
DMS-100* FAMILY

ALL PRODUCT COMPUTING-MODULE LOADS

Volume 13 of 15

RETIRED BUILDING BLOCK
ENGINEERING MANUALS

97Q4

Standard 05.03

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Volume Separator - Front Page

CABINET LGE/DTE NON-ISDN (NTRX47AA)

PEC CODE: NTZZ37EA

CPC CODE: B0235225

RATING: MD

REPLACES: None

REPLACED BY: NTZZ37AC

ABBREVIATION NAME: CPDT (CABINETIZED PDTC EQUIPMENT)
CPLG (CABINETIZED PLGC EQUIPMENT)
CIDT (CABINETIZED IDTC EQUIPMENT)
CILG (CABINETIZED ILGC EQUIPMENT)

ENGINEERING DESCRIPTION: The NTZZ37EA Cabinetized International Digital Controller (CIDC) provides mounting space for two dual shelf XPM modules each configured either as International Digital Trunk Controller (PDTC with domestic software in the UK or IDTC with international software), or International Line Group Controller (PLGC with domestic software in the UK or ILGC with international software).

The CIDC can provide the following interfaces: DS30 or DS512, PCM30 with or without DS0, DS30A and Echo Canceller.

REFERENCE DOCUMENTATION: SLZZ37EA 00 02
MSRX47AA 01 10

MARKETS: Applicable markets:

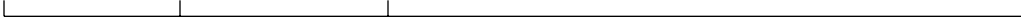
CALA
Asia/Pacific
Europe

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NTZZ37EA EMC2-20-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 14	ECM 660 01	Transfer from ECM-636, updates per ET 110670, ECDs 011-16850, 011-17311. Clarify provisioning of DS30A port cables per ET112300. Add that a minimum of 4 NT6X27 is required per equipped module.
93 08 31	ECM 660 02	
94 02 11	ECM 660 03	Update NTRX47AA per - ECD 011-18052: add XPM+ and - ECD 018-41629: NT6X02BU, P0638263, NTZZ37CA, NTZZ37DA are MD, replaced by NT6X02UF, NT6X0251, NTZZ37CN, NTZZ37CP, or NTZZ37CQ. - Replace Common CP NTRX47AB with NTZZ37BC or NTZZ37BD.
94 07 21	ECM 660 04	Add NTZZ41CA. Delete P0745307, which was introduced prematurely. Clarify RUL3.
95 04 05	ECM 660 05	Change NTZZ37EA to A&M status. NTRX47AC replaces NTRX47AB per EC 024-93969.
95 04 21	ECM 660 06	Change per ECD 024-93026 to introduce the NT6X02WF, NT6X02XH, NTMX70AC, and NT6X01XG kit to the NTRX47AA frame.
95 05 04	ECM 660 07	Change per ET 22689.
95 05 15	ECM 660 08	Change per ET 22979.
95 07 27	ECM 660 09	Change per ECD 024-94287.
96 02 16	ECM 660 11	Per ECD 024-95797 NTMX71AA is Replaced by NTMX71BA. NTMX71AA is not MD'd. Per ECD 024-95646 add NT6X03DD Upgrade kit. Add NT6X03DE XPM+ Upgrade kit to replace the NT6X02XH Kit. The NTMX70AC is MD'd and has no replacement. Add NT6X78AB CMR card.
96 04 19	ECM 660 12	Introduction of GTR, NT6X92EA.
96 07 31	ECM 660 13	Per EC 024-96554 introduce NT6X40FB (NTZZ02HN), NT6X40AD (NTZZ02GC) and NTZZ97AA for NT6X78AB. Clarify the notes for kits NT6X03DD and NT6X03DE.
97 03 14	ECM 704 02	Consolidation of ECM 660 issue 13. Per 024-94268 change bushing P0682727 to P0689010. Per 024-96494 NT6X05CA is replaced by NTMX90AB (ref. only)



The Cabinet LGE/DTE Non-ISDN (NTRX47AA) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CIDC	NTRX47AA		1			AP
Frame Supervisory Panel	NT7X34DA	FSP	1	60		AP
CPCE Shelf Assembly	NT6X0211		4	X+14,X		AP-01
# Cabinetized Fiber Common CP	NTFX33BA	PDTC/PLGC/ IDTC/ILGC		X		RUL1
# Cabinetized Fiber Common CP	NTRX47AB	PDTC/PLGC/ IDTC/ILGC		X		RUL1
# Cabinetized Fiber Common CP	NTRX47AC	PDTC/PLGC/ IDTC/ILGC		X		RUL1
Int. XPM Non-ISDN 48V Cmn CP	NTZZ37BC	ILGC/IDTC/ PLGC/PDTC		X		RUL1
Int. XPM+ Non-ISDN 48V Cm CP	NTZZ37BD	ILGC/IDTC/ PLGC/PDTC		X		RUL1
# XPM+ Upgrade Kit	NT6X01XE			X		RUL1
Filler Faceplate Kit	NT6X02AB			33		RUL1
DS0 8 Port 64KB Interface CP	NT6X55CA			X+14	01	RUL3
# PCM-30 Interface CP	NT6X27AC			X+14,X	01-04	RUL2
PCM-30 Interface CP	NT6X27BB			X+14,X	01-04	RUL2
Filler Face Plate .875	NT0X50AA			X+14,X	01-04	RUL9
DS-30A Interface CP	NT6X48AA			X+14,X	05,06	RUL4
Filler Face Plate .875	NT0X50AA			X+14,X	05,06	RUL9
Connector Key Bracket	P0638261			X+14,X	6R, 7R	RUL4
Universal Time Switch CP	NT6X44EA		2	X+14,X	07	AP-02
Universal Time Switch CP	NT6X44EA		2	X+14,X	07	AP-03
Universal Time Switch CP	NT6X44EA		2	X+14,X	07	AP-04
# Universal Tone Receiver CP	NT6X92CA			X+14,X	08	RUL5
Global Tone Receiver CP	NT6X92EA			X+14,X	08	RUL5
@ 30 Universal Tone Rcvr Ccts	NTZZ41CA			X+14,X	08	RUL18
@ 30 Global Tone Rcvr Ccts	NTZZ02FC			X+14,X	09	RUL18
Filler Face Plate .875	NT0X50AA			X+14,X	08	RUL9
Class Modem Resource card	NT6X78AB			X+14,X	08	RUL23
# Class Modem Resource	NTZZ97AA			X+14,X	08	RUL23
Class Modem Resource	NTZZ02EA			X+14,X	08	RUL23

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Universal Tone Receiver CP	NT6X92CA			X+14,X	09	RUL5
Global Tone Receiver CP	NT6X92EA			X+14,X	09	RUL5
@ 30 Universal Tone Rcvr Ccts	NTZZ41CA			X+14,X	09	RUL18
@ 30 Global Tone Rcvr Ccts	NTZZ02FC			X+14,X	09	RUL18
Continuity Tone Detector CP	NT6X70AA			X+14,X	09	RUL6
Contin. Tone Detect. Wiring	NTNX33WA			X+14,X	09	RUL6
Filler Face Plate .875	NT0X50AA			X+14,X	09	RUL9
Class Modem Resource card	NT6X78AB			X+14,X	09	RUL23
# Class Modem Resource	NTZZ97AA			X+14,X	09	RUL23
Class Modem Resource	NTZZ02EA			X+14,X	09	RUL23
Msg Protocol & Dwnld Tone CP	NT6X69LB		2	X+14,X	10	AP-02
Msg Protocol & Dwnld Tone CP	NT6X69LB		2	X+14,X	10	AP-03
Msg Protocol & Dwnld Tone CP	NT6X69LB		2	X+14,X	10	AP-04
# Universal Tone Receiver CP	NT6X92CA			X+14,X	11	RUL5
Global Tone Receiver CP	NT6X92EA			X+14,X	11	RUL5
@ 30 Universal Tone Rcvr Ccts	NTZZ41CA			X+14,X	11	RUL18
@ 30 Global Tone Rcvr Ccts	NTZZ02FC			X+14,X	11	RUL18
CCITT N5 Spec Tone Rec CP	NT6X62DA			X+14,X	11	RUL16
Filler Face Plate .875	NT0X50AA			X+14,X	11	RUL9
Class Modem Resource card	NT6X78AB			X+14,X	11	RUL23
# Class Modem Resource	NTZZ97AA			X+14,X	09	RUL23
Class Modem Resource	NTZZ02EA			X+14,X	09	RUL23
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	12	AP-02
XPM Plus Processor CP	NTMX77AA		2	X+14,X	12	AP-03
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	12	AP-04
XPM Plus Processor CP	NTMX77AA		2	X+14,X	12	AP-05
Signal Proc. Memory Plus CP	NT6X46BB		2	X+14,X	13	AP-02
Bus Shorter CP	NT7X80AA		2	X+14,X	13	AP-03
Signal Proc. Memory Plus CP	NT6X46BB		2	X+14,X	13	AP-04
Bus Shorter CP	NT7X80AA		2	X+14,X	13	AP-05
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	14	AP-02
Filler Face Plate 0.875	NT0X50AA		2	X+14,X	14	AP-03
Desig. Label for NT0X50AA	P0578498		2	X+14,X	14	AP-03
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	14	AP-04
Filler Face Plate 0.875	NT0X50AA		2	X+14,X	15	AP-02
Filler Face Plate 0.875	NT0X50AA		2	X+14,X	15	AP-03
Filler Face Plate 0.875	NT0X50AA		2	X+14,X	15	AP-04

Retired Equipment
Cabinet LGE/DTE Non-ISDN (NTRX47AA)

NTZZ37EA
EMC2-20-001
Page 5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
4 MB MP Memory CP	NT6X47AC		2	X+14,X	16	AP-02
Filler Face Plate 0.875	NT0X50AA		2	X+14,X	16	AP-03
Desig. Label for NT0X50AA	P0578498		2	X+14,X	16	AP-03
4 MB MP Memory CP	NT6X47AC		2	X+14,X	16	AP-04
Signal Proc. Memory Plus CP	NT6X46BB		2	X+14,X	17	AP-02
Bus Shorter CP	NT7X80AA		2	X+14,X	17	AP-03
Signal Proc. Memory Plus CP	NT6X46BB		2	X+14,X	17	AP-04
Bus Shorter CP	NT7X80AA		2	X+14,X	17	AP-05
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	18	AP-02
Filler Face Plate 0.875	NT0X50AA		2	X+14,X	18	AP-03
Desig. Label for NT0X50AA	P0578498		2	X+14,X	18	AP-03
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	18	AP-04
PCM-30 Signaling I/F CP	NT6X28AA			X+14,X	19	RUL17
Filler Face Plate .875	NT0X50AA			X+14,X	19	RUL9
Echo Canceller Control CP	NTCX50AA			X+14,X	19R	RUL7
Filler Faceplate 0.875	NT0X50AA		2	X+14,X	20	AP-02
Filler Faceplate 0.875	NT0X50AA		2	X+14,X	20	AP-03
Filler Faceplate 0.875	NT0X50AA		2	X+14,X	20	AP-04
XPM+ Terminator Paddleboard	NTMX71BA		4	X+14,X	8R,20R	AP-03
XPM+ Terminator Paddleboard	NTMX71BA		4	X+14,X	8R,20R	AP-05
CSM and N5 Splitter CP	NT6X42CA			X+14,X	21	RUL16
Channel Supervision Mgs CP	NT6X42AA			X+14,X	21	RUL16
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	22	AP-02
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	22	AP-03
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	22	AP-04
# CIDC DS30 Network Interface	NTZZ37FA			X		RUL8
# DS30 Interface Cable Assy	NTRX4610		2	X+14,X	23	AP-06
# Connector Key Bracket	P0638263		2	X+14,X	23R	AP-06
DS30 Network I/F Upper Mod.	NTZZ37CN			X	23	RUL8
DS30 Network Interface CP	NT6X40AC		2	X+14,X	23F	AP-08
Desig. Label For NT6X40AC	P0695397		2	X+14,X	23F	AP-08
DS30 Interface Cable Assy	NTRX4667		1	X		AP-08
DS30 Interface Cable Assy	NTRX4668		1	X+14		AP-08
Universal XPM Net I/F Kit	NT6X02UF			X	23R	RUL8

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Network I/F Upper Mod.	NTZZ02GC			X	23	RUL8
DS30 Network Interface CP	NT6X40AD		2	X+14,X	23F	AP-11
Desig. Label For NT6X40AD	P0834806		2	X+14,X	23F	AP-11
DS30 Interface Cable Assy	NTRX4667		1	X		RUL8
DS30 Interface Cable Assy	NTRX4668		1	X+14		RUL8
Universal XPM Net I/F Kit	NT6X02UF			X	23R	RUL8
DS30 Network I/F Lower Mod.	NTZZ37CP			X	23	RUL8
DS30 Network Interface CP	NT6X40AC		2	X+14,X	23F	AP-09
Desig. Label For NT6X40AC	P0695397		2	X+14,X	23F	AP-09
DS30 Interface Cable Assy	NTRX4665		2	X		AP-09
DS30 Interface Cable Assy	NTRX4666		2	X+14		AP-09
Universal XPM Net I/F Kit	NT6X02UF			X	23R	RUL8
DS30 Network I/F Lower Mod.	NTZZ02GC			X	23	RUL8
DS30 Network Interface CP	NT6X40AD		2	X+14,X	23F	AP-11
Desig. Label For NT6X40AD	P0834806		2	X+14,X	23F	AP-11
DS30 Interface Cable Assy	NTRX4665		2	X		RUL8
DS30 Interface Cable Assy	NTRX4666		2	X+14		RUL8
Universal XPM Net I/F Kit	NT6X02UF			X	23R	RUL8
# CIDC DS512 Network Interface	NTZZ37GA			X		RUL8
# Fiber I/F H/W Assembly	NT6X02BU		1	X	23R	AP-07
# Optical Fiber Danger Label	P0736273		1	X		AP-05
Universal XPM Net I/F Kit	NT6X02UF			X	23R	RUL8
DS512 Network Interface	NTZZ37CQ			X	23	RUL8
DS-512 XPM Interface CP	NT6X40FA		2	X+14,X	23	AP-10
Desig. Label (NT6X40FA)	P0729895		2	X+14,X	23	AP-10
DS-512 XPM Paddle Board	NT6X40GA		2	X+14,X	23R	AP-10
# Snap Bushing	P0682727		1	X		AP-10
Snap Bushing	P0689010		1	X		AP-10
Fiber Cable Kit	NT6X0251		1	X	23R	AP-10
Universal XPM Net I/F Kit	NT6X02UF			X	23R	RUL8
DS512 Network Interface	NTZZ02HN			X	23	RUL8
DS-512 XPM Interface CP	NT6X40FB		2	X+14,X	23	AP-12
Desig. Label (NT6X40FB)	P0834807		2	X+14,X	23	AP-12
DS-512 XPM Paddle Board	NT6X40GA		2	X+14,X	23R	AP-12
Fiber Cable Kit	NT6X0251		1	X	23R	AP-12
# Snap Bushing	P0682727		1	X		RUL8
Snap Bushing	P0689010		1	X		RUL8
Universal XPM Net I/F Kit	NT6X02UF			X	23R	RUL8

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate 0.875	NT0X50AA		2	X+14,X	24	AP-02
Filler Faceplate 0.875	NT0X50AA		2	X+14,X	24	AP-03
Filler Faceplate 0.875	NT0X50AA		2	X+14,X	24	AP-04
Power Coverter +-5V +-12V	NT2X70AF		2	X+14,X	25	AP-02
Power Coverter +-5V +-12V	NT2X70AF		2	X+14,X	25	AP-03
Power Coverter +-5V +-12V	NT2X70AF		2	X+14,X	25	AP-04
PCM-30 (Send) Cable Assy	NTRX4614			X+14,X		RUL2
PCM-30 (Receive) Cable Assy	NTRX4615			X+14,X		RUL2
Wiring List PCM-30 2x8 PCB	NTRX47WB			X+14,X		RUL2
DS0 Leads to B/H Cable Assy	NTRX4701			X+14		RUL3
# Wiring List Echo Cancellor	NTRX47WA			X+14,X		RUL7
ECC Interconnect Cable Assy	NTNX3390			X		RUL7
# PCM-30 Coaxial I/F Assy	NTRX4609			47		RUL2
PCM-30 Coaxial I/F Assy	NTRX4619			47		RUL2
# Personality Plate	P0730337			47		RUL2
Personality Plate	P0734655			47		RUL2
PCM-30 Twist Pair I/F Assy	NTNX3370			47		RUL2
PCM-30 Twist Pair I/F Assy	NTNX3371			47		RUL2
# PCM-30 Coaxial I/F Assy	NTRX4608			33		RUL2
PCM-30 Coaxial I/F Assy	NTRX4618			33		RUL2
# Personality Plate	P0730336			33		RUL2
Personality Plate	P0734654			33		RUL2
PCM-30 Twist Pair I/F Assy	NTNX3370			33		RUL2
PCM-30 Twist Pair I/F Assy	NTNX3371			33		RUL2
DS-30A Interfce 6-Port Cable	NTNX3307			33		RUL4
DS-30A Interfce 6-Port Cable	NTNX3319			33		RUL4
DS-30A Interfce 6-Port Cable	NTNX3320			33		RUL4
DS-30A Interfce 6-Port Cable	NTNX3321			33		RUL4
DS-30A Interfce 4-Port Cable	NTNX3308			33		RUL4
DS-30A Interfce 4-Port Cable	NTNX3322			33		RUL4
DS-30A Interfce 4-Port Cable	NTNX3323			33		RUL4
DS-30A Interfce 4-Port Cable	NTNX3324			33		RUL4
Cable Mounting Bushing	P0638259			33		RUL4
Cable Mounting Washer	P0423631			33		RUL4
# PCM-30 Coaxial I/F Assy	NTRX4607			19		RUL2
PCM-30 Coaxial I/F Assy	NTRX4617			19		RUL2
# Personality Plate	P0730335			19		RUL2
Personality Plate	P0734653			19		RUL2

Retired Equipment
Cabinet LGE/DTE Non-ISDN (NTRX47AA)

NTZZ37EA
EMC2-20-001
Page 8

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
PCM-30 Twist Pair I/F Assy	NTNX3370			19		RUL2
PCM-30 Twist Pair I/F Assy	NTNX3371			19		RUL2
# PCM-30 Coaxial I/F Assy	NTRX4606			05		RUL2
PCM-30 Coaxial I/F Assy	NTRX4616			05		RUL2
# Personality Plate	P0730334			05		RUL2
Personality Plate	P0734652			05		RUL2
PCM-30 Twist Pair I/F Assy	NTNX3370			05		RUL2
PCM-30 Twist Pair I/F Assy	NTNX3371			05		RUL2
DS-30A Interfce 6-Port Cable	NTNX3305			05		RUL4
DS-30A Interfce 6-Port Cable	NTNX3313			05		RUL4
DS-30A Interfce 6-Port Cable	NTNX3314			05		RUL4
DS-30A Interfce 6-Port Cable	NTNX3315			05		RUL4
DS-30A Interfce 4-Port Cable	NTNX3306			05		RUL4
DS-30A Interfce 4-Port Cable	NTNX3316			05		RUL4
DS-30A Interfce 4-Port Cable	NTNX3317			05		RUL4
DS-30A Interfce 4-Port Cable	NTNX3318			05		RUL4
Cable Mounting Bushing	P0638259			05		RUL4
Cable Mounting Washer	P0423631			05		RUL4
Wiring List With XPM+	NT6X01WL			5,47		AP-03
Wiring List Without XPM+	NT6X01WK			5,47		AP-02
NT7X05AA Product Change Kit	NT6X02WF		1	05,33		RUL19
# 3P XPM Plus Change Kit	NT6X02XH		1	05,33		RUL20
# 3P XPM Plus Paddlecard Kit	NTMX70AC		1	05,33		RUL21
Enhanced 3P XPM+ Upg. Kitt	NT6X03DE		1	05,33		RUL24
Option Slot Upg. Kit for 3P	NT6X03DD		1			RUL25
XPM Plus Echo Canceller Kit	NT6X01XG		1	05,33		RUL22
Cooling Unit	NTNX27CA	CU	1	00		AP
EMI Kit Single Bulkhead	NTRX2516					RUL10
EMI Ready Door Kit	NTRX2513					RUL10
Cable Trough Assembly	NTNX5511					RUL11
Leveling Foot Kit	NTRX2523					RUL12
Insulating Boot	P0706920					RUL15
Cover Plate	P0707193					RUL15

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cover Plate	A0368391					RUL15
Latch	P0707195					RUL15
Designation Strip	P0743128		2	X+14,X		AP-02
Designation Strip	P0743128		2	X+14,X		AP-03
Desig. Label (NTMX77AA)	P0735417		2	X+14,X	12	AP-03
Desig. Label (NT2X70AF)	P0809960		2	X+14,X	25	AP-02
Desig. Label (NT2X70AF)	P0809960		2	X+14,X	25	AP-03
Desig. Label (NT2X70AF)	P0809960		2	X+14,X	25	AP-04
Desig. Label (NT6X27BB)	P0739157			X,X+14	2-5	RUL13
Desig. Label (NT6X42CA)	P0731400			X+14,X	11	RUL13
Desig. Label (NT6X55CA)	P0731375			X+14	01	RUL13
Desig. Label (NT6X62DA)	P0731401			X+14,X	11	RUL13
Desig. Label (NT6X92CA)	P0677831			X+14,X	09	RUL13
Desig. Label for NT6X92EA	P0835224					RUL13
Desig. Label (NT6X78AB)	P0731980			X+14,X	8,9,11	RUL13
Desig. Label (NT7X80AA)	P0742962		4	X+14,X	13,17	AP-03
Desig. Label (NTMX77AA)	P0735417		2			AP-05
Desig. Label (NT7X80AA)	P0742962		4			AP-05
Designation Labels	P0711579					RUL2
CPDT Designation Label	P0734501					RUL14
CPLG Designation Label	P0734502					RUL14
CIDT Designation Label	P0734503					RUL14
CILG Designation Label	P0734504					RUL14

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTFX33BA		NTRX49AB and provisionable NT6X42AA/CA.
NTRX4606		NTRX4616
NTRX4607		NTRX4617
NTRX4608		NTRX4618
NTRX4609		NTRX4619
NT6X27AC		NT6X27BB
P0730334	A&M	P0734652
P0730335	A&M	P0734653

PEC	RATING	REPLACED BY PEC
P0730336	A&M	P0734654
P0730337	A&M	P0734655
NTRX47WA	MD	
NTRX47AB	MD	NTRX47AC
NTRX47AC		NTZZ37BC/BD
NTZZ37FA	MD	NTZZ37CN/CP and NT6X02UF
P0638263	MD	NT6X02UF
NTRX4610	MD	NTRX4665, NTRX4666, NTRX4667, NTRX4668
NTZZ37GA	MD	NTZZ37CQ and NT6X02UF
NT6X02BU	MD	NT6X02UF and NT6X0251
NT6X01XE	MD	NT6X02XH
NTMX71AA	MD	NTMX71BA
NTMX70AC	MD	No Replacement
NT6X02XH	MD	NT6X03DE
NT6X92CA	STD *	NT6X92EA
NTZZ41CA	STD *	NTZZ02FC
NTZZ97AA	MD	NTZZ02EA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

* Meaning NT6X92CA and NTZZ41CA are still STD. They will be replaced by NT6X92EA and NTZZ02FC respectively. Check availability before ordering the NT6X92EA or NTZZ02FC.

NOTES:

- 1) For the lower module in the frame, X=05 (ie. shelf positions 05 and 19), and for the upper module in the frame X=33 (ie. shelf positions 33 and 47).

- 2) The formerly provided NT2X70AE Power Converter has been changed to MD status and replaced by the NT2X70AF within the Common CP provisionable per RUL1.

RULES:

- AP 1) When PEC NTZZ37EA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NTRX47AA cabinet, and is shown here for completeness.
- AP-02 1) This PEC is always provided with NTZZ37BC XPM Non-ISDN 48VDC Common CP provisionable per RUL1.
- AP-03 1) This PEC is always provided with NTZZ37BD XPM Plus Non-ISDN 48VDC Common CP provisionable per RUL1.
- AP-04 1) This CP was always provided in the NTRX47AB/AC Common CP, and is shown here for completeness.
- AP-05 1) This item is always provided in NT6X03DE Enhanced 3P Back-plane XPM+ Upgrade Kit provisionable per RUL24.
- AP-06 1) This PEC was always provided in the manufacture discontinued NTZZ37FA International CIDC Network Interface, and is shown here for completeness.
- AP-07 1) This PEC was always provided in the manufacture discontinued NTZZ37GA International CIDC Network Interface, and is shown here for completeness.
- AP-08 1) This PEC is always provided in the NTZZ37CN DS30 Network Interface Upper Module (A/B Cabinet) provisionable per RUL8 and is shown here for completeness.
- AP-09 1) This PEC is always provided in the NTZZ37CP DS30 Network Interface Lower Module (A/B Cabinet) provisionable per RUL8 and is shown here for completeness.
- AP-10 1) This PEC is always provided in the NTZZ37CQ DS512 Network Interface (A/B Cabinet) provisionable per RUL8 and is shown here for completeness.
- AP-11 1) This PEC is always provided in the NTZZ02GC DS30 Network Interface (A/B Cabinet) provisionable per RUL8 and is shown here for completeness.

AP-12 1) This PEC is always provided in the NTZZ02HN DS512 Network Interface (A/B Cabinet) provisionable per RUL8 and is shown here for completeness.

AP-13 1) This PEC is always provided in the NTZZ02EA for Class Modem Resource provisionable per RUL23 and is shown here for completeness.

RUL1 1) For each equipped module,

- for offices with the XPM (MP/SP/FP) feature provide:
 - one (1) NTZZ37BC Int. XPM Non-ISDN 48VDC Common CP, or
- for offices with the XPM Plus (UP) feature provide:
 - one (1) NTZZ37BD Int. XPM Plus Non-ISDN 48VDC Common CP.

The formerly provided NTRX47AB Common CP has been changed to MD status and replaced by the NTRX47AC for XPM (MP/SP/FP) applications. The NTZZ37BC Building Block has been updated to include the contents of NTRX47AC.

2) If the second module is not equipped on the CIDC cabinet, provide:

- one (1) NT6X02AB Common Peripheral Controller Module Filler Faceplate Kit.

3) To convert one PDTC module equipped for XPM to XPM+ provide:

- one (1) NT6X01XE XPM+ 3P Upgrade Kit.

The NT6X01XE kit includes:

- two (2) NTMX77AA XPM Plus Processor CPs,
- two (2) NTMX71AA XPM Plus Paddleboards,
- four (4) NT7X80AA Bus Shorter CPs, and
- backplane wiring modifications for XPM+.

The XPM CPs NT6X45BA, NT6X47AC, and NT6X46BB must be removed before the NT6X01XE XPM+ 3P Upgrade Kit is applied.

The NT6X03DE upgrade kit replaces the NT6X02XH and NTMX70AC field upgrade kits for XPM+ and Option Slot Ready Functionality.

RUL2 1) For each equipped module provide as per customer requirements:

- minimum four (4) and up to eight (8) NT6X27BB PCM-30 Interface CPs.

Each PCM-30 Interface CP supports two (2) PCM-30 ports. The following table is a listing of PCM-30 ports per circuit pack location.

CP POS	4	3	2	1
SHF POS X+14	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS X	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

For the lower module in the cabinet X=05 (i.e. shelf positions 05 and 19),

and for the upper module in the cabinet X=33 (i.e. shelf positions 33 and 47).

2) PCM-30 termination may be provided in the following versions:

- a) Enhanced for EMI PCM-30 Interfacing,
- b) Basic PCM-30 Interfacing,
- c) A&M Enhanced for EMI PCM-30 Interfacing, and
- d) A&M Basic PCM-30 Interfacing,

as detailed below:

a) Enhanced for EMI PCM-30 Interfacing:

For Twisted pair wiring from backplane to bulkhead, and coaxial cable from bulkhead to MDF (This is an EMI enhanced version and is preferred), provide:

- For each module
 - two (2) NTRX4614 PCM-30 (Send) Cable Assys,
 - two (2) NTRX4615 PCM-30 (Receive) Cable Assys, and
 - one (1) NTRX47WB PCM-30 2x8 PCB Wiring List per equipped modul

- For each equipped module in shelf positions 05 and 19
 - One (1) NTRX4616 PCM-30 Coaxial I/F Assy in shelf position 05, and
 - One (1) NTRX4617 PCM-30 Coaxial I/F Assy in shelf position 19, and
- For each equipped module in shelf positions 33 and 47
 - One (1) NTRX4618 PCM-30 Coaxial I/F Assy in shelf position 33, and
 - One (1) NTRX4619 PCM-30 Coaxial I/F Assy in shelf position 47.

b) Basic PCM-30 Interfacing:

For twisted pair wiring from backplane to MDF via the cabinet bulkhead provide:

- two (2) NTN3370 PCM-30 Twisted Pair Interface Assemblies and
- two (2) NTN3371 PCM-30 Twisted Pair Interface Assemblies.
- one (1) P0711579 Designation Labels sheet (One sheet contains sufficient cable connector designation labels for both modules in the frame).
- For each equipped module in shelf positions 05 and 19
 - One (1) P0734652 Personality Plate in shelf position 05, and
 - One (1) P0734653 Personality Plate in shelf position 19, and
- For each equipped module in shelf positions 33 and 47
 - One (1) P0734654 Personality Plate in shelf position 33, and
 - One (1) P0734655 Personality Plate in shelf position 47.

c) A&M Enhanced for EMI PCM-30 Interfacing:

This option is for Addition and Maintenance only. For new jobs refer to option a) above.

For the now A&M EMI enhanced version the following was provided:

- For each equipped module in shelf positions 05 and 19
 - One (1) NTRX4606 PCM-30 Coaxial I/F Assy in shelf position 05, and
 - One (1) NTRX4607 PCM-30 Coaxial I/F Assy in shelf position 19, and
- For each equipped module in shelf positions 33 and 47
 - One (1) NTRX4608 PCM-30 Coaxial I/F Assy in shelf position 33, and
 - One (1) NTRX4609 PCM-30 Coaxial I/F Assy in shelf position 47.

d) A&M Basic PCM-30 Interfacing:

This option is for Addition and Maintenance only. For new jobs refer to option b) above.

For twisted pair wiring from backplane to MDF via the cabinet bulkhead.

- two (2) NTN3370 PCM-30 Twisted Pair Interface Assemblies and
- two (2) NTN3371 PCM-30 Twisted Pair Interface Assemblies.
- one (1) P0711579 Designation Labels sheet (One sheet contains sufficient cable connector designation labels for both modules in the frame).
- For each equipped module in shelf positions 05 and 19
 - One (1) P0730334 Personality Plate in shelf position 05, and
 - One (1) P0730335 Personality Plate in shelf position 19, and
- For each equipped module in shelf positions 33 and 47
 - One (1) P0730336 Personality Plate in shelf position 33, and
 - One (1) P0730337 Personality Plate in shelf position 47.

- RUL3 1) For DS0 interface, for each equipped module, provide as per customer requirements:

- one (1) NT6X55CA DS0 8 Port 64KB Interface CP, and
- two (2) NTRX4701 DS0 Leads to B/H Cable Assembly.

The CIDC may be configured for both PCM30 and DS0 interfaces or for PCM30 interface only. When both PCM30 and DS0 interfaces are provisioned, the number of associated ports per module will be 14 and 8 respectively.

The DS0 I/F card, NT6X55CA, can be assigned only in slot 1 of the upper shelf of the module.

- RUL4 1) For ILGC applications, provide for each module:

- four (4) NT6X48AA DS30A LCM Interface CPs to interface links from ILCM, and
- four (4) P0638261 Connector Key Brackets.

For IDTC applications, provide for each module:

- four (4) NT0X50AA Filler Face Plates.

- 2) The NT6X48AA CP are assigned in pairs for reliability. One member of the pair interfaces the same DS30A ports as the other member. Each member of the pair occupies the same CP slot, with one CP assigned to the lower shelf of the module and the other assigned to the upper shelf of the module.
- 3) The two pairs of NT6X48AA provide interfaces for up to twenty (20) DS30A ports (links) from ILCMs. The following is a listing of DS30A ports per DS30A LCM Interface CP, NT6X48AA location.

	CP POS 5	CP POS 6
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8

PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) Assign ports to DS30A in the following sequence: 19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, 1, 2 and 0.

DS30A ports must be selected from those peripheral ports that remain unassigned after NT6X27BB (PCM30) ports are provisioned per RUL2.

- 5) DS30A Port Cables shall be provisioned by the job engineer based on CCS/line requirements. These cables connect DS30A signals from the backplane of the LGC modules to the bulkhead. Cables are equipped with six 2X4 connectors (6-Port cables) or four 2X4 connectors (4-Port cables) and shall be provisioned based on port requirements.

For each LCM linked to the LGC module, provide:

- One (1) DS30A 6-Port Cable or
One (1) DS30A 4-Port Cable.

Since only eight (8) 6-port and 4-port cables may be provisioned per LGC module, the maximum number of LCMs which may be linked to an LGC module is eight (8).

A further restriction is that, since only four (4) 6-port cables may be provisioned per LGC module, the maximum number of LCMs which may be linked to an LGC module with six (6) links is four (4).

There is no restriction on the order in which the DS30A Port Cables may be assigned.

The DS30A port cables for each of the two LGC modules in the cabinet are listed in the following tables.

DS30A PORT CABLES FOR LGC MODULE ON SHELVES 05 AND 19		
	6-PORT OR 4-PORT	BULKHEAD

CABLE PEC	CABLE	CONNECTOR DESIGNATION
NTNX3305	6-PORT	0P0
NTNX3313	6-PORT	0P1
NTNX3314	6-PORT	0P2
NTNX3315	6-PORT	0P3
NTNX3306	4-PORT	0P4
NTNX3316	4-PORT	0P5
NTNX3317	4-PORT	0P6
NTNX3318	4-PORT	0P7

DS30A PORT CABLES FOR LGC MODULE ON SHELVES 33 AND 47		
CABLE PEC	6-PORT OR 4-PORT CABLE	BULKHEAD CONNECTOR DESIGNATION
NTNX3307	6-PORT	1P0
NTNX3319	6-PORT	1P1
NTNX3320	6-PORT	1P2
NTNX3321	6-PORT	1P3
NTNX3308	4-PORT	1P4
NTNX3322	4-PORT	1P5
NTNX3323	4-PORT	1P6
NTNX3324	4-PORT	1P7

6) For each DS-30A Interface Cable Assembly ordered Provide:

- two (2) P0638259 Bushings and
- two (2) P0423631 Washers.

RUL5 1) The Tone Receiver CPs is a combined service circuit that can perform the function of Digitone Receiver for lines and MF Receiver for trunks.

- 2) Provide zero (0), two (2) or four (4) NT6X92CA per module based on customer requirements. The first provisionable UTR (NT6X92CA) pair shall be located in CP position 8. The second provisionable UTR pair shall be located in CP slot 09, unless CP slot 09 is equipped with a NT6X70AA, in which case the second UTR (NT6X92CA) pair will be located in CP slot 11. Each UTR on the shelf is paired with a UTR in the same circuit pack position on the other shelf in the module.

(OR)

- 2A) Provide two (2) or four (4) NT6X92EA in slots 8, 9 or 11 per PDTG/PLGC module for DIGITONE receivers (LINES) or MF receivers (Trunks). Each of the NT6X92EA circuit pack provides tone reception for PCM 30 Channels. The NT6X92EA is a CCITT compliant tone receiver. (Complies with CCITT Recommendations Q.24, Q.323 and Q.455 for DTMF and MF tone reception) Check availability before ordering the NT6X92EA. DO NOT mix NT6X92 CP types on the same shelf.

- RUL6 1) When this IDTC is handling CCIS/CCS7 voice trunking, provide for each equipped module:

- two (2) NT6X70AA Continuity Tone Detector CPs, and
- two (2) NTNX33WA Continuity Tone Detector Wiring Assemblies.

This CP supports a Continuity Test (COT), and is recommended whenever analog facilities are employed in part or all of the transmission path. When the facility is end-to-end digital, this CP is not required since digital facilities employ other means of fault detection.

- RUL7 1) For Echo Cancelling in non-XPM+ applications, provide for each equipped module:

- two (2) NTCX50AA Echo Canceller Controls (Paddle Board), and
- one (1) NTNX3390 ECC Interconnect Cable Assembly.

- 2) The formerly provided NTRX47WA has been changed to MD status.

- RUL8 1) When DS30 copper network interface is required in a non-ENET office, provide for each equipped module:

For NT6X40AC CP'S USE:

On shelves 47 and 33 (Upper Module)

- one (1) NTZZ37CN DS30 Network
- one (1) NT6X02UF UFXPM Kit

On shelves 19 and 05 (Lower Module)

- one (1) NTZZ37CP DS30 Network
- one (1) NT6X02UF UFXPM Kit

OR

For NT6X40AD CP'S USE:

On shelves 47 and 33 (Upper Module)

- one (1) NTZZ02GC DS30 Network containing: two (2) NT6X40AD
two (2) P0834806

And - one (1) NT6X02UF UFXPM Kit
one (1) NTRX4667 cable assembly
one (1) NTRX4668 cable assembly

On shelves 19 and 05 (Lower Module)

- one (1) NTZZ02GC DS30 Network containing: two (2) NT6X40AD
two (2) P0834806

And - one (1) NT6X02UF UFXPM Kit
one (1) NTRX4665 cable assembly
one (1) NTRX4666 cable assembly

The NT6X40AD is backwards compatible with the NT6X40AC. However, the NT6X40AD has an enhanced C-side loop-around diagnostic feature available with XPM05+ software loads. If the NT6X40AC and NT6X40AD are mixed in a module, they must be datafilled as NT6X40AC in order for the diagnostics to pass.

Otherwise, when Fiber Network Interface is required in an ENET office, provide for each equipped module:

For NT6X40FA CP'S USE:

- one (1) NT6X02UF UFXPM Kit
- one (1) NTZZ37CQ International DS512 Network Interface
Containing: two (2) NT6X40FA CP's
two (2) P0729895 designation labels
two (2) NT6X40GA paddleboards
one (1) NT6X0251 Cable assembly
one (1) P0689010 snap bushing

OR

For NT6X40FB CP'S USE:

- one (1) NT6X02UF UFXPM Kit
- one (1) P0689010 snap bushing
- one (1) NTZZ02HM International DS512 Network Interface
Containing: two (2) NT6X40FB CP's
two (2) P0834807 designation labels
two (2) NT6X40GA paddleboards
one (1) NT6X0251 Cable assembly

The NT6X40FB is backwards compatible with the NT6X40FA. However, the NT6X40FB has an enhanced C-side loop-around diagnostic feature available with XPM05+ software loads. If the NT6X40FA and NT6X40FB are mixed in a module, they must be datafilled as NT6X40FA inorder for the diagnostics to pass.

- RUL9 1) Provide one (1) NT0X50AA Filler Face Plate for each circuit pack position which is not otherwise equipped.
- RUL10 1) For EMI compliant applications, provide:
- one (1) NTRX2516 EMI Kit, Single Bulkhead (NTRX2516 includes NTRX2522 EMI Door Kit).
- 2) Alternatively, provide:
- one (1) NTRX2513 EMI Ready Door Kit.
- RUL11 1) When overhead cabling is required, provide for each CIDC:
- one (1) NTN5511 Cable Trough Assembly.
- RUL12 1) When cabinets are in a non-earthquake zone, provide for each CIDC:
- one (1) NTRX2523 Leveling Foot Kit.
- RUL13 1) Provide the appropriate designation label for each CP provided.
- RUL14 1) The bottom module in the cabinet determines cabinet type. Provide one designation label per cabinet as follows:
- When the bottom module is PDTC provide
 - one (1) P0734501 CPDT Designation Label.
 - When the bottom module is PLGC provide
 - one (1) P0734502 CPLG Designation Label.
 - When the bottom module is IDTC provide
 - one (1) P0734503 CIDT Designation Label.
 - When the bottom module is ILGC provide
 - one (1) P0734504 CILG Designation Label.
- RUL15 1) For each CIDC provide per customer requirements:
- eight (8) P0706920 Insulating Boot,
 - one (1) P0707193 Cover Plate,
 - one (1) A0368391 Cover Plate, and
 - four (4) P0707195 Latch.

The above parts must be provisioned for UK markets and may be provisioned on customer request in other markets.

RUL16 1) When the N5 Signaling feature is required, provide for each equipped LGC/DTC module:

- two (2) NT6X42CA CSM and N5 Splitter CPs, and
- two (2) NT6X62DA CCITT N5 Special Tone Receiver CPs.

Otherwise provide for each equipped LGC/DTC module:

- two (2) NT6X42AA Channel Supervision Msg CPs.

RUL17 1) For each equipped LGC/DTC which supports PCM30 links (NT6X27 PCM-30 Interface CPs provided per RUL2), or for each equipped LGC module which supports links to an LCM (NT6X48 DS30A LCM Interface CPs provided per RUL4), and the LCM is equipped with a PCM30 line drawer such as the NT6X05CA, provide:

- two (2) NT6X28AA PCM-30 Signaling CPs.

The NT6X05CA PCM30 Line Drawer (PLD) has been MD'ed with a functional replacement of NTMX90AB Global Peripheral Platform (GPP).

RUL18 1) Customized Blocks for Tone Receivers.

One (1) NTZZ41CA 30 Universal Tone Rcvr Ccts includes the following:

- two (2) NT6X92CA Universal Tone Receiver CPs provisionable per RUL5, and two (2) P0677831 Designation Labels (NT6X92CA).

One (1) NTZZ02FC 30 Global Tone Rcvr Ccts includes the following:

- two (2) NT6X92EA Universal Tone Receiver CPs provisionable per RUL5, and two (2) P0835224 Designation Labels (NT6X92EA).

The NTZZ02FC is a CCITT compliant tone receiver. (Complies with CCITT Recommendations Q.24, Q.323 and Q.455 for DTMF and MF tone reception)

RUL19 1) Provide one (1) NT6X02WF per module when the peripheral recovery loader option is required. The NT7X05AA requires the XPM PLUS unified processor NTMX77. If the NT6X02WF

(NT7X05AA) is provisioned. The quantity of NT6X92 packs use will be limited to two (2) per module.

If the 3 processor B/P cabinet NTRX47AA has 4 NT6X92 provisioned then remove the NT6X92 from position 11. If 2 NT6X92 and no NT6X62 are provisioned then this kit may be used. If NT6X62 is provisioned then this kit cannot be used.

- RUL20 1) Provide one (1) NT6X02XH 3P XPM PLUS field upgrade kit per module to upgrade to XPM PLUS functionality. (Replaced by NT6X03DE)
- RUL21 1) Provide one (1) NTMX70AC 3P XPM PLUS paddlecard upgrade kit, instead of the NT6X02XH when a module needs to be upgraded to XPM PLUS and the office already has the NTMX77, NTMX71, and NT7X80 circuit packs stocked on site. The NTMX70AC does not contain the NTMX77, NTMX71, and NT7X80 nor the designation labels for these circuit packs. This kit has been replaced by the NT6X03DE with the NTMX71BA paddleboards.
- RUL22 1) Provide one (1) NT6X01XG XPM PLUS echo canceller upgrade kit per module where XPM PLUS is used.

The NT6X28AC and NTCX50AB CPs are required for echo cancellation in XPM PLUS. The NT6X28AA and NTCX50AA CPs are used for NON-XPM PLUS echo cancellation and will not function with XPM PLUS.

- RUL23 1) Provide two (2) NT6X78AB CMR cards per module when Class Modem Resource is required. The CMR cards available slots are 8,9, and 11 per shelf. If the NT6X0211 shelf release is REL70 or below, the NT6X02DD option slot upgrade kit must be applied before the CMR card is installed. (SEE RUL25 for provisioning the NT6X03DD Kit.) If the NT7X05 is used with the NT6X78AB, the number of NT6X92 packs will be limited to two (2) per module. NTZZ02EA contains two (2) NT6X78AB CP's and two (2) P0731980 designation labels.
- RUL24 1) Provide one (1) NT6X03DE Enhanced 3P Backplane XPM+ Upgrade Kit per module to upgrade to XPM PLUS functionality. This new kit includes all the necessary circuit packs, paddleboards, and cable assemblies to upgrade on PDTC/PLGC module to XPM+. The kit includes the new NTMX71BA terminator paddleboards and the option slot straps. It also includes the wiring templates and labels that are necessary for performing the upgrade to XPM+. The "PLUS+" and "OPT" labels P0833380 and P0833381 are included for marking the

frame/cabinet when the XPM+ upgrade is complete. (This kit is for field upgrades only and replaces the NT6X02XH and NTMX70AC upgrade kits to include NTMX71AB and the option for Class Modem Resource.

- RUL25 1) Provide one (1) NT6X03DD Option Slot Upgrade Kit per frame to upgrade to Option Slot Ready functionality. This kit gives the material and instructions for upgrading four NT6X0211 shelves (with NT6X0212 backplane) to "Option Slot Ready" functionality. This kit provides enough green 26 AWG wire to add the option slot straps to an entire frame or cabinet. Wiring templates are included to aid the installer in locating the correct pins. A label is also included which will be installed on the frame or cabinet next to the PEC and release. The label will have the letters "OPT" to signify "Option Slot Ready". This label provides a visual indication of whether the straps have been added to the frame. The presence of the kit in office records will provide a method of tracking to which frames these straps have been applied. This kit is provisioned if the Class Modem Resource card is required. shelf. If the NT6X0211 shelf release is REL70 or below, the NT6X02DD option slot upgrade kit must be applied before the CMR card is installed. (SEE RUL23 for provisioning the NT6X78AB Card.)

INTERNATIONAL CMS7 MODEL A CABINET

PEC CODE: NTZZ37HA

CPC CODE: B0235241

| RATING: MD

REPLACES: None

| REPLACED BY: NTZZ37HB

ABBREVIATION NAME: CMS7

ENGINEERING DESCRIPTION: The NTZZ37HA International Cabinetized Message Switch 7 (CMS7) contains two Message Switch Buffer 7 (MSB7) shelves and two STG7 shelves. The MSB7 shelves are connected to each plane of the CDSN Network through the CSLC via bulkhead DS30 cabling. Each of the MSB7 shelves can take 4 STs. Each of the STG7 shelves can take 16 STs in 2 groups of 8 STs each. Thus the CMS7 may contain up to 40 STs.

REFERENCE DOCUMENTATION: SLZZ37HA 00 02
MSRX48AA 01 05

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

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NTZZ37HA EMC2-20-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 14	ECM 661 01	Transfer from ECM-636 and ETs 110400 and 110600.
93 05 13	ECM 661 02	Correct RUL2 per ET31753 and remove references to Japan.
93 10 19	ECM 661 03	Correct RUL1 provisioning for DPNSS per ET112950.
94 08 12	ECM 636 12	Add MSRX48AA to Reference Documents.
95 04 06	ECM 661 05	NT2X70AE replaced by NT2X70AF per EC 024-93969. NTZZ37HA status changed to A&M.
95 07 27	ECM 661 06	Change per ECD 024-94287. MD NTZZ37HA

The International CMS7 Model A Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CMS7	NTRX48AA		1			AP
Frame Supervisory Panel	NTNX26HA	FSP	1	60		AP
Signal Term Shelf Assy	NT6X0801	STE	2	33,47		AP-01
Signaling Terminal CCS7 CP	NT6X66AA			33,47	04-11	RUL1
Signaling Terminal CCS7 CP	NT6X66AA			33,47	17-24	RUL1
Signaling Terminal DPNSS7 CP	NT6X66CA			33,47	04-11	RUL1
Signaling Terminal DPNSS7 CP	NT6X66CA			33,47	17-24	RUL1
Filler Face Plate	NT0X50AA			33,47	04-11	RUL1
Filler Face Plate	NT0X50AA			33,47	17-24	RUL1
Sig. Term. Interface (STI)	NT6X68AC			33,47	12,13	RUL2
Sig. Term. Interface (STI)	NT6X68AC			33,47	15,16	RUL2
STI With Terminator	NT6X68AD			33,47	12,13	RUL2
STI With Terminator	NT6X68AD			33,47	15,16	RUL2
Filler Face Plate	NT0X50AA			33,47	12,13	RUL2
Filler Face Plate	NT0X50AA			33,47	15,16	RUL2
# Power Converter	NT2X70AE			33,47	01,25	RUL3
Power Converter	NT2X70AF			33,47	01,25	RUL3
Filler Faceplate 2.62	NT0X50AE			33,47	01,25	RUL3
Filler Face Plate	NT0X50AA		2	33,47	14	AP
MSB7 Shelf Assembly	NT6X3201	STA7	2	05,19		AP-01
# MSB7 Offshore Common CP	NTRX48AB	MSB7		05		RUL4
Interntl CMS7 MSB7 Common CP	NTRX48AC	MSB7		05		RUL4
Signaling Terminal CCS7 CP	NT6X66AA			05,19	04-07	RUL1
Signaling Terminal DPNSS7 CP	NT6X66CA			05,19	04-07	RUL1
Sig. Term. Interface (STI)	NT6X68AC			05,19	08	RUL2
STI With Terminator	NT6X68AD			05,19	08	RUL2
Filler Face Plate	NT0X50AA			05,19	08	RUL2
Sig. Term. Interface (STI)	NT6X68AC			05,19	09	RUL2
# CPP Message Protocol CP	NT6X69LA			05,19	20	RUL5
CPP Message Protocol CP	NT6X69LB			05,19	20	RUL5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Power Converter	NT2X70AE			05,19	01,25	RUL3
Power Converter	NT2X70AF			05,19	01,25	RUL3
Filler Faceplate 2.62	NT0X50AE			05,19	01,25	RUL3
Cooling Unit	NTNX27CA		1	00		AP
EMI Kit Single Bulkhead	NTRX2516					RUL6
EMI Ready Door Kit	NTRX2513					RUL6
Cable Trough Assembly	NTNX5511					RUL7
Leveling Foot Kit	NTRX2523					RUL8
Door Label	P0731041		1			AP
Power & Ground Cover Kit	NTRX4810					RUL10
Desig. Label (NT2X70AE)	P0698943					RUL9
Desig. Label (NT2X70AF)	P0809960					RUL9
Desig. Label (NT6X66AA)	P0647822					RUL9
Desig. Label (NT6X66CA)	P0689915					RUL9
Desig. Label (NT6X68AC)	P0647823					RUL9
Desig. Label (NT6X68AD)	P0647824					RUL9
Desig. Label (NT6X69LB)	P0713213					RUL9

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC
NT2X70AE	MD	NT2X70AF
NT6X69LA	A&M	NT6X69LB
NTRX48AB	A&M	NTRX48AC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ37HA is ordered, these items are provided.
- 2) Two always provided message switch buffer array shelves NT6X3201 on positions 5,19 and two NT6X0801 signaling terminal equipment shelves on position 33,47 make up the MSB7 00/01 and STE 0/1 respectively.

- AP-01 1) This PEC is Always Provided with NTRX48AA Cabinetized Message Switch 7 (CMS7) and is shown here for completeness.

- RUL1 1) In CCS7, signaling links are provisioned in pairs. Provide a pair of Signaling Terminal (ST) circuit packs per signaling link pair as follows:

- two (2) NT6X66AA ST CCS7 CPs.

For reliability, the two ST circuit packs associated with a signaling link pair must be provided in slots powered by different power feeds (A & B).

Please refer to the table on the following page for the power feed and ST group definitions and the order in which ST CP pairs should be assigned.

In DPNSS, signaling links are provisioned individually: one per associated PCM-30 span. For each DPNSS signalling link, provide:

- one (1) NT6X66CA ST DPNSS7 CPs.

- 2) For each slot not equipped with an ST circuit pack provide:

- one (1) NT0X50AA Filler Face Plate.

PAIR NUMBER	ST POSITION Shelf-Slot	ST GROUP	POWER FEED

0	05-07	0	A
	19-07	1	B
1	05-06	0	A
	19-06	1	B
2	05-05	0	A
	19-05	1	B
3	05-04	0	A
	19-04	1	B
4	33-17	2	B
	33-11	3	A
5	33-18	2	B
	33-10	3	A
6	33-19	2	B
	33-09	3	A
7	33-20	2	B
	33-08	3	A
8	33-21	2	B
	33-07	3	A
9	33-22	2	B
	33-06	3	A
10	33-23	2	B
	33-05	3	A
11	33-24	2	B
	33-04	3	A
12	47-17	4	B
	47-11	5	A
13	47-18	4	B
	47-10	5	A
14	47-19	4	B
	47-09	5	A
15	47-20	4	B
	47-08	5	A
16	47-21	4	B
	47-07	5	A
17	47-22	4	B
	47-06	5	A
18	47-23	4	B
	47-05	5	A
19	47-24	4	B
	47-04	5	A

RUL2 1) For the UK (CCS7 and DPNSS7) provide NT6X68AC and NT6X68AD CPs as follows:

- ST Group pair 0 and 1 (STA7 shelves 05 and 19):

- Always provide in CP slots 09 of shelves 05 and 19:
 - two (2) NT6X68AC STI CPs.
- When ST group pair 0 and 1 (see table of RUL1) is not the last ST group pair in the office (ie if ST pair(s) provisioned in ST group pair 2 and 3), provide in CP slots 08 of shelves 05 and 19:
 - two (2) NT6X68AC STI CPs, or
- When ST group pair 0 and 1 is the last ST group pair in the office (ie if no ST is provisioned in ST group pair 2 and 3), provide in CP slots 08 of shelves 05 and 19:
 - two (2) NT6X68AD STI with Terminator CPs.
- ST Group Pair 2 and 3 (STG7 shelf 33):
 - When at least one ST pair is provisioned in ST group pair 2 and 3 (see table of RUL1), provide:
 - in CP slots 15 and 16 of shelf 33
 - two (2) NT6X68AC STI CPs.
 - in CP slots 12 and 13 of shelf 33
 - When ST group pair 2 and 3 is not the last ST group pair in the office (ie if ST pair(s) provisioned in ST group pair 4 and 5),
 - two (2) NT6X68AC STI CPs, or
 - When ST group pair 2 and 3 is the last ST group pair in the office (ie if ST pair(s) not provisioned in ST group pair 4 and 5),
 - two (2) NT6X68AD STI with Terminator CPs.
 - ST Group Pair 4 and 5 (STG7 shelf 47):

- When at least one ST pair is provisioned in ST group pair 4 and 5 (see table of RUL1), provide:
 - in CP slots 15 and 16 of shelf 47
 - two (2) NT6X68AC STI CPs.
 - in CP slots 12 and 13 of shelf 47
 - When ST group pair 4 and 5 is not the last ST group pair in the office
 - two (2) NT6X68AC STI CPs, or
 - When ST group pair 4 and 5 is the last ST group pair in the office
 - two (2) NT6X68AD STI with Terminator CPs.

- 2) For each slot not equipped with an STI circuit pack provide:

- one (1) NT0X50AA Filler Face Plate.

RUL3 1) Provide NT2X70AF CPs as follows:

- STA7 shelves 05 and 19 (ST Group pair 0 and 1), CP slots 01 and CP slots 25, always provide:
 - Four (4) NT2X70AF +-5/12V Power Converter 50A CPs.
- STG7 shelf 33 (ST Group pair 2 and 3), when at least one ST pair is provisioned in ST group pair 2 and 3 (see table of RUL1), provide in CP slots 01 and 25:
 - two (2) NT2X70AF +-5/12V Power Converter 50A CPs.
- STG7 shelf 47 (ST Group pair 4 and 5), when at least one ST pair is provisioned in ST group pair 4 and 5 (see table of RUL1), provide in CP slots 01 and 25:
 - two (2) NT2X70AF +-5/12V Power Converter 50A CPs.

- 2) For each slot 01 or 25 of shelves 33 and 47 not equipped with NT2X70AF Power Converter, provide:

- one (1) NT0X50AE Filler Face Plate.
 - 3) The formerly provided NT2X70AE Power Converter has been changed to MD status and replaced by the NT2X70AF.
- RUL4 1) For each equipped MSB7 module in the CMS7 International cabinet, provide:
- one (1) NTRX48AC International CMS7 MSB7 Common CP.
- One packfill equips both shelves of the MSB7 module in shelf positions 5 and 19.
- RUL5 1) For ENET applications, provide for each module:
- two (2) NT6X69LB Message Protocol and Downloadable Tone Circuit Packs.
- For non-ENET applications, provide for each module:
- two (2) NT6X69LA/LB Message Protocol and Downloadable Tone Circuit Packs.
- RUL6 1) For EMI compliant applications, provide for each CMS7:
- one (1) NTRX2516 EMI Kit Single Bulkhead (NTRX2516 includes NTRX2522 EMI Door Kit).
- 2) For EMI Ready applications, provide for each CMS7:
- one (1) NTRX2513 EMI Ready Door Kit.
- RUL7 1) For overhead cabling applications, provide for each CMS7:
- one (1) NTN5511 Cable Trough Assembly.
- RUL8 1) For Non-Earthquake offices, provide for each CMS7:
- one (1) NTRX2523 Leveling Foot Kit.
- RUL9 1) Provide the appropriate designation label for each CP provided.
- RUL10 1) Provide for each CMS7 per customer requirements:
- one (1) NTRX4810 Power & Ground Kit.

The Power & Ground Kit must be provisioned for UK markets and may be provisioned on customer request in other markets.

INTERNATIONAL CLCE

PEC CODE: NTZZ37LA

CPC CODE: B0235467

| RATING: MD

REPLACES: None

REPLACED BY: NTZZ08EB

ABBREVIATION NAME: CLCE

ENGINEERING DESCRIPTION: The NTZZ37LA International Cabinetized Line Concentrating Equipment (CLCE) is a single bay cabinet which can be equipped with up to two dual shelf International Line Concentrating Modules (ILCM). Each ILCM module may support up to 640 line cards for a total of 1280 line cards per CLCE.

REFERENCE DOCUMENTATION: SLZZ37LA 00 01
NTZZ37LA REL 01
SLRX30AA/00 11
MSRX30AA/00 07

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: James Marsden Dept. 3471 (PPK)

NTZZ37LA EMC2-20-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 09 21	ECM 636 08	ET 30933 - Remove NTRX30HA and RUL4. ECD 024-89106 - Add power kits in RUL7
94 11 17	ECM 636 14	Add NT6X04AX as provisionable item.
95 09 14	ECM 600 19	MD NTZZ37LA per EC 024-94287.

The International CLCE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CLCE	NTRX30AA		1			AP
CLCE Supervisory Panel	NTNX26LA	FSP	1	61		AP
Ringing Generator CP (UK)	NT6X30AB			61	1,13	RUL6
Ringing Generator CP (China)	NT6X30DA			61	1,13	RUL6
Ringing Generator CP (AUSIN)	NT6X30AE			61	1,13	RUL6
Line Drawer	NT6X05AA	LD		47	1-5	RUL2
International Line Drawer	NT6X05BA	LD		47	1-5	RUL2
Line Drawer Filler	NT6X05AX			47	1-5	RUL2
ILCM Common CP	NT6X04BB	LCM1		33		RUL1
CLCE Array Shlf Assy	NT6X0431	LCA	1	33		AP-01
Line Drawer	NT6X05AA	LD		33	1-5	RUL2
International Line Drawer	NT6X05BA	LD		33	1-5	RUL2
Line Drawer Filler	NT6X05AX			33	1-5	RUL2
LCM Filler Kit	NT6X04AX			33	1-5	RUL8
Line Drawer	NT6X05AA	LD		19	1-5	RUL2
International Line Drawer	NT6X05BA	LD		19	1-5	RUL2
Line Drawer Filler	NT6X05AX			19	1-5	RUL2
ILCM Common CP	NT6X04BB	LCM0		05		RUL1
CLCE Array Shlf Assy	NT6X0431	LCA	1	05		AP-01
Line Drawer	NT6X05AA	LD		05	1-5	RUL2
International Line Drawer	NT6X05BA	LD		05	1-5	RUL2
Line Drawer Filler	NT6X05AX			05	1-5	RUL2
LCM Filler Kit	NT6X04AX			05	1-5	RUL8
Cooling Unit	NTNX27DA	CU	1	00		AP
Personality Plate	P0729819		4	05,19, 33,47		AP-01
Door Label	P0726712		1			AP
Designation Labels, LSG No.	P0631765		1			AP
EMI Kit (EMI Doors)	NTRX2515		1			AP
Cable Trough Assembly	NTNX5511					RUL3
Leveling Foot Kit	NTRX2523					RUL5
Frame Ground Kit	NTRX2518		1			AP-01

Retired Equipment
International CLCE

NTZZ37LA
EMC2-20-003
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Internal Horizontal Power Kit	NTRX3622					RUL7
External Power Filter Kit	NTRX3634					RUL7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The NTZZ37LA is a NTRX30AA cabinet which can be equipped with up to two (2) independent Line Concentrating Modules (LCMs). One LCM can mount on shelf position 33 and the other on shelf mounting position 05. Each LCM module is composed of 2 shelves. The two (2) bare shelf assemblies do not become an LCM until they are equipped with one NT6X04BB ILCM Common CP. Then the shelf assembly becomes a Line Concentrating Array Shelf (LCA) that can house up to five (5) Line Drawers. Within each LCM the lower LCA is LCA 0 and the upper LCA is LCA 1.

RULES:

- AP 1) When PEC NTZZ37LA is ordered, these items are provided.

- AP-01 1) This pec is always provided on the NTRX30AA frame and is shown here for completeness.
- RUL1 1) Provide for each ILCM to be equipped in the CLCE:
- one (1) NT6X04BB ILCM Common Circuit Pack.
- RUL2 1) For each dual shelf ILCM module equipped with NT6X04BB Common Circuit Pack, provide line drawers as follows:
- up to ten (10) NT6X05AA Line Drawers, or
 - up to ten (10) NT6X05BA International Line Drawers.
- Each line drawer can accommodate up to sixty-four (64) Line Cards in two logical drawers called Line Sub Group (LSG). Line Drawers are positioned in drawer positions 01-05 on each line shelf assembly.
- 2) For any position not equipped with a line drawer, provide:
- one (1) NT6X05AX Line Drawer Filler.
- RUL3 1) When overhead cabling is required, provide for each CLCE:
- one (1) NTN5511 Cable Trough Assembly.
- RUL4 Reserved for future use.
- RUL5 1) When cabinets are in a non-earthquake zone, provide for each CLCE:
- one (1) NTRX2523 Leveling Foot Kit.

- RUL6 1) When analog ringing is required provide two (2) Ringing Generators per frame as detailed in 2) below.

Even though normally one Ringing Generator serves one LCM/ILCM, provide two (2) Ringing Generators even when there is only one LCM/ILCM per frame, so that under failure condition the remaining good Ringing Generator can serve as a spare.

When there is two LCM/ILCM in a frame, and one ringing generator fails, the remaining good Ringing Generator can serve the two LCM/ILCMs.

Data Unit and Business Set do not require analog ringing.

Ringing type and level is set by switch settings in the Ringing Generators.

The two (2) Ringing Generators are positioned horizontally within the FSP top cavity and occupy the whole frame width.

- 2) For UK applications provide:

- two (2) NT6X30AB Ringing Generators.
The NT6X30AB includes the following CPs:
 - One (1) NT6X37AA Ringing Amplifier CP and
 - One (1) NT6X38AB Ringing Control CP.

For China provide

- two (2) NT6X30DA Ringing Generators.
The NT6X30DA includes the following CPs:
 - One (1) NT6X37AA Ringing Amplifier CP and
 - One (1) NT6X38DA Ringing Control CP.

For the international DMS-100 Intelligent Network in Australia provide:

- two (2) NT6X30AE Ringing Generators.
The NT6X30AE includes the following CPs:
 - One (1) NT6X37AA Ringing Amplifier CP and
 - One (1) NT6X38AE Ringing Control CP.

- RUL7 1) When the cabinet is powered from a source within the same lineup, provide one (1) NTRX3622 Internal Horizontal Power Kit.
- 2) When the cabinet is powered from a source external to the lineup, provide one (1) NTRX3634 External Power Filter Kit. See MSZX16CA for required NTZX1608 (Frame Ground External Kit).
- RUL8 1) Provide one (1) NT6X04AX LCM Filler Kit for each Module which is not equipped with ILCM Common CP per RUL1. Each NT6X04AX includes ten (10) NT6X05AX Line Drawer Fillers, as well as Fillers for the CP positions normally occupied by the ILCM Common CP.

INTERNATIONAL CPDC

PEC CODE: NTZZ37MA

CPC CODE: B0235468

| RATING: MD

REPLACES: N/A

| REPLACED BY: NTZZ13LA

ABBREVIATION NAME: CPDC

ENGINEERING DESCRIPTION: The International Cabinetized Power Distribution Center (CPDC) is EMI compliant at the cabinet level for all input power cabling, and at the system level for all power distribution. The CPDC houses equipment required to interface between the -48V office batteries and up to 84 individual loads within the DMS system. The CPDC can house a maximum of two (2) Breaker Panel Assemblies, each of which distributes power to up to 42 individual fused loads.

REFERENCE DOCUMENTATION: SLZZ37MA 00 02
NTZZ37MA REL 02
MSRX31AA/00 05

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Barry Bond Dept. 3471 (RTP)

MAIN CONTACT: NTI: Lily Ahluwalia Dept. 3471 (RTP)

NTZZ37MA EMC2-20-004 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 04 07	----- ECM 631 09	Previous history not available 1) EC 024-73113 - Update rules based on this ECD. 2) Re-write rules in the same order as those of EMS NTZZ13LA. 3) Correct errors in maximum capacity. ET 32153 - Correction to RUL2 3).
93 08 10 94 11 17	ECM 631 10 ECM 631 15	Replaced by NTZZ13LA to eliminate duplication.

The International CPDC is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cabinetized PDC Frame	NTRX31AA	PDC	1			AP
CPDC Door Labels	P0726710		1			AP
Frame Supervisory Panel	NTMX26CD	FSP	1	62		AP-01
16" Filler Panel	P0715769		1	14		AP-01
Frame Ground Kit	NTRX2518		1			AP-01
Junction Box	NTRX01AD		1	08		AP-01
Breaker Panel Assembly	NTRX02AA	BPA		46,30		RUL1
# Breaker Panel Assembly	NTRX02AB	BPA		30		RUL1
Breaker Panel Assembly	NTRX02AD	BPA		46,30		RUL1
16" Filler Panel	P0715769	FPA		30,46		RUL1
-48V ABS Cable	NTMX2643			46		RUL1
ABS Rtn Cable	NTMX2644			46		RUL1
-48V ABS Cable	NTNX2692			30		RUL1
ABS Rtn Cable	NTNX2693			30		RUL1
Brk Pnl 1 to Jnct Box Kit	NTRX02AE			46		RUL1
Brk Pnl 2 to Jnct Box Kit	NTRX02AC			30		RUL1
Remote Powering Hardware Kit	NTRX31AJ					RUL2
Midlineup Panel Assembly	NTRX73AF					RUL2
Bulkhead Filler Panel	P0715616			05,33,47		RUL2
Panel Assembly (Alarm)	NTRX01AJ			05		RUL3
Cable Assembly (Aisle Alarm)	NTRX3108			62		RUL3
Hi-Dens Conn Plate Assy (L-)	NTRX31LC			47		RUL3
Hi-Dens Conn Plate Assy (L+)	NTRX31LD			33		RUL3
Bulkhead Filler Panel	P0715616			33,47		RUL3
Cable Kit (Exterior)	NTRX31AC			19		RUL4
LaMarche Inverter Kit	NTRX31AD	INV		00		RUL5
7" Filler Panel	P0715770	FPA		00		RUL5
LaMarche Return Cable (L+)	NTRX3104			46		RUL5
LaMarche Feed Cable (L-)	NTRX3115			46		RUL5
LaMarche Return Cable (L+)	NTRX3116			30		RUL5
LaMarche Feed Cable (L-)	NTRX3117			30		RUL5
Connector Plate Assy Feed	NTRX01AM			33		RUL6
Connector Plate Assy Return	NTRX01AK			47		RUL6
ENET Plane 0 Feed Blkhd Assy	NTRX01AN			33		RUL6
ENET Plane 0 RTN Blkhd Assy	NTRX01AQ			47		RUL6
ENET Plane 1 Feed Blkhd Assy	NTRX01AP			33		RUL6
ENET Plane 1 RTN Blkhd Assy	NTRX01AR			47		RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EMI Kit (EMI Doors)	NTRX2514					RUL7
EMI Door Kit	NTRX2522					AP-02
EMI Ready Door Kit	NTRX2513					RUL7
Cable Trough Assembly	NTNX5511					RUL8
Leveling Foot Kit	NTRX2523					RUL9
Power Cable Lugs (10 AWG)	A0379092					RUL10
Power Cable Lugs (8 AWG)	A0352431					RUL10
Power Cable Lugs (6 AWG)	A0381005					RUL10
Exterior Skin Assy, Lft-Grey	NTRX73AL					RUL11
Exterior Skin Assy, Rt-Grey	NTRX73AM					RUL11
Cable Trough End Cover-Grey	P0731513					RUL11
UK Insulator Kit	NTRX31AF					RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTRX02AB	MD	N/A for new jobs.

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The feeders to the CPDC from the office battery splice plate and the returns to the office return splice plate, consist of two separate sets of cables. One set is design-

nated Feeder-A and Return-A and the other set, Feeder-B and Return-B.

- 2) The total DC distribution capability of a CPDC is 400 Amperes, 200A on Feeder-A and 200A on Feeder-B. The two feeder cables from the office battery to each CPDC are fused in the power room at 450A maximum. If the actual feeder demand current is less than 200A, the value of the fuse should be selected to be as close to 1.5 times the actual current as possible, consistent with mechanical compatibility of the fuse-holder. In no case shall the battery bus fuse rating exceed 250 Amps. The feeder fuse capability should be increased proportionally as the office expansion occurs.
- 3) A CPDC is normally provided at the non-growth end of each equipment lineup. It may also be provided in the middle of a lineup upon customer's request.

RULES:

- AP
- 1) When PEC NTZZ37MA is ordered, these items are provided.
 - 2) The CPDC can be provisioned with up to two Breaker Panel Assemblies (BPA). The NTRX02AA includes (42) 30 Amp circuit breakers. The NTRX02AB includes (30) 30 Amp circuit breakers and (12) 5 Amp circuit breakers. The NTRX02AD includes (34) 30 Amp circuit breakers and (8) 10 Amp circuit breakers.
 - 3) The Breaker Panel Assy. has 21 (A) Feeds and 21 (B) Feeds. The first circuit breaker in each panel, CB00A and CB00B, is reserved for use with the filter capacitors.
 - 4) The Battery Returns for each load must be connected to the battery return bus on the circuit breaker panel that contains the associated battery feed.
 - 5) The maximum current drain per power feed (A/B) per PDC frame is 200 amp, calculated based on the sum of the maximum steady state loads of the individual equipment being fed.
 - 6) The loads on the two feeds should be as equal as possible.

- AP-01 1) This PEC is always provided on the NTRX31AA CPDC and is shown here for completeness.
- AP-02 1) This PEC is always provided with the NTRX2514 CPDC EMIT Kit and is shown here for completeness.
- RUL1 1) Provide maximum two (2) Breaker Panel Assemblies per CPDC as follows:
- a) When the CPDC is powering a lineup which does not contain any SuperNode, LPP or ENET cabinet, provide one (1) NTRX02AA Breaker Panel Assembly in shelf position 46 and/or shelf position 30.
 - b) When the CPDC is powering a lineup which contains a SuperNode, LPP or ENET in a non-S/DMS cabinet, provide one (1) NTRX02AB Breaker Panel Assembly in shelf position 30 only. Only one such non-S/DMS cabinet can exist per lineup.
 - c) When the CPDC is powering a lineup which contains a SuperNode, LPP or ENET in a C42(S/DMS) cabinet, provide one (1) NTRX02AD Breaker Panel Assembly in shelf position 46 and/or shelf position 30.
- 2) Provide one P0715769, 16" Filler Panel, in shelf position 30 and/or 46 when unequipped with a breaker panel.
- 3) The fusing capacities for the provisionable Breaker Panel Assemblies NTRX02AA/AB/AD are listed in Table A:

Table A Fusing Capacities for Breaker Panel Assemblies		
BREAKER PANEL	BREAKERS	RATING
NTRX02AA	CB00A-CB20A	30A, 65VDC
	CB00B-CB20B	30A, 65VDC
NTRX02AB	CB00A-CB14A	30A, 65VDC
	CB00B-CB14B	30A, 65VDC
	CB15A-CB20A	5A, 65VDC
	CB15B-CB20B	5A, 65VDC
NTRX02AD	CB00A-CB16A	30A, 65VDC
	CB00B-CB16B	30A, 65VDC
	CB17A-CB20A	10A, 65VDC
	CB17B-CB20B	10A, 65VDC

- 4) The breakers are to be populated in ascending numerical order on each Breaker Panel Assembly with the following exceptions:

BREAKER	SHELF	REMARK
CB00A, CB00B	46, 30	Reserved for Filter Capacitors
CB01A	46	Reserved for ABS Power Option
	30	Reserved for ABS Power Option only when it is the only shelf position provisioned in the CPDC
CB01B	46	Reserved for LaMarche Inverter Option
	30	Reserved for LaMarche Inverter Option only when it is the only shelf position provisioned in the CPDC
CB11A-CB14A CB19A-CB20A CB11B-CB14B CB19B-CB20B	30	Used for Supernode Option only when NTRX02AB is provisioned for filtered power.
CB07A-CB14A CB17A-CB20A	30	Used for ENET Plane 0 Option only when NTRX02AB is provisioned for filtered power.
CB07B-CB14B CB17B-CB20B	30	Used for ENET Plane 1 Option only when NTRX02AB is provisioned for filtered power.

- 5) Provide one NTMX2643, -48V ABS Cable, and one NTMX2644, ABS Rtn Cable, per CPDC when two breaker panels are required or a single breaker panel is provisioned in shelf position 46.
 - 6) Provide one NTN2692, -48V ABS Cable, and one NTN2693, ABS Rtn Cable, per CPDC when only a single panel is provisioned in shelf position 30.
 - 7) Provide one NTRX02AE, Brk Pnl 1 to Jnct Box Kit, when a breaker panel assembly is provisioned in shelf position 46.
 - 8) Provide one NTRX02AC, Brk Pnl 2 to Jnct Box Kit, when a breaker panel assembly is provisioned in shelf position 30.
- RUL2 1) For all initial RSC-S applications requiring vertical powering, provide one (1) NTRX31AJ Remote Powering Hardware Kit.

- 2) When the NTRX31AJ Remote Powering Hardware Kit is provisioned for RSC-S applications, provide one (1) NTRX73AF Midlineup Panel Assembly between each pair of adjacent EMI cabinets. For example, provide one (1) NTRX73AF's if the CPDC cabinet is located at the end of an lineup, or provide two (2) NTRX73AF's if the CPDC cabinet is located in the middle of the lineup. In both cases, the panel and screws are "shipped loose".
 - 3) When the NTRX31AJ Remote Powering Hardware Kit is provisioned for RSC-S applications, provide one (1) P0715616 Bulkhead Filler Panel in each of the EMI bulkhead positions 5, 33 and 47.
- RUL3
- 1) For all applications when horizontal powering is required and NTRX31AJ Remote Powering Hardware Kit is not provisioned, provide one (1) NTRX01AJ panel Assembly at EMI bulkhead position 05.
 - 2) For all applications when horizontal powering is required and NTRX31AJ Remote Powering Hardware Kit is not provisioned, provide one (1) NTRX3108 (Aisle Alarm) Cable Assembly.
 - 3) For office extension when the CPDC is required to provide power to both an internally powered primary cabinet lineup and an externally powered lineup with maximum of six (6) cabinets, may be used provide one (1) NTRX31LC (L-) High-Density Connector Plate Assembly at EMI Bulkhead position 47 for external -48V power and one (1) NTRX31LD (L+) High-Density Connector Plate Assembly at EMI Bulkhead position 30 for external battery return capability.
 - 4) Provide two (2) P0715616 Bulkhead Filler Panels at EMI bulkhead positions 33 and 47 if not occupied by NTRX31LC and NTRX31LD.
- RUL4
- 1) Provide one (1) NTRX31AC Exterior Cable Kit at EMI bulkhead position 19 for all customer sites requiring 15 feet of 0000 AWG Power & Return Hookup Cable.
- RUL5
- 1) Provide one (1) NTRX31AD LaMarche Inverter Kit per customer requirements when AC power is required from an end-of-aisle located CPDC. Mount the LaMarche Inverter in shelf position 00. The NTRX31AD kit is only available for -48VDC to 120VAC applications. The following items are included in this kit:

- (1) A0367433 LaMarche Inverter
- (1) NTRX3103 Frame Ground Cable Assembly
- (1) NTRX3112 LaMarche to FSP Cable Assembly
- (2) P0567227 Grommet Snap-Bush
- (1) NTRX0705 Cable Assembly

- 2) The NTRX0705 cable assembly, previously provisionable, has been added to the NTRX31AD stocklist and does not need to be provided separately.
- 3) Provide one (1) P0715770, 7" Filler Panel, if the 500VA LaMarche Inverter is not provided.
- 4) Provide one (1) NTRX3104 (L+) cable and one (1) NTRX3115 (L-) cable for the LaMarche Inverter that is powered from the Breaker Panel Assembly mounted in shelf position 46.
- 5) Provide one (1) NTRX3116 (L+) cable and one (1) NTRX3117 (L-) cable for the LaMarche Inverter that is powered from the Breaker Panel Assembly mounted in shelf position 30.

- RUL6
- 1) Provide one (1) NTRX01AM Power Plate Assembly Feed and one (1) NTRX01AK Power Plate Assembly Return when a SuperNode in a non-S/DMS (old style) cabinet is in the same lineup as the CPDC and powered from the breaker panel assembly NTRX02AB mounted in shelf position 30 of the CPDC.
 - 2) Provide one NTRX01AN, ENET Plane 0 Feed Blkhd Assy, and one NTRX01AQ, ENET Plane 0 RTN Blkhd Assy, when an ENET Plane 0 in a non-S/DMS (old style) cabinet is in the same lineup as the CPDC and powered from the breaker panel assembly NTRX02AB mounted in shelf position 30 of the CPDC.
 - 3) Provide one NTRX01AP, ENET Plane 1 Feed Blkhd Assy, and one NTRX01AR, ENET Plane 1 RTN Blkhd Assy, when an ENET NT9X05AB Plane 1 in a non-S/DMS (old style) cabinet is in the same lineup as the CPDC and powered from the breaker panel assembly NTRX02AB mounted in shelf position 30 of the CPDC.
 - 4) Due to limitations with bulkhead space, NTRX01AN/NTRX01AQ and NTRX01AP/NTRX01AR can not be ordered for the same CPDC. Therefore, the ENET will require one CPDC per Plane (Two CPDCs per ENET).
 - 5) For all field modified external cabinets that are not SuperNode, ENET or LPP and utilize any of the NTRX01AK/AM/AN/AP/AQ/AR bulkhead panel assemblies, ensure the panel locations field modified for external powering

are clearly designated with appropriate breaker panel circuit breaker number and amperage rating.

- RUL7 1) Provide one NTRX2514, CPDC EMI Kit, per cabinet for EMI compliant applications. This kit contains four EMI doors, eight nylon washers and one P0691073 EMI gasket.
- 2) Provide one NTRX2513, EMI Ready Door Kit, per cabinet for EMI Ready applications. This kit contains four EMI doors and eight nylon washers.
- 3) Kits NTRX2513 and NTRX2514 contain the same four doors and nylon washers and therefore, only one kit should be applied to a cabinet. To upgrade from EMI Ready to EMI compliant, only the P0691073 gasket would be needed. Never provide both kits for the same cabinet.
- 4) The Cabinetization Marketing group has determined that only the EMI-compliant option will be ordered. Therefore, the NTRX2514 kit should be ordered for all applications. As soon as the supporting documentation is available, the NTRX2513 will be eliminated as a product offering.
- RUL8 1) Provide one NTN5511, Cable Trough Assembly, per cabinet when overhead cabling is required.
- RUL9 1) Provide one NTRX2523, Leveling Foot Kit, per cabinet for Non-Earthquake offices.
- RUL10 1) Provide a maximum of 40 A0379092 Power Cable Lugs per breaker panel for terminating 10-14AWG power cables when placing orders to new offices.
- 2) Provide a maximum of 40 A0352431 Power Cable Lugs per breaker panel for terminating 8 AWG power cables when placing orders to existing offices.
- 3) Provide a maximum of 40 A0381005 Power Cable Lugs per breaker panel for terminating 6 AWG power cables when placing orders to existing offices.
- RUL11 1) Provide one (1) NTRX73AL, Exterior Skin Assembly, Left-Grey, and one (1) NTRX73AM, Exterior Skin Assembly, Right-Grey, per grey cabinet or lineup when only a cosmetic and EMI-tight endguard panel is required. The NTRX73AL/AM cannot be configured with AC outlets, light switches, alarm lamps, or end-aisle labels.

- 2) Provide one (1) P0731513, Cable Trough End Cover-Grey, for each NTRX73AL and NTRX73AM panel provided on equipment with cable troughs.
- RUL12 1) For UK applications, provide one (1) NTRX31AF UK Insulator Kit. This Kit includes covers for terminal boards and busbars.

INTERNATIONAL CTME

PEC CODE: NTZZ37QA

CPC CODE: B0235574

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ47DC

ABBREVIATION NAME: CTME

ENGINEERING DESCRIPTION: NTZZ37QA is the cabinetized trunk module equipment which houses all MTM, DRA, TM8, T8A, and AXU peripheral module types for all international applications.

REFERENCE DOCUMENTATION: SLZZ37QA 00 02
MSRX32AA 01 14

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: James Marsden Dept. 3471 (PPK)

NTZZ37QA EMC2-20-005 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 09 21	ECM 636 08	ET 17059 - Add EDRAM capabilities.
94 04 23	ECM 636 10	Fix local cable provisioning
94 08 12	ECM 636 12	Clarify cable provisioning rules.
95 04 21	ECM 600 15	Clarify provisioning rules and notes per ET22109. Correct P0707195 quantity per ET21929.
95 06 22	ECM 600 17	Change NTZZ37RB to NTZZ37RA per Design information and ET23819.
95 09 14	ECM 600 19	MD NTZZ37QA per EC 024-94287.

The International CTME is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CTME	NTRX32AA	CTME	1			AP
2" Filler Plate	P0684448		1	65		AP-01
Frame Supervisory Panel	NTNX26MA	FSP	1	60		AP
Terminal Block Cover	P0730668		1	60		RUL12
Latch	P0707195		6	60		RUL12
Terminal Block Cover	A0368391		2	60		RUL12
Int. CTME TM8 Package	NTZZ37WA	ITM8		XX		RUL1
Int. CTME T8A Package	NTZZ37VA	IT8A		XX		RUL2
Int. CTME MTM Package	NTZZ37TA	IMTM		XX		RUL3
Int. CTME IDRA Package	NTZZ37SA	IDRA		XX		RUL4
Int. CTME AXU/OAU Package	NTZZ37RA	AXU/OAU		33		RUL5
Filler Panel	NT0X84AA			XX		RUL6
Blank Personality Plate	P0715616			XX		RUL7
26 PTL E/W 4-8P 1-37P Moulded D-SUB Conn.	NTRX32DY			19, 33, 47		RUL14
26 PTL E/W 4-8P 1-37P Moulded D-SUB Conn.	NTRX32DZ			19, 33, 47		RUL14
26 PTL E/W 8-8P 1-37P Moulded D-SUB Conn.	NTRX32DW			XX		RUL15
26 PTL E/W 8-8P 1-37P Moulded D-SUB Conn.	NTRX32DX			XX		RUL15
26 PTL E/W 4-8P 1-37P Moulded D-SUB Conn.	NTRX32DT			05		RUL13
26 PTL E/W 4-8P 1-37P Moulded D-SUB Conn.	NTRX32DV			05		RUL13
EDRAM Card Wiring List	NTRX32WA			05		RUL13
26 PTL E/W 1-37P Moulded D-SUB Conn.	NTRX3241			05		RUL13
Cooling Unit	NTNX27CA	CU	1	00		AP
FSP Fusing	AR					RUL8
EMI Kit Single Bulkhead	NTRX2516					RUL9
EMI Ready Door Kit	NTRX2513					RUL9
Cable Trough Assembly	NTNX5511					RUL10
Leveling Foot Kit	NTRX2523					RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CTME Label	P0726707		1			AP
Frame Ground Kit	NTRX2518		1			AP-01
Coverplate(37 pin)	P0715774					RUL16
Mounting Hardware	P0670923					RUL16

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" in SHF POS can be one of 05,19,33,47.
- 2) Modules are assigned to positions on the CTME in the shelf position order 05, 19, 33, 47 except for the AXU/OAU which is assigned in shelf positions 33 and 47.

Shelf 05 must be occupied in all CTMEs.
- 3) Modules of various types may be combined on frames where required.

RULES:

- AP 1) When PEC NTZZ37QA is ordered, these items are provided.

- AP-01 1) This PEC is always provided on the NTRX32AA cabinet and is shown here for completeness.
- RUL1 1) For the International Trunk Module 8 Wire (ITM8), provide as required:
- NTZZ37WA International CTME TM8 Package
(including NTZZ37WA's provisionable items).
- RUL2 1) For the International Trunk 8 Wire module (IT8A), provide as required:
- NTZZ37VA International CTME T8A Package.
(including NTZZ37VA's provisionable items).
- RUL3 1) For the International Maintenance Trunk Module (IMTM), provide as required:
- NTZZ37TA International CTME MTM Package
(including NTZZ37TA's provisionable items).
- RUL4 1) For the International Maintenance Trunk Module (IMTM) for DRA, provide as required:
- NTZZ37SA International CTME DRA Package
(including NTZZ37SA's provisionable items).
- RUL5 1) For the International Office Alarm AXU/OAU, provide:
- one (1) NTZZ37RA International CTME AXU/OAU Package
(including NTZZ37RA's provisionable items).
- RUL6 1) For each unequipped shelf position 05,19,33,47, provide:
- one (1) NT0X84AA Filler Panel.
- RUL7 1) Provide one P0715616 Blank Personality Plate for each shelf position that is not equipped.

- RUL8 1) For powering shelves, alarms and cooling units, provide the following FSP fuses:

Designation	Amperage	Voltage	One per:
F01	10 Amps	-48V(1)	Shelf 05
F02	10 Amps	-48V(1)	Shelf 33
F03	10 Amps	-48V(2)	Shelf 47
F04	10 Amps	-48V(3)	Shelf 19
F05	10 Amps	-48V(3)	Shelf 47
F06	10 Amps	-48V(4)	Shelf 05
F07	1.3 Amps	-48VABS	Alarm CP
F08	1.3 Amps	-48VABS	Alarm CP
F09	1.3 Amps	-48VABS	Alarm CP
F10	1.3 Amps	-48VABS	Test jack, Fan lamp & alarm
F11	3 Amps	-48V(2)	Cooling Unit
F12	5 Amps	-48VT	Shelf 19
F13	5 Amps	-48VT	Shelf 33
F14	3 Amps	-48V(4)	Cooling Unit

- 2) Do not fuse unequipped shelf positions.
- 3) Do not fuse shelf position 47 when AXU/OAU NTZZ37RA is provided.

- RUL9 1) For EMI compliant applications, provide for each CTME:

- one (1) NTRX2516 EMI Kit Single Bulkhead.

- 2) For EMI Ready applications, provide for each CTME:

- one (1) NTRX2513 EMI Ready Door Kit.

- RUL10 1) When overhead cabling is required, provide for each CTME:

- one (1) NTN5511 Cable Trough Assembly.

- RUL11 1) For Non-Earthquake offices, provide for each CTME:

- one (1) NTRX2523 Leveling Foot Kit.

RUL12 1) For each CTME provide per customer requirements:

- one (1) P0730668 Terminal Block Cover,
- six (6) P0707195 Latches, and
- two (2) A0368391 Terminal Block Covers.

The above parts must be provisioned for UK markets and may be provisioned on customer request in other markets.

RUL13 1) When an NTZZ37TA IMTM or an NTZZ37SA IDRA module is mounted in shelf position 05, AND, EDRAM or CTM cards are mounted in slot positions 5-8, provide:

- one (1) NTRX32DT cable connecting slots 5-8 for Network Plane 0 to bulkhead positions SL0 in shelf 05;
- one (1) NTRX32DV cable connecting slots 5-8 for Network Plane 1 to bulkhead positions SL1 in shelf 05.

The NTRX32DT and NTRX32DV provide connections for EDRAM cards mounted in slot 5-8 in shelf 05. The EDRAM card wiring in those positions is specified in EDRAM Card Wiring List NTRX32WA.

2) When an NTZZ37TA IMTM or an NTZZ37SA IDRA module is mounted in shelf position 05, AND, EDRAM or CTM cards are NOT mounted in slot positions 5-8, provide:

- one (1) NTRX3241 cable connecting slot 01 for Network Plane 0 to bulkhead positions SL0 in shelf 05;
- one (1) NTRX3241 cable connecting slot 01 for Network Plane 1 to bulkhead positions SL1 in shelf 05.

3) When an NTZZ37WA ITM8 or an NTZZ37VA IT8A module is mounted in shelf position 05, provide:

- one (1) NTRX3241 cable connecting slot 01 for Network Plane 0 to bulkhead positions SL0 in shelf 05;
- one (1) NTRX3241 cable connecting slot 01 for Network Plane 1 to bulkhead positions SL1 in shelf 05.

- RUL14 1) When EDRAM or CTM cards are mounted in slot positions 5-8 on an NTZZ37TA IMTM or an NTZZ37SA IDRA module in shelf position 19, 33 or 47, provide:
- one (1) NTRX32DY cable connecting slots 5-8 for Network Plane 0 to bulkhead positions SL0 in that shelf;
 - one (1) NTRX32DZ cable connecting slots 5-8 for Network Plane 1 to bulkhead positions SL1 in that shelf.
- 2) Do not provide EDRAM cards in shelf position 33 when AXU/OAU NTZZ37RA is provisioned in shelf position 47,33.
- RUL15 1) When EDRAM or CTM cards are mounted in slot positions 9-16 on an NTZZ37TA IMTM or an NTZZ37SA IDRA module in shelf position 05, 19, 33 or 47, provide:
- one (1) NTRX32DW cable connecting slots 9-16 for Network Plane 0 to bulkhead positions SL0A in that shelf;
 - one (1) NTRX32DX cable connecting slots 9-16 for Network Plane 1 to bulkhead positions SL1A in that shelf.
- 2) Do not provide EDRAM cards in shelf position 33 when AXU/OAU NTZZ37RA is provisioned in shelf position 47,33.
- RUL16 1) For each Bulkhead position (SL0, SL1, SL0A and SL1A) that is not equipped with a filter or a connector, provide one (1) Coverplate P0715774 and two (2) screws P0670923.

INTERNATIONAL CDSN

PEC CODE: NTZZ37XA

CPC CODE: B0235580

| RATING: MD

REPLACES: None

REPLACED BY: None

ABBREVIATION NAME: CDSN

ENGINEERING DESCRIPTION: The Cabinetized Dual Shelf Network (CDSN) for international applications houses up to two complete networks per plane in a single bay. All connectors to and from the network module are connected through a bulkhead for EMI protection. The CDSN can only be used with E-CORE. Connection to NT-40 is not supported.

Personality plates are always provided with the cabinet.

REFERENCE DOCUMENTATION: SLZZ37XA 00 02
MSRX35AA 01 05

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Darrell Deeds Dept. 3471 (PPK)

MAIN CONTACT: James Marsden Dept. 3471 (PPK)

NTZZ37XA EMC2-20-007 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 08 12	ECM 636 12	Add MSRX35AA to Reference Documents. MD Section. Detail frame NTRX35AA is being MD'ed by ECD 024-93972 and ECD 024-94859.
95 11 03	ECM 636 19	

The International CDSN is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Cabinet Dual Shelf Network	NTRX35AA	CDSN	1			AP
2" Filler Plate	P0684448		1	65		AP-01
Frame Supervisory Panel	NT7X34AA	FSP	1	60		AP
Network Module Shelf Assy	NT8X1101	NET0:1	1	47		AP-01
Network Module Shelf Assy	NT8X1101	NET1:1	1	19		AP-01
Network Module Shelf Assy	NT8X1101	NET0:0	1	33		AP-01
Network Module Shelf Assy	NT8X1101	NET1:0	1	05		AP-01
Filler Faceplates	NT6X02AB			47,19		RUL1
International CDSN Common CP	NTZZ37YA			X		RUL1
Network Port CP	NT8X12AA			X+28,X	03-04	RUL2
Desig. Label for NT8X12AA	P0654992			X+28,X	03-04	RUL2
Filler Face Plate 0.875	NT0X50AA			X+28,X	03-04	RUL2
Network Shelf Cables	NTRX3523			X+28,X	01-04	RUL2
Network Shelf Cables	NTRX3524			X+28,X	01-04	RUL2
Network P-Side Msg Proc	NT3X75BA			X+28,X	19	RUL3
Network P-Side Msg Proc FRSC	NT3X75BB			X+28,X	19	RUL3
Desig. Label for NT3X75BA	P0700564			X+28,X	19	RUL3
Desig. Label for NT3X75BB	P0703468			X+28,X	19	RUL3
Cable Assembly	NT8X1001					RUL4
Cable Assembly	NT8X1002					RUL4
Cable Assembly	NT8X1104					RUL4
Cooling Unit	NTNX27CA	CU	1	00		AP
Personality Plate	P0730029		4	X+28,X		AP-01
37 Pin Cover Plate	P0715774			X+28,X		RUL8
Screws	P0670923			X+28,X		RUL8
EMI Kit (EMI Doors)	NTRX2516					RUL5
EMI Ready Door Kit	NTRX2513					RUL5
Cable Trough Assembly	NTNX5511					RUL6
Leveling Foot Kit	NTRX2523					RUL7
Power & Ground Cover Kit	NTRX3531					RUL9
CDSN Door Label	P0726706		1			AP
Frame and Logic Ground Kit	NTNX2519		1			AP-01

Retired Equipment
International CDSN

NTZZ37XA
EMC2-20-007
Page 3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTRX35AA	MD	No Replacement

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) X can be 05 or 19.
- 2) NTZZ37XA is a single bay dual plane cabinet comprising two (2) dual shelf Network Modules (NM) as follows:
 - The lower numbered NM is located on
 - shelf position 33 designated as plane 0 and
 - shelf position 05 designated as plane 1.
 - The higher numbered NM is located on
 - shelf position 47 designated as plane 0 and
 - shelf position 19 designated as plane 1.

The FSP is common to both planes.
- 3) Each NM can terminate sixty-four (64) speech links originating from peripheral modules/SLC cabinet.
- 4) In the ABBR column, the following notation applies:
 - NET0:1 - Network Plane 0 for NM 1
 - NET1:1 - Network Plane 1 for NM 1
 - NET0:0 - Network Plane 0 for NM 0
 - NET1:0 - Network Plane 1 for NM 0
- 5) The CDSN is always equipped with four (4) network shelves. Only circuit packs are provisionable.

RULES:

- AP 1) When PEC NTZZ37XA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NTRX35AA cabinet and is shown here for completeness.
- RUL1 1) When the NTZZ37XA is equipped with one (1) Network Module (2nd network not provided), provide for each CDSN:
- one (1) NTZZ37YA International CDSN Common CP (positions 33 and 05), and
 - one (1) NT6X02AB Filler Faceplates (positions 47 and 19).
- 2) When the NTZZ37XA is equipped with two (2) Network Module per plane, provide for each CDSN:
- two (2) NTZZ37YA International CDSN Common CPs (positions 33 and 05 for the 1st network, and positions 47 and 19 for the 2nd network).
- RUL2 1) When the CDSN is JUNCTORED at DNI, provide for each Network Module:
- four (4) NT8X12AA Network Port CPs,
 - four (4) P0654992 Desig. Labels for NT8X12AA,
 - eight (8) NTRX3523 Network Shelf Cables, and
 - eight (8) NTRX3524 Network Shelf Cables.
- When the CDSN is NON-JUNCTORED at DNI, provide for each Network Module:
- four (4) NT0X50AA Filler Face Plates 0.875.
- RUL3 1) When ISDN is not required or when ISDN is required without Fiber RSC, provide for each Network Module:
- two (2) NT3X75BA Network P-Side Msg Proc CPs, and
 - two (2) P0700564 Desig. Labels for NT3X75BA.
- 2) When ISDN is required with Fiber RSC, provide for each Network Module:
- two (2) NT3X75BB Network P-Side Msg Proc (FRSC) CPs, and
 - two (2) P0703468 Desig. Labels for NT3X75BB.

RUL4 1) When one Network Module is provided in a CDSN which is NON-JUNCTORED at CDNI provide cable assemblies as follows:

- four (4) NT8X1104 Cable Assemblies
(One cable assembly for each of the following:
shelf position 33 CP slot 01 with
shelf position 33 CP slot 02,
shelf position 33 CP slot 03 with
shelf position 33 CP slot 04,
shelf position 05 CP slot 01 with
shelf position 05 CP slot 02, and
shelf position 05 CP slot 03 with
shelf position 05 CP slot 04).

When two Network Modules are provided in a CDSN which is NON-JUNCTORED at CDNI provide cable assemblies as follows:

- four (4) NT8X1104 Cable Assemblies
(One cable assembly to connect each of the following:
 - shelf position 33 CP slot 03 with
 - shelf position 33 CP slot 04,
 - shelf position 05 CP slot 03 with
 - shelf position 05 CP slot 04,
 - shelf position 47 CP slot 03 with
 - shelf position 47 CP slot 04, and
 - shelf position 19 CP slot 03 with
 - shelf position 19 CP slot 04),
 - eight (8) NT8X1001 Cable Assemblies
(Two cable assemblies to connect each of the following:
 - shelf position 05 CP slot 01 with
 - shelf position 19 CP slot 02,
 - shelf position 05 CP slot 02 with
 - shelf position 19 CP slot 01,
 - shelf position 33 CP slot 01 with
 - shelf position 47 CP slot 02, and
 - shelf position 33 CP slot 02 with
 - shelf position 47 CP slot 01), and
 - eight (8) NT8X1002 Cable Assemblies
(Two cable assemblies to connect each of the following:
 - shelf position 05 CP slot 01 with
 - shelf position 19 CP slot 02,
 - shelf position 05 CP slot 02 with
 - shelf position 19 CP slot 01,
 - shelf position 33 CP slot 01 with
 - shelf position 47 CP slot 02, and
 - shelf position 33 CP slot 02 with
 - shelf position 47 CP slot 01).
- 2) In extensions, when converting from one configuration to another, ensure that additional Cable Assemblies are provided/removed in order to satisfy the final configuration.

- RUL5 1) For EMI compliant applications, provide for each CDSN:
- one (1) NTRX2516 EMI Kit (EMI Doors).
- 2) For EMI Ready applications, provide for each CDSN:
- one (1) NTRX2513 EMI Ready Door Kit.
- RUL6 1) When overhead cabling is required, provide for each CDSN:
- one (1) NTN5511 Cable Trough Assembly.
- RUL7 1) For Non-Earthquake offices, provide for each CDSN:
- one (1) NTRX2523 Leveling Foot Kit.
- RUL8 1) When the CDSN is non-junctored at the CDNI, provide for each CDSN:
- thirty two (32) P0715774 37-Pin Cover Plates, and
 - sixty four (64) P0670923 Screws.
- RUL9 1) For each CDSN provide per customer requirements:
- one (1) NTRX3531 Power & Ground Cover Kit.
- The Power & Ground Cover Kit must be provisioned for UK markets and may be provisioned on customer request in other markets.

RMM IN CMIS BULKHEAD KIT

PEC CODE: NTZZ45FA

| CPC CODE: B0237867

| RATING: MD

| REPLACES: N/A

| REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The RMM in CMIS Bulkhead Kit allows signal connection from the RMM and circuits mounted on it to terminate through the bulkhead. The NTZZ45FA contains the bulkhead connector plate, cables, cover plates, and hardware to mount on the CMIS bulkhead.

REFERENCE DOCUMENTATION: SLZZ45FA 00 01
NTZZ45FA REL 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Barry Bond Dept. 3471 (PPK)

NTZZ45FA EMC2-24-ASY-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 01 21 95 08 30	ECM 655 01 ECM 655 09	To introduce NTZZ45FA MD SECTION PER ECD 006-21515.

The RMM in CMIS Bulkhead Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Connector Plate	P0733517		1	XX		AP
S/RSC RMM to Blkhd cassy	NTMX8938		1	XX		AP
CEXT RMM to Blkhd cassy	NTMX8815		1	XX		AP
D Sub Filter Connector	A0336653		1	XX		AP
Key Telephone Filter Conn	A0378579		4	XX		AP
D Sub Connector Accessory	A0317136		20	XX		AP
Washer	P0148330		20	XX		AP
25 Pin Cover Plate	P0715775		4	XX		AP
Screw Thread Forming	P0670923		18	XX		AP
37 Pin Cover Plate	P0715774		3	XX		AP
78 Pin Cover Plate	P0741058		2	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) XX can be any of the following Bulkhead positions: 03, 18.5, 34, or 49.5.
- 2) Internal cabling from the RMM to the bulkhead connects slots 5 and 6 to connector C00 on the shelf XX bulkhead, slots 11 and 12 to C01, slots 13 and 14 to C02 and slots 15 and 16 to C03 (all on the shelf XX bulkhead).

RULES:

AP 1) When PEC NTZZ45FA is ordered, these items are provided.

| LCME MODULE WITHOUT LINE DRAWERS

PEC CODE: NTZZ12RA

CPC CODE: B0234907

RATING: MD

REPLACES: Not applicable

REPLACED BY: NTB31BA

ABBREVIATION NAME: LCME

ENGINEERING DESCRIPTION: The NTZZ12RA LCME Module Building Block provides the Common packfill to equip one LCME. The labels required for CRSC and CEXT applications are provisioned per rules in the CRSC/CEXT Building Blocks.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: NTI: WILLIAM STANLEY Dept. 3471 (PPK)

NTZZ12RA EMC2-24-LCME-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 27	ECM 617 04	Remove LCME labels from stocklist
93 03 12	ECM 617 07	Manufacture Discontinue NTZZ12RA.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The LCME Module Without Line Drawers is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LCME Common Circuit Packs	NTBX31BA	LCME	1			AP
Line Drawer ID Label	P0709652		1			AP
LCME PDC Fuse Label	P0711231		0			AP
LCME PDC Fuse Label	P0711232		0			AP
LCME Shelf Label for FSP	P0711233		0			AP
LCME Shelf Label for FSP	P0711234		0			AP
LCME Shelf Label for FSP	P0711235		0			AP
LCME Shelf Label for FSP	P0711236		0			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

1) LCME labels previously included herein have been made provisionable in the CRSC and CEXT Building Blocks.

RULES:

AP 1) When PEC NTZZ12RA is ordered, these items are provided.

|
REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCM-READY) (NON-PCM) (GREY)

PEC CODE: NTZZ47QA

CPC CODE: B0239482

RATING: MD

REPLACES: NTZZ46CA

REPLACED BY: NTZZ47QB

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47QA Building Block provides the base equipment for one CRSC equipped for an internal LCM. The LCM packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for DS1 interfaces to the host, trunks and remote-off-remote. This code provides grey equipment.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47QA EMC2-24-RCC-10 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 20	API 499 01	NTZZ47QA Introduction
93 10 08	API 499 02	Minor revisions and specify grey color
93 11 01	API 499 03	Show AP equipment for EAE3 models.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47QB.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The Remote Switching Center - SONET Model B CRSC (LCM-ready) (Non-PCM) (Grey) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCM Kit	NTMX89FA		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringling Generator Shf Assy	NTRX25AG		1	65		AP02
Enhanced Line Module Shelf	NT6X0442		1	33		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/LCM MSP Kit	NTMX89KJ		1	61		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15,16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1,3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8,17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R,8R, 17R,20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
CRSC RCC2/RMM (Non-PCM) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/LCM VF I/O Kit	NTMX89KH		1			AP
Blkhd 33 Connector Plate	NTMX8969		1	33		AP05
Blkhd 47 Connector Plate	NTMX8982		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
LCM Packfill	NT6X04AB		1	33		RUL1
QFFI Fuse Assembly	NT6X04FA		2	33,47		RUL1
Line Drawers	NT6X05AA		10	33		RUL1
LCM Module Fillers	NT6X04AX		1	33		RUL1
Line Drawer ID Labels	P0631765		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Generator	NT6X30HA		2	65		RUL3
Ringing Generator Filler	NTRX25AK		2	65		RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
RCC2 Packfill (Standard)	NTZZ12XA		1	06		RUL11
RCC2 Packfill (EDC)	NTZZ12ZA		1	06		RUL11
RCC2 Packfill (w/o EISP)	NTZZ12XB		1	06		RUL11
Enhanced ISP	NTBX01AB		2	06	4, 24	RUL11
Design label (NTBX01AB)	P0738856		2	06	4, 24	RUL11
Filler faceplate	NT0X50AA		2	06	4, 24	RUL11
Enhanced Messaging CP	NT6X69AC		2	06	8, 20	RUL11
Design label (NT6X69AC)	P0710476		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Design label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Class Modem Resource BB	NTZZ12UA		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6, 22	AP
Desig. Label (NT6X92BB)	P0690565		2	06	6, 22	AP
Universal Tone Rec'vr (UTR)	NTZZ12VA		2	06	7, 21	RUL9
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		2	06	9:0 19:0	AP
Dual DS1 Packlet	NTMX81AA		6	06	9:1-3 19:1-3	RUL7
Filler Face Plate	NTMX83AA		6	06	9:1-3 19:1-3	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12, 14, 16	RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
Door kit (Cntr latch, grey)	NTRX2568		1			AP
C28 Cable trough (Grey)	NTRX55BA		1			AP
Grey Frame fail light	NT0X24CN		1			AP
Grey bezel for dummy light	P0699441		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CRSC Door label (Blue)	P0715089		1			AP
Leveling foot kit	NTRX2523		1			RUL12
Earthquake anchor kit	NTRX2564		1			RUL12
Earthquake anchor	P0601187		1			RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 4) Items marked AP02 are included in NTMX89FA and are shown for completeness.
- 5) Items marked AP03 are included in NTMX89KJ and are shown for completeness.
- 6) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 7) Items marked AP05 are included in NTMX89KH and are included for completeness.
- 8) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 9) Refer to MS0X60AA for cabinet labels.
- 10) Refer to MSZX16CA for System Power and Grounding information.

RULES:

- AP 1) When PEC NTZZ47QA is ordered, these items are provided.
- RUL1 1) Provide one NT6X04AB LCM Packfill, two NT6X04FA QFFI Fuse Assemblies and ten NT6X05AA Line Drawers to equip the LCM module in the CRSC. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCM is equipped.
- 2) Provide one NT6X04AX LCM Filler kit when the internal LCM is not to be equipped.
- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.

- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when

using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.

- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
Y denotes a slot that CAN be used for that pack.
C denotes a slot that can be used for that pack ONLY
if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide one NTZZ12VA for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
 - 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL11
- 1) Provide one RCC2 packfill per CRSC. Choose the appropriate packfill from those described below, based on application.
 - 2) The NTZZ12XA is used for standard applications (<100 miles to host for U.S.; <150 miles to host for Canada). This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 3) The NTZZ12ZA is used for Extended Distance Capability and requires NTMX76AA HDLC Messaging in the host XPM. This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 4) The HDLC Messaging used in the NTZZ12ZA packfill allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 5) Provide one NTZZ12XB common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:
 1. EITHER two (2) NTB01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications

- RUL12
- 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
 - 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.
 - 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

|
REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCME-READY) (NON-PCM) (GREY)

PEC CODE: NTZZ47RA

CPC CODE: B0239483

RATING: MD

REPLACES: NTZZ12QA

REPLACED BY: NTZZ47RN

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47RA Building Block provides the base equipment for one CRSC equipped for an internal LCME. The LCME packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for DS1 interfaces to the host, trunks and remote-off-remote. This code provides grey equipment.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47RA EMC2-24-RCC-11 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 20	API 499 01	NTZZ47RA Introduction
93 10 08	API 499 02	Minor revisions and specify grey color
93 11 01	API 499 03	Show AP equipment for EAE3; Use LCME BB code NTZZ17HA instead of detail.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47RN.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The Remote Switching Center - SONET Model B CRSC (LCME-ready) (Non-PCM) (Grey) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/ISDN Kit	NTMX89FB		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/ISDN MSP Kit	NTMX89KK		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
CRSC RCC2/RMM (Non-PCM) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/ISDN VF I/O Kit	NTMX89KG		1			AP
Blkhd 33 Connector Plate	NTMX8978		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME	1	33, 47		RUL1
LCME Common CP	NTBX31BA	LCME	1	33, 47		AP07
ISDN Enhanced Line Drawers	NTBX32BA	LD	8	33, 47	1, 3, 5, 7	AP07
LCME Fillers Plates	NTBX31AB		1	33, 47		RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber Line Cards	AR					RUL1
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Generator	NT6X30HA		2	65		RUL3
Ringing Generator Filler	NTRX25AK		2	65		RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
RCC2 Packfill (Standard)	NTZZ12XA		1	06		RUL11
RCC2 Packfill (EDC)	NTZZ12ZA		1	06		RUL11
RCC2 Packfill (w/o EISP)	NTZZ12XB		1	06		RUL11
Enhanced ISP	NTBX01AB		2	06	4, 24	RUL11
Design label (NTBX01AB)	P0738856		2	06	4, 24	RUL11
Filler faceplate	NT0X50AA		2	06	4, 24	RUL11
Enhanced Messaging CP	NT6X69AC		2	06	8, 20	RUL11
Design label (NT6X69AC)	P0710476		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Design label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Class Modem Resource BB	NTZZ12UA		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6, 22	AP
Desig. Label (NT6X92BB)	P0690565		2	06	6, 22	AP
Universal Tone Rec'vr (UTR)	NTZZ12VA		2	06	7, 21	RUL9
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		2	06	9:0 19:0	AP
Dual DS1 Packlet	NTMX81AA		6	06	9:1-3 19:1-3	RUL7
Filler Face Plate	NTMX83AA		6	06	9:1-3 19:1-3	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12, 14, 16	RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
Door kit (Cntr latch, grey)	NTRX2568		1			AP
C28 Cable trough (Grey)	NTRX55BA		1			AP
Grey Frame fail light	NT0X24CN		1			AP
Grey bezel for dummy light	P0699441		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CRSC Door label (Blue)	P0715089		1			AP
Leveling foot kit	NTRX2523		1			RUL12
Earthquake anchor kit	NTRX2564		1			RUL12
Earthquake anchor	P0601187		1			RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 4) Items marked AP02 are included in NTMX89FB and are shown for completeness.
- 5) Items marked AP03 are included in NTMX89KK and are shown for completeness.
- 6) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 7) Items marked AP05 are included in NTMX89KG and are shown for completeness.
- 8) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 9) Items marked AP07 are included in NTZZ17HA and are shown for completeness.
- 10) Refer to MS0X60AA for cabinet labels.
- 11) Refer to MSZX16CA for System Power and Grounding.

RULES:

- AP 1) When PEC NTZZ47RA is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame	Line	Line Sub
Shelf Pos.	Drawer	Group (LSG)

33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set when the LCME module is not to be equipped.
- 4) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 5) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 6) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 7) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 8) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 9) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 10) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.

RUL2	1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup. 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
RUL3	1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
RUL4	1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.

- RUL5
- 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
 - 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
 - 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
 - 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
 - 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
 - 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
 - 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
 - 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
 - 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
 - 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
 Y denotes a slot that CAN be used for that pack.
 C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet.

- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
 - 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide one NTZZ12VA for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.
- Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.
- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
 - 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL11 1) Provide one RCC2 packfill per CRSC. Choose the appropriate packfill from those described below, based on application.
- 2) The NTZZ12XA is used for standard applications (<100 miles to host for U.S.; <150 miles to host for Canada). This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
- 3) The NTZZ12ZA is used for Extended Distance Capability and requires NTMX76AA HDLC Messaging in the host XPM. This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
- 4) The HDLC Messaging used in the NTZZ12ZA packfill allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
- 5) Provide one NTZZ12XB common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:
1. EITHER two (2) NTB01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications
- RUL12 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
- 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.
- 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

| REMOTE SWITCHING CENTER - SONET
MODEL B CEXT (NON-PCM) (GREY)

PEC CODE: NTZZ47SA

CPC CODE: B0239484

RATING: MD

REPLACES: NTZZ12SA

REPLACED BY: NTZZ47SB

ABBREVIATION NAME: CEXT

ENGINEERING DESCRIPTION: The NTZZ47SA Building Block provides the base equipment for one Cabinetized Extension. This cabinet extends the interface capabilities of the Cabinetized RSC by providing mounting positions for additional DCHs and DS-1 packlets. This Building Block provides the base cabinet which can be equipped with one LCME packfill and one RMM, based on office requirements. The LCME packfill and line cards and the RMM packfill and circuit packs must be provisioned separately. External interface packs must be provisioned based on office configuration. This code provides grey equipment.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47SA EMC2-24-RCC-12 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 20	API 499 01	Model B CEXT Introduction
93 10 08	API 499 02	Minor revisions and specify grey color
93 11 01	API 499 03	Show AP equipment for EAE3; Use LCME BB NTZZ17HA instead of detail code.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47zz.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The Remote Switching Center - SONET Model B CEXT (non-PCM) (Grey) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CEXT Cabinet Assy.	NTMX89FC		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
CPM EXT Shelf	NTMX8601		1	06		AP02
Ringing Generator	NT6X30HA		2	65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK		2	65	1, 2	RUL3
CEXT MSP Kit	NTMX89KL		1	61		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1			AP
CEXT Ext/RMM (non-PCM) I/O	NTMX89KC		1			AP
CEXT Connector Plate Assy	NTMX8817		1	05		AP04
Blkhd 19 Connector Plate	NTMX8968		1	19		AP04
CEXT ISDN VF I/O Kit	NTMX89KE		1			AP
Blkhd 33 Connector Plate	NTMX8979		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME	1			RUL1
LCME Common CP	NTBX31BA	LCME	1			AP07
ISDN Enhanced Line Drawer	NTBX32BA	LD	8			AP07
Line Drawer ID Label	P0709652		1			AP07
LCME Filler Plates	NTBX31AB		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber lines	AR					RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
Filler Faceplate	NT0X50AA		1	06	1	RUL7
DS60 Extender CP	NTMX79AA		2	06	2,13	RUL7
DS60 Extender CP	NTMX79AA		2	06	14,25	RUL7
EXT Filler Kit (Right)	NTZZ12KA		1	06	14	RUL7
EXT Filler Kit (Left)	NTZZ12WA		1	06	02	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	4	RUL8
Quad Frame Carrier	NTMX87AA		1	06	4	RUL8
Dual DS1 Packlet	NTMX81AA			06	4 0-3	RUL8
Filler Face Plate	NTMX83AA			06	4 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	5	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	6	RUL8
Quad Frame Carrier	NTMX87AA		1	06	6	RUL8
Dual DS1 Packlet	NTMX81AA			06	6 0-3	RUL8
Filler Face Plate	NTMX83AA			06	6 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	7	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	8	RUL8
Quad Frame Carrier	NTMX87AA		1	06	8	RUL8
Dual DS1 Packlet	NTMX81AA			06	8 0-3	RUL8
Filler Face Plate	NTMX83AA			06	8 0-3	RUL8
Filler Plate	NT0X50AA			06	3,5,7	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	9	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	10	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	11	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	12	RUL8

Retired Equipment
Remote Switching Center - SONET
Model B CEXT (non-PCM) (Grey)

NTZZ47SA
EMC2-24-RCC-12
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	15	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	16	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	17	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	18	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	19	RUL8
Quad Frame Carrier	NTMX87AA		1	06	19	RUL8
Dual DS1 Packlet	NTMX81AA			06	19 0-3	RUL8
Filler Face Plate	NTMX83AA			06	19 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	20	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	21	RUL8
Quad Frame Carrier	NTMX87AA		1	06	21	RUL8
Dual DS1 Packlet	NTMX81AA			06	21 0-3	RUL8
Filler Face Plate	NTMX83AA			06	21 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	22	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	23	RUL8
Quad Frame Carrier	NTMX87AA		1	06	23	RUL8
Dual DS1 Packlet	NTMX81AA			06	23 0-3	RUL8
Filler Face Plate	NTMX83AA			06	23 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	24	RUL8
Filler Plate	NT0X50AA			06	24	RUL8
Door kit (Cntr latch,grey)	NTRX2568		1			AP
C28 Cable trough (Grey)	NTRX55BA		1			AP
Grey Frame fail light	NT0X24CN		1			AP
Grey bezel for dummy light	P0699441		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CRSC Door label (Blue)	P0715089		1			AP
Leveling foot kit	NTRX2523		1			RUL9
Earthquake anchor kit	NTRX2564		1			RUL9
Earthquake anchor	P0601187		1			RUL9

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 4) Refer to MS0X60AA for cabinet labels.
- 5) Items marked AP02 are included with NTMX89FC and are shown for sparing purposes.
- 6) Items marked AP03 are included in NTMX89KL and are shown for completeness.
- 7) Items marked AP04 are included in NTMX89KC and are shown for completeness.
- 8) Items marked AP05 are included in NTMX89KE and are shown for completeness.
- 9) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 10) Items marked AP07 are included in NTZZ17HA and are shown for completeness.

- 11) Refer to MSZX16CA for System Power and Grounding information.

RULES:

AP 1) When PEC NTZZ47SA is ordered, these items are provided.

RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required (Maximum of one per CEXT). Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCME is equipped.

- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set when the LCME module is not to be equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HA. Each will accommodate up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5,9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the

section on ISDN Enhanced Line Drawer NTB32BA for more information.

- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in

a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- RUL2
 - 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
 - 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3
 - 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- RUL4
 - 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5
 - 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below. Provide one NT6X13AB packfill per RMM for domestic applications.
 - 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
 - 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.

- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16. For Canadian applications, use the NT4X98BB and NT4X97AA pair, instead of the NT2X10BA/NT2X11BA.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provide two NTMX79AA and one NT0X50AA (slot 1) to equip the Extension shelf to support one CRSC. These circuit packs are required for configurations that require the additional capabilities provided by the Extension shelf. The Extension shelf is divided into two units (left/right), each of which can support one CRSC. Provide four NTMX79AA packs and two NT0X50AAs (slots 1 and 26) when required to extend the capabilities of two CRSCs. Slots 2 and 13 support extension of the first RCC2. Slots 14 and 25 extend the second RCC2.
- 2) Provide one NTZZ12KA to provide Filler Face Plates for the right side of the Extension shelf (slots 14-26) when it is not to be equipped. If the Extension shelf is not being used at all, provide one NTZZ12KA and one NTZZ12WA (for slots 1-13).
- RUL8 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2, one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of

the Engineering Manual) and select the configuration that best suits your need.

Note: If any of the configurations indicate slots used in the Extension shelf then the CEXT cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf.
- 3) Each slot not equipped with either a DCH or a Quad Carrier CP must be equipped with a NT0X50AA filler plate. Provision one NT0X50AA for each slot (xx = 4,6,8,9-12,15-24) that is not so equipped.
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL9
- 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
 - 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.
 - 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

| REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCM-READY) (PCM) (GREY)

PEC CODE: NTZZ47TA

CPC CODE: B0239485

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ47TB

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47TA Building Block provides the base equipment for one CRSC equipped for an internal LCM. The LCM packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for PCM-30 interfaces to the host, trunks and remote-off-remote. This code provides grey equipment.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

Europe
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47TA EMC2-24-RCC-13 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 20	API 499 01	NTZZ47TA Introduction
93 10 08	API 499 02	Minor revisions and specify grey color
93 11 01	API 499 03	Show AP equipment for EAE3.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47TB.
94 08 10	ECM 691 04	Show NTMX74AA as MD replaced by the NTMX74AB DS30A Interface CP.
94 08 28	ECM 691 05	Undo NTMX74AA changes made in the ECM 691 04. Change NT6X04AB LCM Packfill to NT6X04BB LCM Packfill.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The Remote Switching Center - SONET Model B CRSC (LCM-ready) (PCM) (Grey) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCM Kit	NTMX89FA		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringin Generator Shf Assy	NTRX25AG		1	65		AP02
Enhanced Line Module Shelf	NT6X0442		1	33		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/LCM MSP Kit	NTMX89KJ		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15,16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1,3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8,17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R,8R, 17R,20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
CRSC RCC2/RMM (PCM) Kit	NTMX89KB		1			AP
PCM30 Coax PCB Assembly	NTMX8989		1	05		AP04
PCM30 Ext Blkhd 19 Plate	NTMX8980		1	19		AP04
CRSC/LCM VF I/O Kit	NTMX89KH		1			AP
Blkhd 33 Connector Plate	NTMX8969		1	33		AP05
Blkhd 47 Connector Plate	NTMX8982		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA		1	00		AP
10" Cooling Unit	NTRX91AA	CU	1	00		AP01
LCM Packfill	NT6X04BB		1	33		RUL1
QFFI Fuse Assembly	NT6X04FA		2	33,47		RUL1
Line Drawers	NT6X05AA		10	33		RUL1
LCM Module Fillers	NT6X04AX		1	33		RUL1
Line Drawer ID Labels	P0631765		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Ringin Gen.(China/Austral)	NT6X30EA		2	65		RUL3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Generator (U.K.)	NT6X30GA		2	65		RUL3
Ringing Generator Filler	NTRX25AK		2	65		RUL3
Remote Maint.Mod.(Internat)	NT6X13EA	RMM	1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
C28 German label kit	NTRX3542		1			RUL6
Power Converter	NTMX72AA		2	06	1-2, 26-27	AP
Unified Processor	NTMX77AA		2	06	3,25	AP
Enhanced ISP	NTBX01AB		2	06	4,24	AP
Enhanced Matrix CP	NTMX75AA		2	06	10,18	AP
PCM Signaling Processor	NTMX73AA		2	06	11,17	AP
DS30A Interface CP	NTMX74AA		2	06	13,15	AP
Messaging CP (International)	NT6X69LB		2	06	8,20	RUL11
Desig. Label (NT6X69LB)	P0713213		2	06	8,20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8,20	RUL11
Desig. Label (NTMX76AA)	P0744109		2	06	8,20	RUL11
Filler Plate	NT0X50AA		2	06	5,23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	6,22	AP
Desig. Label (NT6X92CA)	P0677831		2	06	6,22	AP
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	7,21	RUL9
Desig. Label (NT6X92CA)	P0677831		2	06	7,21	RUL9
Filler Plate	NT0X50AA		2	06	7,21	RUL9
Quad Carrier	NTMX87AA		2	06	9,19	AP
Dual PCM-30 Packlet	NTMX82AA		2	06	9:0 19:0	AP
Dual PCM-30 Packlet	NTMX82AA		6	06	9:1-3 19:1-3	RUL7
Filler Face Plate	NTMX83AA		6	06	9:1-3 19:1-3	RUL7

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (PCM) (Grey)

NTZZ47TA
EMC2-24-RCC-13
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12, 14, 16	RUL10
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12, 14, 16	RUL10
Door kit (Cntr latch, grey)	NTRX2568		1			AP
C28 Cable trough (Grey)	NTRX55BA		1			AP
Grey Frame fail light	NT0X24CN		1			AP
Grey bezel for dummy light	P0699441		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CRSC Door label (Blue)	P0715089		1			AP
Leveling foot kit	NTRX2523		1			RUL12
Earthquake anchor kit	NTRX2564		1			RUL12
Earthquake anchor	P0601187		1			RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 4) Refer to MS0X60AA for cabinet labels.
- 5) Items marked AP02 are included in NTMX89FA and are shown for completeness.
- 6) Items marked AP03 are included in NTMX89KJ and are shown for completeness.
- 7) Items marked AP04 are included in NTMX89KB and are shown for completeness.
- 8) Items marked AP05 are included in NTMX89KH and are included for completeness.
- 9) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 10) Refer to MSZX16CA for System Power and Grounding information.

RULES:

- AP 1) When PEC NTZZ47TA is ordered, these items are provided.
- RUL1 1) Provide one NT6X04BB LCM Packfill, two NT6X04FA QFFI Fuse Assemblies and ten NT6X05AA Line Drawers to equip the LCM module in the CRSC. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution nameplates when the LCM is equipped.
- 2) Provide one NT6X04AX LCM Filler kit when the internal LCM is not to be equipped.
- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally

be used except for applications that are extending an existing Model A lineup.

- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30EA Low Profile Ringing Generators for all applications in China or Australia that will support POTS lines. Provide two (2) NT6X30GA Low Profile Ringing Generators for all applications in the United Kingdom that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30--s are NOT provided.
- RUL4 1) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.

- 7) Provide one (1) NT4X98BB and one (1) NT4X97AA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot and the NT4X97AA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS															
CIRCUIT PACK	03	04	05	06	07	08	09	10	11	12	13	14	15	16		
NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT4X98BB	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT4X97AA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		

NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- 2) Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provision PCM-30 packlets for C-side interface based on host traffic requirements. Two PCM-30 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide two NT0X50AAs in slots 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide two NT6X92CAs and labels for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and PCM-30s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
 - 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL11
- 1) Provide two NT6X69LB CPs for standard applications. This pack supports the remote at a maximum distance of 100 miles from the host.
 - 2) Provide two NTMX76AA CPs for Extended Distance Capability (requires NTMX76AA HDLC Messaging in the host XPM). EDC requires BCS-36 for International applications.
 - 3) The HDLC Messaging used in the NTMX76AA allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 4) Provide labels for the Messaging CPs provided.
- RUL12
- 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
 - 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.
 - 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCME-READY) (PCM) (GREY)

PEC CODE: NTZZ47UA

CPC CODE: B0239486

RATING: MD

REPLACES: NTMX89BA

REPLACED BY: NTZZ47UB

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47UA Building Block provides the base equipment for one CRSC equipped for an internal LCME. The LCME packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for PCM-30 interfaces to the host, trunks and remote-off-remote. This code provides grey equipment.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

Europe
CALA

ISSUE AUTHOR: Tim Worsham Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47UA EMC2-24-RCC-14 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 20	API 499 01	NTZZ47UA Introduction
93 10 08	API 499 02	Minor revisions and specify grey color
93 11 01	API 499 03	Show AP equipment for EAE3; Use LCME BB NTZZ17HA instead of detail code.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47UB.
94 08 10	ECM 691 04	Show NTMX74AA as MD replaced by the NTMX74AB DS30A Interface CP.
94 08 28	ECM 691 05	Undo NTMX74AA changes made in the ECM 691 04. Change NTB31BA LCME Common CP to NTB31BB. Add NTB31PA.

The Remote Switching Center - SONET Model B CRSC (LCME-ready) (PCM) (Grey) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCME Kit	NTMX89FB		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/ISDN MSP Kit	NTMX89KK		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
CRSC RCC2/RMM (PCM) Kit	NTMX89KB		1			AP
PCM30 Coax PCB Assembly	NTMX8989		1	05		AP04
PCM30 Ext Blkhd 19 Plate	NTMX8980		1	19		AP04
CRSC/ISDN VF I/O Kit	NTMX89KG		1			AP
Blkhd 33 Connector Plate	NTMX8978		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME	1	33, 47		RUL1
LCME Common CP	NTBX31BB	LCME	1	33, 47		AP07
ISDN Enhanced Line Drawers	NTBX32BA	LD			1, 3, 5, 7	AP07
LCME Fillers Plates	NTBX31AB		1	33, 47		RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber Line Cards	AR					RUL1
LCME Packfill Upgrade Kit	NTBX31PA		1			RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Ringing Gen.(China/Austral)	NT6X30EA		2	65		RUL3
Ringing Generator (U.K.)	NT6X30GA		2	65		RUL3
Ringing Generator Filler	NTRX25AK		2	65		RUL3
Remote Maint.Mod.(Internat)	NT6X13EA	RMM	1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
C28 German label kit	NTRX3542		1			RUL6
Power Converter	NTMX72AA		2	06	1-2, 26-27	AP
Unified Processor	NTMX77AA		2	06	3,25	AP
Enhanced ISP	NTBX01AB		2	06	4,24	AP
Enhanced Matrix CP	NTMX75AA		2	06	10,18	AP
PCM Signaling Processor	NTMX73AA		2	06	11,17	AP
DS30A Interface CP	NTMX74AA		2	06	13,15	AP
Messaging CP (International)	NT6X69LB		2	06	8,20	RUL11
Desig. Label (NT6X69LB)	P0713213		2	06	8,20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8,20	RUL11
Desig. Label (NTMX76AA)	P0744109		2	06	8,20	RUL11
Filler Plate	NT0X50AA		2	06	5,23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	6,22	AP
Desig. Label (NT6X92CA)	P0677831		2	06	6,22	AP
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	7,21	RUL9
Desig. Label (NT6X92CA)	P0677831		2	06	7,21	RUL9
Filler Plate	NT0X50AA		2	06	7,21	RUL9
Quad Carrier	NTMX87AA		2	06	9,19	AP
Dual PCM-30 Packlet	NTMX82AA		2	06	9:0 19:0	AP
Dual PCM-30 Packlet	NTMX82AA		6	06	9:1-3	RUL7

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCME-ready) (PCM) (Grey)

NTZZ47UA
EMC2-24-RCC-14
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NTMX83AA		6	06	19:1-3 9:1-3	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	19:1-3 12,14, 16	RUL10
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
Door kit (Cntr latch,grey)	NTRX2568		1			AP
C28 Cable trough (Grey)	NTRX55BA		1			AP
Grey Frame fail light	NT0X24CN		1			AP
Grey bezel for dummy light	P0699441		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CRSC Door label (Blue)	P0715089		1			AP
Leveling foot kit	NTRX2523		1			RUL12
Earthquake anchor kit	NTRX2564		1			RUL12
Earthquake anchor	P0601187		1			RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 4) Refer to MS0X60AA for cabinet labels.
- 5) Items marked AP02 are included in NTMX89FB and are shown for completeness.
- 6) Items marked AP03 are included in NTMX89KK and are shown for completeness.
- 7) Items marked AP04 are included in NTMX89KB and are shown for completeness.
- 8) Items marked AP05 are included in NTMX89KG and are shown for completeness.
- 9) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 10) Items marked AP07 are included in NTZZ17HA and are shown for completeness.
- 11) Refer to MSZX16CA for System Power and Grounding information.

RULES:

- AP 1) When PEC NTZZ47UA is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution nameplates when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set when the LCME module is not to be equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5, 9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240

Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.

- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.

- RUL3 1) Provide two (2) NT6X30EA Low Profile Ringing Generators for all applications in China or Australia that will support POTS lines. Provide two (2) NT6X30GA Low Profile Ringing Generators for all applications in the United Kingdom that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30--s are NOT provided.
- RUL4 1) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT4X98BB and one (1) NT4X97AA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot and the NT4X97AA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.

- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY
if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- 2) Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provision PCM-30 packlets for C-side interface based on host traffic requirements. Two PCM-30 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide two NT0X50AAs in slots 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide two NT6X92CAs and labels for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and PCM-30s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.
- Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.
- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.

- 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL11
- 1) Provide two NT6X69LB CPs for standard applications. This pack supports the remote at a maximum distance of 100 miles from the host.
 - 2) Provide two NTMX76AA CPs for Extended Distance Capability (requires NTMX76AA HDLC Messaging in the host XPM). (EDC requires BCS-36 for International applications.)
 - 3) The HDLC Messaging used in the NTMX76AA allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 4) Provide labels for the Messaging CPs provided.

- RUL12
- 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
 - 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.
 - 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

- RUL13
- 1) Provide one NTB31PA kit to upgrade one existing MTB31BA packfill to NTB31BB.

| REMOTE SWITCHING CENTER - SONET
MODEL B CEXT (PCM) (GREY)

PEC CODE: NTZZ47VA

CPC CODE: B0239487

RATING: MD

REPLACES: NTMX88BA

REPLACED BY: NTZZ47SN

ABBREVIATION NAME: CEXT

ENGINEERING DESCRIPTION: The NTZZ47VA Building Block provides the base equipment for one Cabinetized Extension. This cabinet extends the interface capabilities of the Cabinetized RSC by providing mounting positions for additional DCHs and PCM-30 packlets. This Building Block provides the base cabinet which can be equipped with one LCME packfill and one RMM, based on office requirements. The LCME packfill and line cards and the RMM packfill and circuit packs must be provisioned separately. External interface packs must be provisioned based on office configuration. This code provides grey equipment.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

Europe
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47VA EMC2-24-RCC-15 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 20	API 499 01	Model B CEXT Introduction
93 10 08	API 499 02	Minor revisions and specify grey color
93 11 01	API 499 03	Show AP equipment for EAE3; Use LCME BB NTZZ17HA instead of detail code.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47SN.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The Remote Switching Center - SONET Model B CEXT (PCM) (Grey) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CEXT Cabinet Assy.	NTMX89FC		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
CPM EXT Shelf	NTMX8601		1	06		AP02
Ringing Gen.(China/Austral)	NT6X30EA		2	65	1, 2	RUL3
Ringing Generator (U.K.)	NT6X30GA		2	65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK		2	65	1, 2	RUL3
CEXT MSP Kit	NTMX89KL		1	61		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1			AP
CEXT Ext/RMM (PCM) I/O Kit	NTMX89KD		1			AP
PCM30 Coax PCB Assembly	NTMX8889		1	05		AP04
Blkhd 19 Connector Plate	NTMX8981		1	19		AP04
CEXT ISDN VF I/O Kit	NTMX89KE		1			AP
Blkhd 33 Connector Plate	NTMX8979		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME	1	33, 47		RUL1
LCME Common CP	NTBX31BA		1			AP07
ISDN Enhanced Line Drawer	NTBX32BA	LD	8			AP07
Line Drawer ID Label	P0709652		1			AP07
LCME Filler Plates	NTBX31AB		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber lines	AR					RUL1

Retired Equipment
Remote Switching Center - SONET
Model B CEXT (PCM) (Grey)

NTZZ47VA
EMC2-24-RCC-15
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Remote Maint.Mod.(Domestic)	NT6X13EA		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
C28 German label kit	NTRX3542		1			RUL6
Filler Faceplate	NT0X50AA		1	06	1	RUL7
DS60 Extender CP	NTMX79AA		2	06	2,13	RUL7
DS60 Extender CP	NTMX79AA		2	06	14,25	RUL7
EXT Filler Kit (Right)	NTZZ12KA		1	06	14	RUL7
EXT Filler Kit (Left)	NTZZ12WA		1	06	02	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	4	RUL8
Quad Frame Carrier	NTMX87AA		1	06	4	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	4 0-3	RUL8
Filler Face Plate	NTMX83AA			06	4 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	5	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	6	RUL8
Quad Frame Carrier	NTMX87AA		1	06	6	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	6 0-3	RUL8
Filler Face Plate	NTMX83AA			06	6 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	7	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	8	RUL8
Quad Frame Carrier	NTMX87AA		1	06	8	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	8 0-3	RUL8
Filler Face Plate	NTMX83AA			06	8 0-3	RUL8
Filler Plate	NT0X50AA			06	3,5,7	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	9	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	10	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	11	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	12	RUL8

Retired Equipment
Remote Switching Center - SONET
Model B CEXT (PCM) (Grey)

NTZZ47VA
EMC2-24-RCC-15
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	15	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	16	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	17	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	18	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	19	RUL8
Quad Frame Carrier	NTMX87AA		1	06	19	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	19 0-3	RUL8
Filler Face Plate	NTMX83AA			06	19 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	20	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	21	RUL8
Quad Frame Carrier	NTMX87AA		1	06	21	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	21 0-3	RUL8
Filler Face Plate	NTMX83AA			06	21 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	22	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	23	RUL8
Quad Frame Carrier	NTMX87AA		1	06	23	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	23 0-3	RUL8
Filler Face Plate	NTMX83AA			06	23 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	24	RUL8
Filler Plate	NT0X50AA			06	24	RUL8
Door kit (Cntr latch,grey)	NTRX2568		1			AP
C28 Cable trough (Grey)	NTRX55BA		1			AP
Grey Frame fail light	NT0X24CN		1			AP
Grey bezel for dummy light	P0699441		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CRSC Door label (Blue)	P0715089		1			AP
Leveling foot kit	NTRX2523		1			RUL9
Earthquake anchor kit	NTRX2564		1			RUL9
Earthquake anchor	P0601187		1			RUL9

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included in NTRX92AA and are included for sparing purposes.
- 4) Refer to MS0X60AA for cabinet labels.
- 5) Items marked AP02 are included in NTMX89FC and are included for sparing purposes.
- 6) Items marked AP03 are included in NTMX89KL and are shown for completeness.
- 7) Items marked AP04 are included in NTMX89KD and are shown for completeness.
- 8) Items marked AP05 are included in NTMX89KE and are shown for completeness.
- 9) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 10) Items marked AP07 are included in NTZZ17HA and are shown for completeness.

- 11) Refer to MSZX16CA for System Power and Grounding information.

RULES:

- AP 1) When PEC NTZZ47VA is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required (Maximum of one per CEXT). Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution nameplates when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set when the LCME module is not to be equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included in NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5, 9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the

section on ISDN Enhanced Line Drawer NTB32BA for more information.

- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in

a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
 - 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- RUL2
- 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
 - 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3
- 1) Provide two (2) NT6X30EA Low Profile Ringing Generators for all applications in China or Australia that will support POTS lines. Provide two (2) NT6X30GA Low Profile Ringing Generators for all applications in the United Kingdom that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30--s are NOT provided.
- RUL4
- 1) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5
- 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
 - 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
 - 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.

- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT4X98BB and one (1) NT4X97AA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot and the NT4X97AA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK														

NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY
if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- 2) Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provide two NTMX79AA and one NT0X50AA (slot 1) to equip the Extension shelf to support one CRSC. These circuit packs are required for configurations that require the additional capabilities provided by the Extension shelf. The Extension shelf is divided into two units (left/right), each of which can support one CRSC. Provide four NTMX79AA packs and two NT0X50AAs (slots 1 and 26) when required to extend the capabilities of two CRSCs. Slots 2 and 13 support extension of the first RCC2. Slots 14 and 25 extend the second RCC2.
- 2) Provide one NTZZ12KA to provide Filler Face Plates for the right side of the Extension shelf (slots 14-26) when it is not to be equipped. If the Extension shelf is not being used at all, provide one NTZZ12KA and one NTZZ12WA (for slots 1-13).
- RUL8 1) When provisioning DCHs, DS-30As and PCM-30s for the RCC2, one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14

of the Engineering Manual) and select the configuration that best suits your need.

Note: If any of the configurations indicate slots used in the Extension shelf then the CEXT cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA.
- 3) Each slot not equipped with either a DCH or a Quad Carrier CP must be equipped with a NT0X50AA filler plate. Provision one NT0X50AA for each slot (xx = 4,6,8,9-12,15-24) that is not so equipped.
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL9
- 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
 - 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.
 - 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

| REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCM-READY) (NON-PCM) (BROWN)

PEC CODE: NTZZ47QM

CPC CODE: B0239719

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ47QB

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47QM Building Block provides the base equipment for one CRSC equipped for an internal LCM. The LCM packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for DS1 interfaces to the host, trunks and remote-off-remote and brown doors and cable troughs.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47QM EMC2-24-RCC-16 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 08	API 499 02	NTZZ47QM Introduction
93 11 01	API 499 03	Show AP equipment for EAE3.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47QB.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The Remote Switching Center - SONET Model B CRSC (LCM-ready) (Non-PCM) (Brown) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCM Kit	NTMX89FA		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringling Generator Shf Assy	NTRX25AG		1	65		AP02
Enhanced Line Module Shelf	NT6X0442		1	33		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/LCM MSP Kit	NTMX89KJ		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15,16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1,3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8,17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R,8R, 17R,20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
CRSC RCC2/RMM (Non-PCM) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/LCM VF I/O Kit	NTMX89KH		1			AP
Blkhd 33 Connector Plate	NTMX8969		1	33		AP05
Blkhd 47 Connector Plate	NTMX8982		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
LCM Packfill	NT6X04AB		1	33		RUL1
QFFI Fuse Assembly	NT6X04FA		2	33,47		RUL1
Line Drawers	NT6X05AA		10	33		RUL1
LCM Module Fillers	NT6X04AX		1	33		RUL1
Line Drawer ID Labels	P0631765		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Generator	NT6X30HA		2	65		RUL3
Ringing Generator Filler	NTRX25AK		2	65		RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT2X10BA			19		RUL5
Multiline Test (Analog)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
RCC2 Packfill (Standard)	NTZZ12XA		1	06		RUL11
RCC2 Packfill (EDC)	NTZZ12ZA		1	06		RUL11
RCC2 Packfill (w/o EISP)	NTZZ12XB		1	06		RUL11
Enhanced ISP	NTBX01AB		2	06	4, 24	RUL11
Design label (NTBX01AB)	P0738856		2	06	4, 24	RUL11
Filler faceplate	NT0X50AA		2	06	4, 24	RUL11
Enhanced Messaging CP	NT6X69AC		2	06	8, 20	RUL11
Design label (NT6X69AC)	P0710476		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Design label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Class Modem Resource BB	NTZZ12UA		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6, 22	AP
Desig. Label (NT6X92BB)	P0690565		2	06	6, 22	AP
Universal Tone Rec'vr (UTR)	NTZZ12VA		2	06	7, 21	RUL9
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		2	06	9:0	AP
				19:0		
Dual DS1 Packlet	NTMX81AA		6	06	9:1-3	RUL7
				19:1-3		
Filler Face Plate	NTMX83AA		6	06	9:1-3	RUL7
				19:1-3		
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12, 14, 16	RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
Door kit (Cntr latch,brown)	NTRX2569		1			AP
C28 Cable trough (Brown)	NTRX55BB		1			AP
Brown Frame fail light	NT0X24BT		1			AP
Brown bezel for dummy light	P0674502		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CRSC Door label (Green)	P0746294		1			AP
Leveling foot kit	NTRX2523		1			RUL12
Earthquake anchor kit	NTRX2564		1			RUL12
Earthquake anchor	P0601187		1			RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 4) Refer to MS0X60AA for cabinet labels.
- 5) Items marked AP02 are included in NTMX89FA and are shown for completeness.
- 6) Items marked AP03 are included in NTMX89KJ and are shown for completeness.
- 7) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 8) Items marked AP05 are included in NTMX89KH and are included for completeness.
- 9) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 10) Refer to MSZX16CA for System Power and Grounding information.

RULES:

- AP 1) When PEC NTZZ47QM is ordered, these items are provided.
- RUL1 1) Provide one NT6X04AB LCM Packfill, two NT6X04FA QFFI Fuse Assemblies and ten NT6X05AA Line Drawers to equip the LCM module in the CRSC. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCM is equipped.
- 2) Provide one NT6X04AX LCM Filler kit when the internal LCM is not to be equipped.
- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.

- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when

using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.

- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
Y denotes a slot that CAN be used for that pack.
C denotes a slot that can be used for that pack ONLY
if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide one NTZZ12UA for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
 - 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL11
- 1) Provide one RCC2 packfill per CRSC. Choose the appropriate packfill from those described below, based on application.
 - 2) The NTZZ12XA is used for standard applications (<100 miles to host for U.S.; <150 miles to host for Canada). This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 3) The NTZZ12ZA is used for Extended Distance Capability and requires NTMX76AA HDLC Messaging in the host XPM. This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 4) The HDLC Messaging used in the NTZZ12ZA packfill allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 5) Provide one NTZZ12XB common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:
 1. EITHER two (2) NTB01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications

- RUL12
- 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
 - 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.
 - 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

| REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCME-READY) (NON-PCM) (BROWN)

PEC CODE: NTZZ47RM

CPC CODE: B0239720

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ47RN

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47RM Building Block provides the base equipment for one CRSC equipped for an internal LCME. The LCME packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for DS1 interfaces to the host, trunks and remote-off-remote and brown doors and cable troughs.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47RM EMC2-24-RCC-17 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 08	API 499 02	NTZZ47RM Introduction
93 11 01	API 499 03	Show AP equipment for EAE3; Use LCME BB NTZZ17HA instead of detail code.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47RN.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The Remote Switching Center - SONET Model B CRSC (LCME-ready) (Non-PCM) (Brown) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/ISDN Kit	NTMX89FB		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/ISDN MSP Kit	NTMX89KK		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
CRSC RCC2/RMM (Non-PCM) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/ISDN VF I/O Kit	NTMX89KG		1			AP
Blkhd 33 Connector Plate	NTMX8978		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME	1	33, 47		RUL1
LCME Common CP	NTBX31BA	LCME	1	33, 47		AP07
ISDN Enhanced Line Drawers	NTBX32BA	LD	8	33, 47	1, 3, 5, 7	AP07
LCME Fillers Plates	NTBX31AB		1	33, 47		RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber Line Cards	AR					RUL1
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Generator	NT6X30HA		2	65		RUL3
Ringing Generator Filler	NTRX25AK		2	65		RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB	RMM	1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT2X10BA			19		RUL5
Multiline Test (Analog)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
RCC2 Packfill (Standard)	NTZZ12XA		1	06		RUL11
RCC2 Packfill (EDC)	NTZZ12ZA		1	06		RUL11
RCC2 Packfill (w/o EISP)	NTZZ12XB		1	06		RUL11
Enhanced ISP	NTBX01AB		2	06	4, 24	RUL11
Design label (NTBX01AB)	P0738856		2	06	4, 24	RUL11
Filler faceplate	NT0X50AA		2	06	4, 24	RUL11
Enhanced Messaging CP	NT6X69AC		2	06	8, 20	RUL11
Design label (NT6X69AC)	P0710476		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Design label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Class Modem Resource BB	NTZZ12UA		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6, 22	AP
Desig. Label (NT6X92BB)	P0690565		2	06	6, 22	AP
Universal Tone Rec'vr (UTR)	NTZZ12VA		2	06	7, 21	RUL9
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		2	06	9:0	AP
				19:0		
Dual DS1 Packlet	NTMX81AA		6	06	9:1-3	RUL7
				19:1-3		
Filler Face Plate	NTMX83AA		6	06	9:1-3	RUL7
				19:1-3		
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12, 14, 16	RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
Door kit (Cntr latch,brown)	NTRX2569		1			AP
C28 Cable trough (Brown)	NTRX55BB		1			AP
Brown Frame fail light	NT0X24BT		1			AP
Brown bezel for dummy light	P0674502		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CRSC Door label (Green)	P0746294		1			AP
Leveling foot kit	NTRX2523		1			RUL12
Earthquake anchor kit	NTRX2564		1			RUL12
Earthquake anchor	P0601187		1			RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

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Please contact NPPM prior to ordering.

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they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 4) Refer to MS0X60AA for cabinet labels.
- 5) Items marked AP02 are included in NTMX89FB and are shown for completeness.
- 6) Items marked AP03 are included in NTMX89KK and are shown for completeness.
- 7) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 8) Items marked AP05 are included in NTMX89KG and are shown for completeness.
- 9) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 10) Items marked AP07 are included in NTZZ17HA and are shown for completeness.
- 11) Refer to MSZX16CA for System Power and Grounding information.

RULES:

- AP 1) When PEC NTZZ47RM is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame	Line	Line Sub

Retired Equipment	NTZZ47RM
Remote Switching Center - SONET	EMC2-24-RCC-17
Model B CRSC (LCME-ready) (Non-PCM) (Brown)	Page 6

Shelf Pos.	Drawer	Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set when the LCME module is not to be equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included in NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5, 9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240

Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.

- RUL2
- 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
 - 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.

- RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.

- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS															
CIRCUIT PACK	03	04	05	06	07	08	09	10	11	12	13	14	15	16		
NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT4X98BB	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT4X97AA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		
NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y		

NOTE: N denotes a slot that CANNOT be used for that pack.
 Y denotes a slot that CAN be used for that pack.
 C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide one NTZZ12UA for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.
- Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.
- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
- 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).

- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL11
- 1) Provide one RCC2 packfill per CRSC. Choose the appropriate packfill from those described below, based on application.
 - 2) The NTZZ12XA is used for standard applications (<100 miles to host for U.S.; <150 miles to host for Canada). This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 3) The NTZZ12ZA is used for Extended Distance Capability and requires NTMX76AA HDLC Messaging in the host XPM. This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 4) The HDLC Messaging used in the NTZZ12ZA packfill allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 5) Provide one NTZZ12XB common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:
 1. EITHER two (2) NTB01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications
- RUL12
- 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
 - 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.

- 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

| REMOTE SWITCHING CENTER - SONET
MODEL B CEXT (NON-PCM) (BROWN)

PEC CODE: NTZZ47SM

CPC CODE: B0239721

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ47SB

ABBREVIATION NAME: CEXT

ENGINEERING DESCRIPTION: The NTZZ47SM Building Block provides the base equipment for one Cabinetized Extension. This cabinet extends the interface capabilities of the Cabinetized RSC by providing mounting positions for additional DCHs and DS-1 packlets. This Building Block provides the base cabinet which can be equipped with one LCME packfill and one RMM, based on office requirements. The LCME packfill and line cards and the RMM packfill and circuit packs must be provisioned separately. External interface packs must be provisioned based on office configuration. This code provides brown doors and cable troughs.

REFERENCE DOCUMENTATION: ISMX89 00 00
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47SM EMC2-24-RCC-18 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 08	API 499 02	Brown Model B CEXT Introduction
93 11 01	API 499 03	Show AP equipment for EAE3; Use LCME BB NTZZ17HA instead of detail code.
93 12 20	API 499 04	Change P0741641 to P0601187.
94 02 08	ECM 691 01	Cancel code, replaced by NTZZ47zz.
95 07 14	ECM 691 11	Changed Section ID to EMC...

The Remote Switching Center - SONET Model B CEXT (non-PCM) (Brown) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CEXT Cabinet Assy.	NTMX89FC		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringling Generator Shf Assy	NTRX25AG		1	65		AP02
Ringling Generator	NT6X30HA		2	65	1, 2	RUL3
Ringling Generator Filler	NTRX25AK		2	65	1, 2	RUL3
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
CPM EXT Shelf	NTMX8601		1	06		AP02
CEXT MSP Kit	NTMX89KL		1	65		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1			AP
CEXT Ext/RMM (non-PCM) I/O	NTMX89KC		1			AP
CEXT Connector Plate Assy	NTMX8817		1	05		AP04
Blkhd 19 Connector Plate	NTMX8968		1	19		AP04
CEXT ISDN VF I/O Kit	NTMX89KE		1			AP
Blkhd 33 Connector Plate	NTMX8979		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA		1	33, 47		RUL1
LCME Common CP	NTBX31BA		1			AP07
ISDN Enhanced Line Drawer	NTBX32BA					AP07
Line Drawer ID Label	P0709652		1			AP07
LCME Filler Plates	NTBX31AB		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber lines	AR					RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT2X10BA			19		RUL5
Multiline Test (Analog)	NT2X11BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
C28 English label kit	NTRX3541		1			RUL6
Filler Faceplate	NT0X50AA		1	06	1	RUL7
DS60 Extender CP	NTMX79AA		2	06	2,13	RUL7
DS60 Extender CP	NTMX79AA		2	06	14,25	RUL7
EXT Filler Kit (Right)	NTZZ12KA		1	06	14	RUL7
EXT Filler Kit (Left)	NTZZ12WA		1	06	02	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	4	RUL8
Quad Frame Carrier	NTMX87AA		1	06	4	RUL8
Dual DS1 Packlet	NTMX81AA			06	4 0-3	RUL8
Filler Face Plate	NTMX83AA			06	4 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	5	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	6	RUL8
Quad Frame Carrier	NTMX87AA		1	06	6	RUL8
Dual DS1 Packlet	NTMX81AA			06	6 0-3	RUL8
Filler Face Plate	NTMX83AA			06	6 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	7	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	8	RUL8
Quad Frame Carrier	NTMX87AA		1	06	8	RUL8
Dual DS1 Packlet	NTMX81AA			06	8 0-3	RUL8
Filler Face Plate	NTMX83AA			06	8 0-3	RUL8
Filler Plate	NT0X50AA			06	3,5,7	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	9	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	10	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	11	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	12	RUL8

Retired Equipment
Remote Switching Center - SONET
Model B CEXT (non-PCM) (Brown)

NTZZ47SM
EMC2-24-RCC-18
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	15	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	16	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	17	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	18	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	19	RUL8
Quad Frame Carrier	NTMX87AA		1	06	19	RUL8
Dual DS1 Packlet	NTMX81AA			06	19 0-3	RUL8
Filler Face Plate	NTMX83AA			06	19 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	20	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	21	RUL8
Quad Frame Carrier	NTMX87AA		1	06	21	RUL8
Dual DS1 Packlet	NTMX81AA			06	21 0-3	RUL8
Filler Face Plate	NTMX83AA			06	21 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	22	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	23	RUL8
Quad Frame Carrier	NTMX87AA		1	06	23	RUL8
Dual DS1 Packlet	NTMX81AA			06	23 0-3	RUL8
Filler Face Plate	NTMX83AA			06	23 0-3	RUL8
ISDN D-Channel Handler (DCH)	NTZZ17BA		1	06	24	RUL8
Filler Plate	NT0X50AA			06	24	RUL8
Door kit (Cntr latch,brown)	NTRX2569		1			AP
C28 Cable trough (Brown)	NTRX55BB		1			AP
Brown Frame fail light	NT0X24BT		1			AP
Brown bezel for dummy light	P0674502		1			AP
Red diode lense	A0328413		1			AP
Hex head washer screw	P0559409		2			AP
CEXT Door label (Green)	P0746295		1			AP
Leveling foot kit	NTRX2523		1			RUL9
Earthquake anchor kit	NTRX2564		1			RUL9
Earthquake anchor	P0601187		1			RUL9

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to MSRX07 for provisioning Endguard Insert Assemblies.
- 2) Refer to MSRX73 for provisioning cosmetic endguards and EMI sidepanels.
- 3) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 4) Refer to MS0X60AA for cabinet labels.
- 5) Items marked AP02 are included with NTMX89FC and are shown for sparing purposes.
- 6) Items marked AP03 are included in NTMX89KL and are shown for completeness.
- 7) Items marked AP04 are included in NTMX89KC and are shown for completeness.
- 8) Items marked AP05 are included in NTMX89KE and are shown for completeness.
- 9) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 10) Items marked AP07 are included in NTZZ17HA and are shown for completeness.

- 11) Refer to MSZX16CA for System Power and Grounding information.

RULES:

- AP 1) When PEC NTZZ47SM is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required (Maximum of one per CEXT). Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set when the LCME module is not to be equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included in NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5, 9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the

section on ISDN Enhanced Line Drawer NTB32BA for more information.

- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in

a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- RUL2
 - 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
 - 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3
 - 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- RUL4
 - 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5
 - 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below. Provide one NT6X13AB packfill per RMM for domestic applications.
 - 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
 - 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.

- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16. For Canadian applications, use the NT4X98BB and NT4X97AA pair, instead of the NT2X10BA/NT2X11BA.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provide two NTMX79AA and one NT0X50AA (slot 1) to equip the Extension shelf to support one CRSC. These circuit packs are required for configurations that require the additional capabilities provided by the Extension shelf. The Extension shelf is divided into two units (left/right), each of which can support one CRSC. Provide four NTMX79AA packs and two NT0X50AAs (slots 1 and 26) when required to extend the capabilities of two CRSCs. Slots 2 and 13 support extension of the first RCC2. Slots 14 and 25 extend the second RCC2.
- 2) Provide one NTZZ12KA to provide Filler Face Plates for the right side of the Extension shelf (slots 14-26) when it is not to be equipped. If the Extension shelf is not being used at all, provide one NTZZ12KA and one NTZZ12WA (for slots 1-13).
- RUL8 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2, one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of

the Engineering Manual) and select the configuration that best suits your need.

Note: If any of the configurations indicate slots used in the Extension shelf then the CEXT cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf.
- 3) Each slot not equipped with either a DCH or a Quad Carrier CP must be equipped with a NT0X50AA filler plate. Provision one NT0X50AA for each slot (xx = 4,6,8,9-12,15-24) that is not so equipped.
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL9
- 1) Provide one NTRX2523 Leveling foot kit per cabinet for non-earthquake applications.
 - 2) Provide one NTRX2564 Earthquake anchor kit per cabinet for earthquake applications or per customer request in non-earthquake zones.
 - 3) Provide one P0601187 Earthquake anchor per cabinet per customer request. In earthquake zone 0 only, one or more anchors may be used with adjustable feet in order to keep the cabinet from shifting out of position or to provide extra protection against tipping.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCM-READY) (NON-PCM)

PEC CODE: NTZZ47QB

CPC CODE: B0224543

| RATING: MD

REPLACES: NTZZ47QA

| REPLACED BY: NTZZ47QD

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47QB Building Block provides a CRSC equipped for an internal LCM. The LCM packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for DS1 interfaces to the host, trunks and remote-off-remote. The doors, cable troughs, anchors and other mechanical equipment must be provided separately per documentation referenced herein.

REFERENCE DOCUMENTATION: ISMX89 00 05
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: Barry Bond Dept. 3471 (PPK)

NTZZ47QB EMC2-24-RCC-19 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 08	ECM 691 01	Introduce NTZZ47QB.
94 09 04	ECM 691 06	Where NTRX72AA was AP, change it to AP NTRX92AA.
94 10 17	ECM 691 07	Add NTMX89LA ordering information.
95 02 14	ECM 691 08	Revisions per EC 024-93471.
95 05 04	ECM 691 09	Revisions per EC 011-21293.
95 07 14	ECM 691 11	MD, replaced by NTZZ47QD. The 1st pair is now provisionable in NTZZ47QD.

The Remote Switching Center - SONET Model B CRSC (LCM-ready) (Non-PCM) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCM Kit	NTMX89FA		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringling Generator Shf Assy	NTRX25AG		1	65		AP02
Enhanced Line Module Shelf	NT6X0442		1	33		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/LCM MSP Kit	NTMX89KJ		1	61		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15,16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1,3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8,17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (Non-PCM) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/LCM VF I/O Kit	NTMX89KH		1			AP
Blkhd 33 Connector Plate	NTMX8969		1	33		AP05
Blkhd 47 Connector Plate	NTMX8982		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
# LCM Packfill	NT6X04AB		1	33		RUL1
LCM Packfill	NT6X04MD		1	33		RUL1
QFFI Fuse Assembly	NT6X04FA		2	33, 47		RUL1
Line Drawers	NT6X05AA		10	33		RUL1
LCM Module Fillers	NT6X04AX		1	33		RUL1
Line Drawer ID Labels	P0631765		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Ringing Generator	NT6X30HA		2	65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK		2	65	1, 2	RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
RMM Repowering Kit	NTMX89LA		1			RUL13
C28 English label kit	NTRX3541		1			RUL6
# RCC2 Packfill (Standard)	NTZZ12XA		1	06		RUL11
# RCC2 Packfill (EDC)	NTZZ12ZA		1	06		RUL11
RCC2 Packfill (w/o EISP)	NTZZ12XB		1	06		RUL11
# Enhanced ISP	NTBX01AB		2	06	4, 24	RUL11
# Design label (NTBX01AB)	P0738856		2	06	4, 24	RUL11
Enhanced ISP	NTBX01BA		2	06	4, 24	RUL11
Design label (NTBX01BA)	P0713794		2	06	4, 24	RUL11
Filler faceplate	NT0X50AA		2	06	4, 24	RUL11
Enhanced Messaging CP	NT6X69AC		2	06	8, 20	RUL11
Design label (NT6X69AC)	P0710476		2	06	8, 20	RUL11
Enhanced Messaging CP (ADSI)	NT6X69AD		2	06	8, 20	RUL11
Design label (NT6X69AD)	P0800014		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Design label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Class Modem Resource BB	NTZZ12UA		1	06	5, 23	RUL8
Peripheral Loader BB	NTZZ02UB		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6, 22	AP
Desig. Label (NT6X92BB)	P0690565		2	06	6, 22	AP
% Universal Tone Rec'vr (UTR)	NTZZ12VA		2	06	7, 21	RUL9
Universal Tone Rec'vr (UTR)	NTZZ12VB		2	06	7, 21	RUL9
Peripheral Loader BB	NTZZ02UB		1	06	7, 21	RUL9

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (Non-PCM)

NTZZ47QB
EMC2-24-RCC-19
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		2	06	9:0 19:0	AP
Dual DS1 Packlet	NTMX81AA		6	06	9:1-3 19:1-3	RUL7
Filler Face Plate	NTMX83AA		6	06	9:1-3 19:1-3	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12, 14, 16	RUL10
Enhanced D-Channel Handler	NTZZ17BB			06	12, 14, 16	RUL10
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12, 14, 16	RUL10
CRSC Door label (Blue)	P0715089		1			RUL12
CRSC Door label (Green)	P0746294		1			RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X04AB	MD	NT6X04MD
NTZZ12XA	MD	NTZZ12XB
NTZZ12ZA	MD	NTZZ12XB
NTBX01AB	MD	NTBX01BA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

% Rating Change Pending. Upon availability, NT6X92BC replaces NT6X92BB. (NTZZ12VB provides NT6X92BCs; NTZZ12VA provides NT6X92BBs.)

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FA and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KJ and are shown for completeness.

- 8) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KH and are included for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ47QB is ordered, these items are provided.
- RUL1 1) Provide one NT6X04MD LCM Packfill, two NT6X04FA QFFI Fuse Assemblies and ten NT6X05AA Line Drawers to equip the LCM module in the CRSC. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCM is equipped. The NT6X04MD packfill replaces the NT6X04AB packfill.
- 2) Provide one NT6X04AX LCM Filler kit and two NT6X04FA QFFI Fuse Assy. when the internal LCM is not to be equipped. The NT6X04FA assemblies are needed to terminate internal cabling.
- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE be-

low. Individual circuit pack provisioning information is included below.

- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (Non-PCM)

NTZZ47QB
EMC2-24-RCC-19
Page 8

NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
 Y denotes a slot that CAN be used for that pack.
 C denotes a slot that can be used for that pack ONLY
 if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)

- 3) Provide filler plates for all unused packlet positions.

- RUL8
- 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned.
 - 2) Provide one (1) NTZZ02UB in slots 5 & 23 when support of fast recovery from lost load is required and support for Calling Number Delivery is not required. Also refer to Rule 9.
 - 3) If slots 5 and 23 are not equipped, provide two (2) NT0X50AA fillers.

- RUL9
- 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
 - 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide one NTZZ12VA or NTZZ12VB for slots 7 and 21. NTZZ12VB provides NT6X92BC UTRs and, when available, should be ordered instead of NTZZ12VA.

Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.

- 3) Provide one (1) NTZZ02UB in slots 7 & 21 when support of fast recovery from lost load is required, support for Calling Number Delivery is required and a second pair of UTRs is not needed. NTZZ02UB can be provided in either slots 5 and 23 or slots 7 and 21 (whichever pair of slots is available). Provide only one NTZZ02UB per RCC2.
- 4) If slots 7 and 21 are not equipped, provide two (2) NT0X50AA fillers.

- RUL10
- 1) When provisioning DCH/EDCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
- 3) When neither a DCH/EDCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

RUL11 1) Provide one RCC2 packfill per CRSC.

- 2) Provide one NTZZ12XB common CP fill per CRSC. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:

1. EITHER two (2) NTB01BA EISP packs and
two (2) P0713794 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
without support for the ADSI SCWID feature
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications
without support for the ADSI SCWID feature
OR two (2) NT6X69AD packs and two (2)
P0800014 labels for standard distance applications
WITH support for the ADSI SCWID feature.

- 3) The NTZZ12XA is now Manufacture Discontinued since it included the NTB01AB, which has been replaced by the NTB01BA.
- 4) The NTZZ12ZA is now Manufacture Discontinued since it included the NTB01AB, which has been replaced by the NTB01BA.

- 5) The HDLC Messaging used in the NTMX76-- pack allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
- RUL12 1) Provide one P0715089 Door label per CRSC when grey equipment is supplied or one P0746294 Door label per CRSC when brown equipment is supplied.
- RUL13 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCME-READY) (NON-PCM)

PEC CODE: NTZZ47RN

CPC CODE: B0224544

| RATING: MD

REPLACES: NTZZ47RA, NTZZ47RM

| REPLACED BY: NTZZ47RQ

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47RN Building Block provides the base equipment for one CRSC equipped for an internal LCME. The LCME packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for DS1 interfaces to the host, trunks and remote-off-remote. The doors, cable troughs, anchors and cabinet mechanicals must be provided separately based on documentation referenced herein.

REFERENCE DOCUMENTATION: ISMX89 00 05
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: Barry Bond Dept. 3471 (PPK)

NTZZ47RN EMC2-24-RCC-20 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 08	ECM 691 01	NTZZ47RN Introduction
94 09 04	ECM 691 06	Where NTRX72AA was AP, change it to AP NTRX92AA.
94 10 17	ECM 691 07	Add NTMX89LA ordering information.
95 02 14	ECM 691 08	Revisions per EC 024-93471.
95 05 04	ECM 691 09	Revisions per EC 011-21293.
95 07 14	ECM 691 11	MD, replaced by NTZZ47RQ. The 1st pair is now provisionable in NTZZ47RQ.

The Remote Switching Center - SONET Model B CRSC (LCME-ready) (Non-PCM) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/ISDN Kit	NTMX89FB		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/ISDN MSP Kit	NTMX89KK		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (Non-PCM) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/ISDN VF I/O Kit	NTMX89KG		1			AP
Blkhd 33 Connector Plate	NTMX8978		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME	1	33, 47		RUL1
LCME Common CP	NTBX31BA	LCME	1	33, 47		AP07
ISDN Enhanced Line Drawers	NTBX32BA	LD	8	33, 47	1, 5, 9, 13	AP07
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber Line Cards	AR					RUL1
LCME Fillers Plates	NTBX31AB		1	33, 47		RUL1
Line Drawer fillers	NT6X05AX		8	33, 47	1, 5, 9, 13	RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Ringing Generator	NT6X30HA		2	65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK		2	65	1, 2	RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
RMM Repowering Kit	NTMX89LA		1			RUL13
C28 English label kit	NTRX3541		1			RUL6
# RCC2 Packfill (Standard)	NTZZ12XA		1	06		RUL11
# RCC2 Packfill (EDC)	NTZZ12ZA		1	06		RUL11
RCC2 Packfill (w/o EISP)	NTZZ12XB		1	06		RUL11
# Enhanced ISP	NTBX01AB		2	06	4, 24	RUL11
# Design label (NTBX01AB)	P0738856		2	06	4, 24	RUL11
Enhanced ISP	NTBX01BA		2	06	4, 24	RUL11
Design label (NTBX01BA)	P0713794		2	06	4, 24	RUL11
Filler faceplate	NT0X50AA		2	06	4, 24	RUL11
Enhanced Messaging CP	NT6X69AC		2	06	8, 20	RUL11
Design label (NT6X69AC)	P0710476		2	06	8, 20	RUL11
Enhanced Messaging CP (ADSI)	NT6X69AD		2	06	8, 20	RUL11
Design label (NT6X69AD)	P0800014		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Design label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Class Modem Resource BB	NTZZ12UA		1	06	5, 23	RUL8
Peripheral Loader BB	NTZZ02UB		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6, 22	AP
Desig. Label (NT6X92BB)	P0690565		2	06	6, 22	AP
% Universal Tone Rec'vr (UTR)	NTZZ12VA		2	06	7, 21	RUL9
Universal Tone Rec'vr (UTR)	NTZZ12VB		2	06	7, 21	RUL9

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCME-ready) (Non-PCM)

NTZZ47RN
EMC2-24-RCC-20
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Peripheral Loader BB	NTZZ02UB		1	06	7, 21	RUL9
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		2	06	9:0	AP
					19:0	
Dual DS1 Packlet	NTMX81AA		6	06	9:1-3	RUL7
					19:1-3	
Filler Face Plate	NTMX83AA		6	06	9:1-3	RUL7
					19:1-3	
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12, 14,	RUL10
					16	
Enhanced D-Channel Handler	NTZZ17BB			06	12, 14,	RUL10
					16	
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12, 14,	RUL10
					16	
CRSC Door label (Blue)	P0715089		1			RUL12
CRSC Door label (Green)	P0746294		1			RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ12XA	MD	NTZZ12XB
NTZZ12ZA	MD	NTZZ12XB
NTBX01AB	MD	NTBX01BA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

% Rating Change Pending. Upon availability, NT6X92BC replaces NT6X92BB. (NTZZ12VB provides NT6X92BCs; NTZZ12VA provides NT6X92BBs.)

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FB and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KK and are shown for completeness.

- 8) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KG and are shown for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 11) Items marked AP07 are included in NTZZ17HA and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ47RN is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:
- | Frame Shelf Pos. | Line Drawer | Line Sub Group (LSG) |
|------------------|-------------|----------------------|
| 33 | 0 | 00,01 |
| 33 | 1 | 02,03 |
| 33 | 2 | 04,05 |
| 33 | 3 | 06,07 |
| 47 | 4 | 08,09 |
| 47 | 5 | 10,11 |
| 47 | 6 | 12,13 |
| 47 | 7 | 14,15 |
- 3) Provide one NTB31AB Filler Plate set and eight NT6X05AX line drawer fillers when the LCME module is not to be equipped.
- 4) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.

- 5) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 6) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 7) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 8) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 9) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
 - 10) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- RUL2
- 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
 - 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3
- 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- RUL4
- 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5
- 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
 - 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
 - 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.

- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK														

NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned.
- 2) Provide one (1) NTZZ02UB in slots 5 & 23 when support of fast recovery from lost load is required and support for Calling Number Delivery is not required. Also refer to Rule 9.
- 3) If slots 5 and 23 are not equipped, provide two (2) NT0X50AA fillers.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.

- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide one NTZZ12VA or NTZZ12VB for slots 7 and 21. NTZZ12VB provides NT6X92BC UTRs and, when available, should be ordered instead of NTZZ12VA.

Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.

- 3) Provide one (1) NTZZ02UB in slots 7 & 21 when support of fast recovery from lost load is required, support for Calling Number Delivery is required and a second pair of UTRs is not needed. NTZZ02UB can be provided in either slots 5 and 23 or slots 7 and 21 (whichever pair of slots is available). Provide only one NTZZ02UB per RCC2.
- 4) If slots 7 and 21 are not equipped, provide two (2) NT0X50AA fillers.

- RUL10 1) When provisioning DCH/EDCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH/EDCH circuit packs are Always Provided as part of the shelf. The label for the DCH/EDCH is included in the NTZZ17BA/BB Building Block.
- 3) When neither a DCH/EDCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL11 1) Provide one RCC2 packfill per CRSC.
- 2) Provide one NTZZ12XB common CP fill per CRSC. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is

required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:

1. EITHER two (2) NTBX01BA EISP packs and
two (2) P0713794 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
without support for the ADSI SCWID feature
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications
without support for the ADSI SCWID feature
OR two (2) NT6X69AD packs and two (2)
P0800014 labels for standard distance applications
WITH support for the ADSI SCWID feature.
 - 3) The NTZZ12XA is now Manufacture Discontinued since it included the NTBX01AB, which has been replaced by the NTBX01BA.
 - 4) The NTZZ12ZA is now Manufacture Discontinued since it included the NTBX01AB, which has been replaced by the NTBX01BA.
 - 5) The HDLC Messaging used in the NTMX76-- pack allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
- RUL12 1) Provide one P0715089 Door label per CRSC when grey equipment is supplied or one P0746294 Door label per CRSC when brown equipment is supplied.
- RUL13 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE SWITCHING CENTER - SONET
MODEL B CEXT (TWISTED PAIR)

PEC CODE: NTZZ47SB

CPC CODE: B0224545

| RATING: MD

REPLACES: NTZZ47SA, NTZZ47SM

| REPLACED BY: NTMX89FC

ABBREVIATION NAME: CEXT

ENGINEERING DESCRIPTION: The NTZZ47SB Building Block provides the base equipment for one Cabinetized Extension. This cabinet extends the interface capabilities of the Cabinetized RSC by providing mounting positions for additional DCHs and DS-1 packlets. This Building Block provides the base cabinet which can be equipped with one LCME packfill and one RMM, based on office requirements. The LCME packfill and line cards and the RMM packfill and circuit packs must be provisioned separately. External interface packs must be provisioned based on office configuration. The doors, anchors, frame fail lights and cabinet mechanicals must be ordered separately based on documentation referenced herein. The twisted pair cable used in this Building Block is typically used for DS1 applications but can also be used for PCM30 applications, when required by the customer.

REFERENCE DOCUMENTATION: ISMX89 00 08

MARKETS: Applicable markets:

US
Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

Retired Equipment
Remote Switching Center - SONET
Model B CEXT (Twisted Pair)EMC2-24-RCC-21
Page 1

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ47SB EMC2-24-RCC-21 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 08	ECM 691 01	Model B CEXT Introduction
94 06 22	ECM 691 03	Change door labels
94 09 04	ECM 691 06	Where NTRX72AA was AP, change it to AP NTRX92AA.
95 05 04	ECM 691 09	Clarify BB as "twisted pair" and add codes for PCM30 applications.
96 04 02	ECM 691 15	Change per EC#024-94829. Add in NTZZ17BA RCP replaced by NTB02BA, NTZZ17HA A&M replaced by NTZZ17HB.
96 06 07	ECM 691 16	MD section.

The Remote Switching Center - SONET Model B CEXT (Twisted Pair) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CEXT Cabinet Assy.	NTMX89FC		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
CPM EXT Shelf	NTMX8601		1	06		AP02
Ringing Generator	NT6X30HA			65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK			65	1, 2	RUL3
CEXT MSP Kit	NTMX89KL		1	61		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1			AP
FPC Label	P0741680		1			AP
CEXT Ext/RMM (TwistPr) I/O	NTMX89KC		1			AP
CEXT Connector Plate Assy	NTMX8817		1	05		AP04
Blkhd 19 Connector Plate	NTMX8968		1	19		AP04
CEXT ISDN VF I/O Kit	NTMX89KE		1			AP
Blkhd 33 Connector Plate	NTMX8979		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
# ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME				RUL1
ISDN 2B1Q Line Conc. Mod.	NTZZ17HB	LCME				RUL1
# LCME Common CP	NTBX31BB	LCME	1			AP07
LCME Common CP	NTBX31BC	LCME	1			AP08
ISDN Enhanced Line Drawer	NTBX32BA	LD	8			AP07, AP08

Retired Equipment
Remote Switching Center - SONET
Model B CEXT (Twisted Pair)

NTZZ47SB
EMC2-24-RCC-21
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LCME Packfill Upgrade Kit	NTBX31PB					RUL10
Line Drawer ID Label	P0709652		1			AP07
LCM Notice Label	P0694813					RUL1
Line card caution nameplate	P0708739					RUL1
Subscriber lines	AR					RUL1
LCME Filler Plates	NTBX31AB					RUL1
LD Filler Plates	NT6X05AX			33, 47	1, 5, 9, 13	RUL1
External Power Kit (Vert.)	NTMX8904					RUL2
Internal Power Kit (Horiz.)	NTMX89KM					RUL2
Remote Maint.Mod.(Domestic)	NT6X13AB			19		RUL4
Remote Maint.Mod.(Intern'i)	NT6X13EA			19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG			19:17		RUL5
Filler Faceplate	NT0X50AA			19:19		RUL5
Filler Faceplate	NT0X50BE			19:20		RUL5
C28 English label kit	NTRX3541					RUL6
Filler Faceplate	NT0X50AA			06	1	RUL7
DS60 Extender CP	NTMX79AA			06	2, 13	RUL7
DS60 Extender CP	NTMX79AA			06	14, 25	RUL7
EXT Filler Kit (Right)	NTZZ12KA			06	14	RUL7
EXT Filler Kit (Left)	NTZZ12WA			06	02	RUL7
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	3	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	3	RUL8
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	4	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	4	RUL8
Quad Frame Carrier	NTMX87AA			06	4	RUL8
Dual DS1 Packlet	NTMX81AA			06	4 0-3	RUL8
Dual PCM30 Packlet	NTMX82AA			06	4 0-3	RUL8
Filler Face Plate	NTMX83AA			06	4 0-3	RUL8

Retired Equipment
Remote Switching Center - SONET
Model B CEXT (Twisted Pair)

NTZZ47SB
EMC2-24-RCC-21
Page 5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	5-12	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	5-12	RUL8
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	15-19	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	15-19	RUL8
Quad Frame Carrier	NTMX87AA			06	19	RUL8
Dual DS1 Packlet	NTMX81AA			06	19 0-3	RUL8
Dual PCM30 Packlet	NTMX82AA			06	19 0-3	RUL8
Filler Face Plate	NTMX83AA			06	19 0-3	RUL8
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	20-21	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	20-21	RUL8
Quad Frame Carrier	NTMX87AA			06	21	RUL8
Dual DS1 Packlet	NTMX81AA			06	21 0-3	RUL8
Dual PCM30 Packlet	NTMX82AA			06	21 0-3	RUL8
Filler Face Plate	NTMX83AA			06	21 0-3	RUL8
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	22-23	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	22-23	RUL8
Quad Frame Carrier	NTMX87AA			06	23	RUL8
Dual DS1 Packlet	NTMX81AA			06	23 0-3	RUL8
Dual PCM30 Packlet	NTMX82AA			06	23 0-3	RUL8
Filler Face Plate	NTMX83AA			06	23 0-3	RUL8
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	24	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	24	RUL8
Filler Plate	NT0X50AA			06	24	RUL8
CEXT Door label (Blue)	P0715088					RUL9
CEXT Door label (Green)	P0746295					RUL9
Des. Label NTBX02BA	P0737724					RUL8
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ17BA NTZZ17HA NTBX31BB	RCP A&M A&M	NTBX02BA NTZZ17HB NTBX31BC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included with NTMX89FC and are shown for sparing purposes.
- 7) Items marked AP03 are included in NTMX89KL and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KC and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KE and are shown for completeness.

- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 11) Items marked AP07 are included in NTZZ17HA and are shown for completeness.
- 12) Items marked AP08 are included in NTZZ17HB and are shown for completeness.
- 13) RCP in flaglist means that the Rating (status) of the pec is pending change.

RULES:

- AP 1) When PEC NTZZ47SB is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HB LCME Building Block for each LCME (2B1Q) module required (Maximum of one per CEXT). Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:
- | Frame Shelf Pos. | Line Drawer | Line Sub Group (LSG) |
|------------------|-------------|----------------------|
| 33 | 0 | 00,01 |
| 33 | 1 | 02,03 |
| 33 | 2 | 04,05 |
| 33 | 3 | 06,07 |
| 47 | 4 | 08,09 |
| 47 | 5 | 10,11 |
| 47 | 6 | 12,13 |
| 47 | 7 | 14,15 |
- 3) Provide one NTB31AB Filler Plate set and eight NT6X05AX Line Drawer fillers when the LCME module is not to be equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HB. Each will accommodate up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Draw-

ers are equipped in line drawer positions 1,5,9 and 13 on each Line Shelf Assembly.

- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.

RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.

- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.

RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.

- 2) Provide two (2) NT6X30EA Low Profile Ringing Generators for Chinese and Australian applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30EAs are NOT provided.

RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped for domestic applications. If the RMM is not to be utilized, provide filler faceplates per Rule 5.

- 2) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped for non-North American applications. If the RMM is not to be utilized, provide filler faceplates per Rule 5.

- RUL5
- 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below. Provide one NT6X13AB packfill per RMM for domestic applications or one NT6X13EA for international applications.
 - 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
 - 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
 - 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
 - 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
 - 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
 - 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16. For Canadian applications, use the NT4X98BB and NT4X97AA pair, instead of the NT2X10BA/NT2X11BA.
 - 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.

- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
 Y denotes a slot that CAN be used for that pack.
 C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provide two NTMX79AA and one NT0X50AA (slot 1) to equip the Extension shelf to support one CRSC. These circuit packs are required for configurations that require the additional capabilities provided by the Extension shelf. The Extension shelf is divided into two units (left/right), each of which can support one CRSC. Provide four NTMX79AA packs and two NT0X50AAs (slots 1 and 26) when required to extend the capabilities of two CRSCs. Slots 2 and 13 support extension of the first RCC2. Slots 14 and 25 extend the second RCC2.
- 2) Provide one NTZZ12KA to provide Filler Face Plates for the right side of the Extension shelf (slots 14-26) when it is not to be equipped. If the Extension shelf is not being used at all, provide one NTZZ12KA and one NTZZ12WA (for slots 1-13).
- RUL8 1) When provisioning DCH/EDCHs, DS-30As and DS-1/PCM30s for the RCC2, one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.
- Note: If any of the configurations indicate slots used in the Extension shelf then the CEXT cabinet must be provided to support this configuration.
- 2) Resistor networks for the DCH/EDCH circuit packs are Always Provided as part of the shelf.
- 3) Each slot not equipped with either a DCH/EDCH or a Quad Carrier CP must be equipped with a NT0X50AA filler plate. Provision one NT0X50AA for each slot (xx = 4,6,8,9-12,15-24) that is not so equipped.
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- 6) Provide one (1) Des. Label for each EDCH provided.
- RUL9 1) Provide one P0715088 Door Label per CEXT for grey applications or one P0746295 Door Label per CEXT for brown applications. RUL10 1) Provide one NTB31PB kit to upgrade one

existing NTB31BB LCME packfill to NTB31BC. All existing
LCMEs in CRSC are to be upgraded to NTB31BC packfills.

REMOTE SWITCHING CENTER - SONET
MODEL B CEXT (COAX)

PEC CODE: NTZZ47SN

CPC CODE: B0224546

| RATING: MD

REPLACES: NTZZ47VA

| REPLACED BY: NTMX89FC

ABBREVIATION NAME: CEXT

ENGINEERING DESCRIPTION: The NTZZ47SN Building Block provides the base equipment for one Cabinetized Extension. This cabinet extends the interface capabilities of the Cabinetized RSC by providing mounting positions for additional DCHs and PCM-30 packlets. This Building Block provides the base cabinet which can be equipped with one LCME packfill and one RMM, based on office requirements. The LCME packfill and line cards and the RMM packfill and circuit packs must be provisioned separately. External interface packs must be provisioned based on office configuration. The cabinet mechanicals (doors, anchors, etc.) must be ordered separately, based on documentation referenced herein. The coaxial cabling used in this Building Block is typically used for PCM30 applications.

REFERENCE DOCUMENTATION: ISMX89 00 08

MARKETS: Applicable markets:

Europe
CALA

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ47SN EMC2-24-RCC-24 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 08	ECM 691 01	NTZZ47SN Introduction.
94 06 22	ECM 691 03	Change door label
94 09 04	ECM 691 06	Where NTRX72AA was AP, change it to AP NTRX92AA.
95 05 04	ECM 691 09	Clarify code as "Coaxial".
95 11 01	ECM 691 13	Change reference NT6X31BA to NT6X31BB.
96 04 02	ECM 691 15	Change per EC#024-94829. Add in NTZZ17BA RCP replaced by NTB02BA, NTZZ17HA A&M replaced by NTZZ17HB.
96 06 07	ECM 691 16	MD section.

The Remote Switching Center - SONET Model B CEXT (Coax) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CEXT Cabinet Assy.	NTMX89FC		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
CPM EXT Shelf	NTMX8601		1	06		AP02
Ringing Gen.(China/Austral)	NT6X30EA			65	1, 2	RUL3
Ringing Generator (U.K.)	NT6X30GA			65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK			65	1, 2	RUL3
CEXT MSP Kit	NTMX89KL		1	61		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1			AP
FPC Label	P0741680		1			AP
CEXT Ext/RMM (Coax) I/O Kit	NTMX89KD		1			AP
PCM30 Coax PCB Assembly	NTMX8889		1	05		AP04
Blkhd 19 Connector Plate	NTMX8981		1	19		AP04
CEXT ISDN VF I/O Kit	NTMX89KE		1			AP
Blkhd 33 Connector Plate	NTMX8979		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
# ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME		33, 47		RUL1
ISDN 2B1Q Line Conc. Mod.	NTZZ17HB	LCME		33, 47		RUL1
# LCME Common CP	NTBX31BB		1			AP07
LCME Common CP	NTBX31BC		1			AP08

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN Enhanced Line Drawer	NTBX32BA	LD	8			AP07, AP08
LCME Packfill Upgrade Kit	NTBX31PB					RUL10
Line Drawer ID Label	P0709652		1			AP07
LCM Notice Label	P0694813					RUL1
Line Card Caution Nameplate	P0708739					RUL1
Subscriber Lines	AR					RUL1
LCME Filler Plates	NTBX31AB					RUL1
LD Filler Plates	NT6X05AX			33,47	1,5, 9,13	RUL1
External Power Kit (Vert.)	NTMX8904					RUL2
Internal Power Kit (Horiz.)	NTMX89KM					RUL2
Remote Maint.Mod.(Domestic)	NT6X13EA			19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG			19:17		RUL5
Filler Faceplate	NT0X50AA			19:19		RUL5
Filler Faceplate	NT0X50BE			19:20		RUL5
C28 English Label kit	NTRX3541					RUL6
C28 German Label kit	NTRX3542					RUL6
Filler Faceplate	NT0X50AA			06	1	RUL7
DS60 Extender CP	NTMX79AA			06	2,13	RUL7
DS60 Extender CP	NTMX79AA			06	14,25	RUL7
EXT Filler Kit (Right)	NTZZ12KA			06	14	RUL7
EXT Filler Kit (Left)	NTZZ12WA			06	02	RUL7
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	3-4	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	3-4	RUL8
Quad Frame Carrier	NTMX87AA			06	4	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	4 0-3	RUL8
Filler Face Plate	NTMX83AA			06	4 0-3	RUL8
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	5-12	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	5-12	RUL8
Quad Frame Carrier	NTMX87AA			06	6	RUL8

Retired Equipment
Remote Switching Center - SONET
Model B CEXT (Coax)

NTZZ47SN
EMC2-24-RCC-24
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual PCM-30 Packlet	NTMX82AA			06	6 0-3	RUL8
Filler Face Plate	NTMX83AA			06	6 0-3	RUL8
Quad Frame Carrier	NTMX87AA			06	8	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	8 0-3	RUL8
Filler Face Plate	NTMX83AA			06	8 0-3	RUL8
Filler Plate	NT0X50AA			06	3,5,7	RUL8
# ISDN D-Channel Handler (DCH)	NTZZ17BA			06	15-24	RUL8
Enhanced D-Channel Handler	NTBX02BA			06	15-24	RUL8
Quad Frame Carrier	NTMX87AA			06	19	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	19 0-3	RUL8
Filler Face Plate	NTMX83AA			06	19 0-3	RUL8
Quad Frame Carrier	NTMX87AA			06	21	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	21 0-3	RUL8
Filler Face Plate	NTMX83AA			06	21 0-3	RUL8
Quad Frame Carrier	NTMX87AA			06	23	RUL8
Dual PCM-30 Packlet	NTMX82AA			06	23 0-3	RUL8
Filler Face Plate	NTMX83AA			06	23 0-3	RUL8
Filler Plate	NT0X50AA			06	24	RUL8
CEXT Door label (Blue)	P0715088					RUL9
Des. Label NTBX02BA	P0737724					RUL8
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ17BA	RCP	NTBX02BA
NTZZ17HA	A&M	NTZZ17HB
NTBX31BB	A&M	NTBX31BC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included in NTRX92AA and are included for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FC and are included for sparing purposes.
- 7) Items marked AP03 are included in NTMX89KL and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KD and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KE and are shown for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 11) Items marked AP07 are included in NTZZ17HA and are shown for completeness.
- 12) Items marked AP08 are included in NTZZ17HB and are shown for completeness.
- 13) RCP in flagList means that the Rating (status) of the pec is pending change.

RULES:

AP 1) When PEC NTZZ47SN is ordered, these items are provided.

RUL1 1) Provide one (1) NTZZ17HB LCME Building Block for each LCME (2B1Q) module required (Maximum of one per CEXT). Provide one P0631765 Line Drawer Label set, one P0694813 LCM Notice Label and two P0708739 Line Card Caution Nameplates when the LCME is equipped.

2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

3) Provide one NTB31AB Filler Plate set and eight NT6X05AX Line Drawer fillers when the LCME module is not to be equipped.

4) Eight (8) NTB32BA Enhanced Line Drawers are included in NTZZ17HB. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5, 9 and 13 on each Line Shelf Assembly.

5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.

6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.

7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.

- 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30EA Low Profile Ringing Generators for all applications in China or Australia that will support POTS lines. Provide two (2) NT6X30GA Low Profile Ringing Generators for all applications in the United Kingdom that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30--s are NOT provided.
- RUL4 1) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.

- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT4X98BB and one (1) NT4X97AA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot and the NT4X97AA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS															
CIRCUIT PACK	03	04	05	06	07	08	09	10	11	12	13	14	15	16		
NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT4X98BB	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT4X97AA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		

NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- 2) Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provide two NTMX79AA and one NT0X50AA (slot 1) to equip the Extension shelf to support one CRSC. These circuit packs are required for configurations that require the additional capabilities provided by the Extension shelf. The Extension shelf is divided into two units (left/right), each of which can support one CRSC. Provide four NTMX79AA packs and two NT0X50AAs (slots 1 and 26) when required to extend the capabilities of two CRSCs. Slots 2 and 13 support extension of the first RCC2. Slots 14 and 25 extend the second RCC2.
- 2) Provide one NTZZ12KA to provide Filler Face Plates for the right side of the Extension shelf (slots 14-26) when it is not to be equipped. If the Extension shelf is not being used at all, provide one NTZZ12KA and one NTZZ12WA (for slots 1-13).
- RUL8 1) When provisioning DCH/EDCHs, DS-30As and PCM-30s for the RCC2, one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If any of the configurations indicate slots used in the Extension shelf then the CEXT cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH/EDCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA and provide one (1) Des. Label for each EDCH provisioned.
 - 3) Each slot not equipped with either a DCH/EDCH or a Quad Carrier CP must be equipped with a NT0X50AA filler plate. Provision one NT0X50AA for each slot (xx = 4,6,8,9-12,15-24) that is not so equipped.
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginnning with port 53 and then descending.
- RUL9 1) Provide one P0715088 Door Label per cabinet for grey applications. Only grey equipment is currently supported for International applications. RUL10 1) Provide one NTB31PB kit to upgrade one existing NTB31BB LCME packfill to NTB31BC. All existing LCMEs in CRSC are to be upgraded to NTB31BC packfills.

RCC2 SHELF PACKFILL W/BITS
(PROVISIONABLE EISP)

PEC CODE: NTZZ12XC

CPC CODE: B0243333

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: No Replacement

ABBREVIATION NAME: RCC2

ENGINEERING DESCRIPTION: The RCC2 is the remote office deployment of the Compact Peripheral Module (CPM) family of peripherals for the DMS-100 family. The RCC2 is based on a one (RCC2) or two shelf configuration (RCC2 and EXT) which must be provisioned separately. The RCC2 Shelf (RCC2) supports a Maximum of 54 P-Side Ports, 16 C-Side Ports and Dual RCC2 configurations. This RCC2 packfill supports Provisionable EISPs, which require BCS-35 or greater, and requires either standard NT6X69-- or extended distance NTMX76-- messaging packs, based on office requirements. The NTMX73AB packs included in this packfill support the Building Integrated Timing System (BITS) and the Additional Message Link (AML) features.

REFERENCE DOCUMENTATION: MSMX89AA 00 07
SLZZ12XC REL 02

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

Retired Equipment
RCC2 Shelf Packfill w/BITS
(Provisionable EISP)

EMC2-24-RCC-25
Page 1

NTZZ12XC EMC2-24-RCC-25 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 06 07	ECM 691 10	Introduce packfill to support BITS.
96 04 01	ECM 691 14	Per EC#...-..... change NTMX72AA to NTMX72AB. (EC# TBD)
96 06 07	ECM 691 16	Cancel BITS optionality.

The RCC2 Shelf Packfill w/BITS (Provisionable EISP) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter	NTMX72AB		2	06	1-2 26-27	AP
Processor	NTMX77AA		2	06	3,25	AP
Enhanced Matrix CP	NTMX75AA		2	06	10,18	AP
PCM Signaling Processor	NTMX73AB		2	06	11,17	AP
Label for NTMX73AB	P0805953		2	06	11,17	AP
DS30A Interface CP	NTMX74AB		2	06	13,15	AP
Label for NTMX74AB	P0744677		2	06	13,15	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTMX74AB replaced NTMX74AA.

RULES:

- AP 1) When PEC NTZZ12XC is ordered, these items are provided.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCM-READY) (TWISTED PAIR)

PEC CODE: NTZZ47QD

CPC CODE: B0243105

| RATING: MD

REPLACES: NTZZ47QB, NTZZ47QC

| REPLACED BY: NTMX89FA

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47QD Building Block provides a CRSC equipped for an internal LCM. The LCM packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired for twisted pair cabling for interfaces to the host, trunks and remote-off-remote. Twisted pair cabling is typically used for DS1 applications but can also be used for PCM30, when desired by the customer. The doors, cable troughs, anchors and other mechanical equipment must be provided separately per documentation referenced herein.

REFERENCE DOCUMENTATION: ISMX89 00 08

MARKETS: Applicable markets:

US
Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ47QD EMC2-24-RCC-27 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 05 04	ECM 691 09	Introduce NTZZ47QD
95 06 07	ECM 691 10	Introduce NTZZ12XC for BITS
95 07 14	ECM 691 11	Added NT6X92BB/NTZZ12VA and second pair NT6X92CA provisioning. Replaced first NT6X92BC pair with NTZZ12VB, corrected qty of NTZZ12VB in slots 7,21 from 2 to 1.
95 11 01	ECM 691 13	EC 024-95229 - Modify provisioning rules for the NT6X69AC/AD CPs.
96 04 02	ECM 691 15	Change per EC#024-94829. Add in NT6X69AC A&M replaced by NT6X69AD. NTZZ12VC (NT6X92EA) GTR added.
96 06 07	ECM 691 16	MD section.

The Remote Switching Center - SONET Model B CRSC (LCM-ready) (Twisted Pair) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCM Kit	NTMX89FA		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringling Generator Shf Assy	NTRX25AG		1	65		AP02
Enhanced Line Module Shelf	NT6X0442		1	33		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/LCM MSP Kit	NTMX89KJ		1	61		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15,16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1,3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8,17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R,8R, 17R,20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (TwistPr) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/LCM VF I/O Kit	NTMX89KH		1			AP
Blkhd 33 Connector Plate	NTMX8969		1	33		AP05
Blkhd 47 Connector Plate	NTMX8982		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
LCM Packfill	NT6X04MD			33		RUL1
QFFI Fuse Assembly	NT6X04FA			33,47		RUL1
Line Drawers	NT6X05AA			33		RUL1
LCM Module Fillers	NT6X04AX			33		RUL1
Line Drawer ID Labels	P0631765					RUL1
LCM Notice Label	P0694813					RUL1
Line card caution nameplat	P0708739					RUL1
External Power Kit (Vert.)	NTMX8904					RUL2
Internal Power Kit (Horiz.)	NTMX89KM					RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Generator	NT6X30HA			65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK			65	1, 2	RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB			19		RUL4
Remote Maint.Mod.(Intern'l)	NT6X13EA			19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG			19:17		RUL5
Filler Faceplate	NT0X50AA			19:19		RUL5
Filler Faceplate	NT0X50BE			19:20		RUL5
RMM Repowering Kit	NTMX89LA					RUL13
C28 English label kit	NTRX3541					RUL6
RCC2 Packfill (w/o EISP)	NTZZ12XB			06		RUL11
RCC2 Packfill (BITS)	NTZZ12XC			06		RUL11
Enhanced ISP	NTBX01BA			06	4, 24	RUL11
Design label (NTBX01BA)	P0713794			06	4, 24	RUL11
Filler faceplate	NT0X50AA			06	4, 24	RUL11
# Enhanced Messaging CP	NT6X69AC			06	8, 20	RUL11
Design label (NT6X69AC)	P0710476			06	8, 20	RUL11
Enhanced Messaging CP (ADSI)	NT6X69AD			06	8, 20	RUL11
Design label (NT6X69AD)	P0800014			06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA			06	8, 20	RUL11
Design label (NTMX76AA)	P0744109			06	8, 20	RUL11
Signaling Circuit Pack	NTMX73AB			06	11, 17	RUL11
Design label (NTMX73AB)	P0805953			06	11, 17	RUL11
Class Modem Resource BB	NTZZ12UA			06	5, 23	RUL8
Peripheral Loader BB	NTZZ02UB			06	5, 23	RUL8
Filler Plate	NT0X50AA			06	5, 23	RUL8
# Universal Tone Rec'vr (UTR)	NT6X92BB			06	6, 22	RUL9
Desig. Label (NT6X92BB)	P0690565			06	6, 22	RUL9
# UTR (NT6X92BC)	NTZZ12VB			06	6, 22	RUL9
# Universal Tone Rec'vr (UTR)	NT6X92CA			06	6, 22	RUL9
Desig. Label (NT6X92CA)	P0677831			06	6, 22	RUL9
GTR (NT6X92EA)	NTZZ12VC			06	6, 22	RUL9

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (Twisted Pair)

NTZZ47QD
EMC2-24-RCC-27
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Global Tone Rec'vr (GTR)	NT6X92EA			06	6, 22	RUL9
Desig. Label (NT6X92EA)	P0835224			06	6, 22	RUL9
# UTR (NT6X92BB)	NTZZ12VA			06	7, 21	RUL9
# UTR (NT6X92BC)	NTZZ12VB			06	7, 21	RUL9
# Universal Tone Rec'vr (UTR)	NT6X92CA			06	7, 21	RUL9
Desig. Label (NT6X92CA)	P0677831			06	7, 21	RUL9
GTR (NT6X92EA)	NTZZ12VC			06	7, 21	RUL9
Global Tone Rec'vr (GTR)	NT6X92EA			06	7, 21	RUL9
Desig. Label (NT6X92EA)	P0835224			06	7, 21	RUL9
Peripheral Loader BB	NTZZ02UB			06	7, 21	RUL9
Filler Plate	NT0X50AA			06	7, 21	RUL9
Quad Carrier	NTMX87AA			06	9, 19	RUL7
Dual DS1 Packlet	NTMX81AA			06	9:0-3	RUL7
					19:0-3	
Dual PCM30 Packlet	NTMX82AA			06	9:0-3	RUL7
					19:0-3	
Filler Face Plate	NTMX83AA			06	9:1-3	RUL7
					19:1-3	
Enhanced D-Channel Handler	NTZZ17BB			06	12, 14, 16	RUL10
Quad Frame Carrier	NTMX87AA			06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Dual PCM30 Packlet	NTMX82AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Dual PCM30 Packlet	NTMX82AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Dual PCM30 Packlet	NTMX82AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12, 14, 16	RUL10
CRSC Door label (Blue)	P0715089					RUL12
CRSC Door label (Green)	P0746294					RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X69AC NT6X92BB/BC/CA NTZZ12VA/VB	A&M STD* STD*	NT6X69AD NT6X92EA NTZZ12VC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FA and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KJ and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KH and are included for completeness.

- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 11) Refer to NTRX70 for Installation hardware kit applicable to RSC-S
- 12) STD* in flaglist means that the pec is still standard pending change. Check availability of replacement pec before ordering.

RULES:

- AP 1) When PEC NTZZ47QD is ordered, these items are provided.
- RUL1 1) Provide one NT6X04MD LCM Packfill, two NT6X04FA QFFI Fuse Assemblies and ten NT6X05AA Line Drawers to equip the LCM module in the CRSC. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCM is equipped.
- 2) Provide one NT6X04AX LCM Filler kit and two NT6X04FA QFFI Fuse Assy. when the internal LCM is not to be equipped. The NT6X04FA assemblies are needed to terminate internal cabling.
- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- 2) Provide two (2) NT6X30EA Low Profile Ringing Generators for all China or Australian applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30EAs are NOT provided.
- RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped for domestic applications

or one NT6X13EA RMM packfill for non-North American applications. If the RMM is not to be utilized, provide filler faceplates per Rule 5.

- RUL5
- 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
 - 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
 - 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
 - 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
 - 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
 - 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
 - 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
 - 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
 - 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.

- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
 Y denotes a slot that CAN be used for that pack.
 C denotes a slot that can be used for that pack ONLY
 if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision packlets for C-side interface based on host traffic requirements. Two interfaces are provided per packlet.

Provide two NTMX87AA Quad Carriers in slots 9 and 19 for all applications. At least two DS1 or PCM30 packets are needed for host interface for all applications. These two packets mount in slots 9:0 and 19:0.

- 2) Assign packets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packet)

- 3) Provide filler plates for all unused packet positions.

RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned.

- 2) Provide one (1) NTZZ02UB in slots 5 & 23 when support of fast recovery from lost load is required and support for Calling Number Delivery is not required. Also refer to Rule 9.

- 3) If slots 5 and 23 are not equipped, provide two (2) NT0X50AA fillers.

RUL9 1) One UTR/GTR Pair in Slot 6 & 22 is always required. Provide two NT6X92BC or one NTZZ12VB for domestic applications or two NT6X92CAs for international applications.

NOTE - The NTZZ12VC contains (2) NT6X92EA GTR cards and is used in all applications. Check availability before ordering. DO NOT mix 6X92 CPs on the same shelf. Replaces NT6X92BC and NT6X92CA when available.

- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide a second UTR pair for slots 7 and 21.

Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.

- 3) Provide one (1) NTZZ02UB in slots 7 & 21 when support of fast recovery from lost load is required, support for Calling Number Delivery is required and a second pair of UTRs is not needed. NTZZ02UB can be provided in either slots 5 and 23 or slots 7 and 21 (whichever pair of slots is available). Provide only one NTZZ02UB per RCC2.

- 4) If slots 7 and 21 are not equipped, provide two (2) NT0X50AA fillers.

- RUL10 1) When provisioning EDCHs, DS-30As and DS-1/PCM30s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the EDCH circuit packs are Always Provided as part of the shelf. The label for the EDCH is included in the NTZZ17BB Building Block.
- 3) When neither a EDCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration when BITS is not used. For all applications using BITS, ports 0 and 8 must be used for the BITS timing signals. For a Dual with BITS, the first two interlinks can use any two DS1 trunking ports that are not on the same packlet.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL11 1) Provide one RCC2 packfill per CRSC. Provide one NTZZ12XC when support for Building Integrated Timing System (BITS) is required OR one NTZZ12XB when BITS support is not needed.

- 2) Provide one NTZZ12XB/XC common CP fill per CRSC. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB/XC packfills contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. The following additional equipment must be supplied:

1. EITHER two (2) NTB01BA EISP packs and
two (2) P0713794 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
2. EITHER two (2) NT6X69AD packs and two (2)
P0800014 labels for standard distance capability
in XPM03/NA001 and higher applications. The

NT6X69AD replaces the NT6X69AC in all new applications. The NT6X69AC should only be ordered for BCS36 and lower applications. The NT6X69AD is required for the ADSI/SCWID feature available in BCS36+.

OR two (2) NTMX76AA packs and two (2) P0744109 labels for extended distance capability. The NTMX76AA does not support the ADSI/SCWID feature.

- 3) The HDLC Messaging used in the NTMX76-- pack allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
- 4) The NTMX73AB Signaling pack is included in the NTZZ12XC packfill. For existing offices that contain NTMX73AA packs and require Building Integrated Timing Supply (BITS), provide two NTMX73AB packs and labels and mount them in slots 11 and 17.

RUL12 1) Provide one P0715089 Door label per CRSC when grey equipment is supplied or one P0746294 Door label per CRSC when brown equipment is supplied.

RUL13 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCME-READY) (TWISTED PAIR)

PEC CODE: NTZZ47RQ

CPC CODE: B0243104

| RATING: MD

REPLACES: NTZZ47RN, NTZZ47RP

| REPLACED BY: NTMX89FB

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47RQ Building Block provides the base equipment for one CRSC equipped for an internal LCME. The LCME packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired for twisted pair cabling interfaces to the host, trunks and remote-off-remote. This cabling is typically used for DS1 applications but can also be used for PCM30, when the customer requires twisted pair cabling. The doors, cable troughs, anchors and cabinet mechanicals must be provided separately based on documentation referenced herein.

REFERENCE DOCUMENTATION: ISMX89 00 08

MARKETS: Applicable markets:

US
Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ47RQ EMC2-24-RCC-28 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 05 04	ECM 691 09	Introduce NTZZ47RQ.
95 06 07	ECM 691 10	Introduce NTZZ12XC for BITS support.
95 07 14	ECM 691 11	Added NT6X92BB/NTZZ12VA and second pair NT6X92CA provisioning. Corrected qty of NTZZ12VB from 2 to 1.
95 11 01	ECM 691 13	EC 024-95229 - Modify provisioning rules for the NT6X69AC/AD CPS.
96 04 02	ECM 691 15	Change reference NTB31BA to NTB31BB. Change per EC#024-94829. Add in NT6X69AC A&M replaced by NT6X69AD, NTB31BB A&M, add NTB31PB Kit. Answer SR RR60350 by adding German Label Kit provisionable. Add in NTZZ17HB per ECM 685 issue 10.
96 06 07	ECM 691 16	Add NTZZ12VC (NT6X92EA) GTR. MD section.

The Remote Switching Center - SONET Model B CRSC (LCME-ready) (Twisted Pair) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/ISDN Kit	NTMX89FB		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/ISDN MSP Kit	NTMX89KK		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (TwistPr) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/ISDN VF I/O Kit	NTMX89KG		1			AP
Blkhd 33 Connector Plate	NTMX8978		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
# ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME		33, 47		RUL1
ISDN 2B1Q Line Conc. Mod.	NTZZ17HB	LCME		33, 47		RUL1
# LCME Common CP	NTBX31BB	LCME	1	33, 47		AP07
LCME Common CP	NTBX31BC	LCME	1	33, 47		AP08
ISDN Enhanced Line Drawers	NTBX32BA	LD	8	33, 47	1, 5, 9, 13	AP07, AP08

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LCME Packfill Upgrade Kit	NTBX31PB					RUL1
LCM Notice Label	P0694813					RUL1
Line card caution nameplate	P0708739					RUL1
Subscriber Line Cards	AR					RUL1
LCME Fillers Plates	NTBX31AB			33,47		RUL1
Line Drawer fillers	NT6X05AX			33,47	1,5, 9,13	RUL1
External Power Kit (Vert.)	NTMX8904					RUL2
Internal Power Kit (Horiz.)	NTMX89KM					RUL2
Ringing Generator	NT6X30HA			65	1,2	RUL3
Ringing Generator Filler	NTRX25AK			65	1,2	RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB			19		RUL4
Remote Maint.Mod.(Intern'l)	NT6X13EA			19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Multiline Test (Analog)	NT4X98BB			19		RUL5
Multiline Test (Control)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG			19:17		RUL5
Filler Faceplate	NT0X50AA			19:19		RUL5
Filler Faceplate	NT0X50BE			19:20		RUL5
RMM Repowering Kit	NTMX89LA					RUL13
C28 English Label Kit	NTRX3541					RUL6
C28 German Label Kit	NTRX3542					RUL6
RCC2 Packfill (w/o EISP)	NTZZ12XB			06		RUL11
RCC2 Packfill (w/BITS)	NTZZ12XC			06		RUL11
Enhanced ISP	NTBX01BA			06	4,24	RUL11
Design label (NTBX01BA)	P0713794			06	4,24	RUL11
Filler faceplate	NT0X50AA			06	4,24	RUL11
# Enhanced Messaging CP	NT6X69AC			06	8,20	RUL11
Design label (NT6X69AC)	P0710476			06	8,20	RUL11
Enhanced Messaging CP (ADSI)	NT6X69AD			06	8,20	RUL11
Design label (NT6X69AD)	P0800014			06	8,20	RUL11
Extended Distance Messaging	NTMX76AA			06	8,20	RUL11
Design label (NTMX76AA)	P0744109			06	8,20	RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Signaling Circuit Pack	NTMX73AB			06	11, 17	RUL11
Design label (NTMX73AB)	P0805953			06	11, 17	RUL11
Class Modem Resource BB	NTZZ12UA			06	5, 23	RUL8
Peripheral Loader BB	NTZZ02UB			06	5, 23	RUL8
Filler Plate	NT0X50AA			06	5, 23	RUL8
# Universal Tone Rec'vr (UTR)	NT6X92BB			06	6, 22	RUL9
Desig. Label (NT6X92BB)	P0690565			06	6, 22	RUL9
# UTR (NT6X92BC)	NTZZ12VB			06	6, 22	RUL9
# Universal Tone Rec'vr (UTR)	NT6X92CA			06	6, 22	RUL9
Desig. Label (NT6X92CA)	P0677831			06	6, 22	RUL9
GTR (NT6X92EA)	NTZZ12VC			06	6, 22	RUL9
Global Tone Rec'vr (UTR)	NT6X92EA			06	6, 22	RUL9
Desig. Label (NT6X92EA)	P0835224			06	6, 22	RUL9
# UTR (NT6X92BB)	NTZZ12VA			06	7, 21	RUL9
# UTR (NT6X92BC)	NTZZ12VB			06	7, 21	RUL9
GTR (NT6X92EA)	NTZZ12VC			06	7, 21	RUL9
# Universal Tone Rec'vr (UTR)	NT6X92CA			06	7, 21	RUL9
Desig. Label (NT6X92CA)	P0677831			06	7, 21	RUL9
Global Tone Rec'vr (GTR)	NT6X92EA			06	6, 22	RUL9
Desig. Label (NT6X92EA)	P0835224			06	6, 22	RUL9
Peripheral Loader BB	NTZZ02UB			06	7, 21	RUL9
Filler Plate	NT0X50AA			06	7, 21	RUL9
Quad Carrier	NTMX87AA			06	9, 19	RUL7
Dual DS1 Packlet	NTMX81AA			06	9:0-3	RUL7
					19:0-3	
Dual PCM30 Packlet	NTMX82AA			06	9:0-3	RUL7
					19:0-3	
Filler Face Plate	NTMX83AA			06	9:1-3	RUL7
					19:1-3	
Enhanced D-Channel Handler	NTZZ17BB			06	12, 14, 16	RUL10
Quad Frame Carrier	NTMX87AA			06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Dual PCM30 Packlet	NTMX82AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Dual PCM30 Packlet	NTMX82AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Dual PCM30 Packlet	NTMX82AA			06	16:0-3	RUL10

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCME-ready) (Twisted Pair)

NTZZ47RQ
EMC2-24-RCC-28
Page 5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
CRSC Door label (Blue)	P0715089					RUL12
CRSC Door label (Green)	P0746294					RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X69AC	A&M	NT6X69AD
NTZZ17HA	A&M	NTZZ17HB
NTBX31BB	A&M	NTBX31BC
NT6X92BB/BC/CA	STD*	NT6X92EA
NTZZ12VA/VB	STD*	NTZZ12VC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.

- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FB and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KK and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KG and are shown for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 11) Items marked AP07 are included in NTZZ17HA and are shown for completeness.
- 12) Refer to NTRX70 for Installation hardware kit for use with RSC-S applications.
- 13) Items marked AP08 are included in NTZZ17HB and are shown for completeness.
- 14) STD* in flaglist means that the pec is still standard pending change. Check availability of replacement pec before ordering.

RULES:

- AP 1) When PEC NTZZ47RQ is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HB LCME Building Block for each LCME (2B1Q) module required. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen

from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set and eight NT6X05AX line drawer fillers when the LCME module is not to be equipped.
- 4) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 5) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 6) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 7) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480

POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 8) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 9) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 10) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- 11) Provide one (1) NTB31PB to upgrade one existing NTB31BB to NTB31BC. All existing LCMEs in CRSC are to be upgraded to the NTB31BC packfill.

- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This

would normally include extension of a Model A lineup using the Model B cabinet.

- RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- 2) Provide two (2) NT6X30EA Low Profile Ringing Generators for Chinese and Australian applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30EAs are NOT provided.
- RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped for domestic applications or one NT6X13EA RMM packfill to equip for non-North American applications. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.

- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16. The NT4X98BB is used in place of the NT2X10BB and the NT4X97AA in place of the NT2X11AD for non-North American applications.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y

NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English. Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provision packlets for C-side interface based on host traffic requirements. Two interfaces are provided per packlet. Provide two NTMX87AA Quad Carriers in slots 9 and 19 for all applications. At least two DS1 or PCM30 packlets mounted in slots 9:0 and 19:0 are required for host interface.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned.
- 2) Provide one (1) NTZZ02UB in slots 5 & 23 when support of fast recovery from lost load is required and support for Calling Number Delivery is not required. NTZZ02UB requires NA004 and XPM05 software or later. Also refer to Rule 9.
- 3) If slots 5 and 23 are not equipped, provide two (2) NT0X50AA fillers.
- RUL9 1) One UTR/GTR Pair in Slot 6 & 22 is always required. Provide two NT6X92BC or one NTZZ12VB for domestic applications or two NT6X92CAs for international applications.

NOTE - The NTZZ12VC contains (2) NT6X92EA GTR cards and is used in all applications. Check availability before ordering. DO NOT mix 6X92 CPs on the same shelf. Replaces NT6X92BC and NT6X92CA when available.

- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide a second UTR pair for slots 7 and 21.

Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.

- 3) Provide one (1) NTZZ02UB in slots 7 & 21 when support of fast recovery from lost load is required, support for Calling Number Delivery is required and a second pair of UTRs is not needed. NTZZ02UB can be provided in either slots 5 and 23 or slots 7 and 21 (whichever pair of slots is available). Provide only one NTZZ02UB per RCC2. NTZZ02UB requires NA004 and XPM05 software or later.

- 4) If slots 7 and 21 are not equipped, provide two (2) NT0X50AA fillers.

- RUL10 1) When provisioning EDCHs, DS-30As and DS-1/PCM30s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the EDCH circuit packs are Always Provided as part of the shelf. The label for the EDCH is included in the NTZZ17BB Building Block.
- 3) When neither a EDCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration when BITS is not used. For all applications using BITS, ports 0 and 8 must be used for the BITS timing signals. For a Dual with BITS, the first two interlinks can use any two DS1 trunking ports that are not on the same packet.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL11 1) Provide one RCC2 packfill per CRSC. Provide one NTZZ12XC when support for Building Integrated Timing System (BITS)

is required OR one NTZZ12XB when BITS support is not needed.

- 2) Provide one NTZZ12XB/XC common CP fill per CRSC. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB/XC packfills contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. The following additional equipment must be supplied:

1. EITHER two (2) NTB01BA EISP packs and
two (2) P0713794 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
2. EITHER two (2) NT6X69AD packs and two (2)
P0800014 labels for standard distance capability
in XPM03/NA001 and higher applications. The
NT6X69AD replaces the NT6X69AC in all new
applications. The NT6X69AC should only be
ordered for BCS36 and lower applications.
The NT6X69AD is required for the ADSI/SCWID
feature available in BCS36+.
OR two (2) NTMX76AA packs and two (2) P0744109
labels for extended distance capability. The
NTMX76AA does not support the ADSI/SCWID feature.

- 3) The HDLC Messaging used in the NTMX76-- pack allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
- 4) The NTMX73AB Signaling pack is included in the NTZZ12XC packfill. For existing offices that contain NTMX73AA packs and require Building Integrated Timing Supply (BITS), provide two NTMX73AB packs and labels and mount them in slots 11 and 17.

RUL12 1) Provide one P0715089 Door label per CRSC when grey equipment is supplied or one P0746294 Door label per CRSC when brown equipment is supplied.

RUL13 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power

feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCM-READY) (COAX)

PEC CODE: NTZZ47TC

CPC CODE: B0243103

| RATING: MD

REPLACES: NTZZ47TB

| REPLACED BY: NTMX89FA

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47TC Building Block provides the base equipment for one CRSC equipped for an internal LCM. The LCM packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired for coaxial cable interfaces to the host, trunks and remote-off-remote. This cabling is typically used for PCM30 interfaces, though PCM30 can also be supported on twisted pair when requested. The doors, anchors, frame fail lights and cabinet mechanicals must be ordered separately, based on documentation referenced herein.

REFERENCE DOCUMENTATION: ISMX89 00 08

MARKETS: Applicable markets:

Europe
CALA

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ47TC EMC2-24-RCC-29 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 05 04	ECM 691 09	NTZZ47TC Introduction.
95 11 01	ECM 691 13	Introduce the NT6X04BC packfill which contains the NT6X51AC CP.
96 04 02	ECM 691 15	Correct label reference.
96 06 07	ECM 691 16	Change per EC#024-94829. Add in NT6X69AC A&M replaced by NT6X69AD. MD section.

The Remote Switching Center - SONET Model B CRSC (LCM-ready) (Coax) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCM Kit	NTMX89FA		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringling Generator Shf Assy	NTRX25AG		1	65		AP02
Enhanced Line Module Shelf	NT6X0442		1	33		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/LCM MSP Kit	NTMX89KJ		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15,16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1,3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8,17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R,8R, 17R,20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (Coax) Kit	NTMX89KB		1			AP
PCM30 Coax PCB Assembly	NTMX8989		1	05		AP04
PCM30 Ext Blkhd 19 Plate	NTMX8980		1	19		AP04
CRSC/LCM VF I/O Kit	NTMX89KH		1			AP
Blkhd 33 Connector Plate	NTMX8969		1	33		AP05
Blkhd 47 Connector Plate	NTMX8982		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA		1	00		AP
10" Cooling Unit	NTRX91AA	CU	1	00		AP01
# LCM Packfill (Internat'l)	NT6X04BB			33		RUL1
LCM Packfill (Internat'l)	NT6X04BC			33		RUL1
QFFI Fuse Assembly	NT6X04FA			33,47		RUL1
Line Drawers	NT6X05AA			33		RUL1
LCM Module Fillers	NT6X04AX			33		RUL1
Line Drawer ID Labels	P0631765					RUL1
LCM Notice Label	P0694813					RUL1
Line card caution nameplate	P0708739					RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
External Power Kit (Vert.)	NTMX8904					RUL2
Internal Power Kit (Horiz.)	NTMX89KM					RUL2
Ringing Gen.(China/Austral)	NT6X30EA			65	1, 2	RUL3
Ringing Generator (U.K.)	NT6X30GA			65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK			65	1, 2	RUL3
Remote Maint.Mod.(Internat)	NT6X13EA	RMM		19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG			19:17		RUL5
Filler Faceplate	NT0X50AA			19:19		RUL5
Filler Faceplate	NT0X50BE			19:20		RUL5
RMM Repowering Kit	NTMX89LA					RUL13
C28 English label kit	NTRX3541					RUL6
C28 German label kit	NTRX3542					RUL6
Power Converter	NTMX72AA		2	06	1-2, 26-27	AP
Unified Processor	NTMX77AA		2	06	3, 25	AP
Enhanced ISP	NTBX01BA		2	06	4, 24	AP
Design label (NTBX01BA)	P0713794		2	06	4, 24	AP
Enhanced Matrix CP	NTMX75AA		2	06	10, 18	AP
PCM Signaling Processor	NTMX73AA		2	06	11, 17	AP
DS30A Interface CP	NTMX74AA		2	06	13, 15	AP
Messaging CP (International)	NT6X69LB			06	8, 20	RUL11
Desig. Label (NT6X69LB)	P0713213			06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA			06	8, 20	RUL11
Desig. Label (NTMX76AA)	P0744109			06	8, 20	RUL11
Peripheral Loader BB	NTZZ02UB			06	5, 23	RUL8
Filler Plate	NT0X50AA			06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	6, 22	AP
Desig. Label (NT6X92CA)	P0677831		2	06	6, 22	AP
Universal Tone Rec'vr (UTR)	NT6X92CA			06	7, 21	RUL9
Desig. Label (NT6X92CA)	P0677831			06	7, 21	RUL9
Filler Plate	NT0X50AA			06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (Coax)

NTZZ47TC
EMC2-24-RCC-29
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual PCM-30 Packlet	NTMX82AA		2	06	9:0 19:0	AP
Dual PCM-30 Packlet	NTMX82AA			06	9:1-3 19:1-3	RUL7
Filler Face Plate	NTMX83AA			06	9:1-3 19:1-3	RUL7
Enhanced D-Channel Handler	NTZZ17BB			06	12,14, 16	RUL10
Quad Frame Carrier	NTMX87AA			06	12	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	14	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	16	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
CRSC Door label (Blue)	P0715089					RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FA and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KJ and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KB and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KH and are included for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ47TC is ordered, these items are provided.
- RUL1 1) Provide one NT6X04BC LCM Packfill, two NT6X04FA QFFI Fuse Assemblies and ten NT6X05AA Line Drawers to equip the LCM module in the CRSC. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution nameplates when the LCM is equipped.
- 2) Provide one NT6X04AX LCM Filler kit and two NT6X04FA QFFI Fuse Assy. when the internal LCM is not to be equipped. The NT6X04FA assemblies are needed to terminate internal cabling.

- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30EA Low Profile Ringing Generators for all applications in China or Australia that will support POTS lines. Provide two (2) NT6X30GA Low Profile Ringing Generators for all applications in the United Kingdom that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30--s are NOT provided.
- RUL4 1) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.

- 7) Provide one (1) NT4X98BB and one (1) NT4X97AA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot and the NT4X97AA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS															
CIRCUIT PACK	03	04	05	06	07	08	09	10	11	12	13	14	15	16		
NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT4X98BB	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT4X97AA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		

NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
 Y denotes a slot that CAN be used for that pack.
 C denotes a slot that can be used for that pack ONLY
 if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- 2) Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provision PCM-30 packlets for C-side interface based on host traffic requirements. Two PCM-30 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one NTZZ02UB in slots 5 & 23 to provide support for the fast recovery from lost software load feature. This feature requires XPM05-based software (like NA004), or later. If NTZZ02UB is not equipped, provide two NT0X50AA fillers for slots 5 and 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide two NT6X92CAs and labels for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.

- RUL10 1) When provisioning EDCHs, DS-30As and PCM-30s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the EDCH circuit packs are Always Provided as part of the shelf. The label for the EDCH is included in the NTZZ17BB Building Block.
- 3) When neither a EDCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- RUL11 1) Provide two NT6X69LB CPs for standard applications. This pack supports the remote at a maximum distance of 100 miles from the host.
- 2) Provide two NTMX76AA CPs for Extended Distance Capability (requires NTMX76AA HDLC Messaging in the host XPM). EDC requires BCS-36 for International applications.
 - 3) The HDLC Messaging used in the NTMX76AA allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 4) Provide labels for the Messaging CPs provided.

- RUL12 1) Provide one P0715089 Door Label per CRSC for grey applications. Only grey equipment is currently supported for International application.

- RUL13 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCME-READY) (COAX)

PEC CODE: NTZZ47UC

CPC CODE: B0243102

| RATING: MD

REPLACES: NTZZ47UB

| REPLACED BY: NTMX89FB

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47UC Building Block provides the base equipment for one CRSC equipped for an internal LCME. The LCME packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired for coaxial cable interfaces to the host, trunks and remote-off-remote. Coaxial cable is typically used for PCM30 applications, though PCM30 can also be supported on twisted pair cable, if required by the customer. The doors, anchors, frame fail lights and cabinet mechanicals must be ordered separately based on documentation referenced herein.

REFERENCE DOCUMENTATION: ISMX89 00 08

MARKETS: Applicable markets:

Europe
CALA

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ47UC EMC2-24-RCC-30 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 05 04	ECM 691 09	NTZZ47UC Introduction.
95 11 01	ECM 691 13	Correct label reference. Minor changes.
96 04 02	ECM 691 15	Change per EC#024-94829. NTBX31BB A&M, add NTBX31PB Kit. Add NTZZ17HB per ECM 685 issue 10.
96 06 07	ECM 691 16	MD section.

The Remote Switching Center - SONET Model B CRSC (LCME-ready) (Coax) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCME Kit	NTMX89FB		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/ISDN MSP Kit	NTMX89KK		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (Coax) Kit	NTMX89KB		1			AP
PCM30 Coax PCB Assembly	NTMX8989		1	05		AP04
PCM30 Ext Blkhd 19 Plate	NTMX8980		1	19		AP04
CRSC/ISDN VF I/O Kit	NTMX89KG		1			AP
Blkhd 33 Connector Plate	NTMX8978		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
# ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME		33, 47		RUL1
ISDN 2B1Q Line Conc. Mod.	NTZZ17HB	LCME		33, 47		RUL1
# LCME Common CP	NTBX31BB	LCME	1	33, 47		AP07
LCME Common CP	NTBX31BC	LCME	1	33, 47		AP08
ISDN Enhanced Line Drawers	NTBX32BA	LD	8	33, 47	1, 5, 9, 13	AP07, AP08

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LCME Packfill Upgrade Kit	NTBX31PB					RUL13
LCME Packfill Upgrade Kit	NTBX31PA					RUL13
LCM Notice Label	P0694813					RUL1
Line card caution nameplate	P0708739					RUL1
Subscriber Line Cards	AR					RUL1
LCME Fillers Plates	NTBX31AB			33,47		RUL1
LD Fillers Plates	NT6X05AX			33,47	1,5 9,13	RUL1
External Power Kit (Vert.)	NTMX8904					RUL2
Internal Power Kit (Horiz.)	NTMX89KM					RUL2
Ringing Gen.(China/Austral)	NT6X30EA			65	1,2	RUL3
Ringing Generator (U.K.)	NT6X30GA			65	1,2	RUL3
Ringing Generator Filler	NTRX25AK			65	1,2	RUL3
Remote Maint.Mod.(Internat)	NT6X13EA	RMM		19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG			19:17		RUL5
Filler Faceplate	NT0X50AA			19:19		RUL5
Filler Faceplate	NT0X50BE			19:20		RUL5
RMM Repowering Kit	NTMX89LA					RUL14
C28 English Label Kit	NTRX3541					RUL6
C28 German Label Kit	NTRX3542					RUL6
Power Converter	NTMX72AA		2	06	1-2, 26-27	AP
Unified Processor	NTMX77AA		2	06	3,25	AP
Enhanced ISP	NTBX01BA		2	06	4,24	AP
Desig. Label (NTBX01BA)	P0713794		2	06	4,24	AP
Enhanced Matrix CP	NTMX75AA		2	06	10,18	AP
PCM Signaling Processor	NTMX73AA		2	06	11,17	AP
DS30A Interface	NTMX74AA		2	06	13,15	AP
Messaging CP (International)	NT6X69LB			06	8,20	RUL11
Desig. Label (NT6X69LB)	P0713213			06	8,20	RUL11

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCME-ready) (Coax)

NTZZ47UC
EMC2-24-RCC-30
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Extended Distance Messaging	NTMX76AA			06	8,20	RUL11
Desig. Label (NTMX76AA)	P0744109			06	8,20	RUL11
Peripheral Loader BB	NTZZ02UB			06	5,23	RUL8
Filler Plate	NT0X50AA			06	5,23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	6,22	AP
Desig. Label (NT6X92CA)	P0677831		2	06	6,22	AP
Universal Tone Rec'vr (UTR)	NT6X92CA			06	7,21	RUL9
Desig. Label (NT6X92CA)	P0677831			06	7,21	RUL9
Filler Plate	NT0X50AA			06	7,21	RUL9
Quad Carrier	NTMX87AA		2	06	9,19	AP
Dual PCM-30 Packlet	NTMX82AA		2	06	9:0	AP
					19:0	
Dual PCM-30 Packlet	NTMX82AA			06	9:1-3	RUL7
					19:1-3	
Filler Face Plate	NTMX83AA			06	9:1-3	RUL7
					19:1-3	
Enhanced D-Channel Handler	NTZZ17BB			06	12,14,	RUL10
					16	
Quad Frame Carrier	NTMX87AA			06	12	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	14	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	16	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14,	RUL10
					16	
CRSC Door label (Blue)	P0715089					RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ17HA NTBX31BB	A&M A&M	NTZZ17HB NTBX31BC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FB and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KK and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KB and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KG and are shown for completeness.

- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 11) Items marked AP07 are included in NTZZ17HA and are shown for completeness.
- 12) Items marked AP08 are included in NTZZ17HB and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ47UC is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HB LCME Building Block for each LCME (2B1Q) module required. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution nameplates when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set and eight NT6X05AX Line Drawer fillers when the LCME module is not to be equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HB. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5, 9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS

line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.

- 6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as

POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
 - 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- RUL2
- 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.
 - 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3
- 1) Provide two (2) NT6X30EA Low Profile Ringing Generators for all applications in China or Australia that will support POTS lines. Provide two (2) NT6X30GA Low Profile Ringing Generators for all applications in the United Kingdom that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30--s are NOT provided.
- RUL4
- 1) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5
- 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
 - 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.

- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT4X98BB and one (1) NT4X97AA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot and the NT4X97AA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

CIRCUIT PACK	03	04	05	06	07	08	09	10	11	12	13	14	15	16
NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- 2) Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provision PCM-30 packlets for C-side interface based on host traffic requirements. Two PCM-30 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one NTZZ02UB in slots 5 & 23 to provide support for the fast recovery from lost software load feature. This feature requires XPM05-based software (like NA004), or

later. If NTZZ02UB is not equipped, provide two NT0X50AA fillers for slots 5 and 23.

RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.

- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide two NT6X92CAs and labels for slots 7 and 21.

Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.

- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.

RUL10 1) When provisioning EDCHs, DS-30As and PCM-30s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the EDCH circuit packs are Always Provided as part of the shelf. The label for the EDCH is included in the NTZZ17BB Building Block.
- 3) When neither a EDCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

RUL11 1) Provide two NT6X69LB CPs for standard applications. This pack supports the remote at a maximum distance of 100 miles from the host.

- 2) Provide two NTMX76AA CPs for Extended Distance Capability (requires NTMX76AA HDLC Messaging in the host XPM). (EDC requires BCS-36 for International applications.)

- 3) The HDLC Messaging used in the NTMX76AA allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 4) Provide labels for the Messaging CPs provided.
- RUL12 1) Provide one P0715089 CRSC Label per CRSC for grey applications. Only grey equipment is currently supported for International application.
- RUL13 1) Provide one NTB31PA kit to upgrade one existing NTB31BA LCME packfill to NTB31BB. Provide one (1) NTB31PB kit to upgrade one existing NTB31BA to NTB31BC. All existing LCMEs in CRSC are to be upgraded to NTB31BC packfills.
- RUL14 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE CLUSTER CONTROLLER 2 SHELF
PACKFILL

PEC CODE: NTZZ12XM

CPC CODE: B0246880

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: NTZZ12XB

ABBREVIATION NAME: RCC2

ENGINEERING DESCRIPTION: The RCC2 is the remote office deployment of the Compact Peripheral Module (CPM) family of peripherals for the DMS-100 family. The RCC2 is based on a one (RCC2) or two shelf configuration (RCC2 and EXT) which must be provisioned separately. The RCC2 Shelf (RCC2) supports a Maximum of 54 P-Side Ports, 16 C-Side Ports and Dual RCC2 configurations. This RCC2 packfill supports Provisionable EISPs, which require BCS-35 or greater. This packfill requires either standard NT6X69-- or extended distance NTMX76-- messaging packs, based on

office requirements. The NTMX77AA Processor included in this packfill is to be used for DMS-100i, APC and EURO applications until further notice.

REFERENCE DOCUMENTATION: SLZZ12XM REL 02

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Mark Sorrell Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NTZZ12XM EMC2-24-RCC-36 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 06 07	ECM 691 16	Created section.
96 10 24	ECM 691 17	Per GPRD/Design Mgmt decision, and to solve technical issues, change the NTMX72AB back to NTMX72AA.
97 05 02	ECM 691 21	MD NTZZ12XM and replace by NTZZ12XB.

The Remote Cluster Controller 2 Shelf Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter	NTMX72AA		2	X	1-2, 26-27	AP
Processor	NTMX77AA		2	X	3,25	AP
Enhanced Matrix CP	NTMX75AA		2	X	10,18	AP
PCM Signaling Processor	NTMX73AA		2	X	11,17	AP
DS30A Interface CP (Intl.)	NTMX74AA		2	X	13,15	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to higher level Engineering Manual Sections for product specific shelf positioning (i.e., X value).

RULES:

- AP 1) When PEC NTZZ12XM is ordered, these items are provided.

| REMOTE CLUSTER CONTROLLER COMMON CP

NTZZ12YA

RATING: MD. Replaced By NTZZ12YB

ABBREVIATION NAME: RCC

ENGINEERING DESCRIPTION: The Remote Control Cluster (RCC) module is an LTC type peripheral controller module, in a remote site, which is an interface between the DS-1 links to an LGC/LTC at the host and the LCM's, DS-1 trunks, and RMM at the remote site.

REFERENCE DOCUMENTATION: N/A

The Remote Cluster Controller Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AG	RCC	1	18		AP
Design Strip (NT6X12AG)	P0713149		2	32,18		AP-01
DS-30A LCM Interface	NT6X48AA		4	32,18	6-7	AP
LGC/LTC Processor CP	NT6X45BC		2	32,18	08	AP
Desig. Label NT6X45BC	P0713576		2	32,18	08	AP
Filler Face Plate	NT0X50AA		4	32,18	09-10	AP-01
Master Proc Memory CP	NT6X47AC		2	32,18	11	AP-01
SP Memory Plus CP	NT6X46BB		2	32,18	12	AP-01
LGC/DTC Processor CP	NT6X45BC		2	32,18	13	AP
Desig. Label NT6X45BC	P0713576		2	32,18	13	AP
Time Switch CP	NT6X44AA		2	32,18	15	AP-01
Domestic Univtone Rec CP	NT6X92BB		2	32,18	16	AP-01
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
Host Link formatter CP	NT6X72AB		2	32,18	19	AP
Filler FP .875 (24)	NT0X50AA		2	32,18	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

FLAGS:

NOTES:

RULES:

AP 1) When PEC NTZZ12YA is ordered, these items are provided.

RUL1 1) When PEC NT6X12AG these items are always provided.

REMOTE CLUSTER CONTROLLER COMMON CP

PEC CODE: NTZZ12YB

| CPC CODE: B0236137

| RATING: MD.

| REPLACES: NTZZ12HC

| REPLACED BY: Replaced by NTZZ12YD

ABBREVIATION NAME: RCC

ENGINEERING DESCRIPTION: The Remote Control Cluster (RCC) module is an LTC type peripheral controller module, in a remote site, which is an interface between the DS-1 links to an LGC/LTC at the host and the LCM's, DS-1 trunks, and RMM at the remote site.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: NTI: Barry Bond Dept. 3471 (PPK)

NTZZ12YB EMC2-24-RCC-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 05 10	----- ECM 618 09	Previous history not available Include NT6X48AA designation labels per ET-16659. MD. Replaced by NTZZ12YD.
94 03 21	ECM 618 12	

The Remote Cluster Controller Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AG	RCC	1	18		AP
Design Strip (NT6X12AG)	P0713149		2	32,18		AP-01
DS-30A LCM Interface	NT6X48AA		4	32,18	6-7	AP
Desig. Label NT6X48AA	P0626877		4	32,18	6-7	AP
LGC/LTC Processor CP	NT6X45BC		2	32,18	08	AP
Desig. Label NT6X45BC	P0713576		2	32,18	08	AP
Filler Face Plate	NT0X50AA		4	32,18	09-10	AP-01
Master Proc Memory CP	NT6X47AC		2	32,18	11	AP-01
SP Memory Plus CP	NT6X46BB		2	32,18	12	AP-01
LGC/DTC Processor CP	NT6X45BC		2	32,18	13	AP
Desig. Label NT6X45BC	P0713576		2	32,18	13	AP
Time Switch CP	NT6X44AA		2	32,18	15	AP-01
Domestic Univtone Rec CP	NT6X92BB		2	32,18	16	AP-01
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
Host Link formatter CP	NT6X72AB		2	32,18	19	AP-01
Filler FP .875 (24)	NT0X50AA		2	32,18	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ12YB is ordered, these items are provided.

AP-01 1) When PEC NT6X12AG these items are always provided.

RCC2 OFFSHORE EXT CP FILL

PEC CODE: NTZZ37KA

CPC CODE: B0235437

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ47SB and NTZZ47SN

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The CEXT frame is a slave extension of the RCC2 shelf divided into two functional modules on a single card cage which are provisioned independently of each other. The left side (card slots 1-13) is always connected to the first RCC2 provisioned and the right side (card slots 14-26) is connected to the second RCC2 in a Dual or CO-Located RSC-S configuration. If the right side is not used it is filled with filler face plates via the EXT Filler Kit (or 2 NT0X50AC and 11 NT0X50AA filler faceplates).

The EXT frame is provisioned to increase the flexibility of P-Side port assignments.

Note:

The RCC2 has the capacity for 54 P-Side ports (3 D-Channel Handler (DCH), 32 DS30As, and xx PCM30s) the total of which is not to exceed 54. The EXT frame increases the quantity of DCHs and PCM30s which may be assigned to the RCC2 by housing the additional CPs.

Increasing the DCHs to the maximum of 10 CPs is at the expense of PCM30s. Increasing the quantity of PCM30s to the maximum of 46 is at the expense of DS30As.

REFERENCE DOCUMENTATION: SLZZ37KA 00 02
NTZZ37KA REL 02

MARKETS:

Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: NTI: Barry Bond Dept. 3471 (PPK)

NTZZ37KA EMC2-24-RCC-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
95 09 05	ECM 639 11	MD section per EC 24-94287, replaced by NTZZ47SB and NTZZ47SN.

The RCC2 Offshore EXT CP Fill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS60 Extender CP	NTMX79AA		2	05	Y,Y+11	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ37KA is ordered, these items are provided.

RCC WITH XPM+

PEC CODE: NTZZ46EA

CPC CODE: B0237306

| RATING: MD.

REPLACES: Not Applicable

| REPLACED BY: NTZZ46EB

ABBREVIATION NAME: RCC+

ENGINEERING DESCRIPTION: This Building Block provides the packfill for an RCC, equipped with the Unified Processor (XPM+). The Unified Processor increases the memory and capacity of the XPM, compared to MP/SP configurations.

REFERENCE DOCUMENTATION: SLZZ46EA 00 01

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: NTI: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

NTZZ46EA EMC2-24-RCC-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 02 22	ECM 678 01	Introduce NTZZ46EA Building Block.
93 10 14	ECM 678 06	Include packfill in Building Block.
93 11 16	ECM 678 07	Correct NTMX77AA location to slot 13.
94 03 21	ECM 618 12	MD. Replaced by NTZZ46EB.

The RCC with XPM+ is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RCC Packfill	NT6X12AK		1	18		AP
Filler Faceplates	NT0X50AA		8	18,32	8,9, 10,11	AP01
Unified Processor	NTMX77AA		2	18,32	13	AP01
Desig. label (NTMX77AA)	P0735417		2	18,32	13	AP01
Time Switch CP	NT6X44AA		2	18,32	15	AP01
Universal Tone Receiver	NT6X92BB		2	18,32	16	AP01
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP01
Terminator Card	NTMX71AA		2	18,32	18R	AP01
Desig. Strip (NT6X12AK)	P0713149		2	18,32		AP01
DS-30A LCM Interface	NT6X48AA		4	18,32	6,7	AP
Messaging Pack	NT6X69AC		2	18,32	17	AP
Filler FP	NT0X50AA		4	18,32	12,24	AP
Power Converter	NT2X70AE		2	18,32	25	AP
Desig. label (NT6X69AC)	P0710476		2	18,32	17	AP
Desig. label (NT2X70AE)	P0698943		2	18,32	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

Items marked AP01 are included in NT6X12AK and are shown for completeness.

RULES:

AP 1) When PEC NTZZ46EA is ordered, these items are provided.

REMOTE MAINTENANCE MODULE
IN CMIS FOR RSC-S

PEC CODE: NTZZ45EA

| CPC CODE: B0237865

| RATING: MD

| REPLACES: N/A

| REPLACED BY: N/A

ABBREVIATION NAME: RMM

ENGINEERING DESCRIPTION: This NTZZ45EA Building Block contains an RMM, RMM shelf assembly, and associated hardware to mount in the CMIS frame. The RMM in CMIS is provided when an additional RMM is needed for the RSC-S application.

REFERENCE DOCUMENTATION: SLZZ45EA 00 01
NTZZ45EA REL 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Barry Bond Dept. 3471 (PPK)

NTZZ45EA EMC2-24-RMM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 01 21 95 08 30	ECM 655 01 ECM 655 09	To introduce NTZZ45EA MD SECTION PER ECD 006-21515.

The Remote Maintenance Module in CMIS for RSC-S is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMM Common CP	NT6X13AB		1	XX		AP
RMM Shelf Assembly	NT6X1306		1	XX		AP
Design Strip (NT6X13AB)	P0653639		1	XX		AP-01
TM Group Codec CP	NT2X59AA		1	XX	01	AP-01
RMM Control Card CP	NT6X74AB		1	XX	02	AP-01
Maintenance Trunk Card	AR			XX	03-16	RUL1
Filler Face Plate	NT0X50AC			XX	03-16	RUL1
Multi O/P Pwr Converter	NT2X09AA		1	XX	17	AP-01
Filler Face Plate .875	NT0X50AA		1	XX	19	AP-01
Power Converter Comm Feat.	NT2X06AB		1	XX	20	AP-01
Cable Support Bracket	P0642031		1	XX		AP
Screw .216-24 X .5 STL 289A	P097F813		2	XX		AP
Hardware Kit	NTRX34MD		1	XX		AP
RMM Wiring	NTRX34WN		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) XX = Shelf position 5, 19, 33, or 47 in the CMIS.

RULES:

- AP 1) When PEC NTZZ45EA is ordered, these items are provided.
- AP-01 2) This PEC is always provided in the RMM Common CP Fill (NT6X13AB) and is shown here for completeness.
- RUL1 1) The following Service Circuits are provisionable on the RMM:
- NT3X09BA - Remote Metallic Test Access (mounts in even CP pos)
 - NT0X10AA - Scan (SC) Point Card (14 SC Points Per Card)
 - NT2X10BA/NT2X11BA - MTU
 - NT2X57AA - Signal Distribution (SD) Card (14 SD Points Per Car
 - NT2X90AD - INC/OG Test Trunk (Required For Metallic Testing)
 - NT3X04AA - Incoming Test Trunk for AE CO.
 - NT2X77AA - Balanced Network (provide 1 with every NT2X90AD)
- 2) Due to bulkhead cabling limitations, RMMs in CMIS for RSC-S applications have additional mounting restrictions. Refer to the following for allowable circuit pack mounting locations:

RMM SLOT	ALLOWED CIRCUIT PACK
-----	-----
3	NT2X10BA
4	NT2X11BA
5	NT0X10AA
6	NT3X09BA
7	NT2X90AD for MONTALK
7R	NT2X77AA
8	NT2X90AD for MONTALK
8R	NT2X77AA
9	NT2X90AD for VERIFICATION 90
9R	NT2X77AA
10	NT2X90AD for VERIFICATION 90
10R	NT2X77AA
11	FULLY PROVISIONABLE WITHIN RULES
12	FULLY PROVISIONABLE WITHIN RULES
13	FULLY PROVISIONABLE WITHIN RULES
14	FULLY PROVISIONABLE WITHIN RULES
15	FULLY PROVISIONABLE WITHIN RULES
16	FULLY PROVISIONABLE WITHIN RULES

- 3) Any card slot 3 thru 16 not equipped with a circuit pack per this rule shall be equipped with an NT0X50AC Filler Face Plate.

REMOTE MAINTENANCE MODULE
IN CMIS MODEL B

PEC CODE: NTZZ45PA

CPC CODE: B0237401

RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTRX56AA

ABBREVIATION NAME: RMM

ENGINEERING DESCRIPTION: This NTZZ45PA Building Block contains an RMM, RMM shelf assembly, and associated hardware to mount in the CMIS Model B cabinet.

REFERENCE DOCUMENTATION: SLZZ45PA 00 01
MSRX56AA 01 06

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ45PA EMC2-24-RMM-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 08 04 96 03 22	ECM 683 07 ECM 602 25	To introduce NTZZ45PA MD and retire section per BBRAT; information duplicated in NTRX56AA.
96 10 11	ECM 602 27	Include the NTRX56AA in the Replaced by section of this document.

The Remote Maintenance Module in CMIS Model B is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMM Kit	NTRX59AU		1	XX		AP
RMM Shelf	NT6X1306		1	XX		AP
Connector Plate RMM	P0744235		1	YY		AP
RMM Common CP	NT6X13AB		1	XX		AP
Designation Strip (NT6X13AB)	P0653639		1	XX		AP-01
TM Group Codec CP	NT2X59AA		1	XX	01	AP-01
RMM Control Card	NT6X74AB		1	XX	02	AP-01
Multi O/P Pwr Converter	NT2X09AA		1	XX	17	AP-01
Filler Face Plate .875	NT0X50AA		1	XX	19	AP-01
Power Converter Comm Feat.	NT2X06AB		1	XX	20	AP-01
CMIS Alarm and Power Cable	NTRX5623					RUL1
Maintenance Trunk Cards	AR			XX	03-16	RUL2
Filler Face Plate	NT0X50AC			XX	03-16	RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NOT APPLICABLE		

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) XX = Shelf position 5, 19, 33, or 47 in the CMIS Model B.
- 2) YY = Connector plate zones A/B, C/D, E/F, G/H in the CMIS Model B. Equivalent to positions 3, 18.5, 34, 49.5.

- 3) The following shows the mounting positions of the RMM in relation to the mounting positions of the Connector Kit on the bulkhead

KIT/UNIT	MTG POS	CONN PLATE	CONN PLT ZONE
NTRX59AU NT6X1306	05	P0744235	A, B
	19		C, D
	33		E, F
	47		G, H

RULES:

AP 1) When PEC NTZZ45PA is ordered, these items are provided.

AP-01 2) This PEC is always provided in the RMM Common CP Fill (NT6X13AB) and is shown here for completeness.

RUL1 1) Provide (1) NTRX5623 CMIS Alarm and Power Cable per (2) B Feed RMMs to provide power to the power converters in the RMM shelf. Provide a second NTRX5623 per (2) A Feed RMMs, if required. A maximum of (2) NTRX5623 should be provided for the maximum of (4) RMMs allowable in a CMIS.

If normal Power Feed provisioning guidelines are followed, as specified above, (1) NTRX5623 will be provisioned for the first RMM (B Feed). A second NTRX5623 will be provided for the second RMM (A Feed). The third and fourth RMMs not require additional NTRX5623 Cables. They will use the two NTRX5623 already provisioned.

RUL2 1) The following Service Circuits are provisionable in slots 03- 16 on the RMM:

- NT2X10BA - MULTI-LINE TEST UNIT ANALOG CARD (NORTH AMERICAN)
- NT2X11BA - MULTI-LINE TEST UNIT CONTROL CARD (NORTH AMERICAN)
- NT4X98-- - METALLIC TEST ACCESS (MTU) ANALOG
- NT4X97-- - METALLIC TEST ACCESS (MTU) CONTROLLER
- NT0X10AA - SCAN (SC) POINT CARD (14 SC POINTS PER CARD)
- NT2X57AA - SIGNAL DISTRIBUTION (SD) CARD (14 SD POINTS PER CARD)
- NT2X90AD - INC/OG TEST TRUNK (REQUIRED FOR METALLIC TESTING)

- NT2X77AA - BALANCED NETWORK (PROVIDE 1 WITH EVERY NT2X90AD)
- NT3X04AA - INCOMING TEST TRUNK FOR AE CO.
- NT3X09BA - REMOTE METALLIC TEST ACCESS

- 2) The provisioning rules for the RMM shelf circuit packs in location 03-16 apply as follows:

CIRCUIT PACK	SLOTS															
	03	04	05	06	07	08	09	10	11	12	13	14	15	16		
NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT4X98--	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT4X97--	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		
NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y		

NOTE1: N denotes a slot that CANNOT be used for that pack.
 Y denotes a slot that CAN be used for that pack,
 C denotes a slot that CAN ONLY BE used for that pack
 IF the SLOT WILL NOT be used for out-of office leads.

NOTE2: The NT2X77AA is located at the rear on the same slot
 the NT2X90AD is located.

- 3) Any card slot 3 thru 16 not equipped with a circuit pack per this rule shall be equipped with an NT0X50AC Filler Face Plate.

OFFICE ALM X-CONN/PRIMARY ALM UNIT

PEC CODE: NTZZ31JA

CPC CODE: B0238560

RATING: MD

REPLACES: Not applicable

REPLACED BY: NTZZ31JB

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ31JA is the office alarm cross-connect shelf (AXU), primary alarm MTM (OAU), associated hardware, and cabling.

REFERENCE DOCUMENTATION: SLRX32CA 01 02
MSRX32CA 00 02

MARKETS: Applicable markets:

US
CALA
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ31JA EMC2-25-AXU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	Initial Issue
94 03 11	ECM 683 03	EC 018 40883, ET 45563
94 11 11	ECM 683 11	MD
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.

The NTZZ31JA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
Alarm Cross Connect Shelf	NT3X89AB	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
OAU Bulkhead Cabling	NTRX32DA		4	47		AP
AXU Bulkhead Cabling	NTRX32DD		2	47		AP
AXU Bulkhead Cabling	NTRX32EP		10	47		AP
AXU Bulkhead Cabling	NTRX32EQ		10	47		AP
AXU Bulkhead Cabling	NTRX32DG		1	47		AP
AXU Bulkhead Cabling	NTRX32EK		1	47		AP
AXU Bulkhead Cabling	NTRX32ER		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		5	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
37-Pin Filter Adapter	A0316598		10	47		AP
9-Pin Filter Adapter	A0344127		8	47		AP
9-Pin Filter Adapter	A0336796		1	47		AP
Filter Adapter Mounting Kit	NTRX3253		19	47		AP
Primary MTM Shelf	NT2X58CA	OAU	1	33		AP
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Trunk Module Common CP Fill	NT2X58AZ		1	33		AP
Personality Plate (AXU/OAU)	P0741849		1	33		AP
Stud Cover Kit (MTM)	NTRX3257		1	33		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there. See Table D in Section EMA14-04-000 for cards mounted on this unit.
- 2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:

For OAU

 One NTRX32DA for each of the following:
 OAU slot 13 to bulkhead connector 33C08
 OAU slot 14 to bulkhead connector 33C09
 OAU slot 15 to bulkhead connector 33C10
 OAU slot 16 to bulkhead connector 33C11

For AXU

 One NTRX32DD for each of the following:
 AXU connector C00 to bulkhead connector 33C00
 AXU connector C01 to bulkhead connector 33C01

One NTRX32EP for each of the following:
 AXU connector C05 to bulkhead connector 47C05
 AXU connector C06 to bulkhead connector 47C06
 AXU connector C09 to bulkhead connector 47C09

AXU connector C10 to bulkhead connector 47C10
AXU connector C13 to bulkhead connector 47C13
AXU connector C14 to bulkhead connector 47C14
AXU connector C17 to bulkhead connector 47C17
AXU connector C18 to bulkhead connector 47C18
AXU connector C21 to bulkhead connector 47C21
AXU connector C22 to bulkhead connector 47C22

One NTRX32EQ for each of the following:

AXU connector C03 to bulkhead connector 47C03
AXU connector C04 to bulkhead connector 47C04
AXU connector C07 to bulkhead connector 47C07
AXU connector C08 to bulkhead connector 47C08
AXU connector C11 to bulkhead connector 47C11
AXU connector C12 to bulkhead connector 47C12
AXU connector C15 to bulkhead connector 47C15
AXU connector C16 to bulkhead connector 47C16
AXU connector C19 to bulkhead connector 47C19
AXU connector C20 to bulkhead connector 47C20

One NTRX32DG to connect:

AXU connector F00 to bulkhead connector 33F00,33F00A

One NTRX32EK to connect:

AXU connector F01 to bulkhead connector 33F01,33F01A

One NTRX32ER to connect:

AXU connector G00 to bulkhead connector 33G00

One NTRX32EB to connect:

AXU connector C43 to bulkhead connector 33C43

One NTRX32EC to connect:

AXU connector C44 to bulkhead connector 33C44

One NTRX32ED to connect:

AXU connector TB TB1 to bulkhead connector 33T01

One NTRX32EE to connect:

AXU connector TB TB1 to bulkhead connector 33T03

One NTRX32EF to connect:

AXU connector TB TB1 to bulkhead connector 33T04

One NTRX32EG to connect:

AXU connector TB TB1 to bulkhead connector 33T05

One NTRX32EH to connect:

AXU connector TB TB1 to bulkhead connector 33T06

One NTRX32EJ to connect:

AXU connector TB TB1 to bulkhead connector 33T02

One NTRX3242 for each of the following:

AXU connector A00 to MTM/OAU at shelf 33 slot 09

AXU connector A04 to MTM/OAU at shelf 33 slot 07

AXU connector A05 to MTM/OAU at shelf 33 slot 05

One NTRX3243 for each of the following:

AXU connector A01 to MTM/OAU at shelf 33 slot 10

AXU connector A02 to MTM/OAU at shelf 33 slot 12

AXU connector A06 to MTM/OAU at shelf 33 slot 08 -Note

AXU connector A07 to MTM/OAU at shelf 33 slot 08 -Note

AXU connector A08 to MTM/OAU at shelf 33 slot 11

One NTRX3244 for each of the following:

AXU connector A03 to MTM/OAU at shelf 33 slot 13

-Note: Slot 08 shall be connected either to connector A06 when provisioned with a NT3X83AA or to connector A07 when provisioned with a NT3X84AA.

- 3) One A0316598 Filter Adapter and one Filter Adapter Mounting Kit, for each personality plate in positions shown in the following table:

Personality Plate	Shelf	Personality Plate Position
P0739915 (Pos.33)	AXU/OAU	F00, F00A,F01,F001A* C09-C11,C43,C44 G00

* 9-Pin Filter Adapter A0336796 is required for position F001A.

- 4) One A0344127 Filter Adapter and one Filter Adapter Mounting Kit, for each personality plate in positions shown in the following table:

Personality Plate	Shelf	Personality Plate Position
P0739915 (Pos.33)	AXU/OAU	T01 - T06,

RULES:

AP 1) When PEC NTZZ31JA is ordered, these items are provided.

OFFICE ALM X-CONN/PRIMARY ALM UNIT (INTERNATIONAL)

PEC CODE: NTZZ31SB

CPC CODE: B0241892

| RATING: MD

REPLACES: NTZZ31SA

| REPLACED BY: No Replacement

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ31SB is the office alarm cross-connect shelf (AXU), primary alarm MTM (OAU), associated hardware, and cabling. This Building Block is for International usage only.

REFERENCE DOCUMENTATION: SLRX32CA 01 03
MSRX32CA 00 04
SLZZ31SB REL 03

MARKETS: Applicable markets:

CALA
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NTZZ31SB EMC2-25-AXU-10 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 11 11	ECM 683 11	Initial Issue
94 12 09	ECM 683 13	Make P0670923, P0715809 AP
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
96 02 09	ECM 601 28	MD and Retire this EMS.
96 03 08	ECM 601 29	Change mounting locations for filter adapters per SR-RR60597.
96 10 25	ECM 683 24	Change Status back to STD from MD. MD per EC018-48743 (NT2X58BC)

The Office Alm X-Conn/Primary Alm Unit (International) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
Alarm Cross Connect Shelf	NT3X89AB	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
OAU Bulkhead Cabling	NTRX32DA		3	47		AP
AXU Bulkhead Cabling	NTRX32DD		2	47		AP
AXU Bulkhead Cabling	NTRX32EP		10	47		AP
AXU Bulkhead Cabling	NTRX32EQ		10	47		AP
AXU Bulkhead Cabling	NTRX32DG		1	47		AP
AXU Bulkhead Cabling	NTRX32EK		1	47		AP
AXU Bulkhead Cabling	NTRX32ER		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		4	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
37-Pin Filter Adapter	A0316598		8	33		AP
9-Pin Filter Adapter	A0344127		6	33		AP
9-Pin Filter Adapter	A0336796		1	33		AP
Filter Adapter Mounting Kit	NTRX3253		15	33		AP
Primary IMTM Shelf	NT2X58BC	OAU	1	33		AP
L+/L- Label	P0737636		1	33		AP
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Trunk Module Common CP Fill	NT2X58AY		1	33		RUL1
Trunk Module Common CP Fill	NT2X58CL		1	33		RUL1
Trunk Module Common CP Fill	NT2X58DB		1	33		RUL1
Trunk Module Common CP Fill	NT2X58DC		1	33		RUL1
Personality Plate (AXU/OAU)	P0741849		1	33		AP
Stud Cover Kit (MTM)	NTRX3257		1	33		AP
Screw	P0670923		2	NOTE 5		AP
9 Pin Cover Plate	P0715809		1	NOTE 5		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there. See Table D in Section EMA14-04-000 for cards mounted on this unit.
- 2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:

For OAU

 One NTRX32DA for each of the following:
 OAU slot 13 to bulkhead connector 33C08
 OAU slot 14 to bulkhead connector 33C09
 OAU slot 15 to bulkhead connector 33C10
 OAU slot 16 to bulkhead connector 33C11

For AXU

 One NTRX32DD for each of the following:
 AXU connector C00 to bulkhead connector 33C00
 AXU connector C01 to bulkhead connector 33C01

 One NTRX32EP for each of the following:
 AXU connector C05 to bulkhead connector 47C05
 AXU connector C06 to bulkhead connector 47C06
 AXU connector C09 to bulkhead connector 47C09

AXU connector C10 to bulkhead connector 47C10
AXU connector C13 to bulkhead connector 47C13
AXU connector C14 to bulkhead connector 47C14
AXU connector C17 to bulkhead connector 47C17
AXU connector C18 to bulkhead connector 47C18
AXU connector C21 to bulkhead connector 47C21
AXU connector C22 to bulkhead connector 47C22

One NTRX32EQ for each of the following:

AXU connector C03 to bulkhead connector 47C03
AXU connector C04 to bulkhead connector 47C04
AXU connector C07 to bulkhead connector 47C07
AXU connector C08 to bulkhead connector 47C08
AXU connector C11 to bulkhead connector 47C11
AXU connector C12 to bulkhead connector 47C12
AXU connector C15 to bulkhead connector 47C15
AXU connector C16 to bulkhead connector 47C16
AXU connector C19 to bulkhead connector 47C19
AXU connector C20 to bulkhead connector 47C20

One NTRX32DG to connect:

AXU connector F00 to bulkhead connector 33F00,33F00A

One NTRX32EK to connect:

AXU connector F01 to bulkhead connector 33F01,33F01A

One NTRX32ER to connect:

AXU connector G00 to bulkhead connector 33G00

One NTRX32EB to connect:

AXU connector C43 to bulkhead connector 33C43

One NTRX32EC to connect:

AXU connector C44 to bulkhead connector 33C44

One NTRX32ED to connect:

AXU connector TB TB1 to bulkhead connector 33T01

One NTRX32EE to connect:

AXU connector TB TB1 to bulkhead connector 33T03

One NTRX32EF to connect:

AXU connector TB TB1 to bulkhead connector 33T04

One NTRX32EG to connect:

AXU connector TB TB1 to bulkhead connector 33T05

One NTRX32EH to connect:

AXU connector TB TB1 to bulkhead connector 33T06

One NTRX32EJ to connect:

AXU connector TB TB1 to bulkhead connector 33T02

One NTRX3242 for each of the following:

AXU connector A00 to MTM/OAU at shelf 33 slot 09

AXU connector A04 to MTM/OAU at shelf 33 slot 07

AXU connector A05 to MTM/OAU at shelf 33 slot 05

One NTRX3243 for each of the following:

AXU connector A01 to MTM/OAU at shelf 33 slot 10

AXU connector A02 to MTM/OAU at shelf 33 slot 12

AXU connector A06 to MTM/OAU at shelf 33 slot 08 -Note

AXU connector A07 to MTM/OAU at shelf 33 slot 08 -Note

AXU connector A08 to MTM/OAU at shelf 33 slot 11

One NTRX3244 for each of the following:

AXU connector A03 to MTM/OAU at shelf 33 slot 13

-Note: Slot 08 shall be connected either to connector A06 when provisioned with a NT3X83AA or to connector A07 when provisioned with a NT3X84AA.

- 3) One A0316598 Filter Adapter and one Filter Adapter Mounting Kit, for each personality plate in positions shown in the following table:

Personality Plate	Shelf	Personality Plate Position
P0739915 (Pos.33)	AXU/OAU	F00, F00A,F01,F001A* C09-C11,C43,C44 G00

* 9-Pin Filter Adapter A0336796 is required for position F001A.

- 4) One A0344127 Filter Adapter and one Filter Adapter Mounting Kit, for each personality plate in positions shown in the following table:

Personality Plate	Shelf	Personality Plate Position
P0739915 (Pos.33)	AXU/OAU	T01 - T06,

- 5) In positions not equipped with 9-pin filter adapter or connector provide coverplate P0715809 and screw P0670923 (2).

RULES:

- AP 1) When PEC NTZZ31SB is ordered, these items are provided.
- RUL1 1) When NT2X58BC is provided, provision NT2X58AY, or NT2X58BB (UK or Spain), or NT2X58CL (Caribbean), or NT2X58DB (Mercury).

OFFICE ALM X-CONN/PRIMARY ALM UNIT (INTERNATIONAL)

PEC CODE: NTZZ31SA

CPC CODE: B0241417

RATING: MD

REPLACES: Not applicable

REPLACED BY: NTZZ31SB

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ31SA is the office alarm cross-connect shelf (AXU), primary alarm MTM (OAU), associated hardware, and cabling. This Building Block is for International usage only.

REFERENCE DOCUMENTATION: SLRX32CA 01 02
MSRX32CA 00 02

MARKETS: Applicable markets:

CALA
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ31SA EMC2-25-AXU-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 02	ECM 683 08	Initial Issue
94 11 11	ECM 683 11	MD
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.

The NTZZ31SA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
Alarm Cross Connect Shelf	NT3X89AB	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
OAU Bulkhead Cabling	NTRX32DA		4	47		AP
AXU Bulkhead Cabling	NTRX32DD		2	47		AP
AXU Bulkhead Cabling	NTRX32EP		10	47		AP
AXU Bulkhead Cabling	NTRX32EQ		10	47		AP
AXU Bulkhead Cabling	NTRX32DG		1	47		AP
AXU Bulkhead Cabling	NTRX32EK		1	47		AP
AXU Bulkhead Cabling	NTRX32ER		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		5	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
37-Pin Filter Adapter	A0316598		10	47		AP
9-Pin Filter Adapter	A0344127		8	47		AP
9-Pin Filter Adapter	A0336796		1	47		AP
Filter Adapter Mounting Kit	NTRX3253		19	47		AP
Primary IMTM Shelf	NT2X58BC	OAU	1	33		AP
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Trunk Module Common CP Fill	NT2X58AZ		1	33		AP
Personality Plate (AXU/OAU)	P0741849		1	33		AP
Stud Cover Kit (MTM)	NTRX3257		1	33		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there. See Table D in Section EMA14-04-000 for cards mounted on this unit.
- 2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:

For OAU

 One NTRX32DA for each of the following:
 OAU slot 13 to bulkhead connector 33C08
 OAU slot 14 to bulkhead connector 33C09
 OAU slot 15 to bulkhead connector 33C10
 OAU slot 16 to bulkhead connector 33C11

For AXU

 One NTRX32DD for each of the following:
 AXU connector C00 to bulkhead connector 33C00
 AXU connector C01 to bulkhead connector 33C01

 One NTRX32EP for each of the following:
 AXU connector C05 to bulkhead connector 47C05
 AXU connector C06 to bulkhead connector 47C06
 AXU connector C09 to bulkhead connector 47C09

AXU connector C10 to bulkhead connector 47C10
AXU connector C13 to bulkhead connector 47C13
AXU connector C14 to bulkhead connector 47C14
AXU connector C17 to bulkhead connector 47C17
AXU connector C18 to bulkhead connector 47C18
AXU connector C21 to bulkhead connector 47C21
AXU connector C22 to bulkhead connector 47C22

One NTRX32EQ for each of the following:

AXU connector C03 to bulkhead connector 47C03
AXU connector C04 to bulkhead connector 47C04
AXU connector C07 to bulkhead connector 47C07
AXU connector C08 to bulkhead connector 47C08
AXU connector C11 to bulkhead connector 47C11
AXU connector C12 to bulkhead connector 47C12
AXU connector C15 to bulkhead connector 47C15
AXU connector C16 to bulkhead connector 47C16
AXU connector C19 to bulkhead connector 47C19
AXU connector C20 to bulkhead connector 47C20

One NTRX32DG to connect:

AXU connector F00 to bulkhead connector 33F00,33F00A

One NTRX32EK to connect:

AXU connector F01 to bulkhead connector 33F01,33F01A

One NTRX32ER to connect:

AXU connector G00 to bulkhead connector 33G00

One NTRX32EB to connect:

AXU connector C43 to bulkhead connector 33C43

One NTRX32EC to connect:

AXU connector C44 to bulkhead connector 33C44

One NTRX32ED to connect:

AXU connector TB TB1 to bulkhead connector 33T01

One NTRX32EE to connect:

AXU connector TB TB1 to bulkhead connector 33T03

One NTRX32EF to connect:

AXU connector TB TB1 to bulkhead connector 33T04

One NTRX32EG to connect:

AXU connector TB TB1 to bulkhead connector 33T05

One NTRX32EH to connect:

AXU connector TB TB1 to bulkhead connector 33T06

One NTRX32EJ to connect:

AXU connector TB TB1 to bulkhead connector 33T02

One NTRX3242 for each of the following:

AXU connector A00 to MTM/OAU at shelf 33 slot 09

AXU connector A04 to MTM/OAU at shelf 33 slot 07

AXU connector A05 to MTM/OAU at shelf 33 slot 05

One NTRX3243 for each of the following:

AXU connector A01 to MTM/OAU at shelf 33 slot 10

AXU connector A02 to MTM/OAU at shelf 33 slot 12

AXU connector A06 to MTM/OAU at shelf 33 slot 08 -Note

AXU connector A07 to MTM/OAU at shelf 33 slot 08 -Note

AXU connector A08 to MTM/OAU at shelf 33 slot 11

One NTRX3244 for each of the following:

AXU connector A03 to MTM/OAU at shelf 33 slot 13

-Note: Slot 08 shall be connected either to connector A06 when provisioned with a NT3X83AA or to connector A07 when provisioned with a NT3X84AA.

- 3) One A0316598 Filter Adapter and one Filter Adapter Mounting Kit, for each personality plate in positions shown in the following table:

Personality Plate	Shelf	Personality Plate Position
P0739915 (Pos.33)	AXU/OAU	F00, F00A,F01,F001A* C09-C11,C43,C44 G00

* 9-Pin Filter Adapter A0336796 is required for position F001A.

- 4) One A0344127 Filter Adapter and one Filter Adapter Mounting Kit, for each personality plate in positions shown in the following table:

Personality Plate	Shelf	Personality Plate Position
P0739915 (Pos.33)	AXU/OAU	T01 - T06,

RULES:

AP 1) When PEC NTZZ31SA is ordered, these items are provided.

OFFICE ALM X-CONN/PRIMARY ALM UNIT

PEC CODE: NTZZ31BA

CPC CODE: B0233988

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ31BA is the office alarm cross-connect shelf (AXU), primary alarm MTM (OAU), associated hardware, and cabling.

REFERENCE DOCUMENTATION: MSRX32AA 01 14
SLZZ31BA 00 08

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Steve Martin Dept. 3471 (PPK)

NTZZ31BA EMC2-25-AXU-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 24	----- ECM 600 07	Previous history not available ET 34793 - Update bulkhead cabling and filter adaptors in the stocklist. ET 16689 - Add Safety Boots to the stocklist. ECD 018-39685 - Change power strapping Remove provisioning rules.
94 09 02	ECM 600 12	Replace 3 Safety Boots (CPCs) with 1 Safety Boot (CPC) per MSRX32AA.
94 11 21	ECM 600 13	ET 59163, replace NT6X1438 W/NTNX1601
95 03 13	ECM 600 14	Replace BB with NTZZ31BB
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
95 06 22	ECM 601 22	Reinstate Building Block per ET23819 and Design information.
95 11 02	ECM 601 23	MD and Retire EMS.

The Office Alm X-Conn/Primary Alm Unit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
Alarm X-Conn Shelf	NT3X89AA	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
AXU Bulkhead Cabling	NTRX3223		2	47		AP
AXU Bulkhead Cabling	NTRX3224		10	47		AP
AXU Bulkhead Cabling	NTRX3225		10	47		AP
AXU Bulkhead Cabling	NTRX3226		1	47		AP
AXU Bulkhead Cabling	NTRX3227		1	47		AP
AXU Bulkhead Cabling	NTRX3228		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		4	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
Primary MTM Shelf	NT2X58CA	OAU	1	33		AP
MTM Common CP	NT2X58AZ		1	33		AP
Provisionable Cards	AR			33		RUL1
Filler Faceplate	NT0X50AC			33		RUL1
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Personality Plate (AXU/OAU)	P0733890		1	33		AP
OAU Bulkhead Cabling	NTRX3220		3	33		AP
37 Pin Filter Adapter	A0316598		8	33		AP
9 Pin Filter Adapter	A0344127		6	33		AP
Mounting Hardware	A0317136		56	33		AP
Washer	P0148330		56	33		AP
Safety Boots	P0743593		6	33		AP
Bolt Cover	P0732389		6	33		AP
Cable Braid Assembly	NT0X9537		1	33		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Cable Assembly	NTNX1601		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X1438	MD	NTNX1601

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Provide a maximum of one (1) Alarm Cross-connect (AXU)/Primary Alarm Unit (OAU), per office. The AXU and the primary alarm MTM (OAU) comprise a functional pair and must be mounted together on the same frame. To limit cable congestion and reduce drop lengths the AXU and the OAU are located in positions 47 and 33 respectively. The secondary alarm MTM shall be restricted to position 47 in another cabinet (on a different power feed from the Primary).

The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there.

See Table D in Section EMA14-04-000 for cards mounted on the above modules.

Do not fuse shelf position 47 when AXU shelf NT3X89AA is provided.

2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:

- One NTRX3223 for each of the following:
AXU connector C00 to bulkhead connector 33C00,
AXU connector C01 to bulkhead connector 33C01,
- One NTRX3224 for each of the following:
AXU connector C05 to bulkhead connector 47C05,
AXU connector C06 to bulkhead connector 47C06,
AXU connector C09 to bulkhead connector 47C09,
AXU connector C10 to bulkhead connector 47C10,
AXU connector C13 to bulkhead connector 47C13,
AXU connector C14 to bulkhead connector 47C14,
AXU connector C17 to bulkhead connector 47C17,
AXU connector C18 to bulkhead connector 47C18,
AXU connector C21 to bulkhead connector 47C21,
AXU connector C22 to bulkhead connector 47C22,
- One NTRX3225 for each of the following:
AXU connector C03 to bulkhead connector 47C03,
AXU connector C04 to bulkhead connector 47C04,
AXU connector C07 to bulkhead connector 47C07,
AXU connector C08 to bulkhead connector 47C08,
AXU connector C11 to bulkhead connector 47C11,
AXU connector C12 to bulkhead connector 47C12,
AXU connector C15 to bulkhead connector 47C15,
AXU connector C16 to bulkhead connector 47C16,
AXU connector C19 to bulkhead connector 47C19,
AXU connector C20 to bulkhead connector 47C20.
- One NTRX3226 to connect:
AXU connector F00 to bulkhead connector 33F00,33F00A;
- One NTRX3227 to connect:
AXU connector F01 to bulkhead connector 33F01;
- One NTRX3228 to connect:
AXU connector G00 to bulkhead connector 33G00;
- One NTRX32EB(replaces NTRX3229) to connect:
AXU connector C43 to bulkhead connector 33C43;
- One NTRX32EC(replaces NTRX3234) to connect:
AXU connector C44 to bulkhead connector 33C44;
- One NTRX32ED(replaces NTRX3235) to connect:
AXU connector TB TB1 to bulkhead connector 33T01;

- One NTRX32EE(replaces NTRX3236) to connect:
AXU connector TB TB1 to bulkhead connector 33T03;
- One NTRX32EF(replaces NTRX3237) to connect:
AXU connector TB TB1 to bulkhead connector 33T04;
- One NTRX32EG(replaces NTRX3238) to connect:
AXU connector TB TB1 to bulkhead connector 33T05;
- One NTRX32EH(replaces NTRX3239) to connect:
AXU connector TB TB1 to bulkhead connector 33T06;
- One NTRX32EJ(replaces NTRX3240) to connect:
AXU connector TB TB1 to bulkhead connector 33T02;
- One NTRX3242 for each of the following:
AXU shelf 47 connector A00
to MTM/OAU at shelf 33 slot 09,
AXU shelf 47 connector A04
to MTM/OAU at shelf 33 slot 07,
AXU shelf 47 connector A05
to MTM/OAU at shelf 33 slot 05,
- One NTRX3243 for each of the following:

AXU shelf 47 connector A06
to MTM/OAU at shelf 33 slot 08
when provisioned with a NT3X83AA,
or
AXU shelf 47 connector A07
to MTM/OAU at shelf 33 slot 08
when provisioned with a NT3X84AA;

AXU shelf 47 connector A01
to MTM/OAU at shelf 33 slot 10,
AXU shelf 47 connector A08
to MTM/OAU at shelf 33 slot 11,
AXU shelf 47 connector A02
to MTM/OAU at shelf 33 slot 12;
- One NTRX3244 for each of the following:
AXU shelf 47 connector A03
to MTM/OAU at shelf 33 slot 13;

- One NTRX3220 for each of the following:
 - OAU connector 14 to bulkhead connector 33C09,
 - OAU connector 15 to bulkhead connector 33C10,
 - OAU connector 16 to bulkhead connector 33C11.
- 3) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions F00, F00A, F01, C09, C10, C11, C43 and C44.

One A0344127 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions T01, T02, T03, T04, T05 and T06.
- 4) The NTN1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58CA in shelf position 33.

RULES:

- AP 1) When PEC NTZZ31BA is ordered, these items are provided.
- RUL1 1) refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an OAU.
- 2) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot:
- one (1) NT0X50AC Filler Faceplate.

OFFICE ALM X-CONN/PRIMARY ALM UNIT

PEC CODE: NTZZ31BB

CPC CODE: B0242551

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ31BB is the office alarm cross-connect shelf (AXU), primary alarm MTM (OAU), associated hardware, and cabling.

REFERENCE DOCUMENTATION: MSRX32AA 01 14
SLZZ31BB 00 01

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ31BB EMC2-25-AXU-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 24	----- ECM 600 07	Previous history not available ET 34793 - Update bulkhead cabling and filter adaptors in the stocklist. ET 16689 - Add Safety Boots to the stocklist. ECD 018-39685 - Change power strapping Remove provisioning rules.
94 09 02	ECM 600 12	Replace 3 Safety Boots (CPCs) with 1 Safety Boot (CPC) per MSRX32AA.
94 11 21	ECM 600 13	ET 59163, replace NT6X1438 W/NTNX1601
95 03 13	ECM 600 14	MD NT3X89AA,BA and replace with NT3X89CA per EC 18-43305
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
95 06 22	ECM 601 22	MD Building Block per ET23819 and Design information.

The Office Alm X-Conn/Primary Alm Unit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
# Alarm X-Conn Shelf	NT3X89AA	AXU	1	47		AP
Alarm X-Conn Shelf	NT3X89CA	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
AXU Bulkhead Cabling	NTRX3223		2	47		AP
AXU Bulkhead Cabling	NTRX3224		10	47		AP
AXU Bulkhead Cabling	NTRX3225		10	47		AP
AXU Bulkhead Cabling	NTRX3226		1	47		AP
AXU Bulkhead Cabling	NTRX3227		1	47		AP
AXU Bulkhead Cabling	NTRX3228		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		4	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
Primary MTM Shelf	NT2X58CA	OAU	1	33		AP
MTM Common CP	NT2X58AZ		1	33		AP
Provisionable Cards	AR			33		RUL1
Filler Faceplate	NT0X50AC			33		RUL1
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Personality Plate (AXU/OAU)	P0733890		1	33		AP
OAU Bulkhead Cabling	NTRX3220		3	33		AP
37 Pin Filter Adapter	A0316598		8	33		AP
9 Pin Filter Adapter	A0344127		6	33		AP
Mounting Hardware	A0317136		56	33		AP
Washer	P0148330		56	33		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Safety Boots	P0743593		6	33		AP
Bolt Cover	P0732389		6	33		AP
Cable Braid Assembly	NT0X9537		1	33		AP
Power Cable Assembly	NTNX1601		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X1438	MD	NTNX1601
NT3X89AA	MD	NT3X89CA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Provide a maximum of one (1) Alarm Cross-connect (AXU)/Primary Alarm Unit (OAU), per office. The AXU and the primary alarm MTM (OAU) comprise a functional pair and must be mounted together on the same frame. To limit cable congestion and reduce drop lengths the AXU and the OAU are located in positions 47 and 33 respectively. The secondary alarm MTM shall be restricted to position 47 in another cabinet (on a different power feed from the Primary).

The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there.

See Table D in Section EMA14-04-000 for cards mounted on the above modules.

Do not fuse shelf position 47 when AXU shelf NT3X89CA is provided.

- 2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3223 for each of the following:
 - AXU connector C00 to bulkhead connector 33C00,
 - AXU connector C01 to bulkhead connector 33C01,
 - One NTRX3224 for each of the following:
 - AXU connector C05 to bulkhead connector 47C05,
 - AXU connector C06 to bulkhead connector 47C06,
 - AXU connector C09 to bulkhead connector 47C09,
 - AXU connector C10 to bulkhead connector 47C10,
 - AXU connector C13 to bulkhead connector 47C13,
 - AXU connector C14 to bulkhead connector 47C14,
 - AXU connector C17 to bulkhead connector 47C17,
 - AXU connector C18 to bulkhead connector 47C18,
 - AXU connector C21 to bulkhead connector 47C21,
 - AXU connector C22 to bulkhead connector 47C22,

- One NTRX3225 for each of the following:
 - AXU connector C03 to bulkhead connector 47C03,
 - AXU connector C04 to bulkhead connector 47C04,
 - AXU connector C07 to bulkhead connector 47C07,
 - AXU connector C08 to bulkhead connector 47C08,
 - AXU connector C11 to bulkhead connector 47C11,
 - AXU connector C12 to bulkhead connector 47C12,
 - AXU connector C15 to bulkhead connector 47C15,
 - AXU connector C16 to bulkhead connector 47C16,
 - AXU connector C19 to bulkhead connector 47C19,
 - AXU connector C20 to bulkhead connector 47C20.
- One NTRX3226 to connect:
 - AXU connector F00 to bulkhead connector 33F00,33F00A;
- One NTRX3227 to connect:
 - AXU connector F01 to bulkhead connector 33F01;
- One NTRX3228 to connect:
 - AXU connector G00 to bulkhead connector 33G00;
- One NTRX32EB(replaces NTRX3229) to connect:
 - AXU connector C43 to bulkhead connector 33C43;
- One NTRX32EC(replaces NTRX3234) to connect:
 - AXU connector C44 to bulkhead connector 33C44;
- One NTRX32ED(replaces NTRX3235) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T01;
- One NTRX32EE(replaces NTRX3236) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T03;
- One NTRX32EF(replaces NTRX3237) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T04;
- One NTRX32EG(replaces NTRX3238) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T05;
- One NTRX32EH(replaces NTRX3239) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T06;
- One NTRX32EJ(replaces NTRX3240) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T02;

- One NTRX3242 for each of the following:
 - AXU shelf 47 connector A00
 - to MTM/OAU at shelf 33 slot 09,
 - AXU shelf 47 connector A04
 - to MTM/OAU at shelf 33 slot 07,
 - AXU shelf 47 connector A05
 - to MTM/OAU at shelf 33 slot 05,
 - One NTRX3243 for each of the following:
 - AXU shelf 47 connector A06
 - to MTM/OAU at shelf 33 slot 08
 - when provisioned with a NT3X83AA,
 - or
 - AXU shelf 47 connector A07
 - to MTM/OAU at shelf 33 slot 08
 - when provisioned with a NT3X84AA;
 -
 - AXU shelf 47 connector A01
 - to MTM/OAU at shelf 33 slot 10,
 - AXU shelf 47 connector A08
 - to MTM/OAU at shelf 33 slot 11,
 - AXU shelf 47 connector A02
 - to MTM/OAU at shelf 33 slot 12;
 - One NTRX3244 for each of the following:
 - AXU shelf 47 connector A03
 - to MTM/OAU at shelf 33 slot 13;
 - One NTRX3220 for each of the following:
 - OAU connector 14 to bulkhead connector 33C09,
 - OAU connector 15 to bulkhead connector 33C10,
 - OAU connector 16 to bulkhead connector 33C11.
- 3) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions F00, F00A, F01, C09, C10, C11, C43 and C44.
- One A0344127 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions T01, T02, T03, T04, T05 and T06.

- 4) The NTN1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58CA in shelf position 33.

RULES:

- AP 1) When PEC NTZZ31BB is ordered, these items are provided.
- RUL1 1) refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an OAU.
- 2) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot:
- one (1) NT0X50AC Filler Faceplate.

INTERNATIONAL CTME AXU/OAU PACKAGE

PEC CODE: NTZZ37RB

CPC CODE: B0242548

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ37RB is the International office alarm cross-connect shelf (AXU), primary alarm IMTM (OAU), associated hardware and cabling package in the Cabinetized Trunk Module Equipment (CTME).

The AXU and OAU are functional pair and must be mounted together on the same frame.

REFERENCE DOCUMENTATION: MSRX32AA 01 14
SLZZ37RB 00 01
NTZZ37RB REL 01

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI James Marsden Dept. 3471 (PPK)

NTZZ37RB EMC2-20-AXU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 21	----- ECM 636 08	Previous history not available ET 34793 - Update bulkhead cabling and filter adaptors in the stocklist. ET 16689 - Add Safety Boots to the stocklist and remove RUL2. ECD 018-39685 - Change power strapping
94 04 23	ECM 636 10	ET 38293 - Update cable changes.
95 03 13	ECM 600 14	Replace safety boots for MTM & TM8 MD NT3X89AA,BA and replace with NT3X89CA per EC 18-43305
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
95 06 22	ECM 601 22	MD Building Block per ET23819 and Design information.

The International CTME AXU/OAU Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
# Alarm X-Conn Shelf	NT3X89AA	AXU	1	47		AP
Alarm X-Conn Shelf	NT3X89CA	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
AXU Bulkhead Cabling	NTRX3223		2	47		AP
AXU Bulkhead Cabling	NTRX3224		10	47		AP
AXU Bulkhead Cabling	NTRX3225		10	47		AP
AXU Bulkhead Cabling	NTRX3226		1	47		AP
AXU Bulkhead Cabling	NTRX3227		1	47		AP
AXU Bulkhead Cabling	NTRX3228		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		4	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
IMTM Shelf	NT2X58BC	OAU	1	33		AP
IMTM Common CP	NT2X58AY			33		RUL1
IMTM Common CP	NT2X58BB			33		RUL1
IMTM Common CP	NT2X58CL			33		RUL1
IMTM Common CP	NT2X58DB			33		RUL1
Provisionable Cards	AR			33		RUL1
Filler Faceplate	NT0X50AC			33		RUL1
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Personality Plate (AXU/OAU)	P0733890		1	33		AP
OAU Bulkhead Cabling	NTRX3220		3	33	C14-16	AP
37 Pin Filter Adapter	A0316598		8	33		AP
9 Pin Filter Adapter	A0344127		6	33		AP
Mounting Hardware	A0317136		56	33		AP
Washer	P0148330		56	33		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Safety Boots	P0743593		6	33		AP
Boot Cover	P0732389		6	33		AP
Cable Braid Assembly	NT0X9537		1	33		AP
Power Cable Assembly	NTNX1601		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT3X89AA	MD	NT3X89CA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Provide a maximum of one (1) Alarm Cross-connect (AXU)/Primary Alarm Unit (OAU), per office. The AXU and the primary alarm MTM (OAU) comprise a functional pair and must be mounted together on the same frame. To limit cable congestion and reduce drop lengths the AXU and the OAU are located in positions 47 and 33 respectively. The secondary alarm MTM shall be restricted to position 47 in another cabinet (on a different power feed from the Primary).

The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there.

See Table D in Section EMA14-04-000 for cards mounted on the above modules.

Do not fuse shelf position 47 when AXU shelf NT3X89CA is provided.

- 2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3223 for each of the following:
 - AXU connector C00 to bulkhead connector 33C00,
 - AXU connector C01 to bulkhead connector 33C01,
 - One NTRX3224 for each of the following:
 - AXU connector C05 to bulkhead connector 47C05,
 - AXU connector C06 to bulkhead connector 47C06,
 - AXU connector C09 to bulkhead connector 47C09,
 - AXU connector C10 to bulkhead connector 47C10,
 - AXU connector C13 to bulkhead connector 47C13,
 - AXU connector C14 to bulkhead connector 47C14,
 - AXU connector C17 to bulkhead connector 47C17,
 - AXU connector C18 to bulkhead connector 47C18,
 - AXU connector C21 to bulkhead connector 47C21,
 - AXU connector C22 to bulkhead connector 47C22,

- One NTRX3225 for each of the following:
 - AXU connector C03 to bulkhead connector 47C03,
 - AXU connector C04 to bulkhead connector 47C04,
 - AXU connector C07 to bulkhead connector 47C07,
 - AXU connector C08 to bulkhead connector 47C08,
 - AXU connector C11 to bulkhead connector 47C11,
 - AXU connector C12 to bulkhead connector 47C12,
 - AXU connector C15 to bulkhead connector 47C15,
 - AXU connector C16 to bulkhead connector 47C16,
 - AXU connector C19 to bulkhead connector 47C19,
 - AXU connector C20 to bulkhead connector 47C20.
- One NTRX3226 to connect:
 - AXU connector F00 to bulkhead connector 33F00,33F00A;
- One NTRX3227 to connect:
 - AXU connector F01 to bulkhead connector 33F01;
- One NTRX3228 to connect:
 - AXU connector G00 to bulkhead connector 33G00;
- One NTRX32EB(replaces NTRX3229) to connect:
 - AXU connector C43 to bulkhead connector 33C43;
- One NTRX32EC(replaces NTRX3234) to connect:
 - AXU connector C44 to bulkhead connector 33C44;
- One NTRX32ED(replaces NTRX3235) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T01;
- One NTRX32EE(replaces NTRX3236) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T03;
- One NTRX32EF(replaces NTRX3237) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T04;
- One NTRX32EG(replaces NTRX3238) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T05;
- One NTRX32EH(replaces NTRX3239) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T06;
- One NTRX32EJ(replaces NTRX3240) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T02;

- One NTRX3242 for each of the following:
 - AXU shelf 47 connector A00
 - to MTM/OAU at shelf 33 slot 09,
 - AXU shelf 47 connector A04
 - to MTM/OAU at shelf 33 slot 07,
 - AXU shelf 47 connector A05
 - to MTM/OAU at shelf 33 slot 05,
 - One NTRX3243 for each of the following:
 - AXU shelf 47 connector A06
 - to MTM/OAU at shelf 33 slot 08
 - when provisioned with a NT3X83AA,
 - or
 - AXU shelf 47 connector A07
 - to MTM/OAU at shelf 33 slot 08
 - when provisioned with a NT3X84AA;
 -
 - AXU shelf 47 connector A01
 - to MTM/OAU at shelf 33 slot 10,
 - AXU shelf 47 connector A08
 - to MTM/OAU at shelf 33 slot 11,
 - AXU shelf 47 connector A02
 - to MTM/OAU at shelf 33 slot 12;
 - One NTRX3244 for each of the following:
 - AXU shelf 47 connector A03
 - to MTM/OAU at shelf 33 slot 13;
 - One NTRX3220 for each of the following:
 - OAU connector 14 to bulkhead connector 33C09,
 - OAU connector 15 to bulkhead connector 33C10,
 - OAU connector 16 to bulkhead connector 33C11.
- 3) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions F00, F00A, F01, C09, C10, C11, C43 and C44.
- One A0344127 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions T01, T02, T03, T04, T05 and T06.

- 4) The NTN1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58BC in shelf position 33. This modification replaces the strapping of SP-48V power to FLT-48V and to be applied to existing offices on a "next time in" basis.
- 5) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ37RB is ordered, these items are provided.
- RUL1 1) For each IMTM provide an IMTM common circuit pack as follows:
- For Turkey, provide:
 - one (1) NT2X58AY IMTM Common CP,
 - For Scopedia in the UK and Spain, provide:
 - one (1) NT2X58BB IMTM Common CP,
 - For the Caribbean Expansion Plan (CEP), provide:
 - one (1) NT2X58CL IMTM Common CP, and
 - For Mercury DMS-250, provide:
 - one (1) NT2X58DB IMTM Common CP.
- 2) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an OAU.
- 3) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot:
- one (1) NT0X50AC Filler Faceplate.

OFFICE ALM X-CONN/PRIMARY ALM UNIT

PEC CODE: NTZZ31JB

CPC CODE: B0241864

| RATING: MD

REPLACES: NTZZ31JA

| REPLACED BY: NTFX4101

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ31JB is the office alarm cross-connect shelf (AXU), primary alarm MTM (OAU), associated hardware, and cabling.

REFERENCE DOCUMENTATION: SLRX32CA 01 03
MSRX32CA 01 04
SLZZ31JB REL 04

MARKETS: Applicable markets:

US
CALA
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NTZZ31JB EMC2-25-AXU-9 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 11 11	ECM 683 11	Initial Issue
94 12 09	ECM 683 13	Make P0670923, P0715809 AP
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
95 05 12	ECM 601 21	Correct note 5 and SLZZ31JB quantity per ET22159.
96 02 09	ECM 601 28	MD and Retire this EMS.
96 03 08	ECM 601 29	Change mounting locations for filter adapters per SR-RR60597.
96 10 25	ECM 683 24	Change Status back to STD from MD. MD per EC018-48742 (NT2X58AZ)

The NTZZ31JB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
Alarm Cross Connect Shelf	NT3X89AB	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
OAU Bulkhead Cabling	NTRX32DA		3	47		AP
AXU Bulkhead Cabling	NTRX32DD		2	47		AP
AXU Bulkhead Cabling	NTRX32EP		10	47		AP
AXU Bulkhead Cabling	NTRX32EQ		10	47		AP
AXU Bulkhead Cabling	NTRX32DG		1	47		AP
AXU Bulkhead Cabling	NTRX32EK		1	47		AP
AXU Bulkhead Cabling	NTRX32ER		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		4	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
37-Pin Filter Adapter	A0316598		8	33		AP
9-Pin Filter Adapter	A0344127		6	33		AP
9-Pin Filter Adapter	A0336796		1	33		AP
Filter Adapter Mounting Kit	NTRX3253		15	33		AP
Primary MTM Shelf	NT2X58CA	OAU	1	33		AP
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Trunk Module Common CP Fill	NT2X58AZ		1	33		AP
Personality Plate (AXU/OAU)	P0741849		1	33		AP
Stud Cover Kit (MTM)	NTRX3257		1	33		AP
Screw	P0670923		2		NOTE 5	AP
9 Pin Cover Plate	P0715809		1		NOTE 5	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there. See Table D in Section EMA14-04-000 for cards mounted on this unit.
- 2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:

For OAU

 One NTRX32DA for each of the following:
 OAU slot 13 to bulkhead connector 33C08
 OAU slot 14 to bulkhead connector 33C09
 OAU slot 15 to bulkhead connector 33C10
 OAU slot 16 to bulkhead connector 33C11

For AXU

 One NTRX32DD for each of the following:
 AXU connector C00 to bulkhead connector 33C00
 AXU connector C01 to bulkhead connector 33C01

One NTRX32EP for each of the following:
 AXU connector C05 to bulkhead connector 47C05
 AXU connector C06 to bulkhead connector 47C06
 AXU connector C09 to bulkhead connector 47C09

AXU connector C10 to bulkhead connector 47C10
AXU connector C13 to bulkhead connector 47C13
AXU connector C14 to bulkhead connector 47C14
AXU connector C17 to bulkhead connector 47C17
AXU connector C18 to bulkhead connector 47C18
AXU connector C21 to bulkhead connector 47C21
AXU connector C22 to bulkhead connector 47C22

One NTRX32EQ for each of the following:

AXU connector C03 to bulkhead connector 47C03
AXU connector C04 to bulkhead connector 47C04
AXU connector C07 to bulkhead connector 47C07
AXU connector C08 to bulkhead connector 47C08
AXU connector C11 to bulkhead connector 47C11
AXU connector C12 to bulkhead connector 47C12
AXU connector C15 to bulkhead connector 47C15
AXU connector C16 to bulkhead connector 47C16
AXU connector C19 to bulkhead connector 47C19
AXU connector C20 to bulkhead connector 47C20

One NTRX32DG to connect:

AXU connector F00 to bulkhead connector 33F00,33F00A

One NTRX32EK to connect:

AXU connector F01 to bulkhead connector 33F01,33F01A

One NTRX32ER to connect:

AXU connector G00 to bulkhead connector 33G00

One NTRX32EB to connect:

AXU connector C43 to bulkhead connector 33C43

One NTRX32EC to connect:

AXU connector C44 to bulkhead connector 33C44

One NTRX32ED to connect:

AXU connector TB TB1 to bulkhead connector 33T01

One NTRX32EE to connect:

AXU connector TB TB1 to bulkhead connector 33T03

One NTRX32EF to connect:

AXU connector TB TB1 to bulkhead connector 33T04

One NTRX32EG to connect:

AXU connector TB TB1 to bulkhead connector 33T05

One NTRX32EH to connect:

AXU connector TB TB1 to bulkhead connector 33T06

One NTRX32EJ to connect:

AXU connector TB TB1 to bulkhead connector 33T02

One NTRX3242 for each of the following:

AXU connector A00 to MTM/OAU at shelf 33 slot 09

AXU connector A04 to MTM/OAU at shelf 33 slot 07

AXU connector A05 to MTM/OAU at shelf 33 slot 05

One NTRX3243 for each of the following:

AXU connector A01 to MTM/OAU at shelf 33 slot 10

AXU connector A02 to MTM/OAU at shelf 33 slot 12

AXU connector A06 to MTM/OAU at shelf 33 slot 08 -Note

AXU connector A07 to MTM/OAU at shelf 33 slot 08 -Note

AXU connector A08 to MTM/OAU at shelf 33 slot 11

One NTRX3244 for each of the following:

AXU connector A03 to MTM/OAU at shelf 33 slot 13

-Note: Slot 08 shall be connected either to connector A06 when provisioned with a NT3X83AA or to connector A07 when provisioned with a NT3X84AA.

- 3) One A0316598 Filter Adapter and one Filter Adapter Mounting Kit, for each personality plate in positions shown in the following table:

Personality Plate	Shelf	Personality Plate Position
P0739915 (Pos.33)	AXU/OAU	F00, F00A,F01,F001A* C09-C11,C43,C44 G00

* 9-Pin Filter Adapter A0336796 is required for position F001A.

- 4) One A0344127 Filter Adapter and one Filter Adapter Mounting Kit, for each personality plate in positions shown in the following table:

Personality Plate	Shelf	Personality Plate Position
P0739915 (Pos.33)	AXU/OAU	T01 - T06,

- 5) In positions not equipped with 9-pin filter adapter or connector provide (1) P0715809 cover plate and (2) P0670923 screws.

RULES:

- AP 1) When PEC NTZZ31JB is ordered, these items are provided.

MAINTENANCE TRUNK MODULE FOR DRA

PEC CODE: NTZZ31EA

CPC CODE: B0233990

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DRA

ENGINEERING DESCRIPTION: NTZZ31EA is the Maintenance Trunk Module for DRA (DRA) and associated hardware, and cabling.

REFERENCE DOCUMENTATION: SLZZ31EA 00 06

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Steve Martin Dept. 3471 (PPK)

NTZZ31EA EMC2-25-DRA-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 09 24	ECM 600 07	ET 16689 - Design change of safety boots and power cables.
94 09 02	ECM 600 12	Replace 3 Safety Boots (cpcs) with 1 Safety Boot (cpc) per MSRX32AA.
94 11 21	ECM 600 13	ET 59163, replace NT6X1438 W/NTNX1601
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
96 02 09	ECM 601 28	MD and Retire this EMS.

The NTZZ31EA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Maint Trk Mod for DRA	NT2X58CB	DRA	1	XX		AP
MTM Common CP	NT2X58AZ			XX		RUL1
MTM Common CP	NT2X58AX			XX		RUL1
MTM Common CP	NT2X58CP			XX		RUL1
MTM Common CP	NT2X58CN			XX		RUL1
Power Converter	NT2X70AF		1	XX	20	AP
Desig Label (NT2X70AF)	P0809960		1	XX	20	AP
Personality Plate (DRA)	P0730034		1	XX		AP
Bulkhead Cabling	NTRX3221		4	XX		AP
Bulkhead Cabling	NTRX3220		4	XX		AP
37 Pin Filter Adapter	A0316598		8			AP
Mounting Hardware	A0317136		32			AP
Washer	P0148330		32			AP
Safety Boots	P0743593		6	XX		AP
Bolt Cover	P0732389		6	XX		AP
Cable Braid Assembly	NT0X9537		1	XX		AP
Power Cable Assembly	NTNX1601		1	XX		AP
Provisionable Cards	AR			XX		RUL2
Filler Faceplate	NT0X50AC			XX		RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X1438	MD	NTNX1601

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" in SHF POS can be one of 47,33,19,05.
- 2) Modules are assigned to positions on the frame in the shelf position order 05, 19, 33, 47.
- 3) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3221 for each of the following:
 - MTM connector 09 to bulkhead connector xxC04,
 - MTM connector 10 to bulkhead connector xxC05,
 - MTM connector 11 to bulkhead connector xxC06,
 - MTM connector 12 to bulkhead connector xxC07,
 - One NTRX3220 for each of the following:
 - MTM connector 13 to bulkhead connector xxC08,
 - MTM connector 14 to bulkhead connector xxC09,
 - MTM connector 15 to bulkhead connector xxC10,
 - MTM connector 16 to bulkhead connector xxC11,
 - (xx denotes shelf position).
- 4) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on shelf DRA personality plate P0730034 in personality plate positions C04 to C11.
- 5) The NTN1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58CB.
- 6) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ31EA is ordered, these items are provided.
- RUL1 1) For each MTM provide an MTM common circuit pack as follows:

1. Provide one (1) NT2X58AZ, CP fill for each NTZZ31DB MTM or NTZZ31EA DRA that is ordered if Digital Data Line Card NT3X05AA/AC is not equipped on this MTM/DRA.

2. Provide one, (1) NT2X58AX Common CP Fill for each NTZZ31DB MTM or NTZZ31EA DRA that is ordered if:

- Digital Data Line Card NT3X05AA/AC is not equipped on this MTM/DRA;

- Audio Tone Detector Card NT5X29AC is equipped on this MTM/DRA.

This CP Fill has an enhanced TM processor card (NT0X70AC) and is normally required for DMS-250 applications.

3. Provide one (1) NT2X58CP Common CP Fill for each NTZZ31DB MTM or NTZZ31EA DRA that is ordered if Digital Data Line Card NT3X05AA/AC is equipped on this MTM/DRA.

4. Provide one (1) NT2X58CN Common CP Fill for each NTZZ31DB MTM or NTZZ31EA DRA that is ordered if:

- Digital Data Line Card NT3X05AA/AC is equipped on this MTM/DRA;

- Audio Tone Detector Card NT5X29AC is equipped on this MTM.

This CP Fill has an enhanced TM processor card (NT0X70AC) and is normally required for DMS-250 applications.

RUL2 1) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an MTM.

2) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot:

- one (1) NT0X50AC Filler Faceplate.

FILLER FACE PLATE KIT

PEC CODE: NTZZ02NA

CPC CODE: B0233978

| RATING: MD

REPLACES: None

| REPLACED BY: NT6X02AB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ02NA is a Filler Face Plate Kit which is designed to fill those shelves and personality plate slots on a NTZZ22CA cabinet which are not equipped with a common circuit packfill.

REFERENCE DOCUMENTATION: SLZZ02NA 00 02
NTZZ02NA REL 02

MARKETS: Applicable markets:

Canada
US
CALA
Europe
Asia/Pacific

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ02NA EMC2-25-FIL CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
96 04 26	ECM 373 45	MD this BB per the Functional Block initiative.

The Filler Face Plate Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPC Filler Face Plate	NT6X02AB		1	33		AP
Cover Plate Kit	NTRX3654		8	33		AP
Cover Plate Kit	NTRX3652		1	47		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ02NA is ordered, these items are provided.

MAINTENANCE TRUNK MODULE

PEC CODE: NTZZ31DA

CPC CODE: B0233989

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTFX4101

ABBREVIATION NAME: MTM

ENGINEERING DESCRIPTION: NTZZ31DA is the Maintenance Trunk Module (MTM) and associated hardware, and cabling.

REFERENCE DOCUMENTATION: SLZZ31DA 00 06

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Steve Martin Dept. 3471 (PPK)

NTZZ31DA EMC2-25-MTM CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 24	----- ECM 600 07	Previous history not available ET 16689 - Design change of safety boots and power cables.
94 09 02	ECM 600 12	Replace Personality Plates (P0730033) with Personality Plate (P0736562) per MSRX32AA. Per MSRX32AA, Safety Boots P0706920, P0729765, P0733299 are replaced by P0743593
94 11 21	ECM 600 13	ET 59163, replace NT6X1438 W/NTNX1601
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
96 09 12	ECM 601 34	MD per EC018-48743.

The Maintenance Trunk Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Maintenance Trk Module	NT2X58CA	MTM	1	XX		AP
MTM Common CP	NT2X58AZ			XX		RUL1
MTM Common CP	NT2X58AX			XX		RUL1
MTM Common CP	NT2X58CP			XX		RUL1
MTM Common CP	NT2X58CN			XX		RUL1
Power Converter	NT2X70AF		1	XX	20	AP
Desig Label (NT2X70AF)	P0809960		1	XX	20	AP
Personality Plate (MTM)	P0736562		1	XX		AP
Bulkhead Cabling	NTRX3222		4	XX		AP
Bulkhead Cabling	NTRX3221		4	XX		AP
Bulkhead Cabling	NTRX3220		4	XX		AP
37 Pin Filter Adapter	A0316598		12			AP
Mounting Hardware	A0317136		48			AP
Washer	P0148330		48			AP
Safety Boots	P0743593		6	XX		AP
Bolt Cover	P0732389		6	XX		AP
Cable Braid Assembly	NT0X9537		1	XX		AP
Power Cable Assembly	NTNX1601		1	XX		AP
Provisionable Cards	AR			XX		RUL2
Filler Faceplate	NT0X50AC			XX		RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X1438	MD	NTNX1601
NT2X58CA	MD	NTFX4101

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" in SHF POS can be one of 47,33,19,05.
- 2) Modules are assigned to positions on the frame in the shelf position order 05, 19, 33, 47.
- 3) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3222 for each of the following:
MTM connector 05 to bulkhead connector xxC00,
MTM connector 06 to bulkhead connector xxC01,
MTM connector 07 to bulkhead connector xxC02,
MTM connector 08 to bulkhead connector xxC03,
 - One NTRX3221 for each of the following:
MTM connector 09 to bulkhead connector xxC04,
MTM connector 10 to bulkhead connector xxC05,
MTM connector 11 to bulkhead connector xxC06,
MTM connector 12 to bulkhead connector xxC07,
 - One NTRX3220 for each of the following:
MTM connector 13 to bulkhead connector xxC08,
MTM connector 14 to bulkhead connector xxC09,
MTM connector 15 to bulkhead connector xxC10,
MTM connector 16 to bulkhead connector xxC11
(xx denotes shelf position).
- 4) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on shelf MTM personality plate P0730033 in personality plate positions C00 to C11.
- 5) The NTN1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58CA.
- 6) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ31DA is ordered, these items are provided.
- RUL1 1) For each MTM provide an MTM common circuit pack as follows:
1. Provide one (1) NT2X58AZ, CP fill for each NTZZ31DB MTM or NTZZ31EA DRA that is ordered if Digital Data Line Card NT3X05AA/AC is not equipped on this MTM/DRA.
 2. Provide one, (1) NT2X58AX Common CP Fill for each NTZZ31DB MTM or NTZZ31EA DRA that is ordered if:
 - Digital Data Line Card NT3X05AA/AC is not equipped on this MTM/DRA;
 - Audio Tone Detector Card NT5X29AC is equipped on this MTM/DRA.
 3. Provide one (1) NT2X58CP Common CP Fill for each NTZZ31DB MTM or NTZZ31EA DRA that is ordered if Digital Data Line Card NT3X05AA/AC is equipped on this MTM/DRA.
 4. Provide one (1) NT2X58CN Common CP Fill for each NTZZ31DB MTM or NTZZ31EA DRA that is ordered if:
 - Digital Data Line Card NT3X05AA/AC is equipped on this MTM/DRA;
 - Audio Tone Detector Card NT5X29AC is equipped on this MTM.
- This CP Fill has an enhanced TM processor card (NT0X70AC) and is normally required for DMS-250 applications.
- RUL2 1) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an MTM.

MAINTENANCE TRUNK MODULE FOR TONE GENERATOR US

PEC CODE: NTZZ06AM

CPC CODE: B0235723

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTFX4101

ABBREVIATION NAME: MTM

ENGINEERING DESCRIPTION: The NTZZ06AM contains CPs that are provided with each MTM which mounts a NT5X29AC CP for U.S. jobs.

REFERENCE DOCUMENTATION: SLZZ06AM 00 01
NTZZ06AM REL 01

MARKETS: Applicable markets:

Canada
US

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Steve Martin Dept. 3471 (PPK)

NTZZ06AM EMC2-25-MTM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 04 05	----- ECM 601 20	Previous history not available Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972. MD per EC018-48743
96 09 12	ECM 601 34	

The Maintenance Trunk Module For Tone Generator US is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Maintenance Trunk Module	NT2X58CA		1	X		AP
MTM Common CP Fill	NT2X58AX		1	X		AP
Maint Trk Mod Sh Assy	NT2X5828		1	X		AP-01
Trunk Module I/F CP	NT2X45AB		1	X	1	AP-02
Trunk Module Processor CP	NT0X70AC		1	X	2	AP-02
TM/Control CP	NT2X53AA		1	X	3	AP-02
Group Codec CP	NT2X59AA		1	X	4	AP-02
Trunk Card	As Req'd			X	05-16	RUL1
Filler Face Plate 0.875	NT0X50AC			X	05-16	RUL2
Multi O/P Pwr Converter CP	NT2X09AA		1	X	17	AP-02
Filler Face Plate .875	NT0X50AA		1	X	19	AP-02
Pwr Conv. CP +/- 5V, 12V	NT2X70AF		1	X	20	AP
Desig. Label (NT2X70AF)	P0809960		1	X	20	AP
Designation Strip	P0701655		1	X		AP-02

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) X = Shelf Position 04,18,32,51 or 65.

RULES:

- AP 1) When PEC NTZZ06AM is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT2X58CA and is shown here for completeness.
- AP-02 1) This PEC is always provided to the NT2X58AX and is shown here for completeness.
- RUL1 1) The MTM provides slots to mount up to twelve (12) test line and trunk cards.
- 2) Refer to Table A-2, Section EMB14-01-000, for cards that can be mounted on an MTM.
- 3) The sum total of the maximum power dissipation per Table A-2 (Section EMB14-01-000) for all cards provisioned on any one shelf shall not exceed 110 watts.
- RUL2 1) When customer requirements specify that Filler Face Plates are to be ordered, provide one (1) NT0X50AC for each location, 05-16, which is not to be equipped with a test line or a trunk card.

CABINETIZED RSC (LCM-READY)
(GRAY)

PEC CODE: NTZZ46CA

CPC CODE: B0238183

RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ47QB

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The CRSC with LCM is capable of being deployed as a single cabinet RSCS which supports up to 640 lines, service and maintenance circuits and DS1 links to host at a maximum distance of 100 miles (150 miles for Canadian applications). In addition, the CRSC may be deployed as the controller in a multi-cabinet RSCS. Other cabinets which may be deployed in a multi-cabinet RSCS are the CPDC, CMIS, and CLCE (max 5 in Mono CRSC). This Building Block provides the basic CRSC cabinet with the minimum equipment required for deployment. One LCM module is provisionable. This Building Block provides gray equipment. /off

REFERENCE DOCUMENTATION: MSMX89CA 00 10

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: NTI: Mark Sorrell Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NTZZ46CA EMC2-25-RCC2-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 12	ECM 617 07	Introduce CRSC (LCM) (Gray) Bld. Blk.
93 04 23	ECM 617 09	Introduce NT6X30CA Ringing Generator.
		Introduce Extended Distance packfill.
93 08 17	ECM 617 11	Introduce NTZZ12XB packfill w/o EISP.
93 10 13	ECM 617 12	Add DCH port use information.
		Add NT0X58BK H/W kit per ET 41093.
94 08 10	ECM 617 16	Show NTMX74AA as MD and replaced by NTMX74AB DS30A Interface CP.
94 08 28	ECM 617 17	Change Equipment List.
94 10 17	ECM 691 07	Retire code. Replaced by NTZZ47QB.
96 04 02	ECM 691 15	Change per EC#024-94829. Add in NTZZ17BB to replace NTZZ17BA.
97 04 18	ECM 691 20	Per EC 024-97291 and EC 028-15577 introduce ISDN Line Drawer provisioning.
97 05 02	ECM 691 21	Per EC 024-97754 introduce the NTAX74AA.

The Cabinetized RSC (LCM-ready) (Gray) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CRSC Cabinet	NTMX89CA		1			AP
Streamline Cabinet	NTNX25EA		1			AP01
Frame Supervisory Panel	NTMX26BA	FSP	1	61		AP
FSP Alarm CP	NT6X36AA		1	61		AP04
Alarm CP for FSP	NT6X36AB		1	61		AP04
# Ringing Generator	NT6X30AA			61	1, 2	RUL13
Ringing Generator	NT6X30CA			61	1, 2	RUL13
Ringing Generator Filler	NT6X3005			61	1, 2	RUL13
LCM Building Block (w/LDs)	NTZZ08BA	LCM		33		RUL2
LCM Module Fillers	NT6X04AX					RUL2
Enhanced Line Module Shelf	NT6X0431	LCA	0	47		AP01
Cover Latch	P0707195			33, 47		RUL2
Safety Cover	P0707194			33, 47		RUL2
Line Drawer (Domestic)	NT6X05AA	LD	5	47	0-4	AP03
ISDN Line Drawer	NT6X05DA	LD	1	47		RUL2
Enhanced Line Module Shelf	NT6X0431	LCA	1	33		AP01
Line Drawer (Domestic)	NT6X05AA	LD	5	33	0-4	AP03
ISDN Line Drawer	NT6X05DA	LD	1	33		RUL2
Subscriber Line Circuits						RUL4
Warning Label (French)	P0689450					RUL5
Line Drawer ID Labels	P0631765					RUL2
STD1 Remote Maint. Module	NTZZ12JA	RMM		19		RUL6
Remote Maint. Mod. Common CP	NT6X13AB	RMM		19		RUL6
Remote Maintenance Module	NT6X1301		1	19		AP01
Maintenance Trunk Card				19	3-16	RUL7
Filler Face Plate	NT0X50AC			19	1-16	RUL8
Filler Face Plate	NT0X50AG			19	17	RUL8
Filler Face Plate	NT0X50AA			19	19	RUL8
Filler Face Plate	NT0X50BE			19	20	RUL8
-48V SP Battery Supply Cable	NT6X1438		1			AP01
# RCC2 Common CP Fill	NTZZ12XA	RCC2		06		RUL1
# RCC2 EDC Packfill	NTZZ12ZA	RCC2		06		RUL1
RCC2 Packfill w/o EISP	NTZZ12XB	RCC2		06		RUL1
RCC2 Packfill	NTZZ12XF	RCC2		06		RUL1
Remote Cluster Controller #2	NTMX8501		1	06		AP01
Enhanced ISP	NTBX01AB			06	4, 24	RUL1
Design label (NTBX01AB)	P0738856			06	4, 24	RUL1
Filler faceplate	NT0X50AA			06	4, 24	RUL1
CMR Building Block	NTZZ12UA			06	5	RUL10

Retired Equipment
Cabinetized RSC (LCM-ready)
(Gray)

NTZZ46CA
EMC2-25-RCC2-1
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Plate	NT0X50AA			06	5,23	RUL10
Peripheral Loader	NT7X05AA			06	5,23 7,21	RUL10
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6,22	AP
NT6X92BB Label	P0690565		2	06	6,22	AP
UTR Building Block	NTZZ12VA			06	7	RUL11
Filler Plate	NT0X50AA			06	7,21	RUL11
Enhanced Messaging CP	NT6X69AC			06	8,20	RUL1
Design label (NT6X69AC)	P0710476			06	8,20	RUL1
Extended Distance Messaging	NTMX76AA			06	8,20	RUL1
Design label (NTMX76AA)	P0744109			06	8,20	RUL1
Quad Frame Carrier	NTMX87AA		2	06	9,19	AP
Dual DS1 Packlet	NTMX81AA		1	06	9:0	AP
Dual DS1 Packlet	NTMX81AA		1	06	19:0	AP
Dual DS1 Packlet	NTMX81AA			06	9:1-3 19:1-3	RUL20
Filler Face Plate	NTMX83AA			06	9:1-3 19:1-3	RUL20
# ISDN DCH Building Block	NTZZ17BA			06	12,14, 16	RUL12
ISDN DCH Building Block	NTZZ17BB			06	12,14, 16	RUL12
Quad Frame Carrier	NTMX87AA			06	12	RUL12
Dual DS1 Packlet	NTMX81AA			06	12 0-3	RUL12
Filler Face Plate	NTMX83AA			06	12 0-3	RUL12
Quad Frame Carrier	NTMX87AA			06	14	RUL12
Dual DS1 Packlet	NTMX81AA			06	14 0-2	RUL12
Filler Face Plate	NTMX83AA			06	14 0-3	RUL12
Quad Frame Carrier	NTMX87AA			06	16	RUL12
Dual DS1 Packlet	NTMX81AA			06	16 0-3	RUL12
Filler Face Plate	NTMX83AA			06	16 0-3	RUL12
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL12
Fan Cooling Unit	NTNX27CA		1	00		AP
CRSC Label	P0715089		1			AP
EMI Door Kit (Grey)	NTRX2516		1			AP
Cable Trough (Grey)	NTNX5511		1			AP
Leveling foot kit	NTRX2523					RUL14
Earthquake Anchor kit	NTRX2512					RUL14

Retired Equipment
Cabinetized RSC (LCM-ready)
(Gray)

NTZZ46CA
EMC2-25-RCC2-1
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
End Guards & EMI Side Panels	NTRX73					RUL16
Frame/Logic Ground H/W Kit	NTRX2519					RUL17
Endguard Insert Assemblies	NTRX07					RUL18
CRSC Standalone Power Kit	NTMX8943					RUL19
CRSC Standalone Power Dwg.	PCMX8943					RUL19
Cover Plate	P0715809					RUL19
Endguard Labels for RSC-S	P0736690					RUL21
ABS Cable	NTMX8955					RUL3
Cover Plate	P0741250					RUL3
BAMD Alarm/Power Cable Assy.	NTZZ46GA					RUL15
Cover Plate	NTEX5070					RUL15
RSC-S Hardware kit	NT0X58BK					RUL22

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X30AA	MD	NT6X30CA
NTZZ17BA	RCP	NTZZ17BB
NTZZ12XA	MD	NTZZ12XB
NTZZ12ZA	MD	NTZZ12XB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

Items marked AP01 are provided as part of the NTMX89CA and are included for completeness.

Retired Equipment
Cabinetized RSC (LCM-ready)
(Gray)

NTZZ46CA
EMC2-25-RCC2-1
Page 5

Items marked AP03 are provided as part of the NTZZ08BA and are included for completeness.

Items marked AP04 are provided as part of the NTMX26BA and are included for completeness.

RCP in flaglist means that the Rating (status) of the pec is pending change.

RULES:

AP 1) When PEC NTZZ46CA is ordered, these items are provided.

RUL1 1) Provide one (1) NTZZ12XB RCC2 packfill which contains NTMX77AA Processor pack. The NTZZ12XB must be applied to North American markets prior to XPM 08 software release.

2) Provide one (1) NTZZ12XF RCC2 packfill which contains NTAX74AA Processor pack. The NTZZ12XF must be applied to North American markets with XPM 08 and later software releases.

Provide the NTAX74AA for all initials and extensions that meet the market and software requirements listed above. Existing sites with the NTMX77AA will work with XPM 08 software releases and later.

The NTAX74AA does not support the NT7X05AA Peripheral Loader (NTZZ02UB) prior to XPM 081 software release for the North American market. If the NT7X05AA is present, replace with NT0X50AA filler panel and label.

3) Provide one NTZZ12XB/XF common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB/XF packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB/XF packfill is provided, the following additional equipment must be supplied:

Retired Equipment
Cabinetized RSC (LCM-ready)
(Gray)

NTZZ46CA
EMC2-25-RCC2-1
Page 6

1. EITHER two (2) NTBX01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications

4) Provide only one packfill per CRSC.

- RUL2 1) Provide one (1) NTZZ08BA LCM Module when lines are to be mounted in the CRSC. This block equips all ten line drawers.
- 2) The LCM module supports all non-ISDN lines. The LCM Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
33	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15
47	8	16,17
47	9	18,19

- 3) Provide eight P0707195 cover latches and two P0707194 safety covers for NT6X0431 applique panel terminal block covering, per customer request. These items cover terminal blocks to prevent accidental contact.
- 4) Provide one set of line drawer ID labels (P0631765) when the LCM module is equipped.
- 5) Provide one set of filler plates (NT6X04AX) when the LCM module is not equipped.
- 6) For ISDN applications provide one (1) NT6X05DA ISDN Line Drawer per LCM shelf, maximum two (2) per module. Each NT6X05DA accommodates up to 28 ISDN Line Cards in two logical drawers called Line Sub Groups (LSG) which can contain 14 cards each.

- 7) For ISDN applications the NT6X51AA or NT6X51AB must be upgraded to NT6X51AC by the NT6X04ZY upgrade kit.

ISDN Line Drawer is for the North American Market.

- 8) A maximum of seven (7) ISDN Line Drawers (NT6X05DA) per remote site can be applied to a single RSC Sonet.

A maximum of fourteen (14) ISDN Line Drawers (NT6X05DA) per remote site can be applied to a dual RSC Sonet.

- 9) Only 1 ILD can be defined in each LCA (Line Concentrating Array). ISDN Line Drawer can not be applied to positions 0 or 10. Preferred positions for locating the ISDN Line Drawer is 8 or 18. This means that if the ILD drawer number of the first ILD is within the range 2 - 8, the next ILD to be defined in this LCM will have its drawer number within the range 12 - 18. This limitation exists in order to permit an optimal heat dispersion in the LCM.

- RUL3 1) Provide one (1) NTMX8955 ABS Cable Assembly when Alarm Battery Supply is required at the bulkhead.

- 2) Provide two (2) P0741250 Cover Plates and four (4) P0670923 screws when the NTMX8955 Cable is NOT required.

- RUL4 1) The following line cards may be assigned to the LCM Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
Data Line Card	NT6X71AA/AB	2	320
Asynchronous I/F Line Card	NT6X76AC/AD	2	320
Business Set Line Card	NT6X21AC	1	640
POTS Message Waiting	NT6X19AA*	1	640
Message Waiting Converter LC	NT6X20AA*	2	10
POTS Line Card	NT6X17AA/AB/AC	1	640
POTS Line Card	NT6X18--	1	640
IBERT	NT6X99AA	2	1 per LCM

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

- 2) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup.

- 3) Provision IBERT for data path loop testing. Provision only one per LCM.
- RUL5 1) Provide one (1) P0689450 French Warning Label when frame is required by Canadian customers. This label is to be affixed to the cabinet FSP.
- RUL6 1) Provide either a fully configured RMM per NTZZ12JA or build the RMM by provisioning one (1) NT6X13AB and equipment per RULES 7, 8, and 9.
2) This shelf is generally needed in Mono RSCS installations. A second (2nd) RMM may be housed in the CEXT cabinet (if used) or a CMIS.
- 3) One NT6X1438 (-48V SP Batter Supply Cable) is provided as part of the NTMX89AA CRSC.
- RUL7 1) The following Service Circuits are provisionable on the RMM:
- NT3X09BA - Remote Metallic Test Access
 - NT0X10AA - Scan (SC) Point Card (14 SC Points Per Card)
 - NT2X10BA/NT2X11BA - MTU
 - NT2X57AA - Signal Distribution (SD) Card
(14 SD Points Per Card)
 - NT2X90AD - INC/OG Test Trunk
(Required For Metallic Testing)
- 2) Due to bulkhead cabling limitations, RMMs in RSC-S applications have additional mounting restrictions. Slots 3-6 can mount the cards shown below ONLY. Slots 7-10 can mount the cards shown, used for the application shown below, ONLY. Slots 3-10 need be equipped only when required for the office configuration (they are not mandatory). Cards needing connection to the Distributing Frame must mount in slots 11-16. Existing RMM assignment restrictions in Section 14 of the Engineering Manual also apply. Refer to the following for allowable circuit pack mounting locations:

RMM SLOT	ALLOWED CIRCUIT PACK
-----	-----
3	NT2X10BA
4	NT2X11BA
5	NT0X10AA
6	NT3X09BA
7	NT2X90AD for MONTALK
8	NT2X90AD for MONTALK
9	NT2X90AD for VERIFICATION 90

10 NT2X90AD for VERIFICATION 90
 11 FULLY PROVISIONABLE WITHIN RULES
 12 FULLY PROVISIONABLE WITHIN RULES
 13 FULLY PROVISIONABLE WITHIN RULES
 14 FULLY PROVISIONABLE WITHIN RULES
 15 FULLY PROVISIONABLE WITHIN RULES
 16 FULLY PROVISIONABLE WITHIN RULES

RUL8 1) Any card slot 1 thru 16 not equipped with a circuit pack per RULE #7 above shall be equipped with an NT0X50AC Filler Face Plate.

2) Provision one NT0X50AG for slot 17 when RMM is not equipped.

3) Provision one NT0X50AA for slot 19 when RMM is not equipped.

4) Provision one NT0X50BE for slot 20 when RMM is not equipped.

RUL9 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet. The packlets in slots 9 and 19, position 0 are Always Provided.

2) Assign packlets in the following order; slot 9,1;19,1;9,2;19,2;9,3; 19,3.

3) Provide filler plates for all unused packlet positions.

RUL10 1) Provide one (1) NTZZ12UA in slots 5 & 23 if CLASS Calling Number Delivery feature is to be supported. This provides two NT6X78AB CPs and labels. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.

2) Provide two (2) NT7X05AAs Cps when Fast Recovery from Lost Load is required. Mount in slots 5 and 23, or slots 7 and 21.

The NTAX74AA does not support the NT7X05AA Peripheral Loader (NTZZ02UB) prior to XPM 081 software release for the North American market. If the NT7X05AA is present, replace with NT0X50AA filler panel and label.

RUL11 1) One UTR Pair in Slot 6 & 22 is included with NTZZ46CA.

2) The exact quantity required is based on traffic. The following general rule may be used for planning purposes only.

Retired Equipment
 Cabinetized RSC (LCM-ready)
 (Gray)

NTZZ46CA
 EMC2-25-RCC2-1
 Page 10

If UTR CCS is 0 to 765, then one pair (6,22) is sufficient.
If UTR CCS is 765 to 1600, then provide a second pair by providing one NTZZ12VA for slots 7 and 21. Labels are included in this block. Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.

- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.

RUL12 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 in the Engineering Manual) and select the configuration that best suits your need. Note: If any of the configurations indicate slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for DCH circuit packs are Always Provided as part of the shelf.

- 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).

- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.

- 5) DS30A ports are to be assigned beginning with port 53 and then descending.

- 6) A DCH in slot 12 uses port 1;a DCH in slot 14 uses port 17 ;a DCH in slot 16 uses port 9.

RUL13 1) Provide two (2) NT6X30CA Ringing Generators to support analog ringing. Check availability reports before ordering. NT6X30CA replaces NT6X30AA.

- 2) Provide two (2) NT6X3005 fillers when the NT6X30-- Ringing Generators are not supplied.

RUL14 1) Provide one (1) NTRX2523 Leveling Foot kit for each CRSC in non-earthquake applications.

- 2) Provide one (1) NTRX2512 Earthquake Anchor kit for each CRSC in earthquake applications.

- 3) Anchoring hardware and leveling feet are provided by Building Studies.

- RUL15 1) Provide one (1) NTZZ46GA BAMD Alarm/Power cable assembly BB when externally powering a NT0X63AC Alarm Control and Display Panel. This BB code includes the hardware required with this cable. Assemble per ADMX89CA.
- 2) Provide one (1) NTEX5070 Cover Plate and two (2) P0670923 screws when NTZZ46GA is NOT required.
- RUL16 1) Refer to MSRX73 for all CRSC cabinet lineup provisioned endpanel, endcover, endguard, duct and column around hardware.
- RUL17 1) Provide one NTRX2519 Frame/Logic Ground H/W kit per CRSC.
- RUL18 1) Refer to MSRX07 for all CRSC cabinet lineup provisioned endguard insert hardware.
- RUL19 1) Provide one NTMX8943 when the CRSC is powered from a seven foot PDC or is operated as a standalone unit. Provide on PCMX8943 drawing when the NTMX8943 kit is provided.
- 2) Provide four (4) P0715809 Cover Plates and eight (8) P0670923 screws when NTMX8943 is NOT required.
- RUL20 1) DS-1 Interfaces mounted on Quad Carriers in slots 9 and 19 provide host interface. A minimum of two links, mounted on different packlets, are required and are Always Provided as part of the Building Block. Additional packlets should be provided per the following to supply the required host interface:

Host Links Required	Packlet Location
-----	-----
2 - 4	9:0 and 19:0
	(Always Provided)
5 - 6	9:0-1 and 19:0
7 - 8	9:0-1 and 19:0-1
9 - 10	9:0-2 and 19:0-1
11 - 12	9:0-2 and 19:0-2
13 - 14	9:0-3 and 19:0-2
15 - 16	9:0-3 and 19:0-3

- 2) Each unequipped packlet location is to be covered with a NTMX83AA filler plate.
- RUL21 1) Provide one set of endguard labels per lineup. Enough labels are provided in this set for (2) CRSCs, (1) CEXT, (1) CPDC, (3) CLCEs and (1) CMIS. Refer to label documentation if additional labels are required.

- RUL22 1) Provide one NT0X58BK Hardware kit to provide installation materials for initial and extension applications.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCM-READY) (PCM)

PEC CODE: NTZZ47TB

CPC CODE: B0224547

| RATING: MD

REPLACES: NTZZ47TA

| REPLACED BY: NTZZ47TC

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47TB Building Block provides the base equipment for one CRSC equipped for an internal LCM. The LCM packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for PCM-30 interfaces to the host, trunks and remote-off-remote. The doors, anchors, frame fail lights and cabinet mechanicals must be ordered separately, based on documentation referenced herein.

REFERENCE DOCUMENTATION: ISMX89 00 05
ADMX89 00 00

MARKETS: Applicable markets:

Europe
CALA

ISSUE AUTHOR: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47TB EMC2-25-RCC2-10 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 08	ECM 691 01	NTZZ47TB Introduction.
94 06 22	ECM 691 03	Change to Internat'l LCM packfill
94 08 10	ECM 691 04	Show NTMX74AA as MD replaced by the NTMX74AB DS30A Interface CP.
94 08 28	ECM 691 05	Undo NTMX74AA changes made in the ECM 691 04. Change NT6X04AB LCM Packfill to NT6X04BB LCM Packfill.
94 09 04	ECM 691 06	Where NTRX72AA was AP, change it to AP NTRX92AA.
94 10 17	ECM 691 07	Add NTMX89LA ordering information.
95 02 14	ECM 691 08	Revisions per ET 20299.
95 05 04	ECM 691 09	Declare code retired status.

The Remote Switching Center - SONET Model B CRSC (LCM-ready) (PCM) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCM Kit	NTMX89FA		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringling Generator Shf Assy	NTRX25AG		1	65		AP02
Enhanced Line Module Shelf	NT6X0442		1	33		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/LCM MSP Kit	NTMX89KJ		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15,16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1,3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8,17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R,8R, 17R,20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (PCM) Kit	NTMX89KB		1			AP
PCM30 Coax PCB Assembly	NTMX8989		1	05		AP04
PCM30 Ext Blkhd 19 Plate	NTMX8980		1	19		AP04
CRSC/LCM VF I/O Kit	NTMX89KH		1			AP
Blkhd 33 Connector Plate	NTMX8969		1	33		AP05
Blkhd 47 Connector Plate	NTMX8982		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA		1	00		AP
10" Cooling Unit	NTRX91AA	CU	1	00		AP01
LCM Packfill (Internat'l)	NT6X04BB		1	33		RUL1
QFFI Fuse Assembly	NT6X04FA		2	33,47		RUL1
Line Drawers	NT6X05AA		10	33		RUL1
LCM Module Fillers	NT6X04AX		1	33		RUL1
Line Drawer ID Labels	P0631765		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (PCM)

NTZZ47TB
EMC2-25-RCC2-10
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Gen.(China/Austral)	NT6X30EA		2	65	1, 2	RUL3
Ringing Generator (U.K.)	NT6X30GA		2	65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK		2	65	1, 2	RUL3
Remote Maint.Mod.(Internat)	NT6X13EA	RMM	1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
RMM Repowering Kit	NTMX89LA		1			RUL13
C28 English label kit	NTRX3541		1			RUL6
C28 German label kit	NTRX3542		1			RUL6
Power Converter	NTMX72AA		2	06	1-2, 26-27	AP
Unified Processor	NTMX77AA		2	06	3, 25	AP
Enhanced ISP	NTBX01AB		2	06	4, 24	AP
Enhanced Matrix CP	NTMX75AA		2	06	10, 18	AP
PCM Signaling Processor	NTMX73AA		2	06	11, 17	AP
DS30A Interface CP	NTMX74AA		2	06	13, 15	AP
Messaging CP (International)	NT6X69LB		2	06	8, 20	RUL11
Desig. Label (NT6X69LB)	P0713213		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Desig. Label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Peripheral Loader BB	NTZZ02UB		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	6, 22	AP
Desig. Label (NT6X92CA)	P0677831		2	06	6, 22	AP
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	7, 21	RUL9
Desig. Label (NT6X92CA)	P0677831		2	06	7, 21	RUL9
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual PCM-30 Packlet	NTMX82AA		2	06	9:0 19:0	AP
Dual PCM-30 Packlet	NTMX82AA		6	06	9:1-3	RUL7

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (PCM)

NTZZ47TB
EMC2-25-RCC2-10
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NTMX83AA		6	06	19:1-3 9:1-3	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	19:1-3 12,14, 16	RUL10
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
CRSC Door label (Blue)	P0715089		1			RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (PCM)

NTZZ47TB
EMC2-25-RCC2-10
Page 5

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FA and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KJ and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KB and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KH and are included for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ47TB is ordered, these items are provided.
- RUL1 1) Provide one NT6X04BB LCM Packfill, two NT6X04FA QFFI Fuse Assemblies and ten NT6X05AA Line Drawers to equip the LCM module in the CRSC. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution nameplates when the LCM is equipped.
- 2) Provide one NT6X04AX LCM Filler kit and two NT6X04FA QFFI Fuse Assy. when the internal LCM is not to be equipped. The NT6X04FA assemblies are needed to terminate internal cabling.
- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally

be used except for applications that are extending an existing Model A lineup.

- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30EA Low Profile Ringing Generators for all applications in China or Australia that will support POTS lines. Provide two (2) NT6X30GA Low Profile Ringing Generators for all applications in the United Kingdom that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30--s are NOT provided.
- RUL4 1) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.

- 7) Provide one (1) NT4X98BB and one (1) NT4X97AA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot and the NT4X97AA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.
- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS															
CIRCUIT PACK	03	04	05	06	07	08	09	10	11	12	13	14	15	16		
NT2X10BA	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT2X11BA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT4X98BB	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N		
NT4X97AA	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N		
NT0X10AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		
NT2X57AA	N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y		

NT2X90AD	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- 2) Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provision PCM-30 packlets for C-side interface based on host traffic requirements. Two PCM-30 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one NTZZ02UB in slots 5 & 23 to provide support for the fast recovery from lost software load feature. NTZZ02UB requires NA004 and XPM05 software, or later. If not required, provide two NT0X50AA fillers for slots 5 and 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide two NT6X92CAs and labels for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and PCM-30s for the RCC2 one must consider all three together to determine the hard-

ware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
 - 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL11
- 1) Provide two NT6X69LB CPs for standard applications. This pack supports the remote at a maximum distance of 100 miles from the host.
 - 2) Provide two NTMX76AA CPs for Extended Distance Capability (requires NTMX76AA HDLC Messaging in the host XPM). EDC requires BCS-36 for International applications.
 - 3) The HDLC Messaging used in the NTMX76AA allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 4) Provide labels for the Messaging CPs provided.
- RUL12
- 1) Provide one P0715089 Door Label per CRSC for grey applications. Only grey equipment is currently supported for International application.
- RUL13
- 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCME-READY) (PCM)

PEC CODE: NTZZ47UB

CPC CODE: B0224548

| RATING: MD

REPLACES: NTZZ47UA

| REPLACED BY: NTZZ47UC

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47UB Building Block provides the base equipment for one CRSC equipped for an internal LCME. The LCME packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for PCM-30 interfaces to the host, trunks and remote-off-remote. The doors, anchors, frame fail lights and cabinet mechanicals must be ordered separately based on documentation referenced herein.

REFERENCE DOCUMENTATION: ISMX89 00 05
ADMX89 00 00

MARKETS: Applicable markets:

Europe
CALA

ISSUE AUTHOR: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47UB EMC2-25-RCC2-11 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 08	ECM 691 01	NTZZ47UB Introduction.
94 08 10	ECM 691 04	Show NTMX74AA as MD replaced by the NTMX74AB DS30A Interface CP.
94 08 28	ECM 691 05	Undo NTMX74AA changes made in the ECM 691 04. Change NTB31BA LCME Common CP to NTB31BB. Add NTB31PA.
94 09 04	ECM 691 06	Where NTRX72AA was AP, change it to AP NTRX92AA.
94 10 17	ECM 691 07	Add NTMX89LA ordering information.
95 02 14	ECM 691 08	Revision per ET 20299.
95 05 04	ECM 691 09	Declare NTZZ47UB status Retired.

The Remote Switching Center - SONET Model B CRSC (LCME-ready) (PCM) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCME Kit	NTMX89FB		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ring Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/ISDN MSP Kit	NTMX89KK		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (PCM) Kit	NTMX89KB		1			AP
PCM30 Coax PCB Assembly	NTMX8989		1	05		AP04
PCM30 Ext Blkhd 19 Plate	NTMX8980		1	19		AP04
CRSC/ISDN VF I/O Kit	NTMX89KG		1			AP
Blkhd 33 Connector Plate	NTMX8978		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME	1	33, 47		RUL1
LCME Common CP	NTBX31BB	LCME	1	33, 47		AP07
ISDN Enhanced Line Drawers	NTBX32BA	LD			1, 5, 9, 13	AP07
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber Line Cards	AR					RUL1
LCME Packfill Upgrade Kit	NTBX31PA		1			RUL13
LCME Fillers Plates	NTBX31AB		1	33, 47		RUL1

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCME-ready) (PCM)

NTZZ47UB
EMC2-25-RCC2-11
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LD Fillers Plates	NT6X05AX		8	33,47	1,5 9,13	RUL1
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Ringing Gen.(China/Austral)	NT6X30EA		2	65	1,2	RUL3
Ringing Generator (U.K.)	NT6X30GA		2	65	1,2	RUL3
Ringing Generator Filler	NTRX25AK		2	65	1,2	RUL3
Remote Maint.Mod.(Internat)	NT6X13EA	RMM	1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test Unit Cntrl.	NT4X98BB			19		RUL5
Multiline Test (Analog)	NT4X97AA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
RMM Repowering Kit	NTMX89LA		1			RUL14
C28 English label kit	NTRX3541		1			RUL6
C28 German label kit	NTRX3542		1			RUL6
Power Converter	NTMX72AA		2	06	1-2, 26-27	AP
Unified Processor	NTMX77AA		2	06	3,25	AP
Enhanced ISP	NTBX01AB		2	06	4,24	AP
Enhanced Matrix CP	NTMX75AA		2	06	10,18	AP
PCM Signaling Processor	NTMX73AA		2	06	11,17	AP
DS30A Interface	NTMX74AA		2	06	13,15	AP
Messaging CP (International)	NT6X69LB		2	06	8,20	RUL11
Desig. Label (NT6X69LB)	P0713213		2	06	8,20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8,20	RUL11
Desig. Label (NTMX76AA)	P0744109		2	06	8,20	RUL11
Filler Plate	NT0X50AA		2	06	5,23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	6,22	AP
Desig. Label (NT6X92CA)	P0677831		2	06	6,22	AP
Universal Tone Rec'vr (UTR)	NT6X92CA		2	06	7,21	RUL9
Desig. Label (NT6X92CA)	P0677831		2	06	7,21	RUL9
Filler Plate	NT0X50AA		2	06	7,21	RUL9

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCME-ready) (PCM)

NTZZ47UB
EMC2-25-RCC2-11
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Quad Carrier	NTMX87AA		2	06	9,19	AP
Dual PCM-30 Packlet	NTMX82AA		2	06	9:0 19:0	AP
Dual PCM-30 Packlet	NTMX82AA		6	06	9:1-3 19:1-3	RUL7
Filler Face Plate	NTMX83AA		6	06	9:1-3 19:1-3	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12,14, 16	RUL10
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual PCM-30 Packlet	NTMX82AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
CRSC Door label (Blue)	P0715089		1			RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FB and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KK and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KB and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KG and are shown for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 11) Items marked AP07 are included in NTZZ17HA and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ47UB is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution nameplates when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen

from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set and eight NT6X05AX Line Drawer fillers when the LCME module is not to be equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5, 9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 8) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCME-ready) (PCM)

NTZZ47UB
EMC2-25-RCC2-11
Page 7

=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 9) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 10) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 11) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.

- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.

- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30EA Low Profile Ringing Generators for all applications in China or Australia that will support POTS lines. Provide two (2) NT6X30GA Low Profile Ringing Generators for all applications in the United Kingdom that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30--s are NOT provided.
- RUL4 1) Provide one (1) NT6X13EA RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT4X98BB and one (1) NT4X97AA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot and the NT4X97AA in the next higher slot.

A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.

- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

NT3X09BA	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.

Y denotes a slot that CAN be used for that pack.

C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- 2) Provide one NTRX3542 per cabinet for applications requiring labels in German.
- RUL7 1) Provision PCM-30 packlets for C-side interface based on host traffic requirements. Two PCM-30 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide two NT0X50AAs in slots 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide two NT6X92CAs and labels for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and PCM-30s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
 - 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL11
- 1) Provide two NT6X69LB CPs for standard applications. This pack supports the remote at a maximum distance of 100 miles from the host.
 - 2) Provide two NTMX76AA CPs for Extended Distance Capability (requires NTMX76AA HDLC Messaging in the host XPM). (EDC requires BCS-36 for International applications.)
 - 3) The HDLC Messaging used in the NTMX76AA allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 4) Provide labels for the Messaging CPs provided.
- RUL12
- 1) Provide one P0715089 CRSC Label per CRSC for grey applications. Only grey equipment is currently supported for International application.
- RUL13
- 1) Provide one NTB31PA kit to upgrade one existing NTB31PA LCME packfill to NTB31BB.
- RUL14
- 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCM-READY) (NON-PCM)

PEC CODE: NTZZ47QC

CPC CODE: B0242513

| RATING: MD

REPLACES: NTZZ47QB

| REPLACED BY: NTZZ47QD

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47QC Building Block provides a CRSC equipped for an internal LCM. The LCM packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for DS1 interfaces to the host, trunks and remote-off-remote. The doors, cable troughs, anchors and other mechanical equipment must be provided separately per documentation referenced herein. This Building Block includes one pair of NT6X92BC Universal Tone Receivers.

REFERENCE DOCUMENTATION: ISMX89 00 05
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47QC EMC2-25-RCC2-12 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 02 14	ECM 691 08	Introduce NTZZ47QC.
95 05 04	ECM 691 09	Declare NTZZ47QC status MD.

The Remote Switching Center - SONET Model B CRSC (LCM-ready) (Non-PCM) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/LCM Kit	NTMX89FA		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringling Generator Shf Assy	NTRX25AG		1	65		AP02
Enhanced Line Module Shelf	NT6X0442		1	33		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/LCM MSP Kit	NTMX89KJ		1	61		AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15,16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1,3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8,17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R,8R, 17R,20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (Non-PCM) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/LCM VF I/O Kit	NTMX89KH		1			AP
Blkhd 33 Connector Plate	NTMX8969		1	33		AP05
Blkhd 47 Connector Plate	NTMX8982		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
LCM Packfill	NT6X04AB		1	33		RUL1
QFFI Fuse Assembly	NT6X04FA		2	33,47		RUL1
Line Drawers	NT6X05AA		10	33		RUL1
LCM Module Fillers	NT6X04AX		1	33		RUL1
Line Drawer ID Labels	P0631765		1			RUL1
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Generator	NT6X30HA		2	65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK		2	65	1, 2	RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk for AECO Local Test	NT3X04AA			19		RUL5
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
RMM Repowering Kit	NTMX89LA		1			RUL13
C28 English label kit	NTRX3541		1			RUL6
RCC2 Packfill (Standard)	NTZZ12XA		1	06		RUL11
RCC2 Packfill (EDC)	NTZZ12ZA		1	06		RUL11
RCC2 Packfill (w/o EISP)	NTZZ12XB		1	06		RUL11
Enhanced ISP	NTBX01AB		2	06	4, 24	RUL11
Design label (NTBX01AB)	P0738856		2	06	4, 24	RUL11
Filler faceplate	NT0X50AA		2	06	4, 24	RUL11
Enhanced Messaging CP	NT6X69AC		2	06	8, 20	RUL11
Design label (NT6X69AC)	P0710476		2	06	8, 20	RUL11
Enhanced Messaging CP (ADSI)	NT6X69AD		2	06	8, 20	RUL11
Design label (NT6X69AD)	P0800014		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Design label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Class Modem Resource BB	NTZZ12UA		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92BC		2	06	6, 22	AP
Desig. Label (NT6X92BC)	P0737431		2	06	6, 22	AP
Universal Tone Rec'vr (UTR)	NTZZ12VB		2	06	7, 21	RUL9
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		2	06	9:0	AP
					19:0	
Dual DS1 Packlet	NTMX81AA		6	06	9:1-3	RUL7
					19:1-3	
Filler Face Plate	NTMX83AA		6	06	9:1-3	RUL7

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (Non-PCM)

NTZZ47QC
EMC2-25-RCC2-12
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	19:1-3 12,14, 16	RUL10
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
CRSC Door label (Blue)	P0715089		1			RUL12
CRSC Door label (Green)	P0746294		1			RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCM-ready) (Non-PCM)

NTZZ47QC
EMC2-25-RCC2-12
Page 5

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FA and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KJ and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KH and are included for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ47QC is ordered, these items are provided.
- RUL1 1) Provide one NT6X04AB LCM Packfill, two NT6X04FA QFFI Fuse Assemblies and ten NT6X05AA Line Drawers to equip the LCM module in the CRSC. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCM is equipped.
- 2) Provide one NT6X04AX LCM Filler kit when the internal LCM is not to be equipped.
- RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.

- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.
- RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines. Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.
- RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.
- RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.
- 2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.
- 3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.
- 4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.
- 5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.
- 6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.
- 7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when

using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.

- 8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.
- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
Y denotes a slot that CAN be used for that pack.
C denotes a slot that can be used for that pack ONLY
if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide one NTZZ12VB for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.

Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
 - 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL11
- 1) Provide one RCC2 packfill per CRSC. Choose the appropriate packfill from those described below, based on application.
 - 2) The NTZZ12XA is used for standard applications (<100 miles to host for U.S.; <150 miles to host for Canada). This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 3) The NTZZ12ZA is used for Extended Distance Capability and requires NTMX76AA HDLC Messaging in the host XPM. This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 4) The HDLC Messaging used in the NTZZ12ZA packfill allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 5) Provide one NTZZ12XB common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:
 1. EITHER two (2) NTB01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
without support for the ADSI SCWID feature
OR two (2) NTMX76AA packs and two (2)

P0744109 labels for extended distance applications
without support for the ADSI SCWID feature
OR two (2) NT6X69AD packs and two (2)
P0800014 labels for standard distance applications
WITH support for the ADSI SCWID feature.

RUL12 1) Provide one P0715089 Door label per CRSC when grey equipment is supplied or one P0746294 Door label per CRSC when brown equipment is supplied.

RUL13 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

REMOTE SWITCHING CENTER - SONET
MODEL B CRSC (LCME-READY) (NON-PCM)

PEC CODE: NTZZ47RP

CPC CODE: B0242514

| RATING: MD

REPLACES: NTZZ47RA, NTZZ47RM

| REPLACED BY: NTZZ47RQ

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ47RP Building Block provides the base equipment for one CRSC equipped for an internal LCME. The LCME packfill and line cards, RMM packfill and circuit packs and external interface packs are provisionable based on office requirements. This code provides a CRSC wired internally for DS1 interfaces to the host, trunks and remote-off-remote. The doors, cable troughs, anchors and cabinet mechanicals must be provided separately based on documentation referenced herein. This Building Block includes one pair of NT6X92BC UTR packs.

REFERENCE DOCUMENTATION: ISMX89 00 05
ADMX89 00 00

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: William Stanley Dept. 3471 (PPK)

NTZZ47RP EMC2-25-RCC2-13 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 02 14 95 05 04	ECM 691 08 ECM 691 09	Introduce NTZZ47RP with NT6X92BCs. Declare NTZZ47RP status MD.

The Remote Switching Center - SONET Model B CRSC (LCME-ready) (Non-PCM) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced CRSC/ISDN Kit	NTMX89FB		1			AP
Vertical Ground Bar Assy	NT0X9595		1			AP02
Base Cabinet Kit	NTMX8903		1			AP02
Remote Maint. Mod. Shelf	NT6X1306		1	19		AP06
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP06
Base Enhanced Cabinet Assy	NTRX25AA		1			AP06
Ringing Generator Shf Assy	NTRX25AG		1	65		AP02
ISDN LCA Shelf	NTBX3118		2	33, 47		AP02
RCC2 CPM Shelf	NTMX8501		1	06		AP02
CRSC/ISDN MSP Kit	NTMX89KK		1			AP
Alarm Module	NTRX41AA		1	61	5	AP03
Breaker Module (10A)	NTRX42AA		5	61	10-14	AP03
Breaker Module (20A)	NTRX42CA		2	61	15, 16	AP03
Fuse Module	NTRX43AA		1	61	7	AP03
Talk-Battery Filter	NTRX44AA		2	61	1, 3	AP03
Blank Rear Panel 2.40"	P0734475		2	61	8, 17	AP03
Blank Rear Panel 1.20"	P0734476		4	61	4R, 8R, 17R, 20R	AP03
FPC (-48V CU Power/Alarm)	NTRX54BA		1	61		AP
FPC Label	P0741680		1	61		AP
CRSC RCC2/RMM (Non-PCM) Kit	NTMX89KA		1			AP
Bulkhead 05 CPM Conn Plate	NTMX8909		1	05		AP04
Bulkhead 19 CPM Conn Plate	NTMX8967		1	19		AP04
CRSC/ISDN VF I/O Kit	NTMX89KG		1			AP
Blkhd 33 Connector Plate	NTMX8978		1	33		AP05
Blkhd 47 Connector Plate	NTMX8983		1	47		AP05
Cooling Unit kit, 10"	NTRX92AA	CU	1	00		AP
Cooling Unit, 10"	NTRX91AA	CU	1	00		AP01
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA	LCME	1	33, 47		RUL1
LCME Common CP	NTBX31BA	LCME	1	33, 47		AP07
ISDN Enhanced Line Drawers	NTBX32BA	LD	8	33, 47	1, 5, 9, 13	AP07
LCM Notice Label	P0694813		1			RUL1
Line card caution nameplate	P0708739		2			RUL1
Subscriber Line Cards	AR					RUL1
LCME Fillers Plates	NTBX31AB		1	33, 47		RUL1
Line Drawer fillers	NT6X05AX		8	33, 47	1, 5, 9, 13	RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
External Power Kit (Vert.)	NTMX8904		1			RUL2
Internal Power Kit (Horiz.)	NTMX89KM		1			RUL2
Ringing Generator	NT6X30HA		2	65	1, 2	RUL3
Ringing Generator Filler	NTRX25AK		2	65	1, 2	RUL3
Remote Maint.Mod.(Domestic)	NT6X13AB		1	19		RUL4
Incoming/Outgoing Test Trk	NT2X90AD			19		RUL5
Scan Circuit Pack	NT0X10AA			19		RUL5
SD Circuit Pack	NT2X57AA			19		RUL5
Incoming Test Trunk	NT3X04AA			19		RUL5
for AECO Local Test						
8x8 Metallic Test Access	NT3X09BA			19		RUL5
Multiline Test (Analog)	NT2X10BA			19		RUL5
Multiline Test (Control)	NT2X11BA			19		RUL5
Balance Network	NT2X77AA			19		RUL5
Filler Faceplate	NT0X50AC			19:1-16		RUL5
Filler Faceplate	NT0X50AG		1	19:17		RUL5
Filler Faceplate	NT0X50AA		1	19:19		RUL5
Filler Faceplate	NT0X50BE		1	19:20		RUL5
RMM Repowering Kit	NTMX89LA		1			RUL13
C28 English label kit	NTRX3541		1			RUL6
RCC2 Packfill (Standard)	NTZZ12XA		1	06		RUL11
RCC2 Packfill (EDC)	NTZZ12ZA		1	06		RUL11
RCC2 Packfill (w/o EISP)	NTZZ12XB		1	06		RUL11
Enhanced ISP	NTBX01AB		2	06	4, 24	RUL11
Design label (NTBX01AB)	P0738856		2	06	4, 24	RUL11
Filler faceplate	NT0X50AA		2	06	4, 24	RUL11
Enhanced Messaging CP	NT6X69AC		2	06	8, 20	RUL11
Design label (NT6X69AC)	P0710476		2	06	8, 20	RUL11
Enhanced Messaging CP (ADSI)	NT6X69AD		2	06	8, 20	RUL11
Design label (NT6X69AD)	P0800014		2	06	8, 20	RUL11
Extended Distance Messaging	NTMX76AA		2	06	8, 20	RUL11
Design label (NTMX76AA)	P0744109		2	06	8, 20	RUL11
Class Modem Resource BB	NTZZ12UA		1	06	5, 23	RUL8
Filler Plate	NT0X50AA		2	06	5, 23	RUL8
Universal Tone Rec'vr (UTR)	NT6X92BC		2	06	6, 22	AP
Desig. Label (NT6X92BC)	P0737431		2	06	6, 22	AP
Universal Tone Rec'vr (UTR)	NTZZ12VB		2	06	7, 21	RUL9
Filler Plate	NT0X50AA		2	06	7, 21	RUL9
Quad Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		2	06	9:0 19:0	AP

Retired Equipment
Remote Switching Center - SONET
Model B CRSC (LCME-ready) (Non-PCM)

NTZZ47RP
EMC2-25-RCC2-13
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual DS1 Packlet	NTMX81AA		6	06	9:1-3 19:1-3	RUL7
Filler Face Plate	NTMX83AA		6	06	9:1-3 19:1-3	RUL7
ISDN D-Channel Handler (DCH)	NTZZ17BA			06	12,14, 16	RUL10
Quad Frame Carrier	NTMX87AA		1	06	12	RUL10
Dual DS1 Packlet	NTMX81AA			06	12:0-3	RUL10
Filler Face Plate	NTMX83AA			06	12:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	14	RUL10
Dual DS1 Packlet	NTMX81AA			06	14:0-2	RUL10
Filler Face Plate	NTMX83AA			06	14:0-3	RUL10
Quad Frame Carrier	NTMX87AA		1	06	16	RUL10
Dual DS1 Packlet	NTMX81AA			06	16:0-3	RUL10
Filler Face Plate	NTMX83AA			06	16:0-3	RUL10
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL10
CRSC Door label (Blue)	P0715089		1			RUL12
CRSC Door label (Green)	P0746294		1			RUL12
Cosmetic Endguards/EMI	Note 1					
Cabinet labels	Note 2					
Power and grounding	Note 3					
Cabinet mechanicals	Note 4					

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to NTRX73 Engineering Manual Section for provisioning cosmetic endguards and EMI sidepanels.
- 2) Refer to MS0X60AA for cabinet labels.
- 3) Refer to NTZX16CA Engineering Manual Section for System Power and Grounding information.
- 4) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.
- 5) Items marked AP01 are included with NTRX92AA and are shown for sparing purposes.
- 6) Items marked AP02 are included in NTMX89FB and are shown for completeness.
- 7) Items marked AP03 are included in NTMX89KK and are shown for completeness.
- 8) Items marked AP04 are included in NTMX89KA and are shown for completeness.
- 9) Items marked AP05 are included in NTMX89KG and are shown for completeness.
- 10) Items marked AP06 are included in NTMX8903 and are shown for completeness.
- 11) Items marked AP07 are included in NTZZ17HA and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ47RP is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ17HA LCME Building Block for each LCME (2B1Q) module required. Provide one P0631765 Line Drawer label set, one P0694813 LCM notice label and two P0708739 line card caution labels when the LCME is equipped.
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen

from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

- 3) Provide one NTB31AB Filler Plate set and eight NT6X05AX line drawer fillers when the LCME module is not to be equipped.
- 4) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 5) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 6) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- 7) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480

POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 8) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 9) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 10) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.

RUL2 1) Provide one (1) NTMX8904 External Power Kit for all cabinets that are to be externally powered. This will normally be used except for applications that are extending an existing Model A lineup.

- 2) Provide one (1) NTMX89KM Internal Power kit for all cabinets that utilize internal (horizontal) powering. This would normally include extension of a Model A lineup using the Model B cabinet.

RUL3 1) Provide two (2) NT6X30HA Low Profile Ringing Generators for all domestic applications that will support POTS lines.

Provide two (2) NTRX25AK fillers when the NT6X30HAs are NOT provided.

RUL4 1) Provide one (1) NT6X13AB RMM packfill when the Remote Maintenance Module is to be equipped. If the RMM is not to be utilized, provide filler faceplates per Rule 5.

RUL5 1) Provide RMM circuit packs based on office requirements. Slot assignment restrictions are described in the TABLE below. Individual circuit pack provisioning information is included below.

2) Provide one (1) NT2X90AD Test Trunk on an "As Required" basis. A NT2X90AD must always be combined with an MTU to provide a talk monitor feature. The TR and TT leads on the NT2X90AD shall be connected to the same Metallic Test Access as the MTU leads T and R. Provide one (1) NT2X77AA Balance Network for each NT2X90AD.

3) Provide one (1) NT0X10AA Scan Circuit Pack for every fourteen (14) scan points required in a remote office. When connected to out-of-office leads, the NT0X10AA must be mounted in an EVEN numbered slot.

4) Provide one (1) NT2X57AA Miscellaneous SD Type 1 circuit pack for every fourteen (14) signal distribution points required for the remote office.

5) Provide one (1) NT3X04AA Incoming Test Trunk for each AECO Local Test Board interface.

6) Provide one (1) NT3X09BA 8X8 Metallic Test Access circuit pack for each four LCMs in the remote site. Each NT3X09BA can serve up to eight service circuits and must be mounted in EVEN circuit pack positions only.

7) Provide one (1) NT2X10BA and one (1) NT2X11BA for each Multiline Test Unit (MTU) required. These packs must be installed in adjacent slots with the NT2X10BA occupying the odd numbered slot and the NT2X11BA in the next higher slot. A minimum of one MTU per office is required. The MTU requires -48V SP (Special Power). The MTU is required when using Electronic Business Sets. The MTU will not function correctly in slots 9 and 10 or slots 13-16.

8) Provide one (1) NT0X50AC for each unequipped slot 1-16 on the RMM shelf.

- 9) When the RMM shelf is NOT equipped, provide one (1) NT0X50AG for slot 17, one (1) NT0X50AA for slot 19, one (1) NT0X50BE for slot 20 and sixteen NT0X50ACs for slots 1-16.
- 10) The total -48V power consumption of the provisionable RMM circuit packs must not exceed 110 Watts. The power ratings of these packs are as follows:

Circuit Pack	Maximum Power Consumption
-----	-----
NT2X59 & NT6X74	25.0 Watts
NT0X10AA	2.0 Watts
NT2X57AA	4.5 Watts
NT2X90AD	1.5 Watts
NT3X04AA	28.0 Watts
NT3X09BA	11.5 Watts
NT2X10BA/NT4X98BB	20.0 Watts
NT2X11BA/NT4X97AA	9.0 Watts

- 11) The following TABLE shows the allowable mounting positions for each provisionable RMM circuit pack:

	SLOTS	03	04	05	06	07	08	09	10	11	12	13	14	15	16
CIRCUIT PACK															
NT2X10BA		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT2X11BA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT4X98BB		Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N
NT4X97AA		N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N
NT0X10AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X57AA		N	Y	C	Y	C	Y	C	N	C	Y	C	Y	C	Y
NT2X90AD		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X04AA		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NT3X09BA		N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	Y

NOTE: N denotes a slot that CANNOT be used for that pack.
 Y denotes a slot that CAN be used for that pack.
 C denotes a slot that can be used for that pack ONLY if it will not be used for out-of-office leads.

- RUL6 1) Provide one NTRX3541 per cabinet for applications requiring labels in English.
- RUL7 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet.
- 2) Assign packlets in the following order; slot 9:0,19:0,9:1,19:1,9:2, 19:2,9:3,19:3. (Note designation is slot:packlet)
- 3) Provide filler plates for all unused packlet positions.
- RUL8 1) Provide one (1) NTZZ12UA in slots 5 & 23 when the CLASS (CMS) Calling Number Delivery feature is provisioned. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.
- RUL9 1) One UTR Pair in Slot 6 & 22 is always included in this BB code.
- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide one NTZZ12VB for slots 7 and 21.
- Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL10 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of the Engineering Manual) and select the configuration that best suits your need.
- Note: If the selected configuration indicates slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.
- 2) Resistor networks for the DCH circuit packs are Always Provided as part of the shelf. The label for the DCH is included in the NTZZ17BA Building Block.
- 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).

- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL11
- 1) Provide one RCC2 packfill per CRSC. Choose the appropriate packfill from those described below, based on application.
 - 2) The NTZZ12XA is used for standard applications (<100 miles to host for U.S.; <150 miles to host for Canada). This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 3) The NTZZ12ZA is used for Extended Distance Capability and requires NTMX76AA HDLC Messaging in the host XPM. This packfill includes the Enhanced ISP pack that is required for ISDN and for all pre-BCS35 applications.
 - 4) The HDLC Messaging used in the NTZZ12ZA packfill allows up to 6.5 ms delay (one way) between the line subscriber and the host controller.
 - 5) Provide one NTZZ12XB common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:
 - 1. EITHER two (2) NTB01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 - 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
without support for the ADSI SCWID feature
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications
without support for the ADSI SCWID feature
OR two (2) NT6X69AD packs and two (2)
P0800014 labels for standard distance applications
WITH support for the ADSI SCWID feature.

- RUL12 1) Provide one P0715089 Door label per CRSC when grey equipment is supplied or one P0746294 Door label per CRSC when brown equipment is supplied.
- RUL13 1) Provide one NTMX89LA kit when the RMM must be powered from the "B" feed. The RMM in a CRSC is normally powered from the "A" feed, while the RMM in a CEXT is powered from the "B" feed. If an office has two CRSC cabinets with RMMs and no CEXT, and the customer wants the RMMs on different power feeds, provide one NTMX89LA to convert one RMM to power from the "B" feed.

CABINETIZED RSC (LCM-READY)
(BROWN)

PEC CODE: NTZZ46DA

CPC CODE: B0238255

RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ47QB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The CRSC with LCM is capable of being deployed as a single cabinet RSCS which supports up to 640 lines, service and maintenance circuits and DS1 links to host at a maximum distance of 100 miles (150 miles for Canadian applications). In addition, the CRSC may be deployed as the controller in a multi-cabinet RSCS. Other cabinets which may be deployed in a multi-cabinet RSCS are the CPDC, CMIS, and CLCE (max 5 in Mono CRSC). This Building Block provides the basic CRSC cabinet with the minimum equipment required for deployment. One LCM module is provisionable. This Building Block provides brown equipment. /off

REFERENCE DOCUMENTATION: MSMX89CA 00 10

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: NTI: Mark Sorrell Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NTZZ46DA EMC2-25-RCC2-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 12	ECM 617 07	Introduce CRSC (LCM) (Brown) Bld. Blk.
93 04 23	ECM 617 09	Introduce NT6X30CA Ringing Generator.
		Introduce Extended Distance packfill.
93 08 17	ECM 617 11	Introduce NTZZ12XB RCC2 w/o EISP.
93 10 13	ECM 617 12	Add DCH port use information.
		ET 41093 - Add NT0X58BK H/W kit.
93 12 02	ECM 617 14	Add newly created correct door label.
94 08 10	ECM 617 16	Show NTMX74AA as MD and replaced by
		NTMX74AB DS30A Interface CP.
94 08 28	ECM 617 17	Show NTMX74AA as replaced by NTMX74AB
		DS30A Interface CP. (NTMX74AA not MD).
94 10 17	ECM 691 07	Retire code. Replaced by NTZZ47QB.
96 04 02	ECM 691 15	Change per EC#024-94829. Add in
		NTZZ17BB to replace NTZZ17BA.
97 04 18	ECM 691 20	Per EC 024-97291 and EC 028-15577
		introduce ISDN provisioning.
97 05 02	ECM 691 21	Per EC 024-97754 introduce the
		NTAX74AA.

The Cabinetized RSC (LCM-ready) (Brown) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CRSC Cabinet	NTMX89CA		1			AP
Streamline Cabinet	NTNX25EA		1			AP01
Frame Supervisory Panel	NTMX26BA	FSP	1	61		AP
FSP Alarm CP	NT6X36AA		1	61		AP04
Alarm CP for FSP	NT6X36AB		1	61		AP04
# Ringing Generator	NT6X30AA			61	1, 2	RUL13
Ringing Generator	NT6X30CA			61	1, 2	RUL13
Ringing Generator Filler	NT6X3005			61	1, 2	RUL13
LCM Building Block (w/LDs)	NTZZ08BA	LCM		33		RUL2
LCM Module Fillers	NT6X04AX					RUL2
Enhanced Line Module Shelf	NT6X0431	LCA	0	47		AP01
Cover Latch	P0707195			33, 47		RUL2
Safety Cover	P0707194			33, 47		RUL2
Line Drawer (Domestic)	NT6X05AA	LD	5	47	0-4	AP03
ISDN Line Drawer	NT6X05DA	LD	1	47		RUL2
Enhanced Line Module Shelf	NT6X0431	LCA	1	33		AP01
Line Drawer (Domestic)	NT6X05AA	LD	5	33	0-4	AP03
ISDN Line Drawer	NT6X05DA	LD	1	33		RUL2
Subscriber Line Circuits						RUL4
Warning Label (French)	P0689450					RUL5
Line Drawer ID Labels	P0631765					RUL2
STD1 Remote Maint. Module	NTZZ12JA	RMM		19		RUL6
Remote Maint. Mod. Common CP	NT6X13AB	RMM		19		RUL6
Remote Maintenance Module	NT6X1301		1	19		AP01
Maintenance Trunk Card				19	3-16	RUL7
Filler Face Plate	NT0X50AC			19	1-16	RUL8
Filler Face Plate	NT0X50AG			19	17	RUL8
Filler Face Plate	NT0X50AA			19	19	RUL8
Filler Face Plate	NT0X50BE			19	20	RUL8
-48V SP Battery Supply Cable	NT6X1438		1			AP01
# RCC2 Common CP Fill	NTZZ12XA	RCC2		06		RUL1
# RCC2 EDC Packfill	NTZZ12ZA	RCC2		06		RUL1
RCC2 Packfill w/o EISP	NTZZ12XB	RCC2		06		RUL1
RCC2 Packfill	NTZZ12XF	RCC2		06		RUL1
Remote Cluster Controller #2	NTMX8501		1	06		AP01
Enhanced ISP	NTBX01AB			06	4, 24	RUL1
Design label (NTBX01AB)	P0738856			06	4, 24	RUL1
Filler faceplate	NT0X50AA			06	4, 24	RUL1
CMR Building Block	NTZZ12UA			06	5	RUL10

Retired Equipment
Cabinetized RSC (LCM-ready)
(Brown)

NTZZ46DA
EMC2-25-RCC2-2
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Plate	NT0X50AA			06	5,23	RUL10
Peripheral Loader	NT7X05AA			06	5,23 7,21	RUL10
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6,22	AP
NT6X92BB Label	P0690565		2	06	6,22	AP
UTR Building Block	NTZZ12VA			06	7	RUL11
Filler Plate	NT0X50AA			06	7,21	RUL11
Enhanced Messaging CP	NT6X69AC			06	8,20	RUL1
Design label (NT6X69AC)	P0710476			06	8,20	RUL1
Extended Distance Messaging	NTMX76AA			06	8,20	RUL1
Design label (NTMX76AA)	P0744109			06	8,20	RUL1
Quad Frame Carrier	NTMX87AA		2	06	9,19	AP
Dual DS1 Packlet	NTMX81AA		1	06	9:0	AP
Dual DS1 Packlet	NTMX81AA		1	06	19:0	AP
Dual DS1 Packlet	NTMX81AA			06	9:1-3 19:1-3	RUL20
Filler Face Plate	NTMX83AA			06	9:1-3 19:1-3	RUL20
PCM Signaling Processor	NTMX73AA			06	11,17	AP02
# ISDN DCH Building Block	NTZZ17BA			06	12,14, 16	RUL12
ISDN DCH Building Block	NTZZ17BB			06	12,14, 16	RUL12
Quad Frame Carrier	NTMX87AA			06	12	RUL12
Dual DS1 Packlet	NTMX81AA			06	12 0-3	RUL12
Filler Face Plate	NTMX83AA			06	12 0-3	RUL12
Quad Frame Carrier	NTMX87AA			06	14	RUL12
Dual DS1 Packlet	NTMX81AA			06	14 0-2	RUL12
Filler Face Plate	NTMX83AA			06	14 0-3	RUL12
Quad Frame Carrier	NTMX87AA			06	16	RUL12
Dual DS1 Packlet	NTMX81AA			06	16 0-3	RUL12
Filler Face Plate	NTMX83AA			06	16 0-3	RUL12
Filler Face Plate	NT0X50AA			06	12,14, 16	RUL12
Fan Cooling Unit	NTNX27CA		1	00		AP
CRSC Label (Green)	P0746294		1			AP
EMI Door Kit (Brown)	NTRX2531		1			AP
Cable Trough (Brown)	NTRX5544		1			AP
Leveling foot kit	NTRX2523					RUL14
Earthquake Anchor kit	NTRX2512					RUL14

Retired Equipment
Cabinetized RSC (LCM-ready)
(Brown)

NTZZ46DA
EMC2-25-RCC2-2
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
End Guards & EMI Side Panels	NTRX73					RUL16
Frame/Logic Ground H/W Kit	NTRX2519					RUL17
Endguard Insert Assemblies	NTRX07					RUL18
CRSC Standalone Power Kit	NTMX8943					RUL19
CRSC Standalone Power Dwg.	PCMX8943					RUL19
Cover Plate	P0715809					RUL19
Endguard Labels for RSC-S	P0736690					RUL21
ABS Cable	NTMX8955					RUL3
Cover Plate	P0741250					RUL3
BAMD Alarm/Power Cable Assy.	NTZZ46GA					RUL15
Cover Plate	NTEX5070					RUL15
RSC-S Hardware kit	NT0X58BK					RUL22

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X30AA	MD	NT6X30CA
NTZZ17BA	RCP	NTZZ17BB
NTZZ12XA	MD	NTZZ12XB
NTZZ12ZA	MD	NTZZ12XB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

Items marked AP01 are provided as part of the NTMX89CA and are included for completeness.

Retired Equipment
Cabinetized RSC (LCM-ready)
(Brown)

NTZZ46DA
EMC2-25-RCC2-2
Page 5

Items marked AP03 are provided as part of the NTZZ08BA and are included for completeness.

Items marked AP04 are provided as part of the NTMX26BA and are included for completeness.

RCP in flaglist means that the Rating (status) of the pec is pending change.

RULES:

AP 1) When PEC NTZZ46DA is ordered, these items are provided.

RUL1 1) Provide one (1) NTZZ12XB RCC2 packfill which contains NTMX77AA Processor pack. The NTZZ12XB must be applied to North American markets prior to XPM 08 software release.

2) Provide one (1) NTZZ12XF RCC2 packfill which contains NTAX74AA Processor pack. The NTZZ12XF must be applied to North American markets with XPM 08 or later software releases.

Provide the NTAX74AA for all initials and extensions that meet the market and software requirements listed above. Existing sites with the NTMX77AA will work with XPM 08 software releases and later.

The NTAX74AA does not support the NT7X05AA Peripheral Loader (NTZZ02UB) prior to XPM 081 software release for the North American market. If the NT7X05AA is present, replace with NT0X50AA filler panel and label.

3) Provide one NTZZ12XB/XF common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB/XF packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB/XF packfill is provided, the following additional equipment must be supplied:

Retired Equipment
Cabinetized RSC (LCM-ready)
(Brown)

NTZZ46DA
EMC2-25-RCC2-2
Page 6

1. EITHER two (2) NTBX01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications
OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications

4) Provide only one packfill per CRSC.

- RUL2 1) Provide one (1) NTZZ08BA LCM Module when lines are to be mounted in the CRSC. This block equips all ten line drawers.
- 2) The LCM module supports all non-ISDN lines. The LCM Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
33	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15
47	8	16,17
47	9	18,19

- 3) Provide eight P0707195 cover latches and two P0707194 safety covers for NT6X0431 applique panel terminal block covering, per customer request. These items cover terminal blocks to prevent accidental contact.
- 4) Provide one set of line drawer ID labels (P0631765) when the LCM module is equipped.
- 5) Provide one set of filler plates (NT6X04AX) when the LCM module is not equipped.
- 6) For ISDN applications provide one (1) NT6X05DA ISDN Line Drawer per LCM shelf, maximum two (2) per module. Each NT6X05DA accommodates up to 28 ISDN Line Cards in two logical drawers called Line Sub Groups (LSG) which can contain 14 cards each.

The ISDN Line Drawer is for the North American Market only.

- 7) For ISDN applications the NT6X51AA or NT6X51AB must be upgraded to NT6X51AC by the NT6X04ZY upgrade kit.
- 8) A maximum of seven (7) ISDN Line Drawers (NT6X05DA) per remote site can be applied to a single RSC Sonet.

A maximum of fourteen (14) ISDN Line Drawers (NT6X05DA) per remote site can be applied to a dual RSC Sonet.

- 9) Only 1 ILD can be defined in each LCA (Line Concentrating Array). ISDN Line Drawer can not be applied to positions 0 or 10. Preferred positions for locating the ISDN Line Drawer is 8 or 18. This means that if the ILD drawer number of the first ILD is within the range 2 - 8, the next ILD to be defined in this LCM will have its drawer number within the range 12 - 18. This limitation exists in order to permit an optimal heat dispersion in the LCM.

RUL3 1) Provide one (1) NTMX8955 ABS Cable Assembly when Alarm Battery Supply is required at the bulkhead.

- 2) Provide two (2) P0741250 Cover Plates and four (4) P0670923 screws when the NTMX8955 Cable is NOT required.

RUL4 1) The following line cards may be assigned to the LCM Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
Data Line Card	NT6X71AA/AB	2	320
Asynchronous I/F Line Card	NT6X76AC	2	320
Business Set Line Card	NT6X21AC	1	640
POTS Message Waiting	NT6X19AA*	1	640
Message Waiting Converter LC	NT6X20AA*	2	10
POTS Line Card	NT6X17AA/AB/AC	1	640
POTS Line Card	NT6X18--	1	640
IBERT	NT6X99AA	2	1 per LCM

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

- 2) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup.

- 3) Provision IBERT for data path loop testing. Provision only one per LCM.
- RUL5 1) Provide one (1) P0689450 French Warning Label when frame is required by Canadian customers. This label is to be affixed to the cabinet FSP.
- RUL6 1) Provide either a fully configured RMM per NTZZ12JA or build the RMM by provisioning one (1) NT6X13AB and equipment per RULES 7, 8, and 9.
- 2) This shelf is generally needed in Mono RSCS installations. A second (2nd) RMM may be housed in the CEXT cabinet (if used) or a CMIS.
- 3) One NT6X1438 (-48V SP Batter Supply Cable) is provided as part of the NTMX89AA CRSC.
- RUL7 1) The following Service Circuits are provisionable on the RMM:
- NT3X09BA - Remote Metallic Test Access
 - NT0X10AA - Scan (SC) Point Card (14 SC Points Per Card)
 - NT2X10BA/NT2X11BA - MTU
 - NT2X57AA - Signal Distribution (SD) Card
(14 SD Points Per Card)
 - NT2X90AD - INC/OG Test Trunk
(Required For Metallic Testing)
- 2) Due to bulkhead cabling limitations, RMMs in RSC-S applications have additional mounting restrictions. Slots 3-6 can mount the cards shown below ONLY. Slots 7-10 can mount the cards shown, used for the application shown below, ONLY. Slots 3-10 need be equipped only when required for the office configuration (they are not mandatory). Cards needing connection to the Distributing Frame must mount in slots 11-16. Existing RMM assignment restrictions in Section 14 of the Engineering Manual also apply. Refer to the following for allowable circuit pack mounting locations:

RMM SLOT	ALLOWED CIRCUIT PACK
-----	-----
3	NT2X10BA
4	NT2X11BA
5	NT0X10AA
6	NT3X09BA
7	NT2X90AD for MONTALK
8	NT2X90AD for MONTALK

9 NT2X90AD for VERIFICATION 90
 10 NT2X90AD for VERIFICATION 90
 11 FULLY PROVISIONABLE WITHIN RULES
 12 FULLY PROVISIONABLE WITHIN RULES
 13 FULLY PROVISIONABLE WITHIN RULES
 14 FULLY PROVISIONABLE WITHIN RULES
 15 FULLY PROVISIONABLE WITHIN RULES
 16 FULLY PROVISIONABLE WITHIN RULES

RUL8 1) Any card slot 1 thru 16 not equipped with a circuit pack per RULE #7 above shall be equipped with an NT0X50AC Filler Face Plate.

2) Provision one NT0X50AG for slot 17 when RMM is not equipped.

3) Provision one NT0X50AA for slot 19 when RMM is not equipped.

4) Provision one NT0X50BE for slot 20 when RMM is not equipped.

RUL9 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet. The packlets in slots 9 and 19, position 0 are Always Provided.

2) Assign packlets in the following order; slot 9,1;19,1;9,2;19,2;9,3; 19,3.

3) Provide filler plates for all unused packlet positions.

RUL10 1) Provide one (1) NTZZ12UA in slots 5 & 23 if CLASS Calling Number Delivery feature is to be supported. This provides two NT6X78AB CPs and labels. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.

2) Provide two (2) NT7X05AAs Cps when Fast Recovery from Lost Load is required. Mount in slots 5 and 23, or slots 7 and 21.

The NTAX74AA does not support the NT7X05AA Peripheral Loader (NTZZ02UB) prior to XPM 081 software release for the North American market. If the NT7X05AA is present, replace with NT0X50AA filler panel and label.

RUL11 1) One UTR Pair in Slot 6 & 22 is included with NTZZ46CA.

- 2) The exact quantity required is based on traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide a second pair by providing one NTZZ12VA for slots 7 and 21. Labels are included in this block. Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.
 - 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL12
- 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 in the Engineering Manual) and select the configuration that best suits your need. Note: If any of the configurations indicate slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.
 - 2) Resistor networks for DCH circuit packs are Always Provided as part of the shelf.
 - 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
 - 6) A DCH in slot 12 uses port 1; a DCH in slot 14 uses port 17; a DCH in slot 16 uses port 9.
- RUL13
- 1) Provide two (2) NT6X30CA Ringing Generators to support analog ringing. Check availability reports before ordering. NT6X30CA replaces NT6X30AA.
 - 2) Provide two (2) NT6X3005 fillers when the NT6X30-- Ringing Generators are not supplied.
- RUL14
- 1) Provide one (1) NTRX2523 Leveling Foot kit for each CRSC in non-earthquake applications.
 - 2) Provide one (1) NTRX2512 Earthquake Anchor kit for each CRSC in earthquake applications.
 - 3) Anchoring hardware and leveling feet are provided by Building Studies.

- RUL15 1) Provide one (1) NTZZ46GA BAMD Alarm/Power cable assembly BB when externally powering a NT0X63AC Alarm Control and Display Panel. This BB code includes the hardware required with this cable. Assemble per ADMX89CA.
- 2) Provide one (1) NTEX5070 Cover Plate and two (2) P0670923 screws when NTZZ46GA is NOT required.
- RUL16 1) Refer to MSRX73 for all CRSC cabinet lineup provisioned endpanel, endcover, endguard, duct and column around hardware.
- RUL17 1) Provide one NTRX2519 Frame/Logic Ground H/W kit per CRSC.
- RUL18 1) Refer to MSRX07 for all CRSC cabinet lineup provisioned endguard insert hardware.
- RUL19 1) Provide one NTMX8943 when the CRSC is powered from a seven foot PDC, is operated as a standalone unit or when vertical powering is used. Provide on PCMX8943 drawing when the NTMX8943 kit is provided. Vertical power should be used for all new applications. Horizontal power will be used only to extend an existing horizontally-powered lineup.
- 2) Provide four (4) P0715809 Cover Plates and eight (8) P0670923 screws when NTMX8943 is NOT required.
- RUL20 1) DS-1 Interfaces mounted on Quad Carriers in slots 9 and 19 provide host interface. A minimum of two links, mounted on different packlets, are required and are Always Provided as part of the Building Block. Additional packlets should be provided per the following to supply the required host interface:
- | Host Links Required | Packlet Location |
|---------------------|-----------------------------------|
| ----- | ----- |
| 2 - 4 | 9:0 and 19:0
(Always Provided) |
| 5 - 6 | 9:0-1 and 19:0 |
| 7 - 8 | 9:0-1 and 19:0-1 |
| 9 - 10 | 9:0-2 and 19:0-1 |
| 11 - 12 | 9:0-2 and 19:0-2 |
| 13 - 14 | 9:0-3 and 19:0-2 |
| 15 - 16 | 9:0-3 and 19:0-3 |
- 2) Each unequipped packlet location is to be covered with a NTMX83AA filler plate.
- RUL21 1) Provide one set of endguard labels per lineup. Enough labels are provided in this set for (2) CRSCs, (1) CEXT, (1)

CPDC, (3) CLCEs and (1) CMIS. Refer to label documentation if additional labels are required.

- RUL22 1) Provide one NT0X58BK Hardware kit to provide installation materials for initial and extension applications.

CABINETIZED RSC BUILDING BLOCK
(GRAY)

PEC CODE: NTZZ12QA

CPC CODE: B0234906

RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ47RN

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The CRSC is capable of being deployed as a single cabinet RSCS which supports up to 480 lines, service and maintenance circuits and DS1 links to host at a maximum distance of 100 miles (150 miles for Canadian applications). In addition, the CRSC may be deployed as the controller in a multi-cabinet RSCS. Other cabinets which may be deployed in a multi-cabinet RSCS are the CPDC, CMIS, and CLCE (max 5 in Mono CRSC). This Building Block provides the grey CRSC cabinet and cable rack and the minimum equipment required for deployment.

| REFERENCE DOCUMENTATION: MSMX89AA 00 12

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ12QA EMC2-25-RCC2-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 27	ECM 617 04	Make LCME labels provisionable
93 01 05	ECM 617 05	Declare code Manufacture Discontinued.
93 02 05	ECM 617 06	Reinstate NTZZ12QA as gray CRSC.
93 03 12	ECM 617 07	Add cable BB codes and FSP spare CPs.
93 04 13	ECM 617 08	EC 011-17820 - Replace NT6X76AC with NT6X76AD Hayes Supported AILC.
93 04 23	ECM 617 09	Introduce NT6X30CA Ringing Generator. Introduce Extended Distance packfill.
93 08 17	ECM 617 11	Introduce NTZZ12XB RCC2 w/o EISP.
93 10 13	ECM 617 12	EC 024-90341 - Add NTRX26CZ cable. ET 41093 - Add NT0X58BK H/W kit.
93 11 05	ECM 617 13	Use LCME BB NTZZ17HA instead of detail
94 08 10	ECM 617 16	Show NTMX74AA as MD and replaced by NTMX74AB DS30A Interface CP.
94 08 28	ECM 617 17	Show NTZZ74AA replaced by NTZZ74AB. Show NTB31AB replaced by NTB31BB. Add NTB31PA LCME Packfill Upgrade Kit.
94 10 17	ECM 691 07	Retire code. Replaced by NTZZ47RN.
96 04 02	ECM 691 15	Per EC#024-94829 add NTZZ17BB, and add NTB31PB upgrade kit.

The Cabinetized RSC Building Block (Gray) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CRSC Cabinet	NTMX89AA		1			AP
Streamline Cabinet	NTNX25EA		1			AP01
Frame Supervisory Panel	NTMX26BA	FSP	1	61		AP
FSP Alarm CP	NT6X36AA		1	61		AP03
Alarm CP for FSP	NT6X36AB		1	61		AP03
# Ringing Generator	NT6X30AA			61	1, 2	RUL13
Ringing Generator	NT6X30CA			61	1, 2	RUL13
Ringing Generator Filler	NT6X3005			61	1, 2	RUL13
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA			33, 47		RUL2
LCME Common Circuit Packs	NTBX31BB	LCME	1	33, 47		AP04
ISDN Line Conc Arr Shf Assy	NTBX3118	LCAI 0		47		AP01
ISDN Line Conc Arr Shf Assy	NTBX3118	LCAI 1		33		AP01
ISDN Enhanced Line Drawer	NTBX32BA	LD	8	33, 47	1, 5, 9, 13	AP04
LCME Packfill Upgrade Kit	NTBX31PA					RUL27
LCME Packfill Upgrade Kit	NTBX31PB					RUL27
Line Drawer ID Label	P0709652		1			AP04
LCME Filler Plates	NTBX31AB					RUL2
Subscriber Line Circuits						RUL4
Warning Label (French)	P0689450					RUL5
LCME PDC Fuse Label	P0711231					RUL22
LCME PDC Fuse Label	P0711232					RUL22
LCME Shelf Label for FSP	P0711233					RUL22
LCME Shelf Label for FSP	P0711234					RUL22
LCME Shelf Label for FSP	P0711235					RUL22
LCME Shelf Label for FSP	P0711236					RUL22
STD1 Remote Maint. Module	NTZZ12JA	RMM		19		RUL6
Remote Maint. Mod. Common CP	NT6X13AB	RMM		19		RUL6
Remote Maintenance Module	NT6X1301		1	19		AP01
Maintenance Trunk Card				19	3-16	RUL7
Filler Face Plate	NT0X50AC			19	1-16	RUL8
Filler Face Plate	NT0X50AG			19	17	RUL8
Filler Face Plate	NT0X50AA			19	19	RUL8
Filler Face Plate	NT0X50BE			19	20	RUL8
-48V SP Battery Supply Cable	NT6X1438		1			AP01
RCC2 Common CP Fill	NTZZ12XA	RCC2		06		RUL1
RCC2 Packfill w/o EISP	NTZZ12XB	RCC2		06		RUL1
RCC2 EDC Packfill	NTZZ12ZA	RCC2		06		RUL1
Remote Cluster Controller #2	NTMX8501		1	06		AP01

Retired Equipment
Cabinetized RSC Building Block
(Gray)

NTZZ12QA
EMC2-25-RCC2-3
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced ISP	NTBX01AB			06	4, 24	RUL1
Design label (NTBX01AB)	P0738856			06	4, 24	RUL1
Filler faceplate	NT0X50AA			06	4, 24	RUL1
CMR Building Block	NTZZ12UA			06	5	RUL10
Filler Plate	NT0X50AA			06	5, 23	RUL10
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6, 22	AP
NT6X92BB Label	P0690565		2	06	6, 22	AP
UTR Building Block	NTZZ12VA			06	7	RUL11
Filler Plate	NT0X50AA			06	7, 21	RUL11
Enhanced Messaging CP	NT6X69AC			06	8, 20	RUL1
Design label (NT6X69AC)	P0710476			06	8, 20	RUL1
Extended Distance Messaging	NTMX76AA			06	8, 20	RUL1
Design label (NTMX76AA)	P0744109			06	8, 20	RUL1
Quad Frame Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		1	06	9:0	AP
Dual DS1 Packlet	NTMX81AA		1	06	19:0	AP
Dual DS1 Packlet	NTMX81AA			06	9:1-3	RUL20
					19:1-3	
Filler Face Plate	NTMX83AA			06	9:1-3	RUL20
					19:1-3	
# ISDN DCH Building Block	NTZZ17BA			06	12, 14,	RUL12
					16	
ISDN DCH Building Block	NTZZ17BB			06	12, 14,	RUL12
					16	
Quad Frame Carrier	NTMX87AA			06	12	RUL12
Dual DS1 Packlet	NTMX81AA			06	12 0-3	RUL12
Filler Face Plate	NTMX83AA			06	12 0-3	RUL12
Quad Frame Carrier	NTMX87AA			06	14	RUL12
Dual DS1 Packlet	NTMX81AA			06	14 0-2	RUL12
Filler Face Plate	NTMX83AA			06	14 0-3	RUL12
Quad Frame Carrier	NTMX87AA			06	16	RUL12
Dual DS1 Packlet	NTMX81AA			06	16 0-3	RUL12
Filler Face Plate	NTMX83AA			06	16 0-3	RUL12
Filler Face Plate	NT0X50AA			06	12, 14,	RUL12
					16	
Fan Cooling Unit	NTNX27CA		1	00		AP
CRSC Label	P0715089		1			AP
CRSC FSP Label	P0742963		1			AP
EMI Door Kit (Gray)	NTRX2516		1			AP
Cable Trough (Gray)	NTNX5511		1			AP

Retired Equipment
Cabinetized RSC Building Block
(Gray)

NTZZ12QA
EMC2-25-RCC2-3
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Leveling foot kit	NTRX2523					RUL25
Earthquake Anchor kit	NTRX2512					RUL25
End Guards & EMI Side Panels	NTRX73					RUL16
Frame/Logic Ground H/W Kit	NTRX2519					RUL17
Endguard Insert Assemblies	NTRX07					RUL18
CRSC Standalone Power Kit	NTMX8943					RUL19
CRSC Standalone Power Dwg.	PCMX8943					RUL19
Cover Plate	P0715809					RUL19
Endguard Labels for RSC-S	P0736690					RUL21
ABS Cable	NTMX8955					RUL24
Cover Plate	P0741250					RUL24
Alarm Cable Assembly BB	NTZZ46FA					RUL23
Cable Gender Change Adapter	NTRX26CZ					RUL23
Cover Plate	P0715775					RUL23
BAMD Alarm/Power Cable Assy.	NTZZ46GA					RUL15
Cover Plate	NTEX5070					RUL15
RSC-S Hardware kit	NT0X58BK					RUL26

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X30AA NTZZ17BA	MD RCP	NT6X30CA NTZZ17BB

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

Retired Equipment
Cabinetized RSC Building Block
(Gray)

NTZZ12QA
EMC2-25-RCC2-3
Page 5

Items marked AP01 are provided as part of the NTMX89AA and are included for completeness.

Items marked AP03 are provided as part of the NTMX26BA and are included for completeness.

Items marked AP04 are provided as part of the NTZZ17HA and are included for completeness.

RCP in flaglist means that the Rating (status) of the pec is pending change.

RULES:

- AP 1) When PEC NTZZ12QA is ordered, these items are provided.
- RUL1 1) Provide one NTZZ12XA Common CP fill per CRSC for standard applications (<100 miles to host for U.S. or <150 miles for Canada). This packfill includes the NTB01AB Enhanced ISP and NT6X69AC messaging packs.
- 2) Provide one NTZZ12ZA common CP fill per CRSC for Extended Distance Capability applications. The HDLC messaging used in this packfill allows up to 6.5 ms delay (one-way) between the line subscriber and the host controller. This packfill includes the Enhanced ISP packs.
- 3) Provide one NTZZ12XB common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:
1. EITHER two (2) NTB01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications

OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications

4) Provide only one packfill per CRSC.

RUL2 1) Provide one (1) NTZZ17HA LCME Building Block when the LCME is to be equipped. Labels must be provisioned separately (See items per Rule 22).

2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

3) Provide one NTB31AB Filler Plate set when the LCME module is not to be equipped.

4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5, 9 and 13 on each Line Shelf Assembly.

5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.

6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.

7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method. Since straps can be re-used, the quantity to be

provided is determined by the number of lines which are to be held simultaneously in this state.

RUL3 1) Reserved.

RUL4 1) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 2) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 3) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 4) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- RUL5 1) Provide one (1) P0689450 French Warning Label when frame is required by Canadian customers. This label is to be affixed to the cabinet FSP.
- RUL6 1) Provide either a fully configured RMM per NTZZ12JA or build the RMM by provisioning one (1) NT6X13AB and equipment per RULES 7, 8, and 9.
- 2) This shelf is generally needed in Mono RSCS installations. A second (2nd) RMM may be housed in the CEXT cabinet or CMIS.
- 3) One NT6X1438 (-48V SP Batter Supply Cable) is provided as part of the NTMX89AA CRSC.
- RUL7 1) The following Service Circuits are provisionable on the RMM:
- NT3X09BA - Remote Metallic Test Access
 - NT0X10AA - Scan (SC) Point Card (14 SC Points Per Card)
 - NT2X10BA/NT2X11BA - MTU
 - NT2X57AA - Signal Distribution (SD) Card
(14 SD Points Per Card)
 - NT2X90AD - INC/OG Test Trunk
(Required For Metallic Testing)
- 2) Due to bulkhead cabling limitations, RMMs in RSC-S applications have additional mounting restrictions. Slots 3-6 can mount the cards shown below ONLY. Slots 7-10 can mount the cards shown, used for the application shown below, ONLY. Slots 3-10 need be equipped only when required for the office configuration (they are not mandatory). Cards needing connection to the Distributing Frame must mount in slots 11-16. Existing RMM assignment restrictions in Section 14 of the Engineering Manual also apply. Refer to the following for allowable circuit pack mounting locations:

RMM SLOT	ALLOWED CIRCUIT PACK
-----	-----
3	NT2X10BA
4	NT2X11BA
5	NT0X10AA

6	NT3X09BA
7	NT2X90AD for MONTALK
8	NT2X90AD for MONTALK
9	NT2X90AD for VERIFICATION 90
10	NT2X90AD for VERIFICATION 90
11	FULLY PROVISIONABLE
12	FULLY PROVISIONABLE
13	FULLY PROVISIONABLE
14	FULLY PROVISIONABLE
15	FULLY PROVISIONABLE
16	FULLY PROVISIONABLE

- RUL8 1) Any card slot 1 thru 16 not equipped with a circuit pack per RULE #7 above shall be equipped with an NT0X50AC Filler Face Plate.
- 2) Provision one NT0X50AG for slot 17 when RMM is not equipped.
- 3) Provision one NT0X50AA for slot 19 when RMM is not equipped.
- 4) Provision one NT0X50BE for slot 20 when RMM is not equipped.
- RUL9 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet. The packlets in slots 9 and 19, position 0 are Always Provided.
- 2) Assign packlets in the following order; slot 9,1;19,1;9,2;19,2;9,3; 19,3.
- 3) Provide filler plates for all unused packlet positions.
- RUL10 1) Provide one (1) NTZZ12UA in slots 5 & 23 if CLASS Calling Number Delivery feature is to be supported. This provides two NT6X78AB CPs and labels. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.
- RUL11 1) One UTR Pair in Slot 6 & 22 is included with NTZZ12QA.
- 2) The exact quantity required is based on traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide a second pair by providing one NTZZ12VA for slots 7 and 21. Labels are included in this block. Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.

- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.

- RUL12 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 in the Engineering Manual) and select the configuration that best suits your need. Note: If any of the configurations indicate slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.
- 2) Resistor networks for DCH circuit packs are Always Provided as part of the shelf.
- 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- 6) A DCH in slot 12 uses port 1;a DCH in slot 14 uses port 17 ;a DCH in slot 16 uses port 9.
- RUL13 1) Provide two NT6X30CA Ringing Generators when analog ringing is required. Analog ringing is used when non-ISDN lines are provided. Check availability reports before ordering. NT6X30CA replaces NT6X30AA.
- 2) Provide two NT6X3005 fillers when the Ringing Generators are not provided.
- RUL14 1) Reserved.
- RUL15 1) Provide one (1) NTZZ46GA BAMD Alarm/Power cable assembly BB when externally powering a NT0X63AC Alarm Control and Display Panel. This BB code includes the hardware required with this cable. Assemble per ADMX89AA.
- 2) Provide one (1) NTEX5070 Cover Plate and two (2) P0670923 screws when NTZZ46GA is NOT required.
- RUL16 1) Refer to MSRX73 for all CRSC cabinet lineup provisioned endpanel, endcover, endguard, duct and column around hardware.
- RUL17 1) Provide one NTRX2519 Frame/Logic Ground H/W kit per CRSC.
- RUL18 1) Refer to MSRX07 for all CRSC cabinet lineup provisioned endguard insert hardware.

- RUL19 1) Provide one NTMX8943 when the CRSC is powered from a seven foot PDC, is operated as a standalone unit or when vertical powering is used. Provide one PCMX8943 drawing when the NTMX8943 kit is provided.
- 2) Provide four (4) P0715809 Cover Plates and eight (8) P0670923 screws when NTMX8943 is NOT required.
- RUL20 1) DS-1 Interfaces mounted on Quad Carriers in slots 9 and 19 provide host interface. A minimum of two links, mounted on different packlets, are required and are Always Provided as part of the NTZZ12QA Building Block. Additional packlets should be provided per the following to supply the required host interface:

Host Links Required	Packlet Location
-----	-----
2 - 4	9:0 and 19:0 (Always Provided)
5 - 6	9:0-1 and 19:0
7 - 8	9:0-1 and 19:0-1
9 - 10	9:0-2 and 19:0-1
11 - 12	9:0-2 and 19:0-2
13 - 14	9:0-3 and 19:0-2
15 - 16	9:0-3 and 19:0-3

- 2) Each unequipped packlet location is to be covered with a NTMX83AA filler plate.
- RUL21 1) Provide one set of endguard labels per lineup. Enough labels are provided in this set for (2) CRSCs, (1) CEXT, (1) CPDC, (3) CLCEs and (1) CMIS. Refer to label documentation if additional labels are required.
- RUL22 1) Provide labels for LCME when the module is equipped.
- RUL23 1) Provide one (1) NTZZ46FA Alarm Cable Assembly (C01/C02 to Aisle ALM1/2) if external aisle alarm interface is required. This BB code includes the hardware required with this cable. Assemble per ADMX89AA.
- 2) Provide two (2) P0715775 Cover Plates and four (4) P0670923 screws when the NTZZ46FA cable is NOT required.
- 3) Provide one (1) NTRX26CZ corrective cable to change the gender of the NTMX8950 cable (included in NTZZ46FA) if the NTMX8950 filtered connector gender is wrong due to installation prior to EC 011-17899. This part should not be sup-

plied for new jobs unless a request has been received from the installer on site.

- RUL24 1) Provide one (1) NTMX8955 ABS Cable Assembly when Alarm Battery Supply is required at the bulkhead.
- 2) Provide two (2) P0741250 Cover Plates and four (4) P0670923 screws when the NTMX8955 Cable is NOT required.
- RUL25 1) Provide one (1) NTRX2523 Leveling Foot kit for each CRSC in non-earthquake applications.
- 2) Provide one (1) NTRX2512 Earthquake Anchor kit for each CRSC in earthquake applications.
- 3) Anchoring hardware and leveling feet are provided by Building Studies.
- RUL26 1) Provide one NT0X58BK Hardware kit to provide installation materials for initial and extension applications.
- RUL27 1) Provide one NTBX31PA kit to upgrade one existing NTBX31BA LCME packfill to NTBX31BB. Provide one (1) NTBX31PB Upgrade Kit per LCME Module, for field upgrades, when converting NTBX31BB LCME common CP to NTBX31BC.

CABINETIZED RSC BUILDING BLOCK
(BROWN)

PEC CODE: NTZZ12QB

CPC CODE: B0238071

RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ47RN

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The CRSC is capable of being deployed as a single cabinet RSCS which supports up to 480 lines, service and maintenance circuits and DS1 links to host at a maximum distance of 100 miles (150 miles for Canadian applications). In addition, the CRSC may be deployed as the controller in a multi-cabinet RSCS. Other cabinets which may be deployed in a multi-cabinet RSCS are the CPDC, CMIS, and CLCE (max 5 in Mono CRSC). This Building Block provides the brown CRSC cabinet and cable rack with the minimum equipment required for deployment.

| REFERENCE DOCUMENTATION: MSMX89AA 00 12

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ12QB EMC2-25-RCC2-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 01 05	ECM 617 05	Introduce code to replace NTZZ12QA.
93 02 05	ECM 617 06	Modify NTZZ12QB to be brown CRSC.
93 03 12	ECM 617 07	Add cable BB codes and FSP spare CPs.
93 04 13	ECM 617 08	EC 011-17820 - Replace NT6X76AC with NT6X76AD Hayes Supported AILC.
93 04 23	ECM 617 09	Introduce NT6X30CA Ringing Generator. Introduce Extended Distance packfill.
93 08 17	ECM 617 11	Introduce NTZZ12XB RCC2 w/o EISP.
93 10 13	ECM 617 12	EC 024-90341 - Cable Gender Adapter ET 41093 - Add NT0X58BK H/W kit.
93 11 05	ECM 617 13	Use LCME BB NTZZ17HA instead of detail
93 12 02	ECM 617 14	Add newly created green door label.
94 08 10	ECM 617 16	Show NTMX74AA as MD and replaced by NTMX74AB DS30A Interface CP.
94 08 28	ECM 617 17	Show NTMX74AA as replaced by NTMX74AB but not MD'd. Show NTB31BA LCME Packfill replaced by NTB31BB.
94 10 17	ECM 691 07	Retire code. Replaced by NTZZ47RN.
96 04 02	ECM 691 15	Per EC#024-94829 add NTZZ17BB, and add NTB31PB upgrade kit.

The Cabinetized RSC Building Block (Brown) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CRSC Cabinet	NTMX89AA		1			AP
Streamline Cabinet	NTNX25EA		1			AP01
Frame Supervisory Panel	NTMX26BA	FSP	1	61		AP
FSP Alarm CP	NT6X36AA		1	61		AP03
Alarm CP for FSP	NT6X36AB		1	61		AP03
# Ringing Generator	NT6X30AA			61	1, 2	RUL13
Ringing Generator	NT6X30CA			61	1, 2	RUL13
Ringing Generator Filler	NT6X3005			61	1, 2	RUL13
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA			33, 47		RUL2
LCME Common Circuit Packs	NTBX31BB	LCME	1			AP04
ISDN Line Conc Arr Shf Assy	NTBX3118	LCAI 0		47		AP01
ISDN Line Conc Arr Shf Assy	NTBX3118	LCAI 1		33		AP01
ISDN Enhanced Line Drawer	NTBX32BA	LD	8	33, 47	1, 5, 9, 13	AP04
Line Drawer ID Label	P0709652		1			AP04
LCME Filler Plates	NTBX31AB					RUL2
LCME Packfill Upgrade Kit	NTBX31PB					RUL27
Subscriber Line Circuits	AR					RUL4
Warning Label (French)	P0689450					RUL5
LCME PDC Fuse Label	P0711231					RUL22
LCME PDC Fuse Label	P0711232					RUL22
LCME Shelf Label for FSP	P0711233					RUL22
LCME Shelf Label for FSP	P0711234					RUL22
LCME Shelf Label for FSP	P0711235					RUL22
LCME Shelf Label for FSP	P0711236					RUL22
STD1 Remote Maint. Module	NTZZ12JA	RMM		19		RUL6
Remote Maint. Mod. Common CP	NT6X13AB	RMM		19		RUL6
Remote Maintenance Module	NT6X1301		1	19		AP01
Maintenance Trunk Card	AR			19	3-16	RUL7
Filler Face Plate	NT0X50AC			19	1-16	RUL8
Filler Face Plate	NT0X50AG			19	17	RUL8
Filler Face Plate	NT0X50AA			19	19	RUL8
Filler Face Plate	NT0X50BE			19	20	RUL8
-48V SP Battery Supply Cable	NT6X1438		1			AP01
RCC2 Common CP Fill	NTZZ12XA	RCC2		06		RUL1
RCC2 Packfill w/o EISP	NTZZ12XB	RCC2		06		RUL1
RCC2 EDC Packfill	NTZZ12ZA	RCC2		06		RUL1
Remote Cluster Controller #2	NTMX8501		1	06		AP01

Retired Equipment
Cabinetized RSC Building Block
(Brown)

NTZZ12QB
EMC2-25-RCC2-4
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced ISP	NTBX01AB			06	4, 24	RUL1
Design label (NTBX01AB)	P0738856			06	4, 24	RUL1
Filler faceplate	NT0X50AA			06	4, 24	RUL1
CMR Building Block	NTZZ12UA			06	5	RUL10
Filler Plate	NT0X50AA			06	5, 23	RUL10
Universal Tone Rec'vr (UTR)	NT6X92BB		2	06	6, 22	AP
NT6X92BB Label	P0690565		2	06	6, 22	AP
UTR Building Block	NTZZ12VA			06	7	RUL11
Filler Plate	NT0X50AA			06	7, 21	RUL11
Enhanced Messaging CP	NT6X69AC			06	8, 20	RUL1
Design label (NT6X69AC)	P0710476			06	8, 20	RUL1
Extended Distance Messaging	NTMX76AA			06	8, 20	RUL1
Design label (NTMX76AA)	P0744109			06	8, 20	RUL1
Quad Frame Carrier	NTMX87AA		2	06	9, 19	AP
Dual DS1 Packlet	NTMX81AA		1	06	9:0	AP
Dual DS1 Packlet	NTMX81AA		1	06	19:0	AP
Dual DS1 Packlet	NTMX81AA			06	9:1-3	RUL20
					19:1-3	
Filler Face Plate	NTMX83AA			06	9:1-3	RUL20
					19:1-3	
# ISDN DCH Building Block	NTZZ17BA			06	12, 14,	RUL12
					16	
ISDN DCH Building Block	NTZZ17BB			06	12, 14,	RUL12
					16	
Quad Frame Carrier	NTMX87AA			06	12	RUL12
Dual DS1 Packlet	NTMX81AA			06	12 0-3	RUL12
Filler Face Plate	NTMX83AA			06	12 0-3	RUL12
Quad Frame Carrier	NTMX87AA			06	14	RUL12
Dual DS1 Packlet	NTMX81AA			06	14 0-2	RUL12
Filler Face Plate	NTMX83AA			06	14 0-3	RUL12
Quad Frame Carrier	NTMX87AA			06	16	RUL12
Dual DS1 Packlet	NTMX81AA			06	16 0-3	RUL12
Filler Face Plate	NTMX83AA			06	16 0-3	RUL12
Filler Face Plate	NT0X50AA			06	12, 14,	RUL12
					16	
Fan Cooling Unit	NTNX27CA		1	00		AP
CRSC Label	P0746294		1			AP
CRSC FSP Label	P0742963		1			AP
EMI Door Kit (Brown)	NTRX2531		1			AP
Cable Trough (Brown)	NTRX5544		1			AP

Retired Equipment
Cabinetized RSC Building Block
(Brown)

NTZZ12QB
EMC2-25-RCC2-4
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Leveling foot kit	NTRX2523					RUL25
Earthquake Anchor kit	NTRX2512					RUL25
End Guards & EMI Side Panels	NTRX73					RUL16
Frame/Logic Ground H/W Kit	NTRX2519					RUL17
Endguard Insert Assemblies	NTRX07					RUL18
CRSC Standalone Power Kit	NTMX8943					RUL19
CRSC Standalone Power Dwg.	PCMX8943					RUL19
Cover Plate	P0715809					RUL19
Endguard Labels for RSC-S	P0736690					RUL21
ABS Cable	NTMX8955					RUL24
Cover Plate	P0741250					RUL24
Alarm Cable Assembly BB	NTZZ46FA					RUL23
Cable Gender Change Adapter	NTRX26CZ					RUL23
Cover Plate	P0715775					RUL23
BAMD Alarm/Power Cable Assy.	NTZZ46GA					RUL15
Cover Plate	NTEX5070					RUL15
RSC-S Hardware kit	NT0X58BK					RUL26

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X30AA NTZZ17BA	MD RCP	NT6X30CA NTZZ17BB

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

Retired Equipment
Cabinetized RSC Building Block
(Brown)

NTZZ12QB
EMC2-25-RCC2-4
Page 5

Items marked AP01 are provided as part of the NTMX89AA and are included for completeness.

Items marked AP03 are provided as part of the NTMX26BA and are included for completeness.

Items marked AP04 are provided as part of the NTZZ17HA and are included for completeness.

RCP in flaglist means that the Rating (status) of the pec is pending change.

RULES:

- AP 1) When PEC NTZZ12QB is ordered, these items are provided.
- RUL1 1) Provide one NTZZ12XA Common CP fill per CRSC for standard applications (<100 miles to host for U.S. or <150 miles for Canada). This packfill includes the NTB01AB Enhanced ISP and NT6X69AC messaging packs.
- 2) Provide one NTZZ12ZA common CP fill per CRSC for Extended Distance Capability applications. The HDLC messaging used in this packfill allows up to 6.5 ms delay (one-way) between the line subscriber and the host controller. This packfill includes the Enhanced ISP packs.
- 3) Provide one NTZZ12XB common CP fill per CRSC to utilize the BCS-35 enhancement of provisionable EISP. Prior to BCS-35, the EISP pack was required for all applications. BCS-35 allows the EISP to be provisioned only when ISDN support is required. The NTZZ12XB packfill contains no messaging packs to allow the user to choose either the NT6X69-- for standard distance (<100 miles in U.S. or <150 miles in Canada) or the NTMX76-- for extended distance applications. When the NTZZ12XB packfill is provided, the following additional equipment must be supplied:
1. EITHER two (2) NTB01AB EISP packs and
two (2) P0738856 labels for ISDN support
OR two (2) NT0X50AA fillers for non-ISDN
 2. EITHER two (2) NT6X69AC packs and two (2)
P0710476 labels for standard distance applications

OR two (2) NTMX76AA packs and two (2)
P0744109 labels for extended distance applications

4) Provide only one packfill per CRSC.

RUL2 1) Provide one (1) NTZZ17HA LCME Building Block when the LCME is to be equipped. Labels must be provisioned separately (See items per Rule 22).

2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
33	0	00,01
33	1	02,03
33	2	04,05
33	3	06,07
47	4	08,09
47	5	10,11
47	6	12,13
47	7	14,15

3) Provide one NTB31AB Filler Plate set when the LCME module is not to be equipped.

4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5,9 and 13 on each Line Shelf Assembly.

5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.

6) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.

7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method. Since straps can be re-used, the quantity to be

provided is determined by the number of lines which are to be held simultaneously in this state.

RUL3 1) Reserved.

RUL4 1) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 2) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 3) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 4) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.
- RUL5 1) Provide one (1) P0689450 French Warning Label when frame is required by Canadian customers. This label is to be affixed to the cabinet FSP.
- RUL6 1) Provide either a fully configured RMM per NTZZ12JA or build the RMM by provisioning one (1) NT6X13AB and equipment per RULES 7, 8, and 9.
- 2) This shelf is generally needed in Mono RSCS installations. A second (2nd) RMM may be housed in the CEXT cabinet (if used) or a CMIS.
- 3) One NT6X1438 (-48V SP Batter Supply Cable) is provided as part of the NTMX89AA CRSC.
- RUL7 1) The following Service Circuits are provisionable on the RMM:
- NT3X09BA - Remote Metallic Test Access
 - NT0X10AA - Scan (SC) Point Card (14 SC Points Per Card)
 - NT2X10BA/NT2X11BA - MTU
 - NT2X57AA - Signal Distribution (SD) Card
(14 SD Points Per Card)
 - NT2X90AD - INC/OG Test Trunk
(Required For Metallic Testing)
- 2) Due to bulkhead cabling limitations, RMMs in RSC-S applications have additional mounting restrictions. Slots 3-6 can mount the cards shown below ONLY. Slots 7-10 can mount the cards shown, used for the application shown below, ONLY. Slots 3-10 need be equipped only when required for the office configuration (they are not mandatory). Cards needing connection to the Distributing Frame must mount in slots 11-16. Existing RMM assignment restrictions in Section 14 of the Engineering Manual also apply. Refer to the following for allowable circuit pack mounting locations:

RMM SLOT	ALLOWED CIRCUIT PACK
-----	-----
3	NT2X10BA
4	NT2X11BA
5	NT0X10AA

6 NT3X09BA
7 NT2X90AD for MONTALK
8 NT2X90AD for MONTALK
9 NT2X90AD for VERIFICATION 90
10 NT2X90AD for VERIFICATION 90
11 FULLY PROVISIONABLE WITHIN RULES
12 FULLY PROVISIONABLE WITHIN RULES
13 FULLY PROVISIONABLE WITHIN RULES
14 FULLY PROVISIONABLE WITHIN RULES
15 FULLY PROVISIONABLE WITHIN RULES
16 FULLY PROVISIONABLE WITHIN RULES

- RUL8 1) Any card slot 1 thru 16 not equipped with a circuit pack per RULE #7 above shall be equipped with an NT0X50AC Filler Face Plate.
- 2) Provision one NT0X50AG for slot 17 when RMM is not equipped.
- 3) Provision one NT0X50AA for slot 19 when RMM is not equipped.
- 4) Provision one NT0X50BE for slot 20 when RMM is not equipped.
- RUL9 1) Provision DS1 packlets for C-side interface based on host traffic requirements. Two DS1 interfaces are provided per packlet. The packlets in slots 9 and 19, position 0 are Always Provided.
- 2) Assign packlets in the following order; slot 9,1;19,1;9,2;19,2;9,3; 19,3.
- 3) Provide filler plates for all unused packlet positions.
- RUL10 1) Provide one (1) NTZZ12UA in slots 5 & 23 if CLASS Calling Number Delivery feature is to be supported. This provides two NT6X78AB CPs and labels. Otherwise, provide two (2) NT0X50AAs in slot 5 & 23.
- RUL11 1) One UTR Pair in Slot 6 & 22 is included with NTZZ12QB.
- 2) The exact quantity required is based on traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,22) is sufficient. If UTR CCS is 765 to 1600, then provide a second pair by providing one NTZZ12VA for slots 7 and 21. Labels are included in this block. Note: A traffic analysis via REALQUICK or PRTCALC is required for exact provisioning.

- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 21.
- RUL12 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 in the Engineering Manual) and select the configuration that best suits your need. Note: If any of the configurations indicate slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.
- 2) Resistor networks for DCH circuit packs are Always Provided as part of the shelf.
- 3) When neither a DCH nor a Quad Carrier CP is provided, provide one NT0X50AA for each unequipped slot (12,14,16).
- 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
- 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- 6) A DCH in slot 12 uses port 1;a DCH in slot 14 uses port 17 ;a DCH in slot 16 uses port 9.
- RUL13 1) Provide two NT6X30CA Ringing Generators when analog ringing is required. Analog ringing is used when non-ISDN lines are provided. Check availability reports before ordering. NT6X30CA replaces NT6X30AA.
- 2) Provide two NT6X3005 fillers when the Ringing Generators are not provided.
- RUL14 1) Reserved.
- RUL15 1) Provide one (1) NTZZ46GA BAMD Alarm/Power cable assembly BB when externally powering a NT0X63AC Alarm Control and Display Panel. This BB code includes the hardware required with this cable. Assemble per ADMX89AA.
- 2) Provide one (1) NTEX5070 Cover Plate and two (2) P0670923 screws when NTZZ46GA is NOT required.
- RUL16 1) Refer to MSRX73 for all CRSC cabinet lineup provisioned endpanel, endcover, endguard, duct and column around hardware.
- RUL17 1) Provide one NTRX2519 Frame/Logic Ground H/W kit per CRSC.

- 2) P0714698 and P0714699 are NOT to be ordered. They are included in the NTRX2516 kit.
- RUL18 1) Refer to MSRX07 for all CRSC cabinet lineup provisioned endguard insert hardware.
- RUL19 1) Provide one NTMX8943 when the CRSC is powered from a seven foot PDC, is operated as a standalone unit or when vertical powering is used. Provide one PCMX8943 drawing when the NTMX8943 kit is provided. Vertical power will be used for all new applications. Horizontal power should be used only to extend an existing horizontally-powered lineup.
- 2) Provide four (4) P0715809 Cover Plates and eight (8) P0670923 screws when NTMX8943 is NOT required.
- RUL20 1) DS-1 Interfaces mounted on Quad Carriers in slots 9 and 19 provide host interface. A minimum of two links, mounted on different packlets, are required and are Always Provided as part of the NTZZ12QB Building Block. Additional packlets should be provided per the following to supply the required host interface:
- | Host Links Required | Packlet Location |
|---------------------|-----------------------------------|
| ----- | ----- |
| 2 - 4 | 9:0 and 19:0
(Always Provided) |
| 5 - 6 | 9:0-1 and 19:0 |
| 7 - 8 | 9:0-1 and 19:0-1 |
| 9 - 10 | 9:0-2 and 19:0-1 |
| 11 - 12 | 9:0-2 and 19:0-2 |
| 13 - 14 | 9:0-3 and 19:0-2 |
| 15 - 16 | 9:0-3 and 19:0-3 |
- 2) Each unequipped packlet location is to be covered with a NTMX83AA filler plate.
- RUL21 1) Provide one set of endguard labels per lineup. Enough labels are provided in this set for (2) CRSCs, (1) CEXT, (1) CPDC, (3) CLCEs and (1) CMIS. Refer to label documentation if additional labels are required.
- RUL22 1) Provide labels for LCME when the module is equipped.
- RUL23 1) Provide one (1) NTZZ46FA Alarm Cable Assembly (C01/C02 to Aisle ALM1/2) Building Block if external aisle alarm interface is required. This BB code includes the hardware required with this cable.

- 2) Provide two (2) P0715775 Cover Plates and four (4) P0670923 screws when the NTZZ46FA cable is NOT required.
 - 3) Provide one (1) NTRX26CZ corrective cable to change the gender of the NTMX8950 cable (included in NTZZ46FA) if the NTMX8950 filtered connector gender is wrong due to installation prior to EC 011-17899. This part should not be supplied for new jobs unless a request has been received from the installer on site.
- RUL24 1) Provide one (1) NTMX8955 ABS Cable Assembly when Alarm Battery Supply is required at the bulkhead.
- 2) Provide two (2) P0741250 Cover Plates and four (4) P0670923 screws when the NTMX8955 Cable is NOT required.
- RUL25 1) Provide one (1) NTRX2523 Leveling Foot kit for each CRSC in non-earthquake applications.
- 2) Provide one (1) NTRX2512 Earthquake Anchor kit for each CRSC in earthquake applications.
- 3) Anchoring hardware and leveling feet are provided by Building Studies.
- RUL26 1) Provide one NT0X58BK Hardware kit to provide installation materials for initial and extension applications.
- RUL27 1) Provide one (1) NTB31PB Upgrade Kit per LCME Module, for field upgrades, when converting NTB31BB LCME common CP to NTB31BC.

CEXT BUILDING BLOCK
(GRAY)

PEC CODE: NTZZ12SA

CPC CODE: B0234908

RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ47SB

ABBREVIATION NAME: CEXT

ENGINEERING DESCRIPTION: The extension cabinet (CEXT) is used to expand the capabilities of the CRSC. The CEXT Building Block consists of the gray cabinet and cable rack, FSP, cooling unit and shelf assemblies. The LCME module, RMM and Extension shelf components must be provisioned based on office requirements. The EXT shelf is actually two shelves on a single card cage which are provisioned independently of each other. One EXT shelf can support two (2) RCC2s (i.e. the left side is used to support the first RCC2 and the right side is used to support the second RCC2). Therefore, in RSCS installations which do not require the additional capabilities provided by the Extension shelf, it must be provided with filler plates for both sides. If only one side is utilized, the other must be covered.

| REFERENCE DOCUMENTATION: MSMX88AA 00 09
SLZZ12SA 00 02

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

Retired Equipment
CEXT Building Block
(Gray)EMC2-25-RCC2-5
Page 1

NTZZ12SA EMC2-25-RCC2-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 27	ECM 617 04	Make LCME labels provisionable
93 01 05	ECM 617 05	Declare code Manufacture Discontinued.
93 02 05	ECM 617 06	Reinstate NTZZ12SA as gray CEXT.
93 03 12	ECM 617 07	Add cable BB code and FSP spare CPs.
93 04 13	ECM 617 08	EC 011-17820 - Replace NT6X76AC with NT6X76AD Hayes Supported AILC.
93 04 23	ECM 617 09	Introduce NT6X30CA Ringing Generator.
93 11 05	ECM 617 13	Use LCME BB NTZZ17HA instead of detail
94 10 17	ECM 691 07	Retire code. Replaced by NTZZ47SB.
96 04 02	ECM 691 15	Change per EC#024-94829. Add provisioning rule for NTZZ17BB.

The CEXT Building Block (Gray) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CEXT Cabinet	NTMX88AA	CEXT	1			AP
Streamline Cabinet	NTNX25EA		1			AP01
Frame Supervisory Panel	NTMX26BA	FSP	1	61		AP
FSP Alarm CP	NT6X36AA		1	61		AP02
Alarm CP for FSP	NT6X36AB		1	61		AP02
% Ring Generator	NT6X30AA			61	1, 2	RUL1
Ring Generator	NT6X30CA			61	1, 2	RUL1
Ring Generator Filler	NT6X3005			61	1, 2	RUL1
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA			33, 47		RUL2
LCME Common Circuit Packs	NTBX31BA	LCME	1			AP03
ISDN Line Conc Arr Shf Assy	NTBX3118	LCAI 0		47		AP01
ISDN Line Conc Arr Shf Assy	NTBX3118	LCAI 1		33		AP01
ISDN Enhanced Line Drawer	NTBX32BA	LD	8	33, 47	1, 5, 9, 13	AP03
Line Drawer ID Label	P0709652		1			AP03
LCME Fillers	NTBX31AB					RUL2
Subscriber Line Circuits						RUL4
Warning Label (French)	P0689450					RUL5
LCME PDC Fuse Label	P0711231					RUL16
LCME PDC Fuse Label	P0711232					RUL16
LCME Shelf Label for FSP	P0711233					RUL16
LCME Shelf Label for FSP	P0711234					RUL16
LCME Shelf Label for FSP	P0711235					RUL16
LCME Shelf Label for FSP	P0711236					RUL16
STD1 Remote Maint. Module	NTZZ12JA	RMM		19		RUL6
Remote Maint. Mod. Common CP	NT6X13AB	RMM		19		RUL6
Remote Maintenance Module	NT6X1301			19		AP01
Maintenance Trunk Card				19	3-16	RUL7
Filler Face Plate	NT0X50AC			19	1-16	RUL8
Filler Face Plate	NT0X50AG			19	17	RUL8
Filler Face Plate	NT0X50AA			19	19	RUL8
Filler Face Plate	NT0X50BE			19	20	RUL8
-48V SP Battery Supply Cable	NT6X1438		1	19		AP01
EXT Filler Kit (Right)	NTZZ12KA			06	14	RUL9
EXT Filler Kit (Left)	NTZZ12WA			06	02	RUL9
RCC2 Extension Shelf	NTMX8601		1	06		AP01
Filler Faceplate	NT0X50AA			06	1	RUL9
DS60 Extender CP	NTMX79AA			06	2, 13	RUL9
DS60 Extender CP	NTMX79AA			06	14, 25	RUL9
# ISDN DCH Building Block	NTZZ17BA			06	3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	4	RUL11

Retired Equipment
CEXT Building Block
(Gray)

NTZZ12SA
EMC2-25-RCC2-5
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN DCH Building Block	NTZZ17BB			06	3	RUL11
ISDN DCH Building Block	NTZZ17BB			06	4	RUL11
Quad Frame Carrier	NTMX87AA			06	4	RUL11
Dual DS1 Packlet	NTMX81AA			06	4 0-3	RUL11
Filler Face Plate	NTMX83AA			06	4 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	5	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	6	RUL11
ISDN DCH Building Block	NTZZ17BB			06	5	RUL11
ISDN DCH Building Block	NTZZ17BB			06	6	RUL11
Quad Frame Carrier	NTMX87AA			06	6	RUL11
Dual DS1 Packlet	NTMX81AA			06	6 0-3	RUL11
Filler Face Plate	NTMX83AA			06	6 0-3	RUL11
ISDN DCH Building Block	NTZZ17BA			06	7	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	8	RUL11
ISDN DCH Building Block	NTZZ17BB			06	8	RUL11
Quad Frame Carrier	NTMX87AA			06	8	RUL11
Dual DS1 Packlet	NTMX81AA			06	8 0-3	RUL11
Filler Face Plate	NTMX83AA			06	8 0-3	RUL11
Filler Plate	NT0X50AA			06	3,5,7	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	9	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	10	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	11	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	12	RUL11
ISDN DCH Building Block	NTZZ17BB			06	9	RUL11
ISDN DCH Building Block	NTZZ17BB			06	10	RUL11
ISDN DCH Building Block	NTZZ17BB			06	11	RUL11
ISDN DCH Building Block	NTZZ17BB			06	12	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	15	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	16	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	17	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	18	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	19	RUL11
ISDN DCH Building Block	NTZZ17BB			06	15	RUL11
ISDN DCH Building Block	NTZZ17BB			06	16	RUL11
ISDN DCH Building Block	NTZZ17BB			06	17	RUL11
ISDN DCH Building Block	NTZZ17BB			06	18	RUL11
ISDN DCH Building Block	NTZZ17BB			06	19	RUL11

Retired Equipment
CEXT Building Block
(Gray)

NTZZ12SA
EMC2-25-RCC2-5
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Quad Frame Carrier	NTMX87AA			06	19	RUL11
Dual DS1 Packlet	NTMX81AA			06	19 0-3	RUL11
Filler Face Plate	NTMX83AA			06	19 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	20	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	21	RUL11
ISDN DCH Building Block	NTZZ17BB			06	20	RUL11
ISDN DCH Building Block	NTZZ17BB			06	21	RUL11
Quad Frame Carrier	NTMX87AA			06	21	RUL11
Dual DS1 Packlet	NTMX81AA			06	21 0-3	RUL11
Filler Face Plate	NTMX83AA			06	21 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	22	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	23	RUL11
ISDN DCH Building Block	NTZZ17BB			06	22	RUL11
ISDN DCH Building Block	NTZZ17BB			06	23	RUL11
Quad Frame Carrier	NTMX87AA			06	23	RUL11
Dual DS1 Packlet	NTMX81AA			06	23 0-3	RUL11
Filler Face Plate	NTMX83AA			06	23 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	24	RUL11
ISDN DCH Building Block	NTZZ17BB			06	24	RUL11
Filler Plate	NT0X50AA			06	24	RUL11
Filler Plate	NT0X50AA			06	26	RUL9
Fan Cooling Unit	NTNX27CA		1	00		AP
CEXT Label	P0715088		1			AP
CEXT FSP Label	P0742964		1			AP
EMI Door Kit (Gray)	NTRX2516		1			AP
Cable Trough (Gray)	NTNX5511		1			AP
Leveling foot kit	NTRX2523					RUL21
End Guard & EMI Side Panels	NTRX73					RUL12
Frame/Logic Ground H/W Kit	NTRX2519					RUL13
MTA Wiring Option	NTMX88WA			19		RUL17
CRSC Standalone Power Kit	NTMX8943					RUL19
CRSC Standalone Power Dwg.	PCMX8943					RUL19
Cover Plate	P0715809					RUL19
Streamline Endguard Insert	NTRX07					RUL14
Auxiliary Alarm Cable BB	NTZZ46FA					RUL18
Cover Plate	P0715775					RUL18
ABS Cable	NTMX8955					RUL20
15-Pin Cover Plate	P0741250					RUL20

Retired Equipment
CEXT Building Block
(Gray)

NTZZ12SA
EMC2-25-RCC2-5
Page 5

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ17BA	RCP	NTZZ17BB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

% Rating Change Pending. NT6X30CA is to replace NT6X30AA.

RCP in flaglist means that the Rating (status) of the pec is pending change.

NOTES:

AP01 This PEC is Always Provided in the NTMX88AA and is shown here for completeness.

AP02 This PEC is Always Provided in the NTMX26BA and is shown here for completeness.

AP03 This PEC is Always Provided in the NTZZ17HA and is shown here for completeness.

RULES:

AP 1) When PEC NTZZ12SA is ordered, these items are provided.

RUL1 1) Provide two NT6X30CA Ringing Generators when analog ringing is required in the LCME mounted in the CEXT. Analog ringing is used when non-ISDN lines are provided. Check availability reports before ordering. NT6X30CA replaces NT6X30AA.

- 2) Provide two NT6X3005 fillers when Ringing Generators are not provided.

- RUL2 1) Provide one (1) NTZZ17HA LCME Building Block when the LCME is to be equipped. Labels must be provisioned separately (See items per Rule 16).
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)	Slot Location
33	0	00,01	1
33	1	02,03	5
33	2	04,05	9
33	3	06,07	13
47	4	08,09	1
47	5	10,11	5
47	6	12,13	9
47	7	14,15	13

- 3) Provide one NTB31AB LCME Filler set when the module is not equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5,9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME for RSC-S applications supports ISDN lines and POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

RUL3 1) Reserved.

RUL4 1) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

2) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

3) The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 4) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 5) Provision a maximum of 32 single slot line cards in even line subgroups and 28 in odd line subgroups.
- RUL5 1) Provide one (1) P0689450 French Warning Label when frame is required by Canadian customers. This label is to be affixed to the cabinet FSP.
- RUL6 1) Provide either a fully configured RMM per NTZZ12JA or build the RMM by provisioning one (1) NT6X13AB and equipment per RULES 7, 8, and 9.
- 2) The first RMM is provided on the CRSC cabinet. A second RMM may be mounted on the CEXT, if required.
- 3) The NT6X1438 (-48V SP Batter Supply Cable) for each RMM shelf is supplied with the NTMX89AA CRSC and NTMX88AA CEXT.
- RUL7 1) The following Service Circuits are provisionable on the RMM:
- NT3X09BA - Remote Metallic Test Access
 - NT0X10AA - Scan (SC) Point Card (14 SC Points Per Card)
 - NT2X10BA/NT2X11BA - MTU
 - NT2X57AA - Signal Distribution (SD) Card (14 SD Points Per Card)
 - NT2X90AD - INC/OG Test Trunk (Required For Metallic Testing)
- 2) Due to bulkhead cabling limitations, RMMs in RSC-S applications have additional mounting restrictions. Slots 3-6 can mount the cards shown below ONLY. Slots 7-10 can mount the cards shown, used for the application shown below, ONLY. Slots 3-10 need be equipped only when required for the office configuration (they are not mandatory). Cards needing connection to the Distributing Frame must mount in slots 11-16. Existing RMM assignment restrictions in Section 14 of the Engineering Manual also apply. Refer to the following for allowable circuit pack mounting locations:

RMM SLOT	ALLOWED CIRCUIT PACK
-----	-----
3	NT2X10BA
4	NT2X11BA
5	NT0X10AA
6	NT3X09BA
7	NT2X90AD for MONTALK
8	NT2X90AD for MONTALK

9	NT2X90AD for VERIFICATION 90
10	NT2X90AD for VERIFICATION 90
11	FULLY PROVISIONABLE
12	FULLY PROVISIONABLE
13	FULLY PROVISIONABLE
14	FULLY PROVISIONABLE
15	FULLY PROVISIONABLE
16	FULLY PROVISIONABLE

- RUL8 1) Any card slot 1 thru 16 not equipped with a circuit pack per RULE #7 above shall be equipped with an NT0X50AC Filler Face Plate.
- 2) Provide fillers as follows when RMM slots are not equipped:
- NT0X50AG for shelf 19 slot 17
 - NT0X50AA for shelf 19 slot 19
 - NT0X50BE for shelf 19 slot 20
- RUL9 1) Provide two NTMX79AA and one NT0X50AA (slot 1) to equip the Extension shelf to support one CRSC. This circuit pack is required for configurations that require the additional capabilities provided by the Extension shelf. The Extension shelf is divided into two units (left/right), each of which can support one CRSC. Provide four NTMX79AA circuit packs and two NT0X50AAs (slots 1 and 26) when required to extend the capabilities of two CRSCs.
- 2) Provide one NTZZ12KA to provide Filler Face Plates for the right side of the Extension shelf when it is not to be equipped. If the Extension shelf is not being used at all, provide one NTZZ12KA and one NTZZ12WA.
- RUL10 1) Provision the EXT to house D-Channel Handlers (DCH) when the office requirements dictate DCH quantities in excess of 3. When the EXT shelf is provisioned with DCH CPs it is at the expense of DS-1 Circuits.
- 2) The EXT shelf is actually two functional shelves on a single card cage. Where Slots 1 thru 13 (the Left Side) is used for the first CRSC and Slots 14 thru 27 (the Right Side) is used for the second CRSC.
- RUL11 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of Engineering Manual) and select the configuration that best suits your need. Note: If any of the configurations indicate slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

- 2) The resistor networks for DCH circuit packs are Always Provided as part of the shelf.
 - 3) Each slot not equipped with either a DCH or a Quad Carrier CP must be equipped with a NT0X50AA filler plate. Provision one NT0X50AA for each slot (xx = 4,6,8,9-12,15-24) that is not so equipped.
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL12 1) Refer to MSRX73 for all CEXT cabinet lineup provisioned endpanel, endcover, end guard, duct and column around hardware.
- RUL13 1) Provide one NTRX2519 Frame/Logic Ground Hardware kit per CEXT.
- RUL14 1) Refer to MSRX07 for all CEXT cabinet lineup provisioned end guard insert hardware.
- RUL15 1) Provide one of each item referenced against this Rule per CEXT.
- RUL16 1) Provide labels for LCME when the module is equipped.
- RUL17 1) Provide NTMX88WA when the RMM in the CEXT includes an MTA pack.
- RUL18 1) Provide one (1) NTZZ46FA Cable Assembly (C01/C02 to Aisle Alm1/2) Building Block when external alarms are required. This code includes the hardware required with this cable. Assemble per ADMX88AA.
- 2) Provide two (2) P0715775 Cover Plates and four (4) P0670923 screws when NTZZ46FA is NOT required.
- RUL19 1) Provide NTMX8943 and PCMX8943 when the CEXT is powered from a seven foot PDC or when vertical powering is used.
- 2) Provide four (4) P0715809 Cover Plates and eight (8) P0670923 screws when NTMX8943 is NOT required.
- RUL20 1) Provide one (1) NTMX8955 ABS Cable when Alarm Battery Supply is required at the bulkhead.

- 2) Provide two (2) P0741250 Cover Plates and four (4) P0670923 screws when NTMX8955 is NOT required.
- RUL21 1) Provide one (1) NTRX2523 Leveling Foot kit for each CEXT for non-earthquake applications.

CEXT BUILDING BLOCK
(BROWN)

PEC CODE: NTZZ12SB

CPC CODE: B0238072

RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ47SB

ABBREVIATION NAME: CEXT

ENGINEERING DESCRIPTION: The extension cabinet (CEXT) is used to expand the capabilities of the CRSC. The CEXT Building Block consists of the brown cabinet and cable rack, FSP, cooling unit and shelf assemblies. The LCME module, RMM and Extension shelf components must be provisioned based on office requirements. The EXT shelf is actually two shelves on a single card cage which are provisioned independently of each other. One EXT shelf can support two (2) RCC2s (i.e. the left side is used to support the first RCC2 and the right side is used to support the second RCC2). Therefore, in RSCS installations which do not require the additional capabilities provided by the Extension shelf, it must be provided with filler plates for both sides. If only one side is utilized, the other must be covered.

| REFERENCE DOCUMENTATION: MSMX88AA 00 09
SLZZ12SB 00 02

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

Retired Equipment
CEXT Building Block
(Brown)EMC2-25-RCC2-6
Page 1

NTZZ12SB EMC2-25-RCC2-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 01 05	ECM 617 05	Introduce code to replace NTZZ12SA.
93 02 05	ECM 617 06	Modify NTZZ12SB to be brown CEXT.
93 03 12	ECM 617 07	Add cable BB code and FSP spare CPs.
93 04 13	ECM 617 08	EC 011-17820 - Replace NT6X76AC with NT6X76AD Hayes Supported AILC.
93 04 23	ECM 617 09	Introduce NT6X30CA Ringing Generator.
93 11 05	ECM 617 13	Use LCME BB NTZZ17HA instead of detail
93 12 02	ECM 617 14	Add newly created green door label.
94 10 17	ECM 691 07	Retire code. Replaced by NTZZ47SB.
96 04 02	ECM 691 15	Change per EC#024-94829. Add provisioning rule for NTZZ17BB.

The CEXT Building Block (Brown) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CEXT Cabinet	NTMX88AA	CEXT	1			AP
Streamline Cabinet	NTNX25EA		1			AP01
Frame Supervisory Panel	NTMX26BA	FSP	1	61		AP
FSP Alarm CP	NT6X36AA		1	61		AP02
Alarm CP for FSP	NT6X36AB		1	61		AP02
% Ring Generator	NT6X30AA			61	1, 2	RUL1
Ring Generator	NT6X30CA			61	1, 2	RUL1
Ring Generator Filler	NT6X3005			61	1, 2	RUL1
ISDN 2B1Q Line Conc. Mod.	NTZZ17HA			33, 47		RUL2
LCME Common Circuit Packs	NTBX31BA	LCME	1			AP03
ISDN Line Conc Arr Shf Assy	NTBX3118	LCAI 0		47		AP01
ISDN Line Conc Arr Shf Assy	NTBX3118	LCAI 1		33		AP01
ISDN Enhanced Line Drawer	NTBX32BA	LD	8	33, 47	1, 5, 9, 13	AP03
Line Drawer ID Label	P0709652		1			AP03
LCME Fillers	NTBX31AB					RUL2
Subscriber Line Circuits						RUL4
Warning Label (French)	P0689450					RUL5
LCME PDC Fuse Label	P0711231					RUL16
LCME PDC Fuse Label	P0711232					RUL16
LCME Shelf Label for FSP	P0711233					RUL16
LCME Shelf Label for FSP	P0711234					RUL16
LCME Shelf Label for FSP	P0711235					RUL16
LCME Shelf Label for FSP	P0711236					RUL16
STD1 Remote Maint. Module	NTZZ12JA	RMM		19		RUL6
Remote Maint. Mod. Common CP	NT6X13AB	RMM		19		RUL6
Remote Maintenance Module	NT6X1301		1	19		AP01
Maintenance Trunk Card				19	3-16	RUL7
Filler Face Plate	NT0X50AC			19	1-16	RUL8
Filler Face Plate	NT0X50AG			19	17	RUL8
Filler Face Plate	NT0X50AA			19	19	RUL8
Filler Face Plate	NT0X50BE			19	20	RUL8
-48V SP Battery Supply Cable	NT6X1438		1	19		AP01
EXT Filler Kit (Right)	NTZZ12KA			06	14	RUL9
EXT Filler Kit (Left)	NTZZ12WA			06	02	RUL9
RCC2 Extension Shelf	NTMX8601		1	06		AP01
Filler Faceplate	NT0X50AA			06	1	RUL9
DS60 Extender CP	NTMX79AA			06	2, 13	RUL9
DS60 Extender CP	NTMX79AA			06	14, 25	RUL9

Retired Equipment
CEXT Building Block
(Brown)

NTZZ12SB
EMC2-25-RCC2-6
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# ISDN DCH Building Block	NTZZ17BA			06	3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	4	RUL11
ISDN DCH Building Block	NTZZ17BB			06	3	RUL11
ISDN DCH Building Block	NTZZ17BB			06	4	RUL11
Quad Frame Carrier	NTMX87AA			06	4	RUL11
Dual DS1 Packlet	NTMX81AA			06	4 0-3	RUL11
Filler Face Plate	NTMX83AA			06	4 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	5	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	6	RUL11
ISDN DCH Building Block	NTZZ17BB			06	5	RUL11
ISDN DCH Building Block	NTZZ17BB			06	6	RUL11
Quad Frame Carrier	NTMX87AA			06	6	RUL11
Dual DS1 Packlet	NTMX81AA			06	6 0-3	RUL11
Filler Face Plate	NTMX83AA			06	6 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	7	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	8	RUL11
ISDN DCH Building Block	NTZZ17BB			06	7	RUL11
ISDN DCH Building Block	NTZZ17BB			06	8	RUL11
Quad Frame Carrier	NTMX87AA			06	8	RUL11
Dual DS1 Packlet	NTMX81AA			06	8 0-3	RUL11
Filler Face Plate	NTMX83AA			06	8 0-3	RUL11
Filler Plate	NT0X50AA			06	3,5,7	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	9	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	10	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	11	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	12	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	15	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	16	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	17	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	18	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	19	RUL11
ISDN DCH Building Block	NTZZ17BB			06	9	RUL11
ISDN DCH Building Block	NTZZ17BB			06	10	RUL11
ISDN DCH Building Block	NTZZ17BB			06	11	RUL11
ISDN DCH Building Block	NTZZ17BB			06	12	RUL11
ISDN DCH Building Block	NTZZ17BB			06	15	RUL11
ISDN DCH Building Block	NTZZ17BB			06	16	RUL11
ISDN DCH Building Block	NTZZ17BB			06	17	RUL11
ISDN DCH Building Block	NTZZ17BB			06	18	RUL11
ISDN DCH Building Block	NTZZ17BB			06	19	RUL11
Quad Frame Carrier	NTMX87AA			06	19	RUL11
Dual DS1 Packlet	NTMX81AA			06	19 0-3	RUL11
Filler Face Plate	NTMX83AA			06	19 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	20	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	21	RUL11

Retired Equipment
CEXT Building Block
(Brown)

NTZZ12SB
EMC2-25-RCC2-6
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN DCH Building Block	NTZZ17BB			06	20	RUL11
ISDN DCH Building Block	NTZZ17BB			06	21	RUL11
Quad Frame Carrier	NTMX87AA			06	21	RUL11
Dual DS1 Packlet	NTMX81AA			06	21 0-3	RUL11
Filler Face Plate	NTMX83AA			06	21 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	22	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	23	RUL11
ISDN DCH Building Block	NTZZ17BB			06	22	RUL11
ISDN DCH Building Block	NTZZ17BB			06	23	RUL11
Quad Frame Carrier	NTMX87AA			06	23	RUL11
Dual DS1 Packlet	NTMX81AA			06	23 0-3	RUL11
Filler Face Plate	NTMX83AA			06	23 0-3	RUL11
# ISDN DCH Building Block	NTZZ17BA			06	24	RUL11
ISDN DCH Building Block	NTZZ17BB			06	24	RUL11
Filler Plate	NT0X50AA			06	24	RUL11
Filler Plate	NT0X50AA			06	26	RUL9
Fan Cooling Unit	NTNX27CA		1	00		AP
CEXT Label	P0746295		1			AP
CEXT FSP Label	P0742964		1			AP
EMI Door Kit (Brown)	NTRX2531		1			AP
Cable Trough (Brown)	NTRX5544		1			AP
Leveling foot kit	NTRX2523					RUL21
End Guard & EMI Side Panels	NTRX73					RUL12
Frame/Logic Ground H/W Kit	NTRX2519					RUL13
MTA Wiring Option	NTMX88WA			19		RUL17
Auxiliary Alarm Cable BB	NTZZ46FA					RUL18
Cover Plate	P0715775					RUL18
ABS Cable	NTMX8955					RUL20
15-Pin Cover Plate	P0741250					RUL20
CRSC Standalone Power Kit	NTMX8943					RUL19
CRSC Standalone Power Dwg.	PCMX8943					RUL19
Cover Plate	P0715809					RUL19
Endguard Insert Assemblies	NTRX07					RUL14

Retired Equipment
CEXT Building Block
(Brown)

NTZZ12SB
EMC2-25-RCC2-6
Page 5

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X30AA NTZZ17BA	MD RCP	NT6X30CA NTZZ17BB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

AP01 This PEC is Always Provided in the NTMX88AA and is shown here for completeness.

AP02 This PEC is Always Provided in the NTMX26BA and is shown here for completeness.

AP03 This PEC is Always Provided in the NTZZ17HA and is shown here for completeness.

RCP in flaglist means that the Rating (status) of the pec is pending change.

RULES:

AP 1) When PEC NTZZ12SB is ordered, these items are provided.

RUL1 1) Provide two NT6X30CA Ringing Generators when analog ringing is required in the LCME mounted in the CEXT. Analog ringing is used when non-ISDN lines are provided. Check availability reports before ordering. NT6X30CA replaces NT6X30AA.

2) Provide two NT6X3005 fillers when Ringing Generators are not provided.

- RUL2 1) Provide one (1) NTZZ17HA LCME Building Block when the LCME (2B1Q) module is required. Labels must be provisioned separately (See items per Rule 16).
- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)	Slot Location
33	0	00,01	1
33	1	02,03	5
33	2	04,05	9
33	3	06,07	13
47	4	08,09	1
47	5	10,11	5
47	6	12,13	9
47	7	14,15	13

- 3) Provide one NTB31AB LCME Filler set when the module is not equipped.
- 4) Eight (8) NTB32BA Enhanced Line Drawers are included with NTZZ17HA. Each accommodates up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5,9 and 13 on each Line Shelf Assembly.
- 5) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 6) The LCME for RSC-S applications supports ISDN lines and POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 7) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- RUL3 1) Reserved.

- RUL4 1) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
IBERT	NT6X99AA	2	1 per LCME

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Interface Line Card is to replace NT6X76AC Asynchronous Interface Line Card.

- 2) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

3) The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 4) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.

- 5) Provision a maximum of 32 single slot line cards in even line subgroups and 28 in odd line subgroups.
- RUL5 1) Provide one (1) P0689450 French Warning Label when frame is required by Canadian customers. This label is to be affixed to the cabinet FSP.
- RUL6 1) Provide either a fully configured RMM per NTZZ12JA or build the RMM by provisioning one (1) NT6X13AB and equipment per RULES 7, 8, and 9.
- 2) The first RMM is provided on the CRSC cabinet. A second RMM may be mounted on the CEXT (if used) or on a CMIS.
- 3) The NT6X1438 (-48V SP Batter Supply Cable) for each RMM shelf is supplied with the NTMX89AA CRSC and NTMX88AA CEXT.
- RUL7 1) The following Service Circuits are provisionable on the RMM:
- NT3X09BA - Remote Metallic Test Access
 - NT0X10AA - Scan (SC) Point Card (14 SC Points Per Card)
 - NT2X10BA/NT2X11BA - MTU
 - NT2X57AA - Signal Distribution (SD) Card (14 SD Points Per Card)
 - NT2X90AD - INC/OG Test Trunk (Required For Metallic Testing)
- 2) Due to bulkhead cabling limitations, RMMs in RSC-S applications have additional mounting restrictions. Slots 3-6 can mount the cards shown below ONLY. Slots 7-10 can mount the cards shown, used for the application shown below, ONLY. Slots 3-10 need be equipped only when required for the office configuration (they are not mandatory). Cards needing connection to the Distributing Frame must mount in slots 11-16. Existing RMM assignment restrictions in Section 14 of the Engineering Manual also apply. Refer to the following for allowable circuit pack mounting locations:

RMM SLOT	ALLOWED CIRCUIT PACK
-----	-----
3	NT2X10BA
4	NT2X11BA
5	NT0X10AA
6	NT3X09BA
7	NT2X90AD for MONTALK
8	NT2X90AD for MONTALK
9	NT2X90AD for VERIFICATION 90
10	NT2X90AD for VERIFICATION 90
11	FULLY PROVISIONABLE WITHIN RULES

12	FULLY PROVISIONABLE WITHIN RULES
13	FULLY PROVISIONABLE WITHIN RULES
14	FULLY PROVISIONABLE WITHIN RULES
15	FULLY PROVISIONABLE WITHIN RULES
16	FULLY PROVISIONABLE WITHIN RULES

- RUL8 1) Any card slot 1 thru 16 not equipped with a circuit pack per RULE #7 above shall be equipped with an NT0X50AC Filler Face Plate.
- 2) Provide fillers as follows when RMM slots are not equipped:
- NT0X50AG for shelf 19 slot 17
 - NT0X50AA for shelf 19 slot 19
 - NT0X50BE for shelf 19 slot 20
- RUL9 1) Provide two NTMX79AA and one NT0X50AA (slot 1) to equip the Extension shelf to support one CRSC. This circuit pack is required for configurations that require the additional capabilities provided by the Extension shelf. The Extension shelf is divided into two units (left/right), each of which can support one CRSC. Provide four NTMX79AA circuit packs and two NT0X50AAs (slots 1 and 26) when required to extend the capabilities of two CRSCs.
- 2) Provide one NTZZ12KA to provide Filler Face Plates for the right side of the Extension shelf when it is not to be equipped. If the Extension shelf is not being used at all, provide one NTZZ12KA and one NTZZ12WA.
- RUL10 1) Provision the EXT to house D-Channel Handlers (DCH) when the office requirements dictate DCH quantities in excess of 3. When the EXT shelf is provisioned with DCH CPs it is at the expense of DS-1 Circuits.
- 2) The EXT shelf is actually two functional shelves on a single card cage. Where Slots 1 thru 13 (the Left Side) is used for the first CRSC and Slots 14 thru 27 (the Right Side) is used for the second CRSC.
- RUL11 1) When provisioning DCHs, DS-30As and DS-1s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to Table H (Section 14 of Engineering Manual) and select the configuration that best suits your need. Note: If any of the configurations indicate slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.
- 2) The resistor networks for DCH circuit packs are Always Provided as part of the shelf.

- 3) Each slot not equipped with either a DCH or a Quad Carrier CP must be equipped with a NT0X50AA filler plate. Provision one NT0X50AA for each slot (xx = 4,6,8,9-12,15-24) that is not so equipped.
 - 4) Ports 0 (slot 12:0) and 8 (slot 16:0) must be the first interlinks in a Dual RCC2 configuration.
 - 5) DS30A ports are to be assigned beginning with port 53 and then descending.
- RUL12 1) Refer to MSRX73 for all CEXT cabinet lineup provisioned endpanel, endcover, end guard, duct and column around hardware.
- RUL13 1) Provide one NTRX2519 Frame/Logic Ground Hardware kit per CEXT.
- RUL14 1) Refer to MSRX07 for all CEXT cabinet lineup provisioned end guard insert hardware.
- RUL15 1) Provide one of each item referenced against this Rule per CEXT.
- RUL16 1) Provide labels for LCME when the module is equipped.
- RUL17 1) Provide NTMX88WA when the RMM in the CEXT includes an MTA pack.
- RUL18 1) Provide one (1) NTZZ46FA Cable Assembly (C01/C02 to Aisle ALM1/2) Building Block when external alarms are required. This code includes the hardware required with this cable. Assemble per ADMX88AA.
- 2) Provide two (2) P0715775 Cover Plates and four (4) P0670923 screws when NTZZ46FA is NOT required.
- RUL19 1) Provide NTMX8943 and PCMX8943 when the CEXT is powered from a seven foot PDC or when vertical powering is used. Vertical power should be used for all new applications. Horizontal power will be used only to extend an existing horizontally-powered lineup.
- 2) Provide four (4) P0715809 Cover Plates and eight (8) P0670923 screws when NTMX8943 is NOT required.
- RUL20 1) Provide one (1) NTMX8955 ABS Cable when Alarm Battery Supply is required at the bulkhead.

- 2) Provide two (2) P0741250 Cover Plates and four (4) P0670923 screws when NTMX8955 is NOT required.
- RUL21 1) Provide one (1) NTRX2523 Leveling Foot kit for each CEXT for non-earthquake applications.

REMOTE CLUSTER CONTROLLER 2 SHELF PACKFILL

PEC CODE: NTZZ12XA

CPC CODE: B0235342

| RATING: MD

REPLACES: N/A

| REPLACED BY: NTZZ12XB

ABBREVIATION NAME: RCC2

ENGINEERING DESCRIPTION: The RCC2 is the remote office deployment of the Compact Peripheral Module (CPM) family of peripherals for the DMS-100 family. The RCC2 is based on a one (RCC2) or two shelf configuration (RCC2 and EXT) which must be provisioned separately. The RCC2 Shelf (RCC2) supports a Maximum of 54 P-Side Ports, 16 C-Side Ports and Dual RCC2 configurations.

REFERENCE DOCUMENTATION: MSMX89AA 00 05

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: NTI: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

NTZZ12XA EMC2-25-RCC2-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 27	ECM 617 04	Add label for NTMX74AA; Change shelf position from 05 to 06
93 01 05	ECM 617 05	Add labels for NT6X69AC and NTB01AB
94 08 10	ECM 617 16	Show NTMX74AA as MD and replaced by NTMX74AB DS30A Interface CP.
94 08 28	ECM 617 17	Remove NTMX74AA and P0738857 from Equipment List. Remove Asia/Pacific and Europe markets.
94 10 17	ECM 691 07	Correct NTMX74AB label code.
95 05 04	ECM 691 09	Declare code status MD.

The Remote Cluster Controller 2 Shelf Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter	NTMX72AA		2	06	1-2 26-27	AP
Processor	NTMX77AA		2	06	3,25	AP
Enhanced ISP CP	NTBX01AB		2	06	4,24	AP
Enhanced Messaging CP	NT6X69AC		2	06	8,20	AP
Enhanced Matrix CP	NTMX75AA		2	06	10,18	AP
PCM Signalling Processor	NTMX73AA		2	06	11,17	AP
DS30A Interface CP	NTMX74AB		2	06	13,15	AP
Label for NT6X69AC	P0710476		2	06	8,20	AP
Label for NTBX01AB	P0738856		2	06	4,24	AP
Label for NTMX74AB	P0744677		2	06	13,15	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

1) The RCC2 Shelf (RCC2) supports the following:

- Contains all 'common' circuitry.
- Supports provisionable DS1s and DCHs.
- May be deployed in a Single shelf configuration supporting a maximum of 54 P-Side Ports.
- The 54-P-Side Ports may be used to support the following:
 - * On Site LCMS supporting CLASS, Pots and Coin Lines
 - * Remote LCMS housed in RLCMS, OPMS or RLCCs (supporting CLASS, Pots and Coin lines) via DS-1 links
 - * CDO/PBX Trunks via DS-1 links
 - * LCME (2B1Q) via DCH & DS-30A ports
 - * Dual RCC2 configuration via P-Side DS-1 links

2) NTMX74AB replaced NTMX74AA.

RULES:

AP 1) When PEC NTZZ12XA is ordered, these items are provided.

RCC2 EDC PACKFILL BUILDING BLOCK

PEC CODE: NTZZ12ZA

CPC CODE: B0237072

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ12XB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ12ZA provides the RCC2 packfill to support applications requiring Extended Distance Capability (EDC). Messaging pack NTMX76AA is included to replace the NT6X69AC used in standard applications. The host XPM for a RSC-S which utilizes this packfill must also be equipped with the NTMX76-- messaging pack.

REFERENCE DOCUMENTATION: MSMX89AA 00 07

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Tim Worsham Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

NTZZ12ZA EMC2-25-RCC2-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 04 23	ECM 617 09	New product; new section
93 08 17	ECM 617 11	Add label for NTMX76AA.
94 08 10	ECM 617 16	Show NTMX74AA as MD and replaced by NTMX74AB DS30A Interface CP.
94 08 28	ECM 617 17	Remove NTMX74AA and P0738857 from Equipment List.
95 05 04	ECM 691 09	Declare code status MD.

The RCC2 EDC Packfill Building Block is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter	NTMX72AA		2	06	1-2 26-27	AP
Unified Processor	NTMX77AA		2	06	3, 25	AP
Enhanced ISP CP	NTBX01AB		2	06	4, 24	AP
Extended Distance Msg	NTMX76AA		2	06	8, 20	AP
Enhanced Matrix CP	NTMX75AA		2	06	10, 18	AP
PCM Signalling Processor	NTMX73AA		2	06	11, 17	AP
DS30A Interface CP	NTMX74AB		2	06	13, 15	AP
Label for NTBX01AB	P0738856		2	06	4, 24	AP
Label for NTMX74AB	P0744677		2	06	13, 15	AP
Label for NTMX76AA	P0744109		2	06	8, 20	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

2) NTMX74AB replaced NTMX74AA.

RULES:

AP 1) When PEC NTZZ12ZA is ordered, these items are provided.

REMOTE CLUSTER CONTROLLER FRAME (CRCC) OFFSHORE

PEC CODE: NTZZ37JA

CPC CODE: B0235436

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ47UC

ABBREVIATION NAME: CRSC

ENGINEERING DESCRIPTION: The NTZZ37JA building block is used to provide the Remote Cluster Controller Offshore (RCC2) function using the NTMX89BA, the Off-shore Cabinetized Remote Switching Center (CRSC).

The NTMX89BA Cabinetized Remote Switching Center (CRSC) Offshore cabinet incorporates an FSP, LCME, RMM, RCC2, and Cooling Unit.

The CRSC is part of the International Remote Switching Center Synchronized Digital Hierarchy (SDH) (RSC-S) product.

The CRSC is capable of being deployed as a single cabinet RSC-S supporting up to 480 lines (maximum 216 ISDN lines), service and maintenance circuits, and PCM30 links.

In addition, the CRSC may be deployed in a multi-cabinet RSC-S. Other cabinets which may be deployed in a multi-cabinet RSC-S, including NTMX88BA CRSC Extension Cabinet (CEXT) Offshore.

| REFERENCE DOCUMENTATION: MSMX89BA 00 09
SLMX89BA 00 03
SLZZ37JA 00 01

MARKETS:

Applicable markets:

Europe
Asia/Pacific
CALA
Carrier

	ISSUE AUTHOR: NTI:	Steve Martin	Dept. 3471	(PPK)
	MAIN CONTACT: NTI:	Scott Maggiolo	Dept. 3471	(PPK)

NTZZ37JA EMC2-25-RCC2-9 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 01 27	ECM 639 04	Changes due to ECD 018 40314.
93 04 15	ECM 639 05	ECD 011-17820 - Replace NT6X76AC with NT6X76AD Hayes Supported AILC.
93 12 21	ECM 639 07	Reformat section; transfer ownership to RTP Product Rules group.
94 08 10	ECM 639 08	Show NTMX74AA as MD replaced by NTMX74AB DS30A Interface CP. Show P0738857 (Label for NTMX74AA) as MD replaced by P0744677 (Label for NTMX74AB).
94 08 28	ECM 639 09	Undo NTMX74AA/AB changes made in the ECM 639 08. Add NTB31BB and NTB31PA.
95 01 27	ECM 639 10	EC 024-93218; Add NTRX3663 Power Fltr.
95 02 14	ECM 691 08	Remove NT6X1438 per SLMX89BA change.
95 05 04	ECM 691 09	Declare Code Status MD.
96 04 02	ECM 691 15	Per EC#024-94829 add NTB02BA, add label P0737724, add NTB31PB upgrade kit. Introduce NT6X92EA.

The Remote Cluster Controller Frame (CRCC) Offshore is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CRSC Offshore	NTMX89BA		1			AP
Streamline Cabinet	NTNX25EA					AP01
Frame Supervisory Panel	NTMX26BA	FSP		61		RUL15
FSP Alarm CP	NT6X36AA		1	61		AP02
Alarm CP for FSP	NT6X36AB		1	61		AP02
Ringing Generator (analog)	NT6X30AA			61	1, 2	RUL16
Ringing Generator (UK)	NT6X30AB			61	1, 2	RUL16
Ringing Generator (Australia)	NT6X30AE			61	1, 2	RUL16
CRSC Stand Alone Power Kit	NTMX8943			61		RUL17
Product Change Kit Drawing	PCMX8943			61		RUL17
Power Filter Kit CRSC	NTRX3663					RUL17
Frame&Logic Ground HW Kit	NTRX2519					RUL18
Misc HW Kit	NT0X58CE					RUL22
End Guard	NTRX73AA					RUL21
End Guard Assembly	NTRX73AC					RUL21
End Guard Assembly	NTRX73AB					RUL21
Streamline End Guard Insert	NTRX07AA					RUL21
Streamline E/G Ins Assy(WOSW)	NTRX07AB					RUL21
Streamline E/G Ins Assy CPDC	NTRX07AC					RUL21
# LCME Common CP	NTBX31BB	LCME				RUL1
ISDN Cabinet LCA Shelf Assy	NTBX3118	LCAI	1	47		AP01
ISDN Enhanced Line Drawer	NTBX32BA	LD			1, 5, 9, 13	RUL2
Line Drawer Filler Plate	NT6X05AX	FP			1, 5, 9, 13	RUL2
LCME Packfill Upgrade Kit	NTBX31PA					RUL24
LCME Packfill Upgrade Kit	NTBX31PB					RUL24
ISDN Cabinet LCA Shelf Assy	NTBX3118	LCAI	0	33		AP01
ISDN Enhanced Line Drawer	NTBX32BA	LD			1, 5, 9, 13	RUL2
Line Drawer Filler Plate	NT6X05AX	FP			1, 5, 9, 13	RUL2
Subscriber Line Circuits	AR					RUL3
Shelf Pos ID Label	P0707612					RUL4
Line Drawer ID Label	P0709652					RUL4
Warning Label (French)	P0689450					RUL4

NTZZ37JA

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMM Shelf Assembly	NT6X1306		1	19		AP01
International RMM Common CP	NT6X13EA	RMM		19		RUL5
Maintenance Trunk Card	AR			19	3-16	RUL5
Filler Face Plate	NT0X50AC			19	11-16	RUL5
RCC2 Main Shelf	NTMX8501		1	06		AP01
Power Converter	NTMX72AA		2	06	1, 26	AP
Processor	NTMX77AA		2	06	3, 25	AP
ISDN Signaling Pre-Proc CP	NTBX01AB		2	06	4, 24	AP
Filler Face Plate	NT0X50AA			06	5, 23	RUL8
# Universal Tone Rec'vr (UTR)	NT6X92CA			06	6, 22, 7, 21	RUL9
Global Tone Rec'vr (GTR)	NT6X92EA			06	6, 22, 7, 21	RUL9
Filler Face Plate	NT0X50AA			06	7, 21	RUL9
Msg Protocol & Downld CP	NT6X69LB		2	06	8, 20	AP
Dual 2MB (PCM30) I/F Packlet	NTMX82AA		2	06	9 0 19 0	AP
Quad Frame Carrier	NTMX87AA		2	06	9, 19	AP
Dual 2MB (PCM30) I/F Packlet	NTMX82AA			06	9 1-3 19 1-3	RUL7
Filler Face Plate	NTMX83AA			06	9 0-3 19 0-3	RUL7
Enhanced Matrix CP	NTMX75AA		2	06	10, 18	AP
PCM Signaling Processor	NTMX73AA		2	06	11, 17	AP
DS30A Interface CP	NTMX74AA		2	06	13, 15	AP
# ISDN D-Channel Handler (DCH)	NTBX02AA			06	12, 14, 16	RUL10
ISDN D-Channel Handler (DCH)	NTBX02BA			06	12, 14, 16	RUL10
Quad Frame Carrier	NTMX87AA			06	12	RUL10
Dual 2MB (PCM30) I/F Packlet	NTMX82AA			06	12 0-3	RUL10
Filler Face Plate	NTMX83AA			06	12 0-3	RUL10
Quad Frame Carrier	NTMX87AA			06	14	RUL10
Dual 2MB (PCM30) I/F Packlet	NTMX82AA			06	14 0-3	RUL10
Filler Face Plate	NTMX83AA			06	14 0-3	RUL10

NTZZ37JA

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Quad Frame Carrier	NTMX87AA			06	16	RUL10
Dual 2MB (PCM30) I/F Packlet	NTMX82AA			06	16 0-3	RUL10
Filler Face Plate	NTMX83AA			06	16 0-3	RUL10
Fan Cooling Unit	NTNX27CA		1	00		AP
CRSC Label	P0715089		1			AP
Design Label (NT6X92CA)	P0677831					RUL20
Design Label (NT6X92EA)	P0835224					RUL20
Design Label (NTBX02AA)	P0697919					RUL20
Design Label (NT6X69LB)	P0713213					RUL20
Design Label (NTBX01AB)	P0735418					RUL20
Design Label (NTMX74AA)	P0738857					RUL20
Design Label (NTBX02BA)	P0737724					RUL20
EMI Kit Single Bulkhead, Grey	NTRX2516					RUL12
Frame Fail LP, Grey	NT9X0174					RUL12
Dummy Fail LP, Grey	P0699441					RUL12
EMI Door Kit, Brown	NTRX2531					RUL12
EMI Gasket Vertical	P0691073					RUL12
Frame Fail LP, Brown	NT9X0102					RUL12
Dummy Fail LP, Brown	P0674502					RUL12
Cable Trough Assembly, Grey	NTNX5511					RUL13
Cable Trough Assembly, Brown	NTRX5544					RUL13
AUX Alarm Cable	NTMX8816					RUL23
Leveling Foot Kit	NTRX2523					RUL14
Bulkhead Assembly	NTMX8991					RUL19
CA Assembly (SEND) CPMtoBHD	NTMX8995					RUL19
CA Assembly (RECV) CPMtoBHD	NTMX8996					RUL19
Bulkhead Assembly	NTMX8901					RUL19
CA Assembly (SEND)	NTMX8945					RUL19
CA Assembly (RECV)	NTMX8946					RUL19

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTBX31BB NTBX02AA NT6X92CA	A&M RCP STD*	No Replacement NTBX02BA NT6X92EA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RCP in flaglist means that the Rating (status) of the pec is pending change.

STD* in flaglist means that the pec is still standard pending change. Check availability of replacement pec before ordering.

RULES:

- AP 1) When PEC NTZZ37JA is ordered, these items are provided.
- AP01 1) When PEC NTMX89BA is ordered, these items are always provided. The break out of these items are shown here for completeness.
The bulkhead assemblies mount on the LEFT side of the frame, when viewing the frame from the rear.
- AP-02 1) These items are included with NTMX26BA and are shown for sparing purposes.
- RUL1 1) Provide one (1) NTBX31BB LCME Common CP Fill for each LCME (2B1Q) module required.

- 2) The LCME module is for the ISDN 2B1Q Access Subsystem. The LCME Line Drawers are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
05 or 40	0	00,01
05 or 40	1	02,03
05 or 40	2	04,05
05 or 40	3	06,07
19 or 54	4	08,09
19 or 54	5	10,11
19 or 54	6	12,13
19 or 54	7	14,15

- RUL2 1) Provide one (1) NTB32BA Enhanced Line Drawer for the LCME to accommodate up to 60 line cards in two (2) logical drawers called Line Sub-Groups. Line Drawers are equipped in line drawer positions 1,5,9 and 13 on each Line Shelf Assembly.
- 2) The Data Line Cards cannot be mounted in the five line card position (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Data Line Card in the lower LSG directly under the PUPS.
- 3) The LCME in RSC-S applications supports, in addition to ISDN lines, POTS, EBS and DATAPATH lines. Refer to the section on ISDN Enhanced Line Drawer NTB32BA for more information.
- 4) For each unequipped line drawer position provide one (1) NT6X05AX Line Drawer Filler Plate.
- 5) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.

Since straps can be re-used, the quantity to be provided is determined by the number of lines which are to be held simultaneously in this state.

- RUL3 1) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE MODULE
=====	=====	=====	=====
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F LC	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AC/AD***	2	240
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA*	1	472
Message Waiting Converter LC	NT6X20AA*	2	8
POTS Line Card	NT6X17AA/AB/AC	1	480
POTS Line Card	NT6X18--**	1	480
World Line Card Type 'A'	@NT6X17BA	1	480
World Line Card Type 'B'	&NT6X18BA	1	480
POTS Line Card (Australia)	NT6X93EA	1	480
International Line Card (UK)	NT6X98AA	1	480
IBERT	NT6X99AA	2	1 per LCME

@ The World Line Card Type 'A' replaces:

NT6X17AC North America
 NT6X93AA Turkey, Belize
 NT6X93BA Caribbean
 NT6X93CA China
 NT6X93DA Morocco
 NT6X93EA Australia
 NT6X99AA UK ScopeDial
 NTMX29AA British telephone

& The World Line Card Type 'B' replaces:

NT6X18AA North America
 NT6X94AB Turkey, Belize, Guyana
 NT6X94BB Caribbean
 NT6X94CA China
 NT6X94DA Morocco
 NT6X33AA Japan Type 'A'

* The POTS Message Waiting cards require one (1) message waiting converter line card NT6X20AA (two slots high) per line drawer to function.

** The NT6X18-- line card type can be used if it is NOT configured as a Coin or ANI line. No high voltage NT6X18-- applications may be used.

*** The NT6X76AD Hayes Supported Asynchronous Line Card replaces NT6X76AC AILC.

- 2) Any of the line cards supported can be mixed with any other line cards of a Line Subgroup. However, if there are more than eight (8) S/T-Interface line cards in the same row as POTS line cards, then the POTS line cards will NOT stay in-service on PUPS failure.

The LCME provides flexible Time Division Multiplexing (TDM) groups. This enables an ISDN line to be placed anywhere in a drawer. Any four ISDN lines from the same physical drawer can belong to the same TDM group subject to rule that lines in a particular TDM group must come from the same physical drawer.

- 4) Provision IBERT for data path/ISDN loop testing. Provision only one per LCME.
- 5) Provision a maximum of 32 single slot cards in even line subgroups and 28 in odd line subgroups.

- RUL4
- 1) Provide one (1) P0689450 French Warning Label when frame is required by Canadian customers. This label is to be affixed to the cabinet FSP.
 - 2) Provide one (1) P0709652 Line Drawer Identification Labels per CRSC Cabinet. P0709652 provides enough labels for 16 Line Drawers.
 - 3) Provide one each of the following LCME PDC Fuse Designation Labels per CRSC and/or CEXT Cabinet provided.

PEC	DESCRIPTION
=====	=====
P0711231	LCME 00 0- LCME 99 0
P0711232	LCME 00 1- LCME 99 1

NTZZ37JA

- 5) Provide one each of the following LCME Module/Shelf Designation Labels per CRSC and/or CEXT Cabinet provided to be affixed to the FSP:

PEC	DESCRIPTION
=====	=====
P0711233	LCME:00 0 LCAI:0- LCME:99 0 LCAI:0
P0711234	LCME:00 0 LCAI:1- LCME:99 0 LCAI:1
P0711235	LCME:00 1 LCAI:0- LCME:99 1 LCAI:0
P0711236	LCME:00 1 LCAI:1- LCME:99 1 LCAI:1

- RUL5 1) For the Remote Maintenance Module (RMM) always provide:

- one (1) NT6X13EA International RMM Common CP and

The NT6X1438 -48V SP Battery Supply Cable has been added to the stocklist for NTMX89BA and should no longer be ordered separately.

- 2) Provision the following CPs for the RMM in shelf position 19:

Card Type	PEC	Slot	Note
-----	---	----	----
INCOMING/OUTGOING TEST TRUNK	NT2X90AD	7-10	A
SCAN CIRCUIT PACK	NT0X10AA	5	B
SD CIRCUIT PACK	NT2X57AA	13-14	C
8X8 METALLIC TEST ACCESS	NT3X09BA	06	D
MULTILINE TEST CONTROLLER	NT4X98BB	03	E
MULTILINE TEST (ANALOG)	NT4X97AA	04	E
BALANCE NETWORK	NT2X77AA		F

Note:

- A Provide one (1) NT2X90AD test trunk on an as required basis. A NT2X90AD must always be combined with an LTU to provide a talk monitor feature. The TR & TT leads on NT2X90AD shall be connected to the same metallic test access as the LTU leads T & R. Slots 7-10 are dedicated for NT2X90.
- B Provide one scan circuit pack (NT0X10AA) for every 14 scan points required in a remote office. Slot 5 is dedicated for NT0X10. When connected to out-of-office leads, the NT0X10AA must be located in even slots.
- C Provide one miscellaneous SD Type 1 circuit pack NT2X57AA for every 14 signal distributor points required for the remote office.
- D Provide one (1) 8X8 Metallic Test Access circuit pack NT3X09BA for each four LCMs in the remote site. Each NT3X09BA can serve up to eight (8) Service Circuits and must be mounted in even slot positions only. Slot 6 is dedicated for NT3X09.
- E Provide the Multiline Test Unit (MTU) which consists of one NT4X98BB and one NT4X97AA circuit pack. The MTU must be installed in adjacent slots with the NT4X98BB occupying the odd numbered slot position. A minimum of one MTU per office is required. -48v SP (Special Power) is required. This unit is also required when electronic business sets are used. Slot 3 is dedicated for NT4X98 and slot 4 is dedicated for NT4X97.
- F Provide one (1) NT2X77AA for every NT2X90AD.

The total 48 volt power consumption of the provisionable circuit packs in the RMM (NT6X1306) must not exceed 110 watts. Rating of circuit packs is as follows:

CIRCUIT PACK CODE	MAXIMUM POWER CONSUMPTION
NT2X59 & NT6X74	25.0 WATTS
NT0X10AA	2.0 WATTS
NT2X10AA/AB	9.0 WATTS
NT2X11AA/AD	8.5 WATTS

NT2X48AB	12.0 WATTS
NT2X57AA	4.5 WATTS
NT2X90AB	1.5 WATTS
NT3X04AA	28.0 WATTS
NT3X09AA	4.0 WATTS
NT3X09BA	11.5 WATTS
NT4X98BB	20.0 WATTS
NT4X97AA	9.0 WATTS

3)

Provide one (1) NT0X50AC Filler Face Plate for each slot 3-16 not equipped with a circuit pack.

- RUL7 1) Provision NTMX82AA Dual 2MB (PCM30) I/F Packlets for C-side interface based on host traffic requirements. Two PCM30 interfaces are provided per packlet.

Always provide two (2) NTMX82AA packlets in slots 9 and 19, position 0.

- 2) Assign packlets in the following order (slot:packlet):

9:0
19:0
9:1
19:1
9:2
19:2
9:3
19:3.

- 3) Provide one (1) NTMX83AA Filler Face Plate for each unused packlet position on the NTMX87AA Quad Frame Carrier.

- RUL8 1) Provide two (2) NT0X50AAs in slot 5 & 23.

- RUL9 1) One UTR Pair in Slot 6 & 21 should be provisioned for each RCC2.

Provide a pair of NT6X92EA as per customer requirements.

DO NOT mix NT6X92s in the same shelf.

- 2) The exact quantity required is based on offered traffic. The following general rule may be used for planning purposes only. If UTR CCS is 0 to 765, then one pair (6,21) is sufficient. If UTR CCS is 765 to 1600, then provide second pair (7,22).

- 3) When only one UTR pair is required provide two (2) NT0X50AAs in slots 7 & 22.

- RUL10 1) When provisioning DCHs, DS-30As and PCM30s for the RCC2 one must consider all three together to determine the hardware configuration required. Refer to the chart on the following page and select the configuration that best suits your need.

Note:

If any of the following configurations indicate slots used in the extension shelf then the CEXT Cabinet must be provided to support this configuration.

DCH, DS30A and PCM30 PROVISIONING CHART for RCC2

A	B	C	D	E	F	G	H	J	K	L
	DCH REQ'D QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	PCM30 PORTS REQ'D	RCC2 SLOTS FOR PCM30s	QTY OF EXT MX87	EXT SLOTS PCM- 30s	DS30As REQ'D QTY	PCM- 30 DYN. TRKS
1	0		0		0-22	12:0-3 16:0 14:0 14:2 16:3 16:2 14:1 16:1	0		0-30	0-22
2	2	14, 16	0		0-08	12:0-3	0		0-30	0-8
3	3	14, 16 12	0		00		0		0-30	0
4	2		1	5, 3 (22, 24)	0-20	12:0-3 16:0 14:0 14:2 16:3 16:2 14:1	0		0-30	20
5	3		1	5, 3, 9 (22, 24, 18)	0-18	12:0-3 16:0 14:0 14:2 16:3 16:2	0		0-30	18
6	4-5		1	5, 3, 9, 7, 8 (22, 24, 18, 20, 19)	0-16	12:0-3 16:0 14:0 14:2 16:3	0		0-30	16

A	B	C	D	E	F	G	H	J	K	L
	DCH REQ'D QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	PCM30 PORTS REQ'D	RCC2 SLOTS FOR PCM30s	QTY OF EXT MX87	EXT SLOTS PCM- 30s	DS30As REQ'D QTY	PCM- 30 DYN. TRKS
7	6-7		1	5, 3, 9, 7, 8, 6, 4 (22, 24, 18, 20, 19, 21, 23)	0-14	12:0-3 16:0 14:0 14:2	0		0-30	0-14
8	8	14	1	5, 3, 9, 7, 8, 6, 4 (22, 24, 18, 20, 19, 21, 23)	0-10	12:0-3 16:0	0		0-30	0-10
9	9	14, 16	1	5, 3, 9, 7, 8, 6, 4 (22, 24, 18, 20, 19, 21, 23)	0-08	12:0-3	0		0-30	0-8
10	10	14, 16 12	1	5, 3, 9, 7, 8, 6, 4 (22, 24, 18, 20, 19, 21, 23)	00		0		0-30	8
11	06		1	5, 3, 9, 7, 8, 6 (22, 24, 18, 20, 19, 21)	0-16	12:0-3 16:0 14:0 14:2	1	4:0 (23: 0)	0-28	0-14
12	06		1	5, 3, 9, 7, 8, 6 (22, 24, 18, 20, 19, 21)	0-18	12:0-3 16:0 14:0 14:2	1	4:0-1 (23: 0-1)	0-26	0-14
13	06		1	5, 3, 9, 7, 8, 6 (22, 24, 18, 20, 19, 21)	0-20	12:0-3 16:0 14:0 14:2	1	4:0-2 (23: 0-2)	0-24	0-14

A	B	C	D	E	F	G	H	J	K	L
	DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	PCM30 PORTS REQ'D	RCC2 SLOTS FOR PCM30s	QTY OF EXT MX87	EXT SLOTS PCM- 30s	DS30As REQ'D QTY	PCM- 30 DYN. TRKS
14	06		1	5, 3, 9, 7, 8, 6 (22, 24, 18, 20, 19, 21)	0-22	12:0-3 16:0 14:0 14:2	1	4:0-3 (23: 0-3)	0-22	0-14
15	05		1	5, 3, 9, 7, 8 (22, 24, 18, 20, 19)	0-24	12:0-3 16:0 14:0 14:2 16:3	1	4:0-3 (23: 0-3)	0-20	0-16
16	05		1	5, 3, 9, 7, 8 (22, 24, 18, 20, 19)	0-26	12:0-3 16:0 14:0 14:2 16:3	2	4:0-3 6:0 (23: 0-3, 21:0)	18	0-16
17	05		1	5, 3, 9, 7, 8 (22, 24, 18, 20, 19)	0-28	12:0-3 16:0 14:0 14:2 16:3	2	4:0-3 6:0-1 (23: 0-3, 21: 0-1)	18	0-16
18	05		1	5, 3, 9, 7, 8 (22, 24, 18, 20, 19)	0-30	12:0-3 16:0 14:0 14:2 16:3	2	4:0-3 6:0-2 (23: 0-3, 21: 0-2)	16	0-16
19	4-5		1	5, 3, 9, 7, 8 (22, 24, 18, 20, 19)	0-32	12:0-3 16:0 14:0 14:2 16:3	2	4:0-3 6:0-3 (23: 0-3, 21: 0-3)	14	0-16

A	B	C	D	E	F	G	H	J	K	L
	DCH REQ'D QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	PCM30 PORTS REQ'D	RCC2 SLOTS FOR PCM30s	QTY OF EXT MX87	EXT SLOTS PCM- 30s	DS30As REQ'D QTY	PCM- 30 DYN. TRKS
20	04		1	5, 3, 9, 7 (22, 24, 18, 20)	0-34	12:0-3 16:0 14:0 14:2 16:3	3	4:0-3 6:0-3 8:0 (23: 0-3, 21: 0-3, 19:0)	14	0-16
21	04		1	5, 3, 9, 7 (22, 24, 18, 20)	0-36	12:0-3 16:0 14:0 14:2 16:3	3	4:0-3 6:0-3 8:0-1 (23: 0-3, 21: 0-3, 19: 0-1)	12	0-16
22	04		1	5, 3, 9, 7 (22, 24, 18, 20)	0-38	12:0-3 16:0 14:0 14:2 16:3	3	4:0-3 6:0-3 8:0-2 (23: 0-3, 21: 0-3, 19: 0-2)	10	0-16
23	03		1	5, 3, 9 (22, 24, 18)	0-40	12:0-3 16:0 14:0 14:2 16:3 16:2	3	4:0-3 6:0-3 8:0-2 (23: 0-3, 21: 0-3, 19: 0-2)	08	0-18

A	B	C	D	E	F	G	H	J	K	L
	DCH REQ'D QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	PCM30 PORTS REQ'D	RCC2 SLOTS FOR PCM30s	QTY OF EXT MX87	EXT SLOTS PCM- 30s	DS30As REQ'D QTY	PCM- 30 DYN. TRKS
24	02		1	5,3 (22,24)	0-42	12:0-3 16:0 14:0 14:2 16:3 16:2 14:1	3	4:0-3 6:0-3 8:0-2 (23: 0-3, 21: 0-3, 19: 0-3)	08	0-20
25	00		1		0-44	12:0-3 16:0 14:0 14:2 16:3 16:2 14:1	3	4:0-3 6:0-3 8:0-3 (23: 0-3, 21: 0-3, 19: 0-3)	08	0-22
26	00		1		0-46	12:0-3 16:0 14:0 14:2 16:3 16:2 14:1 16:1	3	4:0-3 6:0-3 8:0-3 (23: 0-3, 21: 0-3, 19: 0-3)	08	0-22

RUL11 1) Reserved.

RUL12 1) Provide one NTRX2516, EMI Kit Single Bulkhead, per cabinet when Grey doors are required. Provide one (1) NT9X0174 and one (1) P0699441 per NTRX2516 Kit.

- 2) Provide one NTRX2531, EMI Door Kit (Brown), per cabinet when Brown doors are required. Also provide one P0691073, EMI Gasket Vertical, with each NTRX2531 Kit provided. Provide one (1) NT9X0102 and one (1) P0674502 per NTRX2531 Kit.
- RUL13 1) Provide one NTNX5511, Grey Cable Trough Assembly, per cabinet when overhead cabling is required.
- 2) Provide one NTNX5544, Cable Trough Assembly, per cabinet when Brown cable trough is required.
- RUL14 1) Provide one NTRX2523, Leveling Foot Kit, per cabinet for Non-Earthquake offices.
- RUL15 1) Provide one NTMX26BA -48V FSP per cabinet.
- RUL16 1) Provide:
- two (2) NT6X30AA when analog ringing is required,
OR
two (2) NT6X30AB when ringing for the UK market is required,
OR
two (2) NT6X30AE when ringing for the Australian market is required.
- RUL17 1) Provide one (1) NTMX8943 CRSC Stand Alone Power Kit (and one (1) PCMX8943 Product Change Kit drawing) when the CRSC is powered from a seven (7) foot high Power Distribution Center (PDC) or is operated as a stand alone unit or when external power filters (vertical power) are used. Also provide one (1) NTRX3663 Power Filter kit whenever the NTMX8943 kit is provided. This kit provides separate power and return feeds for the RC02 shelf to resolve an issue of DCH cards going System Busy during lightning storms. The NTRX3663 kit should be supplied wherever the NTMX8943 kit is applied.
- RUL18 1) 1) Provide one (1) NTRX2519 Frame&Logic Ground HW Kit for each CRSC cabinet.
- RUL19 1) Provide the following equipment when COAX PCM-30 is specified by the customer:
- one (1) Bulkhead Assembly (NTMX8901)
one (1) CA Assembly (SEND) CPMtoBHD (NTMX8995)
one (1) CA Assembly (RECV) CPMtoBHD (NTMX8996)

- 2) Provide the following equipment when twisted pair PCM-30 is specified by the customer:

one (1) Bulkhead Assembly (NTMX8901)
one (1) CA Assembly (SEND) (NTMX8945)
one (1) CA Assembly (RECV) (NTMX8946)

- RUL20 1) Provide the designation labels for individual circuit packs as required.

- RUL21 1) Provide:
two (2) NTRX73AA End Guards
AND
two (2) NTRX73AC End Guard Assemblies

for overhead cable installations.
OR
two (2) NTRX73AA End Guards
AND
two (2) NTRX73AB End Guard Assemblies

for under floor cable installations.

- 2) Provide one (1) NTRX07AA at the non-CPDC end of each cabinetized lineup when AC switches and/or AC receptacles are required.

3) Provide one (1) NTRX07AB at the non-CPDC end of each cabinetized lineup when AC switches and/or AC receptacles are NOT required.

4) Provide one (1) NTRX07AC at the CPDC end of each cabinetized lineup when AC switches and/or AC receptacles are required.

- RUL22 1) Provide:
one (1) NT0X58CE, MISC HW Kit, per RSC/S.

- RUL23 1) Provide one NTMX8816 Auxillary Cable when CRSC frame is being used in a 7ft line up or for a stand alone application.

- RUL24 1) Provide one NTB31PA kit to upgrade one existing NTB31BA LCME packfill to NTB31BB.

Provide one (1) NTB31PB Upgrade Kit per LCME Module, for field upgrades only, when converting NTB31BB LCME common CP to NTB31BC.

TRUNK MODULE 8 WIRE BUILDING BLOCK

PEC CODE: NTZZ31CA

CPC CODE: B0234022

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTFX4101

ABBREVIATION NAME: TM8

ENGINEERING DESCRIPTION: The NTZZ31CA is the Trunk Module 8 Wire (TM8), associated hardware, and cabling.

REFERENCE DOCUMENTATION: SLZZ31CA 00 04

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Steve Martin Dept. 3471 (PPK)

NTZZ31CA EMC2-25-TM8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 24	----- ECM 600 07	Previous history not available ET 16689 - Design change of safety boots and power cables.
94 09 02	ECM 600 12	Replace 3 Safety Boots (CPCs) with 1 Safety Boot (CPC) per MSRX32AA.
96 09 12	ECM 601 34	MD per EC018-48743

The NTZZ31CA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Trunk Module 8 Wire	NT2X5229	TM8	1	XX		AP
TM8 Common Circuit Pack	NT2X52AS		1	XX		AP
Personality Plate (TM8)	P0730035		1	XX		AP
TM8 Bulkhead Cable Assembly	NTRX3232		1			AP
37 Pin Filter Adapter	A0316598		8			AP
Mounting Hardware	A0317136		32			AP
Washer	P0148330		32			AP
Safety Boots	P0743593		6	XX		AP
Bolt Cover	P0732389		6	XX		AP
Cable Braid Assembly	NT0X9537		1	XX		AP
Trunk Cards	AR			XX		RUL1
Filler Faceplate	NT0X50AC			XX		RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" in SHF POS can be one of 47,33,19,05.
- 2) Modules are assigned to positions on the frame in the shelf position order 05, 19, 33, 47.

- 3) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on shelf TM8 personality plate P0730035 in bulkhead positions A00,A01,B00,B01,C00,C01,D00, and D01.
- 4) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ31CA is ordered, these items are provided.
- RUL1 1) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on a ITM8.
- 2) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot: - one (1) NT0X50AC Filler Faceplate.

CABINETIZED TRUNK MODULE EQUIPMENT

PEC CODE: NTZZ31AA

CPC CODE: B0233987

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ47DC

ABBREVIATION NAME: CTME

ENGINEERING DESCRIPTION: NTZZ31AA is the cabinetized trunk module which houses all MTM, DRA, TM8, and AXU peripheral module types.

REFERENCE DOCUMENTATION: SLZZ31AA 00 03
MSRX32AA 01 14

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ31AA EMC2-25-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 23	ECM 600 03	ET13179 resolution
93 09 24	ECM 600 07	ET17059 - Add EDRAM capabilities.
94 08 12	ECM 636 12	Clarify cable provisioning rules.
95 04 21	ECM 600 15	Clarify provisioning rules and notes per ET22109.
95 06 22	ECM 600 17	Change NTZZ31BB to NTZZ31BA per Design information and ET23819.
95 09 14	ECM 600 19	MD NTZZ31AA per EC 024-94287.

The NTZZ31AA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cabinetized Trunk Module	NTRX32AA		1			AP
Filler (2")	P0684448		1	65		AP-01
Perif Fr Supervisory Panel	NTNX26MA	FSP	1	60		AP
Office Alm X-Conn/Prim Alm	NTZZ31BA	AXU/OAU		33, 47		RUL1
Trunk Module 8 Wire	NTZZ31CA	TM8		XX		RUL1
Maintenance Trunk Module	NTZZ31DA	MTM		XX		RUL1
Maint Trunk Mod for DRA	NTZZ31EA	DRA		XX		RUL1
Filler Panel	NT0X84AA			XX		RUL3
Blank Personality Plate	P0715616			XX		RUL4
26 PTL E/W 4-8P 1-37P Moulded D-SUB Conn.	NTRX32DY			19, 33, 47		RUL11
26 PTL E/W 4-8P 1-37P Moulded D-SUB Conn.	NTRX32DZ			19, 33, 47		RUL11
26 PTL E/W 8-8P 1-37P Moulded D-SUB Conn.	NTRX32DW			XX		RUL12
26 PTL E/W 8-8P 1-37P Moulded D-SUB Conn.	NTRX32DX			XX		RUL12
26 PTL E/W 4-8P 1-37P Moulded D-SUB Conn.	NTRX32DT			05		RUL10
26 PTL E/W 4-8P 1-37P Moulded D-SUB Conn.	NTRX32DV			05		RUL10
EDRAM Card Wiring List	NTRX32WA			05		RUL10
26 PTL E/W 1-37P Moulded D-SUB Conn.	NTRX3241			05		RUL10
Cooling Unit	NTNX27CA	CU	1	00		AP
FSP-CU Cable Assembly	NTRX3230		1	00		AP-01
FSP Fusing	AR					RUL5
EMI Kit (EMI Doors)	NTRX2516					RUL7
EMI Ready Door Kit	NTRX2513					RUL7
Cable Trough Assembly	NTNX5511					RUL8
Leveling Foot Kit	NTRX2523					RUL9
CTME Label	P0726707		1			AP
Frame Ground Kit	NTRX2518		1			AP-01
Coverplate(37 pin)	P0715774					RUL13
Mounting Hardware	P0670923					RUL13

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" in SHF POS can be one of 05,19,33,47.

RULES:

- AP 1) When PEC NTZZ31AA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NTRX32AA cabinet and is shown here for completeness.
- RUL1 1) The following trunk modules may be mounted on the NTZZ31AA. For further information, refer to the section indicated with each module.

MODULE	PEC	ABBR	SL	ENGMAN SECTION	SHF POS
Trunk Module 8 Wire	NTZZ31CA	TM8	SLZZ31CA	EMB2-25-TM8	05-47
Maintenance Trk Module	NTZZ31DA	MTM	SLZZ31DA	EMB2-25-MTM	05-47
Maint Trk Mod for DRA	NTZZ31EA	MTM	SLZZ31EA	EMB2-25-DRA	05-47
Off Alm X-Conn/Primary Alarm Unit	NTZZ31BA	AXU/ OAU	SLZZ31BA	EMB2-25-AXU	47/33

- 2) Provide a maximum of one Alarm Cross-connect/Primary Alm Unit, NTZZ31BA, per office. The AXU and the primary alarm MTM (OAU) comprise a functional pair and must be mounted together on the same frame. To limit cable congestion and reduce drop lengths the AXU and the OAU are located posi-

tions 47 and 33 respectively. The secondary alarm MTM shall be restricted to position 47 on a different power feed from the Primary.

The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there.

See Table D in Section EMA14-04-000 for cards mounted on the above modules.

- 3) Modules are assigned to positions on the CTME in the order shown:

05, 19, 33, 47

The CTME containing the AXU/OAU modules does not follow this order since the AXU must mount in shelf 47 and the OAU in shelf 33. Also, shelf 05 MUST be occupied in all CTMEs.

- 4) Modules of various types may be combined on cabinets where required.

RUL2 1) Reserved for future use.

RUL3 1) Provide one (1) NT0X84AA filler panel for each unequipped shelf position 19,33,47.

RUL4 1) Provide one P0715616 Blank Personality Plate for each shelf position that is not equipped.

RUL5 1) Provide the following FSP fuses for powering shelves, alarms and cooling units:

Designation	Amperage	Code	Voltage	One per:
F01	10 Amps	A0315462	-48V(1)	Shelf 05
F02	10 Amps	A0315462	-48V(1)	Shelf 33
F03	10 Amps	A0286407	-48V(2)	Shelf 47
F04	10 Amps	A0315462	-48V(3)	Shelf 19
F05	10 Amps	A0315462	-48V(3)	Shelf 47
F06	10 Amps	A0286407	-48V(4)	Shelf 05
F07	1.3 Amps	A0205202	-48VABS	Alarm CP
F08	1.3 Amps	A0205202	-48VABS	Alarm CP
F09	1.3 Amps	A0205202	-48VABS	Alarm CP
F10	1.3 Amps	A0205202	-48VABS	Test jack, Fan lamp & alarm
F11	3 Amps	A0205204	-48V(2)	Cooling Unit

F12	5 Amps	A0205205	-48VT	Shelf 19
F13	5 Amps	A0205205	-48VT	Shelf 33
F14	3 Amps	A0205204	-48V(4)	Cooling Unit

2) Do not fuse unequipped shelf positions.

3) Do not fuse shelf position 47 when AXU/OAU NTZZ31BA is provided.

RUL6 1) The following cable is always provided in the cabinet stocklist to power shelves from the FSP:

	Terminal	Provide one:
	-----	-----
Shelf 05:	PC-48V	NTNX1640
	PC GRD	NTNX1639
	FLT-48V	NTNX1642
	FLT GRD	NTNX1640
Shelf 19:	PC-48V	NTNX4743
	PC GRD	NTNX4743
	FLT-48V	NTNX4753
	FLT GRD	NTNX4753
Shelf 33:	PC-48V	NTNX4742
	PC GRD	NTNX4742
	FLT-48V	NTNX4792
	FLT GRD	NTNX4792
Shelf 47:	PC-48V	NTNX1612
	PC GRD	NTNX1611
	FLT-48V	NTNX1612
	FLT GRD	NTNX1611

RUL7 1) Provide one NTRX2516, EMI Kit Single Bulkhead, per cabinet for EMI compliant applications.

2) Provide one NTRX2513, EMI Ready Door Kit, per cabinet for EMI Ready applications

RUL8 1) Provide one NTNX5511, Cable Trough Assembly, per cabinet when overhead cabling is required.

RUL9 1) Provide one NTRX2523, Leveling Foot Kit, per cabinet for Non-Earthquake offices.

- RUL10 1) When an NTZZ31DA MTM or an NTZZ31EA DRA module is mounted in shelf position 05, AND, EDRAM or CTM cards are mounted in slot positions 5-8, provide:
- one (1) NTRX32DT cable connecting slots 5-8 for Network Plane 0 to bulkhead positions SL0 in shelf 05;
 - one (1) NTRX32DV cable connecting slots 5-8 for Network Plane 1 to bulkhead positions SL1 in shelf 05.
- The NTRX32DT and NTRX32DV provide connections for EDRAM cards mounted in slot 5-8 in shelf 05. The EDRAM card wiring in those positions is specified in EDRAM Card Wiring List NTRX32WA.
- 2) When an NTZZ31DA MTM or an NTZZ31EA DRA module is mounted in shelf position 05, AND, EDRAM or CTM cards are NOT mounted in slot positions 5-8, provide:
- one (1) NTRX3241 cable connecting slot 01 for Network Plane 0 to bulkhead positions SL0 in shelf 05;
 - one (1) NTRX3241 cable connecting slot 01 for Network Plane 1 to bulkhead positions SL1 in shelf 05.
- 3) When an NTZZ31CA TM8 module is mounted in shelf position 05, provide:
- one (1) NTRX3241 cable connecting slot 01 for Network Plane 0 to bulkhead positions SL0 in shelf 05;
 - one (1) NTRX3241 cable connecting slot 01 for Network Plane 1 to bulkhead positions SL1 in shelf 05.
- RUL11 1) When EDRAM or CTM cards are mounted in slot positions 5-8 on an NTZZ31DA MTM or an NTZZ31EA DRA module in shelf position 19, 33 or 47, provide:
- one (1) NTRX32DY cable connecting slots 5-8 for Network Plane 0 to bulkhead positions SL0 in that shelf;
 - one (1) NTRX32DZ cable connecting slots 5-8 for Network Plane 1 to bulkhead positions SL1 in that shelf.
- 2) When AXU/OAU is provisioned in shelf position 47,33, do not provide EDRAM cards in shelf position 33.

- RUL12 1) When EDRAM or CTM cards are mounted in slot positions 9-16 on an NTZZ31DA MTM or an NTZZ31EA DRA module in shelf position 05, 19, 33 or 47, provide:
- one (1) NTRX32DW cable connecting slots 9-16 for Network Plane 0 to bulkhead positions SL0A in that shelf;
 - one (1) NTRX32DX cable connecting slots 9-16 for Network Plane 1 to bulkhead positions SL1A in that shelf.
- 2) When AXU/OAU is provisioned in shelf position 47,33, do not provide EDRAM cards in shelf position 33.
- RUL13 1) For each Bulkhead position (SL0, SL1, SL0A and SL1A) that is not equipped with a filter or a connector, provide one (1) Coverplate P0715774 and two (2) screws P0670923.

DIGITAL TRUNK CONTROLLER (CABINETIZED)

NTZZ04DA

RATING: MD'd Replaced by NTZZ04BA

ABBREVIATION NAME: DTC

ENGINEERING DESCRIPTION: The NTZZ04DA is the common circuit pack fill for DTC applications in a CDTE.

The Digital Trunk Controller (DTC) is the host office peripheral controller for digital trunking in a host location.

REFERENCE DOCUMENTATION: SLZZ04DA 00 03
NTZZ04DA REL 03

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ04DA EMC2-26-DTC CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 23	ECM 600 03	MD this Building Block Code

The NTZZ04DA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DTC Common CP	NT6X02IC		1			AP
XPM Processor CP	NT6X45BA		2	X+14	8, 12	AP
Mast Proc Memory Plus CP	NT6X47AC		1	X+14	10	AP
Sig Proc Memory Plus CP	NT6X46BB		1	X+14	11	AP
Time Switch CP	NT6X44AA		1	X+14	14	AP-01
Filler Face Plate 0.875	NT0X50AA		6	X+14	6, 7 9, 17 19, 23	AP
CPP Msg Protocol & Tone CP	NT6X69AC		1	X+14	18	AP
Channel Supervision Mgs CP	NT6X42AA		1	X+14	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X+14	21	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+14	24	AP-01
Power Conv +/-5 & 12V CP	NT2X70AE		1	X+14	25	AP
XPM Processor CP	NT6X45BA		2	X	8, 12	AP
Mast Proc Memory Plus CP	NT6X47AC		1	X	10	AP
Sig Proc Memory Plus CP	NT6X46BB		1	X	11	AP
Time Switch CP	NT6X44AA		1	X	14	AP-01
Filler Face Plate 0.875	NT0X50AA		6	X	6, 7 9, 17 19, 23	AP
CPP Msg Protocol & Tone CP	NT6X69AC		1	X	18	AP
Channel Supervision Mgs CP	NT6X42AA		1	X	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X	21	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Power Conv +/-5 & 12V CP	NT2X70AE		1	X	25	AP
Cover Plate Kit	NTRX3654		8	X		AP
Desig. Strip for NT6X02IC	P0708170		1	X+14	1	AP-01
Desig. Label For NT6X45BA	P0665152		2	X+14	8, 12	AP
Desig. Label For NT6X47AC	P0711663		1	X+14	10	AP
Desig. Label For NT6X46BB	P0711664		1	X+14	11	AP
Desig. Label For NT6X69AC	P0710476		1	X+14	18	AP
Desig. Label For NT2X70AE	P0698943		1	X+14	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Strip for NT6X02IC	P0708170		1	X	1	AP-01
Desig. Label For NT6X45BA	P0665152		2	X	8,12	AP
Desig. Label For NT6X47AC	P0711663		1	X	10	AP
Desig. Label For NT6X46BB	P0711664		1	X	11	AP
Desig. Label For NT6X69AC	P0710476		1	X	18	AP
Desig. Label For NT2X70AE	P0698943		1	X	25	AP

FLAGS:

NOTES:

- 1) One DTC Common CP can be assigned on the cabinet to shelf mounting positions 47 and 33 and the other to shelf mounting positions 19 and 05. For one module X=05 and for the other module X=33.
- 2) For more information on the cabinet refer to the section on NTZZ22CA (Section EMAX-XX-XXX).

RULES:

AP 1) When PEC NTZZ04DA is ordered, these items are provided.
AP-01 1) This PEC is always provided on the NT6X02IC DTC Common CP, and is shown here for completeness.

LINE GROUP CONTROLLER (CABINETIZED)

NTZZ02LA

| RATING: MD'd Replaced by NTZZ02BA

ABBREVIATION NAME: LGC

ENGINEERING DESCRIPTION: The NTZZ02LA is the common circuit pack fill for LGC applications in a CLGE.

The Line Group Controller (LGC) is the host office peripheral controller for all subscriber lines either host or remote location.

REFERENCE DOCUMENTATION: SLZZ02LA 00 03
NTZZ02LA REL 03

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ02LA EMC2-26-LGC CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 23	ECM 600 03	MD this Building Block Code

The NTZZ02LA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LGC Common CP	NT6X02LC		1			AP
XPM Processor CP	NT6X45BA		2	X+14	8,12	AP
Filler Face Plate 0.875	NT0X50AA		4	X+14	9,17, 19,23	AP
Master Processor Memory CP	NT6X47AC		1	X+14	10	AP
Signal Processor Memory CP	NT6X46BB		1	X+14	11	AP
Time Switch CP	NT6X44AA		1	X+14	14	AP-01
Message Protocol & Tone CP	NT6X69AC		1	X+14	18	AP
Channel Supervision Mgs CP	NT6X42AA		1	X+14	20	AP-01
Speech Bus Formatter CP	NT6X41AA		1	X+14	21	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+14	24	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X+14	25	AP
XPM Processor CP	NT6X45BA		2	X	8,12	AP
Filler Face Plate 0.875	NT0X50AA		4	X	9,17, 19,23	AP
Master Processor Memory CP	NT6X47AC		1	X	10	AP
Signal Processor Memory CP	NT6X46BB		1	X	11	AP
Time Switch CP	NT6X44AA		1	X	14	AP-01
Message Protocol & Tone CP	NT6X69AC		1	X	18	AP
Channel Supervision Mgs CP	NT6X42AA		1	X	20	AP-01
Speech Bus Formatter CP	NT6X41AA		1	X	21	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X	25	AP
Cover Plate Kit	NTRX3654		8	X		AP
Desig Strip (NT6X02LC)	P0708171		1	X+14		AP-01
Desig Label (NT6X45BA)	P0665152		2	X+14	8,12	AP
Desig Label (NT6X47AC)	P0711663		1	X+14	10	AP
Desig Label (NT6X46BB)	P0711664		1	X+14	11	AP
Desig Label (NT6X69AC)	P0710476		1	X+14	18	AP
Desig Label (NT2X70AE)	P0698943		1	X+14	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig Strip (NT6X02LC)	P0708171		1	X		AP-01
Desig Label (NT6X45BA)	P0665152		2	X	8,12	AP
Desig Label (NT6X47AC)	P0711663		1	X	10	AP
Desig Label (NT6X46BB)	P0711664		1	X	11	AP
Desig Label (NT6X69AC)	P0710476		1	X	18	AP
Desig Label (NT2X70AE)	P0698943		1	X	25	AP

FLAGS:

NOTES: 1) X = Shelf Position 05 or 33

RULES:

AP 1) When PEC NTZZ02LA is ordered, these items are provided.

AP-01 1) This PEC is always provided on the NT6X02LC LGC Common CP,
and is shown here for completeness.

LINE TRUNK CONTROLLER (CABINETIZED)

NTZZ02MA

RATING: MD'd Replaced by NTZZ02CA

ABBREVIATION NAME: LTC

ENGINEERING DESCRIPTION: The NTZZ02MA is the common circuit pack fill for LTC applications in a CLTE.

The Line Trunk Controller (LTC) Module is the host office peripheral controller module for all subscriber lines and trunks either host or remote location.

REFERENCE DOCUMENTATION: SLZZ02MA 00 03
NTZZ02MA REL 03

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ02MA EMC2-26-LTC CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 23	ECM 600 03	MD this Building Block Code

The NTZZ02MA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LTC Common CP	NT6X02MC		1			AP
XPM Processor CP	NT6X45BA		2	X+14	8,12	AP
Filler Face Plate 0.875	NT0X50AA		4	X+14	9,17, 19,23	AP
Master Processor Memory CP	NT6X47AC		1	X+14	10	AP
Signal Processor Memory CP	NT6X46BB		1	X+14	11	AP
Time Switch CP	NT6X44AA		1	X+14	14	AP-01
Message Protocol & Tone CP	NT6X69AC		1	X+14	18	AP
Channel Supervision Mgs CP	NT6X42AA		1	X+14	20	AP-01
Speech Bus Formatter CP	NT6X41AA		1	X+14	21	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+14	24	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X+14	25	AP
XPM Processor CP	NT6X45BA		2	X	8,12	AP
Filler Face Plate 0.875	NT0X50AA		4	X	9,17, 19,23	AP
Master Processor Memory CP	NT6X47AC		1	X	10	AP
Signal Processor Memory CP	NT6X46BB		1	X	11	AP
Time Switch CP	NT6X44AA		1	X	14	AP-01
Message Protocol & Tone CP	NT6X69AC		1	X	18	AP
Channel Supervision Mgs CP	NT6X42AA		1	X	20	AP-01
Speech Bus Formatter CP	NT6X41AA		1	X	21	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X	25	AP
Cover Plate Kit	NTRX3654		8	X		AP
Desig Strip (NT6X02MC)	P0708172		1	X+14		AP-01
Desig Label (NT6X45BA)	P0665152		2	X+14	8,12	AP
Desig Label (NT6X47AC)	P0711663		1	X+14	10	AP
Desig Label (NT6X46BB)	P0711664		1	X+14	11	AP
Desig Label (NT6X69AC)	P0710476		1	X+14	18	AP
Desig Label (NT2X70AE)	P0698943		1	X+14	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig Strip (NT6X02MC)	P0708172		1	X		AP-01
Desig Label (NT6X45BA)	P0665152		2	X	8,12	AP
Desig Label (NT6X47AC)	P0711663		1	X	10	AP
Desig Label (NT6X46BB)	P0711664		1	X	11	AP
Desig Label (NT6X69AC)	P0710476		1	X	18	AP
Desig Label (NT2X70AE)	P0698943		1	X	25	AP

FLAGS:

NOTES: 1) X = Shelf Position 05 or 33.

RULES:

AP 1) When PEC NTZZ02MA is ordered, these items are provided.

AP-01 1) This PEC is always provided on the NT6X02MC LTC Common CP,
and is shown here for completeness.

SUBSCRIBER MODULE RURAL COMMON CP (CABINETIZED) NTZZ03JA

RATING: MD'd Replaced by NTZZ03CA

ABBREVIATION NAME: SMR

ENGINEERING DESCRIPTION: The Subscriber Module Rural (SMR) module is the peripheral controller module for direct digital interface to the DMS-1R Remote Concentrator Terminal (RCT).

REFERENCE DOCUMENTATION: SLZZ03JA 00 03
NTZZ03JA REL 03

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ03JA EMC2-26-SMR CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 23	ECM 600 03	MD this Building Block Code

The SMR Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
SMR Common CP	NT6X02CP		1			AP
XPM Processor CP	NT6X45AF		2	X+14	8,12	AP-01
Master Processor Memory CP	NT6X47AC		1	X+14	10	AP-01
Signal Processor Memory CP	NT6X46BB		1	X+14	11	AP-01
SCM A Bit/B Word CP	NT6X81BA		1	X+14	13	AP-01
Time Switch CP	NT6X44AB		1	X+14	14	AP-01
Message Interface CP	NT6X43AA		1	X+14	18	AP-01
SCM Pad/Ring CP	NT6X80AA		1	X+14	19	AP-01
Channel Supervision Mgs CP	NT6X42AA		1	X+14	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X+14	21	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X+14	25	AP
Filler Face Plate 0.875	NT0X50AA		7	X+14	6-7,9, 15-17, 23	AP
Filler Face Plate 0.875	NT0X50AA		1	X+14	24	AP-01
XPM Processor CP	NT6X45AF		2	X	8,12	AP-01
Master Processor Memory CP	NT6X47AC		1	X	10	AP-01
Signal Processor Memory CP	NT6X46BB		1	X	11	AP-01
SCM A Bit/B Word CP	NT6X81BA		1	X	13	AP-01
Time Switch CP	NT6X44AB		1	X	14	AP-01
Message Interface CP	NT6X43AA		1	X	18	AP-01
SCM Pad/Ring CP	NT6X80AA		1	X	19	AP-01
Channel Supervision Mgs CP	NT6X42AA		1	X	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X	21	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X	25	AP
Filler Face Plate 0.875	NT0X50AA		7	X	6-7,9, 15-17, 23	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Cover Plate Kit	NTRX3654		8	X		AP
Desig. Strip (NT6X02CP)	P0711634		2			AP-01
Desig. Label (NT2X70AE)	P0698943		1	X+14	25	AP
Desig. Label (NT2X70AE)	P0698943		1	X	25	AP

FLAGS:

NOTES:

- 1) One SMR Common CP can be assigned on the cabinet to shelf mounting positions 47 and 33 and the other to shelf mounting positions 19 and 05. For one module X =05 and for the other module X =33.

RULES:

- AP 1) When PEC NTZZ03JA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT6X02CP SMR Common CP, and is shown here for completeness.

SUBSCRIBER MODULE-100S REMOTE (SMS-R) (CABINETIZED) NTZZ03LA

RATING: MD'd Replaced by NTZZ03EA

ABBREVIATION NAME: SMS-R

ENGINEERING DESCRIPTION: The Subscriber Carrier Module-100S Remote (SMS-R) is the peripheral controller module for direct digital interface from the RSC to the SLC-96. NTZZ03LA is the common circuit packfill for SMS-R applications in a CSME.

REFERENCE DOCUMENTATION: SLZZ03LA 00 03
NTZZ03LA REL 03

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ03LA EMC2-26-SMR-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 23	ECM 600 03	MD this Building Block Code

The SMS-R Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
SMS-R Common CP	NT6X02PD		1			AP
XPM Processor CP	NT6X45BA		2	X+14	8,12	AP-01
MP Memory Plus CP	NT6X47AC		1	X+14	10	AP-01
SP Memory Plus CP	NT6X46BB		1	X+14	11	AP-01
A-Bit Message Card CP	NT6X86AA		1	X+14	13	AP-01
Time Switch CP	NT6X44AB		1	X+14	14	AP-01
CPP Msg Protocol & Tone CP	NT6X69AC		1	X+14	18	AP
SCM Pad/Ring CP	NT6X80AA		1	X+14	19	AP-01
Channel Supervision Mgs CP	NT6X42AA		1	X+14	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X+14	21	AP-01
SMS-R DS-30A C-Side Intf CP	NT8X18BA		1	X+14	22	AP
Power Converter CP	NT2X70AE		1	X+14	25	AP-01
Filler Face Plate 0.875	NT0X50AA		7	X+14	6-7,9, 15-17, 23	AP
Filler Face Plate 0.875	NT0X50AA		1	X+14	24	AP-01
XPM Processor CP	NT6X45BA		2	X	8,12	AP-01
MP Memory Plus CP	NT6X47AC		1	X	10	AP-01
SP Memory Plus CP	NT6X46BB		1	X	11	AP-01
A-Bit Message Card CP	NT6X86AA		1	X	13	AP-01
Time Switch CP	NT6X44AB		1	X	14	AP-01
CPP Msg Protocol & Tone CP	NT6X69AC		1	X	18	AP
SCM Pad/Ring CP	NT6X80AA		1	X	19	AP-01
Channel Supervision Mgs CP	NT6X42AA		1	X	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X	21	AP-01
SMS-R DS-30A C-Side Intf CP	NT8X18BA		1	X	22	AP
Power Converter CP	NT2X70AE		1	X	25	AP-01
Filler Face Plate 0.875	NT0X50AA		7	X	6-7,9, 15-17, 23	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Cover Plate Kit	NTRX3654		8	X		AP
Desig. Strip (NT6X02PD)	P0711633		2			AP-01
Desig. Label for NT6X69AC	P0710476		1	X+14	18	AP
Desig. Label for NT6X69AC	P0710476		1	X	18	AP
Desig. Label for NT8X18BA	P0712505		1	X+14	22	AP
Desig. Label for NT8X18BA	P0712505		1	X	22	AP

FLAGS:

NOTES:

- 1) One SMS-R Common CP can be assigned on the cabinet to shelf mounting positions 47 and 33 and the other to shelf mounting positions 19 and 05. For one module X=05 and for the other module X =33.

RULES:

- AP 1) When PEC NTZZ03LA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT6X02PD SMS-R Common CP, and is shown here for completeness.

SUBSCRIBER MODULE FOR SLC-96 (CABINETIZED)

NTZZ03HA

RATING: MD'd Replaced by NTZZ03BB

ABBREVIATION NAME: SMS

ENGINEERING DESCRIPTION: The Subscriber Module for SLC-96 (SMS) is the peripheral controller module for direct digital interface to the SLC-96. NTZZ03HA is the common circuit packfill for SMS in a CSME.

REFERENCE DOCUMENTATION: SLZZ03HA 00 03
NTZZ03HA REL 03

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ03HA EMC2-26-SMS CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 23	ECM 600 03	MD this Building Block Code

The SMS Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
SMS Common CP	NT6X02DH		1			AP
XPM Processor CP	NT6X45BA		2	X+14	8,12	AP-01
Master Proc Memory Plus CP	NT6X47AC		1	X+14	10	AP-01
Sig Proc Memory Plus CP	NT6X46BB		1	X+14	11	AP-01
A-Bit Message Card CP	NT6X86AA		1	X+14	13	AP-01
Time Switch CP	NT6X44AB		1	X+14	14	AP-01
CPP Msg Protocol & Tone CP	NT6X69AC		1	X+14	18	AP
SCM Pad/Ring CP	NT6X80AA		1	X+14	19	AP-01
Channel Supervision Mgs CP	NT6X42AA		1	X+14	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X+14	21	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X+14	25	AP-01
Filler Face Plate 0.875	NT0X50AA		6	X+14	6,7,9, 15,17, 23	AP
Filler Face Plate 0.875	NT0X50AA		1	X+14	24	AP-01
XPM Processor CP	NT6X45BA		2	X	8,12	AP-01
Master Proc Memory Plus CP	NT6X47AC		1	X	10	AP-01
Sig Proc Memory Plus CP	NT6X46BB		1	X	11	AP-01
A-Bit Message Card CP	NT6X86AA		1	X	13	AP-01
Time Switch CP	NT6X44AB		1	X	14	AP-01
CPP Msg Protocol & Tone CP	NT6X69AC		1	X	18	AP
SCM Pad/Ring CP	NT6X80AA		1	X	19	AP-01
Channel Supervision Mgs CP	NT6X42AA		1	X	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X	21	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X	25	AP-01
Filler Face Plate 0.875	NT0X50AA		6	X	6,7,9, 15,17, 23	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Cover Plate Kit	NTRX3654		8	X		AP
Desig. Strip (NT6X02DH)	P0711629		2			AP-01
Desig. Label for NT6X69AC	P0710476		1	X+14	18	AP
Desig. Label for NT6X69AC	P0710476		1	X	18	AP
Desig. Label for NT6X40BA	P0705065		1	X+14	22	AP
Desig. Label for NT6X40BA	P0705065		1	X	22	AP

FLAGS:

NOTES:

- 1) One SMS Common CP can be assigned on the cabinet to shelf mounting positions 47 and 33 and the other to shelf mounting positions 19 and 05. For one module X=05 and for the other module X=33.

RULES:

- AP 1) When PEC NTZZ03HA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT6X02DH SMS Common CP, and is shown here for completeness.

SUBSCRIBER MODULE URBAN COMMON CP (CABINETIZED) NTZZ03KA

RATING: MD'd Replaced by NTZZ03DA

ABBREVIATION NAME: SMU

ENGINEERING DESCRIPTION: The Subscriber Module Urban (SMU) is the peripheral controller module for direct digital interface to the DMS-1 Urban (RCU). NTZZ03KA is the common circuit packfill for SMU applications in a CSME.

REFERENCE DOCUMENTATION: SLZZ03KA 00 03
NTZZ03KA REL 03

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ03KA EMC2-26-SMU CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 23	ECM 600 03	MD this Building Block Code

The SMU Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
SMU Common CP	NT6X02EG		1			AP
XPM Processor CP	NT6X45BA		2	X+14	8,12	AP-01
Master Proc Memory Plus CP	NT6X47AC		1	X+14	10	AP-01
Sig Proc Memory Plus CP	NT6X46BB		1	X+14	11	AP-01
Time Switch CP	NT6X44CA		1	X+14	14	AP-01
CPP Msg Protocol & Tone CP	NT6X69AC		1	X+14	18	AP
SMU Pad/Ring CP	NT6X80BA		1	X+14	19	AP-01
Channel Supervision Mgs CP	NT6X42AA		1	X+14	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X+14	21	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X+14	25	AP-01
Filler Face Plate 0.875	NT0X50AA		7	X+14	6-7,9, 15,17, 13,23,	AP
Filler Face Plate 0.875	NT0X50AA		1	X+14	24	AP-01
XPM Processor CP	NT6X45BA		2	X	8,12	AP-01
Master Proc Memory Plus CP	NT6X47AC		1	X	10	AP-01
Sig Proc Memory Plus CP	NT6X46BB		1	X	11	AP-01
Time Switch CP	NT6X44CA		1	X	14	AP-01
CPP Msg Protocol & Tone CP	NT6X69AC		1	X	18	AP
SMU Pad/Ring CP	NT6X80BA		1	X	19	AP-01
Channel Supervision Mgs CP	NT6X42AA		1	X	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X	21	AP-01
Power Conv +/-5V & 12V CP	NT2X70AE		1	X	25	AP-01
Filler Face Plate 0.875	NT0X50AA		7	X	6-7,9, 15,17, 13,23,	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Cover Plate Kit	NTRX3654		8	X		AP
Desig. Strip (NT6X02EG)	P0711631		2			AP-01
Desig. Label for NT6X69AC	P0710476		1	X+14	18	AP
Desig. Label for NT6X69AC	P0710476		1	X	18	AP

FLAGS:

NOTES:

- 1) One SMU Common CP can be assigned on the cabinet to shelf mounting positions 47 and 33 and the other to shelf mounting positions 19 and 05. For one module X =05 and for the other module X =33.

RULES:

- AP 1) When PEC NTZZ03KA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT6X02EG SMU Common CP, and is shown here for completeness.

CABINETIZED COMMON PERIPHERAL EQUIPMENT (CCPE)
MODEL A

PEC CODE: NTZZ22CA

CPC CODE: B0234030

RATING: MD

REPLACES: None

REPLACED BY: NTZZ47GC/GD

ABBREVIATION NAME: CLGE (LINE GROUP EQUIPMENT CABINET)
CDTE (DIGITAL TRUNK EQUIPMENT CABINET)
CLTE (LINE TRUNK EQUIPMENT CABINET)
CSME (SUBSCRIBER MODULE EQUIPMENT CABINET)

ENGINEERING DESCRIPTION: NTZZ22CA is the Model A Cabinet version of the ISDN-Ready Common Peripheral Controller Equipment Frame which houses Line Group Controller (LGC), Digital Trunk Controller (DTC), Line Trunk Controller (LTC), Subscriber Module for SLC-96 (SMS), Subscriber Module Rural (SMR), Subscriber Module Urban (SMU), Subscriber Module-100S Remote (SMS-R), Subscriber Carrier Module-100 Access (SMA), ISDN Line Group Controller (LGCI), ISDN Line Trunk Controller (LTCI), and ISDN Digital Trunk Controller (DTCI).

REFERENCE DOCUMENTATION: SLZZ22CA 00 03
MSRX36AB 00 20

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NTZZ22CA EMC2-26-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 15	ECM 616 08	ET 14029 - Expand rule regarding NTRX3654 Cover Plate Kits.
92 11 23	ECM 600 03	EC 011-15293 add SMUI and NTRX36NI. EC 024-82511 add wiring kit for SMUI and a door label. EC 024-83611 add NTRX3655 cable kit for SMS-R. EC 006-16875 add NTRX3635 filter kit MD cabinetized versions of the XPM pack fills and replace them with the non cabinetized XPM pack fills.
92 12 18	ECM 231 09	EC 011-17564 add power kits to the the NTRX36AB Cabinet
93 02 22	ECM 678 01	Add packfills for LGC, LTC and DTC equipped with Unified Processor (XPM+)
93 06 02	ECM 678 03	Remove XPM+ packfills. New shipments of XPM+ are not supported on NTRX36AB. Per EC 011-18238, add upgrade kits.
93 11 22	ECM 600 11	Remove shelf locations 19, 47 from the assignments for the NTRX3654. Update NTZZ22CA for the MD of NTZZ02JA
94 01 24	ECM 314 12	MD packfills: NT6X02CB/CC/CP/CQ/CS/CT/DM/EK
94 08 01	ECM 616 22	EC 011-20341 introduces NT6X69AD for for ADSI/SCWID. EC 011-19602 makes NT6X78AB provisionable on LTCI/LGCI.
94 09 01	ECM 373 31	MD NTZZ02HA and NTZZ02HB, replaced by NTZZ02HM. NT6X02UF added.
94 09 30	ECM 373 32	Update per EC#024-93261 which requires a minimum of two NT6X50 in either shelf of LGC/LTC/DTC modules if ANY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 11 16	ECM 373 34	NT6X50 CPs are required in that shelf. Update per EC#011-18850 which adds NT6X02XG and NTMX70AB.
95 01 31	ECM 373 35	Add new Building Blocks: NTZZ02RA, NTZZ02RB, NTZZ02RC, NTZZ02SA, NTZZ02SB, NTZZ03SD, NTZZ03SJ, and NTZZ03SP. EC 011-20939 incorporates new packs and packfills.
95 02 10	ECM 616 29	Add SMA and XPM+ Modules, NT6X02WC and NT6X02WE per 011-20939. Show NTZZ03BB, NTZZ03DA, NTZZ03EA, NTZZ03MA, and NTZZ17GB are MD and replaced.
95 03 10	ECM 468 07	Incorporate TMS provisioning rules. Other miscellaneous changes.
95 03 29	ECM 373 38	Change status to A&M per PLM request.
95 04 10	ECM 676 09	Add info on SMA Building Blocks.
95 04 27	ECM 373 40	Add Peripheral Loader CP NT7X05AA (NTZZ02UA) per EC#024-93907. Update per latest MSRX36AB.
95 05 18	ECM 373 41	Remove SMA as an application for the PL CP NT7X05AA (NTZZ02UA) per PLM request.
95 07 27	ECM 373 43	MD and Retire this EMS.
95 08 17	ECM 678 22	Update per EC#024-94576 introducing NT6X02WG Product Change Kit
95 11 08	ECM 678 24	EC 024-94348 Indicate BB's & packfills that have been previously MD'd. Add NT6X69AB & MA for historical purpose. EC 011-21580 - Introduces NT6X02TJ packfill that has Universal Processor and Enhanced Processor & Terminal PB as provisionable. New BBs are created

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 26	ECM 373 45	with new packfill to replace old ones. Also, BBs are created for Universal and Enhanced Processors and Enhanced ISDN Pre-Processor CP.
97 04 01	ECM 714 03	Introduce GTR BB that will eventually replace all NT6X92 versions of UTRs. Show NTZZ97AA, NTZZ02DA, & NTZZ02NA as MD for Functional Block initiative. Show NTZZ03BE as MD since NT6X69AD is used with XPM+ on SMS, not NT6X69AC. The NTB01BA is currently provided in the SMA module level BBs, so remove rule for providing NTZZ03AJ with SMA. ECD 024-97224 MDs the NT6X02ET.
97 04 23	ECM 714 04	EC 024 97732 introduces new packfill NT6X02CX for ESMU, and associated upgrade kit. Introduce SMR to SMU and SMS to SMU change kits. New BBs for new packfill NT6X02CX.
97 05 30	ECM 714 05	ECD 024 97867 MDs the NT6X02ES, NTZZ03RK, and NTZZ03RB.

The NTZZ22CA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cab. Common Periph. Equip.	NTRX36AB		1			AP
2" Filler Panel	P0684448		1	65		AP-01
Frame Supervisory Panel	NTNX26NA	FSP	1	60		AP
LGC Common CP	NTZZ02BA	LGC		33		RUL1
LTC Common CP	NTZZ02CA	LTC		33		RUL1
DTC Common CP	NTZZ04BA	DTC		33		RUL1
LGC+ Common CP	NTZZ02QA	LGC+		33		RUL1
LGC+ Common CP, BCS-36+ & up	NTZZ02QJ	LGC+		33		RUL1
LTC+ Common CP	NTZZ02PA	LTC+		33		RUL1
LTC+ Common CP, BCS-36+ & up	NTZZ02PJ	LTC+		33		RUL1
DTC+ Common CP	NTZZ04HB	DTC+		33		RUL1
# SMA Common CP AccessNode IF	NTZZ03SP	SMA		33		RUL1
# SMA Common CP AccessNode IF	NTZZ03ST	SMA		33		RUL1
# SMA Common CP Multivendor IF	NTZZ03SJ	SMA		33		RUL1
# SMA Common CP Multivendor IF	NTZZ03SR	SMA		33		RUL1
SMA Common CP Multivendor IF	NTZZ03SS	SMA		33		RUL1
# SMA Common CP Multivendor IF	NTZZ03SD	SMA		33		RUL1
# SMA Common CP Multivendor IF	NTZZ03SV	SMA		33		RUL1
SMA Common CP Multivendor IF	NTZZ03SW	SMA		33		RUL1
# SMS Common CP	NTZZ03BB	SMS		33		RUL1
SMS Common CP	NTZZ03BG	SMS		33		RUL1
# SMS+ Common CP	NTZZ03BE	SMS+		33		RUL1
SMS+ Common CP, BCS-36+ & up	NTZZ03BS	SMS+		33		RUL1
# SMR Common CP	NTZZ03CA	SMR		33		RUL1
# SMU Common CP	NTZZ03DA	SMU		33		RUL1
# SMU Common CP	NT6X02EP	SMU		33		RUL1
# SMU Common CP	NT6X02ET	SMU		33		RUL1
SMU Common CP	NT6X02EU	SMU		33		RUL1
SMU+ Common CP	NTZZ03DE	SMU+		33		RUL1
SMU+ Common CP, BCS-36+ & up	NTZZ03DK	SMU+		33		RUL1
# SMS-R Common CP	NTZZ03EA	SMS-R		33		RUL1
SMS-R Common CP	NTZZ03EF	SMS-R		33		RUL1
SMS-R+ Common CP	NTZZ03ED	SMS-R+		33		RUL1
# SMUI Common CP	NTZZ03MA	SMUI		33		RUL1
SMUI Common CP	NTZZ03MB	SMUI		33		RUL1
# SMUI+ Common CP	NTZZ03RB	SMUI+		33		RUL1
SMUI+ Common CP	NTZZ03RC	SMUI+		33		RUL1
# SMUI+ Common CP (BCS-36+)	NTZZ03RK	SMUI+		33		RUL1
SMUI+ Common CP (BCS-36+)	NTZZ03RL	SMUI+		33		RUL1
Time Switch CP	NT6X44CA			33	14	RUL1
Enhanced Time Switch	NTAX78AB			33	14	RUL1
# CPCI Common CP	NTZZ17GB	LGCI		33		RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPCI Common CP	NTZZ17CA	LTCI DTCI TMS LGCI		33		RUL1
CPCI+ Common CP	NTZZ17GC	LTCI DTCI LGCI+ LTCI+ DTCI+ ETMS		33		RUL1
CPCI+ Common CP, BCS-36+ up	NTZZ17GJ	LGCI+ LTCI+ DTCI+		33		RUL1
# Filler Face Plate Kit	NTZZ02NA			33		RUL1
CPC Filler Face Plate	NT6X02AB		1	33, 47		RUL1
Controller Array Shf Assy	NT6X0223	CPA1	1	47		AP-01
Controller Array Shf Assy	NT6X0223	CPA0	1	33		AP-01
# 2 DS-1 P-Side EFF Interfaces	NTZZ02DA			47, 33	1-5	RUL2
DS-1 EFF Interface CP	NT6X50AB			47, 33	1-5	RUL2
Des. Label (NT6X50AB)	P0690976			47, 33	1-5	RUL2
# 2 DS-1 P-Side Interfaces	NTZZ03GA			47, 33	1-5	RUL2
DS-1 Interface CP	NT6X50AA			47, 33	1-5	RUL2
Des. Label (NT6X50AA)	P0626878			47, 33	1-5	RUL2
DS0A Signaling Interface	NTZZ04AA			47, 33	1-5	RUL2
2 SCM DS-1 Interface CP	NTZZ03FA			47, 33	1-5	RUL2
DS-1 Interface CP	NT6X85AC			47, 33	1-5	RUL2
Desig. Label for NT6X85AC	P0801996			47, 33	1-5	RUL2
D-Channel Handler (DCH)	NTZZ17BA			47, 33	1-5	RUL13
Enhanced D-Channel Handler	NTZZ17BB			47, 33	1-5	RUL13
# DS30A LCM Interface	NTZZ02JA			33	6	RUL7
10 DS30A LCM Interfaces	NTZZ02KA			33	6, 7	RUL7
Unified Processor	NTZZ03AB			33	12	RUL25
Enhanced Processor	NTZZ03AC			33	12	RUL25
Continuity Tone Detector	NTZZ04CA			33	13	RUL8
CLASS Modem Resource CP	NTZZ02EA			33	13	RUL3
CLASS Modem Resource CP	NTZZ02EA			33	16	RUL3
# CLASS Modem Resource CP	NTZZ97AA			33	13	RUL3
# CLASS Modem Resource CP	NTZZ97AA			33	16	RUL3
Enhanced ISDN Pre-Processor	NTZZ03AJ			33	16	RUL26
Peripheral Loader CP	NTZZ02UA			33	15, 17	RUL24
# 30 Universal Tone Rcvr Ccts	NTZZ02FA			33	15, 16	RUL4
# 30 Universal Tone Rcvr Ccts	NTZZ02FB			33	15, 16	RUL4
30 Global Tone Rcvr Ccts	NTZZ02FC			33	15, 16	RUL4
Msg Protocol Ckt, ADSI/SCWID	NTZZ02RB			33	18	RUL19

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# CPP Msg Protocol & Tone CP	NT6X69AB			33	18	RUL19
Message Interface	NT6X69AC			33	18	RUL19
# CPP Msg Protocol & Tone CP	NT6X69MA			33	18	RUL19
NT6X69AD Product Change Kit	NT6X02WB			33	18	RUL20
NT6X86AB Product Change Kit	NT6X02WC			33	18	RUL21
NT6X80BB/86AB Change Kit	NT6X02WG			33	18	RUL21
NT6X80BB Product Change Kit	NT6X02WE			33	18	RUL22
Ring/Pad Ckt, Freq Sel Ring	NTZZ02SB			33	19	RUL23
# 16 DS30 Network Interface	NTZZ02GA			33	22	RUL5
16 DS30 Network Interface	NTZZ02GC			33	22	RUL5
4 DS30 Network Interface	NTZZ02AA			33	22	RUL5
# DS512 Network Interface CP	NTZZ02HB			33	22	RUL5
# DS512 Network Interface CP	NTZZ02HM			33	22	RUL5
DS512 Network Interface CP	NTZZ02HN			33	22	RUL5
NT2X70AF Upgrade Kit	NT2X70AY			33		RUL27
Universal Connector Kit	NT6X02UF			33	22R	RUL5
Filler Face Plate 0.875	NT0X50AA			47, 33	1-7, 13, 15-17, 19, 23	RUL6
Jumper Kit for Base	NTRX36NI			33	12	RUL16
SMS-R Product Change Kit	NT6X0205			33		RUL17
SMS-R Cable Kit	NTRX3655			33		RUL17
LGC Common CP	NTZZ02BA	LGC		05		RUL1
LTC Common CP	NTZZ02CA	LTC		05		RUL1
DTC Common CP	NTZZ04BA	DTC		05		RUL1
LGC+ Common CP	NTZZ02QA	LGC+		05		RUL1
LGC+ Common CP, BCS-36+ & up	NTZZ02QJ	LGC+		05		RUL1
LTC+ Common CP	NTZZ02PA	LTC+		05		RUL1
LTC+ Common CP, BCS-36+ & up	NTZZ02PJ	LTC+		05		RUL1
DTC+ Common CP	NTZZ04HB	DTC+		05		RUL1
# SMA Common CP AccessNode IF	NTZZ03SP	SMA		05		RUL1
# SMA Common CP AccessNode IF	NTZZ03ST	SMA		05		RUL1
# SMA Common CP Multivendor IF	NTZZ03SJ	SMA		05		RUL1
# SMA Common CP Multivendor IF	NTZZ03SR	SMA		05		RUL1
SMA Common CP Multivendor IF	NTZZ03SS	SMA		05		RUL1
# SMA Common CP Multivendor IF	NTZZ03SD	SMA		05		RUL1
# SMA Common CP Multivendor IF	NTZZ03SV	SMA		05		RUL1
SMA Common CP Multivendor IF	NTZZ03SW	SMA		05		RUL1
# SMS Common CP	NTZZ03BB	SMS		05		RUL1
SMS Common CP	NTZZ03BG	SMS		05		RUL1
# SMS+ Common CP	NTZZ03BE	SMS+		05		RUL1
SMS+ Common CP, BCS-36+ & up	NTZZ03BS	SMS+		05		RUL1
# SMR Common CP	NTZZ03CA	SMR		05		RUL1
# SMU Common CP	NTZZ03DA	SMU		05		RUL1
# SMU Common CP	NT6X02EP	SMU		05		RUL1
SMU Common CP	NT6X02ET	SMU		05		RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
SMU Common CP	NT6X02EU	SMU		05		RUL1
SMU+ Common CP	NTZZ03DE	SMU+		05		RUL1
SMU+ Common CP, BCS-36+ & up	NTZZ03DK	SMU+		05		RUL1
# SMS-R Common CP	NTZZ03EA	SMS-R		05		RUL1
SMS-R Common CP	NTZZ03EF	SMS-R		05		RUL1
SMS-R+ Common CP	NTZZ03ED	SMS-R+		05		RUL1
# SMUI Common CP	NTZZ03MA	SMUI		05		RUL1
SMUI Common CP	NTZZ03MB	SMUI		05		RUL1
# SMUI+ Common CP	NTZZ03RB	SMUI+		05		RUL1
SMUI+ Common CP	NTZZ03RC	SMUI+		05		RUL1
# SMUI+ Common CP (BCS-36+)	NTZZ03RK	SMUI+		05		RUL1
SMUI+ Common CP (BCS-36+)	NTZZ03RL	SMUI+		05		RUL1
Time Switch CP	NT6X44CA			05	14	RUL1
Enhanced Time Switch	NTAX78AB			05	14	RUL1
# CPCI Common CP	NTZZ17GB	LGCI LTCI DTCI TMS		05		RUL1
CPCI Common CP	NTZZ17CA	LGCI LTCI DTCI		05		RUL1
CPCI+ Common CP	NTZZ17GC	LGCI+ LTCI+ DTCI+ ETMS		05		RUL1
CPCI+ Common CP, BCS-36+ up	NTZZ17GJ	LGCI+ LTCI+ DTCI+		05		RUL1
Controller Array Shf Assy	NT6X0223	CPA1	1	19		AP-01
Controller Array Shf Assy	NT6X0223	CPA0	1	05		AP-01
# 2 DS-1 P-Side EFF Interfaces	NTZZ02DA			19,05	1-5	RUL2
DS-1 EFF Interface CP	NT6X50AB			19,05	1-5	RUL2
Des. Label (NT6X50AB)	P0690976			19,05	1-5	RUL2
# 2 DS-1 P-Side Interfaces	NTZZ03GA			19,05	1-5	RUL2
DS-1 Interface CP	NT6X50AA			19,05	1-5	RUL2
Des. Label (NT6X50AA)	P0626878			19,05	1-5	RUL2
2 SCM DS-1 Interface	NTZZ03FA			19,05	1-5	RUL2
DS-1 Interface CP	NT6X85AC			19,05	1-5	RUL2
Desig. Label for NT6X85AC	P0801996			19,05	1-5	RUL2
DS0A Signaling Interface	NTZZ04AA			19,05	1-5	RUL2
D-Channel Handler (DCH)	NTZZ17BA			19,05	1-5	RUL13
Enhanced D-Channel Handler	NTZZ17BB			19,05	1-5	RUL13
# DS30A LCM Interface	NTZZ02JA			05	6	RUL7
10 DS30A LCM Interfaces	NTZZ02KA			05	6,7	RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Unified Processor	NTZZ03AB			05	12	RUL25
Enhanced Processor	NTZZ03AC			05	12	RUL25
Continuity Tone Detector	NTZZ04CA			05	13	RUL8
CLASS Modem Resource CP	NTZZ02EA			05	13	RUL3
CLASS Modem Resource CP	NTZZ02EA			05	16	RUL3
# CLASS Modem Resource CP	NTZZ97AA			05	13	RUL3
# CLASS Modem Resource CP	NTZZ97AA			05	16	RUL3
Enhanced ISDN Pre-Processor	NTZZ03AJ			33	16	RUL26
Peripheral Loader CP	NTZZ02UA			05	15, 17	RUL24
# 30 Universal Tone Rcvr Ccts	NTZZ02FA			05	15, 16	RUL4
# 30 Universal Tone Rcvr Ccts	NTZZ02FB			05	15, 16	RUL4
30 Global Tone Rcvr Ccts	NTZZ02FC			05	15, 16	RUL4
Msg Protocol Ckt, ADSI/SCWID	NTZZ02RB			05	18	RUL19
# CPP Msg Protocol & Tone CP	NT6X69AB			05	18	RUL19
Message Interface	NT6X69AC			05	18	RUL19
# CPP Msg Protocol & Tone CP	NT6X69MA			05	18	RUL19
NT6X69AD Product Change Kit	NT6X02WB			05	18	RUL20
NT6X86AB Product Change Kit	NT6X02WC			05	18	RUL21
NT6X80BB/86AB Change Kit	NT6X02WG			33	18	RUL21
NT6X80BB Product Change Kit	NT6X02WE			05	18	RUL22
Ring/Pad Ckt, Freq Sel Ring	NTZZ02SB			05	19	RUL23
# 16 DS30 Network Interface	NTZZ02GA			05	22	RUL5
16 DS30 Network Interface	NTZZ02GC			05	22	RUL5
4 DS30 Network Interface	NTZZ02AA			05	22	RUL5
# DS512 Network Interface CP	NTZZ02HB			05	22	RUL5
# DS512 Network Interface CP	NTZZ02HM			05	22	RUL5
DS512 Network Interface CP	NTZZ02HN			05	22	RUL5
NT2X70AF Upgrade Kit	NT2X70AY			05		RUL27
Universal Connector Kit	NT6X02UF			05	22R	RUL5
Filler Face Plate 0.875	NT0X50AA			19, 05		RUL6
Filler Face Plate 0.875	NT0X50AA			19, 05	1-7, 13, 15-17, 19, 23	RUL6
Jumper Kit for Base	NTRX36NI			05	12	RUL16
SMS-R Product Change Kit	NT6X0205			05		RUL17
SMS-R Cable Kit	NTRX3655			05		RUL17
NTAX78AB Upgrade Kit	NT6X02CY		1	05		RUL28
SMR to SMU Kit	NT6X02YA		1	05		RUL29
SMR to SMS Kit	NT6X02YB		1	05		RUL30
Cooling Unit	NTNX27CA	CU	1	00		AP
Personality Plate	P0715162		2	05, 33		AP-01
Personality Plate	P0715163		2	19, 47		AP-01
Cover Plate Kit	NTRX3654		16	05, 33		AP
Copper Interface Kit	NTRX3653			19, 47		RUL9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cover Plate Kit	NTRX3652			19,47		RUL9
EMI Kit (EMI Doors)	NTRX2516					RUL10
EMI Ready Door Kit	NTRX2513					RUL10
Cable Trough Assembly	NTNX5511					RUL11
Leveling Foot Kit	NTRX2523					RUL12
Frame Ground Kit	NTRX2518					AP-01
CDTE Door Label	P0727535					RUL15
CLGE Door Label	P0727271					RUL15
CLTE Door Label	P0727573					RUL15
CSME Door Label	P0727572					RUL15
CSSR Door Label	P0738530					RUL15
Power filter Kit	NTRX3635					RUL18
External Power Filter Kit	NTRX3635					RUL18
Internal Horizontal Power kt	NTRX3623					RUL18
# XPM PLUS Upgrade Kit	NTRX36CA					RUL14
# XPM PLUS ISDN Upgrade Kit	NTRX36DA					RUL14
XPM PLUS Upgrade Kit	NT6X02XG					RUL14
Paddlecard Upgrade Kit	NTMX70AB					RUL14

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ02HB	MD	NTZZ02HM
NTZZ02JA	MD	NTZZ02KA
NTZZ03CA	MD	No replacement
NTRX36CA	A&M	NT6X02XG
NTRX36DA	A&M	NT6X02XG
NTZZ03BB	MD	NTZZ03BG
NTZZ03DA	MD	NT6X02EP
NTZZ03EA	MD	NTZZ03EF
NTZZ03MA	MD	NTZZ03MB
NTZZ17GB	MD	NTZZ17CA
NTZZ03SP	MD	NTZZ03ST
NTZZ03SJ	MD	NTZZ03SR
NTZZ03SD	MD	NTZZ03SV
NT6X02EP	MD	NT6X02ET
NT6X02ET	MD	NT6X02EU
NT6X69AB	MD	NT6X69AC
NTZZ03SR	MD	NTZZ03SS
NTZZ03ST	MD	None
NTZZ03SV	MD	NTZZ03SW
NTZZ97AA	MD	NTZZ02EA

PEC	RATING	REPLACED BY PEC
NTZZ03BE	MD	NTZZ03BS
NTZZ02NA	MD	NT6X02AB
NTZZ02DA	MD	NT6X50AB
NTZZ03GA	MD	NT6X50AA
NT6X69MA	MD	NT6X69AC
NTZZ02FA/FB	STD*	NTZZ02FC
NTZZ02GA	STD*	NTZZ02GC
NTZZ02HM	STD*	NTZZ02HN
NTZZ03RB	MD	NTZZ03RC
NTZZ03RK	MD	NTZZ03RL

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

* Rate change pending. Check product availability.

NOTES:

1. CABINETIZED COMMON PERIPHERAL EQUIPMENT NTZZ22CA is the Model A cabinetized version of the general purpose Common Peripheral Controller Equipment Frame which houses Line Group Controller (LGC), Digital Trunk Controller (DTC), Line Trunk Controller (LTC), Subscriber Module for SLC-96 (SMS), Subscriber Module Rural (SMR), Subscriber Module Urban (SMU), Subscriber Module-100S Remote (SMS-R), Subscriber Carrier Module-100 Access (SMA), ISDN Line Group Controller (LGCI), ISDN Line Trunk Controller (LTIC), ISDN Digital Trunk Controller (DTCI), and TOPS Message Switch (TMS) modules.

Each of these modules is housed in two adjacent shelves (i.e. a pair of shelves on positions 47 and 33 and a pair of shelves on positions 19 and 05).

2. Four distinct functional names are associated with this hardware:

- a) "Cabinetized Line Group Equipment", (CLGE) defines the function where the cabinet contains LGC/LGCI modules only.
 - b) "Cabinetized Digital Trunk Equipment", (CDTE) defines the function where the cabinet contains DTC/DTCI modules only.
 - c) "Cabinetized Line Trunk Equipment", (CLTE) defines the function where the cabinet contains LTC/LTCI/TMS modules only.
 - d) "Cabinetized Subscriber Module Equipment", (CSME) defines the function where the cabinet contains SMR/SMS/SMU/SMS-R/SMA/SMUI modules only.
 - e) In the case where one module in a cabinet is a different type than the other, the cabinet functional name will be derived from the bottom module within the cabinet.
3. One of three functional names can be associated with a CPCI module: LGCI, LTCI, and DTCI. The function of the CPCI module is determined by the ISDN access modes (BRI/PRI) and the types of existing services (non-ISDN LCM, trunks) to be supported by the module. The supported access modes, and resulting name given to the CPCI module, are as follows:

Access Modes Supported By CPCI Module	Resulting Module Name	Abbrev.
ISDN BRI, Non-ISDN LCM, DPN Access	ISDN Line Group Controller	LGCI
ISDN BRI, Non-ISDN LCM, DPN Access, Non-ISDN trunks	ISDN Line Trunk Controller	LTCI
ISDN PRI, Non-ISDN trunks	ISDN Digital Trunk Controller	DTCI
ISDN BRA, MBS Services	ISDN Subscr. Module for DMS-1 Urban	SMUI

NOTES:

- Non-ISDN Trunks employ A/B bit signaling.
 - Autovon trunks are supported on DTCI only. Autovon ISUP signaling is not supported.
4. Support for the Analog Display Services Interface (ADSI) and the Spontaneous Call Waiting ID (SCWID) feature of BCS-36+ requires the NT6X78 Class Modem Resource (CMR) CPs, NT6X92 Universal Tone Receiver (UTR) CPs or Global Tone Receivers (GTR), and the NT6X69AD Message Protocol and Tone CPs. ADSI and SCWID are line features and are not applicable to DTC modules. In the case of the SMS-R module, the necessary CPs to support the ADSI/SCWID feature must be provided in the Remote Switching Center (RSC) which is hosting the SMS-R, rather than in the SMS-R module itself.
5. Following is the rule on when to provide NT6X69AC or NT6X69AD. Provide two (2) NT6X69AD CPP Message Protocol CPs for all modules except for any office at BCS-35 or below, SMS module with the MP/SP processor, or any SMS-R module. These exceptions still require NT6X69AC. Message Protocol and Tone CPs required to support BCS-36 and beyond: NTZZ02PJ, NTZZ02QJ, NTZZ03BS, NTZZ03DK, NTZZ03RL, NTZZ17GJ, NTZZ17QS, NTZZ17RS, NTZZ04HD, NTZZ04KD, NTZZ17ST, and NTZZ17TT. Do not provide the following Building Blocks for BCS-36 and beyond as they contain the NT6X69AC Message Protocol and Tone CP: NTZZ02PA, NTZZ02QA, NTZZ03BE, NTZZ03DE, NTZZ03RC, NTZZ17GC, NTZZ17QM, and NTZZ17RM, NTZZ04HB, NTZZ04KA, NTZZ17SM, and NTZZ17TM.

RULES:

- AP 1) When PEC NTZZ22CA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NTRX36AB Frame, and is shown here for completeness.
- RUL1 1) The following controller modules may be mounted in the NTZZ22CA Cabinet. Provide one appropriate common circuit pack set (packfill) to equip one peripheral controller module (both shelves). Additional circuit packs may also be required, depending on module type and customer requirements. Check above flaglist for BB status.

MODULE TYPE

COMMON CP

	SMA, AccessNode Interface	NTZZ03SP	(minimum BCS-35)
	SMA, Multivendor Interf	NTZZ03SJ	(minimum BCS-36)
	SMA, Multivendor Interf	NTZZ03SD	(minimum BCS-36)
	SMA, AccessNode Interface	NTZZ03ST	(minimum BCS-35)
	SMA, Multivendor Interf	NTZZ03SR	(minimum BCS-36)
	SMA, Multivendor Interf	NTZZ03SS	(minimum BCS-36)
	SMA, Multivendor Interf	NTZZ03SV	(minimum BCS-36)
	SMA, Multivendor Interf	NTZZ03SW	(minimum BCS-36)
#	SMS	NTZZ03BB	
	SMS	NTZZ03BG	
#	SMS+	NTZZ03BE	
	SMS+	NTZZ03BS	(minimum BCS-36+)
	SMU	NT6X02EP	
#	SMU	NT6X02ET	
	SMU	NT6X02EU	
	SMU+	NTZZ03DE	
	SMU+	NTZZ03DK	(minimum BCS-36+)
	SMS-R	NTZZ03EF	
	SMS-R+	NTZZ03ED	
	LGC	NTZZ02BA	
	LTC	NTZZ02CA	
	DTC	NTZZ04BA	
#	CPCI, TMS	NTZZ17GB	
	CPCI	NTZZ17CA	
	LGC+	NTZZ02QA	
	LGC+	NTZZ02QJ	(minimum BCS-36+)
	LTC+	NTZZ02PA	
	LTC+	NTZZ02PJ	(minimum BCS-36+)
	DTC+	NTZZ04HB	
	CPCI+, ETMS	NTZZ17GC	
	CPCI+	NTZZ17GJ	(minimum BCS-36+)
#	SMUI	NTZZ03MA	
	SMUI	NTZZ03MB	
#	SMUI+	NTZZ03RB	
	SMUI+	NTZZ03RC	
#	SMUI+	NTZZ03RK	(minimum BCS-36+)
	SMUI+	NTZZ03RL	(minimum BCS-36+)
	LTCI	NTZZ17QA	
	LGCI	NTZZ17RA	
	DTCI	NTZZ17SA	
	LTCI+	NTZZ17QM	
	LTCI+	NTZZ17QS	(minimum BCS-36+)
	LGCI+	NTZZ17RM	
	LGCI+	NTZZ17RS	(minimum BCS-36+)
	DTCI+	NTZZ17SM	

NOTES:

MD - Manufacturing Discontinued.

- 2) Provide Common Peripheral Controller modules as per customer requirements. One (1) NTZZ22CA Common Peripheral Equipment Cabinet can accommodate a maximum of two (2) Common Peripheral Controller modules. Each module will occupy shelf position X and X+14 (where X = 05, or 33).
- 3) If the second module is not equipped on the CPE cabinet, provide one (1) Common Peripheral Controller module Filler Face Plate Kit, NT6X02AB.
- 4) The latest SMA building blocks are NTZZ03SS and NTZZ03SW which contain SMA packfill NT6X02TJ. Provide one NTZZ03SS to equip an SMA module for interface between the DMS and AccessNode or TR-303 compliant Remote Digital Terminal. Provide one NTZZ03SW for the same function and to support Digital Test Access for ISDN. Refer to RUL4 and RUL25 provision UTR/GTRs and Processor CPs, respectively.
- 5) The introduction of SMUI+ packfill NT6X02CX changes slot 14 from NT6X44CA (as always provided) to provisionable. For packfill NT6X02CX the NT6X44CA or the NTAX78AB can be provisioned into slot 14. For digital test access (DTA), the NTAX78AB must be provided. The following details this provisioning:
 - * For SMUI+ with NT6X69AC and NO DTA, provide NTZZ03RC and two (2) NT6X44CA.
 - * For SMUI+ with NT6X69AD (BCS-36 and above) and NO DTA, provide NTZZ03RL and two (2) NT6X44CA.
 - * For SMUI+ with NT6X69AC and DTA, provide NTZZ03RC and two (2) NTAX78AB.
 - * For SMUI+ with NT6X69AD (BCS-36 and above) and DTA, provide NTZZ03RL and two (2) NTAX78AB.

RUL2 1) For all U.S. applications, or for Canadian applications where Extended Frame Format feature is required, provide maximum ten (10) NT6X50AB, DS-1 EFF I/F for each DTC/LGC/LTC for P-side interface. The NT6X50AB is required in applications that interface a fiber span (SONET), therefore, the NT6X50AA should not be used to interface a fiber span.

For Canadian applications where EFF feature is not required, provide maximum ten (10) NT6X50AA

DS-1 Interface for each DTC/LGC/LTC for P-side interface.

NOTE: If ANY NT6X50AB or NT6X50AA are required in slots 1 through 5 of either shelf of an LGC/LTC/DTC module, then at least two circuit packs must be provisioned in that shelf. Provide one additional NT6X50AB or NT6X50AA, per shelf, if necessary to meet this requirement. This does not apply to TMS.

Provide maximum ten (10) NT6X50AB DS-1 Signaling Interface per SMA per customer requirements.

For each SMS/SMS-R, provide maximum ten (10) NTZZ03FA SCM DS-1 Interface CP. Rating change is pending for the NTZZ03FA. Provide maximum ten (10) NT6X85AC DS-1 Interface Circuit Packs, with labels, when the NT6X85AC is available for this application per manufacturing phase-in plan.

For each SMU, provide maximum ten (10) NT6X85AC DS-1 Interface CPs. The NT6X85AC replaces the formerly provided NTZZ03FA for SMU applications immediately. Provide one (1) P0801996 Label for each NT6X85AC provided.

For each SMR, provide maximum six (6) NT6X50AA DS-1 Interface as per customer requirements for P-side interface.

Provide maximum ten (10) NTZZ04AA DS0A Signaling Interface per DTC per customer requirements.

- 2) Each NT6X50AB, NT6X50AA, or NTZZ03FA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS X-14	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19

SHF POS X	PORTS 0,1	PORTS 4,5	PORTS 8,9	PORTS 12,13	PORTS 16,17

For the lower module in the cabinet X=05 (i.e. shelf positions 05 and 19),

and for the upper module in the cabinet X=33 (i.e. shelf positions 33 and 47).

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number.

- 3) For LGC/LTC/LGCI/LTCI, assign the DS-1 hardware in the module such that the DS-1 ports (circuits) start from port 0 and increase in sequential order (i.e. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19). This assignment is really critical only if there are 18 or less than 18 core equipped DS-1 ports/circuits. For new offices this rule must be strictly adhered to.
- 4) For LGC/LTC/LGCI/LTCI, assign first the DS30A LCM Interface in the module if provided. Then assign the DS-1 Interfaces in the module such that the DS-1 ports (circuits) start from 0 and follow this sequence 0, 1, 2 if not used by LCM, 3 if not used by LCM, 4,5,6 if not used by LCM, 7 if not used by LCM, 8,9,10 if not used by LCM, 11 if not used by LCM, 12, 13, 14 if not used by LCM, 15 if not used by LCM, 16, 17, 18 if not used by LCM and 19 if not used by LCM. The LGC/LTC/LGCI/LTCI DS-1 ports (circuits) that are used by digital trunking, links to RSC, links to RLCM, and links to OPM are to be picked from this block of ports (circuits). For new offices, this rule must be strictly adhered to.

This rule is critical in LGC/LTC/LGCI/LTCI that have fewer than 16 network ports and in addition one of the following applies:

18 or less than 18 DS-1 ports (circuits) are used for digital trunking.

18 or less than 18 DS-1 ports (circuits) are used for R

18 or less than 18 DS-1 ports (circuits) are used for R and for digital trunking.

- 5) Provide one (1) NTZZ04AA for each DS0A (56 Kb/s) signaling link required. This building block can be provisioned in any slot that an NT6X50AB or NT6X50AA is allowed. The NTZZ04AA consumes two (2) DS1 ports and uses one (1) of the 24 channels of the first DS1 port for the DS0A channel. The remaining 47 channels cannot be used. Therefore, the NTZZ04AA should be evenly distributed across all DTC to minimize the port impact.
 - 6) For TMS applications, refer to ECM 468 to determine the quantity of NTZZ02DA required.
- RUL3
- 1) Provide one (1) NTZZ02EA, CLASS Modem Resource CP at slot 13 for each LGC/LTC/SMUI/LTCI/LGCI module that is handling CLASS Calling Number Display (CND), Analog Display Services Interface (ADSI), or Spontaneous Call Waiting ID (SCWID). The ADSI and SCWID features can be supported with XPM+ or MP/SP processor at BCS-36+ and above as long as MP/SP is supported.
 - 2) Provide one (1) NTZZ02EA, CLASS Modem Resource CP at slot 16 for each SMS/SMU module that is handling CLASS Calling Number Display (CND), Analog Display Services Interface (ADSI), or Spontaneous Call Waiting ID (SCWID).
- RUL4
- 1) Provide one NTZZ02FC 30 GTR Circuits for each LGC/LTC/DTC/SMS/SMA/SMU and LGCI/LTCI/DTCI/SMUI to perform Digitone and MF receiver functions. UTR/GTRs may only be provided for SMS modules at BCS-35 and above. The NTZZ02FC contains the LSSGR/CCITT compliant Global Tone Receiver that can be used in all markets. It will eventually replace the NTZZ02FA and NTZZ02FB UTR building blocks.
 - 2) One NTZZ02FC provides up to 30 circuits. Each NTZZ02FC contains two circuit packs, one for each shelf of the module. The first NTZZ02FC in a module is mounted in card slot 15, EXCEPT for SMS modules where it is mounted in card slot 17.
 - 3) When UTR/GTRs are provided in an SMS module, the module must be equipped with NT6X69AC/AD in card slot 18, rather than older Messaging packs, in order to avoid exceeding power consumption limits.
 - 4) The following information is retained for historical purpose. The NTZZ02FB contains two NT6X92BC CPs with labels.

The NT6X92BC is a power-reduced version of the NT6X92BB CP included in NTZZ02FA. The NT6X92BC CPs were cut into new production with no upgrade of existing field stock. The NT6X92BB and NT6X92BC CPs are physically and functionally interchangeable. Check availability before ordering the NTZZ02FC.

- 5) If more circuits are required for LGC/LTC/DTC modules, an additional NTZZ02FC can be ordered to mount in card slot 16. The second card in slot 16 CANNOT be added for other module types.
- 6) Do not order any UTR/GTRs for SMR, SMS-R, or TMS modules.
- 7) The Analog Display Services Interface (ADSI) and Spontaneous Call Waiting ID (SCWID) features of BCS-36+ require that the supporting modules be equipped with UTR/GTR CPs. This does not apply to the SMS-R module. If the ADSI or SCWID feature is required for the lines subtending an SMS-R module, the necessary UTR/GTR cards must be provisioned in the Remote Switching Center (RSC) which is hosting that SMS-R.
- 8) UTR/GTR cards located in a particular LGC/LTC module will service all lines and trunks connected to that module. This includes all lines in LCM's, RLCM's and OPM's.

- RUL5
- 1) Provide one (1) NTZZ02GC, 16 DS30 Network Interface, for each LGC/LTC/DTC/SMR/SMU/LGCI/LTCI/DTCI/TMS module requiring DS-30 interface to the Network. Each NTZZ02GC contains circuit packs for shelf position X and X+14 (where X = 05, or 33). The NTZZ02GC will eventually replace the NTZZ02GA. The NTZZ02GC offers NT6X40AD I/F CPs that have enhanced diagnostic functionality when installed in both shelves of a module in offices with XPM05 or later load. If the office has XPM05 or later but mixes the NT6X40AD in a module with NT6X40AC, or if the office has XPM04 or earlier load, then the enhanced diagnostic capability cannot be utilized and the NT6X40AD acts like the NT6X40AC.
 - 2) Provide one (1) NTZZ02AA, 4 DS30 Network Interface, for each SMS module requiring DS-30 interface to the Network. Each NTZZ02AA contains circuit packs for shelf position X and X+14 (where X = 05, or 33).
 - 3) Provide one NTZZ02HN DS512 Network Interface, for each LGC/LTC/DTC/SMS/SMR/SMU/LGCI/LTCI/DTCI/TMS module requiring DS-512 (except SMS-R) interface to the Enhanced Network (E-NET). Each NTZZ02HN contains circuit packs for shelf

position X and X+14 (where X = 05 or 33). The NTZZ02HN will eventually replace the NTZZ02HM. The NTZZ02HN offers NT6X40FB I/F CPs that have enhanced diagnostic functionality when installed in both shelves of a module in offices with XPM04 or later load. If the office has XPM04 or later but mixes the NT6X40FB in a module with NT6X40FA, or if the office has XPM03 or earlier load, then the enhanced diagnostic capability cannot be utilized and the NT6X40FB acts like the NT6X40FA.

RUL6 1) Provide one (1) NT0X50AA, Filler Face Plate 0.875, for each card position 1-7, 9, 13, 15-17, 19, 23 that is unequipped.

RUL7 1) For each LGC/LTC/LGCI/LTCI that will interface LCMs, provide one NTZZ02KA(10 DS30A LCM Interface) when up to ten DS-30A ports are required or two NTZZ02KAs when between eleven and twenty DS-30A ports are required.

2) The following is a listing of DS30A ports per DS30A LCM Interface circuit pack position.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

3) Port/circuits must start and follow the sequence 19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, 1, 2 and 0. LGC/LTC DS30A ports that are assigned to LCM are to

be picked from this block of ports (circuits). Then assign the DS-1 Interfaces in the module.

This rule is critical in LGC/LTC that have fewer than 16 network ports and in addition one of the following applies:

- 18 or less than 18 DS-1 ports (circuits) are used for digital trunking.
- 18 or less than 18 DS-1 ports (circuits) are used for RSC.
- 18 or less than 18 DS-1 ports (circuits) are used for RSC and for digital trunking.

- RUL8 1) Provide one (1) NTZZ04CA, Continuity Tone Detector, for each DTC module requiring continuity tone detection for SS7. For Canadian offices, the Continuity Tone Detector is only required where analog facilities are used at some point in the end-to-end connection of the trunk. Each NTZZ04CA contains circuit packs for shelf position X and X+14 (where X = 05, or 33).
- RUL9 1) Provide one (1) NTRX3653, Copper Interface Kit, per module when copper cables are required as the network interface. (Fiber is not ordered.)
- 2) Provide one (1) NTRX3652, Cover Plate Kit, per module when copper interface is NOT ordered, (Fiber is the network interface.)
- RUL10 1) Provide one NTRX2516, EMI Kit (EMI Doors), per cabinet for EMI compliant applications.
- 2) Provide one NTRX2513, EMI Ready Door Kit, per cabinet for non-EMI compliant applications
- RUL11 1) Provide one NTN5511, Cable Trough Assembly, per cabinet when overhead cabling is required.
- RUL12 1) Provide one NTRX2523, Leveling Foot Kit, per cabinet for Non-Earthquake offices.
- RUL13 1) Provide maximum nine (9) D-Channel Handler CP, either the NTZZ17BA D-Channel Handler (DCH) CP or NTZZ17BB Enhanced D-Channel Handler (EDCH) CP, per CPCI module in accordance with customer requirements and the following conditions:

- A. EDCH hardware requires BCS-35, except for TMS, which requires BCS-36. Order NTZZ17BB for all new jobs at these BCS levels and above.
 - B. The EDCH software load requires the Unified Processor (XPM+) and the Enhanced ISDN Signaling Preprocessor (EISP) in the module. TMS does not use the DCH or the EDCH load; therefore, a TMS module with BCS-36 can use EDCH without XPM+ or EISP.
 - C. The EDCH CP may be combined with DCH CPs in a module, but in that case the DCH software load is required (rather than EDCH load) and the EDCH CP operates as if it is a DCH; i.e., the enhanced capacity of the EDCH CP is not utilized.
 - D. A DCH may be spared with an EDCH circuit pack (BCS-35 or >, BCS-36 or > for TMS).
- 2) Each DCH/EDCH supports up to 124 BRI D-Channels. The spare DCH or EDCH should not be counted when determining the number of DCH/EDCH required to support D-channel traffic.
 - 3) Each DCH/EDCH CP, including the spare, requires one (1) peripheral port on the CPCI module. Assign ECH/EDCH cards to shelf and slot positions in the following order. The spare DCH/EDCH should be assigned last:

		Shlf	CP	Assign
		Pos	Pos	To Logical
		-----	---	-----
1st	DCH/EDCH CP Provisioned:	X+14	1	19
2nd	DCH/EDCH CP Provisioned:	X	1	17
3rd	DCH/EDCH CP Provisioned:	X+14	2	15
4th	DCH/EDCH CP Provisioned:	X	2	13
5th	DCH/EDCH CP Provisioned:	X+14	3	11
6th	DCH/EDCH CP Provisioned:	X	3	09
7th	DCH/EDCH CP Provisioned:	X+14	4	07
8th	DCH/EDCH CP Provisioned:	X	4	05
9th	DCH/EDCH CP Provisioned:	X+14	5	03
10th	DCH/EDCH CP Provisioned:	X	5	01

For the lower module in the cabinet, X=05 (ie. shelf positions 05 and 19), and for the upper module in the cabinet X=33 (ie. shelf positions 33 and 47).

- 4) DCH/EDCH CP are not required for DTCI (PRI) applications, nor where the CPCI supports only non-ISDN LCMs.

- 5) For TOPS Message Switch applications, provide four (4) DCH/EDCH in card slots 1 & 2 of shelf X & shelf X+14. The EDCH CP may be used for TMS applications at BCS-36 and higher.
 - 6) For SMA applications, ISDN support requires minimum BCS-36 or higher. The Enhanced D Channel Handler will be used for SMA ISDN support; the DCH is NOT supported. A maximum of three active and one hot spare EDCH CPs per SMA module are allowed.
- RUL14
- 1) Provide one NT6X02XG XPM PLUS Upgrade Kit per module to upgrade an existing DMS-100 module, except SMR modules, or an existing DMS-250 DTCI module, to XPM PLUS when no parts are already stocked on site.
 - 2) Provide one NTMX70AB XPM PLUS Paddlecard Upgrade Kit instead of NT6X02XG when one of the above modules is to be upgraded to XPM PLUS AND the office already has the NTMX77AA CPs and the NTMX71AA Paddlecards stocked on site. The NTMX70AB Kit does not contain NTMX77AA, NTMX71AA, nor P0735417 Designation Labels for NTMX77AA.
 - 3) When either the NT6X02XG or the NTMX70AB Kit is installed, remove all the NT6X45, NT6X46, and NT6X47 CPs in the module and provide NT0X50AA Filler Face Plates as required to occupy the vacant CP positions.
 - 4) For modules being upgraded to XPM PLUS, when NTB01AA ISDN Signaling Pre-processor CPs are present, provide two NTB01BA CPs, with two P0713794 Designation Labels, and use them to replace the NTB01AA CPs.
 - 5) Application of the NT6X02XG Kit to an SMS module equipped with the NT6X02DH packfill upgrades the module to NT6X02DR; however, the NT6X02DR packfill is an interim level not allowed in the field. The NT6X02WC Change Kit MUST be applied to convert NT6X02DR to NT6X02DS for XPM PLUS operation. Refer to RUL21. The NT6X02XG may be applied to SMS modules equipped with NT6X02DS or later packfills and the packfill part number remains the same.
 - 6) Application of the NT6X02XG Kit to an SMS-R module equipped with the NT6X02PD packfill upgrades the module to NT6X02PG; however, the NT6X02PG packfill is an interim level not allowed in the field. The NT6X02WC Change Kit MUST be applied to convert NT6X02PG to NT6X02PH for XPM PLUS operation. Refer to RUL21. The NT6X02XG may be

applied to SMS modules equipped with NT6X02PH or later packfills and the packfill part number remains the same.

- 7) The formerly provided NTRX36CA and NTRX36DA XPM Plus Upgrade Kits have been changed to A&M status and replaced by the NT6X02XG.
- RUL15 1) Provide one corresponding door label per cabinet. The bottom module in the cabinet determines cabinet type.
- RUL16 1) Provide one Base Jumper Kit for each non-ISDN module ordered. The Base Jumper Kit provides two jumpers for connecting pins on the back on the non-ISDN module to perform in non-ISDN capacity
- RUL17 1) Provide one SMS-R Change Kit for each SMS-R module ordered on the CCPE frame.
- 2) Provide one SMS-R Cable Kit for each SMS-R module ordered on the CCPE frame. This kit provides the hardware and cables necessary to provide DS30A ports to the bulkhead.
- RUL18 1) Provide one Internal Horizontal Power Kit per CCPE Cabinet if the power is being provided from a CPDC in the same lineup.
- 2) Provide one External Power Filter Kit per CCPE Cabinet if the power is from a CPDC in a different lineup.
- RUL19 1) Provide one (1) NTZZ02RB Msg Protocol Ckt for each equipped module requiring update to support the Analog Display Services Interface (ADSI) or Spontaneous Call Waiting ID (SCWID), except SMUI modules. To update SMUI modules, see RUL20. See NOTES 4 and 5 for additional requirements for ADSI and SCWID. Each NTZZ02RB contains two NT6X69AD CPs with labels.
- 2) The NT6X69MA, NT6X69AB, NT6X69AC or NT6X69AD is compatible with any DTC or DTCI module. The NT6X69AC is a low power version of the NT6X69MA. ENET based DTC or DTCI modules cannot use NT6X69AB. The NT6X69AD is used for new production for XPM+. See NOTE 5 for more information on providing NT6X69 CPs.
- RUL20 1) For field application only, provide one (1) NT6X02WB Product Change Kit per SMUI module equipped with the NT6X02EL packfill (NTZZ03MA contains the NT6X02EL) when NT6X69AD Protocol & Tone CPs are required to support the ADSI or

SCWID features of BCS-36+. See NOTE 4 for additional requirements for ADSI and SCWID.

- 2) An existing SMUI module equipped with the NT6X02EL packfill is converted to NT6X02ES by the application of the NT6X02WB kit.
- RUL21
- 1) The NT6X02WC Prod. Chg. Kit was provided to upgrade one existing SMS module with NT6X02DR packfill to NT6X02DS. This kit supplied two NT6X86AB packs and labels to replace existing NT6X86AAs and made slots 13 and 19 provisionable. NT6X02DS is the minimum packfill for SMS+. This kit should no longer be used. Provide the NT6X02WG Kit for all future upgrades.
 - 2) The NT6X02WC Prod. Chg. Kit was provided to upgrade one existing SMS-R module with NT6X02PG packfill to NT6X02PH. This kit supplied two NT6X86AB packs and labels to replace existing NT6X86AAs and made slots 13 and 19 provisionable. NT6X02PH is the minimum packfill for SMS-R+. This kit should no longer be used. Provide the NT6X02WG Kit for all future upgrades.
 - 3) Where the NT6X02WC Kit has been deployed for XPM+ SMS or SMS-R order two NT6X80BB CPs with labels and replace existing NT6X80AA or NT6X80BA. The NT6X02WC Kit should no longer be used. For all future XPM+ SMS or SMS-R upgrades use the NT6X02WG Kit. See EMS for NT6X02WG EMA2-99-XPM-20. RUL22 1) Provide one (1) NT6X02WE Product Change Kit to upgrade one existing SMU module with NT6X02EM packfill to NT6X02EP. For field application only. In the NT6X02EM module, slot 19 is always provided with NT6X80BAs. Product change kit NT6X02WE makes slot 19 provisionable with only the NT6X80BBs.
- RUL23
- 1) Provide one NTZZ02SB Ring/Pad Ckt per SMS module equipped with the NT6X02DS or later packfill. Refer to Rul1 for the latest SMS+ Building Block which includes NT6X02DS or later SMS packfill.
 - 2) Provide one NTZZ02SB Ring/Pad Ckt per SMS-R module equipped with the NT6X02PH packfill. Refer to Rul1 for the latest SMS-R+ Building Block which includes NT6X02PH or later SMS-R packfill.
 - 3) Provide one NTZZ02SB Ring/Pad Ckt per SMA module equipped with NT6X02TF or later packfill. Refer to Rul1 for the latest SMA+ Building Block which includes NT6X02TF or later SMA packfill and NTZZ03SP Building Blocks.

- 4) Provide one NTZZ02SB Ring/Pad Ckt for each SMU module equipped with the NT6X02EP or later packfill and for each SMUI module equipped with the NT6X02ES or later packfill. Refer to RUL1 for the latest SMU+ and SMUI/SMUI+ Building Blocks which contain NT6X02EP or later SMU packfill or NT6X02ES or later SMUI packfill.
 - 5) Each NTZZ02SB contains two NT6X80BB CPs with labels.
- RUL24
- 1) Provide one NTZZ02UA per module to support the Peripheral Loader option. Modules to be equipped with the NTZZ02UA must also be equipped with the NTMX77AA Unified Processor. The NTZZ02UA cannot be used in non-XPM Plus applications. The NTZZ02UA contains two NT7X05AA CPs and labels.
 - 2) Mount the NTZZ02UA in slot 15 for SMS modules, and slot 17 for all other modules. Do not mount the PL CP in SMA peripheral modules.
- RUL25
- 1) For initial SMA applications, provide one NTZZ03AB Unified Processor or one NTZZ03AC Enhanced Processor with SMA module Building Blocks NTZZ03SS or NTZZ03SW which contain the NT6X02TJ packfill. The NTZZ03AB is available and is the default up to NA004 with XPM06. NTZZ03AC, which is an enhanced processor for TR303 features, is available in NA004 with XPM06 (not NA004 with XPM05) and is gating for SMA with XPM07.
 - 2) To upgrade an existing SMA with the Unified Processor to the Enhanced Processor, provided one NTZZ03AC to replace the existing NTMX77AA processor CPs and change the packfill PEC to NT6X02TJ. The NTB01AC EISP or later is required with the NTAX74AA.
- RUL26
- 1) The NTB01BA is currently always provided on the SMA module building blocks. There is no rule for NTZZ03AJ at this time.
- RUL27
- 1) Provide one NT2X70AY to upgrade the NT2X70AE in a module to NT2X70AF. This kit is for field applications where the NT2X70AE was always provided. NT2X70AE is not valid in DTC+ applications.
- RUL28
- 1) Provide one NT6X02CY to upgrade the NT6X02ES to NT6X02CX with DTA (kit includes application of two (2) NTAX78AB for DTA). For field applications only. Refer to the NT6X02CY engineering manual section for further details.

- RUL29 1) Provide one NT6X02YA (per module) to upgrade existing SMR (NT6X02CQ) to SMU (NT6X02EU). Refer to the NT6X02YA engineering manual section for further details (section includes information for upgrading from previous versions of the SMR packfill).
- RUL30 1) Provide one NT6X02YB (per module) to upgrade existing SMR (NT6X02CT) to SMS (NT6X02EU). Refer to the NT6X02YB engineering manual section for further details (section includes information for upgrading from previous versions of the SMR packfill).

PC KIT FOR CHANNEL BUS (CBUS) ACCESS

NTZZ99AA

| RATING: MD

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ99AA Building Block contains the equipment required to upgrade a Link Interface Shelf (LIS) to Channel Bus (CBus) Access capability.

REFERENCE DOCUMENTATION: SLZZ99AA 00 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

NTZZ99AA EMC2-99-CBUS CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 08 03	ECM 620 05	New insert, Network Interface Unit
92 10 02	ECM 620 06	NTZZ30SA and NTZZ30SB Building Blocks do not exist. For FBus upgrades to current LPP Building Blocks, use detailed engineering.

The PC Kit For Channel Bus (CBus) Access is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	FBus Repeater CP	NT9X74CA		2	X	7F, 32F	AP
REMOVE	Des Strip-F (9X72BA)	P0709180		1	X		AP
ADD	FBus Repeater CP	NT9X74DA		2	X	7F, 32F	AP
ADD	Des Strip-F (9X72EA)	P0733873		1	X		AP

NOTES:

1) Provide minimum one (1) maximum three (3) NTZZ99AA Product Change Kit per LIM/LPP Cabinet when converting a Link Interface Shelf (LIS) as follows:

DESCRIPTION	FROM	TO
Link Interface Shelf	NTZZ30SA	NTZZ30SB

2) When modifying Link Interface Shelves (LIS), X in SHF POS refers to 26, 13, or 00.

UNIV 5.25 DDU UPGRADE KIT

PEC CODE: NTZZ99AG

| CPC CODE: B0235777

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Univ 5.25 DDU Upgrade Kit shall be provided with each 5.25" Disk Drive Unit when replacing an 8" Priam or Mercury Disk Drive Unit.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ99AG EMC2-99-DDU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 02 19	----- ECM 502 11	Previous history not available MD all NT4X00 pecs Per ECD 18-45271.

The Univ 5.25 DDU Upgrade Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	Shielded Ribbon Ca	NT4X0048		1	XX	—	AP
ADD	Power Cable	NT4X0036		1	XX	—	AP
ADD	Power Cable	NT4X0045		1	XX	—	AP
ADD	Screw	P097F813		1	XX	—	AP
ADD	Star Washer	P0183220		2	XX	—	AP
ADD	Metal Spacers	P0613075		4	XX	—	AP
ADD	Screw	P0640486		4	XX	—	AP
ADD	Plastic Washer	P0633500		8	XX	—	AP
ADD	Screw	P0160883		4	XX	—	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" in SHF POS is equal to 04,18
- 2) The parts in this kit shall be used by the Installation Department as necessary to replace an 8" Priam or Mercury Disk Drive Unit with a 5.25" Disk Drive Unit. The 8" Disk Drive Unit may be mounted on a NT4X00AA, NT4X00AB, NT4X00AC or NT4X00AF DDU shelf.

RULES:

AP 1) When PEC NTZZ99AG is ordered, these items are provided.

PRODUCT CHANGE KIT
NTZZ17GA TO NTZZ17GB

PEC CODE: NTZZ99AB

CPC CODE: B0235269

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: None

ABBREVIATION NAME: CPCI

ENGINEERING DESCRIPTION: The NTZZ99AB Change Kit provides the circuit packs to upgrade one (1) existing NTZZ17GA Building Block to NTZZ17GB.

REFERENCE DOCUMENTATION: SLZZ99AB 00 01
NTZZ99AB REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ99AB EMC2-99-ISDN-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 26	ECM 616 43	MD this for the Functional Block initiative as it is obsolete.

The PRODUCT CHANGE KIT NTZZ17GA to NTZZ17GB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler faceplate	NT0X50AA		2	X+14, X	9	AP
Master Proc Memory Plus CP	NT6X47AC		2	X+14, X	10	AP
Signal Proc Memory Plus CP	NT6X46BB		2	X+14, X	11	AP
CPP Msg Protocol & Tone CP	NT6X69AC		2	X+14, X	18	AP
Label for NT6X47AC	P0711663		2	X+14, X	10	AP
Label for NT6X46BB	P0711664		2	X+14, X	11	AP
Label for NT6X69AC	P0710476		2	X+14, X	18	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ99AB is ordered, these items are provided.

NIF SMS PRODUCT CHANGE KIT

NTZZ99AD

RATING: Rating Change Pending

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit contains the hardware required to upgrade the NTZZ03BA SMS module to the NTZZ03BB SMS module. The resulting SMS module will interface ENET using fiber speech links. Application of the NTZZ99AD Product Change Kit makes slot 22 provisionable and replaces the NT6X40BA DS30 Network Interface packs with DS512 Network Interface packs.

REFERENCE DOCUMENTATION: SLZZ99AD 00 01
NTZZ99AD REL 01

The NIF SMS Product Change Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	DS30 Network Int. CP	NT6X40BA		1	X+14	22	
REMOVE	DS30 Network Int. CP	NT6X40BA		1	X	22	
ADD	DS512 Network Int. CP	NT6X40CA		1	X+14	22	AP
ADD	Paddle Board	NT6X40DA		1	X+14	22R	AP
ADD	DS512 Network Int. CP	NT6X40CA		1	X	22	AP
ADD	Paddle Board	NT6X40DA		1	X	22R	AP
ADD	Fiber I/F Hardware	NT6X02BU		1	X	22R	AP
ADD	Desig Lab. (NT6X40CA)	P0710477		1	X+14	22	AP
ADD	Desig Lab. (NT6X40CA)	P0710477		1	X	22	AP

NOTES:

- 1) In SHF POS, X = 18 or 51.
- 2) Provide minimum one (1) maximum two (2) NTZZ99AD Common Circuit Pack Kit per frame when converting XPM Modules as follows:

DESCRIPTION	FROM	TO
SMS Common CP	NTZZ03BA	NTZZ03BB

- 3) The NTZZ99AD Product Change Kit changes Slot 22 of the Building Block to a provisionable slot. This slot is being made provisionable to allow for optional copper or fiber Network Interface packs.

RULES:

- AP 1) When PEC NTZZ99AD is ordered, these items are provided.

NIF SMS PRODUCT CHANGE KIT

PEC CODE: NTZZ99AE

CPC CODE: B0235770

| RATING: MD

REPLACES: Not applicable

REPLACED BY: None

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit contains the hardware required to upgrade the NTZZ03BA SMS module to the NTZZ03BB SMS module. The resulting SMS module will interface ENET using fiber speech links. Application of the NTZZ99AE Product Change Kit makes slot 22 provisionable and replaces the NT6X40BA DS30 Network Interface packs with DS512 Network Interface packs.

REFERENCE DOCUMENTATION: SLZZ99AE 00 01
NTZZ99AE REL 01

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ99AE EMC2-99-SMS-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 04 26	----- ECM 328 28	Previous history not available MD this BB per the functional block initiative.

The NIF SMS Product Change Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	DS30 Network Int. CP	NT6X40BA		1	X+14	22	
REMOVE	DS30 Network Int. CP	NT6X40BA		1	X	22	
ADD	DS512 Network Int. CP	NT6X40FA		1	X+14	22	AP
ADD	Paddle Board	NT6X40GA		1	X+14	22R	AP
ADD	DS512 Network Int. CP	NT6X40FA		1	X	22	AP
ADD	Paddle Board	NT6X40GA		1	X	22R	AP
ADD	Fiber I/F Hardware	NT6X02BU		1	X	22R	AP
ADD	Desig Lab. (NT6X40FA)	P0729895		1	X+14	22	AP
ADD	Desig Lab. (NT6X40FA)	P0729895		1	X	22	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) In SHF POS, X = 18 or 51.
- 2) Provide minimum one (1) maximum two (2) NTZZ99AE Common Circuit Pack Kit per frame when converting XPM Modules as follows:

DESCRIPTION	FROM	TO
SMS Common CP	NTZZ03BA	NTZZ03BB

- 3) The NTZZ99AE Product Change Kit changes Slot 22 of the Building Block to a provisionable slot. This slot is being made provisionable to allow for optional copper or fiber Network Interface packs.

RULES:

XPM PLUS ISDN CHANGE KIT

NTZZ99AL

RATING: MD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The XPM Plus ISDN Change Kit provides circuit packs to replace the XPM, MP and SP processors of a LGCI or LTCI with a Unified processor which has increased memory and realtime capacity.

REFERENCE DOCUMENTATION: SLZZ99AL 00 01
NTZZ99AL REL 01

The XPM Plus ISDN Change Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	XPM Processor CP	NT6X45BA		4	X+14, X	8, 12	
REMOVE	MP Mem Plus CP	NT6X47AB		2	X+14, X	9	
REMOVE	MP Mem Plus CP	NT6X47AB		2	X+14, X	10	
or							
REMOVE	MP Mem Plus CP	NT6X47AC		2	X+14, X	10	
REMOVE	SP Mem Plus CP	NT6X46BA		2	X+14, X	11	
or							
REMOVE	SP Mem Plus CP	NT6X46BB		2	X+14, X	11	
REMOVE	ISDN Pre-proc CP	NTBX01AA		2	X+14, X	16	
ADD	XPM Plus PC Kit	NT6X02XA		1	X		AP
ADD	Universal Proc. CP	NTMX77AA		2	X+14, X	12	AP-01
ADD	Des Label NTMX77AA	P0735417		2	X+14, X	12	AP-01
ADD	XPM Plus Term PB	NTMX71AA		2	X+14, X	19R	AP-01
ADD	Enh ISDN Sig Prep CP	NTBX01AB		2	X+14, X	16	AP-01
ADD	Des Label NTBX01AB	P0735418		2	X+14, X	16	AP-01
ADD	Filler Face Plate	NT0X50AA		6	X+14, X	8, 10, 11	AP
ADD	Des. Label NT0X50AA	P0578498		6	X+14, X	8, 10, 11	AP
ADD	Filler Face Plate	NT0X50AA		2	X+14, X	9	RUL1
ADD	Des. Label NT0X50AA	P0578498		2	X+14, X	9	RUL1

NOTES:

- 1) "X" in SHF POS is equal to 18 or 51.

- 2) Provide a minimum of one and a maximum of two NTZZ99AL XPM Plus ISDN Change Kits per NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA ISDN CPEI Frame equipped with LTCI or LGCI peripheral modules to change those ISDN XPM modules to ISDN XPM Plus modules.
- 3) The XPM Plus Packfill Change Kit contains wire for the modification of the NT6X0215 backplane on the NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA CPEI Frame to a NT6X0226 backplane on a NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA CPEI Frame.

RULES:

- AP 1) When PEC NTZZ99AL is ordered, these items are provided.
- 2) AP-01 These equipment items are contained in the NT6X02XA stocklist and are listed herein for completeness.
- RUL1 1) Provide two filler face plates and designation labels if the ISDN XPM module was equipped with two NT6X47AB MP Mem Plus CP in slot 9. These filler face plates are not required if the ISDN XPM module was equipped with two NT6X47AC in slot 10. The NTZZ99AL Kit contains six filler face plates and designation labels for the slots 8, 10 and 11 vacated by the NT6X02XA kit.

XPM PLUS ISDN CHANGE KIT

PEC CODE: NTZZ99AH

CPC CODE: B0235862

RATING: MD

REPLACES: N/A

REPLACED BY: NT6X02XA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The XPM Plus ISDN Change Kit provides circuit packs to replace the XPM, MP and SP processors of a LGCI or LTCI with a Unified processor which has increased memory and real-time capacity.

REFERENCE DOCUMENTATION: SLZZ99AH 00 01
NTZZ99AH REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Europe
Asia/Pacific

| ISSUE AUTHOR: NTI: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Terwey Dept. 3471 (PPK)

NTZZ99AH EMC2-99-XPM-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 12 06	----- ECM 616 17	Previous history not available MD this BB code and replace it with NT6X02XA and NTB01AB Retired Section, it was previously MD.
94 06 07	ECM 673 08	

The XPM Plus ISDN Change Kit is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	XPM Processor CP	NT6X45BA		4	X+14, X	8, 12	
REMOVE	MP Mem Plus CP	NT6X47AB		2	X+14, X	9	
REMOVE	MP Mem Plus CP	NT6X47AB		2	X+14, X	10	
or							
REMOVE	MP Mem Plus CP	NT6X47AC		2	X+14, X	10	
REMOVE	SP Mem Plus CP	NT6X46BA		2	X+14, X	11	
or							
REMOVE	SP Mem Plus CP	NT6X46BB		2	X+14, X	11	
REMOVE	ISDN Pre-proc CP	NTBX01AA		2	X+14, X	16	
ADD	XPM Plus PC Kit	NT6X02XA		1	X		AP
ADD	Universal Proc. CP	NTMX77AA		2	X+14, X	12	AP-01
ADD	Des Label NTMX77AA	P0735417		2	X+14, X	12	AP-01
ADD	XPM Plus Term PB	NTMX71AA		2	X+14, X	19R	AP-01
ADD	Enh ISDN Sig Prep CP	NTBX01AB		2	X+14, X	16	AP
ADD	Des Label NTBX01AB	P0735418		2	X+14, X	16	AP
ADD	Filler Face Plate	NT0X50AA		6	X+14, X	8, 10, 11	AP
ADD	Des. Label NT0X50AA	P0578498		6	X+14, X	8, 10, 11	AP
ADD	Filler Face Plate	NT0X50AA		2	X+14, X	9	RUL1
ADD	Des. Label NT0X50AA	P0578498		2	X+14, X	9	RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "X" in SHF POS is equal to 18 or 51.
- 2) Provide a minimum of one and a maximum of two NTZZ99AH XPM Plus ISDN Change Kits per NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA ISDN CPEI Frame equipped with LTCI or LGCI peripheral modules to change those ISDN XPM modules to ISDN XPM Plus modules.
- 3) The XPM Plus Packfill Change Kit contains wire for the modification of the NT6X0215 backplane on the NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA CPEI Frame to a NT6X0226 backplane on a NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA CPEI Frame.

RULES:

- AP 1) When PEC NTZZ99AH is ordered, these items are provided.
- 2) AP-01 These equipment items are contained in the NT6X02XA stocklist and are listed herein for completeness.
- RUL1 1) Provide two filler face plates and designation labels if the ISDN XPM module was equipped with two NT6X47AB MP Mem Plus CP in slot 9. These filler face plates are not required if the ISDN XPM module was equipped with two NT6X47AC in slot 10. The NTZZ99AH Kit contains six filler

face plates and designation labels for the slots 8, 10 and 11 vacated by the NT6X02XA kit.

XPM PLUS DTC CHANGE KIT FOR DWS

PEC CODE: NTZZ99AQ

CPC CODE: B0238882

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ99AU

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The XPM Plus DTC Change Kit provides circuit packs to replace the XPM, MP and SP processors of a DTC with a Unified Processor which has increased memory and real-time capacity.

REFERENCE DOCUMENTATION: SLZZ99AQ 00 01
NTZZ99AQ REL 01

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: NTI: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: NTI: Barry Bond Dept. 3471 (PPK)

NTZZ99AQ EMC2-99-XPM-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 15	ECM 687 01	Introduces the NTZZ99AQ XPM Plus up-grade Kit for adding XPM Plus to the DTC modules on the NT6X01AB frame. MD NTZZ99AQ, replaced by NTZZ99AU due to NT6X02XA PC Kit being replaced by NT6X02XF.
94 06 07	ECM 673 08	

The XPM Plus DTC Change Kit for DWS is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	XPM Processor CP	NT6X45BA		4	X+14, X	8, 12	
REMOVE	MP Mem Plus CP	NT6X47AB		2	X+14, X	9	
REMOVE	MP Mem Plus CP	NT6X47AB		2	X+14, X	10	
or							
REMOVE	MP Mem Plus CP	NT6X47AC		2	X+14, X	10	
REMOVE	SP Mem Plus CP	NT6X46BA		2	X+14, X	11	
or							
REMOVE	SP Mem Plus CP	NT6X46BB		2	X+14, X	11	
ADD	XPM Plus PC Kit	NT6X02XA		1	X		AP
ADD	Universal Proc. CP	NTMX77AA		2	X+14, X	12	AP-01
ADD	Des Label NTMX77AA	P0735417		2	X+14, X	12	AP-01
ADD	XPM Plus Term PB	NTMX71AA		2	X+14, X	19R	AP-01
ADD	Filler Face Plate	NT0X50AA		6	X+14, X	8, 10, 11	AP
ADD	Des. Label NT0X50AA	P0578498		6	X+14, X	8, 10, 11	AP
ADD	Filler Face Plate	NT0X50AA		2	X+14, X	9	RUL1
ADD	Des. Label NT0X50AA	P0578498		2	X+14, X	9	RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "X" in SHF POS is equal to 18 or 51.
- 2) Provide a minimum of one and a maximum of two NTZZ99AQ XPM Plus DTC Change Kits per NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA ISDN CPEI Frame equipped with DTC peripheral modules to change those DTC XPM modules to XPM Plus modules.
- 3) The XPM Plus Packfill Change Kit contains wire for the modification of the NT6X0215 backplane on the NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA CPEI Frame to a NT6X0226 backplane on a NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA CPEI Frame.

RULES:

- AP 1) When PEC NTZZ99AQ is ordered, these items are provided.
- 2) AP-01 These equipment items are contained in the NT6X02XA stocklist and are listed herein for completeness.
- RUL1 1) Provide two filler face plates and designation labels if the DTC XPM module was equipped with two NT6X47AB MP Mem Plus CP in slot 9. These filler face plates are not required if the DTC XPM module was equipped with two NT6X47AC in slot 10. The NTZZ99AQ Kit contains six filler face plates and designation labels for the slots 8, 10 and 11 vacated by the NT6X02XA kit.

XPM PLUS DTC CHANGE KIT FOR DWS

PEC CODE: NTZZ99AU

CPC CODE: B0224846

| RATING: MD

REPLACES: NTZZ99AQ

| REPLACED BY: NT6X02XG

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The XPM Plus DTC Change Kit provides circuit packs to replace the XPM, MP and SP processors of a DTC with a Unified Processor which has increased memory and real-time capacity. This version of the kit includes paddleboards, instead of wire, to upgrade the backplane wiring for XPM+.

| REFERENCE DOCUMENTATION: SLZZ99AU 00 01

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: Darrell Deeds Dept. 3471 (PPK)

MAIN CONTACT: Barry Bond Dept. 3471 (PPK)

NTZZ99AU EMC2-99-XPM-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 06 07	ECM 673 08	Initial release. Replaces NTZZ99AQ. NT6X02XF replaces NT6X02XA.
95 03 02	ECM 616 30	NT6X02XG replaces NTZZ99AU, which is MD because NT6X02XF is replaced by NT6X02XG.

The XPM Plus DTC Change Kit for DWS is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	XPM Processor CP	NT6X45BA		4	X, X+14	8, 12	
REMOVE	MP Mem Plus CP	NT6X47AB		2	X, X+14	9	
REMOVE	MP Mem Plus CP	NT6X47AB		2	X, X+14	10	
or							
REMOVE	MP Mem Plus CP	NT6X47AC		2	X, X+14	10	
REMOVE	SP Mem Plus CP	NT6X46BA		2	X, X+14	11	
or							
REMOVE	SP Mem Plus CP	NT6X46BB		2	X, X+14	11	
ADD	XPM Plus PC Kit	NT6X02XF		1	X		AP
ADD	Universal Proc. CP	NTMX77AA		2	X, X+14	12	AP-01
ADD	Des Label NTMX77AA	P0735417		2	X, X+14	12	AP-01
ADD	XPM Plus Term PB	NTMX71AA		2	X, X+14	19R	AP-01
ADD	XPM+ Upgrade CP	NTMX7011		2	X, X+14	11R	AP-01
ADD	XPM+ Upgrade CP	NTMX7012		2	X, X+14	12R	AP-01
ADD	Insertion Guide	P0749586		2	X, X+14		AP-01
ADD	Filler Face Plate	NT0X50AA		6	X, X+14	8, 10, 11	AP
ADD	Des. Label NT0X50AA	P0578498		6	X, X+14	8, 10, 11	AP
ADD	Filler Face Plate	NT0X50AA		2	X, X+14	9	RUL1
ADD	Des. Label NT0X50AA	P0578498		2	X, X+14	9	RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "X" in SHF POS is equal to 18 or 51.
- 2) Provide a minimum of one and a maximum of two NTZZ99AU XPM Plus DTC Change Kits per NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA ISDN CPEI Frame equipped with DTC peripheral modules to change those DTC XPM modules to XPM Plus modules.
- 3) The XPM Plus Packfill Change Kit contains circuit boards for the modification of the NT6X0215 backplane on the NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA CPEI Frame to a NT6X0226 backplane on a NT6X01AB, NTZZ17AA, NTZZ17KA or NTZZ17LA CPEI Frame.

RULES:

AP 1) When PEC NTZZ99AU is ordered, these items are provided.

- | 2) AP-01 These equipment items are contained in the NT6X02XF stocklist and are listed herein for completeness.

RUL1 1) Provide two filler face plates and designation labels if the DTC XPM module was equipped with two NT6X47AB MP Mem Plus CP in slot 9. These filler face plates are not required if the DTC XPM module was equipped with two NT6X47AC in slot 10. The NTZZ99AU Kit contains six filler face plates and designation labels for the slots 8, 10 and 11 vacated by the NT6X02XF kit.

97/12/09

EMC3:

DIGITAL NETWORK SUBSYSTEMS CHAPTER ALL

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DIGITAL NETWORK SUBSYSTEMS CHAPTER ALL

EMC3-05-FFP-1	BLANK SHELF ASSEMBLY PACKAGE	NTZZ10CA
EMC3-01-CLK-1	NET CLOCK INTERFACE NT-40	NTZZ07CA
EMC3-01-DSN-1	CABINETIZED DUAL SHELF NETWORK (MODEL B)	NTZZ47FB
EMC3-01-NET-6	ENET IN C42 (S/DMS) CABINET	NTZZ10LB
EMC3-01-NET-8	PLANE 0 SHELF LABELS	NTZZ10QA
EMC3-01-NET-9	PLANE 1 SHELF LABELS	NTZZ10RA
EMC3-01-002	SPEECH LINK CONNECTING CABINET - MODEL B	NTZZ47HA
EMC3-01-003	SPEECH LINK CONNECTING CABINET - MODEL B	NTZZ47HB
EMC3-02-NET-6	DIGITAL NETWORK INTERCONNECT CABINET - M	NTZZ47JA
EMC3-02-NET-7	DIGITAL NETWORK INTERCONNECT CABINET - M	NTZZ47JB
EMC3-04-000	DOUBLE SHELF NETWORK EQUIPMENT FRAME (US	NTZZ07EA
EMC3-04-001	EARTHQUAKE DSNE FRAME (US)	NTZZ07PA
EMC3-05-IF-1	DS-30 INTERFACE ASSEMBLY	NTZZ10GA
EMC3-05-NET-1	ENHANCED NETWORK SHELF ASSEMBLY PACKAGE	NTZZ10BA
EMC3-05-000	ENHANCED NETWORK SIMPLEX CABINET	NTZZ10AA
EMC3-05-001	NETWORK SIMPLEX CABINET GRAY	NTZZ10AG
EMC3-05-002	DIGITAL NETWORK CONNECTING FRAME	NTZZ20BA
EMC3-05-003	EQ FRAME DNI BUILDING BLOCK U.S. ONLY	NTZZ20DA
EMC3-05-004	SPEECH LINK CONNECTING FRAME BUILDING BL	NTZZ21BA
EMC3-05-005	EQ FRAME SLC BUILDING BLOCK U.S. ONLY	NTZZ21DA
EMC3-06-001	64K ENHANCED NETWORK	NTZZ10NA
EMC3-06-002	64K ENHANCED NETWORK	NTZZ10NB
EMC3-06-004	ENHANCED NETWORK SHELF ASSEMBLY PACKAGE	NTZZ10BB
EMC3-06-010	ENET 8M CPU	NTZZ10CC
EMC3-07-NCK-1	CABINETIZED DUAL SHELF NETWORK	NTZZ07FA
EMC3-07-NCK-2	NETWORK COMMON CP KIT	NTZZ07JA
EMC3-07-NCK-3	NETWORK COMMON CP KIT	NTZZ07GA
EMC3-07-NCK-4	NETWORK COMMON CP KIT (48V)	NTZZ07RA
EMC3-07-NCK-5	NETWORK COMMON CP KIT	NTZZ07SA
EMC3-08-000	DIGITAL NETWORK INTERCONNECT CABINET	NTZZ20CA
EMC3-09-NJC	NJC PANEL AND CABLE KIT	NTZZ21FM
EMC3-09-NSL	NSL/PSL PANEL AND CABLE KIT	NTZZ21EA
EMC3-09-NSL-1	NSL PANEL AND CABLE KIT	NTZZ21EM
EMC3-09-PSL	PSL PANEL AND CABLE KIT	NTZZ21FA
EMC3-09-00	SPEECH LINK CONNECTING CABINET	NTZZ21CA

97/12/09

EMC3:

DIGITAL NETWORK SUBSYSTEMS CHAPTER ALL

BLANK SHELF ASSEMBLY PACKAGE

NTZZ10CA

RATING: Manufacture Discontinued

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Blank Shelf Assembly Package is required for each unequipped shelf position to satisfy the forced air cooling requirements of the cabinet. A FSP shorting plug is also provided.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ10CA EMC3-05-FFP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 08 28	----- ECM 627 02	Previous history not available NTZZ10CA is MD's.

The Blank Shelf Assembly Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
FSP Shorting Plug	NT9X0314		1	52		AP
Blank Shelf Assy	NT0X24BD		1	XX		AP

NOTE: 1) XX can be one of 00, 13, and 26.

RULES:

AP 1) When PEC NTZZ10CA is ordered, these items are provided.

RUL1 1) Provide one (1) NTZZ10CA Blank Shelf Assy Pkg for each unequipped network shelf position.

NET CLOCK INTERFACE NT-40

PEC CODE: NTZZ07CA

| CPC CODE: B0231759

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: NTZZ07CA

ENGINEERING DESCRIPTION: NTZZ07CA contains the circuit packs required for the NT-40 interface to the Double Shelf Network (DSNE).

REFERENCE DOCUMENTATION: SLZZ07CA 00 01

NTZZ07CA REL 01

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ07CA EMC3-01-CLK-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- -- 95 09 28	--- --- -- ECM 604 08	Previous history not available. MD entire NT40 product line per ECs 018-42794, 018-43569, 018-44097, 018-45275, 018-45338, 018-42385.

The Net Clock Interface NT-40 is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Clock I/F (NT-40)	NT3X76AA		1	X	23	AP
Network Clock I/F (NT-40)	NT3X76AA		1	X+33	23	AP
Desig Label (NT3X76AA)	P0700565		1	X	23	AP
Desig Label (NT3X76AA)	P0700565		1	X+33	23	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ07CA NT-40 Net Clock Circuit Packs can be assigned to card slots where shelf mounting position X= 18 and the other where shelf mounting position X= 32.

RULES:

- AP 1) When PEC NTZZ07CA is ordered, these items are provided.

CABINETIZED DUAL SHELF NETWORK
(MODEL B)

PEC CODE: NTZZ47FB

CPC CODE: B0240385

| RATING: MD. Manufacturer Discontinued

REPLACES: NTZZ47FA

REPLACED BY: Not applicable

ABBREVIATION NAME: CDSN

ENGINEERING DESCRIPTION: The CDSN houses up to two complete networks per plane in a single bay. All connectors to and from the network module are connected through a bulkhead for EMI protection. The CDSN can only be used with a DMS-CORE, connection to NT-40 is not supported. Personality plates are Always Provided with the cabinet.

REFERENCE DOCUMENTATION: SLRX35CA 01 01
MSRX35CA 01 01
ADRX35CA 01 01

MARKETS: Applicable markets:

US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Gary Baum Dept. 3471 (PPK)

MAIN CONTACT: NTI: Lily Ahluwalia Dept. 3471 (PPK)

NTZZ47FB EMC3-01-DSN-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 11	ECM 683 03	Introduces the NTZZ47FB CDSN Cabinet.
94 08 04	ECM 683 07	Change NTRX25AA to AP-01
94 09 27	ECM 683 09	DSN will not be in Model B
94 12 09	ECM 683 13	MD per EC 018-43989

The Cabinetized Dual Shelf Network (Model B) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cabinet Dual Shelf Network C28 Cabinet Mechanicals	NTRX35CA NTRX25AA	CDSN	1			AP AP-01
2" Filler Plate	P0684448		1	65		AP-01
CDSN Mod Supervisory Panel	NTRX3546	MSP	1	61		AP
Alarm Module	NTRX41AA		1	61	5-6	AP-01
Thermal Breaker Module	NTRX43AA		1	61	7	AP-01
Breaker Module (10A)	NTRX42AA		2	61	8,9	AP-01
Quad Blank Panel 4.80"	P0734474		5	61	1-4, 10-13, 14-17, 10R-13R, 14R-17R	AP-01
Single Blank Panel 1.20"	P0734476		5	61	18 1R, 3R, 18R, 20R	AP-01
Terminal Block Assy 6X3	P0737547		1	61	2R	AP-01
Terminal Block Assy 4X4	P0737326		1	61	4R	AP-01
Filler Faceplates	NT6X02AB			47,19		RUL1
Network Module Shelf Assy	NT8X1101	NET0:1	1	47		AP-01
Network Port CP	NT8X12AA			47	01-04	RUL2
Desig. Label for NT8X12AA	P0654992			47	01-04	RUL2
Filler Face Plate 0.875	NT0X50AA			47	01-04	RUL2
Network P-Side Msg Processor	NT3X75BA			47	19	RUL3
Desig. Label for NT3X75BA	P0700564			47	19	RUL3
Network P-Side Msg Processor	NT3X75BB			47	19	RUL3
Desig. Label for NT3X75BB	P0703468			47	19	RUL3
Network Module Shelf Assy	NT8X1101	NET1:1	1	19		AP-01
Network Common CP (48V)	NTZZ07RA			19		RUL2
Network Common CP (48V Intl)	NTZZ07SA			19		RUL2
Network Port CP	NT8X12AA			19	01-04	RUL2
Desig. Label for NT8X12AA	P0654992			19	01-04	RUL2
Filler Face Plate 0.875	NT0X50AA			19	01-04	RUL2
Network P-Side Msg Processor	NT3X75BA			19	19	RUL3
Desig. Label for NT3X75BA	P0700564			19	19	RUL3
Network P-Side Msg Processor	NT3X75BB			19	19	RUL3
Desig. Label for NT3X75BB	P0703468			19	19	RUL3
Network Module Shelf Assy	NT8X1101	NET0:0	1	33		AP-01
Network Port CP	NT8X12AA			33	01-04	RUL2
Desig. Label for NT8X12AA	P0654992			33	01-04	RUL2
Filler Face Plate 0.875	NT0X50AA			33	01-04	RUL2

Retired Equipment
Cabinetized Dual Shelf Network
(Model B)

NTZZ47FB
EMC3-01-DSN-1
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network P-Side Msg Processor	NT3X75BA			33	19	RUL3
Desig. Label for NT3X75BA	P0700564			33	19	RUL3
Network P-Side Msg Processor	NT3X75BB			33	19	RUL3
Desig. Label for NT3X75BB	P0703468			33	19	RUL3
Network Module Shelf Assy	NT8X1101	NET1:0	1	05		AP-01
Network Common CP (48V)	NTZZ07RA			05		RUL2
Network Common CP (48V Intl)	NTZZ07SA			05		RUL2
Network Port CP	NT8X12AA			05	01-04	RUL2
Desig. Label for NT8X12AA	P0654992			05	01-04	RUL2
Filler Face Plate 0.875	NT0X50AA			05	01-04	RUL2
Network P-Side Msg Processor	NT3X75BA			05	19	RUL3
Desig. Label for NT3X75BA	P0700564			05	19	RUL3
Network P-Side Msg Processor	NT3X75BB			05	19	RUL3
Desig. Label for NT3X75BB	P0703468			05	19	RUL3
Cable Assembly	NT8X1001					RUL4
Cable Assembly	NT8X1002					RUL4
Cable Assembly	NT8X1104					RUL4
Personality Plate	P0730029		4	47, 33, 19, 05		AP-01
37 Pin Cover Plate	P0715774			47, 33, 19, 05		RUL5
Screws	P0670923			47, 33, 19, 05		RUL5
CDSN Transmit Cable Assy	NTRX3536			47, 33, 19, 05		RUL5
CDSN Receive Cable Assy	NTRX3537			47, 33, 19, 05		RUL5
Cooling Unit	NTRX92AA	CU	1	00		AP
Fan Power Control Module	NTRX54BA		1			AP
Designation Label	P0741680		1			AP
External Filter Power Kit	NTRX35MG					RUL6
Horizontal Power Kit	NTRX35MF					RUL6
English Label Kit	NTRX3541					RUL7
C28 Cabinet Mechanicals	NTRX25AA					NOTE5
Cabinet Power and Grounding	NTZX16CA					NOTE6
Door and eqp labels	MS0X60AA					NOTE7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ47FB is a single bay dual plane cabinet comprising four (4) separate Network Modules (NM), two (2) for plane 0 and two (2) for plane 1. The lower numbered NM is located on pos 33 designated as plane 0 and located on pos 05 designated as plane 1. The higher numbered NM is located on pos 47 designated as plane 0 and located on pos 19 designated as plane 1. The MSP is common to both planes.
- 2) Each NM can terminate sixty-four (64) speech links originating from peripheral modules/SLC cabinet.
- 3) In the ABBR column, the following notation applies:

NET0:1 - Network Plane 0 for NM 1
NET1:1 - Network Plane 1 for NM 1
NET0:0 - Network Plane 0 for NM 0
NET1:0 - Network Plane 1 for NM 0
- 4) The CDSN is always equipped with four (4) network shelves. Only circuit packs are provisionable.
- 5) The NTZZ47FB has system level provisionable items covering the following:
 - * Seismic Zone provisioning
 - * Grounding options provisioning
 - * Cable routing options provisioning

- * Cabinet Fail Lamp provisioning

- * Cabinet door provisioning

For details of the above refer to Engineering Manual Section NTRX25AA, C28 Cabinet Mechanical Assembly.

6) For power and grounding information refer to Engineering Manual Section for NTZX16CA Cabinetized Power and Grounding.

7) Refer to MS0X60AA for equipment labeling.

RULES:

AP 1) When PEC NTZZ47FB is ordered, these items are provided.

AP-01 1) This PEC is always provided on the NTRX35CA cabinet and is shown here for completeness.

RUL1 1) Provide one (1) NT6X02AB Filler Faceplates for position 47 and position 19, when this cabinet is equipped with one (1) Network Module per plane.

- RUL2 1) Provide the Network Common CP Kit and the Network Port CP as per Table A for Network Modules NON-junctored at the CDNI. There are two choices for the Network Common CP Kit: 48V and 48V International.

TABLE A

	NTZZ07RA or NTZZ07SA NETWORK COMMON CP		NT8X12AA NETWORK PORT CP	
	QTY	POSITION	QTY	POSITION
1 Network Module per cab. non-junctored at CDNI (i.e. only 1 CDSN in the office)	1	33: 05:	0	
2 Network Modules per cab. non-junctored at CDNI (i.e. only 1 CDSN in the office)	1	33:	2	33:01-02
		05:	2	05:01-02
	1	47:	2	47:01-02
		19:	2	19:01-02

- 2) Provide the Network Common CP Kit and the Network Port CP as per Table A1 for Network Modules JUNCTORED at the CDNI. There are two choices for the Network Common CP Kit: 48V and 48V International.

TABLE A1

	NTZZ07RA or NTZZ07SA NETWORK COMMON CP		NT8X12AA NETWORK PORT CP	
	QTY	POSITION	QTY	POSITION
1 Network Module per cab. junctored at CDNI (i.e. 3 or more Networks in the office)	1	33: 05:	4 4	33:01-04 05:01-04
2 Network Modules per cab. junctored at CDNI (i.e. 3 or more Networks in the office)	1 1	33: 05: 47: 19:	4 4 4 4	33:01-04 05:01-04 47:01-04 19:01-04

NOTE: "Qty" refers to the number of PECs to order while "Position" refers to the shelf position and card position (Shelf:Card) of the CP.

- 3) In extensions, when converting from one configuration to another, ensure that additional CP's are provided/removed in order to satisfy the final configuration.

- 4) Provide one (1) NT0X50AA, Filler Face Plate, in each unequipped position.

- RUL3 1) Provide one (1) NT3X75BA, Network P-Side Msg Processor Non-ISDN, for card pos 19 when ISDN is not required. Also, provide one (1) designation label.
- 2) Provide one (1) NT3X75BB, Network P-Side Msg Processor ISDN, for card pos 19 when ISDN Fibre Remotes are required. Also, provide one (1) designation label.

RUL4 1) Provide Cable Assemblies NT8X1104, NT8X1001 and NT8X1002 as per Table B:

TABLE B

	NT8X1104		NT8X1001		NT8X1002	
	CABLE ASSEMBLY		CABLE ASSEMBLY		CABLE ASSEMBLY	
	QTY	FROM/TO	QTY	FROM/TO	QTY	FROM/TO
1 Network Module per cab. non-junctored at CDNI (i.e. only 1 network in the office)	1	33:01-33:02	0		0	
	1	33:03-33:04				
	1	05:01-05:02				
	1	05:03-05:04				
2 Network Modules per cab. non-junctored at CDNI (i.e. only 1 CDSN in the office)	1	33:03-33:04	2	05:01-19:02	2	05:01-19:02
	1	05:03-05:04	2	05:02-19:01	2	05:02-19:01
	1	47:03-47:04	2	33:01-47:02	2	33:01-47:02
	1	19:03-19:04	2	33:02-47:01	2	33:02-47:01

NOTE: "Qty" refers to the number of Cable Assemblies to provide while "From/To" refers to the two positions on the cabinet (Shelf Position:Card Position) that are connected via the Cable Assembly.

- 2) In extensions, when converting from one configuration to another, ensure that additional Cable Assemblies are provided/removed in order to satisfy the final configuration.

- RUL5 1) Provide 32 P0715774, 37-Pin Cover Plate, and 64 P0670923, Screw, per Cabinet when non-junctored at the CDNI.
- 2) Provide eight (8) NTRX3536, CDSN Transmit Cable Assembly, and eight (8) NTRX3537, CDSN Receive Cable Assembly, per Network when junctored at the CDNI.
- RUL6 1) Provide one (1) External Power Filter Kit, NTRX35MG, if external (vertical) power arrangement is used.
- 2) Provide one (1) Horizontal Power Kit, NTRX35MF, if horizontal power arrangement is used.
- RUL7 1) Provide one (1) NTRX3541, English Label Kit, per cabinet when CDSN requires English labels.

ENET IN C42 (S/DMS) CABINET

PEC CODE: NTZZ10LB

CPC CODE: B0243007

| RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ10LC

ABBREVIATION NAME: ENC

ENGINEERING DESCRIPTION: The Enhanced Network in S/DMS Cabinet houses up to four (4) Network shelves of one plane. Each shelf provides a nominal Switching capacity of 32 K-channels.

REFERENCE DOCUMENTATION: NTZZ10LB REL 01
SLZZ10LB 00 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTC: Jerry Palmer DEPT. 3471 (PPK)

MAIN CONTACT: NTC: Jerry Palmer DEPT. 3471 (PPK)

NTZZ10LB EMC3-01-NET-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 17	ECM 627 11	New section. Introduce NT9X13KA CPU CP. Added NTZZ10QA Plane 0 Labels and NTZZ10RA Plane 1 Labels. Added Streamline Bulkhead Assembly(NTZZ10PA) Added RUL13 and RUL14 for NTZZ30QA and NTZZ30RA. Correct CPC for EM section per ET22849. Add NT9X13KA designation label per ECD 006-23017. Removed frame fail lamps per ECD 018-45801. Correct power filter label quantity per ET 28109. MD section, replaced by NTZZ10LC.
95 05 19	ECM 627 12	
95 10 31	ECM 627 14	
96 03 18	ECM 627 16	

The Enhanced Network in S/DMS is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
S/DMS Enhanced Network Cab.	NT9X05AC		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
Network Shelf Assy	NT9X0818		1	39		AP-01
+5V 80A Power Converter CP	NT9X30AA		2	39	4F, 36F	AP
-5V 20A Power Converter CP	NT9X31AA		2	39	1F, 33F	AP
CPU CP	NT9X13KA		1	39	7F	AP
Network Clock & Msg CP	NT9X36BA		1	39	8F	AP
Filler Face Plate	NT9X19AA		8	39	17F-24F	AP
16K x 16K Chan Term Xpt CP	NT9X35CA		4	39	9F, 10F, 31F, 32F	AP
Remote Terminal I/F PB	NT9X26AB		1	39	7R	AP
Quad DS-512 Fiber I/F PB	NT9X40BB		1	39	8R	AP
PB Filler Face Plate	NT9X19BA		1	39	9R	AP
PB Filler Face Plate	NT9X19BA		8	39	17R-24R	AP
FSP Term Blk Cover Assembly	A0368392			52		RUL1
Network Shelf Assy Pkg	NTZZ10BB			00, 13, 26		RUL1
Blank Shelf Assembly	NT0X24BD			00, 13, 26		RUL1
Enhanced Network Shelf Assy	NT9X0818	ENET		00, 13, 26		RUL1
Filler Packfill	NT9X01FB			00, 13, 26		RUL1
Screws & Washers	P097F813			00, 13, 26		RUL1
	P0284154					RUL1
	P0183220					RUL1
16K x 16K Chan Term Xpt CP	NTZZ10JA			00, 13, 26	10F	RUL2
16K x 16K Chan Xpt CP	NTZZ10KA			XX	11-16, 25-30F	RUL2
Filler Face Plate	NT9X19AA			XX	10F-16F 25F-32F	RUL3
DS-30 Interface Assembly	NTZZ10GA			XX	10R-16R 25R-32R	RUL5
Quad DS-512 Fiber I/F PB	NTZZ10HA			XX	10R-16R 25R-32R	RUL4
PB Filler Face Plate	NT9X19BA			XX	10R-16R 25R-32R	RUL6
96 DS-30 Bulkhead Assembly	NTZZ10DA			XX		RUL7
224 DS-30 Bulkhead Assembly	NTZZ10EA			XX		RUL7
Fiber Bulkhead Assembly	NTZZ10FA			XX		RUL7
Streamline Bulkhead Assy	NTZZ10PA			XX		RUL7
3 DS-512/16 DS-30 I/F PB	NTZZ10MA			XX	10R-16R 25R-32R	RUL8
Terminal Block Des.Strip	P0732511		1			RUL10
Power Filter Label	P0732513		1			RUL10
Horizontal Power Cab.kit	NT9X9531		1			RUL11

Retired Equipment
ENET in C42 (S/DMS) CABINET

NTZZ10LB
EMC3-01-NET-6
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(for Cabinetized Appl.) Stand-alone Power Cab. kit (for non-Cabinetized Appl.)	NT9X9532		1			RUL11
ENET Plane 0 Shelf Labels	NTZZ10QA		1	39		RUL13
ENET Plane 1 Shelf Labels	NTZZ10RA		1	39		RUL14
Optical Fiber Label	P0736273		1	39		AP
DES LABEL (NT9X13KA)	P0814664		1	39		AP
DES LABEL (NT9X36BA)	P0704531		1	39	8F	AP
DES LABEL (NT9X35CA)	P0704533		4	39	9F, 10F 31F, 32F	AP
DES LABEL (NT9X26AB)	P0705003		1	39	7R	AP
DES LABEL (NT9X40BB)	P0734155		1	39	8R	AP
ESP Ground Terminator Assy.	NT9X0324		1			RUL12
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE2
Cooling Unit	NT9X95CU		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) XX can be one of 00, 13, 26, and 39.
- 2) Refer to NT9X95BA (EMA4-07-001) for additional mechanical
hardware requirements for C42 Cabinet.

- 3) The NT9X13KA CPU CP requires NA004 software.

RULES:

- AP 1) When PEC NTZZ10LB is ordered, these items are provided.
- 2) The NT9X95BA contains the NT9X9575 Cabinet Framework.
- The NT9X9575 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 (S/DMS) Cabinet.
- AP-01 1) This PEC is always provided on the NT9X05AC and is shown herein for completeness.
- RUL1 1) Provide one (1) NTZZ10BB, Network Shelf Assy Pkg, for each additional network shelf required. The first shelf at position 39 is always provided to the cabinet. Assign the NTZZ10BA to positions 26,13,00 as required.
- (OR)
- 2) Provide one (1) NT0X24BD Blank Shelf Assy for each unequipped position 26, 13, and 00, to satisfy the forced air cooling requirements of the cabinet,
- (OR)
- 3) Provide one (1) NT9X01FB Filler Packfill per each enhanced network shelf assembly when shelf is not equipped with circuit packs. Note, you require NT9X0818 Network shelf assembly to mount the filler packfill(NT9X01FB) in ENET shelves. Provide four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 locker washer per Enhanced Network shelf assembly.
- 4) A fully equipped cabinet (i.e. four (4) shelves) has the capacity of up to 128K channels. Each shelf provides the switching for speech links interfacing up to 15 I/F PB.
- 5) For applications outside of North America, provide (1) FSP Terminal Block Cover Assembly for each ENET Cabinet.

- RUL2 1) Assign the first twelve (12) NTZZ10KA, 16K x 16K Chan Xpt CP, on the first shelf to adjacent slot pairs in the following order: (30F-29F), (12F-11F), (28F-27F), (14F-13F), (26F-25F), (16F-15F).
- 2) In subsequent shelves the Cross point card is assigned as follows: Assign six (6) NTZZ10KA CP's to odd slots 11F, 13F, 15F, 25F, 27F, and 29F. The next group of seven (7) Cross point CP's are assigned as follows: Assign one (1) NTZZ10JA, 16K x 16K Chan Term Xpt CP, to even numbered slots 10F and 32F. Assign six (6) NTZZ10KA CP's to even slots 12F, 14F, 16F, 26F, 28F, and 30F.
- 3) Assign the CP's on each additional shelf as per 2) above. Fill each shelf before starting the next.
- RUL3 1) Provide one (1) NT9X19AA, CP Filler Face Plate in each slot not equipped with a Circuit Pack to satisfy forced air cooling requirements of the cabinet.
- RUL4 1) Provide one (1) NTZZ10HA Quad DS-512 Fiber Interface for every four (4) DS-512 fiber speech links to be terminated.
- 2) Fiber speech links originate from Series II peripherals (FXPMs)
- 3) Card slot assignment of NTZZ10HA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Card slot assignment for the first shelf is as follows: 10,32,31,30,29,12,11,28,27,14,13,26,25,16,15. The card slot assignment for subsequent shelves is: 31,11,13,15,25,27,29,10,32,12,14, 16,26,28,30.
- RUL5 1) Each NTZZ10GA, DS-30 Interface Assembly, can terminate 16 DS-30 copper speech links or 15 DS-30 message links. Therefore, provide one (1) NTZZ10GA for every 16 DS-30 copper speech links or 15 single port PMs (i.e. TMs and MTMs).
- 2) Copper speech links originate from Series I peripherals (DCMs, MTMs, etc) or from non-fiberized Series II peripherals.
- 3) Card slot assignment of NTZZ10GA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Refer to Rule 2 and 5 for complete assignment rules.

- RUL6 1) Provide one (1) NT9X19BA, PB Filler Face Plate in each slot not equipped with a NTZZ10GA or NTZZ10HA or NTZZ10MA to satisfy the forced air cooling requirements of the cabinet.
- RUL7 1) Two bulkhead I/F panels are required for each equipped shelf position, one for the left cabinet cable riser and one for the right (cabinet viewed from the rear).
- 2) Provide one (1) NTZZ10FA, Fiber Bulkhead Assembly, if slots 10R-16R and 25R-32R are to be used for fiber interface only. No NT9X41BA/45BA CPs can ever be equipped in these slots.
- 3) If there are up to three (3) NT9X41BA/45BAs per half shelf, provide one (1) NTZZ10DA, 96 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cabled directly to the Series I peripherals. In this case NT9X41BAs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly.
- 4) If there are more than three (3) NT9X41BA/45BAs per half shelf, provide one (1) NTZZ10EA, 224 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cross connected at an SLC. In this case NT9X41BAs are restricted to a maximum of seven (7) per half shelf, or 14 per shelf assembly.
- 5) For Streamline applications only, provision:
one (1) NTZZ10PA Streamline Bulkhead Assembly.
- RUL8 1) Each NTZZ10MA, can terminate 3 DS-512 fiber links and 16 DS-30 copper speech links or 15 DS-30 message links. For Initial and ENET Upgrade (Retrofit) jobs provision NTZZ10MAs for a combination of 16 DS-30 copper and 3 DS-512 fiber links. For any remaining copper and fiber links, default termination to NTZZ10GAs and NTZZ10HAs respectively.
- 2) For ENET installed offices, replace NTZZ10GAs with NTZZ10MAs as many as required on fiber peripheral extensions. Once all NTZZ10GAs are replaced use initial office rules. Note that for offices having excess copper links, give recommendation to the customer to make use of NTZZ10MAs in case of future SERIES II peripheral extensions.
- 3) Note that, offices equipped with NT9X45BA which are in NTZZ10MA BB must have at least BCS33 load.
- RUL9 1) Deleted

- RUL10 1) Provide one (1) P0732511 terminal block designation strip per ENC cabinet when powering the enhanced network cabinet in a streamline lineup.
- 2) Provide one (1) P0732513 power filter label per ENC cabinet when powering the enhanced network cabinet in a stand-alone lineup.
- RUL11 1) Provide one (1) NT9X9532 Vertical (External) Cabling Interface Kit when powering the NT9X05AC cabinet from the 7 foot PDC frame OR powering from the Model B CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X05AC. This kit includes cables, filters, and miscellaneous mounting hardware.
- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X05AC cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X05AC. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL12 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British telephone system.
- RUL13 1) Provide one (1) NTZZ10QA Plane 0 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 0.
- RUL14 1) Provide one (1) NTZZ10RA Plane 1 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 1.

PLANE 0 SHELF LABELS

PEC CODE: NTZZ10QA

CPC CODE:

| RATING: Manufacturer Discontinued

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Plane 0 Shelf Labels are required for each shelf in both the Single and Dual ENET. One set of labels will be required for a shelf. The NTZZ10RA is the equivalent for Plane 1.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTC: Jerry Palmer DEPT. 3471 (PPK)

MAIN CONTACT: NTC: Jerry Palmer DEPT. 3471 (PPK)

NTZZ10QA EMC3-01-NET-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 17	ECM 627 11	Initial release of section.
96 03 08	ECM 635 17	MD section, not required for function.

The Plane 0 Shelf Labels is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Front Top Desig. label (Plane 0) Label	P0743011		1	XX		AP
Rear Shelf Desig. Label	P0704530		1	XX		AP
Shelf Strip Rear Top (Plane 0)	P0743005		1	XX		AP
Front Bottom Shelf (Plane 0) Label	P0743003		1	XX		AP
Rear Bottom Shelf (Plane 0) Label	P0743009		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

NOTE: 1) XX can be one of 00, 13, 26, or 39.

RULES:

AP 1) When PEC NTZZ10QA is ordered, these items are provided.

PLANE 1 SHELF LABELS

PEC CODE: NTZZ10RA

CPC CODE:

| RATING: Manufacturer Discontinued

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The Plane 1 Shelf Labels are required for each shelf in both the Single and Dual ENET. One set of labels will be required for a shelf. The NTZZ10QA is the equivalent for Plane 0.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTC: Jerry Palmer DEPT. 3471 (PPK)

MAIN CONTACT: NTC: Jerry Palmer DEPT. 3471 (PPK)

NTZZ10RA EMC3-01-NET-9 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 17	ECM 627 11	Initial release of section.
96 03 08	ECM 635 17	MD section, not required as a function

The Plane 1 Shelf Labels is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Front Shelf Desig. label (Plane 1) Label	P0743012		1	XX		AP
Rear Shelf Desig. Label	P0704530		1	XX		AP
Shelf Strip Rear Top (Plane 1)	P0743006		1	XX		AP
Front Bottom Shelf (Plane 1) Label	P0743004		1	XX		AP
Rear Bottom Shelf (Plane 1) Label	P0743010		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

NOTE: 1) XX can be one of 00, 13, 26, or 39.

RULES:

AP 1) When PEC NTZZ10RA is ordered, these items are provided.

SPEECH LINK CONNECTING CABINET - MODEL B

PEC CODE: NTZZ47HA

CPC CODE: B0237892

| RATING: MD

REPLACES: Not applicable

| REPLACED BY: NTZZ47HB

ABBREVIATION NAME: CSLC

ENGINEERING DESCRIPTION: The NTZZ47HA provides a patch cord cross-connecting facility in the speech links between the Peripheral and Network subsystems. The network interface ports of the peripheral equipment terminate on Peripheral Speech Link Connecting panels (PSL) while the peripheral face ports of the network modules terminate on Network Speech Link Connecting panels (NSL). Connectorized patch cords complete the interconnections between ports of the two groups. The CSLC is equipped with an EMI cabinet.

REFERENCE DOCUMENTATION: SLZZ47HA 00 01
NTZZ47HA REL 01

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: James Marsden Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ47HA EMC3-01-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 11 16	----- ECM 683 01	Previous history not available Introduce the Speech Link Connector Cabinet for Model B.
94 03 11	ECM 683 03	Cancelled
94 08 04	ECM 683 07	Correction to rating

The Speech Link Connecting Cabinet - Model B is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Speech Link Conn Cabinet	NTRX37CA	CSLC	1			AP
Network Speech Lnk Pan Kit	NTZZ21EM	NSLK		XX		RUL1
Periph. Speech Lnk Pan Kit	NTZZ21FA	PSLK		XX		RUL2
Speech Link Patch Cords	AR					RUL3
Digital Net Junctor Cntg Pnl	AR	NJCK		XX		RUL4
Personality Plate Right	P0730031			47,33,19,05		RUL5
Personality Plate Left	P0730032			47,33,19,05		RUL5
Personality Plate Blank	P0715616			47,33,19,05		RUL5
37 Pin Connector Covers	P0715774					RUL5
Cover Mounting Screw	P0670923					RUL5
Designation Label	P0664840		4			AP
ESD Bonding Label	P0726543		4			AP
Door Kit (Center Latch) Grey	NTRX2568		1			AP
Door Label	P0726705		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" can be one of 58, 51, 44, 37, 30, 23, 16, & 09 for NSL panels and 54, 47, 40, 33, 26, 19, 12, & 05 for PSL panels. "XX" can be any of these shelf position for all other equipment.
- 2) For offices whose ultimate size will not exceed four (4) NET per plane and depending on the ratio of PSL to NSL panel quantities, speech link panels of both planes may be combined on the same SLC. However, this is not recommended and should be considered only if floor space for the second SLC is not available. Plane 0 shelf positions are 58, 54, 51, 47, 44, 40, 37 and 33. Plane 1 shelf positions are 30, 26, 23, 19, 16, 12, 09 and 05.
- 3) The CSLC Cabinet has designated fixed positions for mounting the NSL and PSL panels. The panels shall be mounted starting from the top of the cabinet and working down. The specific mounting positions are as follows:

Panel Type	PEC	Cabinet Mounting Positions
NSL	NTZZ21EM	58,51,44,37,30,23,16,09
PSL	NTZZ21FA	54,47,40,33,26,19,12,05

- 4) Each Speech Link Connecting Cabinet can accommodate up to 16 PSL plus NSL panels. However, in order to ensure easy access to all panels and to limit cabling congestion it is recommended that one (1) CSLC be provided per eight (8) Network Modules in each plane. The number of vacant panel positions in the cabinet will depend on the total NET count and on the ratio of PSL to NSL panel quantities.
- 5) This PEC has system level provisionable items covering the following:
 - :ul :li Siesmic Zone provisioning
 - :li Grounding options provisioning
 - :li Cable routing options provisioning
 - :eul

For details of the above refer to EMA15-05-SYS-1 Cabinetization Model B System.

RULES:

- AP 1) When PEC NTZZ47HA is ordered, these items are provided.

- AP-01 1) When PEC NTRX37CA is ordered, these items are provided.
- RUL1 1) One NSLK can terminate all the speech links from one Network Module (NM).
- 2) Provide two (2) Network Speech Link (NSLK) Panels, NTZZ21EM, for each network (i.e. one per network plane) provided on Cabinetized Double Shelf Network CDSN). On a fully equipped CDSN (equipped with two (2) networks) provide four (4) NSL panels.
- RUL2 1) Provide two (2) Peripheral Speech Link (PSLK) Panels, NTZZ21FA, one per plane, for every eight units of peripheral equipment type CTME or every four units of peripheral equipment type CDTE, CLGE, CLTE, or CSME.
- 2) For ease of office administration, separate PSL can be used to segregate Cable Groups according to originating peripheral type.
- 3) Note that on the NT0X56BC patch panel, port 04 is not used for every cable group and two of the original five port cable groups are combined into one eight port cable group.
- 4) Peripheral types, TM, MTM, OAU and TAN utilize just one port per module per plane and therefore are not assigned individual Cable Groups. Instead modules on a given cabinet share a common Cable Group associated with that cabinet which gets cabled to the CSLC. Note that peripheral modules of this type use only ports 0-3 of the combined eight port cable group. Ports 4-7 are unavailable.
- RUL3 1) Speech link patch cords are selected according to the running distance between the two ports which are to be interconnected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following speech link patch cords are required when cross connecting between NSL panels NT0X56BB and PSL panels NT0X56BC:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	W	NE-P4QDK	A0289611
3.0	.91	Y	NE-P4QDL	A0289612
4.0	1.22	O	NE-P4QDM	A0289613
5.0	1.52	R	NE-P4QDN	A0289614
6.5	1.98	G	NE-P4QDP	A0289615
8.0	2.44	BR	NE-P4QDR	A0289616
10.0	3.05	W	NE-P4QDS	A0289617
15.0	4.57	Y	NE-P4QDT	A0289618
20.0	6.10	O	NE-P4QDU	A0289619
25.0	7.62	R	NE-P4QDW	A0289620
30.0	9.14	G	NE-P4QDX	A0289621

RUL4 1) Digital Network Junctor Connecting Panels (NJC) may be provided on the CSLC frame. For assignment rules related to NJC, refer to NTZZ47JA. This configuration is not recommended.

RUL5 1) Provide Personality Plates, 37-Pin Cover Plates, and Cover Mounting Hardware per cabinet as follows:

GR = Greater of NSL or PSL panels

PP = $GR/2$ {SINGLE PLANE CABINET}
(No. of Personality Plates per side :
P0730031 & P0730032)

or

PP = $(GR/4) \times 2$ {COMBINED PLANE CABINET}
(No. of Personality Plates per side :
P0730031 & P0730032)

BP = $4 - PP$
(No. of Blank Personality Plates per side :
P0715616)

CV = $((PP \times 4) - (NSL + PSL)) \times 8$
(Total No. 37-Pin Cover Plates : P0715774)

HW = $CV \times 2$
(Total No. Cover Mounting Hardware : P0670923)

SPEECH LINK CONNECTING CABINET - MODEL B

PEC CODE: NTZZ47HB

CPC CODE: B0224533

| RATING: MD. Manufacturer Discontinued

REPLACES: NTZZ47HA

REPLACED BY: Not applicable

ABBREVIATION NAME: CSLC

ENGINEERING DESCRIPTION: The NTZZ47HB provides a patch cord cross-connecting facility in the speech links between the Peripheral and Network subsystems. The network interface ports of the peripheral equipment terminate on Peripheral Speech Link Connecting panels (PSL) while the peripheral face ports of the network modules terminate on Network Speech Link Connecting panels (NSL). Connectorized patch cords complete the interconnections between ports of the two groups. The CSLC is equipped with an EMI cabinet.

REFERENCE DOCUMENTATION: SLZZ47HB 00 01
NTZZ47HB REL 01

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Gary Baum Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ47HB EMC3-01-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 03 11	ECM 683 03	Introduce the Speech Link Connector Cabinet for Model B.
94 08 04	ECM 683 07	Change NTRX25AA to AP-01 and correct clerical errors
94 09 27	ECM 683 09	DSN will not be in Model B
94 12 09	ECM 683 13	MD per EC 018-43989

The Speech Link Connecting Cabinet - Model B is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Speech Link Conn Cabinet C28 Cabinet Mechanicals	NTRX37CA NTRX25AA	CSLC	1			AP AP-01
Network Speech Lnk Pan Kit	NTZZ21EM	NSLK		XX		RUL1
Periph. Speech Lnk Pan Kit	NTZZ21FA	PSLK		XX		RUL2
Speech Link Patch Cords	AR					RUL3
Digital Net Junctor Cntg Pnl	AR	NJCK		XX		RUL4
Personality Plate Right	P0730031			47,33,19,05		RUL5
Personality Plate Left	P0730032			47,33,19,05		RUL5
Personality Plate Blank	P0715616			47,33,19,05		RUL5
37 Pin Connector Covers	P0715774					RUL5
Cover Mounting Screw	P0670923					RUL5
Designation Label	P0664840		4			AP
ESD Bonding Label	P0726543		4			AP
C28 Cabinet Mechanicals	NTRX25AA					NOTE5
Cabinet Power and Grounding	NTZX16CA					NOTE6
Door and eqp labels	MS0X60AA					NOTE7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" can be one of 58, 51, 44, 37, 30, 23, 16, & 09 for NSL panels and 54, 47, 40, 33, 26, 19, 12, & 05 for PSL panels. "XX" can be any of these shelf position for all other equipment.
- 2) For offices whose ultimate size will not exceed four (4) NET per plane and depending on the ratio of PSL to NSL panel quantities, speech link panels of both planes may be combined on the same SLC. However, this is not recommended and should be considered only if floor space for the second SLC is not available. Plane 0 shelf positions are 58, 54, 51, 47, 44, 40, 37 and 33. Plane 1 shelf positions are 30, 26, 23, 19, 16, 12, 09 and 05.
- 3) The CSLC Cabinet has designated fixed positions for mounting the NSL and PSL panels. The panels shall be mounted starting from the top of the cabinet and working down. The specific mounting positions are as follows:

Panel Type	PEC	Cabinet Mounting Positions
NSL	NTZZ21EM	58,51,44,37,30,23,16,09
PSL	NTZZ21FA	54,47,40,33,26,19,12,05

- 4) Each Speech Link Connecting Cabinet can accommodate up to 16 PSL plus NSL panels. However, in order to ensure easy access to all panels and to limit cabling congestion it is recommended that one (1) CSLC be provided per eight (8) Network Modules in each plane. The number of vacant panel positions in the cabinet will depend on the total NET count and on the ratio of PSL to NSL panel quantities.
- 5) The NTZZ47HB CSLC has system level provisionable items covering the following:
 - * Seismic Zone provisioning
 - * Grounding options provisioning
 - * Cable routing options provisioning
 - * Cabinet Fail Lamp provisioning
 - * Cabinet door provisioning

For details of the above refer to Engineering Manual Section NTRX25AA, C28 Cabinet Mechanical Assembly.

- 6) For power and grounding information refer to Engineering Manual Section for NTZX16CA Cabinetized Power and Grounding.
- 7) Refer to MS0X60AA for equipment labeling.

RULES:

- AP 1) When PEC NTZZ47HB is ordered, these items are provided.
- AP-01 1) When PEC NTRX37CA is ordered, these items are provided for completeness
- RUL1 1) One NSLK can terminate all the speech links from one Network Module (NM).
- 2) Provide two (2) Network Speech Link (NSLK) Panels, NTZZ21EM, for each network (i.e. one per network plane) provided on Cabinetized Double Shelf Network CDSN). On a fully equipped CDSN (equipped with two (2) networks) provide four (4) NSL panels.
- RUL2 1) Provide two (2) Peripheral Speech Link (PSLK) Panels, NTZZ21FA, one per plane, for every eight units of peripheral equipment type CTME or every four units of peripheral equipment type CDTE, CLGE, CLTE, or CSME.
- 2) For ease of office administration, separate PSL can be used to segregate Cable Groups according to originating peripheral type.
- 3) Note that on the NT0X56BC patch panel, port 04 is not used for every cable group and two of the original five port cable groups are combined into one eight port cable group.
- 4) Peripheral types, TM, MTM, OAU and TAN utilize just one port per module per plane and therefore are not assigned individual Cable Groups. Instead modules on a given cabinet share a common Cable Group associated with that cabinet which gets cabled to the CSLC. Note that peripheral modules of this type use only ports 0-3 of the combined eight port cable group. Ports 4-7 are unavailable.

- RUL3 1) Speech link patch cords are selected according to the running distance between the two ports which are to be inter-connected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following speech link patch cords are required when cross connecting between NSL panels NT0X56BB and PSL panels NT0X56BC:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	W	NE-P4QDK	A0289611
3.0	.91	Y	NE-P4QDL	A0289612
4.0	1.22	O	NE-P4QDM	A0289613
5.0	1.52	R	NE-P4QDN	A0289614
6.5	1.98	G	NE-P4QDP	A0289615
8.0	2.44	BR	NE-P4QDR	A0289616
10.0	3.05	W	NE-P4QDS	A0289617
15.0	4.57	Y	NE-P4QDT	A0289618
20.0	6.10	O	NE-P4QDU	A0289619
25.0	7.62	R	NE-P4QDW	A0289620
30.0	9.14	G	NE-P4QDX	A0289621

- RUL4 1) Digital Network Junctor Connecting Panels (NJC) may be provided on the CSLC frame. For assignment rules related to NJC, refer to NTZZ47JA. This configuration is not recommended.

- RUL5 1) Provide Personality Plates, 37-Pin Cover Plates, and Cover Mounting Hardware per cabinet as follows:

GR = Greater of NSL or PSL panels

PP = $GR/2$ {SINGLE PLANE CABINET}
(No. of Personality Plates per side :
P0730031 & P0730032)

or

PP = $(GR/4) \times 2$ {COMBINED PLANE CABINET}
(No. of Personality Plates per side :
P0730031 & P0730032)

BP = 4 - PP
(No. of Blank Personality Plates per side :
P0715616)

CV = ((PP x 4) - (NSL + PSL)) x 8
(Total No. 37-Pin Cover Plates : P0715774)

HW = CV x 2
(Total No. Cover Mounting Hardware : P0670923)

DIGITAL NETWORK INTERCONNECT CABINET - MODEL B

PEC CODE: NTZZ47JA

CPC CODE: B0237891

| RATING: MD

REPLACES: Not applicable

| REPLACED BY: NTZZ47JB

ABBREVIATION NAME: CDNI

ENGINEERING DESCRIPTION: The NTZZ47JA provides a patch cord junctor cross-connect facility for interconnecting between the network junctor face ports of Network Modules in the same plane. The CDNI is packaged in an EMI cabinet.

REFERENCE DOCUMENTATION: SLZZ47JA 00 01
NTZZ47JA REL 01

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: James Marsden Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ47JA EMC3-02-NET-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	Introduce the Digital Network Interconnect Cabinet for Model B.
94 03 11	ECM 683 03	Cancelled
94 08 04	ECM 683 07	Correction to rating

The Digital Network Connecting Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dgtl Net Conn Cabinet	NTRX38CA	CDNIB	1			AP
Dgtl Net Jntr Cntg Pnl Kit	NTZZ21FM	NJCK		XX		RUL1
Junctor Patch Cords	AR					RUL2
Personality Plate Right	P0715596			47, 33, 19, 05		RUL3
Personality Plate Left	P0730030			47, 33, 19, 05		RUL3
Personality Plate Blank	P0715616			47, 33, 19, 05		RUL3
37 pin Cover Plate	P0715774					RUL3
Mounting Screw	P0670923					RUL3
Designation Label	P0664840		4			AP
ESD Bonding Label	P0726543		4			AP
Door Kit (Center Latch) Grey	NTRX2568		1			AP
Door Label	P0726704		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The CDNI provides space to mount a maximum of 16 digital network junctor connecting panels (NJC).

- 2) "XX" can be one of 58, 54, 51, 47, 44, 40, 37, 33, 30, 26, 23, 19, 16, 12, 09, 05.
- 3) For small offices plane 0 and 1 may be combined within the same cabinet. Plane 0 shelf positions are 58, 54, 51, 47, 44, 40, 37 and 33. Plane 1 shelf positions are 30, 26, 23, 19, 16, 12, 09 and 05.
- 4) One CDNI cabinet is required for each 16 Network Modules (NM) per plane with the following exceptions:
 - a) For offices whose ultimate network size will not exceed 8 networks per plane and where floor space is at a premium, junctors of both planes may be combined on the same CDNI cabinet.
- 5) Maximum four (4) CDNI cabinets per system.
- 6) For networks consisting of fewer than three modules duplicated, the DNI cabinet and panel is not required as junctoring is achieved by direct cabling between the Network Module shelves.
- 7) The NTZZ47JA CDNI has system level provisionable items covering the following:
 - :ul :li Siesmic Zone provisioning :li
 - Grounding options provisioning :li Cable routing options provisioning :eul

RULES:

- AP 1) When PEC NTZZ47JA is ordered, these items are provided.
- AP-01 1) When PEC NTRX38CA is ordered, these items are provided.
- RUL1 1) Provide one (1) Network Junctor Connecting Panel Kits, NT0X18DD, per network plane.
- RUL2 1) Junctor patch cords are selected according to the running distance between the two ports which are to be interconnected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18DB/DC/DD and NJC panels NT0X18DB/DC/DD:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	BK-W	NE-P4QDY	A0289622
3.0	.91	BK-Y	NE-P4QEA	A0289623
4.0	1.22	BK-O	NE-P4QEB	A0289624
5.0	1.52	BK-R	NE-P4QEC	A0289625
6.5	1.98	BK-G	NE-P4QED	A0289626
8.0	2.44	BK-BR	NE-P4QEE	A0289627
10.0	3.05	BK-W	NE-P4QEF	A0289628
15.0	4.57	BK-Y	NE-P4QEG	A0289629

- RUL3 1) Provide Personality Plates, 37-Pin Connector Covers, and Mounting screws per cabinet as follows:

PP = NJC/4 {SINGLE PLANE CABINETS}
(No. of Personality Plates per side :
P0715596 & P0730030)

or

PP = (NJC/8) x 2 {COMBINED PLANE CABINETS}
(No. of Personality Plates per side :
P0715596 & P0730030)

BP = 4 - PP
(No. of Blank Personality Plates per side :
P0715616)

CV = ((PP x 4) - (NJC)) x 8
(Total No. 37-Pin Cover Plates : P0715774)

HW = CV x 2
(Total No. Cover Mounting Hardware : P0670923)

DIGITAL NETWORK INTERCONNECT CABINET - MODEL B

PEC CODE: NTZZ47JB

CPC CODE: B0224534

| RATING: MD. Manufacturer Discontinued

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: CDNI

ENGINEERING DESCRIPTION: The NTZZ47JB provides a patch cord junctor cross-connect facility for interconnecting between the network junctor face ports of Network Modules in the same plane. The CDNI is packaged in an EMI cabinet.

REFERENCE DOCUMENTATION: SLZZ47JB 00 01
NTZZ47JB REL 01

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Gary Baum Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ47JB EMC3-02-NET-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 11	ECM 683 03	Introduce the Digital Network Interconnect Cabinet for Model B. Change NTRX25AA to AP-01 and correct clerical errors DSN will not be in Model B MD per EC 018-43989
94 08 04	ECM 683 07	
94 09 27	ECM 683 09	
94 12 09	ECM 683 13	

The Digital Network Connecting Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dgtl Net Conn Cabinet C28 Cabinet Mechanicals	NTRX38CA NTRX25AA	CDNIB	1			AP AP-01
Dgtl Net Jntr Cntg Pnl Kit	NTZZ21FM	NJCK		XX		RUL1
Junctor Patch Cords	AR					RUL2
Personality Plate Right	P0715596			47,33,19,05		RUL3
Personality Plate Left	P0730030			47,33,19,05		RUL3
Personality Plate Blank	P0715616			47,33,19,05		RUL3
37 pin Cover Plate	P0715774					RUL3
Mounting Screw	P0670923					RUL3
Designation Label	P0664840		4			AP
ESD Bonding Label	P0726543		4			AP
C28 Cabinet Mechanicals	NTRX25AA					NOTE7
Cabinet Power and Grounding	NTZX16CA					NOTE8
Door and eqp labels	MS0X60AA					NOTE9

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The CDNI provides space to mount a maximum of 16 digital network junctor connecting panels (NJC).

- 2) "XX" can be one of 58, 54, 51, 47, 44, 40, 37, 33, 30, 26, 23, 19, 16, 12, 09, 05.
- 3) For small offices plane 0 and 1 may be combined within the same cabinet. Plane 0 shelf positions are 58, 54, 51, 47, 44, 40, 37 and 33. Plane 1 shelf positions are 30, 26, 23, 19, 16, 12, 09 and 05.
- 4) One CDNI cabinet is required for each 16 Network Modules (NM) per plane with the following exceptions:
 - a) For offices whose ultimate network size will not exceed 8 networks per plane and where floor space is at a premium, junctors of both planes may be combined on the same CDNI cabinet.
- 5) Maximum four (4) CDNI cabinets per system.
- 6) For networks consisting of fewer than three modules duplicated, the DNI cabinet and panel is not required as junctoring is achieved by direct cabling between the Network Module shelves.
- 7) The NTZZ47JB CDNI has system level provisionable items covering the following:
 - * Seismic Zone provisioning
 - * Grounding options provisioning
 - * Cable routing options provisioning
 - * Cabinet Fail Lamp provisioning
 - * Cabinet door provisioning

For details of the above refer to Engineering Manual Section NTRX25AA, C28 Cabinet Mechanical Assembly.

- 8) For power and grounding information refer to Engineering Manual Section for NTZX16CA Cabinetized Power and Grounding.
- 9) Refer to MS0X60AA for equipment labeling.

RULES:

- AP 1) When PEC NTZZ47JB is ordered, these items are provided.
- AP-01 1) When PEC NTRX38CA is ordered, these items are provided and are shown here for completeness.
- RUL1 1) Provide one (1) Network Junctor Connecting Panel Kits, NT0X18DD, per network plane.
- RUL2 1) Junctor patch cords are selected according to the running distance between the two ports which are to be interconnected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18DB/DC/DD and NJC panels NT0X18DB/DC/DD:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	BK-W	NE-P4QDY	A0289622
3.0	.91	BK-Y	NE-P4QEA	A0289623
4.0	1.22	BK-O	NE-P4QEB	A0289624
5.0	1.52	BK-R	NE-P4QEC	A0289625
6.5	1.98	BK-G	NE-P4QED	A0289626
8.0	2.44	BK-BR	NE-P4QEE	A0289627
10.0	3.05	BK-W	NE-P4QEF	A0289628
15.0	4.57	BK-Y	NE-P4QEG	A0289629

- RUL3 1) Provide Personality Plates, 37-Pin Connector Covers, and Mounting screws per cabinet as follows:

PP = NJC/4 {SINGLE PLANE CABINETS}
(No. of Personality Plates per side :
P0715596 & P0730030)

or

PP = (NJC/8) x 2 {COMBINED PLANE CABINETS}
(No. of Personality Plates per side :
P0715596 & P0730030)

BP = 4 - PP
(No. of Blank Personality Plates per side :
P0715616)

CV = ((PP x 4) - (NJC)) x 8
(Total No. 37-Pin Cover Plates : P0715774)

HW = CV x 2
(Total No. Cover Mounting Hardware : P0670923)

DOUBLE SHELF NETWORK EQUIPMENT FRAME (US)

PEC CODE: NTZZ07EA

CPC CODE: B0232895

| RATING: MD

REPLACES: Not applicable

| REPLACED BY: NTZZ07AA

ABBREVIATION NAME: DSNE

ENGINEERING DESCRIPTION: The DSNE houses up to two complete networks per plane in a single bay. This Building Block is for US applications only.REFERENCE DOCUMENTATION: SLZZ07EA 00 01
NTZZ07EA REL 01MARKETS: Applicable markets:
US

ISSUE AUTHOR: Sandy Kwan Dept. S646 (BRW)

MAIN CONTACT: Sandy Kwan Dept. S646 (BRW)

NTZZ07EA EMC3-04-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 07 29	----- ECM 604 05	Previous history not available ET17199 - Correct typo. Change cable NT8X1101,NT8X1102 to NT8X1001,NT8X1002 MD NTZZ07EA, replaced by NTZZ07AA because Universal Framework NT0X25AH replaces Common Framework NT0X25AA.
93 11 24	ECM 604 06	

The Double Shelf Network Equipment Frame (US) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Double Shelf Net Equip Fr	NT8X10AA		1			AP
Double Shelf Network Assy	NT8X11AB	NET0:1		65/		RUL2
Filler Panel	P0575239	NET1:1		32		RUL2
				65, 32		RUL1
Network Module Shelf Assy	NT8X1101	NET0:0	1	51		AP-01
Network Module Shelf Assy	NT8X1101	NET1:0	1	18		AP-01
Network Common CP	NTZZ07BA			32, 18		RUL2
DSN Common CP	NTZZ07NA			32, 18		RUL4
Network Port CP	NTZZ07MA			32, 18	01, 03	RUL4
NT-40 Net Clock Interface	NTZZ07CA			32, 18	23	RUL3
SuperNode Net Clock I/F	NTZZ07DA			32, 18	23	RUL3
Frame Supervisory Panel	NT0X28AK	FSP	1	45		AP-01
DC Fan Cooling Unit	NT3X90AC	CU	1	04		AP
Common Framework	NT0X25AA	FW	1			AP
Cable Assembly	NT8X1001					RUL5
Cable Assembly	NT8X1002					RUL5
Cable Assembly	NT8X1104					RUL5
26AWG Single Green Wire	R0109836			32		RUL6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) NTZZ07EA is a single bay dual plane frame comprising four (4) separate Network Modules (NM), two (2) for plane 0 and two (2) for plane 1. The lower numbered NM is located on pos 51 designated as plane 0 and located on POS 18 designated as plane 1. The higher numbered NM is located on POS 65 designated as plane 0 and located on POS 32 designated as plane 1. The FSP is common to both planes.
- 2) Each NM can terminate sixty-four (64) speech links originating from peripheral modules.
- 3) In the ABBR column, the following notation applies:
 - NET0:1 - Network Plane 0 for NM 1
 - NET1:1 - Network Plane 1 for NM 1
 - NET0:0 - Network Plane 0 for NM 0
 - NET1:0 - Network Plane 1 for NM 0

RULES:

- AP 1) When PEC NTZZ07EA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT8X10AA Frame, and is shown here for completeness.
- RUL1 1) Provide two (2) P0575239 Filler Panels, one on position 65 and one on position 32, when this frame, NTZZ07EA, is equipped with one (1) Network Module per plane.

- RUL2 1) Provide NT8X11AB (Double Shelf Network Assembly) and NTZZ07BA (Network Common Circuit Packs) as per Table A. Provisioning the first NTZZ07BA in the frame will equip circuit packs in shelf positions 18 and 51. The second NTZZ07BA will provide circuit packs in shelf positions 32 and 65.

TABLE A

	NTZZ07BA		NT8X11AB	
	NETWORK COMMON CP		DOUBLE SHELF NETWORK ASSY	
	QTY	POSITION	QTY	POSITION
1 Network Module per frame junctored at DNI	1	18	0	
2 Network Modules per frame junctored at DNI	2	18,32	1	32

- RUL3 1) Provide one (1) NTZZ07CA NT-40 Network Clock Interface for each NTZZ07BA Network Common CP that interfaces to an NT-40. Assign the first NTZZ07CA to shelf positions 18 in card slot 23, and the second NTZZ07CA to shelf position 32 in card slot 23.
- 2) Provide one (1) NTZZ07DA SuperNode Network Clock Interface for each NTZZ07BA Network Common CP that interfaces to an SuperNode. Assign the first NTZZ07DA to shelf position 18 in card slot 23, and the second NTZZ07CA to shelf position 32 in card slot 23.

- RUL4 1) Provide NT8X11AB Double Shelf Network Assembly, NTZZ07NA DSN Common CP and NTZZ07MA Network Port CP as per Table B. Provisioning the first NTZZ07NA in the frame will equip circuit packs in shelf positions 18 and 51. The second NTZZ07NA will provide circuit packs in shelf positions 32 and 65. The NTZZ07NA DSN Common CP and NTZZ07MA Network Port CP shall only be provided in offices with only one or two network modules and no DNI frame.

TABLE B

	NTZZ07NA DSN COMMON CP		NT8X11AB DOUBLE SHELF NETWORK ASSY		NTZZ07MA NETWORK PORT CP	
	QTY	POSITION	QTY	POSITION	QTY	POSITION
1 Network Module per frame not junctored at DNI	1	18	0		0	
2 Network Modules per frame not junctored at DNI	2	18, 32	1	32	2	18-01, 32-01

NOTE: For a one network office equipped with a NTZZ07NA on a NTZZ07EA DSNE frame extending to a two network office provide, the NT8X11AB at position 32, the NTZZ07NA at position 32, and two NTZZ07MA (Position 18-01 and Position 32-01). For a two network office equipped with two NTZZ02NA on a NTZZ07EA DSNE frame extending to three or more networks, provide two NTZZ07MA for the existing NTZZ07NA (Position 18-03 and position 32-03). The added network modules shall be provisioned using PEC NTZZ07BA. Three or more networks in an office requires a DNI frame for junctoring.

RUL5 1) Provide Cable Assemblies NT8X1104, NT8X1001 and NT8X1002 as per Table C:

TABLE C

	NT8X1104		NT8X1001		NT8X1002	
	CABLE ASSEMBLY		CABLE ASSEMBLY		CABLE ASSEMBLY	
	QTY	FROM/TO	QTY	FROM/TO	QTY	FROM/TO
1 Network Module per frame non-junctored at DNI (i.e. only 1 DSNE in the office)	1	51:01-51:02	0		0	
	1	51:03-51:04				
	1	18:01-18:02				
	1	18:03-18:04				
2 Network Modules per frame non-junctored at DNI (i.e. only 1 DSNE in the office)	1	51:03-51:04	2	18:01-32:02	2	18:01-32:02
	1	18:03-18:04	2	18:02-32:01	2	18:02-32:01
	1	65:03-65:04	2	51:01-65:02	2	51:01-65:02
	1	32:03-32:04	2	51:02-65:01	2	51:02-65:01
2 Network Modules per frame junctored at DNI (i.e. only 1 DSNE in the office)	1	51:03-51:04	0		0	
	1	18:03-18:04				
	1	65:03-65:04				
	1	32:03-32:04				

TABLE C (continued)

	NT8X1104		NT8X1001		NT8X1002	
	CABLE ASSEMBLY		CABLE ASSEMBLY		CABLE ASSEMBLY	
	QTY	FROM/TO	QTY	FROM/TO	QTY	FROM/TO
Only 2 Network Modules in office: one network of NETC version (NT5X13__) or one network of NET version (NT0X48__) and one network of DSNE version (NT8X10__). NOTE: A DNI is always required.	1 1	51:03-51:04 18:03-18:04	0		0	
1 Network Module per frame junctored at DNI (i.e. 3 or more Networks in the office)	0		0		0	
2 Network Modules per frame junctored at DNI (i.e. 3 or more Networks in the office)	0		0		0	

NOTE: "Qty" refers to the number of Cable Assemblies to provide while "From/To" refers to the two positions on the frame (Shelf Position:Card Position) that are connected via the Cable Assembly.

- 2) In extensions, when converting from one configuration to another, ensure that additional Cable Assemblies are provided/removed in order to satisfy the final configuration.

RUL6 1) When PEC NTZZ07BA or NTZZ07NA is shipped loose to a job site then 4.0 meters of this wire is always required.

EARTHQUAKE DSNE FRAME (US)

PEC CODE: NTZZ07PA

CPC CODE: B0234825

| RATING: MD

REPLACES: Not applicable

| REPLACED BY: NTZZ07AA

ABBREVIATION NAME: DSNE

ENGINEERING DESCRIPTION: The Earthquake DSNE houses up to two complete networks per plane in a single bay.

REFERENCE DOCUMENTATION: SLZZ07PA 00 01
NTZZ07PA REL 01MARKETS: Applicable markets:
US

ISSUE AUTHOR: Sandy Kwan Dept. S646 (BRW)

MAIN CONTACT: Sandy Kwan Dept. S646 (BRW)

NTZZ07PA EMC3-04-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 11 24	----- ECM 604 06	Previous history not available MD NTZZ07PA, replaced by NTZZ07AA because Universal Framework NT0X25AH replaces Common Framework NT0X25AA and NT0X25AH is applicable to US and Canada.

The Earthquake DSNE Frame (US) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Double Shelf Net Equip Fr	NT8X10AA		1			AP
Double Shelf Network Assy	NT8X11AB	NET0:1		65/		RUL2
Filler Panel	P0575239	NET1:1		32		RUL2
				65, 32		RUL1
Network Module Shelf Assy	NT8X1101	NET0:0	1	51		AP-01
Network Module Shelf Assy	NT8X1101	NET1:0	1	18		AP-01
Network Common CP	NTZZ07BA			32, 18		RUL2
DSN Common CP	NTZZ07NA			32, 18		RUL4
Network Port CP	NTZZ07MA			32, 18	01, 03	RUL4
NT-40 Net Clock Interface	NTZZ07CA			32, 18	23	RUL3
SuperNode Net Clock I/F	NTZZ07DA			32, 18	23	RUL3
Frame Supervisory Panel	NT0X28AK	FSP	1	45		AP-01
DC Fan Cooling Unit	NT3X90AC	CU	1	04		AP
Common Framework	NT0X25AH	FW	1			AP
Cable Assembly	NT8X1001					RUL5
Cable Assembly	NT8X1002					RUL5
Cable Assembly	NT8X1104					RUL5
26AWG Single Green Wire	R0109836			32		RUL6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ07PA is a single bay dual plane frame comprising four (4) separate Network Modules (NM), two (2) for plane 0 and two (2) for plane 1. The lower numbered NM is located on pos 51 designated as plane 0 and located on POS 18 designated as plane 1. The higher numbered NM is located on POS 65 designated as plane 0 and located on POS 32 designated as plane 1. The FSP is common to both planes.
- 2) Each NM can terminate sixty-four (64) speech links originating from peripheral modules.
- 3) In the ABBR column, the following notation applies:
 - NET0:1 - Network Plane 0 for NM 1
 - NET1:1 - Network Plane 1 for NM 1
 - NET0:0 - Network Plane 0 for NM 0
 - NET1:0 - Network Plane 1 for NM 0

RULES:

- AP 1) When PEC NTZZ07PA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT8X10AA Frame, and is shown here for completeness.
- RUL1 1) Provide two (2) P0575239 Filler Panels, one on position 65 and one on position 32, when this frame, NTZZ07PA, is equipped with one (1) Network Module per plane.
- RUL2 1) Provide NT8X11AB (Double Shelf Network Assembly) and NTZZ07BA (Network Common Circuit Packs) as per Table A. Provisioning the first NTZZ07BA in the frame will equip circuit packs in shelf positions 18 and 51. The second NTZZ07BA will provide circuit packs in shelf positions 32 and 65.

TABLE A

NTZZ07BA	NT8X11AB

	NETWORK COMMON CP		DOUBLE SHELF NETWORK ASSY	
	QTY	POSITION	QTY	POSITION
1 Network Module per frame junctored at DNI	1	18	0	
2 Network Modules per frame junctored at DNI	2	18,32	1	32

- RUL3 1) Provide one (1) NTZZ07CA NT-40 Network Clock Interface for each NTZZ07BA Network Common CP that interfaces to an NT-40. Assign the first NTZZ07CA to shelf positions 18 in card slot 23, and the second NTZZ07CA to shelf position 32 in card slot 23.
- 2) Provide one (1) NTZZ07DA SuperNode Network Clock Interface for each NTZZ07BA Network Common CP that interfaces to an SuperNode. Assign the first NTZZ07DA to shelf position 18 in card slot 23, and the second NTZZ07CA to shelf position 32 in card slot 23.
- RUL4 1) Provide NT8X11AB Double Shelf Network Assembly, NTZZ07NA DSN Common CP and NTZZ07MA Network Port CP as per Table B. Provisioning the first NTZZ07NA in the frame will equip circuit packs in shelf positions 18 and 51. The second NTZZ07NA will provide circuit packs in shelf positions 32 and 65. The NTZZ07NA DSN Common CP and NTZZ07MA Network Port CP shall only be provided in offices with only one or two network modules and no DNI frame.

TABLE B

	NTZZ07NA		NT8X11AB		NTZZ07MA	
	DSN COMMON CP		DOUBLE SHELF NETWORK ASSY		NETWORK PORT CP	
	QTY	POSITION	QTY	POSITION	QTY	POSITION
1 Network Module per frame not junctored at DNI	1	18	0		0	

2 Network Modules per frame not junctioned at DNI	2	18,32	1	32	2	18-01, 32-01

NOTE: For a one network office equipped with a NTZZ07NA on a NTZZ07PA DSNE frame extending to a two network office provide, the NT8X11AB at position 32, the NTZZ07NA at position 32, and two NTZZ07MA (Position 18-01 and Position 32-01). For a two network office equipped with two NTZZ02NA on a NTZZ07PA DSNE frame extending to three or more networks, provide two NTZZ07MA for the existing NTZZ07NA (Position 18-03 and position 32-03). The added network modules shall be provisioned using PEC NTZZ07BA. Three or more networks in an office requires a DNI frame for junctioning.

RUL5 1) Provide Cable Assemblies NT8X1104, NT8X1001 and NT8X1002 as per Table C:

TABLE C

	NT8X1104		NT8X1001		NT8X1002	
	CABLE ASSEMBLY		CABLE ASSEMBLY		CABLE ASSEMBLY	
	QTY	FROM/TO	QTY	FROM/TO	QTY	FROM/TO
1 Network Module per frame non-junctioned at DNI (i.e. only 1 DSNE in the office)	1	51:01- 51:02	0		0	
	1	51:03- 51:04				
	1	18:01- 18:02				
	1	18:03- 18:04				
2 Network Modules per frame non-junctioned at DNI (i.e. only 1 DSNE in the office)	1	51:03- 51:04	2	18:01- 32:02	2	18:01- 32:02
	1	18:03- 18:04	2	18:02- 32:01	2	18:02- 32:01
	1	65:03- 65:04	2	51:01- 65:02	2	51:01- 65:02
	1	32:03- 32:04	2	51:02- 65:01	2	51:02- 65:01

2 Network Modules per frame junctored at DNI (i.e. only 1 DSNE in the office)	1	51:03- 51:04	0		0	
	1	18:03- 18:04				
	1	65:03- 65:04				
	1	32:03- 32:04				

TABLE C (continued)

	NT8X1104		NT8X1001		NT8X1002	
	CABLE ASSEMBLY		CABLE ASSEMBLY		CABLE ASSEMBLY	
	QTY	FROM/TO	QTY	FROM/TO	QTY	FROM/TO
Only 2 Network Modules in office: one network of NETC version (NT5X13__) or one network of NET version (NT0X48__) and one network of DSNE version (NT8X10__). NOTE: A DNI is always required.	1 1	51:03-51:04 18:03-18:04	0		0	
1 Network Module per frame junctored at DNI (i.e. 3 or more Networks in the office)	0		0		0	
2 Network Modules per frame junctored at DNI (i.e. 3 or more Networks in the office)	0		0		0	

NOTE: "Qty" refers to the number of Cable Assemblies to provide while "From/To" refers to the two positions on the frame (Shelf Position:Card Position) that are connected via the Cable Assembly.

- 2) In extensions, when converting from one configuration to another, ensure that additional Cable Assemblies are provided/removed in order to satisfy the final configuration. par
- RUL6 1) When PEC NTZZ07BA or NTZZ07NA is shipped loose to a job site then 4.0 meters of this wire is always required.

DS-30 INTERFACE ASSEMBLY

PEC CODE: NTZZ10GA

CPC CODE: B0231860

| RATING: MD

REPLACES: N/A

| REPLACED BY: NTZZ10MA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The DS-30 Interface Assembly can terminate up to 16 DS-30 copper speech links or up to 15 DS-30 copper message links.

REFERENCE DOCUMENTATION: SLZZ10GA 00 00

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTC: Jerry Palmer DEPT. 3471 (PPK)

MAIN CONTACT: NTC: Jerry Palmer DEPT. 3471 (PPK)

NTZZ10GA EMC3-05-IF-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 05 19 97 05 19	----- ECM 627 12 ECM 627 23	Previous history not available Add CPC for EM section. MD the DS-30 Interface PB, NT9X41BA (NTZZ10GA) per EC 018-50987.

The DS-30 Interface Assembly is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# DS-30 Interface PB	NT9X41BA		1	XX	YY	AP
DS-30 Cable Assembly	NT9X0520		1	XX	YY	AP
DES LABEL (NT9X41BA)	P0704528		1	XX	YY	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X41BA	MD	NT9X45BA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) XX can be one of 00, 13, 26, or 39.
- 2) YY can be one of 10R-16R, and 25R-32R.

RULES:

- AP 1) When PEC NTZZ10GA is ordered, these items are provided.

ENHANCED NETWORK SHELF ASSEMBLY PACKAGE

PEC CODE: NTZZ10BA

CPC CODE: B0231868

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ10BC

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Network Shelf Assembly provides switching for speech links interfacing up to 15 DS-512 fiber and DS-30 copper I/F PB. Each shelf provides a nominal Switching capacity of 32K-channels.

REFERENCE DOCUMENTATION: NTZZ10BA REL 05
SLZZ10BA 00 05

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ10BA EMC3-05-NET-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 08 28	ECM 627 02	Power Converter slots Correction
92 09 23	ECM 635 02	NT9X40BA is A&M and rep. by NT9X40BB
93 08 27	ECM 635 04	Label Corrections in BB(ECD: 18-41044)
94 12 12	ECM 635 10	Network shelf assembly NT9X0818 replaces NT9X0801 assembly.
95 04 17	ECM 627 11	Add NTZZ10QA Plane 0 Labels and NTZZ10RA Plane 1 Labels.
95 05 19	ECM 627 12	Delete duplicate screws and washers, and add location and quantities.
97 04 10	ECM 627 22	Show status as MD for this FB, per query from POPS. Originally MD on ECM627 Issue 16.

The Enhanced Network Shelf Assembly Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Shelf Assy	NT9X0818		1	XX		AP
# +5V 80A Power Converter CP	NT9X30AA		2	XX	4F, 36F	AP
# -5V 20A Power Converter CP	NT9X31AA		2	XX	1F, 33F	AP
# CPU CP	NT9X13FA		1	XX	7F	AP
Network Clock & Msg CP	NT9X36BA		1	XX	8F	AP
16K x 16K Chan Term Xpt CP	NT9X35CA		2	XX	9F, 31F	AP
Filler Face Plate	NT9X19AA		8	XX	17F-24F	AP
Remote Terminal I/F PB	NT9X26AB		1	XX	7R	AP
Quad DS-512 Fiber I/F PB	NT9X40BB		1	XX	8R	AP
PB Filler Face Plate	NT9X19BA		1	XX	9R	AP
Screws & Washers	P097F813		4	XX		AP
	P0284154		1	XX		AP
	P0183220		1	XX		AP
V-Bus Cable Assembly	NT9X0530		16	XX	9R-16R	AP
					25R-32R	
PB Filler Face Plate	NT9X19BA		8	XX	17R-24R	AP
DES LABEL (NT9X13FA)	P0697525		1	XX	7F	AP
DES LABEL (NT9X36BA)	P0704531		1	XX	8F	AP
DES LABEL (NT9X35CA)	P0704533		2	XX	9F, 31F	AP
DES LABEL (NT9X26AB)	P0705003		1	XX	7R	AP
DES LABEL (NT9X40BB)	P0734155		1	XX	8R	AP
ENET Plane 0 Shelf Labels	NTZZ10QA		1	XX		RUL2
ENET Plane 1 Shelf Labels	NTZZ10RA		1	XX		RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X0801	MD	NT9X0818
NT9X30AA	MD	NT9X30AB
NT9X31AA	MD	NT9X31AB
NT9X13FA	MD	NT9X13KA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

1) XX can be one of 00, 13 and 26 for 128K ENET

2) XX can be one of 00, and 26 for 64K ENET

RULES:

AP 1) When PEC NTZZ10BA is ordered, these items are provided.

RUL1 1) Provide one (1) NTZZ10BA Network Shelf Assy Pkg for each additional network shelf required.

RUL2 1) Provide one (1) NTZZ10QA Plane 0 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 0.

RUL3 1) Provide one (1) NTZZ10RA Plane 1 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 1.

ENHANCED NETWORK SIMPLEX CABINET

PEC CODE: NTZZ10AA

| CPC CODE: B0231869

| RATING: MD

| REPLACES: N/A

| REPLACED BY: N/A

ABBREVIATION NAME: NWSC

ENGINEERING DESCRIPTION: The Network Simplex Cabinet houses up to 4 Network shelves of one plane. Each shelf provides a nominal Switching capacity of 32 K-channels.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ10AA EMC3-05-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 22 95 09 28	----- ECM 627 04 ECM 627 13	Previous history not available NTZZ10AA is A&M. Use NTZZ10LA BB. NTZZ10AA is MD PER ECD 018-41001

The Enhanced Network Simplex Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Network Simplex Cabinet	NT9X05AB		1			AP
# Common Cabinet Equipment	NT9X0101		1			AP-01
Network Shelf Assy	NT9X0801		1	39		AP-01
Network Shelf Assy Pkg	NTZZ10BA			00,13,26		RUL1
Blank Shelf Assy Pkg	NTZZ10CA			00,13,26		RUL1
+5V 80A Power Converter CP	NT9X30AA		2	39	1F,33F	AP
-5V 20A Power Converter CP	NT9X31AA		2	39	4F,36F	AP
CPU CP	NT9X13FA		1	39	7F	AP
Network Clock & Msg CP	NT9X36BA		1	39	8F	AP
Filler Face Plate	NT9X19AA		8	39	17F-24F	AP
16K x 16K Chan Term Xpt CP	NT9X35CA		4	39	9F,10F, 31F,32F	AP
Remote Terminal I/F PB	NT9X26AB		1	39	7R	AP
Quad DS-512 Fiber I/F PB	NT9X40BA		1	39	8R	AP
PB Filler Face Plate	NT9X19BA		1	39	9R	AP
PB Filler Face Plate	NT9X19BA		8	39	17R-24R	AP
16K x 16K Chan Term Xpt CP	NTZZ10JA			00,13,26	10F	RUL2
16K x 16K Chan Xpt CP	NTZZ10KA			XX	11-16, 25-30	RUL2
Filler Face Plate	NT9X19AA			XX	10F-16F 25F-32F	RUL3
DS-30 Interface Assembly	NTZZ10GA			XX	10R-16R 25R-32R	RUL5
Quad DS-512 Fiber I/F PB	NTZZ10HA			XX	10R-16R 25R-32R	RUL4
PB Filler Face Plate	NT9X19BA			XX	10R-16R 25R-32R	RUL6
48 DS-30 Bulkhead Assembly	NTZZ10DA			XX		RUL7
112 DS-30 Bulkhead Assembly	NTZZ10EA			XX		RUL7
Fiber Bulkhead Assembly	NTZZ10FA			XX		RUL7
# Kick Plate Assy (Brown)	NT0X2430		1			AP
Frame Fail Light (Brown)	NT0X24BT		1			AP
# Overhead Power Block Kit	NTEX5001					RUL8
Power Boot Kit	NT9X0322					RUL8
DES LABEL (NT9X30AA)	P0704529		2	39	1F,33F	AP
DES LABEL (NT9X31AA)	P0704530		2	39	4F,36F	AP
DES LABEL (NT9X13FA)	P0697525		1	39	7F	AP
DES LABEL (NT9X36BA)	P0704531		1	39	8F	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DES LABEL (NT9X35CA)	P0704533		4	39	9F, 10F 31F, 32F	AP
DES LABEL (NT9X26AB)	P0705003		1	39	7R	AP
DES LABEL (NT9X40BA)	P0704527		1	39	8R	AP
Front Bottom Shelf Label (Plane 0)	P0704534		1	39		AP
Front Bottom Shelf Label (Plane 1)	P0704535		1	39		AP
Rear Bottom Shelf Label (Plane 0)	P0704536		1	39		AP
Rear Bottom Shelf Label (Plane 1)	P0704537		1	39		AP
WARNING LABEL, ENGLISH ONLY "High Voltage"	P0675711		1			RUL10
WARNING LABEL, ENGLISH/FRENCH "High Voltage/Haute Tension"	P0689137		1			RUL10
WARNING LABEL, ENGLISH ONLY "High Voltage"	P0675712		4			RUL11
WARNING LABEL, ENGLISH/FRENCH "High Voltage/Haute Tension"	P0689138		4			RUL11
WARNING LABEL, ENGLISH ONLY "Disconnect Fan"	P0675710		1			RUL12
WARNING LABEL, ENGLISH/FRENCH "Disconnect Fan"	P0689136		1			RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X2430	MD	No Replacement
NT9X05AB	MD	NT9X05AC
NT9X0101	MD	No Replacement
NTEX5001	MD	No Replacement

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES: 1) XX can be one of 00, 13, 26, and 39.

RULES:

AP 1) When PEC NTZZ10AA is ordered, these items are provided.

2) The NT9X0101 is comprised of the following:

- 1 NT0X24AA Cabinet Framework
- 1 NT9X03AA Frame Supervisory Panel
- 4 A0345301 Core Cooling Blowers
- Cabinet Common Cabling & FSP Cabling

The NT0X24AA framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.

The NT9X03AA FSP is mounted at position 52.

The four A0345301 Cooling Blowers are located immediately below position 0.

AP-01 1) This PEC is always provided on the NT9X05AB. It is shown here for completeness.

RUL1 1) Provide one (1) NTZZ10BA, Network Shelf Assy Pkg, for each additional network shelf required.

2) The first shelf at position 39 is always provided to the cabinet. Assign the remaining shelves to positions 26,13,00 as required.

3) Each shelf provides switching for speech links interfacing up to 15 DS-512 fiber and DS-30 copper I/F PB.

4) Provide one (1) NTZZ10CA, Blank Shelf Assy Pkg for each unequipped position 26, 13, 00, to satisfy the forced air cooling requirements of the cabinet.

RUL2 1) Assign the first twelve (12) NTZZ10KA, 16K x 16K Chan Xpt CP, on the first shelf to adjacent slot pairs in the following order: (30F-29F), (12F-11F), (28F-27F), (14F-13F), (26F-25F), (16F-15F).

2) In subsequent shelves the Cross point card is assigned as follows: Assign six (6) NTZZ10KA CP's to odd slots 11F, 13F, 15F, 25F, 27F, and 29F. The next group of seven (7) Cross point CP's are assigned as follows: Assign one (1) NTZZ10JA, 16K x 16K Chan Term Xpt CP, to even numbered slots 10F and 32F. Assign six (6) NTZZ10KA CP's to even slots 12F, 14F, 16F, 26F, 28F, and 30F.

- 3) Assign the CP's on each additional shelf as per 2) above. Fill each shelf before starting the next.
- RUL3 1) Provide one (1) NT9X19AA, CP Filler Face Plate in each slot not equipped with a Circuit Pack to satisfy forced air cooling requirements of the cabinet.
- RUL4 1) Provide one (1) NTZZ10HA Quad DS-512 Fiber Interface for every four (4) DS-512 fiber speech links to be terminated.
- 2) Fiber speech links originate from Series II peripherals (FXPMs)
- 3) Card slot assignment of NTZZ10HA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Card slot assignment for the first shelf is as follows: 10,32,31,30,29,12,11,28,27,14,13,26,25,16,15. The card slot assignment for subsequent shelves is: 31,11,13,15,25,27,29,10,32,12,14, 16,26,28,30.
- RUL5 1) Each NTZZ10GA, DS-30 Interface Assembly, can terminate 16 DS-30 copper speech links or 15 DS-30 message links. Therefore, provide one (1) NTZZ10GA for every 16 DS-30 copper speech links or 15 single port PMS (i.e. TMs and MTMs).
- 2) Copper speech links originate from Series I peripherals (DCMs, MTMs, etc) or from non-fiberized Series II peripherals.
- 3) Card slot assignment of NTZZ10GA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Refer to Rule 2 and 5 for complete assignment rules.
- RUL6 1) Provide one (1) NT9X19BA, PB Filler Face Plate in each slot not equipped with a NTZZ10GA or NTZZ10HA to satisfy the forced air cooling requirements of the cabinet.
- RUL7 1) Two bulkhead I/F panels are required for each equipped shelf position, one for the left cabinet cable riser and one for the right (cabinet viewed from the rear).
- 2) Provide one (1) NTZZ10FA, Fiber Bulkhead Assembly, if slots 10R-16R and 25R-32R are to be used for fiber interface only. No NT9X41BA CPs can ever be equipped in these slots.

- 3) If there are up to three (3) NT9X41BAs per half shelf, provide one (1) NTZZ10DA, 48 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cabled directly to the Series I peripherals. In this case NT9X41BAs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly.
 - 4) If there are more than three (3) NT9X41BAs per half shelf, provide one (1) NTZZ10EA, 112 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cross connected at an SLC. In this case NT9X41BAs are restricted to a maximum of seven (7) per half shelf, or 14 per shelf assembly.
- RUL8 1) For non-raised floor applications, provide one (1) NTEX5001 Overhead Power Block Kit.
- 2) Provide one (1) NT9X0322 Power Boot Kit.
- RUL9 1) Each NTZZ10MA, can terminate 3 DS-512 fiber links and 16 DS-30 copper speech links or 15 DS-30 message links. For Initial and ENET Upgrade (Retrofit) jobs provision NTZZ10MAs for a combination of 16 DS-30 copper and 3 DS-512 fiber links. For any remaining copper and fiber links, default termination to NTZZ10GAs and NTZZ10HAs respectively.
- 2) For ENET installed offices, replace NTZZ10GAs with NTZZ10MAs as many as required on fiber peripheral extensions. Once all NTZZ10GAs are replaced use initial office rules. Note that for offices having excess copper links, give recommendation to the customer to make use of NTZZ10MAs in case of future SERIES II peripheral extensions.
- RUL10 1) PROVIDE ONE (1) P0675711 OR P0689137 LABEL TO BE APPLIED to Supernode FSP Unit.
- RUL11) PROVIDE FOUR (4) P0675712 OR P0689138 LABELS PER CABINET.
- RUL12 1) PROVIDE ONE (1) P0675710 OR P0689136 LABEL TO BE APPLIED to the front of the cabinet below the blowers.

NETWORK SIMPLEX CABINET GRAY

PEC CODE: NTZZ10AG

| CPC CODE: B0236172

| RATING: MD

| REPLACES: N/A

| REPLACED BY: N/A

ABBREVIATION NAME: NWSC

ENGINEERING DESCRIPTION: The Network Simplex Cabinet houses up to 4 Network shelves of one plane. Each shelf provides a nominal Switching capacity of 32 K-channels. Gray Kickplates and gray Frame Fail Lights are always provided.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US
CALA
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ10AG EMC3-05-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 22 95 09 28	----- ECM 627 04 ECM 627 13	Previous history not available NTZZ10AG is A&M. Use NTZZ10LA BB. NTZZ10AA is MD PER ECD 018-41001

The Network Simplex Cabinet Gray is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Network Simplex Cabinet	NT9X05AB		1			AP
# Common Cabinet Equipment	NT9X0101		1			AP-01
Network Shelf Assy	NT9X0801		1	39		AP-01
Network Shelf Assy Pkg	NTZZ10BA			00,13,26		RUL1
Blank Shelf Assy Pkg	NTZZ10CA			00,13,26		RUL1
+5V 80A Power Converter CP	NT9X30AA		2	39	1F,33F	AP
-5V 20A Power Converter CP	NT9X31AA		2	39	4F,36F	AP
CPU CP	NT9X13FA		1	39	7F	AP
Network Clock & Msg CP	NT9X36BA		1	39	8F	AP
Filler Face Plate	NT9X19AA		8	39	17F-24F	AP
16K x 16K Chan Term Xpt CP	NT9X35CA		4	39	9F,10F, 31F,32F	AP
Remote Terminal I/F PB	NT9X26AB		1	39	7R	AP
Quad DS-512 Fiber I/F PB	NT9X40BA		1	39	8R	AP
PB Filler Face Plate	NT9X19BA		1	39	9R	AP
PB Filler Face Plate	NT9X19BA		8	39	17R-24R	AP
16K x 16K Chan Term Xpt CP	NTZZ10JA			00,13,26	10F	RUL2
16K x 16K Chan Xpt CP	NTZZ10KA			XX	11-16, 25-30	RUL2
Filler Face Plate	NT9X19AA			XX	10F-16F 25F-32F	RUL3
DS-30 Interface Assembly	NTZZ10GA			XX	10R-16R 25R-32R	RUL5
Quad DS-512 Fiber I/F PB	NTZZ10HA			XX	10R-16R 25R-32R	RUL4
3 DS-512/16 DS-30 I/F PB	NTZZ10MA			XX	10R-16R 25R-32R	RUL9
PB Filler Face Plate	NT9X19BA			XX	10R-16R 25R-32R	RUL6
48 DS-30 Bulkhead Assembly	NTZZ10DA			XX		RUL7
112 DS-30 Bulkhead Assembly	NTZZ10EA			XX		RUL7
Fiber Bulkhead Assembly	NTZZ10FA			XX		RUL7
Kick Plate Assy (GRAY)	NT0X2516		1			AP
Frame Fail Light (GRAY)	NT0X24CN		1			AP
# Rear Kick Plate (GRAY)	NT0X24CU		1			AP
# Overhead Power Block Kit	NTEX5001					RUL8
Power Boot Kit	NT9X0322					RUL8
DES LABEL (NT9X30AA)	P0704529		2	39	1F,33F	AP
DES LABEL (NT9X31AA)	P0704530		2	39	4F,36F	AP

Retired Equipment
Network Simplex Cabinet Gray

NTZZ10AG
EMC3-05-001
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DES LABEL (NT9X13FA)	P0697525		1	39	7F	AP
DES LABEL (NT9X36BA)	P0704531		1	39	8F	AP
DES LABEL (NT9X35CA)	P0704533		4	39	9F, 10F 31F, 32F	AP
DES LABEL (NT9X26AB)	P0705003		1	39	7R	AP
DES LABEL (NT9X40BA)	P0704527		1	39	8R	AP
Front Bottom Shelf Label (Plane 0)	P0704534		1	39		AP
Front Bottom Shelf Label (Plane 1)	P0704535		1	39		AP
Rear Bottom Shelf Label (Plane 0)	P0704536		1	39		AP
Rear Bottom Shelf Label (Plane 1)	P0704537		1	39		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X2430	MD	No Replacement
NT9X05AB	MD	NT9X05AC
NT9X0101	MD	No Replacement
NTEX5001	MD	No Replacement

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES: 1) XX can be one of 00, 13, 26, and 39.

RULES:

AP 1) When PEC NTZZ10AG is ordered, these items are provided.

2) The NT9X0101 is comprised of the following:

- 1 NT0X24AA Cabinet Framework
- 1 NT9X03AA Frame Supervisory Panel
- 4 A0345301 Core Cooling Blowers
- Cabinet Common Cabling & FSP Cabling

The NT0X24AA framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.

The NT9X03AA FSP is mounted at position 52.

The four A0345301 Cooling Blowers are located immediately below position 0.

AP-01 1) This PEC is always provided on the NT9X05AB. It is shown here for completeness.

RUL1 1) Provide one (1) NTZZ10BA, Network Shelf Assy Pkg, for each additional network shelf required.

2) The first shelf at position 39 is always provided to the cabinet. Assign the remaining shelves to positions 26,13,00 as required.

3) Each shelf provides switching for speech links interfacing up to 15 DS-512 fiber and DS-30 copper I/F PB.

4) Provide one (1) NTZZ10CA, Blank Shelf Assy Pkg for each unequipped position 26, 13, 00, to satisfy the forced air cooling requirements of the cabinet.

RUL2 1) Assign the first twelve (12) NTZZ10KA, 16K x 16K Chan Xpt CP, on the first shelf to adjacent slot pairs in the following order: (30F-29F), (12F-11F), (28F-27F), (14F-13F), (26F-25F), (16F-15F).

2) In subsequent shelves the Cross point card is assigned as follows: Assign six (6) NTZZ10KA CP's to odd slots 11F, 13F, 15F, 25F, 27F, and 29F. The next group of seven (7) Cross point CP's are assigned as follows: Assign one (1) NTZZ10JA, 16K x 16K Chan Term Xpt CP, to even numbered slots 10F and 32F. Assign six (6) NTZZ10KA CP's to even slots 12F, 14F, 16F, 26F, 28F, and 30F.

- 3) Assign the CP's on each additional shelf as per 2) above. Fill each shelf before starting the next.
- RUL3 1) Provide one (1) NT9X19AA, CP Filler Face Plate in each slot not equipped with a Circuit Pack to satisfy forced air cooling requirements of the cabinet.
- RUL4 1) Provide one (1) NTZZ10HA Quad DS-512 Fiber Interface for every four (4) DS-512 fiber speech links to be terminated.
- 2) Fiber speech links originate from Series II peripherals (FXPMs)
- 3) Card slot assignment of NTZZ10HA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Card slot assignment for the first shelf is as follows: 10,32,31,30,29,12,11,28,27,14,13,26,25,16,15. The card slot assignment for subsequent shelves is: 31,11,13,15,25,27,29,10,32,12,14, 16,26,28,30.
- RUL5 1) Each NTZZ10GA, DS-30 Interface Assembly, can terminate 16 DS-30 copper speech links or 15 DS-30 message links. Therefore, provide one (1) NTZZ10GA for every 16 DS-30 copper speech links or 15 single port PMS (i.e. TMs and MTMs).
- 2) Copper speech links originate from Series I peripherals (DCMs, MTMs, etc) or from non-fiberized Series II peripherals.
- 3) Card slot assignment of NTZZ10GA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Refer to Rule 2 and 5 for complete assignment rules.
- RUL6 1) Provide one (1) NT9X19BA, PB Filler Face Plate in each slot not equipped with a NTZZ10GA or NTZZ10HA to satisfy the forced air cooling requirements of the cabinet.
- RUL7 1) Two bulkhead I/F panels are required for each equipped shelf position, one for the left cabinet cable riser and one for the right (cabinet viewed from the rear).
- 2) Provide one (1) NTZZ10FA, Fiber Bulkhead Assembly, if slots 10R-16R and 25R-32R are to be used for fiber interface only. No NT9X41BA CPs can ever be equipped in these slots.

- 3) If there are up to three (3) NT9X41BAs per half shelf, provide one (1) NTZZ10DA, 48 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cabled directly to the Series I peripherals. In this case NT9X41BAs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly.
 - 4) If there are more than three (3) NT9X41BAs per half shelf, provide one (1) NTZZ10EA, 112 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cross connected at an SLC. In this case NT9X41BAs are restricted to a maximum of seven (7) per half shelf, or 14 per shelf assembly.
- RUL8 1) For non-raised floor applications, provide one (1) NTEX5001 Overhead Power Block Kit.
- 2) Provide one (1) NT9X0322 Power Boot Kit.
- RUL9 1) Each NTZZ10MA, can terminate 3 DS-512 fiber links and 16 DS-30 copper speech links or 15 DS-30 message links. For Initial and ENET Upgrade (Retrofit) jobs provision NTZZ10MAs for a combination of 16 DS-30 copper and 3 DS-512 fiber links. For any remaining copper and fiber links, default termination to NTZZ10GAs and NTZZ10HAs respectively.
- 2) For ENET installed offices, replace NTZZ10GAs with NTZZ10MAs as many as required on fiber peripheral extensions. Once all NTZZ10GAs are replaced use initial office rules. Note that for offices having excess copper links, give recommendation to the customer to make use of NTZZ10MAs in case of future SERIES II peripheral extensions.

DIGITAL NETWORK CONNECTING FRAME

PEC CODE: NTZZ20BA

CPC CODE: B0232882

| RATING: MD.

REPLACES: Not Applicable

REPLACED BY: NTZZ20AA

ABBREVIATION NAME: DNI or DNIC

ENGINEERING DESCRIPTION: NTZZ20BA provides a patch cord junctor cross-connect facility for interconnecting between the network junctor face ports of Network Modules in the same plane.

REFERENCE DOCUMENTATION: SLZZ20BA 00 01
NTZZ20BA REL 01

MARKETS: Applicable markets:
US

ISSUE AUTHOR: NTI: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

NTZZ20BA EMC3-05-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 11	ECM 671 03	Declare code Manufacture Discontinued.

The DIGITAL NETWORK CONNECTING FRAME is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Common Framework	NT0X25AA	FW	1			AP
Dgtl Net Intercon Frame	NT0X18CB	DNI	1			AP
Dgtl Net Junctor Cntg Pnl	NT0X18CA	NJC		XX		RUL1
Dgtl Net Junctor Cntg Pnl	NT0X18CC	NJC		XX		RUL2
Dgtl Net Junctor Cntg Pnl	NT0X18DB	NJC		XX		RUL3
Dgtl Net Junctor Cntg Pnl	NT0X18DC	NJC		XX		RUL4
Dgtl Net Junctor Cntg Pnl	NT0X18DD	NJC		XX		RUL5
Junctor Patch Cords	AR					RUL6
MD. Replaced by NT0X18DB.						
MD. Replaced by NT0X18DC.						

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The DNI provides space to mount a nominal 16 (max. 21, subject to cable congestion) digital network junctor connecting panels (NJC).

- 2) "XX" can be one of 71, 68, 64, 61, 57, 54, 50, 47, 43, 40, 36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01.
- 3) For small offices plane 0 and 1 may be combined within the same frame.

Plane 0 shelf positions are as follows:
71, 68, 64, 61, 57, 54, 50, 47, 43, 40

Plane 1 shelf positions are as follows:
36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01
- 4) One DNI frame is required for each 16 Network Modules (NM) per plane.
- 5) Maximum four (4) DNI frames per system.

RULES:

- AP 1) When PEC NTZZ20BA is ordered, these items are provided.
- RUL1 1) Provide one (1) Network Junctor Connecting Panel, NT0X18CA (MD) for each network frame, NT0X48AA (MD) and NT0X48AG (MD) equipped.
- RUL2 1) Provide two (2) Network Junctor Connecting Panels, NT0X18CC (MD), one per plane, for each network frame NT5X13AA equipped.
- RUL3 1) Provide one (1) Network Junctor Connecting Panel, NT0X18DB, for each network frame, NT0X48AA (MD) and NT0X48AG (MD) equipped.
- RUL4 1) Provide two (2) Network Junctor Connecting Panels, NT0X18DC, one per plane, for each network frame NT5X13AA equipped.
- RUL5 1) Provide two (2) Network Junctor Connecting Panels, NT0X18DD, per network i.e. one per network plane. This network is the type that is mounted on the Double Shelf Network Equipment (DSNE) frame. Check application date for DSNE.
- RUL6 1) Junctor patch cords are selected according to the running distance between the two ports which are to be interconnected.

- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18CA/CC and NJC panels NT0X18CA/CC:

LENGTH		CONNECTOR	PRODUCT CODE	
(FEET)	(METRES)	COLOUR	(PEC)	(CPC)
0.5	.15	BL	NE-P4QCB	A0273266
1.0	.30	Y	NE-P4QCC	A0273267
1.5	.46	BK	NE-P4QCD	A0273268
2.0	.61	R	NE-P4QCE	A0273269
2.5	.76	G	NE-P4QCF	A0273270
3.0	.91	W	NE-P4QCG	A0273271
3.5	1.07	O	NE-P4QCH	A0273272
4.0	1.22	BL	NE-P4QCJ	A0273273
4.5	1.37	V	NE-P4QCK	A0273274
5.0	1.52	Y	NE-P4QCL	A0273275
5.5	1.68	BR	NE-P4QCM	A0273276
6.0	1.83	BK	NE-P4QCN	A0273277
6.5	1.98	R	NE-P4QCP	A0273278
7.0	2.13	O	NE-P4QCR	A0273279
7.5	2.29	BL	NE-P4QCS	A0273280
8.0	2.44	G	NE-P4QCT	A0273281
8.5	2.59	W	NE-P4QCU	A0273282
9.0	2.74	V	NE-P4QCW	A0273283
9.5	2.90	Y	NE-P4QCX	A0273284
10.0	3.05	BR	NE-P4QCY	A0273285
10.5	3.20	BK	NE-P4QDA	A0273286
11.0	3.35	R	NE-P4QDB	A0273287
11.5	3.51	G	NE-P4QDC	A0273288
12.0	3.66	W	NE-P4QDD	A0273289

- 4) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18CA/CC and NJC panels NT0X18DB/DC/DD:

LENGTH		CONNECTOR		PRODUCT CODE
(FEET)	(METRES)	COLOUR	(PEC)	(CPC)
2.0	.61	BK-W	NE-P4QEW	A0289641
3.0	.91	BK-Y	NE-P4QEX	A0289642
4.0	1.22	BK-O	NE-P4QEY	A0289643
5.0	1.52	BK-R	NE-P4QFA	A0289644
6.5	1.98	BK-G	NE-P4QFB	A0289645
8.0	2.44	BK-BR	NE-P4QFC	A0289646
10.0	3.05	BK-W	NE-P4QFD	A0289647
15.0	4.57	BK-Y	NE-P4QFE	A0289648

- 5) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18DB/DC/DD and NJC panels NT0X18DB/DC/DD:

LENGTH		CONNECTOR		PRODUCT CODE
(FEET)	(METRES)	COLOUR	(PEC)	(CPC)
2.0	.61	BK-W	NE-P4QDY	A0289622
3.0	.91	BK-Y	NE-P4QEA	A0289623
4.0	1.22	BK-O	NE-P4QEB	A0289624
5.0	1.52	BK-R	NE-P4QEC	A0289625
6.5	1.98	BK-G	NE-P4QED	A0289626
8.0	2.44	BK-BR	NE-P4QEE	A0289627
10.0	3.05	BK-W	NE-P4QEF	A0289628
15.0	4.57	BK-Y	NE-P4QEG	A0289629

EQ FRAME DNI BUILDING BLOCK
U.S. ONLY

PEC CODE: NTZZ20DA

CPC CODE: B0234826

| RATING: MD.

REPLACES: Not Applicable

REPLACED BY: NTZZ20AA

ABBREVIATION NAME: DNI or DNIC

ENGINEERING DESCRIPTION: NTZZ20DA provides a patch cord junctor cross-connect facility for interconnecting between the network junctor face ports of Network Modules in the same plane. This Building Block provides one DNI equipped with the NT0X25AH earthquake frame and is for U.S. applications.

REFERENCE DOCUMENTATION: SLZZ20DA 00 01
NTZZ20DA REL 01

MARKETS: Applicable markets:
US

ISSUE AUTHOR: NTI: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

NTZZ20DA EMC3-05-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 24	ECM 671 01	Provide NTZZ20DA EMS to support code already available in CADES/NTACCESS. Update NTZZ20AA. Position '01' is not a valid mounting position for NT0X25AV and NT0X25AH framework.
92 12 06	ECM 671 02	Position '01' is not a valid mounting position for NT0X25AV and NT0X25AH framework.
93 11 11	ECM 671 03	Declare code Manufacture Discontinued.

The EQ FRAME DNI BUILDING BLOCK U.S. Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Earthquake Framework	NT0X25AH	FW	1			AP
Dgtl Net Intercon Frame	NT0X18CB	DNI	1			AP
@ Dgtl Net Junctor Cntg Pnl	NT0X18CA	NJC		XX		RUL1
# Dgtl Net Junctor Cntg Pnl	NT0X18CC	NJC		XX		RUL2
Dgtl Net Junctor Cntg Pnl	NT0X18DB	NJC		XX		RUL3
Dgtl Net Junctor Cntg Pnl	NT0X18DC	NJC		XX		RUL4
Dgtl Net Junctor Cntg Pnl	NT0X18DD	NJC		XX		RUL5
Junctor Patch Cords	AR					RUL6
@ MD. Replaced by NT0X18DB.						
# MD. Replaced by NT0X18DC.						

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The DNI provides space to mount a nominal 16 (max. 21, subject to cable congestion) digital network junctor connecting panels (NJC).

- 2) "XX" can be one of 71, 68, 64, 61, 57, 54, 50, 47, 43, 40, 36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01.

Update NTZZ20AA. Position '01' is not a valid mounting position for NT0X25AV and NT0X25AH framework

- 3) For small offices plane 0 and 1 may be combined within the same frame.

Plane 0 shelf positions are as follows:

71, 68, 64, 61, 57, 54, 50, 47, 43, 40

Plane 1 shelf positions are as follows:

36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01

Update NTZZ20AA. Position '01' is not a valid mounting position for NT0X25AV and NT0X25AH framework

- 4) One DNI frame is required for each 16 Network Modules (NM) per plane.
- 5) Maximum four (4) DNI frames per system.

RULES:

- AP 1) When PEC NTZZ20DA is ordered, these items are provided.
- RUL1 1) Provide one (1) Network Junctor Connecting Panel, NT0X18CA (MD) for each network frame, NT0X48AA (MD) and NT0X48AG (MD) equipped.
- RUL2 1) Provide two (2) Network Junctor Connecting Panels, NT0X18CC (MD), one per plane, for each network frame NT5X13AA equipped.
- RUL3 1) Provide one (1) Network Junctor Connecting Panel, NT0X18DB, for each network frame, NT0X48AA (MD) and NT0X48AG (MD) equipped.
- RUL4 1) Provide two (2) Network Junctor Connecting Panels, NT0X18DC, one per plane, for each network frame NT5X13AA equipped.
- RUL5 1) Provide two (2) Network Junctor Connecting Panels, NT0X18DD, per network i.e. one per network plane. This network is the type that is mounted on the Double Shelf

Network Equipment (DSNE) frame. Check application date for DSNE.

- RUL6
- 1) Junctor patch cords are selected according to the running distance between the two ports which are to be interconnected.
 - 2) NOTE: DNI and SLC patch cords are not interchangeable.
 - 3) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18CA/CC and NJC panels NT0X18CA/CC:

LENGTH		CONNECTOR	PRODUCT CODE	
(FEET)	(METRES)	COLOUR	(PEC)	(CPC)
0.5	.15	BL	NE-P4QCB	A0273266
1.0	.30	Y	NE-P4QCC	A0273267
1.5	.46	BK	NE-P4QCD	A0273268
2.0	.61	R	NE-P4QCE	A0273269
2.5	.76	G	NE-P4QCF	A0273270
3.0	.91	W	NE-P4QCG	A0273271
3.5	1.07	O	NE-P4QCH	A0273272
4.0	1.22	BL	NE-P4QCJ	A0273273
4.5	1.37	V	NE-P4QCK	A0273274
5.0	1.52	Y	NE-P4QCL	A0273275
5.5	1.68	BR	NE-P4QCM	A0273276
6.0	1.83	BK	NE-P4QCN	A0273277
6.5	1.98	R	NE-P4QCP	A0273278
7.0	2.13	O	NE-P4QCR	A0273279
7.5	2.29	BL	NE-P4QCS	A0273280
8.0	2.44	G	NE-P4QCT	A0273281
8.5	2.59	W	NE-P4QCU	A0273282
9.0	2.74	V	NE-P4QCW	A0273283
9.5	2.90	Y	NE-P4QCX	A0273284
10.0	3.05	BR	NE-P4QCY	A0273285
10.5	3.20	BK	NE-P4QDA	A0273286
11.0	3.35	R	NE-P4QDB	A0273287
11.5	3.51	G	NE-P4QDC	A0273288
12.0	3.66	W	NE-P4QDD	A0273289

- 4) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18CA/CC and NJC panels NT0X18DB/DC/DD:

LENGTH		CONNECTOR		PRODUCT CODE
(FEET)	(METRES)	COLOUR	(PEC)	(CPC)
2.0	.61	BK-W	NE-P4QEW	A0289641
3.0	.91	BK-Y	NE-P4QEX	A0289642
4.0	1.22	BK-O	NE-P4QEY	A0289643
5.0	1.52	BK-R	NE-P4QFA	A0289644
6.5	1.98	BK-G	NE-P4QFB	A0289645
8.0	2.44	BK-BR	NE-P4QFC	A0289646
10.0	3.05	BK-W	NE-P4QFD	A0289647
15.0	4.57	BK-Y	NE-P4QFE	A0289648

- 5) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18DB/DC/DD and NJC panels NT0X18DB/DC/DD:

LENGTH		CONNECTOR		PRODUCT CODE
(FEET)	(METRES)	COLOUR	(PEC)	(CPC)
2.0	.61	BK-W	NE-P4QDY	A0289622
3.0	.91	BK-Y	NE-P4QEA	A0289623
4.0	1.22	BK-O	NE-P4QEB	A0289624
5.0	1.52	BK-R	NE-P4QEC	A0289625
6.5	1.98	BK-G	NE-P4QED	A0289626
8.0	2.44	BK-BR	NE-P4QEE	A0289627
10.0	3.05	BK-W	NE-P4QEF	A0289628
15.0	4.57	BK-Y	NE-P4QEG	A0289629

SPEECH LINK CONNECTING FRAME BUILDING BLOCK (US)

PEC CODE: NTZZ21BA

CPC CODE: B0232881

| RATING: MD.

REPLACES: Not Applicable.

REPLACED BY: NTZZ21AA

ABBREVIATION NAME: SLC or SLCC

ENGINEERING DESCRIPTION: NTZZ21BA provides a patch cord cross-connecting facility in the speech links between the Peripheral and Network subsystems. The network interface ports of the peripheral equipment terminate on Peripheral Speech Link Connecting panels (PSL) while the peripheral face ports of the network modules terminate on Network Speech Link Connecting panels (NSL). Connectorized patch cords complete the interconnections between ports of the two groups.

REFERENCE DOCUMENTATION: SLZZ21BA 00 01
NTZZ21BA REL 01

MARKETS: Applicable markets:
US

ISSUE AUTHOR: NTI: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

NTZZ21BA EMC3-05-004 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 11	ECM 672 03	Declare code Manufacture Discontinued.

The SPEECH LINK CONNECTING FRAME BUILDING BLOCK (US) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Speech Link Conn Frame	NT0X56AA	SLC	1			AP
Common Framework	NT0X25AA	FW	1			AP
# Network Speech Link Panel	NT0X56AB	NSL		XX		RUL2
% Peripheral Speech Link Pnl	NT0X56AC	PSL		XX		RUL1
Network Speech Link Panel	NT0X56BB	NSL		XX		RUL2
Peripheral Speech Link Panel	NT0X56BC	PSL		XX		RUL1
Digital Net Junctor Cntg Pnl	AR	NJC		XX		RUL4
Speech Link Patch Cords	AR					RUL3
# MD. Replaced by NT0X56BB.						
% MD. Replaced by NT0X56BC.						

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" can be one of 71, 68, 64, 61, 57, 54, 50, 47, 43, 40, 36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01.
- 2) For offices whose ultimate size will not exceed four (4) NET per plane and depending on the PSL:NSL ratio, speech

link panels of both planes may be combined on the same SLC. However, this is not recommended and should be considered only if floor space for the second SLC is not available.

Plane 0 shelf positions are as follows:
71, 68, 64, 61, 57, 54, 50, 47, 43, 40

Plane 1 shelf positions are as follows:
36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01

- 3) It is a general practice to start connector panel assignments on the speech link connecting frame from the top of the frame. Alternate PSL panels and NSL panels accordingly.
- 4) Each Speech Link Connecting Frame can accommodate up to 21 PSL plus NSL panels. However, in order to ensure easy access to all panels and to limit cabling congestion it is recommended that one (1) SLC be provided per eight (8) Network Modules in each plane. The number of vacant panel positions at the bottom of each frame will depend on the total NET count and on the ratio of PSL:NSL panels.

RULES:

- AP 1) When PEC NTZZ21BA is ordered, these items are provided.
- RUL1 1) As a minimum requirement provide one (1) PSL per plane for every sixteen (16) Speech Link Cable Groups originating from peripheral modules or frames.
- 2) NT0X56AC has been rated MD. Replace by NT0X56BC.
 - 3) For ease of office administration, separate PSL can be used to segregate Cable Groups according to originating peripheral type.
 - 4) Each Cable Group originating from a given peripheral can contain a maximum of five (5) Speech Links from that peripheral (module) or the individual modules contained on that peripheral (frame).
 - 5) Peripheral types, TM, MTM, OAU and TAN utilize just one Speech Link per module per plane and therefore are not assigned individual Cable Groups. Instead modules on a given frame share a common Cable Group associated with that frame.

- RUL2 1) One NSL can terminate all the speech links from one Network Module (NM).
- 2) NT0X56AB has been rated MD. Replace by NT0X56BB.
- 3) Provide two (2) Network Speech Link (NSL) Panels, NT0X56BB, for each network (i.e. one per network plane) provided.
- RUL3 1) Speech link patch cords are selected according to the running distance between the two ports which are to be inter-connected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following speech link patch cords are required when cross connecting between NSL panels NT0X56AB and PSL panels NT0X56AC:

LENGTH (FEET) (METRES)		CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
0.5	.15	BL	NE-P4QE	A0265763
1.0	.30	Y	NE-P4QF	A0265764
1.5	.46	BK	NE-P4QG	A0265765
2.0	.61	R	NE-P4QH	A0265766
2.5	.76	G	NE-P4QJ	A0265767
3.0	.91	W	NE-P4QK	A0265768
3.5	1.07	O	NE-P4QL	A0265769
4.0	1.22	BL	NE-P4QM	A0265770
4.5	1.37	V	NE-P4QN	A0265771
5.0	1.52	Y	NE-P4QP	A0265772
5.5	1.68	BR	NE-P4QR	A0265773
6.0	1.83	BK	NE-P4QS	A0265774
6.5	1.98	R	NE-P4QT	A0265775
7.0	2.13	O	NE-P4QU	A0265776
7.5	2.29	BL	NE-P4QW	A0265777
8.0	2.44	G	NE-P4QX	A0265778
8.5	2.59	W	NE-P4QY	A0265779
9.0	2.74	V	NE-P4QAA	A0265780
9.5	2.90	Y	NE-P4QAB	A0265781
10.0	3.05	BR	NE-P4QAC	A0265782
10.5	3.20	BK	NE-P4QAD	A0265783
11.0	3.35	R	NE-P4QAE	A0265784
11.5	3.51	G	NE-P4QAF	A0265785
12.0	3.66	W	NE-P4QAG	A0265786
12.5	3.81	O	NE-P4QAH	A0265787
13.0	3.96	BL	NE-P4QAJ	A0265788
13.5	4.11	V	NE-P4QAK	A0265789

14.0	4.27	Y	NE-P4QAL	A0265790
14.5	4.42	BR	NE-P4QAM	A0265791
15.0	4.57	BK	NE-P4QAN	A0265792
15.5	4.72	R	NE-P4QAP	A0265793
16.0	4.88	O	NE-P4QAR	A0265794
16.5	5.03	BL	NE-P4QAS	A0265795
17.0	5.18	G	NE-P4QAT	A0265796
17.5	5.33	W	NE-P4QAU	A0265797
18.0	5.49	V	NE-P4QAW	A0265798
18.5	5.64	Y	NE-P4QAX	A0265799
19.0	5.79	BR	NE-P4QAY	A0265800
19.5	5.94	BK	NE-P4QBA	A0265801
20.0	6.10	R	NE-P4QBB	A0265802
20.5	6.25	O	NE-P4QBC	A0265803
21.0	6.40	BL	NE-P4QBD	A0265804
21.5	6.55	G	NE-P4QBE	A0265805
22.0	6.71	W	NE-P4QBF	A0265806
22.5	6.86	V	NE-P4QBG	A0265807
23.0	7.01	Y	NE-P4QBH	A0265808
23.5	7.16	BR	NE-P4QBJ	A0265809
24.0	7.32	BK	NE-P4QBK	A0265810
24.5	7.47	R	NE-P4QBL	A0265811
25.0	7.62	O	NE-P4QBM	A0265812
25.5	7.77	BL	NE-P4QBN	A0265813
26.0	7.92	G	NE-P4QBP	A0265814
26.5	8.08	W	NE-P4QBR	A0265815
27.0	8.23	V	NE-P4QBS	A0265816
27.5	8.38	Y	NE-P4QBT	A0265817
28.0	8.53	BR	NE-P4QBU	A0265818
28.5	8.69	BK	NE-P4QBW	A0265819
29.0	8.84	R	NE-P4QBX	A0265820
29.5	8.99	O	NE-P4QBY	A0265821
30.0	9.14	BK	NE-P4QCA	A0265822

- 4) The following speech link patch cords are required when cross connecting between NSL panels NT0X56AB and PSL panels NT0X56BC or when cross connecting between PSL panels NT0X56AC and NSL panels NT0X56BB:

	LENGTH (FEET)	(METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61		W	NE-P4QEH	A0289630
3.0	.91		Y	NE-P4QEJ	A0289631
4.0	1.22		O	NE-P4QEK	A0289632
5.0	1.52		R	NE-P4QEL	A0289633
6.5	1.98		G	NE-P4QEM	A0289634
8.0	2.44		BR	NE-P4QEN	A0289635
10.0	3.05		W	NE-P4QEP	A0289636
15.0	4.57		Y	NE-P4QER	A0289637
20.0	6.10		O	NE-P4QES	A0289638
25.0	7.62		R	NE-P4QET	A0289639
30.0	9.14		G	NE-P4QEU	A0289640

- 5) The following speech link patch cords are required when cross connecting between NSL panels NT0X56BB and PSL panels NT0X56BC:

	LENGTH (FEET)	(METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61		W	NE-P4QDK	A0289611
3.0	.91		Y	NE-P4QDL	A0289612
4.0	1.22		O	NE-P4QDM	A0289613
5.0	1.52		R	NE-P4QDN	A0289614
6.5	1.98		G	NE-P4QDP	A0289615
8.0	2.44		BR	NE-P4QDR	A0289616
10.0	3.05		W	NE-P4QDS	A0289617
15.0	4.57		Y	NE-P4QDT	A0289618
20.0	6.10		O	NE-P4QDU	A0289619
25.0	7.62		R	NE-P4QDW	A0289620
30.0	9.14		G	NE-P4QDX	A0289621

- RUL4 1) Digital Network Junctor Connecting Panels (NJC) may be provided on the SLC frame. For assignment rules related to NJC, refer to Section EMA3-03-000, Digital Network Connecting Frame.

EQ FRAME SLC BUILDING BLOCK
U.S. ONLY

PEC CODE: NTZZ21DA

CPC CODE: B0234827

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ21AA

ABBREVIATION NAME: SLC or SLCC

ENGINEERING DESCRIPTION: This Building Block provides one Speech Link Connecting frame equipped with the NT0X25AH framework. This should be applied to U.S. applications only. NTZZ21DA provides a patch cord cross-connecting facility in the speech links between the Peripheral and Network subsystems. The network interface ports of the peripheral equipment terminate on Peripheral Speech Link Connecting panels (PSL) while the peripheral face ports of the network modules terminate on Network Speech Link Connecting panels (NSL). Connectorized patch cords complete the interconnections between ports of the two groups.

REFERENCE DOCUMENTATION: SLZZ21DA 00 01
NTZZ21DA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

NTZZ21DA EMC3-05-005 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 04	ECM 672 01	Provide NTZZ21DA EMS to support code already in CADES and NTACCESS
92 12 07	ECM 672 02	ET20223 - '01' is not a valid mounting position when using NT0X25AV/AH FWs.
93 11 11	ECM 672 03	Declare code Manufacture Discontinued.

The EQ Frame SLC Building Block U.S. Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Speech Link Conn Frame	NT0X56AA	SLC	1			AP
Common Framework	NT0X25AH	FW	1			AP
# Network Speech Link Panel	NT0X56AB	NSL		XX		RUL2
% Peripheral Speech Link Pnl	NT0X56AC	PSL		XX		RUL1
Network Speech Link Panel	NT0X56BB	NSL		XX		RUL2
Peripheral Speech Link Panel	NT0X56BC	PSL		XX		RUL1
Digital Net Junctor Cntg Pnl	AR	NJC		XX		RUL4
Speech Link Patch Cords	AR					RUL3
# MD. Replaced by NT0X56BB.						
% MD. Replaced by NT0X56BC.						

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" can be one of 71, 68, 64, 61, 57, 54, 50, 47, 43, 40, 36, 33, 29, 26, 22, 19, 15, 12, 08, 05. Note that, '01' is not a valid mounting position when using NT0X25AV and NT0X25AH Frameworks.

- 2) For offices whose ultimate size will not exceed four (4) NET per plane and depending on the PSL:NSL ratio, speech link panels of both planes may be combined on the same SLC. However, this is not recommended and should be considered only if floor space for the second SLC is not available.

Plane 0 shelf positions are as follows:
71, 68, 64, 61, 57, 54, 50, 47, 43, 40

Plane 1 shelf positions are as follows:
36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01

Note that, '01' is not a valid mounting position when using NT0X25AV and NT0X25AH Frameworks.

- 3) It is a general practice to start connector panel assignments on the speech link connecting frame from the top of the frame. Alternate PSL panels and NSL panels accordingly.
- 4) Each Speech Link Connecting Frame can accommodate up to 21 PSL plus NSL panels. However, in order to ensure easy access to all panels and to limit cabling congestion it is recommended that one (1) SLC be provided per eight (8) Network Modules in each plane. The number of vacant panel positions at the bottom of each frame will depend on the total NET count and on the ratio of PSL:NSL panels.

RULES:

- AP 1) When PEC NTZZ21DA is ordered, these items are provided.
- RUL1 1) As a minimum requirement provide one (1) PSL per plane for every sixteen (16) Speech Link Cable Groups originating from peripheral modules or frames.
- 2) NT0X56AC has been rated MD. Replace by NT0X56BC.
- 3) For ease of office administration, separate PSL can be used to segregate Cable Groups according to originating peripheral type.
- 4) Each Cable Group originating from a given peripheral can contain a maximum of five (5) Speech Links from that peripheral (module) or the individual modules contained on that peripheral (frame).

- 5) Peripheral types, TM, MTM, OAU and TAN utilize just one Speech Link per module per plane and therefore are not assigned individual Cable Groups. Instead modules on a given frame share a common Cable Group associated with that frame.
- RUL2 1) One NSL can terminate all the speech links from one Network Module (NM).
- 2) NT0X56AB has been rated MD. Replace by NT0X56BB.
- 3) Provide two (2) Network Speech Link (NSL) Panels, NT0X56BB, for each network (i.e. one per network plane) provided.
- RUL3 1) Speech link patch cords are selected according to the running distance between the two ports which are to be interconnected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following speech link patch cords are required when cross connecting between NSL panels NT0X56AB and PSL panels NT0X56AC:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
0.5	.15	BL	NE-P4QE	A0265763
1.0	.30	Y	NE-P4QF	A0265764
1.5	.46	BK	NE-P4QG	A0265765
2.0	.61	R	NE-P4QH	A0265766
2.5	.76	G	NE-P4QJ	A0265767
3.0	.91	W	NE-P4QK	A0265768
3.5	1.07	O	NE-P4QL	A0265769
4.0	1.22	BL	NE-P4QM	A0265770
4.5	1.37	V	NE-P4QN	A0265771
5.0	1.52	Y	NE-P4QP	A0265772
5.5	1.68	BR	NE-P4QR	A0265773
6.0	1.83	BK	NE-P4QS	A0265774
6.5	1.98	R	NE-P4QT	A0265775
7.0	2.13	O	NE-P4QU	A0265776
7.5	2.29	BL	NE-P4QW	A0265777
8.0	2.44	G	NE-P4QX	A0265778
8.5	2.59	W	NE-P4QY	A0265779
9.0	2.74	V	NE-P4QAA	A0265780
9.5	2.90	Y	NE-P4QAB	A0265781
10.0	3.05	BR	NE-P4QAC	A0265782
10.5	3.20	BK	NE-P4QAD	A0265783

11.0	3.35	R	NE-P4QAE	A0265784
11.5	3.51	G	NE-P4QAF	A0265785
12.0	3.66	W	NE-P4QAG	A0265786
12.5	3.81	O	NE-P4QAH	A0265787
13.0	3.96	BL	NE-P4QAJ	A0265788
13.5	4.11	V	NE-P4QAK	A0265789
14.0	4.27	Y	NE-P4QAL	A0265790
14.5	4.42	BR	NE-P4QAM	A0265791
15.0	4.57	BK	NE-P4QAN	A0265792
15.5	4.72	R	NE-P4QAP	A0265793
16.0	4.88	O	NE-P4QAR	A0265794
16.5	5.03	BL	NE-P4QAS	A0265795
17.0	5.18	G	NE-P4QAT	A0265796

LENGTH (FEET) (METRES)		CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
17.5	5.33	W	NE-P4QAU	A0265797
18.0	5.49	V	NE-P4QAW	A0265798
18.5	5.64	Y	NE-P4QAX	A0265799
19.0	5.79	BR	NE-P4QAY	A0265800
19.5	5.94	BK	NE-P4QBA	A0265801
20.0	6.10	R	NE-P4QBB	A0265802
20.5	6.25	O	NE-P4QBC	A0265803
21.0	6.40	BL	NE-P4QBD	A0265804
21.5	6.55	G	NE-P4QBE	A0265805
22.0	6.71	W	NE-P4QBF	A0265806
22.5	6.86	V	NE-P4QBG	A0265807
23.0	7.01	Y	NE-P4QBH	A0265808
23.5	7.16	BR	NE-P4QBJ	A0265809
24.0	7.32	BK	NE-P4QBK	A0265810
24.5	7.47	R	NE-P4QBL	A0265811
25.0	7.62	O	NE-P4QBM	A0265812
25.5	7.77	BL	NE-P4QBN	A0265813
26.0	7.92	G	NE-P4QBP	A0265814
26.5	8.08	W	NE-P4QBR	A0265815
27.0	8.23	V	NE-P4QBS	A0265816
27.5	8.38	Y	NE-P4QBT	A0265817
28.0	8.53	BR	NE-P4QBU	A0265818
28.5	8.69	BK	NE-P4QBW	A0265819
29.0	8.84	R	NE-P4QBX	A0265820
29.5	8.99	O	NE-P4QBY	A0265821
30.0	9.14	BK	NE-P4QCA	A0265822

- 4) The following speech link patch cords are required when cross connecting between NSL panels NT0X56AB and PSL panels NT0X56BC or when cross connecting between PSL panels NT0X56AC and NSL panels NT0X56BB:

	LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT (PEC)	CODE (CPC)
2.0		.61	W	NE-P4QEH	A0289630
3.0		.91	Y	NE-P4QEJ	A0289631
4.0		1.22	O	NE-P4QEK	A0289632
5.0		1.52	R	NE-P4QEL	A0289633
6.5		1.98	G	NE-P4QEM	A0289634
8.0		2.44	BR	NE-P4QEN	A0289635
10.0		3.05	W	NE-P4QEP	A0289636
15.0		4.57	Y	NE-P4QER	A0289637
20.0		6.10	O	NE-P4QES	A0289638
25.0		7.62	R	NE-P4QET	A0289639
30.0		9.14	G	NE-P4QEU	A0289640

- 5) The following speech link patch cords are required when cross connecting between NSL panels NT0X56BB and PSL panels NT0X56BC:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	W	NE-P4QDK	A0289611
3.0	.91	Y	NE-P4QDL	A0289612
4.0	1.22	O	NE-P4QDM	A0289613
5.0	1.52	R	NE-P4QDN	A0289614
6.5	1.98	G	NE-P4QDP	A0289615
8.0	2.44	BR	NE-P4QDR	A0289616
10.0	3.05	W	NE-P4QDS	A0289617
15.0	4.57	Y	NE-P4QDT	A0289618
20.0	6.10	O	NE-P4QDU	A0289619
25.0	7.62	R	NE-P4QDW	A0289620
30.0	9.14	G	NE-P4QDX	A0289621

- RUL4 1) Digital Network Junctor Connecting Panels (NJC) may be provided on the SLC frame. For assignment rules related to NJC, refer to Section EMA3-03-000, Digital Network Connecting Frame.

64K ENHANCED NETWORK

PEC CODE: NTZZ10NA

CPC CODE: B0235700

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ10NC

ABBREVIATION NAME: ENC

ENGINEERING DESCRIPTION: The 64K ENET Cabinet houses 2 Network planes in single cabinet. Each plane houses upto 2 ENET shelves. Each shelf provides a nominal Switching capacity of 32K-channels. The NT9X05AD has the same functionality as existing ENETs but housed in a S/DMS Cabinet.

REFERENCE DOCUMENTATION: NTZZ10NA REL 04
SLZZ10NA 00 04

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ10NA EMC3-06-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 09 23	ECM 635 02	NT9X40BA is A&M and rep. by NT9X40BB
93 03 05	ECM 635 03	Changes Due to ECD # 018-39706. ET #15499: NT0X24BH is a requirement in NTZZ10NA sec. Modification to RUL1. Modifications to RULs pertaining Power Cabling Kit (NT9X9532 or NT9X9531)
93 03 05	ECM 635 03	Changes Due to ECD # 018-39706.
93 08 27	ECM 635 04	Label Corrections in BB(ECD: 18-41004)
94 03 10	ECM 635 08	Changes to C42 Mechanical Hardware (ECD 006-20113), deleted duplicate screws and washers (ET 60513).
95 04 21	ECM 635 11	Changed ICS cabinet to CCTS. Added NTZZ10PA Streamline Bulkhead. Solved ETs 21289, 65073 and 20749. Added NTZZ10QA Plane 0 labels and NTZZ10RA Plane 1 labels.
95 07 20	ECM 635 12	Readded NTZZ10PA, NTZZ10QA and NTZZ10RA BB plus associated rules. Changed acronym of NT0X35CC cabinet to CCTS.
95 10 12	ECM 635 13	Deleted gray and brown frame fail lamps per ECD 018-45801.
96 03 08	ECM 635 17	MD section, replaced by NTZZ10NC

The 64K ENHANCED NETWORK is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced Net. Duplex Cab.	NT9X05AD		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
Network Shelf Assy	NT9X0818		2	13, 39		AP-01
Network Shelf Assy Pkg	NTZZ10BA		2	26, 00		RUL1
Blank Shelf Assembly	NT0X24BD		2	26, 00		RUL1
Filler Packfill	NT9X01FB		2	26, 00		RUL1
+5V 80A Power Converter CP	NT9X30AA		4	13, 39	4F, 36F	AP
-5V 20A Power Converter CP	NT9X31AA		4	13, 39	1F, 33F	AP
CPU CP	NT9X13FA		2	13, 39	7F	AP
Network Clock & Msg CP	NT9X36BA		2	13, 39	8F	AP
Filler Face Plate	NT9X19AA		16	13, 39	17F-24F	AP
16K x 16K Chan Term Xpt CP	NT9X35CA		8	13, 39	9F, 10F, 31F, 32F	AP
Remote Terminal I/F PB	NT9X26AB		2	13, 39	7R	AP
Quad DS-512 Fiber I/F PB	NT9X40BB		2	13, 39	8R	AP
PB Filler Face Plate	NT9X19BA		2	13, 39	9R	AP
PB Filler Face Plate	NT9X19BA		16	13, 39	17R-24R	AP
16K x 16K Chan Term Xpt CP	NTZZ10JA			00, 26	10F	RUL2
16K x 16K Chan Xpt CP	NTZZ10KA			XX	11-16, 25-30	RUL2
Filler Face Plate	NT9X19AA			XX	10F-16F 25F-32F	RUL3
DS-30 Interface Assembly	NTZZ10GA			XX	10R-16R 25R-32R	RUL5
Quad DS-512 Fiber I/F PB	NTZZ10HA			XX	10R-16R 25R-32R	RUL4
PB Filler Face Plate	NT9X19BA			XX	10R-16R 25R-32R	RUL6
96 DS-30 Bulkhead Assembly	NTZZ10DA			XX		RUL7
224 DS-30 Bulkhead Assembly	NTZZ10EA			XX		RUL7
Fiber Bulkhead Assembly	NTZZ10FA			XX		RUL7
Streamline Bulkhead Assy.	NTZZ10PA			XX		RUL7
3 DS-512/16 DS-30 I/F PB	NTZZ10MA			XX	10R-16R 25R-32R	RUL8
Terminal Block Des.Strip	P0732511					RUL10
Power Filter Labels	P0732513		1			RUL10
Optical Fiber Label	P0736273			39, 13, 26, 00		RUL10
Horizontal Power Cab.kit	NT9X9531					RUL11
Stand-alone Power Cab. kit	NT9X9532					RUL11

Retired Equipment
64K ENHANCED NETWORK

NTZZ10NA
EMC3-06-001
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE2
Cabinet Cable Turning Sect.	NT0X35CC					RUL14
ENET Plane 0 Shelf Labels	NTZZ10QA					RUL15
ENET Plane 1 Shelf Labels	NTZZ10RA					RUL16
DES LABEL (NT9X13FA)	P0697525		2	13, 39	7F	AP
DES LABEL (NT9X36BA)	P0704531		2	13, 39	8F	AP
DES LABEL (NT9X35CA)	P0704533		8	13, 39	9F, 10F 31F, 32F	AP
DES LABEL (NT9X26AB)	P0705003		2	13, 39	7R	AP
DES LABEL (NT9X40BB)	P0734155		2	13, 39	8R	AP
Cooling Unit	NT9X95CU		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES: 1) XX can be one of 00, 13, 26, and 39.

2) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ10NA is ordered, these items are provided.
- 2) The NT9X95BA contains the NT9X9575 Cabinet Framework.
- The NT9X9575 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 (S/DMS) Cabinet.
- AP-01 1) This PEC is always provided on the NT9X05AD and is shown herein for completeness.
- RUL1 1) Provide one (1) NTZZ10BA, Network Shelf Assy Pkg, for each additional network shelf required.
- 2) The shelf at position 39 for plane 0, and shelf at position 13 for plane 1 are always provided to the cabinet. Assign the remaining shelves to positions 26 for plane 0 and to position 00 for plane 1 respectively as required.
- 3) Each shelf provides switching for speech links interfacing up to 15 DS-512 fiber and DS-30 copper I/F PB.
- 4) Provide one (1) NT0X24BD Blank Shelf Assy for each unequipped position 26, and 00, to satisfy the forced air cooling requirements of the cabinet,
- (OR)
- 5) Provide one (1) NT9X01FB Filler Packfill per each enhanced network shelf assembly when shelf is not equipped with circuit packs. Note, you require NT9X0818 Network shelf assembly to mount the filler packfill (NT9X01FB) in ENET shelves.
- RUL2 1) Assign the first twelve (12) NTZZ10KA, 16K x 16K Chan Xpt CP, on the first shelf of each plane to adjacent slot pairs in the following order: (30F-29F), (12F-11F), (28F-27F), (14F-13F), (26F-25F), (16F-15F).
- It is a requirement that each ENET Shelf be fully equipped with X-Point CPs before another is started. Each X-Point CP need not have a PB behind it.

- 2) If subsequent shelves are required the Cross point card is assigned as follows: The first group of seven (7) Cross point CP's are assigned as follows: Refer to NTZZ10BA BB for the first assignment of NT9X35CAs in odd numbered slots 9F, and 31F. Assign the next six (6) NTZZ10KA CP's to odd slots 11F, 13F, 15F, 25F, 27F, and 29F. The next group of seven (7) Cross point CP's are assigned as follows: Assign one (1) NTZZ10JA, 16K x 16K Chan Term Xpt CP, to even numbered slots 10F and 32F. Assign six (6) NTZZ10KA CP's to even slots 12F, 14F, 16F, 26F, 28F, and 30F.
- RUL3 1) Provide one (1) NT9X19AA, CP Filler Face Plate in each slot not equipped with a Circuit Pack to satisfy forced air cooling requirements of the cabinet.
- RUL4 1) Provide one (1) NTZZ10HA Quad DS-512 Fiber Interface for every four (4) DS-512 fiber speech links to be terminated.
- 2) Fiber speech links originate from Series II peripherals (FXPMs)
- 3) Card slot assignment of NTZZ10HA follows the same assignment rules as the NT9X35 Crosspoint CP. NTZZ10HA can be mounted in any rear slot that has a NTZZ10JA or NTZZ10KA in the front slot. Card slot assignment for the first shelf is as follows: 10,32,31,30,29,12,11,28,27,14,13,26,25,16,15. The card slot assignment for subsequent shelves is: 31,11,13,15,25,27,29,10,32,12,14, 16,26,28,30.
- RUL5 1) Each NTZZ10GA, DS-30 Interface Assembly, can terminate 16 DS-30 copper speech links or 15 DS-30 message links. Therefore, provide one (1) NTZZ10GA for every 16 DS-30 copper speech links or 15 single port PMs (i.e. TMs and MTMs).
- 2) Copper speech links originate from Series I peripherals (DCMs, MTMs, etc) or from non-fiberized Series II peripherals.
- 3) Card slot assignment of NTZZ10GA follows the same assignment rules as the NT9X35 Crosspoint CP. NTZZ10GA can be mounted in any rear slot that has a NTZZ10JA or NTZZ10KA in the front slot. Refer to Rule 2 and 5 for complete assignment rules.
- RUL6 1) Provide one (1) NT9X19BA, PB Filler Face Plate in each slot not equipped with a NTZZ10GA or NTZZ10HA or NTZZ10MA to satisfy the forced air cooling requirements of the cabinet.

- RUL7 1) Two bulkhead I/F panels are required for each equipped shelf position, one for the left cabinet cable riser and one for the right (cabinet viewed from the rear).
- 2) Provide one (1) NTZZ10FA, Fiber Bulkhead Assembly, if slots 10R-16R and 25R-32R are to be used for fiber interface only. No NT9X41BA CPs can ever be equipped in these slots.
- 3) If there are up to three (3) NT9X41BA/45BAs per half shelf, provide one (1) NTZZ10DA, 96 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cabled directly to the Series I peripherals. In this case NT9X41BA/45BAs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly.
- 4) If there are more than three (3) NT9X41BA/45BAs per half shelf, provide one (1) NTZZ10EA, 224 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cross connected at an SLC. In this case NT9X41BA/45BAs are restricted to a maximum of seven (7) per half shelf, or 14 per shelf assembly.
- 5) For Streamline applications only, provision:
one (1) NTZZ10PA Streamline Bulkhead Assembly.
- RUL8 1) Each NTZZ10MA, can terminate 3 DS-512 fiber links and 16 DS-30 copper speech links or 15 DS-30 message links. For Initial and ENET Upgrade (Retrofit) jobs provision NTZZ10MAs for a combination of 16 DS-30 copper and 3 DS-512 fiber links. For any remaining copper and fiber links, default termination to NTZZ10GAs and NTZZ10HAs respectively.
- RUL9 1) Deleted
- RUL10 1) Provide one (1) P0732511 terminal block designation strip per ENC cabinet when powering the enhanced network cabinet in a streamline lineup.
- 2) Provide one (1) P0732513 power filter label per ENC cabinet when powering the enhanced network cabinet in a stand-alone lineup.
- 3) Provide one (1) P0736273 Optical Fiber Danger Label (English) per shelf when DS-512 Fiber paddle boards are provided.
- RUL11 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X05AD cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR

powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in a different lineup than the NT9X05AD. This kit includes cables, filters, and miscellaneous mounting hardware.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X05AD cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X05AD. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL12 1) Deleted.

RUL13 1) Deleted.

RUL14 1) Provide CCTS as required.

The NT0X35CC (CCTS) mounts on the left and/or right side of a ENC cabinet. The CCTS provides a larger cabling area for cables connected between cabinets and frames. Cable is intended to run down (or up) this cabinet, and enter the large holes in the side of the SuperNode, ENC, etc. cabinet to reach the connector bulkheads.

The NT0X35CC MUST be provisioned for ALL 64K installations.

The number of cabling cabinets required for 64K ENET (NT9X05AD) must be 2(See figure below).

From 64K ENET to 128K ENET upgarde refer to ECM 627.

If not initially installed with ENET, CCTS Cabinets cannot be added at a later date.

Rear

END PNL Assy	CCTS Cabinet NT0X35CC	ENC PL.0 & 1 NT9X05AD	CCTS Cabinet NT0X35CC	END PNL Assy

Front

- RUL15 1) Provide one (1) NTZZ10QA Plane 0 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 0.
- RUL16 1) Provide one (1) NTZZ10RA Plane 1 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 1.

64K ENHANCED NETWORK

PEC CODE: NTZZ10NB

CPC CODE: B0232997

| RATING: Manufacturer Discontinued

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: ENC

ENGINEERING DESCRIPTION: The 64K ENET Cabinet houses 2 Network planes in single cabinet. Each plane houses up to 2 ENET shelves. Each shelf provides a nominal Switching capacity of 32K-channels. The NT9X05AD has the same functionality as existing ENETs but housed in a S/DMS Cabinet.

REFERENCE DOCUMENTATION: NTZZ10NB REL 01
SLZZ10NB 00 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ10NB EMC3-06-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
95 04 21	ECM 635 11	New section which has NT9X13KA CPU CP per ECD 006-21824.
95 07 20	ECM 635 12	Change history updated for accuracy, deleted erroneous rules 12 and 13.
95 10 12	ECM 635 13	Deleted gray and brown frame fail per ECD 018-45801. Added P0814664 designation label for NT9X13KA, ECD 006-23017.
95 12 13	ECM 635 16	Change from RUL to AP for NT9X13KA desig. label per ET 31509 and
96 03 08	ECM 635 17	Correct typo on NT9X13KA label. MD section, replaced by NTZZ10NC

The 64K ENHANCED NETWORK is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced Net. Duplex Cab.	NT9X05AD		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
Network Shelf Assy	NT9X0818		2	13, 39		AP-01
Network Shelf Assy Pkg	NTZZ10BB		2	26, 00		RUL1
Blank Shelf Assembly	NT0X24BD		2	26, 00		RUL1
Filler Packfill	NT9X01FB		2	26, 00		RUL1
+5V 80A Power Converter CP	NT9X30AA		4	13, 39	4F, 36F	AP
-5V 20A Power Converter CP	NT9X31AA		4	13, 39	1F, 33F	AP
CPU CP	NT9X13KA		2	13, 39	7F	AP
Network Clock & Msg CP	NT9X36BA		2	13, 39	8F	AP
Filler Face Plate	NT9X19AA		16	13, 39	17F-24F	AP
16K x 16K Chan Term Xpt CP	NT9X35CA		8	13, 39	9F, 10F, 31F, 32F	AP
Remote Terminal I/F PB	NT9X26AB		2	13, 39	7R	AP
Quad DS-512 Fiber I/F PB	NT9X40BB		2	13, 39	8R	AP
PB Filler Face Plate	NT9X19BA		2	13, 39	9R	AP
PB Filler Face Plate	NT9X19BA		16	13, 39	17R-24R	AP
16K x 16K Chan Term Xpt CP	NTZZ10JA			00, 26	10F	RUL2
16K x 16K Chan Xpt CP	NTZZ10KA			XX	11-16, 25-30	RUL2
Filler Face Plate	NT9X19AA			XX	10F-16F 25F-32F	RUL3
DS-30 Interface Assembly	NTZZ10GA			XX	10R-16R 25R-32R	RUL5
Quad DS-512 Fiber I/F PB	NTZZ10HA			XX	10R-16R 25R-32R	RUL4
PB Filler Face Plate	NT9X19BA			XX	10R-16R 25R-32R	RUL6
96 DS-30 Bulkhead Assembly	NTZZ10DA			XX		RUL7
224 DS-30 Bulkhead Assembly	NTZZ10EA			XX		RUL7
Fiber Bulkhead Assembly	NTZZ10FA			XX		RUL7
Streamline Bulkhead Assy	NTZZ10PA			XX		RUL7
3 DS-512/16 DS-30 I/F PB	NTZZ10MA			XX	10R-16R 25R-32R	RUL8
Design. Label (NT9X13KA)	P0814664		1	XX	7F	AP
Terminal Block Des.Strip	P0732511					RUL10
Power Filter Labels	P0732513		1			RUL10
Optical Fiber Label	P0736273			39, 13, 26, 00		RUL10
Horizontal Power Cab.kit	NT9X9531					RUL11

Retired Equipment
64K ENHANCED NETWORK

NTZZ10NB
EMC3-06-002
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Power Cab. kit	NT9X9532					RUL11
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE2
Cabinet Cable Turn. Sect.	NT0X35CC					RUL14
ENET Plane 0 Shelf Labels	NTZZ10QA		1	13, 39		RUL15
ENET Plane 1 Shelf Labels	NTZZ10RA		1	13, 39		RUL16
DES LABEL (NT9X36BA)	P0704531		2	13, 39	8F	AP
DES LABEL (NT9X35CA)	P0704533		8	13, 39	9F, 10F 31F, 32F	AP
DES LABEL (NT9X26AB)	P0705003		2	13, 39	7R	AP
DES LABEL (NT9X40BB)	P0734155		2	13, 39	8R	AP
Cooling Unit	NT9X95CU		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X0801	MD	NT9X0818

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES: 1) XX can be one of 00, 13, 26, and 39.

2) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

3) CPU CP (NT9X13KA) requires CSP0004 software.

RULES:

- AP 1) When PEC NTZZ10NA is ordered, these items are provided.
- 2) The NT9X95BA contains the NT9X9575 Cabinet Framework.
- The NT9X9575 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 (S/DMS) Cabinet.
- AP-01 1) This PEC is always provided on the NT9X05AD and is shown herein for completeness.
- RUL1 1) Provide one (1) NTZZ10BB, Network Shelf Assy Pkg, for each additional network shelf required.
- 2) The shelf at position 39 for plane 0, and shelf at position 13 for plane 1 are always provided to the cabinet. Assign the remaining shelves to positions 26 for plane 0 and to position 00 for plane 1 respectively as required.
- 3) Each shelf provides switching for speech links interfacing up to 15 DS-512 fiber and DS-30 copper I/F PB.
- 4) Provide one (1) NT0X24BD Blank Shelf Assy for each unequipped position 26, and 00, to satisfy the forced air cooling requirements of the cabinet,
- (OR)
- 5) Provide one (1) NT9X01FB Filler Packfill per each enhanced network shelf assembly when shelf is not equipped with circuit packs. Note, you require NT9X0818 Network shelf assembly to mount the filler packfill (NT9X01FB) in ENET shelves.
- RUL2 1) Assign the first twelve (12) NTZZ10KA, 16K x 16K Chan Xpt CP, on the first shelf of each plane to adjacent slot pairs in the following order: (30F-29F), (12F-11F), (28F-27F), (14F-13F), (26F-25F), (16F-15F).
- It is a requirement that each ENET Shelf be fully equipped with X-Point CPs before another is started. Each X-Point CP need not have a PB behind it.
- 2) If subsequent shelves are required the Cross point card is assigned as follows: The first group of seven (7) Cross

point CP's are assigned as follows: Refer to NTZZ10BA BB for the first assignment of NT9X35CAs in odd numbered slots 9F, and 31F. Assign the next six (6) NTZZ10KA CP's to odd slots 11F, 13F, 15F, 25F, 27F, and 29F. The next group of seven (7) Cross point CP's are assigned as follows: Assign one (1) NTZZ10JA, 16K x 16K Chan Term Xpt CP, to even numbered slots 10F and 32F. Assign six (6) NTZZ10KA CP's to even slots 12F, 14F, 16F, 26F, 28F, and 30F.

- RUL3 1) Provide one (1) NT9X19AA, CP Filler Face Plate in each slot not equipped with a Circuit Pack to satisfy forced air cooling requirements of the cabinet.
- RUL4 1) Provide one (1) NTZZ10HA Quad DS-512 Fiber Interface for every four (4) DS-512 fiber speech links to be terminated.
- 2) Fiber speech links originate from Series II peripherals (FXPMs)
- 3) Card slot assignment of NTZZ10HA follows the same assignment rules as the NT9X35 Crosspoint CP. NTZZ10HA can be mounted in any rear slot that has a NTZZ10JA or NTZZ10KA in the front slot. Card slot assignment for the first shelf is as follows: 10,32,31,30,29,12,11,28,27,14,13,26,25,16,15. The card slot assignment for subsequent shelves is: 31,11,13,15,25,27,29,10,32,12,14, 16,26,28,30.
- RUL5 1) Each NTZZ10GA, DS-30 Interface Assembly, can terminate 16 DS-30 copper speech links or 15 DS-30 message links. Therefore, provide one (1) NTZZ10GA for every 16 DS-30 copper speech links or 15 single port PMs (i.e. TMs and MTMs).
- 2) Copper speech links originate from Series I peripherals (DCMs, MTMs, etc) or from non-fiberized Series II peripherals.
- 3) Card slot assignment of NTZZ10GA follows the same assignment rules as the NT9X35 Crosspoint CP. NTZZ10GA can be mounted in any rear slot that has a NTZZ10JA or NTZZ10KA in the front slot. Refer to Rule 2 and 5 for complete assignment rules.
- RUL6 1) Provide one (1) NT9X19BA, PB Filler Face Plate in each slot not equipped with a NTZZ10GA or NTZZ10HA or NTZZ10MA to satisfy the forced air cooling requirements of the cabinet.
- RUL7 1) Two bulkhead I/F panels are required for each equipped shelf position, one for the left cabinet cable riser and one for the right (cabinet viewed from the rear).

- 2) Provide one (1) NTZZ10FA, Fiber Bulkhead Assembly, if slots 10R-16R and 25R-32R are to be used for fiber interface only. No NT9X41BA CPs can ever be equipped in these slots.
 - 3) If there are up to three (3) NT9X41BA/45BAs per half shelf, provide one (1) NTZZ10DA, 96 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cabled directly to the Series I peripherals. In this case NT9X41BA/45BAs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly.
 - 4) If there are more than three (3) NT9X41BA/45BAs per half shelf, provide one (1) NTZZ10EA, 224 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cross connected at an SLC. In this case NT9X41BA/45BAs are restricted to a maximum of seven (7) per half shelf, or 14 per shelf assembly.
 - 5) For Streamline applications only, provision:
one (1) NTZZ10PA Streamline Bulkhead Assembly.
- RUL8 1) Each NTZZ10MA, can terminate 3 DS-512 fiber links and 16 DS-30 copper speech links or 15 DS-30 message links. For Initial and ENET Upgrade (Retrofit) jobs provision NTZZ10MAs for a combination of 16 DS-30 copper and 3 DS-512 fiber links. For any remaining copper and fiber links, default termination to NTZZ10GAs and NTZZ10HAs respectively.
- RUL9 1) Deleted
- RUL10 1) Provide one (1) P0732511 terminal block designation strip per ENC cabinet when powering the enhanced network cabinet in a streamline lineup.
- 2) Provide one (1) P0732513 power filter labels per ENC cabinet when powering the enhanced network cabinet in a stand-alone lineup.
 - 3) Provide one (1) P0736273 Optical Fiber Danger Label (English) per shelf when DS-512 Fiber paddle boards are provided.
- RUL11 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X05AD cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X05AD. This kit includes cables, filters, and miscellaneous mounting hardware.

Customers may require a spare EMI line filter (A0326932) per office, this filter is part of the stand-alone interface kit.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X05AD cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X05AD. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL12 1) Deleted.

RUL13 1) Deleted.

RUL14 1) Provide CCTS as required.

The NT0X35CC (CCTS) mounts on the left and/or right side of a ENC cabinet. The CCTS provides a larger cabling area for cables connected between cabinets and frames. Cable is intended to run down (or up) this cabinet, and enter the large holes in the side of the SuperNode, ENC, etc. cabinet to reach the connector bulkheads.

The NT0X35CC MUST be provisioned for ALL 64K installations.

The number of cabling cabinets required for 64K ENET (NT9X05AD) must be 2(See figure below).

From 64K ENET to 128K ENET upgrade refer to ECM 627.

If not initially installed with ENET, CCTS Cabinets cannot be added at a later date.

Rear

END PNL Assy	CCTS Cabinet NT0X35CC	ENC PL.0 & 1 NT9X05AD	CCTS Cabinet NT0X35CC	END PNL Assy

Front

- RUL15 1) Provide one (1) NTZZ10QA Plane 0 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 0.
- RUL16 1) Provide one (1) NTZZ10RA Plane 1 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 1.

ENHANCED NETWORK SHELF ASSEMBLY PACKAGE

PEC CODE: NTZZ10BB

CPC CODE: B0243008

| RATING: MD

REPLACES: N/A

| REPLACED BY: NTZZ10BC

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Network Shelf Assembly provides switching for speech links interfacing up to 15 DS-512 fiber and DS-30 copper I/F PB. Each shelf provides a nominal Switching capacity of 32K-channels.

REFERENCE DOCUMENTATION: NTZZ10BB REL 01
SLZZ10BB 00 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ10BB EMC3-06-004 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 17	ECM 627 11	New section. Introduce NT9X13KA CPU CP. Add NTZZ10QA Plane 0 Labels and NTZZ10RA Plane 1 Labels. Add shelf positions for screws. Correct CPC for section per ET22849. Add NT9X13KA designation label per ECD 006-23017.
95 05 19	ECM 627 12	
95 12 13	ECM 635 16	Correct typo on NTZZ10BB reference.
96 03 08	ECM 635 17	MD section. Replaced by NTZZ10BC.

The Enhanced Network Shelf Assembly Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Shelf Assy	NT9X0818		1	XX		AP
+5V 80A Power Converter CP	NT9X30AA		2	XX	4F, 36F	AP
-5V 20A Power Converter CP	NT9X31AA		2	XX	1F, 33F	AP
CPU CP	NT9X13KA		1	XX	7F	AP
Network Clock & Msg CP	NT9X36BA		1	XX	8F	AP
16K x 16K Chan Term Xpt CP	NT9X35CA		2	XX	9F, 31F	AP
Filler Face Plate	NT9X19AA		8	XX	17F-24F	AP
Remote Terminal I/F PB	NT9X26AB		1	XX	7R	AP
Quad DS-512 Fiber I/F PB	NT9X40BB		1	XX	8R	AP
PB Filler Face Plate	NT9X19BA		1	XX	9R	AP
Screws & Washers	P097F813		4	XX		AP
	P0284154		1	XX		AP
	P0183220		1	XX		AP
V-Bus Cable Assembly	NT9X0530		16	XX	9R-16R, 25R-32R	AP
PB Filler Face Plate	NT9X19BA		8	XX	17R-24R	AP
ENET Plane 0 Shelf Labels	NTZZ10QA		1	XX		RUL2
ENET Plane 1 Shelf Labels	NTZZ10RA		1	XX		RUL3
DES LABEL (NT9X13KA)	P0814664		1	XX		AP
DES LABEL (NT9X36BA)	P0704531		1	XX	8F	AP
DES LABEL (NT9X35CA)	P0704533		2	XX	9F, 31F	AP
DES LABEL (NT9X26AB)	P0705003		1	XX	7R	AP
DES LABEL (NT9X40BB)	P0734155		1	XX	8R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X13KA	DEV	

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) XX can be one of 00, 13 and 26 for 128K ENET
- 2) XX can be one of 00, and 26 for 64K ENET
- 3) The NT9X13KA CPU CP requires NA004 software.

RULES:

- AP 1) When PEC NTZZ10BB is ordered, these items are provided.
- RUL1 1) Provide one (1) NTZZ10BB Network Shelf Assy Pkg for each additional network shelf required.
- RUL2 1) Provide one (1) NTZZ10QA Plane 0 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 0.
- RUL3 1) Provide one (1) NTZZ10RA Plane 1 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 1.

ENET 8M CPU

PEC CODE: NTZZ10CC

CPC CODE: B0245895

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ10CD

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The ENET 8M CPU provides the Central Processing Unit (CPU) and the associated Remote Terminal Interface circuit packs.

REFERENCE DOCUMENTATION: SLZZ10CC REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ10CC EMC3-06-010 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 07	----- ECM 635 17	Previous history not available New section created for ENET 8K CPU and RTIF circuit packs.
96 03 28	ECM 632 18	Changed mounting for SNSE.
97 01 07	ECM 635 21	MD the ENET processor card NT9X13FA (NTZZ10CC) per EC 018-49539.

The 64K ENHANCED NETWORK is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPU CP	NT9X13FA		1	XX	YY	AP
Remote Terminal I/F PB	NT9X26AB		1	XX	YY	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ10CC is ordered, these items are provided.

CABINETIZED DUAL SHELF NETWORK

PEC CODE: NTZZ07FA

CPC CODE: B0233979

| RATING: MD

REPLACES: N/A

REPLACED BY: No Replacement

ABBREVIATION NAME: CDSN

ENGINEERING DESCRIPTION: The CDSN houses up to two complete networks per plane in a single bay. All connectors to and from the network module are connected through a bulkhead for EMI protection. The CDSN can only be used with E-CORE. Connection to NT-40 is not supported.

Personality plates are Always Provided with the cabinet.

REFERENCE DOCUMENTATION: SLZZ07FA 00 03 NTZZ07FA REL 03
end

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ07FA EMC3-07-NCK-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- -- 95 10 02	--- --- -- ECM 600 20	Previous history not available. MD section per EC 024-94297

The Cabinetized Dual Shelf Network is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cabinet Dual Shelf Network	NTRX35AA	CDSN	1			AP
2" Filler Plate	P0684448		1	65		AP-01
Frame Supervisory Panel	NT7X34AA	FSP	1	60		AP
Network Module Shelf Assy	NT8X1101	NET0:1	1	47		AP-01
Network Port CP	NT8X12AA			47	01-02	RUL2
Desig. Label for NT8X12AA	P0654992			47	01-02	RUL2
Network Module Shelf Assy	NT8X1101	NET1:1	1	19		AP-01
Network Port CP	NT8X12AA			19	01-02	RUL2
Desig. Label for NT8X12AA	P0654992			19	01-02	RUL2
Filler Faceplates	NT6X02AB			47, 19		RUL1
Network Common CP (Domestic)	NTZZ07GA			19		RUL2
Network Common CP (Domestic)	NTZZ07JA			19		RUL2
Network Module Shelf Assy	NT8X1101	NET0:0	1	33		AP-01
Network Port CP	NT8X12AA			33	01-02	RUL2
Desig. Label for NT8X12AA	P0654992			33	01-02	RUL2
Filler Face Plate 0.875	NT0X50AA			33	01-02	RUL2
Network Module Shelf Assy	NT8X1101	NET1:0	1	05		AP-01
Network Common CP Kit	NTZZ07GA			05		RUL2
Network Common CP Kit	NTZZ07JA			05		RUL2
Network Port CP	NT8X12AA			05	01-02	RUL2
Desig. Label for NT8X12AA	P0654992			05	01-02	RUL2
Filler Face Plate 0.875	NT0X50AA			05	01-02	RUL2
Cable Assembly	NT8X1001					RUL3
Cable Assembly	NT8X1002					RUL3
Cable Assembly	NT8X1104					RUL3
Cooling Unit	NTNX27CA	CU	1	00		AP
Personality Plate	P0730029		4	47, 33, 19, 05		AP-01
37 Pin Cover Plate	P0715774			47, 33, 19, 05		RUL7
Screws	P0670923			47, 33, 19, 05		RUL7
EMI Kit (EMI Doors)	NTRX2516					RUL4
EMI Ready Door Kit	NTRX2513					RUL4
Cable Trough Assembly	NTNX5511					RUL5
Leveling Foot Kit	NTRX2523					RUL6
CDSN Door Label	P0726706		4			AP
Frame and Logic Ground Kit	NTNX2519		4			AP-01

Retired Equipment
Cabinetized Dual Shelf Network

NTZZ07FA
EMC3-07-NCK-1
Page 3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ07FA is a single bay dual plane cabinet comprising four (4) separate Network Modules (NM), two (2) for plane 0 and two (2) for plane 1. The lower numbered NM is located on pos 33 designated as plane 0 and located on pos 05 designated as plane 1. The higher numbered NM is located on pos 47 designated as plane 0 and located on pos 19 designated as plane 1. The FSP is common to both planes.
- 2) Each NM can terminate sixty-four (64) speech links originating from peripheral modules/SLC cabinet.
- 3) In the ABBR column, the following notation applies:

NET0:1 - Network Plane 0 for NM 1
NET1:1 - Network Plane 1 for NM 1
NET0:0 - Network Plane 0 for NM 0
NET1:0 - Network Plane 1 for NM 0
- 4) The CDSN is always equipped with four (4) network shelves. Only circuit packs are provisionable.

RULES:

- AP 1) When PEC NTZZ07FA is ordered, these items are provided.

- AP-01 1) This PEC is always provided on the NTRX35AA cabinet and is shown here for completeness.
- RUL1 1) Provide one (1) NT6X02AB Filler Faceplates for position 47 and position 19, when this cabinet, NTZZ07FA, is equipped with one (1) Network Module per plane.

- RUL2 1) Provide NTZZ07GA (Network Common CP Kit) and NT8X12AA (Network Port CP) as per Table A for Network Modules NON-junctored at the CDNI.

TABLE A

	NTZZ07GA		NT8X12AA	
	NETWORK COMMON CP		NETWORK PORT CP	
	QTY	POSITION	QTY	POSITION
1 Network Module per cab. non-junctored at CDNI (i.e. only 1 CDSN in the office)	1	33: 05:	0	
2 Network Modules per cab. non-junctored at CDNI (i.e. only 1 CDSN in the office)	1	33:	2	33:01-02
		05:	2	05:01-02
	1	47:	2	47:01-02
		19:	2	19:01-02

NOTE: Provision NT0X50AA in slots 01-02 when only one network module has been provisioned.

- 2) Provide NTZZ07JA (Network Common CP Kit) as per Table A1 for Network Modules JUNCTORED at the CDNI. The NT8X12AAs (Network Port CP) are always provided with the NTZZ07JA.

TABLE A1

	NTZZ07JA		NT8X12AA	
	NETWORK COMMON CP		NETWORK PORT CP	
	QTY	POSITION	QTY	POSITION
1 Network Module per cab. junctored at CDNI (i.e. 3 or more Networks in the office)	1	33: 05:	AP AP	33:01-04 05:01-04
2 Network Modules per cab. junctored at CDNI (i.e. 3 or more Networks in the office)	1 1	33: 05: 47: 19:	AP AP AP AP	33:01-04 05:01-04 47:01-04 19:01-04

NOTE: "Qty" refers to the number of PECs to order while "Position" refers to the shelf position and card position (Shelf:Card) of the CP.

- 3) In extensions, when converting from one configuration to another, ensure that additional CP's are provided/removed in order to satisfy the final configuration.

RUL3 1) Provide Cable Assemblies NT8X1104, NT8X1001 and NT8X1002 as per Table B:

TABLE B

	NT8X1104		NT8X1001		NT8X1002	
	CABLE ASSEMBLY		CABLE ASSEMBLY		CABLE ASSEMBLY	
	QTY	FROM/TO	QTY	FROM/TO	QTY	FROM/TO
1 Network Module per cab. non-junctored at CDNI (i.e. only 1 network in the office)	1	33:01-33:02	0		0	
	1	33:03-33:04				
	1	05:01-05:02				
	1	05:03-05:04				
2 Network Modules per cab. non-junctored at CDNI (i.e. only 1 CDSN in the office)	1	33:03-33:04	2	05:01-19:02	2	05:01-19:02
	1	05:03-05:04	2	05:02-19:01	2	05:02-19:01
	1	47:03-47:04	2	33:01-47:02	2	33:01-47:02
	1	19:03-19:04	2	33:02-47:01	2	33:02-47:01

NOTE: "Qty" refers to the number of Cable Assemblies to provide while "From/To" refers to the two positions on the cabinet (Shelf Position:Card Position) that are connected via the Cable Assembly.

- 2) In extensions, when converting from one configuration to another, ensure that additional Cable Assemblies are provided/removed in order to satisfy the final configuration.

RUL4 1) Provide one NTRX2516, EMI Kit (EMI Doors), per cabinet for EMI compliant applications.

- 2) Provide one NTRX2513, EMI Ready Door Kit, per cabinet for EMI Ready applications

RUL5 1) Provide one NTN5511, Cable Trough Assembly, per cabinet when overhead cabling is required.

- RUL6 1) Provide one NTRX2523, Leveling Foot Kit, per cabinet for Non-Earthquake offices.
- RUL7 1) Provide 32 P0715774, 37-Pin Cover Plate, and 64 P0670923, Screw, per cabinet when non-junctored at the CDNI.

NETWORK COMMON CP KIT

PEC CODE: NTZZ07JA

CPC CODE: B0233982

| RATING: MD

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: CDSN

ENGINEERING DESCRIPTION: Network Common CP Kit for Cabinetized Dual Shelf Network (CDSN) NTZZ07FA. Provide for Network Modules JUNCTORED at the CDNI.

REFERENCE DOCUMENTATION: SLZZ07JA 00 02
NTZZ07JA REL 02

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ07JA EMC3-07-NCK-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 05 24	ECM 600 16	Change NT2X70AE to NT2X70AF Power Pack and label per ECD 024-93972. MD section per EC 024-94297
95 10 02	ECM 600 20	

The Network Common Circuit Packs is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Common CP	NT8X11AD		1			AP
Network Port CP	NT8X12AA		4	X+28	01-04	AP
Crosspoint CP	NT8X13AA		1	X+28	05	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	06	AP-01
Crosspoint CP	NT8X13AA		1	X+28	07	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	08	AP-01
Test Code CP	NT8X14AA		1	X+28	09	AP-01
Crosspoint CP	NT8X13AA		1	X+28	10	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	11	AP-01
Crosspoint CP	NT8X13AA		1	X+28	12	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	13	AP-01
Network Port CP	NT8X12AA		4	X+28	14-17	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	18	AP-01
Network P-Side Msg Proc	NT3X75BA		1	X+28	19	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	20	AP-01
Net Control Proc	NT3X74BB		1	X+28	21	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	22	AP-01
Net Clock CP	NT3X76AC		1	X+28	23	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	24	AP-01
Power Converter	NT2X70AF		1	X+28	25	AP
Network Port CP	NT8X12AA		4	X	01-04	AP
Crosspoint CP	NT8X13AA		1	X	05	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	06	AP-01
Crosspoint CP	NT8X13AA		1	X	07	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	08	AP-01
Test Code CP	NT8X14AA		1	X	09	AP-01
Crosspoint CP	NT8X13AA		1	X	10	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	11	AP-01
Crosspoint CP	NT8X13AA		1	X	12	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	13	AP-01
Network Port CP	NT8X12AA		4	X	14-17	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	18	AP-01
Network P-Side Msg Proc	NT3X75BA		1	X	19	AP
Filler Face Plate 0.875	NT0X50AA		1	X	20	AP-01
Net Control Proc	NT3X74BB		1	X	21	AP
Filler Face Plate 0.875	NT0X50AA		1	X	22	AP-01
Net Clock CP	NT3X76AC		1	X	23	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Power Converter	NT2X70AF		1	X	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Shelf Cables	NTRX3523		8			AP
Network Shelf Cables	NTRX3524		8			AP
Desig. Strip for NT8X11AD	P0701589		2			AP-01
Desig. Label for NT8X12AA	P0654992		4	X+28	01-04	AP
Desig. Label for NT3X75BA	P0700564		1	X+28	19	AP
Desig. Label for NT3X74BB	P0686094		1	X+28	21	AP
Desig. Label for NT3X76AC	P0677803		1	X+28	23	AP
Desig. Label for NT2X70AF	P0809960		1	X+28	25	AP
Desig. Label for NT8X12AA	P0654992		4	X	01-04	AP
Desig. Label for NT3X75BA	P0700564		1	X	19	AP
Desig. Label for NT3X74BB	P0686094		1	X	21	AP
Desig. Label for NT3X76AC	P0677803		1	X	23	AP
Desig. Label for NT2X70AF	P0809960		1	X	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE	MD	NT2X70AF

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ07JA is ordered, these items are provided.

- 2) One Network Common Circuit Pack can be assigned on the CDSN where shelf mounting position X=05 and the other where shelf mounting position X=19.
- AP-01 1) This PEC is always provided on the NT8X11AD Network Common CP and is shown here for completeness.

NETWORK COMMON CP KIT

PEC CODE: NTZZ07GA

CPC CODE:

RATING: MD

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: CDSN

ENGINEERING DESCRIPTION: Network Common CP Kit for Cabinetized Dual Shelf Network (CDSN) NTZZ07FA. Provide for Network Modules NON-JUNCTORED at the CDNI.

REFERENCE DOCUMENTATION: SLZZ07GA 00 02
NTZZ07GA REL 02

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ07GA EMC3-07-NCK-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 05 24	ECM 600 16	Change NT2X70AE to NT2X70AF Power Pack and label per ECD 024-93972. MD section per BB Rationalization.
96 03 27	ECM 600 22	

The Network Common Circuit Packs is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Common CP	NT8X11AD		1			AP
Filler Face Plate 0.875	NT0X50AA		2	X+28	03-04	AP
Crosspoint CP	NT8X13AA		1	X+28	05	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	06	AP-01
Crosspoint CP	NT8X13AA		1	X+28	07	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	08	AP-01
Test Code CP	NT8X14AA		1	X+28	09	AP-01
Crosspoint CP	NT8X13AA		1	X+28	10	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	11	AP-01
Crosspoint CP	NT8X13AA		1	X+28	12	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	13	AP-01
Network Port CP	NT8X12AA		4	X+28	14-17	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	18	AP-01
Network P-Side Msg Proc	NT3X75BA		1	X+28	19	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	20	AP-01
Net Control Proc	NT3X74BB		1	X+28	21	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	22	AP-01
Net Clock CP	NT3X76AC		1	X+28	23	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	24	AP-01
Power Converter	NT2X70AF		1	X+28	25	AP
Filler Face Plate 0.875	NT0X50AA		2	X	03-04	AP
Crosspoint CP	NT8X13AA		1	X	05	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	06	AP-01
Crosspoint CP	NT8X13AA		1	X	07	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	08	AP-01
Test Code CP	NT8X14AA		1	X	09	AP-01
Crosspoint CP	NT8X13AA		1	X	10	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	11	AP-01
Crosspoint CP	NT8X13AA		1	X	12	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	13	AP-01
Network Port CP	NT8X12AA		4	X	14-17	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	18	AP-01
Network P-Side Msg Proc	NT3X75BA		1	X	19	AP
Filler Face Plate 0.875	NT0X50AA		1	X	20	AP-01
Net Control Proc	NT3X74BB		1	X	21	AP
Filler Face Plate 0.875	NT0X50AA		1	X	22	AP-01
Net Clock CP	NT3X76AC		1	X	23	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Power Converter	NT2X70AF		1	X	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Strip for NT8X11AD	P0701589		2			AP-01
Desig. Label for NT3X75BA	P0700564		1	X+28	19	AP
Desig. Label for NT3X74BB	P0686094		1	X+28	21	AP
Desig. Label for NT3X76AC	P0677803		1	X+28	23	AP
Desig. Label for NT2X70AF	P0809960		1	X+28	25	AP
Desig. Label for NT3X75BA	P0700564		1	X	19	AP
Desig. Label for NT3X74BB	P0686094		1	X	21	AP
Desig. Label for NT3X76AC	P0677803		1	X	23	AP
Desig. Label for NT2X70AF	P0809960		1	X	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE	MD	NT2X70AF

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ07GA is ordered, these items are provided.
- 2) One Network Common Circuit Pack can be assigned on the CDSN
cabinet where shelf mounting position X=05 and the other
where shelf mounting position X=19.

AP-01 1) This PEC is always provided on the NT8X11AD Network Common CP and is shown here for completeness.

NETWORK COMMON CP KIT (48V)

PEC CODE: NTZZ07RA

CPC CODE: B0238721

| RATING: Manufacture Discontinued

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: CDSN

ENGINEERING DESCRIPTION: Network Common CP Kit for Cabinetized Dual Shelf Network (CDSN). Provide for Network Modules in 48V Applications.

REFERENCE DOCUMENTATION: SLZZ07RA 00 01
NTZZ07RA REL 01

MARKETS: Applicable markets:

US
CALA

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ07RA EMC3-07-NCK-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	Introduces the NTZZ07RA Network Common CP Kit (48V).
96 04 02	ECM 683 22	MD section as it's not a product.

The Network Common CP Kit (48V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Common CP	NT8X11AD		1			AP
Crosspoint CP	NT8X13AA		1	X+28	05	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	06	AP-01
Crosspoint CP	NT8X13AA		1	X+28	07	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	08	AP-01
Test Code CP	NT8X14AA		1	X+28	09	AP-01
Crosspoint CP	NT8X13AA		1	X+28	10	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	11	AP-01
Crosspoint CP	NT8X13AA		1	X+28	12	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	13	AP-01
Network Port CP	NT8X12AA		4	X+28	14-17	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	18	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	20	AP-01
Net Control Proc	NT3X74BB		1	X+28	21	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	22	AP-01
Net Clock CP	NT3X76AC		1	X+28	23	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	24	AP-01
Power Converter	NT2X70AE		1	X+28	25	AP
Crosspoint CP	NT8X13AA		1	X	05	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	06	AP-01
Crosspoint CP	NT8X13AA		1	X	07	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	08	AP-01
Test Code CP	NT8X14AA		1	X	09	AP-01
Crosspoint CP	NT8X13AA		1	X	10	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	11	AP-01
Crosspoint CP	NT8X13AA		1	X	12	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	13	AP-01
Network Port CP	NT8X12AA		4	X	14-17	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	18	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	20	AP-01
Net Control Proc	NT3X74BB		1	X	21	AP
Filler Face Plate 0.875	NT0X50AA		1	X	22	AP-01
Net Clock CP	NT3X76AC		1	X	23	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Power Converter	NT2X70AE		1	X	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Strip for NT8X11AD	P0701589		2			AP-01
Desig. Label for NT3X74BB	P0686094		1	X+28	21	AP
Desig. Label for NT3X76AC	P0677803		1	X+28	23	AP
Desig. Label for NT2X70AE	P0698943		1	X+28	25	AP
Desig. Label for NT3X74BB	P0686094		1	X	21	AP
Desig. Label for NT3X76AC	P0677803		1	X	23	AP
Desig. Label for NT2X70AE	P0698943		1	X	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ07RA is ordered, these items are provided.
- 2) One Network Common Circuit Pack can be assigned on the CDSN where shelf mounting position X=05 and the other where shelf mounting position X=19.
- AP-01 1) This PEC is always provided on the NT8X11AD Network Common CP and is shown here for completeness.

NETWORK COMMON CP KIT
(48V INTERNATIONAL)

PEC CODE: NTZZ07SA

CPC CODE: B0238722

| RATING: Manufacture Discontinued

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: CDSN

ENGINEERING DESCRIPTION: Network Common CP Kit for Cabinetized Dual Shelf Network (CDSN). Provide for Network Modules in 48V International Applications.

REFERENCE DOCUMENTATION: SLZZ07SA 00 01
NTZZ07SA REL 01

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ07SA EMC3-07-NCK-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	Introduces the NTZZ07SA Network Common CP Kit (48V International). MD section as it's not a product.
96 04 02	ECM 683 22	

The Network Common CP Kit (48V International) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Common CP Intl	NT8X11BB		1			AP
Crosspoint CP International	NT8X13BA		1	X+28	05	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	06	AP-01
Crosspoint CP International	NT8X13BA		1	X+28	07	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	08	AP-01
Test Code CP	NT8X14AA		1	X+28	09	AP-01
Crosspoint CP International	NT8X13BA		1	X+28	10	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	11	AP-01
Crosspoint CP International	NT8X13BA		1	X+28	12	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	13	AP-01
Network Port CP	NT8X12AA		4	X+28	14-17	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	18	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X+28	20	AP-01
Net Control Proc	NT3X74BB		1	X+28	21	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	22	AP-01
Net Clock CP	NT3X76AC		1	X+28	23	AP
Filler Face Plate 0.875	NT0X50AA		1	X+28	24	AP-01
Power Converter	NT2X70AE		1	X+28	25	AP
Crosspoint CP International	NT8X13BA		1	X	05	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	06	AP-01
Crosspoint CP International	NT8X13BA		1	X	07	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	08	AP-01
Test Code CP	NT8X14AA		1	X	09	AP-01
Crosspoint CP International	NT8X13BA		1	X	10	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	11	AP-01
Crosspoint CP International	NT8X13BA		1	X	12	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	13	AP-01
Network Port CP	NT8X12AA		4	X	14-17	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	18	AP-01
Filler Face Plate 0.875	NT0X50AA		1	X	20	AP-01
Net Control Proc	NT3X74BB		1	X	21	AP
Filler Face Plate 0.875	NT0X50AA		1	X	22	AP-01
Net Clock CP	NT3X76AC		1	X	23	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP-01
Power Converter	NT2X70AE		1	X	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Strip for NT8X11BB	P0701588		2			AP-01
Desig. Label for NT3X74BB	P0686094		1	X+28	21	AP
Desig. Label for NT3X76AC	P0677803		1	X+28	23	AP
Desig. Label for NT2X70AE	P0698943		1	X+28	25	AP
Desig. Label for NT3X74BB	P0686094		1	X	21	AP
Desig. Label for NT3X76AC	P0677803		1	X	23	AP
Desig. Label for NT2X70AE	P0698943		1	X	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ07SA is ordered, these items are provided.
- 2) One Network Common Circuit Pack can be assigned on the CDSN where shelf mounting position X=05 and the other where shelf mounting position X=19.
- AP-01 1) This PEC is always provided on the NT8X11BB Network Common CP and is shown here for completeness.

DIGITAL NETWORK INTERCONNECT CABINET

PEC CODE: NTZZ20CA

| CPC CODE: B0233986

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: CDNI

ENGINEERING DESCRIPTION: The NTZZ20CA provides a patch cord junctor cross-connect facility for interconnecting between the network junctor face ports of Network Modules in the same plane. The CDNI is packaged in an EMI cabinet.

REFERENCE DOCUMENTATION: SLZZ20CA 00 01
NTZZ20CA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ20CA EMC3-08-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- -- 95 10 02	--- --- -- ECM 600 20	Previous history not available. MD section per EC 024-94297

The Digital Network Connecting Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dgtl Net Conn Cabinet	NTRX38AA	CDNI	1			AP
Dgtl Net Junctor Cntg Pnl	NT0X18DD	NJC		XX		RUL1
Junctor Patch Cords	AR					RUL2
NJC to BLKHD CA ASSY	NTRX3720					RUL3
Personality Plate Right	P0715596			47, 33, 19, 05		RUL4
Personality Plate Left	P0730030			47, 33, 19, 05		RUL4
Personality Plate Blank	P0715616			47, 33, 19, 05		RUL4
37 pin Cover Plate	P0715774					RUL4
Mounting Screw	P0670923					RUL4
EMI Kit (EMI Doors)	NTRX2517					RUL6
EMI Ready Door Kit	NTRX2513					RUL6
Cable Trough Assembly	NTNX5511					RUL7
Leveling Foot Kit	NTRX2523					RUL8
Door Label	P0726704		1			AP
Frame Ground Kit	NTRX2518		1			AP-01

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) The DNI provides space to mount a maximum of 16 digital network junctor connecting panels (NJC).
- 2) "XX" can be one of 58, 54, 51, 47, 44, 40, 37, 33, 30, 26, 23, 19, 16, 12, 09, 05.
- 3) For small offices plane 0 and 1 may be combined within the same cabinet. Plane 0 shelf positions are 58, 54, 51, 47, 44, 40, 37 and 33. Plane 1 shelf positions are 30, 26, 23, 19, 16, 12, 09 and 05.
- 4) One CDNI cabinet is required for each 16 Network Modules (NM) per plane with the following exceptions:
 - a) For offices whose ultimate network size will not exceed 8 networks per plane and where floor space is at a premium, junctors of both planes may be combined on the same CDNI cabinet.
- 5) Maximum four (4) CDNI cabinets per system.
- 6) For networks consisting of fewer than three modules duplicated, the DNI cabinet and panel is not required as junctoring is achieved by direct cabling between the Network Module shelves.

RULES:

- AP 1) When PEC NTZZ20CA is ordered, these items are provided.
- RUL1 1) Provide two (2) Network Junctor Connecting Panels, NT0X18DD, per network i.e. one per network plane, This network is the type that is mounted on the Double Shelf Network Equipment (DSNE) frame.
- RUL2 1) Junctor patch cords are selected according to the running distance between the two ports which are to be interconnected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18DB/DC/DD and NJC panels NT0X18DB/DC/DD:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	CODE (CPC)
2.0	.61	BK-W	NE-P4QDY	A0289622
3.0	.91	BK-Y	NE-P4QEA	A0289623
4.0	1.22	BK-O	NE-P4QEB	A0289624
5.0	1.52	BK-R	NE-P4QEC	A0289625
6.5	1.98	BK-G	NE-P4QED	A0289626
8.0	2.44	BK-BR	NE-P4QEE	A0289627
10.0	3.05	BK-W	NE-P4QEF	A0289628
15.0	4.57	BK-Y	NE-P4QEG	A0289629

RUL3 1) Provide eight (8) NTRX3720 CDNI Cable Assemblies for each NT0X18DD NJC panel provisioned to connect the panel to the bulkhead.

RUL4 1) Provide Personality Plates, 37-Pin Connector Covers, and Mounting screws per cabinet as follows:

PP = NJC/4 {SINGLE PLANE CABINETS}
(No. of Personality Plates per side :
P0715596 & P0730030)

or

PP = (NJC/8) x 2 {COMBINED PLANE CABINETS}
(No. of Personality Plates per side :
P0715596 & P0730030)

BP = 4 - PP
(No. of Blank Personality Plates per side :
P0715616)

CV = ((PP x 4) - (NJC)) x 8
(Total No. 37-Pin Cover Plates : P0715774)

HW = CV x 2
(Total No. Cover Mounting Hardware : P0670923)

RUL5 1) Reserved

RUL6 1) Provide one NTRX2517, EMI Kit Double Bulkhead, per cabinet for EMI compliant applications.

2) Provide one NTRX2513, EMI Ready Door Kit, per cabinet for EMI Ready applications

RUL7 1) Provide one NTN5511, Cable Trough Assembly, per cabinet when overhead cabling is required.

RUL8 1) Provide one NTRX2523, Leveling Foot Kit, per cabinet for Non-Earthquake offices.

NJC PANEL AND CABLE KIT

PEC CODE: NTZZ21FM

CPC CODE: B0238577

| RATING: Manufacture Discontinued

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: PSLK

ENGINEERING DESCRIPTION: The NTZZ21FM provides one (1) Digital Network Junctor Connecting Panel and (8) NJC to Bulkhead Cable Assemblies.

REFERENCE DOCUMENTATION: SLZZ21FM 00 01
NTZZ21FM REL 01

MARKETS: Applicable markets:

Europe
Asia/Pacific
CALA
US

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ21FM EMC3-09-NJC CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	Introduce the NTZZ21FM NJC Panel and Cable Kit for Model B. MD section as it's not a product.
96 04 02	ECM 683 22	

The NJC Panel and Cable Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Junctor Panel	NT0X18DD	NJC	1	WW		AP
NJC to BLKHD CA ASSY	NTRX3722		8	WW		AP

EQUIPMENT FLAGGED '#' :

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "WW" can be one of 54, 47, 40, 33, 26, 19, 12 and 05. The NJC panels mount in the corresponding positions as follows: 58, 51, 44, 37, 30, 23, 16 and 09.

RULES:

- AP 1) When PEC NTZZ21FM is ordered, these items are provided.

NSL/PSL PANEL AND CABLE KIT

PEC CODE: NTZZ21EA

CPC CODE:

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ21EA provides two Network Speech Link Panel, two Peripheral Speech Link Panel, 16 NSL to Bulkhead Cable Assemblies, and 16 PSL to Bulkhead Cable Assemblies.

REFERENCE DOCUMENTATION: SLZZ21EA 00 01
NTZZ21EA REL 01

MARKETS: Applicable markets:

Canada
CALA
Europe
Asia/Pacific

| ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ21EA EMC3-09-NSL CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 27	----- ECM 600 22	Previous history not available MD section per BB Rationalization.

The Speech Link Connecting Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Speech Link Panel	NT0X56BB	NSL	2	YY		AP
Peripheral Speech Link Panel	NT0X56BC	PSL	2			AP
NSL to BLKHD CA ASSY	NTRX3720		16	YY		AP
PSL to BLKHD CA ASSY	NTRX3721		16			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

1) "YY" can be one of 58, 44, 30, 16. The PSL panels mount in the corresponding positions as follows: 54, 40, 26, 12.

RULES: AP 1) When Pec NTZZ21EA is ordered, these items are provided.

NSL PANEL AND CABLE KIT

PEC CODE: NTZZ21EM

CPC CODE: B0238514

| RATING: Manufacture Discontinued

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: NSLK

ENGINEERING DESCRIPTION: The NTZZ21EM provides one (1) Network Speech Link Panel and eight (8) NSL to Bulkhead Cable Assemblies.

REFERENCE DOCUMENTATION: SLZZ21EM 00 01
NTZZ21EM REL 01

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ21EM EMC3-09-NSL-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	Introduce the NTZZ21EM NSL Panel and Cable Kit for Model B. MD section as it's not a product.
96 04 02	ECM 683 22	

The NSL Panel and Cable Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Speech Link Panel	NT0X56BB	NSL	1	WW		AP
NSL to BLKHD CA ASSY	NTRX3722		8	WW		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "WW" can be one of 58, 51, 44, 37, 30, 23, 16 and 09. The NSL panels mount in the corresponding positions as follows: 54, 47, 40, 33, 26, 19, 12 and 05.

RULES:

- AP 1) When PEC NTZZ21EM is ordered, these items are provided.

PSL PANEL AND CABLE KIT

PEC CODE: NTZZ21FA

CPC CODE: B0237894

| RATING: Manufacture Discontinued

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: PSLK

ENGINEERING DESCRIPTION: The NTZZ21FA provides one (1) Peripheral
Speech Link Panels and eight (8) PSL to
Bulkhead Cable Assemblies.REFERENCE DOCUMENTATION: SLZZ21FA 00 01
NTZZ21FA REL 01

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ21FA EMC3-09-PSL CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	Introduce the NTZZ21FA PSL Panel and Cable Kit for Model B.
96 04 02	ECM 683 22	MD section as it's not a product.

The PSL Panel and Cable Kit. is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Peripheral Speech Link Panel	NT0X56BC	PSL	1	WW		AP
PSL to BLKHD CA ASSY	NTRX3723		8	WW		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "WW" can be one of 54, 47, 40, 33, 26, 19, 12 and 05. The NSL panels mount in the corresponding positions as follows: 58, 51, 44, 37, 30, 23, 16 and 09.

RULES:

- AP 1) When PEC NTZZ21FA is ordered, these items are provided.

SPEECH LINK CONNECTING CABINET

PEC CODE: NTZZ21CA

| CPC CODE: B0233982

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: CSLC

ENGINEERING DESCRIPTION: The NTZZ21CA provides a patch cord cross-connecting facility in the speech links between the Peripheral and Network subsystems. The network interface ports of the peripheral equipment terminate on Peripheral Speech Link Connecting panels (PSL) while the peripheral face ports of the network modules terminate on Network Speech Link Connecting panels (NSL). Connectorized patch cords complete the interconnections between ports of the two groups. The CSLC is equipped with an EMI cabinet.

REFERENCE DOCUMENTATION: SLZZ21CA 00 01
NTZZ21CA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Europe
Asia/Pacific

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ21CA EMC3-09-00 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- --	--- --- --	Previous history not available.
95 09 18	ECM 580 02	MD section per EC 024-94297
95 10 02	ECM 600 20	MD section per EC 024-94297

The Speech Link Connecting Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Speech Link Conn Cabinet	NTRX37AA	CSLC	1			AP
Network Speech Link Panel	NT0X56BB	NSL		XX		RUL2
Peripheral Speech Link Panel	NT0X56BC	PSL		XX		RUL1
NSL/PSL Panel and Cable Kit	NTZZ21EA	NSL/PSL		YY		RUL7
Speech Link Patch Cords	AR					RUL3
NSL to BLKHD CA ASSY	NTRX3720			XX		RUL4
PSL to BLKHD CA ASSY	NTRX3721			XX		RUL5
Digital Net Junctor Cntg Pnl	AR	NJC		XX		RUL8
Personality Plate Right	P0730031			47,33,19,05		RUL6
Personality Plate Left	P0730032			47,33,19,05		RUL6
Personality Plate Blank	P0715616			47,33,19,05		RUL6
37 Pin Connector Covers	P0715774					RUL6
Cover Mounting Screw	P0670923					RUL6
EMI Kit (EMI Doors)	NTRX2517					RUL9
EMI Ready Door Kit	NTRX2513					RUL9
Cable Trough Assembly	NTNX5511					RUL10
Leveling Foot Kit	NTRX2523					RUL11
Door Label	P0726705		1			AP
Frame Ground Kit	NTRX2518		1			AP-01

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) "XX" can be one of 58, 51, 44, 37, 30, 23, 16, & 09 for NSL panels and 54, 47, 40, 33, 26, 19, 12, & 05 for PSL panels. "XX" can be any of these shelf position for all other equipment. "YY" can be one of 58, 44, 30, 16.
- 2) For offices whose ultimate size will not exceed four (4) NET per plane and depending on the PSL:NSL ratio, speech link panels of both planes may be combined on the same SLC. However, this is not recommended and should be considered only if floor space for the second SLC is not available. Plane 0 shelf positions are 58, 54, 51, 47, 44, 40, 37 and 33. Plane 1 shelf positions are 30, 26, 23, 19, 16, 12, 09 and 05.

- 3) The CSLC Cabinet has designated fixed positions for mounting the NSL and PSL panels. The panels shall be mounted starting from the top of the cabinet and working down. The specific mounting positions are as follows:

Panel Type	PEC	Cabinet Mounting Positions
NSL	NT0X56BB	58,51,44,37,30,23,16,09
PSL	NT0X56BC	54,47,40,33,26,19,12,05

- 4) Each Speech Link Connecting Cabinet can accommodate up to 16 PSL plus NSL panels. However, in order to ensure easy access to all panels and to limit cabling congestion it is recommended that one (1) CSLC be provided per eight (8) Network Modules in each plane. The number of vacant panel positions in the cabinet will depend on the total NET count and on the ratio of PSL:NSL panels.

RULES:

- AP 1) When Pec NTZZ21CA is ordered, these items are provided.
- RUL1 1) Provide two (2) NT0X56BC, one per plane, for every eight units of peripheral equipment type CTME or every four units of peripheral equipment type CDTE, CLGE, CLTE, or CSME.
- 2) For ease of office administration, separate PSL can be used to segregate Cable Groups according to originating peripheral type.
- 3) Note that on the NT0X56BC patch panel, port 04 is not used for every cable group and two of the original five port cable groups are combined into one eight port cable group.
- 4) Peripheral types, TM, MTM, OAU and TAN utilize just one port per module per plane and therefore are not assigned individual Cable Groups. Instead modules on a given cabinet share a common Cable Group associated with that cabinet which gets cabled to the CSLC. Note that peripheral modules of this type use only ports 0-3 of the combined eight port cable group. Ports 4-7 are unavailable.

- RUL2 1) One NSL can terminate all the speech links from one Network Module (NM).
- 2) Provide two (2) Network Speech Link (NSL) Panels, NT0X56BB, for each network (i.e. one per network plane) provided on Cabinetized Double Shelf Network CDSN). On a fully equipped CDSN (equipped with two (2) networks) provide four (4) NSL panels.
- RUL3 1) Speech link patch cords are selected according to the running distance between the two ports which are to be inter-connected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following speech link patch cords are required when cross connecting between NSL panels NT0X56BB and PSL panels NT0X56BC:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	W	NE-P4QDK	A0289611
3.0	.91	Y	NE-P4QDL	A0289612
4.0	1.22	O	NE-P4QDM	A0289613
5.0	1.52	R	NE-P4QDN	A0289614
6.5	1.98	G	NE-P4QDP	A0289615
8.0	2.44	BR	NE-P4QDR	A0289616
10.0	3.05	W	NE-P4QDS	A0289617
15.0	4.57	Y	NE-P4QDT	A0289618
20.0	6.10	O	NE-P4QDU	A0289619
25.0	7.62	R	NE-P4QDW	A0289620
30.0	9.14	G	NE-P4QDX	A0289621

- RUL4 1) Provide eight (8) NTRX3720, NSL to BLKHD CA ASSY, for each NT0X56BB NSL panel provisioned to connect the panel to the bulkhead.
- RUL5 1) Provide eight (8) NTRX3721, PSL to BLKHD CA ASSY, for each NT0X56BC PSL panel provisioned to connect the panel to the bulkhead.
- RUL6 1) Provide Personality Plates, 37-Pin Cover Plates, and Cover Mounting Hardware per cabinet as follows:

GR = Greater of NSL or PSL panels

PP = $GR/2$ {SINGLE PLANE CABINET}
(No. of Personality Plates per side :
P0730031 & P0730032)
or

PP = $(GR/4) \times 2$ {COMBINED PLANE CABINET}
(No. of Personality Plates per side :
P0730031 & P0730032)

BP = $4 - PP$
(No. of Blank Personality Plates per side :
P0715616)

CV = $((PP \times 4) - (NSL + PSL)) \times 8$
(Total No. 37-Pin Cover Plates : P0715774)

HW = $CV \times 2$
(Total No. Cover Mounting Hardware : P0670923)

- RUL7 1) Provide one NTZZ21EA, NSL/PSL Panel Cable Kit, when two of each type panel are required. Panel to Bulkhead cables are always provided in this kit.
- RUL8 1) Digital Network Junctor Connecting Panels (NJC) may be provided on the CSLC frame. For assignment rules related to NJC, refer to NTZZ20CA. This configuration is not recommended.
- RUL9 1) Provide one NTRX2517, EMI Kit Double Bulkhead, per cabinet for EMI compliant applications.
- 2) Provide one NTRX2513, EMI Ready Door Kit, per cabinet for EMI Ready applications
- RUL10 1) Provide one NTN5511, Cable Trough Assembly, per cabinet when overhead cabling is required.
- RUL11 1) Provide one NTRX2523, Leveling Foot Kit, per cabinet for Non-Earthquake offices.

97/12/09

EMC4

CENTRAL CONTROL SUBSYSTEMS CHAPTER ALL

CENTRAL CONTROL SUBSYSTEMS CHAPTER ALL

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97/12/09

CENTRAL CONTROL SUBSYSTEMS CHAPTER ALL

EMC4-01-CMC-1	CMC PERIPHERAL INTERFACE	NTZZ25BA
EMC4-01-IOMC-1	I/O MESSAGE CONTROLLER	NTZZ25CA
EMC4-01-MEM-1	1-MEGAWORD MEMORY	NTZZ25DA
EMC4-01-PM-1	REMOTE CONTROL	NTZZ25EA
EMC4-01-PM-2	LOCAL PROCESSOR	NTZZ25FA
EMC4-01-000	CENTRAL CONTROL COMPLEX (DOUBLE BAY) BB	NTZZ25AA
EMC4-01-001	CENTRAL CONTROL COMPLEX (DOUBLE BAY) ENH	NTZZ25GA
EMC4-02-SLM-04	SYSTEM LOAD MODULE 1A	NTZZ34JB
EMC4-02-SLM-1	SLM COMMON CP	NTZZ01BA
EMC4-02-SLM-2	SLM COMMON CP	NTZZ97BG
EMC4-02-SLM-3	SLM COMMON CP	NTZZ01BB
EMC4-03-CPU-1	SUPERNODE SERIES 10 CPU	NTZZ01FA
EMC4-03-CPU-5	SUPERNODE BRISC CPU	NTZZ01SA
EMC4-03-FFP-2	FILLER FACE PLATE	NTZZ01MA
EMC4-03-IF-1	4 PORT NETWORK & IOC I/F	NTZZ01CA
EMC4-03-IF-2	4 PORT LIM/LPP INTERFACE	NTZZ01DA
EMC4-03-IF-3	INITIAL ENHANCED NETWORK INTERFACE	NTZZ01NA
EMC4-03-IF7	INITIAL ENHANCED NETWORK INTERFACE - 128	NTZZ01NM
EMC4-03-IF8	4 PORT LIM/LPP INTERFACE FOR CABINETIZED	NTZZ01VA
EMC4-03-IF9	4 PORT NETWORK & IOC I/F FOR CABINETIZED	NTZZ01UA
EMC4-03-KIT-1	SERIES 60 UPGRADE KIT	NTZZ99AS
EMC4-03-KIT-2	SERIES 60 UPGRADE KIT FROM SERIES 50	NTZZ99AR
EMC4-03-KIT-3	SERIES 60 UPGRADE KIT	NTZZ99AV
EMC4-03-MEM-1	6 MBYTE MEMORY	NTZZ01KA
EMC4-03-000	SUPERNODE CABINET AND COMMON CP	NTZZ01AA
EMC4-03-001	SUPERNODE CABINET AND COMMON CP (GRAY)	NTZZ01AM
EMC4-03-002	SUPERNODE CABINET AND COMMON CP	NTZZ97BH
EMC4-04-AP-1	APC APPLICATION PROCESSOR LEFT	NTZZ35BA
EMC4-04-AP-2	APC APPLICATION PROCESSOR RIGHT	NTZZ35DA
EMC4-04-APC-1	APC (C/42) GRAY EXT. -48V	NTZZ35MA
EMC4-04-APC-2	APC (C/42) BROWN (-48V)	NTZZ35NA
EMC4-04-APC-3	APC (C/42) GRAY (-60V)	NTZZ35PA
EMC4-04-APC-4	APC (C/42) -48V	NTZZ35MB
EMC4-04-APC-5	APC (C/42) BROWN (-48V)	NTZZ35NB
EMC4-04-APC-6	APC (C/42) -60V	NTZZ35PB
EMC4-04-FP-1	APC FILE PROCESSOR LEFT	NTZZ35CA
EMC4-04-FP-2	APC FILE PROCESSOR RIGHT	NTZZ35EA
EMC4-04-FP-3	APC PACK FILL RIGHT	NTZZ35JA
EMC4-04-SD-1	APC STORAGE DEVICE LEFT	NTZZ35FA
EMC4-04-SD-2	APC STORAGE DEVICE RIGHT	NTZZ35GA
EMC4-04-SD-3	APC STORAGE DEVICE (FULL SHELF)	NTZZ35HA
EMC4-04-SD-4	STORAGE DEVICE PACK FILL RIGHT WITH PB	NTZZ35KA
EMC4-04-SD-5	STORAGE DEVICE PACK FILL RIGHT W/O PB	NTZZ35LA
EMC4-04-SDF	APC SD (FULL SHELF-C/42)	NTZZ35WA
EMC4-04-SDL	APC SD LEFT(C/42)	NTZZ35UA
EMC4-04-SDR	APC SD RIGHT(C/42)	NTZZ35VA
EMC4-04-000	APPLICATION PROCESSOR CABINET	NTZZ35AA
EMC4-05-000	STREAMLINE SUPERNODE CABINET AND COMMON	NTZZ01TA
EMC4-05-001	SUPERNODE CABINET AND COMMON CP(USA)	NTZZ97BA
EMC4-05-002	STREAMLINE SUPERNODE CABINET AND COMMON	NTZZ97CA
EMC4-05-003	SUPERNODE IN C42(S/DMS) CABINET BCS33 &	NTZZ01RA
EMC4-05-004	SUPERNODE IN C42(S/DMS) CABINET BCS33 &	NTZZ01RN
EMC4-05-005	SUPERNODE S/DMS WITH VARIABLE MEMORY ON	NTZZ01RM

97/12/09

EMC4-05-007	SUPERNODE IN C42(S/DMS) CABINET - BCS34	NTZZ01RB
EMC4-05-008	SUPERNODE S/DMS W/ VAR. MEM. MS - BCS34	NTZZ01RC
EMC4-05-009	SUPERNODE S/DMS - BCS34 & ABOVE	NTZZ01RD
EMC4-05-010	SUPERNODE S/DMS - BCS34 & ABOVE	NTZZ01RE
EMC4-05-011	SUPERNODE S/DMS - BCS34 & ABOVE	NTZZ01RF
EMC4-06-ENI-60V	SUPERNODE SE ENI COMMON CP (-60V)	NTZZ34KA
EMC4-06-000	DMS SUPERNODE SE COMBINED CABINET	NTZZ34AA
EMC4-06-002	DMS SUPERNODE SE	NTZZ34AB
EMC4-06-003	DMS SUPERNODE SE COMBINED CABINET: (-60V	NTZZ34MA
EMC4-06-004	DMS SUPERNODE SE	NTZZ34AC
EMC4-06-005	DMS SUPERNODE SE COMBINED CABINET: (-60V	NTZZ34MB
EMC4-06-006	DMS SUPERNODE SE	NTZZ34AE
EMC4-06-007	SUPERNODE SE ENI COMMON CP DMS SUPERNODE	NTZZ34BA
EMC4-06-008	DMS SUPERNODE SE LIS COMMON CP	NTZZ34EA
EMC4-06-009	DMS SUPERNODE SE LIS COMMON CP	NTZZ34EB
EMC4-06-010	DMS SUPERNODE SE COMBINED CABINET: (-60V	NTZZ34MC
EMC4-06-011	DMS SUPERNODE SE	NTZZ34GA
EMC4-06-012	DMS SUPERNODE SE LIS COMMON CP (-60V)	NTZZ34LA
EMC4-06-013	DMS SUPERNODE SE LIS COMMON CP (-60V)	NTZZ34LB
EMC4-06-014	DMS SUPERNODE SE	NTZZ34AF
EMC4-06-015	DMS SUPERNODE SE	NTZZ34AG
EMC4-06-016	DMS SUPERNODE SE COMBINED CABINET: (-60V	NTZZ34MD
EMC4-06-017	DMS SUPERNODE SE COMBINED CABINET: (-60V	NTZZ34ME
EMC4-06-018	DMS SUPERNODE SE	NTZZ34FA
EMC4-06-019	SUPERNODE SE ENI COMMON CP	NTZZ34BB
EMC4-08-000	APPLICATION PROCESSOR CABINET	NT9X80BA

97/12/09

EMC4

CENTRAL CONTROL SUBSYSTEMS CHAPTER ALL

CMC PERIPHERAL INTERFACE

PEC CODE: NTZZ25BA

RATING: MD

REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: NTZZ25BA provides paired Central Message
Controller Peripheral Interface CPS for each
plane of the CCC.REFERENCE DOCUMENTATION: SLZZ25BA 00 01
NTZZ25BA REL 01

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ25BA EMC4-01-CMC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 09 18	----- ECM 580 02	Previous history not available MD entire NT40 product line per ECs 018-42794, 018-43569, 018-44097, 018-45275, 018-45338, 018-42385.

The CMC Peripheral Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CMC Peripheral I/F CP	NT1X36BB		4	65	X,X+1	AP

RULES:

AP 1) When PEC NTZZ25BA is ordered, these items are provided.

I/O MESSAGE CONTROLLER

PEC CODE: NTZZ25CA

RATING: MD

REPLACED BY: No Replacement

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: NTZZ25CA provides I/O Message Controller CP
to equip both planes of the CCC.REFERENCE DOCUMENTATION: SLZZ25CA 00 01
NTZZ25CA REL 01

MARKETS: Applicable markets:

Canada
US

NTZZ25CA EMC4-01-IOMC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- -- 95 09 18	--- --- -- ECM 580 02	Previous history not available. MD entire NT40 product line per ECs 018-42794, 018-43569, 018-44097, 018-45275, 018-45338, 018-42385.

The I/O Message Controller is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Message Controller CP	NT1X62BB		2	65	23	AP

RULES:

AP 1) When PEC NTZZ25CA is ordered, these items are provided.

1-MEGAWORD MEMORY

PEC CODE: NTZZ25DA

RATING: MD

REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ25DA block provides the required memory circuit packs and designation labels to equip 1 megaword increment of memory in both planes of the CCC.

REFERENCE DOCUMENTATION: SLZZ25DA 00 01
NTZZ25DA REL 01

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ25DA EMC4-01-MEM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 09 18	----- ECM 580 02	Previous history not available MD entire NT40 product line per ECs 018-42794, 018-43569, 018-44097, 018-45275, 018-45338, 018-42385.

The 1-Megaword Memory is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
1MW Memory CP	NT4X80AA		2	XX	YY	AP
Desig Label for NT4X80AA	P0649156		2	XX	YY	AP

RULES:

AP 1) When PEC NTZZ25DA is ordered, these items are provided.

REMOTE CONTROL
PROCESSOR MAINTENANCE CPS

PEC CODE: NTZZ25EA

RATING: MD

REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: NTZZ25EA provides remote control processor
maintenance circuit packs and designation
labels for both planes of the CCC.REFERENCE DOCUMENTATION: SLZZ25EA 00 01
NTZZ25EA REL 01

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ25EA EMC4-01-PM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- -- 95 09 18	--- --- -- ECM 580 02	Previous history not available. MD entire NT40 product line per ECs 018-42794, 018-43569, 018-44097, 018-45275, 018-45338, 018-42385.

The Remote Control Processor Maintenance CPs is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
E2A Telemetry Serial I/F CP	NT1X42AA		2	51	13	AP
Rem Cont Processor Maint CP	NT1X48CA		2	51	16	AP
Desig Label for NT1X42AA	P0649153		2	51	13	AP
Desig Label for NT1X48CA	P0649154		2	51	16	AP

RULES:

AP 1) When PEC NTZZ25EA is ordered, these items are provided.

LOCAL PROCESSOR
MAINTENANCE CPS

PEC CODE: NTZZ25FA

RATING: MD

REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: NTZZ25FA provides local processor maintenance circuit packs and designation labels for both planes of the CCC.

REFERENCE DOCUMENTATION: SLZZ25FA 00 01
NTZZ25FA REL 01

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ25FA EMC4-01-PM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 09 18	----- ECM 580 02	Previous history not available MD entire NT40 product line per ECs 018-42794, 018-43569, 018-44097, 018-45275, 018-45338, 018-42385.

The Local Processor Maintenance CPs is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Processor Maintenance CP	NT1X48DA		2	51	16	AP
Filler Faceplate	NT0X50BA		2	51	13	AP
Desig Label for NT1X48DA	P0661433		2	51	16	AP

RULES:

AP 1) When PEC NTZZ25FA is ordered, these items are provided.

CENTRAL CONTROL COMPLEX (DOUBLE BAY) BB

PEC CODE: NTZZ25AA

RATING: MD

REPLACED BY: No Replacement

ABBREVIATION NAME: CCC

ENGINEERING DESCRIPTION: NTZZ25AA is a double bay frame consisting of two identical Central Control Complex bays. No Memory Extension (MEX) frames are associated with the NTZZ25AA frame.

REFERENCE DOCUMENTATION: SLZZ25AA 00 02
NTZZ25AA REL 02

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ25AA EMC4-01-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 07	----- ECM 183 07	Previous history not available EC #018-39307 - Replace NT0X25AV with NT0X25AH. Change status of NT0X25AV to A&M.
95 09 18	ECM 580 02	MD entire NT40 product line per ECs 018-42794, 018-43569, 018-44097, 018-45275, 018-45338, 018-42385.

The Central Control Complex (Double Bay) BB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Central Cntrl Complex Frame	NT3X45EW		1			AP
% Universal Framework	NT0X25AH		2			AP
CCC Common Circuit Packs	NT3X45ED		1	65,51, 32		AP-01
CCC Common Circuit Packs	NT3X45EJ		1	65,51, 32		AP-01
CCC Common Circuit Packs	NT3X45EV		1	65,51, 32		AP
CM & I/O Device CTL SH ASS	NT2X7606	MDC	2	65		AP-02
Sync Clock Master Osc	NT3X15BB		2	65	01	AP
Sync Master Clock Cont	NT3X14BC		2	65	04	AP
CMC Processor Interface CP	NT1X33BA		2	65	05	AP-05
CMC Common Control CP	NT1X37BA		2	65	06	AP-05
CMC Outgoing Controller CP	NT1X34BA		2	65	07	AP-05
CMC Incoming Controller CP	NT1X35BA		2	65	08	AP-05
CMC Peripheral I/F CP	NT1X36BB		4	65	09,10	AP-05
CMC Peripheral I/F	NTZZ25BA			65	11-22	RUL1
Filler Face Plate .875	NT0X50BA			65	11-22	RUL2
I/O Device Control CP	AR			65	15,17, 19,21	RUL3
I/O Message Controller CP	NTZZ25CA			65	23	RUL4
Filler Face Plate 1.72	NT0X50BF			65	23	RUL2
CMC/IOC BP Terminator CP	NT3X4304		2	65	23R	AP-05
Power Converter	NT2X70BA		2	65	25	AP-03
Power Converter	NT2X70AE		2	65	25	AP
Desig Label for NT3X15BB	P0613355		2	65	01	AP
Desig Label for NT3X14BC	P0645683		2	65	04	AP
Designation Strip (NT2X7606)	P0656305		2	65		AP-05
Desig Label for NT2X70BA	P0613351		2	65	25	AP-03
Desig Label for NT2X70AE	P0698943		2	65	25	AP
Central Proc & Mem Shf Assy	NT3X4106	CPM	2	51		AP-02
Enhanced CPU Cap Common CP	NT3X45EH		1	51		AP
1MW Memory CP	NTZZ25DA			51	01-08	RUL5
Filler Face Plate .875	NT0X50BA			51	01-08	RUL6
16MW Memory BP Terminator	NT3X4309		2	51	01R	AP-05
16MW Memory Control CP	NT4X79AA		2	51	09	AP-05
PS Controller BP Terminator	NT3X4307		2	51	09R	AP-05
Unbal Data Port Ext 40 MHZ	NT1X49DA		2	51	10	AP-04
Processor BP Terminator	NT3X4303		2	51	10R	AP-05
CMC I/F (40 MHZ) CP	NT1X51DA		2	51	11	AP-04
Filler Face Plate .875	NT0X50BA		2	51	12	AP-05

Retired Equipment
Central Control Complex (Double Bay) BB

NTZZ25AA
EMC4-01-000
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Processor 8KW ROM CP	NT1X46DA		2	51	14	AP-04
Filler Face Plate .875	NT0X50BA		2	51	15	AP-05
Rem Cont Processor Maint CPs	NTZZ25EA			51	16	RUL7
Local Proc Maintenance CPs	NTZZ25FA			51	16	RUL7
Proc Timing and Control CP	NT1X47DA		2	51	17	AP-04
Processor ALF CP	NT1X45DA		2	51	18	AP-04
Processor Stack 4KW CP	NT1X44DA		2	51	19	AP-04
Filler Face Plate .875	NT0X50BA		2	51	20	AP-05
Proc Prog Store Port CP	NT1X43DA		2	51	21	AP-04
Power Converter (5V/40A)	NT2X06BB		2	51	22	AP-05
Power Converter	NT2X70BA		2	51	25	AP-03
Power Converter	NT2X70AE		2	51	25	AP
Desig Label for NT2X70BA	P0613351		2	51	25	AP-03
Desig Label for NT2X70AE	P0698943		2	51	25	AP
Desig. Strip (NT3X4106)	P0686468		2	51		AP-04
Frame Supervisory Panel	NT0X28AF	FSP	2	45		AP-02
Dept.of Comm.Cert. Label	P0663265			45		RUL8
16MW Data Store Shf Assy	NT3X3209	DS	2	32		AP-02
Filler Face Plate .875	NT0X50BA		2	32	01	AP-05
Single Ended Mem Bus I/F CP	NT3X37BC		2	32	02	AP-05
Filler Face Plate .875	NT0X50BA		2	32	03	AP-05
16MW Memory Control CP	NT4X79AA		2	32	04	AP-05
Filler Face Plate .875	NT0X50BA		2	32	05	AP-05
1MW Memory CP	NTZZ25DA			32	06-21	RUL9
Filler Face Plate .875	NT0X50BA			32	06-21	RUL6
Desig Label for NT0X50BA	P0599141			32	06-21	RUL10
16MW Memory BP Terminator	NT3X4309		2	32	21R	AP-05
Filler Face Plate 2.62	NT0X50BE		2	32	22	AP-05
Power Converter	NT2X70BA		2	32	25	AP-03
Power Converter	NT2X70AE		2	32	25	AP
Desig Label for NT2X70BA	P0613351		2	32	25	AP-03
Desig Label for NT2X70AE	P0698943		2	32	25	AP
Designation Strip (NT3X3209)	P0656303		2	32		AP-05
Cage Filler Panel Assy	NT0X84AA		2	18		AP-02
DC Fan Cooling Unit	NT3X90AC	CU	2	04		AP-02
Wiring: Sync Off w/o Ext MFR	NT2X76CB		2			AP
Logic Return Cable Assembly	NT0X0008					RUL11
Logic Return Cable Assembly	NT0X0012					RUL11

FLAGS:

% The NT0X25AV is A&M, and it is replaced by NT0X25AH.

NOTES:

- 1) The NTZZ25AA is a double bay frame consisting of two (2) identical Central Control Complex bays.
- 2) The duplicated MDC provided here is capable of interfacing all CPU peripherals (NET & IOC) as CMC0:00 & CMC1:00. It can additionally interface directly to a limited number of I/O devices while functioning as IOC:00 & IOC:01.

Caution: If used to interface Magnetic Tape Drive (MTD) as IOC:00 or IOC:01 then the CCC and MTC/IOE frames must be located adjacent to each other (see also NT0X43AB, Section EMR5-01-001 and NT0X43AC, Section EMR5-01-002, NTZZ09AA, Section EMB5-01-000).

- 3) The duplicated CPM accommodates up to 8 M-Word of PS memory. No memory card is required for spare as a spare row of memory devices on the controller will serve as the "HOT" spare.
- 4) The duplicated DS in position 32 can provide up to 15.75 M-Word of DS memory.
- 5) Two CMC Peripheral Interface cards (NT1X36BB) provided with the MDC shelf will interface a combination of up to five (5) Networks or ten (10) I/O Controller Modules subject to the conditions provided under RUL1.
- 6) The Central Message & I/O Device Controller Module is capable of functioning both as a conventional CMC and optionally as an I/O Controller. Since these functions overlap with respect to card slot assignment the capacity of each is reduced by the other.
- 7) By equipping the I/O Controller function on the MDC separate IOC shelves can be eliminated or reduced in number for a net saving in hardware. Subject to the following conditions this option should always be selected:

- a) This option should not be selected if the ultimate network size is expected to exceed 19 NET per plane. Separate IOC shelves should be provided instead.

Note:

- (i) The above limit allows for a maximum of 3 I/O Device Controller cards per MDC. The user may wish to set the limit to 14 NET to allow for the maximum of 4 cards.
 - (ii) The above limits are decreased by one (1) for each additional 2 IOC shelves required.
- b) This option should not be selected if the number of I/O Device Controller cards provisioned exceeds 15 (17, if the NET cutoff is 14).
 - c) Maximum cabling distances (15 feet) to the MTD must not be exceeded. Maximum cabling distance to the DDU is 18 feet.
 - d) CCC and MTC/IOE frames equipped with MTD must be co-located.
 - e) If selected the function must be provided on both shelves (planes 0 & 1). The controller on plane 0 shall be designated IOC:00 and on plane 1, IOC:01 (see Table B, Section EMB14-02-000, for fixed assignments affecting I/O modules.).
 - f) Additional IOC shelves can be provisioned on MTC/IOE frames as required.
- 8) a) The Central Message & I/O Device Controller, MDC module is located on shelf mounting position 65. There are two (2) MDC per CCC frame.
- b) The Central Processor & Memory, CPM module is located on shelf mounting position 51. There are two (2) CPM per CCC frame.
- c) The Data Store, DS module is located on shelf mounting position 32. There are two (2) DS per CCC frame.

RULES:

- AP 1) When PEC NTZZ25AA is ordered, these items are provided.
- AP-01 1) NT3X45ED and NT3X45EJ CCC Common CP have been replaced by NT3X45EV CCC Common CP.
- AP-02 1) Items marked AP-02 are supplied with NT3X45EW Central Control Complex Frame and are listed for sparing purposes.
- AP-03 1) NT2X70BA Power Converter is replaced by NT2X70AE Power Converter.
- AP-04 1) Items marked AP-04 are supplied with NT3X45EH Enhanced CPU Capacity Common CP and are listed for sparing purposes.
- AP-05 1) Items marked AP-05 are supplied with NT3X45EV CCC Common CP and are listed for sparing purposes.
- RUL1 1) Provide one (dual plane) NTZZ25BA CMC Peripheral Interface for each additional combination of up to five (5) Networks or ten (10) I/O Controller Modules (IOC). Each NTZZ25BA is comprised of a pair of NT1X36BB circuit packs for each plane, providing a maximum of ten (10) ports per plane. Two (2) NT1X36BB CP are always provided in positions 09 and 10 and are used for the first combination of up to five (5) Networks or 10 IOC Modules.
- 2) Port assignments are as follows:
- Each Network module will have two (2) assignments (a plane 0 and a plane 1).
 - Each IOC Module will have one (1) assignment per plane.
 - Module IOC:00 shall be assigned to port 00, card pos 09, terminal 0.
 - Module IOC:01 shall be assigned to port 05, card pos 10, terminal 0.
 - Plane 0 Network Modules shall be assigned to ports on NT1X36BB CP in odd numbered slots.
 - Plane 1 Network Modules shall be assigned to ports on NT1X36BB CP in even numbered slots.
 - Networks and IOC Module will have duplicated assignments to each plane of the CCC.

- 3) Provisionable NTZZ25BA Peripheral Interfaces are mounted in the following order: 1st Slot 11, 2nd Slot 13, 3rd Slot 15, 4th Slot 17, 5th Slot 19, and 6th Slot 21.
- RUL2 1) For each MDC module (one per plane) provide one (1) Filler Face Plate .875, NT0X50BA, in each position 11-22 which is not to be equipped with a card and one (1) Filler Face Plate 1.72 (NT0X50BF) in position 23 if not to be equipped with an NTZZ25CA to satisfy the forced air cooling requirements of this shelf.
- RUL3 1) Each Central Message & I/O Device Controller (MDC) - (one per plane) shelf provides space to mount up to four (4) I/O device control cards if the slots are not required for CMC Peripheral I/F cards (see Note 8 above). Refer to Table B, Section EMB14-02-000 for the types of control cards which can mount on this MDC (same rules as for NT2X76BA) and related assignment restrictions. Each MDC shelf is to be provisioned identically.
- RUL4 1) Provide one (1) (dual plane) NTZZ25CA I/O Message Controller if shelf is to function as an I/O Controller.
- RUL5 1) Provide one (1) (dual plane) NTZZ25DA for every 1 Mega Words of PS memory. Assign cards in descending order starting at slot 8. The top 256K words of program store is reserved. Therefore, up to 7.75 M words are available for program store application.
- 2) Always provide at least one (1) NTZZ25DA per CPM shelf.
- RUL6 1) For each CPM and DS module provide one Filler Face Plate (NT0X50BA) in each location which is not equipped with a card to satisfy the forced air cooling requirements of this shelf.
- RUL7 1) When ordering processor maintenance circuit packs, the following combinations are available:
- a) For enhanced CPU capacity and (local) processor maintenance, provide one (1) (dual plane) NTZZ25FA Local Processor Maintenance CPs.
- b) For enhanced CPU capacity with remote processor maintenance, provide one (1) (dual plane) NTZZ25EA Remote Control Processor Maintenance CPs.
- RUL8 1) Provide one (1) label per NTZZ25AA for Canadian offices equipped with IBN software. Put Label on FSP Bay 0 only.

- RUL9 1) Provide one (1) (dual plane) NTZZ25DA for every 1 Mega Words of DS memory. Assign cards in ascending order starting at slot 6. Sixteen NTZZ25DA are supported in total. (15.75 MWords are available for Data Store applications.
- 2) Always provide at least three (3) NTZZ25DA per DS shelf.
- RUL10 1) Provide one (1) Designation Label corresponding to each card provisioned.
- RUL11 1) Provide one (1) NT0X0008 and one (1) NT0X0012 Logic Return Cable Assemblies per frame when extending existing offices not equipped with enhanced grounding per IS0X00.

CENTRAL CONTROL COMPLEX (DOUBLE BAY) ENHAN. BB

PEC CODE: NTZZ25GA

RATING: MD

REPLACED BY: No Replacement

ABBREVIATION NAME: CCC

ENGINEERING DESCRIPTION: NTZZ25GA is a double bay frame consisting of two identical Central Control Complex bays. No Memory Extension (MEX) frames are associated with the NTZZ25GA frame.

REFERENCE DOCUMENTATION: SLZZ25GA 00 02
NTZZ25GA REL 02

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ25GA EMC4-01-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 07	----- ECM 183 07	Previous history not available This is the new section. EC #018-39307 - Replace NT0X25AV with NT0X25AH. Change status of NT0X25AV to A&M.
95 09 18	ECM 580 02	MD entire NT40 product line per ECs 018-42794, 018-43569, 018-44097, 018-45275, 018-45338, 018-42385.

The Central Control Complex (Double Bay) Enhan. BB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Central Cntrl Complex Frame	NT3X45EW		1			AP
% Universal Framework	NT0X25AH		2			AP
CCC Common Circuit Packs	NT3X45ED		1	65,51, 32		AP-01
CCC Common Circuit Packs	NT3X45EJ		1	65,51, 32		AP-01
CCC Common Circuit Packs	NT3X45EV		1	65,51, 32		AP
CM & I/O Device CTL SH ASS	NT2X7606	MDC	2	65		AP-02
Sync Clock Master Osc	NT3X15BB		2	65	01	AP
Sync Master Clock Cont	NT3X14BC		2	65	04	AP
CMC Processor Interface CP	NT1X33BA		2	65	05	AP-05
CMC Common Control CP	NT1X37BA		2	65	06	AP-05
CMC Outgoing Controller CP	NT1X34BA		2	65	07	AP-05
CMC Incoming Controller CP	NT1X35BA		2	65	08	AP-05
CMC Peripheral I/F CP	NT1X36BB		4	65	09,10	AP-05
CMC Peripheral I/F	NTZZ25BA			65	11-22	RUL1
Filler Face Plate .875	NT0X50BA			65	11-22	RUL2
I/O Device Control CP	AR			65	15,17, 19,21	RUL3
I/O Message Controller CP	NTZZ25CA			65	23	RUL4
Filler Face Plate 1.72	NT0X50BF			65	23	RUL2
CMC/IOC BP Terminator CP	NT3X4304		2	65	23R	AP-05
Power Converter	NT2X70BA		2	65	25	AP-03
Power Converter	NT2X70AE		2	65	25	AP
Desig Label for NT3X15BB	P0613355		2	65	01	AP
Desig Label for NT3X14BC	P0645683		2	65	04	AP
Designation Strip (NT2X7606)	P0656305		2	65		AP-05
Desig Label for NT2X70BA	P0613351		2	65	25	AP-03
Desig Label for NT2X70AE	P0698943		2	65	25	AP
Central Proc & Mem Shf Assy	NT3X4106	CPM	2	51		AP-02
1MW Memory CP	NTZZ25DA			51	01-08	RUL5
Filler Face Plate .875	NT0X50BA			51	01-08	RUL6
16MW Memory BP Terminator	NT3X4309		2	51	01R	AP-05
16MW Memory Control CP	NT4X79AA		2	51	09	AP-05
PS Controller BP Terminator	NT3X4307		2	51	09R	AP-05
Processor BP Terminator	NT3X4303		2	51	10R	AP-05
Filler Face Plate .875	NT0X50BA		2	51	12	AP-05
Filler Face Plate .875	NT0X50BA		2	51	15	AP-05
Rem Cont Processor Maint CPs	NTZZ25EA			51	16	RUL7
Local Proc Maintenance CPs	NTZZ25FA			51	16	RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate .875	NT0X50BA		2	51	20	AP-05
Power Converter (5V/40A)	NT2X06BB		2	51	22	AP-05
Power Converter	NT2X70BA		2	51	25	AP-03
Power Converter	NT2X70AE		2	51	25	AP
Desig Label for NT2X70BA	P0613351		2	51	25	AP-03
Desig Label for NT2X70AE	P0698943		2	51	25	AP
Frame Supervisory Panel	NT0X28AF	FSP	2	45		AP-02
Dept.of Comm.Cert. Label	P0663265			45		RUL8
16MW Data Store Shf Assy	NT3X3209	DS	2	32		AP-02
Filler Face Plate .875	NT0X50BA		2	32	01	AP-05
Single Ended Mem Bus I/F CP	NT3X37BC		2	32	02	AP-05
Filler Face Plate .875	NT0X50BA		2	32	03	AP-05
16MW Memory Control CP	NT4X79AA		2	32	04	AP-05
Filler Face Plate .875	NT0X50BA		2	32	05	AP-05
1MW Memory CP	NTZZ25DA			32	06-21	RUL9
Filler Face Plate .875	NT0X50BA			32	06-21	RUL6
Desig Label for NT0X50BA	P0599141			32	06-21	RUL10
16MW Memory BP Terminator	NT3X4309		2	32	21R	AP-05
Filler Face Plate 2.62	NT0X50BE		2	32	22	AP-05
Power Converter	NT2X70BA		2	32	25	AP-03
Power Converter	NT2X70AE		2	32	25	AP
Desig Label for NT2X70BA	P0613351		2	32	25	AP-03
Desig Label for NT2X70AE	P0698943		2	32	25	AP
Designation Strip (NT3X3209)	P0656303		2	32		AP-05
Cage Filler Panel Assy	NT0X84AA		2	18		AP-02
DC Fan Cooling Unit	NT3X90AC	CU	2	04		AP-02
Wiring: Sync Off w/o Ext MFR	NT2X76CB		2			AP
Logic Return Cable Assembly	NT0X0008					RUL11
Logic Return Cable Assembly	NT0X0012					RUL11

FLAGS:

% The NT0X25AV is A&M, and it is replaced by NT0X25AH.

NOTES:

- 1) The NTZZ25AA is a double bay frame consisting of two (2) identical Central Control Complex bays.
- 2) The duplicated MDC provided here is capable of interfacing all CPU peripherals (NET & IOC) as CMC0:00 & CMC1:00. It can additionally interface directly to a limited number of I/O devices while functioning as IOC:00 & IOC:01.

Caution: If used to interface Magnetic Tape Drive (MTD) as IOC:00 or IOC:01 then the CCC and MTC/IOE frames must be located adjacent to each other (see also NT0X43AB, Section EMR5-01-001 and NT0X43AC, Section EMR5-01-002, NTZZ09AA, Section EMB5-01-000).

- 3) The duplicated CPM accommodates up to 8 M-Word of PS memory. No memory card is required for spare as a spare row of memory devices on the controller will serve as the "HOT" spare.
- 4) The duplicated DS in position 32 can provide up to 15.75 M-Word of DS memory.
- 5) Two CMC Peripheral Interface cards (NT1X36BB) provided with the MDC shelf will interface a combination of up to five (5) Networks or ten (10) I/O Controller Modules subject to the conditions provided under RUL1.
- 6) The Central Message & I/O Device Controller Module is capable of functioning both as a conventional CMC and optionally as an I/O Controller. Since these functions overlap with respect to card slot assignment the capacity of each is reduced by the other.
- 7) By equipping the I/O Controller function on the MDC separate IOC shelves can be eliminated or reduced in number for a net saving in hardware. Subject to the following conditions this option should always be selected:
 - a) This option should not be selected if the ultimate network size is expected to exceed 19 NET per plane. Separate IOC shelves should be provided instead.

Note:

- (i) The above limit allows for a maximum of 3 I/O Device Controller cards per MDC. The user may wish

to set the limit to 14 NET to allow for the maximum of 4 cards.

- (ii) The above limits are decreased by one (1) for each additional 2 IOC shelves required.
 - b) This option should not be selected if the number of I/O Device Controller cards provisioned exceeds 15 (17, if the NET cutoff is 14).
 - c) Maximum cabling distances (15 feet) to the MTD must not be exceeded. Maximum cabling distance to the DDU is 18 feet.
 - d) CCC and MTC/IOE frames equipped with MTD must be co-located.
 - e) If selected the function must be provided on both shelves (planes 0 & 1). The controller on plane 0 shall be designated IOC:00 and on plane 1, IOC:01 (see Table B, Section EMB14-02-000, for fixed assignments affecting I/O modules.).
 - f) Additional IOC shelves can be provisioned on MTC/IOE frames as required.
- 8) a) The Central Message & I/O Device Controller, MDC module is located on shelf mounting position 65. There are two (2) MDC per CCC frame.
- b) The Central Processor & Memory, CPM module is located on shelf mounting position 51. There are two (2) CPM per CCC frame.
- c) The Data Store, DS module is located on shelf mounting position 32. There are two (2) DS per CCC frame.

RULES:

- AP 1) When PEC NTZZ25GA is ordered, these items are provided.
- AP-01 1) NT3X45ED and NT3X45EJ CCC Common CP have been replaced by NT3X45EV CCC Common CP.
- AP-02 1) Items marked AP-02 are supplied with NT3X45EW Central Control Complex Frame and are listed for sparing purposes.
- AP-03 1) NT2X70BA Power Converter is replaced by NT2X70AE Power Converter.
- AP-05 1) Items marked AP-05 are supplied with NT3X45EV CCC Common CP and are listed for sparing purposes.
- RUL1 1) Provide one (dual plane) NTZZ25BA CMC Peripheral Interface for each additional combination of up to five (5) Networks or ten (10) I/O Controller Modules (IOC). Each NTZZ25BA is comprised of a pair of NT1X36BB circuit packs for each plane, providing a maximum of ten (10) ports per plane. Two (2) NT1X36BB CP are always provided in positions 09 and 10 and are used for the first combination of up to five (5) Networks or 10 IOC Modules.
- 2) Port assignments are as follows:
- a. Each Network module will have two (2) assignments (a plane 0 and a plane 1).
 - b. Each IOC Module will have one (1) assignment per plane.
 - c. Module IOC:00 shall be assigned to port 00, card pos 09, terminal 0.
 - d. Module IOC:01 shall be assigned to port 05, card pos 10, terminal 0.
 - e. Plane 0 Network Modules shall be assigned to ports on NT1X36BB CP in odd numbered slots.
 - f. Plane 1 Network Modules shall be assigned to ports on NT1X36BB CP in even numbered slots.
 - g. Networks and IOC Module will have duplicated assignments to each plane of the CCC.

- 3) Provisionable NTZZ25BA Peripheral Interfaces are mounted in the following order: 1st Slot 11, 2nd Slot 13, 3rd Slot 15, 4th Slot 17, 5th Slot 19, and 6th Slot 21.
- RUL2 1) For each MDC module (one per plane) provide one (1) Filler Face Plate .875, NT0X50BA, in each position 11-22 which is not to be equipped with a card and one (1) Filler Face Plate 1.72 (NT0X50BF) in position 23 if not to be equipped with an NTZZ25CA to satisfy the forced air cooling requirements of this shelf.
- RUL3 1) Each Central Message & I/O Device Controller (MDC) - (one per plane) shelf provides space to mount up to four (4) I/O device control cards if the slots are not required for CMC Peripheral I/F cards (see Note 8 above). Refer to Table B, Section EMB14-02-000 for the types of control cards which can mount on this MDC (same rules as for NT2X76BA) and related assignment restrictions. Each MDC shelf is to be provisioned identically.
- RUL4 1) Provide one (1) (dual plane) NTZZ25CA I/O Message Controller if shelf is to function as an I/O Controller.
- RUL5 1) Provide one (1) (dual plane) NTZZ25DA for every 1 Mega Words of PS memory. Assign cards in descending order starting at slot 8. The top 256K words of program store is reserved. Therefore, up to 7.75 M words are available for program store application.
- 2) Always provide at least one (1) NTZZ25DA per CPM shelf.
- RUL6 1) For each CPM and DS module provide one Filler Face Plate (NT0X50BA) in each location which is not equipped with a card to satisfy the forced air cooling requirements of this shelf.
- RUL7 1) When ordering processor maintenance circuit packs, the following combinations are available:
- a) For enhanced CPU capacity and (local) processor maintenance, provide one (1) (dual plane) NTZZ25FA Local Processor Maintenance CPs.
- b) For enhanced CPU capacity with remote processor maintenance, provide one (1) (dual plane) NTZZ25EA Remote Control Processor Maintenance CPs.
- RUL8 1) Provide one (1) label per NTZZ25AA for Canadian offices equipped with IBN software. Put Label on FSP Bay 0 only.

- RUL9 1) Provide one (1) (dual plane) NTZZ25DA for every 1 Mega Words of DS memory. Assign cards in ascending order starting at slot 6. Sixteen NTZZ25DA are supported in total. (15.75 MWords are available for Data Store applications.
- 2) Always provide at least three (3) NTZZ25DA per DS shelf.
- RUL10 1) Provide one (1) Designation Label corresponding to each card provisioned.
- RUL11 1) Provide one (1) NT0X0008 and one (1) NT0X0012 Logic Return Cable Assemblies per frame when extending existing offices not equipped with enhanced grounding per IS0X00.

SYSTEM LOAD MODULE 1A

PEC CODE: NTZZ34JB

CPC CODE: B0246098

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ34JC

ABBREVIATION NAME: SLM1A

ENGINEERING DESCRIPTION: The NTZZ34JB provides a System Load Module 1A for the C42 cabinets.

REFERENCE DOCUMENTATION: SLZZ34JB 00 01
NTZZ34JB REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34JB EMC4-02-SLM-04 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 03 28	ECM 632 18	First issue of section. Introduce the System Load Module 1A for C42 Cabinet applications.
97 04 24	ECM 632 25	MD the SLM 1A (System Load Module) per EC 018-50148.

The System Load Module 1A is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# System Load Module 1A	NT9X44AC		2	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X44AC	MD	NT9X44AD

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34JB is ordered, these items are provided.

SLM COMMON CP

PEC CODE: NTZZ01BA

| CPC CODE: B0231683

| RATING: Manufacture Discontinued

REPLACES: Not Applicable

| REPLACED BY: NTZZ01BB

ABBREVIATION NAME: SLM

ENGINEERING DESCRIPTION: The System Load Module Common CP contains the circuit packs and miscellaneous items that are always required and provisionable for a SLM.

REFERENCE DOCUMENTATION: SLZZ01BA 00 04

NTZZ01BA REL 04

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01BA EMC4-02-SLM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 09 09	----- ECM 626 21	Previous history not available Previous history not available

The SLM Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CM BUS Extender	NT9X27AA		2	13	8R, 31R	AP
Des Label (NT9X27AA)	P0678448		2	13	8R, 31R	AP
SLM Common CP	NT9X07AB		1	00		AP
+12V Power Converter	NT9X47AA		2	00	1F, 33F	AP-01
+5V 80A Converter	NT9X30AA		2	00	4F, 36F	AP-01
Filler Face Plate	NT9X19AA		8	00	7F, 16F, 17F, 19F, 20F, 22F, 23F, 32F	AP-01
CPU Port CP	NT9X12AC		2	00	18F, 21F	AP
Des Label (NT9X12AC)	P0727356		2	00	18F, 21F	AP
CM BUS Extension PB	NT9X27BA		2	00	7R, 32R	AP-01
Parallel Port I/F PB	NT9X46AA		4	00	8R, 18R 21R, 24R	AP-01
CM Subys Clock PB	NT9X22CA		2	00	16R, 23R	AP-01
CM BUS Terminator PB	NT9X21AA		2	00	19R, 22R	AP-01
Pddle Brd Fllr Face Plt	NT9X19BA		16	00	9R-15R, 17R, 20R, 25R-31R	AP-01
CM P-Bus EXTN Cable	NT9X0167		2	00		AP-01
CM P-Bus EXTN Cable	NT9X0757		6	00		AP-01
Des Strip Rear	P0687763		1	00		AP-01
Des Strip Front	P0700720		1	00		AP-01

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ01BA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X07AB SLM Common CP,
and is indicated here for completeness.

SLM COMMON CP

PEC CODE: NTZZ97BG

CPC CODE: B0236198

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ01BA

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The System Load Module Common CP contains the circuit packs and miscellaneous items that are always required and provisionable for a SLM. This BB is identical to NTZZ01BA, except it contains the NT9X12AB CPU port CP instead of the NT9X12AC.

REFERENCE DOCUMENTATION: SLZZ97BG 00 01
NTZZ97BG REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ97BG EMC4-02-SLM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 11 18	ECM 626 06	This section has a rating A&M
95 07 11	ECM 626 25	EC 024-93272 MD of NT9X12AB.
		MD section.
95 08 28	ECM 626 26	Minor corrections.

The SLM Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CM BUS Extender	NT9X27AA		2	13	8R, 31R	AP
Des Label (NT9X27AA)	P0678448		2	13	8R, 31R	AP
SLM Common CP	NT9X07AB		1	00		AP
+12V Power Converter	NT9X47AA		2	00	1F, 33F	AP-01
+5V 80A Converter	NT9X30AA		2	00	4F, 36F	AP-01
Filler Face Plate	NT9X19AA		8	00	7F, 16F, 17F, 19F, 20F, 22F, 23F, 32F	AP-01
CPU Port CP	NT9X12AB		2	00	18F, 21F	AP
Des Label (NT9X12AC)	P0700801		2	00	18F, 21F	AP
CM BUS Extension PB	NT9X27BA		2	00	7R, 32R	AP-01
Parallel Port I/F PB	NT9X46AA		4	00	8R, 18R 21R, 24R	AP-01
CM Subys Clock PB	NT9X22CA		2	00	16R, 23R	AP-01
CM BUS Terminator PB	NT9X21AA		2	00	19R, 22R	AP-01
Pddle Brd Fllr Face Plt	NT9X19BA		16	00	9R-15R, 17R, 20R, 25R-31R	AP-01
CM P-Bus EXTN Cable	NT9X0167		2	00		AP-01
CM P-Bus EXTN Cable	NT9X0757		6	00		AP-01
Des Strip Rear	P0687763		1	00		AP-01
Des Strip Front	P0700720		1	00		AP-01

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ97BG is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X07AB SLM Common CP,
and is indicated here for completeness.

SLM COMMON CP

PEC CODE: NTZZ01BB

CPC CODE: B0241554

| RATING: MD

REPLACES: NTZZ01BA

| REPLACED BY: NTZZ01BC

ABBREVIATION NAME: SLM

ENGINEERING DESCRIPTION: The System Load Module Common CP contains the circuit packs and miscellaneous items that are always required and provisionable for a SLM.

REFERENCE DOCUMENTATION: SLZZ01BB 00 01

NTZZ01BB REL 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01BB EMC4-02-SLM-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 09 96 03 22	ECM 626 21 ECM 626 30	ECD 006-20443 Introduce NT9X12AD MD section per GMF requirements.

The SLM Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CM BUS Extender	NT9X27AA		2	13	8R, 31R	AP
Des Label (NT9X27AA)	P0678448		2	13	8R, 31R	AP
SLM Common CP	NT9X07AB		1	00		AP
+12V Power Converter	NT9X47AA		2	00	1F, 33F	AP-01
+5V 80A Converter	NT9X30AA		2	00	4F, 36F	AP-01
Filler Face Plate	NT9X19AA		8	00	7F, 16F, 17F, 19F, 20F, 22F, 23F, 32F	AP-01
CPU Port CP	NT9X12AD		2	00	18F, 21F	AP
Des Label (NT9X12AD)	P0725905		2	00	18F, 21F	AP
CM BUS Extension PB	NT9X27BA		2	00	7R, 32R	AP-01
Parallel Port I/F PB	NT9X46AA		4	00	8R, 18R, 21R, 24R	AP-01
CM Subys Clock PB	NT9X22CA		2	00	16R, 23R	AP-01
CM BUS Terminator PB	NT9X21AA		2	00	19R, 22R	AP-01
Pddle Brd Fllr Face Plt	NT9X19BA		16	00	9R-15R, 17R, 20R, 25R-31R	AP-01
CM P-Bus EXTN Cable	NT9X0167		2	00		AP-01
CM P-Bus EXTN Cable	NT9X0757		6	00		AP-01
Des Strip Rear	P0687763		1	00		AP-01
Des Strip Front	P0700720		1	00		AP-01

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ01BB is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X07AB SLM Common CP,
and is indicated here for completeness.

SUPERNODE SERIES 10 CPU

PEC CODE: NTZZ01FA

| CPC CODE: B0231699

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: NTZZ01GA

ABBREVIATION NAME: NTZZ01FA

ENGINEERING DESCRIPTION: NTZZ01FA contains the SuperNode Series 10
CPU Processor CP and designation label.REFERENCE DOCUMENTATION: SLZZ01FA 00 03
NTZZ01FA REL 03

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

| ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01FA EMC4-03-CPU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 04 19	----- ECM 626 16	Previous history not available. Retire Section.

The Supernode Series 10 CPU is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPU 68020 Series 10 CP	NT9X13JA		2	13	19F-20F	AP
Des Label (NT9X13JA)	P0705928		2	13	19F-20F	AP
Remote Term I/F Curr Loop	NT9X26AB		2	13	19R-20R	AP
Desig. Label(NT9X26AB)	P0705003		2	13	19R-20R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ01FA is ordered, these items are provided.

SUPERNODE BRISC CPU

PEC CODE: NTZZ01SA

CPC CODE: B0234411

| RATING: Manufacture Discontinued

REPLACES: Not Applicable

REPLACED BY: NTZZ01SB

ABBREVIATION NAME: NTZZ01SA

ENGINEERING DESCRIPTION: NTZZ01SA contains the SuperNode BRISC CPU
and Paddleboard.REFERENCE DOCUMENTATION: SLZZ01SA 00 02
NTZZ01SA REL 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01SA EMC4-03-CPU-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 07 27 94 09 02	----- ECM 626 05 ECM 626 20	Previous history not available Labels for NT9X10AA & NT9X26DA added. Retire Section.

The SUPERNODE BRISC CPU is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
33 MHz 88000 BRISC CPU CP	NT9X10AA		2	13	19F-20F	AP
Des. Label (NT9X10AA)	P0734152		2	13	19F-20F	AP
BRISC RTIF PB	NT9X26DA		2	13	19R-20R	AP
Des. Label (NT9X26DA)	P0734153		2	13	19R-20R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ01SA is ordered, these items are provided.

FILLER FACE PLATE

PEC CODE: NTZZ01MA

CPC CODE: B0231718

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: Detail

ABBREVIATION NAME: NTZZ01MA

ENGINEERING DESCRIPTION: NTZZ01MA contains the Filler Face Plate and designation label for SuperNode Computing Module.

REFERENCE DOCUMENTATION: SLZZ01MA 00 02

NTZZ01MA REL 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01MA EMC4-03-FFP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 22	----- ECM 626 30	Previous history not available MD per GMF Requirements.

The Filler Face Plate is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT9X19AA		2	13	YF, 39-YF	AP
Des Label (NT9X19AA)	P0709515		2	13	YF, 39-YF	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Assign NTZZ01MA where NTZZ01KA or NTZZ01LA has not been assigned to maintain forced air cooling requirements. Y = 16,15,14,13,12,11,10,09,08,07. (F=Front)

RULES:

- AP 1) When PEC NTZZ01MA is ordered, these items are provided.

4 PORT NETWORK & IOC I/F

PEC CODE: NTZZ01CA

CPC CODE: B0231684

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ01CB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: NTZZ01CA contains the circuit packs for the SuperNode required to interface Network Modules and IOC.

REFERENCE DOCUMENTATION: SLZZ01CA 00 01
NTZZ01CA REL 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01CA EMC4-03-IF-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 12 19	----- ECM 626 29	Previous history not available MD Section.

The 4 PORT Network & IOC I/F is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS 4-Port CP	NT9X17AA		4	26, 39	YF, YF+1	AP
4xDS-30 PB	NT9X23AA		4	26, 39	YR, YR+1	AP
DS30 I/F Ca Assy	NT9X0145		4	26, 39	YR, YR+1	AP
Des Label (NT9X17AA)	P0678439		4		YF, YF+1	AP
Des Label (NT9X23AA)	P0678443		4		YR, YR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ01CA is assigned in even card slots from 28F-12F in descending order. Thus Y = 28, 26, 24, 22, 20, 18, 16, 14, 12. (F=Front, R=Rear)

RULES:

- AP 1) When PEC NTZZ01CA is ordered, these items are provided.

4 PORT LIM/LPP INTERFACE

PEC CODE: NTZZ01DA

CPC CODE: B0231697

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ01DB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: NTZZ01DA contains the circuit packs for the SuperNode required to interface Local Message Switch.

REFERENCE DOCUMENTATION: SLZZ01DA 00 03
NTZZ01DA REL 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01DA EMC4-03-IF-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 12 19	----- ECM 626 29	Previous history not available MD Section.

The 4 Port LIM/LPP Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS 4-Port CP	NT9X17AA		4	26, 39	YF, YF+1	AP
4xDS-30 PB	NT9X23BA		4	26, 39	YR, YR+1	AP
DS30 I/F Ca Assy	NT9X0145		4	26, 39	YR, YR+1	AP
Des Label (NT9X17AA)	P0678439		4		YF, YF+1	AP
Des Label (NT9X23BA)	P0697530		4		YR, YR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ01DA is assigned in even card slots from 26-12, in descending order. Thus Y = 26, 24, 22, 20, 18, 16, 14, 12. (F=Front, R=Rear)

RULES:

- AP 1) When PEC NTZZ01DA is ordered, these items are provided.

INITIAL ENHANCED NETWORK INTERFACE

PEC CODE: NTZZ01NA

CPC CODE: B0231788

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ01NB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: NTZZ01NA contains the circuit packs for the SuperNode required to initially interface to the Enhanced Network.

REFERENCE DOCUMENTATION: SLZZ01NA 00 02
NTZZ01NA REL 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01NA EMC4-03-IF-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 12 19	----- ECM 626 29	Previous history not available MD Section.

The Initial Enhanced Network Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS 64-Port CP	NT9X17DA		2	26,39	YFront	AP
DS-512 I/F ENET/MS PB	NT9X20BB		2	26,39	YRear	AP
Des Label (NT9X17DA)	P0707891		2	26,39	YFront	AP
Des Label (NT9X20BB)	P0707894		2	26,39	YRear	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ01NA is assigned with Y = 27-12. Assign cards in ascending order per port group with the NT9X20BB being the first card in the port group.

RULES:

- AP 1) When PEC NTZZ01NA is ordered, these items are provided.

INITIAL ENHANCED NETWORK INTERFACE - 128 PORT

PEC CODE: NTZZ01NM

CPC CODE: B0240973

| RATING: Manufacture Discontinue

REPLACES: Not Applicable

REPLACED BY: NTZZ01NN

ABBREVIATION NAME: NTZZ01NM

ENGINEERING DESCRIPTION: NTZZ01NM contains the circuit packs for the SuperNode required to initially interface to the Enhanced Network.

REFERENCE DOCUMENTATION: SLZZ01NA 00 01

NTZZ01NM REL 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NTZZ01NM EMC4-03-IF7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 04 19 95 02 09	ECM 626 16 ECM 626 23	Create Section. MD NTZZ01NM to incorporate Engineering Change 018-44319

The Initial Enhanced Network Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS 128-Port CP	NT9X17CA		2	26,39	YFront	AP
DS-512 I/F ENET/MS PB	NT9X20BB		2	26,39	YRear	AP
Des Label (NT9X17CA)	P0678441		2	26,39	YFront	AP
Des Label (NT9X20BB)	P0707894		2	26,39	YRear	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ01NM is assigned with Y = 27-12. Assign cards in ascending order per port group with the NT9X20BB being the first card in the port group.

RULES:

- AP 1) When PEC NTZZ01NM is ordered, these items are provided.

4 PORT LIM/LPP INTERFACE FOR CABINETIZED DMS

PEC CODE: NTZZ01VA

CPC CODE: B0234532

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ01VB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: NTZZ01VA contains the circuit packs for the SuperNode required to interface Local Mesage Switch. This is used for Cabinetized DMS application.

REFERENCE DOCUMENTATION: SLZZ01VA 00 01
NTZZ01VA REL 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01VA EMC4-03-IF8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 12 19	----- ECM 626 29	Previous history not available MD Section.

The 4 Port LIM/LPP Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS 4-Port CP	NT9X17AA		4	26, 39	YF, YF+1	AP
4xDS-30 PB	NT9X23BA		4	26, 39	YR, YR+1	AP
DS30 I/F Ca Assy	NT9X6544		4	26, 39	YR, YR+1	AP
Des Label (NT9X17AA)	P0678439		4		YF, YF+1	AP
Des Label (NT9X23BA)	P0697530		4		YR, YR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ01VA is assigned in even card slots from 26-12, in descending order. Thus Y = 26, 24, 22, 20, 18, 16, 14, 12. (F=Front, R=Rear)

RULES:

- AP 1) When PEC NTZZ01VA is ordered, these items are provided.

4 PORT NETWORK & IOC I/F FOR CABINETIZED DMS

PEC CODE: NTZZ01UA

CPC CODE: B0234531

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ01UB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: NTZZ01UA contains the circuit packs for the SuperNode required to interface Network Modules and IOC. This is used for Cabinetized DMS application.

REFERENCE DOCUMENTATION: SLZZ01UA 00 01
NTZZ01UA REL 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01UA EMC4-03-IF9 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 12 19	----- ECM 626 29	Previous history not available MD Section.

The 4 PORT Network & IOC I/F is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS 4-Port CP	NT9X17AA		4	26, 39	YF, YF+1	AP
4xDS-30 PB	NT9X23AA		4	26, 39	YR, YR+1	AP
DS30 I/F Ca Assy	NT9X6544		4	26, 39	YR, YR+1	AP
Des Label (NT9X17AA)	P0678439		4		YF, YF+1	AP
Des Label (NT9X23AA)	P0678443		4		YR, YR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ01UA is assigned in even card slots from 28F-12F in descending order. Thus Y = 28, 26, 24, 22, 20, 18, 16, 14, 12. (F=Front, R=Rear)

RULES:

- AP 1) When PEC NTZZ01UA is ordered, these items are provided.

SERIES 60 UPGRADE KIT

PEC CODE: NTZZ99AS

CPC CODE: B0241070

| RATING: Manufacture Discontinued

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: This upgrade kit changes a Series 10, 20, 30, or 40 processor that has NT9X12ABs and NT9X26ABs on the CM shelf to a Series 60 SuperNode. Note that there are a fixed number of memory cards in this Building Block. This Building Block is for Canada Only in BCS36 and above.

REFERENCE DOCUMENTATION: SLZZ99AS 00 01

MARKETS: Applicable markets:
Canada Only

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ99AS EMC4-03-KIT-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 05 12	ECM 626 17	Create new Building Block.
94 09 02	ECM 626 20	Retire Section.

The Series 60 Upgrade Kit is comprised of the following:

The NTZZ99AS Product Change Kit is comprised of the following removals and additions.

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	CPU Processor CP	NT9X13JA		2	13	19F, 20F	
	OR						
REMOVE	CPU Processor CP	NT9X13BC		2	13	19F, 20F	
	OR						
REMOVE	CPU 33MHz Proc CP	NT9X13GA		2	13	19F, 20F	
	OR						
REMOVE	CPU 40MHz Proc CP	NT9X13HB		2	13	19F, 20F	
ADD	33 MHz BRISC CPU CP	NT9X10AA		2	13	19F, 20F	AP
REMOVE	Remote Term I/F CL	NT9X26AB		2	13	19R, 20R	
ADD	BRISC RTIF PB	NT9X26DB		2	13	19R, 20R	AP
REMOVE	CPU Port CP	NT9X12AB		2	00	18F, 21F	
ADD	CPU Port CP	NT9X12AC		2	00	18F, 21F	AP
REMOVE	CPU Port CP	NT9X12AB		4	13	17F-18F, 21F-22F	
ADD	CPU Port CP	NT9X12AC		4	13	17F-18F, 21F-22F	AP
REMOVE	6Mb Memory CP	NT9X14BB		ALL	13	7F-16F, 23F-32F	
REMOVE	24Mb Memory CP	NT9X14DB		ALL	13	7F-16F, 23F-32F	
ADD	96Mb Memory CP	NT9X14EA		8	13	13F-16F, 23F-26F	AP

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	Filler Face Plate	NT9X19AA			13	7F-12F, 27F-32F	RUL1
ADD	Des Label (NT9X10AA)	P0734152		2			AP
ADD	Des Label (NT9X26DB)	P0747896		2			AP
ADD	Des Label (NT9X12AC)	P0727356		6			AP
ADD	Des Label (NT9X14EA)	P0736863		8			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ99AS is ordered, these items are provided.
- RUL1 1) Provision (1) Filler Face Plate in each card slot (7F-12F and 27F-32F) that is not already equipped with a Filler Face Plate to satisfy the forced air cooling requirements of the frame.

SERIES 60 UPGRADE KIT FROM SERIES 50

PEC CODE: NTZZ99AR

CPC CODE: B0241069

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: No Replacement

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: This upgrade kit changes a Series 50 processor to a Series 60 SuperNode. Note that there are a fixed number of memory cards in this Building Block. This Building Block is for Canada Only in BCS36 and above.

REFERENCE DOCUMENTATION: SLZZ99AR 00 01

MARKETS: Applicable markets:
Canada Only

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ99AR EMC4-03-KIT-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 05 12	ECM 626 17	Create new Building Block.
95 07 11	ECM 626 25	Correct Building Block per ET68613.
96 03 22	ECM 626 30	MD per GMF Requirements.

The Series 60 Upgrade Kit From Series 50 is comprised of the following:

The NTZZ99AR Product Change Kit is comprised of the following removals and additions.

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
BRISC RTIF PB	NT9X26DB		2	13	19R, 20R	AP
96Mb Memory CP	NT9X14EA		8	13	13F-16F, 23F-26F	AP
Filler Face Plate	NT9X19AA		1	13	7F-12F, 27F-32F	RUL1
Des Label (NT9X26DB)	P0747896		2			AP
Des Label (NT9X14EA)	P0736863		8			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ99AR is ordered, these items are provided.

RUL1 1) Provision (1) Filler Face Plate in each card slot (7F-12F and 27F-32F) that is not already equipped with a Filler Face Plate to satisfy the forced air cooling requirements of the frame.

SERIES 60 UPGRADE KIT

PEC CODE: NTZZ99AV

CPC CODE: B0241496

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: No Replacement

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: This upgrade kit changes a Series 10, 20, 30, or 40 processor that has NT9X12AB/ACs and NT9X26ABs on the CM shelf to a Series 60 SuperNode. Note that there are a fixed number of memory cards in this Building Block. This Building Block is for Canada Only in BCS36 and above.

REFERENCE DOCUMENTATION: SLZZ99AV 00 01

MARKETS: Applicable markets:
Canada Only

ISSUE AUTHOR: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NTZZ99AV EMC4-03-KIT-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 02 96 03 22	ECM 626 20 ECM 626 30	ECD 006-20443 - Introduce NT9X12AD. MD per GMF Requirements.

The Series 60 Upgrade Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
33 MHz BRISC CPU CP	NT9X10AA		2	13	19F, 20F	AP
BRISC RTIF PB	NT9X26DB		2	13	19R, 20R	AP
CPU Port CP	NT9X12AD		2	00	18F, 21F	AP
CPU Port CP	NT9X12AD		4	13	17F-18F, 21F-22F	AP
96Mb Memory CP	NT9X14EA		8	13	13F-16F, 23F-26F	AP
Filler Face Plate	NT9X19AA			13	7F-12F, 27F-32F	RUL1
Des Label (NT9X10AA)	P0734152		2			AP
Des Label (NT9X26DB)	P0747896		2			AP
Des Label (NT9X12AD)	P0725905		6			AP
Des Label (NT9X14EA)	P0736863		8			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ99AV is ordered, these items are provided.

RUL1 1) Provision (1) Filler Face Plate in each card slot (7F-12F and 27F-32F) that is not already equipped with a Filler

Face Plate to satisfy the forced air cooling requirements of the frame.

6 MBYTE MEMORY

PEC CODE: NTZZ01KA

CPC CODE:

| RATING: MD

| REPLACES:

| REPLACED BY: NTZZ01LA

ABBREVIATION NAME: NTZZ01KA

ENGINEERING DESCRIPTION: NTZZ01KA contains the 6 MByte Memory CP and designation label for STP applications.

REFERENCE DOCUMENTATION: SLZZ01KA 00 02
NTZZ01KA REL 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ01KA EMC4-03-MEM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 11 22	----- ECM 626 34	Previous history not available MD the following circuit packs per ECD 018-46903: NT9X13DA, NT9X13DB, NT9X13DC, NT9X17AA, NT9X20BB, NT9X54AA, NT9X54AB, NT9X49CA, NT9X30AA, NT9X31AA MD the following circuit packs per ECD 018-45348: NT9X14BB, NT9X26AA, NT9X26CA MD the following circuit pack per ECD 018-43648: NT9X26DA MD the following circuit pack per ECD 006-17002: NT9X12AB Also clear SR RR6A684 on NT9X13DC.

The NTZZ01KA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
* 6 MByte Memory CP	NT9X14BB		2	13	YF, 39-YF	AP
Des Label (NT9X14BB)	P0689619		2	13	YF, 39-YF	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Assign NTZZ01KA to each plane of the CM where Y = 16,15,14,13,12,11,10,09,08,07. (F=Front)

RULES:

- AP 1) When PEC NTZZ01KA is ordered, these items are provided.

SUPERNODE CABINET AND COMMON CP

PEC CODE: NTZZ01AA

| RATING: MD

| ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The System Node Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a brown Supernode. This pec code will be MD in week 92/26 when NTZZ01RA replaces it.

REFERENCE DOCUMENTATION: SLZZ01AA 00 11
NTZZ01AA REL 09

MARKETS: Applicable markets:

Canada

NTZZ01AA EMC4-03-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 18	----- ECM 626 06	Previous history not available This section has a rating A&M

The Supernode Cabinet and Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JA		1			AP
Kick Plate Assy (Brown)	NT0X2430		1			AP
Overhead Power Block Kit	NTEX5001		1			RUL8
Power Boot Kit	NT9X0322		1			RUL8
Dual FSP Connector Pnl. Assy	NTEX5017		1	52		AP
Dual FSP Bulkhead Pnl. Assy	NTEX5018		1	52		AP
FSP Bulking Cable Assy	NT9X0522		2	52		AP
Frame Fail Light Kit(BROWN)	NT0X24BT		1			AP
MSG SW SIMPLEX SELF ASSY	NT9X0440	MS	2	26, 39		AP-01
Msg Sw Proc Comm CP	NT9X04AH		2	26, 39		AP
-5V 20A CONVERTER	NT9X31AA		4	26, 39	1F, 33F	AP-02
+5V 80A CONVERTER	NT9X30AA		4	26, 39	4F, 36F	AP-02
MS T-BUS TERMINATOR CP	NT9X52AA		2	26, 39	7F	AP-02
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26, 39	9F	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	AP
MAPPER CP	NT9X15AA		2	26, 39	11F	AP-02
4 Port Network & IOC I/F	NTZZ01CA			26	28F, 26F	RUL4
					24F, 22F	
					20F, 18F	
					16F, 14F	
					12F	
4 Port LIM/LPP Interface	NTZZ01DA			26	26F, 24F	RUL4
					22F, 20F	
					18F, 16F	
					14F, 12F	
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Link Interface For FLIS	NTZZ01ZA			26, 39	12F-27F	RUL7
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-PORT CP	NT9X17AA		4	26, 39	30F, 31F	AP-02
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
MS LOADING PADDLE BOARD	NT9X32AA		4	26, 39	7R, 10R	AP-02
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB FILLER FACE PLATE	NT9X19BA		4	26, 39	11R, 32R	AP-02
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP-02
SHELF CP FILL FRONT LABEL	P0698334		2	26, 39		AP-02
SHELF CP FILL REAR LABEL	P0690632		2	26, 39		AP-02
MS Blkhd I/F	NT9X6556		2	26, 39		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Blkhd I/F (rt) (DMS)	NT9X6536		2	26, 39		AP
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26, 39		AP
Composite Clk CA Assy	NT9X0175		2	26, 39		AP
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL12
Fiber Optic Cable	A0352268			26, 39		RUL13
Warning Lbl'Lazer Warning'	P0645993			13, 26		RUL14
COMP MOD DUPLEX SH ASSY	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A POWER CONV.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A POWER CONV.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AC		4	13	17F-18F 21F-22F	AP
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
CM BUS TERMINATOR	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R 24R-30R	AP
SUBSYSTEM CLOCK	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R 21R-22R	AP-03
SHELF CP FILL FRONT LABEL	P0700719		1	13		AP-03
SHELF CP FILL REAR LABEL	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM EXT SHELF ASSY	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	AP
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	AP
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP

Retired Equipment
SUPERNODE CABINET AND COMMON CP

NTZZ01AA
EMC4-03-000
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Des Label (NT9X12AC)	P0727356		4	13	17F, 18F 21F, 22F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
Warning Label, English ONLY "High Voltage"	P0675711		1			RUL9
Warning Label, English/French "High Voltage/Haute Tension"	P0689137		1			RUL9
Warning Label, English ONLY "High Voltage"	P0675712		4			RUL10
Warning Label, English/French "High Voltage/Haute Tension"	P0689138		4			RUL10
Warning Label, English ONLY "Disconnect Fan"	P0675710		1			RUL11
Warning Label, English/French "Disconnect Fan/"	P0689136		1			RUL11

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ01AA is ordered, these items are provided.
- AP-01 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X01JA CABINET, AND IS indicated here for completeness.
- AP-02 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X04AH MS COMMON CP, and is indicated here for completeness.
- AP-03 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X06AD CM COMMON CP, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.
- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F, 15F, 14F, 13F, 12F, 11F, 10F, 09F, 08F, 07F
- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.
- RUL4 1) Provide up to nine (9) NTZZ01CA to interface Network and IOC per the following formula,

$$\# \text{ NTZZ01CA} = \frac{(\# \text{NM} + \# \text{IOC})}{8}$$

rounded up to the next integer. 'NM' is a single plane.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CA in the following order; Slots 28, 26, 24, 22, 20, 18, 16, 14, 12

- 2) Provide up to eight (8) NTZZ01DA to interface the LIM/LPP per the following formula,

$$\# \text{ NTZZ01DA} = \{ \# \text{ Link Interface Module Cabinets} / 2 \}$$

to be rounded up to the nearest multiple of 2.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CA is required for STP applications to interface Network & IOC Modules. Each NTZZ01DA contains circuit packs and paddle

boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DA in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to eight (8) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,13,14,...25,26,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 5) Provide up to 12 NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 6) Provide up to eight (8) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each

ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

- RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.
- RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office.
- 2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.
- 3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.
- 4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office.
- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.
- 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs.
- RUL7 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL8 1) Provide one (1) NTEX5001 Overhead Power Block Kit for overhead cabling of the Supernode Frame.
- 2) Provide one (1) NT9X0322 Power Boot Kit.
- RUL9 1) Provide one (1) P0675711 or P0689137 Label to be applied to Supernode FSP Unit.
- RUL10) Provide four (4) P0675712 or P0689138 Labels per cabinet.

- RUL11 1) Provide one (1) P0675710 or P0689136 Label to be applied to the front of the cabinet below the blowers.
- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards.
- RUL13 1) Provide A0352268 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards.
- RUL14 1) Provide two (2) P0645993 Lazer Radiation Warning Labels when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0645993 Lazer Radiation Warning labels according to customer safety regulations that indicate that labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.

SUPERNODE CABINET AND COMMON CP (GRAY)

PEC CODE: NTZZ01AM

| RATING: MD

| ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: NTZZ01AM contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a Gray SuperNode. The NTZZ01AM is for the Canadian Market ONLY. This PEC code will be MD in week 92/26 when NTZZ01RA replaces it.

REFERENCE DOCUMENTATION: SLZZ01AM 00 01
NTZZ01AM REL 01

MARKETS: Applicable markets:

Canada

NTZZ01AM EMC4-03-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 18	----- ECM 626 06	Previous history not available This section has a rating A&M

The SuperNode Cabinet and Common CP(GRAY) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JA		1			AP
KICK PLATE ASSY (GRAY)	NT0X2516		1			AP
REAR KICKPLATE (GRAY)	NT0X24CU		1			AP
Overhead Power Block Kit	NTEX5001		1			RUL8
Dual FSP Connector Pnl. Assy	NTEX5017		1	52		AP
Dual FSP Bulkhead Pnl. Assy	NTEX5018		1	52		AP
FSP Bulking Cable Assy	NT9X0522		2	52		AP
FRAME FAIL LIGHT KIT(GRAY)	NT0X24CN		1			AP
MSG SW SIMPLEX SELF ASSY	NT9X0440	MS	2	26, 39		AP-01
Msg Sw Proc Comm CP	NT9X04AH		2	26, 39		AP
-5V 20A CONVERTER	NT9X31AA		4	26, 39	1F, 33F	AP-02
+5V 80A CONVERTER	NT9X30AA		4	26, 39	4F, 36F	AP-02
MS T-BUS TERMINATOR CP	NT9X52AA		2	26, 39	7F	AP-02
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26, 39	9F	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	AP
MAPPER CP	NT9X15AA		2	26, 39	11F	AP-02
4 Port Network & IOC I/F	NTZZ01CA			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface	NTZZ01DA			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Link Interface For FLIS	NTZZ01ZA			26, 39	12F-27F	RUL7
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-PORT CP	NT9X17AA		4	26, 39	30F, 31F	AP-02
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
MS LOADING PADDLE BOARD	NT9X32AA		4	26, 39	7R, 10R	AP-02
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB FILLER FACE PLATE	NT9X19BA		4	26, 39	11R, 32R	AP-02
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP-02
SHELF CP FILL FRONT LABEL	P0698334		2	26, 39		AP-02
SHELF CP FILL REAR LABEL	P0690632		2	26, 39		AP-02

Retired Equipment
SuperNode Cabinet and Common CP (GRAY)

NTZZ01AM
EMC4-03-001
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS Blkhd I/F	NT9X6556		2	26, 39		AP
DS30 Blkhd I/F (rt) (DMS)	NT9X6536		2	26, 39		AP
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26, 39		AP
Composite Clk CA Assy	NT9X0175		2	26, 39		AP
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL12
Fiber Optic Cable	A0352268			26, 39		RUL13
Warning Label'Lazer Warning'	P0645993			13, 26		RUL14
COMP MOD DUPLEX SH ASSY	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A POWER CONV.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A POWER CONV.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AC		4	13	17F-18F	AP
					21F-22F	
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
CM BUS TERMINATOR	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R	AP
					24R-30R	
SUBSYSTEM CLOCK	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R	AP-03
					21R-22R	
SHELF CP FILL FRONT LABEL	P0700719		1	13		AP-03
SHELF CP FILL REAR LABEL	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM EXT SHELF ASSY	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	AP
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	AP

Retired Equipment
SuperNode Cabinet and Common CP (GRAY)

NTZZ01AM
EMC4-03-001
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Des Label (NT9X12AC)	P0727356		4	13	17F, 18F 21F, 22F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
Warning Label, English ONLY "High Voltage"	P0675711		1			RUL9
Warning Label, English/French "High Voltage/Haute Tension"	P0689137		1			RUL9
Warning Label, English ONLY "High Voltage"	P0675712		4			RUL10
Warning Label, English/French "High Voltage/Haute Tension"	P0689138		4			RUL10
Warning Label, English ONLY "Disconnect Fan"	P0675710		1			RUL11
Warning Label, English/French "Disconnect Fan/"	P0689136		1			RUL11

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ01AM is ordered, these items are provided.
- AP-01 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X01JA CABINET, AND IS indicated here for completeness.
- AP-02 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X04AH MS COMMON CP, and is indicated here for completeness.
- AP-03 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X06AD CM COMMON CP, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.
- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F, 15F, 14F, 13F, 12F, 11F, 10F, 09F, 08F, 07F
- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.
- RUL4 1) Provide up to nine (9) NTZZ01CA to interface Network and IOC per the following formula,

$$\# \text{ NTZZ01CA} = \frac{(\# \text{NM} + \# \text{IOC})}{8}$$

rounded up to the next integer. 'NM' is a single plane.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CA in the following order; Slots 28, 26, 24, 22, 20, 18, 16, 14, 12

- 2) Provide up to eight (8) NTZZ01DA to interface the LIM/LPP per the following formula,

$$\# \text{ NTZZ01DA} = \# \text{ Link Interface Module Cabinets}$$

to be rounded up to the nearest multiple of 2.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CA is required for STP applications to interface Network & IOC Modules. Each NTZZ01DA contains circuit packs and paddle

boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DA in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to eight (8) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,13,14,...25,26,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 5) Provide up to 12 NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 6) Provide up to eight (8) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each

ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

- RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.
- RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office.
- 2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.
- 3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.
- 4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office.
- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.
- 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs.
- RUL7 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL8 1) Provide one (1) NTEX5001 Overhead Power Block Kit for overhead cabling of the Supernode Frame.
- RUL9 1) Provide one (1) P0675711 or P0689137 Label to be applied to Supernode FSP Unit.
- RUL10) Provide four (4) P0675712 or P0689138 Labels per cabinet.
- RUL11 1) Provide one (1) P0675710 or P0689136 Label to be applied to the front of the cabinet below the blowers.

- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards.
- RUL13 1) Provide A0352268 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards.
- RUL14 1) Provide two (2) P0645993 Lazer Radiation Warning Labels when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0645993 Lazer Radiation Warning labels according to customer safety regulations that indicate that labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.

SUPERNODE CABINET AND COMMON CP

PEC CODE: NTZZ97BH

| RATING: MD

| ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The System Node Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a Brown SuperNode. This PEC code will be MD IN week 92/26 When NTZZ01RA REPLACES IT. This BB is identical to NTZZ01AA, except it contains NT9X12AB CPU port CP instead of NT9X12AC. The NTZZ97BH is for the U.S Market ONLY. This PEC code will be MD in week 92/26 when NTZZ01RA replaces it.

REFERENCE DOCUMENTATION: SLZZ97BH 00 01
NTZZ97BH REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Europe
Asia/Pacific

NTZZ97BH EMC4-03-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 18	----- ECM 626 06	Previous history not available This section has a rating A&M

The Supernode Cabinet and Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JA		1			AP
Kick Plate Assy (Brown)	NT0X2430		1			AP
Overhead Power Block Kit	NTEX5001		1			RUL8
Dual FSP Connector Pnl. Assy	NTEX5017		1	52		AP
Dual FSP Bulkhead Pnl. Assy	NTEX5018		1	52		AP
FSP Bulking Cable Assy	NT9X0522		2	52		AP
Frame Fail Light Kit(BROWN)	NT0X24BT		1			AP
MSG SW SIMPLEX SELF ASSY	NT9X0440	MS	2	26, 39		AP-01
Msg Sw Proc Comm CP	NT9X04AH		2	26, 39		AP
-5V 20A CONVERTER	NT9X31AA		4	26, 39	1F, 33F	AP-02
+5V 80A CONVERTER	NT9X30AA		4	26, 39	4F, 36F	AP-02
MS T-BUS TERMINATOR CP	NT9X52AA		2	26, 39	7F	AP-02
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26, 39	9F	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	AP
MAPPER CP	NT9X15AA		2	26, 39	11F	AP-02
4 Port Network & IOC I/F	NTZZ01CA			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface	NTZZ01DA			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Link Interface For FLIS	NTZZ01ZA			26, 39	12F-27F	RUL7
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-PORT CP	NT9X17AA		4	26, 39	30F, 31F	AP-02
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
MS LOADING PADDLE BOARD	NT9X32AA		4	26, 39	7R, 10R	AP-02
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB FILLER FACE PLATE	NT9X19BA		4	26, 39	11R, 32R	AP-02
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP-02
SHELF CP FILL FRONT LABEL	P0698334		2	26, 39		AP-02
SHELF CP FILL REAR LABEL	P0690632		2	26, 39		AP-02
MS Blkhd I/F	NT9X6556		2	26, 39		AP
DS30 Blkhd I/F (rt) (DMS)	NT9X6536		2	26, 39		AP

Retired Equipment
SUPERNODE CABINET AND COMMON CP

NTZZ97BH
EMC4-03-002
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26, 39		AP
Composite Clk CA Assy	NT9X0175		2	26, 39		AP
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL12
Fiber Optic Cable	A0352268			26, 39		RUL13
Warning Lbl 'Lazer Warning'	P0645993			13, 26		RUL14
COMP MOD DUPLEX SH ASSY	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A POWER CONV.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A POWER CONV.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AB		4	13	17F-18F 21F-22F	AP
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
CM BUS TERMINATOR	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R 24R-30R	AP
SUBSYSTEM CLOCK	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R 21R-22R	AP-03
SHELF CP FILL FRONT LABEL	P0700719		1	13		AP-03
SHELF CP FILL REAR LABEL	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM EXT SHELF ASSY	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	AP
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	AP
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des Label (NT9X12AB)	P0700801		4	13	17F, 18F AP 21F, 22F	
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
Warning Label, English ONLY "High Voltage"	P0675711		1			RUL9
Warning Label, English/French "High Voltage/Haute Tension"	P0689137		1			RUL9
Warning Label, English ONLY "High Voltage"	P0675712		4			RUL10
Warning Label, English/French "High Voltage/Haute Tension"	P0689138		4			RUL10
Warning Label, English ONLY "Disconnect Fan"	P0675710		1			RUL11
Warning Label, English/French "Disconnect Fan/"	P0689136		1			RUL11

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ97BH is ordered, these items are provided.
- AP-01 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X01JA CABINET, AND IS indicated here for completeness.
- AP-02 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X04AH MS COMMON CP, and is indicated here for completeness.
- AP-03 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X06AD CM COMMON CP, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.
- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F, 15F, 14F, 13F, 12F, 11F, 10F, 09F, 08F, 07F
- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.
- RUL4 1) Provide up to nine (9) NTZZ01CA to interface Network and IOC per the following formula,

$$\# \text{ NTZZ01CA} = \frac{(\# \text{NM} + \# \text{IOC})}{8}$$

rounded up to the next integer. 'NM' is a single plane.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CA in the following order; Slots 28, 26, 24, 22, 20, 18, 16, 14, 12

- 2) Provide up to eight (8) NTZZ01DA to interface the LIM/LPP per the following formula,

$$\# \text{ NTZZ01DA} = \{ \# \text{ Link Interface Module Cabinets} / 2 \}$$

to be rounded up to the nearest multiple of 2.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CA is required for STP applications to interface Network & IOC Modules. Each NTZZ01DA contains circuit packs and paddle

boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DA in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to eight (8) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,13,14,...25,26,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 5) Provide up to 12 NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 6) Provide up to eight (8) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each

ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

- RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.
- RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office.
- 2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.
- 3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.
- 4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office.
- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.
- 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs.
- RUL7 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL8 1) Provide one (1) NTEX5001 Overhead Power Block Kit for overhead cabling of the Supernode Frame.
- RUL9 1) Provide one (1) P0675711 or P0689137 Label to be applied to Supernode FSP Unit.
- RUL10) Provide four (4) P0675712 or P0689138 Labels per cabinet.
- RUL11 1) Provide one (1) P0675710 or P0689136 Label to be applied to the front of the cabinet below the blowers.

- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards.
- RUL13 1) Provide A0352268 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards.
- RUL14 1) Provide two (2) P0645993 Lazer Radiation Warning Labels when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0645993 Lazer Radiation Warning labels according to customer safety regulations that indicate that labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.

APC APPLICATION PROCESSOR LEFT

PEC CODE: NTZZ35BA

| CPC CODE: B0234567

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: APC Application Processor Left

REFERENCE DOCUMENTATION: MSZZ35BA 00 00

SLZZ35BA 00 00

NTZZ35BA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35BA EMC4-04-AP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 10 23	----- ECM 512 06	Previous history not available MD PECs NT9X80BA, NTZZ35BA, CA, DA, EA, FA, GA, HA per EC18-41001.

The APC Application Processor Left is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter +/-5V	NTDX15AA		2	XX	1F, 4F	AP
Filler Faceplate	NT9X19AA		1	XX	7F	AP
Dual Port Msg Controller CP	NT9X86AA		2	XX	12F, 15F	AP
CPU (68030) 40MHz CP	NT9X13LA		2	XX	13F, 14F	AP
Filler Paddleboard	NT9X19BA		7	XX	7R, 9R-11R, 16R-18R	AP
Bus Terminator PB	NT9X21AB		2	XX	8R, 19R	AP
2-Port Subrate DS-512 PB	NT9X62AA		2	XX	12R, 15R	AP
Desig. Strip(Application Processor Shelf Front)	P0729132		1	XX	1F-19F	AP
Desig. Strip(Application Processor Shelf Rear)	P0729124		1	XX	7R-19R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ35BA is ordered, these items are provided.

APC APPLICATION PROCESSOR RIGHT

PEC CODE: NTZZ35DA

| CPC CODE: B0234569

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: APC Application Processor Right

REFERENCE DOCUMENTATION: MSZZ35DA 00 00

SLZZ35DA 00 00

NTZZ35DA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35DA EMC4-04-AP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 10 23	----- ECM 512 06	Previous history not available MD PECs NT9X80BA, NTZZ35BA, CA, DA, EA, FA, GA, HA per EC18-41001.

The APC Application Processor Right is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Port Msg Controller CP	NT9X86AA		2	XX	24F, 27F	AP
CPU (68030) 40MHz CP	NT9X13LA		2	XX	25F, 26F	AP
Filler Faceplate	NT9X19AA		1	XX	32F	AP
Filler Paddleboard	NT9X19BA		7	XX	21R-23R 28R-30R 32R	AP
Power Converter +/-5V	NTDX15AA		2	XX	33F, 36F	AP
Bus Terminator PB	NT9X21AB		2	XX	20R, 31R	AP
2-Port Subrate DS-512 PB	NT9X62AA		2	XX	24R, 27R	AP
Desig. Strip(Application Processor Shelf Front)	P0729133		1	XX	20F-36F	AP
Desig. Strip(Application Processor Shelf Rear)	P0729122		1	XX	20R-32R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ35DA is ordered, these items are provided.

APC (C/42) GRAY EXT. -48V

PEC CODE: NTZZ35MA

CPC CODE: B0238366

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ35MB

ABBREVIATION NAME: APC

ENGINEERING DESCRIPTION: The APC(Application Processor Cabinet) provides increased processing and data management power required for running software applications such as DMS Service Control Point and Billing Server. Application Processor Shelf can house up to two Application Processor (AP) or File Processor (FP) units. The Storage Device Shelf can house up to two Storage Devices (SDs). Each SD consumes one half shelf and comprises a pair of mass storage units (disk or tape drives). SCSI cables are used to interconnect an FP to one or more SDs in a daisy chain arrangement. Shelves and interconnect cabling are provisionable, subject to certain restrictions. The APC comes provided with a Gray exterior and -48V capability.

REFERENCE DOCUMENTATION: MS9X80CA 01 01
SLZZ35MA 00 02

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA
Carrier

| ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ35MA EMC4-04-APC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 18	ECM 675 02	Remove NT9X9505 & NT9X8101
93 09 21	ECM 675 03	Add note to Ru110
94 03 10	ECM 675 04	Retire Section.

The APC (C/42) Gray Ext. -48V is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Application Processor Cab.	NT9X80CA		1			AP
S/DMS SuperNode Cabinet Assy	NT9X95AA		1			AP-XXX
Frame Supervisory Panel(-48V)	NT9X03AA	FSP	1	52		AP
Cooling Unit (-48V)	NT9X95CU					AP
Power Terminal Block Kit (streamline)	NT9X9531					RUL17
Power Terminal Block Kit (standalone)	NT9X9532					RUL17
Terminator FSP Plug	NT9X0314			52		RUL13, RUL15
Application Processor Shelf	NT9X8101			XX		RUL1
Left Fiber Assembly Panel	NT9X6506			XX		RUL1
Right Fiber Assembly Panel	NT9X6503			XX		RUL1
APC AP LEFT(C/42)	NTZZ35QA			XX	1F	RUL2
APC FP LEFT(C/42)	NTZZ35RA			XX	1F	RUL2
24Mb Memory CP	NT9X14DB			XX	8F-11F, 19F-16F	RUL3
Remote Term I/F PB	NT9X26AB			XX	13R,14R	RUL4
APC AP RIGHT(C/42)	NTZZ35SA			XX	24F	RUL2
APC FP RIGHT(C/42)	NTZZ35TA			XX	23F	RUL2
APC Pack Fill Right	NTZZ35JA			XX	20F	RUL13
24Mb Memory CP	NT9X14DB			XX	20F-23F, 31F-28F	RUL3
Remote Term I/F PB	NT9X26AB			XX	25R,26R	RUL4
APC Storage Device Shelf	NT9X8301			YY		RUL5
Left Fiber Assembly Panel	NT9X6506			YY		RUL5
Right Fiber Assembly Panel	NT9X6503			YY		RUL5
APC SD LEFT(C/42)	NTZZ35UA			YY	1F	RUL11
APC SD (FULL SHELF-C/42)	NTZZ35WA			YY	1F	RUL12
600 MB Disk Storage Unit	NT9X90AA			YY	8F,14F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	8F,14F	RUL6
Filler Face Plate	NT9X19AA			YY	8F-13F, 14F-19F	RUL6
APC SD RIGHT	NTZZ35VA			YY	32F	RUL11
APC Pack Fill Right	NTZZ35JA			XX	20F	RUL13
Storage Device Pack Fill Right W PB	NTZZ35KA			YY	20F	RUL14

Retired Equipment
APC (C/42) Gray Ext. -48V

NTZZ35MA
EMC4-04-APC-1
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
600 MB Disk Storage Unit	NT9X90AA			YY	20F, 26F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	20F, 26F	RUL6
Filler Face Plate	NT9X19AA			YY	20F-25F 26F-31F	RUL6
Desig. Label(NT9X90AA)	P0729127			YY	8F, 14F	RUL6
Desig. Label(NT9X90BA)	P0729128			YY	8F, 14F	RUL6
Desig. Label(NT9X90AA & NT9X90BA)	P0730171			YY	8F, 14F	RUL6
Filler Packfill	NT9X01FB			ZZ		RUL7
Blank Shelf	NT0X24BD			ZZ		RUL7
End of Aisle Lamp Cable	NT9X0146					RUL8
End of Aisle Lamp Cable	NT9X0172					RUL8
Frame Fail Lamp(Gray)	NT0X24CN		1			AP
Rear Frame Fail Lamp(Gray)	P0699441		1			AP
Door Right Front(Gray)	NT9X9502		2			AP
Door Left Front(Gray)	NT9X9503		2			AP
Streamline Exterior skin Assembly, Left, Gray	NTRX73AL					RUL9
Streamline Exterior skin Assembly, Right, Gray	NTRX73AM					RUL9
SCSI Wiring Configuration	AR					RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Both planes of each unit are shown together in the equipment list, while the two half-shelves are shown separately.
- 2) XX, YY, and ZZ denote shelf position 00, 13, 26, or 39. XX denotes equipment that can be assigned to an Application Processor Shelf. One Application Processor Shelf is Always Provided in position 39. YY denotes equipment that can be assigned to a Storage Device Shelf. ZZ denotes equipment that can be assigned to any shelf position.
- 3) Maximum four (4) FPs are to be assigned beginning from shelf 39 (top of cabinet) moving downwards, and left to right across each shelf. Allot space for SDs from shelf 00 (bottom of cabinet) moving upwards, and left to right across each shelf. Leave no gaps in the assignment sequence.
- 4) The SCSI bus with the greatest number of devices is to be assigned first, beginning at the bottom of the cabinet, followed by the next largest bus, and so on.
- 5) Provision the Storage Devices according to the permissible configurations outlined in the ECM. SCSI cabling cannot leave the cabinet.
- 6) Within each SD space allotment, Power Converters, SCSI Device Interface Paddleboards, and SCSI cables must be equipped initially. The Storage Devices themselves can be provisioned in a future extension. Any type of SD may be provisioned in an allotted quadrant, or a quadrant may be left unequipped. However, it is recommended to position the two members of a shadowed pair side by side within a half shelf.
- 7) It is permitted to leave shelf positions unequipped initially. In an extension, Application Processor and Storage Device Shelves can be added in the field in place of the initial Blank Shelf filler.
- 8) Disk storage devices are more sensitive to vibration than DAT storage devices. Where possible, disk drives should be located lower in the cabinet than DAT drives.

- 9) After the FPs and SDs are assigned per the above notes, APs may be assigned to AP shelves into the remaining half-shelf spaces. It is possible to fill a cabinet with APs alone, should an application require it.

RULES:

- AP 1) When PEC NTZZ35MA is ordered, these items are provided.
- 2) The NTZZ35MA is comprised of the following:
- NT9X9501 Cabinet Framework
- AP-XXX 1) This PEC is always provided on the NT9X80CA and is indicated here for completeness.

- RUL1 1) Provide one (1) NT9X8101 Application Processor Shelf when this shelf position is to contain Application Processors (APs) or File Processors (FPs).
- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8101 Application Processor Shelf provisioned. Shelf 39 already comes equipped with one (1) NT9X6506 and one (1) NT9X6503.

- RUL2 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide a dual-plane AP or FP:

PEC	Quantity per half-shelf
-----	-----
NTDX15AB	2
NT9X86AA	2
NT9X13LA	2
NT9X21AB	2
NT9X62AA	2

- RUL3 1) Provision NT9X14DB 24 MByte Memory CP as required by the application. The application may designate one of the memory CPs as a hot spare; this is optional. Note that with the NT9X14DB, the first 4 MByte of data store is unusable.
- 2) In an Application Processor, a maximum of four (4) 24 MByte Memory CP may be equipped per plane (total eight (8) per AP) for a total of 92 MBytes of memory per plane. (96 - 4 = 92 MBytes) In a File Processor, a maximum of three (3) 24 MByte Memory CP may be equipped per plane (total six (6) per FP) for a total of 68 MBytes of memory per plane. (72 - 4 = 68 MBytes) In a FP, slots 8F-10F and 19F-17F, or 20F-22F and 31F-29F, are available for memory CP.
- 3) Assign memory CP beginning with the CP position farthest from the CPU CP and working towards the CPU. For the left half-shelf the sequence is 8F and 19F, 9F and 18F, 10F and 17F, (and 11F and 16F if the unit is an AP). For the right half shelf the sequence is 20F and 31F, 21F and 30F, 22F and 29F, (and 23F and 28F if the unit is an AP).
- RUL4 1) Provision NT9X26AB if that vintage is equipped in the DMS-Core. New core installations should be provisioned with NT9X26AB.
- RUL5 1) Provide one (1) NT9X8301 Storage Device Shelf when this shelf position is to contain Storage Devices (SDs).

- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8301 Storage Device Shelf provisioned.
- RUL6
- 1) Provide one (1) NT9X90AA 600 MByte Disk Storage Device per quadrant when the application requires a hard disk drive.
 - 2) Provide one (1) NT9X90BA 1.3 GByte DAT Storage Device per quadrant when the application requires a Digital Audio Tape storage device. Provision DG60M Magnetic Tape Data Cartridge (blank) as required.
 - 3) Provide six (6) NT9X19AA Filler Face Plates for each allocated quadrant not equipped with with an SD.
 - 4) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AA) and one DATs(NT9X90BA) then provide one (1) P0730171 Label.
 - 5) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AA) then provide one (1) P0729127 Label.
 - 6) When equipping one half SD(storage device) shelf with one or two DATs(NT9X90BA) then provide one (1) P0729128 Label.
- RUL7
- 1) When a provided shelf is not equipped with APs, FPs or SDs, provide one (1) NT9X01FB Filler Packfill to satisfy the forced air cooling requirements of the frame. (Designation Labels P0687764 and P0687765 ARE INCLUDED with the NT9X01FB Filler Packfill)
 - 2) When a shelf is not equipped, provide one (1) NT0X24BD Blank Shelf to satisfy the forced air cooling requirements of the frame.
- RUL8
- 1) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
 - 2) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X80CA and the end of the line-up.
- RUL9
- 1) Provide as per EMA15-05-001.
- RUL10
- 1) SCSI cables are provided based on the physical length from the FP to the SD, and between SDs in the chain. Each diagram in the table below depicts a cabinet configuration, with shelves 39, 26, 13 and 00 shown from top to bottom. "FP" represents a File Processor, "SD" a space allotted for

a Storage Device, and "-" a blank space or Application Processor. The digit following FP or SD indicates which SCSI bus the device belongs to (eg. SD0 is a space allocated to a Storage Device on SCSI bus 0. It is connected to all other SD0 devices and FP0.)

Select the configuration with the desired quantity of FPs and SD spaces, and provision the quantity of cable PECs indicated.

Specwriters Note : Please ensure that both the Frame I.D. and the SCSI cable routing table are always referenced in the Specwriters notes section.

Table 1 - SCSI Cable Provisioning

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
1		55	3	NT9X0443
	FP0 -	60	4	NT9X0444
		65	3	NT9X0445
	SD0 SD0	70	4	NT9X0446
		75	2	NT9X0447
	SD0 SD0			
1		55	1	NT9X0443
	FP0 -	60	1	NT9X0444
		65	2	NT9X0445
	- -	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448
	SD0 SD0			

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	-	-	SD0	SD0	65	1	NT9X0445
		FP0	-									
		-	-									
		-	-									
		SD0	SD0									
		70	1	NT9X0446								
75	2	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	SD0	-	SD0	SD0	55	3	NT9X0443
		FP0	-									
		-	-									
		SD0	-									
		SD0	SD0									
		60	2	NT9X0444								
65	4	NT9X0445										
70	1	NT9X0446										
75	3	NT9X0447										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr></table>	FP0	-	-	-	-	-	SD0	-	60	1	NT9X0444
		FP0	-									
		-	-									
		-	-									
		SD0	-									
		65	3	NT9X0445								
70	2	NT9X0446										
75	1	NT9X0447										
80	1	NT9X0448										
2	<table><tr><td>FP0</td><td>-</td></tr><tr><td>FP1</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	-	FP1	-	-	-	SD0	SD1	60	1	NT9X0444
		FP0	-									
		FP1	-									
		-	-									
		SD0	SD1									
		65	3	NT9X0445								
70	5	NT9X0446										
75	5	NT9X0447										
80	2	NT9X0448										
	<table><tr><td>FP0</td><td>-</td></tr></table>	FP0	-	35	1	NT9X0416						
		FP0	-									
40	3	NT9X0419										

2	<table><tr><td>FP1</td><td>-</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP1	-	SD1	-	SD0	SD0	45	2	NT9X0420		
		FP1	-									
		SD1	-									
		SD0	SD0									
	50	1	NT9X0442									
	55	1	NT9X0443									
	65	1	NT9X0445									
	70	1	NT9X0446									
75	2	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
2	<table><tr><td>FP0</td><td>-</td></tr><tr><td>FP1</td><td>-</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	FP1	-	SD1	SD1	SD0	SD0	35	1	NT9X0416
		FP0	-									
		FP1	-									
		SD1	SD1									
	SD0	SD0										
	40	1	NT9X0419									
	45	2	NT9X0420									
	50	1	NT9X0442									
55	1	NT9X0443										
60	2	NT9X0444										
65	2	NT9X0445										
70	1	NT9X0446										
75	2	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	SD1	SD1	SD0	SD0	SD0	SD0	45	1	NT9X0420
		FP0	FP1									
		SD1	SD1									
		SD0	SD0									
	SD0	SD0										
	50	3	NT9X0442									
	55	4	NT9X0443									
	60	2	NT9X0444									
65	2	NT9X0445										
70	3	NT9X0446										
75	4	NT9X0447										
80	1	NT9X0448										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	SD1	-	SD0	SD0	SD0	SD0	45	1	NT9X0420
		FP0	FP1									
		SD1	-									
		SD0	SD0									
	SD0	SD0										
	50	3	NT9X0442									
	55	3	NT9X0443									
	60	2	NT9X0444									
65	3	NT9X0445										
70	3	NT9X0446										
75	4	NT9X0447										
80	1	NT9X0448										

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	SD1	SD0	SD0	55	1	NT9X0443
		FP0	FP1									
		-	-									
		SD1	SD1									
		SD0	SD0									
		60	1	NT9X0444								
		65	5	NT9X0445								
70	2	NT9X0446										
75	3	NT9X0447										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	-	SD0	SD0	80	1	NT9X0448
		FP0	FP1									
		-	-									
		SD1	-									
		SD0	SD0									
		85	3	NT9X0449								
		2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	FP1	-	-	-	-	SD0	SD1	60
FP0	FP1											
-	-											
-	-											
SD0	SD1											
65	4			NT9X0445								
70	2			NT9X0446								
75	5	NT9X0447										
80	3	NT9X0448										
85	1	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	SD1	SD1	SD0	SD1	SD0	SD0	45	1	NT9X0420
		FP0	FP1									
		SD1	SD1									
		SD0	SD1									
		SD0	SD0									
		50	4	NT9X0442								
		55	5	NT9X0443								
60	6	NT9X0444										
65	5	NT9X0445										
70	1	NT9X0446										
75	2	NT9X0447										

3

FP0	FP1
FP2	-
SD1	SD2
SD0	SD0

50	1	NT9X0442
55	3	NT9X0443
60	4	NT9X0444
65	5	NT9X0445
70	4	NT9X0446
75	3	NT9X0447
80	1	NT9X0448
85	3	NT9X0449

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
3	FP0 FP1	35	1	NT9X0416
		40	3	NT9X0419
	FP2 -	45	2	NT9X0420
		50	1	NT9X0442
	SD2 -	55	1	NT9X0443
		60	1	NT9X0444
	SD0 SD1	65	5	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	2	NT9X0448
4	FP0 FP1	85	1	NT9X0449
		35	1	NT9X0416
	FP2 FP3	40	4	NT9X0419
		45	5	NT9X0420
	SD2 SD3	50	4	NT9X0442
		55	1	NT9X0443
	SD0 SD1	60	2	NT9X0444
		65	4	NT9X0445
	SD0 SD1	70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
	SD0 SD1	85	1	NT9X0449

- RUL11 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide capacity for Storage Devices.

PEC	Quantity per half-shelf
NT9X91AB	2
NT9X19AA	1
NT9X19BA	9
NT9X89BA	4

- RUL12 1) Provision the circuit pack quantities indicated to equip one full shelf to provide capacity for Storage Devices.

PEC	Quantity per full-shelf
NT9X91AB	4
NT9X19AA	2
NT9X19BA	18
NT9X89AA	8

- RUL13 1) Provision the circuit pack quantities indicated to equip one right half application processor shelf with Filler Packs.

PEC	Quantity per half-shelf
-----	-----
NT9X19CA	2
NT9X19AA	13
NT9X19BA	13
NT9X0314	1

- RUL14 1) Provision the circuit pack quantities indicated to equip the right half storage device shelf with Filler Packs. This MUST BE USED IN CONJUNCTION WITH the NTZZ35WA.

PEC	Quantity per half-shelf
-----	-----
NT9X19AA	12

- RUL15 1) Provision one (1) NT9X0314 Terminator FSP Plug at the FSP for every two (2) NT9X19CA equipped.

- RUL17 1) Provide one (1) NT9X9531 Power Terminal Block Kit for streamline applications.

- 2) Provide one (1) NT9X9532 Power Terminal Block kit for standalone applications.

APC (C/42) BROWN (-48V)

PEC CODE: NTZZ35NA

CPC CODE: B0238365

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ35NB

ABBREVIATION NAME: APC

ENGINEERING DESCRIPTION: The APC(Application Processor Cabinet) provides increased processing and data management power required for running software applications such as DMS Service Control Point and Billing Server. Application Processor Shelf can house up to two Application Processor (AP) or File Processor (FP) units. The Storage Device Shelf can house up to two Storage Devices (SDs). Each SD consumes one half shelf and comprises a pair of mass storage units (disk or tape drives). SCSI cables are used to interconnect an FP to one or more SDs in a daisy chain arrangement. Shelves and interconnect cabling are provisionable, subject to certain restrictions. The APC comes provided with a Brown exterior and -48V capability.

REFERENCE DOCUMENTATION: MS9X80CA 01 01
SLZZ35NA 00 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

| ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ35NA EMC4-04-APC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 18	ECM 675 02	Remove NT9X9505 & NT9X8101
93 09 21	ECM 675 03	Add note to Ru110
94 03 10	ECM 675 04	Retire section.

The APC (C/42) Brown (-48V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Application Processor Cab.	NT9X80CA		1			AP
S/DMS SuperNode Cabinet Assy	NT9X95AA		1			AP-XXX
Frame Supervisory Panel(-48V)	NT9X03AA	FSP	1	52		AP
Cooling Unit (-48V)	NT9X95CU		1			AP
Power Terminal Block Kit (streamline)	NT9X9531					RUL17
Power Terminal Block Kit (standalone)	NT9X9532					RUL17
Terminator FSP Plug	NT9X0314			52		RUL13, RUL15
Application Processor Shelf	NT9X8101			XX		RUL1
Left Fiber Assembly Panel	NT9X6506			XX		RUL1
Right Fiber Assembly Panel	NT9X6503			XX		RUL1
APC AP LEFT(C/42)	NTZZ35QA			XX	1F	RUL2
APC FP LEFT(C/42)	NTZZ35RA			XX	1F	RUL2
24Mb Memory CP	NT9X14DB			XX	8F-11F, 19F-16F	RUL3
Remote Term I/F PB	NT9X26AB			XX	13R,14R	RUL4
APC AP RIGHT(C/42)	NTZZ35SA			XX	24F	RUL2
APC FP RIGHT(C/42)	NTZZ35TA			XX	23F	RUL2
APC Pack Fill Right	NTZZ35JA			XX	20F	RUL13
24Mb Memory CP	NT9X14DB			XX	20F-23F, 31F-28F	RUL3
Remote Term I/F PB	NT9X26AB			XX	25R,26R	RUL4
APC Storage Device Shelf	NT9X8301			YY		RUL5
Left Fiber Assembly Panel	NT9X6506			YY		RUL5
Right Fiber Assembly Panel	NT9X6503			YY		RUL5
APC SD LEFT(C/42)	NTZZ35UA			YY	1F	RUL11
APC SD (FULL SHELF-C/42)	NTZZ35WA			YY	1F	RUL12
600 MB Disk Storage Unit	NT9X90AA			YY	8F,14F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	8F,14F	RUL6
Filler Face Plate	NT9X19AA			YY	8F-13F, 14F-19F	RUL6
APC SD RIGHT	NTZZ35VA			YY	32F	RUL11
APC Pack Fill Right	NTZZ35JA			XX	20F	RUL13
Storage Device Pack Fill Right W PB	NTZZ35KA			YY	20F	RUL14

Retired Equipment
APC (C/42) Brown (-48V)

NTZZ35NA
EMC4-04-APC-2
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
600 MB Disk Storage Unit	NT9X90AA			YY	20F, 26F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	20F, 26F	RUL6
Filler Face Plate	NT9X19AA			YY	20F-25F 26F-31F	RUL6
Desig. Label(NT9X90AA)	P0729127			YY	8F, 14F	RUL6
Desig. Label(NT9X90BA)	P0729128			YY	8F, 14F	RUL6
Desig. Label(NT9X90AA & NT9X90BA)	P0730171			YY	8F, 14F	RUL6
Filler Packfill	NT9X01FB			ZZ		RUL7
Blank Shelf	NT0X24BD			ZZ		RUL7
End of Aisle Lamp Cable	NT9X0146					RUL8
End of Aisle Lamp Cable	NT9X0172					RUL8
Frame Fail Lamp(Brown)	NT0X24BT		1			AP
Rear Frame Fail Lamp(Brown)	P0674502		1			AP
Door Right Front(Brown)	NT9X9537		2			AP
Door Left Front(Brown)	NT9X9541		2			AP
Streamline Exterior skin Assembly, Left, Brown	NTRX73AN					RUL9
Streamline Exterior skin Assembly, Right, Brown	NTRX73AP					RUL9
SCSI Wiring Configuration	AR					RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Both planes of each unit are shown together in the equipment list, while the two half-shelves are shown separately.
- 2) XX, YY, and ZZ denote shelf position 00, 13, 26, or 39. XX denotes equipment that can be assigned to an Application Processor Shelf. One Application Processor Shelf is Always Provided in position 39. YY denotes equipment that can be assigned to a Storage Device Shelf. ZZ denotes equipment that can be assigned to any shelf position.
- 3) Maximum four (4) FPs are to be assigned beginning from shelf 39 (top of cabinet) moving downwards, and left to right across each shelf. Allot space for SDs from shelf 00 (bottom of cabinet) moving upwards, and left to right across each shelf. Leave no gaps in the assignment sequence.
- 4) The SCSI bus with the greatest number of devices is to be assigned first, beginning at the bottom of the cabinet, followed by the next largest bus, and so on.
- 5) Provision the Storage Devices according to the permissible configurations outlined in the ECM. SCSI cabling cannot leave the cabinet.
- 6) Within each SD space allotment, Power Converters, SCSI Device Interface Paddleboards, and SCSI cables must be equipped initially. The Storage Devices themselves can be provisioned in a future extension. Any type of SD may be provisioned in an allotted quadrant, or a quadrant may be left unequipped. However, it is recommended to position the two members of a shadowed pair side by side within a half shelf.
- 7) It is permitted to leave shelf positions unequipped initially. In an extension, Application Processor and Storage Device Shelves can be added in the field in place of the initial Blank Shelf filler.
- 8) Disk storage devices are more sensitive to vibration than DAT storage devices. Where possible, disk drives should be located lower in the cabinet than DAT drives.
- 9) After the FPs and SDs are assigned per the above notes, APs may be assigned to AP shelves into the remaining half-shelf spaces. It is possible to fill a cabinet with APs alone, should an application require it.

RULES:

- AP 1) When PEC NTZZ35NA is ordered, these items are provided.
- 2) The NTZZ35NA is comprised of the following:
 - NT9X9501 Cabinet Framework
- AP-XXX 1) This PEC is always provided on the NT9X80CA and is indicated here for completeness.

- RUL1 1) Provide one (1) NT9X8101 Application Processor Shelf when this shelf position is to contain Application Processors (APs) or File Processors (FPs).
- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8101 Application Processor Shelf provisioned. Shelf 39 already comes equipped with one (1) NT9X6506 and one (1) NT9X6503.

- RUL2 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide a dual-plane AP or FP:

PEC	Quantity per half-shelf
-----	-----
NTDX15AB	2
NT9X86AA	2
NT9X13LA	2
NT9X21AB	2
NT9X62AA	2

- RUL3 1) Provision NT9X14DB 24 MByte Memory CP as required by the application. The application may designate one of the memory CPs as a hot spare; this is optional. Note that with the NT9X14DB, the first 4 MByte of data store is unusable.
- 2) In an Application Processor, a maximum of four (4) 24 MByte Memory CP may be equipped per plane (total eight (8) per AP) for a total of 92 MBytes of memory per plane. (96 - 4 = 92 MBytes) In a File Processor, a maximum of three (3) 24 MByte Memory CP may be equipped per plane (total six (6) per FP) for a total of 68 MBytes of memory per plane. (72 - 4 = 68 MBytes) In a FP, slots 8F-10F and 19F-17F, or 20F-22F and 31F-29F, are available for memory CP.
- 3) Assign memory CP beginning with the CP position farthest from the CPU CP and working towards the CPU. For the left half-shelf the sequence is 8F and 19F, 9F and 18F, 10F and 17F, (and 11F and 16F if the unit is an AP). For the right half shelf the sequence is 20F and 31F, 21F and 30F, 22F and 29F, (and 23F and 28F if the unit is an AP).
- RUL4 1) Provision NT9X26AB if that vintage is equipped in the DMS-Core. New core installations should be provisioned with NT9X26AB.
- RUL5 1) Provide one (1) NT9X8301 Storage Device Shelf when this shelf position is to contain Storage Devices (SDs).

- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8301 Storage Device Shelf provisioned.
- RUL6
- 1) Provide one (1) NT9X90AA 600 MByte Disk Storage Device per quadrant when the application requires a hard disk drive.
 - 2) Provide one (1) NT9X90BA 1.3 GByte DAT Storage Device per quadrant when the application requires a Digital Audio Tape storage device. Provision DG60M Magnetic Tape Data Cartridge (blank) as required.
 - 3) Provide six (6) NT9X19AA Filler Face Plates for each allocated quadrant not equipped with with an SD.
 - 4) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AA) and one DATs(NT9X90BA) then provide one (1) P0730171 Label.
 - 5) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AA) then provide one (1) P0729127 Label.
 - 6) When equipping one half SD(storage device) shelf with one or two DATs(NT9X90BA) then provide one (1) P0729128 Label.
- RUL7
- 1) When a provided shelf is not equipped with APs, FP or SDs, provide one (1) NT9X01FB Filler Packfill to satisfy the forced air cooling requirements of the frame. (Designation Labels P0687764 and P0687765 ARE INCLUDED with the NT9X01FB Filler Packfill)
 - 2) When a shelf is not equipped, provide one (1) NT0X24BD Blank Shelf to satisfy the forced air cooling requirements of the frame.
- RUL8
- 1) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
 - 2) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X80CA and the end of the line-up.
- RUL9
- 1) Provide as per EMA15-05-001.
- RUL10
- 1) SCSI cables are provided based on the physical length from the FP to the SD, and between SDs in the chain. Each diagram in the table below depicts a cabinet configuration, with shelves 39, 26, 13 and 00 shown from top to bottom. "FP" represents a File Processor, "SD" a space allotted for

a Storage Device, and "-" a blank space or Application Processor. The digit following FP or SD indicates which SCSI bus the device belongs to (eg. SD0 is a space allocated to a Storage Device on SCSI bus 0. It is connected to all other SD0 devices and FP0.)

Select the configuration with the desired quantity of FPs and SD spaces, and provision the quantity of cable PECs indicated.

Specwriters Note : Please ensure that both the Frame I.D. and the SCSI cable routing table are always referenced in the Specwriters notes section.

Table 1 - SCSI Cable Provisioning

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
1		55	3	NT9X0443
	FP0 -	60	4	NT9X0444
		65	3	NT9X0445
	SD0 SD0	70	4	NT9X0446
		75	2	NT9X0447
	SD0 SD0			
1		55	1	NT9X0443
	FP0 -	60	1	NT9X0444
		65	2	NT9X0445
	- -	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448
	SD0 SD0			

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	-	-	SD0	SD0	65	1	NT9X0445
		FP0	-									
		-	-									
		-	-									
		SD0	SD0									
		70	1	NT9X0446								
75	2	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	SD0	-	SD0	SD0	55	3	NT9X0443
		FP0	-									
		-	-									
		SD0	-									
		SD0	SD0									
		60	2	NT9X0444								
65	4	NT9X0445										
70	1	NT9X0446										
75	3	NT9X0447										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr></table>	FP0	-	-	-	-	-	SD0	-	60	1	NT9X0444
		FP0	-									
		-	-									
		-	-									
		SD0	-									
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2	<table><tr><td>FP0</td><td>-</td></tr><tr><td>FP1</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	-	FP1	-	-	-	SD0	SD1	60	1	NT9X0444
		FP0	-									
		FP1	-									
		-	-									
		SD0	SD1									
		65	3	NT9X0445								
70	5	NT9X0446										
75	5	NT9X0447										
80	2	NT9X0448										
	<table><tr><td>FP0</td><td>-</td></tr></table>	FP0	-	35	1	NT9X0416						
		FP0	-									
		40	3	NT9X0419								
45	2	NT9X0420										

2	FP1 -	50	1	NT9X0442
		55	1	NT9X0443
	SD1 -	65	1	NT9X0445
		70	1	NT9X0446
	SD0 SD0	75	2	NT9X0447
		80	1	NT9X0448
		85	3	NT9X0449
2	FP0 -	35	1	NT9X0416
		40	1	NT9X0419
		45	2	NT9X0420
	FP1 -	50	1	NT9X0442
		55	1	NT9X0443
	SD1 SD1	60	2	NT9X0444
		65	2	NT9X0445
	SD0 SD0	70	1	NT9X0446
		75	2	NT9X0447
		80	1	NT9X0448
		85	3	NT9X0449
2	FP0 FP1	45	1	NT9X0420
		50	3	NT9X0442
		55	4	NT9X0443
	SD1 SD1	60	2	NT9X0444
		65	2	NT9X0445
	SD0 SD0	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448
2	FP0 FP1	45	1	NT9X0420
		50	3	NT9X0442
		55	3	NT9X0443
	SD1 -	60	2	NT9X0444
		65	3	NT9X0445
	SD0 SD0	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	SD1	SD0	SD0	55	1	NT9X0443
		FP0	FP1									
		-	-									
		SD1	SD1									
		SD0	SD0									
		60	1	NT9X0444								
		65	5	NT9X0445								
70	2	NT9X0446										
75	3	NT9X0447										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	-	SD0	SD0	80	1	NT9X0448
		FP0	FP1									
		-	-									
		SD1	-									
		SD0	SD0									
		85	3	NT9X0449								
		2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	FP1	-	-	-	-	SD0	SD1	60
FP0	FP1											
-	-											
-	-											
SD0	SD1											
65	4			NT9X0445								
70	2			NT9X0446								
75	5	NT9X0447										
80	3	NT9X0448										
85	1	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	SD1	SD1	SD0	SD1	SD0	SD0	45	1	NT9X0420
		FP0	FP1									
		SD1	SD1									
		SD0	SD1									
		SD0	SD0									
		50	4	NT9X0442								
		55	5	NT9X0443								
60	6	NT9X0444										
65	5	NT9X0445										
70	1	NT9X0446										
75	2	NT9X0447										

3

FP0	FP1
FP2	-
SD1	SD2
SD0	SD0

50	1	NT9X0442
55	3	NT9X0443
60	4	NT9X0444
65	5	NT9X0445
70	4	NT9X0446
75	3	NT9X0447
80	1	NT9X0448
85	3	NT9X0449

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
3	FP0 FP1	35	1	NT9X0416
		40	3	NT9X0419
	FP2 -	45	2	NT9X0420
		50	1	NT9X0442
	SD2 -	55	1	NT9X0443
		60	1	NT9X0444
	SD0 SD1	65	5	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	2	NT9X0448
4	FP0 FP1	85	1	NT9X0449
		35	1	NT9X0416
	FP2 FP3	40	4	NT9X0419
		45	5	NT9X0420
	SD2 SD3	50	4	NT9X0442
		55	1	NT9X0443
	SD0 SD1	60	2	NT9X0444
		65	4	NT9X0445
	SD0 SD1	70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
	SD0 SD1	85	1	NT9X0449

- RUL11 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide capacity for Storage Devices.

PEC	Quantity per half-shelf
NT9X91AB	2
NT9X19AA	1
NT9X19BA	9
NT9X89BA	4

- RUL12 1) Provision the circuit pack quantities indicated to equip one full shelf to provide capacity for Storage Devices.

PEC	Quantity per full-shelf
NT9X91AB	4
NT9X19AA	2
NT9X19BA	18
NT9X89AA	8

- RUL13 1) Provision the circuit pack quantities indicated to equip one right half application processor shelf with Filler Packs.

PEC	Quantity per half-shelf
-----	-----
NT9X19CA	2
NT9X19AA	13
NT9X19BA	13
NT9X0314	1

- RUL14 1) Provision the circuit pack quantities indicated to equip the right half storage device shelf with Filler Packs. This MUST BE USED IN CONJUNCTION WITH the NTZZ35WA.

PEC	Quantity per half-shelf
-----	-----
NT9X19AA	12

- RUL15 1) Provision one (1) NT9X0314 Terminator FSP Plug at the FSP for every two (2) NT9X19CA equipped.

- RUL17 1) Provide one (1) NT9X9531 Power Terminal Block Kit for streamline applications.

- 2) Provide one (1) NT9X9532 Power Terminal Block kit for standalone applications.

APC (C/42) GRAY (-60V)

PEC CODE: NTZZ35PA

CPC CODE: B0238367

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ35PB

ABBREVIATION NAME: APC

ENGINEERING DESCRIPTION: The APC(Application Processor Cabinet) provides increased processing and data management power required for running software applications such as DMS Service Control Point and Billing Server. Application Processor Shelf can house up to two Application Processor (AP) or File Processor (FP) units. The Storage Device Shelf can house up to two Storage Devices (SDs). Each SD consumes one half shelf and comprises a pair of mass storage units (disk or tape drives). SCSI cables are used to interconnect an FP to one or more SDs in a daisy chain arrangement. Shelves and interconnect cabling are provisionable, subject to certain restrictions. The APC comes provided with a Gray exterior and -48V capability.

REFERENCE DOCUMENTATION: MS9X80CA 01 01
SLZZ35PA 00 02

MARKETS: Applicable markets:

Europe

| ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ35PA EMC4-04-APC-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 18	ECM 675 02	Remove NT9X9505 & NT9X8101
93 09 21	ECM 675 03	Add note to Ru110
94 03 10	ECM 675 04	Retire section.

The APC (C/42) Gray (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Application Processor Cab.	NT9X80CA		1			AP
S/DMS SuperNode Cabinet Assy	NT9X95AA		1			AP-XXX
Frame Supervisory Panel(-60V)	NT9X03BA	FSP	1	52		AP
Cooling Unit (-60V)	NT9X95GU		1			AP
Power Terminal Block Kit (streamline)	NT9X9531					RUL17
Power Terminal Block Kit (standalone)	NT9X9532					RUL17
Terminator FSP Plug	NT9X0314			52		RUL13, RUL15
Application Processor Shelf	NT9X8101			XX		RUL1
Left Fiber Assembly Panel	NT9X6506			XX		RUL1
Right Fiber Assembly Panel	NT9X6503			XX		RUL1
APC AP LEFT(C/42)	NTZZ35QA			XX	1F	RUL2
APC FP LEFT(C/42)	NTZZ35RA			XX	1F	RUL2
24Mb Memory CP	NT9X14DB			XX	8F-11F, 19F-16F	RUL3
Remote Term I/F PB	NT9X26AB			XX	13R,14R	RUL4
APC AP RIGHT(C/42)	NTZZ35SA			XX	24F	RUL2
APC FP RIGHT(C/42)	NTZZ35TA			XX	23F	RUL2
APC Pack Fill Right	NTZZ35JA			XX	20F	RUL13
24Mb Memory CP	NT9X14DB			XX	20F-23F, 31F-28F	RUL3
Remote Term I/F PB	NT9X26AB			XX	25R,26R	RUL4
APC Storage Device Shelf	NT9X8301			YY		RUL5
Left Fiber Assembly Panel	NT9X6506			YY		RUL5
Right Fiber Assembly Panel	NT9X6503			YY		RUL5
APC SD LEFT(C/42)	NTZZ35UA			YY	1F	RUL11
APC SD (FULL SHELF-C/42)	NTZZ35WA			YY	1F	RUL12
600 MB Disk Storage Unit	NT9X90AA			YY	8F,14F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	8F,14F	RUL6
Filler Face Plate	NT9X19AA			YY	8F-13F, 14F-19F	RUL6
APC SD RIGHT	NTZZ35VA			YY	32F	RUL11
APC Pack Fill Right	NTZZ35JA			XX	20F	RUL13
Storage Device Pack Fill Right W PB	NTZZ35KA			YY	20F	RUL14

Retired Equipment
APC (C/42) Gray (-60V)

NTZZ35PA
EMC4-04-APC-3
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
600 MB Disk Storage Unit	NT9X90AA			YY	20F, 26F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	20F, 26F	RUL6
Filler Face Plate	NT9X19AA			YY	20F-25F 26F-31F	RUL6
Desig. Label(NT9X90AA)	P0729127			YY	8F, 14F	RUL6
Desig. Label(NT9X90BA)	P0729128			YY	8F, 14F	RUL6
Desig. Label(NT9X90AA & NT9X90BA)	P0730171			YY	8F, 14F	RUL6
Filler Packfill	NT9X01FB			ZZ		RUL7
Blank Shelf	NT0X24BD			ZZ		RUL7
End of Aisle Lamp Cable	NT9X0146					RUL8
End of Aisle Lamp Cable	NT9X0172					RUL8
Frame Fail Lamp(Gray)	NT0X24CN		1			AP
Rear Frame Fail Lamp(Gray)	P0699441		1			AP
Door Right Front(Gray)	NT9X9502		2			AP
Door Left Front(Gray)	NT9X9503		2			AP
Streamline Exterior skin Assembly, Left, Gray	NTRX73AL					RUL9
Streamline Exterior skin Assembly, Right, Gray	NTRX73AM					RUL9
SCSI Wiring Configuration	AR					RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Both planes of each unit are shown together in the equipment list, while the two half-shelves are shown separately.
- 2) XX, YY, and ZZ denote shelf position 00, 13, 26, or 39. XX denotes equipment that can be assigned to an Application Processor Shelf. One Application Processor Shelf is Always Provided in position 39. YY denotes equipment that can be assigned to a Storage Device Shelf. ZZ denotes equipment that can be assigned to any shelf position.
- 3) Maximum four (4) FPs are to be assigned beginning from shelf 39 (top of cabinet) moving downwards, and left to right across each shelf. Allot space for SDs from shelf 00 (bottom of cabinet) moving upwards, and left to right across each shelf. Leave no gaps in the assignment sequence.
- 4) The SCSI bus with the greatest number of devices is to be assigned first, beginning at the bottom of the cabinet, followed by the next largest bus, and so on.
- 5) Provision the Storage Devices according to the permissible configurations outlined in the ECM. SCSI cabling cannot leave the cabinet.
- 6) Within each SD space allotment, Power Converters, SCSI Device Interface Paddleboards, and SCSI cables must be equipped initially. The Storage Devices themselves can be provisioned in a future extension. Any type of SD may be provisioned in an allotted quadrant, or a quadrant may be left unequipped. However, it is recommended to position the two members of a shadowed pair side by side within a half shelf.
- 7) It is permitted to leave shelf positions unequipped initially. In an extension, Application Processor and Storage Device Shelves can be added in the field in place of the initial Blank Shelf filler.
- 8) Disk storage devices are more sensitive to vibration than DAT storage devices. Where possible, disk drives should be located lower in the cabinet than DAT drives.

- 9) After the FPs and SDs are assigned per the above notes, APs may be assigned to AP shelves into the remaining half-shelf spaces. It is possible to fill a cabinet with APs alone, should an application require it.

RULES:

- AP 1) When PEC NTZZ35PA is ordered, these items are provided.
- 2) The NTZZ35PA is comprised of the following:
- NT9X9501 Cabinet Framework
- AP-XXX 1) This PEC is always provided on the NT9X80CA and is indicated here for completeness.

- RUL1 1) Provide one (1) NT9X8101 Application Processor Shelf when this shelf position is to contain Application Processors (APs) or File Processors (FPs).
- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8101 Application Processor Shelf provisioned. Shelf 39 already comes equipped with one (1) NT9X6506 and one (1) NT9X6503.

- RUL2 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide a dual-plane AP or FP:

PEC	Quantity per half-shelf
-----	-----
NTDX15AB	2
NT9X86AA	2
NT9X13LA	2
NT9X21AB	2
NT9X62AA	2

- RUL3 1) Provision NT9X14DB 24 MByte Memory CP as required by the application. The application may designate one of the memory CPs as a hot spare; this is optional. Note that with the NT9X14DB, the first 4 MByte of data store is unusable.
- 2) In an Application Processor, a maximum of four (4) 24 MByte Memory CP may be equipped per plane (total eight (8) per AP) for a total of 92 MBytes of memory per plane. (96 - 4 = 92 MBytes) In a File Processor, a maximum of three (3) 24 MByte Memory CP may be equipped per plane (total six (6) per FP) for a total of 68 MBytes of memory per plane. (72 - 4 = 68 MBytes) In a FP, slots 8F-10F and 19F-17F, or 20F-22F and 31F-29F, are available for memory CP.
- 3) Assign memory CP beginning with the CP position farthest from the CPU CP and working towards the CPU. For the left half-shelf the sequence is 8F and 19F, 9F and 18F, 10F and 17F, (and 11F and 16F if the unit is an AP). For the right half shelf the sequence is 20F and 31F, 21F and 30F, 22F and 29F, (and 23F and 28F if the unit is an AP).
- RUL4 1) Provision NT9X26AB if that vintage is equipped in the DMS-Core. New core installations should be provisioned with NT9X26AB.
- RUL5 1) Provide one (1) NT9X8301 Storage Device Shelf when this shelf position is to contain Storage Devices (SDs).

- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8301 Storage Device Shelf provisioned.
- RUL6
- 1) Provide one (1) NT9X90AA 600 MByte Disk Storage Device per quadrant when the application requires a hard disk drive.
 - 2) Provide one (1) NT9X90BA 1.3 GByte DAT Storage Device per quadrant when the application requires a Digital Audio Tape storage device. Provision DG60M Magnetic Tape Data Cartridge (blank) as required.
 - 3) Provide six (6) NT9X19AA Filler Face Plates for each allocated quadrant not equipped with an SD.
 - 4) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AA) and one DATs(NT9X90BA) then provide one (1) P0730171 Label.
 - 5) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AA) then provide one (1) P0729127 Label.
 - 6) When equipping one half SD(storage device) shelf with one or two DATs(NT9X90BA) then provide one (1) P0729128 Label.
- RUL7
- 1) When a provided shelf is not equipped with APs, FPs or SDs, provide one (1) NT9X01FB Filler Packfill to satisfy the forced air cooling requirements of the frame. (Designation Labels P0687764 and P0687765 ARE INCLUDED with the NT9X01FB Filler Packfill)
 - 2) When a shelf is not equipped, provide one (1) NT0X24BD Blank Shelf to satisfy the forced air cooling requirements of the frame.
- RUL8
- 1) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
 - 2) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X80CA and the end of the line-up.
- RUL9
- 1) Provide as per EMA15-05-001.
- RUL10
- 1) SCSI cables are provided based on the physical length from the FP to the SD, and between SDs in the chain. Each diagram in the table below depicts a cabinet configuration, with shelves 39, 26, 13 and 00 shown from top to bottom. "FP" represents a File Processor, "SD" a space allotted for

a Storage Device, and "-" a blank space or Application Processor. The digit following FP or SD indicates which SCSI bus the device belongs to (eg. SD0 is a space allocated to a Storage Device on SCSI bus 0. It is connected to all other SD0 devices and FP0.)

Select the configuration with the desired quantity of FPs and SD spaces, and provision the quantity of cable PECs indicated.

Specwriters Note : Please ensure that both the Frame I.D. and the SCSI cable routing table are always referenced in the Specwriters notes section.

Table 1 - SCSI Cable Provisioning

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	SD0	SD0	SD0	SD0	SD0	SD0	55	3	NT9X0443
		FP0	-									
		SD0	SD0									
		SD0	SD0									
		SD0	SD0									
		60	4	NT9X0444								
65	3	NT9X0445										
70	4	NT9X0446										
75	2	NT9X0447										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	SD0	SD0	SD0	SD0	55	1	NT9X0443
		FP0	-									
		-	-									
		SD0	SD0									
		SD0	SD0									
		60	1	NT9X0444								
65	2	NT9X0445										
70	3	NT9X0446										
75	4	NT9X0447										
80	1	NT9X0448										

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	-	-	SD0	SD0	65	1	NT9X0445
		FP0	-									
		-	-									
		-	-									
		SD0	SD0									
70	2	NT9X0446										
75	1	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	SD0	-	SD0	SD0	55	3	NT9X0443
		FP0	-									
		-	-									
		SD0	-									
		SD0	SD0									
60	2	NT9X0444										
65	4	NT9X0445										
70	1	NT9X0446										
75	3	NT9X0447										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr></table>	FP0	-	-	-	-	-	SD0	-	60	1	NT9X0444
		FP0	-									
		-	-									
		-	-									
		SD0	-									
65	3	NT9X0445										
70	2	NT9X0446										
75	1	NT9X0447										
80	1	NT9X0448										
2	<table><tr><td>FP0</td><td>-</td></tr><tr><td>FP1</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	-	FP1	-	-	-	SD0	SD1	60	1	NT9X0444
		FP0	-									
		FP1	-									
		-	-									
		SD0	SD1									
65	3	NT9X0445										
70	5	NT9X0446										
75	5	NT9X0447										
80	2	NT9X0448										
	<table><tr><td>FP0</td><td>-</td></tr></table>	FP0	-	35	1	NT9X0416						
		FP0	-									
40	3	NT9X0419										

2	<table><tr><td>FP1</td><td>-</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP1	-	SD1	-	SD0	SD0	45	2	NT9X0420		
		FP1	-									
		SD1	-									
		SD0	SD0									
	50	1	NT9X0442									
	55	1	NT9X0443									
	65	1	NT9X0445									
	70	1	NT9X0446									
75	2	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
2	<table><tr><td>FP0</td><td>-</td></tr><tr><td>FP1</td><td>-</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	FP1	-	SD1	SD1	SD0	SD0	35	1	NT9X0416
		FP0	-									
		FP1	-									
		SD1	SD1									
	SD0	SD0										
	40	1	NT9X0419									
	45	2	NT9X0420									
	50	1	NT9X0442									
55	1	NT9X0443										
60	2	NT9X0444										
65	2	NT9X0445										
70	1	NT9X0446										
75	2	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	SD1	SD1	SD0	SD0	SD0	SD0	45	1	NT9X0420
		FP0	FP1									
		SD1	SD1									
		SD0	SD0									
	SD0	SD0										
	50	3	NT9X0442									
	55	4	NT9X0443									
	60	2	NT9X0444									
65	2	NT9X0445										
70	3	NT9X0446										
75	4	NT9X0447										
80	1	NT9X0448										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	SD1	-	SD0	SD0	SD0	SD0	45	1	NT9X0420
		FP0	FP1									
		SD1	-									
		SD0	SD0									
	SD0	SD0										
	50	3	NT9X0442									
	55	3	NT9X0443									
	60	2	NT9X0444									
65	3	NT9X0445										
70	3	NT9X0446										
75	4	NT9X0447										
80	1	NT9X0448										

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	SD1	SD0	SD0	55	1	NT9X0443
		FP0	FP1									
		-	-									
		SD1	SD1									
		SD0	SD0									
		60	1	NT9X0444								
		65	5	NT9X0445								
70	2	NT9X0446										
75	3	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	-	SD0	SD0	60	1	NT9X0444
		FP0	FP1									
		-	-									
		SD1	-									
		SD0	SD0									
		65	4	NT9X0445								
		70	4	NT9X0446								
75	3	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	FP1	-	-	-	-	SD0	SD1	60	1	NT9X0444
		FP0	FP1									
		-	-									
		-	-									
		SD0	SD1									
		65	4	NT9X0445								
		70	2	NT9X0446								
75	5	NT9X0447										
80	3	NT9X0448										
85	1	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	SD1	SD1	SD0	SD1	SD0	SD0	45	1	NT9X0420
		FP0	FP1									
		SD1	SD1									
		SD0	SD1									
		SD0	SD0									
		50	4	NT9X0442								
		55	5	NT9X0443								
60	6	NT9X0444										
65	5	NT9X0445										
70	1	NT9X0446										
75	2	NT9X0447										

3

FP0	FP1
FP2	-
SD1	SD2
SD0	SD0

50	1	NT9X0442
55	3	NT9X0443
60	4	NT9X0444
65	5	NT9X0445
70	4	NT9X0446
75	3	NT9X0447
80	1	NT9X0448
85	3	NT9X0449

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
3	FP0 FP1	35	1	NT9X0416
		40	3	NT9X0419
	FP2 -	45	2	NT9X0420
		50	1	NT9X0442
	SD2 -	55	1	NT9X0443
		60	1	NT9X0444
	SD0 SD1	65	5	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	2	NT9X0448
4	FP0 FP1	85	1	NT9X0449
		35	1	NT9X0416
	FP2 FP3	40	4	NT9X0419
		45	5	NT9X0420
	SD2 SD3	50	4	NT9X0442
		55	1	NT9X0443
	SD0 SD1	60	2	NT9X0444
		65	4	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
		85	1	NT9X0449

- RUL11 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide capacity for Storage Devices.

PEC	Quantity per half-shelf
NT9X91AB	2
NT9X19AA	1
NT9X19BA	9
NT9X89BA	4

- RUL12 1) Provision the circuit pack quantities indicated to equip one full shelf to provide capacity for Storage Devices.

PEC	Quantity per full-shelf
NT9X91AB	4
NT9X19AA	2
NT9X19BA	18
NT9X89AA	8

- RUL13 1) Provision the circuit pack quantities indicated to equip one right half application processor shelf with Filler Packs.

PEC	Quantity per half-shelf
-----	-----
NT9X19CA	2
NT9X19AA	13
NT9X19BA	13
NT9X0314	1

- RUL14 1) Provision the circuit pack quantities indicated to equip the right half storage device shelf with Filler Packs. This MUST BE USED IN CONJUNCTION WITH the NTZZ35WA.

PEC	Quantity per half-shelf
-----	-----
NT9X19AA	12

- RUL15 1) Provision one (1) NT9X0314 Terminator FSP Plug at the FSP for every two (2) NT9X19CA equipped.

- RUL17 1) Provide one (1) NT9X9531 Power Terminal Block Kit for streamline applications.

- 2) Provide one (1) NT9X9532 Power Terminal Block kit for standalone applications.

APC (C/42) -48V

PEC CODE: NTZZ35MB

CPC CODE: B0240854

| RATING: MD

REPLACES: NTZZ35MA and NTZZ35NB

REPLACED BY: NT9X80CA

ABBREVIATION NAME: APC

ENGINEERING DESCRIPTION: The APC(Application Processor Cabinet) provides increased processing and data management power required for running software applications such as DMS Service Control Point and Billing Server. Application Processor Shelf can house up to two Application Processor (AP) or File Processor (FP) units. The Storage Device Shelf can house up to two Storage Devices (SDs). Each SD consumes one half shelf and comprises a pair of mass storage units (disk or tape drives). SCSI cables are used to interconnect an FP to one or more SDs in a daisy chain arrangement. Shelves and interconnect cabling are provisionable, subject to certain restrictions. The APC comes provided with -48V capability.

REFERENCE DOCUMENTATION: MS9X80CA 01 07
SLZZ35MB 00 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35MB EMC4-04-APC-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 10	ECM 675 04	Introduce EMS section.
94 04 29	ECM 675 05	ET46843 - Correct Cable Run Typo ECD 018-41431 NT9X95BA repl. NT9X95AA
94 06 09	ECM 675 06	Modify rules for Right filler. Correct Memory Provisioning Order.
94 07 29	ECM 675 07	Introduce the 2 GByte Disk Storage. Correct mismatches with the AD. ECD 018-43238 2 GByte Disk changes. Add FSP Terminal Block cover. Other minor changes.
94 08 31	ECM 675 08	ET 19619. Corrects provisioning of the NT9X9531 & NT9X9532 Power Cabling Kits.
94 11 14	ECM 537 03	Add this EMB to ECM.
95 02 22	ECM 675 09	EC 018-43242 SCSI RTG Labels. EC 018-43745 Introduce NT9X91AC Power Converter into APC and A&M the NT9X91AB Power Converter.
95 08 11	ECM 675 13	ET 27929. Correct end aisle cable.
95 08 29	ECM 675 14	EC 018-45801 Remove frame fail lights.
95 08 31	ECM 675 15	EC 18-44960, add FLIS shelf pos 26.
95 10 19	ECM 675 16	ET30399. Adds labels and rules for P0736058 and P0736059.
96 03 15	ECM 675 19	MD section.

The APC (C/42) -48V is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	POS	POS	RULE
Application Processor Cab.	NT9X80CA		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-XXX
Frame Supervisory Panel -48V	NT9X03AA	FSP	1	52		AP
Cooling Unit (-48V)	NT9X95CU		1			AP
Power Terminal Block Kit (streamline)	NT9X9531					RUL17
Power Terminal Block Kit (standalone)	NT9X9532					RUL17
Terminator FSP Plug	NT9X0314			52		RUL13, RUL15
Application Processor Shelf	NT9X8101			XX		RUL1
Left Fiber Assembly Panel	NT9X6506			XX		RUL1
Right Fiber Assembly Panel	NT9X6503			XX		RUL1
APC AP LEFT(C/42)	NTZZ35QA			XX	1F	RUL2
APC FP LEFT(C/42)	NTZZ35RA			XX	1F	RUL2
24Mb Memory CP	NT9X14DB			XX	11F-8F, 16F-19F	RUL3
Remote Term I/F PB	NT9X26AB			XX	13R,14R	RUL4
APC AP RIGHT(C/42)	NTZZ35SA			XX	24F	RUL2
APC FP RIGHT(C/42)	NTZZ35TA			XX	23F	RUL2
APC Pack Fill Right	NTZZ35JA			ZZ	20F	RUL13
24Mb Memory CP	NT9X14DB			XX	23F-20F, 28F-31F	RUL3
Remote Term I/F PB	NT9X26AB			XX	25R,26R	RUL4
Link Interface Shelf Assy	NT9X7204		1	26		RUL19
+5V Power Converter	NT9X30AA		2	26	04F,36F	RUL21
-5V Power Converter	NT9X31AA		2	26	01F,33F	RUL21
Power Converter CP	NTDX16AA		4	26	04F,36F 01F,33F	RUL22
Power Interface Unit	NT9X2825		2	26	01F-04F 33F-36F	RUL22
LIS F-Bus Controller CP	NT9X96AA		2	26	07F,32F	RUL19
LIS Fiber INTF Paddle Board	NT9X98AA		2	26	07R,32R	RUL19
F-Bus A Terminator PB	NTEX20AA		1	26	30R	RUL19
F-Bus B Terminator PB	NTEX20BA		1	26	8R	RUL19

Retired Equipment
APC (C/42) -48V

NTZZ35MB
EMC4-04-APC-4
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
PB Filler Face Plate	NT9X19BA		10	26	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R,	RUL19
Bulkhead Assembly Left	NT9X6534		2	26		RUL19
Bulkhead Assembly Right	NT9X6580		2	26		RUL19
Intra Shelf Comm. Cable Assy.	NT9X9820			26		RUL19
Enhanced CPU-IPF CP	NTEX22BB		2	26	08F, 30F	RUL23
Ethnernet Interface CP	NT9X84AA		2	26	09F, 31F	RUL23
Ethnernet I/F PB	NT9X85AA		2	26	09R, 31R	RUL23
EIU (2 Slot) ID Label	P0738387		2	26	08F, 30F	RUL23
Desig. Label NT9X85AA	P0711661		2	26	09R, 31R	RUL23
DS0A Cable Assembly	NT9X0190		2	26	09R, 31R	RUL23
Filler Face Plate	NT9X19AA			26	08F-31F	RUL20
PADBD Filler Face Plate	NT9X19BA			26	09R, 11R, 13R, 15R, 17R, 19R, 21R, 23R, 25R, 27R, 29R, 31R	RUL20
Screws & Washers	P097F813		4	26		RUL19
	P0284154		1			RUL19
	P0183220		1			RUL19
Rear Bottom Shelf ID Label	P0739095					RUL19
Rear Bot Design Strip Label	P0739095			26		RUL19
Rear Top Design Strip Label	P0739096			26		RUL19
Front Top Design Strip Label	P0800327			26		RUL19
FLIS Shelf Des. strip(REAR)	P0730475		1	26		RUL19
LIU cable routing labes	P0714420			26		RUL19
LIU cable routing labes	P0735397			26		RUL19
Bulkhead Cover Plate Assy.	NTEX5025			26		RUL19
APC Storage Device Shelf	NT9X8301			YY		RUL5
Left Fiber Assembly Panel	NT9X6506			YY		RUL5
Right Fiber Assembly Panel	NT9X6503			YY		RUL5
APC SD LEFT(C/42)	NTZZ35UA			YY	1F	RUL11
APC SD (FULL SHELF-C/42)	NTZZ35WA			YY	1F	RUL12
600 MB Disk Storage Unit	NT9X90AA			YY	8F, 14F	RUL6
2 GB Disk Storage Unit	NT9X90AB			YY	8F, 14F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	8F, 14F	RUL6

Retired Equipment
APC (C/42) -48V

NTZZ35MB
EMC4-04-APC-4
Page 5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT9X19AA			YY	8F-13F, 14F-19F	RUL6
APC SD RIGHT	NTZZ35VA			YY	32F	RUL11
APC Pack Fill Right	NTZZ35JA			ZZ	20F	RUL13
Storage Device Pack Fill Right W PB	NTZZ35KA			YY	20F	RUL14
600 MB Disk Storage Unit	NT9X90AA			YY	20F, 26F	RUL6
2 GB Disk Storage Unit	NT9X90AB			YY	20F, 26F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	20F, 26F	RUL6
Filler Face Plate	NT9X19AA			YY	20F-25F 26F-31F	RUL6
Desig. Label(NT9X90AA)	P0729127			YY	8F, 14F	RUL6
Desig. Label(NT9X90AB)	P0724360			YY	8F, 14F	RUL6
Desig. Label(NT9X90BA)	P0729128			YY	8F, 14F	RUL6
Desig. Label(NT9X90AA & NT9X90BA)	P0730171			YY	8F, 14F	RUL6
Desig. Label(NT9X90AB & NT9X90BA)	P0724513			YY	8F, 14F	RUL6
APC Terminal Block	P0736058					RUL24
Designation Strip						
APC Cabinet Power Filter Labels	P0736059					RUL25
Filler Packfill	NT9X01FB			ZZ		RUL7
Blank Shelf	NT0X24BD			ZZ		RUL7
Streamline Exterior skin Assembly, Left, Gray	NTRX73AL					RUL9
Streamline Exterior skin Assembly, Right, Gray	NTRX73AM					RUL9
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE10
SCSI Wiring Configuration	AR					RUL10
FSP Terminal Block (TB1)	A0368392			52		RUL18

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Both planes of each unit are shown together in the equipment list, while the two half-shelves are shown separately.
- 2) XX, YY, and ZZ denote shelf position 00, 13, 26, or 39. XX denotes equipment that can be assigned to an Application Processor Shelf. One Application Processor Shelf is Always Provided in position 39. YY denotes equipment that can be assigned to a Storage Device Shelf. ZZ denotes equipment that can be assigned to any shelf position.
- 3) Maximum four (4) FPs are to be assigned beginning from shelf 39 (top of cabinet) moving downwards, and left to right across each shelf. Allot space for SDs from shelf 00 (bottom of cabinet) moving upwards, and left to right across each shelf. Leave no gaps in the assignment sequence.
- 4) The SCSI bus with the greatest number of devices is to be assigned first, beginning at the bottom of the cabinet, followed by the next largest bus, and so on.
- 5) Provision the Storage Devices according to the permissible configurations outlined in the ECM. SCSI cabling cannot leave the cabinet.
- 6) Within each SD space allotment, Power Converters, SCSI Device Interface Paddleboards, and SCSI cables must be equipped initially. The Storage Devices themselves can be provisioned in a future extension. Any type of SD may be

provisioned in an allotted quadrant, or a quadrant may be left unequipped. However, it is recommended to position the two members of a shadowed pair side by side within a half shelf.

- 7) It is permitted to leave shelf positions unequipped initially. In an extension, Application Processor and Storage Device Shelves can be added in the field in place of the initial Blank Shelf filler.
- 8) Disk storage devices are more sensitive to vibration than DAT storage devices. Where possible, disk drives should be located lower in the cabinet than DAT drives.
- 9) After the FPs and SDs are assigned per the above notes, APs may be assigned to AP shelves into the remaining half-shelf spaces. It is possible to fill a cabinet with APs alone, should an application require it.
- 10) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ35MB is ordered, these items are provided.
- 2) The NTZZ35MB is comprised of the following:
 - NT9X9575 Cabinet Framework
- AP-XXX 1) This PEC is always provided on the NT9X80CA and is indicated here for completeness.
- 2) Refer to the NT9X95BA (EMA4-07-001) section for additional Mechanical Hardware requirements for C42 (S/DMS) Cabinet.

- RUL1 1) Provide one (1) NT9X8101 Application Processor Shelf when this shelf position is to contain Application Processors (APs) or File Processors (FPs).
- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8101 Application Processor Shelf provisioned. Shelf 39 already comes equipped with one (1) NT9X6506 and one (1) NT9X6503.

- RUL2 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide a dual-plane AP or FP:

PEC	Quantity per half-shelf
-----	-----
NTDX15AB	2
NT9X86AA	2
NT9X13LA	2
NT9X21AB	2
NT9X62AA	2

- RUL3 1) Provision NT9X14DB 24 MByte Memory CP as required by the application. The application may designate one of the memory CPs as a hot spare; this is optional. Note that with the NT9X14DB, the first 4 MByte of data store is unusable.
- 2) In an Application Processor, a maximum of four (4) 24 MByte Memory CP may be equipped per plane (total eight (8) per AP) for a total of 92 MBytes of memory per plane. (96 - 4 = 92 MBytes) In a File Processor, a maximum of three (3) 24 MByte Memory CP may be equipped per plane (total six (6) per FP) for a total of 68 MBytes of memory per plane. (72 - 4 = 68 MBytes) In a FP, slots 10F-8F and 17F-19F, or 22F-20F and 29F-31F, are available for memory CP.
- 3) Assign memory CP beginning with the CP position nearest the CPU CP and work away from the CPU. For the left half-shelf the sequence is 10F and 17F, 9F and 18F, 8F and 19F. (11F and 16F are the first position if the unit is an AP). For the right half shelf the sequence is 22F and 29F, 21F and 30F, 20F and 31F. (23F and 28F are the first position if the unit is an AP).
- RUL4 1) Provision NT9X26AB if that vintage is equipped in the DMS-Core. New core installations should be provisioned with NT9X26AB.

- RUL5 1) Provide one (1) NT9X8301 Storage Device Shelf when this shelf position is to contain Storage Devices (SDs).

- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8301 Storage Device Shelf provisioned.

- RUL6 1) Provide one (1) NT9X90AA 600 MByte Disk Storage Device per quadrant when the application requires a hard disk drive in BCS36 and below.

Provide one (1) NT9X90AB 2 GByte Disk Storage device per quadrant when the application requires a hard disk drive in CSP-02 and higher. Existing applications utilizing the NT9X90AAs are not required to upgrade any of the storage devices. The NT9X90AB and the NT9X90AA are not supported in the shadowed set.

- 2) Provide one (1) NT9X90BA 1.3 GByte DAT Storage Device per quadrant when the application requires a Digital Audio Tape storage device. Provision DG60M Magnetic Tape Data Cartridge (blank) as required.
- 3) Provide six (6) NT9X19AA Filler Face Plates for each allocated quadrant not equipped with with an SD.
- 4) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AA) and one DATs(NT9X90BA) then provide one (1) P0730171 Label.
- 5) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AA) then provide one (1) P0729127 Label.
- 6) When equipping one half SD(storage device) shelf with one or two DATs(NT9X90BA) then provide one (1) P0729128 Label.
- 7) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AB) and one DATs(NT9X90BA) then provide one (1) P0724513 Label.
- 8) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AB) then provide one (1) P0724360 Label.

- RUL7 1) When a provided shelf is not equipped with APs, FPs or SDs, provide one (1) NT9X01FB Filler Packfill to satisfy the forced air cooling requirements of the frame. (Designation Labels P0687764 and P0687765 ARE INCLUDED with the NT9X01FB Filler Packfill)
- 2) When a shelf is not equipped, provide one (1) NT0X24BD Blank Shelf to satisfy the forced air cooling requirements of the frame. RUL8 1) Reserved.

RUL9 1) Provide as per EMA15-05-001.

RUL10 1) SCSI cables are provided based on the physical length from the FP to the SD, and between SDs in the chain. Each diagram in the table below depicts a cabinet configuration, with shelves 39, 26, 13 and 00 shown from top to bottom. "FP" represents a File Processor, "SD" a space allotted for a Storage Device, and "-" a blank space or Application Processor. The digit following FP or SD indicates which SCSI bus the device belongs to (eg. SD0 is a space allocated to a Storage Device on SCSI bus 0. It is connected to all other SD0 devices and FP0.)

Select the configuration with the desired quantity of FPs and SD spaces, and provision the quantity of cable PECs indicated, as well as one (1) SCSI Cable Routing (RTG) label per cabinet to match the configuration of the APC.

Specwriters Note : Please ensure that both the Frame I.D. and the SCSI cable routing table are always referenced in the Specwriters notes section.

Table 1 - SCSI Cable Provisioning

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
1	FP0 -	55	3	NT9X0443
		60	4	NT9X0444
	SD0 SD0	65	3	NT9X0445
		70	5	NT9X0446
	SD0 SD0	75	1	NT9X0447
	SD0 SD0			

For cabinets configured with 1FP and 12SD, provision one SCSI RTG Label P0724434

1	FP0 -	40	1	NT9X0419
		45	2	NT9X0420
	SD0 -	55	4	NT9X0443
		60	1	NT9X0444
	SD0 SD0	65	3	NT9X0445
		70	4	NT9X0446
	SD0 SD0	75	1	NT9X0447

For cabinets configured with 1FP and 10SD, provision one SCSI RTG Label P0724435

1	FP0 -	55	1	NT9X0443
		60	1	NT9X0444
	- -	65	2	NT9X0445
		70	3	NT9X0446
	SD0 SD0	75	4	NT9X0447
		80	1	NT9X0448
	SD0 SD0			

For cabinets configured with 1FP and 8SD, provision one SCSI RTG Label P0724436

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
1	FP0 -	65	1	NT9X0445
	- -	70	2	NT9X0446
	- -	75	1	NT9X0447
	- -	80	1	NT9X0448
	- -	85	3	NT9X0449
	SD0 SD0			

For cabinets configured with 1FP and 4SD, provision one SCSI RTG Label P0724438

1	FP0 -	55	3	NT9X0443
	- -	60	2	NT9X0444
	- -	65	4	NT9X0445
	- -	70	2	NT9X0446
	- -	75	1	NT9X0447
	SD0 -			
	SD0 SD0			

For cabinets provisioned with 1FP and 6SD, provision one SCSI RTG Label P0724437

1	FP0 -	60	1	NT9X0444
	- -	65	3	NT9X0445
	- -	70	2	NT9X0446
	- -	75	1	NT9X0447
	- -	80	1	NT9X0448
	SD0 -			

For cabinets configured with 1FP and 2SD, provision one SCSI RTG Label P0724439

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
-----	-----	-----	---	-----
2	FP0 FP1	45	1	NT9X0420
		50	2	NT9X0442
	SD1 -	55	3	NT9X0443
		60	3	NT9X0444
	SD0 SD0	65	3	NT9X0445
		70	3	NT9X0446
	SD0 SD0	75	4	NT9X0447
		80	1	NT9X0448

For cabinets configured with 2FP and 10SD, provision one
SCSI RTG Label P0724430

2	FP0 FP1	55	1	NT9X0443
		60	1	NT9X0444
	- -	65	5	NT9X0445
		70	3	NT9X0446
	SD1 SD1	75	2	NT9X0447
		80	1	NT9X0448
	SD0 SD0	85	3	NT9X0449

For cabinets configured with 2FP and 8SD, provision one
SCSI RTG Label P0724431

2	FP0 FP1	60	1	NT9X0444
		65	4	NT9X0445
	- -	70	5	NT9X0446
		75	2	NT9X0447
	SD1 -	80	1	NT9X0448
		85	3	NT9X0449
	SD0 SD0			

For cabinets configured with 2FP and 6SD, provision one
SCSI RTG Label P0724432

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
2	FP0 FP1	60	1	NT9X0444
		65	4	NT9X0445
	- -	70	2	NT9X0446
		75	5	NT9X0447
	- -	80	3	NT9X0448
		85	1	NT9X0449
	SD0 SD1			

For cabinets configured with 2FP and 4SD, provision one SCSI RTG Label P0724433

2	FP0 FP1	45	1	NT9X0420
		50	4	NT9X0442
	SD1 SD1	55	5	NT9X0443
		60	6	NT9X0444
	SD0 SD1	65	5	NT9X0445
		70	2	NT9X0446
	SD0 SD0	75	1	NT9X0447

For cabinets configured with 2FP and 12SD, provision one SCSI RTG Label P0724429

3	FP0 FP1	50	1	NT9X0442
		55	3	NT9X0443
	FP2 -	60	4	NT9X0444
		65	5	NT9X0445
	SD1 SD2	70	5	NT9X0446
		75	2	NT9X0447
	SD0 SD0	80	1	NT9X0448
		85	3	NT9X0449

For cabinets configured with 3FP and 8SD, provision one SCSI RTG Label P0724417

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
3	FP0 FP1	35	1	NT9X0416
		40	3	NT9X0419
	FP2 -	45	2	NT9X0420
		50	1	NT9X0442
	SD2 -	55	1	NT9X0443
		60	1	NT9X0444
	SD0 SD1	65	4	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
		85	1	NT9X0449

For cabinets configured with 3FP and 6SD, provision one SCSI RTG Label P0724428

4	FP0 FP1	35	1	NT9X0416
		40	4	NT9X0419
	FP2 FP3	45	5	NT9X0420
		50	4	NT9X0442
	SD2 SD3	55	1	NT9X0443
		60	2	NT9X0444
	SD0 SD1	65	4	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
		85	1	NT9X0449

For cabinets configured with 4FP and 8SD, provision one SCSI RTG Label P0724416

- RUL11 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide capacity for Storage Devices.

PEC	Quantity per half-shelf
NT9X91AC	2
NT9X19AA	1
NT9X19BA	9
NT9X89BA	4

- RUL12 1) Provision the circuit pack quantities indicated to equip one full shelf to provide capacity for Storage Devices.

PEC	Quantity per full-shelf
-----	-----
NT9X91AC	4
NT9X19AA	2
NT9X19BA	18
NT9X89AA	8

- RUL13 1) Provision the circuit pack quantities indicated to equip one right half of a shelf on the APC Cabinet with Filler Packs.

PEC	Quantity per half-shelf
-----	-----
NT9X19CA	2
NT9X19AA	13
NT9X19BA	13
NT9X0314	1

- RUL14 1) Provision the NTZZ35KA to equip the right half of the storage device shelf with Filler Packs in conjunction with the NTZZ35WA.

PEC	Quantity per half-shelf
-----	-----
NT9X19AA	12

- RUL15 1) Provision one (1) NT9X0314 Terminator FSP Plug at the FSP for every two (2) NT9X19CA equipped.

- RUL17 1) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X80CA cabinet from the NTRX31AA or from NTRX31BA CPDC cabinet which is in the same lineup as the NT9X80CA. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

- 2) Provide one (1) NT9X9532 stand-alone cabling interface kit when powering the NT9X80CA cabinet from the seven foot PDC frame or powering from the new CPDC (NTRX31CA) cabinet, or powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is the different lineup than the NT9X80CA. This kit includes cables, filters, and miscellaneous mounting hardware.

- RUL18 1) Provide one (1) A0368392 TB1 FSP Terminal Block Cover Assembly in all international applications.

- RUL19 1) For the NT9X7204 LIS shelf assembly, provide:
- two (2) NT9X96AA LIS FBUS controller CP's
 - two (2) NT9X98AA LIS Fiber Interface PB's
 - one (1) NTEX20AA Intra FBUS A Termination PB
 - one (1) NTEX20BA Intra FBUS B Termination PB
 - ten (10) NT9X19BA Filler Paddleboards
- 2) For the LIS shelf, provision one (1) NT9X6534 Bulkhead Assembly Left, one (1) NT9X6580 Bulkhead Assembly Right AND one (1) NT9X9820 FLIS Cable Assembly.
- 3) Provision one (1) NTEX5025 Bulkhead cover plate assembly for each unequipped position in the NT9X6534 or NT9X6580 bulkheads.
- 4) Provide one (1) P0736273 optical fiber danger label per link interface shelf assembly NT9X7204.
- 5) Provision one (1) rear bottom designation label, one (1) rear top designation label, one (1) front top designation label, and one (1) FLIS Designation strip (REAR) per LIS shelf provisioned.
- 6) Provision four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 locker washer when a link interface shelf assembly NT9X7204 is required in shelf position 26.
- 7) Provision one (1) sheet of LIU cable routing labels per half shelf when EIU's are provisioned.

SHELF	SLOTS	LABEL
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26	31R-21R	P0735397
26	19R-09R	P0714420

NOTE: An office to be equipped with a (F)LIS has to be pre-configured with

- NT9X13DC Processor (to raise MS memory capacity to 10 MB)
- 2 Inter MS Links(IMLS)

- RUL20 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for the unoccupied slots.

- RUL21 1) Provide TWO (2) NT9X30AA and TWO (2) NT9X31AA power converters for each NT9X7204 shelf when the DUAL POWER REDUNDANCY feature is not required.
- RUL22 1) Provide FOUR (4) NTDX16AA Power Converter, FOUR (4) P0748922 Designation Labels and TWO (2) NT9X2825 Power Interface Units per shelf NT9X7204 when DUAL POWER REDUNDANCY is required or as per customer requirement. (-60V DUAL POWER REDUNDANCY is not a valid option on the FLIS frame). (Power converters -48V option is not available until BASE04/TL03 and above).
- RUL23 1) Provide the Ethernet interface equipment shown when IEC billing is to be provided on an APC cabinet. This is the only approved FLIS configuration for an IEC billing server.
- RUL24 1) Provide one (1) P0736058 APC terminal block designation strip per application processor cabinet when powering the application processor cabinet in a streamline line up.
- RUL25 1) Provide one (1) P0736059 APC Power Filter Label per application processor cabinet when powering the application processor cabinet in a non-streamline line up or in a stand alone application.

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DMS-100 Family
North American DMS-100
ALL PRODUCTS COMPUTING-MODULE LOADS Vol 13 of 15

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VOLUME SEPARATOR - BACK PAGE