PLN-8991-103

DMS-100* FAMILY

ALL PRODUCT COMPUTING-MODULE LOADS

Volume 3 of 15

ACTIVE ENGINEERING MANUALS

97Q4 Standard 05.03 December 1997

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MERIDIAN EIOC MEMORY MODULE NTNX35MA

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTNX35MA MCEM Common CP provides the always provided circuit packs for the MCEM cabinet.

REFERENCE DOCUMENTATION: N/A

The Meridian EIOC Memory Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter CP	NT1X78AA		1	19	2	AP

RULE:

AP 1) When PEC NTNX35MA is ordered, these items are provided.

MERIDIAN EIOC MEMORY MODULE FRAME

PEC CODE: NTNX35AA

CPC CODE: B0227579

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NT9X80CA

ABBREVIATION NAME: MCEM

ENGINEERING DESCRIPTION: The MCEM is the first cabinet of the EIOC line-up. It provides power for the EIOC. It also houses the boot MTD and DDU, and contains room to provision an additional DDU.

REFERENCE DOCUMENTATION: MSNX35AA

MARKETS: Applicable markets:

US
CARRIER

ISSUE AUTHOR: Charley Lord Dept. 6457 (RNS)

MAIN CONTACT: Charley Lord Dept. 6457 (RNS)

NTNX35AA EMA10-15-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-------- 95 10 27	---------- ECM 377 09	Previous history not available Make changes per ECDs 002-15973, 018-40098 & ET 77303 corrections & clarify SCSI DDU rules.

The Meridian EIOC Memory Module Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Supervisory Panel	NT7X34AA	FSP	1	60		AP
Filler Panels	NT0X84AA			47,33		RUL7
MTD Shelf Assembly	NT0X44AD	MTD	1	33		RUL6
Mag Tape Drive	209800-153			33		RUL5
MCEM Common Circuit Pack	NTNX35MA			33		RUL2
DDU Shelf Assembly	NT4X00AF	DDU	1	19		AP
MCEM Common Circuit Pack	NTNX35MA			19		RUL2
Priam Disk Drive Unit	806-13			19	10,18	RUL3
NT-Mercury Disk Drive Unit	8211D-19-063			19	10,18	RUL3
Power Converter	NT1X78AA			19	26	RUL4
Desig. Label	P0668410			19	26	RUL4
PDP Shelf Assembly	NTNX2401		1	00		AP
Power Distribution Panel	NTNX24BA	PDP	1	00		AP
Cabinet Assembly	NTNX25AA	FW				RUL1
Door Assy Left (Brown)	NTNX2550		2			RUL8
Door Assy Left (Gray)	NTNX2515		2			RUL8
Door Assy Right (Brown)	NTNX2552		2			RUL8
Door Assy Right (Gray)	NTNX2513		2			RUL8
Left End Panel (Brown)	NTNX2553		1			RUL9
Left End Panel (Gray)	NTNX2518		1			RUL9
Right End Panel (Brown)	NTNX2546		1			RUL9
Right End Panel (Brown)	NTNX2517		1			RUL9
End Panel Mounting Hardware						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.

FLAGS:

NOTES:

1) The MTD and Disk Drive units and the mounting hardware for both should be assigned to the frame so that they are installed before the frame is shipped.

RULES:

AP 1) When PEC NTNX35AA is ordered, these items are provided.

2) The MCEM PDP comes equipped with "A" and "B" feed fuse panels each equipped with 42 ea. 20A fuses, 43 ea. 1 1/3A fuses, and 1 ea. 10A fuse.

RUL1 1) Cabinet Assembly NTNX25AA is an always provided item in the stocklist for this frame. Colour of the cabinet is determined by the colour of doors and end panels ordered.

RUL2 1) Provide one NTNX35MA.

RUL3 1) Always provide the first DDU. The first DDU mounts in shelf position 10.

2) If a second DDU is to be equipped, mount in shelf position 18.

3) Provide 1 NT4X0037 per Priam DDU (806-13).

4) Provide 1 NT4X0038 per NT-Mercury DDU (8211D-19) (note 1).

5) Provide 1 8211D-19-63 for Bellco compliant jobs.

RUL4 1) Provide these items if the second DDU is to be equipped.

RUL5 1) Provide one Mag Tape Drive per customer requirements.

RUL6 1) Provide one Mag Tape Drive mounting hardware kit per MTD.

RUL7 1) Provide two Filler Panels if an MTD is not to be provisioned.

RUL8 1) Provide a quantity of two (2) left and two (2) right door assemblies for each frame. They must be assigned to the frame.

RUL9 1) Provide a quantity of one (1) left and one (1) right end panel assembly for each frame. They must be assigned to the frame.

RUL10 1) Provide the following hardware for mounting the end panels:

QTY	CPC	DESC.
18	D0000482	SCR Century Fast.SH0008C
14	P0567298	Washer FL .312, .734X.065
14	P0622768	Hex Nut W Ext Tooth Washer
8	P0205653	SCR PHM .164-32X.500
8	P0483753	Washer .196ID,438OD

MCEP COMMON CP

PEC CODE: NTNX31MA

CPC CODE: B0228015

RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCEP Packfill

ENGINEERING DESCRIPTION: The MCEP Common Packfill for the Meridian EIOC Processor Module

REFERENCE DOCUMENTATION: None

MARKETS: Applicable markets:

US
CANADA
WIRELESS

ISSUE AUTHOR: NTI: Charley Lord Dept. 6457 (RNS)

MAIN CONTACT: NTI: Charley Lord Dept. 6457 (RNS)

NTNX31MA EMA10-16-MCEP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 25 95 10 27	ECM 377 05 ECM 377 09	Update circuit pack Make changes per ECD 002-15973, 018-40098 & ET77303 corrections & clarify SCSI DDU rules.

The MCEP Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT0X50BA		8	47	12,13, 15,20	AP
16MW BP Terminal	NT3X4309		2	47	1R	AP
16MW Memory Cont. CP	NT4X79AA		2	47	9	AP
PS BP Term	NT3X4307		2	47	9R	AP
Bal Data Port Ext CP	NT1X50DA		2	47	10	AP
Processor BP Term CP	NT3X4303		2	47	10R	AP
CMC I/F CP	NT1X51DA		2	47	11	AP
Processor 8K ROM CP	NT1X46DA		2	47	14	AP
Processor Maint CP	NT1X48DA		2	47	16	AP
Processor Cont CP	NT1X47DA		2	47	17	AP
Processor ALF CP	NT1X45DA		2	47	18	AP
Processor Stack CP	NT1X44DA		2	47	19	AP
Proc 8MW PS CP	NT1X43DA		2	47	21	AP
Power Converter CP	NT2X06BB		2	47	22	AP
Power Converter CP	NT2X70AE		2	47	25	AP
16MW BP Terminal	NT3X4309		2	33	1R	AP
16MW Memory Cont. CP	NT4X79AA		2	33	8	AP
Diff Mem Bus I/F	NT3X36BC		2	33	9	AP
Stratum 3 Master CP	NT3X15CA		2	33	10	AP
Sync Clock Cont CP	NT3X14BC		2	33	12	AP
CMC Processor CP	NT1X33BA		2	33	13	AP
CMC Com Control CP	NT1X37BA		2	33	14	AP
CMC O/G Control CP	NT1X34BB		2	33	15	AP
CMC I/C Control CP	NT1X35BA		2	33	16	AP
CMC Perip Cont CP	NT1X36BB		2	33	17,18 19	AP
EIOC I/F CP	NT1X36CA		2	33	20	AP
I/O Term Cont CP	NT1X67BC		2	33	21	AP
I/O Message Cont CP	NT1X62BB		2	33	23	AP
CMC/IOC BP Term	NT3X4304		2	33	23R	AP
Pwr Converter CP	NT2X70AE		2	33	25	AP
Filler Face Plate	NT0X50BA		8	19	6,12,	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 NTNX31MA is ordered, these items are provided.

2) An "R" in CP POS (example 23R) indicates that Circuit Pack mounts on the rear of the shelf position indicated (i.e. the rear of shelf position 23).

MERIDIAN EIOC PROCESSOR MODULE FRAME

PEC CODE: NTNX31AA

CPC CODE: B0227474

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NT9X80CA

ABBREVIATION NAME: MCEP

ENGINEERING DESCRIPTION: The MCEP is a double bay cabinet. They are the second and third cabinets in the EIOC line-up. The two cabinets house the CPM (duplicated), the MDC (duplicated), a Dual I/O Shelf, and a Dual DD shelf.

REFERENCE DOCUMENTATION: MSNX31AA

MARKETS: Applicable markets:

US
CARRIER

ISSUE AUTHOR: NTI: Charley Lord Dept. 6457 (RNS)

MAIN CONTACT: NTI: Charley Lord Dept. 6457 (RNS)

NTNX31AA EMA10-16-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 25	ECM 377 05	ECD 002-15426 ADD IOC TO MS wiring kit and IOC TO NT40 Wiring Kit
94 08 22	ECM 377 06	RUL clarification and clean-up
95 10 27	ECM 377 09	Make changes per ECD 002-15973, 018-40098 & ET77303 corrections & clarify SCSI DDU rules.

The Meridian EIOC Processor Module Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Supervisory Panel	NTNX26GA	FSP	2	60		AP
CPM Shelf Assembly	NTNX3401		2	47		AP
MCEP Common CP	NTNX31MA			47		RUL2
1MW Memory Ckt Pack	NT4X80AA			47	8-1	RUL13
Desig. Label (NT4X80AA)	P0649156			47	8-1	RUL15
MDC Shelf Assembly	NT7X2801		2	33		AP
MCEP Common CP	NTNX31MA			33		RUL2
1MW Memory Ckt Pack	NT4X80AA			33	1-7	RUL14
Desig. Label (NT4X80AA)	P0649156			33	1-7	RUL16
4MW Memory Ckt Pack	NT4X80CA			33	1-4	RUL17
Mag Tape Controller	NT1X68BC			33	22	RUL21
DIO Shelf Assembly	NTNX3401		2	19		AP
MCEP Common CP	NTNX31MA			19		RUL2
Power Converter CP	NT2X70AE			19	1	RUL7
Message Cont CP	NT1X62CA			19	4	RUL7
Cont Term CP	NT0X67AA			19	14	RUL7
Message Cont CP	NT1X62CA			19	15	RUL8
Cont Term CP	NT0X67AA			19	24	RUL8
Power Converter CP	NT2X70AE			19	25	RUL8
Disk Drive Controller	NT1X55DA			19	7	RUL9
Disk Drive Controller	NT1X55DA			19	17	RUL10
Disk Drive Controller	NT1X55DA			19	18	RUL11
Mag Tape Controller	NT1X68BC			19	06	RUL21
Terminal Controller	NT1X67BC			19	8,11, 19,22	RUL12
Multi-Protocol Controller	NT1X89BA			19	8,11, 19,22	RUL18
NEMAS Circuit Pack	NT6X91BA			19	9,10, 20,21	RUL11
X25LAPB Control Card	NT6X91BB			19	9,10, 20,21	RUL11
IOC To CMC Wiring kit(NT40)	NTNX31XX		1	19 33	04,15 23	RUL19
IOC To MS Wiring kit(SNode)	NTNX31YY		1	19 33	 23	RUL19
Read/Write/Control Wire Kit	NTNX32PA		1	19 33	06- 22	RUL20
Filler Face Plate	NT0X50BA			19	1-13, 17-24	RUL15
Filler Face Plate	NT0X50BF			19	15	RUL15

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT0X50BE			19	25	RUL15
Desig. Label (NT2X70AE)	P0698493			19	1,25	RUL16
Desig. Label (NT1X62CA)	P0686038			19	4,15	RUL16
Desig. Label (NT0X67AA)	P0657673			19	14,24	RUL16
Desig. Label (NT1X67BC)	P0623517			19	8,11,	RUL16
Desig. Label (NT6X91BB)	P0689833			19	9,10, 20,21	RUL16
Desig. Label (NT1X89BA)	P0708961			19	8,11, 19,22	RUL15
Desig. Label (NT6X91BA)	P0688824			19	9,10, 20,21	RUL15
Desig. Label (NT0X50BA)	P0599141			19	1-13, 17-24	RUL15
Desig. Label (NT0X50BE)	P0654973			19	25	RUL15
Desig. Label (NT0X50BF)	P0661434			19	15	RUL15
Desig. Label (NT4X80CA)	P0712102			19	1-4	RUL15
Desig. Label (NT1X34BB)	P0749698			33	15	RUL16
Desig. Strip (MCEP)	P0696367		2			RUL15
Desig. Strip (MCEP)	P0696369		2			RUL15
Desig. Strip (MCEP)	P0696370		2			RUL15
DDU Shelf Assembly	NT4X00AF		2	05		AP
MCEP Common CP	NTNX31MA			05		RUL2
Power Converter	NT1X78AA			05	2	RUL3
Priam Dual DDU	806-13			05	10,18	RUL5
NT-Mercury Disk Drive Unit	8211D-19-063			19	10,18	RUL6
Power Converter	NT1X78AA			05	26	RUL4
Desig. Label (NT1X78AA)	P0668410			05	2,26	RUL15
Cooling Unit	NTNX27CA	CU	2	01		AP
Cabinet Assembly	NTNX25AA	FW				AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX31AA	MD	NT9X80CA

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 NTNX31AA is ordered, these items are provided.

2) Cabinet Assembly NTNX25AA is an always provided item in the stocklist for this frame. Color of the cabinet is determined by the color of doors and end panels ordered.

RUL1 1) Reserved for future use.

RUL2 1) Provide one NTNX31MA.

RUL3 1) Provide one of each of these items if the first DDU is equipped.

RUL4 1) Provide one of each of these items if the second DDU is equipped.

RUL5 1) If the first DDU is to be equipped, mount in shelf position 10. The second DDU mounts in shelf position 18.

2) Provide one NT4X0037 per Priam DDU (806-13).

3) Provide one NT4X0038 per NT-Mercury (8211D-19).

RUL6 1) Provide 1 8211D-19-63 for Bellco compliant jobs.

RUL7 1) Provide one of each of these items if any cards are equipped in shelf 19, slots 7-12.

RUL8 1) Provide one of each of these items if any cards are equipped in shelf 19, slots 18-22.

RUL9 1) Provide one NT1X55DA if a DDU is equipped in shelf 5, slot 4.

RUL10 1) Provide one NT1X55DA if a DDU is equipped in shelf 5, slot 12.

RUL11 1) Provide one NT1X55DA if a DDU is equipped in MCEM 00, shelf 5, slot 12.

RUL12 1) Provide specific application cards in slots indicated as required by the customer.

RUL13 1) Provide Program Store CPs according to BCS requirements.

RUL14 1) Provide Data Store CPs according to job specific and BCS requirements.

RUL15 1) Provide appropriate Filler Face Plates for any unused card slot.

RUL16 1) Provide one (1) Designation Label corresponding to each card provisioned.

RUL17 1) The NT4X80CA memory card is an upgrade to the NT4X80AA circuit circuit pack. As the data store in the EIOC reaches it's limits, DMS-250 customers will need to upgrade to the 4 megaword NT4X80CA CP to support features in BCS30 and beyond.

2) Each 4MW memory card must be placed within slots 1-4 for it to function as 4MW card. These circuit packs will be assigned into the memory shelf in ascending order from slot 1 to slot 4.

A 1MW card cannot be used in a slot in which the corresponding board enable signal is already being fed to a 4MW card. The slots furthest to the right are the recommended positions to allow easier intermixing of the 1MW and 4MW cards.

3) The table below shows the set of configurations for the intermixing of the 1MW and 4MW Circuit Packs. The number of 4MW cards will be fixed and placed in the slots desig-

nated by the "4MW". 1MW slots are designated by "1MW". The "FFP" denotes that a Filler Faceplate is to be equipped in that slot.

MEMORY SIZE	# 4MW CARDS	SLOT # 1	2	3	4	5	6	7
16MW	4	4MW	4MW	4MW	4MW	FFP	FFP	FFP
16MW	3	4MW	4MW	4MW	1MW	1MW	1MW	1MW
13MW	2	4MW	4MW	1MW	1MW	1MW	1MW	1MW
10MW	1	4MW	1MW	1MW	1MW	1MW	1MW	1MW
7MW	0	1MW	1MW	1MW	1MW	1MW	1MW	1MW

4) The NT4X80CA will create a need for a new backplane terminator. This will be done by making the NT3X4309 that is now on the MCEP to a NT3X4311 by removing straps E81, E82, and E83. Once these slots are rewired for the 4MW CPs they cannot be used for NT4X80AA CP’s.

RUL18 1) These slots are provisionable for EIA ports only.

RUL19 1) The NTNX31YY, XX provide the internal wiring option of IOC connections to a SuperNode or NT40. For the NT40/IOC interface provide one (1) NTNX31XX; for the SuperNode(DPCC, SCC)/IOC interface provide one (1) NTNX31YY. These kits provide all IOC interface to core.

RUL20 1) Provide one (1) NTNX32PA when the MTD controller cp, NT1X68BC in DIO slot 06 and the MTD are provisioned in adjacent bays.

RUL21 1) Provide one (1) NT1X68BC for MTD as required for each Magnetic Tape Drive provisioned.

MCEX COMMON CP

PEC CODE:	NTNX32MA
CPC CODE:	B0228016
RATING:	MD
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	Not Applicable
ENGINEERING DESCRIPTION:	The NTNX32MA MCEX Common CP provides the always provided circuit packs for the MCEX cabinet.
REFERENCE DOCUMENTATION:	Not Applicable
MARKETS:	Applicable markets: US CANADA WIRELESS

ISSUE AUTHOR: NTI: Charley Lord Dept. 6457 (RNS)

MAIN CONTACT: NTI: Charley Lord Dept. 6457 (RNS)

NTNX32MA EMA10-17-MCEX-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 02 09	ECM 377 12	ECD 002-16505 MD MCEX replaced by MCGM

The MCEX Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT0X50BA		4	19	6,12, 13,23	AP
Designation Strip	P0696367		1	19		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.

FLAGS:

NOTES:

RULES:

AP 1) When PEC NTNX32MA is ordered, these items are provided.

MCEX COMMON CP NTNX32NA

RATING: Standard

ABBREVIATION NAME: MCEX Common CP

ENGINEERING DESCRIPTION: This MCEX Common CP provides packs to equip a MCEX bay for MSL100 Compact applications.

REFERENCE DOCUMENTATION: N/A

The MCEX Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate 0.875	NT0X50BA		5	19	06,12 13,17 23	AP

RULE:

AP 1) When PEC NTNX32NA is ordered, these items are provided.

MERIDIAN EIOC EXTENSION MODULE FRAME

PEC CODE:	NTNX32AA
CPC CODE:	B0227475
RATING:	MD
REPLACES:	Not Applicable
REPLACED BY:	NTNX47BA
ABBREVIATION NAME:	MCEX
ENGINEERING DESCRIPTION:	The MCEX cabinet is located in the EIOC line-up beginning at the fourth position. This cabinet provides additional IOC, DDU and MTD capacity. Up to four MCEX cabinets may be provided per EIOC system. The MCEX cabinet is also located in the MSL100 & MTXD line-up. This cabinet provides IOC, DDU and MTD capacity.
REFERENCE DOCUMENTATION:	MSNX32AA
MARKETS:	Applicable markets: US CANADA WIRELESS

ISSUE AUTHOR: NTI: Peter Szczesniak Dept. 2D69 (RICH)

NTNX32AA EMA10-17-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 26	ECM 492 08	Modify provisioning rule for door assemblies Change slot locations for Enhanced MPC CP (V.35), NT1X89BA
93 12 20	ECM 492 09	EC 018-36231 - Replace NT1X62CA with NT1X62CB.
94 03 25	ECM 377 05	ADD Rules corrections
94 06 06	ECM 492 12	Correct brown door label.
94 08 05	ECM 492 13	Add TurboLink requirements (NT1X89BA).
94 08 22	ECM 377 06	Add NTNX32PA MTD Wiring kit(00215825)
95 02 16	ECM 492 18	EC 018-43966 - Replaces NT1X67FA with NT1X89BB.
95 04 25	ECM 492 19	JEL: EC 024-93972 replaces the NT2X70AE with the NT2X70AF.
95 05 12	ECM 377 07	Make changes per ECD002-16042 that apply to the MCEX.
95 08 15	ECM 377 08	Make changes per ECD 002-16296 & ET 23759 corrections. Add cables to Interconnection to I/O Devices.
95 10 27	ECM 377 09	Make changes per ECD 002-15973, 018-40098 & ET77303 corrections & clarify SCSI DDU rules.
95 11 30	ECM 377 10	Make changes per ECD 018-45271.
95 12 19	ECM 377 11	Add new NORTEL logo door label & add SCSI DDU NOTE.
96 02 09	ECM 377 12	ECD 002-16505 MD MCEX replaced by MCGM
97 06 30	ECM 377 13	ECD 011-22424 Adds conversion kit for MCMM to MCEX.
97 10 10	ECM 377 14	Clarification to rule 16 for the NTZX12EA conversation kit.

The Meridian EIOC Extension Module Frame is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Frame Supervisory Panel	NT7X34AA	FSP	1	60		AP
	Filler Panel	NT0X84AA			05		AP
	DIO Shelf Assembly	NTNX3401	DIO	1	19		AP
	MCMM to MCEX Conversion Kit	NTZX12EA					RUL16
	MCEX Common CP	NTNX32MA			19		RUL1
	IOC SCSI DDU CP	NT1X55FA			19	6-12 18-23	RUL2
	Filler Panel	P0684448			58		RUL3
	Filler Panel	NT0X84AA			33,47		RUL3
	MTD Shelf Assembly	NT0X44AD	MTD		33		RUL4
	Mag Tape Drive	209800-153			33		RUL5
	Cook 9-Tk Tape Cont.	NT1X68BC			19	6,17	RUL6
	Mag Tape Drive Wiring Kit	NTNX32PA			19	6,17	RUL7
	Power Converter CP	NT2X70AF			19	1,25	RUL8
	Message Cont CP	NT1X62CB			19	4	RUL8
	Cont. Term. CP	NT0X67AA			19	14	RUL8
	Message Cont CP	NT1X62CB			19	15	RUL9
	Cont. Term. CP	NT0X67AA			19	24	RUL9
	Terminal Controller	NT1X67BD		A/R	19	8,11-13 19,21-23	RUL10
#	SMDI Interface controller	NT1X67FA		A/R	19	8,11-13 19,21-23	RUL10
	Enhanced MPC CP	NT1X89BB		A/R	19	8,11-13 19,21-23	RUL10
	NEMAS Circuit Pack	NT6X91BA		A/R	19	9,10,20	RUL10
	X25LAPB Control Card	NT6X91BB		A/R	19	9,10,20	RUL10
	V.35 Cable Assy.	NTMX4723					RUL10
	RS232 (EMPC) Cable Assy.	NTMX4724					RUL10
	RS232 (HDLC) Cable Assy.	NTMX4725					RUL10
	RS232 or Current Loop	NTMX4726					RUL10
	Cover Plate	P0686749					RUL10
	Cover Plate Screws	P0670923					RUL10
	Filler Face Plate	NT0X50BA	FFP	A/R	19	6-13, 17-24	RUL11
	Filler Face Plate	NT0X50BE	FFP	A/R	19	25	RUL11
	Filler Face Plate	NT0X50BF	FFP	A/R	19	4,15	RUL11
	Desig. Label (NT2X70AF)	P0809960			19	1,25	RUL12
	Desig. Label (NT1X62CB)	P0745105			19	4,15	RUL12
	Desig. Label (NT0X67AA)	P0657673			19	14,24	RUL12
	Desig. Label (NT1X67BD)	P0657675			19	8,11-13 19,21-23	RUL12

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Desig. Label (NT1X67FA)	P0708767			19	8,11-13 19,21-23	RUL12
	Desig. Label (NT1X89BB)	P0800156			19	8,11-13 19,21-23	RUL12
	Desig. Label (NT6X91BA)	P0675184			19	9,10,20	RUL12
	Desig. Label (NT6X91BB)	P0689833			19	9,10,20	RUL12
	Desig. Label (NT1X68BC)	P0616642			19	6,17	RUL12
	Desig. Label (NT1X55DA)	P0688790			19	7,18	NOTE2
	Desig. Label (NT1X55FA)	P0800155			19	6-12 18-23	RUL12
	Desig. Label (NT0X50BA)	P0599141		A/R	19	6-13 17-24	RUL12
	Desig. Label (NT0X50BE)	P0599142		A/R	19	25	RUL12
	Desig. Label (NT0X50BF)	P0599143		A/R	19	15	RUL12
#	Disk Drive Controller	NT1X55DA			19	7,18	NOTE2
#	DDU Shelf Assembly	NT4X00AF	DDU	1	05		NOTE2
#	Priam Disk Drive Unit	806-13			05	10,18	NOTE2
#	NT-Mercury Disk Drive Unit	8211D-19-063			05	10,18	NOTE2
#	Mounting HDW for PRIAM	NT4X0037					NOTE2
#	Mounting H/W Merc & 5.25"DDU	NT4X0038					NOTE2
#	5.25" 220MB Disk Drive Unit	NT4X00AG			05	10,18	NOTE2
	Cabinet Assembly	NTNX25AA	FW				AP
	Door Assy. Left (Brown)	NTNX2550					RUL13
	Door Assy. Right (Brown)	NTNX2552					RUL13
	Door Label Left (Brown)	P0818849					RUL13
	Door Label Right (Brown)	P0695230					RUL13
	Cabinet Type Label (Brown)	P0695229					RUL13
	Door Assy. Left (Gray)	NTNX2515					RUL13
	Door Assy. Right (Gray)	NTNX2513					RUL13
	Door Label Left (Gray)	P0818848					RUL13
	Door Label Right (Gray)	P0699158					RUL13
	Cabinet Type Label (Gray)	P0699150					RUL13
	Earthquake Mounting Kit	NTNX2540					RUL14
	Earthquake Mounting Kit	NTNX2578					RUL14
	Non-EQ Frame Mounting Kit	NTNX2579					RUL15
	Non-EQ Frame Mounting Kit	NTNX2580					RUL15

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT4X0037	MD	NT1X55FA
NT4X0038	MD	NT1X55FA
NT4X00AF	MD	NT1X55FA
806-13	MD	NT1X55FA
8211D-19-063	MD	NT1X55FA
NT4X00AG	MD	NT1X55FA
NT1X55DA	MD	NT1X55FA
P0688790	MD	P0800155
NT1X67FA	MD	NT1X89BB
P0708767	MD	P0800156
P0677704	MD	P0818848
P0699464	MD	P0818849

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.

FLAGS:

The (NT1X55FA) IOC SCSI DDU CP replaces the 5.25" 220MB DDU (NT4X00AG), NT-Mercury 8" Disk Drive 8211D-19-063 & Priam disk drive.

NOTES:

1) The MTD mounting hardware should be assigned to the frame so that it is installed before the frame is shipped.

2) A. The NT1X55FA is a 2-slot wide circuit pack & replaces all earlier versions of NT1X55-- and NT4X00-- products. Provide two (NT1X55FA) SCSI DDU CPs in place of two NT1X55DA & one NT4X00AF/AG combination.

   B. The NT1X55FA is datafilled with its correct PEC number starting at BCS36 and higher. However between BCS30 to 35,

it must be data filled as the older type DDU controller NT1X55DA.

3) The (P0684448) Filler Panel is provisionable (see RUL3).

4) The (NTMX47) cables are provisionable with I/O controller CPs and are located from the DIO backplane to the inside of the bulkhead. They are assigned to rear slots cooresponding with appropriate cp(s) provisioned in front slots (see RUL10). Provision these cables and notify Installer to discard (NTMX47) if existing MCEX has factory wirewrapped cables.

5) Always provision a minimum of one NT1X89BB on initial installations for TurboLink Interface.

RULES:

AP 1) When PEC NTNX32AA is ordered, these items are provided.

RUL1 1) Provide one NTNX32MA which provides DIO shelf designation strip plus four filler face plates.

RUL2 1) Provision in any two consecutive slots (see NOTE2), slot 6 &/or slot 18 on all new builds. IOC 00 & 01 should contain a minimum of one pack each, maximum of two SCSI DDUs per IOC.

2) For field upgrades provision in slot 6 of left side IOC if not occupied by MTD (See RUL7), if occupied place in next 2 consecutive slots between slot 9 & 13. If consecutive slots not available remove 1 or 2 CPs (& cables) in order to add the SCSI DDU. Then the CPs (& cables) should be moved to another IOC. Maximum of two SCSI DDUs per IOC. Remove any devices/cables at the bulkhead connected to DDU assigned slots.

3) For field upgrades in right side IOC, provision in 2 consecutive slots between slots 18 and 23. If consecutive slots not available remove 1 or 2 CPs (& cables) in order to add the SCSI DDU. Then the CPs (& cables) removed should be moved to another IOC. Maximum of two SCSI DDUs per IOC. Remove any devices/cables at the bulkhead connected to DDU assigned slots.

RUL3 1) Provide two filler panels (NT0X84AA) if an MTD is NOT to be provisioned.

2) Provide one filler panel (P0684448) if an MTD is provisioned.

RUL4 1) Provide one mounting hardware per Mag Tape Drive.

RUL5 1) Provide one MTD (Note 1).

RUL6 1) Provide one NT1X68BC in slot 17 if a MTD is equipped in shelf 33. Slot 6 is dedicated for external connection (see RUL7).

RUL7 1) Provision one (1) NTNX32PA MTD wiring kit when MTD is mounted in an adjacent cabinet to the MCEX. If the right side IOC of the DIO on shelf 19 is not being used. The MTD controller card must go in slot 6 of the left IOC of the DIO. If this is the case provision the NTNX32PA wiring kit for the read/write/control cables.

RUL8 1) Provide one of each of these items if any cards are equipped in shelf 19, slots 7-12.

RUL9 1) Provide one of each of these items if any cards are equipped in shelf 19, slots 18-22.

RUL10 Provide specific application cards in slots indicated as required by the customer.

1) Slots 8,11-13,19,21-23 are provisionable for (1x67BD) EIA or current loop operation. Provide (1) NTMX4726 cable for each slot.

2) Slots 8,11-13,19,21-23 are provisionable for 1x67DB, 6x91BB. Provide (1) NTMX4725 cable for each slot.

3) NT1X89BB as provisioned for V.35 EIA port operation can only be used in slots 12, 13, 21 or 23. Provide (1) NTMX4723 cable for each slot.

4) Slots 8,11-13,19,21-23 are provisionable for (NT1X89BB) Async/Sync (X.25). Provide (1) NTMX4724 for each slot.

5) Provision a minimum of one NT1X89BB for CC MIC applications. For redundant links provided two NT1X89BB circuit packs. See above rules regarding what slots are available for RS232(EIA) and V.35 physical interfaces.

6) The 25 pin bulkhead cover plate (P0686749) can be provisioned up to 42 places assuming that a NTMX47 isn't provi-

sioned. Each plate requires (2) P0670923 screws. This means subtract a cover plate for each NTMX47 cable provisioned.

RUL11 1) Provide appropriate Filler Face Plate for any unused card slot.

RUL12 1) Provide one (1) Designation Label corresponding to each card provisioned.

RUL13 1) Provide two (2) left door and two (2) right door assemblies per cabinet. One set of doors is used for the front of the cabinet, the other is used for the rear of the cabinet.

2) Provision two left door labels and two right door labels per cabinet.

3) Provision two cabinet type labels per cabinet.

RUL14 1) Provide one (1) mounting kit when installing frame in ATC zone 6 and 7, NEBS zone 4, and UBC zone 4.

2) Provide one (1) NTNX2540 for slab flooring

3) Provide one (1) NTNX2578 for computer flooring

RUL15 1) Provide one (1) mounting kit when installing frame into a non-earthquake zone.

2) Provide one (1) NTNX2579 for slab flooring

3) Provide one (1) NTNX2580 for computer flooring

RUL16 1) MSL-100 market only. The NTZX12EA kit provides the hardware required to convert the MCMM (NTNX21AA) to the MCEX (NTNX32AA). Circuit packs and cable provisioning will be done by the rules outlined in this Engineering Manual. To apply this kit to the office, the equipment engineer must: - remove the MCMM from the office - provide the MCEX to the office in a null spec - assign the NTZX12EA to the MCEX

MERIDIAN CORE MODULE COMMON CP NTMX42NA

RATING: Standard

ABBREVIATION NAME: MCOR Common CP

ENGINEERING DESCRIPTION: This pack fill provides duplicated Central Processor Control (CPU), 8MW PS, 13MW DS and 10 CMC ports.

REFERENCE DOCUMENTATION: N/A

The Meridian Core Module Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MCC 01:						
16MW BP Terminal	NT3X4309		1	47	1R	AP
1MW Memory Ckt Pack	NT4X80AA		8	47	6-13	AP
16MW Memory Controller CP	NT4X79AA		1	47	14	AP
Diff'l Memory Bus Term	NT3X36BC		1	47	15	AP
Sync Clock Controller CP	NT3X14BC		1	47	18	AP
CMC Processor I/F CP	NT1X33BA		1	47	19	AP
CMC Common Controller CP	NT1X37BA		1	47	20	AP
CMC Outgoing Controller CP	NT1X34BA		1	47	21	AP
CMC Incoming Controller CP	NT1X35BA		1	47	22	AP
CMC/IOC BP Terminal	NT3X4304		1	47	22R	AP
CMC Periph I/F CP	NT1X36BB		2	47	23,24	AP
Power Convertor	NT2X70AE		1	47	25	AP
Designation Strip	P0705432		1	47		AP
CPM 01:						
16MW BP Terminal	NT3X4309		1	33	1R	AP
1MW Memory Ckt Pack	NT4X80AA		5	33	4-8	AP
16MW Memory Controller CP	NT4X79AA		1	33	9	AP
Program Store BP Terminal	NT3X4307		1	33	9R	AP
Balance Data Port Extension	NT1X50DA		1	33	10	AP
CPNPA Backplane Terminator	NT3X4310		1	33	10R	AP
CMC I/F CP	NT1X51DA		1	33	11	AP
Filler Face Plate .875	NT0X50BA		4	33	12,13, 15,20	AP
Processor 8k Rom CP	NT1X46DA		1	33	14	AP
Proc Maintenance Cp	NT1X48DA		1	33	16	AP
Proc Timing & Control	NT1X47DA		1	33	17	AP
Proc A.L.F. CP	NT1X45DA		1	33	18	AP
Proc Stack 4kw cp	NT1X44DA		1	33	19	AP
Proc 8MW PS Port	NT1X43DA		1	33	21	AP
Power Converter	NT2X06BB		1	33	22	AP
Power Converter	NT2X70AE		1	33	25	AP
Designation Strip	P0696370		1	33		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPM 00:						
16MW BP Terminal	NT3X4309		1	19	1R	AP
1MW Memory Ckt Pack	NT4X80AA		5	19	4-8	AP
16MW Memory Controller CP	NT4X79AA		1	19	9	AP
Program Store BP Terminal	NT3X4307		1	19	9R	AP
Balance Data Port Extension	NT1X50DA		1	19	10	AP
CPNPA Backplane Terminator	NT3X4310		1	19	10R	AP
CMC I/f CP	NT1X51DA		1	19	11	AP
Filler Face Plate .875	NT0X50BA		4	19	12,13, 15,20	AP
Processor 8k ROM CP	NT1X46DA		1	19	14	AP
Proc Maintainence CP	NT1X48DA		1	19	16	AP
Proc Timing & Control	NT1X47DA		1	19	17	AP
Proc A.L.F. CP	NT1X45DA		1	19	18	AP
Proc Stack 4kw cp	NT1X44DA		1	19	19	AP
Proc 8MW PS Port	NT1X43DA		1	19	21	AP
Power Converter	NT2X06BB		1	19	22	AP
Power Converter	NT2X70AE		1	19	25	AP
Designation Strip	P0696370		1	19		AP
MCC 00:						
16MW BP Terminal	NT3X4309		1	05	1R	AP
1MW Memory Ckt Pack	NT4X80AA		8	05	6-13	AP
16MW Memory Controller CP	NT4X79AA		1	05	14	AP
Diff’l Memory Bus Term	NT3X36BC		1	05	15	AP
Sync Clock Controller CP	NT3X14BC		1	05	18	AP
CMC Processor I/F CP	NT1X33BA		1	05	19	AP
CMC Common Controller CP	NT1X37BA		1	05	20	AP
CMC Outgoing Controller CP	NT1X34BA		1	05	21	AP
CMC Incoming Controller CP	NT1X35BA		1	05	22	AP
CMC/IOC BP Terminal	NT3X4304		1	05	22R	AP
CMC Periph I/F CP	NT1X36BB		2	05	23,24	AP
Power Convertor	NT2X70AE		1	05	25	AP
Designation Strip	P0705432		1	05		AP

RULES:

AP 1) When PEC NTMX42NA is ordered, these items are provided.

DTC/DTCI/LTC/LTCI COMMON CP (LOWER MODULE)

PEC CODE:	NTNX33NL
CPC CODE:	B0242790
RATING:	STD
REPLACES:	NTNX33ND
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	DTC/DTCI/LTC/LTCI
ENGINEERING DESCRIPTION:	The DTC/DTCI/LTC/LTCI Common CP provides circuit packs for ISDN applications in the upper two shelves of the MCTM-ISDN (MCTMI) cabinet. This DTC/DTCI/LTC/LTCI Common CP NTNX33NL replaces packfill NTNX33ND. Each module can be provisioned for ISDN or Non-ISDN functionality.
REFERENCE DOCUMENTATION:	MSNX33CA 00 20
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI:	Phuong Ly	Dept. 6457	(RICH)
MAIN CONTACT: NTI:	Phuong Ly	Dept. 6457	(RICH)
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CONTACT: NTI:	Richard McNeill	Dept. 5849	(RICH)

NTNX33NL EMA10-20-CPCI-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 11 16	ECM 445 25	Make change per EC 002-16421.

The DTC/DTCI/LTC/LTCI Common CP (Lower Module) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Speech Bus Formatter	NT6X41AA		2	05,19	21	AP
Channel Supv Msg CP	NT6X42AA		2	05,19	20	AP
Universal Tone Rcvr CP	NT6X92BC		2	05,19	15	AP
Des. label NT6X92BC	P0737431		2	05,19	15	AP
Power Converter	NT2X70AF		2	05,19	25	AP
Designation Strip	P0713972		2	05,19		AP
Filler Face Plate .875	NT0X50AA		8	05,19	17,19, 23,24	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 NTNX33NL is ordered, these items are provided.

DTC/DTCI/LTC/LTCI COMMON CP (UPPER MODULE)

PEC CODE: NTNX33NM

CPC CODE: B0242791

RATING: STD

REPLACES: NTNX33NE

REPLACED BY: Not Applicable

ABBREVIATION NAME: DTC/DTCI/LTC/LTCI

ENGINEERING DESCRIPTION: The DTC/DTCI/LTC/LTCI Common CP provides circuit packs for ISDN applications in the upper two shelves of the MCTM-ISDN (MCTMI) cabinet. This DTC/DTCI/LTC/LTCI Common CP NTNX33NL replaces packfill NTNX33ND. Each module can be provisioned for ISDN or Non-ISDN functionality.

REFERENCE DOCUMENTATION: MSNX33CA 00 20

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Phuong Ly Dept. 6457 (RICH)

MAIN CONTACT: NTI: Phuong Ly Dept. 6457 (RICH)

CONTACT: NTI: Jim Large Dept. 5849 (RICH)

CONTACT: NTI: Richard McNeill Dept. 5849 (RICH)

NTNX33NM EMA10-20-CPCI-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 11 16	ECM 445 25	Make change per EC 002-16421.

The DTC/DTCI/LTC/LTCI Common CP (Upper Module) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Speech Bus Formatter	NT6X41AA		2	33,47	21	AP
Channel Supv Msg CP	NT6X42AA		2	33,47	20	AP
Universal Tone Rcvr CP	NT6X92BC		2	33,47	15	AP
Des. label NT6X92BC	P0737431		2	33,47	15	AP
Power Converter	NT2X70AF		2	33,47	25	AP
Designation Strip	P0713972		2	33,47		AP
Filler Face Plate .875	NT0X50AA		8	33,47	17,19, 23,24	AP

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:

RULES:

AP 1) When PEC NTNX33NM is ordered, these items are provided.

DTC/DTCI/LTC/LTCI COMMON CP (LOWER MODULE)

PEC CODE:	NTNX33NQ
CPC CODE:	B0242793
RATING:	STD
REPLACES:	NTNX33NH
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	DTC/DTCI/LTC/LTCI
ENGINEERING DESCRIPTION:	The DTC/DTCI/LTC/LTCI Common CP provides circuit packs for international applications (Japan) in the lower two shelves of the MCTM-I cabinet. This DTC/DTCI/LTC/LTCI Common CP NTNX33NQ replaces packfill NTNX33NH. Each module can be provisioned for ISDN or Non-ISDN functionality.
REFERENCE DOCUMENTATION:	MSNX33CA 00 20
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI:	Phuong Ly	Dept. 6457	(RICH)
MAIN CONTACT: NTI:	Phuong Ly	Dept. 6457	(RICH)
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CONTACT: NTI:	Richard McNeill	Dept. 5849	(RICH)

NTNX33NQ EMA10-20-ICPC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 06 21	ECM 445 20	Make change per EC 002-16248.

The DTC/DTCI/LTC/LTCI Common CP (Lower Module) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Channel Supv Msg CP	NT6X42AA		2	05,19	20	AP
Speech Bus Formatter	NT6X41AB		2	05,19	21	AP
Universal Tone Rcvr CP	NT6X92CA		2	05,19	15	AP
Universal Time Switch	NT6X44EA		2	05,19	14	AP
Power Converter	NT2X70AF		2	05,19	25	AP
Designation Strip	P0809960		2	05,19		AP
Filler Face Plate .875	NT0X50AA		8	05,19	17,19, 23,24	AP
Des. strip .875 picth	P0558197		2	05,19		AP
Designation label	P0736929		2	05,19		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 NTNX33NQ is ordered, these items are provided.

DTC/DTCI/LTC/LTCI COMMON CP (UPPER MODULE)

PEC CODE:	NTNX33NN
CPC CODE:	B0242792
RATING:	STD
REPLACES:	NTNX33NG
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	DTC/DTCI/LTC/LTCI
ENGINEERING DESCRIPTION:	The DTC/DTCI/LTC/LTCI Common CP provides circuit packs for international applications (Japan) in the upper two shelves of the MCTM-I cabinet. This DTC/DTCI/LTC/LTCI Common CP NTNX33NN replaces packfill NTNX33NG. Each module can be provisioned for ISDN or Non-ISDN functionality.
REFERENCE DOCUMENTATION:	MSNX33CA 00 20
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI:	Phuong Ly	Dept. 6457	(RICH)
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NTNX33NN EMA10-20-ICPC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 06 21	ECM 445 20	Make change per EC 002-16248.

The DTC/DTCI/LTC/LTCI Common CP (Upper Module) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Channel Supv Msg CP	NT6X42AA		2	33,47	20	AP
Speech Bus Formatter	NT6X41AB		2	33,47	21	AP
Universal Tone Rcvr CP	NT6X92CA		2	33,47	15	AP
Universal Time Switch	NT6X44EA		2	33,47	14	AP
Power Converter	NT2X70AF		2	33,47	25	AP
Designation Strip	P0809960		2	33,47		AP
Filler Face Plate .875	NT0X50AA		8	33,47	17,19, 23,24	AP
Des. strip .875 picth	P0558197		2	33,47		AP
Designation label	P0736929		2	33,47		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 NTNX33NN is ordered, these items are provided.

PDTC/PLGC/PLTC COMMON PACKFILL (LOWER & UPPER MODULE)

PEC CODE:	NTNX33NR
CPC CODE:	B9242974
RATING:	STD
REPLACES:	NTNX33NP
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	PDTC/PLGC/PLTC common packfill
ENGINEERING DESCRIPTION:	The PDTC/PLGC/PLTC Common packfill provides circuit packs for Cala applications in both lower and upper modules of the MCTM-I cabinet. This PDTC/PLGC/PLTC common packfill, NTNX33NR replaces NTNX33NP. Each module can be provisioned for ISDN or Non-ISDN functionality.
REFERENCE DOCUMENTATION:	MSNX33CA 00 20
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI:	Phuong Ly	Dept. 6457	(RICH)
MAIN CONTACT: NTI:	Phuong Ly	Dept. 6457	(RICH)
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CONTACT: NTI:	Richard McNeill	Dept. 5849	(RICH)

NTNX33NR EMA10-20-ICPC-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 06 21	ECM 445 20	Make change per EC 002-16248.

The PDTC/PLGC/PLTC Common packfill (Lower & Upper Module) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Unified Processor	NTMX77AA		2		12	AP
Des. label NTMX77AA	P0735417		2		12	AP
Time Switch CP	NT6X44EA		2		14	AP
Des. label NT6X44EA	P0705061		2		14	AP
Universal Tone Rcvr CP	NT6X92CA		2		15	AP
Des. label NT6X92CA	P0677831		2		15	AP
Bus Terminator	NTMX71AA		2		19R	AP
Channel Supv Msg CP	NT6X42AA		2		20	AP
Speech Bus Formatter	NT6X41AB		2		21	AP
Power Converter	NT2X70AF		2		25	AP
Designation Strip	P0809960		2		25	AP
Designation Strip	P0713212		2		01-27	AP
Filler Face Plate .875	NT0X50AA		18		01,06,07	
					08,09,11	
					17,23,24	AP
Des. label NT0X50AA	P0578498		18		01,06,07	
AP						
					08,09,11	
					17,23,24	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 NTNX33NR is ordered, these items are provided.

MERIDIAN CABINET TRUNK MODULE (MCTM-ISDN)

PEC CODE:	NTNX33CA
CPC CODE:	B0229950
RATING:	Standard
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	MCTM-ISDN (MCTMI)
ENGINEERING DESCRIPTION:	The Meridian Cabinet Trunk Module - ISDN (MCTM-ISDN) is used to house two independent dual shelf ISDN Common Peripheral Processor modules. Each module can be provisioned for ISDN or Non-ISDN functionality.
REFERENCE DOCUMENTATION:	MSNX33CA 01 01
MARKETS:	Applicable markets: US Canada Wireless Asia/pacific

ISSUE AUTHOR: NTI:	Peter Szczesniak	Dept. 2D69	(RCH)
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NTNX33CA EMA10-20-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 01	ECM 492 03	Add SNSE provisioning information for integration into the MTXD.
92 12 03	ECM 492 04	Add Digital Cellular Time Switch, XPM Plus, and PDTC Plus information.
93 02 14	ECM 492 05	Fix slot assignments for NT6X92BB, NT6X92CA circuit packs. Fix NTNX33DV error. Described in rules but not in equipment list.
93 05 07	ECM 445 04	ADD PROVISIONABLE CARDS, EC 2-15410
93 07 23	ECM 445 05	ADD NT6X02XD XPM+ WIRING KIT
93 11 30	ECM 445 07	Fix typographic error in note 1
94 03 08	ECM 445 08	Replace NT6X02BU with NT6X02UF
94 04 05	ECM 445 09	ADD NT6X78AB CMR card
94 04 14	ECM 445 10	Remove NT6X02XD XPM+ WIRING KIT
94 06 06	ECM 492 12	Correct 6X27 provisioning. Add NX33TS wiring kit for AX78AA. Add 6X69LA. Update fiber hardware provisioning. Correct code for left door label. Miscellaneous clean-up.
94 08 30	ECM 492 14	Add NTAX74AA CAP and XPM Plus field upgrade kits (NTNX33ZA & NTAX75ZB), (NTAX74AA for DOMESTIC VO ICP ONLY).
94 09 09	ECM 445 11	Add Circuit pack information for SMA Access Node information
94 09 21	ECM 492 15	Corrects typographical and formatting errors & identify CAP requirements.
94 10 19	ECM 492 16	Updates EM section to reflect NTBX01AC dependency for CAP (NTAX74AA).
94 11 28	ECM 445 12	Add Circuit pack information for SMA
94 12 06	ECM 492 17	Clarify MCTM-I Cable Kits.
95 01 10	ECM 445 14	Correct 6X44AB and 6X69AC.
95 01 12	ECM 445 15	Correct 6X44AB typo.
95 01 26	ECM 445 16	Add Dialable Wideband to NTAX78 rule.
95 02 16	ECM 492 18	Corrections per ET 20709. Return NT6X44AB into the provisioning rules.
95 04 05	ECM 445 17	Replace NT6X44AB and NT6X69LA with NT6X44AA and NT6X69LB respectively.
95 04 25	ECM 492 19	JEL: EC 024-93969 replaces the NT2X70AE with the NT2X70AF. Also make corrections per ET 22039.
95 05 08	ECM 445 18	Make corrections to NTAX78AB shelf positions per ET 22229. Change pack-

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		fill NTNX33NA&NB and MD them per ET 22529.
95 06 21	ECM 445 20	Make changes per EC 002-16248.
95 06 27	ECM 445 21	Correct EC 002-16248.
95 08 01	ECM 445 22	Add NT6X27JA & NT6X55JA to MCTM-I cabinet per EC 002-16275
95 08 24	ECM 492 24	DKG: Clarify Rules 38, 39, and 40.
95 08 25	ECM 492 25	DKG: Clarify Rule 32 to resolve ET 27309.
95 09 05	ECM 445 23	Delete NT6X27JA & NT6X45BD per EC 002-16275.
95 09 27	ECM 445 24	Change the provisioning rule for 25 pin cover plate, P0686749 & 37 pin cover plate, P0686750 per EC 02-16339
95 10 06	ECM 492 26	DKG: Clarify Rule 26 and 29.
95 11 16	ECM 445 25	Change NTNX33NL & NTNX33NM per EC002-16421.
95 12 08	ECM 445 27	Replace NT6X28AA by NT6X28AC pack
96 01 11	ECM 445 28	Update per ECD 002-16524 to provide ten additional 37 pins connectors to the bulkhead as follows: - CO01-04 & CO11-14 used for DS30. - Add external NTNX33EE cable kit. - 0P8 & 1P8 used for fiber cable to free up 0P7 & 1P7 for DS30A.
96 03 26	ECM 445 29	Update per ECD 002-16627 to add the NTMX76BA for Japan market. This circuit pack will be used in place of NT6X69LB for extended distance remote . This is strictly used for Japan.
96 07 29	ECM 445 30	Update per ECD 002-16666 to add the provisioning rule for echo cancell-ation to MCTM-I cabinet. This echo cancellation is used in celluler GSM.
96 11 15	ECM 445 31	Update per ECD 002-16864 to add the provisioning rule for peripheral loader circuit pack, NT7X05AA. Also replace SMA controller by ESMA housed in the CMVI cabinet. Update NT6X40AC & NT6X40FA to NT6X40AD & NT6X40FB.
97 01 03	ECM 445 32	Update per ECD 011-22150 to increase the number of DS30A from 16 to 20 for ICP module on the MCTM-I cabinet.

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
97 06 02	ECM 445 33	Update per ECD 101-00244 adds the NTMX76AB, replaces NT6X92BC with NT6X92EA & corrects rule 23.
97 06 30	ECM 445 34	Update per ECD 101-00409 adds the NTAX74AA to the PDTC replacing the NTMX77AA and the NTBX01CA replaces the NTBX01BA in the ICP & ICP-O only.
97 08 28	ECM 445 35	Update per ECD 101-00582 adds PCM30 coax NTNX33CX, replace the NTNX25AA base cabinet with NTRX25AA and update NTAX74AA provisioning for the DTC-I in the MCI-ACD market only. No longer available for PCN ISDN peripherals DTC-I, LGC-I and LTC-I. Made NT6X92BC the orderable circuit pack and the NT6X92EA unavailable until wk12 1998.

The Meridian Cabinet Trunk Module (MCTM-ISDN) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Temperature Sensor	NTNX4005		1	70		AP
Frame Supv Panel	NTNX26NA	FSP	1	60		AP
ISDN Cont Arry Shf Assy	NT6X0223	CPA1	1	XX		AP
PLGC/PDTC Common CP BTI	NT6X02UB			XX		RUL26
PCM-30 I/F CP	NT6X27AB			XX	5-2	RUL27
PCM-30 I/F CP	NT6X27BB			XX	5-2	RUL34
DS1 I/F CP	NT6X50AB			XX	5-1	RUL3
NTT-NCCI CCS7 I/F (Japan)	NT6X55JA			XX	5-1	RUL3
Enhanced D-Channel Handler	NTBX02BA			XX	1-5	RUL4
DS30A I/F ckt pack	NT6X48AA			XX	6,7	RUL5
Tone Receiver Card CP	NT6X92CA			XX	15,16	RUL29
LTC/DTC Proc CP	NT6X45BA			XX	8,12	RUL38
Filler Face Plate .875	NT0X50AA			XX	9	RUL39
Master Proc Mem CP	NT6X47AC			XX	10	RUL39
Signal Proc Mem CP	NT6X46BB			XX	11	RUL40
Unified Processor	NTMX77AA			XX	12	RUL24
Cellular Access Proc. (CAP)	NTAX74AA			XX	12	RUL24
Continuity Tone Detr	NT6X70AA			XX	13	RUL9
Peripheral Recovery Loader	NT7X05AA			XX	13,15 17	RUL9
CLASS Modem Resource CP	NT6X78AB			XX	13,17	RUL44
Enhanced Time Switch	NTAX78AB			XX	14	RUL23, RUL45
Digital Cellular Time Switch	NTAX78AA			XX	14	RUL23, RUL45
Time Switch CP (Domestic)	NT6X44AA			XX	14	RUL37
Time Switch CP (SMA)	NT6X44CA			XX	14	RUL45
Time Switch	NT6X44EA			XX	14	RUL30
Univ. Tone Recr	NT6X92BC			XX	15,16	RUL6
Global Tone Recr	NT6X92EA			XX	15,16	RUL6
Enhanced-ISP CP	NTBX01BA			XX	16	RUL7
MSG. ISDN Signal Pre-Proc.	NTBX01CA			XX	16	RUL7
STR/BBF Tone Rcvr CP	NT6X62AB			XX	16	RUL15
CPP Msg Protocol CP	NT6X69AC			XX	18	RUL31
CPP Msg Protocol CP	NT6X69AD			XX	18	RUL31
Msg & HDLC Signal Procg	NTMX76AB			XX	18	RUL31
Message Tone Protocol (HK)	NT6X69HA			XX	18	RUL31
Msg Prot & Download Tones	NT6X69LB			XX	18	RUL31
Msg and CMS pack	NTMX76BA			XX	18	RUL31
PCM-30 Signaling CP	NT6X28AC			XX	19	RUL28
SMU Pad Ringing Card	NT6X80BB			XX	19	RUL46
Bus Terminator	NTMX71AA			XX	19R	RUL25

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
					20R	
CHANNEL SUPERVISION MSG CP	NT6X42AA			XX	20	RUL45, RUL47
SPEECH BUS FORMATTER CP	NT6X41AA			XX	21	RUL45, RUL47
DS-30 Link Cont. CP	NT6X40AD			XX	22	RUL36
DS-512 Link Cont. CP	NT6X40FB			XX	22	RUL35
DS-512 Link Cont. PB	NT6X40GA			XX	22R	RUL35
Filler Face Plate .875	NT0X50AA			XX		RUL8
Power Supply	NT2X70AF			XX	25	RUL47
Cooling Unit	NTNX27CA	CU	1	00		AP
Meridian Cabinet Assy	NTNX25AA	FW				
C28 - B Cabinet Assy	NTRX25AA	FW	1			AP NOTE13
Upper Module Filler Kit	NT6X02AB		1	33,47		RUL1
CPCI Common CP (Lower Mod)	NTNX33NL			05,19		RUL1
CPCI Common CP (Upper Mod)	NTNX33NM			33,47		RUL1
CPCI Common CP (Lower Mod)	NTNX33NQ			05,19		RUL1
CPCI Common CP (Upper Mod)	NTNX33NN			33,47		RUL1
CALA PDTC PACKFIILL	NTNX33NR			05,19 33,47		RUL42
Echo Cancellation kit	NTNX33EC			M0,M1		RUL25
Jumper Kit Non-ISDN	NTRX36NI		1	M0,M1		RUL17
Universal Fiber Kit	NT6X02UF		2			AP
Universal Fiber Kit	NT6X02UF					RUL32
DS-512 Fiber I/F HW Kit	NTNX33SD					RUL32
XPM Plus Upgrade Kit	NTNX33ZA					RUL8
CAP XPM Plus Upgrade Kit	NTAX75ZB					RUL8
DS30A Bulkhead cable Hardware kit (NT6X48AA)	NTNX33DT					RUL19
DS30A Bulkhead cable Hardware kit (NT6X48AA)	NTNX33DU					RUL20
DS30A Bulkhead kit	NTNX33FP					RUL20
DS1 Link Interface MOD 0 Hardware kit (XPM)	NTNX33DV			05,19		RUL20
DS1 Link Interface MOD 1 Hardware kit (XPM)	NTNX33DW			33,47		RUL20

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS1/CII Filter kit	NTNX33FK			05,19 33,47		RUL20
PCM30 filter kit	NTRX46YB			05,19 33,47		RUL20
PCM30 COAX kit per MOD	NTNX33CX			05,19 33,47		RUL48
PCM30 COAX cover kit	NTRX4657			05,33		RUL20
25 pin cover plate	P0686749					AP
Screws	P0180923					AP
DS30 Cable hardware	NTNX33DS					RUL21
External DS30 cable kit	NTNX33EE					RUL21
37 Pin Cover Plate	P0686750					AP
Desig. Label (NTAX74AA)	P0800860					RUL2
Desig. Label (NTAX78AA)	P0737140					RUL2
Desig. Label (NTAX78AB)	P0803131					RUL2
Desig. Label (NTBX01AA)	P0697918					RUL2
Desig. Label (NTBX01AB)	P0735418					RUL2
Desig. Label (NTBX01AC)	P0803486					RUL2
Desig. Label (NTBX01BA)	P0713794					RUL2
Desig. Label (NTBX01CA)	P0873166					RUL2
Desig. Label (NTBX02AA)	P0697919					RUL2
Desig. Label (NTBX02BA)	P0737724					RUL2
Desig. Label (NTMX76AB)	P0871709					RUL2
Desig. Label (NTMX76BA)	P0835570					RUL2
Desig. Label (NTMX77AA)	P0735417					RUL2
Desig. Label (NT0X50AA)	P0578498					RUL8
Desig. label (NT2X70AF)	P0809960					RUL2
Desig. Label (NT6X27AB)	P0678466					RUL2
Desig. Label (NT6X27BB)	P0739157					RUL2
Desig. Label (NT6X28AC)	P0725257					RUL2
Desig. Label (NT6X40AC)	P0695397					RUL2
Desig. Label (NT6X40AD)	P0854869					RUL2
Desig. label (NT6X40FA)	P0729895					RUL2
Desig. label (NT6X40FB)	P0854870					RUL2
Desig. Label (NT6X41AA)	P0737137					RUL2
Desig. Label (NT6X42AA)	P0737138					RUL2
Desig. Label (NT6X44AA)	P0698316					RUL2
Desig. Label (NT6X44CA)	P0707641					RUL2
Desig. Label (NT6X45BA)	P0665152					RUL2
Desig. Label (NT6X46BB)	P0711664					RUL2
Desig. Label (NT6X47AC)	P0711663					RUL2
Desig. Label (NT6X48AA)	P0626877					RUL2
Desig. Label (NT6X50AB)	P0690976					RUL2
Desig. Label (NT6X55JA)	P0703370					RUL2
Desig. Label (NT6X62AB)	P0711789					RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label (NT6X69AC)	P0710476					RUL2
Desig. Label (NT6X69AD)	P0800014					RUL2
Desig. Label (NT6X69HA)	P0743766					RUL2
Desig. Label (NT6X69LB)	P0713213					RUL2
Desig. Label (NT6X70AA)	P0628358					RUL2
Desig. label (NT6X78AB)	P0731980					RUL2
Desig. Label (NT6X80BB)	P0800015					RUL2
Desig. Label (NT6X92BB)	P0686332					RUL2
Desig. Label (NT6X92BC)	P0737431					RUL2
Desig. Label (NT6X92CA)	P0677831					RUL2
Desig. Label (NT6X92EA)	P0871713					RUL2
Desig. Label (NT7X05AA)	P0845116					RUL2
Desig. Label (ICP SHELF-FSP)	P0709279					RUL16
Desig. Strip (SMA)						RUL45
NTNX25AA Equipment						
Right Door Assembly-Grey	NTNX2513					RUL10
Left Door Assembly-Grey	NTNX2515					RUL10
End Panel Assy, Left - Grey	NTNX2518					RUL10
End Panel Assy, Right- Grey	NTNX2517					RUL10
Right Door Assembly-Brown	NTNX2552					RUL10
Left Door Assembly-Brown	NTNX2550					RUL10
End Panel Assy, Left -Brown	NTNX2553					RUL10
End Panel Assy, Right-Brown	NTNX2546					RUL10
Anchor Kit Earthquake-Slab	NTNX2540					RUL13
Anchor Kit Earthquake-Comp	NTNX2578					RUL13
Anchor Kit Non-E/Q-Slab	NTNX2579					RUL14
Anchor Kit Non-E/Q-Comp	NTNX2580					RUL14
NTRX25AA Eqpt (NEW BUILDS) 8/14/97						
Door Kit Top Latch - Grey	NTRX2567					RUL49
Door Kit Center Latch - Grey	NTRX2568					RUL49
Ext. Skin Assy, Left - Grey	NTRX73AL					RUL49
Ext. Skin Assy, Right- Grey	NTRX73AM					RUL49
Door Kit Top Latch - Brown	NTRX2566					RUL50
Door Kit Center Latch-Brown	NTRX2569					RUL50
Ext. Skin Assy, Left -Brown	NTRX73AN					RUL50
Ext. Skin Assy, Right-Brown	NTRX73AP					RUL50

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Earthquake Anchor Kit	NTRX2564					RUL51
Earthquake Anchor	P0601852					RUL51
Leveling Foot Kit (NON-E/Q)	NTRX2523					RUL51
MSL-Mod. B Gnd Kit (Horiz)	NTRX25ML					RUL52
Mod. B - Mod. B Gnd kit	NTRX25MM					RUL52
Cabinet Type Label-Grey	P0687618					RUL11
Left Top Latch Door Label - Grey	P0818848					RUL12
Right Top Latch Door Label - Grey	P0699158					RUL12
Right Center Latch Door Label - Grey	P0832051					RUL12
Cabinet Type Label-Brown	P0699471					RUL11
Left Top Latch Door Label - Brown	P0818849					RUL12
Right Top Latch Door Label - Brown	P0695230					RUL12
Right Center Latch Door Label - Brown	P0832050					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 manufactured and cannot be ordered.

NOTES:

1) 'XX' can be shelf 05, 19, 33 or 47.

2) The MCTM-I With JNET (Junctored Network):
- MCTM-I must be in the same line up as its serving network.
- Each controller requires 16 network ports and interface with JNET via copper cables.

3) The MCTM-I With ENET (Enhanced Network):
- MCTM-I does not have to be in the same line up as its serving network.
- Each controller requires 16 network ports and interface with ENET via extenal fiber cables.

4) The DS1 ports for each LTC/DTCI are fully wired to filter connectors in the rear bulkhead for use as digital trunks or to connect remote modules or both. The DS1 ports are fully connectorized using the new Bandpass RF Filter for improved EMI performance. Additionally, cabling and connectors allow the rear bulkhead to interface to the ISDN Packet Handler.

5) MCTM-I NTNX33CA can be provisioned with 2-shelf Common Peripheral Control(CPC) modules for ISDN or non-ISDN functions. Each MCTM-I can have up to two (2) CPCs. The MCTM-I can be provisioned for the following CPC:
- Non-ISDN: The non-ISDN CPC will be called DTC/LGC/LTC. Non-ISDN controller will NOT require NTBX01s and NTBX02s circuit packs.
- ISDN: There are two types of ISDN controllers.
  a) PRA ISDN: Use for ISDN trunk controller. The PRA controller will be called DTCI. The DTCI controller requires NTBX01s.
  b) BRA ISDN: Use for ISDN line controller. The BRA controller will be called LGC. If LGC controller also has trunk then it will be called LTC. LGC/LTC controller requires both NTBX01s & NTBX02s CP. LTC. LGC/LTC controller requires both NTBX01s and NTBX02s circuit packs.
-SMA: This is the subscriber module access-100 controller. SMA is d to control ACCESS NODE. SMA controller requires NTBX01AC circuit pack. SMA also requires NTBX02BA if there are any ISDN line on the ACCESS NODE.

6) When upgrading ISDN XPM modules to XPM PLUS, the modules must be equipped with the Enhanced ISDN Sig Pre-Proc (EISP) CP NTBX01AB. If the ISDN XPM modules being upgraded to XPM PLUS are equipped with the ISDN Sig Pre-Proc (ISP) CP NTBX01AA, then replacement by the NTBX01AB CP and Desig. Labels P0735418 is mandatory.

7) ENI and ENET both refer to Enhanced Networks (ENET).

8) When NT6X48AAs are provisioned, provide 1 NTNX33DT and 1 NTNX33DU per frame. If the office is an ENET then both NTNX33DT & NTNX33DU provide only seven (7) DS30A connectors.

9) When DS512 interface is required to interface to ENET, provide 1 NTNX33SD per frame. DO NOT provide the NTNX33DS when the NTNX33SD is provisioned.

10) When DS30 interface is required to interface to JNET, provide 1 NTNX33DS per frame. DO NOT provide the NTNX33SD when the NTNX33DS is provisioned.

11) These circuit packs are for International applications and for customer required features.

12) The 25 pin cover plate, P0686749 and 37 pin cover plate, P0686750 (NTNX33CP) will be part of the NTNX33CA stocklist.

13) The NTNX33CA as of 8/10/97 changed from the NTNX25AA to the NTRX25AA model C-28B base cabinet. Refer to the rules 49-52. Any additional provisioning can be obtained by looking at MSRX25AA.

RULES:

AP 1) When PEC NTNX33CA is ordered, these items are provided.

RUL1 1) NTNX33NL replaces NTNX33ND. 2) Provide one SL100 domestic packfill, NTNX33NL as required. This packfill will equip one CPC module in the lower two shelf positions (05, 19) of MCTM-ISDN cabinet.

3) NTNX33NM replaces NTNX33NE.

4) Provide one SL100 domestic packfill, NTNX33NM as required This packfill will equip one CPC module in the upper two shelf positions (33, 47) of MCTM-ISDN cabinet.

5) Provide one NTNX33NN as required to pack fill one CPC module in the lower two shelf positions (05,19) for International aplications. NTNX33NN replaces NTNX33NG.

6) Provide one NTNX33NQ as required to pack fill one CPC module in the upper two shelf positions (33,47) for International aplications. NTNX33NQ replaces NTNX33NH.

7) Provide one NT6X02AB CPCE Filler Kit as required when upper module position (shf pos 33, 47) is unequipped.

RUL2 1) Provide one label per circuit pack provisioned. (NT code on label should be same as circuit pack provisioned.) Affix designation label to appropriate position on designation strip.

RUL3 1) For all applications including ICP-O, CALA PDTC, and Japan DTC, provide a maximum of ten (10) NT6X50AB DS1 I/F EFF circuit packs in slots 1-5 for both shelves of the DTC.

2) NT6X50AB DS1 I/F Extended Frame Format (EFF) circuit packs are assigned in selected slots: First in the lower of the two shelves of the module and next in the upper of the two shelves, then the lower, then the upper, etc. From the highest numbered slot (5) toward the lowest numbered slot (1).

3) One NT6X50AB EFF DS1 I/F circuit pack provides two DS1 ports.

4) For each module, the DS1 ports/spans are assigned in the following sequential order: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.

	CP POS	5	4	3	2	1
Unit 1	SHF X┼14	PORTS 2,3	PORTS 6,7	PORTS 10,11	PORTS 14,15	PORTS 18,19
Unit 0	SHF X	PORTS 0,1	PORTS 4,5	PORTS 8,9	PORTS 12,13	PORTS 16,17

5) Note that each DCH NTBX02AA assigned to a shelf position per RUL5, physically makes two (2) DS1 ports unavailable. These ports cannot be assigned to DS1.

6) Provision the NT6X55JA, CII/CMI I/F circuit packs for DTC-Japan application. A maximum of ten (10) NT6X55JA circuit packs from slots 5-1 can be provisioned in a DTC-Japan module.

7) One NT6X55JA circuit pack provides one CII port for communication and one CMI port for monitoring purposes. CII ports are assigned with even port number in the following ordered: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18. CMI ports are assigned with odd port number in the following ordered: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19.

RUL4 1) See note 4.

2) NTBX02AA is scheduled to be 'MD'. Order NTBX02BA for all new job.

3) Provide a maximum of nine (9) NTBX02BA, Enhanced D-Channel Handler (EDCH CP) per module in accordance with customer requirements. In BCS28 or later, provide one (1) additional NTBX02BA for use as a hot spare.

4) Each EDCH has 32 "ports" available. One port is dedicated to the ISP (NTBX01s, see RUL 7). Each of the remaining 31 ports will handle up to four multiplexed BRA D-channels for a total of 124 BRA channels maximum.

5) EDCH CP are not required for DTCI (PRA) ICP, ICP-0 and PDTC applications.

6) For LTC/LGCI, ICP and ICP-0 operations, DS30A links(LMs) are assigned first followed by EDCH then DS1 port assignments.

7) ISDN does not function in the same CPCI with CCS7. The software peripheral load for ISDN Common Peripheral Controller is not compatible with the CCS7 load. (See RUL9).

8) Each NTBX02BA, EDCH, including the spare, requires one peripheral port on the module. Assign NTBX02BA cards to shelf and slot positions in the following order. The spare EDCH should be assigned last.

	Shf Pos	CP Pos	Assign Logical Port Number
1st EDCH CP Provisioned:	X┼14	1	19
2nd EDCH CP Provisioned:	X	1	17
3rd EDCH CP Provisioned:	X┼14	2	15
4th EDCH CP Provisioned:	X	2	13
5th EDCH CP Provisioned:	X┼14	3	11
6th EDCH CP Provisioned:	X	3	09
7th EDCH CP Provisioned:	X┼14	4	07

8th EDCH CP Provisioned:	X	4	05
9th EDCH CP Provisioned:	X┼14	5	03
10th EDCH CP Provisioned:	X	5	01

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).

9) NTBX02BA, EDCH circuit packs may be provisioned in any combination with NT6X50AB DS1 I/F circuit packs as required by the customer.

RUL5 1) NT6X48AA DS30A I/F circuit packs are not provisioned when CPC is used for DTC/DTCI applications.

2) For LTC/LGC, ICP, ICP-0, PDTC operation, first provide the DS-30A circuit packs NT6X48AA and designation label P0626877 to slots 6 & 7 on both shelves of the controller and assign links (0-19) to peripheral equipment. (SEE RULE 18).

3) After assignment of DS30A links, Enhanced D-Channel Handler CP (EDCH) NTBX02BA and DS1 I/F CP NT6X50AB are assigned in slots 1-5 per customer requirements (See RUL3 and RUL4).

4) The DS30A ports are assigned in the following sequential order:19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, 1, 2, 0.

Slot 6 - ports 19, 18, 15, 14, 11, 10, 7, 6, 3, & 2.
Slot 7 - ports 17, 16, 13, 12, 9, 8, 5, 4, 1, & 0.

RUL6 1) NT6X92BC is still the pack to order. The NT6X92EA will not be available for new jobs until wk12 1998.

2) NT6X92BC UTR is a combined service circuit that can perform the function of digitone receiver for lines and the MF receiver for trunks. One pair of NT6X92BC in slot 16 provides up to thirty additional circuits for situations where more than the first 30 (in slot 15) are needed.

3) The second UTR is assignable to slot 16 in each of the CPC module.

4) UTR cards located in a particular DTC/LTC/LGC,ICP and SMA module will service all lines and trunks connected to that module.

5) NT6X92BC is a new UTR circuit pack and is compatible to the NT6X92BB.

RUL7 1) NTBX01AA/AB/AC are scheduled to be 'MD'. Provision NTBX01BA pack for all new job.

2) DO NOT REPLACE NTBX01AA/AB IN A MP/SP EQUIPPED MODULE WITH NTBX01BA EXCEPT when NTBX01BA is part of the XPM PLUS upgrade.

3) NTBX01BA pack ONLY works with XPM PLUS.

4) Provision two (2) NTBX01BA ISDN Signalling Pre-Processor (ISP) CP for DTCI/LTC-ISDN/LGC-ISDN operations. (see note 4)

5) Provide the NTBX01AB for BCS 31+ or higher applications. The software will not support NTBX01AA and NTBX01AB packs in the same switch.

6) Provide the NTBX01CA when ICP is equipped with NTAX74AA Cellular Access Processor. Provide two (2) NTBX01BA per CPC module when SMA configuration is required. Provide one (1) P0713794 designation label per NTBX01BA circuit pack.

7) Provide the NTBX01CA in place of the NTBX01BA circuit pack for the ICP & ICP-O applications.

RUL8 1) Provide Filler Face Plate NT0X50AA and designation label P0578498 on shelves 05, 19, 33 and 47 in slots 1-7, 13 and 16 when unequipped.

2) When upgrading to XPM PLUS, provide eight (8) Filler Face Plates NT0X50AA and designation labels P0578498 if the ISDN XPM module was previously equipped with four NT6X47AB MP Memory Plus CP, or provide six (6) Filler Face Plates NT0X50AA and designation labels P0578498 if the ISDN XPM module was previously equipped with two NT6X47AC MP Memory Plus CP. These plates are used in slots 8-11 as required.

3) All NTNX33CA cabinets Release 24 and higher are pre-wired for PM+ which is backwards compatible with NON-XPM Plus modules. For field upgrade to XPM Plus for all applications use kit NTNX33ZA. This NTNX33ZA kit includes the following:

- (8) NT0X50AA
- (1) NTMX70AB
- (2) NTMX77AA
- (2) NTMX71AA

- (8) P0578498
- (2) P0739085
- (2) P0749586

Use XPM CAP field upgrade kit NTAX75ZB for ICP and ICP-0 field upgrade to XPM Plus with Cellular Access Processor per customer requirements. See RUL24 for provisionable circuit packs. The NTAX75ZB must be used with MTX02 software or higher.

RUL9 1) Provide two NT6X70AA Continuity Tone Detector packs when DTC module is handling CCS7 signalling and continuity checking is required.

2) CCS7 does not function in the same CPCI with ISDN. (See RUL 4,item 6).

3) Provide two NT7X05AA peripheral recovery loader option per controller module as required. NT7X05AA circuit pack must be used with the unified processor - NTMX77. Minimum s/w load for NT7X05AA is MSL06.

4) NT7X05AA can be assigned to slots 13, 15, or 17.

RUL10 1) Provide four door assemblies (2 left and 2 right, one set for front and one set for rear of cabinet). To be applied to the MCTMI with a release of 30 or less. All new builds should use RULE 49 which makes reference to the NTRX25AA C-28B.

2) Provide one end panel for the right and left side of the cabinet depending on which color is required.

RUL11 1) Provide two cabinet type labels, one for front, one for rear of cabinet.

RUL12 1) Provide four door labels (2 left and 2 right, one set for front and one set for rear of cabinet).

2) Provide new Nortel left door label-grey, P0818848 instead of P0677704 (TOP LATCH DOORS).

3) Provide new Nortel left door label-brown, P0818849 instead of P0699464 (TOP LATCH DOORS).

4) Provide the right door label-grey, P0699158 (TOP LATCH DOORS) or P0832051 (CENTER LATCH DOORS).

5) Provide the right door label-brown, P0695230 (TOP LATCH DOORS) or P0832050 (CENTER LATCH DOORS).

RUL13 1) Provision one (1) earthquake mounting kit when installing in the following earthquake zones:

ATC	Zone 6
NEBS	Zone 4
UBC	Zone 4

Provide NTNX2540 earthquake anchor kit for slab flooring. Provide NTNX2578 earthquake anchor kit for computer type flooring. Additional seismic engineering may be required. To be applied to the MCTMI with a release of 30 or less. All new builds should use RULE 51 which makes reference to the NTRX25AA C-28B.

RUL14 1) Provision one (1) frame anchor kit when installing frame in an non-earthquake zone.

Provide NTNX2579 anchor kit for slab flooring. Provide NTNX2580 anchor kit for computer type flooring. To be applied to the MTCM-I with a release of 30 or less. All new builds should use RULE 51 which makes reference to the NTRX25AA C-28B.

RUL15 1) Provide two (2) NT6X62AB Special Tone Receiver CP, for each CPC module when Reorigination and/or Blue Box Fraud features are required. Mount circuit packs in slot 16 of the upper & lower shelves of the CPC.

2) The NT6X62AB STR/BBF CP is provisionable for DTCs only.

RUL16 1) When MCTMI is used in MTX-D system, module is called ICP module (Intelligent Cellular Periperal). Provision one (1) P0709279 ICP module des label per ICP module ordered and mount on FSP.

RUL17 1) Provide one kit per module to provide backplane wiring for non-ISDN functionality.

RUL18 1) Unassigned

RUL19 1) Provide one NTNX33DT DS30A cable kit per cabinet when provisioning NT6X48AA circuit packs. This kit provides bulkhead connectors for up to six (6) Enhanced Line Modules per controller.

(1) NTNX3305 FOR SHELF 05 & 19
(1) NTNX3306 FOR SHELF 05 & 19

(1) NTNX3313 FOR SHELF 05 & 19
(1) NTNX3314 FOR SHELF 05 & 19
(1) NTNX3315 FOR SHELF 05 & 19
(1) NTNX3316 FOR SHELF 05 & 19
(1) NTNX3307 FOR SHELF 33 & 47
(1) NTNX3308 FOR SHELF 33 & 47
(1) NTNX3319 FOR SHELF 33 & 47
(1) NTNX3320 FOR SHELF 33 & 47
(1) NTNX3321 FOR SHELF 33 & 47
(1) NTNX3322 FOR SHELF 33 & 47

RUL20 1) The following NTNX33DU DS30A cables should be provided when NT6X48AAs are provided. Only one NTNX33DU is required per cabinet. These cables use the 0P7 and 1P7 bulkhead connector positions, which are also used by the NTNX33SD kit. Therefore, these additional DS30A cables CAN ONLY provide up to seven (7) DS30A connectors if NTNX33SD cable kit is provided. See rule 20 part 2.

(1) NTNX3317 FOR SHELF 05 & 19
(1) NTNX3318 FOR SHELF 05 & 19
(1) NTNX3323 FOR SHELF 33 & 47
(1) NTNX3324 FOR SHELF 33 & 47

2) Part 1 of rule 20 is true only with existing MCTM-I cabinet in the field. Any MCTM-I cabinet ordered after 01/11/96 will have connectors 0P7 & 1P7 available for DS30A connection. Fiber cable will be routed to the bulkhead using 0P8 and 1P8 holes.

3) Provision NTNX33DV DS-1 cable harware kit when NT6X50's or NTBX02's are required for DS-1 or D-Channel I/F is required. This NTNX33DV or DW cable kit can also be used for PCM-30 if the physical link is via twisted pair. If coax is required see Rule 48. Only one NTNX33DV and NTNX33DW is required per cabinet.

NTNX33DV twisted pair cable kit contains: Module 0
(1) NTNX3309 FOR SHELF 05
(1) NTNX3310 FOR SHELF 19

NTNX33DW twisted pair cable kit contains: Module 1
(1) NTNX3311 FOR SHELF 33
(1) NTNX3312 FOR SHELF 47

NTNX33FK (DS1/CII application filter kit) provided on a per module basis when the circuit pack NT6X50AB (DS1) or NT6X55JA (C/CMI) is prov.:
(4) A0336653 D-SUB FILTER CONNECTOR
(16) A0317136 D-SUB CONNECTOR ACCESSORY
(8) P0148330 WASHER

NTRX46YB (PCM30 application filter kit) provided on a 2 module bas when the circuit packs NT6X27AB/BB (PCM30) is prov.:
(8) A0385509 D-SUB FILTER CONNECTOR
(32) A0317136 D-SUB CONNECTOR ACCESSORY
(16) P0148330 WASHER

4) Provision one NTRX4657 coax cover plate kit per module when PCM30 or DS1/CII is being provided via twisted pair. (NO COAX Connection.)

5) Provision one NTNX33FP cable kit to increase the number of DS30A from 16 to 20 per ICP module on the MCTM-I cabinet. THE NTNX33FP KIT INCLUDES THE FOLLOWING DS30A 37 pin cables:
(1) NTMX3319 FOR SHELF 05 & 19
(1) NTMX3325 FOR SHELF 33 & 47

6) Provision NTNX33FP cable kit with ENET offices only. Also, DO NOT PROVIDE NTNX33EE KIT WITH NTNX33FP KIT TO THE SAME MCTM-I cabinet.

RUL21 1) Provide one NTNX33DS DS30 cable kit per cabinet when the MCTM-I is to interface to Jnet cabinet. This DS30 cable kit provides the following copper cables: (Internal to Line-up)
(1) NTMX3310 FOR SHELF 05
(1) NTMX3312 FOR SHELF 19
(1) NTMX3311 FOR SHELF 33
(1) NTMX3313 FOR SHELF 47

2) Provide one NTNX33EE external DS30 cable kit per MCTM-I when MCTM-I is to connect to the Jnet custom frame. This NTNX33EE cable kit provides network ports to the MCTM-I bulkhead for connecting to the custom Jnet outside of the MCTM-I line up. DO NOT provision cable kit NTNX33DS with NTNX33EE external cable kit for the same cabinet. Cable kit NTNX33EE provides the following cables: (External to Line-up)

	MCTM-I BULKHEAD
(1) NTMX3320 FOR SHELF 05 ----->	CO: 01 & 02
(1) NTMX3322 FOR SHELF 19 ----->	CO: 03 & 04
(1) NTMX3321 FOR SHELF 33 ----->	CO: 11 & 12
(1) NTMX3323 FOR SHELF 47 ----->	CO: 13 & 14

3) With the NTNX33EE external DS30 cable kit, MCTM-I cabinet will be be able to connect to custom switch (EMI or Non-EMI). Engineering will require to provision cables from the MCTM-I cabinet to the custom Jnet. The following cables are required:

Custom EMI	Custom Non-EMI
==========	==========
NTAX36AJ (SLC -----> EMI BKHD)	NTAX36AM (MCTMI ----> S
NTNX36RI (MCTMI ---> EMI BKHD)	

Refer to CANX11AB cable document for detail information.

RUL22 1) reserve for future use.

RUL23 1) Two NTAX78AA Time Switch circuit packs must be provisioned for ICP (digital) module operations when an MDSP cabinet is used. The NTAX78AA is mandatory if DSPMs are provided. The NT6X44AA may be used for analog/(P3 radio) only applications.

2) When providing the NTAX78AA or NTAX78AB for FIELD UPGRADE, provision one NTNX33TS wiring option kit per CPC module. Provide this kit ONLY for FIELD UPGRADE. Do not provision the NTNX33TS kit with new MCTM-I cabinet.

3) Replace NT6X44AA by Digital Cellular Time Switch, NTAX78AA in DTC-I application for Dialable WIdeband Service (DWS) feature.

4) NTAX78AB is a preferable circuit pack. Check for General Availablity before providing this card.

RUL24 1) Provide two (2) Unified Processor circuit packs NTMX77AA with Designation Labels P0735417 per each module for XPM Plus upgrade on shelves 05, 19, 33, and 47 in position 12. In addition, see Rule 8-2 Rule 25 for associated Filler Face Plate and Bus Treminator provisioning for XPM PLUS.

2) Provide two (2) Cellular Access Processors NTAX74AA with designation labels P0800860 for each ICP, ICP-O or PDTC modules to upgrade to XPM Plus or to upgrade ICP, ICP-O or PDTC from NTMX77AA to NTAX74AA CP per customer requirement. See RULE 8 for NTNX33CA field upgrade to XPM Plus. The NTAX74AA CP must be used with the MTX02 software or higher in the ICP & ICP-O. For the PDTC MTX06 S/W or higher is required. The NTAX74AA is used in ICP packfill with the EISP NTBX01AC, NTBX01BA or NTBX01CA. The NTBX01AC must have release which implemented changes introduced by ECD 011-21002 or higher. NOTE: At present the NTAX74AA is PRE-GATE 3 product and there is a limited quantity.

3) Provide two (2) Cellular Access Processors NTAX74AA per DTC-I for the MCI-ACD market only. This will therefore remove the NTAX74AA provisioning on the PCN ISDN Peripherals

(DTCI, LGC-I & LTC-I). The NTAX74AA requires a software load of MSL06.

RUL25 1) Provide two (2) Bus Terminator paddle boards NTMX71AA per ICP for the XPM PLUS upgrade on shelves 05, 19, 33, and 47 in position 19R. In addition, see Rule 8-2 and Rule 24 for associated Filler Face Plate and Unified Processor provisioning respectively for XPM PLUS.

2) Echo cancellation is used in the American GSM market. Provision one NTNX33EC echo cancellation kit per DTC module. The NTNX33EC kit includes the following hardware:

(1) NTNX3390 ECC Interconnect Cable Assy.
(2) NTCX50AB RS232 Port Controller Paddle card for XPM
(2) P0749586 Paddle Board Insertion Guide
R0109836 0.50 M Hook-up Wire

3) The NTCX50AB circuit pack uses only TXD, RXD and GND1. The two NTCX50AB circuit packs are linked together via bulkhead P01 for lower DTC module (sh. 5 &19) and bulkhead P11 for upper DTC module (sh. 33 & 47). Provide one NTNX36AE cable per CPC module to interface to external echo cancellation equipment. Refer to CANX11AB for detail.

4) The NTCX50AB requires XPM+. When a controller module has echo cancellation, assign the NTCX50AB & NTMX71AA paddle board as follows:

NTCX50AB to slot 19R
NTMX71AA to slot 20R

RUL26 1) Provide one (1) NT6X02UB for each ICP-O or DTC-O module with the following circuit packs. ICP-O is available with MTX02 software and higher, DTC-O is availabel with BCS35 and higher.

PEC	DESCRIPTION	DTC-O E1 Int. Slot#	ICP-O E1 Int. Slot#
NT6X27BB	Enhanced PCM30 Interface	02-05	02-05
NT6X48AA	DS-30A Interface		06,07
NTMX77AA	Unified Processor	12	12

NTAX74AA	Cellular Access Proc.	N/A	12
NTAX78AA	Digital Time Switch		14
NT6X44EA	Universal Time Switch	14	
NT6X92CA	Universal Tone Recvr.	15,16	15
NTBX01BA	ISDN Signal Pre-Proc.		16
NT6X69LB	CPP MSG Prot. Download	18	18
NT6X28AC	PCM30 Signaling	19	19
NTMX71AA	UP Bus Terminator	19R	19R
NT6X42AA	Channel Superv. Message	20	20
NT6X41AB	Speech Bus Form. (Turk)	21	21
NT6X40AC	DS-30 Interface	22	22
NT6X40FB	DS-512 Interface	22	22
NT6X40GA	DS-512 Paddleboard	22R	22R
NT2X70AF	Power Converter	25	25
NT0X50AA	Filler 0.875 inch	All empty card slots.	

RUL27 1) Provide a pair of NT6X27AB PCM 30 Interface circuit packs per NT6X02 Common CP when the interoffice sync feature is required. Provide in sequence from slot 5 to 2.

RUL28 1) NT6X28AC replaces NT6X28AA circuit pack.

2) Provide two (2) NT6X28AC PCM 30 Signaling CP circuit packs per controller ILGC/IDTC/PDTC/ICP-0 are required when NT6X27__ is provisioned.

RUL29 1) Provide zero (0), two (2), or four (4) NT6X92CA Universal Tone Receiver Card (UTR) per ILGC/IDTC/DTC-O module dependent on traffic.

2) Provide two (2) NT6X92CA UTR for each CPC controller module in only slot 15 for ICP-0 application. Provide two (2) NT6X92CA in slot 15 for ICP only when required by customer features. Applicable on the ICP with MTX01 software or higher. NT6X92CA in ICP configuration is available now for Colombia, China and Brazilian markets.

RUL30 1) Provide two (2) NT6X44EA CPs per NT6X02UB Common CP Fill (NT6X44EA replaces NT6X44AB), except ICP-0. Provide two (2) NTAX78AA Time switch CP per NT6X02UB for ICP-0 application. See Rule 26.

RUL31 1) Provide two (2) NT6X69AC Message protocol cards for domestic systems using North American tones.

2) Provide two (2) NT6X69LB CPP Msg for each CPC controller module in slot 18 for ICP-0 application for J-NET or E-NET networks. Provide two NT6X69LB in slot 18 for ICP only when required by customer features for J-NET or E-NET.

3) Provide two (2) NT6X69HA Message Protocol Cards for DTC-I /LTC-I/LGC-I and ICP configurations when required by job engineer (Example: Hong Kong market). See Rule : 2 for designation label.

4) Provide two (2) NT6X69AD Message Protocol Generator per CPC module instead of NT6X69AC for the SMA configuration per customer requirements when ADSI/ SCWID features are required (also required XPM PLUS and CLASS modem). For MSL100 system, provision NT6X69AD circuit pack for new system. See item 6 below.

5) Provide two (2) NTMX76BA circuit packs per LGC/LTC controller for Extended Distance Remote application used in Japan only.

6) Provide two NTMX76AB Extended Distance Capability Tone and Msg. packs in the Domestic and Wireless applications for the LTC-I only when the Sonet Remote is to be placed more than 150 miles away from the host, up to 500 miles. A min S/W load of MSL04 is required.

RUL32 1) Provide one (1) NTNX33SD DS-512 Fiber Interface Hardware Kit for the initial installation of each cabinet that requires a DS-512 interface to ENET.

2) For field Upgrade provide two (2) NT6X02UF Universal Fiber kits and one (1) NTNX33SD DS-512 Fiber Interface Hardware Kit per cab when the controller is required DS-512 Fiber I/F to E-NET and NTNX33CA cabinet does not have permanently installed NT6X02UF Kit. (Cabinet Release 23 and Lower). Remove and discard wire-wrapped DS-30 cables. Also provide for field upgrades the NT6X0250 ground strap kit which gets applied at the back of the cabinet at position 58. This kit will get applied on all new builds.

3) Provide one (1) Fiber Kit NTNX33SD kit per cabinet when the field upgrades from DS-30 to Fiber is required and NT6X02UF kits were pre-installed on NTNX33CA cabinet (Release 24 and higher).

RUL33 1) Unassigned.

RUL34 1) Provide a maximum of eight (8) NT6X27BB PCM-30 Interface CP per module as per customer requirements. Provide in sequence from slot 5 to 2.

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

2) Provision the NTNX33DV cable kit if any PCM30 I/F circuit packs, NT6X27AB/BB is provided (twisted pair).

RUL35 1) Provide two (2) NT6X40FA, DS512 XPM Interface CP, and two (2) NT6X40GA, DS512 Link Paddle Board, for each DTC/LGC/LTC

module requiring a fiber interface to ENET. Mount the circuit packs in slot 22 and 22R respectively, of the upper and lower shelves of the peripheral module.

2) Do not mix the NT6X40CA Network Interface pack and the NT6X40GA Paddle Board on the same module. In addition, do not mix the NT6X40FA Network Interface pack and the NT6X40DA Paddle Board on the same module.

3) NT6X40FA is 'MD'. Replace NT6X40FA with NT6X40FB.

RUL36 1) Provide two (2) NT6X40AC network inferface packs whenever NON-Fiber DS-30 network interface is required.

2) NT6X40AC is 'MD'. Replace NT6X40AC with NT6X40AD.

RUL37 1) Provide two (2) NT6X44AA time switch packs per DTC/LGC/LTC and DTCI controller for domestic systems in North America. See rules 23 and 45.

RUL38 1) The NT6X45BA LGC/DTC processor will remain 'STD' for LGC/DTC controllers. Order NT6X45BA ONLY for BCS upgrade on existing offices or offices with BCS below BCS36. Provision XPM+ for all new controllers (BCS36 and up) and initial jobs.

2) Provide filler face plates for slots 8, 12 of all modules equipped with XPM plus.

RUL39 1) Order NT6X47AC ONLY for BCS upgrade on existing sites. Provision XPM+ for all new controllers (BCS36 and up) and initial jobs.

2) Provide filler face plates for slots 10 of all modules equipped with XPM plus.

RUL40 1) Order NT6X46BB ONLY for BCS upgrade on existing sites. Provision XPM+ for all new controllers (BCS36 and up) and initial jobs. See rule 24 for detail.

2) Provide filler face plates for slots 11 of all modules equipped with XPM plus.

RUL41 1) Rule 41 previously deleted.

RUL42 1) Provide one (1) NTNX33NR CALA PDTC packfill for each module needed. One packfill provides enough cards to provison both shelves of a module. NTNX33NR replaces NTNX33NP. The NTAX74AA replaced the NTMX77AA in the NTNX33NR packfill.

RUL43 1) Removed. The NT6X02XD XPM+ WIRING KIT is no longer needed because the wiring is now always provided.

RUL44 1) Provide two (2) NT6X78AB, CLASS Modem Resource CP, for each LGC/LTC module that is handling CLASS-Calling Number Display. Mount circuit packs in slot 13 of the upper and lower shelves of the peripheral modules.

2) The source document for CLASS is ECM 332. Refer to that document before completing a job using CLASS.

3) Provide two (2) NT6X78AB Class Modems per CPC module in slots 17 for SMA configuration when CLASS modem features are required.

RUL45 1) The following cards should be provisioned for Access Node SMA configuration per one shelf:

PEC	DESCRIPTION	SLOT	Rule
NT6X50AB	DS-1 I/F	01-05(Qty as req'd)	3
NTMX77AA	Unified Processor	12	45(2)
NT6X44CA	Time Switch	14	45(4)
	or		
NTAX78AB	Enhanced Time Switch	14	23,45(5)
NT6X92EA	Glob. Tone Rcvr(UTR)	15	6
NTBX01BA	ISDN Pre-Processor	16	45(2)
NT6X78AB	CLASS Modem Resource	17	45
NT6X69AC	Msg Protocol Tone Gen.	18	31,45(6)
NT6X80BB	SMU Pad Ringing Card	19	45(2)
NTMX71AA	Terminater	19R	45(2)
NT6X42AA	Channel Supp. Message	20	45(3)
NT6X41AA	Speech Bus Formatter	21	45(3)
NT6X40AC	DS-30 I/F	22	36
	or		
NT6X40FB	DS-512 I/F	22	35
NT6X40GA	DS-512 Paddleboard	22R	35
NT2X70AF	Power Converter	25	45(3)
NT0X50AA	Filler Face Plate	6,7,8,9,10 11,13,23,24 & 1-5 as required	

2) Always provide this circuit pack with a corresponding designation label on each sehlf for SMA configuration.

3) Always proivde this Circuit pack on each shelf for SMA configuration. Always proivde two (2) designation strips P0803132 per CPC module for SMA configuration.

4) Provide two (2) NT6X44CA Time switches per CPC module for SMA Access Node configuration for initial and extensions, add designation labels, see RULE 2.

5) Provide two (2) NTAX78AB Enhanced Time Switches per CPC module for SMA configuration when Digital Test Access features are required, see RULE 23. Add corresponding designation labels, see rule 2.

6) Provide two (2) NT6X69AC message protocol cards per CPC module for SMA configuration. Replace NT6X69AC by NT6X69AD per customer requirements when ADSI/ SCWID feature is required. Add corresponding designation labels, see RULE 2. 7) Provide the NTMX76AB that will provide Ext. Dist. Cap. Tone & Msg. when the Sonet Remote is to be placed more than 150 miles away from the host, up to 500 miles. A min S/W load of MSL04 is required.

RUL46 1) Provide two (2) NT6X80BB for SMA Access Node applications.

2) SMA controller is replaced by ESMA housed in the CMVI cabinet. Order CMVI cabinet for all new jobs. ESMA requires ENET and MSL05 software load.

RUL47 1) Always provision the following circuit packs per CPC module if packfill does not include them:
- Two (2) NT2X70AF Slot 25
- Two (2) NT6X41AA Slot 21
- Two (2) NT6X42AA Slot 20

RUL48 1) The NTNX33CX PCM30 coax kit is to be provisioned on a per module basis. If twisted pair is required see RUL20. The kit contains the following:

- (2) NTRX4614 send cables for coax
- (2) NTRX4615 receive cables for coax
- (1) NTRX4656 kit that contains two PCM30 PCB’s for connecting the above cables to the bulkhead.

RUL49 1) Provision one door kit-grey per MCTMI cabinet. There are two different types of door latches - top latch and center latch that can be provided for the NTRX25AA base cabinet.

2) Provision one NTRX2567 door kit for top latch - grey.

3) Provision one NTRX2568 door kit for center latch - grey.

4) Provision one NTRX73AL exterior skin assembly left - grey. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.

5) Provision one NTRX73AM exterior skin assembly right - grey. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.

6) Since the MCTM-I is now being put into the C-28B cabinet, its exterior skin assembly (end panel) will not fit with the MSL100 cabinet. There- fore, when the MCTM-I cabinet is in the same line up with the MSL100 cabinet, you will need to provision one end panel for the MSL100 cabinet. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.

7) Provide door label as required.

RUL50 1) Provision one door kit-grey per MCTMI cabinet. There are two different types of door latches - top latch and center latch that can be provided for the NTRX25AA base cabinet.

2) Provision one NTRX2566 door kit for top latch - grey.

3) Provision one NTRX2569 door kit for center latch - grey.

4) Provision one NTRX73AN exterior skin assembly left - grey. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.

5) Provision one NTRX73AP exterior skin assembly right - grey. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.

6) Since the MCTM-I is now being put into the C-28B cabinet, its exterior skin assembly (end panel) will not fit with the MSL100 cabinet. There- fore, when the MCTM-I cabinet is in the same line up with the MSL100 cabinet, you will need to provision one end panel for the MSL100 cabinet. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.

7) Provide door label as required.

RUL51 1) Provide one earthquake anchor kit per MTCM-I cabinet. The kit contains four anchor assemblies. NTRX2564 also includes the isolation pad P0740946.

2) Individual earthquake anchor assembly, P0601852 may be provided per customer requirements.

3) Provide one leveling foot kit per cabinet for non-earthquake zone.

RUL52 1) When grounding the MCTM-I cabinet (NTRX25AA) to an MSL100 cabinet in the line-up, always provision one grounding hardware kit NTRX25ML. NTRX25ML kit is to be ordered ship loose.

2) When grounding the MCTM-I cabinet (NTRX25AA) to another C-28B (NTRX25AA) cabinet in the line-up, always provision one grounding hardware kit NTRX25MM. NTRX25MM kit is to be ordered shiploose.

MERIDIAN LINK MODULE COMMON CP NTMX44NA

RATING: Standard

ABBREVIATION NAME: MLNK

ENGINEERING DESCRIPTION: The MLNK Common CP provides packs to equip a DTC module in the upper half of the cabinet and a MSB7 module in the lower half of the cabinet.

REFERENCE DOCUMENTATION: N/A

The Meridian Link Module Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# LTC/DTC Proc CP	NT6X45BA		4	33,47	8,12	AP
Master Proc Mem CP	NT6X47AB		4	33,47	9,10	AP
Signal Proc Mem CP	NT6X46BA		2	33,47	11	AP
Time Switch CP	NT6X44AB		2	33,47	14	AP
Universal Tone Rcvr CP	NT6X92BB		2	33,47	15	AP
Filler Face Plate	NT0X50AA		8	33,47	17,19, 23,24	AP
CPP Msg Protocol CP	NT6X69AB		2	33,47	18	AP
Channel Supv Msg CP	NT6X42AA		2	33,47	20	AP
Speech Bus Formatter	NT6X41AA		2	33,47	21	AP
DS30 Network I/F CP	NT6X40AC		2	33,47	22	AP
Power Converter	NT2X70AE		2	33,47	25	AP
Designation Strip	P0706012		2	33,47		AP
Power Converter	NT2X70AE		4	05,19	1,25	AP
CCS7 Sig'l Term CP	NT6X66AA		2	05,19	7	AP
Sign'l Terminal I/F	NT6X68AD		2	05,19	8	AP
Sign'l Terminal I/F	NT6X68AC		2	05,19	9	AP
Sign'l Terminal Buffer	NT6X67AA		2	05,19	10	AP
# Master Sign'l Processor	NT6X45BA		4	05,19	11,16	AP
Filler Face Plate	NT0X50AA		8	05,19	12,14 19,21	AP
Master Processor Memory	NT6X47AB		2	05,19	13	AP
Signal Processor Memory	NT6X46BA		2	05,19	15	AP
DS30A I/F CP	NT6X48AA		2	05,19	17	AP
Time Switch CP	NT6X44AB		2	05,19	18	AP
CPP Msg Protocol CP	NT6X69AB		2	05,19	20	AP
Channel Supervision Msg	NT6X42AA		2	05,19	22	AP
Speech Bus Formatter	NT6X41AA		2	05,19	23	AP
DS30 Network I/F CP	NT6X40AC		2	05,19	24	AP
Designation Strip	P0706254		2	05,19		AP

FLAGS:

Use NT6X45AF and designation label P0685029 until NT6X45BA is available (URTO/URTS).

RULE:

AP 1) When PEC NTMX44NA is ordered, these items are provided.

MERIDIAN LINK MODULE NTMX44AA

RATING: Standard

ABBREVIATION NAME: MLNK

ENGINEERING DESCRIPTION: The Meridian Link Module (MLNK) houses a DTC module on the upper half of the cabinet and a Message Switch Buffer 7 (MSB7) in the lower half of the cabinet.

REFERENCE DOCUMENTATION: N/A

The Meridian Link Module is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE	
	Frame Supv Panel	NTNX26GA	FSP	1	60		AP	
	Com Periph Proc Shelf Assy	NT6X0215	DTC	2	33,47		AP	
	DS1 I/F CP	NT6X50AB			33,47	1-5	RUL3	
	DS30A I/F ckt pack	NT6X48AA			33,47	6,7	RUL4	
	Continuity Tone Detr	NT6X70AA			33,47	13	RUL8	
	Universal Tone Rcvr	NT6X92BB			33,47	16	RUL5	
*	Specialized Tone Rcvr (STR)	NT6X62AA			33,47	16	RUL6	
	Special Tone Rcvr (STR/BBF)	NT6X62AB			33,47	16	RUL6	
	Filler Face Plate .875	NT0X50AA			33,47		RUL7	
	Msg Switch/Buffer Shelf Assy	NT6X3201	MSB7	2	05,19		AP	
	Signaling Terminal	NT6X66AA			05,19	4-6	RUL9	
	Filler Face Plate .875	NT0X50BA			05,19	4-6	RUL10	
	Cooling Unit	NTNX27CA	CU	1	00		AP	
	Meridian Cabinet Assy	NTNX25AA	FW	1			AP	
	MLNK Common CP	NTMX44NA					RUL1	
	Right Door Assembly-Gray	NTNX2513					RUL11	
	Left Door Assembly-Gray	NTNX2515					RUL11	
	Right Door Label - Gray	P0669158					RUL11	
	Left Door Label - Gray	P0677704					RUL11	
	Cabinet Type Label (Gray)	P0706206					RUL12	
	Right Door Assembly-Brown	NTNX2552					RUL1	1
	Left Door Assembly-Brown	NTNX2550					RUL1	1
	Right Door Label - Brown	P0699463					RUL1	1
	Left Door Label - Brown	P0699464					RUL1	1
	Cabinet Type Label Brown	P0706207					RUL1	2
	Anchor Kit (Earthquake Slab)	NTNX2540					RUL1	3
	Anchor Kit (EQ-Comp'r Floor)	NTNX2578					RUL1	3
	Anchor Kit (Non-EQ Slab)	NTNX2579					RUL1	4
	Anchor Kit (Non-EQ Com Flr)	NTNX2580					RUL1	4
	Desig. Label (NT0X50AA)	P0578498			33,47		RUL7	
	Desig. Label (NT0X50BA)	P0599141			05,19	4-6	RUL10	
	Desig. Label (NT6X48AA)	P0626877			33,47	6,7	RUL4	
	Desig. Label (NT6X50AB)	P0690976			33,47	1-5	RUL2	
	Desig. Label (NT6X62AA)	P0677229			33,47	16	RUL2	
	Desig. Label (NT6X62AB)	P0711789			33,47	16	RUL2	

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label (NT6X66AA)	P0647822			05,19	4-6	RUL2
Desig. Label (NT6X70AA)	P0628358			33,47	13	RUL2
Desig. Label (NT6X92BB)	P0686332			33,47	16	RUL2

FLAGS:

* To be rated MD. Replaced by NT6X62AB.

RULE:

AP 1) When PEC NTMX44AA is ordered, these items are provided.

RUL1 1) Provide one NTMX44NA per frame. This pack-fill will provide circuits packs to equip one DTC module and one MSB7 module.

RUL2 1) Provide one label per circuit pack provisioned. (NT code on label should be same as circuit pack provisioned.) Affix designation label to apropriate position on designation strip.

RUL3 1) For DTC application with extended frame format, provide a maximum of 10 NT6X50AB DS1 EFF I/F ckt packs in slots 1-5, both shelves of DTC.

2) NT6X50AB DS1 extended frame format (EFF) I/F ckt packs are assigned in selected slots: First in the lower of the 2 shelves of the module and next in the upper of the 2 shelves, then the lower, then the upper etc. From the highest numbered slot (5) toward the lowest numbered slot (1). When slots 1-5 of any shelf is unequipped, provide filler face plate NT0X50AA and designation label.

3) One NT6X50AB EFF DS1 I/F ckt pack provides two DS1 ports.

4) The DS1 ports/spans are assigned in the following sequential order: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.

RUL4 1) NT6X48AA DS30A I/F ckt pack is not provisioned when CPC is used for DTC applications.

2) For LTC application, first, provide the DS30A ckt packs NT6X48AA and designation labels P0626877 to slots 6 & 7, both shelves of the LTC and assign links (0-19) to line equipment. The DS1 I/F ckt packs are provided in slots 1-5 as required for DS1 I/F to digital trunks.

3) The DS30A ports are assigned in the following sequential order: 19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, 1, 2, 0.

slot 6 - 19, 18, 15, 14, 11, 10, 7, 6, 3, & 2

slot 7 - 17, 16, 13, 12, 9, 8, 5, 4, 1, & 0

RUL5 1) NT6X92BB UTR is a combined service circuit that can perform the function of digitone receiver for lines and MF receiver for trunks. One pair of NT6X92BB provides up to thirty circuits.

2) The UTR is assignable to slot 16 in the shelf. One member of the UTR pair is assigned to the lower shelf in the module and it's mate is assigned to slot 16 in the upper shelf of the same module.

3) UTR cards located in a particular DTC/LTC/LGC module will service all lines and trunks connected to that module.

RUL6 1) Provide two (2) NT6X62AB, Specialized Tone Receivers (STR/BBF) as required by the customer for each CPC module.

2) The NT6X62AB STR/BBF CP is for DMS-250 applications only.

RUL7 1) Provide filler face plate NT0X50AA and designation label P0578498 on shelves 33 & 47, in slots 1-7, 13, 15 and slot 16 when unequipped.

RUL8 1) Provide 2 NT6X70AA continuity tone detector packs when module is handling ccs signalling and continuity checking is required.

RUL9 1) Provide Signalling Terminal (ST) NT6X66AA for CCITT#7.

2) The two ST Signalling Terminal circuit packs associated with a signalling link pair (ie; Signalling Layer) must be provided on seperate ST groups. Each is powered by different power feeds. (A & B) for reliability purposes.

	ST GRP	
Pair #0	0	Shelf 05, slot 07 (Always provided w/NTMX44NA)
	1	Shelf 19, slot 07 (Always provided w/NTMX44NA)
Pair #1	0	Shelf 05, slot 06
	1	Shelf 19, slot 06
Pair #2	0	Shelf 05, slot 05
	1	Shelf 19, slot 05
Pair #3	0	Shelf 05, slot 04
	1	Shelf 19, slot 04

RUL10 1) Provide filler face plate NT0X50BA and designation label P0599141 on shelves 05 & 19, in slots 4-7 when unequipped.

RUL11 1) Provide 2 door assemblies (2 left and 2 right, one set for front and one set for rear of cabinet).

2) Provide two right door labels (Gray or Brown) per cabinet. Provide two left door labels (Gray or Brown) per cabinet.

RUL12 1) Provide 2 cabinet type labels, one for front and one for rear of cabinet.

RUL13 1) Provision one earthquake mounting kit when installing cabinet in ATC Zone 6 or 7, NEBS Zone 4, and UBC Zone 4. Use NTNX2540 kit for slab type flooring or NTNX2578 for computer flooring.

RUL14 2) Provision one frame mounting kit when installing cabinet in a non-earthquake zone. Use NTNX2579 kit for slab flooring or use NTNX2580 for computer flooring.

MERIDIAN CABINET SEVEN MODULE LOWER MC7M MODULE COMMON CP NTNX12PA

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTNX12PA Common CP equips the lower two shelves of the MC7M cabinet. The message switch buffer 7 provides and maintains a path from the SS7 digital signaling link which is switched through the network to the SS7 signaling terminal. MSB7 00/01 also performs the message switching and distribution functions between the DTCs and the appropriate signaling terminal. This packfill is for international applications only.

REFERENCE DOCUMENTATION: N/A

The Meridian Cabinet Seven Module Lower Module Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter CP	NT2X70AE		4	05,19	1,25	AP
Signal Terminal I/F	NT6X68AC		4	05,19	8,9	AP
Signal Terminal Buffer	NT6X67AA		2	05,19	10	AP
Master Signal Processor	NT6X45BA		4	05,19	11,16	AP
Master Processor Memory	NT6X47AB		2	05,19	13	AP
Signal Processor Memory	NT6X46BA		2	05,19	15	AP
DS30A LCM Interface	NT6X48AA		2	05,19	17	AP
Time Switch	NT6X44AB		2	05,19	18	AP
CPP Message Protocol	NT6X69AB		2	05,19	20	AP
Cannel Supervision Msg.	NT6X42AA		2	05,19	22	AP
Speech Bus Formatter	NT6X41AB		2	05,19	23	AP
DS30 Network Interface	NT6X40AC		2	05,19	24	AP

RULE:

AP 1) When PEC NTNX12PA is ordered, these items are provided.

MERIDIAN CABINET MISCELLANEOUS POWER ASSEMBLY

PEC CODE: NTNX9601

CPC CODE: B0230025

RATING: Standard

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTNX9601 is an assembly equipped in a Meridian Cabinet Miscellaneous (MCMI) to provide power distribution fuse panels and a ground panel located at the bottom of the cabinet.

One of the two fuse panels distributes 'A' feed power to up to fifteen individually fused loads. The other fuse panel distributes 'B' feed power.

REFERENCE DOCUMENTATION: SLNX9601 00 03

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: Joe Bragg Dept. 6457 (RNS)

NTNX9601 EMA10-24-PWR-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
96 09 17	ECM 464 17	Update NTNX9601 per SLNX9601 00 03.

The Meridian Cabinet Miscellaneous Power Assembly is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Panel	P0706280		1	65		AP
Fuse Panel 'A' Feed UL Appr.	NT0X42UB		2	49,41		AP
Fuse Panel 'B' Feed UL Appr	NT0X42UC		2	45,37		AP
PDC FSP UL Approved	NT0X40UA		1	32		AP
Filter Panel UL Approved	NT0X42UG		1	15		AP
Ground Panel	NT0X42AM		1	08		AP
4" Filler Panel	NT0X42AD		7			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 sections EMA16-02-UFPA-1 and EMA16-02-UFPB-1 for details of provisioning fuses for the fuse panels.

2) The NTNX9601 is suitable for use where ground cables enter the bottom of the cabinet.

RULES:

AP 1) When PEC NTNX9601 is ordered, these items are provided.

MERIDIAN CABINET MISCELLANEOUS POWER ASSEMBLY

PEC CODE: NTNX9606

CPC CODE: B0230489

RATING: Standard

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTNX9606 is an assembly equipped in a Meridian Cabinet Miscellaneous (MCMI) to provide power distribution fuse panels and a ground panel located at the top of the cabinet.

One of the two fuse panels distributes 'A' feed power to up to fifteen individually fused loads. The other fuse panel distributes 'B' feed power.

REFERENCE DOCUMENTATION: SLNX9606 00 02

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: Joe Bragg Dept. 6457 (RNS)

NTNX9606 EMA10-24-PWR-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
96 09 17	ECM 464 17	Update NTNX9606 per SLNX9606 00 02.

The Meridian Cabinet Miscellaneous Power Assembly is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ground Panel	NT0X42AM		1	60		AP
Filler Panel	P0706280		1	57		AP
Fuse Panel 'A' Feed UL Appr.	NT0X42UB		2	49,41		AP
Fuse Panel 'B' Feed UL Appr	NT0X42UC		2	45,37		AP
PDC FSP UL Approved	NT0X40UA		1	32		AP
Filter Panel UL Approved	NT0X42UG		1	15		AP
4" Filler Panel	NT0X42AD		7			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 sections EMA16-02-UFPA-1 and EMA16-02-UFPB-1 for details of provisioning fuses for the fuse panels.

2) The NTNX9606 is suitable for use where ground cables enter the top of the cabinet.

RULES:

AP 1) When PEC NTNX9606 is ordered, these items are provided.

MERIDIAN CABINET MISCELLANEOUS

PEC CODE: NTNX96AA

CPC CODE: B0230016

RATING: Standard

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: MCMI

ENGINEERING DESCRIPTION: The Meridian Cabinet Miscellaneous can be configured for use as a power distribution bay, in which case it is equipped with a provisionable Power Assembly containing standard fuse and ground panels. Within this configuration there is a choice of top or bottom ground feed.

Alternatively, the MCMI can be used as a general purpose bay to house miscellaneous equipment. In this configuration, a provisionable n Frame Supervisory Panel may be equipped to power active equipment.

REFERENCE DOCUMENTATION: MSNX96AA 00 05

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: Joe Bragg Dept. 6457 (RNS)

NTNX96AA EMA10-24-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
96 09 17	ECM 464 17	Update NTNX96AA per ECD002-16801.

The Meridian Cabinet Miscellaneous is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	FSP -48V (No Filtering)	NT0X88AB			60		RUL2
	FSP -48V Talk (Filtering)	NT0X88AF			60		RUL2
	Filler Panel	P0706280			65		RUL2
	2" Filler Plate	P0684448			65		RUL2
	Mer. Cab. Misc. Power Assy	NTNX9601					RUL1
	Mer. Cab. Misc. Power Assy	NTNX9606					RUL1
	Merid Cab. Common Framework	NTNX25AA	FW	1			AP
#	Cable Tie	P0558618					RUL3
	Cable Tie	P0738868					RUL3
	Screw	P097F813					RUL2,3
	Lockwasher	P0183222					RUL2
	Washer	P0284154					RUL2
	Anchor Kit E'qke Slab Flr	NTNX2540					RUL4
	Anchor Kit E'qke Cmptr Flr	NTNX2578					RUL4
	Anchor Kit Non E.Q. Slab	NTNX2579					RUL4
	Anchor Kit Non E.Q. Cmptr	NTNX2580					RUL4
	Right Door Ass'y (grey)	NTNX2513					RUL5
	Left Door Ass'y (grey)	NTNX2515					RUL5
	Right Door Label (grey)	P0699158					RUL6
#	Left Door Label (grey)	P0677704					RUL6
	Left Door Label (grey)	P0818849					RUL6
	Right Door Ass'y (brown)	NTNX2552					RUL5
	Left Door Ass'y (brown)	NTNX2550					RUL5
	Right Door Label (brown)	P0695230					RUL6
#	Left Door Label (brown)	P0699464					RUL6
	Left Door Label (brown)	P0818848					RUL6
	Cabinet Label (grey)	P0704735					RUL7
	Cabinet Label (brown)	P0704736					RUL7
	End Panel Assembly (Right)	NTNX2517					RUL8
	End Panel Assembly (Left)	NTNX2518					RUL8
	Cable Duct Cover (Top)	P0674549					RUL9
	Cable Duct Cover (Bottom)	P0685168					RUL9
	Mounting Hardware	P097F839					RUL9

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
P0558618	STD	P0738868
P0699464	MD	P0818848
P0677704	MD	P0818849

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) When active miscellaneous equipment is equipped, the maximum power dissipation of this cabinet is not to exceed 600 Watts.

2) Both NTNX9601 and NTNX9606 contain their own Frame Supervisory Panel (FSP) and shall not be provisioned in conjunction with either NT0X88AB or NT0X88AF FSP.

3) When EMI protection is required, it is essential that all active equipment mounted on this cabinet be EMI-compliant on a shelf and/or unit basis.

4) The MCMI equipped with NTNX9601 or NTNX9606 Power Assembly is intended to provide power for the cabinets which are standalone EMI compliant, such as the NT9X01JB DPCC and the NT9X70BB LIM.

RULES:

AP 1) When PEC NTNX96AA is ordered, these items are provided.

RUL1 1) Order one (1) NTNX9601 Miscellaneous Power Assembly to provide power distribution fuse panels and a ground panel located at the bottom of the cabinet. See note 2.

2) Order one (1) NTNX9606 Miscellaneous Power Assembly to provide power distribution fuse panels and a ground panel located at the top of the cabinet. See note 2.

3) Do not provision both NTNX9601 and NTNX9606 in the same cabinet.

RUL2 1) Order one (1) NT0X88AB Misc. Equipment Frame Supervisory Panel when active misc. equipment is equipped in the cabinet. This FSP provides a non-filtered power supply. See notes 1,2,3.

2) Order one (1) NT0X88AF Misc. Equipment Frame Supervisory Panel when active misc. equipment is equipped in the cabinet. This FSP provides a filtered power supply. See notes 1,2,3.

3) Provide one (1) P0684448 2" Filler Plate when either NT0X88AB or NT0X88AF FSP is equipped in shelf 60.

4) Provide one (1) P0706280 Filler Panel when an NT0X42__ Fuse Distribution Panel is equipped in shelf 60.

5) Provide four (4) P097F813 Screws, one (1) P0183220 Lockwasher & one (1) P0284154 Washer to mount the P0684448 or P0706280.

6) Do not provision both NT0X88AB and NT0X88AF in the same cabinet.

RUL3 1) Provision P0738868 Cable Tie as needed for securing cabling associated with any miscellaneous equipment mounted in the cabinet.

2) Provide one (1) P097F813 Mounting Screws per Cable Tie.

RUL4 1) Provision one (1) Earthquake Anchor Kit when installing cabinet in ATC Zone 6 or 7, NEBS Zone 4 and UBC Zone R. Use NTNX2540 kit for slab-type flooring or NTNX2578 for computer flooring.

2) Provision one (1) Frame Mounting Kit when installing cabinet in a non-earthquake zone. Use NTNX2579 kit for slab-type flooring or NTNX2580 for computer flooring.

RUL5 1) When specifying brown cabinets, provision two (2) NTNX2550 Left Door Assemblies and two (2) NTNX2552 Right Door Assemblies - one for front and rear respectively.

2) When specifying grey cabinets, provision two (2) NTNX2515 Left Door Assemblies and two (2) NTNX2513 Right Door Assemblies - one each for front and rear respectively.

RUL6 1) When specifying brown cabinets, provision two (2) P0818848 Left Door Labels and two (2) P0695230 Right Door Labels - one each for front and rear respectively.

2) When specifying grey cabinets, provision two (2) P0818849 Left Door Labels and two (2) P0699158 Right Door Labels - one each for front and rear respectively.

RUL7 1) Provide two (2) Cabinet Type Labels. When specifying brown cabinets, use P0704736. When specifying grey cabinets, use P0704735.

RUL8 1) Provide one (1) NTNX2517 Right End Panel Assembly when the cabinet is to be located at the end of an aisle and on the right hand side (viewed from the front of the aisle).

2) Provide one (1) NTNX2518 Left End Panel Assembly when the cabinet is to be located at the end of an aisle and on the left hand side (viewed from the front of the aisle).

RUL9 1) Provide one (1) P0674549 Cable Duct Cover (Top) and fourteen (14) P097F839 Mounting Screws when cabling exits from bottom of frame.

2) Provide one (1) P0685168 Cable Duct Cover (Bottom) and fourteen (14) P097F839 Mounting Screws when cabling exits from bottom of frame.

3) The Cable Duct Covers are not required when the NTNX9601 or NTNX9606 are provisioned.

MERIDIAN CABINET CCS#6 MODULE NTNX34PA

RATING: Standard

ABBREVIATION NAME: MSB6E00/01

ENGINEERING DESCRIPTION: The NTNX34PA is the common circuit pack-fill to equip the lower two shelves (one module) of the MC6M cabinet. The message switch buffer 6 switches signaling messages between the STs and the CCIS or CCITT#6 trunks on the DTCs via the inter-peripheral message links (IMPLs) i.e. nailed-up connections through the network.

REFERENCE DOCUMENTATION: MSNX34PA

The MSB6E00-01 Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter	NT2X70AE		4	05,19	1,25	AP
CCIS,CCITT#6 Sign'l Term	NT6X65AA		2	05,19	11	AP
Sign'l Terminal I/F	NT6X68AD		2	05,19	12	AP
Sign'l Terminal I/F	NT6X68AC		2	05,19	13	AP
Sign'l Terminal Buffer	NT6X67AA		2	05,19	14	AP
Master Sign'l Processor	NT6X45BA		4	05,19	15,19	AP
Filler Face Plate	NT0X50AA		4	05,19	16,24	AP
Master Processor Memory	NT6X47AB		2	05,19	17	AP
Signal Processor Memory	NT6X46BA		2	05,19	18	AP
CPP Message Protocol	NT6X69LA		2	05,19	20	AP
Channel Supervision Msg	NT6X42AA		2	05,19	21	AP
Speech Bus Formatter	NT6X41AB		2	05,19	22	AP
DS30 Network Interface	NT6X40AC		2	05,19	23	AP

RULE:

AP 1) When PEC NTNX34PA is ordered, these items are provided.

NOTE 1) All modems are provisionable including the modem for the 1st pair of signaling terminals.

MCLM-ENHANCED LOWER MODULE COMMON CP
MERIDIAN SL100 CABINET SYSTEM

PEC CODE: NTNX38LE

CPC CODE:

RATING: Standard

REPLACES: Not applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCLM-Enhanced

ENGINEERING DESCRIPTION: This NTNX38LE LCME Common CP will equip the lower module of the

REFERENCE DOCUMENTATION: Not applicable

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTC: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: NTI: Joe Bragg Dept. 6457 (RNS)

NTNX38LE EMA10-27-LCME-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
93 09 24	ECM 489 05	Introduce NT6X71BA Single Slot Data Line Card to replace NT6X71AB.
93 09 28	ECM 489 06	Indicate NT6X71BA will not be ordered for Meridian SL-100 in 1993.
93 10 18	ECM 489 07	Fix PEC for FSP spares in note 2.
94 11 29	ECM 489 08	Add NTBX34BC and capacitor kit.
95 02 03	ECM 489 10	Fix NTBX34BC reference.
96 12 19	ECM 489 15	Replace NTBX34BC with NTBX34CB per ECD002-17097.

MCLM-Enhanced ISDN line cabinet with circuit packs and 8 2B1Q line drawers.

The MCLM-Enhanced Lower Module Common CP Meridian SL100 Cabinet System is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN 2B1Q Line Drawer	NTBX32BA	LD	8	5,19	1-13	AP
ISDN Digroup Cont CP	NTBX35AA		2	5,19	19	AP
ISDN Digroup Cont CP	NTBX35AA		2	5,19	20	AP
# ISDN Enhanced LCME Proc CP	NTBX34BC		2	5,19	21	AP
ISDN Enhanced LCME Proc CP	NTBX34CB		2	5,19	21	AP
ISDN LCME Pwr Conv +5V/+15V	NT6X53CA		2	5,19	22	AP
ISDN LCME Batt'y/Rng Rtr	NTBX72AA		2	5,19	25	AP
# Designation Strip	P0709653		2	5,19		AP
Designation Strip	P0832020		2	5,19		AP
ISDN Slot Labels	P0690637		2	5,19		AP
ISDN Drwr Ident Labels	P0709652		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTBX34BC	MD	NTBX34CB
P0709653	MD	P0832020

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 NTNX38LE is ordered, these items are provided.

MCLM-ENHANCED UPPER MODULE COMMON CP
MERIDIAN SL100 CABINET SYSTEM

PEC CODE: NTNX38LF

CPC CODE:

RATING: Standard

REPLACES: Not applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCLM-Enhanced

ENGINEERING DESCRIPTION:

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTC: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: NTI: Joe Bragg Dept. 6457 (RNS)

NTNX38LF EMA10-27-LCME-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
93 09 24	ECM 489 05	Introduce NT6X71BA Single Slot Data Line Card to replace NT6X71AB.
93 09 28	ECM 489 06	Indicate NT6X71BA will not be ordered for Meridian SL-100 in 1993.
93 10 18	ECM 489 07	Fix PEC for FSP spares in note 2.
94 11 29	ECM 489 08	Add NTBX34BC and capacitor kit.
95 02 03	ECM 489 10	Fix NTBX34BC reference.
96 12 19	ECM 489 15	Replace NTBX34BC with NTBX34CB per ECD002-17097.

The MCLM-Enhanced Upper Module Common CP Meridian SL100 Cabinet System is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	ISDN 2B1Q Line Drawer	NTBX32BA	LD	8	33,47	1-13	AP
	ISDN Digroup Cont CP	NTBX35AA		2	33,47	19	AP
	ISDN Digroup Cont CP	NTBX35AA		2	33,47	20	AP
#	ISDN Enhanced LCME Proc CP	NTBX34BC		2	33,47	21	AP
	ISDN Enhanced LCME Proc CP	NTBX34CB		2	33,47	21	AP
	ISDN LCME Pwr Conv +5V/+15V	NT6X53CA		2	33,47	22	AP
	ISDN LCME Batt'y/Rng Rtr	NTBX72AA		2	33,47	25	AP
#	Designation Strip	P0709653		2	5,19		AP
	Designation Strip	P0832020		2	5,19		AP
	ISDN Slot Labels	P0690637		2	33,47		AP
	ISDN Drwr Ident Labels	P0709652		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTBX34BC	MD	NTBX34CB
P0709653	MD	P0832020

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 NTNX38LF is ordered, these items are provided.

MERIDIAN CABINET LINE MODULE-ENHANCED ISDN

PEC CODE:	NTNX38CA
CPC CODE:	B0231762
RATING:	Standard
REPLACES:	Not applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	MCLME
ENGINEERING DESCRIPTION:	The Meridian Cabinet Line Module - Enhanced with 2B1Q ISDN format is a cabinet which houses two dual shelf LCME modules. Each LCME module houses eight 2B1Q type line drawers. Each line drawer has 60 available slots.
REFERENCE DOCUMENTATION:	ISNX38CA 00 05
MARKETS:	Applicable markets: Canada US Asia/Pacific CALA

ISSUE AUTHOR: NTI: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: NTI: Joe Bragg Dept. 6457 (RNS)

NTNX38CA EMA10-27-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
93 09 24	ECM 489 05	Introduce NT6X71BA Single Slot Data Line Card to replace NT6X71AB.
93 09 28	ECM 489 06	Indicate NT6X71BA will not be ordered for Meridian SL-100 in 1993.
93 10 18	ECM 489 07	Fix PEC for FSP spares in note 2.
94 11 29	ECM 489 08	Add NTBX34BC and capacitor kit.
94 12 06	ECM 489 09	Fix reference document.
95 04 06	ECM 489 11	Replace NT6X30AA and NT6X30CA.
95 11 20	ECM 489 12	Implement ECD 18-37578 & include FLI OEM product.
95 12 18	ECM 489 13	New logo label & provide correct Remote Migration ECD 002-16505.
96 01 11	ECM 489 14	Correct new line cards, ECD 002-16505
96 12 19	ECM 489 15	Replace NTBX34BC with NTBX34CB per ECD002-17097.

The Meridian Cabinet Line Module-Enhanced ISDN is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Supervisory Panel	NTNX26LA	FSP	1	60		AP
Cooling Unit	NTNX27DA	CU	1	00		AP
ISDN LCA Shelf Assy	NTBX3118	LCAI	2	05,19		AP
ISDN LCA Shelf Assy	NTBX3118	LCAI	2	33,47		AP
Meridian Cabinet Assembly	NTNX25AA	FW	1			AP
MCLM-E Common CP (Lower Mod)	NTNX38LE	LCME		05		RUL1
MCLM-E Common CP (Upper Mod)	NTNX38LF	LCME		33		RUL1
LD Cutoff Strap	A0285591					RUL2
Ringing Generators	NT6X30CA		2	60	01,13	RUL3
Miscellaneous Line Cards						RUL4
LCME Filler Plate Kit	NTBX31AB		1	33		RUL5
Filler Line Drawers	MT6X05AX		8	33,47		RUL5
ISDN Enhanced LCME Proc CP	NTBX34CB		4	5,19, 33,47	21	RUL10
Designation Label (NTBX34CB)	P0859733		4	05,19, 33,47	21	RUL10
Door Assembly-Left (Brown)	NTNX2550					RUL6
Door Assembly-Right (Brown)	NTNX2552					RUL6
Door Label-Left (Brown)	P0818849					RUL6
Door Label-Right (Brown)	P0699463					RUL6
Cabinet Type Label (Brown)	P0732592					RUL6
Door Assembly-Left (Grey)	NTNX2515					RUL6
Door Assembly-Right (Grey)	NTNX2513					RUL6
Door Label-Left (Grey)	P0818848					RUL6
Door Label-Right (Grey)	P0699158					RUL6
Cabinet Type Label (Grey)	P0732593					RUL6
Anchor Kit (EarthquaKe Slab)	NTNX2540					RUL7
Anchor Kit (Eq Cmptr Floor)	NTNX2578					RUL7
Anchor Kit (Non_EQ Slab)	NTNX2579					RUL7
Anchor Kit (Non_EQ Comp Flr)	NTNX2580					RUL7
Capacitor Kit	NTNX38CR					RUL8
EMI Sock Kit	NT0X32DH					RUL9
EMI End Panel Assembly (L)	NT0X3297					RUL9
EMI End Panel Assembly (R)	NT0X3298					RUL9
End Guard Assembly (Green)	NT0X73DF					RUL9
End Guard Assembly (Grey)	NT0X73DG					RUL9

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) One LCME module is composed of two (2) shelves. MCLM-Enhanced 2B1Q ISDN cabinet can have up to two (2) LCME modules. One LCME module occupies shelf positions 05 and 19 and one LCME module occupies shelves 33 and 47. The two bare shelf assemblies become an LCME module when they are equipped with an LCME Common CP packfill. The shelf assembly then becomes an ISDN 2B1Q Line Card Array shelf (LCAI).

2) The following circuit packs are always provided with higher level PECs, but should be considered for spares list.

   AP with NTBX32BA 2B1Q Line Drawer:
   NTBX36BA LCME Bus I/F Card (BIC)
   NTBX71AA Drawer Power Supply Card (PUPS)

   AP with NTNX26LA FSP:
   NT6X36AA FSP Alarm CP
   NT6X36AB FSP Alarm CP

3) Maximum of eight (8) MCLM-E in a lineup with MCAM as first cabinet in the lineup. MTA CP (metalic test access) for MCLM-E is located in the PTM/MTM of the MCAM in the SAME LINEUP ONLY. In the case of an RSC site, the MTA will be located in the RMM of the MCRMS in the SAME LINEUP ONLY.

4) MCLM-E must be within 45 cable feet of serving MCTM/MCRMS cabinet.

5) MCLM-E does not require direct cabling to network.

6) In an office equipped with both standard MCLM NTNX38AA and MCLM-E NTNX38CA, all MCLM/LCM must be uniquely numbered (ie; LCM 01 AND LCME 01 cannot co-exist).

7) The MCLME Cabinet(s) may be added to an existing remote Custom EMI installation. Only (1) EMI Sock kit/End Panel/Endguard required for each new remote Cabinet lineup extention.

RULES:

AP 1) When PEC NTNX38CA is ordered, these items are provided.

RUL1 1) Provide one (1) NTNX38LE MCLM-E Common CP to packfill the lower LCME of the MCLM-E Cabinet with ckt packs and eight (8) line drawers.

2) Provide one (1) NTNX38LF MCLM-E Common CP to packfill the upper LCME of the MCLM-E Cabinet with ckt packs and eight (8) line drawers.

RUL2 1) Provide quantity of eight (8) line drawer cutoff straps per LCME.

RUL3 1) Provision two (2) NT6X30CA Ringing Generators per MCLM-E in any MSL100 system. The NT6X30CA combines the Ringing Amplifier CP (NT6X37AA) and the Ringing Control CP (NT6X38AA), which were AP for the NT6X30AA, into a single circuit pack.

RUL4 1) For BCS32 and above the following line cards may be provisioned in the NTBX32BA line drawer:

	PEC	ISDN LINE CARD	QTY PER LD
	NTBX26AA	S/T Interface (2 slots)	30
	NTBX27AA	U Interface (1 slot)	60
	NT6X17BA	Type A	60
**	NT6X18BA	Type B	60
***	NT6X71BA	Datapath (single slot)	60
	NT6X76AA	Datapath (Async)	30
	NT6X99AA	Datapath IBERT Card	1
	NT6X21AD	Type C P-Phone (EBS)	60
	NT6X19AA	POTS MSG wTNG	59
*	NT6X20AA	Power Converter	1

* Provide a NT6X20AA if any NT6X19AA’s are provisioned.

** Not to be provisioned for coin phone applications.

*** The Single Slot Data Line Card NT6X71BA replaces NT6X71AB for jobs in BCS-32 or higher. The NT6X71BA occupies one slot in a line drawer while NT6X71AB occupies two slots. The NT6X71BA will not be ordered for Meridian SL-100 jobs in 1993. Refer to EMA14-03-000 Table C for detailed provisioning rules.

2) Each line drawer is divided into two line sub-groups. Distribute line cards accross all line sub-groups to balance the real time load of the LCME.

3) Any four (4) ISDN line cards in the same physical drawer will be multiplexed together. Thus, for maximum channel utilitization, ISDN lines should be provisioned in groups of four (4) in each line drawer.

4) ISDN D-channels from any line card from within a physical line drawer will be multiplexed together. D-channels from line cards in different physical line drawers will not be multiplexed together.

5) Any of the line cards supported can be mixed with any other line card at the drawer logical sub-group level.

6) Each line drawer is divided into two (2) logical drawers of subgroups. The individual logical sub-group in a line drawer will number from the bottom up; starting at subgroup 0 at the first line drawer (Line Drawer 0) and continuing, in sequential order, up to subgroup 15 (at the top of Line Drawer 7).

7) When provisioning an IBERT (NT6X99AA) card in a line drawer, do not provision other card types within two (2) horizontally adjacent slots of the IBERT card except for the NT2X03AA, NT6X20AA, NT6X23AA, NT6X95AA and NT6X95AB. For example, if the IBERT card is in slot 0 of an LSG (i.e. slots 0 & 1 occupied by IBERT card) do not use slots 2, 3, 4 and 5 except for the cards mentioned above. The reason for this restriction is the IBERT card causes noise in voice frequency type line cards which can be heard and may cause noise test diagnostics to fail.

RUL5 1) Provision one (1) NTBX31AB Filler Kit and eight (8) NT6X05AX Line Drawers in the upper module (shelves 33 & 47) when this module is to be unequipped.

The NTBX01AB Filler Kit consists of the following:

Quantity 6 NT0X50AA FFP Shelves 33 & 47, Slots 19, 20 & 21
Quantity 4 NT0X50AM FFP Shelves 33 & 47, Slots 22 & 25

RUL6 1) Provision two left door assemblies and two right door assemblies per cabinet.

2) Provision two left door labels and two right door labels per cabinet.

3) Provision two cabinet type labels per cabinet.

RUL7 1) Provision one earthquake mounting kit when installing cabinet in in ATC Zone 6 and 7; NEBS Zone 4; and UBC Zone 4. Use NTNX2540 for slab type flooring or NTNX2578 for computer type flooring.

2) Provision one cabinet mounting kit when installing cabinet in in a NON-earthquake zone. Use NTNX2579 for slab type flooring or NTNX2580 for computer type flooring.

RUL8 1) The NTNX38CR capacitor kit will not be ordered. It is shown if it should need to be ordered as a loose shipped item for field upgrade purposes. Cabinets with release numbers greater than 10 will have modifications that eliminate the need for this kit.

RUL9 1) This rule applies when adding line bay(s) on existing Custom EMI remote configurations and ONLY if the extension consists of adding the MCLME or MCLM. The EMI sock kit will accomodate all MCLME(s) power, ABS, alarm, etc. cabling in the new lineup. The DS30A cables are seperate shielded cables and will be terminated on the normal MCLME bulkhead ports. This hardware is only required on (1) end of the lineup.

1) Select & provision (1) either left or right EMI End Panel of the MCLME in the new extension lineup and minimize distance to the controller. See NOTE4.

2) Provision (1) End Guard NT0X73DF (Green) for each EMI End Panel used with Brown doors.

Provision (1) End Guard NT0X73DG (Grey) for each EMI End Panel used with Grey doors.

3) Provision (1) EMI Sock Kit for each EMI End Panel.

RUL10 1) Provision one (1) NTBX34CB and one (1) P0859733 when upgrading existing sites with older LCME Processor circuit packs.

IPE

PEC CODE:	NTND04AA
CPC CODE:	A0388217
RATING:	Standard
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	IPE
ENGINEERING DESCRIPTION:	IPE - AS1081D Pedestal/Top Cap Assembly, DC provides the base and logical frame position for the stackable IPE modules.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI: Charley Lord Dept. 6457 (RNS)

MAIN CONTACT: NTI: Charley Lord Dept. 6457 (RNS)

NTND04AA EMA10-29-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 04 27	ECM 509 07	updates prior to gate 3
94 11 07	ECM 509 12	correct end cap PEC
95 04 07	ECM 509 13	update PECs and rules
95 08 23	ECM 509 15	ECD 002-16269 LTI cable corrections, corrections per ET 26099 & update IPE descriptions
95 11 01	ECM 509 17	ET 31159, correct cable PEC, clarify LTI rules & pedestal anchoring.

The IPE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Column Top Cap Kit	NT7D00BA		1			AP
Pedestal Assy.	NT7D09CA		1	00		AP
System Monitor Panel	NT7D10CA		1	00		AP
Power Dist.Assy. -48VDC	NT7D67CB		1	00		AP
System Monitor	NT8D22AC		1	00		AP
Sys.Mon. Ser.link Cable	NT8D46AL		1	00		AP
Pedestal Blower Unit DC	NT8D52DD		1	00		AP
Intelligent Periph. Module	NTND03AA	IPE	A/R	XX		RUL1
Cable Egress (Rear Cap)	P0699851		1			RUL2
Cable Rack (Front Cap)	P0705883		1			RUL2
Overhead Cable Tray Kit	NT8D63AA		1	XX		RUL3
GREY Overhead Cable Stansion	A0600064		1	XX		RUL3
BRWN Overhead Cable Stansion	A0600065		1	XX		RUL3
IPE Column Off-Load Ramp	P0738686		1	XX		RUL4
IPE Label Kit	NTZR42AA		1			RUL5
Floor Mounting Kit (Non-Eq.)	NT8D64BF		1			RUL6
Floor Mounting Kit (Earthq.)	NT8D64CE		1			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 IPE equipment design is modular, therefore PEC NTND04AA was created to enable CADES to accept and provide a means to engineer and specify the layout and simulate frames positions in lineups.

2) The IPE modules are single shelf modules that can be stacked from one to four modules high. Shelf positions XX= 11, 28, 45, 62 of the IPEC column.

3) Designation labels are not required for circuit packs in the IPE shelf. The Pec Codes are printed on the face plate of the card.

4) Due to the modular nature of the IPE, which has no frame work assembly to define as the 'frame I.D.' the IPE Pedestal assembly (NTND04AA) provides the base and logical frame position for the stackable IPE modules and top cap. The Pedestal assembly houses foot leveling, grille, -48VDC Power Distribution Unit, product label, air filter, panels, gasket, blower unit, system alarm, and other miscellaneous hardware as part of the 'always provided' items.

5) Refer to ECM main section 2.5.1 for column & row Designation Label Provisioning rules.

6) Refer to EMA10-32-001 for IPE Power Cable Kits for MCRMS remotes.

RULES:

AP 1) When PEC NTND04AA is ordered, these items are provided.

RUL1 1) Provide one (1) NTND03AA for every 16 line cards ordered.

RUL2 1) Provide one (1) P0699851 cable egress rear cap and one (1) P0705883 cable rack front grille per column when cabling is to run overhead and NOT suspended from ceiling.

2) Provide one (1) P0699851 cable egress rear cap per column when overhead cable ladder is suspended from ceiling.

RUL3 1) Provide one (1) NT8D63AA Overhead Cable Tray Kit per one complete column (4 IPE modules) where cable rack cannot be suspended from the ceiling and must be supported by the IPECs. The kit is a stansion support that sits on top of the column.

2) Provide one (1) Overhead Cabling Stansion (Grey or Brown) per IPE column when cabling is run overhead and cable ladder cannot be suspended from the ceiling.

RUL4 1) Provide one (1) P0738686 IPE column off-load ramp per office. One ramp per site can be used at both host and remote locations.

RUL5 1) Provide one (1) label kit to label up to 3 columns.

RUL6 1) The IPE Pedestal comes equipped with adjustable free turning non-swivel leveling feet, therefore a Floor Mounting Kit is usually NOT required in a Non-Earthquake zone. However, if the customer requires the column(s) to be floor mounted in Non-Earthquake zone provide one (1) Floor Mounting Kit (Non-Eq.) per column.

RUL7 1) Provide one (1) Floor Mounting Kit per column when installed in Earthquake zone 4.

IPE

PEC CODE:	NTND03AA
CPC CODE:	A0388216
RATING:	Standard
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	IPEC
ENGINEERING DESCRIPTION:	The IPE AS1065D Module Shelf, DC is built with the MSL100 Controller CP, Ringing Generator, PE Power Supply, Module assembly, and I/O Panel to XPEC cables. It houses the analog, digital and LTI line cards.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI: Jesse Perkins Dept. 6457 (RNS)

MAIN CONTACT: NTI: Jesse Perkins Dept. 6457 (RNS)

NTND03AA EMA10-29-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 19	ECM 509 08	filler face plate change
94 08 12	ECM 509 09	IPE PEC CHANGE update
95 04 07	ECM 509 13	update PECs and rules
95 06 15	ECM 509 14	Include LTI cp PECs and rules and Earthquake bracing PECs and rules.
95 08 23	ECM 509 15	ECD 002-16269 LTI cable corrections, corrections per ET 26099 & update IPE descriptions
95 09 21	ECM 509 16	Corrections per ET 30389, correct IPE module side cover PEC & LTI cable PECs
95 11 01	ECM 509 17	ET 31159, correct cable PEC, clarify LTI rules & pedestal anchoring.
95 11 06	ECM 509 18	Correct LTI slots on Pre-93 IPE module
96 01 12	ECM 509 19	Correct Line cards slots assignments
96 02 19	ECM 509 20	Include new Power supply ECD 024-94880
96 07 30	ECM 509 22	Add the NT6D54BA to the NTND03AA.
96 12 23	ECM 509 23	Replace the NT5D11AA and NT6D40AD with the NT5D11AC and NT6D40BA respectively per ECDs 024-97159 and 024-96339.
97 04 04	ECM 509 24	Replace the NT8D02EA and NT8D09AK with the NT8D02EB and NT8D09AL respectively per ECDs 024-97760 and 024-97948.
97 06 18	ECM 509 25	Correct and update AC IPE power requirements.

The IPE is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Intelligent Periph. Module	NT8D37EC		1	XX		AP
#	P.E. Power Supply	NT6D40AD		1	XX	00	AP
	P.E. Power Supply	NT6D40BA		1	XX	00	AP
	Ringing Generator DC	NT6D42CD		1	XX	07	AP
	Controller CP (MCC)	NT7D07AC		1	XX	18	AP
	I/O panel to MCC Cable	NT8D92AB		2	XX		AP
	Cable Standoff Kit	NT6D54BA		1	XX		RUL1
	ID Front Strip Label	P0729414		1			RUL1
	ID Rear Strip Label	P0729415		1			RUL1
#	DIGITAL LINE CARD(DLC)	NT8D02EA		A/R	XX XX	10-17, 20-27	RUL2
	DIGITAL LINE CARD(DLC)	NT8D02EB		A/R	XX XX	10-17, 20-27	RUL2
#	ANALOG MSG WAITING CARD(ALC)	NT8D09AK		A/R	XX XX	10-17, 20-27	RUL2
	ANALOG MSG WAITING CARD(ALC)	NT8D09AL		A/R	XX XX	10-17, 20-27	RUL2
#	LINE SIDE T1 (LTI)	NT5D11AA		A/R	XX XX	10-16 20-26	RUL3
	LINE SIDE T1 (LTI)	NT5D11AC		A/R	XX XX	10-16 20-26	RUL3
	LTI bulkhead to port cable	NT5D13AA		A/R	XX		RUL3
	LTI HMI daisy chain cable	NT7R83AA		A/R	XX		RUL3
	LTI Ext. T1 interface cable	NT7R83BA		A/R	XX		RUL3
	Expansion Kit	NT8D49AA		1			RUL4
	IPE Module Side Cover	NT9D18AA		A/R	XX		RUL5
	EQ Cube Bracing Kit, 2 Mod Raised or Non-Concrete Floor	NT8D64BA		1			RUL6
	EQ Cube Bracing Kit, 3 Mod Raised or Non-Concrete Floor	NT8D64BB		1			RUL6
	EQ Cube Bracing Kit, 4 Mod Raised or Non-Concrete Floor	NT8D64BC		1			RUL6
	EQ Cube Bracing Kit, 1 Mod Slab Floor	NT8D64CD		1			RUL7
	EQ Cube Bracing Kit, 2 Mod Slab Floor	NT8D64CA		1			RUL7
	EQ Cube Bracing Kit, 3 Mod Slab Floor	NT8D64CB		1			RUL7
	EQ Cube Bracing Kit, 4 Mod Slab Floor	NT8D64CC		1			RUL7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT5D11AA	MD	NT5D11AC
NT6D40AD	MD	NT6D40BA
NT8D02EA	MD	NT8D02EB
NT8D09AK	MD	NT8D09AL

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 IPE equipment design is modular, therefore PEC NTND03AA was created to enable CADES to accept and provide a means to engineer and specify the layout and simulate shelf positions in frames.

2) The IPE modules are single shelf modules that can be stacked from one to four modules high. Shelf positions XX= 11, 28, 45, 62 of the IPEC column.

3) Designation labels are not required for circuit packs in the IPE shelf. The Pec Codes are printed on the face plate of the card.

4) Refer to ECM509 main section 2.5.1 for column and row DESIGNATION LABEL provisioning rules.

5) IPE Modules (NT8D37DC) manufactured before 1993 have LTI slot provisioning limitations, see RUL3 & NTP 555-4001-022 for further details.

6) Nortel does not provide under floor bracing components for raised floor applications.

7) The DS30A cables between the MCTM Controllers and the IPE Modules must not exceed 45 feet maximum length.

8) Filler face plates are not required for line card fillers, air flow plenum is provided by the IPE cover.

9) The AP cps are designated on the IPE shelf designation strip with cp names, NOT slot numbers. The numbered slots accommodate the provisionable line cards. SEE Table 1.
The Power Supply occupies approximately seven cards slots (0-6).
The Ringing Generator occupies approximately three cards slots (7-9).
The Controller Card (MCC) occupies two cards slots (18,19).

RULES:

AP 1) When PEC NTND03AA is ordered, these items are provided.

RUL1 1) Provide (1) ID Front Strip Label P0729414 per module.

2) Provide (1) ID Rear Strip Label P0729415 per module.

3) Provide (1) Cable Standoff Kit (NT6D54BA) per module.

RUL2 1) The line cards are assignable in any of the slots, 10 through 27 of the IPE.

RUL3 1) The NT8D37EC Module allows the 2-slot wide LTI circuit pack to be assigned in 2 consecutive slots. Assignable slots are slots 10 thru 16 & slots 20 thru 26. For example, the LTI card can be installed in slot 10, occupying slots 10 & 11, but CANNOT be installed in slot 17 because the MCC occupies slots 18 & 19.

The NT8D37DC Module (pre-93 vintage) allows the 2-slot wide LTI circuit pack to be assigned in 2 consecutive slots, however there are LTI slot limitations. The ONLY assignable slots are 10, 11, 14, 15, 20, 21, 24 or 25.

2) Provide (1) NT5D13AA cable with each LTI cp. This cable provides connectivity between the bulkhead to the HMI(s), T1(s) & Alarms. It has a bulkhead connector(P1) & 4 ports (P2,P3,P4,P5), refer to Table 1 for CP Slot to Bulkhead & IPE Module Type connectivity.

3) Provide (1) NT7R83AA LTI HMI daisy chain cable when distance from connector P5 to next LTI’s cable (NT5D13AA) connector P4 is greater than two feet.

4) Provide (1) NT7R83BA Extension T1 interface cable for each LTI cable (NT5D13AA) port 2.

RUL4 1) Provide one (1)Expansion Kit NT8D49AA between adjacent IPE modules in a lineup.

EXAMPLE: If office has one column of four IPE'S and one column of one IPE, provide one kit, if two then two kits and so on, two columns of four IPE's would have four Expansion Kits.

RUL5 1) Provide two module side covers for each NTND03AA IPE ordered.

2) Provide a maximum of eight side covers per line-up.

RUL6 1) Provide appropriate Seismic attachment cube bracing kit to raised floor and non-concrete floors as required.

RUL7 1) Provide appropriate Seismic attachment cube bracing kit to (concrete) slab floor.

* TABLE 1 *

IPE MODULE TYPE	IPE SLOT Desig	Label	D410 slot	BULKHEAD PORT
DC/EC	0		10	A
DC/EC	1		11	B
EC	2		12	C
EC	3		13	D
DC/EC	4		14	E
DC/EC	5		15	F
EC	6		16	G
NOT AVAILABLE	7		17	H
DC/EC	8		20	K
DC/EC	9		21	L
EC	10		22	M
EC	11		23	N
DC/EC	12		24	R
DC/EC	13		25	S
EC	14		26	T
NOT AVAILABLE	15		27	U

IPE PEDESTAL/TOP CAP ASSEMBLY, AC

PEC CODE:	NTND04BA
CPC CODE:	A0655452
RATING:	Standard
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	IPE
ENGINEERING DESCRIPTION:	IPE - AS1081A Pedestal/Top Cap Assembly, AC provides the base and logical frame position for the stackable IPE modules.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI: Charley Lord Dept. 6457 (RNS)

MAIN CONTACT: NTI: Charley Lord Dept. 6457 (RNS)

NTND04BA EMA10-29-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 05 06	ECM 509 21	Initial release of EMA introducing AC IPE.
97 06 18	ECM 509 25	Correct and update AC IPE power requirements.

The IPE PEDESTAL/TOP CAP ASSEMBLY, AC is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Column Top Cap Kit	NT7D00AA		1			AP
Pedestal Assy.	NT8D27BB		1	00		AP
Power Dist.Assy. AC	NT8D53BB		1	00		AP
System Monitor	NT8D22AC		1	00		AP
Sys.Mon. Ser.link Cable	NT8D46AL		1	00		AP
Pedestal Blower Unit AC	NT8D52AB		1	00		AP
Intelligent Periph. Module	NTND03BA	IPE	A/R	XX		RUL1
Cable Egress (Rear Cap)	P0699851		1			RUL2
Cable Rack (Front Cap)	P0705883		1			RUL2
Overhead Cable Tray Kit	NT8D63AA		1	XX		RUL3
GREY Overhead Cable Stansion	A0600064		1	XX		RUL3
BRWN Overhead Cable Stansion	A0600065		1	XX		RUL3
IPE Column Off-Load Ramp	P0738686		1	XX		RUL4
IPE Label Kit	NTZR42AA		1			RUL5
Floor Mounting Kit (Non-Eq.)	NT8D64BF		1			RUL6
Floor Mounting Kit (Earthq.)	NT8D64CE		1			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 IPE AC powered equipment is to be provided ONLY as 'extended' IPEs used in conjucntion with an FII or TII product.

2) The IPE equipment design is modular, therefore PEC NTND04BA was created to enable CADES to accept and provide a means to engineer and specify the layout and simulate frames positions in lineups.

3) The IPE modules are single shelf modules that can be stacked from one to four modules high. Shelf positions XX= 11, 28, 45, 62 of the IPEC column.

4) Designation labels are not required for circuit packs in the IPE shelf. The Pec Codes are printed on the face plate of the card.

5) Due to the modular nature of the IPE, which has no frame work assembly to define as the "frame I.D." the IPE Pedestal assembly (NTND04BA) provides the base and logical frame position for the stackable IPE modules and top cap. The Pedestal assembly houses foot leveling, grille, -48VDC Power Distribution Unit, product label, air filter, panels, gasket, blower unit, system alarm, and other miscellaneous hardware as part of the "always provided" items.

6) Refer to ECM509 main section 2.5.1 for column and row DESIGNATION LABEL provisioning rules.

7) AC-powered systems require one IG-LG 30 orange receptacle for each column within 2.4 m (8 ft.) of the column’s pedestal. Each column comes equipped with one 30 Amp cord & plug.
The safety ground/protective earth wire must be #6 AWG or larger. The safety ground/protective earth wire must connect the frame ground in the pedestal to the single-point ground (SPG,typically ACEG in the AC panel for AC applications.) in the service panel.
The Logic Return (LR) requirement must be #6 AWG or larger and connect from the LR connection in the pedestal to the SPG in the service panel.

RULES:

AP 1) When PEC NTND04BA is ordered, these items are provided.

RUL1 1) Provide one (1) NTND03BA for every 16 line cards ordered.

RUL2 1) Provide one (1) P0699851 cable egress rear cap and one (1) P0705883 cable rack front grille per column when cabling is to run overhead and NOT suspended from ceiling.

2) Provide one (1) P0699851 cable egress rear cap per column when overhead cable ladder is suspended from ceiling.

RUL3 1) Provide one (1) NT8D63AA Overhead Cable Tray Kit per one complete column (4 IPE modules) where cable rack cannot be suspended from the ceiling and must be supported by the IPECs. The kit is a stansion support that sits on top of the column.

2) Provide one (1) Overhead Cabling Stansion (Grey or Brown) per IPE column when cabling is run overhead and cable ladder cannot be suspended from the ceiling.

RUL4 1) Provide one (1) P0738686 IPE column off-load ramp per office. One ramp per site can be used at both host and remote locations.

RUL5 1) Provide one (1) label kit to label upto 3 columns.

RUL6 1) Provide one (1) Floor Mounting Kit per column when installed in Non-Earthquake zone.

RUL7 1) Provide one (1) Floor Mounting Kit per column when installed in Earthquake zone 4.

IPE MODULE ASSEMBLY, AC

PEC CODE:	NTND03BA
CPC CODE:	A0655451
RATING:	Standard.
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	AC IPE
ENGINEERING DESCRIPTION:	The IPE AS1065A Module Shelf, AC is built with the MSL100 Controller CP, Ringing Generator, PE Power Supply, Module assembly, and I/O Panel to XPEC cables. It is ONLY available as an 'extended' remote with the FII or TII product. It houses the analog, digital and LTI line cards.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI: Jesse Perkins Dept. 6457 (RNS)

MAIN CONTACT: NTI: Jesse Perkins Dept. 6457 (RNS)

NTND03BA EMA10-29-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 05 06	ECM 509 21	Initial release of EMA introducing AC IPE.
96 07 30	ECM 509 22	Add the NT6D54BA to the NTND03BA.
96 12 23	ECM 509 23	Replace the NT5D11AA and NT6D40AD with the NT5D11AC and NT6D40BA respectively per ECDs 024-97159 and 024-96339.
97 04 04	ECM 509 24	Replace the NT8D02EA and NT8D09AK with the NT8D02EB and NT8D09AL respectively per ECDs 024-97660 and 024-97948.
97 06 18	ECM 509 25	Correct and update AC IPE power requirements.

The IPE MODULE ASSEMBLY, AC is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	IPE Module, AC	NT8D37BA		1	XX		AP
	AC Power Supply	NT8D06AB		1	XX	00	AP
	Ringing Generator AC	NT8D21AB		1	XX	07	AP
	Controller CP (MCC)	NT7D07AC		1	XX	18	AP
	I/O panel to MCC Cable	NT8D92AB		2	XX		AP
	Cable Standoff Kit	NT6D54BA		1	XX		RUL1
	ID Front Strip Label	P0729414		1			RUL1
	ID Rear Strip Label	P0729415		1			RUL1
#	DIGITAL LINE CARD(DLC)	NT8D02EA		A/R	XX XX	10-17, 20-27	RUL2
	DIGITAL LINE CARD(DLC)	NT8D02EB		A/R	XX XX	10-17, 20-27	RUL2
#	ANALOG MSG WAITING CARD(ALC)	NT8D09AK		A/R	XX XX	10-17, 20-17	RUL2
	ANALOG MSG WAITING CARD(ALC)	NT8D09AL		A/R	XX XX	10-17, 20-27	RUL2
#	LINE SIDE T1 (LTI)	NT5D11AA		A/R	XX XX	10-16 20-26	RUL3
	LINE SIDE T1 (LTI)	NT5D11AC		A/R	XX XX	10-16 20-26	RUL3
	LTI bulkhead to port cable	NT5D13AA		A/R	XX		RUL3
	LTI HMI daisy chain cable	NT7R83AA		A/R	XX		RUL3
	LTI Ext. T1 interface cable	NT7R83BA		A/R	XX		RUL3
	Expansion Kit	NT8D49AA		1			RUL4
	IPE Module Side Cover	NT9D18AA		A/R	XX		RUL5
	EQ Cube Bracing Kit, 2 Mod Raised or Non-Concrete Floor	NT8D64BA		1			RUL6
	EQ Cube Bracing Kit, 3 Mod Raised or Non-Concrete Floor	NT8D64BB		1			RUL6
	EQ Cube Bracing Kit, 4 Mod Raised or Non-Concrete Floor	NT8D64BC		1			RUL6
	EQ Cube Bracing Kit, 1 Mod Slab Floor	NT8D64CD		1			RUL7
	EQ Cube Bracing Kit, 2 Mod Slab Floor	NT8D64CA		1			RUL7
	EQ Cube Bracing Kit, 3 Mod Slab Floor	NT8D64CB		1			RUL7
	EQ Cube Bracing Kit, 4 Mod Slab Floor	NT8D64CC		1			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 IPE equipment design is modular, therefore PEC NTND03BA was created to enable CADES to accept and provide a means to engineer and specify the layout and simulate shelf positions in frames.

2) The IPE modules are single shelf modules that can be stacked from one to four modules high. Shelf positions XX= 11, 28, 45, 62 of the IPEC column.

3) Designation labels are not required for circuit packs in the IPE shelf. The Pec Codes are printed on the face plate of the card.

5) IPE Modules (NT8D37AA) manufactured before 1993 have LTI slot provisioning limitations, see RUL3 & NTP 555-4001-022 for further details.

6) Nortel does not provide under floor bracing components for raised floor applications.

7) The DS30A cables between the MCTM Controllers and the IPE Modules must not exceed 45 feet maximum length.

8) Filler face plates are not required for line card fillers, air flow plenum is provided by the IPE cover.

9) The AP cps are designated on the IPE shelf designation strip with cp names, NOT slot numbers. The numbered slots accommodate the provisionable line cards. SEE Table 1.

The Power Supply occupies approximately seven cards slots (0-6).
The Ringing Generator occupies approximately three cards slots (7-9).
The Controller Card (MCC) occupies two cards slots (18,19).

RULES:

AP 1) When PEC NTND03BA is ordered, these items are provided.

RUL1 1) Provide (1) ID Front Strip Label P0729414 per module.

2) Provide (1) ID Rear Strip Label P0729415 per module.

3) Provide (1) Cable Standoff Kit (NT6D54BA) per module.

RUL2 1) The line cards are assignable in any of the slots, 10 through 27 of the IPE.

RUL3 1) The NT8D37BA Module allows the 2-slot wide LTI circuit pack to be assigned in 2 consecutive slots. Assignable slots are slots 10 thru 16 & slots 20 thru 26. For example, the LTI card can be installed in slot 10, occupying slots 10 & 11, but CANNOT be installed in slot 17 because the MCC occupies slots 18 & 19.

The NT8D37AA Module (pre-93 vintage) allows the 2-slot wide LTI circuit pack to be assigned in 2 consecutive slots, however there are LTI slot limitations. The ONLY assignable slots are 10, 11, 14, 15, 20, 21, 24 or 25.

2) Provide (1) NT5D13AA cable with each LTI cp. This cable provides connectivity between the bulkhead to the HMI(s), T1(s) & Alarms. It has a bulkhead connector(P1) & 4 ports (P2,P3,P4,P5), refer to Table 1 for CP Slot to Bulkhead & IPE Module Type connectivity.

3) Provide (1) NT7R83AA LTI HMI daisy chain cable when distance from connector P5 to next LTI’s cable (NT5D13AA) connector P4 is greater than two feet.

4) Provide (1) NT7R83BA Extension T1 interface cable for each LTI cable (NT5D13AA) port 2.

RUL4 1) Provide one (1)Expansion Kit NT8D49AA between adjacent IPE modules in a lineup.

EXAMPLE: If office has one column of four IPE'S and one column of one IPE, provide one kit, if two then two kits and so on, two columns of four IPE's would have four Expansion Kits.

RUL5 1) Provide two module side covers for each NTND03AA IPE ordered.

2) Provide a maximum of eight side covers per line-up.

RUL6 1) Provide appropriate Seismic attachment cube bracing kit to raised floor and non-concrete floors as required.

RUL7 1) Provide appropriate Seismic attachment cube bracing kit to (concrete) slab floor.

* TABLE 1 *

IPE MODULE TYPE	IPE SLOT Desig	Label	D410 slot	BULKHEAD PORT
AA/BA	0		10	A
AA/BA	1		11	B
BA	2		12	C
BA	3		13	D
AA/BA	4		14	E
AA/BA	5		15	F
BA	6		16	G
NOT AVAILABLE	7		17	H
AA/BA	8		20	K
AA/BA	9		21	L
BA	10		22	M
BA	11		23	N
AA/BA	12		24	R
AA/BA	13		25	S
BA	14		26	T
NOT AVAILABLE	15		27	U

MPDC BOTTOM FEED

PEC CODE: NTNX16AA

CPC CODE: B0227922

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MPDC

ENGINEERING DESCRIPTION: The Meridian Power Distribution Center is a modified PDC for the Meridian Cabinet products and is for powering SuperNode and IPE equipment. The NTNX16AA is for bottom feed application.

REFERENCE DOCUMENTATION: ADNX16AA 00 05

ISNX16AA 00 03

MSNX16AA 00 04

MARKETS: Applicable markets:

US

ISSUE AUTHOR:	Kevin Neville	Dept. 5849	(RICH)
MAIN CONTACT:	Kevin Neville	Dept. 5849	(RICH)
CONTACT:	Rich McNeill	Dept. 5849	(RICH)

NTNX16AA EMA10-30-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 06 11	ECM 492 41	KMN: Add MS,AD,IS references and remove Jim Large as contact.

The MPDC Bottom Feed is comprised of the following:

EQUIPMENT		PEC	ABBR	QTY	SHF POS	CP POS	RULE
Meridian Framework Assy.		NTNX25DB		1			AP
Filler Panel		NT0X42AD		2	00,63		AP
Frame Supervisory Panel		NT0X40UA		1	34		AP
Filter Circuit		NT0X42UG		1	29		AP
Filler Panel		NT0X42AH		2	06,18		AP
Fuse Panel 'A'Power		NT0X42UB		1	59		AP
Fuse Panel 'B'Power		NT0X42UC		1	55		AP
Fuse Panel 'A'Power		NT0X42UB		1	51		RUL1
Fuse Panel 'B'Power		NT0X42UC		1	47		RUL1
Fuse Panel 'A'Power		NT0X42UB		1	43		RUL1
Fuse Panel 'B'Power		NT0X42UC		1	39		RUL1
Filler Panel		NT0X42AD		4	51,47		RUL1
30A Fuse Kit		NT0X42AS					RUL2
5a Fuse Kit		NT0X42AN					RUL2
10A fuse Kit		NT0X42AJ					RUL2
20A fuse Kit		NT0X42AK					RUL2
Right Door	Grey	NTNX2513		2			RUL3
Left Door	Grey	NTNX2515		2			RUL3
Right end Panel	Grey	NTNX2517		1			RUL3
Left end Panel	Grey	NTNX2518		1			RUL3
Left Door Label	Grey	P0818848		2			RUL2
Right Door Label	Grey	P0677703		2			RUL3
Cabinet Type Label	Grey	P0739870		2			RUL3
Right Door	Brown	NTNX2552		2			RUL4
Left Door	Brown	NTNX2550		2			RUL4
Right end Panel	Brown	NTNX2546		1			RUL4
Left end Panel	Brown	NTNX2553		1			RUL4
Left Door Label	Brown	P0818849		2			RUL4
Right Door Label	Brown	P0699463		2			RUL4
Cabinet Type Label	Brown	P0739868		2			RUL4
Earthquake Kit-Slab Floor		NTNX2540		1			RUL5
Earthquake Kit-Raised Floor		NTNX2578		1			RUL6
Frame Mounting Kit(non EQ)		NTNX2579		1			RUL7
Frame Mounting Kit(non EQ)		NTNX2580		1			RUL8
750MCM Lug Hardware Kit		NTNX16DA					RUL9
500MCM Lug Hardware Kit		NTNX16DF					RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
350MCM Lug Hardware Kit	NTNX16DB					RUL11
250MCM Lug Hardware Kit	NTNX16DC					RUL12
Logic Equalizer TERM. Kit	NTNX16DD		1			RUL13
Caution Label	P0702174		2			RUL14
spare fuse 30A	NT0X42AS					RUL15
spare fuse 5A	NT0X42AN					
spare fuse 10A	NT0X42AJ					
spare fuse 20A	NT0X42AK					
Terminal Lug, 6AWG, #10	A0288176					RUL16
Terminal Lug, 6AWG, .250"	A0352967					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) The feeders to the MPDC 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 designated Feeder-A and Return-A and the other set, Feeder-B and Return-B.

2) The total DC distribution capability of a MPDC is 800 Amperes, 400A on Feeder-A and 400A on Feeder-B. The two feeder cables from the office battery to each MPDC are fused in the power room at 600A maximum. If the actual feeder demand current is less than 400A, 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. The feeder fuse capability should be increased proportionally as the office expansion occurs.

3) The first fuse, FUSE POS. 0, on fuse panel A (shelf pos. 59) and fuse panel B (shelf pos. 55) will be occupied and supply power for ABS alarm system.

4) Provide one spare 10 amp fuse, A0315462, and one spare QFF1A 1 1/3 amp fuse, A0205202, per filter panel, NT0X42UG.

RULES:

AP 1) When PEC NTNX16AA is ordered, these items are provided.

2) The MPDC (NTNX16AA) comes equipped with two Fuse Panels: "A" Feed (FPA), pos. 59, and Fuse Panel "B" Feed, at pos. 55.

3) A 20a fuse is "always provided" on the first "AP" fuse panel (fuse panel "A" power) at F0 to supply power to the FSP. A dummy fuse is "always provided" in fuse position F0 o the second AP fuse panel to balance out the two panels.

4) The MPDC will accommodate an initial thirty (30) 0-30a fuses without the addition of extra fuse panels, and 90 0-30a fuses with the provisionable fuse panels added at pos. 51,47,43,39.

5) The maximum current drain per power feed (A/B) per MPDC frame is 400 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.

RUL1 1) Provide one NT0X42UB "A" power fuse panels at pos. 51, 43 as required for additional 15 -48V A fuses as required. Provision the fuse panels from the top down starting with panel 51, then 43.

2) Provide NT0X42UC "B" power fuse panels at pos. 47, 39 as required for additional 15 -48V B fuses as required. Provision the fuse panels from the top down starting with panel 47 then 39.

3) When not providing fuse panels at fuse pos. 51,47,43,39 provide an NT0X42AD.

RUL2 1) Fuses on all fuse panels are provisionable. Provide A and B fuses as required to fuse the equipment provided. The maximum current available per feed is 400a and the demand on the MPDC should be calculated on the basis of the aggregate of the maximum steady load of the individual equipment. The load on each feed from the MPDC should be balanced as close as possible.

RUL3 1) For GREY applications provide doors and end panels as required: two right (NTNX2513) and two left (NTNX2515) doors

per MPDC (front & back). One right end panel (NTNX2517) and one left end panel (NTNX2518) per MPDC.

2) For GREY applications provide labels as required: one per door of right and left door labels, and one cabinet label per MPDC.

RUL4 1) For BROWN applications provide doors and end panels as required: two right (NTNX2552) and two left (NTNX2550) doors per MPDC (front & back). One right end panel (NTNX2546) and one left end panel (NTNX2553) per MPDC.

2) For BROWN applications provide labels as required: one per door of right and left door labels, and one cabinet label per MPDC.

RUL5 1) Provide one Earthquake Kit (NTNX2540) per MPDC for slab floor applications.

RUL6 1) Provide one Earthquake Kit (NTNX2578) per MPDC for raised floor applications.

RUL7 1) Provide one Frame Mounting Kit when installing the cabinet in a non-earthquake zone. Use the NTNX2579 kit for slab type flooring. NTNX2580 for computer (raised) flooring.

RUL8 1) Provide one Frame Mounting Kit when installing the cabinet in a

RUL9 1) Provide one (1) NTNX16DA hardware kit for each 750MCM cable that will feed TO the Battery from the Battery Return Plate. Also provide one (1) NTNX16DA hardware kit for every 750MCM cable that will feed FROM the Battery to the -48V busplate (extension plate). Maximum runs of cable are four feeding and four returning. SPECIAL NOTE : LUG KITS TO BE ORDERED BY INSTALLATION DESIGN ENGINEERS OR BUILDING STUDIES ENGINEERS.

RUL10 1) Provide one (1) NTNX16DF hardware kit for each 500MCM cable that will feed TO the Battery from the Battery Return Plate. Also provide one (1) NTNX16DF hardware kit for every 500MCM cable that will feed FROM the Battery to the -48V busplate (extension plate). Maximum runs of cable are four feeding and four returning. SPECIAL NOTE : LUG KITS TO BE ORDERED BY INSTALLATION DESIGN ENGINEERS OR BUILDING STUDIES ENGINEERS.

RUL11 1) Provide one (1) NTNX16DB hardware kit for each 350MCM cable that will feed TO the Battery from the Battery Return

Plate. Also provide one (1) NTNX16DB hardware kit for every 350MCM cable that will feed FROM the Battery to the -48V busplate (extension plate). Maximum runs of cable are four feeding and four returning. SPECIAL NOTE : LUG KITS TO BE ORDERED BY INSTALLATION DESIGN ENGINEERS OR BUILDING STUDIES ENGINEERS.

RUL12 1) Provide one (1) NTNX16DC hardware kit for each 250MCM cable that will feed TO the Battery from the Battery Return Plate. Also provide one (1) NTNX16DC hardware kit for every 250MCM cable that will feed FROM the Battery to the -48V busplate (extension plate). Maximum runs of cable are four feeding and four returning. SPECIAL NOTE : LUG KITS TO BE ORDERED BY INSTALLATION DESIGN ENGINEERS OR BUILDING STUDIES ENGINEERS.

RUL13 1) Provide one NTNX16DD Logic Equalizer Kit for terminating one 1/O logic ground cable on the MPDC Ground Return Plate. The MPDC can support up to four C42 line-ups for logic ground equalization. The kit provides lug, washers, nut, and bolt for terminating cable on bus.

NOTE: The NTNX16DD is to be field installed and not assigned to the frame.

RUL14 1) Provide TWO (2) P0702174 CAUTION Labels for the front and back left door assembly. One label should be affixed to both the front and the back door assembly as specified by ADNX16AA.

RUL15 1) Provide fusing as required. See EMI NT0X42UB and NT0X42UC.

2) Provide spare fusing as follows:

Use the following scenarios for providing spare fusing:

1) For ONE PAIR of fuse panels: (TWO PANELS)

NOTE: THESE FUSES ARE SPARES FOR THE "AP" FUSE PANELS ONLY

(4) NT0X42AN 5A FUSE KIT
(9) NT0X42AS 30A FUSE KIT
(3) NT0X42AJ 10A FUSE KIT
(4) NT0X42AK 20A FUSE KIT

2) For TWO PAIR of fuse panels: (FOUR PANELS)

(9) NT0X42AN 5A FUSE KIT
(19) NT0X42AS 30A FUSE KIT
(3) NT0X42AJ 10A FUSE KIT
(4) NT0X42AK 20A FUSE KIT

3) For THREE PAIR of fuse panels: (SIX PANELS)

(12) NT0X42AN 5A FUSE KIT
(30) NT0X42AS 30A FUSE KIT
(3) NT0X42AJ 10A FUSE KIT
(8) NT0X42AK 20A FUSE KIT

RUL16 1) Provide ONE (1) A0288176 #10 6awg Terminal Lug and ONE A0352967 .250" Terminal Lug for each fuse position required. (Two lugs per fuse position).

MPDC TOP FEED

PEC CODE:	NTNX16BA
CPC CODE:	B0237345
RATING:	STANDARD
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	MPDC
ENGINEERING DESCRIPTION:	The Meridian Power Distribution Center is a modified PDC for the Meridian Cabinet products and is for powering SuperNode and IPE equipment. The NTNX16BA is for top feed applications.
REFERENCE DOCUMENTATION:	ADNX16BA 00 06 ISNX16BA 00 03 MSNX16BA 00 04
MARKETS:	Applicable markets: US

ISSUE AUTHOR:	Kevin Neville	Dept. 5849	(RICH)
MAIN CONTACT:	Kevin Neville	Dept. 5849	(RICH)
CONTACT:	Rich McNeill	Dept. 5849	(RICH)

NTNX16BA EMA10-31-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 06 11	ECM 492 41	KMN: Add MS,AD,IS references and remove Jim Large as contact.

The MPDC Top Feed is comprised of the following:

EQUIPMENT		PEC	ABBR	QTY	SHF POS	CP POS	RULE
Meridian Framework Assy.		NTNX25DB		1			AP
Filler Panel		NT0X42AD		2	00,63		AP
Filler Panel		NT0X42AH		2	41,53		AP
Filter Circuit		NT0X42UG		1	34		AP
Frame Supervisory Panel(FSP)		NT0X40UA		1	28		AP
Fuse Panel 'A'Power		NT0X42UB		1	24		AP
Fuse Panel 'B'Power		NT0X42UC		1	20		AP
Fuse Panel 'A'Power		NT0X42UB		1	16		RUL1
Fuse Panel 'B'Power		NT0X42UC		1	12		RUL1
Fuse Panel 'A'Power		NT0X42UB		1	08		RUL1
Fuse Panel 'B'Power		NT0X42UC		1	04		RUL1
Filler Panel		NT0X42AD		4	16,12 08,04		RUL1
30A Fuse Kit		NT0X42AS					RUL1
5a Fuse Kit		NT0X42AN					RUL1
10A fuse Kit		NT0X42AJ					RUL1
20A fuse Kit		NT0X42AK					RUL1
Right Door	Grey	NTNX2513		2			RUL2
Left Door	Grey	NTNX2515		2			RUL2
Right end Panel	Grey	NTNX2517		1			RUL2
Left end Panel	Grey	NTNX2518		1			RUL2
Left Door Label	Grey	P0818848		2			RUL2
Right Door Label	Grey	P0677703		2			RUL2
Cabinet Type Label	Grey	P0739870		2			RUL2
Right Door	Brown	NTNX2552		2			RUL3
Left Door	Brown	NTNX2550		2			RUL3
Right end Panel	Brown	NTNX2546		1			RUL3
Left end Panel	Brown	NTNX2553		1			RUL3
Left Door Label	Brown	P0818849		2			RUL3
Right Door Label	Brown	P0699463		2			RUL3
Cabinet Type Label	Brown	P0739868		2			RUL3
Earthquake Kit-Slab Floor		NTNX2540		1			RUL4
Earthquake Kit-Raised Floor		NTNX2578		1			RUL5
Frame Mounting Kit(non EQ)		NTNX2579		1			RUL6
Frame Mounting Kit(non EQ)		NTNX2580		1			RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
750MCM Lug Hardware Kit	NTNX16DA					RUL8
500MCM Lug Hardware Kit	NTNX16DF					RUL9
350MCM Lug Hardware Kit	NTNX16DB					RUL10
250MCM Lug Hardware Kit	NTNX16DC					RUL11
Logic/Equalizer Hardware Kit	NTNX16DD					RUL12
Caution Label	P0702174		2			RUL13
spare fuse 30A	NT0X42AS					RUL14
spare fuse 5A	NT0X42AN					
spare fuse 10A	NT0X42AJ					
spare fuse 20A	NT0X42AK					
Terminal Lug, 6AWG, #10	A0288176					RUL15
Terminal Lug, 6AWG, .250"	A0352967					RUL15

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 feeders to the MPDC 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 designated Feeder-A and Return-A and the other set, Feeder-B and Return-B.

2) The total DC distribution capability of a MPDC is 800 Amperes, 400A on Feeder-A and 400A on Feeder-B. The two feeder cables from the office battery to each MPDC are fused in the power room at 600A maximum. If the actual feeder demand current is less than 400A, 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. The feeder fuse capability should be increased proportionally as the office expansion occurs.

3) The first fuse, FUSE POS. 0, on fuse panel A (shelf pos. 24) and fuse panel B (shelf pos. 20) will be occupied and supply power for ABS alarm system.

4) Provide one spare 10 amp fuse, A0315462, and one spare QFF1A 1 1/3 amp fuse, A0205202, per filter panel, NT0X42UG.

RULES:

AP 1) When PEC NTNX16BA is ordered, these items are provided.

2) The MPDC (NTNX16BA) comes equipped with two Fuse Panels: "A" Feed (FPA), pos. 24, and Fuse Panel "B" Feed, at pos. 20.

3) A 20a fuse is "always provided" on the first "AP" fuse panel (fuse panel "A" power) at F0 to supply power to the FSP. A dummy fuse is "always provided" in fuse position F0 o the second AP fuse panel to balance out the two panels.

4) The MPDC will accommodate an initial thirty (30) 0-30a fuses without the addition of extra fuse panels, and 90 0-30a fuses with the provisionable fuse panels added at pos. 51,47,43,39.

5) The maximum current drain per power feed (A/B) per MPDC frame is 400 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.

RUL1 1) Provide one NT0X42UB "A" power fuse panels at pos. 16, 08 as required for additional 15 -48V A fuses as required. Provision the fuse panels from the top position down: panel 16 first then 08.

2) Provide NT0X42UC "B" power fuse panels at pos. 12, 04 as required for additional 15 -48V B fuses as required. Provision the fuse panels from the top position down: panel 12 first then 08.

3) When not providing fuse panels at fuse pos. 16,12,08,04 provide an NT0X42AD.

RUL2 1) For GREY applications provide doors and end panels as required: two right (NTNX2513) and two left (NTNX2515) doors per MPDC (front & back). One right end panel (NTNX2517) and one left end panel (NTNX2518) per MPDC.

2) For GREY applications provide labels as required: one per door of right and left door labels, and one cabinet label per MPDC.

RUL3 1) For BROWN applications provide doors and end panels as required: required: two right (NTNX2552) and two left

(NTNX2550) doors per MPDC (front & back). One right end panel (NTNX2546) and one left end panel (NTNX2553) per MPDC.

2) For BROWN applications provide labels as required: one per door of right and left door labels, and one cabinet label per MPDC.

RUL4 1) Provide one Earthquake Kit (NTNX2540) per MPDC for slab floor applications.

RUL5 1) Provide one Earthquake Kit (NTNX2578) per MPDC for raised floor applications.

RUL6 1) Provide one Frame Mounting Kit when installing the cabinet in a non-earthquake zone. Use the NTNX2579 kit for slab type flooring. NTNX2580 for computer (raised) flooring.

RUL7 1) Provide one Frame Mounting Kit when installing the cabinet in a non-earthquake zone. Use the NTNX2580 kit for computer (raised) flooring.

RUL8 1) Provide one (1) NTNX16DA hardware kit for each 750MCM cable that will feed TO the Battery from the Battery Return Plate. Also provide one (1) NTNX16DA hardware kit for every 750MCM cable that will feed FROM the Battery to the -48V busplate (extension plate). Maximum runs of cable are four feeding and four returning. SPECIAL NOTE : LUG KITS TO BE ORDERED BY INSTALLATION DESIGN ENGINEERS OR BUILDING STUDIES ENGINEERS.

RUL9 1) Provide one (1) NTNX16DF hardware kit for each 500MCM cable that will feed TO the Battery from the Battery Return Plate. Also provide one (1) NTNX16DA hardware kit for every 750MCM cable that will feed FROM the Battery to the -48V busplate (extension plate). Maximum runs of cable are four feeding and four returning. SPECIAL NOTE : LUG KITS TO BE ORDERED BY INSTALLATION DESIGN ENGINEERS OR BUILDING STUDIES ENGINEERS.

RUL10 1) Provide one (1) NTNX16DB hardware kit for each 350MCM cable that will feed TO the Battery from the Battery Return Plate. Also provide one (1) NTNX16DA hardware kit for every 750MCM cable that will feed FROM the Battery to the -48V busplate (extension plate). Maximum runs of cable are four feeding and four returning. SPECIAL NOTE : LUG KITS TO BE ORDERED BY INSTALLATION DESIGN ENGINEERS OR BUILDING STUDIES ENGINEERS.

RUL11 1) Provide one (1) NTNX16DC hardware kit for each 250MCM cable that will feed TO the Battery from the Battery Return Plate. Also provide one (1) NTNX16DA hardware kit for every 750MCM cable that will feed FROM the Battery to the -48V busplate (extension plate). Maximum runs of cable are four feeding and four returning. SPECIAL NOTE : LUG KITS TO BE ORDERED BY INSTALLATION DESIGN ENGINEERS OR BUILDING STUDIES ENGINEERS.

RUL12 1) Provide one NTNX16DD Logic Equalizer Kit for terminating one 1/O logic ground cable on the MPDC Ground Return Plate. The MPDC can support up to four C42 line-ups for logic ground equalization. The kit provides lug, washers, nut, and bolt for terminating cable on bus.

NOTE: The NTNX16DD is to be field installed and not assigned to the frame.

RUL13 1) Provide TWO (2) P0702174 CAUTION Labels for the front and back left door assembly. One label should be affixed to both the front and the back door assembly as specified by ADNX16AA.

RUL14 1) Provide fusing as required. See EMI NT0X42UB and NT0X42UC.

2) Provide one A0205210 DUMMY FUSE for each fuse position where no fuse was provisioned.

Provide spare fusing as follows:

Use the following scenarios for providing spare fusing:

1) For ONE PAIR of fuse panels: (TWO PANELS)

NOTE: THESE FUSES ARE SPARES FOR THE "AP" FUSE PANELS ONLY

(4) NT0X42AN 5A FUSE KIT
(9) NT0X42AS 30A FUSE KIT
(3) NT0X42AJ 10A FUSE KIT
(4) NT0X42AK 10A FUSE KIT

2) For TWO PAIR of fuse panels: (FOUR PANELS)

(9) NT0X42AN 5A FUSE KIT
(19) NT0X42AS 30A FUSE KIT
(3) NT0X42AJ 10A FUSE KIT
(8) NT0X42AK 20A FUSE KIT

3) For THREE PAIR of fuse panels: (SIX PANELS)

(12) NT0X42AN 5A FUSE KIT
(30) NT0X42AS 30A FUSE KIT
(3) NT0X42AJ 10A FUSE KIT
(3) NT0X42AK 20A FUSE KIT

RUL15 1) Provide ONE (1) A0288176 #10 6awg Terminal Lug and ONE A0352967 .250" Terminal Lug for each fuse position required. (Two lugs per fuse position).

MERIDIAN CABINET REMOTE MODULE - SONET

PEC CODE:	NTNX17AC
CPC CODE:	B0237346
RATING:	STANDARD
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	MCRMS
ENGINEERING DESCRIPTION:	MCRMS is the SONET version of the Meridian Remote Cabinet. It contains an RCC2, RMM, an RCC2 extension shelf, and PDP.
REFERENCE DOCUMENTATION:	ISNX17AC 00 10
MARKETS:	Applicable markets: Canada US

ISSUE AUTHOR: David O'Connell Dept. 2D69 (RICH)

MAIN CONTACT: David O'Connell Dept. 2D69 (RICH)

NTNX17AC EMA10-32-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 18	ECM 544 01	Initial Issue
95 06 29	ECM 544 03	Make changes per ECD002-16261.
95 11 15	ECM 544 04	Make changes per ECD002-16421.
95 11 22	ECM 544 05	Make changes per ECD018-37578.
96 06 03	ECM 544 06	Replace NT2X10AB/BA with NT2X10BB, replace NT2X11AD with NT2X11BA and add the NT6X69AD per ECD002-16663.
96 10 23	ECM 544 07	Replace the NTMX72AA with the NTMX72AB and add NT7X05AA per ECD 002-16827.
97 04 11	ECM 544 08	Replace the NTMX73AA with the NTMX73AB and the NTMX74AA with the NTMX74AB as per ecd 011-22377.
97 06 16	ECM 544 09	ADD THE NTMX76AB, NTAX74AA AND REPLACE THE NT6X92BC WITH NT6X92EA. PER ECD 101-00215.
97 10 28	ECM 544 10	Update the following per ECD 101-00734 Add provisioning considerations for the NT6X05DA Line Drawer For Remotes (ILDR).

The Meridian Cabinet Remote Module - SONET is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Meridian Cabinet FW Assy	NTNX25AA		1			AP
Cooling Unit	NTNX27CA		1	16		AP
Power Distribution Panel	NTNX24DA		1	01		AP
Frame Supervisory Panel-FSP	NTNX26HA		1	62		AP
RMM Shelf Assembly	NT6X1306		1	49		AP
Desig. Strip(Shelf 49 RMM)	P0739665		1			AP
Group Codec CP	NT2X59AA		1	49	01	RUL1
RMM Controler	NT6X74AB		1	49	02	RUL1
SC Scanner	NT0X10AA		1	49	03	RUL1
Incom./Outgo. Test Trunk	NT2X90AD		2	49	04,08	RUL1
Balanced network	NT2X77AA		2	49	04,08	RUL1
SD Signal Distributor	NT2X57AA		1	49	07	RUL1
Multi O/P PWR Converter	NT2X09AA		1	49	17	RUL1
Filler Face Plate	NT0X50AA		1	49	19	RUL1
Power Converter	NT2X06AB		1	49	20	RUL1
MTU Analog Card	NT2X10BB		1	49	05	RUL2
MTU Digital Card	NT2X11BA		1	49	06	RUL2
MTA-Metallic Test Access	NT3X09BA		2	49	11,12 13	RUL3
SC Scanner	NT0X10AA		3	49	14,15 16	RUL4
SD Signal Distributor	NT2X57AA		3	49	14,15 16	RUL4
Incoming Test Trunk	NT3X04AA		3	49	14,15 16	RUL5
Incom./Outgo. Test Trunk	NT2X90AD		1	49	14,15 16	RUL6
Balanced network	NT2X77AA		2	49	14,15 16	RUL6
Filler Face Plate	NT0X50AC		1	49	05-16	RUL7
Remote Cluster Cont.(SONET)	NTMX8501		1	35		AP
Desig. Strip(Shelf 35 RCC2)	P0739664		1			AP
Power Converter	NTMX72AA		2	35	01,26	RUL1
Power Converter	NTMX72AB		2	35	01,26	RUL1
Enhanced Processor	NTMX77AA		2	35	03,25	RUL1, RUL27
Cellular Access Proc. (CAP)	NTAX74AA		2	35	03,25	RUL27
ISDN Signal Preprocessor	NTBX01BA		2	35	04,24	RUL1

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Message Protocol & Tone	NT6X69AC		2	35	08,20	RUL25
	Message Protocol & Tone	NT6X69AD		2	35	08,20	RUL25
	Msg & HDLC Signal Proc.g	NTMX76AB		2	35	08,20	RUL25
	ENHANCED MATRIX	NTMX75AA		2	35	10,18	RUL1
	PCM SIGNAL PROCESSOR	NTMX73AB		2	35	11,17	RUL1
	DS30A INTERFACE	NTMX74AB		2	35	13,15	RUL1
	Class Modem Resource	NT6X78AB		2	35	05,23	RUL8
	Universal Tone Receiver	NT6X92BC		2	35	06,07 21,22	RUL9
#	Global Tone Receiver	NT6X92EA		2	35	06,07 21,22	RUL9
	Peripheral Loader	NT7X05AA		3	35	05,06, 07,21, 22,23	RUL26
	Quad Frame Carrier	NTMX87AA		1	35	09	RUL10
	Dual DS1 Packlet	NTMX81AA		4	35	09 0-3	RUL10
	Packet Filler Face Plate	NTMX83AA		4	35	09 0-3	RUL10
	Quad Frame Carrier	NTMX87AA		1	35	19	RUL10
	Dual DS1 Packlet	NTMX81AA		4	35	19 0-3	RUL10
	Packet Filler Face Plate	NTMX83AA		4	35	19 0-3	RUL10
	Quad Frame Carrier	NTMX87AA		1	35	12	RUL10
	Dual DS1 Packlet	NTMX81AA		4	35	12 0-3	RUL10
	Packet Filler Face Plate	NTMX83AA		4	35	12 0-3	RUL10
	Quad Frame Carrier	NTMX87AA		1	35	14	RUL10
	Dual DS1 Packlet	NTMX81AA		4	35	14 0-3	RUL10
	Packet Filler Face Plate	NTMX83AA		4	35	14 0-3	RUL10
	Quad Frame Carrier	NTMX87AA		1	35	16	RUL10
	Dual DS1 Packlet	NTMX81AA		4	35	16 0-3	RUL10
	Packet Filler Face Plate	NTMX83AA		4	35	16 0-3	RUL10
	D Channel Handler	NTBX02BA		3	35	12,14, 16	RUL11
	Extension Shelf Assy.	NTMX8601		1	21		AP
	Desig. Strip(Shelf 21 EXT)	P0739663		1			AP
	Filler Face Plate	NT0X50AA		12	21	01,26 15-24	RUL1
	Filler Face Plate	NT0X50AC		4	21	02,25 13-14	RUL1 RUL1
	DS60 Extension	NTMX79AA		2	21	02,13	RUL12
	D Channel Handler	NTBX02BA		10	21	03-12	RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Quad Frame Carrier	NTMX87AA		1	21	04	RUL14
Dual DS1 Packlet	NTMX81AA			21	04 0-3	RUL14
Packet Filler Face Plate	NTMX83AA			21	04 0-3	RUL14
Quad Frame Carrier	NTMX87AA		1	21	06	RUL14
Dual DS1 Packlet	NTMX81AA			21	06 0-3	RUL14
Packet Filler Face Plate	NTMX83AA			21	06 0-3	RUL14
Quad Frame Carrier	NTMX87AA		1	21	08	RUL14
Dual DS1 Packlet	NTMX81AA			21	08 0-3	RUL14
Packet Filler Face Plate	NTMX83AA			21	08 0-3	RUL14
Filler Face Plate	NT0X50AA		10	21	3-12	RUL15
Right Door (gray)	NTNX2513		2			RUL16
Left Door (gray)	NTNX2515		2			RUL16
Right End Panel (gray)	NTNX2517		1			RUL16
Left End Panel (gray)	NTNX2518		1			RUL16
Right Door (brown)	NTNX2552		2			RUL16
Left Door (brown)	NTNX2550		2			RUL16
Right End Panel (brown)	NTNX2546		1			RUL16
Left End Panel (brown)	NTNX2553		1			RUL16
Door Label-Right(Gray)	P0677703		2			RUL20
Door Label-Left (Gray)	P0818848		2			RUL20
Door Label-Right(brown)	P0699463		2			RUL20
Door Label-Left (brown)	P0818849		2			RUL20
Cabinet Type Label(Grey)	P0739666		2			RUL21
Cabinet Type Label(Brown)	P0739667		2			RUL21
Power Cable Kit(IPE)	NTNX17FA		1	00		RUL17
Power Cable Kit(IPE)	NTNX17FB		1	00		RUL17
Power Cable Kit(IPE)	NTNX17FC		1	00		RUL17
Desig. Label (NTAX74AA)	P0800860					RUL18
Desig. Label (NTBX02BA)	P0737724					RUL18
Desig. Label (NTBX01BA)	P0713794					RUL18
Desig. Label (NTMX79AA)	P0739812					RUL18
Desig. Label (NTMX87AA)	P0739811					RUL18
Desig. Label (NTMX72AB)	P0804792					RUL18
Desig. Label (NTMX73AB)	P0870046					RUL18
Desig. Label (NTMX74AB)	P0804878					RUL18
Desig. Label (NTMX76AB)	P0871709					RUL18
Desig. Label (NTMX77AA)	P0735417					RUL18
Desig. Label (NT6X69AD)	P0800014					RUL18
Desig. Label (NT6X78AB)	P0731980					RUL18

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label (NT6X92BC)	P0737431					RUL18
Desig. Label (NT6X92EA)	P0871713					RUL18
Desig. Label (NT0X10AA)	P0656328					RUL18
Desig. Label (NT2X90AD)	P0688244					RUL18
Desig. Label (NT2X57AA)	P0656327					RUL18
Desig. Label (NT3X09BA)	P0664847					RUL18
Desig. Label (NT3X04AA)	P0689910					RUL18
Desig. Label (NT2X10BA)	P0707874					RUL18
Desig. Label (NT2X10BB)	P0838517					RUL18
Desig. Label (NT2X11BA)	P0707876					RUL18
Desig. Label (NT7X05AA)	P0845116					RUL18
Desig. Label (NT0X50AA)	P0578498					RUL19
Desig. Label (NT0X50AC)	P0580258					RUL19
Anchor Kit(earthquake Slab)	NTNX2540					RUL22
Anchor Kit(EQ Compter floor)	NTNX2578					RUL22
Anchor Kit(Non-EQ Slab)	NTNX2579					RUL23
Anchor Kit(Non-EQ comp.flr)	NTNX2580					RUL23
EMI Sock Kit	NT0X32DH					RUL24
End Panel Assembly (Left)	NT0X3297					RUL24
End Panel Assembly (Right)	NT0X3298					RUL24
End Guard Assembly (Green)	NT0X73DF					RUL24
End Guard Assembly (Grey)	NT0X73DG					RUL24

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTMX73AA	DEV	NTMX73AB
NTMX74AA	MD	NTMX74AB
NT6X92BC	STD	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:

1) When provisioning on the EXT. shelf (21) it is possible to mix NTBX02BA, and NTMX87AA in any of the provisionable slots in any combinatiion.

2) A maximum of up to 10 DCH boards may be used in the MCRMS cabinet.

3) MCRMS must be within 45 cable feet of LCM bay/cabinet.

4) The MCRMS Cabinet may be added to an existing remote Custom EMI installation. Only (1) EMI Sock kit/End Panel/Endguard required for each new remote Cabinet lineup extention.

5) The ISDN Line Drawer is a new LCM drawer type that will support ISDN line cards and contain the D-channel handler. The ISDN line drawer will co-exist with current POTS line drawers in a standard LCM. A maximum of two NT6X05DA Line Drawers can be provisioned per LCM. Only one ISDN line drawer per LCM shelf is allowable.

   Implement the ISDN Line Drawer for Remotes (ILDR) in the MCLM & MCRU. Maximum of 2 line drawers per LCM is allowed. The number of ILDR drawers that can be provisioned on an XPM is dependent on equipment that subtends that XPM. The basic limitation is the number of available message channels on that equipment.

   The following Table shows the equipment that can be subtended off a peripheral and the number of message channels that are allocated for that equipment. The bottom line shows the maximum resources available per XPM. Therefore, for example, if an RCC2 already has 4 RLCMs, 4 LCMs and an RMM subtending it, that would use up a total of 33 message channels (4x6 + 4x2 + 1), and leave a total of 12 message channels for ILDRs. Since each ILDR uses 2 message channels, a total of 6 ILDRs would be able to be provisioned on this RCC2.

   It should be noted that the RCC2 already has software to check that these limits are not exceeded, and the ILDR will be included in this check. However, other peripherals (RCC+ and LTC+) do not have this capability and therefore this

would have to be done manually. If this limitation is exceeded, functionality will be affected.

NODE	# MESSAGE CHANNELS	RELEVANT TO: RCC2	RCC+	LTC+
LCM	2	Y	Y	Y
RLCM WITH ESA & RMM	6	Y	Y	Y
LCME	2	Y	N	N
SMS-R	2	Y	N	N
RMM ON RCC2 OR RCC+	1	Y	Y	N
ILDR	2	Y	Y	Y
DUAL CONFIGURATION	2	Y	Y	N
RCC2/RCC+	2	N	N	Y
TOTAL # OF CHANNELS AVAILABLE:		45	39	47

The limitations in the Table define the number of ILDRs that can be provisioned per host shelf, and the limitation of 480 ISDN lines per host shelf defines the total quantity of ISDN lines that can be configured. As a general rule, the ILDR message channels will limit the configuration assuming that no LCME is provisioned on the same host. If an LCME is provisioned on the same host, then the number of ISDN lines would probably be the limiting factor.

The ISDN line drawer is intended to be made available in all the DMS-100F frame and cabinet types provisionable with the RSC, RSC-S, MCRMS, MCRM, MCRU, MCLM, and RLCM remote products. It is intended to be designed and engineerable in the following vehicles: RSC, RSC-S, MCRU, MCLM, and RLCM.

RSC Sonet cannot be supported by LTCI or LGCI equipment at the host, when configured for ISDN Line Drawer. Also, remotes that subtends RSC Sonet cannot be supported by LTCI or LGCI equipment at the host, when configured for ISDN Line Drawer.

ISDN Line Drawer for Remotes is for the North American Market ONLY.

During ESA of the RSC or RSC-S, the ISDN Line drawer will not be supported. If an RSC or RSC-S enters ESA, the ILDR call might survive the entry but no commitment is made to supporting any service within ESA.

Only 1 ILDR 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 ILDR drawer number of the first ILDR is within the range 2 - 8, the next ILDR 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.

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.

If the RSC-S requires Extended Distance Capability, it may be equipped with the NTMX76AA or NTMX76AB circuit packs. The host XPM for a RSC-S with EDC must also be equipped for HDLC messaging (NTMX76AA or NTMX76AB in- stead of NT6X69) and must utilize the Unified Processor (XPM PLUS). Refer to ECM-445 for details of provisioning XPM PLUS. The host DS1 interfaces must be 64Kb clear channel (NT6X50AB) to support ISDN and to ensure a protocol match with the NTMX81AA packs in the RCC2 shelf (NTMX81AA is electrically the same as NT6X50AB.

RULES:

AP 1) When PEC NTNX17AC is ordered, these items are provided.

RUL1 1) All circuit packs listed under Rule 1 must always be provisioned in the slots (see part 4 of the rule for NTMX72AB) and quantities indicated.

2) When the circuit packs designated by Rule 1 are provisioned on the RMM shelf (49) the following features are included:

A) 14 Scan Points
B) 14 Signal Distribution
C) 2 Incoming/Outgoing test trunks (attached to the provisioned LTU’s, or an MTU to provide

talk monitor feature.
D) 1 MTA for a capacity of four ELM's or LCMI's

3) EACH OF THE TWO (2) NTMX74ABS IN THE RCC2 CAN HANDLE ALL 32 DS30A PORTS ON THE MCRMS. ONLY ONE (1) NTMX74AB IS ACTIVE AT ANY GIVEN TIME. Therefore, it is not necessary to distribute DS30A links between the TWO CARDS. HOWEVER, EACH NTMX74AB HAS 8 DS30A RECEIVER CHIPS WITH 4 DS30A links each. If the two message links from a non-XPM peripheral are assigned to the same chip an E1 outage can occur should the chip fail. To keep this from happening distribute DS30A ports in the following manner: (The NTMX74AB replaced the NTMX74AA and is backward compatible to BCS33.)

53,49,45,41,37,33,29,25,52,48,44,40,36,32,28,24,51,47,43,39,35
31,27,50,46,42,38,34,30 and 26

4) Provide two (2) NTMX72AA Power Converters, in the slots and quantities indicated. NTMX72AB Power Converters are not available for use yet.

RUL2 1) Provide one (1) NT2X10BB and one (1) NT2X11BA in slots 5 & 6 respectively.

RUL3 1) Provide one CP for every two MCLM or MCLME cabinets in the remote side.

2) Provide additional MTA card n slot 13 for MCLM 04-05.

RUL4 1) Provide SC and SD cards for additional scan and distribution points.

RUL5 1) Provide one incoming test trunk NT3X04AA for each AECO local board interface circuit pack on an "as required" basis.

RUL6 1) Provide NT2X90AD as required for trunk test. The NT2X90AD replaces the NT2X90AB and the NT2X90AC. the AD, AB, AND AC are compatible and offices do not need to be retrofitted with all NT2X90AD circuit packs.

.of 11 2) Provide one (1) NT2X77AA for each NT2X90AD cp provisioned.

RUL7 1) Provide NT0X50AC filler face plate to fill all empty slots on the RMM shelf.

RUL8 1) Provide two (2) NT6X78AB cicuit packs in slots 5 and 23 when the CLASS Calling Number Delivery feature is provi-

sioned. If card is not required provision NT0X50AA filler face plates in slots 05 and 23.

RUL9 1) Provide NT6X92EA when GTR features are provisioned. If only two UTR cp's are ordered they must go in slots 06, 22, the second pair will go in slots 07, 21.

2) The exact quantity of NT6X92EA CP's is based on the offered traffic. The following general rule may be used for planning purposes only: If UTR CCS is 0 to 765, then provide one pair (slots 6,22). If UTR CCS is 765 to 1600, then provide second pair (slots 7,21).

RUL10 1) Provide NTMX87AA in slots 9, 19 for the first 16 Host side (C-side) DS-1 ports. Each Quad Frame Carrier will accept 4 Dual DS-1 packlets.

2) Provision the NTMX81AA DS1 packlets for C-side interface based on host traffic requirements. Each NTMX81AA packlet handles two (2) DS1 ports.

3) Provide NTMX87AA in slots 12,14,16 for additional DS-1 interface.

4) Provision NTMX83AA filler face plates for each NTMX81AA not provided.

RUL11 1) Provide NTBX02BA when D-Channel hanndler is required. A maximum of 10 DCH Cp's can be provisioned in the MCRMS.

RUL12 1) Provide the NTMX79AA DS60 extension in slots 02 and 13 when EXT shelf is required.

RUL13 1) Provision up to seven (7) NTBX02BA when more than 324 DCH channels are required. (See above NOTE section)

RUL14 1) Provide NTMX87AA when more than 24 P-Side DS-1 ports are required.

RUL15 1) Provide NT0X50AA for unprovisioned slots 3-12 on EXT shelf.

RUL16 1) Provide 2 right doors and two left doors (front&rear) for gray or brown applications.

1) Provide end panels, right and left for the MCRMS cabinet.

RUL17 1) Provision the NTNX17FA kit when connecting the MCRMS cabinet to the first IPE in the line-up.

2) Provision the NTNX17FB kit when connecting the MCRMS cabinet to the second IPE in the line-up.

3) Provision the NTNX17FC kit when connecting the MCRMS cabinet to the third IPE in the line-up.

RUL18 1) Provide a Designation label for every circuit pack provisioned.

RUL19 1) Provide a Designation label for filler Face Plate provisioned.

RUL20 1) Provide Door Labels as required for each door provisioned.

RUL21 1) Provide two cabinet labels for each MCRMS cabinet provisioned.

RUL22 1) Provision one Earthquake mounting kit when installing frame in ATC Zone 6 and 7, NEBS zone 4 and UBC Zone 4. Use NTNX2540 for slab floors and NTNX2578 for computer floor.

RUL23 1) Provision one Frame mounting kit when installing frame a Non-Earthqu ake Zone. Use NTNX2579 Kit for slab type flooring or NTNX2580 for computer flooring. NTNX2578 for computer floor.

RUL24 This rule applies when upgrading an existing Custom EMI remote configuration and if the extension consists of adding ONLY the MCRMS. The EMI sock kit will accomodate all power, ABS, alarm, MTA cabling from the new MCRMS lineup to the existing Custom EMI LCM bulkhead. This hardware is only required on (1) end of the lineup. The DS30A cables are seperate shielded cables and will be terminated from the MCRMS bulkhead ports to the LCM bulkhead.

1) Select & provision (1) either left (NT0X3297) or right (NT0X3298) End Panel of the MCRMS in the new extension lineup to minimize distance to the line bay(s). See NOTE3.

2) Provision (1) End Guard NT0X73DF (Green) for each EMI End Panel used with Brown doors.

Provision (1) End Guard NT0X73DG (Grey) for each EMI End Panel used with Grey doors.

3) Provision (1) EMI Sock Kit for End Panel (NT0X3297/NT0X3298).

RUL25 1) Provision two (2) NT6X69AD when Analog Display Services Interface (ADSI) and Spontaneous Call Waiting Identification (SCWID) features are used in BCS36 or greater offices. Otherwise provision two (2) NT6X69ACs.

2) The NTMX76AB allows the Sonet Remote to be placed 150 miles away from the host, up to 500 miles. This circuit pack is an upgrade to the NT6X69AD that uses HDLC protocal to communicate to the Sonet Remote. A min S/W load of MSL04 is required. (Provides Ext. Dist. Cap Tone and MSG).

RUL26 1) Provide one (1) NT7X05AA per RCC on the RCC2 shelf (Sh. 35). For the left RCC, provide the NT7X05AA in either slots 5,6 or 7. For the right RCC, provide the NT7X05AA in either slot 21,22 or 23. The NT7X05AA is provisioned per request of customer to facilitate a reduction of peripheral reload time to about 10% of reload time without the NT7X05AA. Requires MSL06 or greater software load.

RUL27 1) The NTAX74AA replaces the NTMX77AA in situations where the memory exhaust has been identified as a problem. A min S/W load of MSL06/ XPM08 is required if the NTAX74AA is being provided and No NT7X05AA card is being used. If the customer is using a NT7X05AA card and the NTAX74AA is required than a min S/W load of MSL07 is required.

RLCC COMMON PACKFILL

PEC CODE:	NTNX14LC
CPC CODE:	B0242773
RATING:	Standard
REPLACES:	NTNX14LA
REPLACED BY:	CPs provisionable under NTNX14AA.
ABBREVIATION NAME:	N/A
ENGINEERING DESCRIPTION:	The RLCC or MCRU Common CP provides the always provided circuit packs for the RMM,HIE and the LCA shelves. All circuit packs in this packfill have been moved to the frame level PEC (NTNX14AA). This packfill will be MDed at a later date.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: NTI: Joe Bragg Dept. 6457 (RNS)

NTNX14LC EMA10-34-RLCC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 10 29	ECM 415 04	Corrected EMS so contents would match the stocklist of the NTNX14LA. The designation label P0639580 was removed from the EMS since it was not included on the stocklist.
95 01 27	ECM 415 07	Added Austrialain circuit packs.
95 04 26	ECM 415 08	Moved EMS to section 10.
95 05 12	ECM 415 09	Replace NT2X70AE with NT2X70AF per ECD024-93969 and to bring EMA to agreement with ISNX14AA 01 06 section C.
95 05 19	ECM 415 10	Replace NTNX14LA with NTNX14LC per ET23459.
95 09 27	ECM 415 11	Make changes per ECD002-16359.
95 11 15	ECM 415 12	Make changes per ECD002-16402.

The RLCC Common Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Group CODEC	NT2X59AA			47	1	RUL5
A-law TM CODEC with BT tones	NT2X59CA			47	1	RUL1
Filler Face Plate	NT0X50AC			47	1-16	RUL5
RMM Control	NT6X74AB			47	2	RUL5
Metallic Test Unit Analog	NT2X10BA			47	3	RUL5
Metallic Test Unit Digital	NT2X11BA			47	4	RUL5
MTU Controller	NT4X97AA			47	4	RUL1
INC/OG Test Trunk	NT2X90AD			47	5,7	RUL5
8X8 Metallic Test Access	NT3X09BA			47	6,14	RUL5
MISC/Scanner	NT0X10AA			47	8,16	RUL5
Digitone Receiver	NT2X48AB			47	9	RUL5
SD w/OAU MON	NT2X57AA			47	10,15	RUL5
INC Test from AECO LTD	NT3X04AA			47	14	RUL5
Power Converter	NT2X09AA			47	17	RUL5
Filler Face Plate	NT0X50AG			47	17	RUL6
Filler Face Plate	NT0X50AA			47	19	RUL7
Power Converter	NT2X06AB			47	20	RUL5
Filler Face Plate	NT0X50AE			47	20	RUL6
Desig. Labels for LSGs	P0631765					RUL12
Desig. Label for NT2X59AA	P0643110			47	1	RUL13
Desig. Label for NT0X50AC	P0580258			47	1-16	RUL13
Desig. Label for NT6X74AB	P0663271			47	2	RUL13
Desig. Label for NT2X10BA	P0707874			47	3,11	RUL13
Desig. Label for NT2X11BA	P0707876			47	4,12	RUL13
Desig. Label for NT2X90AD	P0688244			47	5,7,13	RUL13
Desig. Label for NT3X09BA	P0664847			47	6,14	RUL13
Desig. Label for NT0X10AA	P0656328			47	8,16	RUL13
Desig. Label for NT2X48AB	P0676175			47	9	RUL13
Desig. Label for NT2X57AA	P0656327			47	10,15	RUL13
Desig. Label for NT3X04AA	P0689910			47	14	RUL13
Desig. Label for NT2X09AA	P0688106			47	17	RUL13
Desig. Label for NT0X50AG	P0685986			47	17	RUL13
Desig. Label for NT0X50AE	P0591361			47	20	RUL13
Desig. Label for NT0X50AA	P0578498			47	19	RUL13
Desig. Label for NT2X06AB	P0591398			47	20	RUL13
Desig. Label for NT2X59CA	P0677817			47	1	RUL13
Desig. Label for NT4X97AA	P0677209			47	4	RUL13
Ringing Generator CP	NT6X60CA			33	1,5	RUL2
Ringing Generator CP	NT6X60AE			33	1,5	RUL2
Filler Face Plate	NT0X50AH			33	1,5	RUL2
Filler Face Plate 2.22 IN.	NT0X50AG		1	33	9	AP
Filler Face Plate .875	NT0X50AA		2	33	12,13	AP
Link Control CP	NT6X73AA		2	33	17,18	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Intl Link Control CP	NT6X73BA		2	33	17,18	RUL1
DS1 Interface CP	NT6X50AA		2	33	19,20	AP
Enchanced PCM30 Interface CP	NT6X27BB		2	33	19,20	RUL1
Pwr Converter -5VOLT,12V	NT2X70AF		2	33	22,25	AP
Power Converter 5V/15V CP	NT6X53AA		2	5,19	1	AP
LCM Processor CP	NT6X51AA		2	5,19	4	AP
Digroup Control CP	NT6X52AA		2	5,19	5	AP
Basic line card	NT6X17AB			5,19		RUL3
Full featured line card without +48V	NT6X18AA			5,19		RUL3
Full featured line card with +48V	NT6X18AB			5,19		RUL3
Business set	NT6X21AC			5,19		RUL3
Interface for data unit	NT6X71AB			5,19		RUL3
Interface for telephone with message waiting lamp	NT6X19AA			5,19		RUL3
Japan General use line	NT6X33AA			5,19		RUL3
Message waiting converter	NT6X20AA			5,19		RUL3
Power converter (+48V)	NT6X23AA			5,19		RUL3
Data above voice POTS	NT6X87AA			5,19		RUL3
World line card	NT6X17BA			5,19		RUL3,4
P-Phone line card	NT6X21BC			5,19		RUL3,4
IBERT Test card	NT6X99AA			5,19		RUL3,4
Desig. Label (NT2X70AF)	P0809960		2			AP
Desig. Label (NT6X73BA)	P0681919		2			
Desig. Label (NT6X27BB)	P0739157		2			
Desig. Label (NT0X50AH)	P0670789			33	1,5	RUL13
Desig. Label (NT6X60CA)	P0740744			33	1,5	RUL13
Desig. Label (NT6X60AE)	P0725753			33	1,5	RUL13
Desig. Label (NT6X51AA)	P0633541		2			AP
Desig. Label (NT6X52AA)	P0633542		2			AP
Desig. Label (NT6X53AA)	P0633543		2			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) Use this packfill as a guideline. Provision per customer requirements.

RULES:

AP 1) When PEC NTNX14LC is ordered, these items are provided.

RUL1 1) Provide two (2) NT6X73BA and two (2) NT6X27BB cards for PCM-30 applications in Austrailia. Provide one (1) NT2X59CA A-law CODEC and one (1) NT4X97AA MTU controller for Austrailia applications.

RUL2 1) Provide two (2) NT6X60CA Ringing Generators when analog ringing is required in the office.

2) Provide two (2) NT6X60AE Ringing Generators when analog ringing is required in Austrailian use.

RUL3 1) Line cards are provisionable and spread according to standard DMS rules.

RUL4 1) For Austrailian use only.

RUL5 1) Refer to Table A, Section EMA14-01-000 for RMM provisionable circuit packs. Also refer to RUL9 for ESA provisioning.

2) Provide Filler Face Plate, NT0X50AC in slots not equipped with a circuit pack.

3) The following slots are provisionable, however, they are have fixed assignments for cabling efficiency. The following rules govern RMM card assignments:

SLOT	PEC	SLOT	PEC
03	NT2X10BA	10	NT2X57AA
04	NT2X11BA	11	NT2X10AB
05	NT2X90AD	12	NT2X11AA
06	NT3X09BA	*13	NT2X90AD
07	NT2X90AD	*14	NT3X09BA or NT3X04AA
08	NT0X10AA	*15	NT2X57AA
09	NT2X48AB	*16	NT0X10AA

* Slots 13 thru 16 are currently wired together to allow the operation of DRAM circuitry in these slots when the DRA software becomes available for remotes.

* The NT2X10BA, NT2X11BA LTU pair is not operational in these slots because of the DRA wiring and therefore should not be provisioned in slots 13 thru 16.

* All other applicable RMM CP's are allowed in slots 13 thru 16, however, these slots should be reserved whenever possible to allow for the future DRA application.

4) Provide one (1) NT2X59AA (Group Codec) if any cp's are provisioned in the RMM for slots 3 thru 8 or 10 thru 16.

5) If ESA is required, a NT2X48AB must be provisioned in slot 9. The NT2X48AB requires two slots.

RUL6 1) Provide one (1) NT0X50AG when the NT2X09AA is not provisioned in slot 17. Provide one (1) NT0X50AE when the NT2X09AA is not provisioned in slot 20.

RUL7 1) Provide one (1) NT0X50AA Filler Face Plate in positions shown when not equipped with a circuit pack.

RUL12 1) Provide one (1) P0631765 per RLCC. Each item contains LSG designation labels for twenty (20) Line Sub Groups (00-19) housed in ten (10) line drawers.

RUL13 1) Provide one (1) Designation Label for each of the indicated circuit packs supplied.

MCRU PACKFILL KIT

PEC CODE: NTNX14LD

CPC CODE: B0242774

RATING: Standard.

REPLACES: NTNX14LC

REPLACED BY: CPs provisionable under NTNX14AA.

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The RLCC or MCRU Common CP provides the always provided circuit packs for the RMM,HIE and the LCA shelves.

All circuit packs in this packfill have been moved to the frame level PEC (NTNX14AA). This packfill will be MDed at a later date.

REFERENCE DOCUMENTATION: ISNX14AA 01 10
SLNX14LD 00 03

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: NTI: Joe Bragg Dept. 6457 (RNS)

NTNX14LD EMA10-34-RLCC-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
95 09 27	ECM 415 11	Make changes per ECD002-16359.
95 11 15	ECM 415 12	Make changes per ECD002-16402.

The MCRU Packfill Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Group CODEC	NT2X59AA			47	1	RUL5
A-law TM CODEC with BT tones	NT2X59CA			47	1	RUL1
Filler Face Plate	NT0X50AC			47	1-16	RUL5
RMM Control	NT6X74AB			47	2	RUL5
Metallic Test Unit Analog	NT2X10BA			47	3	RUL5
Metallic Test Unit Digital	NT2X11BA			47	4	RUL5
MTU Controller	NT4X97AA			47	4	RUL1
INC/OG Test Trunk	NT2X90AD			47	5,7	RUL5
8X8 Metallic Test Access	NT3X09BA			47	6,14	RUL5
MISC/Scanner	NT0X10AA			47	8,16	RUL5
Digitone Receiver	NT2X48AB			47	9	RUL5
SD w/OAU MON	NT2X57AA			47	10,15	RUL5
INC Test from AECO LTD	NT3X04AA			47	14	RUL5
Power Converter	NT2X09AA			47	17	RUL5
Filler Face Plate	NT0X50AG			47	17	RUL6
Filler Face Plate	NT0X50AA			47	19	RUL7
Power Converter	NT2X06AB			47	20	RUL5
Filler Face Plate	NT0X50AE			47	20	RUL6
Desig. Labels for LSGs	P0631765					RUL12
Desig. Label for NT2X59AA	P0643110			47	1	RUL13
Desig. Label for NT0X50AC	P0580258			47	1-16	RUL13
Desig. Label for NT6X74AB	P0663271			47	2	RUL13
Desig. Label for NT2X10BA	P0707874			47	3,11	RUL13
Desig. Label for NT2X11BA	P0707876			47	4,12	RUL13
Desig. Label for NT2X90AD	P0688244			47	5,7,13	RUL13
Desig. Label for NT3X09BA	P0664847			47	6,14	RUL13
Desig. Label for NT0X10AA	P0656328			47	8,16	RUL13
Desig. Label for NT2X48AB	P0676175			47	9	RUL13
Desig. Label for NT2X57AA	P0656327			47	10,15	RUL13
Desig. Label for NT3X04AA	P0689910			47	14	RUL13
Desig. Label for NT2X09AA	P0688106			47	17	RUL13
Desig. Label for NT0X50AG	P0685986			47	17	RUL13
Desig. Label for NT0X50AE	P0591361			47	20	RUL13
Desig. Label for NT0X50AA	P0578498			47	19	RUL13
Desig. Label for NT2X06AB	P0591398			47	20	RUL13
Desig. Label for NT2X59CA	P0677817			47	1	RUL13
Desig. Label for NT4X97AA	P0677209			47	4	RUL13
Ringing Generator CP	NT6X60CA			33	1,5	RUL2
Ringing Generator CP	NT6X60AE			33	1,5	RUL2
Filler Face Plate	NT0X50AH			33	1,5	RUL2
Filler Face Plate 2.22 IN.	NT0X50AG		1	33	9	AP
Filler Face Plate .875	NT0X50AA		2	33	12,13	AP
Link Control CP	NT6X73AA		2	33	17,18	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Intl Link Control CP	NT6X73BA		2	33	17,18	RUL1
DS1 Interface CP	NT6X50AB		2	33	19,20	AP
Enchanced PCM30 Interface CP	NT6X27BB		2	33	19,20	RUL1
Pwr Converter -5VOLT,12V	NT2X70AF		2	33	22,25	AP
Power Converter 5V/15V CP	NT6X53AA		2	5,19	1	AP
LCM Processor CP	NT6X51AC		2	5,19	4	AP
Digroup Control CP	NT6X52AA		2	5,19	5	AP
Basic line card	NT6X17AB			5,19		RUL3
World Line Card Type B	NT6X18BA			5,19		RUL3
P-Phone Line Card	NT6X21AD			5,19		RUL3
Single Slot Data Line Card	NT6X71BA			5,19		RUL3
Interface for telephone with message waiting lamp	NT6X19AA			5,19		RUL3
Japan General use line	NT6X33AA			5,19		RUL3
Message waiting converter	NT6X20AA			5,19		RUL3
Power converter (+48V)	NT6X23AA			5,19		RUL3
Data above voice POTS	NT6X87AA			5,19		RUL3
World line card	NT6X17BA			5,19		RUL3,4
P-Phone line card	NT6X21BC			5,19		RUL3,4
IBERT Test card	NT6X99AA			5,19		RUL3,4
Desig. Label (NT2X70AF)	P0809960		2			AP
Desig. Label (NT6X73BA)	P0681919		2			
Desig. Label (NT6X27BB)	P0739157		2			
Desig. Label (NT0X50AH)	P0670789			33	1,5	RUL13
Desig. Label (NT6X60CA)	P0740744			33	1,5	RUL13
Desig. Label (NT6X60AE)	P0725753			33	1,5	RUL13
Desig. Label (NT6X51AC)	P0802359		2			AP
Desig. Label (NT6X52AA)	P0633542		2			AP
Desig. Label (NT6X53AA)	P0633543		2			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) Use this packfill as a guideline. Provision per customer requirements.

RULES:

AP 1) When PEC NTNX14LD is ordered, these items are provided.

RUL1 1) Provide two (2) NT6X73BA and two (2) NT6X27BB cards for PCM-30 applications in Austrailia. Provide one (1) NT2X59CA A-law CODEC and one (1) NT4X97AA MTU controller for Austrailia applications.

RUL2 1) Provide two (2) NT6X60CA Ringing Generators when analog ringing is required in the office.

2) Provide two (2) NT6X60AE Ringing Generators when analog ringing is required in Austrailian use.

RUL3 1) Line cards are provisionable and spread according to standard DMS rules.

RUL4 1) For Austrailian use only.

RUL5 1) Refer to Table A, Section EMA14-01-000 for RMM provisionable circuit packs. Also refer to RUL9 for ESA provisioning.

2) Provide Filler Face Plate, NT0X50AC in slots not equipped with a circuit pack.

3) The following slots are provisionable, however, they are have fixed assignments for cabling efficiency. The following rules govern RMM card assignments:

SLOT	PEC	SLOT	PEC
03	NT2X10BA	10	NT2X57AA
04	NT2X11BA	11	NT2X10AB
05	NT2X90AD	12	NT2X11AA
06	NT3X09BA	*13	NT2X90AD
07	NT2X90AD	*14	NT3X09BA or NT3X04AA

08	NT0X10AA	*15	NT2X57AA
09	NT2X48AB	*16	NT0X10AA

* Slots 13 thru 16 are currently wired together to allow the operation of DRAM circuitry in these slots when the DRA software becomes available for remotes.

* The NT2X10BA, NT2X11BA LTU pair is not operational in these slots because of the DRA wiring and therefore should not be provisioned in slots 13 thru 16.

* All other applicable RMM CP's are allowed in slots 13 thru 16, however, these slots should be reserved whenever possible to allow for the future DRA application.

4) Provide one (1) NT2X59AA (Group Codec) if any cp's are provisioned in the RMM for slots 3 thru 8 or 10 thru 16.

5) If ESA is required, a NT2X48AB must be provisioned in slot 9. The NT2X48AB requires two slots.

RUL6 1) Provide one (1) NT0X50AG when the NT2X09AA is not provisioned in slot 17. Provide one (1) NT0X50AE when the NT2X09AA is not provisioned in slot 20.

RUL7 1) Provide one (1) NT0X50AA Filler Face Plate in positions shown when not equipped with a circuit pack.

RUL12 1) Provide one (1) P0631765 per RLCC. Each item contains LSG designation labels for twenty (20) Line Sub Groups (00-19) housed in ten (10) line drawers.

RUL13 1) Provide one (1) Designation Label for each of the indicated circuit packs supplied.

REMOTE LINE CONCENTRATING CABINET

PEC CODE:	NTNX14AA
CPC CODE:	B0223802
RATING:	Standard
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	RLCC or MCRU
ENGINEERING DESCRIPTION:	The RLCC and MCRU is a cabinetized remote that can serve up to 640 lines. This remote communicates to the host via up to six DS-1 links and is cabinetized to EMI compliance. (U.S. applications only)
REFERENCE DOCUMENTATION:	ISNX14AA 01 11
MARKETS:	Applicable markets: US Asia/Pacific

ISSUE AUTHOR: David O’Connell Dept. 2D69 (RICH)

MAIN CONTACT: David O’Connell Dept. 2D69 (RICH)

NTNX14AA EMA10-34-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 10 29	ECM 415 04	Introduce the NT6X47AC Master Processor Memory Pack which is required to support ESA in BCS-33. This change is being performed prior to the ECD release which will formally introduce these changes.
93 01 05	ECM 415 05	Corrected reference to the Designation Label "NT6X50AC", should reference the "NT0X50AC" P0580258.
93 06 04	ECM 415 06	ECD 002-15381 Introduce the NT6X60CA Ringing Generator.
95 01 27	ECM 415 07	Added Austrialain circuit packs.
95 04 26	ECM 415 08	Moved EMS to section 10.
95 05 12	ECM 415 09	Replace NT2X70AE with NT2X70AF per ECD024-93969 and to bring EMA to agreement with ISNX14AA 01 06 section C.
95 05 19	ECM 415 10	Replace NTNX14LA with NTNX14LC per ET23459.
95 09 27	ECM 415 11	Make changes per ECD002-16359.
95 11 15	ECM 415 12	Make changes per ECD002-16402.
96 03 27	ECM 415 13	Add the NT6X51BA for EDC on the MCRU in accordance with ECD002-16627.
97 04 14	ECM 415 15	Change the NT2X10AB/BA to NT2X10BB, NT2X11AD to NT2X11BA and the NT2X48AB to NT2X48BB.
97 10 28	ECM 415 16	Update the following per ECD 101-00734 1) Clarify Rule 4, add explanation of CP's usage. 2) Correct Rule 5, should read EMA14-01-000. 3) Added NT6X60BB Japan Ring Generator 4) Added provisioning of NT6X05DA ISDN Line Drawer For Remotes (ILDR).

The Remote Line Concentrating Cabinet is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Meridian Cabinet	NTNX25AA	FW	1			AP
	End Panel Assy Gray (Right)	NTNX2517					RUL1
	End Panel Assy Gray (Left)	NTNX2518					RUL1
	End Panel Assy Brown (Right)	NTNX2546					RUL1
	End Panel Assy Brown (Left)	NTNX2553					RUL1
	Door Assy Gray (Right)	NTNX2513					RUL2
	Door Assy Gray (Left)	NTNX2515					RUL2
	Door Assy Brown (Right)	NTNX2552					RUL2
	Door Assy Brown (Left)	NTNX2550					RUL2
	Anchor Kit- Earthquake (Concrete Slab Floor)	NTNX2540					RUL3
	Anchor Kit- Earthquake (Computer Floor)	NTNX2578					RUL3
	Anchor Kit- non Earthquake (Concrete Slab Floor)	NTNX2579					RUL3
	Anchor Kit- non Earthquake (Computer Floor)	NTNX2580					RUL3
	Bulkhead Assembly	NTNX1446					AP
	RLCC FSP	NTNX26AA	FSP	1	60		AP
	Rmt Maint Mod Shf Assy	NT6X1306	RMM	1	47		AP
	Filler Face Plate	NT0X50AC			47	1-16	RUL5
	Group CODEC	NT2X59AA			47	1	RUL5
	A-law TM CODEC with BT tones	NT2X59CA			47	1	RUL4
	RMM Control	NT6X74AB			47	2	RUL5
#	LTU - Analog	NT2X10AB			47	3,11	RUL5
#	LTU - Digital	NT2X11AD			47	4,12	RUL5
#	MTU - Analog	NT2X10BA			47	3	RUL5
	MTU - Analog	NT2X10BB			47	3,11	RUL5
	MTU - Digital	NT2X11BA			47	4	RUL5
	MTU Analog Card	NT4X98BB			47	3	RUL4
	MTU Controller	NT4X97AA			47	4	RUL4
	INC/OG Test Trunk	NT2X90AD			47	5,7,13	RUL5
	8X8 Metallic Test Access	NT3X09BA			47	6,14	RUL5
	MISC/Scanner	NT0X10AA			47	8,16	RUL5
#	Digitone Receiver	NT2X48AB			47	9	RUL5,9
	Digitone Receiver	NT2X48BB			47	9	RUL5,9
	SD w/OAU MON	NT2X57AA			47	10,15	RUL5
	INC Test from AECO LTD	NT3X04AA			47	14	RUL5
	Power Converter	NT2X09AA			47	17	RUL5
	Filler Face Plate	NT0X50AG			47	17	RUL6
	Filler Face Plate	NT0X50AA			47	19	RUL7
	Power Converter	NT2X06AB			47	20	RUL5
	Filler Face Plate	NT0X50AE			47	20	RUL6

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Desig. Labels for LSGs	P0631765					RUL12
	Desig. Label for NT2X59AA	P0643110			47	1	RUL13
	Desig. Label for NT0X50AC	P0580258			47	1-16	RUL13
	Desig. Label for NT6X74AB	P0663271			47	2	RUL13
#	Desig. Label for NT2X10AB	P0664835			47	3,11	RUL13
#	Desig. Label for NT2X11AD	P0710810			47	4,12	RUL13
#	Desig. Label for NT2X10BA	P0707874			47	3	RUL13
	Desig. Label for NT2X10BB	P0838517			47	3	RUL13
	Desig. Label for NT2X11BA	P0707876			47	4	RUL13
	Desig. Label for NT2X90AD	P0688244			47	5,7,13	RUL13
	Desig. Label for NT3X09BA	P0664847			47	6,14	RUL13
	Desig. Label for NT0X10AA	P0656328			47	8,16	RUL13
#	Desig. Label for NT2X48AB	P0676175			47	9	RUL13
	Desig. Label for NT2X48BB	P0653620			47	9	RUL13
	Desig. Label for NT2X57AA	P0656327			47	10,15	RUL13
	Desig. Label for NT3X04AA	P0689910			47	14	RUL13
	Desig. Label for NT2X09AA	P0688106			47	17	RUL13
	Desig. Label for NT0X50AG	P0685986			47	17	RUL13
	Desig. Label for NT0X50AE	P0591361			47	20	RUL13
	Desig. Label for NT0X50AA	P0578498			47	19	RUL13
	Desig. Label for NT2X06AB	P0591398			47	20	RUL13
	Desig. Label for NT2X59CA	P0677817			47	1	RUL13
	Desig. Label for NT4X98BB	P0701603			47	3	RUL13
	Desig. Label for NT4X97AA	P0677209			47	4	RUL13
	Host I/F Equip Shf Assy	NT6X1108	HIE	1	33		AP
	Ringing Generator CP	NT6X60CA			33	1,5	RUL8
	Ringing Generator CP	NT6X60AE			33	1,5	RUL8
	Japan Ring Generator (RLCM)	NT6X60BB			33	1,5	RUL8
	Filler Face Plate	NT0X50AH			33	1,5	RUL8
	Filler Face Plate 2.22 IN.	NT0X50AG		1	33	9	RUL7
	Filler Face Plate	NT0X50AA			33	12-16, 21	RUL7
	Master Processor Memory CP	NT6X47AB			33	14	RUL9
	Master Processor Memory CP	NT6X47AC			33	14	RUL9
	LGC/DTC Processor CP	NT6X45AF			33	15	RUL9
	ESA Clock and Tone CP	NT6X75AA			33	16	RUL9
	DS-1 Interface CP	NT6X50AB			33	21	RUL10
	Desig. Label for NT6X47AB	P0666374			33	14	RUL13
	Desig. Label for NT6X47AC	P0711821			33	14	RUL13
	Desig. Label for NT0X50AA	P0578498			33	14-16, 21	RUL13
	Desig. Label for NT6X45AF	P0685029			33	15	RUL13
	Desig. Label for NT6X75AA	P0642015			33	16	RUL13
	Link Control CP	NT6X73AA		2	33	17,18	RUL21
	Intl Link Control CP	NT6X73BA		2	33	17,18	RUL4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS1 Interface CP	NT6X50AB		2	33	19,20	RUL21
Enchanced PCM30 Interface CP	NT6X27BB		2	33	19,20	RUL4
Pwr Converter -5VOLT,12V	NT2X70AF		2	33	22,25	RUL22
Desig. Label for NT6X50AB	P0690976			33	21	RUL13
Line Con Module Shf	NTNX2802		2	05,19		AP
Power Converter 5V/15V CP	NT6X53AA		2	5,19	1	RUL23
LCM Processor CP	NT6X51AC		2	5,19	4	RUL23
LCM Processor CP	NT6X51BA			5,19	4	RUL23
Desig. Label for NT6X51BA	P0835569			5,19	4	RUL23
Process Controller Card	NT6X51DA		2	5,19	4	RUL25
Designation Label (NT6X51DA)	P0865463		2	5,19	4	RUL25
Digroup Control CP	NT6X52AA		2	5,19	5	RUL23
Line Drawer	NT6X05AA	LD		05,19	1-5	RUL11
ISDN Line Drawer For LCM	NT6X05DA		X	05,19,		RUL24
Line Cards	AR					RUL11
Desig. Labels for LSGs	P0631765			05,19	1-5	RUL12
Cooling Unit	NTNX27AA	FCU	1	00		AP
Door Label (Right- gray)	P0699137					RUL14
Door Label (Left- gray)	P0818848					RUL14
Door Label (Right- brown)	P0699136					RUL15
Door Label (Left- brown)	P0818849					RUL15
Cabinet Type Label (gray)	P0699135					RUL16
Cabinet Type Label (brown)	P0699134					RUL17
Cabinet Position Label(gray)						RUL18
Cabinet Position Label(brown)						RUL19
EMI/RFI Gasket Strip	P0976010					RUL20
FCC Marking Label	P0634844					AP
FCC Compliance Label	P0676164					AP
UL Listing Label	P0736496					AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X10AB	STD	NT2X10BB
NT2X10BA	STD	NT2X10BB
NT2X11AD	STD	NT2X11BA
NT2X48AB	STD	NT2X48BB
P0664835	STD	P0838517
P0707874	STD	P0838517
P0710810	DEV	P0707876

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) Printed Circuit Packs: Provisioning for RLCC utilizes DMS-100 printed circuit packs.

2) Cabinet NTNX14AA: The RLCC cabinet is available in a maple brown or gray color.

3) The circuit packs in the NTNX14LD Packfill have been moved to the frame level PEC (NTNX14AA). The NTNX14LD will be MDed at a later date.

RULES:

AP 1) When PEC NTNX14AA is ordered, these items are provided.

RUL1 1) Provide one (1) right and one (1) left End Panel Assembly per customer requirements.

RUL2 1) Provide two (2) right and two (2) left Door Assemblies per customer requirements.

RUL3 1) Provide one (1) Anchor Kit to meet the customer floor mounting requirements.

RUL4 1) Provide one (1) NT2X59CA, required for International Tones on the RMM shelf, one (1) NT4X98BB, one (1) NT4X97AA, required for MTU tests in International applications, two (2) NT6X73BA and two (2) NT6X27BB required for International P Links. applications, two (2) NT6X73BA and two (2) NT6X27BB required for

RUL5 1) Refer to Table A of EMA14-01-000 for RMM provisionable circuit packs.

2) Provide NT2X48BB if Emergency Stand Alone software will be used.

3) Provide 1 NT3X09BA for every 2 MCRUs this RMM supports. If the second NT3X09BA in slot 14 is not needed the NT3X04AA may be provisioned in this slot for Automatic Electric (AE-31) type test desk, otherwise provide Filler Face Plate (NT0X50AC).

4) Provide 1 MTU pair for all new U.S. applications. Otherwise provide 1 or 2 LTU pairs per customer request. NOTE: Do not provide an LTU in slots 11 & 12 if a MTU pair is in slots 3 & 4.

5) Provide an NT0X50AC to any unequipped slots in the range indicated.

6) MTU required for ISDN Line Drawer for Remotes (ILDR), provide the NT2X10BA and NT2X11BA pair for MTU (Multi-Line Test Unit).

RUL6 1) Provide the NT0X50AG in slot 17 and the NT0X50AE in slot 20 if these slots are unequipped.

RUL7 1) Provide one (1) NT0X50AG in slot 9 and NT0X50AAs in any unequiped slots in the range of positions indicated.

RUL8 1) Provide two (2) NT6X60CA Ringing Generators when analog ringing is required in the office.

2) Provide two (2) NT6X60AE Ringing Generators when analog ringing is required in Austrailian use.

3) Provide two (2) NT6X60BB Ringing Generators when analog ringing is required in Japan market.

4) Provide two (2) NT0X50AH Filler Face Plates if Ringing Generators are not provided.

RUL9 1) The NT6X47AC Master Processor Memory is required to support the ESA feature in BCS-33. BCS-33 requires the additional memory on the NT6X47AC pack. The NT6X47AC may be provided in lieu of the NT6X47AB in pre-BCs-33 application.

2) Provide one (1) NT6X47AC Master Processor Memory CP, one (1) NT6X45AF LGC/DTC Processor CP and one (1) NT6X75AA ESA Clock and Tone CP when Emergency Stand Alone (ESA) feature is required.

3) When ESA is a requirement provide digitone receivers NT2X48BB on the RMM shelf based on traffic requirements. The NT2X48BB requires 2 card slots.

4) ESA is not supported for Australian applications.

RUL10 1) Provide one (1) additional NT6X50AB for a maximum of three (3) NT6X50AB DS-1 Interface CP based on traffic requirements per RLCC cabinet. Two (2) CPs are always provided with the MCRU Packfill Kit (NTNX14LD).

RUL11 1) Provide one (1) Line Drawer NT6X05AA to accommodate up to sixty-four (64) line cards in two line sub groups (LSG's) on the RLCM 100C (See Section EMA2-07-LD-1).

2) The RLCC utilizes the same line cards as the host LCMs. Refer to the host LCM provisioning rules for line card provisioning.

RUL12 1) Provide one (1) P0631765 per RLCC. Each item contains LSG designation labels for twenty (20) Line Sub Groups (00-19) housed in ten (10) line drawers.

RUL13 1) Provide one (1) Designation Label for each of the indicated circuit packs supplied.

RUL14 1) Provide two (2) Door Labels when ordering gray door assemblies.

RUL15 1) Provide two (2) Door Labels when ordering brown door assemblies.

RUL16 1) Provide two (2) Cabinet Type Labels when ordering gray door assemblies.

RUL17 1) Provide two (2) Cabinet Type Labels when ordering brown door assemblies.

RUL18 1) Provide two (2) Cabinet Position Labels when ordering gray door assemblies for the following conditions;

P0669153 if cabinet is the first cabinet in a line-up
P0669154 if cabinet is the second cabinet in a line-up
P0669156 if cabinet is the third cabinet in a line-up
P0669157 if cabinet is the fourth cabinet in a line-up

RUL19 1) Provide two (2) Cabinet Position Labels when ordering brown door assemblies for the following conditions;

P0695232 if cabinet is the first cabinet in a line-up
P0695233 if cabinet is the second cabinet in a line-up
P0695234 if cabinet is the third cabinet in a line-up
P0665235 if cabinet is the fourth cabinet in a line-up

RUL20 1) Provide one (1) EMI/RFI Gasket Strip if the RLCC is located in a line-up.

RUL21 1) Provide two (2) NT6X73AA and two (2) NT6X50AB for applications not in Australia. See RUL4 for Australian applications.

2) Provide two (2) NT6X50AB DS-1 E.F.F. Card for ISDN applications that require 64Kb/s clear channel path at Host and Remote.

RUL22 1) Always provide two (2) NT2X70AF Power Converters.

RUL23 1) Provide two (2) NT6X53AA, two (2) NT6X51AC and two (2) NT6X52AA, except in the Japan market where the Extended Distance Capability (EDC-MCRU) is required. If EDC is require provide two (2) NT6X51BA and two (2) P0835569 Designation Labels instead of NT6X51AC.

RUL24 1) For ISDN applications, provide one (1) NT6X05DA ISDN Line Drawer for Remotes per LCM shelf, (LCA) with a maximum two (2) per MCRU.

MCRU Hardware Requirements are as follows:

1) NT6X51DA (Process Controller Card)
2) NTBX27AA (ISDN 2B1Q Single Slot Line Card)
3) NT6X50AB (DS-1 E.F.F. Card) at Host and Remote
4. NT2X10BA/NT2X11BA (Multi-Line Test Unit Analog Card/Multi-Line Unit Control Card) for the Line Test function.

Each NT6X05DA accomodates up to 28 ISDN line cards in two logical drawers called Line Sub Groups (LSG) which can contain 14 cards each.

It is recommended that the ISDN Line Drawer be provisioned in the right hand drawer position of each shelf in physical position 4 and 9 (logical drawers 8/9 and 18/19) in order to permit an optimal heat dispersion in the LCM.

However, ISDN Line Drawers can be provisioned in any drawer position on on the LCM shelf except physical position 0 and 5 (logical drawers 00/01 and 10/11). This is because BIC Relay Test diagnostics require those positions for systems use.

Quantity and mounting positions of the NT6X05DA are job engineerable. Maximum per LCA Line Module is TWO. Maximum per MCRU cabinet is TWO

Provision line cards in the line drawers per MS6X05DA. LCM common circuit packs must be provisioned in modules(s) to be provisioned with line drawers. LCM MUST use NT6X51DA Processor card.

Mounting positions are as follows:

	FRAME MOUNTING POS	CONTAINING LINE DRAWERS
MODULE XX 0	05	LSG 02-09
	19	LSG 12-19

LCM MODULE	FRAME MOUNTING POSITION	LINE DRAWER LOGICAL SUB-GROUPS
0	05-10	LSG 02 to 03
0	05-14	LSG 04 to 05
0	05-18	LSG 06 to 07
0	05-22	LSG 08 to 09
0	19-10	LSG 12 to 13
0	19-14	LSG 14 to 15
0	19-18	LSG 16 to 17
0	19-22	LSG 18 to 19

Implement the ISDN Line Drawer for Remotes (ILDR) in the MCLM & MCRU. Maximum of 2 line drawers per LCM is allowed. The number of ILDR drawers that can be provisioned on an XPM is dependent on equipment that subtends that XPM. The

basic limitation is the number of available message channels on that equipment.

The following Table shows the equipment that can be subtended off a peripheral and the number of message channels that are allocated for that equipment. The bottom line shows the maximum resources available per XPM. Therefore, for example, if an RCC2 already has 4 RLCMs, 4 LCMs and an RMM subtending it, that would use up a total of 33 message channels (4x6 + 4x2 + 1), and leave a total of 12 message channels for ILDRs. Since each ILDR uses 2 message channels, a total of 6 ILDs would be able to be provisioned on this RCC2.

It should be noted that the RCC2 already has software to check that these limits are not exceeded, and the ILDR will be included in this check. However, other peripherals (RCC+ and LTC+) do not have this capability and therefore this would have to be done manually. If this limitation is exceeded, functionality will be affected.

NODE	# MESSAGE CHANNELS	RELEVANT TO: RCC2	RCC+	LTC+
LCM	2	Y	Y	Y
RLCM WITH ESA & RMM	6	Y	Y	Y
LCME	2	Y	N	N
SMS-R	2	Y	N	N
RMM ON RCC2 OR RCC+	1	Y	Y	N
ILDR	2	Y	Y	Y
DUAL CONFIGURATION	2	Y	Y	N
RCC2/RCC+	2	N	N	Y
TOTAL # OF CHANNELS AVAILABLE:		45	39	47

The limitations in the Table define the number of ILDRs that can be provisioned per host shelf, and the limitation of 480 ISDN lines per host shelf defines the total quantity of ISDN lines that can be configured. As a general rule, the ILDR message channels will limit the configuration assuming that no LCME is provisioned on the same host. If an

LCME is provisioned on the same host, then the number of ISDN lines would probably be the limiting factor.

Provide one (1) NTBX27AA per ISDN U Line (2B1Q Signalling) in the NT6X05DA Line Drawer as per Job Engineering requirements. (Up to 28 per physical Line Drawer).

Provisionable for MSL08 and later software ONLY.

LINE CARD SLOT ASSIGNMENTS:

Line Card	LOGICAL DRAWER POSITION
00-13	Upper LSG's 3, 5, 7, 9, 13, 15, 17, 19
00-13	Lower LSG's 2, 4, 6, 8, 12, 14, 16, 18

RUL25 1) For ISDN applications (NT6X05DA) provide two (2) NT6X51DA Process Controller Cards per LCM Module. Provide one (1) P0865463 Designation Label per NT6X51DA.

EMA11

MAINTENANCE AND TEST EQUIPMENT CHAPTER ALL

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MAINTENANCE AND TEST EQUIPMENT CHAPTER ALL

EMA11-01-COMM-1	DMS-100F COMMUNICATION MODULES	DMS100COM
EMA11-01-NKSU-0	NORSTAR KEY SYSTEMS	NORSTAR
EMA11-01-NKSU-1	NORSTAR KEY SYSTEM UNIT (NKSU) KIT	NTZX18AB
EMA11-01-PRT-8	MAP PRINTER (DEC LA30N-CA)	LA30
EMA11-01-PRT-9	MAP PRINTER (DEC LA400-CA)	LA400
EMA11-01-VDU-3	DEC VT-420 SERIES VDUS	VT-420
EMA11-01-VDU-4	MAP VDU (DEC VT-340GA)	VT340
EMA11-01-000	MAINTENANCE AND ADMINISTRATION POSITION	NT0X57
EMA11-01-001	MAP AREA EQUIPMENT	MAP_EQUIP
EMA11-02-DRTU-2	NSSD MODEL 3704 DIG REMOTE TEST UNIT BRO	NT0J04EB
EMA11-02-FPL-1	3703-03 LOCAL CONTROL FRONT PANEL BROWN	NT0J04BQ
EMA11-02-RTU-16	RTU/AMH 16-TRUNK (CALRS)	NTAN11AA
EMA11-02-RTU-4	RTU/AMH 4-TRUNK (CALRS)	NTAN10AA
EMA11-02-000	MODEL 3703-03 LOCAL TEST CABINET (BROWN)	NT0J6_BA
EMA11-03-000	DATA PHONES	DATAPHON
EMA11-04-000	CENTRALIZED OPERATIONS ADMINISTRATION AN	NT4G13

DMS-100F COMMUNICATION MODULES

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NT5X64 Series Communication Modules (CM) are designed for use at Maintenance and Administration Positions (MAP) and test positions such as Line Test Positions (LTP) and Trunk Test Positions (TTP) in DMS-100 Family switching offices. The CM can be connected to lines from NE-1A2 Key Telephone Systems (KTS) installed in DMS 100 Family offices to provide voice communications between these test positions.

The CM consists of a basic unit permitting the connection to a maximum of 20 KTS lines and an optional extension unit that permits connection to an additional 20 KTS lines.

Two types of packaging configuration are available, a desk-mount type and a rack-mount type suitable for installation in NT5X82 type Frame Assemblies, or equivalent.

REFERENCE DOCUMENTATION: GS5X64 01 01
MS5X82AA 01 01

The DMS-100F Communication Modules is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	20 Line Basic, DIGITONE	NT5X64AA					RUL1
#	20 Line Basic,DIGIPULSE	NT5X64AB					RUL1
	20 Line Basic, 16 Button DGT-DGP-MF	NT5X64AC					RUL1
	20 Ln Supplementary Unit	NT5X64AD					RUL2
	16 Button Signalling Unit	NT5X64AE					RUL3
	20 Line Basic, Rackmount	NT5X64BA					RUL4
	20 Ln Supp Unit,Rackmount	NT5X64BC					RUL4
	NTL Handset	NE63QDRNC-03					RUL5
	Cradle Assembly	NT5X64AH					RUL5
	Headset (Ivory)	QSR2F					RUL6
	Logic Hands Free Unit	QUS1C6-20					RUL7
	Logic Autodialler Unit	NT0C25-AC-20					RUL7
	Cable Assembly	NT5X64AG					RUL7

Rated MD.

RULES:

RUL1 1) Ordered per customer requirements.

2) NT5X64AA is used with DMS-100 and DMS-100/200 offices.

3) NT5X64AC is used with DMS-100, DMS-100/200, DMS-200, and DMS-300 offices.

RUL2 1) Order one NT5X64AD 20 Line Supplementary Unit per NT5X64AA/AC in order to permit the CM to connect to an additional 20 KTS lines.

RUL3 1) The 16 button signalling unit is used to add DGT, DGP and MF signalling capability to the NTL Logic Telephone Set or equivalent.

RUL4 1) For rack mounted version, order NT5X64BA for 20 line basic and NT5X64BC for 20 line supplementary units. These should be installed at the mounting facility of the associated

test position as described in NTP 297-1001-157 DMS-100/200/300 Family NT5X64 Type Communication Module Description, Ordering Information, Installation, Operation and Maintenance. Mounting facilities must be verified by NTL.

RUL5 1) If a telephone handset is required for use with NT5X64AA/AC units, NTL handset, NEG3QDRNC-03 (A0283472) and the Communication Module Cradle Assembly, NT5X64AH, should be provided.

RUL6 1) Logic 10/20 sets must be ordered with headset feature.

RUL7 1) Ordered per customer requirements.

2) If a hands free set and/or an autodialler are to be provisio ned, cable assembly NT5X64AG must be provided (one per basic 20 line unit).

3) Hands free unit requires minimum 16 VAC at 100 mA to be supplied via MD9207 transformer A0276607 unless the associated key system can provide the required power. If required, provide quantity of one (1) transformer for each hands free unit.

NORSTAR KEY SYSTEMS

PEC CODE: NORSTAR

CPC CODE: Not Applicable

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The Norstar Key System is designed to serve as the backbone of MAP Voice Communications Module. The Norstar KSU is a digital key system which provides the user with advance features such as:

* Automatic phone relocation with the system
* Support of single phones, FAX Machines, Modems, Answering Machines, and other analog tip and ring devices.
* Automatic transfer to emergency telephone if power fails
* Headset Jack available on Norstar Telephones
* Remote Administration
* Bilingual (English/Spanish) telephone prompts by individual telephone
* Multipurpose auxiliary power supply for terminals and the extension of station loops to 900 meters (3000 ft.).

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Mark Sorrell Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NORSTAR EMA11-01-NKSU-0 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 28	ECM 472 14	Introduction of general Norstar Section. Also update equipment list per latest Norstar Catalog.
94 07 14	ECM 472 15	Remove M7208 and M7310 Telsets since they cannot be used as MAP Phones.
94 10 12	ECM 472 16	Introduce new part numbers for M7324 Telsets. Manufacture Discontinue (MD) the Unity II phone and replace with M8009 Telephone Set.
95 02 17	ECM 472 17	Update per Norstar Product Catalog dated January 1995.
95 09 14	ECM 472 18	Update per Norstar Product Catalog dated June 1995.

The Norstar Key Systems is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Norstar Key System (N Amer.)	NTZX18AB					RUL1
Norstar 2-Port Expansion Un	NT5B26GA-93					RUL2
Norstar 6-Port Expansion Un	NT5B27GA-93					RUL2
Norstar Trunk Mod (N Amer.)	NT5B32FA-93	NTM				RUL3
Norstar Trunk Cartridge	NT7B75GA-93					RUL3
1A2 Trunk Cartridge	NT5B39GA-93					RUL3
E&M/DISA Trunk Cartridge	NT5B38GA-93					RUL3
DID Trunk Cartridge	NT5B37GA-93					RUL3
Norstar Station Module	NT5B50FA-93	NSM				RUL4
Power Bar (115V)	NT5B56AA					RUL5
Add-On Norstar Mtg Board	P0708017					RUL6
Wall Mounting Kit	NTZX1850					RUL6
Norstar Telset M7324 Ash	NT8B40AE-35					RUL7
Norstar Telset M7324 Grey	NT8B40AE-93					RUL7
Norstar Telset M7324 Black	NT8B40AE-03					RUL7
RJ-11 Modular Jack	NE-625QA4					RUL8
Norstar Telset Aux Pwr Sup	NT8B60CA-35					RUL8
Panasonic Port Cassette Rcr	A0324061					RUL8
Panasonic Dram Record Cable	NTZX1851					RUL8
M8009 Telephone Set	A0404589					RUL9
26AWG Red/Green Wire Pair	R0109670					RUL9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Norstar Screw Kit	NTZX1852					RUL10
Headset w/ Ear Hook	A0384863					RUL11
Accessory: Ear Loop	A0378013					RUL11
Accessory: Head Band	A0378014					RUL11
Norstar Radio Freq Filter Kt	NT8B10CA-35					RUL12
Analog Terminal Adapter	NT8B90AC-93	ATA				RUL13
Norstar Key Cap Kit	NT6B9901					RUL14
BIX Connection Tool	QTBIX16A					RUL15
Norstar Tech Reference Set	NT6B9807					RUL17
DR5 Software Pkg	NT5B25DJ-93					RUL18
Centrex Plus Software Pkg	NT5B30DE-93					RUL18

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT5B40GA-93	MD	NT7B75GA-93

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 Norstar KSU requires an Uninterruptable Power Supply (UPS). Provide the currently provisionable inverter or circuit off of an existing inverter to accomodate the 69-Watt power requirement of the NKSU.

2) The KSU is connected to its add-on modules by connecting DS-3 cables from the Expansion Cartridge installed in the KSU to the add-on modules. Refer to CA0X15 for cabling instructions.

RULES:

RUL1 1) Provide the Norstar KSU Kit as the base component of the MAP Voice Communication Module. The NTZX18AB Norstar KSU Kit will provide the Telco with the capability of terminating:

* 12 Central Office (CO) lines,

* 24 Norstar Telephones

* Three ordinary telephones to be used as an emergency voice line to another switching system. Two lines from the KSU and one from the NTM.

RUL2 1) ALWAYS PROVISION one (1) Norstar Expansion Unit either the NT5B26GA-93 (2-Port Expansion Module) or the NT5B27GA-93 (6-Port Expansion Module). This is to be specified by the customer to enable the Norstar KSU to:

* add a 2-Port expansion unit (NT5B26GA-93) to facilitate adding up to two (2) add on modules (NTM or NSM) in any combination, or

* add a 6-Port expansion unit (NT5B27GA-93) to facilitate adding up to six (6) add on modules (NTM or NSM) in any combination.

2) Add on modules may be Norstar Trunk Modules (NTM) or Norstar Station Modules (NSM) in any combination totaling two or six modules as required.

RUL3 1) Provide a Norstar Trunk Module (NTM) to provide a mounting enclosure for up to three (3) Norstar Trunk Cartridges. Each NTM has three (3) card slots for trunk cartridges.

2) Provide from one to a maximum of three Norstar Trunk Cartridges per Trunk Module to expand the number CO-Lines which may be connected to the Norstar KSU. One Trunk Cartridge provides the ability to connect four (4) more CO-Lines to the base system.

3) Provide from one to a maximum of three 1A2 Trunk Cartridges per Trunk Module if the Norstar Key System will be used in conjunction with the 1A2 Key System. One Trunk Cartridge provides the ability to connect four (4) 1A2 Key System Trunks.

4) Provide from one to a maximum of three E&M/DISA Trunk Cartridges per Trunk Module if the Norstar Key System will be used to support E&M/DISA. One Trunk Cartridge provides the ability to connect two (2) E&M Trunks and two (2) DTMF Receivers for DISA.

5) Provide from one to a maximum of three DID Trunk Cartridges per Trunk Module if the Norstar Key System will be used to support DID Trunks. One Trunk Cartridge provides the ability to connect four (4) DID Trunks.

RUL4 1) Provide one (1) Norstar Station Module (NSM) to increase the number of Norstar Telephone Sets which may be terminated on the Key System by a factor of 16 telsets.

RUL5 1) One (1) Power Bar is AP to provide AC connection facilities for the Main Key System and up to three (3) add-on modules (Trunk/Station modules). One additional module may be connected to this power bar.

2) If a second power bar is required, plug it into the fourth AC outlet on the always provided bar.

RUL6 1) Provide one Add-On Norstar Mtg Board (P0708017) and one Wall Mounting Kit (NTZX1850) per NTM and/or NSM added.

RUL7 1) Provide from one (1) to a maximum of 24 Norstar Telsets, color per Telco specifications, for operation with the Norstar KSU.

Provision the M7324 Set for the MAP Phone, no other Norstar Telset is applicable for the MAP/LTP/TTP application.

The Norstar Telsets cannot be used outside of the Norstar environment because they use digital technology and are incompatible with the analog environment.

2) If more than 24 Telsets are required, station modules must be provided (See RULE #4 above).

3) The M7324 telset has:

Telephone Features

* Integrated Handsfree Unit
* Headset Jack Equipped
* Two-Line Display (2x16 Characters)
* Three Display Buttons (Context Sensitive)
* 24 Buttons With Indicators
* 20 Line Appearances
* Hearing Aid Compatible
* Volume Adjustment Bar
* Speaker for Paging/Background Music
* Reversible Wall Mount Base

Telset Hardware

* M7324 Telset (NT8B40)
* Receiver
* Line Cord 2.1m (7 ft.)
* Feature Card with Plastic Lens
* Key Cap Kit
  - Button Labels
  - Clear Keys Caps
  - Pre-Printed Key Caps
* User Card
* Speed Dial Card and Plastic Sleeve

RUL8 1) Provide one (1) RJ-11 Modular Jack per Norstar Telset station.

2) Provide one (1) Norstar Telset Auxilary Power Supply per three (3) Norstar Telset when the loop length exceeds 1000 ft. (305 Meters).

3) Provide one Panasonic Portable Cassette Recorder (A0324061) and one Panasonic DRAM Recording Cable (NTZX1851) to provide a facility for loading the MTM DRAM unit from the Norstar M7324 Telset.

RUL9 1) Provide the following equipment per Telco specifications to serve as a Single Line Emergency Telephone Set:

A0404589 - M8009 Telephone Set
R0109670 - 26AWG Red/Green Wire Pair

NOTE: The M8009 Telephone Set can be wall-mounted if preferred.

RUL10 1) Provide one Norstar screw kit per NTM, NSM, and/or Emergency Telephone Set provided.

RUL11 1) Provide one (1) headset for each MAP-Type position. If ear loop or head band is preferred over the standard earhook, provide A0378013 or A0378014 in addition to A0384863. Additional headset may be provided per Telco request.

RUL12 1) Provide one RFI Kit per Telco request to reduce the effect of RFI induced noise as the the Norstar is susceptable to RFI interference.

RUL13 1) The Analog Terminal Adapter is used to convert a Norstar digital Station port into a regular POTS line to serve analog tip and ring devices.

2) Provide one (1) Analog Terminal Adapter (NT8B90AC-93) per Telco request to provide an interface to an analog device such as a modem, FAX machine, answering machine, etc.

3) Single line phones can be administered with both inside and outside lines and several call features.

4) The Analog Loop Length is (a) 1300 Ohms maximum for voice, and (b) 200 Ohms maximum for data applications.

RUL14 1) Provide the Norstar Key Cap Kit (NT6B9901) as spare equipment per Telco request.

RUL15 1) Provide one or two BIX Connection Tools per customer requirements.

RUL16 1) The NT0B17AB Auxiliary Ring Generator has been Manufacture Discontinued (MD).

RUL17 1) Provide a minimum of one copy of the technical reference manuals.

RUL18 1) Provide one (1) of the listed available software packages for EVERY Norstar Key System provided. Provide the DR5 Software Package as standard unless Centrex features are required. Each software package consists of an English/Spanish cartridge and English documentation. Refer to the Norstar Product Catalog for a detailed description of each software package.

NORSTAR KEY SYSTEM (N AMERICA)

PEC CODE: NTZX18AB

CPC CODE: B0230722

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: NKSU

ENGINEERING DESCRIPTION: The NTZX18AB is a kit which contains the NorStar KSU and other always required components. This kit is designed to provide the customer with a base system designed to serve as the backbone of MAP Voice Communications Module.

The NorStar KSU is a digital key system which provides the user with advance features such as:

* Automatic phone relocation with the system
* Support of single phones, FAX Machines, Modems, Answering Machines, and other analog tip and ring devices.
* Automatic transfer to emergency telephone if power fails
* Headset Jack available on NorStar Telephones
* Remote Administration
* Bilingual (English/Spanish) telephone prompts by individual telephone
* Multipurpose auxiliary power supply for terminals and the extension of station loops to 900 meters (3000 ft.).

REFERENCE DOCUMENTATION: SLZX18AB 00 03

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Mark Sorrell Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NTZX18AB EMA11-01-NKSU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 09 27	ECM 472 09	NORSTAR Telset NT8B20AA-35 has been MD'd and replaced by the NT8B20AB-35.
92 11 30	ECM 472 10	NORSTAR 8x24 Key System Un NT5B20DB-93 MD'd and replaced by the NT5B20FC-93. Add provisionable software and new telsets.
93 04 19	ECM 472 11	Correct miscellaneous typos.
93 09 29	ECM 472 12	Manufacture Discontinue (MD) the NT0B17AB Auxiliary Ring Generator and the A0378002 Liberation Headset. Also, change the software provisioning for Norstar.
93 12 22	ECM 472 13	Introduce new part numbers for the M7208 telsets and the M7310 telsets.
94 03 28	ECM 472 14	Remove provisionable equipment to a general NorStar engman section.
94 07 14	ECM 472 15	Update per latest stocklist.
95 09 14	ECM 472 18	Update per latest NORSTAR catalog.

The NorStar Key System (N America) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NorStar 8X24 Key System Unit	NT5B20FC-93		1			AP
NorStar Trunk Module	NT5B32FA-93		1			AP
Norstar Trunk Cartridge	NT7B75GA-93		1			AP
NorStar Power Bar	NT5B56AA		1			AP
Eight Position Bix Pack	QAPAC8U		1			AP
Eight Position Bix Cover	QCPAC1A		1			AP
RJ-11 Modular Jack Connector	QCBIX36B		1			AP
Label, Blank, White Set	P0679239		1			AP
Label, Blank, White Set	P0657101		1			AP
KSU Mounting Board	P0708016		1			AP
Wall Mount Cable Tie Bracket	P0633741		6			AP
Wall Mount Cable Tie Bracket	P0633702		6			AP
NorStar Anchor Kit	NTZX1850		1			AP
NorStar Wood Screw Kit	NTZX1852		3			AP
NorStar Key Cap Kit	NT6B9901		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT5B40GA-93	MD	NT7B75GA-93

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 NTZX18AB NorStar KSU Kit is comprised of 98% of the components required to provide the Telco with the capability of terminating:

   * 12 Central Office (CO) lines,

   * 24 NorStar Telephones

   * Three ordinary telephones to be used as an emergency voice line to another switching system. Two lines from the KSU and one from the NTM.

   The remaining 2% consists of provisioning the appropriate Expansion Cartridge and the required number of Emergency Telephones. This will complete provisioning of a basic NorStar KSU.

2) The KSU is connected to its add-on modules by connecting DS-3 cables from the Expansion Cartridge installed in the KSU to the add-on modules. Refer to CA0X15 for cabling instructions.

3) The NorStar KSU requires an Uninterruptable Power Supply (UPS). Provide the currently provisionable inverter or circuit off of an existing inverter to accomodate the 69-Watt power requirement of the NKSU.

RULES:

AP 1) When PEC NTZX18AB is ordered, these items are provided.

MAP PRINTER (DEC LA30N-CA)

PEC CODE:	LA30
CPC CODE:	A0660002
RATING:	Standard
REPLACES:	LA75S
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	LA30N-CA
ENGINEERING DESCRIPTION:	The Maintenance and Administration Position (MAP) is the primary man/machine interface between the Telco personnel and the DMS system. The secondary vehicle for providing this interface is the Printer (PTR). This Engineering Insert provides ordering information for the Digital Equipment Corporation (DEC) LA30 Printer with the appropriate accessories.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: Canada US

ISSUE AUTHOR: NT: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT: Mark Sorrell Dept. 3471 (PPK)

LA30 EMA11-01-PRT-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 08 27	ECM 607 11	Introduce the LA30N-CA as a replacement for the LA75S.

The MAP Printer (DEC LA30N-CA) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DEC Printer (LA30N-CA)	A0660002					RUL1
20 ma Current Loop Adapter	H8673-AC					RUL2
RS232 Connection Adapter	H8671-A					RUL2
DEC Printer Stand/Catcher (LAXXS-DS)	A0382512					RUL3
DEC Ribbon (LA30R-KA)	A0660004					RUL4
RS-232 Slave Cable	BC16E-10FT					RUL5
RS-232 Slave Cable	BC16E-25FT					RUL5
RS-232 Slave Cable	BC16E-50FT					RUL5

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) If replacing the DEC LA-120 Printer, replace the existing Current Loop Adapter (LA12X-AL) with the H8673-AC CLA.

RULES:

AP 1) When PEC LA30 is ordered, these items are provided.

RUL1 1) Provide one or more of the LA30N-CA printer(s) per Telco requirements.

RUL2 1) Provide one (1) H8673-AC Current Loop Adapter per LA30 that will be equipped for current loop operation applications (such as stand-alone). The Current Loop Adapter is a critical circuit when operating in the Current Loop Mode, therefore, it is recommended that a CLA is always provided as spare equipment when the current loop application is required.

2) Provide one (1) H8671-A RS-232 Connection Adapter per LA30 that will be equipped for RS-232 operation (such as modem stand-alone).

3) Note: Each LA30 can only be equipped for Current Loop or Modem (RS-232) operation.

RUL3 1) Provide one (1) DEC LAXXS-DS Desktop Stand/Paper Catcher per DEC LA30N-CA printer.

RUL4 1) Provide one (1) or more A0660004 Ribbon Cartridge(s) per DEC LA30N-CA printer.

RUL5 1) Provide proper length and quantity of cable(s) for interfacing this printer with the VT-420 VDUs.

MAP PRINTER (DEC LA400-CA)

PEC CODE:	LA400
CPC CODE:	A0660949
RATING:	Standard
REPLACES:	LA424-CA
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	LA400-CA
ENGINEERING DESCRIPTION:	The Maintenance and Administration Position (MAP) is the primary man/machine interface between the Telco personnel and the DMS system. The secondary vehicle for providing this interface is the Printer (PTR). This Engineering Insert provides ordering information for the Digital Equipment Corporation (DEC) LA400-CA Printer with the appropriate accessories.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: Canada US

ISSUE AUTHOR: NT Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT Mark Sorrell Dept. 3471 (PPK)

LA400 EMA11-01-PRT-9 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 08 27	ECM 607 11	Introduce the DEC LA400-CA as a replacement for the LA424-CA.

The MAP Printer (DEC LA400-CA) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DEC LA400-CA Printer	A0660949					RUL1
20 ma Current Loop Adapter	H8673-AA					RUL2
20 ma Current Loop Adapter	H8673-AC					RUL2
RS232 Connection Adapter	H8671-A					RUL2
DEC Stand (LA40X-PS)	A0660951					RUL3
DEC Ribbon (LA40R-KA)	A0660952					RUL4
RS-232 Slave Cable	BC16E-10FT					RUL5
RS-232 Slave Cable	BC16E-25FT					RUL5
RS-232 Slave Cable	BC16E-50FT					RUL5

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) If replacing the DEC LA-120 Printer, replace the existing Current Loop Adapter (LA12X-AL) with the H8673-AC CLA.

RULES:

AP 1) When PEC LA400 is ordered, these items are provided.

RUL1 1) Provide one or more of the LA400-CA printer(s) per Telco requirement.

RUL2 1) Provide one (1) H8673-AA Current Loop Adapter per LA400-CA that will be equipped for current loop operation applications (such as stand-alone) for Meridian Cabinet applications only. The Current Loop Adapter (CLA) is a critical circuit when operating in the current loop mode, therefore, it is recommended that a CLA is always provided as spare equipment when the current loop application is required.

2) Provide one (1) H8673-AC Current Loop Adapter per LA400-CA that will be equipped for current loop operation applications (such as stand-alone) for non-Meridian Cabinet applications only. The CLA is a critical circuit when operating in the current loop mode, therefore, it is recommended that a CLA is always provided as spare equipment when the current loop application is required.

3) Provide one (1) H8671-A RS-232 Connection Adapter per LA400 that will be equipped for RS-232 operation (such as modem stand-alone).

4) Note: Each LA400-CA printer can only be equipped for Current Loop or Modem operation.

RUL3 1) Provide one (1) A0660951 Pedestal Stand/Paper Catcher (LA40X-PS) per LA400-CA printer.

RUL4 1) Provide one (1) or more A0660952 Ribbon Cartridge(s) (LA40R-KA) per DEC LA400 printer.

RUL5 1) Provide proper length and quantity of cable(s) for interfacing this printer with the VT-340 and/or VT-420 VDUs.

DEC VT-420 SERIES VDU VT-420

RATING: Standard

ABBREVIATION NAME: VDU

ENGINEERING DESCRIPTION: The DEC VT-420 Series Video Display Units (VDUs) are ANSI-Compatible terminals designed to offer ergonomic features, high performance, powerful functionality and exceptional video quality. This unit is introduced as a direct replacement for the DEC VT-320 Series VDUs. This unit is available in three colors: Amber, Green and White. These units are fully compatible with RS-232 applications and also with the 20mA current loop applications (with Current Loop Adapter).

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US

VT-420 EMA11-01-VDU-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 08 06	ECM 607 03	Introduce the VT-420 which replaces the VT-320.

The DEC VT-420 Series VDU is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DEC VT420 Amber VDU W/Keybd	VT420-JA					RUL1
DEC VT420 Green VDU W/Keybd	VT420-HA					RUL1
DEC VT420 White VDU W/Keybd	VT420-GA					RUL1
20 ma Current Loop Adapter	H8673-AC					RUL2
DEC Terminal Stand	VT2XX-AF					RUL3
LaMarche Inverter Unit	A0367433					RUL4
Inverter Unit	NT0X87AA					RUL4
Data Cord DEC VT-420	NE-P4QFP					RUL5

NOTES:

1) The VT420-JA/HA/GA comes equipped with one (1) LK401-AA Keyboard, one (1) BN19P-1K Power Cord, and one (1) EK-VT420-UU User’s Guide.

2) Provide proper length and quantity of cable(s) for interfacing the VT420-JA/HA/GA with the LA75S-AA and the LA424-CA printers.

RULES:

RUL1 1) Provide one or more of these units as a MAP Terminal or RTIF Terminal as required.

2) Provide VDU screen color in accordance with Telco Preference.

RUL2 1) Provide one (1) H8673-AC Current Loop Adapter per VDU that will be equipped for current loop operation application. The Current Loop Adapter is a critical circuit when operating in the Current Loop Mode, therefore, it is recommended that a CLA is always provided as spare equipment when the current loop application is required.

RUL3 1) Provide one (1) VT2XX-AF terminal stand per VDU as required for portable applications of the VDU.

RUL4 1) Provide the A0367433 LaMarche Inverter to provide protected AC in accordance with ISG specifications (US applications only).

2) Provide the NT0X87AA Inverter to provide protected AC in accordance with ISG specifications (Canadian applications).

RUL5 1) Provide one (1) ADC Products NE-P4QFP Portable Map Cable per VT-420 VDU when VDU is used for Portable MAP applications.

DEC VT340/525 VIDEO DISPLAY UNIT

PEC CODE: VT340

CPC CODE: A0385880

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: VT525

ENGINEERING DESCRIPTION: The DEC VT525-KIT is a feature rich and user friendly machine capable of operating in the RS-232 or the current loop mode (with proper current loop adapters). The VT525-KIT contains a color 14" monitor, keyboard, and logic box and has been introduced as a replacement for the Colortrend CT-220R Color Terminal which is now rated MD.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NT: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT: Mark Sorrell Dept. 3471 (PPK)

VT340 EMA11-01-VDU-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 11 20	ECM 607 04	Introduce the DEC VT-340 Color Video Display Unit.
93 03 05	ECM 607 07	The B&B232CL3R Current Loop Adapter is being replaced with the H8673-AC CLA. These units are interchangeable for the terminals (not the printers).
96 08 27	ECM 607 11	Opened in error.
96 09 19	ECM 607 12	Correct VT340 to VT525 per OEM group.

The DEC VT340/525 Video Display Unit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DEC 14" Color Monitor	FR-PCXCV-VA					AP
Keyboard	LK-411-AA					AP
Logic Box	VT525-AA					AP
# CLA DB25 - DB25	B&B232CL3R					RUL1
20 ma Current Loop Adapter	H8673-AC					RUL1
DEC Terminal Stand	VT2XX-AF					RUL2
Data Cord DEC VT-340	NE-P4QFP					RUL3

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 VT340 is ordered, these items are provided.

RUL1 1) Provide one (1) DEC H8673-AC Current Loop Adapter per monitor that will be equipped for current loop operation applications (such as stand-alone). The Current Loop Adapter is a critical circuit when operating in the Current Loop Mode, therefore, it is recommended that a CLA is always provided as spare equipment when the current loop application is required.

RUL2 1) Provide one (1) VT2XX-AF terminal stand per monitor as required for portable applications of the monitor.

RUL3 1) Provide one (1) ADC Products NE-P4QFP Portable MAP Cable per monitor when the monitor is used for portable MAP applications.

MAINTENANCE AND ADMINISTRATION POSITION NT0X57

RATING: Standard

ABBREVIATION NAME: MAP

ENGINEERING DESCRIPTION: The Maintenance and Administration Position (MAP) is the primary man/machine interface between the Telco personnel and the DMS system for performing I/O functions. This is not an MS but a list of equipment associated with the MAP.

The Maintenance and Administrative Position consists of the following equipment:

- CRT + keys
- desk arrangement,
- Jack sets,
- Logic 10 (or Logic 20 for toll)
- printer (or teletype),
- Data set to connect to IOC if the position is remote. Data sets depend on baud rate: min. 110, max. 300 for dial access. Dedicated facilities dictate maximum baud rate.

Connection between the jacks on MAP and the DMS switch is subject to normal trunking limits.

REFERENCE DOCUMENTATION: N/A

The Maintenance and Administration Position is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Visual Display Unit	AR	VDU				RUL1
Teleprinters	AR					RUL1
Voice Communication Module	AR	CM				RUL2
MAP Furniture Center Section	NT0X57AA					RUL3
MAP Furniture Ctr Sect With Tst Trk Jk Assy	NT0X57AB					RUL4
MAP Furniture Counter Sect	NT0X57AC					RUL5
Map Counter Sect. Suppt Leg	A0500					RUL6
MAP Furniture Shelf Sect	NT0X57AD					RUL6
Map Counter Sect. Suppt Leg	A0500					RUL6
Test Trunk Jack Box Assy	NT0X57AF					RUL7
Test Trunk Jack Assy	NT0X57AG					RUL7

NOTE:

1) Hardware requirements vary with functions to be preformed at a MAP and a single MAP can be dedicated to more than one function.

2) Components usually associated with the MAP are the VDU, Communication Module, Test facilities, and position furniture.

3) Each of the components mentioned in Note 2) can be ordered and configured seperately. The customer may choose to provide some or all of the equipment required for the MAP.

4) All test sets considered non-optional in SP-1 are provided in DMS. i.e. Oscillator NS-19260 in SP-1 becomes Tone generator in DMS; Measuring Set TTI 1400 or NSQ4205 in SP-1 becomes NT2X96AA in DMS.

   Optional Equipment in both SP-1 and DMS:

   - Dial Pulse Signalling Test Set (TTS26BDLR)
   - Echo Return Loss Measuring Set
     (481B Beaumar or 9032 Wiltron)
   - Impulse Counter (6HR)

Optional test gear may either be mounted on a MIS frame and wired to a test access bus or may be portable.

NT1X00AA Milliwatt produces 2 channels of Milliwatt (1000 Hz) only. NT1X90AA tone generator is frequency and level programmable.

RULE:

RUL1 1) Provide VDU's and Teleprinters as per customer requirements. The customer may choose to provide its own VDU(s) and teleprinters.

2) The interface between the VDU and the DMS system is via a Device Controller (DC) and the I/O Controller (IOC).

RUL2 1) Provide voice communication module(s) as per customer requirements. The customer may choose to provide its own.

2) See Central Office (CO) Communication System Section (available in next release) for communication module equipment used at the MAP.

RUL3 1) Provide as per customer requirements.

2) The Center section consists of a terminal surface on which the VDU is seated.

RUL4 1) Provide as per customer requirements.

2) The NT0X57AB is identical to the NT0X57AA except the NT0X57AB includes test jacks.

3) Provide NT0X57AB when MAP is used for trunk testing. includes test jacks.

RUL5 1) Provide NT0X57AC when an adjustable counter section is required. Lighting is provided with NT0X57AC.

2) If the NT0X57AC is provided without the Center Section, provide one A0500 support leg.

RUL6 1) Provide NT0X57AD when book shelf section(s) is(are) required. Lighting is provided with NT0X57AC.

2) NT0X57AD includes lighting mounted under the shelf and an adjustable work surface beneath the book shelf.

3) If the NT0X57AD is provided without the Center Section, provide one A0500 support leg.

RUL7 1) Provide one Test Trunk Jack Box Assembly (NT0X57AF) if the MAP is used for trunk testing and MAP furniture (in particular, NT0X57AB) has not been provided.

2) Test Trunk Jack Assembly (NT0X57AG) is always provided with the MAP furniture centre section NT0X57AB. The Test Trunk Jack Assembly NT0X57AG can be provided (instead of NT0X57AF) if its use is similar to that with the MAP furniture (centre section). See AD0X57AA-AD.

MAP AREA EQUIPMENT

PEC CODE:	MAP_EQUIP
CPC CODE:	Not Applicable
RATING:	Standard
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	N/A
ENGINEERING DESCRIPTION:	This EMS is a summary of the equipment associated with the MAP Area. Detail engineering information is found in the individual EMSs for each type of equipment.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NT:	Mark Sorrell	Dept. 3471	(PPK)
MAIN CONTACT: NT:	Mark Sorrell	Dept. 3471	(PPK)
CONTACT: NT:	Richard Mathias	Dept. 3471	(PPK)

MAP EQUIP EMA11-01-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 06	ECM 607 08	This EMS is being introduced as a summary of available MAP area equipment found in individual EMS.
94 02 04	ECM 607 09	Reinstate the VT2XX-AA as the Portable VDU Stand. The VT2XX-AF was too large for equipment aisles.
96 08 27	ECM 607 11	1) Replace the VT2XX-AA (cpc A0324081) with LAXXS-AC (cpc AO382537) due to vendor equipment change. This closes SR RR66585 with this update. 2) LA30 and LA400 replace MD'd printers LA75S and LA424. 3) MD HP700/44 Series VDUs.

The MAP AREA EQUIPMENT is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	MAP Furniture With Jacks	NTZZ14BA	MAP				RUL1
	Amber VDU (VT-420)	VT-420JA	VDU				RUL2
	Green VDU (VT-420)	VT-420HA	VDU				RUL2
	White VDU (VT-420)	VT-420GA	VDU				RUL2
#	Amber VDU (HP 700/44)	C1007A	VDU				RUL2
#	Green VDU (HP 700/44)	C1007G	VDU				RUL2
#	White VDU (HP 700/44)	C1007W	VDU				RUL2
	Color VDU (VT-340)	VT-340GA	VDU				RUL2
#	Portable VDU Stand	VT2XX-AA					RUL2
	Portable VDU Stand	LAXXS-AA					RUL2
#	RD Printer (DEC LA-75S)	LA75S-AA	RD				RUL3
#	RD Printer (DEC LA-75S)	NTZZ14EB	RD				RUL3
#	RD Printer (DEC LA-424)	LA424-CA	RD				RUL3
#	RD Printer (DEC LA-424)	NTZZ14EC	RD				RUL3
	RD Printer (DEC LA30N-CA)	A0660002	RD				RUL3
	RD Printer (DEC LA30)	NTZZ14ED	RD				RUL3
	RD Printer (DEC LA400-CA)	A0660949	RD				RUL3
	RD Printer (DEC LA400)	NTZZ14EE	RD				RUL3
	NorStar Key Service Module	NTZX18AB	NKSM				RUL4
	Alarm Control & Display Pnl	NT0X63AA					RUL5
	Alarm Display Panel	NT0X63AB					RUL5
	Exit Alarm Panel	NT0X64AA					RUL5
	LaMarche 500 Watt Inverter	A31-500-48V-A6					RUL6
	Data Phones	DATAPHON					RUL7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
VT2XX-AA	MD	LAXXS-AA
LA-75S	MD	LA30
NTZZ14EB	MD	NTZZ14ED
LA424-CA	MD	LA400
NTZZ14EC	MD	NTZZ14EE

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:

RUL1 1) Provide the NTZZ14BA MAP furniture e/w jacks as required.

RUL2 1) Provide one VDU per MAP, Portable MAP, and/or RTIF application in accordance with the following chart.

DMS-100 VDU APPLICATIONS

VDU	MAP	PORTABLE MAP	RTIF	VENDOR	VDU MODEL NO.	SCREEN COLOR
VT-420	x	x	X	DEC	VT-420JA	Amber
VT-420	x	x	X	DEC	VT-420HA	Green
VT-420	x	x	X	DEC	VT-420GA	White
C1007A	x	x	X	HP	700/44	Amber
C1007G	x	x	X	HP	700/44	Green
C1007W	x	x	X	HP	700/44	White
VT-340	x	x	X	DEC	VT-340GA	Color

2) Provide one LAXXS-AA per portable MAP/RTIF application.
3) All HP VDUs (C1007A, C1007G, and C1007W) are Manufacture Discontinued (MD). Provide DEC VT-420 VDUs as replacements.

RUL3 1) There are no KSR printers offered at this time.

2) The LA75S-AA and LA-424 printers have been Manufacture Discontinued (MD).

3) Provide one LA30N-CA or the LA-400-CA per customer specifications for a MAP RD Printer, and other RD printer requirements.

RUL4 1) Provide one NTZX18AB (NKSM) per office requiring a Digital 12-Line 1A2-Type Key System (See MSZZ14FA for provisionable phones).

RUL5 1) Provide Alarm Panels as specified by the Telco.

RUL6 1) Provide the A31-500-48V-A6 LaMarche Inverter to supply protected AC for MAP devices as required.

2) Refer to ECM 289 for ISG requirements.

RUL7 1) Provide Data Phones as specified by the Telco.

NSSD MODEL 3704
DIGITAL REMOTE TEST UNIT (DRTU) (BROWN)

PEC CODE:	NT0J04EB
CPC CODE:	A0347078
RATING:	Standard
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	DRTU
ENGINEERING DESCRIPTION:	The NT0J04EB DRTU is a full function Local Test Cabinet (NT0J04BB) slave measurement device designed to test subscriber loops at Pair Gain remote terminal locations.
REFERENCE DOCUMENTATION:	SL0J04EB 01 04
MARKETS:	Applicable markets: Canada US

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NT0J04EB EMA11-02-DRTU-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 12 17	ECM 152 10	Correct the EMS for NT0J04EB so that the section will reflect the true stocklist of the NT0J04EB.
93 03 05	ECM 152 12	Added the P0596114 adapter bracket for mounting the DRTU in a 26" frame.
93 08 06	ECM 152 15	ET 35633 - Add 2 P0596114 to NT0X02AB EMS with screws and remove the mtg brackets from NT0J04EB EMS.

The NT0J04EB Brown colored NSSD Model 3704 Digital Remote Test Unit (DRTU) is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Digital Remote Test Un Assy	NT0J1402		1			AP
	19/23 Inch Mtg Bracket Brn	NT0J0418		1			AP
	DRTU Installation H/W Kit	NT0J0419		1			AP
	Front Panel	NT0J0402		1			AP-01
	Cable Harness	NT0J0412		1			AP-01
	Cable Assembly	NT0J0413		1			AP-01
	XFM Software DRTU Cont Assy	NT0J1404		1			AP-01
	DRTU Controller PCB Assy	NT0J1403		1			AP-01
	Top Case (Maple)	NT0J0428		1			AP-01
	Bottom Case (Weldment)	NT0J0423		1			AP-01
	Interconnections Label	NT0J0437		1			AP-01
	Label Mounting Plate	NT0J0438		1			AP-01
	XFM Firmware Assy PCB	NT0J0435		1			AP-01
	Cable Assembly	P0696586		1			AP-01
#	NSSD 3703-03 LTC Brown	NT0J04BB					RUL1
	NSSD LTC 4 Trunk 3 Wire	NT0J62BA					RUL1
	NSSD LTC 4 Trunk 4 Wire	NT0J63BA					RUL1
	NSSD LTC 16 Trunk 4 Wire	NT0J64BA					RUL1
#	System Upgrade Kit	NT0J04BD					RUL3
	System Upgrade Kit	NT0J60AA					RUL3
	MLT Applique Shelf	NT3J00BA					RUL4
	Signature Acc w/Off Hook Routing	NT3J00BE					RUL5
	Brown 26" Mounting Adapters	NT0J04DD					RUL6
#	XFM Firmware Assy PCB	NT0J0414					RUL7
	XFM Firmware Assy PCB	NT0J0435					RUL7
#	DRTU Control Assy PCB	NT0J0420					RUL7
	DRTU Control Assy PCB	NT0J1403					RUL7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0J04BB	MD	NT0J62BA/NT0J63BA/ NT0J64BA
NT0J04BD	MD	NT0J60AA
NT0J0414	MD	NT0J0435
NT0J0420	MD	NT0J1403

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) Standard DMS100F LTC mainframe: NT0J6_BA. This PEC code is used to provide the required LTC by inserting a 2, 3, or 4 in the PEC code. Provide one (1) of thes units (NT0J62BA / NT0J63BA / NT0J64BA) as the base component of the NSSD Local Test Cabinet. The NT0J62BA, NT0J63BA, and the NT0J64BA LTCs contain the door, frame and trunk options.

2) The DRTU is an extension of the Local Test Cabinet (LTC) located at the DMS100F Remote office (i.e RLM, RLCM, or RSC). The LTC must be configured to: (1) Provide DRTU control, and (2) Access the DRTU at a remote location.

3) Metallic Test Access (MTA). The test trunks which the LTC interfaces may be any of the available NT2X90 versions, and may be multipled across horizontals of each associated MTA.

4) The DRTU uses the EMTA feature to operate in the remote environment. Refer to NTP 297-2101-451 Section 105 for information on implementing the EMTA feature. Note in pre BCS24 offices the test trunk used to access the DRTU should be assigned to one of the lower-numbered MTA horizontals (1-7), where horizontal zero is preassigned.

5) Line Assignments. The DRTU will require five (5) Type A - line cards with directory numbers; three in the host and two in the remote. One of these lines must be equipped with the Automatic Line (AUL) feature.

RULES:

AP 1) When PEC NT0J04EB is ordered, these items are provided.

AP-01 1) This PEC is always provided to the NT0J1402 and is shown here for completeness.

RUL1 1) Provide one NT0J62BA / NT0J63BA / NT0J64BA LTC in the host office if host office is not presently equipped with an LTC.

2) Refer to Engineering Manual Section NT0J__BA for provisioning info and placement details for the NT0J62BA, NT0J63BA, and the NT0J64BA LTCs.

RUL2 1) Reserved for future use.

RUL3 1) Provide one NT0J60AA LTC Upgrade Kit in the host office if office is equipped with a Brown or Ash colored Model 3703-00/01 LTC.

2) Refer to Engineering Manual Section EMA11-02-000 for more details on the NT0J60AA LTC Upgrade Kit.

RUL4 1) Provide one NT3J00BA (MLT Applique Shelf) in the host office.

2) If the NT3J00BA shelf is existing in the host, then ensure that space is available for equipment per RUL #5.

3) Refer to Engineering Manual Section EMA13-01-MLTS-1 for more details on the NT3J00BA (MLT Applique Shelf).

RUL5 1) Provide one NT3J00BE (Signature Off-Hook Routing Card) to enable the LTC to access the DRTU via the AUL line card.

2) Refer to Engineering Manual Section EMA13-01-MLTS-1 for more details on the NT3J00BE (Signature Off-Hook Routing Card).

RUL6 1) Provide one (1) NT0J04DD (26" Brown Mounting Adapter) to provide twenty-six inch mounting of the LTC in a MIS frame.

RUL7 1) Provide one (1) each of these items if the telco requests maintenance spares for the DRTU. These items come equipped with the NT0J04EB DRTU and are not usually ordered as spares since the NT0J04EB is generally replaced as a unit.

NSSD MODEL 3703-03 LOCAL CONTROL FRONT PANEL (BROWN) NT0J04BQ

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Local Control Front Panel without the 52A head set jack facility. Provides keyboard, CRT display, and handset for operation of the Standard Brown-colored LTC.

REFERENCE DOCUMENTATION: N/A

The NSSD Model 3703-03 Local Control Front Panel (Brown) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CRT2 Controller	NT0J0830		1			AP
CRT Assembly	NT0J0452		1			AP
Telephone Hand Set	A0334204		1			AP
NE-H4DUQA-26 Cord 1.8 M	A0274221		1			AP

NOTE 1) Provide the NT0J04BQ for local control only operation of the LTC (ie. the operator must be standing in front of the LTC to operate it).

RULES:

AP 1) When PEC NT0J04BQ is ordered, these items are provided.

RTU/AMH 16-TRUNK (CALRS)

PEC CODE: NTAN11AA

CPC CODE: A0401838

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: RTU

ENGINEERING DESCRIPTION: The 16-Trunk RTU/AMH is remote test head which is installed in a switching center to allow CALRS loop testing into that location.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTC: Morris James Dept. 0393 (KWAY)

NTAN11AA EMA11-02-RTU-16 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 01 23	ECM 566 01	Introduce AMH 16-Trunk RTU.

The RTU/AMH 16-Trunk (CALRS) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
16 Channel MUX	NT0J0827	MX16	1		1	AP
IFC Board	NT0J0828	IFC	1		2	AP
Tip/Ring Conditioner	NT0J0824	TRC	1		5	AP
Tones Board	NT0J0825	TONE	1		6	AP
AMH Board	NTAN00AB	AMH	1		7	AP
Loop Test Processor	NTAN70AA	CPS	1		9	AP
DRTU Interface Board	NT0J04ED		1		10	RUL1
Cbl Fault Loc MUX/CP (2 CPs)	NT0J05AP		1		11,12	RUL2
Remote Access 2	NT0J04EC	REM	1		13	AP
Power Supply	NT0J0811		1		19	AP
DRTU	NTAN60AA					RUL3

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 RTU mounts in a MIS frame or a 19-inch or 23-inch frame. The RTU requires 20 inches in the frame (vertically), plus 4 inches above and 4 inches below for ventilation. The RTU includes rack-mount adapters for mounting in either a 19-inch or 23-inch frame. Refer to the MIS EMS for mounting adapters for the MIS frame.

2) The RTU is located at the host switching office (DMS10, DMS100, RSC, or RLCM). An RTU can also be used with non-NT switches.

3) For CALRS, the DRTU can only be used if an RTU is provided at the host office.

4) The DRTU can be located in an OPM, DMS1, DMS1U, RSC, or RLCM. The DRTU can also be used with non-NT equipment.

5) The DRTU includes rack-mount adapters for 19-inch or 23-inch frames. Rack-mount adapters for 26" frames are provisionable. (Refer to MIS EMS.) The DRTU is 2 inches in height, and requires 2 inches above and 2 inches below for ventilation.

6) If using dedicated access from CALRS to the RTU, a 48 Volt modem is required. This may be customer-provided, or is available from Prism. Contact Prism Systems Engineering for more information.

RULES:

AP 1) When PEC NTAN11AA is ordered, these items are provided.

RUL1 1) Provide one DRTU Interface Board if DRTU access is required from the RTU and CALRS Admin software version is less than V 7. There is no limit to the number of DRTUs which can interface to an RTU.

RUL2 1) Provide Cable Fault Locate MUX/CP (two board set) if the Cable Fault Locate feature is required by the customer.

RUL3 1) If required, provide DRTU(s) at the remote office(s). The DRTU is a complete assembly. There are no provisionable items within the DRTU.

RTU/AMH 4-TRUNK (CALRS)

PEC CODE: NTAN10AA

CPC CODE: A0401837

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: RTU

ENGINEERING DESCRIPTION: The 4-Trunk RTU/AMH is remote test head which is installed in a switching center to allow CALRS loop testing into that location.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTC: Morris James Dept. 0393 (KWAY)

NTAN10AA EMA11-02-RTU-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 01 23	ECM 566 01	Introduce AMH 4-Trunk RTU.

The RTU/AMH 4-Trunk (CALRS) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
4 Channel MUX	NT0J0829	MX4	1		1	AP
IFC Board	NT0J0828	IFC	1		2	AP
Tip/Ring Conditioner	NT0J0824	TRC	1		5	AP
Tones Board	NT0J0825	TONE	1		6	AP
AMH Board	NTAN00AB	AMH	1		7	AP
Loop Test Processor	NTAN70AA	CPS	1		9	AP
DRTU Interface Board	NT0J04ED		1		10	RUL1
Remote Access 2	NT0J04EC	REM	1		13	AP
Power Supply	NT0J0811		1		19	AP
DRTU	NTAN60AA					RUL2

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 RTU mounts in a MIS frame or a 19-inch or 23-inch frame. The RTU requires 20 inches in the frame (vertically), plus 4 inches above and 4 inches below for ventilation. The RTU includes rack-mount adapters for mounting in either a 19-inch or 23-inch frame. Refer to the MIS EMS for mounting adapters for the MIS frame.

2) The RTU is located at the host switching office (DMS10, DMS100, RSC, or RLCM). An RTU can also be used with non-NT switches.

3) For CALRS, the DRTU can only be used if an RTU is provided at the host office.

4) The DRTU can be located in an OPM, DMS1, DMS1U, RSC, or RLCM. The DRTU can also be used with non-NT equipment.

5) The DRTU includes rack-mount adapters for 19-inch or 23-inch frames. Rack-mount adapters for 26" frames are provisionable. (Refer to MIS EMS.) The DRTU is 2 inches in height, and requires 2 inches above and 2 inches below for ventilation.

6) If using dedicated access from CALRS to the RTU, a 48 Volt modem is required. This may be customer-provided, or is available from Prism. Contact Prism Systems Engineering for more information.

RULES:

AP 1) When PEC NTAN10AA is ordered, these items are provided.

RUL1 1) Provide one DRTU Interface Board if DRTU access is required from the RTU and CALRS Admin software version is less than V 7. There is no limit to the number of DRTUs which can interface to an RTU.

RUL2 1) If required, provide DRTU(s) at the remote office(s). The DRTU is a complete assembly. There are no provisionable items within the DRTU.

NSSD LTC
NSSD LOCAL TEST CABINET (BROWN)

PEC CODE: NT0J6_BA

CPC CODE: NT0J62BA - A0388366, NT0J63BA - A0388355, NT0J64BA - A0388362

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: LTC

ENGINEERING DESCRIPTION: NSSD Local Test Cabinet (LTC) An intelligent measurement unit for automated subscriber lines testing from the central office or from any remote location. The LTC mainframe PEC NT0J6_BA contains a variable character which must be substituted with a 2, 3, or 4 to provide a valid LTC PEC.

The valid PECs are NT0J62BA, NT0J63BA, and NT0J64BA which provide an LTC equipped with the 4 Trunk 4 Wire, 4 Trunk 3 Wire, or 16 Trunk 4 Wire unit option, respectively. Each LTC PEC contain the door, frame, trunk option, and mounting hardware. The NT0J6_BA LTC is only available in the color of brown.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NT0J6 BA EMA11-02-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 08 13	ECM 152 09	Corrected naming conventions and an erroneous reference of NT0J04AD to NT0J08AD.
93 03 25	ECM 152 13	ET 29003 Corrected the EMS for the NT0J6_BA which incorrectly stated which switches the NT0J62BA and the NT0J63BA LTC support.
94 09 29	ECM 152 16	ET 19809-Update rule 2 to add NT0J04DC as required when mounting the LTC in the MDF.

The NSSD Local Test Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LTC 4 Trunk 3 Wire Option	NT0J62BA					RUL1
LTC 4 Trunk 4 Wire Option	NT0J63BA					RUL1
LTC 16 Trunk 4 Wire Option	NT0J64BA					RUL1
Tip Ring Conditioner (TRC)	NT0J0824		1		11	AP-01
Tones Generator PCB (TONE)	NT0J0825		1		12	AP-01
Extra Fast Meter Two (XFM2)	NT0J0871		1		13	AP-01
Central Processor Sys (CPS)	NT0J0446		1		15	AP-01
Power Supply (NT0J0811)	NT0J0811		1		19	AP-01
Loop Test Processor	NT0J58AA		1			AP-01
19" or 23" Rack Adapters	NT0J04BY					RUL2
26" Rack Adapters	NT0J04DD					RUL2
Wall Mounting Kit	NT0J04DC					RUL2
DF Mount Adapter	NT0J08AD					RUL2
Remote Access DCP Card	NT0J04EC					RUL3
Pair Identification Buzzer	NT0J04DE					RUL4
Trunk Calibrator	NT0J04DA					RUL5
4 Trunk Spare Pack Kit	NT0J66EA					RUL6
4 Trk 3 Wire Spare Pack Kit	NT0J66DA					RUL6
16 Trunk Spare Pack Kit	NT0J66FA					RUL6
System Upgrade Kit	NT0J60AA					RUL7
DRTU	NT0J04EB					RUL8
MLT Applique Shelf	NT3J00BA					RUL9
Signature O-H Routing Card	NT3J00BE					RUL9
DRTU Interface Option 2	NT0J04ED					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) The LTC requires two (2) line cards (items 1) and 2)) for normal operation. If DRTU is installed in a remote office, then three (3) additional line cards (items 3), 4) and 5)) are required as follows:

1) POTS-1FR-DTMF	Data Line for Remote LTC Access
2) POTS-1FR-DTMF	Dual function line (Voice & DRTU CALL BACK)
3) POTS-1FR-DTMR-AVL	Data Line LTC to DRTU Interface via Signature Off-Hook Routing Card.
4) POTS-1FR-DTMF	Remote Office Line Card - DRTU Data Line
5) POTS-1FR-DTMF	Remote Office Line Card - DRTU Call Back Path

RULES:

AP 1) When PEC NT0J6_BA is ordered, whether the NT0J62BA, NT0J063BA, or the NT0J64BA is required, these items are always provided.

RUL1 1) The NSSD NT0J6_BA LTC has three hardware offerings for accessing trunks as follows:

- 4 Trunk 3 Wire Access (NT0J62BA)
- 4 Trunk 4 Wire Access (NT0J63BA)
- 16 Trunk 4 Wire Access (NT0J64BA)

Selecting the four (4) or sixteen (16) test trunk selector option depends on the number test trunk access points desired by the Telco and the type of Switching system that the LTC will be accessing. Any of the four (4) or sixteen (16) trunks can be used to access a normal test trunk or MDF appearance. However, the Four or Sixteen trunk access option is required for the basic operation of the LTC.

2) Provide the NT0J63BA (4-Trunk 4W Test Trunk LTC) to access a mixturea of up to four dial type and MDF Shoe type test trunks. This LTC is designed to access trunks on a DMS-100F or Western Electric Switching system.

3) Provide the NT0J62BA (4-Trunk 3W Test Trunk LTC) to access a mixture of up to four dial type and MDF Shoe type test trunks. This LTC is designed to access trunks on all other Switching systems. Refer to RUL1 item 2 above.

4) Provide the NT0J64BA (16-Trunk 4W Test Trunk LTC) to access a mixture of up to 16 dial-type and MDF Shoe-type test trunks. This LTC is designed to access trunks on a DMS-100F or Western Electric Switching system.

RUL2 1) The LTC offers Desk, Wall, Equipment Rack (two options), and MDF mounting arrangements. Provisioning of a specific arrangement shall be per telco specifications.

2) Provide the Wall/Desk Mounting Kit (NT0J04DC) for mounting the LTC on a wall surface or on a desk surface.

3) Provide the 19" or 23" Rack Adapters, (NT0J04BY), when installing the LTC in equipment frames with a 19 or 23 inch width internal mounting space.

4) Provide the 26" Rack Adapters, (NT0J04DD), when installing the LTC in the DMS100F MIS/RME frame.

5) Provide one DF Mount Adapter (NT0J08AD) and one Wall/Desk Mounting Kit (NT0J04DC) when mounting LTC on the DF. Specify the width of the DF, due to fact that the MDF Mounting Bars are custom fitted.

RUL3 1) Provide one NT0J04EC (Remote Access DCP Card) to enable the remote interface ports to the LTC from a Local/Remote Data Terminal, Intelligent controller, Craft terminal, etc. This option provides three remote access ports -- Dial-Up, Dedicated, and a Local EIA RS-232C.

2) This option may be factory or field installed. The LTC Upgrade Kit, (NT0J60AA), must be applied to the 3703-00/01 LTC models to upgrade them to 3703-03 standards prior to adding the Remote Access DCP Card NT0J04EC.

RUL4 1) Provide one NT0J04DE (MDF Pair Identifier Buzzer) to enable the LTC to perform a continunity check on a selected line. This is a separate unit which mounts to the wall mounting kit backboard and provides either a visual or combination

visual and audio indication to alert the operator that the correct line has been selected.

2) Using the 22 guage wire included on the stocklist of the NT0J04DE, perform the following connections for -48V, GND, Tip and Ring between the NSSD LTC and the NT0J04DE Pair Identifier/Buzzer.

3) The NT0J04DE contains hardware for mounting on the MDF, wall, or the LTC unit itself.

* Connect CO GND (ground) and CO BAT from the Pair Identifier/Buzzer to CO GND and CO -48V of the LTC Pair Identifier/Buzzer connector.

* Connect the TIP and RING from the Pair Identifier/Buzzer to the TIP and RING of the LTC Pair Identifier/Buzzer connector.

* When using the NT0J04DE with a remote unit, connect the Pair Identifier/Buzzer RMT terminal to the remote unit.

RUL5 1) Provide the NT0J04DA, (Trunk Calibrator), to provide a means of eliminating the effects of trunk length on the loop measurements.

2) DMS100 Digital Switching recommends the provisioning of one Trunk Calibrator for every DMS or remote pair gain terminal the LTC is to interface.

RUL6 1) Provide these spare kits to provide maintenance spares as recommended by the equipment manufacturer. All spare kits include the following packs:

QTY	PEC	DESCRIPTION	CPC
1	NT0J0811	48V Power Supply Assembly	A0334035
1	NT0J0871	Extra Fast Meter 2 (XFM2)	A0338612
1	NT0J0824	Tip & Ring Conditioner	A0337968
1	NT0J58AA	Loop Test Processor	A0388183
1	NT0J0825	Tones Supply PCB	A0337969

2) In addition to the spares provided above, the following spares are provided based on LTC configuration:

a) NT0J66DA: 4 Trunk 3 Wire Configuration

QTY	PEC	DESCRIPTION	CPC

1	NT0J0491	4 Channel Mux PCB Assembly	A0331738

b) NT0J66EA: 4 Trunk 4 Wire Configuration

QTY	PEC	DESCRIPTION	CPC
1	NT0J0828	IFC Board PCB Assembly	A0339423
1	NT0J0829	4 Channel MuxB PCB Assembly	A0339424

c) NT0J66FA: 16 Trunk 4 Wire Configuration

QTY	PEC	DESCRIPTION	CPC
1	NT0J0827	16 Channel Mux PCB Assembly	A0339422
1	NT0J0828	IFC Board PCB Assembly	A0339423

3) Other replaceable parts are not included in the above spare parts kit due to their reliability. Reference NTP 662-5101-203 Iss. 11 or later for other available parts that can be purchased for NSSD LTC.

4) When providing spare equipment in conjunction with a System Upgrade Kit, (NT0J60AA), provide spares for those items added with the upgrade only.

RUL7 1) The NT0J60AA System Upgrade Kit provides a new LTC card cage which features the following enhancements:

* Trunk Control Keys

* A Boost Key

* Four (4) More Ports:

  Local EIA RS-232-C
  Two (2) Dial-In Ports
  Call-Back

* Four (4) Trunk Connectors Instead Of One (1)

2) Provide the System Upgrade Kit (NT0J60AA) to upgrade the 3703-00/01 LTC models to the NSSD NT0J6_BA standards.

3) When provisioning this kit the serial number and color of the existing Model 3703-00/01 must be provided with the equipment order, as the card cage will be replaced and the existing serial number reused.

RUL8 1) Provide the NT0J04EB DRTU for installation in a DMS-100F Digital Remote Office (NT0X02AB type frame) as a remote component of the NSSD NT0J6_BA Local Test Cabinet (LTC), which extends all LTC subscriber line testing capabilities to subscriber lines connected to the remote office.

2) The DRTU requires the following hardware for complete installation:

a) The NSSD NT0J6_BA LTC installed in the host office.

b) Remote Access DCP - installed in LTC Model 3703-03 or modified Model 3703-00/01 LTC per Item C below and RUL3 above.

c) Upgrade Kit (NT0J60AA) - installed in existing LTC model 3703-00/01.

d) Signature Off Hook Routing PCB - one card per two DRTUs.

e) MLT Applique Shelf - installed in the host office; if shelf exists, then ensure space is available for the required number of NT3J00BE PCBs.

3) Refer to Section EMA11-02-DRTU-2 for detailed engineering information.

RUL9 1) Provide one (1) NT3J00BA (MLT Applique Shelf) to accommodate the Signature Off Hook Routing PCB (NT3J00BE). If nonexistent in the office, ensure space is available on the MLT shelf for the NT3J00BE.

2) Refer to Section EMA13-01-MLTS-1 for detailed engineering information.

RUL10 1) Provide one (1) NT0J04ED (DRTU I/F Card) whenever a DRTU is required and the NT0J04ED has not been previously provided.

DATA PHONES

PEC CODE: DATAPHON

CPC CODE: Not Applicable

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: These phones were being used in DMS-100F offices in various Data Phone applications. An example is the ETAS application.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Charles Maynard Dept. 3471 (PPK)

MAIN CONTACT: NTI: Charles Maynard Dept. 3471 (PPK)

DATAPHON EMA11-03-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 06	ECM 607 08	Information in this EMS has been updated to reflect current availability of Data Sets.
93 09 03	ECM 195 05	Data Phone NT0C22DA-35 has been MD'd and replaced by the NT4L21AA Unity Redial Phone Set.
93 11 04	ECM 195 06	The NT4L21AA-93 Unity Redial (grey) has been MD'd and replaced by the NT4L21AA-35 (ash) or the NT4L21AA-03 (black) telephone sets.

The Data Phones is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Data Phone (black) 6 button Rotary	A0283193					RUL1
# Data Phone (ivory) 6 button Rotary	A0283194					RUL1
# Data Phone (beige) 6 button Rotary	A0283196					RUL1
# Unity I (Chamel. Grey) Digitone	NT0C22AA-35					RUL2
# Unity I Set-Chamel. Grey	NT0C22AD-35					RUL3
# Unity I Set-Chamel. Grey	NT0C22DA-35					RUL4
# Logic 6 Digitone	2206-FWR-30-35S					RUL5
# Unity I Set-Chamel. Ash	NT4L11AA-35					RUL6
Unity Redial Ash	NT4L21AA-35					RUL6
# Unity I Set-Black	NT4L11AA-03					RUL7
Unity Redial Black	NT4L21AA-03					RUL7
# Unity I Set-Dolphin Grey	NT4L11AA-93					RUL8
# Unity Redial Grey	NT4L21AA-93					RUL8

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
A0283193	MD	No Replacement
A0283194	MD	No Replacement
A0283196	MD	No Replacement
NT0C22AA-35	MD	NT0C22AD-35
NT0C22AD-35	MD	NT0C22DA-35
NT0C22DA-35	MD	NT4L21AA-35
NT0C22DA-35	MD	NT4L21AA-03
NT0C22DA-35	MD	NT4L21AA-93
2206-FWR-30-35S	MD	No Replacement
NT4L11AA-35	MD	NT4L21AA-35
NT4L11AA-03	MD	NT4L21AA-03
NT4L11AA-93	MD	NT4L21AA-93
NT4L21AA-93	MD	NT4L21AA-35 or 03

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.

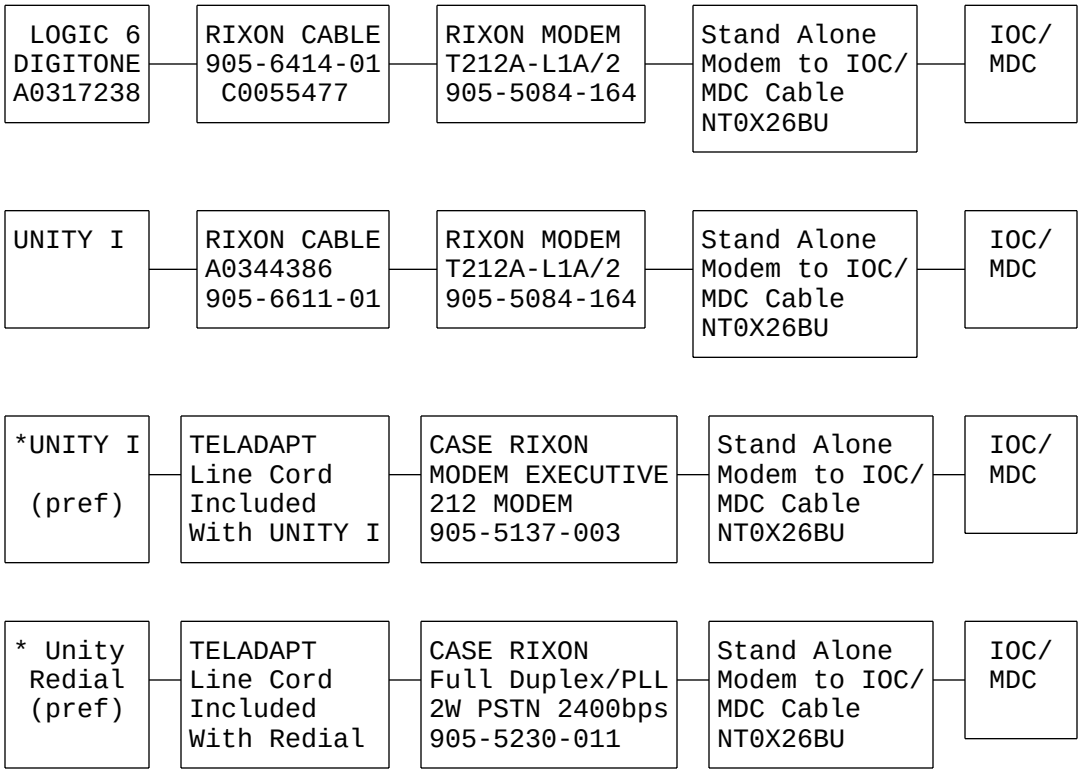
NOTES:

1) The main difference between the Canadian and U.S. version of the Unity I set is that the Canadian version is Radio Frequency Interference (RFI) immune whereas the U.S. version is not.

2) The main difference between the Logic 6 Digitone set and the Unity I set is the number of lines. The Logic 6 Digitone is a six button, five line set which currently can be used to interface one and only one data line because cabling is wired to utilize line number one. The Unity I is a single line telephone set. Both sets are digitone.

3) The Logic 6 Digitone set and the Unity I set can interface with the Rixon T212A modem but the appropriate Rixon cable must be provided as follows:

TELEPHONE SET	RIXON CABLE PEC	RIXON CABLE CPC	RIXON ASSOCIATED MODEM
Logic 6 Digitone (Line No. 1)	905-6414-01	C0055477	T212A-L1A/2 Standalone 1200bps Dial-Up Modem Part no. 905-5084-164
Unity I	905-6611-01	A0344386	T212A-L1A/2 Standalone 1200bps Dial-Up Modem Part no. 905-5084-164
Unity I	Teladapt Line Cord Included with Unity I	9’ Modular Cord	Executive 212 Standalone 1200bps Dial-Up Modem Part no. 905-5137-003
Unity Redial	Teladapt Line Cord Included with the Unity Redial	9’ Modular Cord	RM4222-C Stand-alone 1200bps Dial-Up Modem Part no. 905-5230-011



* - This is the Recommended Configuration

NOTE: Original data retained for historical purposes.

FIGURE 1

TELEPHONE SETS VS RIXON MODEM

RULES:

RUL1 1) The six-button rotary disk key telephone set manufactured by London Works in Ontario has been discontinued.

RUL2 1) The Unity I single line digitone telephone set (NT0C22AA-35) is equipped with a fully modular TELADAPT cord (2 metres long). Colour is Chameleon grey. Non RFI compliant.

2) The Unity I NT0C22AA-35 set has been discontinued.

RUL3 1 The Unity I single line digitone telephone set (NT0C22AD-35) is equipped with a fully modular TELADAPT cord (2 metres long). Colour is Chameleon grey. CSA RFI compliant.

2) The Unity I NT0C22AD-35 set has been discontinued.

RUL4 1 The Unity I single line digitone telephone set (NT0C22DA-35) is equipped with a fully modular TELADAPT cord (2 metres long). Colour is Chameleon grey. CSA RFI compliant.

2) These telephone sets are approved for Canadian use only. They are sourced from the Telecom Terminals Division (TTD) in London, Ontario.

3) The Unity I NT0C22DA-35 set has been discontinued.

RUL5 1) The Logic 6 Digitone multi-line six button key telephone set (2206-FWR-30-35S) is equipped with 34 Pin male connector Amphenol Plug Mounting Cord and C4A Ringer. Available in Ash colour only. The six buttons consist of five for line pickup or other services and one hold button.

2) The Logic 6 Digitone multi-line six button key telephone set (2206-FWR-30-35S) has been discontinued.

RUL6 1) The Unity Redial single line digitone telephone set (NT4L21AA-35) is equipped with a fully modular TELADAPT cord (9 feet long). Colour is Chameleon ash.

2) These telephone sets are approved for U.S use only. They are sourced from the Advanced Communications Terminals (ACT) Division of Nashville, Tn.

RUL7 1) The Unity Redial single line digitone telephone set (NT4L21AA-03) is equipped with a fully modular TELADAPT cord (9 feet long). Colour is black.

2) These telephone sets are approved for U.S use only. They are sourced from the Advanced Communications Terminals (ACT) Division of Nashville, Tn.

RUL8 1) The Unity Redial NT4L21AA-93 (grey) is now rated MD and replaced with the NT4L21AA-35 (ash) or the NT4L21AA-03 (black) telephone set.

BUSINESS NETWORK MANAGEMENT NT4G13

RATING: Standard

ABBREVIATION NAME: BNM

ENGINEERING DESCRIPTION: Business Network Management (BNM) is a Networks product that supplements the DMS-100F Meridian Digital Centrex (MDC) by providing MDC network analysis and control features. Specifically, a BNM system collects information from DMS-100 Business switches, processes the information collected and provides reports associated with the Centrex network.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

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NT4G13 EMA11-04-000 CHANGE HISTORY

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
--------	----------	Previous history not available.
92 11 03	ECM 481 06	Replaces the NT4G46BK ALIU with the NT4G46CS ALIU. Also the name of this engineering manual section is changed from COAM to BNM.
93 03 19	ECM 481 07	Replaces the NT4G21AA and NT4G20QA with the NT4G20QB SCSI 160 MByte Disk/Tape SRU. Change Rule 16 to show correct PEC QTBIX16A.

The BNM System is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC CODE		QTY	CABINET NUMBER	SRU POS	RULE
# DVS Cabinet	NT4G13DA			01-08	-	RUL1
DVS Loft Cabinet	NT4G13FA			01-08	-	RUL35
Access Door W/NT Logo	NT4G13BD				-	AP
Access Door (DNC-500)	NT4G13BC			01	-	RUL13
Access Door (DNC-50)	NT3M36AB			01	-	RUL13
# Input Connector Assembly	NT4G42BA			01	-	RUL2
Input Connector Assembly	NT4G42CA			01	-	RUL31
Vertical Connector Assembly	NT4G41BA			Last	-	RUL4
# Horizontal Connector Assembly	NT4G40BA				-	RUL3
Horizontal Connector Assembly	NT4G40CA				-	RUL38
115V Conversion Kit	NT4G09AD			-	-	RUL41
220V Conversion Kit	NT4G09BD			-	-	RUL5
% 110/220V Power Converter SRU	NT4G19EA				-	RUL5
Universal Power Supply	NT4G19FA					RUL37
-48/+32V Power Converter SRU	NT4G50DA			-	-	RUL34
Loft Power Supply (AC)	NT4G13AJ					RUL36
# SASI Primary Processor 68010-4	NT4G16BA			01	5-8	RUL6
% SASI Primary Processor 68010-5	NT4G16HA			01	5-8	RUL6
# SCSI Primary Processor 68010-6	NT4G16EA			01	5-8	RUL6
SCSI Primary Processor 68010-6	NT4G16EE			01	5-8	RUL6
# SCSI Primary Processor 68020-7	NT4G26EA			01	5-8	RUL6
* SCSI Primary Processor 68020-7	NT4G16NA			01	5-8	RUL6
# SCSI Cartridge Tape SRU	NT4G21AA			01	13-16	RUL19
# SCSI 160 MByte Disk/Tape	NT4G20QA			01	15-16	RUL19
SCSI 160 MByte Disk/Tape	NT4G20QB			01	15-16	RUL19
# SASI 80 MByte Storage(disk/tape)	NT4G20FA			02	9-14	RUL7,44
SASI 80 MByte Storage(disk/tape)	NT4G20FB			02	9-14	RUL7,44
# LANlink SRU	NT4G14BA			01	3-4	RUL8,43
LANlink SRU	NT4G14DA			01	3-4	RUL8,43

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC CODE		QTY	CABINET NUMBER	SRU POS	RULE
# Applications Processor 68010-2	NT4G25AA			AR	AR	RUL12,45
Applications Processor 68010-3	NT4G25CA			AR	AR	RUL12,45
Applications Processor 68010-5	NT4G25DA			AR	AR	RUL12,45
Applications Processor 68010-7	NT4G25EA			AR	AR	RUL12,45 50
* Applications Processor 68020-10	NT4G25GA			AR	AR	RUL12,45 47
Applications Processor 68010-3	NT4G25CA			AR	AR	RUL48
Applications Processor 68010-7	NT4G25EA			AR	AR	RUL48
Applications Processor 68020-10	NT4G25GA			AR	AR	RUL48
Applications Processor 68010-3	NT4G25CA			AR	AR	RUL47
# 350 MByte Disk Drive SRU (SASI)	NT4G20GA			01	9-16	RUL9,44
350 MByte Disk Drive SRU (SASI)	NT4G20SA			01	9-16	RUL9,44
* 160 MByte Disk Only SRU (SCSI)	NT4G20PA			AR	AR	RUL51
# 350 MByte Disk Drive SRU (SCSI)	NT4G20JA			AR	AR	RUL21
350 MByte Disk Drive SRU (SCSI)	NT4G20TA			AR	AR	RUL21
SASI to SCSI Conversion Kit	NT4G20GB			-	-	RUL42
# SCSI File Processor 68010-6	NT4G26CA			AR	AR	RUL20,45
SCSI File Processor 68010-6	NT4G26CB			AR	AR	RUL20,45
SCSI File Processor 68020-7	NT4G26JA			AR	AR	RUL20,45
DVIX Software (03.20) & License	NT4G91FF			-	-	RUL52
DVIX License Only	NT4G94FF			-	-	RUL52
Turbo Informix	NT4G91EE			-	-	RUL53
Informix 4GL Runtime	NT4G91DE			-	-	RUL53
Informix 4GL	NT4G91BX			-	-	RUL53
Informix ESQL/C License	NT4G91FU			-	-	RUL54
C-ISAM License	NT4G91FN			-	-	RUL54

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
1600 BPI Mag Tape Drive	A0324003			-	-	RUL10
Mag Tape Controller Kit	NT4G46CK			-	-	RUL10
SCSI 9-Track Mag Tape 6250 BPI	NT4G08AA			-	-	RUL49
SCSI Mag Tape Local Cable (10’)	NT4G09AK			-	-	RUL49
SCSI Mag Tape Local Cable (6’)	NT4G09BK			-	-	RUL49
# M4010 Data Controller	NT0M90BA			-	-	RUL14,43
# M4010 Data Controller	NT0M90GB			-	-	RUL14,43
M4110 Data Controller	NT0M90PA			-	-	RUL14,43
# Monochrome Monitor	NT0M92BA			-	-	RUL14
Monochrome Monitor	NT0M92DA			-	-	RUL14
Keyboard	NT0M91BA			-	-	RUL14
LAN Interface Unit (LIU)	NT4G46CA			-	-	RUL11
# Alarm LANLink Interface Unit PCB	NT4G46BK			-	-	RUL33
Alarm LANLink Interface Unit PCB	NT4G46CS			-	-	RUL33
System Matrix Printer	A0317073			-	-	RUL15
# NT-220 ASCII Terminal	NT3M20AA			-	-	RUL17,18
ASCII Terminal	NT3M20BD			-	-	RUL17,18
BIX Cross-Connect Panel	A0321335			-	-	RUL16
BIX Cross-Connect Tool	QTBIX16A			-	-	RUL16
Boot Cable	P0654783			-	-	RUL17
SCSI/SCSI Local Cables (2.0ft)	NT4G09AE			-	-	RUL22
SCSI/SCSI Local Cables (3.0ft)	NT4G09BE			-	-	RUL22
SCSI/SCSI Local Cables (64.0in)	NT4G09CE			-	-	RUL22
SCSI/SCSI Local Cables (72.0in)	NT4G09DE			-	-	RUL22
SCSI/SCSI Local Cables (98.0in)	NT4G09EE			-	-	RUL22
SCSI/SCSI Local Cables (124.0in)	NT4G09FE			-	-	RUL22

EQUIPMENT	PEC CODE	QTY	CABINET NUMBER	SRU POS	RULE

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-48V Cabinet Conversion (2 Cab)	NT4G13AK			-	-	RUL23,30
-48V Cabinet Conversion (3 Cab)	NT4G13AL			-	-	RUL24,30
-48V Cabinet Conversion (4 Cab)	NT4G13AM			-	-	RUL25,30
-48V Cabinet Conversion (5 Cab)	NT4G13AN			-	-	RUL26,30
-48V Cabinet Conversion (6 Cab)	NT4G13AP			-	-	RUL27,30
-48V Cabinet Conversion (7 Cab)	NT4G13AQ			-	-	RUL28,30
-48V Cabinet Conversion (8 Cab)	NT4G13AR			-	-	RUL29,30
-48V Upgrade Kit	NT4G13AS					RUL39
-48V Cabinet Downgrade Kit	NT4G13AT					RUL40
-48V Upgrade Kit (2 to 3 Cab)	NT4G13AU					RUL32
-48V Upgrade Kit (3 to 4 Cab)	NT4G13AV					RUL32
-48V Upgrade Kit (4 to 5 Cab)	NT4G13AW					RUL32
-48V Upgrade Kit (5 to 6 Cab)	NT4G13AX					RUL32
-48V Upgrade Kit (6 to 7 Cab)	NT4G13AY					RUL32
-48V Upgrade Kit (7 to 8 Cab)	NT4G13AZ					RUL32

EQUIPMENT	PEC CODE	QTY	CABINET NUMBER	SRU POS	RULE

FLAGS:

Manufacturer Discontinued

% Rated A&M

* Refer to the URTO/URTS report before ordering.

NOTES:

RULES:

AP 1) When PEC NT4G13 is ordered, these items are provided.

RULE 1) NT4G13DA rated MD.

Provide one (1) NT4G13DA DVS System cabinet to provide up to a maximum of sixteen (16) SRU locations. A minimum of two (2) cabinets are required per DVS system up to a maximum of eight (8). The required number of cabinets is based on the number of SRU's required and the number of slot locations required per SRU. Slot requirements for each SRU are as follows:

NT4G14BA	LANlink	(2) Slots
NT4G16BA/HA/EA	Primary Processor	(4) Slots
NT4G16EE	Primary Processor	(4) Slots
NT4G19EA/FA	AC Rectifier	(4) Slots
NT4G20FA/FB	80 Mbyte Disk/Tape Unit	(6) Slots
NT4G20PA	160 MByte Disk Only	(2) Slots
NT4G20QA/QB	160 MByte Disk/Tape	(2) Slots
NT4G20GA/JA	350 MByte Disk	(8) Slots
NT4G21AA	SCSI Tape SRU	(4) Slots
NT4G25AA/CA	Applications Processor	(2) Slots
NT4G25DA/EA/GA	Applications Processor	(4) Slots
NT4G26CA/CB	SCSI File Processor	(4) Slots
NT4G26EA	SCSI 68020 Primary Proc.	(4) Slots
NT4G50DA	-48V/+33V Converter	(2) Slots

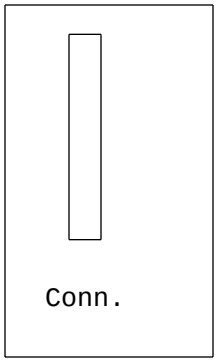
All SRU's must be physically assigned beginning with odd slot locations. The software slot assignment required for software load build is the actual slot location the SRU accesses the cabinet backplane. This software slot location should be used to indicate SRU slot locations on equipment configuration specifications. The following information details the slot location where each SRU accesses the backplane.

Primary Processor	Second SRU slot location
Applications Processor	Last SRU slot location
LANLink	First SRU slot location
SCSI Tape SRU	Second SRU Slot location
SCSI File Processor	Last SRU Slot location

The remaining SRU do not access the data bus.

Primary Proc.

EXAMPLE:



The Primary Proc. accesses the backplane at slot six when it is physically located in slots 5-8.

Slots: 5 6 7 8

RULE 2) Manufacturer Discontinued

Provide one (1) NT4G42BA Input Connector Assembly for each DVS system. The NT4G42BA must be located on cabinet 01 to provide BUS terminator boards and an AC power input connection. This assembly is also required when the -48VDC power option is utilized instead of AC.

RULE 3) Manufacturer Discontinued

Provide a quantity of NT4G40BA Horizontal Connector Assemblies equal to the number of provisioned cabinets minus one. The NT4G40BA connects the cabinet backplanes of adjacent cabinets.

RULE 4) Provide one (1) NT4G41BA Vertical Connector Assembly for each DVS system. The NT4G41BA must be located on the last cabinet in the line-up to loop the top cabinet-backplane to the bottom cabinet-backplane.

RULE 5) Provide one (1) NT4G19EA AC Power SRU for each DVS system cabinet NT4G13DA when an AC power source is used to power the system. The power SRU should be located in the cabinets according to system application provisioning guidelines. This SRU must be located in the lower portion of the cabinets.

Also provide one NT4G09BD 220VAC Conversion Kit when 220VAC is utilized. A power cord for 115VAC operation is always provided.

RULE 6) All SASI Primary Processors are rated A&M.

Provide one (1) Primary Processor per BNM System. The Primary Processor must be located in cabinet 01 slots 5-8 to satisfy software boot requirements.

The SCSI 68020-7 Primary Processor should be provisioned for all initial BNM systems at NSR-27 and higher if the customer requires a manual reboot button. Otherwise order the SCSI 68010-6 Primary Processor.

In NSR-27 multiple SCSI 350 mbyte disk units can be daisy chained off of the SCSI Primary Processor. This is addition to the SCSI Cartridge tape drive. The second, third and fourth disk is dedicated to SMDR data storage only. The first disk is dedicated to system software retention and OM, KT and ATT data storage. If the required SMDR data storage is beyond the capabilities of three 350 mbyte disks, SMDR data collection can be transfered to a provisioned SCSI File Processor. Refer to rule 20 for more details. If a SCSI File Processor is provisioned for SMDR then only one 350 mbyte disk can be connected to the Primary.

For existing BNM systems equipped with a SASI Primary Processor, the SASI Primary may be replaced with the SCSI NT4G16EE or NT4G16NA Primary when an increase in disk storage for SMDR data collection is required as described above. Also, instead of replacing the Primary Processor, a SCSI File Processor may be provisioned along with associated 350 Mbyte disk drives to increase SMDR data storage capabilities. Refer to Rules 20 and 21.

The NT4G16BA and NT4G16HA are equipped with 4 MBytes and 5 MBytes of usable RAM memory respectively. The NT4G16EE is equipped with 6 Mbytes of usable RAM and the NT4G16NA has 7 Mbytes of RAM. Refer to the DVS base section of document ECM-394 to determine Primary Processor memory requirements. The provisioned/equipped Primary Processor must be capable of storing this software.

RULE 7) Rated A&M.

Provide one (1) NT4G20FB SASI 80MByte Mass Storage Device per BNM system. The NT4G20FB is used to store a duplicate copy of the operating programs and to load system software when a SASI Primary Processor is provisioned. This SRU must be located in cabinet 02 slots 9-14. (60 MBytes of disk storage is available for application system data.) If a SCSI Primary processor is provisioned, do not provision this SRU. Instead see rule 19.

RULE 8) Provision the required quantity of NT4G14 LANlink SRU using the following calculations. The first LANLink SRU must be placed in cabinet 01 slots 3-4.

$$\frac{\text{\# of M4000 Terminals + \# of LIU's (2 port and 10 port)}}{12}$$

The remaining LANlink SRU may be placed in any vacant slot location not utilized by and/or reserved for Power SRU, Primary Processor SRU, 350 MByte Disk SRU or 80 MByte Storage SRU.

A minimum of two (2) LANLink SRU's may be provisioned to provide redundancy. All incoming links to the LAN must be spread evenly across LANLink SRU.

RULE 9) Rated A&M.

Provide one (1) NT4G20SA SASI350 MByte Disk Drive SRU to add an additional 350 MBytes of disk storage capability for data collection features. Refer to the Disk Storage section of this document to determine if this SRU is required. The SASI Disk SRU should only be provisioned when a SASI Primary Processor is provisioned. If a SCSI Primary is provisioned instead see rule 21.

RULE 10) Provide one (1) A0324003 SASI Mag Tape Drive Unit (Stand-Alone) when SMDR data storage on tape is a requirement. Also provide one (1) NT4G46CA LAN Interface Unit equipped with one (1) NT4G46CK Mag Tape Controller kit. This LIU mounts inside the Mag Tape Unit.

The NT4G08AA SCSI Mag Tape Drive CANNOT be used if the customer requires SMDR data storage on tape.

Dimensions:	Height = 36 inches
	Width = 21.5 inches
	Depth = 36 inches
Power:	115 VAC Protected
	170 Watts Operating
	270 Watts In-rush (150ms)

RULE 11) Current LIUs have two (2) serial ports and one (1) parallel port available for interfacing RS232 devices.

LIUs must be provisioned according to communication personality requirements per the following formulas.

ATA Personality:

No.of ASCII Terminals (local or remote)
2 ports/LIU

APIO Personality:

No. of SMDR Spooling Ports
2 ports/LIU

X.25 LAPB Personality:

No. of Data Links
2 ports/LIU

where: No. of Data Links = No. of NOP links to DMS
+ No. of X25 links to DNC-100s
+ No. of X25 links to DPN NAS
+ No. of X25 links to COSMOS
+ No. of X25 links to non-DMS switch

Printers:

Log/journal printers may be connected to the parallel printer ports of the APIO LIUs. Other LIUs may be provisioned if additional ports are required.

Host Reachthrough LIUs:

A total of five ports may be configured for Host Reachthrough.

AHA: # Ports to ASCII HOST for M4110 Access

2 ports/LIU

APIO: # Ports to ASCII Host for ASCII Terminal Access

2 ports/LIU

HDLC/BSC: # Ports to IBM Host

2 ports/LIU

X.25 LAPB: # Ports to ASCII Host via X.25 Network

2 ports/LIU

The LIU is a self-contained desk-top device that may also be mounted on a wall. The LIU can be placed on Common Equipment Shelves in NT0X02AB MIS Frames when the DVS System is located in a Central Office or when requested by the customer for non-Telco premise applications.

If a MIS Frame is provisioned for BNM LIUs and inverters, then the MIS Frame must be co-located with the BNM System and the customer is responsible for providing the power. This MIS Frame cannot be powered from a PDC in the DMS office.

If a DMS MIS Frame is provisioned for a BNM office, then a miscellaneous hardware kit must also be provided.

Power Requirements: 115 VAC Protected
43 WATTS
5 Ft Power Cord

Dimensions: H = 4"
W = 12"
D = 14"

RULE 12) Provide the required quantity/type of Application Processors using the following software application provisioning guidelines. These guidelines are based on pre-assigned PRU/Application Processor configurations provided in section XV of this document. Exceptions to these simplified rules can be made utilizing the detailed memory and real time engineering guidelines.

The 68010 Applications Processors reference by this rule are equipped with RAM memory as follows:

NT4G25AA	---	2 MBytes
NT4G25CA	---	3 MBytes
NT4G25DA	---	5 MBytes
NT4G25EA	---	7 MBytes

The 68020 Applications Processors referenced by this rule are equipped with RAM as follows:

NT4G25GA	---	10 MBytes

The Application Processor SRU may be placed in any vacant slot location not utilized by and/or reserved for Power SRU, Primary Processor SRU, 350 MByte Disk SRU, and 80 MByte Storage SRU.

1) Provide one (1) 7 mbyte Application Processor for each DNC-50/500 BNM system to support Call Tracking and SMDR Tape Generation. (DNC-50 does not support Call Tracking.)

2) Provide one (1) 3 mbyte Application Processor for each DNC-500 BNM system to support Host Reachthrough if required.

3) Provide the following Application Processors for each DNC-500 BNM system when Station Administration is required.

- Provide one (1) 3 Mbyte Application Processor to support two (2) instances of the DT PRU. One instance is required per customer (max. of 8).
- Provide one (1) 7 mbyte Application Processor to support the VR PRU.

- Provide one (1) 10 mbyte Application Processor to support the remainder of the Station Administration PRUs.

4) Provide additional Application Processors as required to support the following software utilizing the memory and real time calculations provided. Note that if 68020-10 Applications Processors are used to execute any of the following PRUs, the actual processor CPU utilization values will be 70% of the values derived via the following calculations.

PRU	MEMORY (kbytes)	REAL TIME/NOTE
SM	290 + (170 * # nodes) plus shared per table C	BH SMDR records * 2 ---------- * 100 3,600,000
DS	715 + (ports * 222) plus shared per table C	11.25% per active spooling port
SS	315 + shared per table C	Assign with DS PRU
OM	670 + (# nodes * 64) plus shared per table C	9% per node (9600 BPS Links) 14.5% per node (19.2K Links)
PV	233K + shared per table C	Assign with OM PRU
AT	654 + (# nodes * 64) plus shared per table C	Assign with KT PRU
KT	677 + (# nodes * 64) plus shared per table C	15.3% per active node (9600 BPS) 24.5% per active node (19.2K PPS)
PT	834 + (sessions * 68)	5% per active MAP session
ZZ	340K	Assign with PT PRU
FA	584 + shared per table C	Refer to ECM394 Section XII for calculation
ST	See table B Calculation	

NOTE: Table B and Table C are located in ECM-394.

5) Provide one (1) 10 MByte Applicaton Processor to support Network Administration in a DNC-500.

6) Provide one (1) 3 Mbyte Application Processor for the MXP, MXD, and XSRU Boss PRUs. These PRUs are needed for Processor CPU and Disk Performance Monitoring which is a part of BNM release NSR-28.

RULE 13) Provide one DNC-50, DNC-100 or DNC-500 door per DNC system for cabinet number one. Each remaining cabinet comes equipped with an NT LOGO door (always provided).

RULE 14) Provision one (1) NT0M90PA M4110 Data Controller, one (1) NT0M92DA Monochrome Monitor and one (1) NT0M91BA keyboard for each Man Machine Interface required by the Telco. M4110 terminals must be located within 2,000 feet of the DVS system. If remote terminals are required, ASCII VT100 compatible terminals must be utilized instead. A minimum of one (1) M4110 is required for System Administration.

Dimensions: Width = 26.25 inches
Depth = 25.50 inches

Power Requirements: 115 VAC Protected
75 Watts
E/W 10 Ft. Power Cord

RULE 15) Provide one (1) system printer A0317073 for printing of DVS maintenance information. Additional printers may be provisioned as required for printing of data relating to the system application (i.e.: printing of OM's on a BNM system).

Available options are: Pedestal Stand A0317078
Paper Catch Tray C2501313

Power: 120 VAC
140 Watts

RULE 16) The BIX Cross-Connect Panel A0321335 is a self contained cross-connect system. It is equipped with a punch-down cross-connect field allowing termination of M4000 series terminals and LIU's. The panel is capable of terminating four (4) LANLink SRU (48 ports) and 48 M4000 terminals/LIU's. Provide one (1) panel for every four (4) Lanlink SRU.

This panel is not required if a standard Distribution Frame is utilized as a cross-connect facility.

Provide one (1) BIX Cross Connect Tool QTBIX16A when the BIX Cross Connect Panel is provided.

RULE 17) The customer is to provide one (1) VT-100 compatible terminal for initializing the system. Provision one (1) P0654783 pigtail cable and one (1) NT0M96DQ cable for connecting to MD'd NT3M20AA terminal.

When the NT3M20BD is provisioned, provide one (1) P0654783 pigtail cable and either one (1) NT0M96SC 10 ft., or one (1) NT0M96RS 25 ft., or one (1) NT0M96RT 50 ft. long cable for connecting to NT3M20BD.

The NT3M20AA NT-220 terminal has been rated Manufacture Discontinued (MD).

Power For ASCII: 115 VAC
55 Watts nominal

RULE 18) Additional VT-100 compatible terminals may be provided by the customer as required for MMI ASCII access to the DVS.

RULE 19) Provide one (1) NT4G20QB SCSI 160 MByte Disk/Tape SRU in Cabinet 01 Slots 15-16 when the SCSI Primary Processor is provisioned. The 160 MByte SRU provides approximately 158 MBytes of formatted storage area.

PLEASE NOTE: Only 160 MByte Disks can be daisy-chained from this 160 MByte Disk/Tape SRU, since each daisy-chain MUST contain only all 160 OR 350 MByte Disks and not a combination of both.

RULE 20) Provide one (1) NT4G26CB SCSI File Processor when a SCSI Disk Drive is required for Station Administration data storage independent of the data collection disk connected to the Primary Processor.

Provide one (1) NT4G26CB SCSI File Processor to be dedicated for SMDR data collection I/O when the Primary Processor is not being used for this function. See Rule 21. This processor may be located in any unequipped cabinet location, however, it should be located as close as possible to it's associated SCSI Disks.

Provide one (1) NT4G26JA SCSI File Processor per DNC-500 BNM System when the NTG243 feature of Station Administration Billing is required. This processor must be equipped with the DVIX operating system. This processor is designated the Billing File Processor.

Provide one (1) NT4G26CB SCSI File Processor to be dedicated for OM, ATT and KT data collection I/O when the Primary Processor is not being used for this function. See Rule 21. This processor may be located in any unequipped cabinet location, however, it should be located as close as possible to it's associated SCSI Disks.

RULE 21) SCSI to SCSI local cabling is restricted to a maximum of 20 feet. Therefore, SCSI storage devices should be located as close as possible to their appropriate SCSI processor, whether primary or file processor. The recommended position for the 1st SCSI Disk Unit is Cabinet 02 Slots 09-16.

Provide one SCSI Disk Unit to be connected to the SCSI Primary Processor NT4G16EE/NT4G16NA to collect OM, KT and ATT data and to store the BNM operating software. Provide additional SCSI Disk Units as required up to a maximum of three for SMDR data collection. These three disks also connect to the Primary. If the required SMDR data storage area is greater than the capabilities of three SCSI Disk Units, then the SMDR data collection function must be transfered to a provisioned SCSI File Processor. In this case only one SCSI Disk Unit should be provisioned off of the Primary. The SMDR data collection I/O function may also be provisioned on a File Processor to offload the Primary Processor.

Provide an additional SCSI Disk Unit for the Station Administration feature when additional storage beyond the :LOCAL disk is required for Station Administration based on storage calculations. This disk unit is connected to the SCSI File Processor dedicated to Station Administration data I/O.

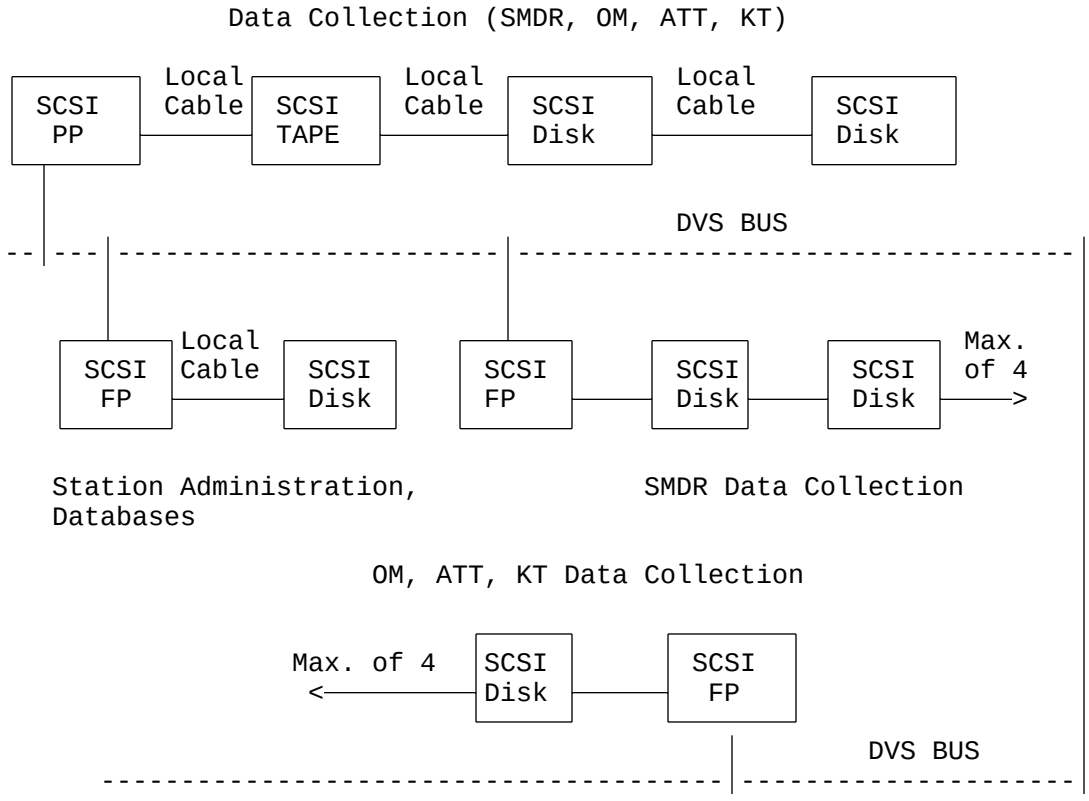
Provide up to four SCSI Disk Units as required for SMDR data storage when the SMDR data collection functionality is provisioned on a SCSI File Processor. See Rule 20.

Provide one (1) SCSI Disk Unit per DNC-500 BNM System when the NTG241/NTG243 features of Station Aministration Billing are provisioned. This disk unit is designated the Billing Disk, and is connected to the Billing File Processor.

RULE 22) Provide NT4G09 SCSI/SCSI local cables to connect SCSI storage devices to the SCSI Primary and File Processor. Cables are required between the following.

NT4G16 - NT4G21
NT4G20 - NT4G21
NT4G26 - NT4G20
NT4G20 - NT4G20

The total cable distance between the controlling SCSI processor and the last storage device daisy chained off the processor is 20 feet. This includes Cart. drives and nine-track tape drives. PLEASE NOTE: Each daisy-chain can contain only all 160 OR 350 MByte Disks, and not a combination of both.



Determine the required length considering horizontal and vertical distances between SRU's and order the appropriate length cable.

RULE 23) Provide one (1) NT4G13AK -48V Cabinet Conversion Kit when a two (2) cabinet DVS system is to be powered from a -48V DC source.

RULE 24) Provide one (1) NT4G13AL -48V Cabinet Conversion Kit when a three (3) cabinet DVS system is to be powered from a -48V DC source.

RULE 25) Provide one (1) NT4G13AM -48V Cabinet Conversion Kit when a (4) cabinet DVS system is to be powered from a -48VDC source.

RULE 26) Provide one (1) NT4G13AN -48V Cabinet Conversion Kit when a five (5) cabinet DVS system is to be powered from a -48V DC source.

RULE 27) Provide one (1) NT4G13AP -48V Cabinet Conversion Kit when a six (6) cabinet DVS system is to be powered from a -48V DC source.

RULE 28) Provide one (1) NT4G13AQ -48V Cabinet Conversion Kit when a seven (7) cabinet DVS system is to be powered from a -48V DC source.

RULE 29) Provide one (1) NT4G13AR -48V Cabinet Conversion Kit when an eight (8) cabinet DVS system is to be powered from a -48V DC source.

RULE 30) The -48V DC Cabinet conversion kits may be used to retrofit existing AC powered systems.

RULE 31) Provide one (1) NT4G42CA Input Connector for each initial DVS system utilizing the NT4G13FA Loft Cabinets. Also, when upgrading existing NT4G13DA cabinet systems with NT4G13FA cabinets, the existing NT4G42BA input connector must be replaced with an NT4G42CA.

RULE 32) When provisioning additional cabinets to an existing -48V DC powered system, order the appropriate power hardware according to the following table.

FROM TO

Existing Cabinets	Total Cabinets	EQUIPMENT REQUIRED
2	3	QTY (1) NT4G13AU Upgrade Kit
2	4	QTY (1) NT4G13AU Upgrade Kit QTY (1) NT4G13AV Upgrade Kit
2	5	QTY (1) NT4G13AU Upgrade Kit QTY (1) NT4G13AV Upgrade Kit QTY (1) NT4G13AW Upgrade Kit
2	6	QTY (1) NT4G13AU Upgrade Kit QTY (1) NT4G13AV Upgrade Kit QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit
2	7	QTY (1) NT4G13AU Upgrade Kit QTY (1) NT4G13AV Upgrade Kit QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit QTY (1) NT4G13AY Upgrade Kit
2	8	QTY (1) NT4G13AU Upgrade Kit QTY (1) NT4G13AV Upgrade Kit QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit QTY (1) NT4G13AY Upgrade Kit QTY (1) NT4G13AZ Upgrade Kit

Existing Cabinets	Total Cabinets	EQUIPMENT REQUIRED
3	4	QTY (1) NT4G13AV Upgrade Kit
3	5	QTY (1) NT4G13AV Upgrade Kit QTY (1) NT4G13AW Upgrade Kit
3	6	QTY (1) NT4G13AV Upgrade Kit QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit
3	7	QTY (1) NT4G13AV Upgrade Kit QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit QTY (1) NT4G13AY Upgrade Kit
3	8	QTY (1) NT4G13AV Upgrade Kit QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit QTY (1) NT4G13AY Upgrade Kit QTY (1) NT4G13AZ Upgrade Kit
4	5	QTY (1) NT4G13AW Upgrade Kit
4	6	QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit
4	7	QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit QTY (1) NT4G13AY Upgrade Kit
4	8	QTY (1) NT4G13AW Upgrade Kit QTY (1) NT4G13AX Upgrade Kit QTY (1) NT4G13AY Upgrade Kit QTY (1) NT4G13AZ Upgrade Kit

Existing Cabinets	Total Cabinets	EQUIPMENT REQUIRED
5	6	QTY (1) NT4G13AX Upgrade Kit
5	7	QTY (1) NT4G13AX Upgrade Kit QTY (1) NT4G13AY Upgrade Kit
5	8	QTY (1) NT4G13AX Upgrade Kit QTY (1) NT4G13AY Upgrade Kit QTY (1) NT4G13AZ Upgrade Kit
6	7	QTY (1) NT4G13AY Upgrade Kit
6	8	QTY (1) NT4G13AY Upgrade Kit QTY (1) NT4G13AZ Upgrade Kit
7	8	QTY (1) NT4G13AZ Upgrade Kit

RULE 33) Provide one (1) NT4G46CA LIU equipped with one (1) NT4G46CS Alarm LIU PCB for each Alarm LANLink Interface Unit (ALIU) required. ALIUs are used to visually and audibly indicate alarm conditions in the BNM system. A maximum of two (2) ALIUs are allowed with NSR-28.

When a spare Alarm LANLink Interface Unit (ALIU) is required, provide one (1) NT4G46CA LIU equipped with one (1) NT4G46CS Alarm LIU PCB. The shop assembles these two parts together to form a complete ALIU prior to shipping to site.

RULE 34) Provide one (1) NT4G50DA -48V/+32V Power Converter SRU per DVS cabinet when the system is to be powered from a -48VDC power source. The SRU should be placed in the following slot locations:

Three Cabinets	Cabinet 01 slots 1-2
	Cabinet 02 slots 1-2
	Cabinet 03 slots 1-2
Four Cabinets	Cabinet 01 slots 1-2
	Cabinet 02 slots 1-2
	Cabinet 03 slots 1-2, 3-4
Five Cabinets	Cabinet 01 slots 1-2
	Cabinet 02 slots 1-2
	Cabinet 03 slots 1-2
	Cabinet 04 slots 1-2
	Cabinet 05 slots 1-2
Six Cabinets	Cabinet 01 slots 1-2
	Cabinet 02 slots 1-2
	Cabinet 03 slots 1-2
	Cabinet 04 slots 1-2
	Cabinet 05 slots 1-2
	Cabinet 06 slots 1-2
Seven Cabinets	Cabinet 01 slots 1-2
	Cabinet 02 slots 1-2
	Cabinet 03 slots 1-2
	Cabinet 04 slots 1-2
	Cabinet 05 slots 1-2
	Cabinet 06 slots 1-2, 3-4
Eight Cabinets	Cabinet 01 slots 1-2
	Cabinet 02 slots 1-2
	Cabinet 03 slots 1-2
	Cabinet 04 slots 1-2
	Cabinet 05 slots 1-2
	Cabinet 06 slots 1-2
	Cabinet 07 slots 1-2
	Cabinet 08 slots 1-2

When -48VDC is utilized do not provision the loft power supply.

RULE 35) Provision one (1) NT4G13FA DVS Loft Cabinet to provide sixteen (16) SRU slot locations. A minimum of two (2) cabinets are required per system up to a maximum of eight (8). The required number of cabinets is based on the number of SRU's required and the number of slot locations required per SRU. Refer to RULE 1 for SRU slot requirements. All systems (initials or extensions) that ship after January 1, 1988 must utilize the NT4G13FA loft cabinets.

RULE 36) Provide one (1) NT4G13AJ Loft Power Supply for every NT4G13FA Loft Cabinet when an AC power source is utilized. This power supply is located in the upper air plenum portion of the cabinet and does not require SRU slot space. If a -48VDC power source is utilized, do not provision this supply.

RULE 37) When the NT4G13AJ loft AC power supply is utilized one (1) NT4G19FA Universal Power Supply SRU may be provisioned as a hot spare. The NT4G19FA SRU must be located in the bottom portion of a cabinet.

RULE 38) For initial DVS systems utilizing the NT4G13FA Loft cabinets, provide a quantity of NT4G40CA Horizontal Connector Assemblies equal to the number of provisioned cabinets minus one. Also provide one (1) NT4G40CA for each NT4G13FA cabinet used to extend an existing system.

RULE 39) When -48V power is utilized, provide one (1) NT4G13AS Upgrade Kit per DVS system if you have a 4 or 7 Cabinet System and a power supply needs to be provided in Slots 3-4.

RULE 40) Provide one (1) NT4G13AT -48V Cabinet Downgrade Kit when removing -48V powered cabinets from an existing DVS installation.

RULE 41) Provide one (1) NT4G09AD 115VAC conversion kit when an existing 220VAC system is downgraded to a 115VAC system.

RULE 42) Provide one (1) NT4G20GB SASI to SCSI conversion kit to convert one (1) existing NT4G20GA SASI 350 MByte disk SRU to an NT4G20JA SCSI 350 MByte disk SRU. After conversion the NT4G20GA will be functionally equivalent to the NT4G20JA, therefore, NT4G20JA engineering rules apply.

Drawings required on site to aid installation in performing the conversion are: IP4G20GB, AD4G20JA and IS4G20JA

RULE 43) The first M4010 or 4020 terminal must be assigned to LANLink 1 port 1 in all cases.

RULE 44) If this 350 MByte Disk is not provisioned, the 80 Mbyte Storage SRU must be located in cabinet 1 slots 9-14.

RULE 45) If the BNM system is located in a non-Central Office environment, the maximum number of Processors (Primary, File and Application) allowed in the system is 16. This restriction is due to EMI requirements.

RULE 46) Reserved for future use.

RULE 47) Provide 3 mbyte Application Processors for every DNC-50/500 BNM system to support X.25 Gateway PRUs per the following:

68010-3 Processors

- Provide one (1) 3 mbyte Application Processor for every five (5) 9600 BPS NOP/X.25 data links.
- Provide one (1) 3 mbyte Application Processor for every four (4) 19.2K BPS NOP/X.25 data links.

These processors may be assigned as required.

Rule 48) Provide two (2) 3 mbyte, three (3) 7 mbyte and three (3) 10 mbyte Application Processors for every DNC-50/500 BNM system to support base DNC/BNM software.

Rule 49) Provide one (1) NT4G08AA SCSI Nine-Track Tape Unit for the Save and restore to 9-Track capability when the SCSI Primary Processor is utilized.

The NT4G08AA SCSI Mag Tape Drive CANNOT be used if the customer requires SMDR data storage on tape. Refer to RULE 10.

Provide one (1) NT4G08AA SCSI 9-Track Mag Tape Unit if Station Administration Billing is provisioned. If a SCSI 9-Track Mag Tape Unit has already been provisioned for other purposes, then an additional tape drive is not required.

Also provision one (1) NT4G09AK or NT4G09BK Local Cable to connect the SCSI Mag Tape drive to the last equipped SCSI Disk SRU that is daisy chained off the SCSI Primary Processor. The longest cable is 10 feet therefore the tape drive must be located in close proximity to the BNM system. See Rule 22 for SCSI cable distance limitations.

Rule 50) Provide one (1) 7 mbyte Application Processor to be dedicated for Helix CI and XSRU software.

RULE 51) SCSI to SCSI local cabling is restricted to a maximum of 20 feet. Therefore, SCSI storage devices should be located as close as possible to their appropriate SCSI processor, whether primary or file processor.

Provide one (1) NT4G20PA, 160 MByte Disk Only SRU, when the BNM/COSMOS Interface is provisioned. The 160 Mbyte Disk provides approximately 158 MBytes of formatted storage area. If storage requirements exceed 95-percent of the formatted capacity, a 350 MByte Disk must be provisioned instead.

Provide one (1) NT4G20PA, 160 MByte Disk Only SRU, when CDR Collection is provisioned. The 160 MByte Disk provides approximately 158 MBytes of formatted storage area. If storage requirements exceed 95-percent of the formatted capacity, a 350 MByte Disk must be provisioned instead.

Provide a maxium of four (4) NT4G20PA, 160 MByte Disk Only SRU, when OM, ATT and KT Interface is provisioned. The 160 Mbyte Disk provides approximately 158 MBytes of formatted storage area. If storage requirements exceed 95-percent of the formatted capacity, a 350 MByte Disk must be provisioned instead.

RULE 52) Provide one (1) NT4G91FF DVIX 3.20 Software and License package for the first 68020 File Processor or Application Processor running a DVIX Feature. If NT4G91FF was or is already ordered for a previous DVIX feature, it is not necessary to order this PEC again.

Provide one (1) NT4G94FF DVIX License for each 68020 processor running a DVIX Feature that is provisioned above and beyond the first processor as described above.

The NT4G91 and NT4G94 codes mentioned in this rule are outside vendor items and must be ordered as hardware items.

A DVIX Feature refers to any of the following features:

Station Administration Billing
BNM/COSMOS Interface
Call Detail Records (CDR) Collection

RULE 53) Provide one (1) NT4G91EE Turbo Informix software package when NTG212 and/or NTG213 is ordered. Also, order one (1) NT4G91DE Informix 4GL Runtime and one (1) NT4G91BX Informix 4GL software package when NTG212 and/or NTG213 is ordered. These codes include the software and license fee for the SPP File Processor.

The NT4G91 codes mentioned in this rule are outside vendor items.

RULE 54) Provide one (1) NT4G91FU Informix ESQL/C License when the NTG212 and/or NTG213 software packages are provisioned. Also, provide one (1) NT4G91FN C-ISAM License when NTG212 and/or NTG213 is ordered. These licenses are required because the NTG212 and NTG213 features utilize portions of this Informix software. It is only necessary to ensure that the proper license fees are paid.

The NT4G91 codes mentioned in this rule are outside vendor items.

EMA13

MISCELLANEOUS SUBSYSTEMS CHAPTER ALL

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MISCELLANEOUS SUBSYSTEMS CHAPTER ALL

EMA13-01-BIX-1	BIX SHELF	TCS 1800B-1 L1
EMA13-01-CDA-1	COOK DIVISION DIGITAL ANNOUNCER	NT7M00__
EMA13-01-CDA-3	COOK DIGITAL ANNOUNCER (CDA) NT5M-SERIES	NT5M0N__
EMA13-01-DSM-2	RM42000 DATA SET MODULE	905-5222-00N
EMA13-01-DSM-4	RM70 DATA SET MODULE 120VAC	905-5098-001
EMA13-01-DTH-0	DTH-ROTL SPARES KIT (NT7F18AD)	NT7F19AC
EMA13-01-DTH-3	DIGITAL TEST HEAD REMOTE OFFICE TEST LIN	NT7F18AD
EMA13-01-DTH-4	DTH-DIGITAL TRUNK TEST (DTT)	NT7F18BA
EMA13-01-DTH-5	DIGITAL TEST HEAD-ROTL/DTT	NT7F18CA
EMA13-01-DTH-6	PRODUCT CHANGE KIT NT7F20AA/18AA/18AB-CA	NT7F38AB
EMA13-01-DTH-7	PRODUCT CHANGE KIT NT7F18AD-CA .TOPIC2	NT7F38BA
EMA13-01-DTH-8	DTH-DTT SPARES KIT (NT7F18BA)	NT7F19BA
EMA13-01-DTH-9	DTH-ROTL/DTT SPARES KIT (NT7F18CA)	NT7F19CA
EMA13-01-FPX-1	AUXILIARY FUSE PANEL FOR TOPS AND ESAC	NT5X98AA
EMA13-01-FSP-1	MISCELLANEOUS EQUIPMENT FSP	NT0X88AB
EMA13-01-FSP-2	REMOTE SERVICE EQUIPMENT FSP	NT0X88AD
EMA13-01-FSP-3	10 AMP FILTER MISCELLANEOUS EQUIPMENT FS	NT0X88AE
EMA13-01-FSP-4	HOST/REMOTE MISCELLANEOUS EQUIPMENT FSP	NT0X88AF
EMA13-01-GDC-1	GDC DATA SET MODULE	T_GDC_MOD
EMA13-01-HDW-02	CHINA PACKAGING HARDWARE KITS	NT0X71CB
EMA13-01-MISC-1	MISCELLANEOUS APPLIQUE EQUIPMENT SHELF	NT5X95AA
EMA13-01-MLTS-1	MLT APPLIQUE SHELF	NT3J00BA
EMA13-01-RCT-1	LYNCH AUTOMATIC PROTECTION SWITCH	B302MA09
EMA13-01-TL-1	TELLABS 292BR-1 CONFERENCE SYSTEM	292BR-1
EMA13-01-UDS-1	UDS DATA SET MODULE SHELF (RM16M)	62005220
EMA13-01-000	MISCELLANEOUS EQUIPMENT FRAME	NT0X02AB
EMA13-01-002	CABINETIZED REMOTE MISCELLANEOUS EQUIPME	NTRX31EA
EMA13-01-003	MODEL B MISCELLANEOUS EQUIPMENT CABINET	NTRX56AA
EMA13-01-1A2-1	1A2 LINE CARD SHELF	TCS 1800A-1 L1
EMA13-02-000	MAINTENANCE SPARE STORAGE FRAME	NT0X85AA
EMA13-03-HWK-1	MISCELLANEOUS HARDWARE KIT	NT0X58AE
EMA13-03-HWK-10	MISCELLANEOUS HARDWARE KIT	NT0X58AP
EMA13-03-HWK-2	MISCELLANEOUS HARDWARE KIT	NT0X58AF
EMA13-03-HWK-3	MISCELLANEOUS HARDWARE KIT	NT0X58AG
EMA13-03-HWK-4	MISCELLANEOUS HARDWARE KIT	NT0X58AH
EMA13-03-HWK-5	MISCELLANEOUS HARDWARE KIT	NT0X58AJ
EMA13-03-HWK-6	MISCELLANEOUS HARDWARE KIT	NT0X58AK
EMA13-03-HWK-7	MISCELLANEOUS HARDWARE KIT	NT0X58AL
EMA13-03-HWK-8	MISCELLANEOUS HARDWARE KIT	NT0X58AM
EMA13-03-HWK-9	MISCELLANEOUS HARDWARE KIT	NT0X58AN
EMA13-04-PM-1	DMS PACKING MATERIAL	D9000
EMA13-04-001	CABINETIZED MISC SPARE STORAGE - MODEL B	NTRX49BA
EMA13-99-PWR-1	POWER CONVERTER PRODUCT CHANGE KIT	NT2X70AZ
EMA13-99-PWR-2	NT2X70AF POWER CP AND LABEL	NT2X70AY

BIX SHELF

PEC CODE: TCS 1800B-1 L1

CPC CODE: A0332020

RATING: A&M.

REPLACES: Not Applicable

REPLACED BY: NTZX18AB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The purpose of the BIX Shelf is to provide a convenient means of multiplying up to three Logic 10/20 sets and/or Communication Modules. One BIX Shelf can accommodate up to three BIX Modules. One Logic 10/20 set or Communication Module can be terminated onto one BIX Module.

When required, the BIX Shelf always mounts beneath the 1A2 Line Card Shelf.

If additional BIX Shelves are required, they can be mounted beneath the previous BIX Shelf.

This shelf is 26 inches wide and 4 inches high.

The BIX Shelf is a sheet metal shelf assembly equipped with a Printed Circuit Board (PCB). On the PCB are ten connectors which are all multiplied together. Six of the connectors connect up to the three BIX Modules (i.e. two connectors per BIX Module). Two of the connectors will allow for multiplying to the preceding shelf (either a 1A2 Line Card Shelf or a BIX Shelf). Another two of the connectors will allow for multiplying to the succeeding shelf below itself (a BIX Shelf if required).

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

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

TCS 1800B-1 L1 EMA13-01-BIX-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
93 05 24	ECM 353 02	A&M TCS 1800B-1 L1.

The BIX Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# BIX Module	TCS 1800BA-1 L1				01-03	RUL1
# BIX Blank Panel	TCS 1800BB-1 L1				01-03	RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
TCS1800BA-1 L1	A&M	Norstar (NTZX18AB)
TCS1800BB-1 L1	A&M	Norstar (NTZX18AB)

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)

CODE	CPC	DESCRIPTION
TCS 1800B-1 L1	A0332020	BIX Shelf
TCS 1800BA-1 L1	A0332021	BIX Module
TCS 1800BB-1 L1	P0685353	BIX Blank Panel

RULES:

RUL1 1) Provide up to three (3) BIX Modules as required.

One (1) BIX Module can accommodate the local cross connections of one Logic 10/20 phone or Communication Module.

Note that the BIX Module can accommodate up to ten (10) telephone lines. These lines can all be from one Logic phone or Communication Module, or from several Logic phones

or Communication Modules (i.e. two lines from each of five Logic phones, etc.).

2) Provide one (1) TCS 1800BB-1 L1, BIX Blank Panel, for each unequipped module position on a BIX Shelf.

COOK DIVISION DIGITAL ANNOUNCER NT7M00__

RATING: Standard

ABBREVIATION NAME: CDA

ENGINEERING DESCRIPTION: The Cook Digital Announcer records analog messages in a digital format and stores the information in memory. When the appropriate signals are received for the interface circuits, the message is converted back to a analog format for output to the line requesting the message.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR NTI: Merdia Drummer Dept. 3471 (PPK)

MAIN CONTACT NTI: Merdia Drummer Dept. 3471 (PPK)

NT7M00 EMA13-01-CDA-1 CHANGE HISTORY

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 03 06	API 420 01	Change Status for STD to MD for the following Items: NT7M08BA, NT7M29BA, NT7M29BA, and NT7M26BA
92 08 21	API 420 02	No Change, EMS Maintained until Released in an ECM.
92 12 18	API 420 02	Reflect 4-Channel Firmware as MD.
93 03 29	ECM 543 01	Convert API420 Issue 03 to an ECM.

The Cook Division Digital Announcer is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	1-Chan 19" 32S RTA STB	NT7M00CC					RUL1
	1-Chan 26" 32S RTA BRN	NT7M00DC					RUL2
	1-Chan 26" 32S RR/RTA BRN	NT7M00DB					RUL3
	Remote Record/Ring Trip Kt	NT7M07BA					RUL4
┌	1-Line Ring Trip Acc Ckt	NT7M08BA					RUL5
┌	4-Line Ring Trip Acc Ckt	NT7M29BA					RUL6
#	3-Chan Audio Expansion Kt	NT7M26BA					RUL7
	Hanset&Cord w/teladapt conn	213360					RUL8
	Hanset Cassette Adpter cord	213284					RUL9
	Rechargeable Battery Pack	NT7M03BA					RUL10
#	Basic 4-Chan F/W for 4Msgs	NT7M41AA					RUL11
$	Sync 4-Chan F/W for 4Msgs	NT7M41BA					RUL12
#	4Port Demand Phased FW 1MSG	NT7M41CA					RUL13
#	4Port Fixed MSGL Firmware	NT7M41DA					RUL15
	32Sec Memory Upgrade Kit	NT7M04CA					RUL14

FLAGS:

#	Rated MD. No Replacement
$	Rated MD. No Replacement
┌	Rated MD. No Replacement

NOTES:

1) The NT7M00-Series Digital Announcer (DA) from the Cook Division of Northern Telecom Inc. may be provided as a desk top or rack mount unit. However, only the rack mount units have been approved for use by Digital Switching. This unit may be used as an adjunct announcer to the DMS100F internal MTM mounted Digital Recorded Announcer Machine (DRAM), in a Remote Office environment.

2) The format of the message for the transmission medium and the number of lines accessible by a given CDA is dependent upon it's configuration and firmware (EPROMs) load. All CDA firmware packages provide the following features:

   a) Operational Status: Indicates mode of operation (i.e. Select, On-Line, Alarm, etc.) on the front panel.

b) Memory Usage: Displays the amount of available memory (in seconds) and provides a real time count down during recording or playback.

c) Channel Activity: Displays active Audio output channels by number.

d) Remote Operation: Illuminates a dedicated Remote indicator lamp when the CDA has accepted the security code and is under remote control.

e) Fault Diagnostics: Built-In-Test - Alarm indicator illuminates on fault detection.

f) Peg Count: Displays a running total of messages requests (up to 999,999).

g) Extra Equipment: Allows the user to program up to 20 C/MC relay Control Signal operations for use as timing references, or for external devices.

h) Special Information Tones: Allows the addition of industry standard tone patterns to the beginning of messages for electronic announcement identification.

NOTE: Specific firmware packages limit or add to the common features above.

3) The DMS100F approved configurations of the NT7M0-Series CDAs are always provided with mounting adapters for 19 or 26 inch mounting. Refer to Engineering Rule associated with a given unit for the always provided bracket. The physical dimensions of the NT7M00-Series CDA follow:

Height: 1.75 inches (for the NT7M00-Series of CDA)
Width: 17.5 inches
Depth: 12.0 inches

4) Expansion to the NT7M-Series CDA is MD'd. NT7M00-Series CDA's is still manufactured, however, expansion is no longer available. The following information in this section is for reference only:

* Expanding the number of lines having simultaneous access to the CDA.

* Expanding the number of Audio outputs from one(1) to four(4).

The Audio Expansion Chassis was provided to increase the number of audio inputs from one to four on the single channel CDA.

* Provide additional memory, a minimum of 64-seconds is required for a 4-Channel unit.

* Provide a 3-Channel Audio Expansion Chassis (3CAE) of the same color as the Single Channel CDA (SC-CDA) being expanded

* Select an 3CAE with or without the 4-Line Ring Trip Access Circuit (4L-RTA) as required.

* Provide the firmware as required for the type of 4-Channel (4C) operation required.

  The number of users having simultaneous access to the single channel CDA may be expanded by adding the Line expansion chassis.

RULES:

RUL1 1) Provide NT7M00CC announcer for applications requiring one audio output and a message length from one to thirty-two seconds.

2) The NT7M00CC Digital Announcer is equipped with the following:

a) Single Channel/Port (1-Chan)
b) 19 inch Mounting Brackets (19")
c) Battery Backup (all approved units are e/w battery back-
up
d) 32 second message length (32S)
e) Ring Trip Access Circuit (RTA)
f) Product Color Silvertone Black (STB)
g) Basic Single Channel Firmware

RUL2 1) Provide NT7M00DC announcer for applications requiring one audio output and a message length from one to thirty-two seconds.

2) The NT7M00DC Digital Announcer is equipped as the NT7M00CC above, with the following exceptions:

b) 26 inch Mounting Brackets (26")
f) Product Color NT Brown (BRN)

RUL3 1) Provide NT7M00DB announcer for applications requiring one audio output and a message length from one to thirty-two seconds.

2) The NT7M00DB Digital Announcer is equipped as the NT7M00CC above, with the following exception:

b) 26 inch Mounting Brackets (26")
e) Remote Record and Ring Trip Access Circuit (RR/RTA)
f) Product Color NT Brown (BRN)

RUL4 1) The NT7M07BA Remote Record / Ring Trip Kit circuitry allows the Announcer to accept message changes from a remote telephone while simultaneously permitting the Announcer to operate as a stand alone device without the usual dependence on Central Office equipment. The Remote Record / Ring Trip Access circuit combines both functions on a single PCB. This kit may be field or factory installed.

2) The Remote Record circuits may be used wherever tone encoded (DTMF) type telephone communications are available. Remote Record functions can not be used in locations where only pulse or rotary dial type telephones are available.

3) The Ring Trip functions work well with both pulse or tone type telephones, but the Ring Trip functions are not intended for use with pay phones or party lines.

4) The Remote Record / Ring Trip Circuitry is equipped with a user programmable three digit security feature since the remote option allows changes to the announcements from any DTMF telephone.

5) The NT7M07BA Remote Record / Ring Trip Kit is equipped with the following:

QTY	PEC	DESCRIPTION
1	NT7M07AA	Remote Record / Ring Trip PCB
1	NT7M28AD	34-Pin Ribbon Cable
1	NT7M0103	FCC Compliance Label
1	P0665452	Cover Plate
2	704-0801	3/16 x 4-40 Screw
4	752-9512	Plastic Washer
4	706-0878	1/4 x 6-32 Screw

RUL5 1) The NT7M08BA One Line Ring Trip Kit circuits match the Announcer directly to the subscriber line, allowing it to operate as a stand alone device without the usual dependence on Central Office interface equipment. This kit may be field or factory installed.

2) The Ring Trip Access (RTA) Circuit is fully automatic in operation. It will terminate a call upon receiving an internal end-of-message signal from the Digital Announcer, or if loop current is interrupted longer than 300 milliseconds.

3) One Ring Trip Access Circuit is required for each telephone line accessing the Cook Division Digital Announcer.

Note: Several single Line Ring Trip Access circuits may be wired in parallel if more than one telephone lines must access the announcer or the Four Line Ring Trip Access Circuit may be provided.

4) The NT7M08BA Ring Trip Access Kit is equipped with the following:

QTY	PEC	DESCRIPTION
1	NT7M08AA	Ring Trip Access PCB
1	NT7M28AD	34-Pin Ribbon Cable
1	NT7M09AA	Cable Assembly
1	NT7M0103	FCC Compliance Label
1	680-7264	Card Edge Connector
1	214533	Connector Retainer
2	704-0801	3/16 x 4-40 Screw
4	752-9512	Plastic Washer
4	706-0878	1/4 x 6-32 Screw

RUL6 1) This equipment has been Manufacture Discontinued (MD). However, the following information is retained for historical purposes only. It shall be removed on a next time in basis.

The NT7M29BA Four Line Ring Trip Kit circuits match the Announcer directly to the subscriber line, allowing it to operate as a stand alone device without the usual dependence on Central Office interface equipment (with the execption of the Type "A" or "B" Line Card requirement). This kit may be field or factory installed.

2) The Ring Trip Access (RTA) Circuit is fully automatic in operation. It will terminate a call upon receiving an internal end-of-message signal from the Digital Announcer,

or if loop current is interrupted longer than 300 milliseconds.

3) One Ring Trip Access Circuit is required for each telephone line accessing the Cook Division Digital Announcer. Note: Four Line Ring Trip Access circuits may be wired in parallel if more than four telephone lines must access the announcer.

4) The NT7M29BA Ring Trip Access Kit is equipped with the following:

QTY	PEC	DESCRIPTION
1	NT7M29AA	Multi-Ring Trip Access PCB
1	NT7M30AA	RJ-11 Jack Assembly
1	NT7M31AA	Cable Assembly
1	NT7M2603	FCC Compliance Label

RUL7 1) This equipment has been Manufacture Discontinued (MD). However, the following information is retained for historical purposes only. It shall be removed on a next time in basis.

The NT7M26BA is Manufacture Discontinued (MD). Information contained in item 2 and 3 below are for historical purposes only.

2) Provide one NT7M26BA Expansion kit to expand the line accessing capabilities of the single channel CDA in multiples of three lines. One NT7M26BA expands the line acc essing capabilities of the single channel CDA by three lines.

3) Upgrading the single channel CDA to a 4-Channel unit will require a firmware upgrade as well. Refer to equipment Rules 11-13 to select the firmware package.

RUL8 1) Provide one 213360 type 'G' handset and cord combination (modified for direct connect to a cassette player or other audio device) for recording voice messages on the CDA via the Modular Jack located on the front panel.

2) The cord is equipped with a minature phone jack and audio plug for connection to the cassette player. The jack automatically disconnects the handset transmitter allowing recording without noise pickup.

RUL9 1) Provide one 213284 Cassette Adapter Cord to facilitate direct connection of the cassette player to the CDA, without

the use of a handset, for Voice Message recording directly from cassette player to CDA.

RUL10 1) Provide the NT7M03BA (Rechargeable Battery Pack) as spare equipment for the CDA. If the power pack fails then the entire battery pack must be replaced as opposed to replacing one of the four cells.

RUL11 1) Provide the NT7M41AA Basic 4-channel Firmware (F/W) Kit when upgrading a single channel unit to a 4-channel unit. Equipment per RULE #7 is also required.

2) The NT7M41AA Basic 4-Channel Firmware Kit provides all the capabilities of the common program (See Note #2 above), and differs only in the number of audio outputs.

3) The NT7M41AA F/W may be used with other equipment to expand the Audio accessing capabilities of Single Channel unit to those of a NT7M25EA.

RUL12 1) The NT7M41BA Firmware has been Manufacture Discontinued (MD) with no direct replacement. Information per items 2 and 3 below has been retained for historical purposes.

2) Provide the NT7M41BA 4-channel Synchronous Firmware Kit when upgrading a single channel unit to a 4-channel unit. Equipment per RULE #7 is also required.

3) The NT7M41BA provides all the capabilities of the common program (See Note #2 above). In addition, it provides for fixed message lengths and simultaneous start times similar to the mechanical type drum announcers.

RUL13 1) Provide the NT7M41CA 4-channel Demand Phased Entry Firmware Kit when upgrading a single channel unit to a 4-channel unit. Equipment per RUL7 is also required.

2) The NT7M41CA provides all the capabilities of the common program (See Note #2 above). In addition, it provides for multiple requests for one message. Only one message may be recorded, but it is available to all outputs independently.

3) The NT7M41CA F/W may be used with other equipment to expand the Audio accessing capabilities of Single Channel unit to those of a NT7M25CV/DG/DN/EB.

RUL14 1) The 32Sec Memory Upgrade Kit (NT7M04CA) is required when upgrading a single channel CDA to a four channel unit.

Note: four channel units require 64 seconds of memory as a minimum memory requirement.

RUL15 1) Provide the NT7M41DA 4-channel Fixed Message Length Firmware Kit when upgrading a single channel unit to a 4-channel unit. Equipment per RUL7 is also required.

2) The NT7M41DA provides all the capabilities of the common program (See Note #2 above). In addition, it allows memory to be partitioned into sections equally divided by the number of audio outputs (i.e. each channel gets the maximum equal message time).

3) The NT7M41DA F/W may be used with other equipment to expand the audio accessing capabilities of Single Channel unit to those of a NT7M25FM.

COOK DIGITAL ANNOUNCER (CDA)
NT5M-SERIES

PEC CODE: NT5M0N__

CPC CODE: Not applicable

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CDA

ENGINEERING DESCRIPTION: The Cook Digital Announcer records analog messages in a digital format and stores the information in memory. When the appropriate signals are received for the interface circuits, the message is converted back to a analog format for output to the line or trunk requesting the message.

The Cook Division Digital Announcer (CDA) is available in two basic versions Ring Trip Access (RTA) and Trunk Access (TRK) which are used within the DMS-100F as follows:

* The Ring Trip Access CDA is used in the Remote Office environment and interfaces the remote via subscriber lines (Tip/Ring Pairs). It provides announcements instead of re-order tone for Non-Resident Codes and Prefixes (i.e. 0-, 0+, and 1+) when the Remote Office is operating in the Emergency Stand Alone (ESA) mode.

* The new Trunk Access CDA is offered for use in Automatic Call Distribution (ACD) environments in which several subscribers may be grouped together on one 4-Wire E & M Trunk, then attached to the CDA for message output.

Voice Messages are recorded on both the Ring Trip and Trunk Access CDAs via a Type "G"

Handset. The Handset interfaces the CDA via a modular jack on the front panel. The analog voice messages are stored digitally in solid state (DRAM) memory. When the appropriate signals are received from the interface circuits (Trunk or Line), the message is converted to analog for output to the line requesting.

REFERENCE DOCUMENTATION: MS0X02AB

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

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NT5M0N EMA13-01-CDA-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 03 28	API 420 01	Initial Creation of EMS add New NT5M04 Series CDAs and MD NT7M25 Series.
92 08 21	API 420 02	Add 4-New Versions of the NT5M Series CDA for the Audio Attendant Feature
92 12 18	API 420 03	Remove all references to CDA-AA Units
93 03 29	ECM 543 01	Incorporate Changes For API420 Iss:03.
93 06 21	ECM 543 02	ECN # 70770 MD’s NT5M50AC, NT5M50AL, NT5M50AN, NT5M04DS, and NT5M08CE.

The Cook Digital Announcer (CDA) NT5M-Series is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	2Chan 26" 1M RR/TRK FIXED	NT5M02CB					RUL1
	4Chan 26" 2M RR/TRK BASIC	NT5M04DP					RUL2
	4Chan 26" 2M RR/TRK FIXED	NT5M04DQ					RUL3
	4Chan 26" 1M RR/TRK SP/DMD	NT5M04DR					RUL4
#	4Chan 26" 1M RR/TRK SP/TMP	NT5M04DS					RUL5
	4Chan 26" 2M RR/TRK MUSR	NT5M04DT					RUL6
	6Chan 26" 3M RR/TRK FIXED	NT5M06CA					RUL7
	8Chan 26" 4M RR/TRK BASIC	NT5M08CB					RUL8
	8Chan 26" 4M RR/TRK FIXED	NT5M08CC					RUL9
	8Chan 26" 1M RR/TRK SP/DMD	NT5M08CD					RUL10
#	8Chan 26" 1M RR/TRK SP/TMP	NT5M08CE					RUL11
	8Chan 26" 4M RR/TRK MUSR	NT5M08CF					RUL12
	2Chan 26" 1M RR/RTA FIXED	NT5M02CC					RUL13
	4Chan 26" 2M RR/RTA FIXED	NT5M04DU					RUL14
	4Chan 26" 1M RR/RTA SP/DMD	NT5M04DV					RUL15
	6Chan 26" 3M RR/RTA FIXED	NT5M06CB					RUL16
	8Chan 26" 4M RR/RTA FIXED	NT5M08CG					RUL17
	8Chan 26" 1M RR/RTA SP/DMD	NT5M08CH					RUL18
	Handset with Jack & Cord	213360					RUL19
	Kit, 19" Meridian Mtg Brkt	213281-101					RUL20
	Kit, AC Power Adapter	NT5M45EA					RUL21
	Kit, 1 Minute Mem Expnsn	NT5M45AA					RUL22
	Kit, 2Chan Ring Trip Accss	NT5M45BB					RUL23
	Kit, 4Chan Ring Trip Accss	NT5M45BC					RUL24
	Kit, 2Chan Trunk Access	NT5M45CB					RUL25
	Kit, 4Chan Trunk Access	NT5M45CC					RUL26
	Kit, Wirewrap Trk Adapter	NT5M45DA					RUL27
	Kit, Power Connector	NT5M45EB					RUL28
	Kit, MCH Basic FW	NT5M50AA					RUL29
#	Kit, MCH Synchronous FW	NT5M50AC					RUL30
	Kit, MCH Demand Phased FW	NT5M50AE					RUL31
	Kit, MCH Fixed Message FW	NT5M50AG					RUL32
	Kit, MCH Split/Demand FW	NT5M50AJ					RUL33

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
#	Kit, MCH Split/Time FW	NT5M50AL					RUL34
#	Kit, MCH Split/Tape FW	NT5M50AN					RUL35
	Kit, MCH Multi-User FW	NT5M50BE					RUL36
	Kit, Battery Pack Replcmt	NT7M03BA					RUL37

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT5M50AC	MD	None
NT5M50AL	MD	None
NT5M50AN	MD	None
NT5M04DS	MD	None
NT5M08CE	MD	None

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) When the always provided Remote Record feature is enabled on either the Ring Trip Access or the Trunk Access CDA a separate voice line card Type A or B must be provisioned and cabled.

2) The Trunk Access CDA's require one 4W E&M Trunk (NT2X72AA) per channel provisioned.

3) The Ring Trip Access CDA's require one voice line card either Type A or B per channel provisioned, plus one for the Remote Record feature.

4) The new Trunk Interface CDA is offered for use in Automatic Call Distribution (ACD) environments in which several subscribers may be grouped together on one trunk, then attached to the CDA for message output.

5) The NT5M-Series Digital Announcer (CDA) from the Cook Division of Northern Telecom Inc. may be provided as a desk top or rack mount unit. However, only the rack mount units have been approved for use by Digital Switching.

6) This unit may be used as an adjunct announcer to the DMS100F internal MTM mounted Digital Recorded Announcer Machine (DRAM), in a Remote Office environment during ESA operations.

7) The format of the message for the transmission medium and the number of lines or trunks accessed is dependent upon its configuration and firmware (EPROMs) load. All CDA firmware packages provide the following features:

   a) Operational Status: Indicates mode of operation (i.e. Select, On-Line, Alarm, etc.) on the front panel.

   b) Memory Usage: Displays the amount of available memory (in seconds) and provides a real time count down during recording or playback.

   c) Channel Activity: Displays active Audio output channels by number.

   d) Remote Operation: Illuminates a dedicated Remote indicator lamp when the CDA has accepted the security code and is under remote control.

   e) Fault Diagnostics: Built-In-Test - Alarm indicator illuminates on fault detection.

   f) Peg Count: Displays a running total of messages requests (up to 999,999).

   g) Extra Equipment: Allows the user to program up to 20 C/MC relay Control Signal operations for use as timing references, or for external devices.

   h) Special Information Tones: Allows the addition of industry standard tone patterns to the beginning of messages for electronic announcement identification.

i) Power: All CDA's are shipped with power connector kit (NT5M45EB). The kit contains the mating connector, crimp style contacts, backshell, and strain relief required to fabricate the power connector assembly. Wire for this task is job engineered and may be 18-24 guage. One wire is required for each; -48V dc Battery, Battery Return, and Frame Ground. Alternatively, the Frame Ground may be run to a Frame Ground Stud located on the rear of the CDA near the power connector. The Frame Gound Stud is a #5 screw. The appropriate crimp style lug is provided by job engineering.

8) The DMS100F approved configuration of the NT5M-Series CDAs are always provided with mounting adapters for 26 inch mounting. 19" Mounting Brackets are available for Meridian applications. The physical dimensions of the CDA are:

Height: 1.75 inches
Width: 17.5 inches
Depth: 12.0 inches

9) Installation of CDA's require the following cable considerations:

* Power: All CDA's are shipped with a Power Connector Kit (NT5M45EB). The kit contains the mating connector, crimp style contacts, backshell, and strain relief required to fabricate the power connector assembly.

* Provide a length of 18AWG wire to connect -48V, BATRTN, and Frame Ground leads on the CDA to the FSP 1 1/3A fuse. Use Red, Black, and Green wire, respectively. NOTE: 24AWG wire is permissible where distances between FSP and CDA warrant.

RULES:

RUL1 1) Provide NT5M02CB CDA for applications requiring two audio outputs and a message length up to one minute.

2) The NT5M02CB CDA is equipped with the following:

a) 2-Port Fixed Message Length F/W (FIXED) NT5M50AE
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)

e) One minute message length (1M)
f) Trunk Access (TRK)
g) Product Color NT Brown (BRN)

RUL2 1) Provide NT5M04DP CDA for applications requiring four audio outputs via a 4W E&M Trunk (NT2X72AA) and a message length up to two minutes.

2) The NT5M04DP CDA is equipped with the following:

a) 4-Port Basic Multi-channel F/W (BASIC) NT5M50AA
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Two minute message length (2M)
f) Trunk Access (TRK)
g) Product Color NT Brown (BRN)

RUL3 1) Provide NT5M04DQ CDA for applications requiring four audio outputs and a message length up to two minutes.

2) The NT5M04DQ CDA is equipped with the following:

a) 4-Port Fixed Message Length F/W (FIXED) NT5M50AG
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Two minute message length (2M)
f) Trunk Access (TRK)
g) Product Color NT Brown (BRN)

RUL4 1) Provide NT5M04DR CDA for applications requiring four audio outputs and a message length up to one minute.

2) The NT5M04DR CDA is equipped with the following:

a) 4-Port Split Memory Demand Phased F/W (SP/DMD) NT5M50AJ
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (1M)
f) Trunk Access (TRK)
g) Product Color NT Brown (BRN)

RUL5 1) Provide NT5M04DS CDA for applications requiring four audio outputs and a message length up to one minute.

2) The NT5M04DS CDA is equipped with the following:

a) 4-Port Split Memory Time Phased F/W (SP/TMP) NT5M50AL
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (2M)
f) Trunk Access (TRK)
g) Product Color NT Brown (BRN)

RUL6 1) Provide NT5M04DT CDA for applications requiring four audio outputs and a message length up to two minutes.

2) The NT5M04DT CDA is equipped with the following:

a) 4-Port Multi-User F/W (MUSR) NT5M50BE
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Two minute message length (2M)
f) Trunk Access (TRK)
g) Product Color NT Brown (BRN)

RUL7 1) Provide NT5M06CA CDA for applications requiring six audio outputs and a message length up to three minutes.

2) The NT5M06CA CDA is equipped with the following:

a) 6-Port Fixed Length Message F/W (FIXED) NT5M50AG
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Three minute message length (3M)
f) Trunk access (TRK)
g) Product Color NT Brown (BRN)

RUL8 1) Provide NT5M08CB CDA for applications requiring eight outputs and a message length up to four minutes.

2) The NT5M08CB CDA is equipped with the following:

a) 8-Port Basic Multi Channel Message F/W (BASIC) NT5M50AA.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)

d) Battery Backup (all units are e/w battery back-up)
e) Four minute message length (4M)
f) Trunk access (TRK)
g) Product Color NT Brown (BRN)

RUL9 1) Provide NT5M08CC CDA for applications requiring eight outputs and a message length up to four minutes.

2) The NT5M08CC CDA is equipped with the following:

a) 8-Port Fixed Message Length F/W (FIXED) NT5M50AG.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Four minute message length (4M)
f) Trunk access (TRK)
g) Product Color NT Brown (BRN)

RUL10 1) Provide NT5M08CD CDA for applications requiring eight outputs and a message length up to one minute.

2) The NT5M08CD CDA is equipped with the following:

a) 8-Port Split Memory Demand Phased F/W (SP/DMD) NT5M50AJ.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (1M)
f) Trunk access (TRK)
g) Product Color NT Brown (BRN)

RUL11 1) Provide NT5M08CE CDA for applications requiring eight outputs and a message length up to one minute.

2) The NT5M08CE CDA is equipped with the following:

a) 8-Port Split Memory Time Phased F/W (SP/TMP) NT5M50AL.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (1M)
f) Trunk access (TRK)
g) Product Color NT Brown (BRN)

RUL12 1) Provide NT5M08CF CDA for applications requiring eight outputs and a message length up to four minutes.

2) The NT5M08CF CDA is equipped with the following:

a) 8-Port Multi-user F/W (MUSR) NT5M50BE.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Four minutes message length (4M)
f) Trunk access (TRK)
g) Product Color NT Brown (BRN)

RUL13 1) Provide NT5M02CC CDA for applications requiring two audio outputs and a message length up to one minute.

2) The NT5M02CC CDA is equipped with the following:

a) 2-Port Fixed Message Length F/W (FIXED) NT5M50AE
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (1M)
f) Ring Trip (line) Access (RTA)
g) Product Color NT Brown (BRN)

RUL14 1) Provide NT5M04DU CDA for applications requiring four audio outputs and a message length up to two minutes.

2) The NT5M04DU CDA is equipped with the following:

a) 4-Port Fixed Message Length F/W (FIXED) NT5M50AG
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Two minute message length (2M)
f) Ring Trip (line) access (RTA)
g) Product Color NT Brown (BRN)

RUL15 1) Provide NT5M04DV CDA for applications requiring four audio outputs and a message length up to one minute.

2) The NT5M04DV CDA is equipped with the following:

a) 4-Port Split Memory Demand Phased F/W (SP/DMD) NT5M50AJ
b) 26 inch Mounting Brackets (26")

c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (1M)
f) Ring Trip (line) access (RTA)
g) Product Color NT Brown (BRN)

RUL16 1) Provide NT5M06CB CDA for applications requiring six audio outputs and a message length up to three minutes.

2) The NT5M06CB CDA is equipped with the following:

a) 6-Port Fixed Length Message F/W (FIXED) NT5M50AG
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Three minute message length (3M)
f) Ring Trip (line) access (RTA)
g) Product Color NT Brown (BRN)

RUL17 1) Provide NT5M08CG CDA for applications requiring eight outputs and a message length up to four minutes.

2) The NT5M08CG CDA is equipped with the following:

a) 8-Port Fixed Message Length F/W (FIXED) NT5M50AG.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Four minutes message length (4M)
f) Ring Trip (line) Access (RTA)
g) Product Color NT Brown (BRN)

RUL18 1) Provide NT5M08CH CDA for applications requiring eight outputs and a message length up to one minute.

2) The NT5M08CH CDA is equipped with the following:

a) 8-Port Split Memory Demand Phased F/W (SP/DMD) NT5M50AJ.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (1M)
f) Ring Trip (line) Access (RTA)
g) Product Color NT Brown (BRN)

RUL19 1) Provide one 213360 type 'G' handset and cord combination (modified for direct connect to a cassette player or other audio device) for recording voice messages on the CDA via the Modular Jack located on the front panel.

2) The cord is equipped with a minature phone jack and audio plug for connection to the cassette player. The jack automatically disconnects the handset transmitter allowing recording without noise pickup.

RUL20 1) Provide one 213281-101 19" Meridian Mounting Bracket Kit when mounting the CDA in a Meridian Frame. CDA's are always equipped with 26" mounting brackets. In Meridian applications, the 19" brackets must be ordered separately.

RUL21 1) Provide one NT5M45EA AC Power Adapter Kit when the CDA is to be powered from an 120V ac, 60Hz source as opposed to -48V dc central office battery, (eg 'desk-top' units).

RUL22 1) Provide one NT5M45AA 1 Minute Memory Expansion Kit for each minute of message length to be added to a CDA. The maximum message length is eight minutes.

RUL23 1) Provide one NT5M45BB Two Line Ring Trip Kit to upgrade an existing four channel Ring Trip (Line) Access CDA (NT5M04__) to a six channel Ring Trip (Line) Access CDA (NT5M06__). This kit may be field or factory installed.

2) The Ring Trip Access (RTA) Circuit is fully automatic in operation. It will terminate a call upon receiving an internal end-of-message signal from the CDA, or if loop current is interrupted. Switch settings are provided which allow the loop current interruption period to be preset at 100, 300, or 500 millisecond intervals.

3) One Ring Trip Access Circuit is required for each telephone line accessing the CDA.

4) The NT5M45BB Ring Trip Access Kit is equipped with one 2 Line Ring Trip Access PCB, NT5M02AB.

RUL24 1) Provide one NT5M45BC Four Line Ring Trip Kit to upgrade an existing four channel Ring Trip (Line) Access CDA (NT5M04__) to a eight channel Ring Trip (Line) Access CDA (NT5M08__) or to upgrade an existing two channel Ring Trip (Line) Access CDA (NT5M02__) to a Six channel Ring Trip (Line) Access CDA (NT5M04__). This kit may be field or factory installed.

2) The Ring Trip Access (RTA) Circuit is fully automatic in operation. It will terminate a call upon receiving an internal end-of-message signal from the CDA, or if loop current is interrupted. Switch settings are provided which allow the loop current interruption period to be preset at 100, 300, or 500 millisecond intervals.

3) One Ring Trip Access Circuit is required for each telephone line accessing the CDA.

4) The NT5M45BC Ring Trip Access Kit is equipped with one 4 Line Ring Trip Access PCB, NT5M02AA.

RUL25 1) Provide one NT5M45CB Two Channel Kit to upgrade an existing four channel Trunk Access CDA (NT5M04__) to a six channel Trunk Access CDA (NT5M06__). This kit may be field or factory installed.

2) One Trunk Access Circuit is required for each central office trunk accessing the CDA.

3) The NT5M45CB Two Channel Trunk Kit is equipped with one 2 Channel Trunk Interface PCB, NT5M03AB.

RUL26 1) Provide one NT5M45CC Four Channel Trunk Kit to upgrade an existing four channel Trunk Access CDA (NT5M04__) to a eight channel Trunk Access CDA (NT5M08__) or to upgrade an existing two channel Trunk Access CDA (NT5M02__) to a six channel Trunk Access CDA (NT5M04__). This kit may be field or factory installed.

2) The NT5M45CC Four Channel Trunk Kit provides four additional central office trunk interfaces to the CDA. The existing CDA must be of the trunk interface type.

3) One Trunk Access Circuit is required for each central office trunk accessing the CDA.

4) The NT5M45CC Four Channel Trunk Kit is equipped with one 4 Channel Trunk Interface PCB.

RUL27 1) The NT5M45DA Wire/Wrap Trunk Adapter Kit provides a wire/wrap connector for the Trunk interface at the rear of the CDA. One kit is always provided with two and four channel trunk interface CDA’s. Two kits are always provided with six and eight channel Trunk Access CDA’s. The NT5M45DA Wire/Wrap Trunk Adapter Kit may be ordered to replace missing or damaged original connectors.

RUL28 1) The NT5M45EB Power Connector Kit provides a replacement connector for the always provided power connector shipped with every CDA.

RUL29 1) The NT5M50AA Basic Firmware Kit provides an EPROM programmed with the 'BASIC' CDA operating system. This kit may be ordered to replace damaged EPROM's in CDAs equipped with this feature or this kit may be used to reconfigure a CDA originally equipped with a different operating system.

2) This operating system is characterized by one variable length message per channel, played out through separate audio paths.

RUL30 1) The NT5M50AC Synchronous Firmware Kit provides an EPROM programmed with the 'SYNCHRONOUS' CDA operating system. This kit may be ordered to replace damaged EPROM's in CDAs equipped with this feature or this kit may be used to reconfigure a CDA originally equipped with a different operating system.

2) This operating system is characterized by one fixed length message per channel. The playback for all channels is controlled by a start signal for the first channel.

RUL31 1) The NT5M50AE Demand Phased Firmware Kit provides an EPROM programmed with the 'DEMAND PHASED' CDA operating system. This kit may be ordered to replace damaged EPROM's in CDAs equipped with this feature or this kit may be used to reconfigure a CDA originally equipped with a different operating system.

2) This operating system is characterized by a single message for each channel. Each channel provides a separate start signal and plays the same message from the beginning.

RUL32 1) The NT5M50AG Fixed Message Firmware Kit provides an EPROM programmed with the 'FIXED MESSAGE LENGTH' CDA operating system. This kit may be ordered to replace damaged EPROM's in CDAs equipped with this feature or this kit may be used to reconfigure a CDA originally equipped with a different operating system.

2) This operating system is characterized by message time that is divided by the number of channels into equal parts. Each message is played out on a separate channel.

RUL33 1) The NT5M50AJ Split Memory/Demand Phased Firmware Kit provides an EPROM programmed with the 'SPLIT MEM/DEMAND

PHASED' CDA operating system. This kit may be ordered to replace damaged EPROM's in CDAs equipped with this feature or this kit may be used to reconfigure a CDA originally equipped with a different operating system.

2) This operating system is characterized by two audio announcements, stored in memory, one active and one reserve. The reserve message may be changed while the CDA is online, even if the active message is in use. The number of output channels is determined by the number of channels in the CDA, (minimum two).

RUL34 1) The NT5M50AL Split Memory/Time Phased Firmware Kit provides an EPROM programmed with the 'SPLIT MEM/TIME PHASED' CDA operating system. This kit may be ordered to replace damaged EPROM's in CDAs equipped with this feature or this kit may be used to reconfigure a CDA originally equipped with a different operating system.

2) This operating system is the same as DEMAND PHASED except, the output to the audio channels is spaced by 1/n (where n = number of channels in the CDA) of the total message length. During high call volume periods, this allows multiple calls to be grouped together for rapid handling.

RUL35 1) The NT5M50AN Split Memory/Tape Emulation Firmware Kit provides an EPROM programmed with the 'SPLIT MEM/TAPE EMULATION' CDA operating system. This kit may be ordered to replace damaged EPROM's in CDAs equipped with this feature or this kit may be used to reconfigure a CDA originally equipped with a different operating system.

2) This operating system is the same as DEMAND PHASED except a 'busy' relay provides a two second 'rewind pulse' at the end of the message, thus emulating a magnetic tape type CDA.

RUL36 1) The NT5M50BE Multi-User F/W Kit provides an EPROM programmed with the 'MULTI_USER' CDA operating system. This kit may be ordered to replace damaged EPROM's in CDAs equipped with this feature or this kit may be used to reconfigure a CDA originally equipped with a different operating system.

2) This operating system is the same as FIXED MESSAGE LENGTH but has added security features. Each channel has a specific password, and the message on any given channel can not be changed unless the password for that channel is en-

tered. This assures that multiple users of one CDA can not interfer with each other’s messages.

RUL37 1) Provide the NT7M03BA (Rechargeable Battery Pack) as spare equipment for the CDA.

RM4200 DATA SET MODULE (DSM)

PEC CODE:	905-5222-00N
CPC CODE:	N/A
RATING:	STANDARD
REPLACES:	N/A
REPLACED BY:	N/A
ABBREVIATION NAME:	DSM
ENGINEERING DESCRIPTION:	The Case/Datatel RM4200 Data Set Module (DSM)is a 16 slot card cage that mounts in a standard 19, 23, or 26-inch rack or cabinet. The RM4200 is designed to house the RM4200 Series 4201, 4202, 4208, 4212, and 4200 829 cards in any combination totaling 16 cards. Mounting adapters for 19, 23, or 26-inch mounting are always provided with the unit by the manufacturer. The RM4200 provides facilities for connecting the card cage to the Public Switched Telephone Network (PSTN) Telephone Lines via three FCC-Registered arrangements: (1) Permissive, (2) Programmable, and (3) Fixed Loss Loop.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US

| ISSUE AUTHOR: NTI: Pradyumn Joshi Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Pradyumn Joshi Dept. 3471 (PPK)

905-5222-00N EMA13-01-DSM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 11 03	ECM 633 02	Additional information was added to show the replacement for the 905-5137-001 and the 905-5137-003 modems.
93 04 14	ECM 633 05	Correct misc. errors
93 05 26	ECM 633 06	Change descriptions to match Table Z
93 11 22	ECM 633 08	Add vendor part numbers
94 02 01	ECM 633 09	ET45663 correct cpc codes and ad pec to flaglist table
95 04 17	ECM 633 12	Md’d modems and change author name.

The RM4200 Data Set Module (DSM) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RM4200 DSM 115VAC (A0355254)	DCM42000					RUL1
RM4200 Spare 115VAC Pwr	A0360855					RUL1
RM4200 DSM -48VDC (A0600770)	DCM42101					RUL1
RM4200 Spare -48VDC Pwer	A0360856					RUL1
Adapter Plug For Adj Xmit	A0320894					RUL2
Adapter Plug For Perm.	A0369235					RUL2
ADAPTER PLUG FOR FLL XMIT	A0369236					RUL2
# DCM4201 (A0367996)	DCM42011					RUL3
DCM4202 (A0355258)	DCM42021					RUL4
# DCM4208 (A0367994)	DCM42081					RUL5
DCM4212 (A0355259)	DCM42121					RUL6
DCM4229 (A0355255)	DCM42291					RUL7
DCM4222 (A0351637)	DCM42221					RUL8
DCM4232 (A0352086)	DCM42323					RUL9
DCM4296 (A0351642)	DCM42961					RUL10
DCP4256 (A0384722)	DCP42561					RUL11

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Case Standalone Modems:						
#	DCM4201	(A0367997) DCM42010					RUL3
	DCM4202	(A0355257) DCM42020					RUL4
#	DCM4208	(A0367995) DCM42080					RUL5
	DCM4212	(A0355260) DCM42120					RUL6
	DCM4229	(A0355256) DCM42290					RUL7
	DCM4222	(A0351638) DCM42220					RUL8
	DCM4232	(A0352087) DCM42322					RUL9
	DCM4296	(A0351641) DCM42960					RUL10
	DCP4256	(A0385841) DCP42560					RUL11

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
A0367996	MD	NO REPLACEMENT
A0367994	MD	NO REPLACEMENT
A0367997	MD	NO REPLACEMENT
A0367995	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) The RM4200 DSM requires seven (7) inches of vertical rack space plus two (2) (one inch above and below the shelf) for cooling.

2) The RM4200 DSM modem cards are not provisionable on the RM40A/B shelf and vice-versa, due to the differences in physical size (the RM4200 products are smaller).

3) The CASE/DATATEL RM4200 Rack Mountable Card Cage by CASE/DATATEL Communications Inc. is a 16-Slot card cage that mounts in a 19", 23", or 26" rack or cabinet and houses up to 16 cards. The brackets required to mount the unit in a 19, 23, or 26 inch rack are Always Provided with the RM4200.

4) The -48VDC Power Supply accepts dual battery feeds, is redundant, and automatically switches in the event of a failure without loss of signal.

5) All card modems require (1) one card slot. Public Switch Telephone Network (PSTN), Private Line (PL), or Digital Data Service Network (DDS) modem applications may be intermixed on a single shelf.

When using a Stand-Alone or Rack Mounted modem in the 4Wire Dedicated Mode connected to a 2-wire Line, a 4229 DAS Unit is required.

6) It is recommended that rack mounted modems be utilized at every DMS site to save space and provide a tidier installations. The RM4200 DSM connects the Modem Cards to the telephone lines, Data Terminal Equipment (DTE).

7) Direct connection of the RM4200 DSM to Telephone Sets is not a DMS100 approved option. However, this option can be used with StandAlone modems.

8) The RM4200 assignable cards and their applications are shown in Table 1 below. The different modem card types, speeds, and operating modes may be intermixed in a single RM4200 shelf. However, when the 4229 DAS units and Private Line (PL) modems are intermixed on a single shelf, the shelf mounting capacity is reduced by the number of 4229 units used.

RULES:

RUL1 1) The RM4200 is available in a -48VDC and a 115VAC version. The preferred unit is the DC-Version. If the AC version is selected, a protected AC source is required.

2) Provide the Telco specified quanity of the appropriate Spare power supply per Telco requirements.

RUL2 1) Provide one adapter plug per side (maximum two per shelf) for modems operated in a DIAL-UP(PSTN) mode. These adapters are used to determine the transmit level of each modem in Side One (slots 1 thru 8) and/or Side Two (slots 9 thru 16). These adapters contain a non-adjustable resistive element which is connected to connector P2 for Side One and/or P4 for Side Two.

2) Provide one 905-6582-01 Adjustable (Adj)/Programmable adapter plug per side of the RM4200 shelf having modems operating in Dial-Up mode per Telco specifications. This plug provides jumpers between the PR and PC input leads on connector P2/P4 to connect the resistance built into the Telco interconnection point. The transmit level is determined by the Telco and is set between 0 and -12 dBm.

3) Provide one 905-6582-02 permissive adapter plug per side of the RM4200 shelf which has modems operating in the Dial-Up mode. This plug places a 9310 ohm resistor between the PR and PC input leads of connector P2/P4 to provide a transmit level of -9 DBm maximum.

4) Provide one 905-6582-03 Fixed Loss Loop (FLL) adapter plug per side of the RM4200 DSM having modems operating in the Dial-UP mode. This plug places a 866 ohm resistor between the PR and PC input leads of connector P2/P4 to provide a transmit level of -4 DBm maximum.

RUL3 1) Provide the 4201 modem for Full Duplex Synchronous binary serial data transmission and reception over 3002-type four-wire (4W) private lines or half duplex over two-wire private lines and two-wire DDD switched network.

2) The 4201 is compatible with CASE, RIXON, and BELL 201B and 201C series modems, and UDS 201B/C modem.

RUL4 1) Provide the 4202 modem for Asynchronous 4W Full Duplex operation on Private Leased Lines at speed of 0-1800 bps on conditioned lines.

RUL5 1) Provide the 4208 modem for Synchronous 4W Full Duplex operation in A-Mode on Private Leased Lines at 4800bps.

RUL6 1) Provide the 4212 modem for 2-Wire Dial-Up operation as follows:

* 1200 bps Synchronous operation on FDX PSTN Line

* 1200 bps Character Asynchronous operation on FDX PSTN Lines

* 0-300 bps Asynchronous operation on FDX PSTN Lines

RUL7 1) Provide the 4229 unit to terminate four-wire private line data channels.

RUL8 1) Provide the 4222 full duplex modem for transmitting and receiving serial data over the 2 wire PSTN or over 2 wire PLL’s. The modem operates at 1200 or 2400 bps synchronous or at 300/1200/2400 bps asychronous.

2) The RM4222-C Dataset and Stand-Alone modems are now provided as replacements to the 905-5137-001 and the 905-5137-003 modems. Note that the 905-5137-001 & 003 are stand-alone modems.

RUL9 1) Provide the 4232 full duplex modem for transmitting and receiving serial data over the 2 wire PSTN or over 4 wire PLL's. The modem operates at 1200/2400/4800/9600 bps synchronous or at 300/1200/2400/4800/9600 bps asychronous.

RUL10 1) Provide the 4296 full duplex modem for transmitting and receiving serial data over 4 wire PLL's. The modem operates at 9600 bps with synchronous timing.

RUL11 1) Provide the DCP4256 modem for 4W point-to-point and multipoint in a DDS (Digital Data Service) facility or 4W point-to-point when used as a LDM (Limited Distance Modem).

CASE RM70 DATA SET MODULE 120VAC 905-5098-001

RATING: Standard.

ABBREVIATION NAME: DSM

ENGINEERING DESCRIPTION: The RM70 Rack Mount (RM) mounts in a 19/23 inch frame. It accommodates up to eight (8) each 212EXEC, R212A, R103J, and R201C modems or any combination of these modems for a total of eight modems.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US

905-5098-001 EMA13-01-DSM-4 CHANGE HISTORY

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 11 03	ECM 633 02	This insert is being updated to show the replacement for the 905-6836-02 and 905-6836-20 modems. Applications for these modems have migrated to the RM4200 Series Products.

The Case Rixon RM70 Data Set Module (DSM) Shelf is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
#	R212A Intelligent Modem	905-6836-02				1,3,5,7,9, 11,13,15	RUL1
#	212EXEC With Autodialer DSC	905-6836-20				1,3,5,7,9, 11,13,15	RUL2
	RM46A1 Mount Bracket 19" to 23"	615-1022-01					RUL3
	RM46A1 Mount Bracket 23" to 26"	615-1051-01					RUL3
$	Inverter Unit	NT0X87AA					RUL4

FLAGS:

\# MD. Replaced by the RM4200 Series product model number 4222. This product is ordered via 905-5230-012 for a Rack Mount unit or 905-5230-011 for a Stand Alone unit.

$ Rating Change Pending. One new jobs use the A0367433 LaMarche Inverter, refer to Ready To Order and Ready To Ship (RTO/RTS and URTO/URTS) lists.

NOTES:

1) RM70 shelf requires seven (7) inches of vertical space. The overall dimensions are: 7"H X 19" or 23"W X 11.5"D.

2) Refer to the Installation Manual IM940 Section 2100 for Isolated System Grounding (ISG) requirements on new or extension applications.

RULES:

AP 1) When PEC 905-5098-001 is ordered, these items are provided.

RUL1 1) Provide one (1) 905-6836-02 R212A Rixon Intelligent Autodial modem for full duplex Asynchronous 0-300 bps operation or character Asynchronous operation at 1200 bps over pots lines.

2) This modem has been traditionally used in conjunction with the Security Dialback Feature (NTX293AA). However it is an earlier vintage modem, where the modem listed in RULE #2 below is of a later vintage and may be used for the same function.

RUL2 1) Provide one (1) 905-6836-20 (212EXEC) Rixon Executive 212 Autodial modem for full duplex Asynchronous 0-300 bps operation or character Asynchronous operation at 1200 bps over pots lines.

RUL3 1) Provide one each mounting adapters A0318221 and A0318220 to convert the unit from 19" to 23" and 23" to 26", respectively.

RUL4 1) Provide one (1) NT0X87AA per the Engineering Manual Section 43E-03-000 RULE #5 for each RM70 shelf provided. Use connectors J2-J4 on the Inverter as the RM70 does not require the surge voltage provided by connector J1.

DTH-ROTL SPARES KIT (NT7F18AD)

PEC CODE:	NT7F19AC
CPC CODE:	A0400487
RATING:	Standard.
REPLACES:	NT7F19AB
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	N/A
ENGINEERING DESCRIPTION:	The Digital Test Head-Remote Office Test Line (DTH-ROTL) Spares Kit.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NT7F19AC EMA13-01-DTH-0 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 15	ECM 479 06	Initial Introduction Per ECD 024-85846 - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.
94 06 20	ECM 479 10	ECO 92-1151 MD’s NT7F19AB and so it is replaced by NT7F19AC.

The DTH-ROTL Spares Kit (NT7F18AD) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Supply	NT5A23AA		1			AP
DS-0 Handler CP	NT7F25AB		1			AP
DTH-ROTL VF I/F CP	NT7F29AA		1			AP
Control Processor CP	NT7F23AB		1			AP
ROM Pack Assembly	NT7F26AD		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:

RULES:

AP 1) When PEC NT7F19AC is ordered, these items are provided.

DIGITAL TEST HEAD REMOTE OFFICE TEST LINE (ROTL)

PEC CODE: NT7F18AD

CPC CODE: A0398173

RATING: Standard.

REPLACES: NT7F18AB.

REPLACED BY: Not Applicable.

ABBREVIATION NAME: DTH

ENGINEERING DESCRIPTION: The Digital Test Head that performs analog testing on lines and trunks.

REFERENCE DOCUMENTATION:
MS0X02AB 01 36
SL7F18AD 01 02
IS7F18 01 02

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: Rena Fisher Dept. 3471 (PPK)

NT7F18AD EMA13-01-DTH-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 08 10	API 425 01	Initial introduction of this product via the subject Product Specification
92 10 06	API 425 02	Include late issue 01 review comments and corrections noted per ET 14499 and ET 14559.
92 10 09	API 425 03	Include late issue 02 review comments via reopened ET 14499
92 12 15	ECM 479 06	Per ECD 024-85846 Convert PEC NT7F18AD from a fully provisionable DTH-ROTL or DTH-ROTL/DTT to a DTH-ROTL ONLY KIT. - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.
93 12 24	ECM 479 08	ECD 011-18704 Add DTH On/Off Switch. Change status of NT7F18AD to STD.
94 03 23	ECM 479 09	Remove P0709355 and NT7F2711 from stocklist of NT7F18AD. It cannot be determined at which point these were removed from PAS stocklist.
94 06 20	ECM 479 10	ECO 92-1151 replaces NT7F27AA with NT7F33AA so Figure 1 is updated to reflect this change.
94 08 08	ECM 479 11	ET 19229 - Remove reference to NT7F19CA when upgrading to DTH ROTL/ DTT and add NT7F32AA as the spare CP
95 12 05	ECM 479 14	EC 018-46106 - Delete reference to NT7F27BA cable kit. Cables are provided in CA0X04 Issue 55.

The Digital Test Head Remote Office Test Line (ROTL) is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Shelf Assembly	NT7F22AA		1			AP
	General Description Manual	NT7F2002		1	X		AP
	DTH Operations Manual	NT7F2003		1	X		AP
	Installation and Maint. Man.	NT7F2004		1	X		AP
	DTH Power Supply	NT5A23AA		1	X	0	AP
	Control Processor Card	NT7F23AB		1	X	1	AP
	ROM Pack	NT7F26AD		1	X	1R	AP
	DS-0 Handler PCB	NT7F25AB		1	X	2	AP
	Filler Face Plate	NT7F30AA		6	X	3-8	AP
	VF Interface PCP	NT7F29AA		1	X	9-10	AP
	Dummy Panel	NT7F30BA		1	X	11-18	AP
	Dummy Panel	NT7F30CA		1	X	19	AP
	DTH-ROTL Spares Kit	NT7F19AC					RUL1
	DTH-ROTL TO ROTL/DTT UG Kit	NT7F38BA					RUL2
	DS-1 I/F CP	NT7F32AA					RUL2
	DS-0 Handler PCB	NT7F25AB			X	6-7	RUL2
	Filler Face Plate	NT7F30AA			X	6-7	RUL2
	Common Equipment Shelf	NT3X25AA	CES		X		RUL3
	Pkt Assembler Disassembler	A0382277	PAD				RUL3
	UDS DDS/MR1 DSU/CSU	64565074					RUL3
#	DTH-ROTL Cable Kit	NT7F27BA					RUL4
	DTH-RS232 Cable 43 inches	NT7F27DA					RUL4
	DTH-RS232 Cable 50 feet	NT7F27DB					RUL4
	Amber Video Display Unit	C1007A					RUL5
	Green Video Display Unit	C1007G					RUL5
	White Video Display Unit	C1007W					RUL5
	Protected AC	INVERTER					RUL6
	DTH Bracket/Switch Assembly	NT7F15AA					RUL7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT7F27BA	STD	No Replacement; Refer to CA0X04 55

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 DTH is fused at 10 amps from the FSP Circuit Breaker or the PDC per job specific requirements.

2) The DTH is 14-inches high and requires 5-inches above and below the unit for cooling purposes, for a total of 24-inches of vertical MIS frame space.

3) The necessary mounting hardware is always provided with NT7F18AD.

RULES:

AP 1) When PEC NT7F18AD is ordered, these items are provided.

RUL1 1) Provide the DTH-ROTL Spares Kit when the Telco specifies maintenance spares for the NT7F18AD.

RUL2 1) Provide the Upgrade kit to upgrade an existing NT7F18AD ROTL to a NT7F18CA DTH-ROTL/DTT.

2) Refer to Engineering Manual Section NT7F38BA for more information on the Upgrade Kit.

3) When the DTH-ROTL to DTH-ROTL/DTT Kit is provisioned and the Telco specifies maintenance spares, provide one NT7F32AA per NT7F38BA provisioned.

4) When the ROTL to ROTL/DTT Kit is provisioned two (2) DS0 CP are always provided plus two more are always provided with the NT7F18AD, however, additional DS0 CPs may be required.

Use the following calculations to determine the exact quantity of DS0 CPs required:

The following calculations are required to provision the DTH-ROTL, DTH-DTT, or DTH-ROTL/DTT:

a. Calculate the number of Test Access Paths (TAP) required, using the formula: N_TAP = N_OG/(192 * H), as follows:

N_TAP = N_OG / (192 * H)

b. Calculate the number of 108 Test Lines (TL) required.

Using the formula - N_TL = N_IT / (83.5 * H) or N_TL = N_IR. Select the greater of: the number of Incoming Trunks or the number of Incoming Routes. Always round up to the next higher integer value.

c. Calculate the number of DS-0 CPs required.

N_DS0 = ((N_TAP + N_TL) / 4 (round up)) - 3; the QTY Upgrade Kits NT7F38BA = QTY_EXISTING_NT7F218AD

** Note: Two DS0s are AP in NT7F38BA; Plus two in NT7F18AD **

d. Calculate the quantity of DTH shelves required.

NT7F18CA = RUL2.4.c / 4 (Round Up) Minus (QTY_OF_EXISTING NT7F18AD)

e. Reuse Filler Face Plates as required.

RUL3 1) Always provide one each of equipment referenced per this RULE when the DTH-DTT or DTH-ROTL/DTT application is provisioned.

RUL4 1) Cables referenced with this Rule shall be applied based on the product application and frame configuration as follows:

1. NT7F27DA/DB - Provision as follows:

   a. When DTH-DTT and Common Equipment Shelf is installed the same frame provision three (3) NT7F27DA cables.

   b. When DTH-DTT and Common Equipment Shelf is installed in different frames provision one (1) NT7F27DA and two (2) NT7F27DB cables.

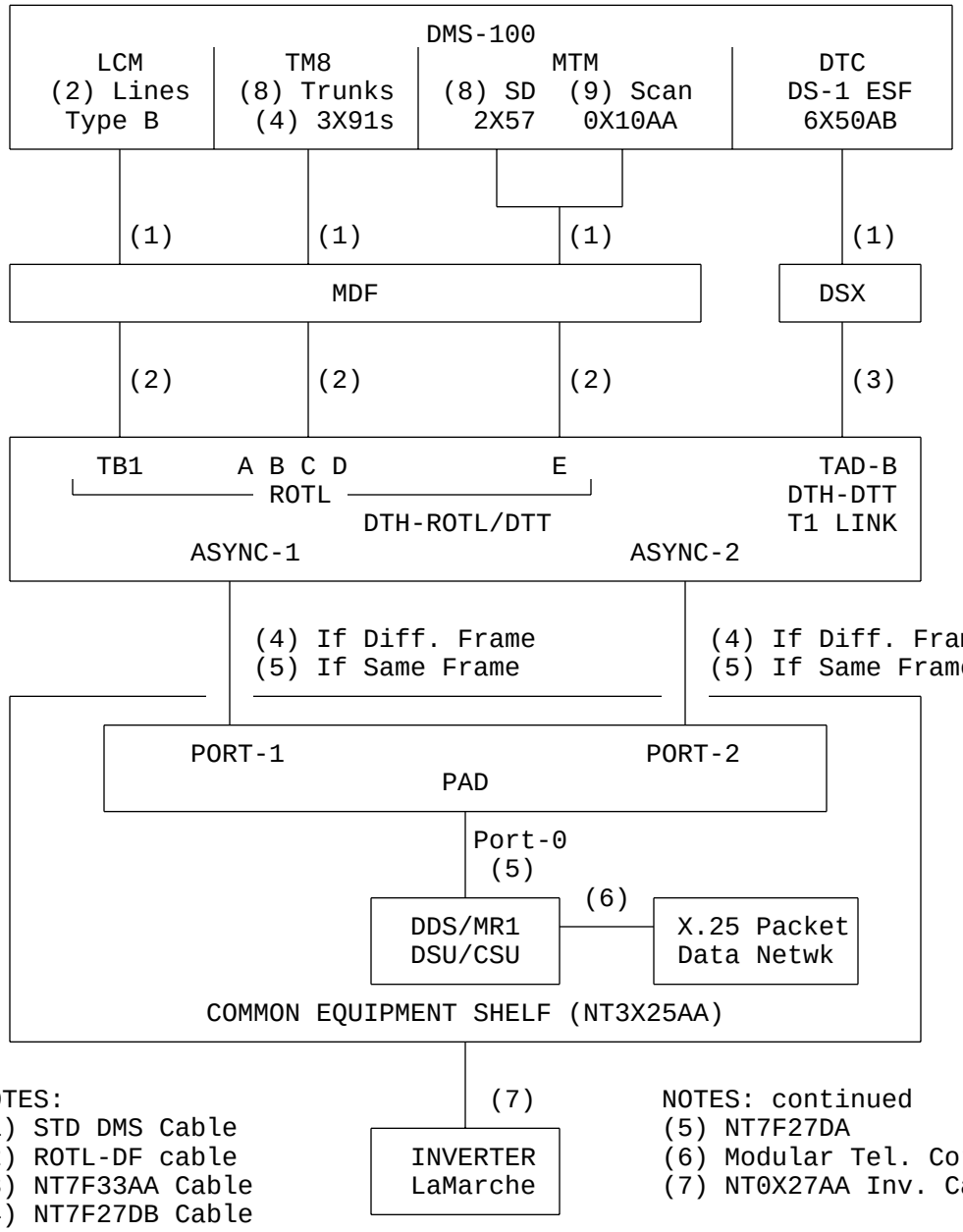
      Note: NT7F27DA is simply a 43" version of the NT7F27DB

2. Refer to Figure 1 attached for a conceptual illustration of the DTH ROTL/DTT Cabling Requirements:

RUL5 1) Provision VDUs per telco specifications when the DTH-ROTL/DTT or DTH-DTT is provisioned. Note: VDU Cabling is always supplied with a 50ft length.

RUL6 1) Protected AC is required to power the Common Equipment Shelf (CES), thereby, providing protected AC for the equipment mounted on the CES.

2) The DMS-100 standard for providing local protected AC is the LaMarche Inverter (Refer to MIS/CMIS EMS for detailed engineering information).



NOTES:
(1) STD DMS Cable
(2) ROTL-DF cable
(3) NT7F33AA Cable
(4) NT7F27DB Cable

NOTES: continued
(5) NT7F27DA
(6) Modular Tel. Cord
(7) NT0X27AA Inv. Cable

FIGURE 1: TYPICAL DTH-ROTL/DTT CABLING DIAGRAM

RUL7 1) Provide one NT7F15AA DTH On/Off Switch per Telco Request or WHEN THE DTH SHELF IS INSTALLED IN FRAME/CABINET/RELAY rack

where the shelf power cannot be turned On/Off at the frame/cabinet/relay rack.

DTH-DIGITAL TRUNK TEST (DTT)

PEC CODE:	NT7F18BA
CPC CODE:	A0400486
RATING:	Limited.
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	DTH
ENGINEERING DESCRIPTION:	The Digital Test Head that performs digital testing on ISDN lines and trunks including Bit Error Ratio Test (BERT), Digital loopback, and Multi-junction unit (MJU) control.
REFERENCE DOCUMENTATION:	MS0X02AB 01 36 SL7F18BA 01 01 IS7F18 01 02
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: Rena Fisher Dept. 3471 (PPK)

NT7F18BA EMA13-01-DTH-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 15	ECM 479 06	Introduce PEC NT7F18BA Per ECD 024-85846 - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.
93 12 24	ECM 479 08	EC 011-18704 Add DTH On/Off switch.
94 03 23	ECM 479 09	Remove P0709355 and NT7F2711 from stocklist of NT7F18BA. It cannot be determined at which point these were removed from PAS stocklist. Also, correct qty of NT7F30AA from 6 to 2.
94 06 20	ECM 479 10	ECO 92-1151 replaces NT7F27AA with NT7F33AA so rules and Figure 1 are updated to reflect this change.
95 07 31	ECM 479 12	Show NT7F27DA in equipment list.
95 12 05	ECM 479 14	EC 018-46106 - Delete reference to NT7F27BA cable kit. Cables are provided in CA0X04 Issue 55.

The DTH-DIGITAL TRUNK TEST (DTT) is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Shelf Assembly	NT7F22AA		1	X		AP
	General Description Manual	NT7F2002		1	X		AP
	DTH Operations Manual	NT7F2003		1	X		AP
	Installation and Maint. Man.	NT7F2004		1	X		AP
	DTH Power Supply	NT5A23AA		1	X	0	AP
	Control Processor Card	NT7F23AB		1	X	1	AP
	ROM Pack	NT7F26AD		1	X	1R	AP
	DS-0 Handler PCB	NT7F25AB		1	X	2	AP
	DS-1 Interface PCB	NT7F32AA		1	X	8	AP
	Filler Face Plate	NT7F30AA		2	X	9-10	AP
	Dummy Panel	NT7F30BA		1	X	11-18	AP
	Dummy Panel	NT7F30CA		1	X	19	AP
	RS-232 CABLE 43"	NT7F27DA		2	X		AP
	DTH-ROTL Spares Kit	NT7F19BA					RUL1
	DS-0 Handler PCB	NT7F25AB			X	3-7	RUL2
	Filler Face Plate	NT7F30AA			X	3-7	RUL2
	Common Equipment Shelf	NT3X25AA	CES		X		RUL3
	Pkt Assembler Disassembler	A0382277	PAD				RUL3
	UDS DDS/MR1 DSU/CSU	64565074					RUL3
#	DTH-DTT Cable Kit	NT7F27AA					RUL4
	DTH-DTT Cable Kit	NT7F33AA					RUL4
	DTH-RS232 Cable 50 feet	NT7F27DB					RUL4
	DTH-RS232 Cable 43"	NT7F27DA					RUL4
	Amber Video Display Unit	C1007A					RUL5
	Green Video Display Unit	C1007G					RUL5
	White Video Display Unit	C1007W					RUL5
	Protected AC	INVERTER					RUL6
	DTH Bracket/Switch Assembly	NT7F15AA					RUL7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT7F27AA	MD	NT7F33AA

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 DTH is fused at 10 amps from the FSP Circuit Breaker or the PDC per job specific requirements.

2) The DTH is 14-inches high and requires 5-inches above and below the unit for cooling purposes, for a total of 24-inches of vertical MIS frame space.

3) The necessary mounting hardware is always provided with NT7F18BA.

RULES:

AP 1) When PEC NT7F18BA is ordered, these items are provided.

RUL1 1) Provide the DTH-DTT Spares Kit when the Telco specifies maintenance spares for the NT7F18BA.

RUL2 1) One (1) DS0 CP is always provided when the NT7F18BA provided, however, additional DS0 cps may be required. Use the following calculations to determine the exact quantities of DS0 cps required:

The following calculations are required to provision the DTH-ROTL, DTH-DTT, or DTH-ROTL/DTT:

a. Calculate the number of Test Access Paths (TAP) required, using the formula: N_TAP = N_OG/(192 * H), as follows:

N_TAP = N_OG / (192 * H)

b. Calculate the number of 108 Test Lines (TL) required.

Using the formula - N_TL = N_IT / (83.5 * H) or N_TL = N_IR. Select the greater of: the number of Incoming Trunks or the number of Incoming Routes. Always round up to the next higher integer value.

c. Calculate the number of DS-0 CPs required.

N_DS0 = ((N_TAP + N_TL) / 4 (round up)) - 1;

d. Calculate the quantity of DTH shelves required.

NT7F18BA = RUL2.1.c / 4 (Round Up) Minus (QTY_OF_EXISTING NT7F18BA)

e. Reuse Filler Face Plates as required.

RUL3 1) Always provide one each of equipment referenced per this RULE when the DTH-DTT or DTH-ROTL/DTT application is provisioned.

RUL4 1) Cables referenced with this Rule shall be applied based on the product application and frame configuration as follows:

1. NT7F33AA - Always provision when DTH-ROTL/DTT or DTT only application is required.

2. NT7F27DA/DB - Provision as follows:

a. When DTH-DTT and Common Equipment Shelf is installed the same frame provision one (1) NT7F27DA cables.

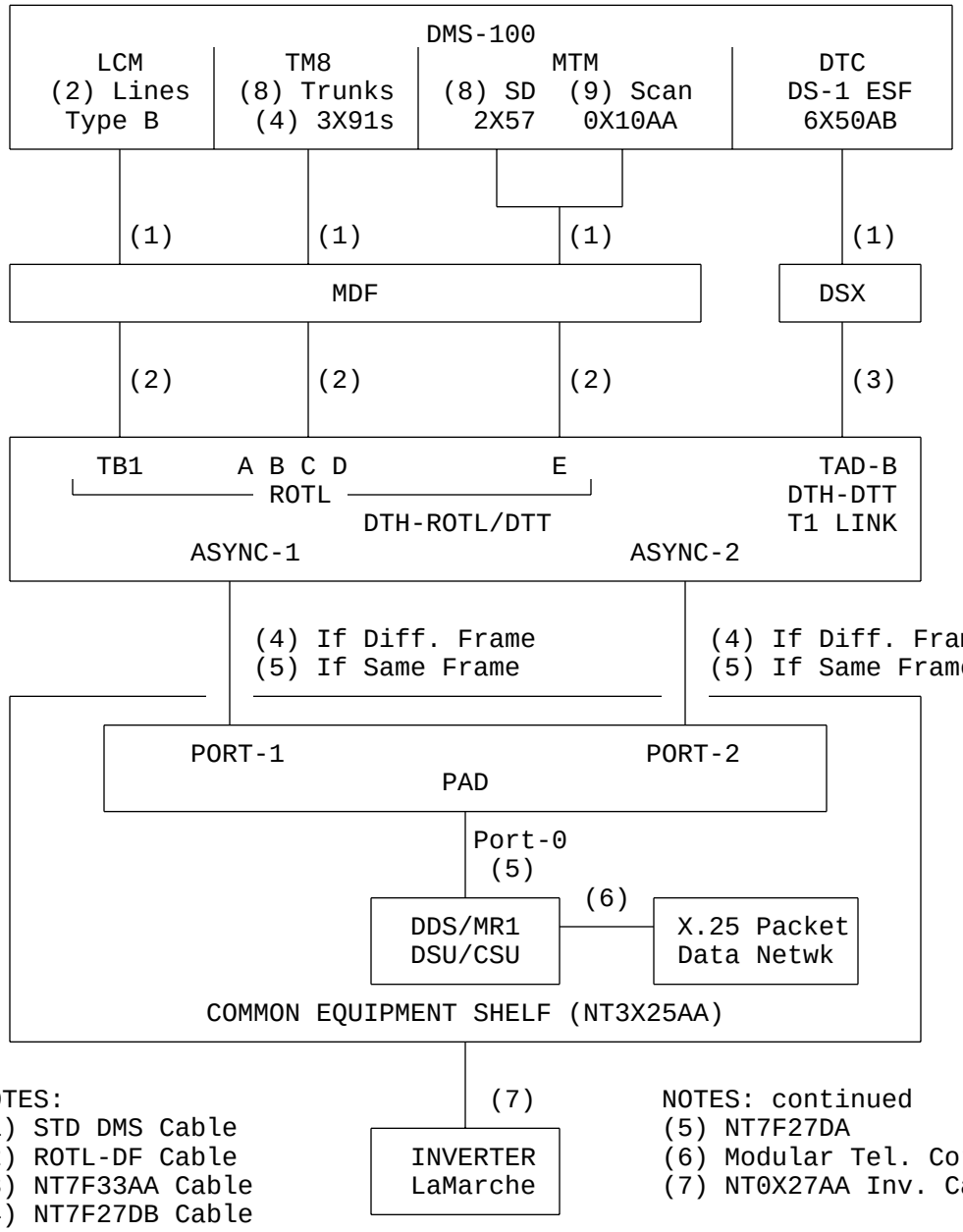
b. When DTH-DTT and Common Equipment Shelf is installed in different frames provision two (2) NT7F27DB cables.

Note: NT7F27DA is simply a 43" version of the NT7F27DB

RUL5 1) Provision VDUs per telco specifications when the DTH-ROTL/DTT or DTH-DTT is provisioned. Note: VDU Cabling is always supplied with a 50ft length.

RUL6 1) Protected AC is required to power the Common Equipment Shelf (CES), thereby, providing protected AC for the equipment mounted on the CES.

2) The DMS-100 standard for providing local protected AC is the LaMarche Inverter (See ECM-602 for detailed engineering information).



NOTES:
(1) STD DMS Cable
(2) ROTL-DF Cable
(3) NT7F33AA Cable
(4) NT7F27DB Cable

NOTES: continued
(5) NT7F27DA
(6) Modular Tel. Cord
(7) NT0X27AA Inv. Cable

FIGURE 1: TYPICAL DTH-ROTL/DTT CABLING DIAGRAM

RUL7 1) Provide one NT7F15AA DTH On/Off Switch per Telco Request or WHEN THE DTH SHELF IS INSTALLED IN FRAME/CABINET/RELAY rack

where the shelf power cannot be turned On/Off at the frame/cabinet/relay rack.

DIGITAL TEST HEAD-ROTL/DTT

PEC CODE:	NT7F18CA
CPC CODE:	A0400484
RATING:	Limited.
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	DTH
ENGINEERING DESCRIPTION:	The Digital Test Head that performs both digital and analog testing on lines and trunks and ISDN lines and trunks.
REFERENCE DOCUMENTATION:	MS0X02AB 01 36 SL7F18CA 01 01 IS7F18 01 02
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: Rena Fisher Dept. 3471 (PPK)

NT7F18CA EMA13-01-DTH-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 15	ECM 479 06	Introduce PEC NT7F18BA Per ECD 024-85846 - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.
93 12 24	ECM 479 08	EC 011-18704 Add DTH On/Off switch.
94 03 23	ECM 479 09	Remove P0709355 and NT7F2711 from stocklist of NT7F18CA. It cannot be determined at which point these were removed.
94 06 20	ECM 479 10	ECO 92-1151 replaces NT7F27AA with NT7F33AA so rules and Figure 1 are updated to reflect this change.
95 07 31	ECM 479 12	ET 19519- Show NT7F27BA in RUL4 for ROTL functionality. Also show NT7F27DA in equipment list.
95 12 05	ECM 479 14	EC 018-46106 - Delete reference to NT7F27BA cable kit. Cables are provided in CA0X04 Issue 55.

The Digital Test Head-ROTL/DTT is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Shelf Assembly	NT7F22AA		1			AP
	General Description Manual	NT7F2002		1			AP
	DTH Operations Manual	NT7F2003		1			AP
	Installation and Maint. Man.	NT7F2004		1			AP
	DTH Power Supply	NT5A23AA		1		0	AP
	Control Processor Card	NT7F23AB		1		1	AP
	ROM Pack	NT7F26AD		1		1R	AP
	DS-0 Handler PCB	NT7F25AB		2		2-3	AP
	DS-1 Interface PCB	NT7F32AA		1		8	AP
	VF Interface PCP	NT7F29AA		1		9-10	AP
	Dummy Panel	NT7F30BA		1		11-18	AP
	Dummy Panel	NT7F30CA		1		19	AP
	DTH-RS232 Cable 43 inches	NT7F27DA		2			AP
	DTH-ROTL Spares Kit	NT7F19CA					RUL1
	DS-0 Handler PCB	NT7F25AB				4-7	RUL2
	Filler Face Plate	NT7F30AA				4-7	RUL2
	Common Equipment Shelf	NT3X25AA	CES				RUL3
	Pkt Assembler Disassembler	A0382277	PAD				RUL3
	UDS DDS/MR1 DSU/CSU	64565074					RUL3
#	DTH-DTT Cable Kit	NT7F27AA					RUL4
	DTH-DTT Cable Kit	NT7F33AA					RUL4
#	DTH-ROTL Cable Kit	NT7F27BA					RUL4
	DTH-RS232 Cable 50 feet	NT7F27DB					RUL4
	DTH-RS232 Cable 43"	NT7F27DA					RUL4
	Amber Video Display Unit	C1007A					RUL5
	Green Video Display Unit	C1007G					RUL5
	White Video Display Unit	C1007W					RUL5
	Protected AC	INVERTER					RUL6
	DTH Bracket/Switch Assembly	NT7F15AA					RUL7

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT7F27AA NT7F27BA	MD STD	NT7F33AA No Relacement; Refer to CA0X04 55

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 DTH is fused at 10 amps from the FSP Circuit Breaker or the PDC per job specific requirements.

2) The DTH is 14-inches high and requires 5-inches above and below the unit for cooling purposes, for a total of 24-inches of vertical MIS frame space.

3) The necessary mounting hardware is always provided with NT7F18AD.

RULES:

AP 1) When PEC NT7F18CA is ordered, these items are provided.

RUL1 1) Provide the DTH-DTT Spares Kit when the Telco specifies maintenance spares for the NT7F18CA.

RUL2 1) Two (2) DS0 CPs are always provided, however, additional DS0 CPs may be required. Use the following calculations to determine the exact quantity of DS0 CPs required:

The following calculations are required to provision the DTH-ROTL/DTT:

a. Calculate the number of Test Access Paths (TAP) required, using the formula: N_TAP = N_OG/(192 * H), as follows:

N_TAP = N_OG / (192 * H)

b. Calculate the number of 108 Test Lines (TL) required.

Using the formula - N_TL = N_IT / (83.5 * H) or N_TL = N_IR. Select the greater of: the number of Incoming Trunks or the number of Incoming Routes. Always round up to the next higher integer value.

c. Calculate the number of DS-0 CPs required.

N_DS0 = ((N_TAP + N_TL) / 4 (round up)) - 2; the AP QTY in NT7F18CA

d. Calculate the quantity of DTH shelves required.

NT7F18CA = RUL2.4.c / 4 (Round Up) Minus (QTY_OF_EXISTING NT7F18AD)

e. Reuse Filler Face Plates as required.

1. Assign DS0 Handler CPs starting at slot #4 thru 7.

Note:

In DTH-ROTL/DTT applications the DS0 Handler CP at slot #2 automatically assumes the ROTL functions.

2) Provide Filler Face Place in any unequipped slot 4 thru 7 not provisioned with a DS-0 CP.

RUL3 1) Always provide one each of equipment referenced per this RULE when the DTH-DTT or DTH-ROTL/DTT application is provisioned.

RUL4 1) Cables referenced with this Rule shall be applied based on the product application and frame configuration as follows:

1. NT7F33AA - Always provision when DTH-ROTL/DTT or DTT only application is required.

2. NT7F27DA/DB - Provision as follows:

a. When DTH-DTT and Common Equipment Shelf is installed the same frame provision one (1) NT7F27DA cables.

b. When DTH-DTT and Common Equipment Shelf is installed in different frames provision two (2) NT7F27DB cables.

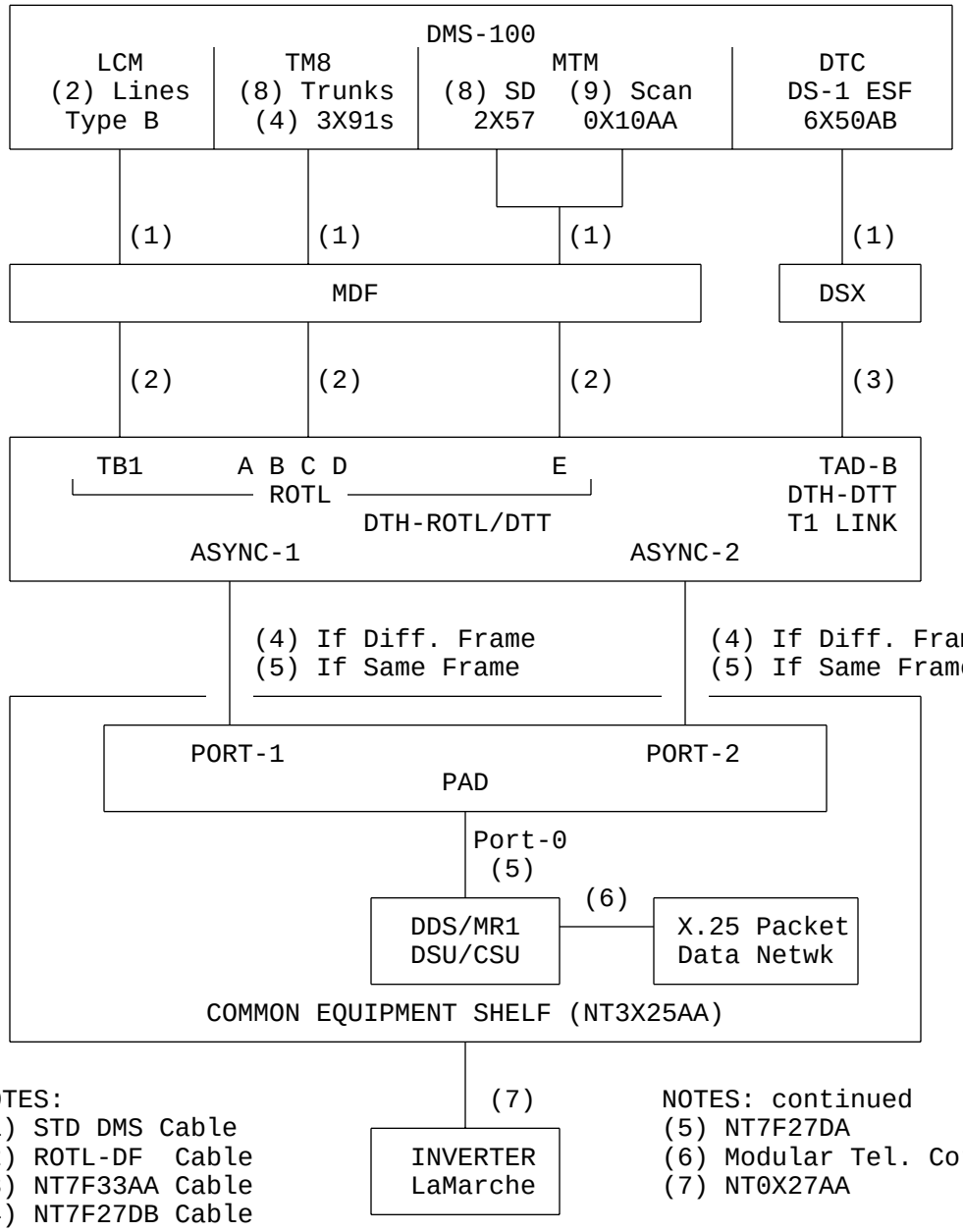
Note: NT7F27DA is simply a 43" version of the NT7F27DB

3. Refer to Figure 1 attached for a conceptual illustration of the DTH ROTL/DTT Cabling Requirements:

RUL5 1) Provision VDUs per telco specifications when the DTH-ROTL/DTT or DTH-DTT is provisioned. Note: VDU Cabling is always supplied with a 50ft length.

RUL6 1) Protected AC is required to power the Common Equipment Shelf (CES), thereby, providing protected AC for the equipment mounted on the CES.

2) The DMS-100 standard for providing local protected AC is the LaMarche Inverter (See ECM-602 for detailed engineering information).



NOTES:
(1) STD DMS Cable
(2) ROTL-DF Cable
(3) NT7F33AA Cable
(4) NT7F27DB Cable

NOTES: continued
(5) NT7F27DA
(6) Modular Tel. Cord
(7) NT0X27AA

FIGURE 1: TYPICAL DTH-ROTL/DTT CABLING DIAGRAM

RUL7 1) Provide one NT7F15AA DTH On/Off Switch per Telco Request or WHEN THE DTH SHELF IS INSTALLED IN FRAME/CABINET/RELAY rack

where the shelf power cannot be turned On/Off at the frame/cabinet/relay rack.

PRODUCT CHANGE KIT NT7F20AA/18AA/18AB-CA
ROTL TO ROTL/DTT

PEC CODE:	NT7F38AB
CPC CODE:	A0398172
RATING:	Limited
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	N/A
ENGINEERING DESCRIPTION:	This change kit may be applied to the NT7F18AB and NT7F20AA vintages of the DTH-ROTL to provide the Digital Test Trunk capability.
REFERENCE DOCUMENTATION:	SL7F38AB 01 02
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NT7F38AB EMA13-01-DTH-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 08 10	API 425 01	Initial introduction of this product via the subject Product Specification
92 10 09	API 425 02	Include late issue 01 review comments and corrections noted per ET 14499 and ET 14559.
92 12 15	ECM 479 06	ADD NT7F25AB to Stocklist - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.
94 03 23	ECM 479 09	EC 024-89178 Add another NT7F25AB to stocklist of NT7F38AB. Change NT7F27AA to NT7F27DA.

The Product Change Kit NT7F20AA/18AA/18AB-CA ROTL to ROTL/DTT is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Control Processor CP	NT7F23AA		1	XX	01	AP
REMOVE	ROM PCB	NT7F26AB		1	XX	01R	AP
REMOVE	DS-0 Handler PCB	NT7F25AA		1	XX	02	AP
REMOVE	Filler Face Plate	NT7F30AA		2	XX	03,08	AP
ADD	Control Processor CP	NT7F23AB		1	XX	01	AP
ADD	ROM PCB	NT7F26AD		1	XX	01R	AP
ADD	DS-O Handler PCB	NT7F25AB		2	XX	02,03	AP
ADD	DS-1 Interface PCB	NT7F32AA		1	XX	08	AP
ADD	DTT Cable Kit	NT7F27DA		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" in SHF POS is equal to any valid mounting position in the MIS Frame

2) The NT7F38AB may be provisioned to upgrade the NT7F20AA, NT7F18AA, and NT7F18AB (ROTL) to the NT7F18CA (DTH-ROTL/DTT).

RULES:

AP 1) When PEC NT7F38AB is ordered, these items are provided.

PRODUCT CHANGE KIT NT7F18AD-CA

PEC CODE:	NT7F38BA
CPC CODE:	A0400489
RATING:	Limited
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	N/A
ENGINEERING DESCRIPTION:	This change kit may be applied to the NT7F18AD vintage of the Remote Office Test Line Unit (ROTL) to the NT7F18CA vintage DTH-ROTL/DTT.
REFERENCE DOCUMENTATION:	SL7F38BA 01 02
MARKETS:	Applicable markets: US Canada

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NT7F38BA EMA13-01-DTH-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 15	ECM 479 06	Initial Introductin of the PEC NT7F38BA via ECD 024-85846 - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.
94 03 23	ECM 479 09	EC 024-89178 Remove 1 NT7F25AB from stocklist of NT7F38BA.

The Product Change Kit NT7F18AD-CA is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Filler Face Plate	NT7F30AA		2	XX	03,08	AP
ADD	DS-O Interface PCB	NT7F25AB		1	XX	03	AP
ADD	DS-1 Interface PCB	NT7F32AA		1	XX	08	AP
ADD	DTT Cable Kit	NT7F27DA		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" in SHF POS is equal to any valid mounting positio in the MIS Frame

RULES:

AP 1) When PEC NT7F38BA is ordered, these items are provided.

DTH-DTT SPARES KIT (NT7F18BA) NT7F19BA

RATING:	Standard.
ABBREVIATION NAME:	N/A
ENGINEERING DESCRIPTION:	The Digital Test Head-Digital Trunk Test (DTH-DTT) Spares Kit.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US Canada

NT7F19BA EMA13-01-DTH-8 CHANGE HISTORY

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
92 12 15	ECM 479 06	Initial Introduction Per ECD 024-85846 - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.

The DTH-DTT Spares Kit (NT7F18BA) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Supply	NT5A23AA		1			AP
DS-0 Handler CP	NT7F25AB		1			AP
Control Processor CP	NT7F23AB		1			AP
ROM Pack Assembly	NT7F26AD		1			AP
DS-1 I/F CP	NT7F32AA		1			AP

FLAGS:

NOTES:

RULES:

AP 1) When PEC NT7F19BA is ordered, these items are provided.

DTH-ROTL/DTT SPARES KIT (NT7F18CA) NT7F19CA

RATING:	Standard.
ABBREVIATION NAME:	N/A
ENGINEERING DESCRIPTION:	The Digital Test Head-Remote Office Test Line/Digital Trunk Test (DTH-ROTL/DTT) Spares Kit.
REFERENCE DOCUMENTATION:	N/A
MARKETS:	Applicable markets: US Canada

NT7F19CA EMA13-01-DTH-9 CHANGE HISTORY

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
92 12 15	ECM 479 06	Initial Introduction Per ECD 024-85846 - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.

The DTH-ROTL/DTT Spares Kit (NT7F18CA) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Supply	NT5A23AA		1			AP
DS-0 Handler CP	NT7F25AB		1			AP
DTH-ROTL VF I/F CP	NT7F29AA		1			AP
Control Processor CP	NT7F23AB		1			AP
ROM Pack Assembly	NT7F26AD		1			AP
DS-1 I/F CP	NT7F32AA		1			AP

FLAGS:

NOTES:

RULES:

AP 1) When PEC NT7F19CA is ordered, these items are provided.

AUXILIARY FUSE PANEL FOR TOPS AND ESAC NT5X98AA

RATING: Standard

ABBREVIATION NAME: FP

ENGINEERING DESCRIPTION: The Auxiliary Fuse Panel distributes "A" feed power to up to fifteen individually fused TOPS or ESAC loads and "B" feed power to up to fifteen individually fused TOPS or ESAC loads. Each fuse is rated at 1 1/3 amps.

REFERENCE DOCUMENTATION: N/A

The Auxiliary Fuse Panel for TOPS and ESAC is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Aux. Fuse Panel Assy	NT5X9802		1	40		AP
Fuse (QFF1A)	A0205202			40	F01-F15 F17-F32	RUL1
Dummy Fuse (QFF3A)	A0205210			40	F01-F15 F17-F31	RUL2
Dummy Fuse (QFF3A)	A0205210		2	40	F16,F32	AP

NOTE:

1) CP POS indicates fuse positions.

RULE:

AP 1) When PEC NT5X98AA is ordered, these items are provided.

RUL1 1) Provide up to thirty fuses and their designation disc as per job requirements.

2) Fuses of the following types and ratings may be provided:

FUSE	AMP	CPC	DES DISC	COL
QFF1A	1 1/3	A0205202	P097P235	WH

3) The following (Table 1) contains maximum fuse ratings and fuse/terminal assignments for NT5X98AA:

FUSE LOC	MAX. RATING (AMPS)	PDC FEED	FP TERMINAL	COMMENT
F01	1.33	A	TB2-1	TOPS/ESAC CIRCUIT
F02	1.33	A	TB2-2	TOPS/ESAC CIRCUIT
F03	1.33	A	TB2-3	TOPS/ESAC CIRCUIT
F04	1.33	A	TB2-4	TOPS/ESAC CIRCUIT
F05	1.33	A	TB2-5	TOPS/ESAC CIRCUIT
F06	1.33	A	TB2-6	TOPS/ESAC CIRCUIT
F07	1.33	A	TB2-7	TOPS/ESAC CIRCUIT
F08	1.33	A	TB2-8	TOPS/ESAC CIRCUIT
F09	1.33	A	TB2-9	TOPS/ESAC CIRCUIT
F10	1.33	A	TB2-10	TOPS/ESAC CIRCUIT
F11	1.33	A	TB2-11	TOPS/ESAC CIRCUIT
F12	1.33	A	TB2-12	TOPS/ESAC CIRCUIT
F13	1.33	A	TB2-13	TOPS/ESAC CIRCUIT
F14	1.33	A	TB2-14	TOPS/ESAC CIRCUIT
F15	1.33	A	TB2-15	TOPS/ESAC CIRCUIT
F16	DUMMY	-	-	NOT USED
F17	1.33	B	TB4-1	TOPS/ESAC CIRCUIT
F18	1.33	B	TB4-2	TOPS/ESAC CIRCUIT
F19	1.33	B	TB4-3	TOPS/ESAC CIRCUIT
F20	1.33	B	TB4-4	TOPS/ESAC CIRCUIT
F21	1.33	B	TB4-5	TOPS/ESAC CIRCUIT
F22	1.33	B	TB4-6	TOPS/ESAC CIRCUIT
F23	1.33	B	TB4-7	TOPS/ESAC CIRCUIT
F24	1.33	B	TB4-8	TOPS/ESAC CIRCUIT
F25	1.33	B	TB4-9	TOPS/ESAC CIRCUIT
F26	1.33	B	TB4-10	TOPS/ESAC CIRCUIT
F27	1.33	B	TB4-11	TOPS/ESAC CIRCUIT
F28	1.33	B	TB4-12	TOPS/ESAC CIRCUIT
F29	1.33	B	TB4-13	TOPS/ESAC CIRCUIT
F30	1.33	B	TB4-14	TOPS/ESAC CIRCUIT
F31	1.33	B	TB4-15	TOPS/ESAC CIRCUIT
F32	DUMMY	-	-	NOT USED

RUL2 1) Provide one (1) Dummy Fuse, A0205210, in each location which is not equipped with a fuse.

MISCELLANEOUS EQUIPMENT FSP NT0X88AB

RATING: Standard

ABBREVIATION NAME: FSP

ENGINEERING DESCRIPTION: The FSP receives the feeder cables from the PDC fuse and distributes DC power via local fuses to the shelves in the frame. The FSP also receives the Alarm Battery Supply (ABS) multiple feeder from the ABS fuse in the PDC and routes the ABS via internal fuses to the frame alarm circuits.

REFERENCE DOCUMENTATION: MS0X88AB 01 02

The Miscellaneous Equipment Frame Supervisory Panel is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MIS Frame FSP Panel Assy	NT0X8800		1	45		AP
Converter Drive & Alm Card	NT0X91AA		1	45	01	AP
Fuse QFF1A	A0205202		3	45	F01-03	AP
Fuse Design Disc	P097P235		3	45	F01-03	AP
Dummy Fuse QFF3A	A0205210		1	45	F04	AP
Fuse	AR			45	F05-24	RUL2
Dummy Fuse QFF3A	A0205210			45	F05-24	RUL1
Fuse Design Disc	AR			45	F05-24	RUL2

NOTE:

1) CP POS indicates fuse positions when the position number is preceeded by "F".

RULE:

AP 1) When PEC NT0X88AB is ordered, these items are provided.

2) NT0X88AB comes equipped with two (2) 10A circuit breakers, CB1 and CB2, (always provided with NT0X8800) which are available for assignment to MIS-mounted equipment. See RUL2 2) Table 2 for terminal assignments.

RUL1 1) Provide one Dummy Fuse, A0205210, in each location which is not to be equipped with a fuse.

RUL2 1) Provide up to twenty (20) fuses in these locations to power MIS-mounted miscellaneous equipment. Select from the following (Table 1) according to required rating and provide one corresponding designation disk for each fuse ordered (see RUL2 2) Table 2 for maximum ratings):

FUSE RATING (AMPS)	FUSE TYPE	FUSE PEC	DESIGNATION DISC COLOUR	DISC PEC
0.18	QFF1E	A0205206	Y	P097P239
0.25	QFF1F	A0205207	V	P097P240
0.50	QFF1G	A0205208	R	P097P241
0.75	QFF1H	A0205209	BR	P097P242
1.33	QFF1A	A0205202	WH	P097P235
2.0	QFF1B	A0205203	O	P097P236
3.0	QFF1C	A0205204	BL	P097P237
5.0	QFF1D	A0205205	G	P097P238

Table 1

2) The following (Table 2) contains maximum fuse ratings and fuse/terminal assignments for NT0X88AB.

FUSE LOC	MAX RATING (AMPS)	PDC FEED	FSP TERMINAL	COMMENT	REMARKS
CB1	10 FIXED	A	TB1-12	MISC circuits	
CB2	10 FIXED	B	TB1-11	MISC circuits	
FO1	1.33 FIXED	ABS	TS1-14	Alarm BAT. to PC card	
FO2	1.33 FIXED	ABS	TB3-11	Alarm BAT. end AIS LP	
FO3	1.33 FIXED	ABS	-	Alarm BAT. FSP jacks	
FO4	DUMMY	ABS	-	Not Used	
FO5	5	A	TB2-1	MISC circuits	
FO6	5	A	TB2-2	MISC circuits	
FO7	5	A	TB2-3	MISC circuits	
FO8	5	A	TB2-4	MISC circuits	
FO9	5	A	TB2-7	MISC circuits	
FO10	5	A	TB2-8	MISC circuits	
FO11	5	A	TB2-9	MISC circuits	
FO12	5	A	TB2-10	MISC circuits	
FO13	5	A	TB3-7	MISC circuits	
FO14	5	A	TB3-8	MISC circuits	
FO15	5	B	TB3-9	MISC circuits	
FO16	5	B	TB3-10	MISC circuits	
FO17	1.33	B	TS1-1	MISC circuits	a
FO18	1.33	B	TS1-2	MISC circuits	a
FO19	1.33	B	TS1-3	MISC circuits	a
FO20	1.33	B	TS1-4	MISC circuits	a
FO21	1.33	B	TS1-5	MISC circuits	a
FO22	1.33	B	TS1-6	MISC circuits	a
FO23	1.33	B	TS1-7	MISC circuits	a
FO24	1.33	B	TS1-8	MISC circuits	a

TABLE 2

FSP FUSE/TERMINAL ASSIGNMENTS

REMARKS:

a) Due to the limited current carrying capacity of TS1 pins, fuses in locations FO17 through FO24 must not be rated higher than 1.33A.

REMOTE SERVICE EQUIPMENT FSP NT0X88AD

RATING: Standard

ABBREVIATION NAME: FSP

ENGINEERING DESCRIPTION: The FSP receives the feeder cables from the PDC fuse and distributes DC power via local fuses to the shelves in the frame. The FSP also receives the Alarm Battery Supply (ABS) multiple feeder from the ABS fuse in the PDC and routes the ABS via internal fuses to the frame alarm circuits. NT0X88AD is used on the RSE frame when equipped in an RLM office.

REFERENCE DOCUMENTATION: MS0X88AD 01 02

The Remote Service Equipment Frame Supervisory Panel is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RSE Frame FSP Panel Assy	NT0X8820		1	45		AP
Converter Drive & Alm Card	NT0X91AA		1	45	01	AP
Converter Drive	NT0X91AD		1	45	02	AP
Fuse QFF1A	A0205202		3	45	F01-F03	AP
Fuse Design Disc (white)	P097P235		3	45	F01-F03	AP
Dummy Fuse QFF3A	A0205210		1	45	F04	AP
Fuse	AR			45	F05-F16	RUL1
Dummy Fuse QFF3A	A0205210			45	F05-F16	RUL2
Fuse Design Disc	AR			45	F05-F16	RUL1

NOTE:

1) CP POS indicates fuse positions when the position number is preceeded by "F".

RULE:

AP 1) When PEC NT0X88AD is ordered, these items are provided.

2) NT0X88AD comes equipped with four (4) 10A circuit breakers, CB1 through CB4 (always provided with NT0X8820). These are primarily intended to power RSM shelves. If not required for this purpose, they can be assigned to other RSM-mounted equipment. See RUL1 3) Table 3 for terminal assignments.

RUL1 1) Provide up to twelve (12) fuses in these locations to power RSE-mounted miscellaneous equipment, or supply RSM talk battery. Select from the following (Table 1) according to required fuse rating and provide one corresponding Desig-nation Disk for each fuse ordered:

FUSE RATING (AMPS)	FUSE TYPE	FUSE PEC	DESIGNATION DISC COLOUR	DESIGNATION DISC PEC
0.18	QFF1E	A0205206	Y	P097P239
0.25	QFF1F	A0205207	V	P097P240
0.50	QFF1G	A0205208	R	P097P241
0.75	QFF1H	A0205209	BR	P097P242
1.33	QFF1A	A0205202	WH	P097P235
2.0	QFF1B	A0205203	O	P097P236
3.0	QFF1C	A0205204	BL	P097P237
5.0	QFF1D	A0205205	G	P097P238

Table 1

2) When used to supply talk battery to RSM shelves, utilize shelf feed circuit breakers and provide talk battery fuses as follows:

RSM SHELF POS	SHELF FEED CB RATING	SHELF FEED CB LOC	SHELF FEED TERM ID	SHELF TALK BATTERY FUSE RATING	SHELF TALK BATTERY FUSE LOC	SHELF TALK BATTERY TERM ID
65	10A	CB1	TB1-12	1.33	F12	TB2-10
51	10A	CB2	TB1-11	1.33	F11	TB2-9
32	10A	CB3	TB1-10	1.33	F10	TB2-8
18	10A	CB4	TB1-9	1.33	F09	TB2-7

Table 2

3) The following (Table 3) contains maximum fuse ratings and fuse/terminal assignments for NT0X88AD.

FUSE LOC	MAX RATING (AMPS)	PDC FEED	FSP TERMINAL	COMMENT
CB1	10 FIXED	A	TB1-12	RSM or MISC circuits
CB2	10 FIXED	A	TB1-11	RSM or MISC circuits
CB3	10 FIXED	A	TB1-10	RSM or MISC circuits
CB4	10 FIXED	A	TB1-9	RSM or MISC circuits
FO1	1.33 FIXED	ABS	TS2-9	Alarm BAT. to PC card
FO2	1.33 FIXED	ABS	TB3-11	Alarm BAT. end AIS LP
FO3	1.33 FIXED	ABS	-	Alarm BAT. FSP jacks
FO4	DUMMY	ABS	-	Not Used
FO5	5	A	TB2-1	MISC circuits
FO6	5	A	TB2-2	MISC circuits
FO7	5	A	TB2-3	MISC circuits
FO8	5	A	TB2-4	MISC circuits
FO9	5	A	TB2-7	Talk Battery
FO10	5	A	TB2-8	Talk Battery
FO11	5	A	TB2-9	Talk Battery
FO12	5	A	TB2-10	Talk Battery
FO13	5	B	TB3-7	MISC circuits
FO14	5	B	TB3-8	MISC circuits
FO15	5	B	TB3-9	MISC circuits
FO16	5	B	TB3-10	MISC circuits

TABLE 3

FSP FUSE/TERMINAL ASSIGNMENTS

RUL2 1) Provide one Dummy Fuse, A0205210, in each location which is not to be equipped with a fuse.

10 AMP FILT MISC EQPT FSP NT0X88AE

RATING: Standard

ABBREVIATION NAME: FSP

ENGINEERING DESCRIPTION: The FSP receives the feeder cables from the PDC fuse and distributes DC power via local fuses to the shelves in the frame. The FSP also receives the Alarm Battery Supply (ABS) multiple feeder from the ABS fuse in the PDC and routes the ABS via internal fuses to the frame alarm circuits. NT0X88AE is used when MIS-mounted equipment which require 10 amp filtered -48V circuit breakers.

REFERENCE DOCUMENTATION: MS0X88AE 01 01

The 10 Amp Filter Miscellaneous Equipment Frame Supervisory Panel is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
10A Flt MIS Frm FSP Pnl Assy	NT0X8833		1	45		AP
Converter Drive & Alm Card	NT0X91AA		1	45	01	AP
Fuse QFF1A	A0205202		3	45	F01-F03	AP
Fuse Design Disc (white)	P097P235		3	45	F01-F03	AP
Dummy Fuse QFF3A	A0205210		1	45	F04	AP
Fuse	AR			45	F05-F16	RUL1
Dummy Fuse QFF3A	A0205210			45	F05-F16	RUL2
Fuse Design Disc	AR			45	F05-F16	RUL1

NOTE:

1) CP POS indicates fuse positions when the position nubmer is preceeded by "F".

RULE:

AP 1) When PEC NT0X88AE is ordered, these items are provided.

2) NT0X88AE comes equipped with two (2) 10A circuit breakers, CB1 and CB2, (always provided with NT0X8833) which are available for assignment to MIS- mounted equipment. CB1 can be assigned to any miscellaneous circuits (i.e. ROTL unit) which require 10 amp filtered -48V supply. See RUL1 2) Table 2 for terminal assignments.

RUL1 1) Provide up to twelve (12) fuses in these locations to power MIS- mounted miscellaneous equipment. Select from the following according to required rating and provide one corresponding designation disk for each fuse ordered (see RUL1 2) Table 2 for maximum ratings):

FUSE RATING (AMPS)	FUSE TYPE	FUSE PEC	DESIGNATION DISC COLOUR	DISC PEC
0.18	QFF1E	A0205206	Y	P097P239
0.25	QFF1F	A0205207	V	P097P240
0.50	QFF1G	A0205208	R	P097P241
0.75	QFF1H	A0205209	BR	P097P242
1.33	QFF1A	A0205202	WH	P097P235
2.0	QFF1B	A0205203	O	P097P236
3.0	QFF1C	A0205204	BL	P097P237
5.0	QFF1D	A0205205	G	P097P238

2) The following (Table 2) contains maximum fuse ratings and fuse/terminal assignments for NT0X88AE.

FUSE LOC	MAX RATING (AMPS)	PDC FEED	FSP TERMINAL	COMMENT
CB1	10 FIXED	A	TB1-12	ROTL or MISC ckts req talk BAT.
CB2	10 FIXED	B	TB1-11	MISC circuits
FO1	1.33 FIXED	ABS	-	Alarm BAT. to PC card
FO2	1.33 FIXED	ABS	TB3-11	Alarm BAT. end AIS LP
FO3	1.33 FIXED	ABS	-	Alarm BAT. FSP jacks
FO4	DUMMY	ABS	-	NOT USED
FO5	5	A	TB2-1	MISC circuits
FO6	5	A	TB2-2	MISC circuits
FO7	5	A	TB2-3	MISC circuits
FO8	5	A	TB2-4	MISC circuits
FO9	5	A	TB2-7	MISC circuits
FO10	5	A	TB2-8	MISC circuits
FO11	5	B	TB2-9	MISC circuits
FO12	5	B	TB2-10	MISC circuits
FO13	5	B	TB3-7	MISC circuits
FO14	5	B	TB3-8	MISC circuits
FO15	5	B	TB3-9	MISC circuits
FO16	5	B	TB3-10	MISC circuits

TABLE I

FSP FUSE/TERMNAL ASSIGNMENTS

RUL2 1) Provide one Dummy Fuse, A0205210, in each location which is not to be equipped with a fuse.

HOST/REMOTE MISC. EQUIPMENT NT0X88AF
FRAME SUPERVISORY PANEL

RATING: Standard

ABBREVIATION NAME: FSP

ENGINEERING DESCRIPTION: The FSP receives the feeder cables from the PDC fuse and distributes DC power via local fuses to the shelves in the frame. The FSP also receives the Alarm Battery Supply (ABS) multiple feeder from the ABS fuse in the PDC and routes the ABS via internal fuses to the frame alarm circuits. NT0X88AF is used for RME-mounted equipment or for MIS-mounted equipment requiring filtered (talk) battery.

REFERENCE DOCUMENTATION: MS0X88AF 01 02

The Remote Miscellaneous Equipment Frame Supervisory Panel is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MIS Frame FSP Panel Assy	NT0X8843		1	45		AP
Converter Drive & Alm Card	NT0X91AA		1	45	01	AP
Fuse Design Disc	P097P235		3	45	F01-03	AP
Dummy Fuse QFF3A	A0205210		1	45	F04	AP
Fuse	AR			45	F05-24	RUL1
Fuse QFF1A	A0205202		3	45	F01-03	AP
Dummy Fuse QFF3A	A0205210			45	F05-24	RUL2
Fuse Design Disc	AR			45	F04-24	RUL1

NOTE:

1) CP POS indicates fuse positions when the position number is preceeded by "F".

RULE:

AP 1) When PEC NT0X88AF is ordered, these items are provided.

2) NT0X88AB comes equipped with two (2) 10A circuit breakers, CB1 and CB2, (always provided with NT0X8843) which are available for assignment to miscellaneous circuits requiring filtered (talk) battery. See RUL1 3) Table 2 for terminal assignments.

RUL1 1) Provide up to twenty (20) fuses in these locations to power MIS/RME-mounted miscellaneous equipment. Select from the following (Table 1) according to required rating and provide one corresponding designation disk for each fuse ordered (see RUL1 3) Table 2 for maximum ratings):

FUSE RATING (AMPS)	FUSE TYPE	FUSE PEC	DESIGNATION DISC COLOUR	DISC PEC
0.18	QFF1E	A0205206	Y	P097P239
0.25	QFF1F	A0205207	V	P097P240
0.50	QFF1G	A0205208	R	P097P241
0.75	QFF1H	A0205209	BR	P097P242
1.33	QFF1A	A0205202	WH	P097P235
2.0	QFF1B	A0205203	O	P097P236
3.0	QFF1C	A0205204	BL	P097P237
5.0	QFF1D	A0205205	G	P097P238

Table 1

2) Each of A feed and B feed must never exceed 10 amp per feed.

3) The following (Table 2) contains maximum fuse ratings and fuse/terminal assignments for NT0X88AF.

FUSE LOC	MAX RATING (AMPS)	PDC FEED	FSP TERMINAL	COMMENT	REMARKS
CB1	10 FIXED	A	TB1-12	MISC ckts req talk BAT.	
CB2	10 FIXED	B	TB1-11	MISC ckts req talk BAT.	
FO1	1.33 FIXED	ABS	TS1-14	Alarm BAT. to PC card	
FO2	1.33 FIXED	ABS	TB3-11	Alarm BAT. end AIS LP	
FO3	1.33 FIXED	ABS	-	Alarm BAT. FSP jacks	
FO4	DUMMY	ABS	-	Not Used	
FO5	5	A	TB2-1	MISC ckts req talk BAT.	
FO6	5	A	TB2-2	MISC ckts req talk BAT.	
FO7	5	A	TB2-3	MISC ckts req talk BAT.	
FO8	5	A	TB2-4	MISC ckts req talk BAT.	
FO9	5	A	TB2-7	MISC ckts req talk BAT.	
FO10	5	A	TB2-8	MISC ckts req talk BAT.	
FO11	5	A	TB2-9	MISC ckts req talk BAT.	
FO12	5	A	TB2-10	MISC ckts req talk BAT.	
FO13	5	A	TB3-7	MISC ckts req talk BAT.	
FO14	5	A	TB3-8	MISC ckts req talk BAT.	
FO15	5	B	TB3-9	MISC ckts req talk BAT.	
FO16	5	B	TB3-10	MISC ckts req talk BAT.	
FO17	1.33	B	TS1-1	MISC ckts req talk BAT.	a
FO18	1.33	B	TS1-2	MISC ckts req talk BAT.	a
FO19	1.33	B	TS1-3	MISC ckts req talk BAT.	a
FO20	1.33	B	TS1-4	MISC ckts req talk BAT.	a
FO21	1.33	B	TS1-5	MISC ckts req talk BAT.	a
FO22	1.33	B	TS1-6	MISC ckts req talk BAT.	a
FO23	1.33	B	TS1-7	MISC ckts req talk BAT.	a
FO24	1.33	B	TS1-8	MISC ckts req talk BAT.	a

TABLE 2

FSP FUSE/TERMINAL ASSIGNMENTS

REMARKS:

a) Due to the limited current carrying capacity of TS1 pins, fuses in locations FO17 through FO24 must not be rated higher than 1.33A.

RUL2 1) Provide one Dummy Fuse, A0205210, in each location which is not to be equipped with a fuse.

GDC DATA SET MODULE

PEC CODE: T_GDC_MOD

CPC CODE: N/A

RATING: Standard

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: DSM

ENGINEERING DESCRIPTION: The Data Set Module Shelf houses up to sixteen data set modems per office requirements, and is a redundant powered 48 volt DC shelf. The unit is 11.0 inches high, 12.00 inches deep and 19.0 inches wide. The shelf accepts switched and private line data sets as well as other plug-in modems. The different series of GDC modems may be mixed within the shelf in any manner desired.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Pradyumn Joshi Dept. 3471 (PPK)

MAIN CONTACT: NTI: Pradyumn Joshi Dept. 3471 (PPK)

T GDC MOD EMA13-01-GDC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 01 22	ECM 633 03	Introduction of GDC DS-6 modem shelf and modems for the MIS.
93 02 19	ECM 633 04	Correct pec code errors
93 04 14	ECM 633 05	Correct pec code errors
93 05 26	ECM 633 06	MD A0378948 modem.
93 11 22	ECM 633 08	Add Vendor part numbers.
94 03 21	ECM 633 10	Correct rule associations in EM sections T-GDC_MOD
95 04 17	ECM 633 12	ET 021639 correct mtg. adpt quantity from two to one.Add DC Vfast modems. Also add MD status and furnish replacement for MD modems.
95 10 30	ECM 633 13	Update MD status and furnish replacement for MD Modems. Correct stand alone and rack mount Modems info.for MD modems.Add NMS, VFAST V.35 Modems.
96 02 12	ECM 633 14	ET-33139 MD A0620450 replace with A0620530. Correct MD status of A0378946.
97 04 23	ECM 633 15	Update MD list with replacement.

The GDC Data Set Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# DS-6/R-1Modem Shelf	(A0380973) 010M047-003			X		RUL1
# DS-6 Mounting Adp	(A0384166) 010J025-002			X		RUL1
# DS-6/R Modem Shelf	(A0381712) 010M047-001			X		RUL1
# DS-6 Mounting Adp	(A0384166) 010J025-002			X		RUL1
DS-6/R-1 Shelf with bracket	(A0602127) 010M047-006			X		RUL1
# DC 108-3M	(A0378927) 055P001-001			X	1-16	RUL3
DC 202S/T	(A0328524) 053P001-002			X	1-16	RUL4
# DC 4800	(A0301068) 051P006-002			X	1-16	RUL7
DC 9600 SPA	(A0378923) 049P026-004			X	1-16	RUL8
DC 9600 RPA	(A0378921) 049P026-001			X	1-16	RUL8
# DC 224+	(A0378939) 059P025-002			X	1-16	RUL10
# DC 224+X.25	(A0378941) 059M031-001			X	1-16	RUL10
DC 596	(A0378942) 049P038-001			X	1-16	RUL11
# DC 596MNP5	(A0378944) 049M038-031			X	1-16	RUL11
DC 596X.25	(A0378946) 049M038-011			X	1-16	RUL11
DC 596 V.42	(A0617934) 049M038-041			X	1-16	RUL11
# DC 500C/56KD	(A0379007) 048P034-001			X	1-16	RUL14
# DC 500C/UXR	(A0352789) 048P041-001			X	1-16	RUL14
DC VFAST(RS232)28.8K	(A0620448) 060P014-001A			X	1-16	RLL11
DC 500F/AXR	(A0601470) 048P062-001			X	1-16	RUL15
SP 500A	(A0601469) 048P050-001			X	1-16	RUL16
DC 552A	(A0378952) 048M070-101			X	1-16	RUL17
# DC 19202A	(A0378920) 077M001-003			X	1-16	RUL18
DC 500G/UXR	(A0632154) 048P049-001			X	1-16	RUL15
NMS 510/IFP	(A0605209) 058M124-007			X	1-16	RUL20
NMS 510	(A0640831) 058P124-001			X	1-16	RUL21
DC V FAST(V.35) 28.8K	(A0620485) 060M014-201A			X	1-16	RUL22
DPS-9 Spare Power Supply	(A0380974) 041P033-001		1	X		RUL19

GDC Standalone Modems:

GDC DE-1 Enclosure -48V modem card Enclosure	(A0379193) S-010B003-002					RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
#GDC DE-17 Enclosure (A0379194) -48V DATASET/DSU Enclosure	S-010B017-001					RUL2
GDC DE-17 Enclosure (A0674460) -24/48V DATASET/DSU Enclosure	S-010B017-002					RUL2
# DC 108-3M	(A0328537)	055A001-001				RUL3
DC 202S/T	(A0328522)	053A001-001				RUL4
# DC 4800	(A0297086)	051A005-001				RUL7
# DC 9600 SPA	(A0378926)	049A021-011				RUL8
DC 9600 RPA	(A0378922)	049A016-011				RUL8
# DT 9600 RPA	(A0601467)	049A036-001				RUL9
# DC 224+	(A0378924)	059A026-001				RUL10
# DC 224+X.25	(A0378940)	059A026-011				RUL10
DC 596	(A0351816)	049A038-001				RUL11
# DC 596MNP5	(A0378943)	049A038-031				RUL11
DC 596X.25	(A0378945)	049A038-011				RUL11
# GDC 914 ADR	(A0600061)	061A032-001				RUL13
# DC596V.42	(A0620433)	049A038-041				RUL11
# DC VFAST(RS232)28.8K	(A0620450)	060A014-001A				RUL11
DT VFAST(RS232)28.8K	(A0620530)	060A010-001A				RUL11
DC 500G/UXR	(A0632487)	048A049-001				RUL15
# DC 500C/56KD	(A0378947)	048A020-011				RUL14
# DC 500C/UXR	(A0378948)	048A041-001				RUL14
# DC 500C/DBU-A	(A0378949)	048A027-001				RUL14
DC 500F/AXR	(A0614226)	048A062-001				RUL15
DT 500A	(A0386041)	048A061-001				RUL16
DT 500N	(A0602029)	048A074-001				RUL16
# DC 19202A	(A0378925)	077A002-001				RUL18
# DC 19202A-ADR	(A0376148)	077A005-001				RUL18
NMS 510/IFP	(A0605210)	058A068-001				RUL20
NMS 510	(A0640834)	058A064-001				RUL21
# DC V FAST(V.35) 28.8K	(A0620487)	060A014-201A				RUL22
V.FAST 28.8K V.35	(A0620540)	060A010-201				RUL22

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
055P001-001	MD	No replacement
059P025-002	MD	049P038-001
059M031-001	MD	049P038-001
048P034-001	MD	048P062-001
048P041-001	MD	048P062-001
051P006-002	MD	049P038-001
049P026-004	MD	049P026-001
049M038-031	MD	049M038-011
049A036-001	MD	049A016-011
049A038-041	MD	060A010-011
077M001-003	MD	060P014-001A
055A001-001	MD	No replacement
059A026-001	MD	049A038-001
059A026-011	MD	049A038-001
048A020-011	MD	048A062-001
048A041-001	MD	048A062-001
048A027-001	MD	048A062-001
051A005-001	MD	049A038-001
049A021-001	MD	049A016-011
049A038-031	MD	049A038-011
061A032-001	MD	060A010-001A
077A002-001	MD	060A010-001A
077A005-001	MD	060A010-001A
060A014-001A	MD	060A010-001A
060A014-201A	MD	060A010-201

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 one (1) GDC DS-6 -48V Modem Shelf to transmit and receive binary serial data for remote terminals requiring

rates above 300 Bits Per Second (BPS) up to 56 Kbps over private or dial-up line circuits.

A Maximum 16 Data Sets per shelf; Maximum of two (2) Data Set shelves per MIS frame when shelf is powered from FSP; When powered directly from the PDC space availabity is the limiting factor.)

2) "X" can be any shelf position providing thirteen (13) inches of consecutive vertical space; 1" above and below the unit for cooling and 11" for the unit itself.

3) All card modems require (1) one card slot, unless otherwise noted.

4) Public Switch Telephone Network (PSTN), Private Line (PL), or Digital Data Service Network (DDS) modem applications may be intermixed on a single shelf.

5) Provide power supply as spare equipment per customer requirements.

6) A normally closed (NC) alarm contact is provided as a power failure indicator. This is provided only with the DS-6 Modem Shelf.

7) Provide two 5.0 amp fuses per GDC DS-6 shelf.

8) It is recommended that rack mounted modems be utilized at every DMS because it provides a tidier installation.

9) One (1) DPS-9 Power Supply can power 16 slot positions, but two (2) are provided per DS-6 shelf.

RULES:

RUL1 1) Provide one (1) GDC DS-6/R-1 and DS-6/R -48V Modem Shelf to hold up to 16 modem cards to transmit and receive binary serial data to remote terminals requiring rates above 300 Bits Per Second (BPS) up to 56 Kbps over private or dial-up line circuits. DS-6/R-1 and DS-6/R has same functionality, only difference is DS-6/R has eight (8) 50-PIN Amphenol connectors for DTE Interface. DS-6/R is used by PAC BELL GDC DS-6/R-1 (A0380973) has been manufacture discontinue and replace by GDC DS-6/R-1 (A0602127), which comes equipped with brackets for 26" mounting.

2) Provide one (1) mounting adapters per DS-6 Modem Shelf.

RUL2 1) Provide one DE-1 DC enclosure for a -48V analog rack mount modem when a customer does not wish to purchase a 16 slot modem shelf. The DE-1 enclosure will hold only one DC powered card modem.

2) Provide one DE-17 DC enclosure for a -48V DSU rack mount unit when a customer does not wish to purchase a 16 slot modem shelf. The DE-17 enclosure will hold only one DC powered DSU card.

3) The DC enclosures basically make a DC powered rack mount modem/DSU card into a DC powered stand alone unit.

RUL3 1) Provision the DC 108 modem for use with two or four wire voice grade dedicated circuits. Point-to-point or multipoint. Compatible with BELL 103 protocol and BELL 108 protocol.

2) The GDC 108 Modem Mechanical Specifications are as follows:

Data Rate ..... 300 bps

Digital Interface ... EIA RS-232

Timing ..... Async

Analog Connection .. .6 pin modular jack

Stand-Alone .... Width 10.9", Height 3.90", Depth 12.5"

Card ..... One Card Slot in DS-6 Shelf

RUL4 1) Provision the 202S/T for dedicated Full Duplex 2W and 4W circuits point-to-point or multipoint and for use with Dial Up half duplex 2W circuits. Automatic answer only operation, and page refresh, where the communication path exceeds 1200 feet. compatible with BELL 202S protocol and BELL 202T protocol.

2) The GDC 202S/T Mechanical Specifications are as follows:

Data Rate ..... 0-1200 bps Dial up

..... 0-1800 bps Dedicated line

Digital Interface ... EIA RS232 and CCITT V.23

Timing ..... Async

Telephone Line ..... Direct connect

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot in DS-5 / DS-6 Shelf

RUL5 1) Reserved RUL6 1) Reserved

RUL7 1) Provision the 4800 modem for use with two or four wire voice grade circuits and compatable with BELL 208A protocol. It will operate over private line point-to-point or multipoint circuits. A maximum of 16 modems per shelf can be configured on the DS-6/R-1 Shelf.

2) The GDC 4800 Mechanical Specifications are as follows:

Data Rate ..... 4800 bps

Digital Interface ... EIA RS232

Timing ..... Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot in DS-5 / DS-6 Shelf

RUL8 1) Provision the 9600 SPA/RPA modem for use with four wire point-to-point or multipoint, private line synchronous modem. It complies with CCITT V.29 specifications for domestic and international applications, with fallback rates of 4800 and 7200 bps. A maximum of 16 modems per shelf can be configured on the DS-6/R-1 Shelf.

2) The GDC 9600 Mechanical Specifications are as follows:

Data Rate ..... 9600 bps

Fall Back Rate ..... 7200 or 4800 bps

Digital Interface ... EIA RS232 & V.29 compliant

Timing ..... Async or Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot in DS-5 / DS-6 Shelf

RUL9 1) Provision the DT 9600 RPA modem for use with 4W full duplex voice grade dedicated circuits. Use the DT 9600 RPA for point-to-point or multipoint circuits. It complies with CCITT V.29 specifications for domestic and international applications. The DT9600 RPA is a standalone unit only.

2) The GDC 9600 Mechanical Specifications are as follows:

Data Rate ..... 9600 bps

Fall Back Rate ..... 7200 or 4800 bps

Digital Interface ... EIA RS232

Timing ..... Async or Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

RUL10 1) Provision the 224+ modem for use with 2W switched and dedicated line applications. It provides full duplex, asynchronus (300- 2400 bps) and synchronous (1200 and 2400 bps) data transmission. The 224X is a 224 with the X.25 feature enhancement module (FEM) installed to allow access to the X.25 network for multi-host, multi-session applications. The 224C is a 224 with a V.42bis FEM installed providing V.42bis error correction and MNP-1 to MNP-5 datacompression. the 224+ is compatible with BELL 212A, 103 and 113 modems at 1200 and 300 bps respectivly. It is compatible with CCITT V.22 and V.22bis at 1200 and 2400 bps respectivly.

2) The GDC 224+ Mechanical Specifications are as follows:

Data Rate ..... 300 to 2400 bps

Digital Interface ... EIA RS232

Timing ..... Async or Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot in DS-5 / DS-6 Shelf

RUL11 1) The DC 596 modem provides 9600, 4800, 2400, 1200 and 0-300bps point-to-point synchronous and asynchronous, private line and switched-network data communications (0 - 300 bps is asynchronous only). The 596X is a 596 with an X.25 feature enhancement module (FEM) installed to allow access to an X.25 network. The 596C is a 596 with a MNP-5 FEM installed providing V.22 error correction and MNP-5 data compression. The DC 596V is a 596 with V.22bis FEM installed, providing V.22bis error correction and MNP-1 to MNP-5 data compression allowing up to 38,000 bps data transfer rate.

The DC 596V.42 is a 596 with V.42bis FEM installed, providing V.42bis error correction.

DC VFAST(RS232) 28.8K provide up to 28.8KBPS primary data rate or V32BIS automode.It is point-to-point 2 wire or 4 wire full duplex operation.

2) The GDC 596 Mechanical Specifications are as follows:

Data Rate ..... 0 to 9600 bps

..... upto 19,200 bps with MNP-5 compression

..... upto 38,000 bps with V.22bis compression

Digital Interface ... EIA RS232

Timing ..... Async or Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot in DS-5 / DS-6 Shelf

RUL12 1) Reserved

RUL13 1) Provision the GDC 914 modem for use with 2W full duplex dial up or 2W/4W full duplex dedicatd circuits. The GDC 914 modem provides 14,400, 9600, 2400, 2400/75, 1200 and 0-300 bps switched network and private line data communications (0-300 bps is asynchrouns only). The GDC 914 complies with CCITT V.32bis, V.22bis, V.22, V.23 and V.21 specifications. The GDC 914 utilizes CCITT v.42, MNP4 error corrections and CCITT V.42bis MNP5 data compression allowing up to 38,000 bps data transfer rate. The GDC 914 ADR provides callback security with password promting data integrity and prevents unuatherized access. The GDC 914 ADR provides automatic dial restoral for backup on dedicated circuits, The GDC 914 is a standalone unit only.

2) The GDC 914 Mechanical Specifications are as follows:

Data Rate ..... 0 to 14,400 bps uncompressed

..... upto 19,200 bps with MNP-5 compression

..... upto 38,000 bps with V.22bis compression

Digital Interface. EIA RS232

Timing ..... Async or Sync

Telephone Line .... Direct connect in accordance with FCC

Stand-Alone 914 ... Width 6.25", Height 1.75", Depth 10.25"

Stand-Alone 914ADR. Width 6.25", Height 1.75", Depth 12.00"

RUL14 1) The 500/UXR and 500C/56KD series Data Service Unit (DSU) is designed for use on private line, 4-wire cable or DDS (DATAPHONE 2 Digital Service). It operates asynchronous at 1.2, 1.8, 2.4, 4.8, 9.6 and 19.2 Kbps and synchronously at 2.4, 4.8, 9.6, 19.2, 38.4 and 56 Kbps. The 500C/56KD only operates at 56Kbps synchronous. A maximum of 16 modems per shelf can be configured on the DS-6/R-1 Shelf.

2) The GDC 500 Mechanical Specifications are as follows:

Data Rate ..... 1200 to 19200 bps async

..... 2400 to 56,000 bps sync

Digital Interface ... EIA RS232

Timing ..... Async or Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot in DS-5 / DS-6 Shelf

RUL15 1) The 500G/UXR and 500F/AXR series Data Service Unit (DSU) is designed for use on private line, 4-wire cable or DDS (DATAPHONE 2 Digital Service) or GDS (Generic Digital Service). They operate full duplex, point-to-point or multipoint at data rates from 1200 to 56000 bps and full duplex point-to-point on 64000bps DDS circuits. The 500F/AXR features an LCD front panel for easy diagnostics and configuration.

2) The GDC 500 Mechanical Specifications are as follows:

Data Rate ..... 1200 to 19200 bps async

..... 2400 to 64,000 bps sync

Digital Interface ... EIA RS232, EIA RS530 and CCITT V.35

Timing ..... Async or Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot in DS-5 / DS-6 Shelf

RUL16 1) The DT 500A and DT 500N series Data Service Units (DSU) are designed for use on private line, 4W cable DDS (DATAPHONE 2 Digital Services) or GDS (Generic Digital Service). They operate Full Duplex, point-to-point or multipoint at data rates from 1200 to 56,000 bps on full duplex point-to-point at 64,000 bps. The 500N is provisioned for use on TOPS MPX applications only. The DT 500A and DT 500N are standalone units only.

2) The GDC 500 Mechanical Specifications are as follows:

Data Rate ..... 1200 to 19200 bps async

..... 2400 to 64,000 bps sync

Digital Interface ... EIA RS232, CCITT V.35

Timing ..... Async or Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 7.40", Height 1.40", Depth 11.00"

Card ..... One Card Slot the DS-6 Shelf

RUL17 1) The DC552A channel service unit is a two-port CSU designed for use on private line T1 and fractional T1 service. It is caompatable with all 551 type CSU's. The 552 has two V.35 DTE interface, an ASCII supervisory port, supports D4 superframe and ANSI T1.403 ESF, AMI or B8ZS encoding. A maximum of 8 CSU's per DS-6 shelf.

2) The GDC 500 Mechanical Specifications are as follows:

Data Rate ..... 1.544 Mbps (T1)

..... Fractional T1 rates of N x 56Kbps (N = 1 to 24)

Digital Interface ... CCITT V.35

Timing ..... Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot the DS-6 Shelf

RUL18 1) The 19202A is a two-port, time division multiplexer (TDM). Either or both ports may operate synchronous or asynchronously. Port data rates of 2.4, 4.8, 7.2, 9.6, 12.0, 14.4, 16.8 or 19.2 kbps are supported, with the only restriction being that the combined port rates cannot exceed the selected aggregate rate. 2400 bps ports can be optioned to 1800 and 1200 bps applications. Trellis encoding with error correction is supported. A maximum of 16 modems per shelf can be configured on the DS-6/R-1 Shelf.

2) The GDC 19202A Mechanical Specifications are as follows:

Data Rate ..... 19.2k, 16.8k, 14.4k, 9.6k bps

Digital Interface ... EIA RS232

Timing ..... Async or Sync

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot in DS-6 Shelf

RUL19 1) Provide one DPS-9 power supply for maintenance spares as per telco instructions.

RUL20 1) The NMS 510/IFP is designed for use on private line, 4-wire circuits or DDS (Data Phone 2 digital service). They operate full dulex,point to point or multi point at data rates from 1200 to 64,000bps. Maximum of eight (8) NMS 510/IFP per shelf can be configured on the DS-6 shelf.

2) The NMS 510/IFP Mechanical Specifications are as follows.

Data Rate .....
64k,56k,19.2k,9.6k,4.8k,2.4k,1.8k,1.2k bps

Digital Interface ... EIA RS232 and CCITT V.35

Timing ..... Async (1.2 to 19.2KBPS or Sync(2.4 to 64KBPS)

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... Eight (8) cards per "DS" Shelf.

Physical Interface....DB-25 pin via rear of DATACOMM Shelf

RUL21 1) The NMS 510 is designed for use on private line 4-wire circuits or DDS (Data phone 2 digital service). They operate full duplex, point to point or multipoint at data rates from 1200 to 64,000bps. Maximum sixteen (16) NMS 510 per shelf can be configured on the DS-6 shelf.

The NMS 510 can be ordered with an intelligent Front Panel (FP) option ease installation of the units.

2) The NMS 510 Mechanical Specifications are as follows.

Data Rate.....64k,56k,19.2k,9.6k,4.8k,2.4k,1.8k,1.2k bps

Digital Interface ... EIA/TIA-232E and CCITT V.35

Timing ..... Async or Sync.

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot the DS-6 Shelf

Physical Interface:

Rack Mount.....DB-25 Pin via rear of Datacomm (DS-6) shelf.

Standalone.....DB-25 Pin and 34 pin Winchester connectors.

RUL22 1) The DC VFAST(V.35) 28.8K provides up to 28.8 kbps VFAST or V.32 BIS Automode, other/ speeds from 300 bps upto 28.8 kbps. Alos it operate 2 wire or 4 wire full duplex, point to point, assync or sync operation. The DTE interface is EIA/CCITT V.35.Maximum sixteen (16) DC VFAST(V.35) 28.8k per shelf can be configured on the DS-6 shelf.

The DC VFAST(V.35) 28.8K Mechanical specifications are as follows.

Data Rate ..... 0 to 28.8k bps

Digital Interface ... EIA/CCITT V.35

Timing ..... Async & Sync.

Telephone Line ..... Direct connect in accordance with FCC

Stand-Alone ..... Width 10.90", Height 3.90", Depth 12.50"

Card ..... One Card Slot the DS-6 Shelf

Physical Interface:

Rack Mount.....DB-25 Pin via rear of Datacomm (DS-6) shelf.

Standalone.....DB-25 Pin connectors.

CHINA PACKAGING HARDWARE KITS

PEC CODE: NT0X71CB

CPC CODE: B0246159

RATING: STD

REPLACES: NT0X71CA

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: This document describes the equipment used to provide an aesthetic improvement for frame-based DMS equipment for the China market. This equipment provides a cabinet system facade required by the Guangdong Post Telecommunications Administative Bureau.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

Asia/Pacific
Canada
US

ISSUE AUTHOR: NTI: Deniece LAnd Dept. 3471 (PPK)

MAIN CONTACT: NTI: Deniece Land Dept. 3471 (PPK)

NT0X71CB EMA13-01-HDW-02 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 02 28	ECM 589 02	Introduce NT0X71CB which is the replacement for the NT0X71CA per EC 018-49063.
97 06 29	ECM 589 03	Correct CPC number per SR RR73161.
97 09 29	ECM 589 04	Add note for Line Card restrictions per PLM/Design.

The China Packaging Hardware Kits is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Door Kit, Grey, 23.6 "	NT0X71CB		1			AP
Cable Trough Shield Kit	NT0X49ED		1			RUL1
Cable Trough End Shield	NT0X49EH		1			RUL2
Cable Trough End Shield	NT0X49EJ		1			RUL2
Endguard, Grey, 23.6 inches	NT0X73AJ		1			RUL3
End Panel, Grey, 23.6 inches	NT0X73AK		1			RUL4
Main Cross Aisle (Variable)	NT0X75AH		1			RUL5
Cross Aisle Duct (37.5")	NT0X75AJ		1			RUL6
Cross Aisle Duct (25.5")	NT0X75AK		1			RUL7
Cross Aisle Duct (Variable)	NT0X75AL		1			RUL8
Cross Aisle Duct (Small)	NTRX55CU		1			RUL9
Cross Aisle Duct (Medium)	NTRX55CV		1			RUL10
Cross Aisle Duct (Large)	NTRX55CW		1			RUL11
Cross Aisle Duct (Rear/Vari)	NT0X24CX		1			RUL12
Cross Aisle Duct(Front/Vari)	NT0X24CY		1			RUL13
Cable Bay Frame Door Label	P0806548		1			RUL14
MSS Frame Door Label	P0806549		1			RUL14
DNI Frame Door Label	P0806550		1			RUL14
RME Frame Door Label	P0806551		1			RUL14
IRLCM Frame Door Label	P0806552		1			RUL14
PDC Frame Door Label	P0806553		1			RUL14
LCEI Frame Door Label	P0806554		1			RUL14
ILCE Frame Door Label	P0806555		1			RUL14
ITME Frame Door Label	P0806556		1			RUL14
LGEO Frame Door Label	P0806557		1			RUL14
ILGE Frame Door Label	P0806558		1			RUL14
DTEO Frame Door Label	P0806561		1			RUL14
IDTE Frame Door Label	P0806564		1			RUL14
IOE Frame Door Label	P0806566		1			RUL14
DSNE Frame Door Label	P0806567		1			RUL14
CCC Frame Door Label	P0806568		1			RUL14
SLC Frame Door Label	P0806573		1			RUL14
Mechanical Bay Frame Label	P0806589		1			RUL14
Blank Frame Door Label	P0808806		1			RUL14
PDTE Frame Door Label	P0809053		1			RUL14
Screw Kit	NT0X71DA		1			RUL15
Grey Cable Duct Support	NT0X75AM		1			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) Provide one NT0X71CB door kit per NT0X25AA/AH based framework when aesthetic enhancement is required. This kit provides both front and rear doors as well as required adapters and mounting hardware. When mounting the NT0X71CB on NT0X25AA common framework see rule 15.

For frames equipped with doors, in order to allow for Maximum for Maximum Traffic and worst case Short Customer Loops, the NT6X05BA line Drawer should only be provisioned with the NT6X17BA and/or NT6X18BA line cards. Thermal Dissipation testing is not complete on other line cards used in frames with door additions.

RULES:

AP 1) When PEC NT0X71CB is ordered, these items are provided.

RUL1 1) Provide one NT0X49ED Cable Trough Shield kit per frame when cables are being conveyed overhead using cable troughs. This kit provides an aesthetic cover for the front and rear of the cable trough.

RUL2 1) Provide one NT0X49EH Cable Trough End Shield at the end of each lineup when the NT0X75AH main cross-aisle duct is not being used. The NT0X49EH Cable Trough End Shield covers the open end of the outermost cable trough above the

endguard/panel. 2) Provide one NTRX49EJ Cable Trough End Shield at the end of the line-up when the NT0X75AH Main Cross Aisle Duct is being used to convey cables between gaps in the line-ups.

RUL3 1) Provide one NT0X73AJ End Guard at the end of each lineup that requires end aisle light inserts. When used immediately to the right of a line frame (when viewed from the front), maintain a 15 inch space between the end of the frame and any abstruction (wall, pillar, etc.) to permit the endguard to swing open for line card access. When mounting the NT0X73AJ end guard on frames equipped with line drawers, the minimum clearance to obstructions should be no less than 12 inches. For all non-line applications an 8 inch minimum clearance will suffice.

RUL4 1) Provide one NT0X73AK End Panel at the end of each lineup that does not require end aisle inserts (for example, blank end panels at breaks in the lineup). When used immediately to the right of a line frame (when viewed from the front), maintain a 15 inch space between the end of the frame and any abstruction (wall, pillar, etc.) to permit the end panel to swing open for line card access. When mounting the NT0X73AK end guard on frames equipped with line drawers, the minimum clearance to obstructions should be no less than 12 inches. For all non-line applications an 8 inch minimum clearance will suffice.

RUL5 1) Provide one NT0X75AH Main Cross Aisle Bridge to provide a single intra-aisle cable conveyance across a gap in the NT0X25AH frame lineup. The length of the NT0X75AH can be determined as follows:

Length = lineup gap + 3.5 inches.
Note: The lineup gap is measured from the base of each frame.

RUL6 1) Provide appropriate quantities of NT0X75AJ cross aisle cable duct to support cable conveyance between line-ups whose aisle width, measured from the base of each frame is 3.466 feet. The adjusted aisle width with the NT0X71CB facade in place will be 3.0 feet.

RUL7 1) Provide appropriate quantities of NT0X75AK cross aisle cable duct to support cable conveyance between line-ups whose aisle width, measured from the base of each frame is 2.466 feet. The adjusted aisle width with the NT0X71CB facade in place will be 2.0 feet.

RUL8 1) Provide appropriate quantities of NT0X75AL cross aisle cable duct to support cable conveyance between line-ups whose aisle width width cannot be accommodated by the NT0X75AJ/AK cable duct. The NT0X75AL variable length cable duct dimension can be determined as follows:

Length = Aisle width (measured from base of frame) - 4.1 inches.

RUL9 1) Provide appropriate quantities of NTRX55CU Cross Aisle Duct to support cable conveyance between C42 cabinets equipped with NTRX55BE cable troughs and lineups containing NT0X71CB enhanced aesthetics package. The NTRX55CU cross aisle duct-small accommodates aisle widths, measured from the base of opposing cabinets less the NT0X71CB facade, ranging from 23.00 to 31.23 inches.

RUL10 1) Provide appropriate quantities of NTRX55CV Cross Aisle Duct to support cable conveyance between C42 cabinets equipped with NTRX55BE cable troughs and lineups containing NT0X71CB enhanced aesthetics package. The NTRX55CV cross aisle duct-medium accommodates aisle widths, measured from the base of opposing cabinets less the NT0X71CB facade, ranging from 31.25 to 47.00 inches.

RUL11 1) Provide appropriate quantities of NTRX55CW Cross Aisle Duct to support cable conveyance between C42 cabinets equipped with NTRX55BE cable troughs and lineups containing NT0X71CB enhanced aesthetics package. The NTRX55CW cross aisle duct-large accommodates aisle widths, measured from the base of opposing cabinets less the NT0X71CB facade, ranging from 47.00 to 75.50 inches.

RUL12 1) Provide one NT0X24CX Cross Aisle Duct (Rear Access) to provide a single inter-aisle cable conveyance between a C42 cabinet utilizing the NT0X25AX cable trough and a lineup containing NT0X71CB frame treatments. The length of the NT0X24CX must be specified in the 411 Spec per the following:

Length = Aisle Width + 6.5 Inches
Note: The aisle width is measured from the base of each frame less the NT0X71CB facade.

RUL13 1) Provide one NT0X24CY Cross Aisle Duct (Front Access) to provide a single inter-aisle cable conveyance between a C42 cabinet utilizing the NT0X25AX cable trough and a lineup containing NT0X71CB frame treatments. The length of the

NT0X24CY must be specified in the 411 Spec per the follow-ing:

Length = Aisle Width + 2.5 Inches
Note: The aisle width is measured from the base of each frame less the NT0X71CB facade.

RUL14 1) Provide one door label per frame, as needed. Reference NT0X60 for more label information.

RUL15 1) Provide one NT0X71DA screw kit when the NT0X71CB facade is applied on NT0X25AA framework. (The NT0X25AA common frame-work is used primarily for raised floor cable access).

RUL16 1) Provide appropriate quantity of NT0X75AM grey cable duct support to support the NT0X75AH main cross aisle duct on frame cable troughs.

MISCELLANEOUS APPLIQUE EQUIPMENT SHELF NT5X95AA

RATING: To be rated A&M.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This shelf provides housing for the miscellaneous applique circuit packs.

REFERENCE DOCUMENTATION: MS5X95AA 01 01

The Miscellaneous Applique Equipment Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Misc Applique Eqpt Shf Assy	NT5X9502		1	XX		AP
Multioutput Power Converter	NT2X09AA		1	XX	01	RUL1
Alt Use Trk Applique Ckt	NT5X97AA			XX	03-10	RUL2
Alt Use Trk Applique Ckt	NT5X97AA			XX	11-19	RUL2
Filler Face Plate	NT0X50AC			XX	03-19	RUL3
Multioutput Power Converter	NT2X09AA		1	XX	20	RUL1
Filler Face Plate	NT0X50AE			XX	1,20	RUL4
Designation Label (NT5X97AA)	P0661414			XX		RUL5

NOTES:

1) "XX" in SHF POS can be one of 65, 51, 32, 18, 04.

2) The sum total of the maximum power dissipation for all cards provisioned on any one shelf shall not exceed 150 watts (i.e. 5X97AA - 5.2 watts).

RULE:

AP 1) When PEC NT5X95AA is ordered, these items are provided.

RUL1 1) Provide one (1) NT2X09AA, Multioutput Power Converter in card position 1 if there are any Applique CP’s on slots 3 to 10.

2) Provide one (1) NT2X09AA, Multioutput Power Converter in card position 20 if there are any Applique CP’s on slots 11 to 19.

RUL2 1) Provide up to eight (8) Applique CP’s (NT5X97AA) if slot 1 is equipped with NT2X09AA, Multioutput Power Converter.

2) Provide up to nine (9) Applique CP’s (NT5X97AA) if slot 20 is equipped with NT2X09AA, Multioutput Power Converter.

3) The Alternate Use Trunk Applique Circuit is used for transferring the common four wire transmission facilities between the alternate use of FX and tie trunks.

RUL3 1) Provide Filler Face Plates in positions 03-19 that are not equipped with the Applique Circuit Packs, NT5X97AA.

RUL4 1) Provide Filler Face Plates in positions 1, 20 that are not equipped with the Multioutput Power Converter, NT2X09AA.

RUL5 1) Provide one Designation Label for each Applique Circuit Pack, NT5X97AA.

MLT APPLIQUE SHELF

PEC CODE:	NT3J00BA
CPC CODE:	A0327284
RATING:	STD
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	MLTS
ENGINEERING DESCRIPTION:	NT3J00BA is a shelf assembly which houses up to ten (10) circuit packs used for loop testing purposes.
REFERENCE DOCUMENTATION:	SL3J00BA 01 08
MARKETS:	Applicable markets: Canada US CALA Asia/Pacific Europe

ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Steve Martin Dept. 3471 (PPK)

NT3J00BA EMA13-01-MLTS-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
93 12 22	ECM 357 02	Slot 05 of the NT3J00BA MLT Applique Shelf is removed as a valid slot due to the presence of a support bracket.
95 01 26	ECM 357 03	Change rules to indicate that signature cards are not required for Prism Systems DRTUs used with CALRS Admin System version 7 or higher.
95 08 25	ECM 357 04	Added NTAN60AA to RUL2.
96 02 19	ECM 357 06	Remove slot mounting location 11 from NT3J00BE on shelf to answer SR60104.
97 03 05	ECM 602 29	Add CMIS to Note 1 and correct fusing requirements in Note 2 per Design documentation.
97 08 29	ECM 602 33	Update CP slot positions per EC 018-51221.
97 10 08	ECM 602 34	Correct RUL1)2.

The MLT Applique Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MLT Power Supply CP	NT3J00BC		1		01	AP
MLT Applique Ckt Pack	NT3J00BB			XX	03,05,07, 09,13,15, 17,19,21	RUL1
Signature Acc w/Off Hook Routing	NT3J00BE			XX	03,05,07, 09,11,13, 15,17,19, 21	RUL2

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 shelf position can be any valid shelf position on the MIS Frame or CMIS Cabinet. See Engineering Manual Sections for NT0X02AB, NTZZ18AB, NTRX56AA, and NTZZ47PC for more details.

2) The NT3J00BA Applique Shelf is fused at 1 1/3 amps in the MIS Frame and 2 amps in the CMIS Cabinet, with power terminations at TB1-1 (-48V) and TB1-2 (GRD) using 22 AWG wire.

3) The NT3J00BA Card Cage is cabled to the distributing frame via four (4) NT0X26UE 50 pin connectorized cables. These cables terminate on the following shelf connectors:

   Connector J1 - cabling circuits 01-06, slots 03,05,07
   Connector J2 - cabling circuits 07-12, slots 09,11,13
   Connector J3 - cabling circuits 13-18, slots 15,17,19
   Connector J4 - cabling circuits 19-20, slots 21

   Leads for each individual circuit are T, R, TT, RR, SD1, SD2, SD3, SD4.

4) An 812A cable should also be provided from the NT3J00BA card cage to the DF for the alarm leads (NO,C).

RULES:

AP 1) When PEC NT3J00BA is ordered, these items are provided.

RUL1 1) The Applique Circuit Pack (NT3J00BB) contains two (2) circuits. One circuit is required for any interface test multiple (NT2X90AD) which utilizes Mechanized Loop Testing (MLT) on subscriber carrier modules SMU, SMS and SMR.

2) The NT3J00BA Card Cage houses nine (9) NT3J00BB Applique Circuit Packs. The cards mount in odd slots 03-09, 13-21.

3) A signal Distribution circuit, seven points, (NT2X57AA) is required for each NT3J00BB circuit provisioned to operate relays on the applique CP.

RUL2 1) Provide one (1) NT3J00BE Signature Off-Hook Routing Card for up to two (2) NT0J04AA/AB/NTAN60AA Digital Remote Test Units (DRTU).

   Note: Signature cards are NOT required for Prism Systems DRTUs (NTAN60AA) used with CALRS Admin System version 7 or higher, and Split Connect & Test feature is activated.

2) Provide the circuit pack (NT3J00BE) to enable the Local Test Cabinet (LTC) to set up a nonmetallic, voice frequency DRTU control path via Off-Hook Routing signaling. This PCB is equipped with two (2) circuits.

3) If the DRTU is used to test co-located pair gain and digital remote systems, then separate verticals in the host must be assigned and separate signature circuits must be

used - one with a remote signature for the extended vertical serving the digital remote and one with a carrier signature for the vertical assigned to the carrier.

LYNCH AUTOMATIC PROTECTION SWITCH B302MA09

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The B302MA09 provides protection for DS-1 spans for up to 4 RCTs (DMS-1R). Each shelf can house two(2) Alarm cards (B302AL52) and twelve (12) span switch cards (B302SS51).

REFERENCE DOCUMENTATION: N/A

The Lynch Automatic Protection Switch is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Span Switch Cards(GRP.#1)	B302SS51			XX	2-4	RUL1
Span Switch Cards(GRP.#2)	B302SS51			XX	5-7	RUL1
Span Switch Cards(GRP.#3)	B302SS51			XX	9-11	RUL1
Span Switch Cards(GRP.#4)	B302SS51			XX	12-14	RUL1
Alarm Cards	B302AL52			XX	1,8	RUL2

NOTE:

1) "XX" in shelf position can be any valid shelf position on NT0X02AB.

2) The current drain for a fully configured B302MA09 shelf is 1.15 amps. The shelf requires a 5 amp fuse at the MIS frame FSP or PDC.

RULE:

AP 1) When PEC B302MA09 is ordered, these items are provided.

RUL1 1) Provision three(3) B302SS51 span switch cards for each RCT. These span switch cards will be considered as a group. Group#1 will be card slots 2-4, Group#2 will be card slots 5-7, Group#3 will be card slots 9-11, Group#4 will be card slots 12-14.

2) The first card slot of each group is reserved for the Protection Span switch; the second card slot of each group is reserved for the Highest priority span (Span 'A'). The third card slot of each group is reserved for Span 'B'.

RUL2 1) Provision one(1) B302AL52 Alarm Card for every two(2) RCTs. One (1) Alarm card for every two(2) groups of span switch cards. Alarm card #1 for Group numbers 1 & 2 and Alarm card #2 for Group numbers 3 & 4. Mount Alarm card #1 in slot pos 1 and Alarm card #2 in slot pos 8.

2) Provision one(1) NT0X10AA scan card for every seven (7) B302AL52 Alarm cards provisioned.

TELLABS 292R CONFERENCE/ALERTING SYSTEM 292BR-1

RATING: Standard

ABBREVIATION NAME:

TL21 - when provisioned as a 10-Line 292 System.

TL22 - when provisioned as a 20-Line 292 System.

TL23 - when provisioned as a 30-Line 292 System.

TL24 - when provisioned as a 40-Line 292 System.

TL25 - when provisioned as a 50-Line 292 System.

TL26 - when provisioned as a 60-Line 292 System.

ENGINEERING DESCRIPTION: The Tellabs 292R System is a multishelf multistation ringdown telephone conference circuit designed primarily for use in local emergency reporting and alerting applications and in business conferencing applications. The 292R System provides access up to a maximum of 60 local stations either from a dedicated telephone (i.e., master station) or from any local telephone line via a listed directory number.

REFERENCE DOCUMENTATION: N/A

The Tellabs 292R Conference/Alerting System is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
291R/292R Common Eqpt Shelf	80-5033		1	x		AP
Tellabs Bypass Plug	50-4001		1	x		AP
2W ARD Conf Orig Line Ckt	9293			x	1-2	RUL1
2W ARD Conf Trk Access Ckt	9296			x	1-5	RUL2
2W Conf Amplifier module	9294			x	6	RUL3
Tellabs 291/292 Tone Supply	9121			x	7	RUL4
Tellabs 291/292 Ring Timer	9132			x	8	RUL5
Telab 292 Ringing Interrupt	9003A			x	9	RUL6
Tellabs 292 Long Timer	9133			x	10	RUL7
# 1-Digit DTMF Dial Decoder	6072			x	11	RUL8
1-Digit DTMF Dial Decoder	6073			x	11	RUL8
Tellabs 291/292 Fuse Module	9021			x	12	RUL9
292 10-Line Station Shelf	80-5034		1	x		AP
Tellabs 291/292 Fuse Module	9021			x	12	RUL9
Tellabs 291/292 Line Ckt	9291			x	1-10	RUL10
Tellabs 292 Line Exp. Shelf	292DR			x		RUL11
Tellabs 291/292 Fuse Module	9021			x	12	RUL9
Tellabs 291/292 Line Ckt	9291			x	1-10	RUL10
19 to 26 Inch Mtg Adapter	P0701391					RUL12

FLAGS:

MD. Replace by 6073.

NOTES:

1) The 292BR-1 requires 13 inches of rack space, 6-inches for each shelf and 1-inch cooling space in between.

2) The 'x' in the shelf position column indicates any MIS frame position with sufficient vertical space to mount the six (6) inch shelf and one (1) inch cooling space as required.

RULES:

AP 1) When PEC 292BR-1 is ordered, these items are provided.

RUL1 1) Provide one 9293 (2Wire Automatic Ringdown (ARD) Conference Originate Line Circuit Module) for manual conference origination. Slot #1 will be empty with manual only conferencing.

2) For combined automatic and manual conference origination, provide one 9293 in slot #1 and one 9296 (Trunk Access Module) in slot #2. Refer to RULE #2 Below for automatic only conferencing.

RUL2 1) Provide one (1) 9296 (Trunk Access Modules) in slot #1 for Automatic Conferencing, however, two (2) 9296s in slots 1&2 is strongly recommended.

2) For combined automatic and manual conference origination, provide one 9293 in slot #1 and one 9296 (Trunk Access Module) in slot #2. Refer to RULE #1 above for manual only conferencing.

3) Provide three (3) additional 9296 (Trunk Access Modules) in slots 3, 4, or 5 to allow three callers access to the Remote-Answer capabilities of the 292-System. Provisioning one 9296 in slot #3 would provide one caller access and two 9296s in slots 3&4 will provide two callers access to the Remote-Answer capabilities of the 292-System.

RUL3 1) Provide one 9294 (2Wire Conference Amplifier Module) in slot #6 to provide amplification for the voice path signals of all the conference lines that are active.

2) The 9294 is a summing amplifier that provides the necessary gain and distributes the summed signals to all active conference lines.

RUL4 1) Provide the 9121 (Tone Supply Module) in slot #7 to supply the required ringback tone the 292-System conferees via the 9291 Line circuit.

RUL5 1) Provide one 9132 (Ringing Timer Module) in slot #8 to provide control timing for the 9003A - Ringing Interrupter Relay Module in the form of 1-second signals.

2) The 9132 also provides an adjustable timeout circuit to control the length of time the station will ring if not answered. This timeout circuit can also be used to force the

conference idle after a predetermined timeout interval has expired.

RUL6 1) Provide the 9003A (Ringing Interrupter Relay Module) in slot #9 to work in conjunction with the 9132 in slot #8; together they enable the harmonic or decimonic ringing at the conferee stations. In addition, this 9003A provides fault detection circuitry for external fault indications such as a shorted cable or loss of ringing generator voltage.

RUL7 1) Provide one 9133 (Long Interval Timer) to enable the 292-System to start a community siren and to control the duration of its operation.

2) The 9133 can be optioned for three (3) modes of operation: (1) Manual, (2) Fixed Time Interval, and (3) Fixed Time Interval with Override.

Manual: The siren operates only while the button is depressed.

Fixed Time Interval: The siren starts when the pushbutton is depressed and continues to operate until the predetermined interval has expired.

Fixed Time Interval with Override: The siren starts when the pushbutton is depressed and continues until the time interval has expired or until the pushbutton is depressed a second time.

RUL8 1) Provide one 6073 (Single Digit DTMF/Dial Decoder Module) in slot #11 in conjunction with the 9133 in slot #10 to provide any conference station in the system equipped with a DTMF telephone with the means to start a community siren by simply pressing the asterisk (*) pushbutton on the phone. The status of 6072 has been changed to manufacture discountinued.

2) In addition to the above, the 6073 module may be used to zone the 292-System lines. The master station/dispatcher may selectively signal up to 11 groups of stations. This feature permits the dispatcher to call only those members required for a particular emergency (for example paramedics can be assigned to one group, firemen to another group, other emergency members to another group, and so on).

RUL9 1) Provide one 9021 (Fuse Module) in slot #12 for the Common Shelf and each station shelf provided.

2) The 9021 is equipped with 13 Buss GMT-Type fuses rated at 0.25 Amps each, arranged in two groups - one of 6 fuses, and one of 7.

RUL10 1) Provide up to 10 9291 (2Wire Automatic Ringdown (ARD) Conference Terminate Line Circuit Module) in slots 1 thru 10 for the always provided station shelf and each expansion shelf provided.

RUL11 1) The 292BR-1 host system is always provided with the capability to mount up to 10 conference lines. Provide one 292DR per 10 additional conference lines required by the Telco. Provide the 292DR in cases where the Telco require 11 or more conference lines. Up to five 292DRs may be provided with the 292BR-1 system.

2) The 292DR requires six (6) inches of vertical frame mounting space.

RUL12 1) Provide two each P0701391 mounting adapters for each 292BR-1 provided, and two more for each 292DR provided.

UDS DATA SET MODULE SHELF (RM16M)

PEC CODE: 62005220

CPC CODE: A0344310

RATING: Standard

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: DSM

ENGINEERING DESCRIPTION: The Data Set Module Shelf houses up to sixteen data set modems per office requirements, and is equipped with 2 power supplies for redundancy. The unit is 7.0 inches high, 10.75 inches deep and 23 inches wide. The shelf accepts various types of direct connect and leased line modems. The different series of UDS modems may be mixed within the shelf in any manner desired.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: Pradyumn Joshi Dept. 3471 (PPK)

MAIN CONTACT: NTI: Pradyumn Joshi Dept. 3471 (PPK)

62005220 EMA13-01-UDS-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 11 03	ECM 633 02	Changed RUL2 by removing reference to "maximum 16 data set per shelf" since this RUL also applies to the stand-alone units. Information concerning the number of data set units that can be mounted per shelf is in note 1.
93 01 22	ECM 633 03	Added the UDS 202T modem to the EMS. The UDS 202T performs the same functions as the 202S/T modem but can be rack mounted and operate at 1800 bps. Both the rackmount and stand-alone versions are being introduced.
93 04 14	ECM 633 05	Correct pec code errors
93 05 26	ECM 633 06	Make Corrections to Pec codes and Desc
93 08 30	ECM 633 07	MD modems for UDS
93 11 22	ECM 633 08	Add vendor part numbers
94 02 01	ECM 633 09	ET45663 correct cpc codes and ad pec to flaglist table ET18469 MD UDS A829-L4 modem
94 03 21	ECM 633 10	Correct rule associations in EM sections 62005220
95 04 17	ECM 633 12	Add new modems and furnish replacement modems for MD modems.
95 10 30	ECM 633 13	Update MD status and furnish replacement for MD Modems. Correct stand alone and rack mount Modems info.for MD modems.
96 02 12	ECM 633 14	Update MD status and furnish replacement for MD Modems.
97 04 23	ECM 633 15	Update MD status and furnish replacement for MD Modems.

The UDS Data Set Module Shelf (RM16M) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Spare Pwr Supply For Mdm Shf	A0354088			X	1-16	RUL1
sep						
# 108	(A0336305) 61035121			X	1-16	RUL2
# 201B/C	(A0336308) 62015166			X	1-16	RUL3
201BC/AS	(A0352863) 52015202			X	1-16	RUL3
# 202S/D	(A0336309) 62025211			X	1-16	RUL4
# 202ST	(A0336338) 62025276			X	1-16	RUL4
# 202S/T-R	(A0361382) 62025234			X	1-16	RUL4
202T	(A0355568) 62025209			X	1-16	RUL4
# 202T W/829	(A0600654) 61045020			X	1-16	RUL4
# 208A/B	(A0344314) 62085083			X	1-16	RUL5
# 208B/D	(A0376141) 62085099			X	1-16	RUL5
2860	(A0614310) 5208515200010			X	1-16	RUL5
# 212A	(A0336307) 62125086			X	1-16	RUL6
# 212A/D	(A0336306) 62125084			X	1-16	RUL6
# 224A	(A0336336) 62255011			X	1-16	RUL7
# 224A/D	(A0336337) 62245010			X	1-16	RUL7
# 224AT/D	(A0360868) 62245032			X	1-16	RUL7
2440	(A0385557) 52245226			X	1-16	RUL7
# D9.6	(A0344316) 64965007			X	1-16	RUL8
# 720DDB	(A0344438) 61025082			X	1-16	RUL9
# A829-L4	(A0318216) 61045001			X	1-16	RUL10
# D56	(A0336873) 64565007			X	1-16	RUL11
# DDS/MR	(A0360763) 64565022			X	1-16	RUL12
# DDS/MR1	(A0379708) 64565080			X	1-16	RUL12
# DDS/MR1	(A0383083) 54565084			X	1-16	RUL12
# DDS/MR1 V.35	(A0381121) 64565077			X	1-16	RUL12
# DDS/MR1 ADPT	(A0379708) 64565080			X	1-16	RUL12
# DDS/MRS	(A0609599) 5456522900010			X	1-16	RUL12
DDS/MRS DUAL	(A0609601) 5456522900020			X	1-16	RUL12
# 9648T	(A0352841) 62095131			X	1-16	RUL13
# V.3225	(A0369783) 62095137			X	1-16	RUL14
# DU100-V.35	(A0367939) 64565045			X	1-16	RUL15
# DU100-RS232	(A0367942) 64565042			X	1-16	RUL15
V.3229	(A0600472) 5209527100020			X	1-16	RUL16
DU170 V.35	(A0634633) 64565179			X	1-16	RUL17
DU170 RS-232	(A0634623) 64565177			X	1-16	RUL17

UDS Standalone Modems:

# 108	(A0336488) 61035119					RUL2
# 201B/C	(A0336491) 62015141					RUL3
# 201BC/AS	(A0352864) 52015201					RUL3

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
#	202S/D (A0336498)	62025199					RUL4
	202S/T (A0336496)	62025278					RUL4
#	202S/T-R (A0361381)	62025281					RUL4
#	202T (A0352933)	52025217					RUL4
	202T (A0301003)	62025197					RUL4
#	202T W/829 (A0378686)	61045018					RUL4
#	208A/B (A0344317)	62085064					RUL5
#	208B/D (A0376142)	62085096					RUL5
#	2860 (A0614309)	5208515300010					RUL5
#	212A (A0336489)	62125069					RUL6
#	212A/D (A0336490)	52125081					RUL6
#	224A (A0326758)	62245004					RUL7
#	224AT/D (A0360869)	62245030					RUL7
	2440 (A0360824)	52245118					RUL7
#	D9.6 (A0344315)	64965004					RUL8
#	720 DDBU (A0336899)	61025047					RUL9
#	D56 (A0336874)	64565005					RUL11
#	DDS/MR (A0355564)	64565021					RUL12
#	DDS/MR1 (A0385556)	5456508300010					RUL12
	DDS/MRS (A0609602)	5456523000010					RUL12
	DDS/MR1 RS232/V.35 (A0651308)	64565158					RUL12
	DDS/MRS ADPT (A0609600)	5456518700010					RUL12
#	DDS/MRS RS530 (A0614306)	5456518700030					RUL12
	DDS/MR1 RS530 (A0600483)	64565072					RUL12
#	V.3225 (A0369788)	62095136					RUL14
#	DU100 V.35 (A0367941)	64565047					RUL15
#	DU100 RS232 (A0601199)	64565044					RUL15
#	DU100 RS530 (A0367943)	64565043					RUL15
	V.3229 (A0600471)	5209526200020					RUL16
	DU170 V.35 (A0634629)	64565176					RUL17
#	DU56 V.35 (A0620465)	6496505600020					RUL17
	DU170 RS232 (A0633604)	64565174					RUL17
	DU170 RS530 (A0636941)	64565175					RUL17
#	DU56 RS232 (A0633610)	6496505600010					RUL17
#	DU56 RS232 (A0620466) (For frame Relay)	6496505600030					RUL17

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
A0336899		No replacement
A0361382	MD	No replacement
A0336336	MD	A0385557
62245010	MD	A0385557
A0360868	MD	A0385557
A0336308	MD	A0352863
A0360763	MD	No Replacement
A0600654	MD	No Replacement
A0336491	MD	A0352864
A0361381	MD	No replacement
A0326758	MD	A0360824
A0360869	MD	A0360824
A0336305	MD	No replacement
A0336306	MD	A0385557
A0336309	MD	No replacement
A0336307	MD	A0385557
A0344316	MD	No Replacement
A0336338	MD	A0355568
A0336488	MD	No replacement
A0336498	MD	No replacement
A0336489	MD	A0360824
A0336490	MD	A0360824
A0344315	MD	A0651308
A0352864	MD	No Replacement
A0355564	MD	A0609600
A0352933	MD	A0301003
A0336874	MD	A0651308
A0369783	MD	A0600472
A0381121	MD	A0614307
A0383083	MD	No replacement
A0379708	MD	No Replacement
A0344438	MD	No replacement
A0344314	MD	A0614310
A0376141	MD	A0614310
A0369788	MD	A0600471
A0385556	MD	A0651308
A0336873	MD	No Replacement
A0344317	MD	A0614309
A0376142	MD	A0614309
A0318216	MD	No replacement
A0379708	MD	No Replacement
A0352841	MD	No Replacement
A0614309	MD	No Replacement
A0378686	MD	No Replacement

PEC	RATING	REPLACED BY PEC
A0367939	MD	A0634633
A0367941	MD	A0634623
A0367941	MD	A0633610
A0601199	MD	A0633604
A0601199	MD	A0633610
A0367942	MD	A0634629/A0620465
A0609599	MD	No Replacement
A0620465	MD	A0634629
A0620466	MD	A0649475
A0633610	MD	A0633604
A0614306	MD	A0600483
A0367943	MD	A0636941

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 one (1) UDS 23" DC REDUNDANT MODEM SHELF RM16M (A0344310) to transmit and receive binary serial data for up to 16 remote terminal requiring rates above 300 Bits Per Second (BPS) up to 9600 BPS over private or dial-up line circuits.

   A Maximum 16 Data Sets per shelf; Maximum of two (2) Data Set shelves per MIS frame when shelf is powered from FSP; When powered directly from the PDC space availabity is the limiting factor.)

2) "X" can be any shelf position providing nine (9) inches of consecutive vertical space; 1" above and below the unit for cooling and 7" for the unit itself.

3) The UDS RM-16M shelf is a 23-inch rack mountable housing, which occupies 7 inches of vertical space and will house up to sixteen card modems.

4) All card modems require (1) one card slot, unless otherwise noted.

5) Public Switch Telephone Network (PSTN), Private Line (PL), or Digital Data Service Network (DDS) modem applications may be intermixed on a single shelf, using the UDS A829L4 ADS units or the RM46A1 shelf (See RM46A1 Engineering Manual Section) or provide equipment per RUL13 to mount in the RM16M shelf.

6) Mounting adapters (26") are always provided with the RM-16M 23".

7) Provide as spare equipment per customer requirements.

8) A normally closed (NC) alarm contact is provided as a power failure indicator. The supplies require DC battery (-48 +/-4V) with a maximum input current of 3.0 amps when shelf is fully loaded.

9) Provide two 3.0 amp fuses per RM16M Data Set Shelf.

10) Provisioning per Note 10 is no longer required as UDS has introduced a more cost effective method of providing loopback on PLL applications. However, the original information is retained below for historical purposes.

    Provide one Rixon Data Auxiliary Set (RM46A1) Shelf and C829CR Cards on a one to one basis in conjunction with the UDS RM16 Shelf and Modem Cards when Modems are to be used in a Dedicated Mode. Provide 1 LaMarche Inverter Unit - per 4 RM46A1 shelves.

11) It is recommended that rack mounted modems be utilized at every DMS because this is generally the most financially and physically economical configuration, and it provides a tidier installation.

12) One (1) DPS-9 Power Supply can power 16 slot positions, but two (2) are provided per shelf.

RULES:

AP 1) When PEC 62005220 is ordered, these items are provided.

RUL1 1) Provide one (1) A0354088 power supply for maintenance spares as per telco instructions.

RUL2 1) Provision the UDS 108 modem for dedicated 300bps connections for peripheral equipment, (printers, terminals, etc).

2) The UDS 108 Modem Mechanical Specifications are as follows:

Digital Interface .. EIA RS-232

Analog Connection .. 6 pin modular jack
Stand-Alone .... Width 7", Height 2.25", Depth 9.6", Wt 2lbs 8ozs
Card ..... One Card Slot in RM16M Shelf

Power Requirements . 115 VAC +/- 10%, 47 to 63Hz, 12 Watts

RUL3 1) The UDS 201B/C and 201BC/AS may be used as a Private Leased Line modem or Dial-Up modem for applications requiring 2400bps Synchronous operation. However, the 201B/C has been Manufacture discontinued. It is replaced by the 201BC/AS which may be used for both Synchronous and Asynchronous 2400bps operation.

2) The UDS 201B/C and 201BC/AS Modem Mechanical Specifications are as follows:

Digital Interface .. EIA RS-232

Analog Interface ... 6 pin modular jack cable always provided
Stand-Alone ..... Width 7", Height 2.25", Depth 9.6", Wt 2lbs 8ozs
Card ..... One Card Slot in RM16M Shelf

Power Requirements . 115 VAC +/- 10%, 47 to 63Hz, 12 Watts

RUL4 1) Provision the 202S family of modems for Private Leased Line (PLL) 1200bps applications as follows:

* 202S/D -- MD’d

Provision the 202S/D for dial-up terminal applications requiri asynchronous operations at 0-1200bps or 600-1200bps synchronou operation, auto answer and auto dial capability, and page refr the communication path exceeds 1200 ft.

* 202S/T

Provision the 202S/T for dedicated Full Duplex 4W or Dial Up H Duplex 2W terminal applications requiring asynchronous communi 0-1200 baud operation, automatic answer only operation, and pa refresh,
where the communication path exceeds 1200 feet.

* 202S/T-R -- MD'd

Provision the 202S/T-R for all application suitable for the 20 plus the requirement for a Reverse/Secondary Channel capabilit secondary channel is configurable as follows:

- asynchronous communications 0-1200 baud operation,
- Secondary Channel where baud rate is selectable from 5, 0-75 and 0-150 baud
- and page refresh

in applications where the communications path exceeds 1200 fee

* 202T

Provision the 202T for applications for operation up to 1200bp over unconditioned lines or up to 1800bps with C2 conditined l

- asynchronous communications 0-1800 baud operation,

* 202T/829

Provision the 202T/829 for applications similar for the 202T. the 202T/829 includes an L4 type line termination unit to assu accurate data transfer over leased lines.

- asynchronous communications 0-1800 baud operation,

2) The UDS 202S family (202S/D, 202S/T, 202T, and 202S/T-R) Mechanical Specifications are as follows:

Digital Interface .. EIA RS232 and CCITT V.24

Telephone Line ..... Direct connect in accordance with FCC
Interface ..... Regulation Part 68. Eight (8) Foot cable always provided
Stand-Alone ..... Width 7", Height 2.25", Depth 9.6", Wt 2lbs 8ozs
Card ..... One Card Slot in RM16M Shelf

RUL5 1) provision the 208 family of modems for 2 or 4 wire dial-up of leased line applications.

* 208A/B

  Provision the 208A/B for dedicated Full Duplex 4W or Dial-Up half Duplex 2W terminal applications requiring synchronous communications 4800 baud operation, and page refresh, where th communication path exceeds 1200 feet.

* 208B/D

  Provision the 208B/D for 4800bps Full Duplex 4W or half duplex 2-wire applications requiring synchronus communications. This also works in dial-up and 2 or 4-wire leased line applications the auto answer feature.

* 2860

  The 2860 is both Bell 208A/B and 201B/C compatible. This modem is designed for synchronus/asynchronus operations at 4800 and bps over 2-wire dial-up and 2 or 4-wire leased lines.

2) When provisioning this modem or any other modem for dedicated/Private Leased Line operation, special circuits are needed to interface between the modem and the cable pair. These circuits are referred to as Auxiliary Data Sets (ADS) (See RUL13).

3) The UDS 208A/B Mechanical Specifications are as follows:

Digital Interface .. EIA RS232 and CCITT V.24

Telephone Line
Interface ..... Direct connect in accordance with FCC Regulation Part 68. Eight (8) Ft. Cable always provided
Stand-Alone ..... Width 7", Height 2.25", Depth 9.6", Wt 2lbs 8ozs
Card ..... One Card Slot in RM16M Shelf

Power Requirements . 115 VAC ^{1}10%, 50 to 60Hz, 10 Watts

RUL6 1) Provision the UDS 212 modem family as follows:

* 212A -- MD’d

Provision the 212A for Dial-up terminal applications requiring asynchronous communications 0-300/1200 baud Dial-up operation automatic answer capability, where the communication path exce feet.

* 212A/D

Provision the 212A/D for Dial-Up terminal applications requiri asynchronous communications 0-1200 baud Dial-UP operation and automatic answer/dial capability, where the communication path 1200 feet.

2) The UDS 212A and 212A/D modem Mechanical Specifications are as follows:

Digital Interface .. EIA RS232 and CCITT V.24

Telephone Line
Interface ..... Direct connect via Programmable data jacks (RJ45S) or Permissive "Voice" jacks (RJ11C) in accordance with FCC Regulation Part 68. Eight (8) Ft. Cable always provided
Stand-Alone ..... Width 7", Height 2.25", Depth 9.6", Wt 2lbs 10ozs
Card ..... One Card Slot in RM16M Shelf

Power Requirements . 115 VAC +/- 10%, 50 to 60Hz, 4 Watts

RUL7 1) These modems operate like the 212 modem family and is often provisioned in lieu of the 212A, A/D, and Intelligent/Executive models, due to their increased flexibility in operating speeds. Provision the UDS 224 modem family (224A, 224A/D, 224AT/D, and 2440) as follows:

The UDS 224A, 224A/D, and AT/D modem have been MD'ed. On new jobs provision the UDS 2440 for all applications suitable for the 224 f

* 224A - Status MD'ed Effective Feb 92

Provision the 224A for Dial-Up terminal applications requiring asynchronous 0-300 bps or synchronous communications 1200-2400 operation and an auto anwer capability, where the communicatio exceeds 1200 feet.

* 224A/D - Status MD'ed Effective Feb 92

Provision the 224A/D for any application suitable for the 224A requires and Automatic Answer and dial capability.

* 224AT/D - Status MD'ed Effective Feb 92

  Provision the 224AT/D for any application suitable for the 224 that requires the modem to be software configurable via the Ha Command Set.

* 2440

  Provision the UDS 2440 for any application suitable for the 22 that requires the Hayes compatible AT Command Set, CCITT V.22 (except at 600 bps), BELL 103, or BELL 212A communication prot This
  modem supports MNP Level 2 through 5.

4) The UDS 224A, 224A/D, 224AT/D, and 2440 Mechanical Specifications are as follows:

Digital Interface	
224 A/AD/ATD	EIA RS232 and CCITT V.24
2440	EIA RS-232 at DTE, V.22 bis, V.22 (execpt at 600 bps), MNP Levels 2 through 5.
Telephone Line Interface	Direct connect via Programmable data jacks (RJ45S) or Permissive "Voice" jacks (RJ11C) in accordance with FCC Regulation Part 68. Eight (8) Foot Cable always provided
Stand-Alone	Width 7", Height 2.25", Depth 9.6" Wt 2lbs 10ozs
Card	One Card Slot in RM16M Shelf

Power Requirements . 115 VAC ^{1}10%, 50 to 60Hz, 4 Watts

RUL8 1) Provision the UDS Digital Data Service (DDS) D9.6K for applications requiring digital transmission at 9.6K, 4.8K, or 2.4K bps.

2) Typical applications for this device are (1) Local Area Data Channel (LADC) and (2) Limited Distance Modem (LDM).

3) The telco must provide a RJ48 8-pin modular jack (RJ45 type) or a 42A Block - both types have connections for the transmit and receive pair; to interface the combination DSU & CSU modem from UDS.

4) When the D9.6K Modem is used as Limited Distance Modem (LDM) the maximum distance between the modems is determined by the wire size. Refer to the Chart below:

Wire Guage	Data Rate	Distance
19	9.6K bps	15 miles
19	4.8K bps	19 miles
19	2.4K bps	25 miles
26	9.6K bps	5.5 miles
26	4.8K bps	7 miles
26	2.4K bps	10 miles

Unloaded Metallic Circuits; 19 to 26 gauge

5) The UDS D9.6K DDS Modem Mechanical Specifications are as follows:

DTE Interface ..... EIA RS232
Stand-Alone ..... Width 7", Height 2.257", Depth 9.6", Wt 2.5lbs
Card ..... One Card Slot in RM16M Shelf

Power Requirements . 115 VAC 60Hz, 4 Watts

RUL9 1) The UDS 720DDB is Manufacturer Discontinued, however, the following information is retained for historical purposes:

2) Provision the 720 Dual Dial Backup Unit (DDBU) for operation with EADAS or SCC Links with the DDBU in secure mode.

3) The UDS 720 DDBU is not end to end compatible with AT&T 48ER1 or 38FR1 dial backup units -- in cases where this mixed interface is required provide the Case Rixon 4000DB1 Dual Dial Backup Unit.

4) The DDBU may be used to temporarily re-establish a failed PLL; it may be used temporarily while waiting for a PLL to be installed, or it may be used for permanent 4-Wire full duplex PSTN operation.

5) In the U.S Market UDS 720 DDBU units SHALL NOT be provided for operation with DPP Units; this has been deemed a telco responsibility by Marketing - Digital Switching Division.

RUL10 1) Provide one A829L4 Auxiliary Data Set per four wire (4W) private leased line (PLL) modem to be installed. This circuit is required to interface the 4W PLL modem to the two wire (2W) telco line.

RUL11 1) Provide two (2) UDS 56KBPS Digital Data Channel Service Units per TOPS-MP High Speed Data Access (HSDA) Card NTNX66.

2) When the UDS 56KBPS Modem is used as Limited Distance Modem (LDM) the maximum distance between the modems is determined by the wire size. Refer to the Chart below:

WIRE GAUGE	DISTANCE
19	10 miles
26	03 miles

3) The UDS 56KBPS Modem Mechanical Specifications are as follows:

DTE Interface ..... CCITT V.35 Via UDS Provided Adapter Cable
Stand-Alone ..... Width 7", Height 2.25", Depth 9.6", Wt 2lbs 4ozs
Card ..... One Card Slot in RM16M Shelf

Power Requirements . 115 VAC ±10%, 50 to 60Hz, 5 Watts

RUL12 1) The DDS/MRS operates either point-to-point or multipoint applications, transmitting synchronous data at rates of 1.2 to 56 kbps and asynchronous data from 1.2 to 19.2 kbps. As a limited distance modem the DDS/MRS provides serial, full duplex transmission, as well as synchronous 64kpbs over private 4-wire unloaded lines. The DDS/MRS can interface EIA-530 or CCITT V.35. DDS/MRS adpt can transmit at two rate adapt speeds of 19.2 or 1.2 kbps.

RUL13 1) Provision the UDS 9648T modem for use with applications requiring communications protocols per CCITT V.29 specifications for 9600 bps Trellis Coding, 9600 bps non coded, 7200 bps, and 4800 bps. Also, provision for applications requiring communications protocols at 4800 bps per BEL 208A/B specifications.

RUL14 1) Provision the UDS V.3225 modem for use applications requiring communications protocols as follows:

* 9600 bps Trellis-Coded operation per CCITT Recommendation V.32

* 4.8 and 9.6kbps Un-Coded operation per CCITT Recommendation V.

* 1.2 and 2.4kbps operation per CCITT Recommendation V.32. Note 4-wire Leased Line (Private Line) operation is not available i mode.

* 300bps operation per BELL 103 specifications.

RUL15 1) The DU100 data unit provides full duplex synchronous operation at 64000 bps when used on inter-switch calls or over a "clear channel " T1 link. The unit provides 64000, 56000, 48000, 19200, 9600, 4800, 2400, or 1200 bps full duplex, synchronus and 19200, 9600, 4800, 2400, 1200, 300 bps full duplex asynchronous data communications. The DU100 uses CCITT V.35 or EIA-530/449 interface for high speeds or EIA-232D for low speed interface. The UDS DU100 V.35 and RS232 modem have been MD'ed. On new jobs provision the UDS DU170 and DU 56 V.35 and RS232 modems for suitable applications. (Refer replacement table.)

RUL16 1) The V.3229 transmits full-duplex, asynchronuos or synchronous data at 14400, 12000, 9600, 7200, 4800, 2400 or 1200 bps over dial-up lines and full-duplex, asynchronous or synchronous data at 14400, 12000, 9600, 7200, 4800 bps on leased lines. Provides both 2 and 4-wire leased line operations and autodial/au+toanswer features.

RUL17 1) The DU170 and DU56 provides full duplex synchronous operation at 64000, 56000, 48000, 19200, 9600, 4800,2400, 1200bps over dial-up lines and full-duplex, asynchronous 19200, 9600, 4800, 2400, 1200bps. With frame relay asynchronous data rates are 57600 or 38400 bps. 2) The UDS DU170 Modem Mechanical Specifications are as follows:

DTE Interface ..... CCITT V.35 or EIA-530/449 high speed; EIA-232D low speed (option specified by customer)
Stand-Alone ..... Width 7", Height 2.25", Depth 9.6", Wt 24ozs
Card ..... One Card Slot in RM16M Shelf

Power Requirements . 115 VAC, 60Hz +- 10% , 5 Watts

MISCELLANEOUS EQUIPMENT FRAME - MIS/ REMOTE MISC EQUIPMENT FRAME - RME

PEC CODE: NT0X02AB

CPC CODE: B0211420

RATING: STD

REPLACES: NTZZ15BA (contents)

REPLACED BY: Not applicable

ABBREVIATION NAME: MIS or RME

ENGINEERING DESCRIPTION: The MIS is a general purpose equipment frame intended to accommodate miscellaneous DMS, common systems and other hardware required in a DMS-100 Host office or Remote.

The RME is a general purpose miscellaneous equipment frame (MIS) that serves as the Power Distribution Center (PDC) for an RSC Office.

The RME accommodates a maximum of 60 Fuses (5, 10, 20, and 30 amp). When designated an RME, a MIS frame contains a Power Distribution Module. Without this module the frame is designated a MIS frame, even if used in a remote site.

REFERENCE DOCUMENTATION: MS0X02AB 01 38
AD0X02AB 01 21
SL0X02AB 01 06

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

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NT0X02AB EMA13-01-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 08 10	API 425 01	Initial introduction of this product via the subject Product Specification
92 09 06	API 425 02	Include late issue 01 review comments and corrections noted per ET 14499 and ET 14559.
92 12 15	ECM 479 06	Add NT7F18BA and NT7F18CA - Note: Only PEC NT7F18AB and NT7F19AB may be provisioned until further notice. Check URTO/URTS & RTO/RTS Schedule for the Availability Dates for PECs NT7F18AD/BA/CA, NT7F38AB/BA NT7F19AC/BA/CA, PAD, and UDS DDS/MR1. All RAMP Jobs shall be processed as usual.
93 01 22	ECM 602 08	Introduce the GDC DS-6 Modem shelf for the MIS Frame. ET15009 - WTA cannot be mounted in pos 65R due to conflict with ground cable lug until workaround is available.
93 02 26	ECM 526 06	ET16079, ET16139 - Make WTA provisionable in shelf positions 04F and 04R
93 03 16	ECM 602 09	Change reference to RM-16M Modem Shelf from PEC to CPC which is supported by the MS.
93 03 29	ECM 543 01	Incorporate changes per API420 Iss: 03
93 05 10	ECM 618 09	EC006-16761 & EC018-40418 incorporated field upgrade kit (NT0X58DA) for ABS power in to RME frame (NT0X02AB, NTZZ12GA, NTZZ15CB).
93 05 24	ECM 353 02	To A&M the TCS1800 Key system.
93 06 21	ECM 543 02	ECN # 70770 MD’s NT5M04DS and NT5M08CE
93 07 27	ECM 602 10	ECD 018-39718 introduces the NT0X9594 Ground Bar Assembly replacing the NT0X9504. ET 34143 replaces C0054375 with RA877.
93 08 06	ECM 152 15	ET 35633 - Show 2 P0596114 26" mtg brackets and screws as provisionable to the DRTU.
93 08 17	ECM 270 05	ET 27823 - Resolve provisioning requirements for GDC modems and accessories per RUL36, 37 & 38. ET 17379 - Change NT0J04FB to NT0J04EB

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
93 09 09	ECM 602 11	The LaMarche Inverter will now be available for the Canadian market as well as the U.S. market instead of the NT0X87AA Inverter. Information concerning the Grounding H/W Kits have also been added.
93 11 10	ECM 526 07	Update Rul72 in section to align with ECM52607 WTA Panels.
93 11 18	ECM 690 01	Introduces the equipment that is required for EAS.
93 12 24	ECM 479 08	ECD 018-41594- MD NT7F18AB and replace with NT7F18AD.
94 06 20	ECM 602 14	ECD 018-42030 Remove NT5X0810 from RUL 9, part included in NT5X08AC.
94 07 12	ECM 602 15	Added Universal Framework to RUL 1. Added NT3X25BB MTA Workaround per ECD 18-42121/ET12919.
94 08 17	ECM 602 16	Major update to make EMA match MS. ET 19459 Revised NT0X42AK fuse assignment from shelf 59 to 67.
94 09 09	ECM 560 01	Introduce the ESTU and ITM into the frame to meet Gate 2 deliverable requirements for an ECM.
94 11 01	ECM 690 04	Made EAS FSP always provisioned per PLM on RME used as PDC and resolve ET19869. ETs 13659, 15889, 15909 - Added mounting restrictions for CES, Modem Shelves, Terminal Blocks, and Ground Material Assembly.
95 01 26	ECM 602 19	Added AMH RTU and DRTU for use with CALRS.
95 03 16	ECM 690 06	ECD 6-21517: MD A0367433 Inverter and replaced by NTRX31DH. UL Power Panel Assy is the only one to be used. CND Power Panel Assy is no longer to be spec'd. Changed NT5X69AA provisioning to show that it is no longer to be isolated. Added Grounding note 3. NTMX1665 Lamarche Iso Hdw MD and replaced by NT0X43XD. Revised Inverter Isolation requirements. Removed Pos 04 restriction when

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		Inverter is used in ISG application - cable in NT0X43XD Kit will reach. EAS related changes not on above listed ECD: Added cables and fuses to Power Panel Assemblies. Added NTNX2656 removal reference to NT0X42XC for clarification - reference has always been in PC0X42XC.
95 03 21	ECM 602 21	ECD 24-93972 MD NT2X70AE and P0698943 Des Label, replaced by NT2X70AF and P0809960 Des Label. ET 21899 Corrected typo in equipment list - NT0X42XD s/b NT0X43XD. Clarified Inverter Rule.
95 08 04	ECM 690 07	Rewrote UL Power Panel Assembly rule to correct equipment provisioned in accordance with current Design docs. The NT0X40UB FSP is not currnently supported in RME design docs. To have EAS it is neccessary to order the NT0X42XC EAS Kit to upgrade the NT0X40UA FSP.
95 08 22	ECM 690 08	Per ECD 18-45090 MD NT0X40UA and NT0X0201, replaced by NT0X40UB and NT0X0202. NT0X40UA is MD only in the RME application, it is still valid for use in PDC applications. MD NT0X07AU, replaced by liquid tight conduit run from inverter to top of frame and then to protected AC poles.
95 11 30	ECM 602 24	Per ECD 006-23666 Added SDM 06 info. SDM 06 processor cards, disk drive, and ethernet hardware added. Added rules 85 thru 88 added. Changed rating of NT0X07AU to STD; it cannot be used in DMS100 applications.
96 05 20	ECM 602 26	ECD 018-46899 - Update RUL86 regarding application of NTRX50JU; MD NT5X98AA. RR63294 - Add note to rul19 part 3, to indicate installation of storage shelf assembly and CP cage assembly.
96 10 11	ECM 602 27	RR67823: To update section to indicate that its contents contain

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		the information that was also included in section NTZZ15BA which is now MDed.
96 11 27	ECM 602 28	MD NT2X46AB per EC018-49694
97 03 05	ECM 602 29	General clean-up of EMS. Clarify mounting of DTH-ROTL.
97 04 07	ECM 602 30	Correct mounting location of modem shelf (GDC) per SR RR73226.
97 05 20	ECM 602 31	Enhance RUL10 for NT3X25AA shelf mounting position 52 above FSP per SR RR74356.
97 08 04	ECM 602 32	MD NT5X0806 and NT5X0810 per EC 018-49762. MD NT5X08AC and NT5X55AA per EC 018-46886.
97 09 26	ECM 722 01	Update EMS to add NTEX45AA 1-Meg Modem Service Patch Panel Kit, Rule 89 and Note 4 per 1-MMS Product Spec issue 01.08, EC 024-98088 and EC 024-98055.

The Miscellaneous Equipment Frame - MIS/ Remote Misc Equipment Frame - RME is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Universal Framework	NT0X25AH					RUL78
Terminal Block Assembly	NT3X25BA			64,69,74		RUL11
Terminal Block Assembly	NT3X25BB			64,69,74		RUL27
Misc Eqpt Frame Supv Panel	NT0X88AB	FSP		45		RUL1
RSE Frame Supervisory Panel	NT0X88AD	FSP		45		RUL1
10A Filt MIS Frame Supv Pnl	NT0X88AE	FSP		45		RUL1
20A Filt MIS Frame Supv Pnl	NT0X88AF	FSP		45		RUL1
FSP Cover	P0673914			45		RUL40
Enhanced Alarm System Kit	NT0X42XC			50R		RUL76
# Aux Fuse Pnl for TOPS,ESAC	NT5X98AA			40		RUL26
Miscellaneous Equipment	AR					RUL2
Isolated Hardware	NT0X0013					RUL45
# CDN Power Panel Assembly	AR					RUL16
ABS Alarm Upgrade Kit	NT0X58DA					RUL16
U.L. Power Panel Assembly	AR					RUL63
# Ground Material Assembly	NT0X9504					RUL15
Ground Material Assembly	NT0X9594			20,40,67		RUL15
# Intercon Cbls RSM 65 to FSP	NT0X46BP			65		RUL18
# Intercon Cbls RSM 51 to FSP	NT0X46BR			51		RUL18
# Intercon Cbls RSM 32 to FSP	NT0X46BS			32		RUL18
# Intercon Cbls RSM 18 to FSP	NT0X46BT			18		RUL18
Intercon Cbls RSM 65 to FSP	NT0X46CG			65		RUL18
Intercon Cbls RSM 51 to FSP	NT0X46CD			51		RUL18
Intercon Cbls RSM 32 to FSP	NT0X46CE			32		RUL18
Intercon Cbls RSM 18 to FSP	NT0X46CF			18		RUL18
Intercon Cbls ROTL 28 to FSP	NT0X95CS			28		RUL23

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X46BP	MD	NT0X46CD/CE/CF/CG
NT0X46BR	MD	NT0X46CD/CE/CF/CG
NT0X46BS	MD	NT0X46CD/CE/CF/CG
NT0X46BT	MD	NT0X46CD/CE/CF/CG
NT0X9504	MD	NT0X9594
NT5X98AA	MD	
NT5X0806	MD	No Replacement
NT5X0810	MD	No Replacement
NT5X08AC	MD	No Replacement
NT5X55AA	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) If front doors are required on this frame, the miscellaneous equipment (eg. SP-1, No. 5 Crossbar) must be mounted 1" behind the front of the frame supervisory panel. For information on the frame doors, refer to Section EMA15-01-002.

2) In the DMS main or host office, this frame is designated "MIS". In the DMS RLCM and RSC offices it is designated "RME".

3) When adding any miscellaneous equipment not covered in this document, the customer engineer shall check with BNR grounding design authority to ensure that the following grounding rules are met for existing equipment prior to release of issue 01 34 of MS0X02AB:

   A) All AC powered misc. equipment must be isolated from the frame.

B) DC powered misc. equipment shall be treated as follows:

1) If chassis is connected to battery return, isolate equipment from this frame.

2) If chassis is connected to logic return, isolate equipment from this frame.

3) If chassis is floating, mount equipment directly on frame.

For equipment installed subsequent to release and cut-in of MS0X02AB 01 34 and AD0X02AB 01 19:

C) Inverters powering MAP positions, ISTC (NT5X69AA) and external protected AC outlets shall be non-isolated and have their chassis ground connected to frame ground. The NT5X69AA unit shall also be non-isolated.

D) Any new equipment added to MS0X02AB shall be evaluated per IS0X00 00 16 (or later) Note 304 and mounted accordingly.

E) No equipment requiring power from an isolated inverter shall be fed from a non-isolated inverter and no equipment requiring power from a non-isolated inverter shall be fed from an isolated inverter. If necessary two inverters shall be provided.

4) At least one (1) NTEX45AA Patch Panel Kit must be provisioned for any office equipped with 1-Meg Modem Service. Up to 24 DBICs (NTEX54AA) may be connected to each NTEX45AA Patch Panel. The NTEX45AA Patch Panel may be reserved per LCM, per LCE, or may have DBICs connected to the panel without maintaining order with respect to the physical location of the DBICs. All DBICs connected to the patch panel must be within 50 cable meters of the patch panel.

A) The NTEX45AA Patch Panel Kit consists of the RJ45 Patch Panel Cable Management Panel, adapter brackets, and mounting hardwa Refer to ADEX45AA for assembly into the MIS frame.

B) The total vertical space occupied by one (1) NTEX45AA Patch Panel is four (4) inches. Allow an additional minimum one (1) above the Patch Panel for cables from the front to route to t back of the unit.

C) One (1) port on the NTEX45AA Patch Panel per MIS frame may be reserved by the customer for network management.

RULES:

AP 1) When PEC NT0X02AB is ordered, these items are provided.

RUL1 1) On the NT0X25AH Universal Framework, provide one (1) RSE Frame Supervisory Panel, NT0X88AD, per frame if equipped in a RLM office or one (1) RME Frame Supervisory Panel, NT0X88AF, per frame if equipped in a RLCM or RSC office, or if any miscellaneous circuits require filtered (talk) battery. Otherwise, provide one (1) MISC EQPT Frame Supervisory Panel, NT0X88AB. Equip each per its corresponding MS.

2) Provide one (1) 10 AMP FILT MISC EQPT Frame Supervisory Panel, NT0X88AE, per frame if any miscellaneous circuits (i.e. ROTL unit) require 10 amp filtered -48V circuit breakers. Equip each per its corresponding MS.

3) Provide one (1) NT0X88AF when a total of up to twenty-four (48V filtered) ABS fuses and two (2) 10 amp CB (filtered) are required to power two TELLABS fire report systems, or fifteen CAMA units, or one ROTL unit and up to six CAMA units, or a SMD but can never exceed 10 amp on a per feed basis. This FSP must also be provided on all frames equipped with NT0X71CA doors.

4) Wiring between the NT0X88 FSP and units mounted on the frame shall be connected using loose wiring methods. Leads are terminated at a terminal block that requires a ring terminal. To make the connection, use 22GA wire (or larger per current/voltage drop requirements). If three or more wires are terminated in a single terminal, 24GA wire may be used (depending upon current/voltage drop requirements).

Wire color is as follows:

Red for bat or -48V ABS
Black for bat rtn
Green for alarm leads

Terminals are specified as follows:

TB2 on NT0X87AA use C0054383
TB1 on NT0X88AA/AB/AC/AD/AE/AF use RA877

TB2 on NT0X88AA/AB/AC/AD/AE/AF use C0054383
TB3 on NT0X88AB/AD/AE/AF use C0054383

5) FSP fuse to terminal block cross reference can be found within the corresponding FSP sections that follow.

6) Provide one (1) FSP cover P0673914 which mounts over the FSP (NT0X88AB/AD/AE/AF) when the top of the FSP is exposed due to empty positions above the FSP, or due to irregular size of equipment mounted above FSP.

RUL2 1) Provide miscellaneous equipment per office requirements.

2) In provisioning equipment on the frame the Job Engineer must take into account the following:

* The physical height (or effective clearance requirements) and base offset of each unit. Note: Base offset is the distance between the bottom of the unit and its lowest mounting hole.

* The physical width of the unit and provide mounting adapters where necessary.

* The power requirements (number of feeds and fuse ratings) of each unit and ensure that the FSP can satisfy the power requirements of the equipment installed on the frame.

* Establish or identify the DMS-100F compatibility requirements with any non-DMS unit being provided, if necessary by detailed interface study in accordance with the OEM Procedure 1.04 or the latest issue.

3) Listed below are the more common DMS equipment types which mount on MIS, RSE and RME frames and their associated provisioning rules.

PEC	EQUIPMENT	EQUIP ON: MIS	RSE/ RME	RULE
# NT0X03AA	REC ANN MOD 6 CH 6.5 SEC MSG	*		RUL3
# NT0X03AB	REC ANN MOD 12 CH 6.5 SEC MSG		*	RUL3
# NT0X03AC	REC ANN MOD 6 CH 13.5 SEC MSG		*	RUL3
# NT0X03AD	REC ANN MOD 12 CH 13.5 SEC MSG	*		RUL3
NT0X03AF	REC ANN 6 CH to 12 CH CONV Kit	*		RUL4,
NT0X03AG	REC ANN 6.5 SEC to 13.5 CONV Kit	*		RUL4
# NT0X87AA	Inverter Unit	*	*	RUL5
# A0367433	LaMarche 500W Inverter	04,13 22,31 52,60 70	04,13 22,31 52,60 70	RUL5
NTRX31DH	500VA AC Inverter	04,13 22,31 52,60 70	04,13 22,31 52,60 70	RUL5
P0708015	Direct Powering Label	04,13 22,31 52,60 70	04,13 22,31 52,60 70	RUL5
# NTMX1665	LaMarche Frame Isolation Kit	04,13 22,31 52,60 70	04,13 22,31 52,60 70	RUL5
NT0X43XD	IOE Inverter ISG Kit	04,13 22,31 52,60 70	04,13 22,31 52,60 70	RUL5
NTMX1657	Inverter Frame Ground Kit	04,13 22,31 52,60 70	04,13 22,31 52,60 70	RUL5
P0567227	Hole Bushing			RUL5
# NTMX1658	LaMarche Jumper Ground Kit	13,22 31,52 60	13,22 31,52 60,70	RUL5
# NT0X07AU	AC Hardware - Mounting Plate	04,13 22,31 52,60 70	04,13 22,31 52,60 70	RUL5
# NT2X46AB	Metallic Test Access Unit	*	*	RUL6
P0588094	Metallic Test Access Unit Cover	*	*	RUL7
# NT1X60AB	Data Set Module	*		RUL8
NT3X25AA	Common Equipment Shelf	04,17	22,31	RUL10

			26,35 52,60 69	35,52 60,69	
	NT5X58AA	1A2 Key TEL SYS Stand-Alone UN	*		RUL12
	NT5X85AA	AUD & Visual ALM. EXT CKT	*		RUL13
	C0045361	Pylon RG-2 Ringing Generator	*		RUL13
	NT0X0013	Isolation Mounting Hardware			RUL13
	NT5X86AA	AUD Alarm Cutoff Control Unit	*		RUL14
	NT5X86AB	AUD Alarm Cutoff Key Panel	*		RUL14
#	NT2X58AE	Remote Service Module		*	RUL17
	NT2X58CF	Remote Service Module		*	RUL17
	NT2X58CM	R.S.M. Circuit Packfill Kit			RUL17
#	NT2X70AE	+-5V +-12V Power Converter 50 Amp			RUL17
#	P0698943	Designation Label NT2X70AE			RUL17
	NT2X70AF	+-5V +-12V Power Converter 50 Amp			RUL17
	P0809960	Designation Label NT2X70AF			RUL17
	NT0X8501	Circuit Pack Cage Mounting		*	RUL19
	NT0X8503	Circuit Pack Storage Shelf Assy		*	RUL19
	NT3X55AA	Line Card Storage Chassis Assy		*	RUL20
	NT3X55BA	Line Card Storage Chassis Assy		*	RUL20
#	1056	ROTL Power Supply	*		RUL21
#	1066-ROTL/52A	ROTL	*		RUL21
	NT0X0013	Isolated Hardware Mounting Screws	*		RUL21
#	1050-4W-TST	Optional 105 Test LN/RESP	*		RUL22
#	NT5X95AA	Misc Applique Equipment Shelf	*		RUL24
	NT0X8502	Remote Service Equip Storage Shf		*	RUL25
#	291 System	TELLABS Fire Report System	*		RUL28
	292R	TELLABS Conference/Alerting Syst			RUL28
	NT5X74AA	CAMA Units	*		RUL29
	NT5X75AA	Auxiliary CAMA Position (TSPS-TOPS)			RUL29
	NT5X72AB	Central Alarm Applique Circuit	*		RUL32
	NT5X92AB	Alarm Extension Panel		*	RUL33
	NT5X09AA	GDC DS-5 Modem Shelf	34,52	34,52	RUL34
	A0380973	GDC DS-6 Modem Shelf	34,52	34,52	RUL73
	A0384166	DS-6 Mounting Bracket			RUL73
	Various	GDC DS-6 Modems			RUL73
#	010B015-001	DS-1 Modem Card Cage	*		RUL36
#	101-4924-001	Modular Jack Mounting Bracket	*		RUL36
#	101-4918-001	Data Unit Shelf	*		RUL37
#	101-4926-001	Modular Jack Mounting Bracket	*		RUL38
#	S66M2-ST-1244LR	S66M2-51-124LR-125R Block			RUL38
	NT3J00AA	TOPS Tone & Scrambler Card Cage	*		RUL41
	NT3J00AB	TOPS Tone & Scrambler CP	*		RUL41
	NT3J00BA	MLT Applique Shelf	*		RUL42
	NT3J00BB	MLT Applique CP	*		RUL42
	NT3J0044	Power Supply (spare)	*		RUL41
#	NT4X25BH	Data Unit Rackmount Shelf	*		RUL43
	NT4X25DH	Data Unit Rackmount Shelf	*		RUL43
#	62005208	23" DC Modem Shelf (RM16M)	*	*	RUL44

	A0344310	23" DC Redundant Modem Sh (RM16M)	35,52	35,52	RUL44
	NTNX1113	ESD Modem Faceplate Kit			RUL44
	Various	UDS Modems	Slots 1-16		RUL44
#	905-5060-01	RM46A1 Data Mounting Shelf	*	*	RUL47
#	615-1022-01	RM46A1 Mounting Bracket 19 to 23"	*	*	RUL47
#	615-1051-01	RM46A1 Mounting Bracket 23 to 26"	*	*	RUL47
#	A0318217	Model C829CR-L4 Data Aux Set	*	*	RUL48
#	NT0J04BB	LTU Mainframe Brown	*	*	RUL49
#	NT0J04BA	LTU Mainframe Ash	*	*	RUL49
	NT0J62BA	LTC 4 Trunk 3 Wire	*	*	RUL49
	NT0J63BA	LTC 4 Trunk 4 Wire	*	*	RUL49
	NT0J64BA	LTC 16 Trunk 4 Wire	*	*	RUL49
	NTAN10AA	RTU-AMH 4-Trunk (for CALRS)	*	*	RUL80
	NTAN11AA	RTU-AMH 16-Trunk (for CALRS)	*	*	RUL80
	NT0J04DD	26" LTC Mounting Adapters	*	*	RUL81
#	TCS 1800A-1 L1	1A2 Line Card Shelf	*	*	RUL50
#	TCS 1800B-1 L1	BIX Shelf	*	*	RUL51
#	TCS 1603AB-P8	Intercommect Cable (1.2 m long) for 1A2 Line Card Shelf & BIX Shf	*	*	RUL52
#	TCS 1603A	MDF Cable for 1A2 Line Card Shelf	*	*	RUL53
#	TCS 1800M-1 L1	TCS 1800 1A2 Key Telephone System Customer Manual	*	*	RUL54
#	NT0J04AA	Digital Rmt Test Unit (DRTU) Ash		*	RUL55
#	NT0J04AB	Digital Rmt Test Unit (DRTU) Brown		*	RUL55
#	NT0J04EA	Digital Rmt Test Unit (DRTU) Ash		*	RUL55
	NT0J04EB	Digital Rmt Test Unit (DRTU) Brown		*	RUL55
	P0596114	Mounting Brackets	*		RUL55
	P0148634	Mounting Screws	*		RUL55
	NTAN60AA	DRTU-AMH (for CALRS)		*	RUL82
	NT0J14EA	26" Rack-mount Adapter		*	RUL83
	NT7M00CC	1-Chan 19" 32S RTA STB	*	*	RUL56, 66
	NT7M00DC	1-Chan 26" 32S RTA BRN	*	*	RUL56, 66
	NT7M00DB	1-Chan 26" 32S RR/RTA BRN	*	*	RUL56, 66
#	NT7M25CV	4-Chan 19" 64S RTA STB	*	*	RUL56, 66
#	NT7M25EB	4-Chan 26" 64S RTA BRN	*	*	RUL56, 66
#	NT7M25DG	4-Chan 26" 64S RR/RTA BRN	*	*	RUL56, 66
#	NT7M25DN	4-Chan 26" 128S RR/RTA BRN	*	*	RUL56, 66
#	NT7M25DY	4-Chan 26" 128S RR/RTA BRN	*	*	RUL56, 66
#	NT7M25EA	4-Chan 26" 128S RR/RTA BRN	*	*	RUL56, 66
	292BR-1	TELLABS 292 Conf/Alerting System	*	*	RUL57

	292DR	TELLABS 292 Line Expansion Shelf	*	*	RUL58
#	905-5121-004	RM40A/B Data Set SH -48V DC	*	*	RUL59
#	905-5121-001	RM40A/B Data Set SH 117V AC	*	*	RUL59
	905-5098-001	RM70 Modem Card Cage 120V AC	*	*	RUL60
	905-5118-001	RM80 Data Set Shelf -48V DC	*	*	RUL61
	905-5139-001	RM90 Modem Shelf 125V AC	*	*	RUL62
	A0355254	RM4200 Data Set Module 115	35,52	35,52	RUL67
	A0600770	RM4200 Data Set Module -48V DC	35,52	35,52	RUL67
	Various	RM4200 Modems			RUL67
#	NT7M29CF	LEC w/1 4L RTA NT Brown	*	*	RUL64
#	NT7M29CG	LEC w/2 4L RTA NT Brown	*	*	RUL64
#	NT7M29CB	LEC w/1 4L RTA Silver Tone BLK	*	*	RUL64
#	NT7M29CC	LEC w/2 4L RTA Silver Tone BLK	*	*	RUL64
	21340431	Prerecorded MSGS Cassette Tape	*	*	RUL66
#	NT7F20AA	Digital Test Head-ROTL (DTHR)	*		RUL68
#	NT7F18AA	Digital Test Head-ROTL (DTHR)	*		RUL68
#	NT7F18AB	Digital Test Head-ROTL (DTHR)	*		RUL68
	NT7F18AD	Digital Test Head-ROTL (DTH)	*		RUL68
	NT7F18BA	Digital Test Head-DTT (DTH)	*		RUL68
	NT7F18CA	Digital Test Head-ROTL/DTT (DTH)	*		RUL68
	NTNX5109	TOPS MPX Mounting Hardware	*		RUL69
	A0368910	MAU	*		RUL70
	P0709734	MAU Adapter Bracket	*		RUL70
	NTNX5103	TOPS MPX BIX Box Assy	*		RUL70
	P0702320	BIX Box Adapter Bracket	*		RUL71
	NT7X76AA	WTA Panel	*	*	RUL72
	NT7X76BA	WTA Panel (Dedicated LTU/MTU)	*	*	RUL72
	NT0X31AE	Cable Trough	*	*	RUL72
	NT5M02CB	2-Chan 26" 1M RR/TRK FIXED	*		RUL74, 75
	NT5M04DP	4-Chan 26" 2M RR/TRK BASIC	*		RUL74, 75
	NT5M04DQ	4-Chan 26" 2M RR/TRK FIXED	*		RUL74, 75
	NT5M04DR	4-Chan 26" 1M RR/TRK SP/DMD	*		RUL74, 75
#	NT5M04DS	4-Chan 26" 1M RR/TRK SP/TMP	*		RUL74, 75
	NT5M04DT	4-Chan 26" 2M RR/TRK MUSR	*		RUL74, 75
	NT5M06CA	6-Chan 26" 3M RR/TRK FIXED	*		RUL74, 75
	NT5M08CB	8-Chan 26" 4M RR/TRK BASIC	*		RUL74, 75
	NT5M08CC	8-Chan 26" 4M RR/TRK FIXED	*		RUL74, 75
	NT5M08CD	8-Chan 26" 1M RR/TRK SP/DMD	*		RUL74, 75
#	NT5M08CE	8-Chan 26" 1M RR/TRK SP/TMP	*		RUL74,

NT5M08CF	8-Chan 26" 4M	RR/TRK MUSR	*		RUL74, 75
NT5M02CC	2-Chan 26" 1M	RR/RTA FIXED	*	*	RUL74, 75
NT5M04DU	4-Chan 26" 2M	RR/RTA FIXED	*	*	RUL74, 75
NT5M04DV	4-Chan 26" 1N	RR/RTA SP/DMD	*	*	RUL74, 75
NT5M06CB	6-Chan 26" 3M	RR/RTA FIXED	*	*	RUL74, 75
NT5M08CG	8-Chan 26" 4M	RR/RTA FIXED	*	*	RUL74, 75
NT5M08CH	8-Chan 26" 1M	RR/RTA SP/DMD	*	*	RUL74, 75
NT5X69AA	Inactive System Timing Channel				RUL77
NT0J42BA	ESTU Master Module (EMM)		*	*	RUL79
NT0J43AA	ISDN Test Module (ITM)		*	*	RUL79

@ NTRX50DA	SuperNode Data Manager	3		RUL84
@ NT6X1402	Baffle			RUL84
NTRX50JP	VME Proc Card 32 MB Dram			RUL85
NTRX50JQ	VME Proc Card 64 MB Dram			RUL85
NTRX50JR	VME Proc Card 96 MB Dram			RUL85
NTRX50JS	VME Proc Card 128 MB Dram			RUL85
NTRX50JT	1GB SCSI-II Disk Drive			RUL86
NTRX50JU	2GB SCSI-II Disk Drive			RUL86
NTRX50JV	Ethernet Controller Card			RUL87
NTRX50JW	Ethernet Transition Card			RUL87
P097F813(4)	Screw			RUL88
P0284154(1)	Washer			RUL88
P0183220(1)	Lock Washer			RUL88

EQUIPMENT FLAGGED '#' and "@":

PEC	RATING	REPLACED BY PEC
NT0X03AA	A&M	DRA system
NT0X03AB	A&M	DRA system
NT0X03AC	A&M	DRA system
NT0X03AD	A&M	DRA system
NT0X87AA	MD	A0367433
NT1X60AB	MD	NT5X09AA
NT2X58AE	MD	NT2X58CF
1056	MD	NT7F18AB
1066-ROTL/52A	MD	NT7F18AB
1050-4W-TST	MD	NT7F18AB
NT7F20AA	MD	NT7F18AB
NT7F18AA	MD	NT7F18AB
NT5X95AA	A&M	none
NT4X25BH	MD	NT4X25DH
62005208	MD	62005220
905-5060-01	MD	RM4200 DSM & ADS
615-1022-01	MD	RM4200 DSM & ADS
615-1051-01	MD	RM4200 DSM & ADS
A0318217	MD	RM4200 DSM & ADS
NT0J04BB	MD	NT0J04EB
NT0J04BA	MD	NT0J04EB
NT0J04AB	MD	NT0J04EB
NT0J04AA	MD	NT0J04EA
NT0J04EA	MD	NT0J04EB
NT7M25CV	MD	NT5M-Series CDAs
NT7M25EB	MD	NT5M-Series CDAs
NT7M25DG	MD	NT5M-Series CDAs
NT7M25DN	MD	NT5M-Series CDAs
NT7M25EA	MD	NT5M-Series CDAs
NT7M29CF	MD	NT5M-Series CDAs
NT7M29CG	MD	NT5M-Series CDAs
NT7M29CB	MD	NT5M-Series CDAs
NT7M29CC	MD	NT5M-Series CDAs
NT7M26CA	MD	NT5M-Series CDAs
NT7M26DA	MD	NT5M-Series CDAs
NT7M26GA	MD	NT5M-Series CDAs
NT7M26HA	MD	NT5M-Series CDAs
NT7M25DY	MD	NT7M25FM
905-5121-004	MD	905-5222-003
905-5121-001	MD	905-5222-001
NT7F18AB	MD	NT7F18AD
TCS 1800A-1 L1	A&M	NTZX18AB NORSTAR
TCS 1800B-1 L1	A&M	NTZX18AB NORSTAR
TCS 1603AB-P8	A&M	NTZX18AB NORSTAR

TCS 1603A	A&M	NTZX18AB NORSTAR
TCS 1800M-1 L1	A&M	NTZX18AB NORSTAR
NT5M04DS	MD	None
NT5M08CE	MD	None
010B015-001	MD	UDS MODEM PRODUCTS
101-4924-001	MD	UDS MODEM PRODUCTS
101-4918-001	MD	UDS MODEM PRODUCTS
101-4926-001	MD	UDS MODEM PRODUCTS
S66M2-ST-1244LR	MD	UDS MODEM PRODUCTS
291 System	MD	292 System
NTMX1658	MD	NTMX1657
CDN Power Panel	STD	UL Power Panel Ass
A0367433	MD	NTRX31DH
NTMX1665	MD	NT0X43XD
NT2X70AE	MD	NT2X70AF
P0698943	MD	P0809960
NTRX50DA	LTD	SDM VO JOBS ONLY
NT6X1402	LTD	SDM VO JOBS ONLY
NT0X40UA	MD/STD	NT0X40UB(see note)
NT0X0201	MD	NT0X0202
NT0X07AU	STD	None
NT2X46AB	MD	NT3X09BA

NT0X40UA NOTE: This part is not allowed to mount in the RME application. It is still vaild for PDC applications.
NT0X07AU NOTE: This part is no longer used in DMS-100 applications but may be used in other applications such as DMS-250.

LTD - LIMITED. These products are in the introduction 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.

RUL3 1) These recorded announcement modules are rated A&M.

2) When a six channel RM unit is provided, an additional eight inches of mounting space directly above the unit must be reserved on the frame.

3) Provide one (1) or more Recorded Announcement Module (RM) of each appropriate type as required to satisfy the recorded announcement needs of the office. Equip each per its corresponding MS.

4) Due to the high level of radiated electromagnetic interference attributed to inverter units (INV), RM and INV units must be equipped on separate frames which are separated by at least one frame. If mounted on the same frame, an INV and RM must be separated by a minimum of eighteen inches.

RUL4 1) Provide one (1) Channel Conversion Kit, NT0X03AF to convert one 6-channel RM into a 12-channel unit.

Conversions are as follows:

NT0X03AA to NT0X03AB and
NT0X03AC to NT0X03AD

2) Provide one (1) Duration Conversion Kit, NT0X03AG to convert one 6.5 second RM into one 13.5 second RM.

Conversions are as follows:

NT0X03AA to NT0X03AC and
NT0X03AB to NT0X03AD

3) Adequate space must be available above the existing RM to accommodate this hardware extension.

4) Provide both NT0X03AF and NT0X03AG to convert NT0X03AA to NT0X03AD.

RUL5 1) For all applications, provide one (1) NTRX31DH 500VA AC Inverter per four (4) 120VAC Protected AC feeds required which do not exceed 500 Watts output (250 Watts max each pair of outlets - Circuit 1 and 2). This unit requires one (1) 30-Amp Fuse (NT0X42AS) at the PDC. When the RME frame contains PDC equipment, the mounting locations for the 500VA AC Inverters are restricted to 04, 22, and 31. Location 04 may be used only if the Inverter is non-isolated since the isolated ground bar used in this application does not extend to the bottom of the frame.

The inverter has a failure mode switch to allow selection between breaker trip failure or breaker trip/inverter failure detection.

2) 1" above and below the unit must be reserved for cooling on initial jobs.

3) When frame is used as a RME, the inverter may mount in positions 04, 13, 22, 31, 52, 60, and 70 with the following restrictions. If the RME is used as a PDC, the inverter

may not mount in positions 13, 52, 60, or 70 (only positions 04, 22, and 31 are valid). Location 04 may be used if the RME is used as a PDC only if the inverter is non-isolated since the isolated ground bar used in this application does not extend to the bottom of the frame.

4) Modem frame Applications - For ISG applications, provide one (1) NT0X43XD Kit per 500VA AC Inverter for grounding the inverter to the vertical ground bar.

5) Non-Modem Frame Applications - Each Inverter supplying End Aisle protected AC outlets and/or MAPs shall be non-isolated (mounted directly to the frame) using one (1) NTMX1657 Kit and three (3) P0567227 Bushings.

6) One P0708015 (Direct Powering Label) is required when the inverter is powered directly from the PDC.

7) When the inverter is powering external equipment (VDU's, Printers, etc.) liquid tight conduit is run from inverter to the top of the frame and then to protected AC poles, per Installation Methods. The NT0X07AU should NOT be used in DMS100 applications including the RME.

8) All AC powered miscellaneous equipment must be isolated from the frame.

9) Inverters powering MAP positions, ISTC (NT5X69AA) and external protected AC outlets shall be non-isolated and have their chassis ground connected to frame ground. The NT5X69AA unit shall also be non- isolated.

10) No equipment requiring power from an isolated inverter shall be fed from a non-isolated inverter and no equipment requiring power from a non-isolated inverter shall be fed from an isolated inverter. If necessary two inverters shall be provided.

RUL6 1) Provide one (1) NT2X46AB Metallic Test Access Unit for each ten LM/RLM or LCM's when up to sixteen 2-wire test trunks are provided.

2) A 1" space must be provided between adjacent switches to allow the mounting of a minibar switch cover (P0588094).

RUL7 1) Provide one (1) Metallic Test Access Unit Cover for each MTA ordered (NT2X46AB).

RUL8 1) Provide one (1) Data Set Module (DSM), NT1X60AB, as required to accommodate up to sixteen (16) modem cards. Equip per MS1X60AB. On new jobs, NT1X60AB is replaced by NT5X09AA.

2) Locate here only if unit cannot be accommodated on MTC or IOE Frame (see MS0X43AB, Section EMR5-01-001, MS0X43AC, Section EMR5-01-002, and MS0X43AD, Section EMA5-01-000).

3) This unit is powered by 115V 60 Hz and requires a dedicated INV. The number of inverters required shall be calculated using the following data:

Maximum inverter output is 500 watts.

TYPE I/O EQUIPMENT		DEVICE	POWER CONSUMPTION
Standalone Data Sets	Dial Up NT3X26AA	GDC 103-A3	15 Watts Each
		Rixon 212A	10 Watts Each

4) In the Canadian market the MIS Frame shall no longer be equipped with data set (modem) shelves or common equipment shelves (NT3X25AA). These shelves must be mounted on the Data Modem Frame (NT0X43BA).

RUL9 1) Provide one (1) NT5X08AC Data Set Module Shelf to accommodate up to sixteen 4800 modems (MTX). Equip per MS5X08AC. Locate Data Set Module Shelf with MTX modems within fifty feet of connecting IOC. NT5X08AC shelf requires a space of eleven inches high (14 inches if a cover is provided).

2) A cover, NT5X0806, and four (4) P097F813 mounting screws may be provided for each NT5X08AC Data Set Module Shelf. NT5X0806 and NT5X08AC are now MD’ed.

3) Each NT5X08AC Data Set Module Shelf is to be fed by one (1) 500VA AC inverter.

4) For more information on NT5X08AC, see Section EMA5-01-DSM-1.

5) In the Canadian market, the MIS Frame shall no longer be equipped with data set (modem) shelves or common equipment shelves (NT3X25AA). These shelves must be mounted on the Data Modem Frame (NT0X43BA).

RUL10 1) Provide one (1) Common Equipment Shelf, NT3X25AA, to accommodate up to 2 standalone modems and associated data tele-

phone sets or other standalone units up to a maximum of six shelves per frame.

2) For Modem Pooling, provide up to five (5) NT3X25AA as required. One NT3X25AA can accommodate up to three (3) data units.

3) In the Canadian market, the MIS Frame shall no longer be equipped with data set (modem) shelves or common equipment shelves (NT3X25AA). These shelves must be mounted on the Data Modem Frame (NT0X43BA). They are usable in RME applications.

4) The CES may not mount in positions 52, 60, or 69 in RMEs configured as a PDC.

5) When mounting the CES in a frame with an FSP at 45, the first position above the FSP which can accept the CES is 52. Position 52 is the required mounting position to allow clearance for the FSP cover below the CES.

6) Refer to the Engineering Sections noted in the GDC, UDS, and RM4200 Modem Rules for information on standalone modems.

RUL11 1) Provide Terminal Block Assemblies, NT3X25BA, as required to locally cross-connect MIS frame mounted equipment (for example a bank of modems).

2) Each assembly connects the DF via a 50 pair cable.

3) Provide one (1) NT3X25BA when required, (i.e. Modem Pooling) to cross connect data sets to MDF.

4) The Terminal Block may not be mounted in position 77.

RUL12 1) The 1A2 Key Telephone System Stand Alone Unit (KSS), NT5X58AA, can be provided in DMS-100 and in small DMS-200 and DMS-100/200 offices where the system requirement is not expected to exceed 7 lines and (or) 5 key telephone sets. For larger systems provide 1A2 Key Telephone Systems Module (KSM), NT5X55AA.

NT5X55AA is now MD’ed.

2) Maximum two (2) KSS per frame. Equip per MS5X58AA.

RUL13 1) Provide one (1) Alarm Audible and Visual Extension Circuit, NT5X85AA, per office when the number of Alarm Audible Pan-

els, NT0X66AA, exceeds two or (and) the number of Exit Alarm Display Panels, NT0X64AA, exceeds four (three for OAS Version I) (see also Office Alarm Visual and Audible Equipment, Section EMA6-01-000). Maximum one circuit per office.

2) A Pylon RG-2 Ringing Generator, 20 Hz ringing generator, or equivalent must be provided with the Alarm Audible and Visual Extension Circuit when more than two Audible Alarm Panels are provided. Provide one (1) Pylon RG-2 Ringing Generator C0045361, two (2) mounting brackets P0596114 and four (4) isolation hardware NT0X0013.

3) When applied to offices equipped with OAS Version I, AXU shelf NT0X62AA must be modified by NT0X62AB.

RUL14 1) Provide one (1) NT5X86AA, Audible Alarm Cut-Off Unit, in conjunction with one (1) Audible Alarm Cutoff Key Panel, NT5X86AB, when selective audible alarm cutoff control is required. Up to six audible circuits are controlled (see also Section EMA6-01-000). Maximum one unit per office.

2) NT5X86AB does not mount on Miscellaneous Equipment Frame NT0X02AB. The location is determined by the customer.

RUL15 1) Provide one (1) NT0X9594 per MIS, RSE or RME when the frame or any of its contents require grounding. Do not provide when a Power Panel Assembly is provided (i.e., when the RME is used as a PDC).

2) One (1) NT0X9594 must be provided for each MIS frame that is dedicated for modem equipment. (U.S. applications only)

RUL16 1) This Power Panel Assembly has been replaced by the UL Compliant Power Panel Assembly provisioned in RUL63. DO NOT ORDER THE FOLLOWING ASSEMBLY. IT IS RETAINED FOR HISTORICAL PURPOSES ONLY.

For Canadian offices, provide one (1) Power Panel Assembly when the RME is to function as the power distribution center for the RLM, RLCM or RSC office. The Power Panel Assembly consists of the following items of equipment which are fixed assigned to the frame positions indicated:

EQUIPMENT	PEC	POS

Ground Panel (5.5")	NT0X42AM	72
Fuse Panel "A" Feed	NT0X42AB	67,59
Fuse Panel "B" Feed	NT0X42AC	63,55
Frame Supervisory Panel	NT0X40AB	50
Power Cable Assembly	NTNX2656	67
20A Distribution Fusing	NT0X42AK	67,F14
Filter Panel	NT0X42AG	12
Power Panel MISC Material ASSY	NT0X0201	12
Filler Panel Assembly	NT0X42AD	55,59

2) With the basic configuration provide one (1) NT0X42AB and one (1) NT0X42AC in shelf positions 67 and 63 respectively to accommodate the first 15 distribution circuits on each feed.

3) Provide one additional panel of each type as required in POS 55 and 59 to accommodate the next 15 circuits on each feed. If not provide two (2) Filler Panel Assemblies, NT0X42AD, in these locations.

4) Provide one (1) spare 10 amp fuse, A0315462 , and one (1) spare QFF1A 1 1/3 amp fuse, A0205202, per filter panel, NT0X42AG.

5) When extending an office where an RME frame is configured as a PDC frame, the EAE shall reference the D640 to determine when to provide one NT0X58DA per PDC-RME installed. NT0X58DA consists of A0288175, R0106721, NT0X42AK, and P0743062.

   Apply NT0X58DA as follows: Assign NT0X42AK to RME shelf position 67, fuse position 14, if available. Otherwise assign to any available A FEED 20 Amp fuse position in the PDC equipped RME. Designate this fuse as "ABS ALARM" using P0743062 label.

6) For initials, assign NT0X42AK to RME shelf position 67, fuse position 14, if available. Otherwise assign to any available A FEED 20 Amp fuse position in the PDC equipped

RME. Designate this fuse as "ABS ALARM" using P0743062 label.

RUL17 1) For remote offices (Group of RLM's) not employing the Emergency Stand Alone (ESA) feature, provide one or more Remote Service Module (RSM), NT2X58AF/CF, as required to accommodate the office maintenance, alarm and service circuits and NT2X58CM packfills. Provide one NT2X58CF RSM for each RLM frame provided when the Emergency Stand Alone feature is provided. Provide one NT2X70AF Power Converter and P0809960 Designation Label per NT2X58CM. Equip each per MS2X58CF.

2) When a Remote Service Module (NT2X58CF) is provided on the NT0X02AB frame, miscellaneous equipment including additional NT2X58CF shelves may be mounted in the remaining frame positions. Mount miscellaneous equipment toward lower portion of the bay to allow for future growth of service modules at the top. The B fusing is to be 3 amp maximum for each NT2X58CF shelf.

3) Maximum one RSM per RLM and four RSM per RSE.

4) Note, cabling distance between the RSM and Line Drawer (LD) position 19 of the connecting RLM must not exceed 15 feet (4.6 meters).

RUL18 1) Provide one (1) interconnecting cable group for each RSM provided; select according to position of shelf on the RSE frame.

RUL19 1) Provide one (1) or more Circuit Pack Storage Shelf Assy, NT0X8503, consisting of 1 Circuit Pack Cage Assy, NT0X33AA, 20 Inline Card Sliders, P0558097 and 20 Offset Card Sliders, P0558098, to house the spare card requirements of the Remote Office.

2) Provide up to a maximum of five (5) NT0X8503 per NT0X02AB.

3) Provide up to a maximum of five (5) NT0X8501 per job requirement in place of the NT0X8503 Circuit Pack Cage Mounting when front doors are required and no space is required directly behind the cage.

If any wiring, cables or equipment runs down the rear of the frame behind the cage, then the NT0X8501 cage cannot be used.

RUL20 1) Provide one (1) Line Card Storage Chassis, NT3X55AA, to accommodate up to twenty (20) Line Cards, size 4" x 4" and up to four (4) cards, size 4" x 6".

2) Provide one (1) Line Card Storage Chassis, NT3X55BA, (used in conjunction with LCE vintage line cards) to accommodate up to thirty (30) single slot Line Cards, or ten (10) double slot and ten (10) single slot line cards. The chassis will also store two (2) line drawer Bus I/F cards.

3) Equip NT3X55AA/BA on shelf NT0X8503. Allow 6" per chassis maximum 4 per shelf.

RUL21 1) When the Remote Office Test Line (ROTL) feature is required, provide one (1) ROTL, the 105 Test Line Units, and one (1) ROTL Power Supply Unit per office.

2) Mount the ROTL and 105 Test Line Unit 1066-ROTL/52A at POS 06. Unit includes mounting adapters.

3) Mount the ROTL Power Supply Unit 1056 at POS 28.

4) Provide twelve (12) Isolated Hardware mounting screws, NT0X0013, to secure the ROTL hardware. (NT0X0013 replaces P097F813 for this application only.)

5) If required, provide one (1) ROTL Spares Kit APC 1066-SPK, (CPC A0300305).

RUL22 1) The optional 105 Test Line is a circuit pack that plugs into the ROTL unit. The first 105 Test Line CP is always provided with the ROTL unit.

2) Provide up to five (5) additional 105 Test Lines as per customer requirements.

3) Starting with slot position A10, the 105 Test Lines are assigned as follows:

Test Line #	1	2	3	4	5	6
Slot Position	A10	A9	A8	A7	A6	A5

NOTE: the 105 Test Line that is always provided with the ROTL unit is assigned in slot A10.

RUL23 1) Provide two (2) Interconnect Power Cables, NT0X95CS, between each ROTL Power Supply Unit and the FSP.

RUL24 1) Provide one (1) NT5X95AA MAE Shelf for offices requiring NT5X97AA Alternate Use Trunk Applique Circuit Packs. Equip per MS5X95AA.

2) This shelf is used with NT0X88AD FSP.

3) This shelf requires two (2) 10 amp fuses -48V to PDC.

4) Each shelf may be provisionable with two (2) power converters. A maximum of four (4) power converters is allowable per frame due to FSP limitations.

5) In applications where either or no power converters per shelf are used, a maximum of five (5) shelves may be mounted per frame.

RUL25 1) Provide up to a maximum of five (5) NT0X8502 per job requirement. Only provide on Remote Service Equipment frame.

RUL26 1) Reserved for future use.

RUL27 1) Provide Terminal Block Assembly (NT3X25BB) when required for DMS-250 in place of the DF for cabling and cross connecting.

2) The NT3X25BB may also be provided on the DMS 100/200 to cable MTAs and LCEs to an IDF using the MIS frame. This is called an MTA workaround.

3) The Terminal Block may not be mounted in position 77.

RUL28 1) The TELLABS 291 System is MD’ed.

2) Provide the TELLABS 292R Conference/Alerting System per customer request. For more information refer to ECM 428.

3) Order FSP NT0X88AF as per RUL1.

RUL29 1) Provide per customer requirements.

2) Order FSP NT0X88AF per RUL1 3).

3) Used in conjunction with NT5X75AA, NT5X76AA and NT5X77AA per customer requirements. (See Section EMA14-01-000).

RUL30 1) Reserved for future use.

RUL31 1) Reserved for future use.

RUL32 1) Provide one (1) NT5X72AB when NT5X72AA Central Alarm Display Panel is provided in the Alarm Center (see Section EMA6-01-000).

2) NT5X72AB is a 2" high panel mounted on the MIS.

RUL33 1) Provide one (1) NT5X92AB Alarm Extension Panel if at least one (1) NT5X92AA Panel is provided, and/or more than one NT0X63AC panel is provided at a remote site, and/or at least one (1) NT0X64AA Panel is provided (see Section EMA6-01-000).

2) NT5X92AB is a 2" high panel mounted on the RSE.

RUL34 1) Provide one (1) DS-5 Modem Shelf, NT5X09AA when modem pooling (Canadian applications) is a requirement. The shelf is powered from the FSP, NT0X88AB, using two (2) ten amp fuses.

2) Mounting hardware is always provided with the shelf.

3) For more information on NT5X09AA, see section EMA5-01-DSM-2.

RUL35 1) Reserved for future use.

RUL36 1) Equipment referenced per this rule is used on a limited basis and is replaced by the UDS Modem Products. However, the following information is retained for historical purposes only:

-For Modem Pooling (U.S. applications), provide one (1) DS-1 AC powered modem card cage to house up to sixteen (16) GDC modems. Maximum two (2) per DU MIS frame.

-Also provide two (2) mounting brackets for each DS-1.

RUL37 1) Equipment referenced per this rule is used on a limited basis and is replaced by the UDS Modem Products. However, the following information is retained for historical purposes only:

-For Modem Pooling (U.S. applications), provide one (1) 101-4918-001 shelf to house up to three (3) Data Units. This shelf shall be field modified to include an AC power strip. Power is derived from an inverter.

RUL38 1) Equipment referenced per this rule is used on a limited basis and is replaced by the UDS Modem Products. However, the

following information is retained for historical purposes only:

-For Modem Pooling (U.S. applications), provide one (1) pre-wired modular jack block to terminate twelve (12) Data Units, maximum three (3) per DU MIS frame. The blocks mount on top of the frame using one (1) 101-4926-001 bracket. Provide one (1) bracket per block.

RUL39 1) Deleted

RUL40 1) Provide one (1) FSP Cover, P0673914 and mount over the FSP (NT0X88AB/AD/AE/AF) when the top of the FSP is exposed due to empty positions above FSP, or due to irregular size of equipment mounted above FSP. This cover protects the FSP from foreign material and requires no additional vertical frame space.

RUL41 1) The TOPS Tone & Scrambler scrambles the speech of a subscriber as heard by the operator during verification, and introduces an alerting tone to the subscriber when an operator must "barge-in" on an established connection.

2) The NT3J00AA card cage is seven (7) inches high and twenty six (26) inches wide. The NT3J00AB is packaged on a double wide circuit pack and is located in odd slots 03 through 21. Spread all scrambler CPs evenly over all card cages. An NT3J0044 power supply is always provided in slot 01 of the card cage.

3) The NT3J00AA card cage is fused at 1 1/3 amps with power terminations at the FSP on TB1-11 (-48V) and TB1-12 (GND) using 22AWG wire.

4) The NT3J00AA card cage is cabled to the distributing frame via three (3) NT0X26UE 50 pin connectorized cables.

RUL42 1) The NT3J00BA applique shelf is a multifunctional custom designed circuit pack holder used at present for loop test applications.

2) The NT3J00BA applique shelf is seven (7) inches high and twenty six (26) inches wide.

3) Refer to Engineering Manual Section EMA13-01-MLTS-1 for more details.

RUL43 1) Provide one (1) Data Unit Rackmount LS Shelf on the MIS Frame to accommodate up to sixteen (16) data units (U.S. applications only).

2) For more information on the Data Unit Rackmount LS shelf, NT4X25DH, see Section EMA5-03-DRS-1.

RUL44 1) Provide one (1) A0344310 23" DC Modem Shelf (RM16M) to accommodate up to sixteen UDS modem cards. (Use in MIS is for U.S. applications only. May be used in RME in all markets.)

2) In the Canadian market, the MIS Frame shall no longer be equipped with data set (modem) shelves or common equipment shelves (NT3X25AA). These shelves must be mounted on the Data Modem Frame (NT0X43BA).

3) A0344310 shelf requires a space of seven inches high.

4) The mounting adapters to convert the unit from 23" to 26" are always provided by UDS.

5) Provide one (1) ESD Modem Faceplate Kit for each UDS modem shelf (A0344310) that houses UDS modems (A0336306 & A0360763).

6) Provision modem cards per customer requirements to provide desired features. For provisionable modems see UDS Modems Engineering Manual Section, EMA13-01-UDS-1 (62005220).

RUL45 1) Miscellaneous hardware such as ROTL Units, MTD’s, etc. must be electrically isolated from the framework upon which they are mounted. Refer to Installation Manual 940 Section 01 for grounding criteria.

2) One (1) NT0X0013 Isolation Hardware is provisioned in place of each mounting screw for each piece of miscellaneous equipment with a non-NT_X__ Product Engineering Code (PEC) that is mounted in the Remote Miscellaneous Equipment Frame.

3) The following equipment (which mounts on a Miscellaneous Frame) have isolation hardware always provided as part of their stocklist. Any piece of equipment with a NT_X__ PEC which mounts on a MIS frame that is not on this list must have NT0X0013 Isolation Hardware provisioned to accommodate ISG.

PEC DESCRIPTION

NT5X58AA - 1A2 Key Telephone System
NT5X55AA - 1A2 Key Telephone System Module
NT5X09AA - Data Set (Modem) Shelf

RUL46 1) For Isolated System Grounding (ISG), one (1) NT4X2591 Data Unit Grounding and Mounting Hardware Kit is provided per DC Modem Shelf. (U.S. applications only)

RUL47 1) The RM46A1 shelf and its associated cards are MD'ed. However, the following information is retained for historical purposes.

2) Provide one (1) 905-5060-01 RM46A1 Data Mounting Shelf to provide a mounting enclosure for Data Auxiliary Sets, which provides standard terminations for four-wire Private Leased Line operation of modems for both non-loaded and loaded lines. This shelf can accommodate up to eight (8) Rixon Data Auxiliary Sets.

3) 905-5060-01 shelf requires a vertical space of seven inches high.

4) Provide one each mounting adapters 615-1022-01 and 615-1051- 01 to convert the unit from 19" to 23" and 23" to 26", respectively.

5) Provide one (1) 500VA AC Inverter per RULE 5 for every twelve (12) 905-5060-01 RM46A1 shelves provided.

6) Refer to 905-5060-01 Engineering Manual Section for more detailed engineering information.

RUL48 1) The A0318217 Auxiliary Data Set is MD'ed. However, the following information is retained for historical purposes.

2) Provide one (1) A0318217 C829CR-L4 Data Auxiliary Set to provide standard terminations for four-wire Private Leased Line operation of modems for both non-loaded and loaded lines.

3) Provide one (1) A0318217 per stand alone or rack mounted modem configured for four-wire Private Leased Line operation on non-loaded or loaded lines.

RUL49 1) The NT0J04BA and the NT0J04BB are replaced by the NT0J6_BA Local Test Cabinet, where the "_" is substituted by a 2, 3, or 4, resulting in the NT0J62BA / NT0J63BA / NT0J64BA LTC.

2) Provide one (1) NT0J62BA / NT0J63BA / NT0J64BA LTC Mainframe along with other equipment to provide a microprocessor controlled LTC for testing subscriber loop circuits. This unit requires an 8 amp fuse for CO Battery and a 1 1/3 amp fuse for Alarm Battery.

3) Refer to Engineering Manual Section for NT0J6_BA for details on the NT0J62BA / NT0J63BA / NT0J64BA LTC.

4) The LTC requires 19.75 inches of vertical rack space, 3.5 inches of cooling space is required above and below the unit.

RUL50 1) Provide one (1) FSP NT0X88AB/AD/AF per RUL1 1).

2) Provide one (1) QFF1C 3 Amp fuse, A0205204 into the FSP per TCS 1800A-1 L1, 1A2 Line Card Shelf.

3) Provide one (1) TCS 1800A-1 L1, 1A2 Line Card Shelf, to accommodate a maximum of ten (10) TCS 1800AA-1 L1, 1A2 Line Cards.

For systems requiring more than ten (10) lines, order additional TCS 1800A-1 L1, 1A2 Line Card Shelves, as required.

4) Refer to the provisioning rules for the 1A2 Line Card Shelf, TCS 1800A-1 L1.

5) Mounting brackets are not required.

RUL51 1) Provide one (1) TCS 1800B-1 L1, BIX Shelf, to provide a cross connect facility at the MIS frame for multiple Logic 10/20 phones or Communication Modules.

2) This shelf accommodates a maximum of three (3) TCS 1800BA-1 L1, BIX Modules.

3) Mounting brackets are not required.

4) This shelf is not required when the main distribution frame (MDF) is used as the cross connect facility.

5) Refer to the provisioning rules for the BIX Shelf, TCS 1800B- 1 L1.

RUL52 1) Provide two (2) TCS 1603AB-P8 Interconnect Cable to connect one (1) 1A2 Line Card Shelf to its associated BIX Shelf.

2) Provide two (2) TCS 1603AB-P8 Interconnect Cable when multiplying one BIX Shelf to another BIX Shelf.

3) In each of the above cases, one TCS 1603AB-P8 Interconnect Cable is required for the first five (5) line card appearances and the second cable is required for the second five (5) line card appearances.

RUL53 1) Provide two (2) TCS 1603A MDF Cables (specify length in metres) for each 1A2 Line Card Shelf to cable it to the MDF when cross connections to multiple Logic 10/20 or Communication Module is required at the MDF.

2) One of these MDF Cables is required for the first five (5) line card appearances and the second cable is required for the second five (5) line card appearances from the 1A2 Line Card Shelf.

3) These cables not required when the BIX Module is used as a local cross connection facility.

RUL54 1) When the TCS 1800 Key Telephone System is provided, provide one (1) TCS 1800M-1 L1 Customer Manual as required.

RUL55 1) The NT0J04EA DRTU is MD'ed and replaced by the NT0J04EB.

2) Provide the DRTU to enable the Local Test Cabinet (Located in the host office) to test subscriber lines connected to a DMS Digital Remote Office or Pair Gain Device (eg. DMS1 Line).

3) The DRTU is approved for the following Digital Remotes: (1) RSC (2) RLM (3) RLCM (for RSE/RME frame mounting). Refer to NT0J04EB EMS for more provisioning information.

4) Provide two (2) P0596114 mounting brackets and (4) P0148634 mounting screws per each DRTU.

RUL56 1) The NT7M-Series Digital Announcer (DA) from the Cook Division of Northern Telecom Inc. is provided as a desk top or rack mount unit. This unit is used as an adjunct announcer to the DMS- 100F internal MTM mounted Digital Recorded Announcer Machine (DRAM) for remote offices.

2) The DMS100F approved configuration of the NT7M-Series DAs are always provided with mounting adapters for 19 or 26 inch mounting. The physical dimensions of the DA and its associated Expansion Chassis are:

Height: 1.75 inches (for the NT7M00-Series CDA)
Width: 17.5 inches
Depth: 12.0 Inches

3) The NT7M00-Series single channel CDA is powered from the MIS frame FSP via a 2 amp fuse.

4) Refer to the Engineering Manual Section EMA13-01-CDA-1 for detailed engineering information on the NT7M00-Series of CDA configurations.

RUL57 1) Provide the TELLABS 292BR-1 as a base component in supplying Telco requirements for a conference/alerting system.

2) The TELLABS 292BR-1 provides the facility to mount up to 10 conference lines and the required control cards.

3) The TELLABS 292BR-1 has the following physical properties:

H 13" W 19" (TELLABS provides adapters for 23" mtg)

4) Provide four (4) each P0701391 mounting brackets per 292BR-1 provided.

5) Order FSP NT0X88AF per RUL1 Item 3).

RUL58 1) Provide one (1) 292DR per 10-Lines Conference Lines required in excess of the initial 10-Lines provided with the 292BR-1.

2) Provide four (4) P0701391 mounting brackets per 292DR provided.

RUL59 1) The RM40A/B is MD'ed. However, the following information is retained for historical purposes.

2) The Rixon Data Set Shelf (RM40A/B) is a 16 slot data set card mounting enclosure. The shelf is available in a -48V and a 117V AC version (where the -48V version is preferred).

3) The RM40A/B mounts a maximum of 16 single slot data set cards, 8 dual slot data set cards, or other combinations thereof totalling 16 cards slots used but not necessarily equipped with a modem.

4) The RM40A/B requires a space of seven inches high.

5) For more information on the RM40A/B -48V version, refer to section on 905-5121-004.

6) For more information on the RM40A/B 117V AC version, refer to section on 905-5121-001. Note this shelf requires protected AC via a 500VA AC Inverter.

RUL60 1) The Rixon Data Set Shelf (RM70) is a 16 slot data set shelf used to mount eight (8) each of the following modems: R103J, R201C, Executive 212A, Intelligent R212A, or any combination of these modems totalling eight (8) dual slot modems per RM70 modem shelf.

2) Protected AC is required for this shelf.

3) All telephone and telephone line connections are made directly to the modem. Card cage power is provided by a 3-prong capture AC power cord.

4) The RM70 require seven (7) inches of vertical mounting space and adapters for 26" MIS frame mounting.

5) Refer to section on 905-5098-001 for more detailed engineering information.

RUL61 1) The Rixon RM80 is a rack mounted card cage equipped with 16 card slots and power supply. The shelf is used by NTI to house up to eight (8) CA208A/B modems.

2) Protected AC is required for this shelf.

3) All telephone and telephone line connections are made directly to the modem. Card cage power is provided by a 3-prong capture AC power cord.

4) The RM80 requires fourteen (14) inches of vertical mounting space and adapters for 26" MIS frame mounting.

5) Refer to section on 905-5118-001 for more detailed engineering information.

RUL62 1) The Rixon RM90 is a rack mounted card cage equipped with 18 card slots and power supply. The shelf is used by NTI to house up to nine (9) R96 modems.

2) Protected AC is required for this shelf.

3) All telephone, telephone line, and test connections are made directly to the modem. Card cage power is provided by a 3-prong capture AC power cord.

4) The RM90 requires 10.5 inches of vertical mounting space and adapters for 26" MIS frame mounting.

5) Refer to section on 905-5139-001 for more detailed engineering information.

RUL63 1) Provide one (1) U.L. EAS Power Panel Assembly when the RME is to function as the power distribution center for the RLCM or RSC office. The U.L. Power Panel Assembly consists of the following items of equipment which are fixed assigned to the frame positions indicated:

EQUIPMENT	PEC	POS
Ground Panel (5.5")	NT0X42AM	72
U.L. Fuse Panel "A" Feed	NT0X42UB	67,59
U.L. Fuse Panel "B" Feed	NT0X42UC	63,55
U.L. Filter Panel	NT0X42UG	12
Power Panel Misc Material Assy	NT0X0202	
Filler Panel Assembly	NT0X42AD	55,59
U.L. Frame Supervisory Panel	NT0X40UB	50

2) With the basic configuration provide one (1) NT0X42UB and one (1) NT0X42UC in shelf positions 67 and 63 respectively to accommodate the first fifteen (15) distribution circuits on each feed.

3) Provide one (1) additional panel of each type as required in POS 59 and 55 to accommodate the next fifteen (15) circuits on each feed. If not, provide two (2) Filler Panel Assemblies, NT0X42AD, in these locations.

4) Provide one (1) spare 10 amp fuse, A0315462 and one (1) spare QFF1A 1-1/3 amp fuse, A0205202 per filter panel, NT0X42UG.

RUL64 1) Equipment referenced with this RULE is MD'ed with no direct replacement. Refer to the NT5M-Series CDA for a functional Replacement.

RUL65 1) Reserved for future use.

RUL66 1) Provide the Cook Division Pre-Recorded MSGs Cassette Tape (213404) per Telco specifications to provide industry standard telephone announcements for either male or female voice message applications. This tape may be used with any recorded announcement system (analog or digital).

(2) Each announcement is approximately ten seconds in length. One side of the tape has all messages recorded in a male voice and the other side has the same messages recorded in a female voice. There are 54 messages per side.

RUL67 1) The Case/Datatel RM4200 Data Set Module is a 16 slot data set card mounting enclosure. The shelf is available in a -48V DC and a 115V AC version (where the -48V DC version is preferred). (Use in MIS is for U.S. applications only. May be used in RME in all markets.) Note that the 115VAC shelf requires (1) one 500VA AC Inverter which can power up to three (3) 115VAC RM4200 Shelves.

2) In the Canadian market the MIS Frame shall no longer be equipped with data set (modem) shelves or common equipment shelves (NT3X25AA). These shelves must be mounted on the Data Modem Frame (NT0X43BA).

3) The RM4200 requires a space of seven inches of vertical rack space, plus one inch above and below the shelf for convection cooling. Mounting adapters required to mount the shelf in a 19, 23 or 26 inch frame are always provided by the manufacturer.

4) For more information on these shelves, refer to the Engineering Manual Section EMA13-01-DSM-2, PEC code 905-5222-00N.

5) Provision modems per customer requirements to provide desired features. For provisionable modems see Engineering Manual Section EMA13-01-DSM-2, PEC code 905-5222-00N.

RUL68 1) ROTL's are fused from the PDC or MIS Frame FSP at 10 amps.

2) The NT7F18AA/AB/BA/CA/AD or NT7F20AA requires 14-inches plus 5 empty frame mounting hole locations above and below the unit for cooling purposes, for a total of 14-inches

plus the number of inches left open by the 10 empty frame slots of vertical MIS frame space (approximately 25-inches).

3) Refer to ECM 479 DTH provisioning and the Engineering Manual Section for DTH-ROTL provisioning details.

RUL69 1) Provide one (1) NTNX5109 TOPS MPX mounting hardware per Miscellaneous Frame used in TOPS MPX applications. (This kit contains hardware for a fully equipped TOPS MPX Miscellaneous Frame). A TOPS MPX Miscellaneous frame cannot house other miscellaneous equipment than that dedicated for TOPS MPX. A TOPS MPX Miscellaneous Frame does not require an FSP. (Reference Figure 1)

RUL70 1) For the TOPS MPX system, one token ring contains from 1 to 20 operator positions (16 standard). Each frame may contain a maximum of four (4) token rings. Refer to NTNX51BA for further TOPS MPX provisioning.

2) Provide three (3) MAUs per token ring required.

3) Provide two (2) P0709734 MAU adapter brackets per token ring. (Two brackets will accomdate the mounting of three (3) MAUs).

4) Provide one (1) NTNX5103 TOPS MPX BIX Block assembly per token ring.

RUL71 1) Provide one (1) P0702320 BIX Block adapter bracket per each two (2) TOPS MPX BIX Block assembly (NTNX5103). (One bracket accomdates two (2) BIX Block assemblies).

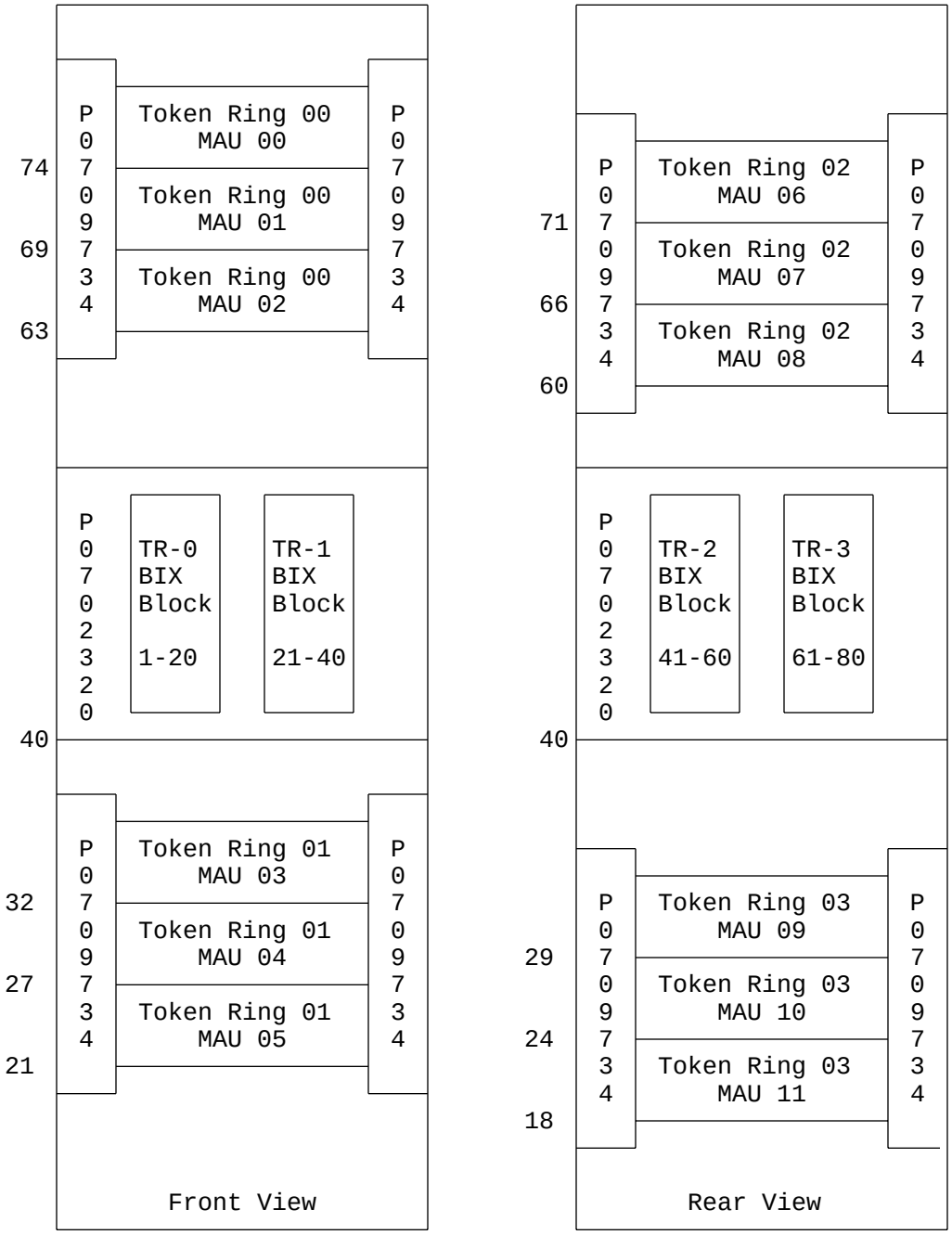

Figure 1. TOPS MPX Miscellaneous Frame Layout

RUL72 1) Provision the NT7X76AA WTA Panel for Wideband Test Access, NT7X76BA WTA Panel (Dedicated LTU/MTU) for dedicated LTU/MTU applications. Provision the NT0X31AE Cable Trough on the MIS frame when WTA panels are present to accommodate the large quantity of cables.

The Wideband Test Access (WTA) Panel will replace the use of the Main Distributing Frame (MDF) for metallic cross-connecting of test circuits (such as the Line Test Unit/Multiline Test Unit (LTU/MTU)), Metallic Test Access (MTA), and line equipment in DMS offices.

The WTA Panel is a cross-connect panel which provides the metallic cross-connect capability for the testing of DMS wideband subscriber services such as Datapath as well as existing voice frequency DMS-100 subscriber services. It is mandatory for the testing of Datapath service. The existing MDF cabling method cannot support the testing of these services mainly because of the transmission impairment caused by the excessive switching office cabling.

The most important application of the WTA panel is when it is used in conjunction with a PGTC (Pair Gain Test Controller) test set. The PGTC can only tolerate up to a 1.5dB loss in the test loop to maintain full testing functionality and reliability. The WTA Panel reduces the test loop lengths for the PGTC test equipment.

This method of cross-connecting office wiring for the test circuits, MTA, and test access cables will drastically reduce the amount of office cabling resulting from the existing MDF method.

2) To achieve minimum MTA cabling distance, the following rules are to be followed when possible:

* Place the MTAs that provide vertical appearances for ISDN/Datapath next to the WTA miscellaneous frame(s).

* Place all LTUs/MTUs next to the WTA miscellaneous frame(s).

* Place the ISDN/Datapath line test equipment next to the WTA Miscellaneous frame(s).

* Avoid cross-connection of NT equipment at the MDF where possible. Note that the APPLIQUE card cannot terminate on a WTA, and therefore must terminate on the MDF.

* Ensure the TM8 Flip Plate is also provisioned.

3) There are two (2) versions of the WTA Panel:

NT7X76AA WTA Panel

NT7X76BA WTA Panel (Dedicated LTU/MTU)

NT7X76AA allows the cross-connection of up to 30 NT3X09BA MTA circuits in a matrix of three (3) horizontal NT3X09BA rows by ten (10) vertical NT3X09BA columns. This is equivalent to the cross-connection of 24 horizontal test appearances to 80 vertical appearances. The NT3X09BA card has 8 horizontals and 8 verticals.

The NT3X09AA is not recommended for use with the WTA panel. The NT3X09AA has a 4X8 matrix as opposed to the NT3X09BA which has an 8X8 matrix. An NT3X09AA can be connected to the WTA panel using the NT3X09BA connectorized cable, but once a WTA horizontal row has a NT3X09AA, only NT3X09AAs can be connected to that particular horizontal row. The NT3X09AAs and NT3X09BAs cannot be mixed on the same row of a WTA panel.

NT7X76BA is similar to NT7X76AA with one exception. The first horizontal test appearance of the 24 horizontal test appearances of the NT7X76BA panel is grouped into five (5) subgroups, each with two (2) horizontal 0's and 16 verticals (if NT3X09BA cards are used for cross-connection purposes) or 8 verticals (if NT3X09AA cards are used for cross-connection purposes). Each horizontal subgroup can have a dedicated LTU/MTU. Hence, up to five (5) dedicated LTU/MTUs can be connected to NT7X76BA. If NT3X09BA cards are used, each dedicated LTU/MTU will have access to 16 verticals or 8 Line Concentrating Modules (LCMs) within each horizontal subgroup 0.

4) The NT7X76AA WTA Panel cannot be used for the dedicated LTU/MTU function.

The NT7X76BA WTA Panel (Dedicated LTU/MTU) can be used for the dedicated LTU/MTU function.

The NT7X76AA can also be used if the office requires more than one (1) (horizontal) row of WTA Panels or more than 24 horizontal test appearances.

5) The number of WTA Panels can be expanded horizontally (in rows) and/or vertically (in columns) in a matrix.

For offices without dedicated LTU/MTUs, only NT7X76AA would be required for expansion both horizontally and vertically.

For offices with dedicated LTU/MTUs, the first row of WTA Panels would be of the NT7X76BA type. If connection to more dedicated LTU/MTUs was required, NT7X76BA Panels would be used for the second row of WTA Panels. Otherwise, the NT7X76AA Panel should be used. Our current standard is to have dedicated LTU/MTUs on the first row of the matrix of WTA Panels (i.e. NT7X76BA) and not to have dedicated LTU/MTUs on the second and all subsequent rows of the matrix of WTA Panels (i.e. NT7X76AA).

6) The WTA Panel replaces the Intermediate Distribution Frame (IDF) for the testing of the universal SLC 96 subscriber loop carrier system which uses an AT&T test tool called Pair Gain Test Controller (PGTC).

   The existing engineering rules for the use of the IDF should be applied to the use of the WTA Panel. For more information, see ECM-276 on subject 8X8 Metallic Test Access Circuit Pack, NT3X09BA.

7) The WTA panel mounts on the Miscellaneous Equipment (MIS) Frame NT0X02AB. With the panel mounted on an MIS frame within the DMS equipment frame lineups, all the cabling to the MDF is eliminated and this results in much shorter office wiring for the testing of subscriber services.

   For initials, or extensions adding Miscellaneous equipment frames, always provide the cable trough, NT0X31AE, on the MISC frame to accommodate future WTA panel growth.

   For initial and extension offices requiring new MIS Frames, the WTA Panels should be mounted on standard shelf positions 65, 51, 32, 18 and 04 in the following order:

Panel #1	65 Front
Panel #2	51 Front
Panel #3	51 Rear
Panel #4	32 Front
Panel #5	32 Rear
Panel #6	18 Front
Panel #7	18 Rear
Panel #8	04 Front

   Currently WTA panel cannot be mounted on position 65R due to conflict with the ground cable lug. This restriction will be removed in future when the workaround is available.

For ease of engineering cables, the WTA Panels are assigned from the top position down on the MIS Frame.

Although a Frame Supervisory Panel (FSP) is not required for the WTA Panel, an FSP can be mounted in shelf position 45F if other devices (which can mount on the MIS Frame) require an FSP. Hence, if the MIS Frame is not fully provisioned with WTA Panels, other valid hardware units can be mounted.

A WTA panel cannot be mounted in position 45R behind an FSP. Space must be given behind the FSP for installers to have access to the FSP cabling.

For installation on existing MIS Frames in existing offices, the WTA Panels can be mounted on any available shelf position of the MIS Frame, preferably the top shelf positions.

8) To minimize the office wiring required for line testing, the Maintenance Trunk Modules (MTM) that are provisioned with NT3X09BA cards and LTU/MTUs should be reduced to a minimum and placed in the adjacent TME/DCE Frames next to the MIS Frames containing WTA Panels.

The Line Concentrating Equipment Frames (LCE) and ISDN Line Concentrating Equipment Frames (LCEI) should be clustered around the MIS Frames containing WTA Panels in order to minimize the cabling to these panels.

Hence, the signal loss caused by office wiring should be reduced to the minimum that is possible. The signal loss should be less than one (1) dB in most offices.

To allow open access to the WTA Panel’s connectors, all WTA panel interconnect cables (e.g. MTA Cables) are to be routed behind the panel(s).

9) Discrimination Numbering

WTA Panels NT7X76AA/BA are numbered from 000 on up (e.g. WTA 000, WTA 001, etc.).

RUL73 1) Provide one (1) DS-6 Modem Shelf to accommodate up to sixteen (16) modems. (Use in MIS is for U.S. applications only. May be used in RME in all markets.)

2) For more information on A0380973, see section EMA13-01-GDC-1.

3) In the Canadian market, the MIS frame is no longer equipped with data set (modem) shelves or common equipment shelves (NT3X25AA). These shelves are mounted on the Data Modem Frame (NT0X43BA).

4) Provision modem cards per customer requirements to provide desired features. For provisionable modems see GDC Modems Engineering Manual Section, EMA13-01-GDC-1 (T_GDC_MOD).

RUL74 1) Installation of CDA's require the following cable considerations:

* Power: All CDA's are shipped with a Power Connector Kit (NT5M45EB). The kit contains the mating connector, crimp style contacts, backshell, and strain relief required to fabricate the power connector assembly.

* Provide a length of 22AWG wire to connect -48V, BATRTN, and Frame Ground leads on the CDA to the FSP 1 1/3A fuse. Use Red, Black, and Green wire, respectively per Rule 75.

NOTE-Any wire 18 to 24AWG solid or stranded may be substituted where distance or other issues warrant.

RUL75 1) The NT5M0n__ Series CDA mount in the MIS/RSE/RME frame where two inches (2") of rack space per unit is available.

2) Provide one (1) 1 1/3 amp fuse per NT5M0n__ Series CDA provisioned.

3) Provide the following wire shipped loose to the job site, lengths as specified below:

3.0 meters R0106540 Red for 48VDC
3.0 meters R0106542 Black for Battery Return (BATRTN)
1.0 meters of R0108330 Green for Frame Ground (FG)

4) Provide the following cables as specified below:

1. If CDA interfaces 4-Wire E & M Trunks, provide one 25 Pair Cable Assembly NTNX36AA for every 4 CDA Channels, i.e. one cable for 2 or 4 channel CDAs, two cables for 6 or 8 channel CDAs. The length of this cable is job engineered.

2. If CDA interfaces Voice Line Cards, provide one RJ-11 Modular Cord, NE-D4BUQA2.1 and one Teledapt Jack Box NE-625QA4 for each CDA channel. Also provide one

mounting strip, NT0X07AU as a mounting point for the Jack Boxes.

3. If the always provided Remote Record feature is to be enabled, provide a separate RJ-11 Modular Cord NE-D4BUQA2.1 and a separate Teledapt Jack Box NE-625QA4.

RUL76 1) Provide one (1) NT0X42XC per RME equipped with the power distribution equipment when the independent ABS feed portion of EAS is required unless it is already equipped with the NT0X40UB EAS FSP. The PC0X42XC Kit should also be ordered to provide installation information.

2) When the Enhanced Alarm System Kit is provisioned, the 20A ABS Alarm fuse F14 at shelf position 67, the NTNX2656 Power Cable Assembly and the ABS Alarm label are no longer necessary and should be removed. For addition mounting details see PC0X42XC.

RUL77 1) Provide one (1) Inactive System Timing Circuit (NT5X69AA) when required to record the duration of dead system downtime should it occur.

2) The Inactive System Timing Circuit must be powered from an inverter mounted on the same MIS frame. The ISTC and the inverter must both be non-isolated.

RUL78 1) Provide one (1) Universal Framework (NT0X25AH) per each MIS, RSE, or RME frame required.

RUL79 1) The EMM, NT0J42BA, is designed to provide ISDN 2B1Q Subscriber loop line test maintenance service for up to 2000 lines per EMM. The ITM, NT0J43AA, is optional equipment to the EMM that provides additional test features. Together they are referred to as ESTU, Enhanced Services Test Unit. Refer to EMA13-01-TL1-1 for provisioning information for ESTU.

RUL80 1) Provision NTAN1_AA RTU based on number of lines and testing requirements, for testing subscriber loop circuits via CALRS (please contact Prism Systems Engineering Department for final configuration). This unit requires a 5 amp fuse for CO Battery and a 2 amp fuse for Alarm Battery.

2) Refer to Engineering Manual Section for NTAN1_AA for more details.

3) The RTU requires 20 inches (50.8 cm) of vertical rack space, 4 inches (10.16 cm) of cooling space above and below the unit.

RUL81 1) Provide mounting adapters NT0J04DD to convert the LTC/RTU from 23" mounting to 26" mounting, when mounting unit in an NT0X02AB type frame.

RUL82 1) Provide one (1) NTAN60AA to test lines in a Remote or Pair-Gain device from CALRS.

The DRTU is used as a slave device with the Local Test Cabinet or Remote Test Unit (XFM or AMH). The DRTU is approved for the following Digital Remotes: (1) RSC (2) RLM (3) RLCM (for RSE/RME frame mounting).

RUL83 1) Provide mounting adapter when mounting NTAN60AA in a MIRME/ RSE frame.

RUL84 1) Where no doors are used on the MIS frame, the SDM should be mounted in shelf position 3, and no baffle should be used. If this space is not available, the SDM can be mounted in any available space, and a 4 inch Baffle (NT6X1402) placed directly beneath the SDM from position 8 and up.

Provide one (1) NTRX50DA per office when Generic Services Frame- work (GSF) software application is provided. Provides NTRX50JA VME SDM chassis, Frame power/alarm cable, frame logic return cable and mounting hardware.

2) Where doors are used, the SDM should be mounted in shelf position 3, and no baffle should be used. If this space is not available, the SDM can only be mounted in one of the following positions: 69, 68, 35, 34, or 18-07. A Baffle (NT6X1402) must be placed directly beneath the SDM.

When the doors are used, these are recommended mounting positions:
-68, with 4 inch baffle below SDM (fills 64-73)
-51, with 4 inch baffle below SDM (fills 47-56)
-34, with 4 inch baffle below SDM (fills 30-39)
-17 down to 3, using no baffle below 8.
-17 would fill 13-22, 16 would fill 12-21,etc.

(Baffle position is SDM position minus 4. Baffle occupies 4 inches, SDM occupies 6 inches).

3) The SDM is powered by a single A or B Feed. If both 10 Amp Circuit Breakers in the MIS FSP are in use, an additional FSP must be provisioned for SDM mounting. Power for the MIS frame must originate from either the PDC or CPDC.

4) NTRX50DA SDM VME can only be provisioned on frames equipped with NT0X88AB or NT0X88AF FSPs. When NT0X71CA doors are to be provisioned NT0X88AF is the only fuse panel that can e specified in conjunction with NTRX50DA. The following mounting positions refer to frame mounting position of the lowest screw holding the NTRX50DA mounting brackets to the frame. For new production specify frame mounting position 03 for NTRX50DA; (NT6X1402 baffle is not required when NTRX50DA mounts in position 03). CB1 or CB2 on NT0X88AB/AF FSP and alarm connections to FSP TS1 pins 14,15 must be assigned to NTRX50DA.

5) For more information on the SuperNode Data Manager, refer to ECM588.

RUL85 1) Provide one of NTRX50JP,JQ, JR, or JS processor cards depending upon the amount of DRAM memory required. One of these packs must be provided.

RUL86 1) Provide either NTRX50JT or NTRX50JU per disk drive capacity required. One of these disk drives must be provided. For 120MB DRAM option, provide NTRX50JU 2GB disk drive only.

RUL87 1) Provide both NTRX50JV and NTRX50JW when NTRX50DA is to be connected to telephone company LAN.

RUL88 1) Provide one NT6X1402 baffle and mounting hardware when NTRX50DA is not mounted in frame position 03.

RUL89 1) Provide quantity of NTEX45AA 1-Meg Modem Patch Panel Kits as required (see Note 4).

CABINETIZED REMOTE MISCELLANEOUS EQUIPMENT (CRME)

PEC CODE: NTRX31EA

CPC CODE: B0239067

RATING: STD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CRME

ENGINEERING DESCRIPTION: The Cabinetized Remote Miscellaneous Equipment (CRME) is a general purpose equipment cabinet for use in Remote Switching Center - Sonet (RSC-S) line-ups. It combines PDC and MIS functions into one cabinet. The CRME product uses the NTRX25AA Enhanced Cabinet. The dimensions of the NTRX25AA are 28.5W X 28.7D X 72.0H inches. The approximate weight of the cabinet is 810 pounds.

The CRME can support multiple line-ups composed of up to 76 individual loads and houses a maximum of 2 power distribution panels, each of which distributes power to up to 38 individual fused loads. Additional optional equipment also has reserved breakers which may further limit the number of supported loads. The total DC distribution capability of a CRME is 400 Amperes, 200A on Feeder-A and 200A on Feeder-B. This PDC functionality occupies the top half of the cabinet.

The bottom half is reserved for MIS equipment. Only DC powered equipment is supported. Additional CMIS cabinets may be added as required.

REFERENCE DOCUMENTATION: MSRX31EA 00 05
SLRX31EA 00 04
ADRX31EA 00 05
MSRX40AA 00 03

SLRX40AA 00 03
SLRX4001 00 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Steve Martin Dept. 3471 (PPK)

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NTRX31EA EMA13-01-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 01	API 499 03	Initial Release of CRME Cabinet
93 12 20	API 499 04	Correct NTRX02CA breaker info, removed fuses and desig. labels from equipment list per Manuf. request.
94 02 07	ECM 691 01	Make miscellaneous corrections per Manufacturing request.
94 04 01	ECM 691 02	Corrections per EC 24-91374 and PA Mtg - added part 11 to RUL4 for A0322413 - added NTRX3164 Inverter Cable Assy - removed P0284154 and P0183220 from RUL5, parts in kit. - removed sections 3 and 4 from RUL10 which referenced P0737433 Contact Cover and MSP pos 20 term. block connections (P1B - P2D). - corrected P/N from NTRX0242 to 0245. - removed reference to A0381005 lug, added A0352431 and A0386307 lugs.
94 06 22	ECM 691 03	Corrections per ET 19059.
94 10 20	ECM 602 18	Per ECD 024-93181: Removed NTRX3133 Top Cover Kit since cables always depart from the top. Changed p/n of lugs referenced in RUL4 Added Notes 4-6 per Design Review.
95 02 14	ECM 691 08	Corrections per ET 20819.
95 03 20	ECM 602 20	Replaced NTRX31CJ Lamarche Inverter Kit with NTRX31DH 500VA AC Inverter and NTRX31DJ Inverter Kit per ECD 6-21505.
95 08 21	ECM 602 22	EC 24-93936 - Removed P0744667 and P097F813 from CDA Rule. The parts are in SLRX59AN and were therefore being double ordered. Added NTRX2573 Spare Fuse Card. ET28469 - Clarified EAS RUL to state that EAS is not required for non DMS-100 applications such as NAV.
95 11 30	ECM 602 24	ET 30519 - Added RUL21 & 22 to specify placement of fillers P0734474, P0734475, & P0734476. Added note to AP01 clarifying location of NTRX41EA.
96 03 22	ECM 602 25	RR62067- Deprovision filler panel,

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		P0734476, in slot 20R. It comes w/ MSP In rul10, reduce # of P0734476's to 4. In rul21, part3, remove filler when provisioning NTRX31EB in 20R.
96 10 11	ECM 602 27	RR64867: Change positions of P0734476's and P0559409's to 15,15R, 16, and 16R. RR66242: Added "AP" items, (P0734476, NTRX2572,P0734475), to equipment list to positions, 9F,10F, and 11F-12F respectively.
97 03 05	ECM 602 29	Correct typo in desc. of P0734476 per SR RR72262. General clean-up of EMS.

The Cabinetized Remote Miscellaneous Equipment (CRME) is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Cabinet Assembly	NTRX25AA		1			AP
	CRME MSP Kit	NTRX3145					RUL1
	Modular Supervisory Panel	NTRX40AA	MSP	1	62		AP01
	Alarm Module	NTRX41AA		1	62	5	AP01
	Breaker Module (10A)	NTRX42AA		1	62	14	AP01
	Thermal Breaker Module (1W-Fuse Module)	NTRX43AA		1	62	13	AP01
	Power Alarm Module	NTRX41BA		1	62	7	AP01
	Power Alarm Backpanel PCP	NTRX4105		1	62	7R	AP01
	ABS Module	NTRX41EA		1	62	10R	AP01
	Filler Plate (2.40")(double)	P0734475		1	62	09F	AP01
	Filler Plate (1.20")(single)	P0734476		2	62	11F,12F	AP01
	CP FUSE HOLDER	NTRX2572		1	62	10F	AP01
	ESD Label Kit	NTRX3541			62	TOP	RUL1
	EAS Alarm Card Kit	NTRX41DA			62	15,16	RUL2
	EAS MSP Module	NTRX41CA		2	62	15,16	AP02
	EAS Jumper Cable	NTRX4067			62		RUL2
	Filler Plate	P0734476			62	15,16, 15R,16R	RUL2
	Fastener	P0559409			62	15,16, 15R,16R	RUL2
	EAS Alarm Harness	NTRX3151					RUL3
	CB Shelf Assy (30A)	NTRX02CA			49,35		RUL4
	CB Shelf Filler	P0737710			49,35		RUL4
	Shelf End Busbar Insulators	P0739909			35		RUL4
	Shelf Busbar Kit	NTRX0245			49,35		RUL4
	RTN Busbar End Insulators	P0739710			35		RUL4
	Shelf Power Cable	NTRX3132			49,35		RUL4
#	Lamarche Inverter Kit	NTRX31CJ			00		RUL5
	500VA AC Inverter	NTRX31DH			00		RUL5
	500VA AC Inverter Kit	NTRX31DJ			00		RUL5
	Inverter Cable Assembly	NTRX3164					RUL5
	Cover, Bottom- Kit	NTRX3134			BASE		RUL6
	ISG Cabinet Label	P0741854			49		RUL9
	CRME MISC Fuse Card Kit	NTRX31EB			62	18,19, 20R	RUL10
	Filler Plate	P0734476			62	18,19 18R,19R,	RUL10
	Fastener	P0559409			62	18,19	RUL10
	Bottom Feed Cable Bkt Kit	NTRX3143			15,24		RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Kit	NTRX3148			62	1	RUL12
Filler Plate	P0734476			62	1R	RUL12
Fastener	P0559409			62	1	RUL12
GDC Modem Shelf DS-6/R-1 Redundant -48VDC	A0380973			18		RUL13
CMISC GDC Shelf Modem Kit	NTRX59AM					RUL13
Cable Tie Bracket	P0744667			13,27		RUL13
12-24 HHTS	P097F813					RUL13
GDC Modems	VARIOUS					RUL14
CMISC COOK DA Shelf Hardware	NTRX59AN			32		RUL16
Cook DA 5M Series Options	VARIOUS					RUL17
CMISC Alarm Ext. Kit	NTRX59AP			10		RUL19
Cable Tie Bracket	P0744667			10		RUL19
12-24 HHTS	P097F813					RUL19
Spare Fuse Card	NTRX2573			62	10	RUL20
Filler Plate (1.20")(single)	P0734476			62		RUL21
Filler Plate (2.40")(double)	P0734475			62		RUL21
Filler Plate (4.80")(quad)	P0734474			62		RUL21
Fastener	P0559409			62		RUL22

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTRX31CJ	MD	NTRX31DH/NTRX31DJ

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) Multiple feed is the only option supported.

   The maximum capacity for the CRME is 200A per feed. The 'A' and 'B' feed to CRME unit must be protected with 65 VDC min., 250 amp maximum fuses (BUSMAN type TPL or TPN or equivalent), or equivalent circuit breakers at the supply source.

   An A & B circuit breaker is required on each panel of the cabinet to provide alarm sensing for the EAS option. Each distribution panel includes both A & B feeds.

2) Refer to NTRX25AA Engineering Manual Section for doors, anchors, cable troughs, frame fail lights and cabinet mechanical information.

3) The MSP fuse assignments for this product are:

MSP Fuse Card Position		MSP 18	MSP 19		
		Fuse A	Fuse B	Disk A	Disk B
NTRX59AN CDA	F01	1.33 A0205202	NONE	WHITE P097P235	NONE
NTRX59AM DS-6 Modem	F02	5.00 A0205205	5.00 A0205205	GREEN P097P238	GREEN P097P238
NTRX3148 LTC	F03	5.00 A0205205	NONE	GREEN P097P238	NONE
NTRX59AP ALARM	F04	1.33 A0205202	NONE	WHITE P097P235	NONE
TBD	F05				
TBD	F06				
TBD	F07				
TBD	F08				

4) IMAP is the only topology to be used for the Maintenance and Administration Position (MAP).

5) DC-coupled links (for example, EIA-232) must not be used to connect the DC modems to any other external or internal devices.

6) The DC modems must only be terminated to an MDF via a 4-wire null modem cable.

RULES:

AP 1) When PEC NTRX31EA is ordered, these items are provided.

AP01 1) Equipment always provided when PEC NTRX3145 is provided. Note that the ABS Module, NTRX41EA is a double width card and occupys slots 10R and 11R.

AP02 1) Equipment always provided when PEC NTRX41DA is provided.

RUL1 1) Provision (1) NTRX3145 CRME MSP kit per cabinet to provide standard MSP elements for cabinet.

2) Provision (1) NTRX3541 to provide English language labels for the MSP.

RUL2 1) Provision (1) NTRX41DA EAS Alarm Card kit per CB shelf to support an Enhanced Alarm System. (CRME has individual A & B power feeds for each shelf) The first card provisioned is assigned to slot 15; the second card is assigned to slot 16. The EAS Alarm Card kit shall be supplied for all U.S. DMS-100 applications and is provisionable, based on customer requirements, for all other markets. Non DMS-100 applications, such as NAV, do not require EAS.

2) Provision one NTRX4067 EAS cable assembly if an EAS kit is provisioned in slot 16.

3) Provision the following parts to fill each position not filled by EAS Alarm Cards:

QTY	CPC	DESCRIPTION
2	P0734476	Filler Plate
4	P0559409	Fastener

RUL3 1) Provision (1) NTRX3151 EAS Harness per cabinet if EAS is a desired option.

RUL4 1) Provision the NTRX02CA CB Shelf Assy in shelf positions 49 and 35 as required.

2) This product is equipped only with the multiple feed power feed method. This option is defined as having an A & B

Feed for each shelf being provided from the power source to the CRME. An A and B circuit breaker is required on each panel of the cabinet to provide alarm sensing of the EAS option.

3) Protection capabilities for the two provisionable breaker panel assemblies are as follows:

NTRX02CA	RATING
CB00A-CB19A	30A, 65VDC
CB00B-CB19B	30A, 65VDC

The breakers are to be populated in ascending numerical order with the following exceptions:

SHELF POSITION 49

BREAKER	SHELF	REMARK
CB FA	49	RESERVED FOR FILTER CAPACITORS A
CB FB	49	RESERVED FOR FILTER CAPACITORS B
CB01A	49*	RESERVED EAS ALARM A OPT
CB01B	49*	RESERVED EAS ALARM B OPT
CB02A	49*	RESERVED FOR ABS POWER OPTION OPT
CB02B	49*	RESERVED FOR 500VA AC INVERTER OPT
CB03A	49*	RESERVED FOR POWERING MISC EQ. OPT
CB03B	49*	RESERVED FOR POWERING MISC EQ. OPT

CB04 A & B - CB19 A & B are available to assign to power products There are 16 A and 16 B breakers available.

SHELF POSITION 35

BREAKER	SHELF	REMARK
CB FA	35	RESERVED FOR FILTER CAPACITORS A
CB FB	35	RESERVED FOR FILTER CAPACITORS B
CB01A	35*	RESERVED FOR ALARM A OPT
CB01B	35*	RESERVED FOR ALARM B OPT

CB02 A & B - CB19 A & B are available to assign to power products. There are 18 A and 18 B breakers available.

4) Provision sufficient A0386311 two hole power lugs for terminating 10-14 AWG power cables. There are 2 lugs required for each circuit breaker or feed that is required. A maximum of 80 lugs per shelf will be required.

5) Provision A0614961 two hole power lugs as required for terminating 8 AWG power cables for special applications.

6) Provision A0614959 two hole power lugs as required for terminating 6 AWG power cables for special applications.

7) Provision A0615493 two hole power lugs as required for terminating 1/0 AWG power cables for terminating to the RTN Busbar in non-domestic applications where there is an LRE in the office for logic return. Do not use LRE in U.S. market.

8) Provision the P0737710 shelf filler in shelf positions 49 and 35 to fill unused shelf positions. The total number of shelves and fillers must total 2. Filler shelves are provisionable for circuit breaker shelves, but no fillers are provided in MISC area of cabinet. (MISC area of cabinet is the lower region of the cabinet)

9) Provision (1) P0739909 Shelf Bus End Insulator if (1) CB shelf is in the cabinet. If 2 shelves are provisioned no insulators are required.

10) Provision (1) NTRX0245 Shelf Equalizer Kit Per CB panel to provide a busbar and hardware to connect CB panel and busbar.

11) Provision P0739710 RTN Busbar End Insulator if (1) CB shelf is in the cabinet. If 2 shelves are provisioned no insulators are required.

12) Provision (4) NTRX3132 Shelf Power Cables per shelf to power a single shelf. The cables are only 15 feet long and limits the location of the cabinet with respect to the power source. They are to be shipped loose and not assigned to the cabinet.

NOTE: These cable are flex cables with heat shrink covering the barrel of the lug. If this is not allowed in the product owners region, please provision material and fabricate cables on site.

RUL5 1) Provision (1) 500VA AC Inverter, NTRX31DH, and (1) 500VA AC Inverter Kit, NTRX31DJ per customer requirements for End Aisle A/C. Kit includes Inverter, 120VAC cables, and conduit assembly. Kit is only available for -48VDC to 120VAC applications.

The Inverter has a failure mode switch to allow selction between breaker trip failure or breaker trip/inverter failure detection.

2) Provision (1) Inverter Cable Assembly, NTRX3164, if Inverter Kit is provisioned.

RUL6 1) Provide (1) NTRX3134 Bottom Cover Kit for covering bottom opening if cabling is to be in cable trays on top of cabinet.

RUL7 1) Reserved for future use.

RUL8 1) Provision (1) Door Label P0746219 to provide (4) door labels for the CRME.

RUL9 1) Provision (1) ISG Label, P0741854, per cabinet as required to identify grounding method. Label is to be mounted on the right side of the top circuit breaker panel. Label is required for all ISG offices in North America. Label is not required for European offices.

RUL10 1) Provision (1) NTRX31EB MISC Fuse Kit if any MISC shelf requiring power is to be provisioned. Kit provides (2) fuse cards with (8) fuses on each card, power cables, terminal block, label and related hardware. (no fuses provided) The fuse cards (NTRX43AA) mount in slots 18 and 19 (Front) and the terminal board (P0737326) mounts in slot 20R. A filler plate mounts in slot 20 (Front). A maximum of one NTRX31EB kit is currently provisionable.

2) Provision the following parts for the cabinet if no MISC kits requiring fuses are provided.

QTY	CPC	DESCRIPTION
4	P0734476	Filler Plate
8	P0559409	Fastener

RUL11 1) Provision Bottom Feed Cable Bracket NTRX3143 to provide bracket and fasteners to support dressing 4/0 power feed cables from the bottom up the left rear side of the cabinet.

RUL12 1) Provision (1) NTRX3148 Power Kit to provide terminal block and associated hardware to power such items as a Local Test Cabinet. Refer to CS 4122 for power, bonding, and isolation requirements when equipment is powered from the DMS.

For specific details consult ISZX16CA for system information.

2) Provision the following parts to fill space if the power kit is not provided:

QTY	CPC	DESCRIPTION
1	P0734476	Filler Plate
2	P0559409	Fastener

3) While (1) A0205205 5A fuse for the Power Kit is shown on the MS, manufacturing has asked that the part not be provisioned. They will provide.

4) While (1) P097P238 Green Designation Disks for fuse holders is shown on the MS, manufacturing has asked that the part not be provisioned. They will provide.

RUL13 1) Provision (1) A0380973 Data Set Module Shelf if requested by customer. It houses up to sixteen Data Set Modems and is a redundant powered 48 volt DC shelf. One (1) DPS-9 Power Supply can power 16 slot positions, but two (2) are provided per DS-6 shelf. The different series of GDC modems may be mixed within the shelf in any manner desired.

2) Provision (1) NTRX59AM CMISC GDC Modem Kit to provide support for a modem shelf, if the Data Set Module Shelf above was provisioned or per customer requirement if customer is providing a GDC Modem Shelf. Kit provides modem shelf mounting hardware. (kit does not provide Modem shelf, fuses, or designation disks.)

3) If the CMISC GDC Modem Kit is provisioned, provision the following items for each Kit provisioned.

*

* (2) P0744667 Brackets for controlling modem cable dressing. See ADRX59AM for mounting details.

* (2) P097F813 per bracket for a total of (4) fasteners to secure brackets.

4) While (2) A0205205 5 AMP Fuses for each CMISC GDC Modem Kit are shown on the MS, manufacturing has asked that the part not be provisioned. They will provide.

5) While (2) P097P238 Green Designation Disks for fuse holders are shown on the MS, manufacturing has asked that the part not be provisioned. They will provide.

RUL14 1) Provision modem cards per customer requirements to provide desired features. For provisionable modems see GDC Modems Engineering Manual Section, EMA13-01-GDC-1 (T_GDC_MOD).

RUL15 1) Reserved for future use.

RUL16 1) Provision (1) NTRX59AN CMISC COOK DA Shelf hardware if a COOK Digital Announcer (CDA) is to be provided in this cabinet. This kit provides only mounting hardware for this product. The Announcer must be ordered separately.

2) While (1) A0205202 1.33 AMP Fuse for the MSP to power CDA is shown on the MS, manufacturing has asked that the part not be provisioned. They will provide.

3) While (1) P097P235 WHT Designation Disk for fuse holders is shown on the MS, manufacturing has asked that the part not be provisioned. They will provide.

RUL17 1) Provision 5M Series Cook Digital Announcers per customer requirements to provide desired features. For provisionable CDAs see NT5M Series Engineering Manual Section EMA13-01-CDA-3 (NT5M0N__).

RUL18 1) Reserved for future use.

RUL19 1) Provision (1) NTRX59AP CMISC Alarm Extension Kit to mount in the CRME if at least one NT0X64AA is provided for a remote office.

2) Provision (1) P0744667 bracket and (2) P097F813 screws for cable management when the Alarm Extension kit is provided.

3) Application of the Alarm Extension Kit is limited by the following factors:

The dry relay contacts are limited in accordance with Table 725- 31(B) of the National Electrical Code (NEC) for not inherently limited power sources (overcurrent protection required). The source of power for these contacts is limited to 60 VDC, 1 A. The dry relay contacts are not allowed to have outside plant connection. This is required in order to reduce hazards from lightning and power cross conditions onto the bay and connected power source(s) supplying the relay contacts.

RUL20 1) Provide (1) NTRX2573 Spare Fuse Holder to provide storage space for spare fuses for products already in the field. Please note new shipments of CRME after 9535 will contain this card as part of the cabinet MSP kit and it will not be necessary to order separately.

RUL21 1) Provide blank panels to cover vacant card positions and openings in the front and rear of the MSP. The double and quad width panels should only be applied when future growth is expected, use single width panels for ease of field installation of modules.

2) Double width modules occupy only a single position in the rear so an additional single width panel is required to close the opening.

3) A single width panel in position 20 (rear) is always provided as part of the MSP. When the NTRX31EB is provisioned, manufacturing removes this single width filler panel from 20R.

RUL22 1) Provide mounting screws to secure equipment to the MSP per the following:

Screw code	Qty.	Equipment
P0559409	2	P0734476 - blank panel, 1.2"
P0559409	4	P0734475 - blank panel, 2.4"
P0559409	4	P0734474 - blank panel, 4.8"

2) Modules which insert from the front come equipped with a captive screw for positive retention.

MODEL B MISCELLANEOUS EQUIPMENT CABINET (CMIS)

PEC CODE: NTRX56AA

CPC CODE: B0237401

RATING: STD

REPLACES: NTZZ45PA

REPLACED BY: Not Applicable

ABBREVIATION NAME: CMIS

ENGINEERING DESCRIPTION: The CMIS may be configured as an EMC compliant (closed) cabinet which houses Nortel (Northern Telecom) Supported Equipment or as a Non-EMC (open) cabinet which primarily houses Customer Preferred Equipment.

The Non-Shielded open CMIS is provided to mount customer- supplied EMI-Compliant equipment, although the option exists for Nortel to provide EMI-Compliant equipment in this cabinet, when necessary.

REFERENCE DOCUMENTATION: MSRX56AA 01 11
ISRX56AA
ISRX59--
MSZX16CA
NTP 297-1001-109

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

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NTRX56AA EMA13-01-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 04 08	ECM 683 04	Initial Release of CMIS Detail EMS
94 06 09	ECM 683 05	Include RMM Shelf provisioning info per ECD 24-92391. Clarify Inverter powering.
94 09 22	ECM 602 17	ECD 24-92592 Added GDC Kit, Shelf, and misc. items. Added UDS Kit, Shelf, and misc. items. Added CDA Kit, Shelf, and misc. items. Added Right Hand Bulkhead Kit. Added Top and Bottom Cover Kits. Added Top/Bottom Cable Bracket parts. Other corrections per design review: Removed NTRX1670 from RUL6. Removed referece to NTRX56CF and CG from RUL36 part 3. Added NTRX54AA provisioning. Added locations for Connector Plates. Corrected mounting locations in Note 4 drawing. Replaced NTRX56CD Logic Return Busbar Kit with NTNX2911 Bus Bar and P097F813 Screws, RUL1.
94 11 22	ECM 683 12	Changes made per ECD 24-92594: Replaced NTRX59AB with NTRX59AZ and NTRX59AF with NTRX59AY. These are no longer Isolated. Removed Common Equip Shelf and Kit(NT3X25AA/NTRX59AG) Added Alarm Ext Kit NTRX59AP, ESTU/ITM Kit NTRX59AW, and TELLABS Termination Set (various). MD NTRX59AJ, replaced with NTRX59BJ. Other changes per PA Review: Changed A/V Alarm Ext Kit, MLT, ISTL, and Inverter mounting locations. Added specific Cook Digital Announcers which may be used in CMIS. Added Secondary Protectors for non UL 1459 appproved telephone line connected units.
95 03 20	ECM 602 20	Introduced new 500VA AC Inverter - A0367433 replaced by NTRX31DH per ECD 6-21505. Corrected P/N - P0746677 was P0746777.

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		Removed reference to ISG hardware being in the NTRX59AY Kit. ET65493 - added note to NTRX3133 Rule that it can't be used with NTRX56CA. ET64753 - corrected positions of panels and screws used when NTRX56CE is not provisioned, RUL8. Was 2 and 2R, now 12 and 12R. Misc - Clarified Vert/Horiz powering restrictions in Model B extensions to Model A offices.
95 11 30	ECM 602 24	Changes made per ECD 018-46245. NTRX59AZ identified as non-isolated inverter. NTRX59AB identified as isolated inverter and rerated STD. POS 19,33 added for NTRX59AB. NT3X25AA, NTRX59AG added to eqpt list; NTRX59AG, NTRX59AB removed from eqpt. flag table. Note 3- NTRX59AZ in EMC closed cabinet changed to 500VA inverter, non-isolated reference added. NTRX59AB/NTRX31DH, NTRX59AG/NT3X25AA added to non emc open section.(Note3) NTRX59AG/NT3X25AA, NTRX59AB/NTRX31DH added.(Note6) Cabinet fail lamp provision removed. (Note7) NTRX59AB/NTRX31DH added to non-filtered battery table.(Note11) Reference to NTRX59AB Added. (RUL9) (RUL15)Section on NTRX59AB added. Reference to NT3X25AA (NTRX59AG KIT) added. NTRX59AY linked with NTRX59AZ. Fuse assignment for NTRX59AB/NTRX31DH added. (RUL18) 2. "closed" added to EMC. 3. Inverter reference changed to non-isolated inverter. Lamarche changed to NTRX31DH. (RUL55) Added in entirety.
96 03 22	ECM 602 25	Changes made per ECD 018-46245. RR60106: Deprovisioned NT3J00BE in

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		slot 11 of NT3J00BA.
96 10 11	ECM 602 27	RR67554: Changed r to ri on the P0730993 and P0730259 to distinguish right from rear, in the equipment list RR68426: Changed quantity of P0734475, position filler, from 2 to 1, when the NTRX56CF or the NTRX56CG is not provided. RR67563: Added more text to the engineering description section to further define "Open"and "Closed" CMIS
97 03 05	ECM 602 29	Removed qty. from RUL items. General clean-up of EMS. Changed shelf mounting locations for bulkhead equipment from XXR/Ri to XX. (Per ADRX56AA and SR RR6D166). See added Note 14.
97 05 20	ECM 602 31	Enhance RUL18 per SR RR74903 to note 'ship loose' items.
97 08 04	ECM 602 32	Per EC 018-51221 add German Des. Label, update slot positions for NT3J00 CPs, update slot positions for NT3X25AA.
97 10 08	ECM 602 34	Per EC 018-51464 MD NT0J42BA and NT0J43AA.

The Model B Miscellaneous Equipment Cabinet (CMIS) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CMIS Mod. Supervisory Panel Kt	NTRX5610	MSP		61		RUL1
Modular Supervisory Panel	NTRX40AA	MSP	1	61		AP-01
Alarm Module	NTRX41AA		1	61		AP-01
Terminal Block (6X3)	P0737547		1	61	2R	AP-01
Terminal Block 4X4	P0737326		1	61	4R	AP-01
Thermal Breaker Module	NTRX43AA		3	61	7-9	AP-01
Fuse 3/4 Amp Brown	A0205209		4	61	7 F01-	AP-01
					F04	AP-01
Fuse Block Designation Brown	P097P242		4	61	7 F01-	AP-01
					F04	AP-01
Fuse Dummy	A0205210		4	61	7 F05-	AP-01
					F08	AP-01
Breaker Module (10A)	NTRX42AA		2	61	10-11	AP-01
Bus Bar Assembly	NTNX2911			05		RUL1
Screw	P097F813					RUL1
CMIS External Power Filter Kit	NTRX56CA					RUL2
CMIS Horizontal Cabling Kit	NTRX56CB					RUL3
Designation Label (Germany)	P0847107					RUL2
Talk Battery Mod Kit (B) 20Amp	NTRX56CF			61	01,13 14,15	RUL6
Talk Battery Module 20 Amp	NTRX44AA		1	61	01	AP-03
Breaker Module 20 Amp	NTRX42CA		1	61	13	AP-03
Breaker Module 10 Amp	NTRX42AA		1	61	14	AP-03
Fuse Module	NTRX43AA		1	61	15	AP-03
Talk Battery Mod Kit (A) 20Amp	NTRX56CG			61	03,16 17,18	RUL6
Talk Battery Module 20 Amp	NTRX44AA		1	61	03	AP-04
Breaker Module 20 Amp	NTRX42CA		1	61	16	AP-04
Breaker Module 10 Amp	NTRX42AA		1	61	17	AP-04
Fuse Module	NTRX43AA		1	61	18	AP-04
FAN Pwr Control Module (-48 V)	NTRX54BA			61	19	RUL7
Desig Label (NTRX54BA)	P0741680			61	19	RUL7
FAN Pwr Control Module (-48 V)	NTRX54AA			61	19	RUL7
Desig Label (NTRX54AA)	P0741735			61	19	RUL7
MSP Desig Label (CU)	P0746680			61	03	RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MSP Blank Panel (Two Pos)	P0734475			61	01,03, 19	RUL8
MSP Blank Panel (One Pos)	P0734476			61	01R,03R	RUL8
				61	13,13R	
				61	14,14R	
				61	15,15R	
				61	16,16R	
				61	17,17R	
				61	18,18R	
				61	19R	
Panel Mounting Screw	P0559409			61	01,01R	RUL8
				61	03,03R	
				61	13,13R	
				61	14,14R	
				61	15,15R	
				61	16,16R	
				61	17,17R	
				61	18,18R	
				61	19,19R	
Cooling Unit Kit (Ten Inch)	NTRX92AA			00		RUL9
C28 Cab Label Kit (English)	NTRX3541					RUL10
C28 Cab Label Kit (German)	NTRX3542					RUL10
CMIS MSP Fuse Desig Label	P0738236					RUL11
CMIS MSP Breaker Desig Label	P0746677					RUL11
CMIS MSP Fuse Desig Label	P0746678					RUL11
CMIS MSP Fuse Desig Label	P0746679					RUL11
Blank Conn Plate (Full Size)	P0715616			05,19, 33,47		RUL12
CMIS Conn Plate Bulkhead Screw Kit (One Full Size)	NTRX34DS			05,19, 33,47		RUL12
Blank Conn Plate (Half Size)	P0730259			05,12, 19,26,33, 40,47,54, 61		RUL13
CMIS Connector Plate Bulkhead Screw Kit (Two Half Size)	NTRX34DT			05,12,19, 26,33,40 47,54		RUL13
480 Pin Terminal Block Assy	NTRX34LA			49,55		RUL14
CMIS Universal Connector Plate(24 x 25 Pin)	P0737132			05,19, 33,47		RUL14

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	CMIS Conn Plate Bulkhead Screw Kit (One Full Size)	NTRX34DS			05,19, 33,47		RUL14
	Cable Bracket	P0642031			49R		RUL14
	Cable Bracket	P0642031			55R		RUL14
	Screw	P097F813					RUL14
	25-Pin Filter Adapter	A0316594			AR		RUL14
	Female Screwlock	A0317136			AR		RUL14
	Flat Washer	P0148330			AR		RUL14
	Cover Plate (25-Pin)	P0715775			AR		RUL14
	Mounting Screws	P0670923			AR		RUL14
	500VA AC Inverter	NTRX31DH			05	19,33	RUL15
#	Lamarche Inverter	A0367433			05		RUL15
	CMIS 500VA AC Inverter Kit (non-isolated)	NTRX59AZ			05		RUL15
	CMIS Lamarche Inverter Kit (isolated)	NTRX59AB			05	19,13	RUL15
	Breaker Module Kit (20 Amp)	NTRX56CE			61	12	RUL15
	MSP Pwr & Bat Rtn Cable	NTRX1670			61	12R	RUL15
	Power Cable Desig Label	P0737501			61	12R	RUL15
	Breaker Module 20 Amp	NTRX42CA		1	61	12	AP-02
	MSP Blank Panel (One Pos)	P0734476			61	12,12R	RUL8
	Panel Mounting Screw	P0559409			61	12,12R	RUL8
	CMIS DTH-ROTL KIT	NTRX59AC			07,35		RUL16
	DTH/ROTL	NT7F18AD			07,35		RUL16
	Connector Plate DTH/ROTL	P0730992			05,34		RUL16
	CMIS DTH-ROTL Spares Kit	NT7F19AC					RUL16
	Audible/Visual Alarm Ext Unit	NT5X85AA			05,19, 33,47		RUL17
	CMIS Audible/Visual Alarm Extension kit	NTRX59AD			05,19, 33,47		RUL17
	Conn. Plate A/V Alarm Ext Kit	P0730991			05,19 33,47		RUL17
	CMIS Pylon RG-2 Ring Gen Kit	NTRX59AE			09,23 37,51		RUL17
	Pylon RG-2 Ring Generator	A0379066			09,23 37,51		RUL17
	CMIS Audible Alarm Cutoff Kit	NTRX59AH			07,21, 35,49		RUL17

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Audible Alarm Cutoff Control Unit	NT5X86AA			07,21, 35,49		RUL17
	Inactive System Timing Circuit	NT5X69AA			14		RUL18
	CMIS Inactive System Timing	NTRX59AY			14		RUL18
#	CMIS Inactive System Timing Circuit Kit	NTRX59AF			14		RUL18
	115 V ac Power Cable Assy	NTRX34FO					RUL18
	24 AWG Solid Wire (Green)	R0109636			14		RUL18
	25-Pin Filter Adapter	A0316594					RUL18
	Female Screwlock	A0317136					RUL18
	Flat Washer	P0148330					RUL18
	MLT Applique Shelf	NT3J00BA			05,19 33,47		RUL20
	Conn Plate MLT Applique Shelf	P0730993			05,19 33,47		RUL20
	CMIS MLT Applique Shelf Kit	NTRX59BJ			05,19 33,47		RUL20
#	CMIS MLT Applique Shelf Kit	NTRX59AJ			05,19 33,47		RUL20
	CMIS Connector Plate Bulkhead Screw Kit (Two Half Size)	NTRX34DT					RUL20
	MLT Applique Ckt Pack	NT3J00BB			05,19 33,47	03-09, 13-21	RUL20
	Signature Off Hook Routing CP	NT3J00BE			05,19 33,47	03-21	RUL20
	9-Pin Filter Adapter	A0344127			AR		RUL21
	Female Screwlock	A0317136			AR		RUL21
	Flat Washer	P0148330			AR		RUL21
	Cover Plate (9-Pin)	P0715809			AR		RUL21
	Mounting Screws	P0670923			AR		RUL21
	37-Pin Filter Adapter	A0316599			AR		RUL21
	Female Screwlock	A0317136			AR		RUL21
	Flat Washer	P0148330			AR		RUL21
	Cover Plate (37-Pin)	P0715774			AR		RUL21
	Mounting Screws	P0670923			AR		RUL21
	CMIS CASE/DATATEL RM4200 (-48 V dc) Modem Shelf	A0600770					RUL23
	CMIS CASE/DATATEL RM4200 (-48V dc) Modem Shelf Kit	NTRX59AK			09,23 37,51		RUL23
	Secondary Protectors	A0361490					RUL22

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CASE/DATATEL Modem	A0367996				1-16	RUL24
CASE/DATATEL Modem	A0355258				1-16	RUL25
CASE/DATATEL Modem	A0367994				1-16	RUL26
CASE/DATATEL Modem	A0355259				1-16	RUL27
CASE/DATATEL 829 Data Aux. Set	A0355255				1-16	RUL28
CASE/DATATEL Modem	A0600589				1-16	RUL29
CASE/DATATEL Modem	A0352086				1-16	RUL30
CASE/DATATEL Modem	A0351642				1-16	RUL31
CASE/DATATEL Adapter Plug For Adjustable Xmit Level	A0320894				P2,P4	RUL32
CASE/DATATEL Adapter Plug For Permissive Xmit Level	A0369235				P2,P4	RUL33
CASE/DATATEL Adapter Plug For Fixed Loss Loop Xmit Level	A0369236				P2,P4	RUL34
CMIS DANTEL Digital Alarm Scanner (DMS-100 to SCC Interface)	A0601999			09,23 37,51		RUL35
CMIS DANTEL Digital Alarm Scanner (DMS-100 to SCC Interface) Kit	NTRX59AL			09,23 37,51		RUL35
RMM Kit	NTRX59AU			05,19, 33,47		RUL36
RMM Shelf	NT6X1306			05,19, 33,47		RUL36
RMM Common CP	NT6X13AB			05,19, 33,47		RUL36
CMIS Alarm and Power Cable	NTRX5623					RUL36
Connector Plate RMM	P0744235			05,19 33,47		RUL36
Designation Strip (NT6X13AB)	P0653639		1	05,19, 33,47		AP-05
TM Group Codec CP	NT2X59AA		1		01	AP-05
RMM Control Card	NT6X74AB		1		02	AP-05
Multi O/P Pwr Converter	NT2X09AA		1		17	AP-05
Filler Face Plate .875	NT0X50AA		1		19	AP-05
Power Converter Comm Feat.	NT2X06AB		1		20	AP-05
Maintenance Trunk Cards					03-16	RUL36
Filler Face Plate	NT0X50AC				03-16	RUL36
Cover, Top-Kit	NTRX3133			TOP		RUL37
Cable Bracket	P0737714			BASE		RUL37
Cable Bracket	P0738577			BASE		RUL37

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Screw, Self Tapping	P097F839			BASE		RUL37
Cover, Bottom- Kit	NTRX3134			BASE		RUL38
Cable Bracket	P0737714			TOP		RUL38
Cable Bracket	P0738577			TOP		RUL38
Screw, Self Tapping	P097F839			TOP		RUL38
Right Hand Bulkhead Kit	NTRX56FA			05		RUL39
GDC Modem Shelf DS-6/R-1 Redundant -48VDC	A0380973					RUL40
CMIS GDC Modem Shelf Kit	NTRX59AS			05,19 33,47		RUL40
GDC Modems					1-16	RUL41
Secondary Protectors	A0361490					RUL41
UDS Modem Shelf RM16M	A0344310					RUL42
CMIS UDS RM16-23DC Modem Kit	NTRX59AV			05,19 33,47		RUL42
UDS Modems					1-16	RUL43
Secondary Protectors	A0361490					RUL43
CMIS COOK DA Shelf Hardware	NTRX59AN			05,07,09,11,13 15,17,19,21,23 25,27,29,31,33 35,37,39,41,43 45,47,49,51,53 55,57,59		RUL44
2Chan 26" 1M RR/RTA FIXED	NT5M02CC					RUL45
4Chan 26" 2M RR/RTA FIXED	NT5M04DU					RUL46
4Chan 26" 1M RR/RTA SP/DMD	NT5M04DV					RUL47
6Chan 26" 3M RR/RTA FIXED	NT5M06CB					RUL48
8Chan 26" 4M RR/TRK FIXED	NT5M08CC					RUL49
8Chan 26" 1M RR/RTA SP/DMD	NT5M08CH					RUL50
CMIS Alarm Ext. Kit	NTRX59AP			05,19 33,47		RUL51
Cable Tie Bracket	P0744667			10 33,47		RUL51
12-24 HHTS	P097F813					RUL51
CMIS ESTU/ITM KIT	NTRX59AW			07,21 35,49		RUL52
# Enhanced Services Test Unit (ESTU) Master Moudule (EMM)	NT0J42BA			09,23 37,51		RUL52
# ISDN Test Module (ITM)	NT0J43AA			05,19 33,47		RUL52

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TELLABS 1014U Universal Mounting Shelf	A0624408					RUL53
TELLABS 1014U Universal Mounting Shelf Kit	NTRX59AX			05,19 33,47		RUL53
Connector Plate TELLABS	P0733320			05,19 33,47		RUL53
TELLABS 4201 Terminating Set	A0361743				1-14	RUL54
Secondary Protectors	A0361490					RUL54
Common EQPT Shelf (115VAC)	NT3X25AA			05,13,21, 29,37,45,53		RUL55
Common EQPT Shelf (115VAC) Kit	NTRX59AG			05,13,21, 29,37,45,53		RUL55
C28 Cabinet Mechanicals	NTRX25AA					NOTE7
Cabinet Power and Grounding	NTZX16CA					NOTE8
Door and eqp labels	MS0X60AA					NOTE9

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTRX59AF	MD	NTRX59AY
NTRX59AJ	MD	NTRX59BJ
A0367433	MD	NTRX31DH
NT0J42BA	MD	No Replacement
NT0J43AA	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) The term EMC or Closed Cabinet as used in this document is defined as follows:

   A cabinet in which NT Supported equipment which by itself is not EMC compliant will be mounted and rendered EMC compliant by means of cabinet enclosure, bulkhead connector plates, and cable filtering or shielding as required.

2) The term Non-EMC or Open Cabinet as used in this document is defined as follows:

   A Cabinet in which Customer Preferred (Non NT Supported Equipment) will be mounted. This area will not require enclosure, filtering, or shielding of input/output signals at the cabinet level.

3) The following equipment must be mounted in the specified type of cabinet.

   In an EMC (Closed) cabinet:

NTRX59AZ / NTRX31DH	500VA AC Inverter (non-isolated)
NTRX59AC / NT7F18AD	DTH-ROTL
NTRX59AD / NT5X85AA	Audible/Visual Alarm Extension
NTRX59AE / A0379066	Pylon RG-2 Ring Gen
NTRX59AY / NT5X69AA	Inactive System Timing
NTRX59AH / NT5X86AA	Audible Alarm Cutoff
NTRX59BJ / NT3J00BA	MLT Applique Shelf
NTRX59AU / NT6X1306	RMM
NTRX59AX / A0624408	TELLABS 1014U Universal Mounting Shelf
NTRX34LA	480 Pin Terminal Block Assy
NTRX56FA	Right Hand Bulkhead Kit

   In a Non-EMC (Open) cabinet:

NTRX59AB / NTRX31DH	500VA INVERTER (ISOLATED)
NTRX59AK / A0600770	CASE/DATATEL RM4200
NTRX59AL / A0601999	DANTEL Digital Alarm Scanner
NTRX59AP	CMISC Alarm Ext. Kit
NTRX59AS / A0380973	GDC Modem Shelf
NTRX59AN	COOK DA Shelf Hardware
NTRX59AV / A0344310	UDS RM16M-23DC Modem
NTRX59AW	CMIS ESTU/ITM Kit
NTRX59AG / NT3X25AA	COMMON EQPT SHELF (115VAC)

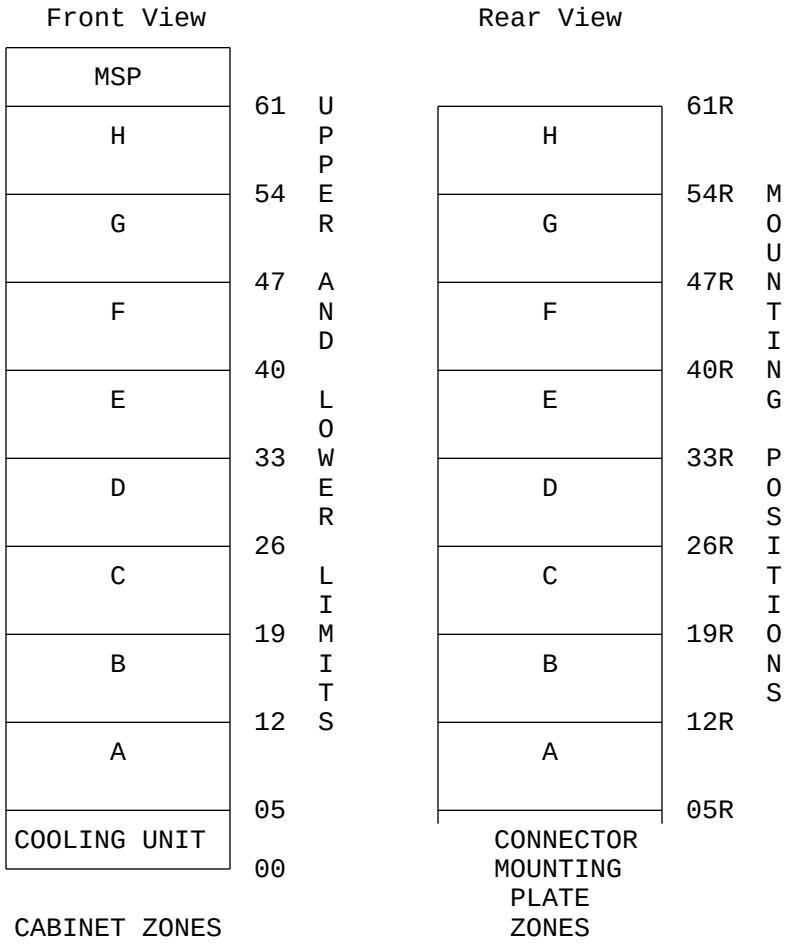
4) Detailed below is information relative to the generic placement of equipment and equipment personality plates:

Units can be mounted on the CMIS only in positions indicated. CMIS mounting space is divided into eight seven inch zones labeled " A to H". Mounting positions given for units are the location of the lowest screw holding the unit or the units mounting bracket to the cabinet, as applicable. When a unit requires an associated connector mounting plate, the unit and associated plate mounting positions must be those shown opposite each other in the following table.

The following table covers all units mounting in zones A to H. Full size connector plates occupy two zones (A-B, C-D, E-F, or G-H). Half size connector plates occupy one zone. The terms, "personality plates" and "connector plates" refer to the same thing.

These plates mount on the four panel generic duct to form the EMI Bulkhead where internal and external (SWBD) cables connect. Mounting location and methods for cables and connector plates are shown on unit Assembly Drawings (AD).

Positions 05, 12, 19, 26, 33, 40, 47, and 54 indicated in the sketch below of connector plate zones refer to the position of the bottom mounting screw holding the plate on the duct, and the numeric positions are equivalent to and level with the equivalent equipment mounting positions on the cabinet.



5) Weight restrictions apply to equipment mounted in this cabinet. Total of provisionable equipment excluding Doors, Cooling Unit, Cable Trough, MSP, Internal Cables, and Connector Plates is not to exceed 580 pounds. Fifty-Six inches (56") of equipment mounting space is available for mounting units. This leaves a maximum allowable loading of provisionable unit of 10.3 pounds per inch. No units documented in this EMS exceed this limit.

6) ISG (Isolated System Grounding) requirement must be applied to all units mounted in the cabinet. All units mounted in the cabinet must be electrically insulated from the cabinet if:

   Unit has Logic Return connected to Chassis Ground.

Unit has Battery Return connected to Chassis Ground

Unit has DC signal connections (metallic connection) to other equipment having logic return or battery return connected to chassis.

Units isolated as defined above, must have their Chassis Ground connected to the Logic Return Busbar.

The following units must be isolated from the cabinet.

NTRX59AG / NT3X25AA	COMMON EQPT SHELF (115 VAC)
NTRX59AK / A0600770	CASE/DATATEL RM4200
NTRX59AS / A0380973	GDC Modem Shelf
NTRX59AV / A0344310	UDS RM16M-23DC Modem
NTRX59AB / NTRX31DH	500VA INVERTER (ISOLATED)

7) The NTRX56AA has system level provisionable items covering the following:

Seismic Zone provisioning

Grounding options provisioning

Cable routing options 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.

10) The following Fuses and Fuse Designation Discs are provisionable on the NTRX40AA MSP on a per unit basis. It is not necessary to specify Battery Return or Fuse Connections as that is covered by the cabinet wiring document.

FUSE AMPS	FUSE CPC	DESIG DISC
1-1/3	A0205202	P097P235
2	A0205203	P097P236
3	A0205204	P097P237
5	A0205205	P097P238
0.180	A0205206	P097P239
1/4	A0205207	P097P240
1/2	A0205208	P097P241
3/4	A0205209	P097P242
DUMMY	A0205210	NONE

The equipment engineer must only specify unit, fuse(s) assigned, fuse amps, and designation disc. Fuses and designation discs to be specified are shown above.

11) NON-FILTERED BATTERY Source

Non-Filtered Battery A-Feed is supplied via fuses in shelf position 61 Slot 08 and/or dual 10 Amp Circuit Breaker in shelf position 61 slot 10 (CB1, CB2).

Non-Filtered Battery B-Feed is supplied via fuses in shelf position 61 Slot 09 and/or dual 10 Amp Circuit Breaker in shelf position 61 slot 11 (CB3, CB4).

The total amperage of fuses in shelf position 61 slots 08 and 09, shall not exceed 30 Amps for a circuit breaker equipped CPDC or PDC.

For a circuit breaker equipped CPDC or PDC, total amperage of fuses supplied in shelf position 61 Slot 08 shall not exceed 10A if both CB1 and CB2 are assigned to units or 20A if only one of CB1 or CB2 is assigned.

For a circuit breaker equipped CPDC or PDC, total amperage of fuses supplied in shelf position 61 Slot 09 shall not exceed 10A if both CB3 and CB4 are assigned to units or 20A if only one of CB3 or CB4 is assigned.

The total amperage of fuses in shelf position 61 slots 08 and 09, shall not exceed 20 Amps for a PDC equipped with 30 Amp Fuses.

For a PDC equipped with 30 Amp Fuses, total amperage of fuses supplied in shelf position 61 Slot 08 shall not exceed 0A if both CB1 and CB2 are assigned to units or 10A if only one of CB1 or CB2 is assigned.

For a PDC equipped with 30 Amp Fuses, total amperage of fuses supplied in shelf position 61 Slot 09 shall not exceed 0A if both CB3 and CB4 are assigned to units or 10A if only one of CB3 or CB4 is assigned.

Non-filtered battery provisionable fuses and assignable breakers on the NTRX40AA.

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AZ NTRX31DH	1 CB	20	MSP POS 12,CB05 ASSIGNMENT IS FIXED
NTRX59AC NT7F18AD	1 CB	10	MSP POS 10,CB01,02 MSP POS 11,CB03,04
NTRX59AD NT5X85AA	5	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59AE A0379066			POWERED FROM NTRX59AD
NTRX59AY NT5X69AA	1	0.25	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59AH NT5X86AA	1	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59BJ NT3J00BA	1	2	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59AK A0600770 (A0367419 has been MD)	1 1	5 5	MSP POS 08,F01-08 MSP POS 09,F01-08 (ONE FUSE MUST BE IN MODULE 08, THE OTHER IN MODULE 09.)
NTRX59AL A0601999	1	3	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59AN See RUL45 for DAs	1	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59AP NT5X92AB	1	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59AS A0380973	1 CB	10	MSP POS 08,F01-08 MSP POS 09,F01-08 (ONE FUSE MUST BE IN MODULE 08, THE OTHER IN MODULE 09.)

Non-filtered battery provisionable fuses and assignable breakers on the NTRX40AA.

NTRX59AU NT6X1306	1 CB	10	MSP POS 10,CB01,02 MSP POS 11,CB03,04
NTRX59AV A0344310	1 1	5 5	MSP POS 08,F01-08 MSP POS 09,F01-08 (ONE FUSE MUST BE IN MODULE 08, THE OTHER IN MODULE 09.)
NTRX59AW NT0J42BA NT0J43AA	2	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59AB NTRX31DH	1 CB	20	MSP POS 12,CB05 ASSIGNMENT IS FIXED

12) FILTERED TALK BATTERY Source

Filtered battery A-Feed is supplied via fuses in shelf position 61 Slot 18 and/or dual 10 Amp Circuit Breaker in shelf position 61 slot 17.

Filtered battery B-Feed is supplied via fuses in shelf position 61 Slot 15 and/or dual 10 Amp Circuit Breaker in shelf position 61 slot 14.

The total amperage of fuses plus breakers used for Filtered Talk Battery shall not exceed 20 Amps for the A or B Feeds, individually.

If no CBs are used on a given circuit (A or B), then it may be fused to a maximum of 20 Amps.

If one (1) 10 Amp CB is used on a given circuit (A or B), then it may be fused to a maximum of 10 Amps.

If two (2) 10 Amp CB are used on a given circuit (A or B), then no fuses may be assigned to that module.

Always provide dummy fuses A0205210 in unused fuse positions.

Each module may be equipped with a physical maximum of eight (8) fuses.

Filtered battery provisionable fuses and assignable breakers on the NTRX40AA.

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AU NT6X1306	1	5	MSP POS 18,F01-08 (A Feed) MSP POS 15,F01-08 (B Feed)

13) Customer provided hardware in an Non-EMC cabinet has yet to be defined.

14) All bulkhead equipment (personality/conn plates) mount on the rear of the cabinet, and on the left as shown in the rear view per ADRX56AA.

RULES:

AP 1) When PEC NTRX56AA is ordered, these items are provided.

AP-01 1) Equipment always provided when PEC NTRX5610 is provided.

AP-02 1) Equipment always provided when PEC NTRX56CE is provided.

AP-03 1) Equipment always provided when PEC NTRX56CF is provided.

AP-04 1) Equipment always provided when PEC NTRX56CG is provided.

AP-05 1) Equipment always provided when PEC NT6X13AB is provided.

RUL1 1) Provide one (1) NTRX5610 MSP Kit per cabinet, except when cabinets have no power requirements. This kit provides the NTRX40AA, standard MSP modules, and MSP wiring. An example of no power requirements is if four (4) NTRX34LA 480 Pin Terminal Block Assembly are provisioned.

2) When the MSP Kit is provisioned, also provision one (1) NTNX2911 Bus Bar Assembly and six (6) P097F813 Screws.

RUL2 1) Provide one (1) NTRX56CA Kit per cabinet in cases where the office is arranged for external (vertical) power distribution. A maximum of three (3) Model B Cabinets, including CMIS, with external power arrangements may be configured in

a single lineup of Model A Cabinets (i.e. in Model B extensions to Model A offices).

2) When External Power Distribution Kits are provisioned, the power entering the cabinet from the power plant shall be treated as not EMC filtered. The kit contains a 13 position external power filter module, mounting hardware, cable tunnel covers, external power cable boots, cabinet internal power cables, and designation label. If the cabinet is destined for the German market and a German language label is required for the 13 position power filter, provide P0847107 label.

RUL3 1) Provide one (1) NTRX56CB per cabinet in offices where cabinets are arranged for horizontal power distribution. A horizontal power arrangement is used in Cabinetization Model A lineups. The NTRX56CB Horizontal Cabling Kit may be used when CMIS Cabinets are included in a Model A lineup (i.e. Model B extensions to Model A offices).

2) Horizontal power distribution indicates a power delivery arrangement in which power, which has been filtered to reduce EMC, is distributed horizontally along the bottom of a cabinet lineup within the EMC envelope comprising that lineup.

3) When both PECs NTRX56CB and NTRX56CE are provided, provide two (2) each of NTRX1670 (cable) and two (2) each of P0737501 (label) for MSP Shelf Position 61 Slot 12R.

4) When both PECs NTRX56CB and NTRX56CF are provided, provide two (2) each of NTRX1670 (cable) and two (2) each of P0737501 (label) for MSP Shelf Position 61 Slot 13R.

5) When both PECs NTRX56CB and NTRX56CG are provided, provide two (2) each of NTRX1670 (cable) and two (2) each of P0737502 (label) for MSP Shelf Position 61 Slot 16R.

RUL4 1) RESERVED.

RUL5 1) RESERVED.

RUL6 1) Provide one (1) NTRX56CF Talk Battery Mod Kit to provide Filtered Talk Battery (B-Feed) module in the MSP. Refer to the fuse NOTE earlier in this document for a listing of which equipment require Filtered Talk Battery.

2) Provide one (1) NTRX56CG to provide Filtered Talk Battery (A- Feed) module in the MSP. Refer to the fuse NOTE ear-

lier in this document for a listing of which equipment require Filtered Talk Battery.

3) FILTERED TALK BATTERY Source

Filtered battery A-Feed is supplied via fuses in shelf position 61 Slot 18 and/or dual 10 Amp Circuit Breaker in shelf position 61 slot 17.

Filtered battery B-Feed is supplied via fuses in shelf position 61 Slot 15 and/or dual 10 Amp Circuit Breaker in shelf position 61 slot 14.

The total amperage of fuses plus breakers used for Filtered Talk Battery shall not exceed 20 Amps for the A or B Feeds, individually.

If no CBs are used on a given circuit (A or B), then it may be fused to a maximum of 20 Amps.

If one (1) 10 Amp CB is used on a given circuit (A or B), then it may be fused to a maximum of 10 Amps.

If two (2) 10 Amp CB are used on a given circuit (A or B), then no fuses may be assigned to that module.

Always provide dummy fuses A0205210 in unused fuse positions.

Each module may be equipped with a physical maximum of eight (8) fuses.

RUL7 1) Provide one (1) NTRX54AA or NTRX54BA when a cooling unit is provided per the following:

2) Provide one (1) NTRX54BA, P0741680, and P0746680 when office battery is -48V and filtered power output to Cooling Unit is not required. This is the module that should be provisioned most often.

3) Provide one (1) NTRX54AA, P0741735, and P0746680 when office battery is -60V. The NTRX54AA should also be provisioned when office battery is -48V and filtered power output to Cooling Unit is required. Most often this should not be the case.

RUL8 1) Provide a quantity of P0734475 (MSP Blank Panel Two Position), P0734476 (MSP Blank Panel One Position), and

P0559409 (Panel Mounting Screws), when equipment is not provided per the following:

When NTRX56CE is not provided, provide two (2) P0734476 and four (4) P0559409 to be equipped on MSP Slot Positions 12 and 12R.

When NTRX56CF is not provided, provide seven (7) P0734476, one (1) P0734475, and eighteen (18) P0559409 to be equipped on MSP Slot Positions as follows:

MSP Filler Kit

EQUIPMENT	PEC	QTY	POS	POS
MSP Blank Panel (Two Pos)	P0734475	1	61	01
MSP Blank Panel (One Pos)	P0734476	7	61	01R
				13,13R
				14,14R
				15,15R
Panel Mounting Screw	P0559409	18	61	01,01R
				13,13R
				14,14R
				15,15R

When NTRX56CG is not provided, provide seven (7) P0734476, one (1) P0734475, and eighteen (18) P0559409 to be equipped on MSP Slot Positions as follows:

MSP Filler Kit

EQUIPMENT	PEC	QTY	POS	POS
MSP Blank Panel (Two Pos)	P0734475	1	61	03
MSP Blank Panel (One Pos)	P0734476	7	61	03R
				16,16R
				17,17R
				18,18R
Panel Mounting Screw	P0559409	18	61	03,03R
				16,16R
				17,17R
				18,18R

When NTRX54AA/BA is not provided, provide one (1) P0734475 MSP Blank Panel (Two Pos) at MSP Slot Position 19, one (1) P0734476 MSP Blank Panel (One Pos) at MSP Slot Position 19R and six (6) P0559409 Panel Mounting Screw.

RUL9 1) Provide one (1) NTRX92AA Cooling Unit Kit per cabinet under the following conditions:

NTRX59AZ or NTRX59AB (500VA AC Inverter Kit) and 500VA AC Inverter is provided in shelf position 05 and the following conditions apply. A cooling unit is not required for any other inverter mounting positions except Shelf Position 05.

The total units connected to the 500VA AC Inverter draws over 3.75 Amps at 120 V ac.

In cases where any unit other than the NTRX59AY (ISTC) is mounted in the 7" Zone immediately above the Inverter.

NOTE - NO UNIT EXCEPT THE NTRX59AY (ISTC) CAN MOUNT IN THE 7 INCH ZONE IMMEDIATELY ABOVE A 500VA AC INVERTER SUPPLYING MORE THAN 3.75 AMPS.

2) When the NTRX59BJ (NT3J00BA) MLT is provisioned and power dissipation exceeds 150 Watts per unit. Power dissipation is calculated per the total number of CPs installed in the MLT Shelf. Each NT3J00BB CP dissipates 15 Watts, each NT3J00BE dissipates 25 Watts. Dissipation of more than 150 Watt is allowed only if the MLT shelf is mounted in shelf position 05 and a Cooling Unit is provisioned - or - the 7" mounting space immediately above the unit is left vacant, for example:

MOUNT IN 05, LEAVE 12 BLANK
OR MOUNT IN 12, LEAVE 19 BLANK
OR MOUNT IN 19, LEAVE 26 BLANK
OR MOUNT IN 26, LEAVE 33 BLANK
OR MOUNT IN 33, LEAVE 40 BLANK
OR MOUNT IN 40, LEAVE 54 BLANK

RUL10 1) Provide either one (1) NTRX3541 Label Kit for use in English Language applications or one (1) NTRX3542 Kit for use in German Language applications.

RUL11 1) Provide Shelf Position ID Labels as follows when field upgrades which add units to the cabinet are provided.

2) Provide one (1) P0738236 label when any unit is added.

3) Provide one (1) P0746677 label when added units are assigned to breakers CB1, CB2, CB3 or CB4.

4) Provide one (1) P0746678 label when added units are assigned to breakers CB09 or CB10.

5) Provide one (1) P0746679 label when added units are assigned to breakers CB13 or CB14.

RUL12 1) Provide one (1) P0715616 Full Size Blank Plate and one (1) NTRX34DS CMIS Conn Plate Bulkhead Screw Kit in all connector mounting plate positions in EMC cabinets which are not provided with connector mounting plates associated with units.

RUL13 1) Provide one (1) P0730259 (Half Size Blank Plate) when only one half of bulkhead opening is provided with Half Size Connector Plate associated with units. Provide one (1) NTRX34DT for each two (2) P0730259 and each combination of one (1) NTRX59BJ and one (1) P0730259.

RUL14 1) Provide one (1) NTRX34LA, one (1) P0737132, one(1) NTRX34DS, two (2) P0642031, and four (4) P097F813 to provide a 480 Pin Wire Wrap Cross Connect field (20) 25-Pin connectors-24 leads/conn) consisting of two rows of terminal blocks, terminal block to bulkhead cabling, and two cross cabinet cable brackets with mounting screws. Mounts in an EMC cabinet.

2) The NTRX34LA consists of two rows of terminal blocks. One row mounts in Shelf Position 49 and one row mounts in pos 55. (1) NTRX34LA and (1) P0737132 must be provided when any unit is provisioned which does not have its own bulkhead connector plates and cables. Currently the NTRX59AY is the only unit in this category.

3) The EAE must specify which connector from the range C01-C20 on P0737132 plate to which each unit cable is assigned. Each cable requires one connector position. The appropriate switchboard cables must be assigned to corresponding connector position, so that the proper internal/external cable matchups are specified. The appropriate cable(s) from each unit to the NTRX34LA must be provisioned per carx---- documents.

4) Detailed below are the connector arrangement on the NTRX34LA:

TOP	C21-C24 (NOT USED)
	C17-C20
	C13-C16
	C09-C12
	C05-C08
BOT	C01-C04

The above depicts the P0737132 connector positions as seen from installer side of the NTRX34LA.

5) Provide one (1) 25-Pin Filter Adapter set per cable connected to the NTRX34LA, Installer side. This set consists of the following equipment and quantities:

EQUIPMENT	PEC	QTY REQ'D
25-Pin Filter Adapter	A0316594	(1)
Female Screwlock	A0317136	(4)
Flat Washer	P0148330	(4)

6) Provide one (1) 25-Pin Cover Plate set for any unused Installer side connectors on the NTRX34LA (i.e., not equipped with cables). The number of sets required is equal to 24 minus the number of ports used. (Minimum of (4) P0715775 and (8) P0670923). This set consists of the following equipment and quantities:

EQUIPMENT	PEC	QTY REQ'D
Cover Plate (25-Pin)	P0715775	(1)
Mounting Screws	P0670923	(2)

RUL15 1) Provision one (1) 500VA AC Inverter, NTRX31DH, if requested by customer to provide 115 V ac to units in CMIS cabinets (and mounted in same cabinet). Customer has the option of providing this circuit.

The inverter has a failure mode switch to allow selection between breaker trip failure or breaker trip/inverter failure detection.

2) Provide one (1) NTRX59AZ (500VA AC Inverter Kit) non-isolated per closed CMIS cabinet to provide support for an inverter if it is provisioned or if customer is providing. This kit provides isolation and mounting hardware, and Frame Ground Cable. Only mounting pos 05 may be specified.

2a) Provide one (1) NTRX59AB (500VA Inverter Kit - Isolated) per open CMIS cabinet to provide support for an inverter if it is provisioned or if customer is providing. Mounting position 05, 19, or 33 may be specified. This kit provides mounting hardware and logic return cable.

3) If the Inverter Kit is not provisioned, provide two (2) MSP Blank Panels (One Pos) P0734476 and four (4) Panel Mounting Screws P0559409.

4) The 500VA AC Inverter provides standard AC socket outlets for (4) 120 V ac circuits ((2) dual outlets). The maximum total power consumption of all units connected to one inverter shall not exceed 500 watts (120 V ac nominal, 4.15 amps output). (1) NTRX34FO (120 V ac Power Cord) is required to distribute power from the inverter to each unit which requires protected AC. Refer to the rules for the unit requiring the power to determine the length of NTRX34FO.

   Units listed in the chart below are the only units to date that may be assigned to the CMIS Model B which require this cable:

UNITS REQUIRING AC POWER (120 V ac)	SUPPLY CABLE (ONE PER UNIT)
NT5X69AA (NTRX59AY KIT)	NTRX34FO
NT3X25AA (NTRX59AG KIT)	NTRX34FO

5) NTRX59AZ and inverter packaged with the Inactive System Timing Circuit Kit (NTRX59AY).

6) Provide one (1) NTRX56CE to provide the 20 amp breaker module in the MSP for provisioning input power for the 500VA AC Inverter. The inverter is powered from the MSP via one 20 amp circuit breaker mounted in slot 12 CB05. Slot 12 is a fixed assignment.

   When both PECs NTRX56CB and NTRX56CE are provided, provide two (2) each of NTRX1670 (cable) and two (2) each of P0737501 (label) for MSP Shelf Position 61 Slot 12R.

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AZ NTRX31DH	1 CB	20	MSP POS 12,CB05 ASSIGNMENT ID FIXED
NTRX59AB	1 CB	20	MSP POS 12,CB05

NTRX31DH			ASSIGNMENT ID FIXED

RUL16 1) Provision one (1) DTH/ROTL, NT7F18AD, to provide Remote Office Line Testing, if requested by customer. Customer has the option of providing this circuit. Mounts in an EMC cabinet.

2) Provision one (1) NTRX59AC CMIS DTH/ROTL Kit to provide support for a DTH/ROTL if it was provisioned or if customer is providing. The kit provides mounting hardware, bulkhead connector plate, unit to bulkhead cables and filter adapters. Mounts in an EMC cabinet.

3) Provision one (1) Connector Plate DTH/ROTL, P0730992, per NTRX59AC Kit provisioned. In the chart below note that when the unit is mounted in shelf position 07, the P0730992 (Full Size Connector Mounting Plate) must be mounted in ZONES A and B, when mounted in shelf position 35, P0730992 must be mount in ZONES E and F. Also, note the unit's fusing specifications included.

NT7F18AD/NTRX59AC MOUNTING and FUSING INFO					
MTG POS	CONN PLATE	CONN PLT ZONE	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG DESIG RANGE
07	P0730992	A,B	1 CB	10	MSP POS 10,CB01,02 MSP POS 11,CB03,04
35		E,F			

4) Provide one (1) NT7F19AC Spares Kit per NTRX59AC, when the Telco specifies maintenance spares for the DTH-ROTL.

RUL17 1) Provision one (1) Audible/Visual Alarm Ext Unit, NT5X85AA, based on the following. Customer has the option of providing this circuit. Mounts in an EMC cabinet.

When the number of NT0X66-- (Audible Alarm Panels) provisioned exceeds two (2), and/or

When the number of NT0X64-- (Exit Alarm Display Panels) provisioned exceeds four (4).

2) Provide one (1) NTRX59AD and one (1) P0730991 per office to provide support for an Audible/Visual Alarm Ext Unit if provisioned or if customer is providing. The NTRX59AD pro-

vides Mounting Hardware, Unit to Bulkhead Cables, Filter Adapters, and is mounted in an EMC cabinet.

3) When NTRX59AD is provisioned, always provide one (1) Pylon RG-2 Ring Generator, A0379066. Customer has the option of providing this circuit. Mounts in an EMC cabinet.

4) When NTRX59AD is provisioned, always provide one (1) CMIS Pylon RG-2 Ring Gen. Kit, NTRX59AE, to provide support for the Pylon RG- 2 Ring Generator on a one per office basis. The NTRX59AE provides Mounting Brackets and Hardware and is mounted in an EMC cabinet.

5) When NTRX59AD is provided, provision one (1) Audible Alarm Cutoff Control Unit, NT5X86AA, on a one per office basis when Selective Audible Alarm Cutoff Control is required. Customer has the option of providing this circuit. Mounts in an EMC cabinet.

6) Provision one (1) CMIS Audible Alarm Cutoff Kit, NTRX59AH, to provide support for an Audible Alarm Cutoff Control Unit if provisioned or if customer is providing. It supports up to six audible circuits. The NTRX59AH must be used in conjunction with externally mounted NT5X86AB. The NTRX59AH Kit provides Mounting Hardware, Bulkhead Connector Plate, Unit To Bulkhead Cables, and the Filter Adapters and is mounted in an EMC cabinet.

   If the NTRX59AH is not required leave its assigned mounting position blank and provide (8) Blank Cover Plates 9 Pin (P0715809) and (16) mounting screws (P0670923) to cover unused connector mounting positions on the P0730991 (Connector Mounting Plate).

7) Fusing and power requirements for the system is as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AD NT5X85AA	5	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08
NTRX59AE A0379066			POWERED FROM NTRX59AD
NTRX59AH NT5X86AA	1	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08

8) The NTRX59AD, NTRX59AE, and NTRX59AH are provided as a group. However, the NTRX59AH may not be provided initially as a standalone item.

9) Provision one (1) Connector Mounting Plate, P0730991, per NTRX59AD Kit provisioned. It provides connector fields for NT5X85AA and NT5X86AA. However, these units shall be assigned and provisioned as a group (e.g. assign consecutively in cabinet shelf positions 04, 06, 08 or 18, 20, 22 etc.). See the chart below:

KIT/UNIT	MTG POS	CONN PLATE	CONN PLT ZONE
NTRX59AD NT5X85AA	05	P0730991	A,B
	19		C,D
	33		E,F
	47		G,H
NTRX59AH NT5X86AA	07		
	21		
	35		
	49		
NTRX59AE A0379066	09		
	23		
	37		
	51		

RUL18 1) Provision one (1) Inactive System Timing Circuit, NT5X69AA, on a one per office basis to record the duration of system downtime, if requested by customer. Customer has the option of providing this circuit. Mounts in an EMC cabinet.

2) Provide one (1) NTRX59AY, Inactive System Timing Circuit Kit (ISTC) to provide support for an Inactive System Timing Circuit if provisioned or if customer is providing. The

NTRX59AY Kit provides Mounting Brackets. Mounts in an EMC (closed) cabinet.

3) The following equipment or connections to this equipment is also required:

A non-isolated inverter located in the same cabinet or a connection on an inverter located in the same cabinet. When the NTRX59AY is provisioned a 120 V ac inverter socket and (1) NTRX34FO variable length cable is required. The cable length required is dependent of the shelf position of the two units. Refer to the chart below and provision the NTRX34FO cable and cable length as indicated:

NTRX31DH SHELF POSITION	NT5X69AA SHELF POSITION	NTRX34FO REQUIRED LENGTH IN INCHES
5	14	36

Six (6) feet of R0109636 (24 AWG Solid Green Wire). This wire used to connect ISTC unit (NT5X69AA) TSA, PIN 15 to NTRX34LA. Customer engineer must specify PIN 1 on one of connectors C01-C20 as being assigned to ISTC. See ISRX34LA NOTE 208 for actual NTRX34LA terminal block pin to be specified. Customer engineer must ensure that switchboard cable containing "IAST" lead is assigned to the same C01-C20 connector that has been assigned to the internal connection. Refer to ISRX59AY, CAD 1.

One (1) NTRX34LA or a connection on one (1) of the twenty (20) connectors on the NTRX34LA.

One (1) 25-Pin Filter adapter is required on P0732132 which is provisioned per the NTRX34LA. Provide the following, shipped loose:

One (1) 25-Pin Filter Adapter, A0316594

Four (4) Female Screwlock, A0317136

Four (4) Flat Washer, P0148330

4) The ISTC legal mounting location and Connector Mounting Plate requirement is as follows:

KIT/UNIT	MTG POS	CONN PLATE	CONN PLT ZONE
NTRX59AY NT5X69AA	14	Via Conn Plate Prov. With NTRX34LA	See NTRX34LA

5) The ISTC fusing requirements are as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AY NT5X69AA	1	0.25	MSP POS 08,F01-08 MSP POS 09,F01-08

RUL19 1) RESERVED

RUL20 1) Provide one (1) MLT Applique Shelf, NT3J00BA, per each multiple of ten (10) MLT circuit packs required for loop testing. Customer has the option of providing this shelf themselves. Mounts in an EMC cabinet.

2) Provide one (1) Connector Plate MLT Applique Shelf, P0730993, and one (1) CMIS MLT Applique Shelf Kit, NTRX59BJ, to provide support for each MLT Applique Shelf if provisioned or if customer is providing. This kit provides ISG Mounting Hardware, Bulkhead Connector Plate, Unit to Bulkhead Cables, Filter Adapters, and Logic Return Ground Cable. Mounts in an EMC cabinet.

3) Provide one (1) NTRX34DT for every two (2) NTRX59BJ.

4) Provide NT3J00BB CPs in pos 03 to 09 or 13 to 21 or NT3J00BE CPs in pos 03 to 21 (odd positions only) as per job engineering requirements. NOTE: Cooling unit may be required. See NTRX92AA rule for power dissipation limits.

5) The chart below depicts the relationship between the equipment mounting position and the Zone in which the Connector

Mounting Plate must be mounted. Provide a half size blank connector plate in adjacent zone (if unused).

KIT/UNIT	MTG POS	CONN PLATE	CONN PLT ZONE
NTRX59BJ NT3J00BA	05	P0730993	A
	19		C
	33		E
	47		G

6) The NT3J00BA fusing requirements are as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59BJ NT3J00BA	1	2	MSP POS 08,F01-08 MSP POS 09,F01-08

RUL21 1) Currently, there is no requirement for the 9-Pin or 37- Pin Filter Adapter and associated covers. However, this equipment is included here so as to maintain all items documented by MSRX56AA as provisionable.

2) There is no documented requirement for the 9-Pin Filter Adapter or Cover Plates. However, if they should be required, provide the following:

Provide one (1) 9-Pin Filter Adapter set per cable connected to a Bulkhead Connector Plate having 9-Pin cutouts. This set consists of the following equipment and quantities:

EQUIPMENT	PEC	QTY REQ'D
9-Pin Filter Adapter	A0344127	(1)
Female Screwlock	A0317136	(4)
Flat Washer	P0148330	(4)

Provide one (1) 9-Pin Cover Plate set for any unused Installer side connectors on a Bulkhead Connector Plate hav-

ing 9-Pin cutouts. This set consists of the following equipment and quantities:

EQUIPMENT	PEC	QTY REQ'D
Cover Plate (9-Pin)	P0715809	(1)
Mounting Screws	P0670923	(2)

3) There is no documented requirement for the 37-Pin Filter Adapter or Cover Plates. However, if they should be required, provide the following:

Provide one (1) 37-Pin Filter Adapter set per cable connected to a Bulkhead Connector Plate having 37-Pin cutouts. This set consists of the following equipment and quantities:

EQUIPMENT	PEC	QTY REQ'D
37-Pin Filter Adapter	A0316599	(1)
Female Screwlock	A0317136	(4)
Flat Washer	P0148330	(4)

Provide one (1) 37-Pin Cover Plate set for any unused Installer side connectors on a Bulkhead Connector Plate having 37-Pin cutouts. This set consists of the following equipment and quantities:

EQUIPMENT	PEC	QTY REQ'D
Cover Plate (37-Pin)	P0715774	(1)
Mounting Screws	P0670923	(2)

RUL22 1) Provision one (1) Secondary Protector, A0361490, for each CASE/DATATEL modem provisioned. These are installed at the MDF. These are required because these modems are not UL 1459 approved.

RUL23 1) Provision one (1) CMIS CASE/DATATEL RM4200 (-48VDC) Modem Shelf, A0600770, to accommodate up to sixteen CASE DATATEL 4200 series modems. Customer has the option of providing this shelf. Mounts in a non-EMC (OPEN) cabinet.

2) Provision one (1) CMIS CASE/DATATEL RM4200 (-48VDC) Modem Shelf Kit, NTRX59AK, to provide support for each CMIS CASE/DATATEL RM4200 (- 48VDC) Modem Shelf if provisioned or if customer is providing. Kit provides isolation/mounting brackets, logic ground cable and associated hardware.

3) The CMIS CASE/DATATEL RM4200 (-48VDC) Modem Shelf occupies 7" of vertical space. Allow an additional 1" above and below the unit for cooling. Mounting position specified is of the lowest screw holding the unit mounting bracket to the cabinet. Bottom edge of the unit is 1-1/2" below this mounting position.

4) The modem shelf fusing requirements are as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AK	1	5	MSP POS 08,F01-08
A0600770	1	5	MSP POS 09,F01-08
(A0367419 has been MD)			(ONE FUSE MUST BE IN MODULE 08, THE OTHER IN MODULE 09.)

RUL24 1) Provide 42011 modem (A0367996) for full duplex synchronous binary serial data transmission/reception over 3002 type 4W private lines or half duplex over 2W private lines and 2W DDD switched network.

RUL25 1) Provide 42021 modem (A0355258) for asynchronous 4W full duplex operation on private leased lines at 0-1800 bps speed on conditioned lines.

RUL26 1) Provide 42081 modem (A0367994) for synchronous 4W full duplex operation in a-mode on private leased lines at 4800 bps.

RUL27 1) Provide 42121 modem (A0355259) for 2W dial-up operation as follows; 1200 BPS operation on FDX PSTN line or 1200 BPS character asynchronous operation on FDX PSTN line or 0-300 BPS asynchronous operation on FDX PSTN line.

RUL28 1) Provide 42291 Data Auxiliary Set (829 DAS) Modem (A0355255) to terminate 4W private line data channels.

RUL29 1) Provide 42225 modem (A0600589) for full duplex operation for the transmission of serial data over 2W PSTN or 2W PLL for operation at 1200 or 2400 bps synchronous or 300/1200/2400 bps asynchronous operation.

RUL30 1) Provide 42323 modem (A0352086) for full duplex operation for the transmission and reception of serial data over 2W PSTN or 4W PLL. Provides operation at 1200/2400/4800/9600

bps synchronous or 300/1200/2400/4800/9600 bps asynchronous operation.

RUL31 1) Provide 42961 modem (A0351642) for full duplex operation for the transmission and reception of serial data over 4W PLL at 9600 bps synchronous operation.

RUL32 1) Provide one (1) adapter plug per side (max. two per RM4200 SHELF) for modems operated in dial up mode on Public Switched Telephone Network (PSTN). Specify adapter in connector pos P2 to determine transmit level of modems in slots 1-8 or in connector pos P4 for slots 9-16. Specify A0320894 (CASE DATATEL 905-6582-01) to provide Telco adjustable transmit level between 0 and -12 dBm.

RUL33 1) Provide one (1) adapter plug per side (max. two per RM4200 SHELF) for modems operated in dial up mode on Public Switched Telephone Network (PSTN). Specify adapter in connector pos P2 to determine transmit level of modems in slots 1-8 or in connector pos P4 for slots 9-16. Specify A0369235 (CASE DATATEL 905-6582-02) to provide a permissive transmit level of -9 dBm maximum.

RUL34 1) Provide one (1) adapter plug per side (max. two per RM4200 SHELF) for modems operated in dial up mode on Public Switched Telephone Network (PSTN). Specify adapter in connector pos P2 to determine transmit level of modems in slots 1-8 or in connector pos P4 for slots 9-16. Specify A0369236 (CASE DATATEL 905-6582-03) to provide a Fixed Loss Loop (FLL) transmit level of -4 dBm maximum.

RUL35 1) Provide one (1) CMIS DANTEL Digital Alarm Scanner (DMS-100 to SCC Interface, fully wired and equipped), A0601999, for each DMS office required to interface with Switch Control Centers (SCC) of Bell Operating Companies (USA). Customer has the option of providing this circuit. Mounts in a non-EMC cabinet.

2) Provide one (1) CMIS DANTEL Digital Alarm Scanner Kit, NTRX59AL, to provide support for each CMIS DANTEL Digital Alarm Scanner if it was provisioned or if customer is providing. Kit provides mounting brackets and associated hardware.

3) The CMIS DANTEL Digital Alarm Scanner occupies 6" of vertical space. Allow an additional 1" above and below the unit for cooling. Mounting position specified is that of the lowest screw holding the unit mounting bracket to the cabi-

net. Bottom edge of the unit is 1- 1/2" below this mounting position.

4) The Scanner fusing requirements are as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AL A0601999	1	3	MSP POS 08,F01-08 MSP POS 09,F01-08

RUL36 1) Provide one (1) RMM Kit, NTRX59AU, one (1) RMM Shelf, NT6X1306, and one (1) RMM Common CP, NT6X13AB, when service circuits or trunks are equipped on the CMIS Model B up to a maximum of (4) per CMIS cabinet. Mount the first RMM in position 05 on the CMIS with each additional RMM mounted in 19, 33, then 47. The RMM requires 14 inches of vertical space on the CMIS frame.

In a mono RCS-S office there may only be a maximum of three RMMs, one Internal RMM located in the CRSC and two External RMMs located in CEXT or CMIS. Therefore, the maximum number of RMM in a CMIS for an RSC-S mono office is two.

In a dual RCS-S office there may be a maximum of six RMMs, two Internal RMMs located in the CRSCs and four External RMMs located in CEXTs or CMISs. Therefore, the maximum number of RMM in a CMIS for an RSC-S dual office is four.

2) Provide one (1) Connector Plate RMM, P0744235, for each RMM provisioned. 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

3) The RMM is unique in that it requires both Filtered and Non- Filtered TALK BATTERY and is currently the only CMIS equipment that requires Filtered TALK BATTERY. The fuses are used to power the circuit packs in the RMM shelf; this power is filtered. The RMM fusing requirements are as follows.

   The RMM shelf can be powered by "B" or "A" Feed (L-). Use NTRX42AA in pos. 11 of the MSP for Input to PC-48V if "B" feed is required to Shelf. Circuit Breaker # 3 or 4. Use NTRX42AA in pos. 10 of the MSP for Input to PC-48V if "A" feed is required to Shelf. Circuit Breaker # 1 or 2.

   See FUSING INFO Table below for connection variations.

   Use NTRX43AA in pos. 15 of the MSP for Input to FLT-48V if "B" feed is required to Shelf. Connect to one of the eight Fuse positions available. Use NTRX43AA in pos. 18 of the MSP for Input to FLT-48V if "A" feed is required to Shelf. Connect to one of the eight Fuse positions available.

   See FUSING INFO Table below for connection variations.

   The first RMM provisioned in the CMIS should be powered from the B Feed (MSP POS 11 - CB03, MSP POS 15, F01-08) since the Internal RMM provided in the CRSC is powered by the A Feed. Fusing should alternate between A and B.

   A second RMM provisioned in the CMIS should be powered from the A Feed (MSP POS 10 - CB01, MSP POS 18, F01-08).

   A third RMM provisioned in the CMIS should be powered from the B Feed (MSP POS 11 - CB04, MSP POS 15, F01-08) since the Internal RMM provided in the CRSC is powered by the A Feed.

A fourth RMM provisioned in the CMIS should be powered from the A Feed (MSP POS 10 - CB02, MSP POS 18, F01-08).

FUSING INFO		
NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG DESIG RANGE
1 CB	10	MSP POS 10,CB01,02 (A Feed) MSP POS 11,CB03,04 (B Feed)
1	5	MSP POS 18,F01-08 (A Feed) MSP POS 15,F01-08 (B Feed)

4) Provide one (1) NTRX5623 CMIS Alarm and Power Cable per two B Feed RMMs to provide power to the power converters in the RMM shelf. Provide a second NTRX5623 per two A Feed RMMs, if required. A maximum of two NTRX5623 should be provided for the maximum of four RMMs allowable in a CMIS.

   If normal Power Feed provisioning guidelines are followed, as specified above, one 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 not require additional NTRX5623 Cables. They will use the two NTRX5623 already provisioned.

5) 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

6) The provisioning rules for the RMM shelf circuit packs in location 03-16 apply as follows:

	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
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.

7) Any card slot 3 thru 16 not equipped with a circuit pack per this rule shall be equipped with an NT0X50AC Filler Face Plate.

RUL37 1) Provision one (1) NTRX3133 Top Cover Kit, in an OPEN CMIS cabinet only, for covering top opening if cabling is to be done under floor or on raised floor. Also provision one (1) P0737714 Cable Bracket, one (1) P0738577 Cable Bracket and four (4) P097F839 Screws, Self Tapping at the bottom of the cabinet to secure cables.

The Top Cover cannot be used in conjunction with the NTRX56CA CMIS External Power Filter Kit. These parts physically interfere with each other and cannot be used together.

RUL38 1) Provide one (1) NTRX3134 Bottom Cover Kit, in an OPEN CMIS cabinet only, for covering bottom opening if cabling is to be in cable trays on top of cabinet. Also provision one (1) P0737714 Cable Bracket, one (1) P0738577 Cable Bracket and four (4) P097F839 Screws, Self Tapping at the top of the cabinet to secure cables.

RUL39 1) If cabinet is a CLOSED type, provision one (1) NTRX56FA Right Hand Bulkhead Kit at the right rear of the cabinet.

RUL40 1) Provision one (1) A0380973 CMIS GDC Data Set Module Shelf, in an OPEN CMIS cabinet only, if requested by customer. Customer has the option of providing this shelf themselves. A maximum of four may be provisioned per cabinet. It houses up to sixteen Data Set Modems and is a redundant powered 48 volt DC shelf. One (1) DPS-9 Power Supply can power 16 slot positions, but two (2) are provided per DS-6 shelf. The different series of GDC modems may be mixed within the shelf in any manner desired.

2) Provision one (1) NTRX59AS CMISC GDC Modem Kit, in an OPEN CMIS cabinet only, to provide support for a modem shelf, if the Data Set Module Shelf above was provisioned or per customer requirement if customer is providing a GDC Modem Shelf. Kit provides modem shelf mounting hardware. (kit does not provide Modem shelf, fuses, or designation disks.)

3) The CMIS GDC Data Set Module Shelf occupies 10.5" of vertical space. Allow an additional 1" above and below the unit for cooling. Mounting position specified is the lowest screw holding the unit mounting bracket to the cabinet. Bottom edge of the unit is 1- 1/2" below this mounting position.

4) The modem shelf fusing requirements are as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AS A038097	1CB	10	MSP POS 08,F01-08 MSP POS 09,F01-08 (ONE FUSE MUST BE IN MODULE 08, THE OTHER IN MODULE 09.)

RUL41 1) Provision modem cards, in an OPEN CMIS cabinet only, per customer requirements to provide desired features. For

provisionable modems see GDC Modems Engineering Manual Section, EMA13-01-GDC-1 (T_GDC_MOD).

2) Provision one (1) Secondary Protector, A0361490, for each GDC modem provisioned which is not UL 1459 approved. These are to be installed at the MDF. The following GDC modems are UL 1459 approved and do not required the Protector:

Modem Description	Modem CPC
GDC DC 202S/T	A0328524
GDC DC 596	A0378942
GDC DC 596 MNP5	A0378944
GDC DC 596 X.25	A0378946
GDC DC 19202A	A0378920
GDC DC 500F/AXR	A0601470

RUL42 1) Provision one (1) A0344310 CMIS UDS Modem Shelf RM16, in an OPEN CMIS cabinet only, if requested by customer. Customer has the option of providing this shelf. A maximum of four may be provisioned per cabinet. It houses up to sixteen Data Set Modems and is a redundant powered 48 volt DC shelf. One (1) DPS-9 Power Supply can power 16 slot positions, but two (2) are provided per RM16 shelf. The different series of UDS modems may be mixed within the shelf in any manner desired.

2) Provision one (1) NTRX59AV CMISC UDS RM16-23DC Modem Kit, in an OPEN CMIS cabinet only, to provide support for a modem shelf, if the Data Set Module Shelf above was provisioned or per customer requirement if customer is providing a UDS Modem Shelf. Kit provides modem shelf mounting hardware. (kit does not provide Modem shelf, fuses, or designation disks.)

3) The CMIS UDS Modem Shelf RM16 may be mounted in any position in a non-EMC cabinet. The unit occupies 7" of vertical space. Allow an additional 1" above and below the unit for cooling. Mounting position specified is the lowest screw holding the unit mounting bracket to the cabinet. Bottom edge of the unit is 1-1/2" below this mounting position.

4) The modem shelf fusing requirements are as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AV A0344310	1 1	5 5	MSP POS 08,F01-08 MSP POS 09,F01-08 (one fuse must be in MOD 08, the other in MOD 09)

RUL43 1) Provision modem cards, in an OPEN CMIS cabinet only, per customer requirements to provide desired features. For provisionable modems see UDS Modems Engineering Manual Section, EMA13-01-UDS-1 (62005220).

2) Provision one (1) Secondary Protector, A0361490, for each modem provisioned. These are to be installed at the MDF. These are required because these modems are not UL 1459 approved.

RUL44 1) Provision one (1) NTRX59AN CMISC COOK DA Shelf Hardware Kit, in an OPEN CMIS cabinet only, if a COOK Digital Announcer (CDA) is to be provided in this cabinet. A maximum of eight may be provisioned per cabinet of trunk or line versions or a mix - (4) A Feed and (4) B Feed alternating. This kit provides only mounting hardware for this product. The Announcer must be ordered separately.

2) Fusing and power requirements for the system is as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AN	1	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08

RUL45 1) Provide NT5M02CC CDA for applications requiring two audio outputs and a message length up to one minute.

2) The NT5M02CC CDA is equipped with the following:

a) 2-Port Fixed Message Length F/W (FIXED) NT5M50AE
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)

e) One minute message length (1M)
f) Ring Trip (line) Access (RTA)
g) Product Color NT Brown (BRN)

3) Refer to the Cook Digital Announcer Engineering Manual Section, EMA13-01-CDA-3, NT5M0N, for more information.

RUL46 1) Provide NT5M04DU CDA for applications requiring four audio outputs and a message length up to two minutes.

2) The NT5M04DU CDA is equipped with the following:

a) 4-Port Fixed Message Length F/W (FIXED) NT5M50AG
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Two minute message length (2M)
f) Ring Trip (line) access (RTA)
g) Product Color NT Brown (BRN)

3) Refer to the Cook Digital Announcer Engineering Manual Section, EMA13-01-CDA-3, NT5M0N, for more information.

RUL47 1) Provide NT5M04DV CDA for applications requiring four audio outputs and a message length up to one minute.

2) The NT5M04DV CDA is equipped with the following:

a) 4-Port Split Memory Demand Phased F/W (SP/DMD) NT5M50AJ
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (1M)
f) Ring Trip (line) access (RTA)
g) Product Color NT Brown (BRN)

3) Refer to the Cook Digital Announcer Engineering Manual Section, EMA13-01-CDA-3, NT5M0N, for more information.

RUL48 1) Provide NT5M06CB CDA for applications requiring six audio outputs and a message length up to three minutes.

2) The NT5M06CB CDA is equipped with the following:

a) 6-Port Fixed Length Message F/W (FIXED) NT5M50AG
b) 26 inch Mounting Brackets (26")

c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Three minute message length (3M)
f) Ring Trip (line) access (RTA)
g) Product Color NT Brown (BRN)

3) Refer to the Cook Digital Announcer Engineering Manual Section, EMA13-01-CDA-3, NT5M0N, for more information.

RUL49 1) Provide NT5M08CC CDA for applications requiring eight outputs and a message length up to four minutes.

2) The NT5M08CC CDA is equipped with the following:

a) 8-Port Fixed Message Length F/W (FIXED) NT5M50AG.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) Four minute message length (4M)
f) Trunk access (TRK)
g) Product Color NT Brown (BRN)

3) Refer to the Cook Digital Announcer Engineering Manual Section, EMA13-01-CDA-3, NT5M0N, for more information.

RUL50 1) Provide NT5M08CH CDA for applications requiring eight outputs and a message length up to one minute.

2) The NT5M08CH CDA is equipped with the following:

a) 8-Port Split Memory Demand Phased F/W (SP/DMD) NT5M50AJ.
b) 26 inch Mounting Brackets (26")
c) Remote Record (all units are e/w remote record feature)
d) Battery Backup (all units are e/w battery back-up)
e) One minute message length (1M)
f) Ring Trip (line) Access (RTA)
g) Product Color NT Brown (BRN)

3) Refer to the Cook Digital Announcer Engineering Manual Section, EMA13-01-CDA-3, NT5M0N, for more information.

RUL51 1) Provision one (1) NTRX59AP CMISC Alarm Extension Kit, in an OPEN CMIS cabinet only, to mount in the CMIS if at least one NT0X64AA is provided for a remote office.

2) Provision one (1) P0744667 bracket and two (2) P097F813 screws for cable management when the Alarm Extension kit is provided.

3) Application of the Alarm Extension Kit is limited by the following factors:

The dry relay contacts are limited in accordance with Table 725- 31(B) of the National Electrical Code (NEC) for not inherently limited power sources (overcurrent protection required). The source of power for these contacts is limited to 60 VDC, 1 A. The dry relay contacts are not allowed to have outside plant connection. This is required in order to reduce hazards from lightning and power cross conditions onto the bay and connected power source(s) supplying the relay contacts.

4) Fusing and power requirements for the system is as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AP	1	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08

RUL52 1) Provide one (1) EMM, NT0J42BA, to provide ISDN 2B1Q Subscriber loop line test maintenance service for up to 2000 lines as required by the Customer, in an OPEN CMIS cabinet only,.

2) Provide one (1) ISDN Test Module (ITM), NT0J43AA, per EMM, in an OPEN CMIS cabinet only, to provide the following test functions:

* Cold Start Verification

* Performance Monitoring Detection

* Threshold Crossing Verification Testing

3) Provide one (1) CMIS ESTU/ITM Kit, NTRX59AW, per ESTU/ITM to provide support for each EMM/ITM provisioned, in an OPEN CMIS cabinet only. The kit provides ESTU Splitter Box Assembly (XCONN), EMM/XCONN Cable Assembly, and EMM to ITM Cable Assembly.

4) The EMM/ITM requires 8 inches of continuous space. They must be mounted in sets with the EMM above the ITM and 2 inches of space between them. The CMIS ESTU/ITM Kit mounts between these units.

5) Fusing and power requirements for the system is as follows:

KIT/UNIT	NUMBER OF FUSES	AMPS	FUSE/BREAKER DESIG RANGE
NTRX59AW NT0J42BA NT0J43AA	2	1-1/3	MSP POS 08,F01-08 MSP POS 09,F01-08

5) The EMM, ITM and X-CONN UNIT must be mounted within the same CMIS cabinet. The EMM produces the most heat dissipation and should be mounted directly above the ITM unit. The modem shelf can mount within the same CMIS cabinet as the ITM/EMM etc. or another CMIS located within 50 feet. The GDC-596-9600 (A0378942) modem card and the GDC DS-6 modem shelf (A0380973) are recommended for the HSM I/F. The GDC DS-6 modem shelf is not part of the NTRX59AW kit. The NTRX59AM kit represents the modem shelf and all rules associated with that shelf.

6) Maximum length for EIA devices is 50 Feet. Use shielded cable for external cabling.

7) Refer to EMA13-01-TL1-1 (NT0J42BA Eng. Man. Section) for further provisioning information for ESTU.

RUL53 1) Provide one (1) TELLABS 1014U Universal Mounting Shelf, A0624408, in a CLOSED cabinet only to provide support for up to (14) 4201 Terminating Sets, if requested by customer. Customer has the option of providing this shelf.

2) The TELLABS Mounting Shelf occupies 6 inches of space.

3) Provide one (1) TELLABS 1014U Universal Mounting Shelf Kit, NTRX59AX, in a CLOSED cabinet only, if the TELLABS Mounting Shelf is provisioned or per customer requirement if customer is providing a TELLABS Mounting Shelf. Kit provides mounting hardware and other TELLABS 1014U items required to properly install the shelf.

4) Provide one (1) Connector Plate, P0733320, per each TELLABS 1014U Universal Mounting Shelf Kit provisioned.

RUL54 1) Provision TELLABS 4201 Terminating Sets, in a CLOSED cabinet only, per customer requirements. These provide basic toll-grade interfacing between 2W and 4W voice-frequency transmission facilities. It features switchable 600 or 900-ohm impedance termination on the 2W side, while 4W impedance terminations are fixed at 600 ohms. The 4201 Sets should not be used in applications characterized by low impedance (less than 800 ohms) across the A and B leads.

2) Provision one (1) Secondary Protector, A0361490, for each Terminating Set provisioned. These are installed at the MDF. These are required because these Terminating Sets are not UL 1459 approved.

RUL55 1) Provide NT3X25AA (115VAC) Common Equipment Shelf as required by customer for customer provided 115/120 VAC powered equipment.

2) Provide one (1) NTRX59AG Kit for each NT3X25AA specified. Provides mounting hardware and logic return cable.

3) To be provided in non EMC (open) CMIS only.

4) 115/120 VAC power is obtained from NTRX31DH Inverter located in same cabinet only. NTRX59AB (isolated) Inverter Kit must be specified as AC power source.

5) Customer is responsible for EMC performance of customer provided units mounted on NT3X25AA.

6) Supply NTRX34FO cable in lengths specified below. Each NT3X25AA requires one cable. X in length box indicates non-valid mounting position combination.

120 VAC POWER CORD LENGTH-NT3X25AA TO INVERTER (NTRX59AG KIT TO NTRX59AB KIT) (Length in Inches)

Inverter Location (mtg brkt-bot scr)	NT3X25AA (MTG BRKT-BOT SCR)						
	5	13	21	29	37	45	53
5	X	X	38	46	54	62	70
19	41	33	X	X	40	48	56
33	55	47	39	31	X	X	42

120 VAC POWER CORD LENGTH-NT3X25AA TO NT3X25AA (NTRX59AG KIT TO NTRX59AB KIT) (Length in Inches)

NT3X25AA Location (mtg brkt-bot scr)	NT3X25AA (MTG BRKT-BOT SCR)						
	5	13	21	29	37	45	53
5	X	31	39	47	55	63	71
13	31	X	31	39	47	55	63
21	39	31	X	31	39	47	55
29	47	39	31	X	31	39	47
37	55	47	39	31	X	31	39
45	63	51	47	39	31	X	31
53	71	63	51	47	39	31	X

1A2 LINE CARD SHELF

PEC CODE: TCS 1800A-1 L1

CPC CODE: A0332019

RATING: A&M.

REPLACES: Not Applicable

REPLACED BY: NTZX18AB

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The 1A2 Line Card Shelf is required for the maintenance communication system associated with the MAP and TTP key telephone set and provides multi-line key-set operation of communication trunks, monitor trunks and 101-type test lines.

The 1A2 Line Card Shelf is used with Logic 10/20 telephone sets and Communication Modules (NT5X64__).

TCS 1800A-1 L1 is a ten (10) line 1A2 Key Telephone System which occupies one shelf on the MIS/RSE/RME frame.

This shelf is 26 inches wide and 5 inches high.

Systems requiring more than ten (10) lines can be accommodated by using additional TCS 1800A-1 L1, 1A2 Line Card Shelves.

This system replaces the following:

1. NT5X58AA 1A2 Key Telephone System
   Stand Alone Unit
   (7 line capacity)

2. NT5X56AA 1A2 Key Telephone System
   Equipment Frame
   (28 line capacity)

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

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

TCS 1800A-1 L1 EMA13-01-1A2-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
93 05 24	ECM 353 02	A&M the TCS 1800A-1 L1.

The 1A2 Line Card Shelf is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
#	1A2 Line Card	TCS 1800AA-1 L1				01-10	RUL1
#	Filler Face Plate	TCS 1800AA-1 L2				01-10	RUL1
#	Pwr & Interrupter Card Equipped for 10V AC Lamp Signalling	TCS 1800AB-1 L1				11	RUL2
#	Ringing Generator 20 Hz	TCS 1800AC-1 L1				12	RUL3
#	Rng Gen Fill Face Plate	TCS 1800AC-1 L2				12	RUL3
#	10V AC Power Supply	TCS 1800C-1 L1				11R	RUL4
	QFF1B 2 Amp Fuse	A0205203		1		F1	AP
	QFF1F 1/4 Amp Fuse	A0205207		1		F2	AP
	QFF1H 3/4 Amp Fuse	A0205209		1		F3	AP
	QFF1H 3/4 Amp Fuse	A0205209		1		F4	AP
	QFF1B 2 Amp Fuse	A0205203		1		F5	AP
	QFF1B 2 Amp Fuse	A0205203		1		F6	AP
	QFF1B 2 Amp Fuse	A0205203		1		F7	AP
	QFF3A Dummy Fuse	A0201210		1		F8	AP
#	BIX Module	TCS 1800BA-1 L1				2R	RUL5

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
TCS 1800AA-1 L1	A&M	Norstar (NTZX18AB)
TCS 1800AA-1 L2	A&M	Norstar
TCS 1800AB-1 L1	A&M	Norstar
TCS 1800AC-1 L1	A&M	Norstar
TCS 1800AC-1 L2	A&M	Norstar
TCS 1800C-1 L1	A&M	Norstar
TCS 1800BA-1 L1	A&M	Norstar

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)

CODE	CPC	DESCRIPTION
TCS 1800A-1 L1	A0332019	1A2 Line Card Shelf
TCS 1800AA-1 L1	A0332023	1A2 Line Card
TCS 1800AA-1 L2	P0685350	Filler Face Plate
TCS 1800AB-1 L1	A0332024	Power and Interrupter Card Equipped for 10V AC Lamp Signalling
TCS 1800AC-1 L1	A0332025	Ringing Generator 20 Hz
TCS 1800AC-1 L2	P0685352	Ringing Generator Filler Face Plate
TCS 1800C-1 L1	A0332022	10V AC Power Supply

RULES:

RUL1

1) One 1A2 Line Card connects to one (1) ring down line circuit (i.e. Type A Line Card, Type B Line Card; other generic line card, from #5XBAR, SXS, etc.; or NT5X30AA) via the 1A2 Line Card tip and ring leads.

2) One 1A2 Line Card can multiple up to several Logic phones and Communication Modules. The multiplying of the Logic phone and Communication Module connections are performed at the BIX Module or the MDF, depending upon customer requirements.

3) Provide one (1) TCS 1800AA-1 L1, 1A2 Line Card, for each NT5X30 trunk circuit or for each outside access line to another local switcher.

4) Provide a maximum of ten (10) TCS 1800AA-1 L1, 1A2 Line Cards, per TCS 1800A-1 L1, 1A2 Line Card Shelf.

5) Otherwise, provide one (1) TCS 1800AA-1 L2, Filler Face Plate, for each unoccupied position.

RUL2

1) Provide one (1) TCS 1800AB-1 L1, Power and Interrupter Card equipped for 10V AC Lamp Signalling, for each 1A2 Line Card Shelf ordered.

RUL3

1) Provide one (1) TCS 1800AC-1 L1, Ringing Generator 20 Hz, only if Logic 10/20 telephone sets are needed.

2) One TCS 1800AC-1 L1 can only handle a maximum of five (5) ringers simultaneously.

3) One TCS 1800AC-1 L1 can be shared over multiple 1A2 Line Card Shelves.

4) If it is required to ring more than five ringers simultaneously, do not provide TCS 1800AC-1 L1. Instead, provide an external floating ringing generator, such as the Pylon RG-2 Ringing Generator or equivalent. A grounded or a floating ringing supply may be used.

5) Otherwise, provide Ringing Generator Filler Face Plate, TCS 1800AC-1 L2.

RUL4 1) Provide one (1) TCS 1800C-1 L1, 10V AC Power Supply, if Logic 10/20 sets or Communication Modules (NT5X64__) are needed.

2) Input power is to be provided via an Inverter Unit NT0X87AA. Since the 10V AC Power Supply has an output of 100 watts, and the Inverter Unit has a capacity of 200 watts, up to two (2) 10 V AC Power Supplies can be powered by one (1) Inverter Unit.

3) One TCS 1800C-1 L1 can only handle a maximum of five (5) twenty line Communication Modules.

4) One TCS 1800C-1 L1 can be shared over multiple 1A2 Line Card Shelves.

5) This unit is required to power the line key lamps (twenty per Communication Module) on the Communication Modules, and the line key lamps on the Logic 10/20 sets.

RUL5 1) Provide one TCS 1800BA-1 L1, BIX Module, to accommodate the local cross connections of one Logic 10/20 phone or Communication Module.

This module mounts on the rear of the 1A2 Line Card Shelf.

This module is not required when the MDF is utilized for cross connection purposes.

Note that the BIX Module can accommodate up to ten (10) telephone lines. These lines can all be from one Logic phone or Communication Module, or from several Logic phones or Communication Modules (i.e. two lines from each of five Logic phones, etc.).

2) Otherwise, provide TCS 1800B-1 L1, BIX Shelf when cross connections to multiple Logic 10/20 or Communication Module are required at the rear of the NT0X02AB frame.

For provisioning information on the BIX Shelf, see the provisioning rules for TCS 1800B-1 L1.

MAINTENANCE SPARE STORAGE FRAME

PEC CODE: NT0X85AA

CPC CODE: B0207803

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MSS

ENGINEERING DESCRIPTION: The Maintenance Spare Storage Frame houses the spare circuit packs required for a DMS office. Each frame houses approximately 100 spare circuit packs.

REFERENCE DOCUMENTATION: MS0X85AA 01 10

MARKETS: Applicable markets:

US
Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Mark Sorrell Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NT0X85AA EMA13-02-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- -- 96 11 01	--- ---- ECM 614 06	Previous history unavailable. Add Framework Assemblies per MS0X25. Close SR RR65464.

The Maintenance Spare Storage Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Common Framework Assy	NT0X25AA					RUL3
EMI Common Framework Assy	NT0X25AE					RUL3
EMI Earthquake Framework Assy	NT0X25AH					RUL3
Common CP Cage Assy	NT0X8501	ASSY		63		AP
Line Card Stor Chassis Assy	NT3X55AA			63		RUL1
Line Card Stor Chassis Assy	NT3X55BA			63		RUL2
Common CP Cage Assy	NT0X8501	ASSY		49		AP
Line Card Stor Chassis Assy	NT3X55AA			49		RUL1
Line Card Stor Chassis Assy	NT3X55BA			49		RUL2
Common CP Cage Assy	NT0X8501	ASSY		35		AP
Line Card Stor Chassis Assy	NT3X55AA			35		RUL1
Line Card Stor Chassis Assy	NT3X55BA			35		RUL2
Common CP Cage Assy	NT0X8501	ASSY		21		AP
Line Card Stor Chassis Assy	NT3X55AA			21		RUL1
Line Card Stor Chassis Assy	NT3X55BA			21		RUL2
Common CP Cage Assy	NT0X8501	ASSY		07		AP
Line Card Stor Chassis Assy	NT3X55AA			07		RUL1
Line Card Stor Chassis Assy	NT3X55BA			07		RUL2

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 NT0X85AA is ordered, these items are provided.

RUL1 1) Provide one (1) Line Card Storage Chassis, NT3X55AA, to accommodate up to twenty (20) Line Cards, NT2X17 or NT2X18, Ringing Bus MUX cards, NT2X20AB, (size 4" x 4") and up to four (4) I/O Bus Interface cards, NT2X16, (size 4" x 6").

2) Allow 6" of shelf width per chassis. Maximum four (4) chassis per shelf.

3) The use of this chassis for the storage of other cards of reduced dimensions requires confirmation.

4) Chassis are to be shipped loose. Installation will mount on frame per job requirements.

RUL2 1) Provide one (1) Line Card Storage Chassis, NT3X55BA, to accommodate up to thirty (30) single slot New Peripheral Line Cards, or ten (10) double slot New Periphral Line Cards and ten (10) single slot New Peripheral Line Cards, and up to one (1) New Peripheral I/O Bus Interface card. For the case of 10 single slot line cards and 10 double slot line cards, each double slot line card may be replaced by two (2) single slot line cards.

2) Maximum four (4) chassis and 3 single slot cards in the shelf.

3) Chassis are to be shipped loose. Installation will mount on frame per job requirements.

RUL3 1) Provide one (1) framework assembly according to the site requirements. The NT0X25AA Common Framework Assembly provides framework for non EMI and non earthquake applications. The NT0X25AE EMI Common Framework Assembly provides framework for EMI and non earthquake applications. The NT0X25AH EMI Earthquake Framework Assembly provides framework for EMI and earthquake applications.

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AE
CPC CODE:	B0228131
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a host office of up to 25 frames.
REFERENCE DOCUMENTATION:	SL0X58AE 00 04
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AE EMA13-03-HWK-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Term.Ring 1/4,8AWG,90 deg.	A0346848		100			AP
Term.Ring 1/4 stud,14AWG	A0352968		50			AP
Term.Ring 1/4 stud,6AWG	A0352967		50			AP
Ground Strap	A0319449		4			AP
Fuse QFF1A 1.3 Amp	A0205202		30			AP
Dummy Fuse QFF3A	A0205210		30			AP
Term.Ring 22-16AWG,6 Stud	A0288192		100			AP
Term.Ring 16-14AWG,8 Stud	A0288181		35			AP
Term.Ring 16-14AWG,10 Stud	A0288182		10			AP
Term.Ring 16-14AWG,1/4 Stud	A0288184		50			AP
Term.Ring 16-14AWG,6 Stud	A0288198		250			AP
Term.Ring 8 AWG,8 Stud	A0288199		10			AP
Term.Ring 8 AWG,8 Stud	A0291001		150			AP
Term.Ring 8 AWG,10 Stud V	A0288179		150			AP
Term.Ring 8 AWG,10 Stud	A0288178		200			AP
Term.Ring 8 AWG,1/4 Stud	A0288180		100			AP
Term.Ring 6 AWG,10 Stud V	A0288177		75			AP
Term.Ring 6 AWG,10 Stud V	A0288176		125			AP
Term.Ring 6 AWG,1/4 Stud N	A0288200		100			AP
Isolation Mtg. Hardware	B0225006		50			AP
Cable Termination Hrdw.	B0226182		10			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Nomex Tape	R0113635		2			AP
24 AWG Jumper Wire	R0109439		152m			AP
#9 Lacing Twine	R0112611		15			AP
Ca Hole Firestopped,label	P0690941		1			AP
Ca Hole Opened,label	P0693256		1			AP
WS Lock E .221-.475X.028	P0183220		50			AP
Washer Fl .223-.500X.057	P0284154		20			AP
Labels	P0580200		1			AP
Labels	P0575221		2			AP
Labels	P0575222		2			AP
Labels	P0575223		2			AP
Labels	P0580231		1			AP
Labels	P0580232		1			AP
Labels	P0580233		1			AP
Labels	P0580234		1			AP
Labels	P0580235		1			AP
Labels	P0580236		1			AP
PDC Labels	P0580250		8			AP
PDC Labels	P0580251		8			AP
Labels	P0580252		8			AP
Labels	P0580242		4			AP
Design Labels (trim panel)	P0643585		4			AP
LOGO Designation Label	P0575188		1			AP
Design Label (LOGO FSP)	P0629198		1			AP
MAP Designation Label	P0588093		2			AP
MAP Designation Label	P0588076		1			AP
Shelf Designation Label	P0575125		1			AP
FSP Designation Labels	P0598834		1			AP
Designation Label	P0622873		2			AP
Designation Label	P0618512		1			AP
Labels	P0580243		1			AP
Labels	P0580217		1			AP
Labels	P0580218		1			AP
WS FL .258ID,.562OD,.063	P0160739		100			AP
WS SPR .255ID,.493OD,.063	P0183028		100			AP
Cap Screw,190-32X.438	P0599135		25			AP
Taptite Screw 5/16-18X1/2	P0613379		12			AP
20Amp Fuse Label (PDC)	P0668418		1			AP
5 & 10 Amp Fuse Label	P0668419		1			AP
Screw HHT .216-24X.500	P097F813		200			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Fuse Designation Disc White	P097P235		30			AP
Cable Tie (preferred)	P0567232		7000			AP
Cable Tie 15 inch	P0590550		9000			AP
Cable Tie (preferred)	P0567226		800			AP
Designation Labels (shelf)	P0657667		1			AP
Term.Ring 12-10AWG 10 Stud	A0288183		75			AP
Term.Ring 12-10AWG 10 Stud	A0298616		250			AP
Term.Ring 12-10AWG 8 Stud	A0298617		75			AP
Hex Nut .375-16	P0401452		25			AP
Nut Hex .250-20X.438	P0065747		25			AP
Nut Hex .190-32	P0081293		25			AP
FL WS .180X.406X.036	P0210742		25			AP
WS Lock I .256-.478X.028	P0382825		25			AP
Washer Lock	P0388144		25			AP
Screw	P0545096		25			AP
Helical Spring Washer	P0643582		25			AP
Nut Hex S.216-24X.438	P0125953		25			AP
PHM SCR .216-24X.500	P0160021		25			AP
Nut Hex .164-32	P0206518		25			AP
Washer Helical .168ID	P0242132		25			AP
SCR HH CAP .375-16X1.000	P0127312		25			AP
Helical SPG.Washer	P0183036		50			AP
Frame Design Labelling PDC	P0633013		4			AP
PHS SCR	P0552356		50			AP
Term Ring	A0368074		50			AP
Term Ring	A0367788		100			AP
Cable Tie (Non-Preferred)	P0633713		500			AP
Washer .387X.734X.063	P0160742		50			AP
WS Lock E .256-.510X.028	P097Y579		50			AP
CONN Term. Lug Ring/Plain6	A0292966		100			AP
CONN Term. Ring/Plain16-14	A0288184		10			AP
Cable Termination HDWR.	B0232966		7			AP
Cable Termination HDWR.	B0232967		20			AP
ISG Equip. Ground Lug	A0378320		5			AP
ESD Wrist Ground Strap	A0319449		2			AP
Incandescent Lamp T1-3/4	A0378972		1			AP
PVC Fiber Sleeve, Black	R0115186		1.200MT			AP
.052-.85 G51P-B, 12.75 long	R0059716		1			AP
Hook-up wire, UL1429 26AWG	R0109836		3.100MT			AP
Cable Tie Mt.Base,1.12 in.	P0719431		50			AP
Paint, Enamel, Maple-Brown	R0116746		2			AP
Cable Tie, Nylon PLT2M-M69	P0633708		100			AP
Conn Hood Wire IDT 2X2X16	A0367518		5			AP

Conn Hood Wire IDT 2X2X16	A0367519	5	AP
Washer	P0411824	20	AP
Screw Thread .216-20x.75lg	P097F815	25	AP
Fuse Block, 9/32 in. fuse	A0346002	2	AP
Cable Tie Mtg.Base,Nylon	P0633746	50	AP
Term Splice Cab,CTAP,orange	A0361880	10	AP
Drain Wire Assembly	B0238795	2	AP
Ground Wire Assembly	P049Q122	2	AP
Conn Term Lug Disconnect	A0329118	25	AP
Conn Term Lug Disc/Locking	A0382703	10	AP
Conn Term Lug Disc/Locking	A0382704	10	AP
Catapillar Grommet/Teflo	R0113159	3.050MT	AP
Stud for C01, C02,.112-40	P0511003	5	AP
Conn Rect. 2x9, 2x8	A0207411	1	AP
Fuse,5A,Ceramic 125VAC	A0327000	20	AP
Fuse,10A,125VAC,nondelay	A0315462	20	AP
Fuse,20A,125VAC,nondelay	A0314873	20	AP
Fuse,30A,125VAC,nondelay	A0328460	10	AP
Term Blk Screw 12term,2row	A0291464	1	AP
Term Blk Screw,nonfeedthru	A0325283	1	AP
Term Blk Screw,6term.2row	A0294154	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:

RULES:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AP
CPC CODE:	B0230391
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a remote office adding one (1) RLCM frame.
REFERENCE DOCUMENTATION:	SL0X58AP 00 05
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AP EMA13-03-HWK-10 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TERM.RING #14GA-1/4 STUD	A0352968		5			AP
TERM. RING #6GA-1/4 STUD	A0352967		5			AP
TERM RING 22-16AWG 6 STUD	A0288192		5			AP
TERM RING 14-16AWG 10 STUD	A0288182		5			AP
TERM RING 16-14AWG 6STUD V	A0288198		10			AP
TERM RING 6AWG 10 STUD V	A0288176		15			AP
FUSE 1 1/3 AMP	A0205202		10			AP
DUMMY FUSE	A0205210		10			AP
24 GA JUMPER WIRE	R0109439		152m			AP
#9 LACING TWINE	R0112611		2			AP
NOMEX TAPE	R0113635		1			AP
FUSE DESIG DISC (WHITE)	P097P235		10			AP
CA HOLE FIRESTOPPED,LABEL	P0690941		1			AP
CABLE HOLE OPENED,LABEL	P0693256		1			AP
CABLE TIE (PREFERRED)	P0567232		1000			AP
CABLE TIE	P0590550		500			AP
CABLE TIE (PREFERRED)	P0567226		250			AP
WS LOCK E .221-.475X.028	P0183220		25			AP
WASHER FL .223-.500X.057	P0284154		5			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
WS FL .258ID,.562OD,.063	P0160739		10			AP
WS SPR .255ID,.493OD,.063	P0183028		10			AP
SCREW HHT .216-24X.500	P097F813		25			AP
CAP SCREW, 190-32X.438	P0599135		5			AP
TAPTITE SCREW 5/16-18X1/2	P0613379		3			AP
END GUARD FLOOR ID, FL 1-10	P0580200		1			AP
END GUARD ROW ID, A-F	P0575221		2			AP
FSP ROW A-B00-19,C00-03	P0580231		1			AP
FSP ROW C04-19,D00-19,E00-07	P0580232		1			AP
FSP ROW E08-19,F00-19,G00-11	P0580233		1			AP
TRIM PNL SHELF ID (LCE/RLCM)	P0643585		2			AP
Term Ring	A0368074		5			AP
Cable Tie (Non-Preferred)	P0633713		75			AP
Ground Strap	A0319449		1			AP
ESD Wrist Grounding Strap	A0319449		1			AP
Term Ring 6AWG, 10 Stud N	A0288177		10			AP
Term Ring 8AWG, 10 Stud	A0288178		5			AP
Term Ring 8AWG, 10 Stud V	A0288179		20			AP
Cable Termination Hardware	B0232966		2			AP
Cable Termination Hardware	B0232967		5			AP
Cable Tie Mount, Adhesive	P0719431		25			AP
Helical Spring Washer	P0643582		5			AP
Paint, Enamel, Maple Brown	R0116746		2			AP
Cable Tie, Nylon, PLT2M-M69	P0633708		100			AP
TermBLK Screw,12Term,2Row	A0291464		1			AP
TermBLK Screw,6Term,2Row	A0294154		1			AP
TermBLK Screw,12Term,2Row	A0325283		1			AP
CONN Hood Wire IDT 2x2x16	A0367518		5			AP
CONN Hood Wire IDT 2x2x16	A0367519		5			AP
Washer	P0411824		20			AP
Screw Thread .216-20x.750LG	P097F815		25			AP
Fuse Block, Holder, EndMnt	A0346002		2			AP
Cable Tie, Mount Base, Nylon	P0633746		50			AP
Term Splice Cab C-Tap 6AWG	A0361880		10			AP
Drain Wire Assembly	B0238795		2			AP
Ground Wire Assembly	P049Q122		2			AP
CONN Term Lug Disc. 22-18	A0329118		25			AP
CONN Term Lug Disc. 12-10	A0382703		10			AP
CONN Term Lug Disc. 12-10	A0382704		10			AP
Flam Ret. Catapillar Grom.	R0113159		3.050MT			AP
Stud .112-40 (for C01,C02)	P0511003		5			AP
CONN Rect 2.9, 2x8, .200	A0207411		1			AP
Fuse, 125VAC, 5A, Ceramic	A0327000		20			AP

Fuse, 125VAC 10A, nondelay	A0315462	20	AP
Fuse, 125VAC 20A, nondelay	A0314873	20	AP
Fuse, 125VAC 30A, nondelay	A0328460	10	AP
Incandescent Lamp T1-3/4	A0378972	1	AP
Sleeve, PVC-Fiberglass, BLK	R0115186	1.200MT	AP
.052-.085 G51P-B, 12.75 Long	R0059716	1	AP
Hookup Wire, UL1429, 26AWG	R0109836	3.100MT	AP
Term Ring 6AWG 1/4 Stud NY	A0288200	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:

RULES:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AF
CPC CODE:	B0228132
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a host office of up to 50 frames.
REFERENCE DOCUMENTATION:	SL0X58AF 00 04
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AF EMA13-03-HWK-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Term.Ring 1/4,8AWG,90 deg.	A0346848		150			AP
Term.Ring 1/4 stud,14AWG	A0352968		75			AP
Term.Ring 1/4 stud,6AWG	A0352967		75			AP
Ground Strap	A0319449		4			AP
Fuse QFF1A 1.3 Amp	A0205202		30			AP
Dummy Fuse QFF3A	A0205210		30			AP
Term.Ring 22-16AWG,6 Stud	A0288192		100			AP
Term.Ring 16-14AWG,10 Stud	A0288182		20			AP
Term.Ring 16-14AWG,6 Stud	A0288198		350			AP
Term.Ring 8 AWG,8 Stud	A0288199		10			AP
Term.Ring 8 AWG,8 Stud	A0291001		200			AP
Term.Ring 8 AWG,10 Stud V	A0288179		200			AP
Term.Ring 8 AWG,10 Stud	A0288178		300			AP
Term.Ring 8 AWG,1/4 Stud	A0288180		100			AP
Term.Ring 6 AWG,10 Stud V	A0288177		100			AP
Term.Ring 6 AWG,10 Stud V	A0288176		150			AP
Term.Ring 6 AWG,1/4 Stud N	A0288200		100			AP
Isolation Mtg. Hardware	B0225006		75			AP
Cable Termination Hrdw.	B0226182		20			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Nomex Tape	R0113635		2			AP
24 AWG Jumper Wire	R0109439		305m			AP
#9 Lacing Twine	R0112611		25			AP
Ca Hole Firestopped,label	P0690941		1			AP
Ca Hole Opened,label	P0693256		1			AP
WS Lock E .221-.475X.028	P0183220		50			AP
Washer Fl .223-.500X.057	P0284154		20			AP
Labels	P0580200		2			AP
Labels	P0575221		2			AP
Labels	P0575222		2			AP
Labels	P0575223		2			AP
Labels	P0580231		1			AP
Labels	P0580232		1			AP
Labels	P0580233		1			AP
Labels	P0580234		1			AP
Labels	P0580235		1			AP
Labels	P0580236		1			AP
PDC Labels	P0580250		8			AP
PDC Labels	P0580251		8			AP
Labels	P0580252		8			AP
Labels	P0580242		4			AP
Design Labels (trim panel)	P0643585		6			AP
LOGO Designation Label	P0575188		1			AP
Design Label (LOGO FSP)	P0629198		1			AP
MAP Designation Label	P0588093		2			AP
MAP Designation Label	P0588076		1			AP
Shelf Designation Label	P0575125		1			AP
FSP Designation Labels	P0598834		1			AP
Designation Label	P0622873		2			AP
Designation Label	P0618512		1			AP
Labels	P0580243		1			AP
Designation Label	P0618511		1			AP
Labels	P0580217		1			AP
Labels	P0580218		1			AP
WS FL .258ID,.562OD,.063	P0160739		100			AP
WS SPR .255ID,.493OD,.063	P0183028		100			AP
Cap Screw,190-32X.438	P0599135		25			AP
Taptite Screw 5/16-18X1/2	P0613379		12			AP
20Amp Fuse Label (PDC)	P0668418		1			AP
5 & 10 Amp Fuse Label	P0668419		1			AP
Screw HHT .216-24X.500	P097F813		200			AP
Fuse Designation Disc White	P097P235		30			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cable Tie (preferred)	P0567232		9000			AP
Cable Tie 15 inch	P0590550		11000			AP
Cable Tie (preferred)	P0567226		1000			AP
Fuse Designation Disc Gray	P0691379		15			AP
Designation Labels (shelf)	P0657667		1			AP
Term Ring	A0368074		100			AP
Term Ring	A0367788		150			AP
Term.Ring 12-10AWG 10 Stud	A0288183		100			AP
Term.Ring 12-10AWG 10 Stud	A0298616		300			AP
Term.Ring 12-10AWG 8 Stud	A0298617		100			AP
Hex Nut .375-16	P0401452		25			AP
Nut Hex .250-20X.438	P0065747		25			AP
Nut Hex .190-32	P0081293		25			AP
FL WS .180X.406X.036	P0210742		25			AP
WS Lock I .256-.478X.028	P0382825		25			AP
Washer Lock .221	P0388144		25			AP
Screw	P0545096		25			AP
PHS SCR	P0552356		25			AP
Helical Spring Water	P0643582		25			AP
Nut Hex S.216-24X.438	P0125953		25			AP
PHM SCR .216-24X.500	P0160021		25			AP
Nut Hex .164-32	P0206518		25			AP
Washer Helical .168ID	P0242132		25			AP
SCR HH CAP .275-16X1.000	P0127312		25			AP
Helical SPG.Washer	P0183036		50			AP
Frame Design Labelling PDC	P0633013		4			AP
Cable Tie (Non-Preferred)	P0633713		1000			AP
Washer .387X.734X.063	P0160742		50			AP
WS Lock E .256-.510X.028	P097Y579		50			AP
CONN Term. Ring Lug Ring	A0292966		100			AP
CONN Term. Ring/Plain16-14	A0288184		10			AP
Cable Termination HDWR.	B0232966		10			AP
Cable Termination HDWR.	B0232967		30			AP
ISG Equip. Ground Lug	A0378320		5			AP
ESD Wrist Ground Strap	A0319449		4			AP
PVC Fiber Sleeve, Black	R0115186		1.200MT			AP
.052-.85 G51P-B, 12.75 long	R0059716		1			AP
Hook-up wire, UL1429 26AWG	R0109836		3.100MT			AP
Term Blk Screw 12term,2row	A0291464		1			AP
Term Blk Screw,nonfeedthru	A0325283		1			AP
Term Blk Screw,6term.2row	A0294154		1			AP
Fuse,30A,125VAC,nondelay	A0328460		10			AP
Fuse,20A,125VAC,nondelay	A0314873		20			AP

Fuse,10A,125VAC,nondelay	A0315462	20	AP
Fuse,5A,Ceramic 125VAC	A0327000	20	AP
Conn Rect. 2x9, 2x8	A0207411	1	AP
Stud for C01, C02,.112-40	P0511003	5	AP
Catapillar Grommet/Teflo	R0113159	3.050MT	AP
Conn Term Lug Disc/Locking	A0382704	10	AP
Conn Term Lug Disc/Locking	A0382703	10	AP
Conn Term Lug Disconnect	A0329118	25	AP
Ground Wire Assembly	P049Q122	2	AP
Drain Wire Assembly	B0238795	2	AP
Term Splice Cab,CTAP,orange	A0361880	10	AP
Cable Tie Mtg.Base,Nylon	P0633746	50	AP
Fuse Block, 9/32 in. fuse	A0346002	2	AP
Screw Thread .216-20x.75lg	P097F815	25	AP
Washer	P0411824	20	AP
Conn Hood Wire IDT 2X2X16	A0367519	5	AP
Conn Hood Wire IDT 2X2X16	A0367518	5	AP
Cable Tie, Nylon PLT2M-M69	P0633708	100	AP
Paint, Enamel, Maple-Brown	R0116746	2	AP
Incandescent Lamp T1-3/4	A0378972	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:

RULES:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AG
CPC CODE:	B0228133
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a host office of up to 75 frames.
REFERENCE DOCUMENTATION:	SL0X58AG 00 04
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AG EMA13-03-HWK-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Term.Ring 1/4,8AWG,90 deg.	A0346848		200			AP
Term.Ring 1/4 stud,14AWG	A0352968		100			AP
Term.Ring 1/4 stud,6AWG	A0352967		100			AP
Ground Strap	A0319449		4			AP
Fuse QFF1A 1.3 Amp	A0205202		30			AP
Dummy Fuse QFF3A	A0205210		30			AP
Term.Ring 22-16AWG,6 Stud	A0288192		100			AP
Term.Ring 16-14AWG,10 Stud	A0288182		20			AP
Term.Ring 16-14AWG,6 Stud	A0288198		400			AP
Term.Ring 8 AWG,8 Stud	A0288199		10			AP
Term.Ring 8 AWG,8 Stud	A0291001		250			AP
Term.Ring 8 AWG,10 Stud V	A0288179		200			AP
Term.Ring 8 AWG,10 Stud	A0288178		400			AP
Term.Ring 8 AWG,1/4 Stud	A0288180		100			AP
Term.Ring 6 AWG,10 Stud V	A0288177		100			AP
Term.Ring 6 AWG,10 Stud V	A0288176		175			AP
Term.Ring 6 AWG,1/4 Stud N	A0288200		100			AP
Isolation Mtg. Hardware	B0225006		100			AP
Cable Termination Hrdw.	B0226182		30			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
24 AWG Jumper Wire	R0109439		610m			AP
#9 Lacing Twine	R0112611		40			AP
Ca Hole Firestopped,label	P0690941		1			AP
Ca Hole Opened,label	P0693256		1			AP
WS Lock E .221-.475X.028	P0183220		50			AP
Washer Fl .223-.500X.057	P0284154		25			AP
Labels	P0580200		3			AP
Labels	P0575221		2			AP
Labels	P0575222		2			AP
Labels	P0575223		2			AP
Labels	P0580231		1			AP
Labels	P0580232		1			AP
Labels	P0580233		1			AP
Labels	P0580234		1			AP
Labels	P0580235		1			AP
Labels	P0580236		1			AP
PDC Labels	P0580250		8			AP
PDC Labels	P0580251		8			AP
Labels	P0580252		8			AP
Labels	P0580242		4			AP
Design Labels (trim panel)	P0643585		8			AP
LOGO Designation Label	P0575188		1			AP
Design Label (LOGO FSP)	P0629198		1			AP
MAP Designation Label	P0588093		2			AP
MAP Designation Label	P0588076		1			AP
Shelf Designation Label	P0575125		1			AP
FSP Designation Labels	P0598834		1			AP
Designation Label	P0622873		2			AP
Designation Label	P0618512		1			AP
Labels	P0580243		1			AP
Designation Label	P0618511		1			AP
Labels	P0580217		1			AP
Labels	P0580218		1			AP
WS FL .258ID,.562OD,.063	P0160739		200			AP
WS SPR .255ID,.493OD,.063	P0183028		200			AP
Cap Screw,190-32X.438	P0599135		10			AP
Taptite Screw 5/16-18X1/2	P0613379		13			AP
20Amp Fuse Label (PDC)	P0668418		1			AP
5 & 10 Amp Fuse Label	P0668419		1			AP
Screw HHT .216-24X.500	P097F813		400			AP
Fuse Designation Disc White	P097P235		30			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cable Tie (preferred)	P0567232		11000			AP
Cable Tie 15 inch	P0590550		13000			AP
Cable Tie (preferred)	P0567226		2000			AP
Designation Labels (shelf)	P0657667		1			AP
Term Ring	A0368074		150			AP
Term Ring	A0367788		200			AP
Term.Ring 12-10AWG 10 Stud	A0288183		100			AP
Term.Ring 12-10AWG 10 Stud	A0298616		350			AP
Term.Ring 12-10AWG 8 Stud	A0298617		150			AP
Hex Nut .375-16	P0401452		25			AP
Nut Hex .250-20X.438	P0065747		25			AP
Nut Hex .190-32	P0081293		25			AP
FL WS .180X.406X.036	P0210742		25			AP
WS Lock I .256-.478X.028	P0382825		25			AP
Washer Lock .221	P0388144		25			AP
Screw	P0545096		25			AP
PHS SCR	P0552356		25			AP
Helical Spring Washer	P0643582		25			AP
Nut Hex S.216-24X.438	P0125953		25			AP
PHM SCR .216-24X.500	P0160021		25			AP
Nut Hex .164-32	P0206518		25			AP
Washer Helical .168ID	P0242132		25			AP
SCR HH CAP .375-16X1.000	P0127312		25			AP
Helical SPG.Washer	P0183036		50			AP
Frame Design Labelling PDC	P0633013		4			AP
Cable Tie (Non-Preferred)	P0633713		1500			AP
Washer .387X.734X.063	P0160742		50			AP
WS Lock E .256-.510X.028	P097Y579		50			AP
ESD Wrist Grounding Strap	A0319449		6			AP
CONN Term. Lug Ring 12-10	A0292996		100			AP
CONN Term. Lug Ring 16-14	A0288184		10			AP
Cable Termination Hardware	B0232966		13			AP
Cable Termination Hardware	B0232967		40			AP
ISG Vicinity Equip. Grd Lug	A0378320		5			AP
Cable Tie Mount, Adhesive	P0719431		100			AP
Paint, Enamel, Maple Brown	R0116746		2			AP
Cable Tie, Nylon, PLT2M-M69	P0633708		100			AP
CONN Hood Wire IDT 2x2x16	A0367518		5			AP
CONN Hood Wire IDT 2x2x16	A0367519		5			AP
Washer	P0411824		20			AP
Screw Thread .216-20x.750LG	P097F815		25			AP
Fuse Block, Holder, EndMnt	A0346002		2			AP
Cable Tie, Mount Base, Nylon	P0633746		50			AP

Term Splice Cab C-Tap 6AWG	A0361880	10	AP
Drain Wire Assembly	B0238795	2	AP
Ground Wire Assembly	P049Q122	2	AP
CONN Term Lug Disc. 22-18	A0329118	25	AP
CONN Term Lug Disc. 12-10	A0382703	10	AP
CONN Term Lug Disc. 12-10	A0382704	10	AP
Flam Ret. Catapillar Grom.	R0113159	3.050MT	AP
Stud .112-40 (for C01,C02)	P0511003	5	AP
CONN Rect 2.9, 2x8, .200	A0207411	1	AP
Fuse, 125VAC, 5A, Ceramic	A0327000	20	AP
Fuse, 125VAC 10A, nondelay	A0315462	20	AP
Fuse, 125VAC 20A, nondelay	A0314873	20	AP
Fuse, 125VAC 30A, nondelay	A0328460	10	AP
Incandescent Lamp T1-3/4	A0378972	1	AP
Sleeve, PVC-Fiberglass, BLK	R0115186	1.200MT	AP
.052-.085 G51P-B, 12.75 Long	R0059716	1	AP
Hookup Wire, UL1429, 26AWG	R0109836	3.100MT	AP
Term BLK,Screw,12Term,2Row	A0291464	1	AP
Term BLK,Screw,6Term,2Row	A0294154	1	AP
Term BLK,Screw,12Term,2Row	A0325283	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:

RULES:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AH
CPC CODE:	B0228134
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a host office of up to 100 frames.
REFERENCE DOCUMENTATION:	SL0X58AH 00 04
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AH EMA13-03-HWK-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Term.Ring 1/4,8AWG,90 deg.	A0346848		350			AP
Term.Ring 1/4 stud,14AWG	A0352968		150			AP
Term.Ring 1/4 stud,6AWG	A0352967		150			AP
Ground Strap	A0319449		4			AP
Fuse QFF1A 1.3 Amp	A0205202		30			AP
Dummy Fuse QFF3A	A0205210		30			AP
Term.Ring 22-16AWG,6 Stud	A0288192		100			AP
Term.Ring 16-14AWG,10 Stud	A0288182		25			AP
Term.Ring 16-14AWG,6 Stud	A0288198		600			AP
Term.Ring 8 AWG,8 Stud	A0288199		10			AP
Term.Ring 8 AWG,8 Stud	A0291001		300			AP
Term.Ring 8 AWG,10 Stud V	A0288179		300			AP
Term.Ring 8 AWG,10 Stud	A0288178		500			AP
Term.Ring 8 AWG,1/4 Stud	A0288180		100			AP
Term.Ring 6 AWG,10 Stud V	A0288177		150			AP
Term.Ring 6 AWG,10 Stud V	A0288176		225			AP
Term.Ring 6 AWG,1/4 Stud N	A0288200		100			AP
Isolation Mtg. Hardware	B0225006		125			AP
Cable Termination Hrdw.	B0226182		40			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Nomex Tape	R0113635		4			AP
24 AWG Jumper Wire	R0109439		1220m			AP
#9 Lacing Twine	R0112611		50			AP
Ca Hole Firestopped,label	P0690941		1			AP
Ca Hole Opened,label	P0693256		1			AP
WS Lock E .221-.475X.028	P0183220		50			AP
Washer Fl .223-.500X.057	P0284154		25			AP
Labels	P0580200		4			AP
Labels	P0575221		2			AP
Labels	P0575222		2			AP
Labels	P0575223		2			AP
Labels	P0580231		1			AP
Labels	P0580232		1			AP
Labels	P0580233		1			AP
Labels	P0580234		1			AP
Labels	P0580235		1			AP
Labels	P0580236		1			AP
PDC Labels	P0580250		8			AP
PDC Labels	P0580251		8			AP
Labels	P0580252		8			AP
Labels	P0580242		4			AP
Design Labels (trim panel)	P0643585		10			AP
LOGO Designation Label	P0575188		1			AP
Design Label (LOGO FSP)	P0629198		1			AP
MAP Designation Label	P0588093		2			AP
MAP Designation Label	P0588076		1			AP
Shelf Designation Label	P0575125		1			AP
FSP Designation Labels	P0598834		1			AP
Designation Label	P0622873		2			AP
Designation Label	P0618512		1			AP
Labels	P0580243		1			AP
Designation Label	P0618511		1			AP
Labels	P0580217		1			AP
Labels	P0580218		1			AP
WS FL .258ID,.562OD,.063	P0160739		200			AP
WS SPR .255ID,.493OD,.063	P0183028		200			AP
Cap Screw,190-32X.438	P0599135		25			AP
Taptite Screw 5/16-18X1/2	P0613379		13			AP
20Amp Fuse Label (PDC)	P0668418		1			AP
5 & 10 Amp Fuse Label	P0668419		1			AP
Screw HHT .216-24X.500	P097F813		400			AP
Fuse Designation Disc White	P097P235		30			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cable Tie (preferred)	P0567232		12000			AP
Cable Tie 15 inch	P0590550		15000			AP
Cable Tie (preferred)	P0567226		3000			AP
Designation Labels (shelf)	P0657667		1			AP
Term Ring	A0368074		200			AP
Term Ring	A0367788		250			AP
Term.Ring 12-10AWG 10 Stud	A0288183		150			AP
Term.Ring 12-10AWG 10 Stud	A0298616		400			AP
Term.Ring 12-10AWG 8 Stud	A0298617		200			AP
Hex Nut .375-16	P0401452		25			AP
Nut Hex .250-20X.438	P0065747		25			AP
Nut Hex .190-32	P0081293		25			AP
FL .180X.406X.036	P0210742		25			AP
WS Lock I .256-.478X.028	P0382825		25			AP
Washer Lock .221	P0388144		25			AP
Screw	P0545096		25			AP
PHS SCR	P0552356		25			AP
Helical Spring Washer	P0643582		25			AP
Nut Hex S.216-24X.438	P0125953		25			AP
PHM SCR .216-24X.500	P0160021		25			AP
Nut Hex .164-32	P0206518		25			AP
Washer Helical .168ID	P0242132		25			AP
SCR HH CAP .375-16X1.000	P0127312		25			AP
Helical SPG.Washer	P0183036		50			AP
Frame Design Labelling PDC	P0633013		4			AP
Cable Tie (Non-Preferred)	P0633713		2000			AP
Washer .387X.734X.063	P0160742		50			AP
WS Lock E .256-.510X.028	P097Y579		50			AP
ESD Wrist Grounding Strap	A0319449		8			AP
CONN Term. Lug Ring 12-10	A0292996		100			AP
Cable Termination Hardware	B0232966		17			AP
Cable Termination Hardware	B0232967		50			AP
ISG Vicinity Equip. Grd Lug	A0378320		5			AP
Cable Tie Mount, Adhesive	P0719431		125			AP
CONN Term. Lug Ring 16-14	A0288184		10			AP
Paint, Enamel, Maple Brown	R0116746		2			AP
Cable Tie, Nylon, PLT2M-M69	P0633708		100			AP
Term BLK,Screw,12Term,2Row	A0291464		1			AP
Term BLK,Screw,6Term,2Row	A0294154		1			AP
Term BLK,Screw,12Term,2Row	A0325283		1			AP
CONN Hood Wire IDT 2x2x16	A0367518		5			AP
CONN Hood Wire IDT 2x2x16	A0367519		5			AP
Washer	P0411824		20			AP

Screw Thread .216-20x.750LG	P097F815	25	AP
Fuse Block, Holder, EndMnt	A0346002	2	AP
Cable Tie, Mount Base, Nylon	P0633746	50	AP
Term Splice Cab C-Tap 6AWG	A0361880	10	AP
Drain Wire Assembly	B0238795	2	AP
Ground Wire Assembly	P049Q122	2	AP
CONN Term Lug Disc. 22-18	A0329118	25	AP
CONN Term Lug Disc. 12-10	A0382703	10	AP
CONN Term Lug Disc. 12-10	A0382704	10	AP
Flam Ret. Catapillar Grom.	R0113159	3.050MT	AP
Stud .112-40 (for C01,C02)	P0511003	5	AP
CONN Rect 2.9, 2x8, .200	A0207411	1	AP
Fuse, 125VAC, 5A, Ceramic	A0327000	20	AP
Fuse, 125VAC 10A, nondelay	A0315462	20	AP
Fuse, 125VAC 20A, nondelay	A0314873	20	AP
Fuse, 125VAC 30A, nondelay	A0328460	10	AP
Incandescent Lamp T1-3/4	A0378972	1	AP
Sleeve, PVC-Fiberglass, BLK	R0115186	1.200MT	AP
.052-.085 G51P-B, 12.75 Long	R0059716	1	AP
Hookup Wire, UL1429, 26AWG	R0109836	3.100MT	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:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AJ
CPC CODE:	B0228135
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a host office extention of up to ten (10) frames.
REFERENCE DOCUMENTATION:	SL0X58AJ 00 04
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AJ EMA13-03-HWK-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Term.Ring 1/4,8AWG,90 deg.	A0346848		50			AP
Term.Ring 1/4 stud,14AWG	A0352968		25			AP
Term.Ring 1/4 stud,6AWG	A0352967		25			AP
Ground Strap	A0319449		3			AP
Fuse QFF1A 1.3 Amp	A0205202		30			AP
Dummy Fuse QFF3A	A0205210		30			AP
Term.Ring 22-16AWG,6 Stud	A0288192		50			AP
Term.Ring 16-14AWG,10 Stud	A0288182		10			AP
Term.Ring 16-14AWG,6 Stud	A0288198		100			AP
Term.Ring 8 AWG,8 Stud	A0288199		10			AP
Term.Ring 8 AWG,8 Stud	A0291001		100			AP
Term.Ring 8 AWG,10 Stud V	A0288179		100			AP
Term.Ring 8 AWG,10 Stud	A0288178		75			AP
Term.Ring 8 AWG,1/4 Stud	A0288180		40			AP
Term.Ring 6 AWG,10 Stud V	A0288177		50			AP
Term.Ring 6 AWG,10 Stud V	A0288176		75			AP
Term.Ring 6 AWG,1/4 Stud N	A0288200		50			AP
Nomex Tape	R0113635		1			AP
#9 Lacing Twine	R0112611		10			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ca Hole Firestopped,label	P0690941		1			AP
Ca Hole Opened,label	P0693256		1			AP
WS Lock E .221-.475X.028	P0183220		50			AP
Labels	P0580200		1			AP
Labels	P0575221		2			AP
Labels	P0575222		2			AP
Labels	P0575223		2			AP
Labels	P0580231		1			AP
Labels	P0580232		1			AP
Labels	P0580233		1			AP
Labels	P0580234		1			AP
Labels	P0580235		1			AP
Labels	P0580236		1			AP
PDC Labels	P0580250		8			AP
PDC Labels	P0580251		8			AP
Labels	P0580252		8			AP
Labels	P0580242		1			AP
Design Labels (trim panel)	P0643585		2			AP
LOGO Designation Label	P0575188		1			AP
Design Label (LOGO FSP)	P0629198		1			AP
Shelf Designation Label	P0575125		1			AP
Designation Label	P0622873		2			AP
Designation Label	P0618512		1			AP
Labels	P0580243		1			AP
Designation Label	P0618511		1			AP
Labels	P0580217		1			AP
Labels	P0580218		1			AP
WS FL .258ID,.562OD,.063	P0160739		50			AP
WS SPR .255ID,.493OD,.063	P0183028		50			AP
Cap Screw,190-32X.438	P0599135		10			AP
Taptite Screw 5/16-18X1/2	P0613379		5			AP
20Amp Fuse Label (PDC)	P0668418		1			AP
5 & 10 Amp Fuse Label	P0668419		1			AP
Screw HHT .216-24X.500	P097F813		100			AP
Fuse Designation Disc White	P097P235		30			AP
Cable Tie (preferred)	P0567232		2000			AP
Cable Tie 15 inch	P0590550		1000			AP
Cable Tie (preferred)	P0567226		500			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Designation Labels (shelf)	P0657667		1			AP
Term Ring	A0368074		40			AP
Term Ring	A0367788		50			AP
Term.Ring 12-10AWG 10 Stud	A0288183		50			AP
Term.Ring 12-10AWG 10 Stud	A0298616		80			AP
Term.Ring 12-10AWG 8 Stud	A0298617		50			AP
Isolation MTG Hardware	B0225006		25			AP
Cable Termination HRDW	B0226182		10			AP
Cable Tie (Non-Preferred)	P0633713		300			AP
Hex Nut .375-16	P0401452		25			AP
Nut Hex .250-20X.438	P0065747		25			AP
Nut Hex .190-32	P0081293		25			AP
FL WS .180X.406X.036	P0210742		25			AP
WS Lock I .256-.478X.028	P0382825		25			AP
Washer Lock .221	P0388144		25			AP
Screw	P0545096		25			AP
PHS SCR	P0552356		25			AP
Helical Spring Washer	P0643582		25			AP
Nut Hex S.216-24X.438	P0125953		25			AP
PHM SCR .216-24X.500	P0160021		25			AP
Nut Hex .164-32	P0206518		25			AP
Washer Helical .168ID	P0242132		25			AP
SCR HH CAP .375-16X1.000	P0127312		25			AP
Helical SPG.Washer	P0183036		50			AP
Frame Design Labelling PDC	P0633013		4			AP
Washer .387X.734X.063	P0160742		50			AP
Ws Lock E .256-.510X.028	P097Y579		50			AP
ESD Wrist Grounding Strap	A0319449		1			AP
CONN Term. Lug Ring 12-10	A0292996		50			AP
CONN Term. Lug Ring 16-14	A0288184		10			AP
ISG Vicinity Equip. Grd Lug	A0378320		5			AP
Cable Tie Mount, Adhesive	P0719431		25			AP
Cable Termination Hardware	B0232966		7			AP
Cable Termination Hardware	B0232967		20			AP
Paint, Enamel, Maple Brown	R0116746		1			AP
Cable Tie, Nylon, PLT2M-M69	P0633708		100			AP
CONN Hood Wire IDT 2x2x16	A0367518		1			AP
CONN Hood Wire IDT 2x2x16	A0367519		1			AP
Washer	P0411824		10			AP
Screw Thread .216-20x.750LG	P097F815		5			AP
Fuse Block, Holder, EndMnt	A0346002		1			AP
Cable Tie, Mount Base, Nylon	P0633746		10			AP
Term Splice Cab C-Tap 6AWG	A0361880		5			AP

Drain Wire Assembly	B0238795	2	AP
Ground Wire Assembly	P049Q122	2	AP
CONN Term Lug Disc. 22-18	A0329118	10	AP
CONN Term Lug Disc. 12-10	A0382703	5	AP
CONN Term Lug Disc. 12-10	A0382704	5	AP
Flam Ret. Catapillar Grom.	R0113159	1.520MT	AP
Stud .112-40 (for C01,C02)	P0511003	5	AP
CONN Rect 2.9, 2x8, .200	A0207411	1	AP
Fuse, 125VAC, 5A, Ceramic	A0327000	10	AP
Fuse, 125VAC 10A, nondelay	A0315462	10	AP
Fuse, 125VAC 20A, nondelay	A0314873	10	AP
Fuse, 125VAC 30A, nondelay	A0328460	5	AP
Incandescent Lamp T1-3/4	A0378972	1	AP
Sleeve, PVC-Fiberglass, BLK	R0115186	1.200MT	AP
.052-.085 G51P-B, 12.75 Long	R0059716	1	AP
Hookup Wire, UL1429, 26AWG	R0109836	3.100MT	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:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AK
CPC CODE:	B0228136
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a remote office of up to ten (10) frames for all remotes except OPMs.
REFERENCE DOCUMENTATION:	SL0X58AK 00 04
MARKETS:	Applicable markets:
	US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AK EMA13-03-HWK-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Term.Ring 1/4,8AWG,90 deg.	A0346848		50			AP
Term.Ring 1/4 stud,14AWG	A0352968		15			AP
Term.Ring 1/4 stud,6AWG	A0352967		15			AP
Ground Strap	A0319449		1			AP
Fuse QFF1A 1.3 Amp	A0205202		10			AP
Term.Ring 22-16AWG,6 Stud	A0288192		25			AP
Term.Ring 16-14AWG,10 Stud	A0288182		5			AP
Term.Ring 16-14AWG,6 Stud	A0288198		100			AP
Term.Ring 8 AWG,8 Stud	A0291001		80			AP
Term.Ring 8 AWG,10 Stud V	A0288179		150			AP
Term.Ring 8 AWG,10 Stud	A0288178		75			AP
Isolation Mtg. Hardware	B0225006		25			AP
Cable Termination Hrdw.	B0226182		5			AP
Nomex Tape	R0113635		1			AP
24 AWG Jumper Wire	R0109439		610m			AP
#9 Lacing Twine	R0112611		5			AP
Ca Hole Firestopped,label	P0690941		1			AP
Ca Hole Opened,label	P0693256		1			AP
WS Lock E .221-.475X.028	P0183220		50			AP
Labels	P0580200		1			AP
Labels	P0575221		2			AP
Labels	P0580231		1			AP
Labels	P0580232		1			AP
PDC Labels	P0580250		8			AP
Labels	P0580242		1			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LOGO Designation Label	P0575188		1			AP
Designation Label	P0622873		2			AP
Designation Label	P0633023		1			AP
Designation Label	P0633022		1			AP
Designation Label	P0633021		1			AP
Designation Label	P0633020		1			AP
WS FL .258ID,.562OD,.063	P0160739		50			AP
WS SPR .255ID,.493OD,.063	P0183028		50			AP
Cap Screw,190-32X.438	P0599135		10			AP
Taptite Screw 5/16-18X1/2	P0613379		5			AP
20Amp Fuse Label (PDC)	P0668418		1			AP
5 & 10 Amp Fuse Label	P0668419		1			AP
Screw HHT .216-24X.500	P097F813		100			AP
Fuse Designation Disc White	P097P235		10			AP
Cable Tie (preferred)	P0567232		2000			AP
Cable Tie 15 inch	P0590550		1000			AP
Cable Tie (preferred)	P0567226		500			AP
Designation Labels (PDC)	P0647801		3			AP
Designation Labels	P0647800		2			AP
Designation Labels	P0633042		2			AP
Washer FL .223-.500X.057	P0284154		10			AP
Term.Ring 6AWG 10 Stud N	A0288177		30			AP
Term.Ring 6AWG 10 Stud V	A0288176		45			AP
Term Ring	A0367788		50			AP
Term.Ring 12-10AWG 10 Stud	A0288183		30			AP
Term.Ring 12-10AWG 10 Stud	A0298616		80			AP
Term.Ring 12-10AWG 8 Stud	A0298617		50			AP
Cable Tie (Non-Preferred)	P0633713		300			AP
Design Label (Logo-FSP)	P0629198		1			AP
Hex Nut .375-16	P0401452		25			AP
Nut Hex .250-20X.438	P0065747		25			AP
Nut Hex .190-32	P0081293		25			AP
FL WS .180X.406X.036	P0210742		25			AP
WS Lock I .256-.478X.028	P0382825		25			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Washer Lock .221	P0388144		25			AP
Screw	P0545096		25			AP
PHS SCR	P0552356		25			AP
Helical Spring Washer	P0643582		25			AP
Nut Hex S.216-24X.438	P0125953		25			AP
PHM SCR .216-24X.500	P0160021		25			AP
Nut Hex .164-32	P0206518		25			AP
Washer Helical .168ID	P0242132		25			AP
SCR HH CAP .375-16X1.000	P0127312		25			AP
Helical SPG.Washer	P0183036		50			AP
Frame Design Labelling PDC	P0633013		4			AP
Term Ring	A0368074		25			AP
Shelf Design Labelling FSP	P0633042		2			AP
Washer .387X.734X.063	P0160742		50			AP
WS Lock E .256-.510X.028	P097Y579		50			AP
ESD Wrist Grounding Strap	A0319449		1			AP
Term Ring 8AWG 1/4 Stud	A0288180		20			AP
Cable Termination Hardware	B0232966		3			AP
Cable Termination Hardware	B0232967		10			AP
CONN Term. Lug Ring 12-10	A0292996		10			AP
ISG Vicinity Equip. Grd Lug	A0378320		5			AP
Cable Tie Mount, Adhesive	P0719431		30			AP
Paint, Enamel, Maple Brown	R0116746		2			AP
Cable Tie, Nylon, PLT2M-M69	P0633708		100			AP
Term BLK screw,12Term2Row	A0291464		1			AP
Term BLK screw,6Term2Row	A0294154		1			AP
Term BLK screw,12Term,2Row	A0325283		1			AP
CONN Hood Wire IDT 2x2x16	A0367518		5			AP
CONN Hood Wire IDT 2x2x16	A0367519		5			AP
Washer	P0411824		20			AP
Screw Thread .216-20x.750LG	P097F815		25			AP
Fuse Block, Holder, EndMnt	A0346002		2			AP
Cable Tie, Mount Base, Nylon	P0633746		50			AP
Term Splice Cab C-Tap 6AWG	A0361880		10			AP
Drain Wire Assembly	B0238795		2			AP
Ground Wire Assembly	P049Q122		2			AP
CONN Term Lug Disc. 22-18	A0329118		25			AP
CONN Term Lug Disc. 12-10	A0382703		10			AP
CONN Term Lug Disc. 12-10	A0382704		10			AP
Flam Ret. Catapillar Grom.	R0113159		3.050MT			AP
Stud .112-40 (for C01,C02)	P0511003		5			AP
CONN Rect 2.9, 2x8, .200	A0207411		1			AP
Fuse, 125VAC, 5A, Ceramic	A0327000		20			AP
Fuse, 125VAC 10A, nondelay	A0315462		20			AP
Fuse, 125VAC 20A, nondelay	A0314873		20			AP

Fuse, 125VAC 30A, nondelay	A0328460	10	AP
Incandescent Lamp T1-3/4	A0378972	1	AP
Sleeve, PVC-Fiberglass, BLK	R0115186	1.200MT	AP
.052-.085 G51P-B, 12.75 Long	R0059716	1	AP
Hookup Wire, UL1429, 26AWG	R0109836	3.100MT	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:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AL
CPC CODE:	B0230388
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a host office extention adding zero (0) to two (2) frames.
REFERENCE DOCUMENTATION:	SL0X58AL 00 05
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AL EMA13-03-HWK-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TERM RING 1/4,8AWG,90 DEG	A0346848		10			AP
TERM.RING #14GA-1/4 STUD	A0352968		10			AP
TERM. RING #6GA-1/4 STUD	A0352967		5			AP
TERM RING 22-16AWG 6 STUD	A0288192		10			AP
TERM RING 16-14AWG 8 STUD	A0288181		10			AP
TERM RING 14-16AWG 10 STUD	A0288182		5			AP
TERM RING 16-14AWG 1/4STUD	A0288184		10			AP
TERM RING 16-14AWG 6STUD V	A0288198		20			AP
TERM RING 8AWG 8 STUD	A0288199		5			AP
TERM RING 8AWG 8 STUD	A0291001		20			AP
TERM RING 8AWG 10 STUD V	A0288179		40			AP
TERM RING 8AWG 10 STUD	A0288178		20			AP
TERM RING 8 AWG 1/4 STUD	A0288180		40			AP
TERM RING 6AWG 10 STUD N	A0288177		20			AP
TERM RING 6AWG 10 STUD V	A0288176		30			AP
TERM RING 6AWG 1/4 STUD NY	A0288200		20			AP
TERM RING 12-10AWG 8 STUD	A0298617		10			AP
TERM RING 12-10AWG 10 STUD	A0298616		20			AP
TERM RING 12-10AWG 1/4STUD	A0292996		25			AP
TERM RNG 12-10AWG 10 STUD	A0288183		30			AP
FUSE 1 1/3 AMP	A0205202		5			AP
DUMMY FUSE	A0205210		5			AP
GROUND STRAP	A0319449		1			AP
ISOLATION MTG HARDWARE	B0225006		10			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CABLE TERMINATION HRDW	B0226182		5			AP
#9 LACING TWINE	R0112611		2			AP
NOMEX TAPE	R0113635		1			AP
FUSE DESIG DISC (WHITE)	P097P235		5			AP
CA HOLE FIRESTOPPED,LABEL	P0690941		1			AP
CABLE HOLE OPENED,LABEL	P0693256		1			AP
CABLE TIE (PREFERRED)	P0567232		1000			AP
CABLE TIE 15 IN.	P0590550		500			AP
CABLE TIE (PREFERRED)	P0567226		200			AP
WS LOCK E .221-.475X.028	P0183220		25			AP
WASHER FL .223-.500X.057	P0284154		5			AP
WS FL .258ID,.562OD,.063	P0160739		25			AP
WS SPR .255ID,.493OD,.063	P0183028		10			AP
SCREW HHT .216-24X.500	P097F813		50			AP
CAP SCREW, 190-32X.438	P0599135		5			AP
TAPTITE SCREW 5/16-18X1/2	P0613379		3			AP
END GUARD FLOOR ID,FL 1-10	P0580200		1			AP
END GUARD ROW ID, A-F	P0575221		2			AP
END GUARD ROW ID, G-M,EXCL I	P0575222		2			AP
END GUARD ROW ID, N-T,EXCL O	P0575223		2			AP
FSP ROW A-B00-19,C00-03	P0580231		1			AP
FSP ROW C04-19,D00-19,E00-07	P0580232		1			AP
FSP ROW E08-19,F00-19,G00-11	P0580233		1			AP
FSP ROW G12-19,H00-19,J00-15	P0580234		1			AP
FSP ROW J16-19,K00-19,L00-19	P0580235		1			AP
FSP ROW M00-19,N00-19,P00-03	P0580236		1			AP
PDC ROW A-E(00-19),F00-04	P0580250		8			AP
PDC ROW F5-19,G-K00-19,L0-9	P0580251		8			AP
PDC ROW L10-19,M-Q00-19,R-14	P0580252		8			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TRIM PNL SHELF ID	P0580242		1			AP
TRM PNL SH ID	P0643585		1			AP
PDC SHF NAME/NO, LCM:0 LCA:0	P0633020		1			AP
PDC SHF NAME/NO, LCM:0 LCA:1	P0633021		1			AP
PDC SHF NAME/NO, LCM:1 LCA:0	P0633022		1			AP
PDC SHF NAME/NO, LCM:1 LCA:1	P0633023		1			AP
PDC SHF NAME/NO, LCE:000-104	P0633013		4			AP
PDC SH,CPU,CMC,PS,DS,IOC,MTD	P0575125		2			AP
PDC SHF NAME/NO, CU:00-CU:99	P0622873		2			AP
PDC SHF NAME/NO, DDU 00-49	P0618512		2			AP
PDC FRAME, CCC,DNI,SLC,TME	P0580243		1			AP
PDC FRAME NAME/NO,IOE 00-08	P0618511		1			AP
PDC SHELF NAME/NO, NET0 & 1	P0657667		1			AP
FSP LOGO,DMS-100&200,NOR TEL	P0575188		1			AP
FSP LOGO, 30 DMS-100/200	P0629198		1			AP
PDC 20 AMP FUSE LABELS	P0668418		1			AP
PDC 5 AND 10 AMP FUSE LABELS	P0668419		1			AP
Term Ring	A0368074		10			AP
Term Ring	A0367788		25			AP
Cable Tie (Non-Preferred)	P0633713		50			AP
Labels	P0580217		1			AP
Labels	P0580218		1			AP
Cable Termination Hardware	B0232966		2			AP
Cable Termination Hardware	B0232967		5			AP
Cable Tie Mount, Adhesive	P0719431		25			AP
ESD Wrist Grounding Strap	A0319449		1			AP
CONN Term. Lug Ring 12-10	A0292996		40			AP
CONN Term. Lug Ring 16-14	A0288284		10			AP
Helical Spring Washer	P0643582		25			AP
Paint, Enamel, Maple Brown	R0116746		1			AP
Cable Tie, Nylon, PLT2M-M69	P0633708		100			AP
CONN Hood Wire IDT 2x2x16	A0367518		1			AP
CONN Hood Wire IDT 2x2x16	A0367519		1			AP
Washer	P0411824		10			AP
Screw Thread .216-20x.750LG	P097F815		5			AP
Fuse Block, Holder, EndMnt	A0346002		1			AP
Cable Tie, Mount Base, Nylon	P0633746		10			AP
Term Splice Cab C-Tap 6AWG	A0361880		5			AP
Drain Wire Assembly	B0238795		2			AP
Ground Wire Assembly	P049Q122		2			AP
CONN Term Lug Disc. 22-18	A0329118		10			AP
CONN Term Lug Disc. 12-10	A0382703		5			AP
CONN Term Lug Disc. 12-10	A0382704		5			AP
Flam Ret. Catapillar Grom.	R0113159		1.520MT			AP
Stud .112-40 (for C01,C02)	P0511003		5			AP
CONN Rect 2.9, 2x8, .200	A0207411		1			AP

Fuse, 125VAC, 5A, Ceramic	A0327000	10	AP
Fuse, 125VAC 10A, nondelay	A0315462	10	AP
Fuse, 125VAC 20A, nondelay	A0314873	10	AP
Fuse, 125VAC 30A, nondelay	A0328460	5	AP
Incandescent Lamp T1-3/4	A0378972	1	AP
Sleeve, PVC-Fiberglass, BLK	R0115186	1.200MT	AP
.052-.085 G51P-B, 12.75 Long	R0059716	1	AP
Hookup Wire, UL1429, 26AWG	R0109836	3.100MT	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:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AM
CPC CODE:	B0230389
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a host office extention adding three (3) to five (5) frames.
REFERENCE DOCUMENTATION:	SL0X58AM 00 05
MARKETS:	Applicable markets:
	US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AM EMA13-03-HWK-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISOLATION MTG HARDWARE	B0225006		20			AP
CABLE TERMINATION HRDW	B0226182		5			AP
TERM RING 1/4,8AWG,90 DEG	A0346848		20			AP
TERM.RING #14GA-1/4 STUD	A0352968		20			AP
TERM. RING #6GA-1/4 STUD	A0352967		20			AP
TERM RING 22-16AWG 6 STUD	A0288192		10			AP
TERM RING 14-16AWG 10 STUD	A0288182		10			AP
TERM RING 16-14AWG 6STUD V	A0288198		50			AP
TERM RING 8AWG 8 STUD	A0288199		5			AP
TERM RING 8AWG 8 STUD	A0291001		50			AP
TERM RING 8AWG 10 STUD V	A0288179		80			AP
TERM RING 8AWG 10 STUD	A0288178		40			AP
TERM RING 8 AWG 1/4 STUD	A0288180		40			AP
TERM RING 6AWG 10 STUD N	A0288177		40			AP
TERM RING 6AWG 10 STUD V	A0288176		60			AP
TERM RING 6AWG 1/4 STUD NY	A0288200		40			AP
TERM RING 12-10AWG 8 STUD	A0298617		20			AP
TERM RING 12-10AWG 10 STUD	A0298616		40			AP
TERM RNG 12-10AWG 10 STUD	A0288183		40			AP
FUSE 1 1/3 AMP	A0205202		10			AP
DUMMY FUSE	A0205210		10			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
GROUND STRAP	A0319449		1			AP
#9 LACING TWINE	R0112611		4			AP
NOMEX TAPE	R0113635		1			AP
FUSE DESIG DISC (WHITE)	P097P235		10			AP
FUSE DESIG DISC (VIOLET)	P097P240		10			AP
CA HOLE FIRESTOPPED, LABEL	P0690941		1			AP
ISOLATION SHIM	P0690641		1			AP
CABLE HOLE OPENED,LABEL	P0693256		1			AP
CABLE TIE (PREFERRED)	P0567232		1500			AP
CABLE TIE 15 IN.	P0590550		1000			AP
CABLE TIE (PREFERRED)	P0567226		500			AP
WS LOCK E .221-.475X.028	P0183220		25			AP
WASHER FL .223-.500X.057	P0284154		10			AP
WS FL .258ID,.562OD,.063	P0160739		25			AP
WS SPR .255ID,.493OD,.063	P0183028		20			AP
SCREW HHT .216-24X.500	P097F813		50			AP
CAP SCREW, 190-32X.438	P0599135		2			AP
TAPTITE SCREW 5/16-18X1/2	P0613379		2			AP
END GUARD FLOOR ID,FL 1-10	P0580200		1			AP
END GUARD ROW ID, A-F	P0575221		2			AP
END GUARD ROW ID, G-M,EXCL I	P0575222		2			AP
END GUARD ROW ID, N-T,EXCL O	P0575223		2			AP
FSP ROW A-B00-19,C00-03	P0580231		1			AP
FSP ROW C04-19,D00-19,E00-07	P0580232		1			AP
FSP ROW E08-19,F00-19,G00-11	P0580233		1			AP
FSP ROW G12-19,H00-19,J00-15	P0580234		1			AP
FSP ROW J16-19,K00-19,L00-19	P0580235		1			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
FSP ROW M00-19,N00-19,P00-03	P0580236		1			AP
PDC ROW A-E(00-19),F00-04	P0580250		8			AP
PDC ROW F5-19,G-K00-19,L0-9	P0580251		8			AP
PDC ROW L10-19,M-Q00-19,R-14	P0580252		8			AP
TRIM PNL SHELF ID	P0580242		1			AP
TRM PNL SH ID	P0643585		1			AP
PDC SHF NAME/NO, LCM:0 LCA:0	P0633020		1			AP
PDC SHF NAME/NO, LCM:0 LCA:1	P0633021		1			AP
PDC SHF NAME/NO, LCM:1 LCA:0	P0633022		1			AP
PDC SHF NAME/NO, LCM:1 LCA:1	P0633023		1			AP
PDC SHF NAME/NO, LCE:000-104	P0633013		4			AP
PDC SH,CPU,CMC,PS,DS,IOC,MTD	P0575125		2			AP
PDC SHF NAME/NO, CU:00-CU:99	P0622873		2			AP
PDC SHF NAME/NO, DDU 00-49	P0618512		2			AP
PDC FRAME, CCC,DNI,SLC,TME	P0580243		1			AP
PDC FRAME NAME/NO,IOE	P0618511		1			AP
PDC SHELF NAME/NO, NET0 & 1	P0657667		1			AP
FSP LOGO,DMS-100&200,NOR TEL	P0575188		1			AP
FSP LOGO, DMS-100/200	P0629198		1			AP
PDC 20 AMP FUSE LABELS	P0668418		1			AP
PDC 5 AND 10 AMP FUSE LABELS	P0668419		1			AP
Term Ring	A0367788		50			AP
Cable Tie (Non-Preferred)	P0633713		100			AP
Term Ring	A0368074		25			AP
Labels	P0580217		1			AP
Labels	P0580218		1			AP
Cable Termination Hardware	B0232966		2			AP
Cable Termination Hardware	B0232967		5			AP
Cable Tie Mount, Adhesive	P0719431		25			AP
ESD Wrist Grounding Strap	A0319449		1			AP
CONN Term. Lug Ring 12-10	A0292996		80			AP
CONN Term. Lug Ring 16-14	A0288284		10			AP
Helical Spring Washer	P0643582		25			AP
Paint, Enamel, Maple Brown	R0116746		1			AP
Cable Tie, Nylon, PLT2M-M69	P0633708		100			AP
CONN Hood Wire IDT 2x2x16	A0367518		1			AP
CONN Hood Wire IDT 2x2x16	A0367519		1			AP
Washer	P0411824		10			AP
Screw Thread .216-20x.750LG	P097F815		5			AP
Fuse Block, Holder, EndMnt	A0346002		1			AP
Cable Tie, Mount Base, Nylon	P0633746		10			AP
Term Splice Cab C-Tap 6AWG	A0361880		5			AP
Drain Wire Assembly	B0238795		2			AP
Ground Wire Assembly	P049Q122		2			AP
CONN Term Lug Disc. 22-18	A0329118		10			AP
CONN Term Lug Disc. 12-10	A0382703		5			AP

CONN Term Lug Disc. 12-10	A0382704	5	AP
Flam Ret. Catapillar Grom.	R0113159	1.520MT	AP
Stud .112-40 (for C01,C02)	P0511003	5	AP
CONN Rect 2.9, 2x8, .200	A0207411	1	AP
Fuse, 125VAC, 5A, Ceramic	A0327000	10	AP
Fuse, 125VAC 10A, nondelay	A0315462	10	AP
Fuse, 125VAC 20A, nondelay	A0314873	10	AP
Fuse, 125VAC 30A, nondelay	A0328460	5	AP
Incandescent Lamp T1-3/4	A0378972	1	AP
Sleeve, PVC-Fiberglass, BLK	R0115186	1.200MT	AP
.052-.085 G51P-B, 12.75 Long	R0059716	1	AP
Hookup Wire, UL1429, 26AWG	R0109836	3.100MT	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:

MISCELLANEOUS HARDWARE KIT
U.S. APPLICATIONS ONLY

PEC CODE:	NT0X58AN
CPC CODE:	B0230390
RATING:	Standard
REPLACES:	Not Applicable.
REPLACED BY:	Not Applicable.
ABBREVIATION NAME:	Not Applicable.
ENGINEERING DESCRIPTION:	This Miscellaneous Hardware kit provides sufficient terminal rings, cables ties,loose wire,etc. to install a remote office adding up to five (5) frames. For use on all remotes except OPMs and RLCMs.
REFERENCE DOCUMENTATION:	SL0X58AN 00 05
MARKETS:	Applicable markets: US

ISSUE AUTHOR: NTI: Debbie Goss Dept. 3471 (PPK)

MAIN CONTACT: NTI: Debbie Goss Dept. 3471 (PPK)

NT0X58AN EMA13-03-HWK-9 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- 95 03 21	-- ECM 406 08	Previous history not available. Incorporate EC 024-93452 to update the always provided equipment list.

The Miscellaneous Hardware Kit U.S. Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISOLATION MTG HARDWARE	B0225006		20			AP
CABLE TERMINATION HRDW	B0226182		5			AP
TERM RING 1/4,8AWG,90 DEG	A0346848		20			AP
TERM.RING #14GA-1/4 STUD	A0352968		35			AP
TERM. RING #6GA-1/4 STUD	A0352967		20			AP
TERM RING 22-16AWG 6 STUD	A0288192		10			AP
TERM RING 14-16AWG 10 STUD	A0288182		5			AP
TERM RING 16-14AWG 6STUD V	A0288198		50			AP
TERM RING 8AWG 8 STUD	A0288199		5			AP
TERM RING 8AWG 8 STUD	A0291001		50			AP
TERM RING 8AWG 10 STUD V	A0288179		80			AP
TERM RING 8AWG 10 STUD	A0288178		25			AP
TERM RING 8 AWG 1/4 STUD	A0288180		20			AP
TERM RING 6AWG 1/4 STUD NY	A0288200		20			AP
TERM RING 12-10AWG 8 STUD	A0298617		20			AP
TERM RING 12-10AWG 10 STUD	A0298616		40			AP
TERM RNG 12-10AWG 10 STUD	A0288183		50			AP
FUSE 1 1/3 AMP	A0205202		10			AP
DUMMY FUSE	A0205210		10			AP
GROUND STRAP	A0319449		1			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
24 GA JUMPER WIRE	R0109439		305m			AP
#9 LACING TWINE	R0112611		4			AP
NOMEX TAPE	R0113635		1			AP
FUSE DESIG DISC (WHITE)	P097P235		10			AP
CA HOLE FIRESTOPPED,LABEL	P0690941		1			AP
CABLE HOLE OPENED,LABEL	P0693256		1			AP
CABLE TIE (PREFERRED)	P0567232		1500			AP
CABLE TIE 15 IN.	P0590550		1000			AP
CABLE TIE (PREFERRED)	P0567226		500			AP
WS LOCK E .221-.475X.028	P0183220		25			AP
WASHER FL .223-.500X.057	P0284154		10			AP
WS FL .258ID,.562OD,.063	P0160739		25			AP
WS SPR .255ID,.493OD,.063	P0183028		25			AP
SCREW HHT .216-24X.500	P097F813		50			AP
CAP SCREW, 190-32X.438	P0599135		5			AP
TAPTITE SCREW 5/16-18X1/2	P0613379		3			AP
END GUARD FLOOR ID, FL 1-10	P0580200		1			AP
END GUARD ROW ID, A-F	P0575221		2			AP
FSP ROW A-B00-19,C00-03	P0580231		1			AP
FSP ROW C04-19,D00-19,E00-07	P0580232		1			AP
FSP ROW E08-19,F00-19,G00-11	P0580233		1			AP
PDC ROW A-E(00-19),F00-04	P0580250		8			AP
TRIM PNL SHELF ID	P0580242		1			AP
TRIM PNL SHELF ID (LCE/RLCM)	P0643585		1			AP
PDC SHF NAME/NO, CU:00-CU:99	P0622873		2			AP
PDC SHF NAME/NO, INV:000-104	P0633042		1			AP
PDC SHF NAME/NO, LCM:0 LCA:0	P0633020		1			AP
PDC SHF NAME/NO, LCM:0 LCA:1	P0633021		1			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
PDC SHF NAME/NO, LCM:1 LCA:0	P0633022		1			AP
PDC SHF NAME/NO, LCM:1 LCA:1	P0633023		1			AP
PDC SHF NAME/NO, LCE:000-104	P0633013		4			AP
PDC FRAME NAME/NO,RCE 00-34	P0647801		1			AP
PDC FRAME NAME/NO,RME 00-104	P0647800		2			AP
FSP LOGO,DMS-100&200,NOR TEL	P0575188		1			AP
PDC 20 AMP FUSE LABELS	P0668418		1			AP
PDC 5 AND 10 AMP FUSE LABELS	P0668419		1			AP
Term Ring	A0367788		50			AP
Cable Tie (Non-Preferred)	P0633713		100			AP
Term Ring	A0368074		20			AP
Cable Termination Hardware	B0232966		2			AP
Cable Termination Hardware	B0232967		5			AP
Cable Tie Mount, Adhesive	P0719431		25			AP
ESD Wrist Grounding Strap	A0319449		1			AP
Helical Spring Washer	P0643582		10			AP
Paint, Enamel, Maple Brown	R0116746		2			AP
Cable Tie, Nylon, PLT2M-M69	P0633708		100			AP
TermBLK Screw,12Term,2Row	A0291464		1			AP
TermBLK Screw,6Term,2Row	A0294154		1			AP
TermBLK Screw,12Term,2Row	A0325283		1			AP
CONN Hood Wire IDT 2x2x16	A0367518		5			AP
CONN Hood Wire IDT 2x2x16	A0367519		5			AP
Washer	P0411824		20			AP
Screw Thread .216-20x.750LG	P097F815		25			AP
Fuse Block, Holder, EndMnt	A0346002		2			AP
Cable Tie, Mount Base, Nylon	P0633746		50			AP
Term Splice Cab C-Tap 6AWG	A0361880		10			AP
Drain Wire Assembly	B0238795		2			AP
Ground Wire Assembly	P049Q122		2			AP
CONN Term Lug Disc. 22-18	A0329118		25			AP
CONN Term Lug Disc. 12-10	A0382703		10			AP
CONN Term Lug Disc. 12-10	A0382704		10			AP
Flam Ret. Catapillar Grom.	R0113159		3.050MT			AP
Stud .112-40 (for C01,C02)	P0511003		5			AP
CONN Rect 2.9, 2x8, .200	A0207411		1			AP
Fuse, 125VAC, 5A, Ceramic	A0327000		20			AP
Fuse, 125VAC 10A, nondelay	A0315462		20			AP
Fuse, 125VAC 20A, nondelay	A0314873		20			AP
Fuse, 125VAC 30A, nondelay	A0328460		10			AP
Incandescent Lamp T1-3/4	A0378972		1			AP
Sleeve, PVC-Fiberglass, BLK	R0115186		1.200MT			AP
.052-.085 G51P-B, 12.75 Long	R0059716		1			AP
Hookup Wire, UL1429, 26AWG	R0109836		3.100MT			AP
Term Ring 6AWG, 10 Stud V	A0288176		20			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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NOTES:

RULES:

DMS PACKING MATERIAL

PEC CODE:	D9000
CPC CODE:	N/A
RATING:	Cancelled
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	Not Applicable
ENGINEERING DESCRIPTION:	Packing Material is to be provided so as to allow the installer to ship the removed equipment based on the disposition specified by the customer. This packing material is for Canadian applications only.
REFERENCE DOCUMENTATION:	Not Applicable
MARKETS:	Applicable markets: Canada

ISSUE AUTHOR:	Otis Gibbs	Dept. 3471	(PPK)
MAIN CONTACT:	Otis Gibbs	Dept. 3471	(PPK)

D9000 EMA13-04-PM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
94 03 01	ECM 424 03	Convert EMA section to new format and template. ET 95940 - When removing an RLCM frame from a remote office, all line drawers are to be removed from the frame. ET 38553 - Two new D9000 series codes have been created, one (D9026) to provide packing material for loose shelves of SuperNode based cabinets, and one (D9027) to provide packing material for loose shelves of NT 40 based frames.
96 09 03	ECM 424 05	SR 67203 - EMS retired. Packing material is now ordered by Installation per the IAP 1201 document.

The DMS Packing Material is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Double Bay Frame	D9000					RUL1
Single Bay Frame	D9001					RUL2
Bulk Pack for Circuit Packs	D9002					RUL3
Single Pack for Circuit Packs or Small Packs	D9003					RUL4
4 X 4 Line Drawer Pack	D9004					RUL5
4 X 4 Line Card Pack	D9005					RUL6
3 X 3 Line Drawer Pack	D9006					RUL7
3 X 3 Line Card Pack	D9007					RUL8
NT6X54 Bus Interface Card	D9024					RUL19
NT6X71 Data Line Card	D9025					RUL20
Supernode Cabinet	D9008					RUL9
Supernode Paddle Boards	D9010					RUL10
Supernode Logic Boards	D9011					RUL11
MSL 100 Cabinet	D9012					RUL12
OPM Cabinet	D9013					RUL13
Cellular Frame	D9014					RUL14
Supernode Power Pack	D9015					RUL15
Supernode SLM Unit	D9016					RUL16
NT40 Redeployment Kit	D9017					RUL17
Inverter	D9018					RUL18
Loose SuperNode Shelves	D9026					RUL21
Loose NT 40 Shelves	D9027					RUL22

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) If circuit packs are to be removed from a single bay frame for shipment to a location different from the frame, then packing material shall be supplied for both the frame and the circuit packs being removed. The circuit packs shall be segregated so as to allow proper disposition to the various locations specified.

2) All line drawers are to be removed from line drawer frames. The spec writer shall provide packing material for both the frame and the line drawers.

   Line drawers/cards are referred to by its dimensions. 3 X 3 refers to newer line cards which are 3 inches by 3 inches e.g. NT6X17AA, etc. 4 X 4 refers to the old line cards which are 4 inches by 4 inches in size.

3) Mag Tape Drives and Disc Drive units shall be removed from the I/O frames. The spec writer shall provide packing material for both the frame and the unit(s). Packing material supercodes for the Mag Tape Drives and Disc Drive Units will be made available at a later date.

4) ROTL units shall be removed from the frame. The spec writer shall provide packing material for both the frame and the ROTL. Packing material supercodes for the ROTL units will be made available at a later date.

5) Inverters shall be removed from the frame(s). The spec writer shall provide packing material for both the frame(s), and the inverters.

6) Supernode paddle boards, logic boards, power packs and SLM units shall be removed from the Supernode cabinet. The spec writer shall provide packing material for the cabinet as well as the various components.

RULES:

RUL1 1) The Double Bay Frame Packing Material Supercode D9000 is used to order the following:

1	D3006-1	Double Bay Skid
1	D3006-2	Double Bay Top
8	D4015	2 x 2 x 2 1/2 Angle Board
1	D4010	Double Bay Antistatic Bag

6	D3008	2 x 4 Uprights
1	7838	ID Panel

RUL2 1) The Single Bay Frame Packing Material Supercode D9001 is used to order the following:

1	D3007-1	Single Bay Skid
1	D3007-2	Single Bay Top
4	D4015	2 x 2 x 2 1/2 Angle Board
1	D4009	Single Bay Antistatic Bag
4	D3008	2 x 4 Uprights
1	7838	ID Panel

RUL3 1) The Bulk Pack for Circuit Packs Packing Material Supercode D9002 is used to order the following:

1	D8035-1	Carton
2	D8035-2	Antistatic Styrofoam Inserts
1	D8035-3	Bottom Pad
1	D8035-4	Top Pad

2) This can be ordered to package up to ten (10) circuit packs or up to three (3) power converter circuit packs.

RUL4 1) The Single Pack for Circuit Packs or Small Packs Packing Material Supercode D9003 is used to order the following:

1	D1903	Carton
2	D2000	Folder
1	D4006	Shielding Bag

RUL5 1) The 4X4 Line Drawer Pack Packing Material Supercode D9004 is used to order the following:

1	D8007	Carton
2	D8008	Top & Bottom Insert
1	D8009	Top Pad
4	D4016	6x8 Foam Bag

2) The 6x8 Foam Bags, D4016, are provided for the four (4) connectors on the frame that connect to the line drawer (used when the frame is being shipped without the drawers). Foam bags are used to protect the connectors (which terminate on the back of the line drawers) from damage.

RUL6 1) The 4X4 Line Card Pack Packing Material Supercode D9005 is used to order the following:

1	D8010	Carton

2	D8011	Antistatic Styrofoam Insert
1	D8012	Foam Pad

2) This can be ordered to package up to ten (10) line card circuit packs.

RUL7 1) The 3X3 Line Drawer Pack Packing Material Supercode D9006 is used to order the following:

1	D8031-1	Carton
1	D8031-2	Top Insert
1	D8031-3	Bottom Insert
4	D4016	6x8 Foam Bag

2) The 6x8 Foam Bags, D4016, are provided for the four (4) connectors on the frame that connect to the line drawer (used when the frame is being shipped without the drawers). Foam bags are used to protect the connectors (which terminate on the back of the line drawers) from damage.

RUL8 1) The 3X3 Line Card Pack Packing Material Supercode D9007 is used to order the following:

1	D8024	Carton
2	D8025	Antistatic Styrofoam Insert
1	D8012	Foam Pad

2) This can be ordered to package up to ten (10) line card circuit packs.

RUL9 1) The Supernode Cabinet Packing Material Supercode D9008 is used to order the following:

1	D3011-1	Supernode Base
1	D3011-2	Supernode Top
4	D3011-3	Supernode Upright
1	D4010	Antistatic Bag
1	7838	ID Panel

RUL10 1) The Supernode Paddle Boards Packing Material Supercode D9010 is used to order the following:

1	D8069-1	Carton
1	D8069-2	Folder
1	D5037	Shielding Bag

RUL11 1) The Supernode Logic Boards Packing Material Supercode D9011 is used to order the following:

1	D8070-1	Carton
1	D8071-1	Folder
1	D5037	Shielding Bag

RUL12 1) The MSL 100 Cabinet Packing Material Supercode D9012 is used to order the following:

1	D3014-1	Cabinet Base
1	D3014-2	Cabinet Top
4	D3014-3	Cabinet Upright
1	D4014-1	Antistatic Bag
1	7838	ID Panel

RUL13 1) The OPM Cabinet Packing Material Supercode D9013 is used to order the following:

1	NT1001	Includes uprights Top and Bottom Skid
1	7838	ID Panel

RUL14 1) The Cellular Frame Packing Material Supercode D9014 is used to order the following:

1	D3007	Cellular Frame Skid
1	D3012	Cellular Frame Top
4	D3013	Cellular Frame 2 x 4’s
1	D4009	Antistatic Bag
4	D4015	2 x 2 x 2 1/2 Angle Board
1	7838	ID Panel

RUL15 1) The Supernode Power Pack Packing Material Supercode D9015 is used to order the following:

1	D8068-1	Carton
1	D8068-2	Folder
1	D8068-3	Foam
1	D5038	Shielding Bag

RUL16 1) The Supernode SLM Unit Packing Material Supercode D9016 is used to order the following:

1	D8081-1	SLM Inner Carton
4	D8081-2	SLM Corner Pads
1	D8081-3	Outer Carton
1	D8081-4	Desicant for SLM
1	D5040	Shielding Bag for SLM

RUL17 1) The Packing Material Supercode for the NT40 Deployment Kit D9017 is used to order the following:

1	D8105	NT40 Deployment Carton

RUL18 1) The Inverter Packing Material Supercode D9018 is used to order the following:

1	D8001	Carton
2	D1917	Inserts
2	D8004	Inserts

RUL19 1) The Bus Interface Card Packing Material Supercode D9024 is used to order the following:

1	D8058	Carton
2	D8024	Antistatic Styrofoam Insert
2	D8012	Foam Pad

2) This can be ordered to package up to ten (10) NT6X54__ Bus Interface cards.

RUL20 1) The Data Line Card Packing Material Supercode D9025 is used to order the following:

1	D8059	Carton
2	D8025	Antistatic Styrofoam Insert
1	D8012	Foam Pad

2) This can be ordered to package up to ten (10) NT6X71__ Data Line cards.

RUL21 1) The Loose SuperNode Shelves Packing Material Supercode D9026 is used to order the following:

1	D8091-1	Carton
2	D8091-2	Top and Bottom Insert

RUL22 1) The Loose NT 40 Shelves Packing Material Supercode D9027 is used to order the following:

1	D8002	Carton
As Required	D8003	Side Pads
2	D8004	Top and Bottom Pads

CABINETIZED MISC SPARE STORAGE - MODEL B

PEC CODE:	NTRX49BA
CPC CODE:	B0237507
RATING:	Standard
REPLACES:	NTRX49AA (Cabinet A)
REPLACED BY:	Not applicable.
ABBREVIATION NAME:	CMSS
ENGINEERING DESCRIPTION:	The Cabinetized Miscellaneous Spare Storage (CMSS) provides for storage of spare circuit packs and is colored either brown or grey. The storage cabinet can be provisioned with up to four spare storage shelf assemblies which can hold 0.875", 1.125", or SuperNode size circuit packs.
REFERENCE DOCUMENTATION:	SLRX49BA 00 01 MSRX49BA 00 04
MARKETS:	Applicable markets: US Canada Asia/Pacific CALA Europe

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTRX49BA EMA13-04-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 06 14	ECM 683 23	Initial issue. Created detailed EMS per SR RR63944.

The Cabinetized Misc Spare Storage - Model B is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
C28B Mechanical Assembly	NTRX25AA		1			AP
Frame Ground Hardware Kit	NTRX2518		1			AP
Spare Storage Shelf Assy	NTNX2201			07,21 35,49		RUL1
Spare Storage Shelf Assy Super-Node Circuit Packs	NTNX2203			08,22 37,51		RUL2
MSP Card Storage Chassis	NTRX4001			02,10,15 24,29,38 43,52,57		RUL3
Screw (Mounting Hardware)	P097F813					RUL3
Washer (Grounding Hardware)	P0284154					RUL3
Washer (Grounding Hardware)	P0183220					RUL3
Line Card Storage Chassis	NT3X55BA			07,21 35,49		RUL4
Tool Tray	P0700829		1	63		RUL8
Screw (Mounting Hardware)	P097F813		4			RUL8
Washer (Grounding Hardware)	P0284154		1			RUL8
Washer (Grounding Hardware)	P0183220		1			RUL8
Horizontal Cabling Bracket	P0739584					RUL5
Screw Mounting Hardware	P097F839					RUL5
C28 English Label Kit	NTRX3541		1			RUL6
C28 German Label Kit	NTRX3542		1			RUL7
C28 Cabinet Mechanicals	NTRX25AA					NOTE1
Cabinet Power and Grounding	NTZX16CA					NOTE2
Door and eqp. labels	MS0X60AA					NOTE3

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 NTRX49BA 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.

2) For power and grounding information refer to Engineering Manual Section for NTZX16CA Cabinetized Power and Grounding.

3) Refer to MS0X60AA for equipment labeling.

4) Shelf provisioning should always begin with P0700829 Tool Tray first, NTNX2201 shelves second, NTNX2203 shelves third, and the NTRX4001 chassis fourth, when mixing shelf types in the same storage cabinet.

5) Always provision NTNX2201 first beginning in position 49 and providing additional NTNX2201 shelves downwards.

6) When no NTNX2201 shelves are provisioned, always provision NTNX2203 shelves beginning with position 51 and provision downwards.

7) Always provision NTRX4001 MSP beginning in the highest permissible but unoccupied position and add additional chassis downwards.

8) Provision Line Card Storage Chassis NT3X55BA in NTNX2201 from left to right, beginning from the left. To install the NT3X55BA, remove circuit pack sliders from the NTNX2201 shelf that is to receive the Chassis and insert and secure the NT3X55BA to the top of the shelf using the provided hardware. Provision the NT3X55BA starting with the topmost NTNX2201 shelf position, from top to bottom filling each shelf completely before provisioning the next lower shelf.

9) Always provision the NTRX4001 MSP Card Storage Chassis beginning at the highest available, permissible position and add additional chassis downwards. If no Horizontal Cabling Bracket P0739584 is provisioned, the NTRX4001 MSP Card Storage Chassis may be provisioned in position 02 when the cabinet is fully loaded with (4) shelves.

RULES:

AP 1) When PEC NTRX49BA is ordered, these items are provided.

RUL1 1) Provide one (1) NTNX2201, Spare Storage Shelf Assembly, to store up to fifty four (54) 0.875 inch spare circuit packs or up to forty two (42) 1.125 inch spare circuit packs. A maximum of four (4) NTNX2201 may be provisioned in one NTRX49BA cabinet.

RUL2 1) Provide one (1) NTNX2203, Spare Storage Shelf Assembly, to store up to two (2) power converters and twenty (20) SuperNode size (ECORE, ENET, LPP) cards on the front side and a maximum of twenty six (26) paddle boards on the rear side. A maximum of four (4) NTNX2201 may be provisioned in one NTRX49BA cabinet.

RUL3 1) Provide one (1) NTRX4001 MSP Card Storage Chassis to store a maximum of twenty (20) MSP Cards. A maximum of two (2) NTRX4001 MSP Card Storage Chassis can be provisioned in a NTRX49BA cabinet.

2) Provide four (4) Screw P097F813, one (1) Washer P0284154 and one (1) Washer P0183220 for each NTRX4001 MSP Card Storage Chassis provided.

RUL4 1) Provide one (1) NT3X55BA, Line Card Storage Chassis, to store a maximum of ten (10) Double Slot Line Cards or ten (10) Single Slot Line Cards plus one (1) IF card. Four (4) NT3X55BA can be mounted in a NTNX2201 shelf assembly.

RUL5 1) Provide one (1) Horizontal Cabling Bracket P0739584 and two (2) P097F839 Screw Mounting Hardware when the Storage Cabinet is included in a lineup with 'Horizontal' power arrangement.

RUL6 1) Provide one (1) NTRX3541 Label Kit for English language applications.

RUL7 1) Provide one (1) NTRX3542 Label Kit for German language applications.

RUL8 1) Provide one (1) P0700829 Tool Tray with each Spares Storage Cabinet. The tool tray is located at shelf position 63.

2) Provide four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 washer for mounting and grounding of Tool Tray.

POWER CONVERTER PRODUCT CHANGE KIT NT2X70AZ

RATING: Check application date for NT2X70AZ.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to all existing equipment that contains the NT2X70AA/AB/AC/AD/BA.

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	+5/12V Pwr Converter	NT2X70--		1			AP
ADD	+5/12V Pwr Converter	NT2X70AE		1			AP
ADD	Des Label (NT2X70AE)	P0698943		1			AP

NOTE: 1) Provide one (1) NT2X70AZ Kit per existing NT2X70 CP.

2) The NT2X70AZ kit is used for field upgrade of existing circuit packs ONLY.

NT2X70AF POWER CP AND LABEL

PEC CODE:	NT2X70AY
CPC CODE:	B0242769
RATING:	Standard.
REPLACES:	Not Applicable
REPLACED BY:	Not Applicable
ABBREVIATION NAME:	Not Applicable
ENGINEERING DESCRIPTION:	The NT2X70AY contains the necessary hardware for field use. This kit provides provides an upgrade on all existing hardware that contains NT2X70AA/AB/AC/AD/AE/BA power converters.
REFERENCE DOCUMENTATION:	SL2X70AY
MARKETS:	Applicable markets: US Canada Europe Asia/Pacific CALA Carrier Wireless

ISSUE AUTHOR: Deniece Land Dept. 3471 (PPK)

MAIN CONTACT: Deniece Land Dept. 3471 (PPK)

NT2X70AY EMA13-99-PWR-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 06 09	ECM 704 03	Create EMS with Labels and CP’s.

The NT2X70AF Power CP and Label is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	+5/12V PWR Converter	NT2X70--		1	XX	25	1
ADD	+5/12V PWR Converter	NT2X70AF		1	XX	25	AP
ADD	Des Strip (NT2X70AF)	P0809960		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) Provide this kit, (2) two per module,for all upgrades.

RULES:

AP 1) When PEC NT2X70AY is ordered, these items are provided.

RUL1 1) The NT2X70AF Kit is used for field upgrades of existing circuit packs only.

EMA14

TABLES CHAPTER ALL

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TABLES CHAPTER ALL

EMA14-01-000	TABLE A - TRUNK MODULE PROVISIONABLE CAR	TABLE A
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EMA14-04-000	TABLE D - FSP, INV, CU, AXU INCLUDED CAR	TABLE D
EMA14-05-000	OPD VERSABLOCK CTB AND NON-CTB	T_OPD_VERSABLK
EMA14-06-000	TELZON TERMINAL BLOCK CTB AND NON-CTB	T_TELZON
EMA14-07-000	OPD ROTATING TERMINAL BLOCK	T_OPD_ROTATING
EMA14-08-000	RSC-SONET PROVISIONING AND CONFIGURATION	TABLE H
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EMA14-27-000	BCS34 SOFTWARE TO HARDWARE CROSS-REFEREN	T_BCS34_XREF
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EMA14-27-003	BCS 36 SOFTWARE TO HARDWARE CROSS-REFERE	T_BCS36_XREF
EMA14-27-004	NA002 SOFTWARE FUNCTIONALITY REQUIRED HA	NA002_HDW
EMA14-27-005	NA003 SOFTWARE FUNCTIONALITY REQUIRED HA	NA003_HDW
EMA14-27-006	NA004 SOFTWARE FUNCTIONALITY REQUIRED HA	NA004_HDW
EMA14-27-007	NA005B SOFTWARE FUNCTIONALITY REQUIRED H	NA005B_HDW
EMA14-27-008	NAVB002 SOFTWARE FUNCTIONALITY REQUIRED	NAVB002_HDW
EMA14-27-009	NAVB003 SOFTWARE FUNCTIONALITY REQUIRED	NAVB003_HDW
EMA14-27-010	NAVB004 SOFTWARE FUNCTIONALITY REQUIRED	NAVB004_HDW
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EMA14-27-013	NA007 SOFTWARE FUNCTIONALITY REQUIRED HA	NA007_HDW
EMA14-27-014	NA008 SOFTWARE FUNCTIONALITY REQUIRED HA	NA008_HDW
EMA14-27-015	NA009 SOFTWARE FUNCTIONALITY REQUIRED HA	NA009_HDW
EMA14-27-030	NON-CM SOFTWARE COMPATIBILITY MATRIX	NON_CM_MTRX

TABLE A - TRUNK MODULE PROVISIONABLE CARDS

PEC CODE: TABLE A

CPC CODE: Not Applicable

RATING: See descriptions for individual CPs

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Tables A-1, A-2, A-3 and A-4 list the DMS-100 Family trunk, maintenance, analog interface and service circuits and provides important characteristics (Tables A-1 and A-2) and assignment data (Tables A-3 and A-4).

For convenience, Tables A-1 and A-3 are restricted to metallic trunks while Tables A-2 and A-4 describe other circuit types.

Notes accompany all tables. To obtain all relevant details the user shall refer to both tables of the pair which lists the particular card.

REFERENCE DOCUMENTATION: MS documents listed in the "NOTE" section

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Steve Martin Dept. 3471 (PPK)

MAIN CONTACT: Steve Martin Dept. 3471 (PPK)

TABLE A EMA14-01-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 07 31	ECM 531 02	Add changes to support A-Law.
92 10 07	ECM 532 03	Introduction of enhanced Coin Detection Circuit NT3X08AB
92 10 16	ECM 389 06	Removes restriction on MTU slot position in IMTM shelf (ET14079)
92 11 25	ECM 532 04	MD CDC NT3X08AA
93 05 07	ECM 464 07	Update ITM8 provisionable cards info.
93 07 30	ECM 548 01	Introduction of Conference Trunk Module (CTM) NT1X81AA. ET8363 - The NT5X30BA comes equipped with a balance network and therefore does not require an external balance network (i.e. NT2X77BB) to be mounted on it.
93 11 03	ECM 548 02	The CTM NT1X81AA requires BCS-35 or later software to be in the DMS switch. Remove NT3X33AA Line Traffic Simulator CP. SCA#QT300606: # added to 3 detailed PECs; corrections made to NT1X76GM, NT1X76HC, NT1X76HD; NT1X76AC should have been NT1X76HC.
93 11 18	ECM 690 01	Introduce equipment that is required to support EAS.
94 01 28	ECM 200 04	ET112130, ECD 018-40153 - Revise provisioning rules pertaining to 6 port & 3 port conference circuits, Conference Trunk Modules (CTM), and digital modems. Revise RULE av. Dial-Up Autoquote feature requires NT3X02BA to be used in a stand-alone configuration. Revise RULE ao.
94 06 15	ECM 601 14	Include configuration constraints Induced by PM Software Load and Load Execs. Refer to ET 18679. Incorporates solution to ET 49343
94 09 24	ECM 601 15	ECD 018-41658 - Provide provisioning rule for NT3X91AA/TM08/DTH ROTL combination on same frame. ECD 018-

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		43463 - MD NT2X78AA, 4 wire analog trunk cp. Update rule on NT4X23AA.
94 10 24	ECM 389 08	ET 18679 - Correct provisioning rule for NT2X10--/NT2X11-- (MTU) in combination with NT3X68-- Tone Gen. in the same MTM. Also, corrected provisioning for DMODEMs and Conference circuits.
95 02 24	ECM 601 17	ET 21099 - Correct provisioning rule NT1X90--/NT2X96-- (TTT) in combination with NT3X68-- Ton Gen in the same MTM
95 05 05	ECM 557 11	Introduce EDTU in MTM EC 018 45190
95 07 14	ECM 531 06	MD NT1X75/76/79 Series of DRAM cards. The EDRAM, NT1X80AA, is now standard for all applications. Provisioning of -48/-60V SP Power is mandatory for CTM CPs in Trunk Modules
95 12 07	ECM 601 25	Make corrections to table concerning card slot rules and MTM additions. Answer ET 32109 and 81583.
96 03 08	ECM 601 29	Make corrections to table per SR RR60883 and 61079. (add NT2X48BA and NT2X48BB to table for 61079, and add NT4X96BC for 60883) Also correct CTM provisioning quantities.
96 06 20	ECM 601 32	MD the following CPs per EC#018-46775: NT1X29AA, NT1X31AA, NT2X47AB, NT2X47AC, NT2X48AA, NT2X48AB, NT2X50AB NT3X05AA, NT3X05AB, NT3X33AA, NT3X82AB NT4X65AA, NT5X04AA, NT5X25AA, NT3X82AA
96 09 20	ECM 531 11	Add NT1X80BA EDRAM 16 CP. MD NT3X67AA/BA/BB, MD NT4X98BB per EC 018-48036.
96 10 16	ECM 531 12	Change number of channels for EDRAM from 30 to 29 per NT Tech. Add Rul at to show EDRAMs require -48V SP kit on extension offices. (POPS)
96 11 19	ECM 276 08	MD NT2X46AB per EC018-49694.
96 12 11	ECM 601 36	Per EC018-49399 and PRS BY46633 correct the replacement pec for MD'ed NT2X48AA (rep by NT2X48BA). Also see Engineering Bulletin 771 for SW datafill information. Enhance rule 'y' to describe the

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		physical width of the NT2X48 CPs.
97 01 02	ECM 557 29	Enhance rule a23 for assignment of the EDTU CP NT4X45AA. Correct CPs replaced by EDTU CP NT4X45AA in flaglist and rule a23.
97 01 31	ECM 601 37	Un-MD the following PECs per EC018-50459-NT2X48AB, NT4X98BB.
97 04 30	ECM 531 13	Change power dissipation for NT1X80BA to 7 watts per NT Tech.
97 05 15	ECM 352 07	Enhance RUL a14 for DTUs per input from users and NTACCESS.
		Un-md NT2X47AB per EC018-50897.
97 06 23	ECM 557 34	Enhance RUL a23 for EAE3 automation
		Correct several spelling errors.
		Update per EC 018-39871 for rules about MF receiver CPs.
97 08 04	ECM 557 35	MD NT1X00AA/AB/AC/AD/AE/AF/AG/AH/KA per EC 018-51285.
		MD NT2X72BB and NT2X95BB per EC 018-51320.
		MD NT4X65AB per EC 018-51169.
97 09 08	ECM 557 36	MD NT2X57AB per EC 018-51378.
		MD NT3X82AC/AD/AE/AA/AB/NT3X84AA/ NT3X85AA per EC 018-51284.
97 10 16	ECM 601 38	MD NT2X55AA and NT2X67AA per EC 018-51486.
		MD NT2X10AB, NT2X11AA, and NT2X11AC PER 018-51489.
		Add CP Functionality Chart to Note 9 per SR RR-68594.

The Table A - Trunk Module Provisionable Cards is comprised of the following:

	PEC	CIRCUIT TYPE	BAL NET	NO CKT	NO SLT	LST SLT	PRD CRD	PWR DIS	RULE
	NT1X54AA	Jack Ended Trunk		2	1			0.5	a
	NT2X65AA	CAMA Pos Sign Trk	*	1	1			1	b,c,ab
	NT2X66AA	CAMA CW Susp LP Trk		1	1			1	a5
	NT2X72AA	4W E&M Type D1 600 I/F		2	1			1	ar
	NT2X72AB	4W E&M Type D1 600 E SUPR CONT		2	1			1	d
	NT2X72AC	4W E&M 600 L GN E SUPR CONT		2	1			1	d
	NT2X72BA	4W DC5A Tie Trunk		2	1			1	
#	NT2X72BB	4W CAIA 600 ohm Trunk		2	1			1	
#	NT2X78AA	4W INC/OG (2600 Hz) MF/DP		2	1				
	NT2X81AA	2W E&M 900 2WY INC/OG MF/DP	*	2	1				a19
	NT2X81AB	2W E&M 600 2WY INC/OG MF/DP	*	2	1				a19
	NT2X81BA	2W DC5A Tie Trunk	*	2	1				ay
	NT2X82AA	2W LP 900 INC REV BAT MF/DP	*	2	1				a19
	NT2X83AA	2W LP 900 OG REV BAT MF/DP	*	2	1				a19
	NT2X84BA	Earth Calling Trunk		1	1				ay,a8
	NT2X85AA	RCDG COMPL TRK H-L Coin	*	1	1				aq
	NT2X86AA	Toll SW 3RD W Coin FX Ring	*	1	1				aq
	NT2X88AA	4W INC/OG 600 E&M MF/DP		2	1			1	
#	NT2X90AA	2W INC from NE-14 LTD 900	*	1	1				b,h
#	NT2X90AB	INC/OG TST TRK	*	1	1			1.5	b
#	NT2X90AC	INC/OG TST TRK	*	1	1			1.5	ax
	NT2X90AD	INC/OG TEST TRK	*	1	1			1.5	a4
	NT2X92AA	2W LP 900 OG REV BAT MF	*	2	1				a19
	NT2X95AA	2WY PBX TRK DID/DOD	*	1	1				
	NT2X95BA	Direct Dial Inward Trunk	*	1	1				ay
#	NT2X95BB	2W JUSMAG 600 ohm DDO Trunk	*	1	1				ay
	NT2X98AA	2W INC 900 DP RB SLV CONT		2	1				
	NT3X04AA	INC TST from AECO LTD		2	1			28	
	NT3X06AA	2W OGT TRK to AE/3CL CO-LO	*	1	1			0.5	aq
	NT3X07AA	2W INC TRK to AE/3CL CO-LO	*	2	1				aq
	NT3X91AA	REM OFF. TST Line I/F TRK		2	1				a21
	NT5X03AA	CCITT R1 Trk, 101 Tst Ln DMS-300		2	1				f
#	NT5X04AA	CCITT #5 Trk		2	1				f
	NT5X04AB	CCITT #5 Trk		2	1				f

TABLE A-1
TRUNK MODULE PROVISIONABLE CARDS
METALLIC TRUNKS CIRCUIT CHARACTERISTICS

	PEC	CIRCUIT TYPE	BAL NET	NO CKT	NO SLT	LST SLT	PRD CRD	PWR DIS	RULE
	NT5X06AA	CCITT #6 Trk		2	1				f
#	NT5X25AA	1WY CO TRK OG GRD ST or INC LP		2	1				
	NT5X30AA	101 Comm Test Line	*	1	1			3	g,a19
	NT5X30BA	101 Comm Test Line UK		1	1			3	az

TABLE A-1 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
METALLIC TRUNKS CIRCUIT CHARACTERISTICS

	PEC	CIRCUIT TYPE	BAL NET	NO CKT	NO SLT	LST SLT	PRD CRD	PWR DIS	RULE
	NT0X10AA	MISC Scanner		2	1			2	i,j,ag,a22
#	NT1X00AA	102 Test (milliwatt)		2	1			4	k
#	NT1X00AB	102 Test (milliwatt)		2	1			4	k
#	NT1X00AC	ROH Tone Generator		2	1			4	k,l
#	NT1X00AD	ROH Tone Generator		2	1			4	k,l
#	NT1X00AE	ROH Tone Int'l 102 Tst Trk		2	1			4	k,m
#	NT1X00AF	ROH Tone 102/10db Tst Trk		2	1			4	k
#	NT1X00AG	ROH Tone 102/20db Tst Trk		2	1			4	k
#	NT1X00AH	ROH Tone 102/15db Tst Trk		2	1			4	k
#	NT1X00KA	102 Test Trunk (China)		2	1			4	k
#	NT1X31AA	3-Port Conference Circuit		6	3			3	n,o
#	NT1X75AA	DIG. Recorded Ann Cont		30	12	05	6L	23	l,p,t,a9, a12
#	NT1X75BA	Enhanced Dig. Rec Ann Cont		30	12	05	6L	3	l,p,t,a9, a12
#	NT1X75DA	A-Law Dig. Rec Ann Cont		30	12	05	6L	23	l,p,t,a9, a12
#	NT1X76AA	DRA Standard Ann-English		-	1		6R	10	r,q,t,a9
#	NT1X76AB	U.S. Bell Standard Ann CP		-	1		6R	10	r,q,t,a9
#	NT1X76AE	ACTS DRA CP		-	1			10	r,q,t,a9, a13
#	NT1X76AF	AOSSVR English Ann (Part 1)		-	1		6R	2.5	r,q,t,a9, a10
#	NT1X76AG	AOSSVR English Ann (Part 2)		-	1		6R	2.5	r,q,t,a9, a10
#	NT1X76AH	CCC Standard English Ann		-	1		6R	2.5	r,q,t,a9, a11
#	NT1X76HC	CCC Standard English Ann for QTel, MT&T and NBTel		-	1		6R	5	r,q,t,a9, a11
#	NT1X76AJ	CLASS Phase 1 English Announcements (1) of (2) CP		-	1		6R	5	r,q,t,a15
#	NT1X76AK	CLASS Phase 1 English Announcements (2) of (2) CP		-	1		6R	5	r,q,t,a15
#	NT1X76AM	Call Forward Remote Activation - English		-	1		6R	2.5	r,q,t,a9, a16
#	NT1X76AP	CLASS Phase 2 English Announcements (1) of (8) CP		-	1		6R	5	r,q,t,a15

TABLE A-2
TRUNK AND REMOTE MODULES PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
CIRCUIT CHARACTERISTICS;

PEC	CIRCUIT TYPE	BAL NET	NO CKT	NO SLT	LST SLT	PRD CRD	PWR DIS	RULE
# NT1X76AQ	CLASS Phase 2 English Announcements (2) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76AR	CLASS Phase 2 English Announcements (3) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76AS	CLASS Phase 2 English Announcements (4) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76AT	CLASS Phase 2 English Announcements (5) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76AU	CLASS Phase 2 English Announcements (6) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76AV	CLASS Phase 2 English Announcements (7) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76AW	CLASS Phase 2 English Announcements (8) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76BA	DRA Standard Ann-French	-	1		6R	12.5		r,q,t,a9
# NT1X76BF	AOSSVR French Ann (Part 1)	-	1		6R	2.5		r,q,t,a9, a10
# NT1X76BG	AOSSVR French Ann (Part 2)	-	1		6R	2.5		r,q,t,a9, a10
# NT1X76BH	CCC Standard French Ann	-	1		6R	2.5		r,q,t,a9, a11
# NT1X76HD	CCC Standard French Ann for QTel, MT&T and NBTel	-	1		6R	5		r,q,t,a9, a11
# NT1X76BJ	CLASS Phase 1 French Announcements (1) of (2) CP	-	1		6R	5		r,q,t,a15
# NT1X76BK	CLASS Phase 1 French Announcements (2) of (2) CP	-	1		6R	5		r,q,t,a15
# NT1X76BP	CLASS Phase 2 French Announcements (1) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76BQ	CLASS Phase 2 French Announcements (2) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76BR	CLASS Phase 2 French Announcements (3) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76BS	CLASS Phase 2 French Announcements (4) of (8) CP	-	1		6R	5		r,q,t,a15
# NT1X76BT	CLASS Phase 2 French Announcements (5) of (8) CP	-	1		6R	5		r,q,t,a15

TABLE A-2 (Continued)
TRUNK AND REMOTE MODULES PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
CIRCUIT CHARACTERISTICS

PEC	CIRCUIT TYPE	BAL NET	NO CKT	NO SLT	LST SLT	PRD CRD	PWR DIS	RULE
# NT1X76BU	CLASS Phase 2 French Announcements (6) of (8) CP	-	1			6R	5	r,q,t,a15
# NT1X76BV	CLASS Phase 2 French Announcements (7) of (8) CP	-	1			6R	5	r,q,t,a15
# NT1X76BW	CLASS Phase 2 French Announcements (8) of (8) CP	-	1			6R	5	r,q,t,a15
# NT1X76CA	MCCS Std Announcement CP	-	1			6R	10	r,q,t,a9
# NT1X76GA	CLASS Phase 2 English Announcements (1) of (4) CP	-	1			6R	5	r,q,t,a15
# NT1X76GB	CLASS Phase 2 English Announcements (2) of (4) CP	-	1			6R	5	r,q,t,a15
# NT1X76GC	CLASS Phase 2 English Announcements (3) of (4) CP	-	1			6R	5	r,q,t,a15
# NT1X76GE	CLASS Phase 2 U.S. Custom Feature Names Announcements-Type I CP for Bell South	-	1			6R	5	r,q,t,a15
# NT1X76GF	CLASS Phase 2 U.S. Custom Feature Names Announcements-Type II CP for Bell Atlantic	-	1			6R	5	r,q,t,a15
# NT1X76GG	CLASS Phase 2 U.S. Custom Feature Names Announcements-Type III CP for United Tel.	-	1			6R	5	r,q,t,a15
# NT1X76GH	CLASS Phase 2 U.S. Custom Feature Names Announcements-Type IV CP for GTE	-	1			6R	5	r,q,t,a15
# NT1X76GJ	CLASS Phase 2 U.S. Custom Feature Names Announcements-Type V CP for Pacific Bell	-	1			6R	5	r,q,t,a15
# NT1X76GK	CLASS Phase 2 U.S. Custom Feature Names Announcements-Type VI CP for Ameritech	-	1			6R	5	r,q,t,a15
# NT1X76GL	CLASS Phase 2 U.S. Custom Feature Names Announcements-Type VII CP for Southwest Bell	-	1			6R	5	r,q,t,a15
# NT1X76GM	CLASS Phase 2 U.S. Custom Feature Names Announcements-Type VIII CP for US West	-	1			6R	5	r,q,t,a15
# NT1X76JA	Automatic Recall Date/Time Announcements (1) or (2) CP	-	1			6R	5	r,q,t,a9, a17

TABLE A-2
TRUNK AND REMOTE MODULES PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
CIRCUIT CHARACTERISTICS

	PEC	CIRCUIT TYPE	BAL NET	NO CKT	NO SLT	LST SLT	PRD CRD	PWR DIS	RULE
#	NT1X76JB	Automatic Recall Date/Time Announcements (2) or (2) CP	-	1			6R	5	r,q,t,a9, a17
#	NT1X77AA	DRA Recordable Memory	-	1			6R	11	s,q,t,a9
#	NT1X79AA	MCCS/ACTS Custom Ann. CP	-	1			6R	5	s,q,t,a9
	NT1X80AA	Enhanced Digital Recorded Announcement Machine (EDRAM) CP (4 Min.)	29	1				9	a18,at
	NT1X80BA	Enhanced Digital Recorded Announcement Machine (EDRAM) CP (16 Min.)	29	1				7	a24,at
	NT1X81AA	Conference Trunk Module (CTM) CP	29	1				5	a20,at
#	NT1X90AA	Test Signal Generator	-	1	15	1L		6	t
	NT1X90BA	Test Signal Gen. (A-Law)	-	1	15	9L		6	t
	NT2X01AA	AIOD Trunk CP	4	2				19	au
#	NT2X10AB	Line Tst Unit Analog Cd	-	1	15	4LO		6.7	t,u,q,a3
#	NT2X10AC	Line Tst Unit Analog Cd	-	1	15	4LO		6.7	t,u,q,a3
	NT2X10BA	Multi-line Test Unit Analog Card	-	1	15	10LO		15	t,q,as, at,a3
#	NT2X11AA	Line Tst Unit Digital Cd	1	1			4RE	8.5	t,u,a3
#	NT2X11AC	Line Tst Unit Digital Cd	1	1			4RE	8.5	t,u,a3
#	NT2X11AD	Line Tst Unit Digital Cd	1	1			4RE	8.5	t,u,a3
	NT2X11BA	Multi-line Test Unit Controller Card	2	1			10RE	9	t,as,at a3
	NT2X43AB	Office Alarm circuit #3	-	2	15			13	v,q
	NT2X47AB	TRMSN TST MOD CON SIG GEN	1	1	15	2LO		8.7	m,t,w,x
#	NT2X47AC	TRMSN TST MOD CON SIG GEN	1	1	15	3LO		8.7	t,w,x
#	NT2X47AD	TTU Control Processor	1	1	15	3LO		8.7	t,w,x
	NT2X47BA	Trmsn Tst Ctrl (A-Law)	1	1	15	8LO		8.7	t,w,x
#	NT2X48AA	DGTL 4 Channel MF RCVR	4	2	15			12	o,y
	NT2X48AB	DGTL 4 Chan Digitone RCVR	4	2	15			12	o,y
	NT2X48BA	DGTL 4 Chan MF RCVR	4	2	15			12	o,y
	NT2X48BB	DGTL 4 Chan DTMF RCVR	4	2	15			12	o,y
	NT2X48CA	MF Receiver - A Law	4	2	15			16	o,y
	NT2X48CB	DTMF Receiver (British Tel)	4	2	15			16	o,y
	NT2X48CC	DTMF Receiver - A Law	4	2	15			16	o,y
#	NT2X50AB	Minibar Driver	1	1				4.8	z
#	NT2X55AA	SD Card II	2	1				5.1	i,aa

TABLE A-2 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
CIRCUIT CHARACTERISTICS

	PEC	CIRCUIT TYPE	BAL NET	NO CKT	NO SLT	LST SLT	PRD CRD	PWR DIS	RULE
#	NT2X56AA	TRMSN TST MOD Dig. Filter	-	1			2RE	12.9	t,x,q
#	NT2X56AB	TRMSN TST MOD Dig. Filter	-	1			3RE	12.9	t,x,q
#	NT2X56BA	Trmsn Test Filter (A-Law)	-	1			8RE	12.9	t,x,q
	NT2X57AA	SD Card I	2	1				4.5	i,aa
#	NT2X57AB	SD Card I with OAU MON	2	1				4.5	i,aa
	NT2X71AA	Transmission Termination Trk	1	1				3	b
	NT2X75AA	Loop Around Test Line	2	1				1	ab
#	NT2X96AA	PCM Level Meter	1	1			1R	6	t
	NT2X96BA	PCM Level Meter (A-Law)	1	1			9R	6	t
	NT3X02AA	TOPS Control Processor	4	2	15	5LO		8	t,ao,av
	NT3X02BA	Dial up Auto/TOPS Cont Proc	4	2	15	5LO		8	t,ao,av
	NT3X03AA	TOPS DGTL Signal Processor	-	1			5RE	5	t,q,av
#	NT3X05AA	Digital Data Line Card	1	1				7	
#	NT3X05AB	Digital Data Line Card	1	1				7	
	NT3X05AC	Digital Data Line Card	1	1				7	
#	NT3X08AA	Coin Detection Circuit	-	1				15	an
#	NT3X08AB	Coin Detection Circuit	-	1				15	an
	NT3X09AA	Remote Metallic Access	1	1				11.5	aw,a2
	NT3X09BA	8X8 Metallic Test Access CP	1	1				11.5	a2
#	NT3X67AA	6 Port Conference Circuit	6	3				7.5	n
#	NT3X67BA	6 Party Conf Ckt (A-Law)	6	3				7.5	n
#	NT3X67BB	6 Party Conf Ckt (A-Law)	6	3				7.5	n
	NT3X68AA	TONE GEN: PRMT/PST/CONF	4	2				3	ad,a3
	NT3X68AB	TONE GEN: DTMF Tone	4	2				3	ad,a3
	NT3X68AC	TONE GEN: CALL WAITING	4	2				3	l,ad,a3
	NT3X68BA	TONE GEN: PRMT/PST/CONF	4	2				3	ad.a3
	NT3X68BB	TONE GEN: DTMF Tone	4	2				3	ad,a3
	NT3X68BC	TONE GEN: CALL WAITING	4	2				3	l,ad,a3
#	NT3X82AA	OAS Dead SYS w Unique AUD	1	2	15			9	v,ai
#	NT3X82AC	OAS Dead SYS w Unique AUD	1	2	15			9	v,ai
#	NT3X82AB	OAS Dead SYS w Common AUD	1	1				4	ai
#	NT3X82AD	OAS Dead SYS w Common AUD	1	1				4	ai
#	NT3X83AA	OAS Alarm Transfer	1	1				13	ai,at
#	NT3X84AA	OAS Alarm Sending	1	1				2	ai,at
#	NT3X85AA	OAS Alarm Grouping	1	1				5	
	NT3X85AB	OAS Alarm Grouping	1	1				5	
#	NT4X23AA	DTU BERT Unit CP	2	1				10	a14
#	NT4X45AA	EDTU Enhanced Dig. Test Unit	4	2	15			10.8	a23

TABLE A-2 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
CIRCUIT CHARACTERISTICS

	PEC	CIRCUIT TYPE	BAL NET	NO CKT	NO SLT	LST SLT	PRD CRD	PWR DIS	RULE
	NT4X97AA	MTU Controller	2	1			7RE	9	t,as,a3,at
#	NT4X98BA	MTU Analog (International)	-	1	15		7LO	15	t,as,q, a3,at
	NT4X98BB	MTU Analog (International)	-	1	15		11LO	15	t,as,q, a3,at
	NT4X98BC	MTU Analog (International)	-	1	15		11LO	15	t,as,q, a3,at
	NT5X29AA	CCIS CONT CKET TONE DET/GEN	16	8	07			3.5	ap
	NT5X29AC	CTS TONE DET DTMF TONE GEN	16	8	07			3.5	ap
	NT5X29BA	A-Law ATD Tone Generator	16	8	07			3.5	ap

TABLE A-2 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
CIRCUIT CHARACTERISTICS

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X90AA	MD	NT2X90AD
NT2X90AB	MD	NT2X90AD
NT2X90AC	MD	NT2X90AD
NT5X04AA	MD	NT5X04AB
NT1X00AA	MD	NT1X00AB
NT1X00AB	MD	NT1X80AA
NT1X00AC	MD	NT1X00AD
NT1X00AD	MD	NT1X80AA
NT1X00AE	MD	NT1X80AA
NT1X00AF	MD	NT1X80AA
NT1X00AG	MD	NT1X80AA
NT1X00AH	MD	NT1X80AA
NT1X00KA	MD	NT1X80AA
NT1X31AA	MD	NT3X67AA
NT1X75AA	MD	NT1X80AA
NT1X75BA	MD	NT1X80AA
NT1X75DA	MD	NT1X80AA
NT1X76AA	MD	NT1X80AA
NT1X76AB	MD	NT1X80AA
NT1X76AE	MD	NT1X80AA
NT1X76AF	MD	NT1X80AA

PEC	RATING	REPLACED BY PEC
NT1X76AG	MD	NT1X80AA
NT1X76AH	MD	NT1X80AA
NT1X76AJ	MD	NT1X80AA
NT1X76AK	MD	NT1X80AA
NT1X76AM	MD	NT1X80AA
NT1X76AP	MD	NT1X80AA
NT1X76AQ	MD	NT1X80AA
NT1X76AR	MD	NT1X80AA
NT1X76AS	MD	NT1X80AA
NT1X76AT	MD	NT1X80AA
NT1X76AU	MD	NT1X80AA
NT1X76AV	MD	NT1X80AA
NT1X76AW	MD	NT1X80AA
NT1X76BA	MD	NT1X80AA
NT1X76BF	MD	NT1X80AA
NT1X76BG	MD	NT1X80AA
NT1X76BH	MD	NT1X80AA
NT1X76BJ	MD	NT1X80AA
NT1X76BK	MD	NT1X80AA
NT1X76BP	MD	NT1X80AA
NT1X76BQ	MD	NT1X80AA
NT1X76BR	MD	NT1X80AA
NT1X76BS	MD	NT1X80AA
NT1X76BT	MD	NT1X80AA
NT1X76BU	MD	NT1X80AA
NT1X76BV	MD	NT1X80AA
NT1X76BW	MD	NT1X80AA
NT1X76CA	MD	NT1X80AA
NT1X76GA	MD	NT1X80AA
NT1X76GB	MD	NT1X80AA
NT1X76GC	MD	NT1X80AA
NT1X76GE	MD	NT1X80AA
NT1X76GF	MD	NT1X80AA
NT1X76GG	MD	NT1X80AA
NT1X76GH	MD	NT1X80AA
NT1X76GJ	MD	NT1X80AA
NT1X76GK	MD	NT1X80AA
NT1X76GL	MD	NT1X80AA
NT1X76GM	MD	NT1X80AA
NT1X76HC	MD	NT1X80AA
NT1X76HD	MD	NT1X80AA
NT1X76JA	MD	NT1X80AA
NT1X76JB	MD	NT1X80AA
NT1X77AA	MD	NT1X80AA
NT1X79AA	MD	NT1X80AA
NT2X10AC	STD	NT4X98BB(int’l)

PEC	RATING	REPLACED BY PEC
		NT2X10BA(US, CAN)
NT2X11AC	MD	NT4X97AA(int'l)
		NT2X11BA(US, CAN)
NT2X11AD	STD	NT4X97AA(int'l)
		NT2X11BA(US, CAN)
NT2X47AC	MD	NT2X47AD
NT2X56AA	STD	NT2X56AB
NT2X78AA	MD	QPP601E
		Transmission prod.
NT3X05AA	MD	NT3X05AC
NT3X05AB	MD	NT3X05AC
NT3X08AA	MD	NT3X08AB
NT3X08AB	STD	
NT3X67AA	MD	NT1X81AA
NT3X67BA	MD	NT3X67BB
NT3X67BB	MD	NT1X81AA
NT4X23AA	STD	
NT4X98BA	MD	NT4X98BB
NT3X85AA	STD	
NT4X45AA	DEV	Check availability
		before ordering
NT4X23AA	STD	2 rep by NT4X45AA
NT1X90AA	STD	4 rep by NT4X45AA
NT2X47AC/AD	STD	4 rep by NT4X45AA
NT2X96AA	STD	4 rep by NT4X45AA
NT2X56AB	STD	4 rep by NT4X45AA
NT1X29AA	MD	No Replacement
NT2X48AA	MD	NT2X48BA
NT2X50AB	MD	NT3X09BA
NT3X33AA	MD	No Replacement
NT3X82AA	MD	NT3X82AF
NT3X82AB	MD	NT3X82AG
NT4X65AA	MD	NT4X65AB
NT4X65AB	MD	No Replacement
NT5X25AA	MD	NT6X50AA
NT2X46AB	MD	NT3X09BA
NT2X72BB	MD	No Replacement
NT2X95BB	MD	No Replacement
NT2X57AB	MD	No Replacement
NT3X82AC	MD	No Replacement
NT3X82AD	MD	No Replacement
NT3X82AE	MD	No Replacement
NT3X83AA	MD	No Replacement
NT3X83AB	MD	No Replacement
NT3X84AA	MD	No Replacement
NT3X85AA	MD	No Replacement

PEC	RATING	REPLACED BY PEC
NT2X55AA	MD	No Replacement
NT2X67AA	MD	No Replacement
NT2X10AB	MD	No Replacement
NT2X11AA	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.

	PEC	TM2	TM4	TM8	TM8 (T8A)	ATM T8A	MTM -AA	MTM -AC /CA /AN /AL	MTM -AG	MTM -AK /CB /AM	OAU	RSM	RULE
	NT1X54AA		*	*			*	*	*	*			ac
	NT2X65AA			*		*							
	NT2X66AA	*	*	*									
	NT2X72AA			*		*							af
	NT2X72AB			*		*							
	NT2X72AC			*		*							
#	NT2X78AA		*	*		*							
	NT2X81AA			*									
	NT2X81AB			*									
	NT2X82AA	*	*	*									
	NT2X83AA	*	*	*									
	NT2X85AA	*	*	*									
	NT2X86AA	*	*	*									
	NT2X88AA			*	*	*							af
	NT2X90AA			*									h,ag
	NT2X90AB			*								*	ag
	NT2X90AC			*								*	
	NT2X90AD			*								*	
	NT2X92AA	*	*	*									
	NT2X95AA	*	*	*									
	NT2X98AA		*	*									
	NT3X04AA			*									
	NT3X06AA		*	*									
	NT3X07AA			*									
	NT3X91AA			*									a21
	NT5X03AA					*							
	NT5X04AA					*							
	NT5X04AB					*							
	NT5X06AA					*							
	NT5X25AA				*								
	NT5X30AA	*	*	*		*	*						

TABLE A-3
TRUNK MODULE PROVISIONABLE CARDS
METALLIC TRUNKS - VALID MODULE TYPES

	PEC	RMM	IMTM (-AT)	IMTM (-AU)	ITM8	IT8A	RULE
	NT1X54AA		*	*	*		
	NT2X65AA				*		
	NT2X66AA				*		
	NT2X71AA		*	*			
	NT2X72AA				*		
	NT2X72AB				*		
	NT2X72AC				*		
	NT2X72BA				*		
	NT2X72BB				*		
#	NT2X78AA				*		
	NT2X81AA				*		
	NT2X81AB				*		
	NT2X81BA				*		
	NT2X82AA				*		
	NT2X83AA				*		
	NT2X84BA				*		
	NT2X85AA				*		
	NT2X86AA				*		
	NT2X88AA				*		
	NT2X90AA				*		
	NT2X90AB	*			*		b,ax
	NT2X90AC	*	*		*		b,ax
	NT2X90AD	*					b,ax
	NT2X92AA				*		
	NT2X95AA				*		
	NT2X95BA				*		
	NT2X95BB				*		
	NT2X98AA				*		
	NT3X04AA	*			*		
	NT3X07AA				*		
	NT3X91AA				*		a21
	NT5X03AA					*	
	NT5X04AA					*	
	NT5X04AB					*	
	NT5X06AA					*	
	NT5X30AA		*		*		
	NT5X30BA		*		*		

TABLE A-3 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
METALLIC TRUNKS
VALID MODULE TYPES

PEC	TM2	TM4	TM8	TM8 (T8A)	ATM	T8A	MTM -AA /CA /AN /AL	MTM -AC	MTM -AG	MTM -AK /CB /AM	OAU	RSM	RULE
NT0X10AA							*	*			*	*	ag,ah, ak,a22
NT1X00AA							*	*					
NT1X00AB							*	*					
NT1X00AC							*	*					
NT1X00AD							*	*					
NT1X00AE							*	*					
NT1X00AF							*	*					
NT1X00AG							*	*					
NT1X00AH							*	*					
NT1X31AA	*	*	*		*	*	*	*	*	*			aj
NT1X75AA									*	*			
NT1X75BA									*	*			
NT1X76AA									*	*			
NT1X76AB									*	*			
NT1X76AE									*	*			
NT1X76AF									*	*			
NT1X76AG									*	*			
NT1X76AH									*	*			
NT1X76HC									*	*			
NT1X76AJ									*	*			
NT1X76AK									*	*			
NT1X76AM									*	*			
NT1X76AP									*	*			
NT1X76AQ									*	*			
NT1X76AR									*	*			
NT1X76AS									*	*			
NT1X76AT									*	*			
NT1X76AU									*	*			
NT1X76AV									*	*			
NT1X76AW									*	*			
NT1X76BA									*	*			
NT1X76BF									*	*			
NT1X76BG									*	*			
NT1X76BH									*	*			
NT1X76HD									*	*			

TABLE A-4
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
VALID MODULE TYPES

PEC	TM2	TM4	TM8 (T8A)	ATM T8A	MTM -AA	MTM -AC /CA /AN /AL	MTM -AG	MTM -AK /CB /AM	OAU	RSM	RULE
NT1X76BJ							*	*			
NT1X76BK							*	*			
NT1X76BP							*	*			
NT1X76BQ							*	*			
NT1X76BR							*	*			
NT1X76BS							*	*			
NT1X76BT							*	*			
NT1X76BU							*	*			
NT1X76BV							*	*			
NT1X76BW							*	*			
NT1X76CA							*	*			
NT1X76GA							*	*			
NT1X76GB							*	*			
NT1X76GC							*	*			
NT1X76GE							*	*			
NT1X76GF							*	*			
NT1X76GG							*	*			
NT1X76GH							*	*			
NT1X76GJ							*	*			
NT1X76GK							*	*			
NT1X76GL							*	*			
NT1X76GM							*	*			
NT1X76JA							*	*			
NT1X76JB							*	*			
NT1X77AA							*	*			
NT1X79AA							*	*			
NT1X80AA						*	*	*			
NT1X80BA						*	*	*			
NT1X81AA						*	*	*			
NT1X90AA					*	*	*	*			am
NT2X01AA						*					au
NT2X10AA						*	*	*		*	
NT2X10AB						*	*	*		*	
NT2X10BA						*	*	*			
NT2X11AA						*	*	*		*	
NT2X11AC						*	*	*		*	

TABLE A-4
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
VALID MODULE TYPES

PEC	TM2	TM4	TM8	TM8 (T8A)	ATM	T8A	MTM -AA	MTM -AC /CA /AN /AL	MTM -AG	MTM -AK /CB /AM	OAU	RSM	RULE
NT2X11AD								*	*	*		*	
NT2X11BA								*	*	*			
NT2X43AB							*	*					ak
NT2X47AA								*					
NT2X47AB								*					
NT2X47AC								*					
NT2X47AD								*					
NT2X48AA	*	*	*		*	*	*	*	*	*			aj
NT2X48AB	*	*	*		*	*	*	*	*	*		*	al,aj
NT2X48BA	*	*	*		*	*	*	*	*	*		*	al,aj
NT2X48BB	*	*	*		*	*	*	*	*	*		*	al,aj
NT2X50AA								*	*	*			
NT2X50AB								*	*	*		*	
NT2X55AA							*	*	*	*		*	ag
NT2X56AA								*					
NT2X56AB								*					
NT2X57AA							*	*				*	ag,ah, ak
NT2X57AB								*					ag,ak
NT2X71AA								*	*	*			ac
NT2X75AA								*	*	*			aj
NT2X96AA							*	*	*	*			am
NT3X02AA								*					
NT3X02BA								*					
NT3X03AA								*					
NT3X05AA								*	*	*			am
NT3X05AB								*					am
NT3X05AC								*					am
NT3X08AA								*	*	*			
NT3X08AB								*	*	*			
NT3X09AA													aw,a2
NT3X09BA								*				*	aw,a2, ag
NT3X67AA								*	*	*			

TABLE A-4 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
VALID MODULE TYPES

PEC	TM2	TM4	TM8 (T8A)	TM8 ATM T8A	MTM -AA	MTM -AC /CA /AN /AL	MTM -AG	MTM -AK /CB /AM	OAU	RSM	RULE
NT3X68AA						*	*	*			
NT3X68AB						*	*	*			
NT3X68AC						*	*	*			
NT3X82AA						*	*	*			ah
NT3X82AC						*	*	*			ah
NT3X82AB						*	*	*			ah
NT3X82AD						*	*	*			ah
NT3X83AA						*	*	*			ag,ah
NT3X84AA						*	*	*			ag,ah
NT3X85AA						*	*	*			ah
NT4X23AA					*	*	*	*			
NT4X45AA					*	*	*	*			
NT5X29AA						*					
NT5X29AB						*					
NT5X29AC						*					

TABLE A-4 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
VALID MODULE TYPES

PEC	IMTM -AT /-BC	IMTM -AU /-BD	ITM8	RMM	RULE
NT0X10AA	*			*	ag,ah,ak,a22
NT0X50AC	*	*			
NT1X00AB	*				
NT1X00AE	*	*			
NT1X00AF	*				
NT1X00KA	*				
NT1X31AA			*		
NT1X54AA	*	*			
NT1X75DA		*			
NT1X76AA		*			
NT1X77AA		*			
NT1X79AA		*			
NT1X80AA	*	*			
NT1X80BA	*	*			
NT1X81AA	*	*			
NT1X90BA	*	*			am
NT2X10AA	*	*		*	a3
NT2X10AB	*	*		*	a3
NT2X10AC				*	a3
NT2X10BA				*	
NT2X11AA	*	*		*	a3
NT2X11AC				*	a3
NT2X11AD				*	a3
NT2X11BA				*	
NT2X47BA	*	*			
NT2X47AB	*			*	
NT2X48AA			*	*	al,aj
NT2X48AB			*	*	al,aj
NT2X48BA			*	*	al,aj
NT2X48BB			*	*	al,aj
NT2X48CA	*	*	*	*	a7
NT2X48CB	*	*	*	*	a7
NT2X48CC	*	*	*	*	a7
NT2X50AB		*			
NT2X55AA		*			
NT2X56BA	*				

TABLE A-4 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
VALID MODULE TYPES

PEC	IMTM -AT /-BC	IMTM -AU /-BD	ITM8	RMM	RULE
NT2X57AA	*			*	
NT2X57AB				*	ag,ah,ak
NT2X71AA	*	*			
NT2X75AA		*			
NT2X75BA	*	*			
NT2X96BA	*	*			am
NT3X02AA	*				
NT3X02BA	*				
NT3X03AA	*				
NT3X09AA				*	aw,a2,ag
NT3X09BA	*	*		*	a2,ag,aw
NT3X67BA	*				
NT3X67BB	*	*			
NT3X68BA	*	*			
NT3X68BB	*	*			
NT3X68BC	*	*			
NT3X82AA	*				
NT3X82AC	*				
NT3X82AB	*				
NT3X82AD	*				
NT3X83AA	*				
NT3X84AA	*				
NT3X85AA	*				
NT4X97AA	*	*		*	
NT4X98BB	*	*		*	a7
NT4X98BC	*	*		*	a7
NT5X29AC	*				
NT5X29BA	*				

TABLE A-4 (Continued)
TRUNK MODULE PROVISIONABLE CARDS
TEST, SERVICE, SCANNER AND SIGNAL DISTRIBUTOR CIRCUITS
VALID MODULE TYPES

NOTES:

1) One Balance Network plug-in (daughter board) must be provisioned for each 2-wire trunk circuit on each card (see BAL NET field) as follows:

   a) For H88 loaded cable select Precision Balance Network - H88, NT2X80AA.

   b) For other loaded or non-loaded arrangements select Compromise Balance Network, NT2X77 as follows:

DISTANCES UP TO	TRUNK IMPEDANCE 600 OHM	900 OHM
750 feet	NT2X77AD	NT2X77AC
9000 feet	NT2X77AB	NT2X77AA

   c) For International applications, select the following Balanced Networks:

PEC	DESCRIPTION	BAL NET
NT2X81BA	2W DCS5A Tie Trunk	NT2X77BA
NT2X95BA	Direct Dial Inward Trunk	
NT2X95BB	JUSMAG 2W 600 ohm DDO Trunk	

2) Number of circuits (NO. CKT), number of slots (NO. SLT) per card and highest assignable slot on MTM if other than slot 16 (LST SLT):

   a) By definition, the number of circuits in a given card is related to the number of trunk enable lines utilized when the card is installed. However, while this facilitates internal shelf function, it does not always reflect the card circuit capacity from the standpoint of assignable hardware. Noted exceptions are cards which function in pairs. Entries under CKT/CARD represent assignable circuits and are consistent with the treat-

ment in S/W translations. Exceptions are stated in the notes and a '-' indicates no assignable circuit.

b) Unless noted, each card occupies one physical slot on its assigned shelf and in spare card storage.

c) The MTM backplane is designed to access up to 30 enable signals (circuits). Each provisionable MTM CP slots has access to these 30 enable signals per the following chart:

SLOT	ENABLE/CIRCUIT	ENABLE/CIRCUIT ACCESS	TOTAL ENABLES
05	00	00-29	30
06	02	02-29	28
07	04	04-29	26
08	06	06-13	8
09	08	08-15	8
10	10	10-17	8
11	12	12-19	8
12	14	14-21	8
13	16	16-23	8
14	18	18-25	8
15	20	20-27	8
16	22	22-29	8

The ENABLE/CIRCUIT column represents the initial circuit the slot accesses.

The ENABLE/CIRCUIT ACCESS column represents the entire range of enable/circuits the slot accesses.

The TOTAL ENABLES column represents the total number of enable/circuits the slot accesses.

d) The enable signals on the backplane are arranged to allow 2-circuit cards to be placed in adjacent slots, 4-circuit cards to be placed in alternating slots, and 8-circuit cards to be placed in every fourth slot, etc. CPs that use less than the available enables for that slot will access the lowest available enables.

Certain card types, as noted, do not violate the reserved slot requirements of multi-circuit cards. This is usually true of one member of a functional pair.

e) Slots 05, 06 and 07 are the only slots that have access to more than eight enable signals, therefore, cards such as the NT5X29 that utilize 16 circuits may only be

assigned to slots 05, 06 or 07. If the NT5X29 is assigned to slot 05, the next available slot is 13. If the NT5X29 is assigned to slot 06, the next available slot is 14. The NT5X29 can not be provisioned to use less than 16 circuits when it is located in slots 05-07 because it will always use the 16 enables if it has access to them. It is possible, however, to assign the NT5X29 to a card slot that accesses 8 enable signals allowing only 8 circuits on the NT5X29 to be accessed. This would allow more of the MTM to be used for other cards. When an 8 slot 16 circuit card is located in slot 05 then slots 13-16 are still available for other cards if enough enables are available. Remember that the MTM PM load should be verified prior to mixing NT5X29's with any other CP.

3) Functional pairs or groups (PRD CRD) are discussed in note t. Table entries are as follows:

1st character - pair or group number per note t

2nd character - left/right orientation

3rd character - odd/even slot requirement if required

4) Maximum power dissipation (PWR DIS) column provides the maximum power consumption (in watts) of the cards which mount on MTM and OAU shelves. The total 48-volt power consumption of the provisionable packs in the MTM must not exceed 110 watts.

Normally, all circuit packs requiring -48V SP are mounted in shelf positions 51 or 65. For TME frame NT0X46AB in the field, Product Change Kit NT0X82XA extends -48V SP to positions 32, 18 and 04. It also modifies the way the -48V SP is delivered to shelf position 51 from the FSP (i.e. wiring information NT0X46WC connects NT7X3746 Cable Assembly to terminal block TB3 pin 12B of the FSP). Hence, when -48V SP is required on shelf positions 51, 32, 18 and 04, provide one PC Kit NT0X82XA.

For initial applications (initial and extension jobs), when frame type is "TME" and only one power source (A or B) is required, provide one FSP Strapping Information NT0X82WA and Cable Assembly NT0X8211. Along with the modified FSP, this hardware always provides the -48V SP to MTM/IMTM shelves in positions 65, 51, 32, 18 and 04.

For initial applications (initial and extension jobs), when frame type is "DCE" and two power sources (A and B) are required, provide one FSP Strapping Information NT0X82WB, one Cable Assembly NT0X95CL and one Cable Assembly NT7X3406. Along with the modified FSP, this hardware always provides the -48V SP to MTM/IMTM shelves in position 65, 51, 32, 18 and 04.

-48V SP can be provided to a maximum of any four of the five positions.

The following CPs require -48V SP power:

CIRCUIT PACK	-48V SP
NT1X80AA	*
NT1X81AA	*
NT2X10BA NT2X11BA	*
NT3X83AA	*
NT3X84AA	*
NT4X98 NT4X97	*

5) Module Types Overview (refer to appropriate MS sections for details):

TABLE A HEADING	FUNC ABBR	SHELF PEC	MS DOCUMENT	DESCRIPTION	NOTE
TM2	TM2	NT2X52AA	MS2X52AA	Rated MD	D
		NT2X52AE	MS2X52AE	Rated MD	
		NT2X52AM	MS2X52AM	Rated MD	
TM4	TM4	NT2X52AB	MS2X52AB	Rated MD	D
		NT2X52AF	MS2X52AF	Rated MD	
		NT2X52AN	MS2X52AN	Rated MD	
TM8	TM8	NT2X52AC	MS2X52AC	Rated MD	D
		NT2X52AG	MS2X52AG	Rated MD	A
		NT2X52AP	MS2X52AP	Rated MD	A
T8A(TM8)	T8A	NT2X52AG	MS2X52AG	Rated MD	A
		NT2X52AP	MS2X52AP	Rated MD	A
T8A	T8A	NT2X52AD	MS2X52AD	Rated MD	
		NT2X52AR	MS2X52AR	DMS-300 Gateway offices only (Canadian applications)	A
ITM8	ITM8	NT2X52BB	MS2X52BB	International TM8	
IT8A	IT8A	NT2X52CC	MS2X52CB	DMS-300 Int’l Gateway office	
MTM(-AA)	MTM	NT2X58AA	MS2X58AA	Rated MD, rep by NT2X58AC	D
MTM(-AC)	MTM	NT2X58AC	MS2X58AC	Replaced by NT2X58CA	B
MTM(-AG)	MTM	NT2X58AG	MS2X58AG	Required for DRA Systems Replaced by NT2X58AK	B
MTM(-AK)	MTM	NT2X58AK	MS2X58AK	Rated MD	B
MTM(-AN)	MTM	NT2X58AN	MS2X58AN	Rated MD	
MTM(-CA)	MTM	NT2X58CA	MS2X58CA	Standard MTM, replaced by NT2X58AL (Cdn. appl.)	
MTM(-AL)	MTM	NT2X58AL	MS2X58AL	Rated MD	
MTM(-CB)	MTM	NT2X58CB	MS2X58CB	Required for DRA Systems, replaced by NT2X58AM (Cdn. appl.)	
MTM(-AM)	MTM	NT2X58AM	MS2X58AM	Rated MD	
IMTM(-AT)	IMTM	NT2X58AT	MS2X58AT	Int’l Maintenance Trunk Module	
IMTM(-AU)	IMTM	NT2X58AU	MS2X58AU	Rated MD	
IMTM(-BC)	IMTM	NT2X58BC	MS2X58BC	Int’l Maintenance Trunk Module	
IMTM(-BD)	IMTM	NT2X58BD	MS2X58BD	Rated MD	
OAU	OAU	NT2X58AB	MS2X58AB	Rated MD	
OAU	OAU	NT2X58AD	MS2X58AD	Retired product	
		NT2X58AF	MS2X58AF	Retired product	
RMM	RMM	NT6X1301	MS6X10AC MS6X14AA MS6X14CA MS8X01AA	Standard RMM	C
RSM	RSM	NT2X58AE	MS2X58AE	Rated MD	B
		NT2X58CF	MS2X58CF	Rated MD	B

NOTES

A. TM8, T8A(TM8) and ATM are identical hardware types; they differ only in the functions supported by virtue of different S/W loads and execs.

Some cards may not be valid on all types or may have different applications on some.

B. Cards with leads which cable out of the building are restricted to even-numbered slots on these shelves. Odd slots must not be used due to an increased risk of voltage breakdown between shelf backplane traces (see also Note ag.).

C. RMM shelf assembly NT6X1301 is not equipped with any circuit packs. To create a functional RMM, the shelf assembly must be equipped with RMM Common CP fill NT6X13AB.

D. An office equipped with any of the hardware types, NT2X52AA, NT2X52AB, NT2X52AC, NT2X58AA, and in any quantity is restricted as follows:

a) Cards with Type ID circuits shall not mount on any MTM, and

b) Cards without Type ID circuits shall not mount on any TM.

Problem circuit packs are identified in the rules

6) Unless established to the contrary below or in the notes, cards can be equipped only on those module types marked with an asterisk (*).

7) An asterisk (*) under T8A indicates that the card type is used on this TM in the Teleglobe DMS-300 office. Other card types may also be valid on this shelf.

8) The functional characteristics of a TME, CTME, ISME or CISM module, e.g. an MTM, is determined, to some extent, by the related PM (Peripheral Module) software load. The PM load used depends upon the module function and the type of switch in which the PM resides. The following table correlates the PM load name with switch type and PM type.

PM TYPE	DMS 100 /IBN	DMS 200 /TOPS	DMS 250	DMS 300 GATEWAY	MTX CELLULAR	SL 100 /IBN
TM2,4,8	BTMKA02	BTMKA02	BTMKA02	BTMKA02	BTMKA02	BTMKA02
T8A	KTMA02	N/A	N/A	TTMNA01	N/A	KTMA02
PTM	N/A	N/A	RMTMKA01	N/A	N/A	N/A
STM	N/A	N/A	RMTMKA01 MTMKA02	N/A	N/A	N/A
MTM	MTMKA02	MTMKA02	RMTMKA01 MTMKA02	MTMKA02	MTMKA02	MTMKA02
OAU	MTMKA02	MTMKA02	N/A	N/A	MTMKA02	N/A
TAN	MTMKA02	MTMKA02	MTMKA02	MTMKA02	MTMKA02	MTMKA02

Table 1, PM Loads - PM Type to Office Type Cross Reference

The information given in the above table is subject to change upon release of new PM software loads. Refer to the latest Peripheral Module Release Document for PM load information.

9) The functional characteristics of a TME, CTME, ISME or CISM PM is determined, overall, by the PM load applied. At load time, a PM load exec further defines the functional characteristics of the host PM. The characteristics, defined by the PM load exec, impose configuration restrictions on the service circuits which reside in the host PM. The following table correlates PM type with PM load and PM load Exec name. In the 'Comment' column there is description of the types of service circuit which may be used with the PM type associated PM load/Exec line up. This table is applicable to shelf modules and their service circuit CPs. The table is not applicable to the CPs which operate as PMs, e.g. EDRAM and CTM CPs.

PM TYPE	HARDWARE REQUIRED	PM LOAD	EXEC LINE UP	COMMENT
TM2		BTMKA02	TM2EX	2 WIRE POTS TRUNK
TM4		BTMKA02	TM4EX	2/4 WIRE POTS TRUNK
TM8	NT ONLY	FSTMDA02 TSTMKA02	TM8EX	FEATURE SIMULATOR LOAD
TM8		BTMKA02	TM8EX	2,4,8 WIRE ANALOG TRUNKS
MTM		MTMKA02	MTMEX or MTMDT *	BASIC MTM+TTT+LTU+POTS RECEIVERS+SD,SC+DEAD SYSTEM ALM+DRAM+EDTU
IMTM		MTMKA02	IMTMEX or IMTMDT *	BASIC MTM+TTT+LTU+POTS RECEIVERS+SD,SC+DEAD SYSTEM ALM+DRAM+EDTU
MTM		MTMKA02	DDLCEX	BASIC MTM+DDLC
MTM		MTMKA02	OAUEX	SD,SC POINTS & DEAD SYS ALM
MTM		MTMKA02	AMTMEX	BASIC MTM+DTMF SENDER+ SV06S-V(5X29AB)+3X68AA

Continued..

PM TYPE	HARDWARE REQUIRED	PM LOAD	EXEC LINE UP	COMMENT
MTM	5X29AC 0X70AC	RMTMKA01	AMTMATD	BASIC MTM+RECEIVERS(MF, DTMF & ATD
MTM	4X65AB	RMTMKA01	AMTMTTT	MAINTENANCE CCTS,DRAM (CANADIAN MARKET ONLY)
MTM DMS 250	0X70AC	RMTMKA01	MTM250	RECEIVERS (MF,DTMF & ACD)┼AIOD FEATURES
MTM DMS 250	0X70AC	MTMKA02	MTMTTT	MAINTENANCE CCTS,DRAM
PTM	0X70AC	RMTMKA01	TM250P	MTC.& SERVICE CCT FOR PACKAGED SWITCHES
STM	0X70AC	RMTMKA01	MTM250 MTMTTT MTMEX	RECEIVERS(MF,DTMF,ACD)+ AIOD FEATURE MAINTENANCE CCTS MTX CCTS
TAN		MTMKA02	TANEX	TEST ACCESS NTWK WITH METALLIC TEST PATH FOR TESTING SATELLITE TRKS
OAU		MTMKA02	OAUEX	SD,SC POINTS & DEAD SYS ALARMS

Table 2, EXEC Line up - PM Load and Type

The information given in the above table is subject to change upon release of new PM software loads. Refer to the latest Peripheral Module Release Document for PM load information.

CP Functionality

The following chart is further explaination of the comments in Table 2, relating CP PEC to Function. This chart will help determine which CPs are allowed with each PM Load on a shelf. The chart is incomplete, and will be updated with future design input.

The following CPs are defined by these TYPES;
1. 2 Wire Pots Trunk
2. 4 Wire Pots Trunk
3. 8 Wire Analog Trunk
4. TTU
5. TTT
6. LTU
7. Pots Receivers
8. SD Points
9. SC Points
10. Dead System Alarm
11. Reserved Future Use
12. DTMF Sender
13. SC06S-V
14. MF Receivers
15. DTMF Receivers
16. ATD
17. AIOD Features
18. MTX CCTS
19. Digital Data Line Card (DDLC)

NT PEC	TYPE																		
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
	1																		
0X10									XX										
1X00																			
1X54																			
1X90					XX														
2X01																	XX		
2X10						XX													
2X11						XX													
2X47				XX															
2X48														XX	XX				
2X56				XX															
2X57								XX											
2X65																			
2X66																			
2X71					XX														
2X72		XX																	

TABLE A
Active Equipment EMA14-01-000
Table A - Trunk Module Provisionable Cards Page 33

2X75																			
2X81	XX																		
2X82	XX																		
2X83	XX																		
2X84	XX																		
2X85																			
2X86																			
2X88		XX																	
2X90																			
2X92																			
2X95	XX																		
2X96					XX														
2X98	XX																		
3X02																			
3X03																			
3X04																			
3X05																			XX
3X06	XX																		
3X07	XX																		
3X08																			
3X09																			
3X68																			
3X82																			
3X83																			
3X84																			
3X85																			
3X91																			
4X23																			
4X45																			
4X97																			
4X98																			
5X03																			
5X04																			
5X06																			
5X25																			
5X29																XX			
5X30																			
FX44																			
FX45																			

RULES:

a Specifically required for use as a jack-ended trunk in DMS-100 and DMS-100/200 offices. Can also be used for this function in other DMS-100 Family offices.

b One assignable circuit utilizing 2 TLC and enables.

c Each card contains one Talk circuit (on TLC1) and one Key circuit (on TLC0). Provide one card per position. Talk circuit must be provisioned with a compromise Balance Network plug-in, (daughter board), types NT2X77AB or AD.

d DMS-100/200 Common Base Software supports all card functions other than echo suppressor control.

f Required for DMS-300 only. These cards are equipped for metallic access by the Test Access Network and therefore must be provisioned on T8A and IT8A (NT2X52AD/AG/AP/AR and CC respectively) shelves only.

g No restriction on number of cards per TM; however, a maximum of 4 cards per TM can be assigned in software as 101 Test Lines (i.e. terminating only).

h Equip on NT2X52AG/AP shelves only. Do not equip on NT2X52AC.

i Two circuits per card, each circuit having seven Scanner or Signal Distributor points depending on the card type.

j The following scanner functional modes are selectable by means of card mounted miniature switches:

1. loop detector

2. ground detector

3. battery detector

k One physical circuit per card which can be connected to either or both of two speech channels; hence two circuits/card.

l Time Switch Broadcasting (TSB) employed to distribute tones or announcements simultaneously to multiple users. Maximum one TSB card per shelf. Shelves containing TSB cards should be connected to ports on different Network Sub Groups.

m Required for DMS-300 only.

n Two 3-port circuits. Since each card utilizes 6 enables two adjacent slots on the right must be left vacant on the shelf. These two slots should be filled with Filler Face Plates (NT0X50AC). However, cards may be mounted in slot 16 of MTM. NT3X67 can be used as one 6-port circuit or as two 3-port circuits.

o Assignment is restricted to either one NT2X48__ or two NT1X31AA cards per TM. Rule does not apply to MTM. The NT1X31AA is rated MD, replaced by NT3X67AA.

p 1) Card mounted switches permit this card to be configured as an 8, 16, 24 or 30 circuit interface. The number of circuits and number of slots shown in Table A-2 reflect the maximum switch setting.

Card should be restricted to slot 05 on the MTM.

Each DRA System consists of a group of cards which includes one NT1X75__ and up to eight memory cards NT1X76 and NT1X77AA. Cards occupy a continuous group of MTM slots with the NT1X75__ in the left-most slot.

If the NT1X75__ card is configured as 8 or 16 channels, card slots not reserved for DRA can be assigned to other cards.

The following chart is for mounting other cards in a DRA:

CP	Card Slots Occupied	Card Slots Available
NT1X75__.08	05 to 08	09 to 16
NT1X75__.16	05 to 12	13 to 16
NT1X75__.24	05 to 16	none
NT1X75__.30	05 to 16	none

NT1X75__.08 - 08 circuit card

NT1X75__.16 - 16 circuit card

NT1X75__.24 - 24 circuit card

NT1X75__.30 - 30 circuit card

2) For new DRA applications, provide EDRAM card NT1X80AA or NT1X80BA.

q 1) Can be equipped in slots designated as reserved for multi-circuit cards. (see Note 2 d) above).

2) For new DRA applications, provide EDRAM card NT1X80AA or NT1X80BA.

r Maximum one card of each type per shelf depending on application.

s Maximum eight cards per shelf.

t These card types are provided in functional pairs (or groups) and must occupy continuous odd/even slots with specific left/right orientations as indicated below.

PAIR	PEC	SIDE	SLOT #	NOTE
1.	NT1X90__	LEFT	-	1,2,9
	NT2X96__	RIGHT	-	
2.	NT2X47AA/AB	LEFT	ODD	1,3,8
	NT2X56AA	RIGHT	EVEN	
3.	NT2X47AC/AD	LEFT	ODD	1,3,8
	NT2X56AB	RIGHT	EVEN	
4.	NT2X10AB/AC	LEFT	ODD	1,3,4,8
	NT2X11AA/AC/AD	RIGHT	EVEN	
5.	NT3X02AA/BA	LEFT	ODD	1,3,7,8
	NT3X03AA	RIGHT	EVEN	
6.	NT1X75__	LEFT	ODD	1,3,5,8
	NT1X76__	RIGHT	OTHER	
	NT1X77AA	RIGHT	OTHER	
	NT1X79AA	RIGHT	OTHER	
7.	NT4X97AA	RIGHT	EVEN	1,3,6,8
8.	NT2X47AB/BA	LEFT	ODD	1,3,6,8
	NT2X56BA	RIGHT	EVEN	
9.	NT1X90BA	LEFT	-	1,2,6,8
	NT2X96BA	RIGHT	-	
10.	NT2X10BA	LEFT	ODD	1,3,4,8,10
	NT2X11BA	RIGHT	EVEN	
11.	NT4X97AA	RIGHT	EVEN	1,3,4,6,8,10
	NT4X98BB/BC	LEFT	ODD	

NOTES:

1. Circuits per card shown only against the primary MTM I/F card of each pair or group (i.e. the card identified in translations).

2. Pair does not utilize the MTM Intercard Bus; therefore,

   - no specific slot requirement,
   - can be equipped on shelf NT2X58AA,
   - can be assigned to any slot pair on NT2X58AG or NT2X58AK/AM.

3. Not to be assigned on shelf NT2X58AA.

4. Restricted to slots 15 and 16 on shelf NT2X58AU and NT2X58AM.

5. See also Note p above. Can be assigned on shelf NT2X58AC (one pair per shelf) if for the ultimate office size each DRA system consists of the DRA Controller plus one memory card only.

6. Only for international application.

7. Physically NT3X02AA requires one slot, but electrically it requires two slots. However, NT3X03AA can physically mount right beside it.

8. Card pairs are interconnected via the Intercard Bus of the MTM shelf (not provided in NT2X58AA).

9. Minimum of two of each per office. Maximum of two of each per shelf.

10. Do not assign to the following shelf slots:
    IRMM NT6X13 - Slots 9, 10

u 1) In the DMS standalone office or host: Provide one NT2X10AB and one NT2X11 (LTU) for each MTA which directly connects LME (i.e. one for each Row 0 (or base) MTA). Assign to Horizontal 0 of each Row 0 MTA. Provide another per office to be multipled over all MTA in one Row. Assign to a vacant Horizontal and Row.

2) At the Remote Site: Provide a minimum of one LTU for each RLM site serving up to approximately 6,000 lines.

v Due to physical dimensions one adjacent slot to the right must be left vacant. Provide two slots for each card in spare card storage.

w By internal design this card derives the higher (odd) circuit number associated with any slot into which it is placed.

x One Transmission Test Unit (TTU) consists of one NT2X47__ and one NT2X56__. A minimum of two (2) TTUs per office, maximum of two TTUs per shelf must be installed only in paired card positions ((5,6), (7,8), (9,10), (11,12), (13,14), (15,16)) with NT2X56 occupying the even numbered position.

The TTU is required, in appropriate pairs subject to other notes, in all DMS-100 Family offices to provide for MF and Digitone receiver diagnostics.

For compatibility with Automatic Transmission Measuring and Signaling Testing Equipment (ATME-2) in International offices, the NT2X47AB Mu-law TTU Controller is to be provided in combination with the NT2X56BA A-Law Transmission Test Filter.

y Four circuits per card, therefore one adjacent slot to the right must be left vacant for each card assigned. Fitted with a double-width faceplate to enforce this requirement, the CPs NT2X48AA/AB/CA/CB fill two physical slots, whereas the CPs NT2X48BA/BB/CC fill one physical slot and are only fitted with a single-width faceplate.

When the Emergency Stand Alone (ESA) feature is required, the last card slot that the NT2X48__ can be assigned to is slot 13.

When the Emergency Stand Alone (ESA) feature is required, provide one NT2X48AB for each RLM Double Bay Frame in the RLM office.

For SuperNode office, no more than three (3) MF receiver (NT2X48xx) CPs may reside in an MTM Shelf.

z Two circuits one having 10 horizontal driver points and the other having 20 vertical driver points.

Provide one for every Metallic Test Access (MTA) unit NT2X46AA.

aa The following Signal Distributor functional modes are selectable by card mounted miniature switches for each circuit:

1) Normally open ground operation,
2) Normally closed ground operation,
3) Normally open loop operation,
4) Normally closed loop operation.

ab One physical circuit per card with two speech channel appearances (loop around). Treat as two circuits per card, each to be assigned to a separate trunk group.

ac Not to be equipped on MTM shelves in offices configured per Note 5) D above.

ad 1. One physical circuit per card which can be connected to any or all of four speech channels; hence four circuits per card.

2. For DMS-250 trunks on DCM, DTC or LTC using DTMF outpulsing, do not supply the DTMF Sender CP, NT3X68AB.

3. For the other DMS applications, as of BCS-16 (or later) in case of digital trunks outpulsing DTMF on DTC or LTC, do not supply the DTMF Sender CP, NT3X68AB.

4. The tones for the above situations will be outpulsed straight from the respective peripheral modules.

af In DMS-200 offices valid as a jack ended trunk when mounted on TM8 only.

ag When mounted on NT2X58AC, NT2X58AG, NT2X58AK, NT2X58AE, NT2X58AT, NT2X58BC, NT2X58CA, NT2X58CB, NT2X58AL or NT2X58AM and when leads are to be cabled out of the building, these cards must be located in even numbered card slots only due to a risk of voltage breakdown between backplane wiring associated with odd numbered positions.

ah Version II Office Alarm System (OAS):

Two MTM shall be identified as components of the Office Alarm System (OAS) referred to as primary and secondary alarm MTM.

These MTM shall be fed from different power feeds (A and B) and connect to different Network Modules (if only one NM, to different NSG). Both MTMs must be supplied with -48V SP.

The primary MTM shall be mounted in shelf position 51 immediately below the AXU. The secondary MTM shall be mounted on another frame in shelf position 65. When both the Alarm Cross Connect Shelf NT3X89AA/AB and the MTM are on or expected to be on the same frame, the MTM should be placed in position 51. If the NT3X89AA/AB is not required with the MTM, the MTM shall be placed in position 65.

These cards shall be equipped as follows:

PEC	MOUNT ON PRIMARY MTM	MOUNT ON SECONDARY MTM
NT3X82AA or NT3X82AB (1 per each MTM)	YES	YES
NT3X82AC or NT3X82AD (1 per MTM EAS)	YES	YES
NT3X83AA	YES	NO
NT3X84AA	YES	NO
NT3X85AA	SEE NOTE	
NT2X57AA (for basic OAS)	YES	NO
NT0X10AA (for basic OAS)	YES	NO
NT0X10AA (for RDB and Equip Rows)	SEE NOTE	

Note: Mount on primary or secondary or other MTM as required in that order of preference.

It is preferred that the primary MTM be provided with the majority of alarm CP and the critical scan points. The primary MTM must be equipped with an NT2X57AA, an NT0X10AA and either an NT3X83AA or an NT3X84AA.

In small offices (less than 12 equipment rows), the alarm circuits are interconnected via the DF. In large offices (12 or more equipment row), the interconnection is made via the NT3X89AA Alarm Crosspoint Shelf. Alarm systems range in size from two alarm CPs to a full alarm system, accommodating 40 equipment rows.

ai Do not mix the NT3X82AA/AC and the NT3X82AB/AD on the same MTM. When used in a small office, 20 Hz for NT0X61AB may be obtained from the 1A Key Set. In addition, provide one NT0X63__ Alarm Control & Display Panel (NT0X63AA or NT0X63AC) per customer requirements. NT0X63AA is ordered when NT3X82AA/AC is equipped;

NT0X63AC is ordered when NT3X82AB/AD is equipped. Refer to section EMA6-01-000 for further information on the Alarm Control & Display Panel.

NT3X83AA and NT3X84AA must be provided in even circuit pack positions. Do not equip these two cards on the same MTM. These cards require -48V SP.

aj Not to be equipped on TM shelves in offices configured per Note 5) D above.

ak Version I Office Alarm System (OAS):

For OAU Alarm Battery alarm and Dead System alarm functions, a group of MTM mounted circuits consisting of two scan points (on card NT0X10AA), four SD points (on card NT2X57AA), and one Office Alarm Card #3 (NT2X43AB) must be provided together on one MTM which is powered from a different feed from the OAU and connected to a different Network Module (or different NSG if only one NM). Remaining scan and SD points on these cards may be assigned to other functions. If office is equipped with the new OAU (NT2X58AF) then NT2X57AB replaces NT2X57AA in this note.

The Office Alarm Card #3 NT2X43AB is MD.

al Provide one card for each RLM furnished with the Emergency Stand Alone (ESA) feature. Assign only to slot 06 of the associated RSM. Note, these cards function only during ESA and do not serve normal remote office traffic.

am The DDLC card NT3X05AA cannot mount on an MTM which already houses TTT cards (i.e. NT1X90AA and NT2X96AA).

an The Coin Detection CP physically occupies one card slot on a MTM. The CDC will use eight time slots and therefore four consecutive card slots are required. A maximum of three NT3X08--circuit pack’s can be housed in any MTM (NT2X58AC/CA/AL) with placement being in card slots 05, 09 and 13. If desired, the CDC card can be placed on a MTM with other cards provided the next three slots following the NT3X08AA or AB are empty and provisioning rules for these other packs are followed.

ao The Dial-Up Autoquote feature requires the NT3X02BA to be used in a stand-alone configuration. This circuit pack is generally used with the NT3X03AA mounted in the slot to its right, but this must not be done for the Dial-Up Autoquote feature, since this would disable all four ports on the NT3X02BA. Therefore, a NT3X03AA must not be provisioned and the TM card slot to the

right of the NT3X02BA must be left vacant (except for the applicable filler face plate).

ap NT5X29AA: Tone detector and generator for common channel interoffice signaling (CCIS) continuity checker.

NT5X29AB: Tone detector for service observing circuits. Used by DMS-100 equipment with Traffic Operator Position System (TOPS).

NT5X29AC: Tone detector for audible ringing, answer, and digitone multifrequency tones.

aq There are a number of restrictions that still exist in the use of NT3X06AA, NT3X07AA, NT2X85AA and NT2X86AA trunk circuits for interfacing switchboards (regular operator or SOST) from DMS-200 switches.

The restrictions are the following:

1) Upon calling party disconnect of a leave word call, there is no 120 IPM flash of board lamps.

2) Only line no. method of coin control is supported (T&R to inband conversion capability has not been provided in DMS-200).

3) In order to transfer calls from TOPS to SOST via NT3X06AA or NT2X85AA a looparound arrangement is required (termination of TOPS to 3CL directly is not supported).

4) SOST operators are unable to re-ring TOPS operators on calls routed from TOPS to SOST. It is recommended that the use of NT3X06AA, NT3X07AA, NT2X85AA and NT2X86AA trunks be avoided where possible through the use of digital trunks.

It is recommended that the use of NT3X06AA, NT3X07AA, NT2X85AA, and NT2X86AA trunks be avoided where possible through the use of digital trunks.

ar 1. In the case of CCIS, the analog trunk card NT2X72AA is to be used to interface the transfer links to the DMS and the analog interface of the modem to the network.

2. In the NT2X72AA used for modem output, the second circuit is to be left unassigned (unused). For the transfer link (VFL) from reliability point of view, it is preferred if

the second circuit of the NT2X72AA and NT6X50AA is left unassigned (unused).

as 1. When MTA, NT2X46AB is used, provide one (1) MTU measurement circuit (NT4X97 and NT4X98 pair provides two circuits: NT2X10BA and NT2X11BA pair provides two circuits) for each MTA which directly connects LCE (i.e. one circuit for each row 0 (or base) MTA). Assign to horizontal 0 of each row 0 MTA. Provide an additional MTU circuit (on a separate NT4X97/NT4X98 pair or NT2X10BA/NT2X11BA pair as applicable) per office to be multipled over all MTA in one row. Assign to a vacant horizontal and row. Minimum number of MTU circuits should be 4 (i.e. 2 hardware units). The NT2X46AB is MD'ed, and the replacement is NT3X09BA.

2. When MTA, NT3X09BA is used, provide one MTU measurement circuit (NT4X97 and NT4X98 pair provides two circuits; NT2X10BA and NT2X11BA pair provides two circuits) for up to two NT3X09BA Metallic Test Access CPs. Assign to row zero of the first MTA and multiple it to horizontal zero of the second MTA. The MTU circuit will be dedicated to up to eight LCMs. Provide an additional MTU circuit (rover) to multiple across all of the MTAs in a row. This circuit is assigned to a vacant horizontal in the row.

3. At the remote site, provide a minimum of one MTU for each RLCM/IRLCM site.

4. The NT4X98 and NT2X10BA circuit packs require -48V SP connection. The -48V SP connection is only available on frame positions 51 and 65 on the TME frame. When the change kit NT0X82XA is applied, the -48V SP connection becomes available on any four of the five MTM shelves on the TME frame. Therefore, the MTU packs can only be assigned to MTM shelves. (See note 4.) Refer to Section EMA2-01-000 (TME Frame NT0X46AB) for more information on -48V SP and the corresponding cabling per MTM shelf.

at 1. -48V SP is required for the operation of this card. This card can be assigned to the MTM/IMTM. Provide local cabling per Section EMA2-01-000. LTUs and MTUs can be assigned to the RMM, provide one (1) NT6X1438 cable. (reference EMA2-14-000, EMA2-15-000). (See note 4.)

au 1) A maximum of six (6) NT2X01AA CP (i.e. 24 AIOD receivers) can be accommodated in an MTM.

2) The first of four receivers on a single AIOD pack must be placed in an MTM circuit number which is divisible by four (i.e. circuits 0, 4, 8, 12, 16, 20).

3) Quantities of NT2X01AA packs are dependent upon the security or standby arrangement selected by the customer. When multiple receivers are provided for a single data link or for multiple data links from a single PBX, it is recommended that these receivers not be located on the same NT2X01AA pack and that the additional packs not be located in the same MTM.

av 1) The Control Processor card, NT3X02AA, is a four port I/O (Input/Output) controller capable of handling duplex communication to four (4) modems or terminals simaltaneously.

The Digital Signal Processor card, NT3X03AA, is a four port digital interface used to enable the NT3X02AA to handle duplex communication simaltaneously to four (4) modems or terminals via TM (Trunk Module) or DCM (Digital Carrier Module) to Digital Channel Bank trunks.

An NT3X02AA and an NT3X03AA plug into two adjacent card slots within an MTM (Maintenance Trunk Module).

One pair of circuit packs consisting of one NT3X02AA and one NT3X03AA constitutes a DMODEM (Digital Modem). One DMODEM has four ports (circuits).

A digital modem provides a data interface between Business Service Attendant Consoles (BSAC) and the Central Processing Unit (CPU).

A digital modem provides a data interface between Traffic Operator Position System (TOPS) positions and TOPS teletypewriters (TTY) and the Central Processing Unit (CPU).

Since one DMODEM has four ports (circuits), theoretically, it can service four TOPS positions, four TOPS TTYs, or four BSACs. However, there are provisioning limitations.

* TOPS Offices Only

In TOPS offices (which have only TOPS positions and TOPS TTYs, and no BSACs), provide up to a maximum of one DMODEMs per MTM. This will provide up to a maximum of 4 modem ports per MTM. Hence, up to a maximum of 4 TOPS positions or

Conference cards (NT1X31__, NT3X67__) cannot be mounted on an MTM which has a DMODEM. However, up to a maximum of twelve Conference Trunk Modules (CTM), NT1X81AA, can be provisioned on the same MTM. TOPS TTYs can be accommodated per MTM.

* IBN Offices with BSACs Only

In IBN offices (which have only BSACs and no TOPS positions or TOPS TTYs), provide only one DMODEM per MTM. Although there are four ports per DMODEM, only up to a maximum of two BSACs can be assigned to one DMODEM. Conference cards (NT1X31__, NT3X67__) cannot be mounted on an MTM which has a DMODEM connected to a BSAC. However, up to a maximum of twelve Conference Trunk Modules (CTM), NT1X81AA, can be provisioned on the same MTM.

* Combined TOPS and IBN Offices

In combined TOPS and IBN offices, follow the provisioning rules outlined above for TOPS Offices only if only TOPS positions and TOPS TTYs are assigned to any specific MTM. Similarly, follow the provisioning rules outlined above for IBN Offices with BSACs only if only BSACs are assigned to any specific MTM.

If a combination of TOPS positions, TOPS TTYs, and BSACs are assigned to an MTM, then provide only one DMODEM per MTM. Up to a maximum of three TOPS positions or TOPS TTYs and one BSAC can be assigned to one DMODEM. Conference cards (NT1X31__, NT3X67__) cannot be mounted on an MTM which has a DMODEM. However, up to a maximum of twelve Conference Trunk Modules (CTM), NT1X81AA, can be provisioned on the same MTM.

In each of the above cases (TOPS Offices only, IBN Offices with BSACs only, Combined TOPS and IBN Offices), spread the DMODEMs evenly across all MTMs for reliability purposes.

aw When mounted on a RMM shelf and when leads are to be cabled out of the building, these cards must be located in even numbered card slots only due to a risk of voltage breakdown between backplane wiring associated with odd numbered positions. On RSM shelf the NT3X09AA is assignable to slots 8, 10, 12.

ax 1) NT2X90AD is replacing the NT2X90AC in the U.S. market only. NT2X90AC is required to support Mechanized Loop Testing (MLT).

2) NT2X90AD, NT2X90AC and NT2X90AB can co-exist in the same offices, therefore, NT2X90AB will not be retrofitted.

ay Provide Balance Network as follows:

PEC	BN
NT2X81BA	NT2X77BA
NT2X95BA	NT2X77BA
NT2X95BB	NT2X77BA
NT2X84BA	-

az NT5X30BA is the U.K. version of the communication test line. It has complex impedance for BT application and in addition can interface to UK key telephone system.

a1 1) Not used at this time.

a2 1) The NT3X09BA card is designed to replace the existing MTA unit, NT2X46AB, in the host office and in the RLM site. It will also replace the Remote MTA card, NT3X09AA, in the RSC, remote sites. Refer to Table A-2 in this section. Presently NT3X09BA is not applicable to RLCM and IRLCM for Canadian offices only.

2) The NT3X09BA card will work as an extension to an NT2X46AB.

3) Provide one NT3X09BA for each 4 LM/RLM/LCM when up to 8 test circuits are required.

4) Each NT3X09BA card is assigned to a column, (0 to 63) and up to eight rows (0 to 7), per column.

5) Until BCS-24 is present in an office, all MTA units within a column must be of the same type(i.e., the same PEC). MTA units within a row can be of different types. Multiplying of test equipment over columns with different MTA types is allowed. Mixing of MTA types within a column is allowed with BCS-24.

6) NT3X09BA card must be provisioned in an OPM RMM shelf when battery maintenance and diagnostics are required.

7) To allow the testing of the universal SLC96 subscriber carrier system using a Pair Gain Test Controller (PGTC), the total NT3X09BA multiple cable length must not exceed the figures shown in Table X of CA0X06. Otherwise, an Intermediate Distribution Frame (IDF) (i.e. customer provided) close to the DMS line up will be required.

The total multiple cable length is the sum of all multiple cables to the distribution frame, both horizontal and vertical.

The overall MTA circuit distance must be calculated based on the longest metallic path from any PGTC to any universal SLC96 Central Office Terminal Channel Unit (COT CU) in the central office.

The MTA multiple cables can be minimized by placing the TME that house the MTAs close to the cable racks and the MDF as much as possible.

a3 1) NT2X10, NT2X11, NT4X97 or NT4X98 cannot be provisioned in CP POS 13-16 on the RMM shelf. They must be provisioned in CP POS 3-12, because the pair bus of CP POS 13-16 have been merged for use with the DRA feature.

2) The NT2X10BA, NT2X11BA pair will not operate if it is installed in slot 9 and 10 of the RMM; therefore, they cannot be provisioned in CP POS 9-10 on the RMM shelf.

3) NT2X10AC and NT2X11AC are provisionable on the OPM only. They must be provisioned on the RMM in CP POS 3-4. NT2X10AC and NT2X11AC can be replaced by NT2X10BA and NT2X11BA.

4) The IMTU may be added to systems with existing LTUs (NT2X10/NT2X11). The system must be equipped with software at BCS-19 or higher.

5) The NT2X11AD Line Test Unit Digital Card (U.S. applications only) is introduced to correct a problem with volume reset on the Enhanced Business Set (EBS). BCS-26 or higher is required.

6) For every MTA that has a ISDN 2B1Q LCM (LCME) on the vertical there must be at least one MTU on a horizontal of that MTA. A LTU that has access to a MTA that has a LCME on the vertical will NOT be used to perform any metallic testing on the 2B1Q lines. Any rover test units (ones shared across MTAs) that has access to the MTA that has a LCME on it must be a MTU for it to be used on the LCME.

7) For the U.S. applications only, the MTUs are to be used for ISDN offices only. No LTUs can be assigned to an MTA that has an LCME on the vertical. No MTA that has an LCME on the vertical can be daisy-chained to other MTAs that does not have an LCME on the vertical.

8) For U.S. applications, NT2X10/NT2X11 cannot be mounted in an MTM with an NT3X68 Tone Generator card. This restriction is imposed because there are 2 different MTM EXECs supporting these cards, and only one EXEC can run on an MTM at one time.

9) For International applications, NT4X98/NT4X97 cannot be mounted in an MTM that has been configured with a NT3X68 Tone Generator card. This restriction is imposed because there are 2 different MTM EXECs supporting these cards, and only one EXEC can run on an MTM at one time.

10) NT1X90/NT2X96 (TTT) cannot be mounted in an MTM with an NT3X68 Tone Generator card.

a4 1) NT2X90AD provides an extra feature for testing SLC-96 Integrated Carrier.

2) The NT2X90AD replaces the NT2X90AB and NT2X90AC. The NT2X90AD will support all existing test systems.

3) The NT2X90AD can co-exist with the NT2X90AC and NT2X90AB test trunks, therefore, there is no need to retrofit existing offices. The particular test trunk being used must be identified (datafilled) at the trunk subgroup level within the office.

4) The office must be equipped with BCS-19 or later software to support the NT2X90AD.

a5 1) When NT2X66AA is ordered, also provide the following:

1.one Call Waiting Signal Circuit SD95868-01

2.one CAMA Suspension Key Lamp & Control Circuit SD95872-01 SD95872-01

3.one Call Waiting Lamp Indication ED26764-11 Grp 1

The above equipment will mount on an MIS frame.

a6 1) Used in conjunction with SD95853-01, SD95481-01 and SD95482- 01. These common system circuits are no longer available from NT. Use NT5X74AA, NT5X75AA and NT5X76AA as replacements per customer requirements (see Section EMA13-01-000).

a7 1) For international use only.

a8 1) The Earth Calling Trunk Card NT2X84BA must not be mixed with any other trunk card on the ITM8 shelf.

a9 1) To determine the maximum number of DRA cards that may be job engineered on one shelf, use the following chart. For each of the speech memory cards supplied for one shelf, add the virtual card credit (128K - eight bit). The total must not exceed eight. For example, one NT1X76BA plus one NT1X76AA plus four NT1X79AA cards total seven, so one more card may be added if its VCARD credit is only one.

DRA SPEECH MEMORY CARD

CARD	PEC CODE	VCARD CREDIT
ROM	NT1X76AA	1
ROM	NT1X76AB	2
ROM	NT1X76AE	2
ROM	NT1X76AF	2
ROM	NT1X76AG	2
ROM	NT1X76AH	2
ROM	NT1X76AJ	2
ROM	NT1X76AK	2
ROM	NT1X76AM	2
ROM	NT1X76AP	2
ROM	NT1X76AQ	2
ROM	NT1X76AR	2
ROM	NT1X76AS	2
ROM	NT1X76AT	2
ROM	NT1X76AU	2
ROM	NT1X76AV	2
ROM	NT1X76AW	2
ROM	NT1X76BA	2
ROM	NT1X76BF	2
ROM	NT1X76BG	2
ROM	NT1X76BH	2
ROM	NT1X76BJ	2
ROM	NT1X76BK	2
ROM	NT1X76BP	2
ROM	NT1X76BQ	2
ROM	NT1X76BR	2
ROM	NT1X76BS	2
ROM	NT1X76BT	2
ROM	NT1X76BU	2
ROM	NT1X76BV	2
ROM	NT1X76BW	2
ROM	NT1X76CA	2
ROM	NT1X76JA	2
ROM	NT1X76JB	2
ROM	NT1X76GA	2
ROM	NT1X76GB	2
ROM	NT1X76GC	2
ROM	NT1X76GE	2
ROM	NT1X76GF	2
ROM	NT1X76GG	2
ROM	NT1X76GH	2
ROM	NT1X76GJ	2

DRA SPEECH MEMORY CARD

CARD	PEC CODE	VCARD CREDIT
ROM	NT1X76GK	2
ROM	NT1X76GL	2
ROM	NT1X76GM	2
ROM	NT1X76HC	2
ROM	NT1X76HD	2
ROM	NT1X76RR	2
RAM	NT1X77AA	1
EEPROM	NT1X79AA	1

Provide combinations of RAM and/or ROM cards (speech memory cards) on a job engineered basis within card positions 6 to 14.

a10 1) For AOSS Voice Response, the DRA Modules will consist of a controller card (NT1X75BA) and four (4) double density PROM speech cards.

If English announcements are required, provide one card each of NT1X76AF and NT1X76AG.

If French announcements are required, provide one card each of NT1X76BF and NT1X76BG.

If both English and French announcements are required, provide one card each of NT1X76AF, NT1X76AG, NT1X76BF, and NT1X76BG.

2) A DRA Module used for the AOSS Voice Response feature cannot be used for other applications. Features such as Mechanized Calling Card Service (MCCS) and Automatic Coin Toll Service (ACTS) must use different DRA devices.

a11 1) For Custom Charge Calling (CCC), the DRA Modules will consist of a controller card (NT1X75BA) and two double density PROM speech cards.

If English announcements are required, provide either one NT1X76AH or one NT1X76HC. Use NT1X76HC if the CCC feature is required for Telcos: MT&T, QTel of NBTel, otherwise use NT1X76AH.

If French announcements are required, provide either one NT1X76BH or one NT1X76HD. Use NT1X76HD if the CCC feature

is required for Telco: MT&T, QTel or NBTel, otherwise use NT1X76BH.

If both English and French announcements are required, provide one NT1X76HC and one NT1X76HD if CCC feature is required by Telco: MT&T, QTel or NBTel, otherwise provide NT1X76AH and one NT1X76BH.

2) A DRA Module used for the Custom Charge Calling feature should not be used for other applications. Features such as AOSS Voice Response and Automatic Coin Toll Service (ACTS) must use different DRA devices.

a12 1) Either of these circuits are always provided in position 5 on a job engineered basis. The NT1X75BA is an enhanced NT1X75AA. NT1X75BA is fully compatible with and replaces the NT1X75AA. The NT1X75DA is used for A-law.

2) The NT1X75BA/DA must be provided if the NT1X79 EEPROM is used.

a13 1) One NT1X76AE is required on the ACTS DRAM. The slot location for the DRA circuit pack should follow the controller circuit pack (NT1X75BA). Recommended card slot locations are for the controller (NT1X75BA) card slot five and for the ACTS announcement circuit pack (NT1X76AE) card slot six.

a14 1) Up until BCS-24 the maximum number of IBERT Line Cards (NT6X99AA) and DTU BERT Unit Circuits (NT4X23AA) (i.e. two circuits per card) allowed in an office (host plus all associated remotes) is 64.

For more information on IBERT Line Card (NT6X99AA) see Table C Line Drawer Provisionable Cards.

As of BCS-25, the maximum number of NT6X99AA cards and NT4X23AA circuits allowed in an office is 128.

While BER testing can be performed by either the NT6X99AA card, mounted in an LCM, or by the NT4X23AA card, mounted in an MTM, there is a software problem that prevents the NT4X23AA from successfully testing Datapath Extension trunks. Therefore, it is recommended that the NT6X99AA be used for DMS-100 and DMS-100/200 offices (local and local/toll applications) and the NT4X23AA be used for DMS-200 offices (toll applications).

A minimum of twelve NT4X23AA CPs should be provisioned for DMS-200 offices.

Use 2 DTU's (NT4X23AA) when software bridging the OHBT (Offhook Balance Test) to BCS35 and BCS36 in SWBT applications. Also, if WLC (World Line Card) and the OHBT feature is required for SWBT, provision the DTUs as follows:

(2) NT4X23AA CPs needed for 25,000 Lines
(3) NT4X23AA CPs needed for 30,000 Lines
(4) NT4X23AA CPs needed for 75,000 Lines

a15 1) For Phase 1 CLASS DRA Announcements, the DRA modules will consist of a controller card NT1X75BA and up to four double density PROM speech cards (i.e. NT1X76AJ/AK/BJ/BK).

If bilingual announcements are required (e.g. French followed by English on the same announcement), then the Phase 1 CLASS DRA Announcement cards must be provisioned on the same DRA shelf (i.e. NT1X76AJ/AK/BJ/BK).

The Phase 1 CLASS DRA Announcement cards are only available in sets (e.g. NT1X76AJ/AK or NT1X76BJ/BK) and cannot be provisioned separately. However, if the customer chooses to create their own announcements, and if the Automatic Recall (AR) feature with the Voice Back Option within NTXA00AA is activated, then the CLASS Phase 1 English Announcements (2) of (2) CP card, NT1X76AK, and/or the CLASS Phase 1 French Announcements (2) of (2) CP card, NT1X76BK, must be provided. Otherwise, if the Voice Back Option is not to be activated, then NT1X76AK and/or NT1X76BK are optional. Also, the NT1X76AK card can be ordered separately for the Call Forward Remote Activation (CFRA) feature.

2) For Phase 2 CLASS DRA Announcements, the DRA modules will consist of a controller card NT1X75BA and up to four double density PROM speech cards (i.e. NT1X76AP-AW, NT1X76BP-BW, NT1X76GA-GC, NT1X76GE-GL).

For provisioning, two groups of Phase 2 CLASS DRA Announcements are available:

(i) Phase 2 CLASS DRA Announcements (List 1-12)
(ii) Phase 2 CLASS DRA Announcements (List 13-31)

The following are the Phase 2 CLASS DRA Announcement (List 1-12) cards:

(i) NT1X76AP/AQ/AR/AS/AT/AU/AV/+English "Personality"

Card
(ii) NT1X76BP/BQ/BR/BS/BT/BU/BV/+French "Personality"
Card

The following are the Phase 2 CLASS DRA Announcement (List 13-31) cards:

NT1X76GA/GB/GC + English "Personality" Card

If Customers want Phase 2 CLASS DRA Announcements, the group of List 13-31 cards are optional.

If either group or both groups of Phase 2 CLASS DRA Announcements are required, provide a "Personality" card for each group. Note that if both groups are required, two "Personality" cards of the same type (i.e. one for each group) must be provided.

The following are the Phase 2 CLASS DRA "Personality" cards:

NT1X76AW/BW/GE/GF/GG/GH/GJ/GK/GL/GM

The Phase 2 CLASS DRA Announcement cards are only available in sets (e.g. NT1X76AP/AQ/AR/AS/AT/AU/AV/AW or NT1X76BP/BQ/BR/BS/BT/BU/BV/BW or NT1X76GA/GB/GC) and cannot be provisioned separately. Note that the only exception to this is the "Personality" card (e.g. NT1X76AW) which will be provisionable with other Telco specific packs (as highlighted above).

Cards NT1X76AP/AQ/AR/AS must be mounted together on the same DRA module. Cards NT1X76AT/AU/AV/AW must be mounted together on the same DRA module. Similarly, cards NT1X76BP/BQ/BR/BS must be mounted together on the same DRA module and cards NT1X76BT/BU/BV/BW must be mounted together on the same DRA module. Cards NT1X76GA/GB/GC + "Personality" Card must be mounted together on the same DRA module. The previous cards within each DRA module can be in any order.

a16 1) For Call Forward Remote Activation, the DRA Modules consist of a controller card (NT1X75BA) and two double density PROM speech cards, the NT1X76AM and NT1X76AK cards.

2) The NT1X76AM card can be provisioned onto an existing DRA module that has the space to allow it, but must be on the same DRA as an NT1X76AK card.

a17 1) For Automatic Recall Date and Time activation, the DRA Modules consist of a controller card (NT1X75BA), and sets of one double density ROM speech card NT1X76JA and one double density ROM speech card NT1X76JB.

2) The NT1X76AJ and the NT1X76AK cards are required and should be assigned to the same DRA module as the NT1X76JA and NT1X76JB cards. In a Class Phase 1 English office, the NT1X76JA/JB can be assigned to a DRA where the NT1X76AJ/AK cards are existing and there is room. Otherwise, in other offices or where the DRAs with NT1X76AJ/AK cards are filled, an additional set of NT1X76AJ/AK cards must be ordered.

a18 1) The EDRAM is provisioned using the same provisioning rules as for the existing DRA Module as given in PLN 8991-104 (DMS-100 Family Provisioning).

The EDRAM Module provides 29 announcement channels and 4.3 minutes of announcement time for announcement playback/recording.

For each DMS office, provision the number of EDRAM as required to accommodate the standard announcements.

Depending on the optional recorded announcement features ordered by the customer, provision additional EDRAM Modules as required. The optional features are described in ECM 531 - EDRAM.

2) As a customer requested option, each EDRAM may either have N +1 or Full duplication for reliability. The need is more pronounced for toll offices where it is important to get the message sent to the subscriber.

3) The EDRAM card is inserted into one of the thirteen provisionable trunk card slots of the ISM shelf. When all thirteen slots are equipped with EDRAM cards, the maximum power dissipation per ISM shelf is not exceeded. It derives +5V power from the shelf power converter, but otherwise, it is independent of the ISM shelf.

Although the EDRAM can mount onto existing MTM/DRA shelves, no new MTM/DRA shelves should be ordered. For new and existing offices, provision only ISM shelves to mount the EDRAM.

Each EDRAM requires one DS-30 network port appearance on the network. Each DS-30 network port (link) has 32 chan-

nels; 30 voice channels, channel 0 as the message channel, and channel 16 is not used.

The EDRAM has its own pair of DS-30 links for connecting to both planes of the JNET/ENET, and communicates with the Message Switch/Central Message Controller (MS/CMC) directly via the message channel of this DS-30 link.

The DS-30 cable for the EDRAM can be plugged directly into the pins at the back of the ISM/MTM/DRA backplane at the slot corresponding to the position of the EDRAM. The other end of the DS-30 cable is terminated at the Peripheral Speech Link (PSL) Panel mounted on the Speech Link Connecting (SLC) Frame or at the Enhanced Network (ENET) depending on office requirements.

The EDRAM can be engineered into the two vacant adjacent slots on the right of 3 Port Conference Cards (NT1X31AA) and on the right of 6 Port Conference Cards (NT3X67) on existing MTM/IMTM/DRA/IDRA shelves.

4) NOTE- One EDRAM CP provides the same functionality and capacity as one DRA shelf with NT1X76 PROM memory and NT1X77 RAM memory, but not the functionality of NT1X79 non volatile memory since the EDRAM memory is volatile. The functionality of NT1X79 non volatile memory is provided by EDRAM in BCS-36 with Feature No. AQ0984 - EDRAM Announcement Up-loading. Until BCS-36, a manual action is required to restore customer recorded announcements lost due to MTM power converter failure.

a19 1) One or two balance networks must be provisioned per circuit on each board. The following types of balance networks are available.

Balance Network	Circuit Type
NT2X77AA	Compromise balance network 900 OHMs
NT2X77AB	Compromise balance network 600 OHMs
NT2X77AC	Compromise balance network 900 OHMs fixed
NT2X77AD	Compromise balance network 600 OHMs fixed
NT2X80AA	Precision balance network -H88

a20 1) Although the CTM can mount onto existing DRA/IDRA shelves, no new DRA/IDRA shelves should be ordered. For new and existing offices, provision only MTM/IMTM shelves to mount the CTM.

The CTM NT1X81AA requires BCS-35 or later software to be in the DMS switch. It plugs into any one or up to all twelve of the provisionable card slots of the MTM/DRA/IMTM/IDRA shelf and uses the shelf for the purposes of housing, logic power, and cable mounting. When all twelve slots are equipped with CTM cards, the maximum power dissipation limit of 110 watts per MTM/DRA/IMTM/IDRA shelf is not exceeded.

The CTM circuit pack requires -48V SP power. When adding CTM to existing TM shelves ensure that -48V SP power is applied to the shelf. This may require ordering of SP Power extension kits. Reference ECM 601.

The CTM can be engineered into the two vacant adjacent slots on the right of 3 Port Conference Cards (NT1X31AA) and on the right of 6 Port Conference Cards (NT3X67) on existing MTM/IMTM/DRA/IDRA shelves.

If the CTM is the only type of conference circuit in an office, a minimum of two CTM cards should be provisioned, each installed on different MTM/IMTMs.

As a general rule, it is recommended that CTM cards be spread out on as many MTM/IMTM/DRA/IDRA shelves as possible, so that power converter failure on a single MTM/IMTM/DRA/IDRA would result in the least disruption.

A maximum of 512 CTM cards can be supported in each office. This limitation is imposed by software.

Each CTM requires one DS-30 network port appearance on the network. Each DS-30 network port (link) has 32 channels; 30 voice channels, channel 0 as the message channel, and channel 16 is not used.

The CTM has its own pair of DS-30 links for connecting to both planes of the Network Module (NM), and communicates with the Central Control/Central Message Controller (CC/CMC) directly via the message channel of this DS-30 link.

The DS-30 cable for the CTM plugs directly into the pins at the back of the MTM/IMTM/DRA/IDRA backplane at the slot corresponding to the position of the CTM. The other end of the DS-30 cable is terminated at the Peripheral Speech Link (PSL) Panel mounted on the Speech Link Connecting (SLC) Frame or at the Enhanced Network (ENET), depending on office requirements.

a21 1) To meet customer requirements for noise levels, the NT3X91AA should not be provisioned in slots 5,12 or 19 of the TM8 shelf when the DTH ROTL is provided on the same frame.

a22 1) There is a relationship between the floor plan arrangement of frames and the provisioning of alarm scan cards (NT0X10AA) on the primary MTM. The relationship is as follows.

Office Aisles Equipped	Primary Alm MTM Card Slot Equipped	Primary Alm MTM Cable Conn.Equipped	AXU Cable Conn. Equipped
A-F	10	C05	A00
G-M	11	C06	A01
N-BB	12	C07	A02
CC-RR	13	C08	A03

a23 1) The EDTU CP contains 4 VTUs (Virtual Test Units). A VTU can be statically assigned to perform the function a single circuit of either a TTU (NT4X23AA, 2 Circuits per card) or a TTT (NT1X90AA and NT2X96AA, 1 circuit per card pair) or a TTU (NT2X47AC/AD and NT2X56AB, 1 circuit per card pair). An EDTU CP may be installed in any slot on an MTM Shelf. If the MTM Shelf is mounted in a TME frame, the slot to the immediate RIGHT of the EDTU CP must either be vacant or equipped with a CP that seizes no trunk enables, such as EDRAM or CTM. If the MTM is an ISM Shelf, the slot to the immediate LEFT of the EDTU CP must either be vacant or equipped with a CP that seizes no trunk enables, such as EDRAM or CTM.

The EDTU CP design provides a new platform to house the DTU (BERT and OHBT), TTT, and TTU functionality. The EDTU CP has four (4) circuit enables. When available , the EDTU CP is the preferred CP for DTU, TTT, and TTU applications.

A single EDTU CP can replace any of the following service CPs: (Domestic Market only)

replaces two (2) NT4X23AA Digital Test Unit (DTU) or
replaces four (4) NT1X90AA Test Signal Gen (TTT) or
replaces four (4) NT2X96AA PCM Level Meter (TTT) or
replaces four (4) NT2X47AC/AD Trans. Test Unit (TTU) or
replaces four (4) NT2X56AB TTU Digital Filter (TTU) or
some combination of the above CPs.

The CC S/W associated with the EDTU provides mechanisms for static selection of any combination of DTU, TTT, and TTU applications.

To achieve robustness, all offices deploying EDTUs must provision at least two (2) separate EDTU CPs, and these should be installed on at least two (2) separate shelves.

The total number of EDTUs required is based on the equivalent number of DTUs, TTTs, and TTUs that would otherwise be required in the office.

--Add up the total number of TTTs, TTUs, and DTU circuits needed for BERT/BERP, and the total number of DTU circuits needed for OHBT in the office.

--If this total is not a multiple of 4, increase it to the next larger multiple of 4. If the result is less that 8, use 8.

--Divide this value by 4 to obtain the number of EDTU CPs required for the office. This is at least 2.

--Install these CPs on at least two separate ISM (MTM) Shelves.

--For robustness, distribute the circuits of each type needed across as many EDTU CPs as possible. For example, if there are to be three EDTU CPs, and 6 TTT trunk members are required in the office, provision two TTT trunk members on each of the three EDTU CPs.

See the Engineering Manual Sections for more information on CP location in the specific shelf types. See EMS NTFX4101 for ISM Shelf information, and EMS Table A or BB-TAB-A for MTM Shelf information.

a24 1) The EDRAM 16 is provisioned using the same provisioning rules as for the existing EDRAM 4 as shown in this table.

The EDRAM 16 Module provides 29 announcement channels and 17.23 minutes of announcement time for announcement playback/recording.

For each DMS office, provision the number of EDRAM 16 required to accommodate office announcements.

Currently the first application is in Japan only for a Notification of Time and Charge.

2) As a customer requested option, each EDRAM may either have N +1 or Full duplication for reliability. The need is more pronounced for toll offices where it is important to get the message sent to the subscriber.

3) The EDRAM card is inserted into one of the thirteen provisionable trunk card slots of the ISM shelf. When all thirteen slots are equipped with EDRAM cards, the maximum power dissipation per ISM shelf is not exceeded. It derives +5V power from the shelf power converter, but otherwise, it is independent of the ISM shelf.

   Although the EDRAM can mount onto existing MTM/DRA shelves, no new MTM/DRA shelves should be ordered. For new and existing offices, provision only ISM shelves to mount the EDRAM.

   Each EDRAM requires one DS-30 network port appearance on the network. Each DS-30 network port (link) has 32 channels; 30 voice channels, channel 0 as the message channel, and channel 16 is not used.

   The EDRAM has its own pair of DS-30 links for connecting to both planes of the JNET/ENET, and communicates with the Message Switch/Central Message Controller (MS/CMC) directly via the message channel of this DS-30 link.

   The DS-30 cable for the EDRAM can be plugged directly into the pins at the back of the ISM/MTM/DRA backplane at the slot corresponding to the position of the EDRAM. The other end of the DS-30 cable is terminated at the Peripheral Speech Link (PSL) Panel mounted on the Speech Link Connecting (SLC) Frame or at the Enhanced Network (ENET) depending on office requirements.

   The EDRAM can be engineered into the two vacant adjacent slots on the right of 3 Port Conference Cards (NT1X31AA) and on the right of 6 Port Conference Cards (NT3X67) on existing MTM/IMTM/DRA/IDRA shelves.

TABLE B - I/O CONTROLLER MODULE PROVISIONABLE CARDS

PEC CODE: TABLE B

CPC CODE: Not Applicable

RATING: N/A

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Table B-1 lists all DMS-100 FAMILY input and output device control cards which could mount on the various I/O Controller Module versions.

Tables B-2, B-3, B-4 and B-5 detail assignment restrictions relating to the system Initial Program Load (IPL) and ETAS requirements.

REFERENCE DOCUMENTATION: MS1X61AA 01 08
MS1X61AB 01 19
MS1X61AD 01 16
MS1X61AG 01 06
MS2X76AA 01 07
MS2X76BA 01 11

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

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TABLE B EMA14-02-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 09 14	ECM 388 04	Removed cancelled product NT1X67AC
93 01 05	ECM 388 05	ET 23793 - Clarify the functionality of NT1X67BD/BC for Enhanced Security Software features. Consolidate information from ECM-279 issue01(Cancelled) and ECM-234 issue04 (Cancelled).
93 02 12	ECM 316 04	1) ET 20368 - Add current drain for NT1X68 CP. 2) ET 111230 - Clarify rules j and k related to baud rates of NT1X67AB/ CB/BC/BD cards.
93 07 08	ECM 613 14	ET16819/16629 - Add DPP controller CP rules.
93 10 27	ECM 613 16	EC 018-40888 - Introduce NT1X61AG.
93 12 20	ECM 613 18	1) EC 018-40186 - Md NT1X89AA and replace it with NT1X89BA. 2) EC 018-38958 - State that NT1X67BD is backward compatible with NT1X67BC. 3) EC 018-39278 - State that NT1X67BC should be provisioned for SuperNode offices instead of NT1X67AB.
94 04 28	ECM 613 20	1) ET 16018- Show Portable MAP VDU port assignments on IOC:00 as well as IOC:01 in tables B-2 through B-5
94 06 03	ECM 613 21	1) ET 18919- In flaglist & rule, show NT1X89AA replaced by NT1X89BA and not NT1X89AB.
94 07 08	ECM 613 22	1) EC 018-42674 MD’s NT1X67AB and replaces it with NT1X67BC. Also, MD’s NT1X68AC and replaces it with NT1X68BC. 2) EC 018-41414 MD’s NT1X61AB and NT1X61AD and are replaced by NT1X61AG.
94 07 22	ECM 561 01	1) EC 018-42674 Introduces SCSI-DDU NT1X55FA to replace NT1X55DA DDU Controller CP and the DDU shelf.
94 08 29	ECM 316 07	EC 018-42674 Introduces NT1X89BB into NT1X61AG shelf for ISDN TL1 and SMDI applications.

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
95 02 03	ECM 613 26	EC 018-41414 Introduces NT1X89BB into NT1X61AA/AB/AD and NT2X76BA shelves EC 018-43363 MDs NT1X67DB and replaces it with NT1X89BB. EC 018-43966 MDs NT1X67BB, NT1X67FA & NT1X67DB on NT1X61AG and replaces them with NT1X89BB. EC 018-43479 MDs NT1X67DB in NT2X76BA and replaces it with NT1X89BB. Show designation label for NT1X89BB. EC 018-43459 MDs NT1X67BA.
95 05 18	ECM 613 29	ET 22249 - Clarify rules to ensure any NT1X67AA/AB is upgraded to NT1X67BC/BD when converting an NT40 office to a Supernode office.
95 06 12	ECM 316 09	Correct Data transfer rate on NT1X89BB Ports 2 & 3 from 9.6Kbps to 19.2 Kbps.
95 09 25	ECM 613 30	EC 018-45526 Introduces new NT8X48BD DPP into IOE frame.
95 10 11	ECM 316 10	EC 018-45423 Add rule for NT Europe to always provide one NT1X89BB for TAS access. Correct reference to software for Password Encryption.
96 02 08	ECM 388 07	MD NT1X67BC and replace with NT1X67BD, MD NT1X68BD and show no replacement per ECD 018-45271. Update baud rates for NT1X67BD to avoid confusion in the field.
96 03 19	ECM 613 32	reformat Table b-2 per RR80393.
96 06 19	ECM 388 08	Clarify NT1X89BB vs NT1X67BD usage.
96 12 16	ECM 561 05	MD NT6X91AA/AB/BB per ECD 018-48047 (replacement for all is NT6X91CA). Note: The NT6X91CA is not a new pack; it is highlighted within this document (with a change bar) since this doc change history does not show when the pack was introduced.
97 09 19	ECM 316 13	MD NT6X91CA per EC 018-51380.

The Table B - I/O Controller Module Provisionable Cards is comprised of the following:

	PEC	CIRCUIT TYPE	CKT/ CARD	RULE	EQUIP ON IOC NT1X61AA	IOC NT1X61AB, NT1X61AD, NT2X76AA, NT1X61AG	MDC NT2X76BA
#	NT1X67AA	I/O Terminal Ctrl CP	4	a	*		
#	NT1X67AB	I/O Terminal Ctrl CP	4	a,j	*	*	
#	NT1X67CB	I/O Terminal Ctrl CP	4	a,j			*
#	NT1X67BC	I/O Terminal Ctrl CP	4	a,h,k	*	*	*
	NT1X67BD	I/O Terminal Ctrl CP	4	a,h,k	*	*	*
#	NT1X67FA	I/O Terminal Ctrl CP	1	n	*	*	*
#	NT1X67BA	Bit Sync Data Lnk Ctrl	1	b	*	*	
#	NT1X67BB	Bit Sync Data Lnk Ctrl	1	b,l	*	*	
#	NT1X67DB	Bit Sync Data Lnk Ctrl	1	b,l	*	*	*
	NT1X67EA	High Speed Prtr Ctrl	1	m		*	
#	NT1X89AA	Multi-Protocol Cont	4	f	*	*	*
#	NT1X89BA	Enhanced MP Controller	4	o	*	*	*
	NT1X89BB	Enhanced MP Controller	4	o,p	*	*	*
	P0800156	Des. label NT1X89BB					
#	NT6X91AA	MTX Link Controller	1	g		*	
#	NT6X91AB	MTX Link Controller	1	g		*	
#	NT6X91BA	NEMAS Link Controller	1	g		*	
#	NT6X91BB	X.25 LAPB Link Ctrlr	1	g		*	
#	NT6X91CA	9600 Baud MTX Link Cnt	1	g		*	
	For HP MTD, NT0X44AA:						
#	NT1X68AA	9 Track Tape Ctrl HP	1	c	*		
#	NT1X68AB	9 Track Tape Ctrl HP	1	c	*	*	
#	NT1X68BB	9 Track Tape Ctrl HP	1	c			*
#	NT1X68BD	9 Track Tape Ctrl HP	1	c,d	*	*	*
	For Cook MTD, NT0X44AB or 209800-153, BMCA, BMCD, BMCS, or DPP:						
#	NT1X68AC	9 Track Tape Ctrl Cook	1	c	*	*	
	NT1X68BC	9 Track Tape Ctrl Cook	1	c	*	*	*
	For Winchester DDU, A0300005, A0300006:						
#	NT1X55AA	Disk Drive Ctrl Winchester	1	e	*	*	*
	For Winchester DDU, A0300007:						
	NT1X55AB	Winchester DDU Ctrl	1	e	*	*	*
#	NT1X55DA	MSD DDU Ctrl Memory System Division (MSD)	1	e	*	*	*

```
  For 5.25" ESDI-DDU, NT4X00AG:
# NT1X55DA  DDU Controller CP      1  e      *         *         *

  For 2.5" SCSI-DDU:
  NT1X55FA  SCSI Disk Drive Unit   1  e      *         *         *
  P0800155  Des. Label NT1X55FA    1  e      *         *         *
```

TABLE B-1
I/O CONTROLLER PROVISIONABLE CARDS

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT1X67AA	MD	NT1X67BC
NT1X67AB	MD	NT1X67BC
NT1X67CB	A&M	NT1X67BC
NT6X91BA	A&M	NT6X91BB
NT1X68AA	MD	NT1X68BD
NT1X68AB	MD	NT1X68BD
NT1X68BB	MD	NT1X68BD
NT1X55AA	MD	NT1X55AB
NT1X89AA	MD	NT1X89BA
NT1X68AC	MD	NT1X68BC
NT1X55DA	STD*	NT1X55FA
NT1X67BA	MD	NT1X89BB
NT1X67BB	MD	NT1X89BB
NT1X67DB	MD	NT1X89BB
NT1X67FA	MD	NT1X89BB
NT1X89BA	MD	NT1X89BB
NT1X67BC	MD	NT1X67BD
NT1X68BD	MD	No Replacement
NT6X91AA	MD	NT6X91CA
NT6X91AB	MD	NT6X91CA
NT6X91BB	MD	NT6X91CA
NT6X91CA	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.

* Rate change pending. Check product availability.

NOTES:

1) Unless established to the contrary in the notes, cards can be equipped only on those module types marked with an asterisk (*).

2) The module type heading "MDC NT2X76BA" also refers to the MDC module on the NT3X45EA and NT3X45EW CCC Frames.

RULES:

(a) 1) Provide one (1) Terminal Controller card for every four I/O devices, teleprinters, visual display units (VDU) etc, to be assigned I/O ports.

2) Terminal Controllers are equipped with two types of transmission interfaces. The type selected for use will depend on the cabling distance between the I/O Device and the IOC as follows:

CABLING DISTANCE (feet)	INTERFACE TYPE	MODEM REQUIRED
< 50	EIA- RS 232	NO
<= 1200	EIA- Current Loop	NO
>1200	EIA- RS 232	YES

Modems are arranged for either dial-up or private line operation. See MS0X43AB, Section EMR5-01-001 for the former and MS1X60AB, Section EMR5-01-DSM-2 for the latter.

3) Offices equipped with BCS-19 or higher can have NT1X67BC and NT1X67BD cards co-existing along with pre-NT1X67BC cards (NT1X67AA/AB/CB) cards in the same office.

Offices equipped with BCS-18 and lower can not have mixture of NT1X67BC, NT1X67BD and pre-NT1X67BC cards and are restricted to the following configurations:

a) Mixture of NT1X67AA/AB/CB cards in the same office.

b) Only NT1X67BC cards in the same office.

c) Only NT1X67BD cards in the same office.

4) Offices which currently have NT1X67AB and NT1X67CB cards must be extended with these same cards during an office extension, unless the office has BCS19 or later software.

5) For extensions to existing DMS offices with I/O Terminal Controller Cards, NT1X67AA/AB/CB, if the remote bulk DMO input capability is ordered, then I/O Terminal Controller Card, NT1X67BC, must be retrofitted. This feature is part of software package NTX128AA, Enhanced Administration II.

6) If existing DMS offices (either TOPS or non-TOPS) with I/O Terminal Controller Cards NT1X67AA/AB/CB are extended to TOPS with the Service Analysis feature, then I/O Terminal Controller Card NT1X67BC must be retrofitted.

7) Automatic Dial Back feature. All terminal controller cards used in conjunction with automatic dial back must be NT1X67BD. Provide one (1) NT0X26TG cable per intelligent modem. Connect from IOC connector CXX to modem connector DTE.

8) The Cybernex MDLS-110 VDU has been found to be incompatible if used with the older versions of Terminal Controller Cards. When replacing or adding VDUs in an existing office equipped with software loads equal to or less than BCS-18, the Engineer should check existing Terminal Controller Cards. If the office is equipped with one of the following cards, the MDLS-110 VDU will not be compatible:

NT1X67AA NT1X67AB NT1X67CB

When adding VDUs in offices equipped with the above Terminal Controller Cards and BCS-18 or less, the following options are available for offices with BCS18 software or less:

a) Equip the office with an alternate VDU (e.g. VT220).

b) Equip the office with Cybernex MDLS-110 VDU and upgrade all Terminal Controller Cards in the office to NT1X67BC or NT1X67BD.

The following note pertains to offices with BCS-18 or less.

NOTE: NT1X67BC, BD CARDS CANNOT CO-EXIST IN THE SAME OFFICE WITH NT1X67AA/AB/CB CARDS if office is at BCS-18 or lower. A "COLD RESTART" IS REQUIRED TO VALIDATE THIS CHANGE. SAEs SHOULD CONTACT MARKETING TO DETERMINE THE COST RESPONSIBILITY OF THIS CHANGEOUT.

The following installation note shall be included in the spec by the EAE when changing out the Terminal Controller Cards:

Note 5x: The installer shall set the TC-FIRMWARE-VERSION Table OFCSTD to ’1’ for the NT1X67BC or ’2’ for the NT1X67BD. A "COLD RESTART" is required to validate this change.

9) Distributed Peripheral Processing (DPP). Provide two (2) ports per each equipped DPP NT8X48BD: one port for the chassis "A" of the DPP and another port for the chassis "B" of the DPP. These two ports should reside in separate IOC modules with different power feeds. The IOC with the port for chassis "A" should have the same power feed as chassis "A" of the DDP, and the IOC with the port for chassis "B" should have the same power feed as chassis "B" of the DDP. The two IOC’s should be power interlocked. (The NT8X48BD replaces NT8X48AB,NT8X48AA, NT8X48BA, and NT8X48AD.)

10) For SuperNode offices, do not provide NT1X67AB cards in IOC shelves. Provide NT1X67BC/BD instead. Also, if converting an NT40 office that contains NT1X67AA/AB CPs to a Supernode office, upgrade these CPs to NT1X67BC/BD. This will prevent slow terminal response known as "sleepy terminal".

(b) 1) One circuit per card. Initial application: remote transmission of AMA and OM data.

(c) 1) Provide one (1) Nine Track Tape Controller Card (NT1X68AC) for each COOK Magnetic Tape Drive (MTD) to be equipped in the office.

2) Provide two (2) NT1X68AC CP per each equipped DPP: one card for the chassis "A" of the DPP and another card for the chassis "B" of the DPP. These two cards should reside in separate IOC modules with different power feeds. The IOC with the card for chassis "A" should have the same power feed as chassis "A" of the DDP, and the IOC with the card for chassis "B" should have the same power feed as chassis "B" of the DDP. The two IOC’s should be power interlocked.

3) Cabling distance to MTD shall not exceed 15 feet for HP drive and 17 feet for cook drive.

4) Provide two (2) NT1X68AC CP per each redundant BMC NT8M04-A/C/D/F provided. These two cards should be located on separate IOC modules.

5) Provide one (1) NT1X68AC CP per each non-redundant BMC Deuce NT8M04-G provided.

6) The maximum current drain for NT1X68AA/AB/AC/BB/BC/BD is about 3 Amps at +5 volts.

(d) 1) NT1X68BD is required for all HP MTD's where the office has both HP and Cook Mag Tapes. Without this controller an image made on a Cook MTD may not boot in on an HP MTD.

(e) 1) Provide one (1) Disk Drive Controller card (NT1X55AB) for each 14" Disk Drive Unit (DDU) (A0300007) to be equipped in the office.

2) Provide one (1) Disk Drive Controller card (NT1X55DA) for each 8" Disk Drive Unit (DDU) (8211D-19) or 5.25" ESDI Disk Drive Unit (ESDI-DDU) (NT4X00AG) to be equipped in the office.

3) The ESDI-DDU NT4X00AG and its Controller CP NT1X55DA are replaced by the SCSI Disk Drive Unit (SCSI-DDU) NT1X55FA and label P0800155 which mount on the IOC shelf in any of the following nine (9) slot positions: 4, 6, 8, 10, 12, 14, 16, 18 and 20. The NT1X55FA is a double face plate circuit pack so it also takes up the neighboring slot positions 5, 7, 9, 11, 13, 15, 17, 19, and 21. Do not provide a filler face plate in these neighboring positions when the NT1X55FA is provided.

For initial jobs, provide one SCSI-DDU NT1X55FA and label when GA, for each DDU required. If 2 DDU's are required, mount the first NT1X55FA in IOC:00 and the second in IOC:01. Refer to SCSI-DDU ECM for software restrictions.

(f) 1) Each NT1X89AA has four interfaces for connection to I/O devices. The first two (Ports 2 and 3) are independant full duplex RS-232C data communications interfaces. These have the proper handshaking to support most synchronous or asynchronous data sets and can operate at speeds up to 19,200 bits per second. NT1X89AA is manufactury discontinued and replaced by NT1X89BA.

2) Cabling to these interfaces is done as per CA0X15. Each IOC shelf slot has four (4) thirty-four pin connectors in a vertical row. These two interfaces occupy the top two.

3) The third interface (port 1) is a RS-366 Auto Call Unit interface. An Auto Call Unit is a device that dials a telephone number, then turns control of the telephone line over to a data set. This interface uses the third connector on the IOC shelf slot.

4) The fourth interface (port 0) available on the NT1X89AA is a high speed asynchronous interface designed to work with Video Display Units. It is a simple two-wire interface, conforming to RS-232C electrical specifications with no hardware handshaking.

5) The DMS-100F interfaces to the Engineering and Administrative Data Acquisition System (EADAS) minicomputer over a dedicated synchronous 2400 bit per second data link. This is accomplished by using one (1) RS232 synchronous communication link on the NT1X89AA MPC CP (link 2 or 3).

6) The maximum measured current consumption for NT1X89AA under operation is as follows:

Voltage	Current Required
+ 5 volts	2.200 amps
+12 volts	0.090 amps
-12 volts	0.100 amps

Total DC power consumption is 13.28 watts.

(g) 1) Provide one (1) MTX Link Controller CP, NT6X91CA for each HDLC link (Active and Standby) in the MTX on the CPU side of the network. this controller CP must be used for 9600 baud applications. The NT6X91CA has been MD'd, driven by the MD of the NT6X15AB frame and associated products. New wireless product line does not use NT6X91CA.

Provide one (1) P0686395 Designation Label per NT6X91CA.

(h) 1) The NT1X67BD Echo Off Terminal controller circuit pack is a firmware updated version of the NT1X67BC Terminal Controller CP and is only for use with the Auto Dialback feature or special Line Editing Functions. The NT1X67BD has all the features of the NT1X67BC plus:

a) Input Immediate.

b) Echo Off.

c) The UART control register is now under software control.

2) The NT1X67BD is backward compatible with the NT1X67BC. The NT1X67BC is Manufacture Discontinued and replaced by the NT1X67BD.

3) The NT1X67BD is required to support password encription feature of the NTX292AB. The NT1X67BC by design echos back the password during logon to the system. Refer to ECM-238 for further information.

(j) 1) These cards have four separate ports for peripheral terminal devices.These ports can support one device per port at variable baud rates using either EIA or 20mA current loop operation.Current NTI specifications dictate that no single port on these cards exceed 1200 baud.However,it is possible in special applications for these cards to support a baud rate of up to 4800 baud on a single port if the following conditions are met:

- The terminal must be able to support the higher baud rates.
- The sum of the baud rates for all ports on a single card must not exceed 4800 baud. ---

Refer to Figure W for examples of port configurations. Any other port configurations that specify a single port supporting a baud rate greater than 1200 baud will be at the customer's discretion and/or risk.

Terminals used for the operator position must be configured for a maximum baud rate of 1200 baud due to potential communication problems that may be created during emergency situations if higher baud rates are used.

Example A			Example B		
PORT	0	-- 1200 Baud maximum	PORT	0	-- 600 Baud
PORT	1	-- 1200 Baud maximum	PORT	1	-- 600 Baud
PORT	2	-- 1200 Baud maximum	PORT	2	-- 2400 Baud
PORT	3	-- 1200 Baud maximum	PORT	3	-- 1200 Baud

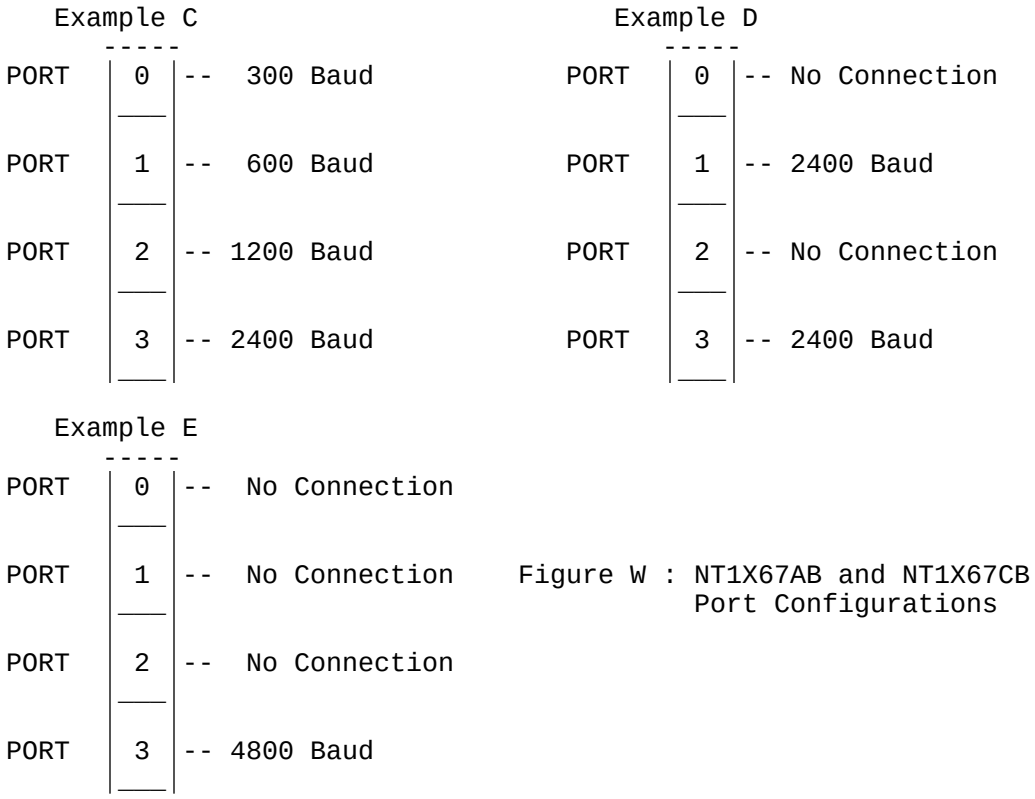


Figure W : NT1X67AB and NT1X67CB Port Configurations

Note 1: These are examples only and not set configurations.
Note 2: Note that the sum of the baud rates for each card does not exceed 4800 baud.
Note 3: Example A illustrates the normal operating condition.All others are for special applications.

(k) 1) These cards succeed the NT1X67AB and NT1X67CB and also have four ports. These ports can support one device per port at variable baud rates using either EIA or 20mA current loop operation. Previous NTI specifications dictate that no single port on these cards exceed 2400 baud. However, cards ordered after May, 1993 will support a baud rate of up to 9600 for EIA operation and 4800 for current loop operation total if the following conditions are met:

- The terminal must be able to support the higher baud rates.
- The sum of the baud rates for all ports on a single card must not exceed 9600(EIA) or 4800(CL) baud. ---

Refer to Figure X for examples of port configurations.

Terminals used for the operator position must be configured for a maximum baud rate of 1200 baud due to potential communication problems that may be created during emergency situations if higher baud rates are used.

Example A

PORT	0	-- 2400 Baud maximum
PORT	1	-- 2400 Baud maximum
PORT	2	-- 2400 Baud maximum
PORT	3	-- 2400 Baud maximum

Example B

PORT	0	-- No Connection
PORT	1	-- 1200 Baud (4800) Note 2
PORT	2	-- 3600 Baud (4800) Note 2
PORT	3	-- No Connection

Example C

PORT	0	-- No Connection
PORT	1	-- No Connection
PORT	2	-- No Connection
PORT	3	-- 4800 Baud (9600) Note 2

Example D

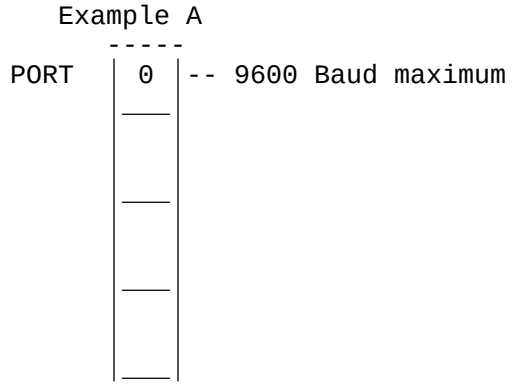
PORT	0	-- No Connection
PORT	1	-- 600 Baud
PORT	2	-- 600 Baud
PORT	3	-- 3600 Baud

Note 1: These are examples only and not set configurations.
Note 2: Note that for a card that has a port exceeding 2400 baud, the sum of the baud rates for all ports does not exceed 4800 baud, for CL, or 9600 baud, for EIA, on cards ordered after May, 1993.
Note 3: Example A illustrates the normal operating condition.All others are for special applications.

Figure X : NT1X67BC and NT1X67BD
Port Configurations

(l) 1) The NT1X67BB and NT1X67DB are special cards designed for special applications.They are not functionally similar to the other NT1X67 cards and cannot be used as a substitute.Each

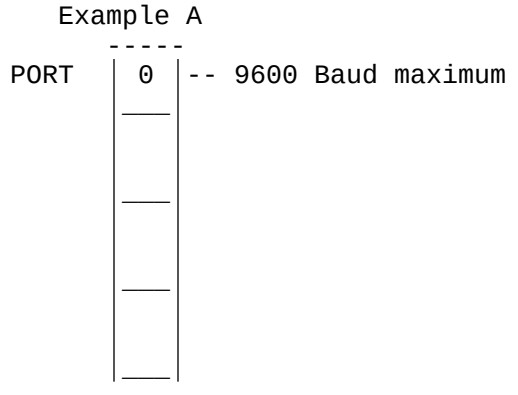
card has a single port that will support a baud rate of up to 9600 baud and communicates using EIA only. These cards are not currently used for U.S. applications but were applied to early offices using the DNC-500. Refer to Figure Y.



Note 1: Only one port available.
Note 2: EIA communication only.
Note 3: Used for HDLC X.25 protocol only.

Figure Y : NT1X67BB and NT1X67DB Port Configuration

(m) 1) The NT1X67EA is a single port, high speed, output-only, asynchronous terminal controller. This circuit pack is a single channel, high capacity 9600 baud version that was introduced to meet customer requirements for real time tracking of call distribution reports. Currently for SL-100 application only. Refer to Figure Z.



Note 1: Only one port available.
Note 2: EIA communication only.
Note 3: Output only.

Figure Z : NT1X67EA Port Configuration

(n) 1) Provide one (1) NT1X67FA I/O Terminal Controller CP per SMDI Message Desk. These cards have one (1) port for Message Desk stations. These ports can support one device per port at a variable baud rate from 110 to 1200 baud.

2) The NT1X67FA is a special card designed for special applications. It is not functionally similar to the other NT1X67 cards and cannot be used as a substitute.

(o) 1) Each NT1X89BA/BB has four interfaces for connection to I/O devices. The following ports correspond to the four connectors provided for each IOC slot at the rear of the IOC shelf. The four connector and Port Three is top connector. However, these four physical connectors map to three data links, Ports One and Three use the same data link. These ports are:

1. Port 0: Asynchronous Only with an RS-232 Interface
2. Port 1: Synchronous CCITT V.35 Interface
3. Port 2: Synchronous/Asynchronous with an RS-232 Interface
4. Port 3: Synchronous/Asynchronous with an RS-232 Interface

2) The above EMPC ports are used/configured as follows:

Port 0

* Port zero is arranged for Async-Only RS-232 transmissions. This port provides the following modem controls signals (this is an enhancement over the MPC):

  - Ring Indicator (RI)
  - Data Terminal Ready (DTR)
  - Data Set Ready (DSR)
  - Request To Send (RTS)
  - Clear To Send (CTS)
  - Receive Line Signal Detect (RLSD)

  However, Port Zero is used for Debug purposes only by the current software loads.

Port 1

* Port one is a CCITT V.35 Synchronous communication port. This port shares a common data stream circuit with Port 3 and is thus datafilled in s/w tables as port/link 3. Port one supports 56-64Kbps data transmissions with external clocking only.

Port 2

* Port Two is arranged for Asynchronous or Synchronous transmission with a RS-232 interface. This port facilitates Synchronous data transmissions from:

  NT1X89BA - 300bps to 2400bps with internal or external clocking.

  NT1X89BB - 300bps to 19.2Kbps with internal or external clocking.

Port 3

* Port Three is arranged for Asynchronous or Synchronous transmission with a RS-232 interface. This port facilitates Synchronous data transmissions from:

  NT1X89BA - 300bps to 2400bps with internal or external clocking.

  NT1X89BB - 300bps to 19.2Kbps with internal or external clocking.

The NT1X89BB is now ordered for SMDI and replaces NT1X67FA.

The NT1X89BB also replaces the NT1X67BB and NT1X67DB for special high speed EIA communication applications.

The NT1X89BB CANNOT be used as a replacement for the NT1X67BD as a driver for MAP, Port. VDU, or ETAS positions.

(p) 1) NT Europe required to always provide one NT1X89BB EMPC pack for TAS access.

IOC DEVICE ADDRESS (HEX)	CARD SLOT & BASE CKT NO. ON SHELF PEC: NT1X61AA SLT	CKT	NT1X61AB/AD/AG SLT	CKT	NT2X76 SLT	CKT	FIXED ASSIGNED DEVICES ON MODULE: IOC:00	IOC:01	NOTE
04	12	16	04	00	21	00	MTD:00	MTD:01	b,c
08	04	00	06	04	19	04	MTD:02	MTD:03	b,d
OC	14	20	08	08	17	08	MAP:00	PORT.VDU	b,e
OD	14	21	08	09	17	09	PORT.VDU	MAP:00	b,e
OF	14	23	08	11	17	11	ETAS	ETAS	b,f
10	06	04	10	12	15	12	AR	AR	a,b
14	16	24	12	16	--	--	AR	AR	a,b
18	08	08	14	20	--	--	AR	AR	a,b
1C	18	28	16	24	--	--	AR	AR	a,b
20	10	12	18	28	--	--	AR	AR	a,b
24	20	32	20	32	--	--	AR	AR	a,b

TABLE B-2

FIXED I/O PORT ASSIGNMENTS FOR LAYOUT WITH MTD’S ONLY

NOTES FOR TABLE B-2

(a) AR, assign additional MTD or terminals as required.

(b) Select and provide the appropriate I/O device control card according to Table B-1.

NT1X61AA RESTRICTIONS:

Subject to restrictions imposed by fixed assignments, cards shall be assigned to slots on the shelf in the same order in which they appear in Table B-2. Maximum of three (3) cards shall be assigned to the group of slots, 04, 06, 08 and 10. Maximum of four (4) cards shall be assigned to the group of slots 12, 14, 16, 18 and 20. These are to satisfy power loading requirements of NT1X61AA where slots 12, 14, etc are fed from one converter and slots 04, 06, 08, etc are fed from another.

Fixed-assigned devices are assigned to the lowest numbered circuit associated with the slot. Unused circuits may be assigned to other functions.

(c) Minimum of two (2) MTD per system. MTD:00 and MTD:01 are assigned as shown here.

(d) If provided MTD:02 and MTD:03 shall be assigned as shown. If not provided, other devices may be assigned to these locations. However the user may wish to reserve the slots for future MTD additions.

(e) MAP:00 is interpreted to mean the office primary general maintenance position. PORT.VDU is the portable visual display unit (VDU) provided for maintenance use within the main equipment aisles. These devices are always provided. The PORT.VDU is assigned a port on IOC:00 and IOC:01 to allow access to all main aisles. Also, for the NT2X76 MDC, the PORT.VDU needs to be assigned a port on MDC in plane 0 and MDC in plane 1.

(f) ETAS service assignments for the VDU and printer are IOC:00 VDU and IOC:01 printer.

IOC DEVICE ADDRESS (HEX)	CARD SLOT & BASE CKT NO. ON SHELF PEC: NT1X61AA SLT	CKT	NT1X61AB/AD/AG SLT	CKT	NT2X76 SLT	CKT	FIXED ASSIGNED DEVICES ON MODULE: IOC:00	IOC:01	NOTE
04	12	16	04	00	21	00	DDU:00	DDU:01	b,c
08	04	00	06	04	19	04	DDU:02	MTD:00	b,d
OC	14	20	08	08	17	08	MAP:00	PORT.VDU	b,e
OD	14	21	08	09	17	09	PORT.VDU	MAP:00	b,e
OF	14	23	08	11	17	11	ETAS	ETAS	b,f
10	06	04	10	12	15	12	AR	AR	a,b
14	16	24	12	16	--	--	AR	AR	a,b
18	08	08	14	20	--	--	AR	AR	a,b
1C	18	28	16	24	--	--	AR	AR	a,b
20	10	12	18	28	--	--	AR	AR	a,b
24	20	32	20	32	--	--	AR	AR	a,b

TABLE B-3

FIXED I/O PORT ASSIGNMENTS FOR LAYOUT WITH ONLY ONE MTD AND ONE OR MORE DDU'S

NOTES FOR TABLE B-3

(a) AR, assign additional DDU, DPP, BMC or terminals as required.

(b) Select and provide the appropriate I/O device control card according to Table B-1.

NT1X61AA RESTRICTIONS:

Subject to restrictions imposed by fixed assignments, cards shall be assigned to slots on the shelf in the same order in which they appear in Table B-3. Maximum of three (3) cards shall be assigned to the group of slots, 04, 06, 08 and 10. Maximum of four (4) cards shall be assigned to the group of slots 12, 14, 16, 18 and 20. These are to satisfy power loading requirements of NT1X61AA where slots 12, 14, 16 etc. are fed from one converter and slots 04, 06, 08 etc. are fed from another.

Fixed-assigned devices are assigned to the lowest numbered circuit associated with the slot. Unused circuits may be assigned to other functions.

(c) Minimum of one (1) DDU per system. DDU:00 and DDU:01 are assigned as shown here.

(d) If provided DDU:02 shall be assigned as shown. If not provided, other devices may be assigned to this location. However, the user may wish to reserve the slot for a future DDU addition.

Minimum of one (1) MTD per system. MTD:00 is assigned as shown here.

(e) MAP:00 is interpreted to mean the office primary general maintenance position. PORT.VDU is the portable visual display unit (VDU) provided for maintenance use within the main equipment aisles. These devices are always provided. The PORT.VDU is assigned a port on IOC:00 and IOC:01 to allow access to all main aisles. Also, for the NT2X76 MDC, the PORT.VDU needs to be assigned a port on MDC in plane 0 and MDC in plane 1.

IOC DEVICE ADDRESS (HEX)	CARD SLOT & BASE CKT NO. ON SHELF PEC: NT1X61AA SLT	CKT	NT1X61AB/AD/AG SLT	CKT	NT2X76 SLT	CKT	FIXED ASSIGNED DEVICES ON MODULE: IOC:00	IOC:01	NOTE
04	12	16	04	00	21	00	DDU:00	DDU:01	b,c
08	04	00	06	04	19	04	MTD:01	MTD:00	b,d
OC	14	20	08	08	17	08	MAP:00	PORT.VDU	b,e
OD	14	21	08	09	17	09	PORT.VDU	MAP:00	b,e
OF	14	23	08	11	17	11	ETAS	ETAS	b
10	06	04	10	12	15	12	AR	AR	a,b
14	16	24	12	16	--	--	AR	AR	a,b
18	08	08	14	20	--	--	AR	AR	a,b
1C	18	28	16	24	--	--	AR	AR	a,b
20	10	12	18	28	--	--	AR	AR	a,b
24	20	32	20	32	--	--	AR	AR	a,b

TABLE B-4

FIXED I/O PORT ASSIGNMENTS FOR LAYOUT WITH
TWO OR MORE MTD'S AND WITH TWO OR MORE DDU'S

NOTES FOR TABLE B-4

(a) AR, assign additional DDU, MTD, DPP, BMC or terminals as required.

(b) Select and provide the approprate I/O device control card according to Table B-1.

NT1X61AA RESTRICTIONS:

Subject to restrictions imposed by fixed assignments, cards shall be assigned to slots on the shelf in the same order in which they appear in Table B-4. Maximum of three (3) cards shall be assigned to the group of slots, 04, 06, 08 and 10. Maximum of four (4) cards shall be assigned to the group of slots 12, 14, 16, 18 and 20. These are to satisfy power loading requirements of NT1X61AA where slots 12, 14, 16, etc. are fed from one converter and slots 04, 06, 08, etc. are fed from another.

Fixed-assigned devices are assigned to the lowest numbered circuit associated with the slot. Unused circuits may be assigned to other functions.

(c) Minimum of one (1) DDU per system. DDU:00 and DDU:01 are assigned as shown here.

(d) Minimum of one (1) MTD per system. MTD:00 and MTD:01 are assigned as shown here.

(e) MAP:00 is interpreted to mean the office primary general maintenance position. PORT.VDU is the portable visual display unit (VDU) provided for maintenance use within the main equipment aisles. These devices are always provided. The PORT.VDU is assigned a port on IOC:00 and IOC:01 to allow access to all main aisles. Also, for the NT2X76 MDC, the PORT.VDU needs to be assigned a port on MDC in plane 0 and MDC in plane 1.

IOC DEVICE ADDRESS (HEX)	CARD SLOT & BASE CKT NO. ON SHELF PEC: NT1X61AA SLT	CKT	NT1X61AB/AD/AG SLT	CKT	NT2X76 SLT	CKT	FIXED ASSIGNED DEVICES ON MODULE: IOC:00	IOC:01	NOTE
04	12	16	04	00	21	00	DDU:00	MTD:02	b,c
08	04	00	06	04	19	04	MTD:01	MTD:00	b,d
OC	14	20	08	08	17	08	MAP:00	PORT.VDU	b,e
OD	14	21	08	09	17	09	PORT.VDU	MAP:00	b,e
OF	14	23	08	11	17	11	ETAS	ETAS	b
10	06	04	10	12	15	12	AR	AR	a,b
14	16	24	12	16	--	--	AR	AR	a,b
18	08	08	14	20	--	--	AR	AR	a,b
1C	18	28	16	24	--	--	AR	AR	a,b
20	10	12	18	28	--	--	AR	AR	a,b
24	20	32	20	32	--	--	AR	AR	a,b

TABLE B-5

FIXED I/O PORT ASSIGNMENTS FOR LAYOUT
WITH ONE OR MORE MTD'S AND WITH ONLY ONE DDU

NOTES FOR TABLE B-5

(a) AR, assign additional MTD, DPP, BMC or terminals as required.

(b) Select and provide the appropriate I/O device control card according to Table B-1.

NT1X61AA RESTRICTIONS:

Subject to restrictions imposed by fixed assignments, cards shall be assigned to slots on the shelf in the same order in which they appear in Table B-5. Maximum of three (3) cards shall be assigned to the group of slots, 04, 06, 08 and 10. Maximum of four (4) cards shall be assigned to the group of slots 12, 14, 16, 18 and 20. These are to satisfy power loading requirements of NT1X61AA where slots 12, 14, 16 etc. are fed from one converter and slots 04, 06, 08 etc. are fed from another.

Fixed-assigned devices are assigned to the lowest numbered circuit associated with the slot. Unused circuits may be assigned to other functions.

(c) Minimum of one (1) DDU per system. DDU:00 is assigned as shown here.

If provided MTD:02 shall be assigned as shown. If not provided, other devices may be assigned to this location. However, the user may wish to reserve the slot for a future MTD addition.

(d) Minimum of one (1) MTD per system. MTD:00 and MTD:01 are assigned as shown here.

(e) MAP:00 is interpreted to mean the office primary general maintenance position. PORT.VDU is the portable visual display unit (VDU) provided for maintenance use within the main equipment aisles. These devices are always provided. The PORT.VDU is assigned a port on IOC:00 and IOC:01 to allow access to all main aisles. Also, for the NT2X76 MDC, the PORT.VDU needs to be assigned a port on MDC in plane 0 and MDC in plane 1.

TABLE C - LINE DRAWER PROVISIONABLE CARDS

PEC CODE: TABLE C

CPC CODE: N/A

RATING: N/A

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Table C-1 lists all DMS-100 Family analog line circuit types and other Line Drawer (LD) provisionable cards and states provisioning rules and assignment restrictions for each.

Table C-2 and C-3 lists the line features supported by each card type. Table C-2 lists Residential line features while Table C-3 lists Coin and PBX line features.

Check URTO, URTS, RTO, RTS dates for Line Cards.

REFERENCE DOCUMENTATION: MS2X19AC 01 03
MS6X05AA 00 12
MS6X05BA 00 07
MS6X05DA 00 01
MS6X05EA 01 01
MSBX32BA 00 06
MSNX14AA 01 01

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

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TABLE C EMA14-03-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
92 07 31	ECM 619 06	ECD 011-15255
92 09 28	ECM 619 09	Correction of Errors in Table C, incl NT6X95 with World Line Card Type B provisioning
92 11 27	ECM 274 08	Revised the assignment rule of NT6X99AA to explicitly state that it can mount in other line card slots as well. Standard Line Card Type D NT6X71AC is cancelled.
93 04 15	ECM 419 04	ECD 011-17940/011-17820 - Introduce NT6X76AD Hayes Supported AILC to replace NT6X76AC AILC. Include NT6X17BA and NT6X18BA.
93 05 14	ECM 619 14	ECD 011-17940 - Introduce NT6X71BA.
93 09 24	ECM 274 09	ECD 006-17182 - Update Single Slot Data Line Card NT6X71BA rules.
93 12 03	ECM 619 18	Correct status of NT6X17AC to GA
93 12 03	ECM 619 19	Typographical error correction
93 12 22	ECM 310 02	ECM 510 cancelled, information information transferred to Table C
94 01 12	ECM 536 05	Correction of typos.
94 11 23	ECM 619 26	EC 011-21137 Introduction of NT6X21AD P-Phone Line Card
95 08 01	ECM 419 05	Change status of NT6X76AC from A&M to MD.
95 10 04	ECM 619 35	Change status of NT0X4598 and NT0X4599 to MD per EC 018-44299.
96 03 28	ECM 619 40	Consolidate Japan LCE Line Cards and Notes into TABLE C per MS6X05AA and EC 024-94219. Other updates per current MS document.
97 03 21	ECM 619 43	MD NT6X51AB per EC 024-96698. Also, update Rule M, Note 5. Minor editing correction to Note T. MD the following PECs per EC 024-97629: NT6X21AA/AB, NT6X71AA/AB, NT6X93AA/BA/CA/DA/EA, NT6X94AA/AB/BA/BB/CA/DA, NT6X95AB, and NT6X98AA. Also, reflect that NT6X71AC was MD per EC 006-17560; NT6X95AA was MD per EC 018-22232; and

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
		NT6X17AA/AB was MD per EC 018-19031.
97 04 18	ECM 619 44	Update EMS TABLE C per EC 02-97291 and EC 028-15577. Change Rule Z to reflect new product NT6X05DA ILD-R.
97 08 29	ECM 619 47	Update EMS TABLE C, Rules O, W and X to reflect NT6X99AA IBERT provisioning rules per EC 011-21643.
97 09 26	ECM 722 01	Update EMS TABLE C, Rules B, N, Q, T, X, AB, AI to reflect NTEX17AA xLC and NT6X05EA LCM Line Drawer provisioning requirements and restrictions in DMS-100 Host Office LCE frames for 1-Meg Modem Service per 1-MMS Product Spec issue 01.08, EC 024-98088 and EC 024-98055.
97 11 14	ECM 619 49	Update EMS Rule W to reflect provisioning information for the NT6X21BC Line Card for International applications (GL03-China) per EC 024-98361. Also, update Rule AB, part 5 to include WLC restriction for Japan.

The Table C - Line Drawer Provisionable Cards is comprised of the following:

	PEC	CIRCUIT TYPE	RULES
	NT2X17AB	STD Line Card Type A	a,b,c
#	NT2X18AC	STD Line Card Type B	a,c,d
	NT2X18AD	STD Line Card Type B With +48V	a,c,e,g
	NT2X18AE	STD Line Card Type B W/O +48V	a,c,f,g
	NT2X03AA	Power Converter (+48V)	h
#	NT0X4599	Line Drawer Terminator	i,k,l
#	NT0X4598	Line Drawer Terminator	j,k,l
#	NT6X17AA	Standard Line Card Type A	m,b
#	NT6X17AB	Standard Line Card Type A	m,b
	NT6X17AC	OPT Line Card Type A	m,b
	NT6X17BA	World Line Card Type A	m,b,aa
	NT6X18AA	Standard Line Card Type B W/O +48V	n
	NT6X18AB	Standard Line Card Type B with +48V	n
	NT6X18BA	World Line Card Type B	ab
#	NT6X21AA	Standard Line Card Type C	o
#	NT6X21AB	Standard Line Card Type C	o,r
	NT6X21AC	Standard Line Card Type C	o
	NT6X21AD	P-Phone Line Card Type C	o
	NT6X21BC	Type C Line Card (A-Law)	w
#	NT6X71AA	Standard Line Card Type D	p
#	NT6X71AB	Standard Line Card Type D	p
#	NT6X71AC	Standard Line Card Type D	p
	NT6X71BA	Single Slot Data Line Card	p
	NT6X19AA	Standard Line Card Type E	q
	NT6X20AA	Message Waiting Converter	t
	NT6X23AA	Power Converter (+48V)	t
#	NT6X76AA	Asynchronous I/F Line Card	s
#	NT6X76AC	Enhanced Asynchronous I/F Line Card	s
	NT6X76AD	Hayes Supported Asynchronous I/F Line Card	s
	NT6X87AB	Data Above Voice Line Card (DAVLC)(4 Slot)	ah
#	NT6X93AA	Type A Line Card (Turkey)	va
#	NT6X93BA	Type A Line Card (CEP)	va
#	NT6X93CA	Type A Line Card (China)	va
#	NT6X93DA	Type A Line Card (Morocco)	va
#	NT6X93EA	Type A Line Card (Australia)	va
#	NT6X98AA	SCOPEDIAL Line Card (UK)	va
#	NT6X94AA	Type B Line Card (Turkey)	vb
#	NT6X94AB	Type B Line Card (Turkey)	vb
#	NT6X94BA	Type B Line Card (CEP)	vb
#	NT6X94BB	Type B Line Card (CEP)	vb
#	NT6X94CA	Type B Line Card (China)	vb
#	NT6X94DA	Type B Line Card (Morocco)	vb
	NT6X64AB	Misc Use Line Card (Japan)	ac
	NT6X64AC	Misc Use Line Card (Japan)	ac

NT6X22AA	Metallic Access Line Card (Japan)	ad
NT6X24AA	Metallic Test Interface Card (Japan)	ad
NT6X33AA	General Use Line Card (Japan)	ae,af
NT6X64AA	Misc Use Line Card (Japan) (2 Slots)	ae,ag

TABLE C-1: LINE DRAWER PROVISIONABLE CARDS

	PEC	CIRCUIT TYPE	RULES
#	NT6X95AA	Metering Tone Generator	u
#	NT6X95AB	Metering Tone Generator	u
	NT6X99AA	IBERT Line Card	x
	NTBX26AA	ISDN 'S/T' Interface Line Card	y
	NTBX27AA	ISDN 2B1Q 'U' Interface Line Card	z
	NTEX17AA	xLC Line Card (2 Slots)	ai

TABLE C-1: LINE DRAWER PROVISIONABLE CARDS

FLAGS:

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X04AB	MD	NT6X04AC
NT2X18AC	MD	NT2X18AE or AD
NT0X4598	MD	No Replacement
NT0X4599	MD	No Replacement
NT6X76AA	MD	NT6X76AD
NT6X76AC	MD	NT6X76AD
NT6X17AA	MD	NT6X17AB
NT6X17AB	MD	NT6X17AC
NT6X21AB	MD	NT6X21AC
NT6X71AA	MD	NT6X71AB
NT6X71AB	MD	NT6X71BA(BCS32+)
NT6X71AC	MD	NT6X71BA
NT6X93AA	MD	NT6X17BA
NT6X93BA	MD	NT6X17BA
NT6X93CA	MD	NT6X17BA
NT6X93DA	MD	NT6X17BA
NT6X93EA	MD	NT6X17BA
NT6X94AA	MD	NT6X94AB
NT6X94AB	MD	NT6X18BA
NT6X94BA	MD	NT6X94BB
NT6X94BB	MD	NT6X18BA
NT6X94CA	MD	NT6X18BA
NT6X94DA	MD	NT6X18BA
NT6X95AA	MD	NT6X95AB

PEC	RATING	REPLACED BY PEC
NT6X95AB	MD	No Replacement
NT6X98AA	MD	NT6X17BA

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.

NOTE: Check URTO, URTS, RTO, RTS dates for the cards listed above.

NOTES:

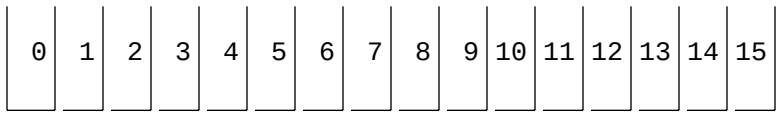
1) Recommended Line Card Spread

Spread each line card type equally over all LCM. Then spread each line card type found in the LCM equally over all LSG within the LCM (applicable to initial and extension offices). See exception in item 1.1.

In most cases the number of line cards per card type will not be evenly divisible by the number of LSG and by the number of LCM. Therefore, in such cases, there will be an imbalance of one. This increment (imbalance) of one from each line type is to be spread around so that the total number of line cards is nearly constant across all LSG and LCM.

Line Card Type A, B, C, E, Single Slot Line Card Type D, and ISDN 2B1Q 'U' Interface occupy one card slot and Standard Line Card Type D, Type L Message Waiting Converter CP, Power Converter (+48V) CP, ISDN 'S/T' Interface, IBERT Line Card and Asynchronous Interface Line Cards occupy two slots. The line card slot arrangement within an non-ISDN LSG is shown below:

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31



Line Card Slot Numbering Scheme For One LSG

The line card slot arrangement within an LSG for the ISDN 2B1Q LCM is shown below:

1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31
0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30

Line Card Slot Numbering Scheme For One LSG

NOTE: The top LSG of NTBX32BA ISDN 2B1Q Line Drawer has the Point of Use Power Supply (PUPS) card assigned to slots 28-30.

The following is a recommended Line Card spread procedure: (variations to this procedure may be requested by the Telco)

Spread line cards and converters within an LSG (of a non-ISDN LCM) in the following fashion:

1.1 First, assign the Message Waiting Converter CP, NT6X20AA or the Power Converter (+48V) CP, NT6X23AA to the specific Line Drawer. As of BCS-16 the converter cards must be assigned to slot 0 of the upper LSG within the line drawer (i.e. odd numbered LSG). Only one converter card is assignable per Line Drawer. (Therefore, Line Card Type E requiring message waiting and Line Card Type B requiring fraud prevention feature cannot co-exist in the same line drawer.)

1.2 Second, assign Line Card Type A starting from slot 0 (starting from slot 1 if the Message Waiting Converter CP NT6X20AA or the Power Converter (+48V) NT6X23 is assigned to slot 0) in the following order: 0, 16, 1, 17, 2, 18, 3, 19, 4, 20, 5, 21, 6, 22, 7, 23, 8, 24, 9, 25, 10, 26, 11, 27, 12, 28, 13, 29, 14, 30, 15 and 31.

For reliability purposes, distribute line cards over physical ISDN 2B1Q Line drawers. For maximum cooling efficiency, populate the line cards horizontally before determining vertical distribution within a physical drawer. Assign the ISDN 'S/T' and the ISDN 'U' Interface Line Cards first, then the Type A Line Cards with this in mind. If there is more than eight (8) S/T-Interface line cards in the same row as Type A line cards, then the Type A 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.

1.3 Continue with Line Card Type B where Line Card Type A is finished and follow the same sequence. Line Card Type B is not supported on the LCME.

1.4 Third, continue with Line Card Type C where Line Card Type B finished and continue the same sequence.

1.5 Fourth, continue with Line Card Type E where Line Card Type C finished and continue the same sequence.

1.6 Fifth, assign Line Card Type D to the non-ISDN LCM. For offices with BCS-32 and/or later, assign Single Slot Data Card Type D starting from slot 15 in the following sequence: 15, 31, 14, 30, 13, 29, 12, 28, 11, 27, 10, 26, 9, 25, 8, 24, 7, 23, 6, 22, 5, 21, 4, 20, 3, 19, 2, 18, 1, 17, 0, 16. For offices with BCS-31 and/or earlier, assign Standard Line Card Type D starting from slot 15 in the following sequence: 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1 and 0.

1.7 Sixth, assign Line Card Type D to the ISDN LCM starting from slot 30 in the lower LSG and slot 16 in the upper LSG. For offices with BCS-32 and/or later, assign Single Slot Data Card Type D in the following sequence: 30, 31, 28, 29, 26, 27, 24, 25, 22, 23, 20, 21, 18, 19, 16, 17, 14, 15, 12, 13, 10, 11, 8, 9, 6, 7, 4, 5, 2, 3, 0, 1. For offices with BCS-31 and/or earlier, assign Standard Line Card Type D in the following sequence: 30, 28, 26, 24, 22, 20, 18, 16, 14, 12, 10, 8, 6, 4, 2, and 0. The Line Card Type D cannot be mounted in the ten line card positions (slots 18 to 26) in the top LSG next to the PUPS line card. It is permitted to mount the Line Card Type D in the lower LSG directly under the PUPS.

1.8 Seventh, assign Line Card Type L continuing where the Type D Line Cards finished.

1.9 The slots above the assigned Standard Line Card Type D, Line Card Type L, Message Waiting Converter CP, Power converter (+48V) CP,

ISDN 'S/T' Interface, and IBERT Line Card are made unavailable as the card takes two (2) slots.

1.10 For extensions assign as follows:

First, assign the Message Waiting Converter CP or the Power Converter (+48V) CP as per item 1.1. Then assign line cards in the order of item 1.2, 1.3, 1.4, 1.5 and 1.6 and as prescribed by these items. Thirdly, start assigning Standard Line Card Type D where the Standard Line Card Type D finished at the previous extension and follow the sequence of item 1.6. Fourth, assign Line Card Type L where the Type L cards finished at the previous extension and follow the sequence of item 1.7.

1.11 If office already engineered then at least implement item 1.1.

1.12 For multi zone DF, for zoning purposes treat the LSG as LD of LME. In most cases the number of line cards per card type will not be evenly divisable by the number of LSG's. Therefore, ensure that these imbalances of one (1) do not bunch up (i.e. do not put in the same zone all these positive or additional one (1) from each line type). In other words, make sure that each zone has equal number of lines for each line card type and equal number of total line cards.

1.12 For reliability, spread the message waiting line cards evenly across all the line drawers in the office.

2) MADN

The rules for assigning MADN members to a MADN group are as follows:

2.1 Spread the MADN members belonging to a specific MADN group across as many LM/RLM/LGC/LCM/LD/LSG as possible.

2.2 The maximum number of MADN members of the same MADN group that can be assigned to LM/LCM is eight (8).

2.3 The maximum number MADN business set members of the same MADN group that can be assigned to an LGC/LTC is 16.

2.4 The maximum number of MADN members belonging to the same MADN group that can be assigned to line drawer of an LM/RLM bay or to an LSG of an LCM is as follows:

For 500/2500 subscriber set is 4.

3) For offices that have double slot line cards, double slot converters or Point of Use Power Supplies (NTBX71AA) on the LCME line drawers order A0313317, Two Slot Line Card Insertion/Removal Tool.

Also, in each Host & Remote Site, provide one (1) A0298291 and one (1) A0298292 for each 10,000 core equipped line/site in the LCM's. The minimum is two each except RLCM/OPM site where minimum is one. A0298291 is the line card insertion/removal tool and A0298292 is the line card removal tool. This is to be ordered in the 996 spec.

The following Multi Frequency Ringing types are supported in DMS. The appropriate Ringing Generator Interface card must be equipped in each Line Module Control shelf of the LME or RLM (see MS2X14AE, Section EMR2-04-LMC-3, and MS2X14AF, Section EMR2-04-RLC-3).

MF TYPE	CARD PEC	FREQUENCIES (Hz)
Harmonic	NT2X27AC	16-2/3, 25, 33-1/3, 50, 66-2/3
Decimonic	NT2X27AB	20, 30, 40, 50, 60
Synchromonic (16 Hz)	NT2X27AD	16, 30, 42, 54, 66
Synchromonic	NT2X27AE	20, 30, 42, 54, 66
20 Hz Bell Coded	NT2X27AF	20

NOTE: DMS supports only 4 frequencies in each group. Any four may be selected.

RULES:

a) Each line card consists of one line circuit. Line cards are selected per Tables C-2 and C-3 for use according to the line features to be supported.

b) 1. Additionally provide one (1) NT2X17AB per LME and RLM bay and equip in slot 00 LD:00 for use as a Test Line Card. Not to be assigned to a subscriber loop.

2. One type A line card on slot 00 in line sub group 00 must be provided for each LCM on a dedicated basis for diagnostic/testing purposes when analog ringing is required (i.e. in the absence of analog ringing, this slot is available for subscriber use). In the NT6X05EA Line Drawer, the NTEX17AA xLC Line Card meets this requirement.

c) 1. For Canadian applications only, provide at least one line card (LC) per equipped line drawer (LD) to enable the Telco to commission and diagnose the bus interface card of each LD during in service. For LD 00 this means that there will be a minimum of two line cards required (i.e. this requirement is in addition to slot 00 LD 00). This card can be assigned to a subscriber.

2. For Canadian applications only, it is no longer required that one LME/RLM/LCE/RLCM frame for each initial and extension office be provided with one line drawer/line sub group equipped with 32 line cards to enable commissioning of the LD-MDF cable. The 32 line cards must still be available in the office. However, if there is no LD/LSG filled up with 32 line cards then commissioning will fill up one LD/LSG before the cable test and after the cable test will move the line cards back. For the purposes of this rule LD refers to the LD in the LME/RLM frames (for new peripherals LSG is used).

3. For Canadian Applications only, RLM’s with the ESA option require a minimum of two (2) line cards per bay in order to demonstrate the intra bay calling option with ESA.

d) In order to limit total LM bay dissipation the number of Type B line cards equipped on each LME or RLM bay shall not exceed 128 for NT2X18AC. Restrict quantities as follows:

No. of NT2X18AC < 128

e) The NT2X18AD card shall be provided only in offices where the +48V method of coin fraud prevention is required.

f) The NT2X18AE card provides all the current Type B features with the exception of +48V. This card is NT’s standard Type B offering.

g) 1. For extensions to existing offices equipped with NT2X18AD’s, the NT2X18AE line cards should be supplied to offices where the +48V interface is not required. Having 2 versions of type ’B’ line cards in these offices will not present an administration problem to the Telco because the +48V capability

in the NT2X18AD is redundant in these offices, and all the type 'B' line cards are still interchangeable.

2. For offices where the +48V interface is required, supply NT2X18AD for all type 'B' requirements. Mixing type 'B' line cards in these offices (i.e. NT2X18AD for coin lines, and NT2X18AE for other type 'B' requirements) will result in loss of flexibility in subscriber line administration.

h) As a minimum requirement, provide one (1) NT2X03AA for each Line Drawer which is to be equipped with at least one NT2X18AD card which requires +48V to support its assigned features.

For optimum flexibility in an office requiring NT2X03AA cards, the standard procedure is to provide one (1) NT2X03AA for each LD equipped with NT2X18AD cards.

Assign to LD slot 31 only.

i) "Old" design LME NT0X45AA,AB and RLM frame NT0X45BA require NT0X4599 which connects to the footplate where the line drawer would otherwise have been connected.

j) "New" design LME NT0X45AC and RLM frame NT0X45BB,BC,BD require NT0X4598 which connects to the cable connector which would otherwise have gone to the line drawer.

k) 1. The Line Drawer Terminator (LDT) provisioning rule is stated per ten (10) line drawer positions (shelf pair).

2. LD position 19 with the RSM interface on an RLM is equivalent to an empty line drawer.

3. No. of LDT per ten line drawer positions

$$= 7 - \frac{LD}{2.3} - \frac{LC}{32}$$

l) Starting with LME frame, NT0X45AD, and RLM frames, NT0X45BE, BF, BG, which are equipped with Power Converter CP, NT2X05AB, any subsequent LME or RLM frame will not require LDT's.

m) 1. New World Line Card Type A (NT6X17BA) will support same features as old line card type A (NT6X17AC). For all domestic offices order the World Line Card (NT6X17BA. NT6X17BA requires at least BCS 33 load.

NOTE:

For RNS engineered jobs, the NT6X17AC is still to be provided until the NT6X17BA becomes qualified for use in the RNS market.

2. Provide one (1) NT6X17BA Line Card for each modem pool member per customer requirements. (non RNS jobs)

2a. Provide one (1) NT6X17AC Line Card for each modem pool member per customer requirements for RNT engineered jobs.

3. The PEC for the Optimized Line Card, NT6X17AB is being changed to NT6X17AC without any equipment change. For initial and extensions jobs order NT6X17AC.

4. Provide one (1) NT6X17AB Line Card for each modem pool member per customer requirements.

5. The World Line Card Type A (NT6X17BA) is not supported by 'small memory' LCMs, i.e., LCMs using LCM Processor CP NT6X51AA. Extended memory LCM, with LCM Processor CP NT6X51AB must be used. NT6X51AB is MD and replaced by NT6X51AC.

n) New line card type B will support same features as its equivalent old line card type B. Do not provision the NT6X18AB in the NT6X05EA LCM Line Drawer.

o) 1. Line card type C will only support the business set P-phone. The NT6X21AC rplaces both the NT6X21AA and NT6X21AB.

2. Provide NT6X21AD for operation with P-Phones subtended from Universal Digital Loop Carriers (ULDC).

3. The NT6X21AC must not be placed within two (2) slots adjacent to the NT6X99AA IBERT card on either side.

4. The NT6X21AD shall not be used in DMS-10 applications.

p) 1. Line card type D will only support the data unit.

2. Provide one (1) Line Card Type D for each modem pool member per customer requirements.

3. The Standard Line Card Type D NT6X71AC (requires double slots) is cancelled and replaced by NT6X71AB.

4. The Single Slot Data Line Card NT6X71BA replaces Standard Line Card Type D (requires double slots) NT6X71AA, NT6X71AB and NT6X71AC for offices with BCS-32 or higher. Offices with BCS-31 or lower will continue to provision the NT6X71AB Standard Line Card Type D. The NT6X71BA needs no more than 23mA of current.

q) Line card type E will support telephone sets with message waiting lamp and single party features. Do not provision the NT6X19AA in the NT6X05EA LCM Line Drawer.

r) Line card type C, NT6X21AB is available which is good for 4.5 km (15K ft) of 26 gauge cable at 8 KHz and 21 degrees C. The old version of the line card type C, NT6X21AA is good for only about 7.5K ft. Both line cards are for the business set application.

s) 1. The Asynchronous Interface Line Card (AILC) is used in conjunction with an Asynchronous Interface Module (AIM) to interface a user's DTE to the SL-100 switch. Additionally, it can be used with equipment (terminals, packet assembler/dissemblers or protocol converters) that uses a compatible RS-422 interface. The AILC can be used with data line cards and data units and, in addition, can employ the modem pooling feature as do DU/DLC's.

2. The AILC occupies two slots in the line drawer. It is assignable to any slot in the lower row of each line sub group(LSG). It will make unavailable the corresponding slot in the upper row of the LSG (for example, in a non-ISDN LSG, an AILC assigned to slot 15 makes slot 31 unavailable, and, in an ISDN LSG, an AILC assigned to slot 14 makes slot 15 unavailable, etc.). The AILC uses both line card connectors. One is used for transmit and the other is used for receive. Although it uses two lines, the AILC appears to the LGC as a single circuit.

3. The NT6X76AA AILC requires 55 mA of +15V power in standby mode and 70 mA when active. This is an important consideration in an LCM that is heavily populated with asynchronous line cards. The +15V supply is limited to 15A when operating off of a single power converter. Potentially this could limit the number of line cards to twenty-one per line drawer.

4. The NT6X76AC AILC requires 15 mA of +15V power in standby mode and 27 mA when active. This is within the normal two-slot power allowance for a line card, therefore the NT6X76AC can be provisioned as required in a line drawer without exceeding current limits.

5. The NT6X76AD Hayes Supported AILC replaces NT6X76AC and earlier versions of NT6X76__. The NT6X76AD supports both Hayes command set and NT symbolic dialing set, while the NT6X76AC only supports NT symbolic dialing set. The NT6X76AD requires 3.5mA to 5mA less of +15V power than NT6X76AC Enhanced AILC. The provisioning rules for NT6X76AD are the same as for NT6X76AC.

6. Due to the potentially very high usage of data lines, the population of asynchronous line cards and data ine cards in an LCM could be limited by the available channels of the LGC. Similarly, a heavily populated LCM could be limited due to the increased messaging required by data lines.

t) 1. One (1) NT6X23AA, Power Converter (+48V) is required in the Line Drawer if there are any Line Card Type B with +48V (NT6X18AB) and this +48V feature is required (requires double slot). Locate NT6X23AA in the odd LSG, slot positions 0 and 16. The ISDN 2B1Q LCM (LCME) does not support Type B Line Cards; therefore, NT6X23AA is not to be supported on the LCME.

2. One (1) NT6X20AA, Message Waiting Converter card is required in the line drawer if there are any type E line cards. Locate NT6X20AA in the odd LSG, slot positions 0 and 16.

3. Do not provision the NT6X20AA or the NT6X23AA in the NT6X05EA LCM Line Drawer.

u) 1. For applications using tone metering, provide one (1) NT6X95AB Metering Tone Generator per Line Drawer equipped with any Type B Line Card versions, except for the World Line Card Type B, NT6X18BA. That is, for tone metering applications, if the Type B Line Cards in the Line Drawer comprise World Line Card Type B only, the NT6X95AB is not required because the World Line Card contains a metering tone generator. The Metering Tone Generator card is assigned to slot 0 of the upper LSG only (i.e. the odd line sub-group).

va) 1. Provide one (1) NT6X93AA or NT6X93BA for each 600 ohm POTS line.

2. Provide one (1) NT6X94AB for each line requiring meter pulsing coin control or for reversals for coin or PBX lines. NT6X94AB replaces NT6X94AA and requires BCS22 software to support it.

3. The NT6X94BB Type B Line Card replaces the NT6X94BA Line Card for applications in the Caribbean Expansion Plan. This Line Card requires BCS-24 software to support it.

4. For China, provide one (1) NT6X93CA for each POTS line or one (1) NT6X94CA for each line requiring meter pulsing coin control.

5. For Morocco, provide one (1) NT6X93DA for each POTS line or one (1) NT6X94Ca for each line requiring meter pulsing coin control.

6. The NT6X98AA SCOPEDIAL Line Card uses A-Law companding and is designed specifically for the UK market where it is used, typically, for military applications Defense Switched Network (DSN). This line card is compatible with switch environments in the UK and therefore must not be provisioned outside the UK. NT6X98AA may only be provisioned in switches using A-Law companding.

7. For RNS engineered jobs, provide the NT6X17AC until the NT6X17BA becomes qualified for use in the RNS market.

vb) 1. Provide one (1) NT6X94AB for each line requiring meter pulsing coin control or for reversals for coin or PBX lines. NT6X94AB replaces NT6X94AA and requires BCS22 software to support it.

2. The NT6X94BB Type B Line Card replaces the NT6X94BA Line Card for applications in the Caribbean Expansion Plan. This Line Card requires BCS-24 software to support it.

3. For China, provide one (1) NT6X93CA for each POTS line or one (1) NT6X94CA for each line requiring meter pulsing coin control.

4. For Morocco, provide one (1) NT6X93DA for each POTS line or one (1) NT6X94CA for each line requiring meter pulsing coin control.

w) 1. The NT6X21BC is a standard Type C Line Card modified for A-Law operation. This Line Card supports the standard business set (P-Phone) and requires BCS-23 software to support it. The NT6X21BC Line Card may be provisioned for the UK and International applications (GL03-China) requiring A-Law. A-Law line cards must not be provisioned in the same office as U-Law type line cards. Do not place the NT6X21BC Line Card within two (2) adjacent slots, either side, of an NT6X99AA IBERT card. Reference Rule X, part 4.

x) 1. IBERT line card provides an optional maintenance capability for testing the data loops in a DMS office (i.e. office with Datapath features). Although the appearance of the IBERT is that of a line card, the IBERT is NOT a line card in the normal sense as there is no subscriber loop or set associated with it. The only interaction with an IBERT is achieved from a MAP through the DMS/IBERT messaging interface.

2. While BER testing can be performed by either the NT6X99AA card, which mounts in an LCM, or by the NT4X23AA card, which mounts in an MTM, there is a software problem that prevents the NT4X23AA from successfully testing Datapath Extension trunks. Therefore, it is recommended that the NT6X99AA be used for DMS-100 and DMS-100/200 offices (local and local/toll applications) and the NT4X23AA be used for DMS-200 offices (toll applications).

A minimum of one (1) NT6X99AA (requires 2 slots) per LCM or 24 per office (whichever is larger) should be provisioned for basic test capability in DMS-100 or DMS-100/200 offices. Higher quantities of test cards will provide faster office coverage.

3. For datapath loop testing it is recommended that one (1) NT6X99AA IBERT Line Card be provided per LCM equipped with a data line card. Although NT6X99AA can mount on other line card slots, it is recommended that NT6X99AA be located on slot 1 in line sub group 00 of an LCM or on slot 0 in line sub group 10 of the same LCM. In the NT6X05EA LCM Line Drawer, locate the NT6X99AA IBERT Card in the odd LSG in the last slot positions, 15 and 31.

4. If switch bit error rate testing is required, it is recommended that one (1) NT6X99AA IBERT Line Card be provided for each LCM in the office. Although NT6X99AA can mount on other line card slots, it is recommended that NT6X99AA be located on slot 1 in line sub group 00 of an LCM or on slot 0 in line sub group 10 of the same LCM. In the NT6X05EA LCM Line Drawer, locate the NT6X99AA IBERT Card in the odd LSG in the last slot positions, 15 and 31.

When provisioning an IBERT (NT6X99AA) card in a line drawer, do not provision other card types within two (2) horizontally adjacent slots of the IBERT on either side except for the following: NT6X20AA Message Waiting Converter, and NT6X23AA Power Converter +48v.

5) Up until BCS-24 the maximum number of IBERT line cards (NT6X99AA) and DTU BERT Unit Circuits (NT4X23AA) (i.e. two

circuits per card) allowed in an office (host plus all associated remotes) is 64.

For more information on DTU BERT Unit Card (NT4X23AA), see Table A Trunk Module Provisionable Cards.

As of BCS-25, the maximum number of NT6X99AA cards and NT4X23AA circuits allowed in an office is 128.

For Canadian Applications Only

If the IBERT line card requirement exceeds the above software limitations of 64 and 128 respectively in an office, it is permissible to perform the associated tests by restructuring the associated software data tables accordingly.

y) 1. This card offers a digital 4-wire ISDN S/T Interface for ISDN services. This card mounts on an ISDN LCME.

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.

z) 1. This card offers a digital 2-wire ISDN U Interface for ISDN services. This card mounts on an ISDN LCME.

2. This card also mounts on an NT6X05DA ISDN Line Drawer for North America Remote applications in the RLCM, OPM, OPAC, RSC (LCE) and RSC-S (CLCE) products.

aa) 1. Provide one (1) NT6X17BA World Line Card Type A for international markets on all new jobs. NT6X17BA requires minimum BCS33 software. The World Line Card Type A replaces the following international line cards:

* NT6X93AA (Turkey, Belize)
* NT6X93BA (CEP)
* NT6X93CA (China)
* NT6X93DA (Morocco)
* NT6X93EA (Australia)
* NT6X98AA (UK Scopedial)

For RNS engineered jobs, provide the NT6X17AC until the NT6X17BA becomes qualified for use in the RNS market.

ab) 1. The World Line Card supports the same features as equivalent Type B Line Cards. The World Line Card does not support Message Waiting Lamp and the British Telecom 30K ohm loop feature. Equivalent Line Type B Cards are:

* NT6X33AA - Japan
* NT6X94AB - Turkey, Belize and Guyana
* NT6X94BB - Caribbean
* NT6X94CA - China
* NT6X93DA - Morrocco
* NT6X18AA - North America

2. The World Card Type B requires BCS33, or later, load.

3. The World Line Card Type B (NT6X18BA) is not supported by 'small memory' LCMs, i.e., LCMs using LCM Processor CP NT6X51AA. Extended memory LCM, with LCM Processor CP NT6X51AB must be used.

4. The World Line Card Type B (NT6X18BA) may not be used for +48V applications in the NT6X05EA LCM Line Drawer.

5. The World Line Card Type B (NT6X18BA) may not be used for Japan applications. See NT6X33AA Line Card, and Rules AE, AF.

ac) 1. Provide NT6X64AB Misc Use Line Card as required. The NT6X64AB may be provisioned in odd line drawer slot pairs, for example: 01/17 or 03/19, in DMS-10 Japan applications.

2. Provide NT6X64AC Misc Use Line Card as required. The NT6X64AC may be provisioned in odd line drawer slot pairs, for example: 01/17 or 03/19, in DMS-10 Japan applications.

ad) 1. Provide one (1) NT6X22AA Metallic Access Line Card, per line drawer, if the No-Ring Feature is turned on in DMS-10 Japan applications only. Provision in slot pairs 00/16 of even numbered LSGs only.

2. Provide one (1) NT6X24AA Metallic Test Interface Card, per line drawer, if the No-Ring Feature is turned off in DMS-10 Japan applications only. Provision in slot pairs 00/16 of even numbered LSGs only.

ae) 1. These line cards must be used in conjunction with the NT6X30BA Japanese ringing generator.

af) 1. Provide for POTS and single party line for Japan.

ag) 1. Provide for two-party and coin phone for Japan (requires double slot).

ah) 1. Provide Transmission Facility for ASCII data above voice (requires 4 slots).

ai) 1. Provide NTEX17AA xLC line cards for 1-MMS voice and data service on the xLC within the NT6X05EA LCM Line Drawer. This Line Drawer is to be used for North America Host Office LCE frame applications only. (Requires 2 slots).

2. If only xLCs are deployed within a drawer, a maximum of 16 may be installed. The xLCs are to be populated in the even LSG only (two lower rows of drawer). The odd LSG (two [2] upper rows of drawer) must be left completely unpopulated. Note that xLCs are mountable in the even LSG slots 0-15, physically occupying slots 0-31, and that the odd LSG slots 0-31 are unavailable when xLCs are mounted in the even LSG slots 0-15.

3. If xLCs and other Line Cards are to be mixed, Rule ai, part 2 remains as stated for the xLC cards. Line cards are not allowed in slots vertically above xLCs. Furthermore, line cards are not allowed in slots closer to the DBIC than the farthest xLC. For example, if an xLC occupies slots 07/23 of the even LSG, no line cards are allowed in slots 00-07 and 16-23 of the odd LSG.

		FEATURE LINE CIRCUIT TYPE (NT2X SERIES)			
	ANI	'A' -17AB	'B' -18AC	'B' -18AD	'B' -18AE
Single Party-					
- 20 Hz AC/DC Bridged or ring to grd.	NA	*	*	*	*
- MF Bridged or ring to grd.	NA	*	*	*	*
Two Party-					
- 20 Hz AC/DC Ring Divided	YES		*	*	*
- MF Divided	YES		*	*	*
- MF Bridged	NO		*	*	*
Four Party-					
- MF (BRIDGED)	NO		*	*	*
- MF (DIVIDED)	YES		*	*	*
- Semi-Selective Ringing (20 Hz AC/DC Divided Coded)	NO		*	*	*
- 20 Hz AC/DC Bridged Coded	NO		*	*	*
- Fully Selective Ringing (20 Hz Superimposed Divided)	YES		*	*	*
Eight Party-					
- 20 Hz AC/DC Divided Coded	NO		*	*	*
- MF Divided	NO		*	*	*
- 20 Hz Superimposed Divided Coded (Semi-Selective)	NO		*	*	*

TABLE C-2

LINE CARD FEATURES
(NT2X SERIES)

RESIDENTIAL LINES

	FEATURE LINE CIRCUIT TYPE (NT2X SERIES)			
	'A' -17AB	'B' -18AC	'B' -18AD	'B' -18AE
COIN:				
Prepay - Dial Tone First (Loop ST)				
- Rotary Dial			* * *	
- Touch Tone ┼48V on ring fraud prevention				*(2)
- Touch Tone -48V T/R REV fraud prevention				*(1) *
- Touch Tone no fraud prevention				* * *
Prepay - Coin First (Ground ST)				
- Rotary Dial			* *	
- Touch Tone ┼48V on ring fraud prevention				*(2)
- Touch Tone -48V T/R REV fraud prevention				*(1)
- Touch Tone no fraud prevention				* *
Semi- Post Pay		*	*	*
PBX:				
- Loop Start	*	*(3)	*	*
- Ground Start		*	*	*
- Toll Diversion (4)		*	*	*
- Hotel/Motel (5)		*	*	*
- WAT's & TWX:	*	*	*	*

NOTE: (*) Indicates reference note

TABLE C-3

LINE CARD FEATURES
(NT2X Series)

COIN AND PBX

NOTES FOR TABLE C-3:

(1) When no ground isolation is provided in the coin station, a 900 ohm limit applies.

(2) +48 Volt supply required for fraud prevention, use NT2X03AA (see Note h) of Table C-1 above).

(3) Out-going calls to operator only.

(4) Indication provided by reverse battery.

(5) Indication provided by reverse battery to PBX message registers.

TABLE D - FSP, INV, CU, AXU INCLUDED CARDS

PEC CODE: TABLE D

CPC CODE: Not Applicable

RATING: N/A

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Table D lists all cards, fixed-by-design and provisionable, included in the various DMS-100 Family Frame Supervisory Panels (FSP), D.C. Fan Units, Inverter Units (INV), Cooling Unit (CU) and Office Alarm X-Connect Field Units (AXU). This table is provided as a convenience to aid in spare card provisioning for these units.

Table D-1 describes the various cards while Table D-2 and D-3 provide the quantities associated with each unit.

NOTE: Cooling Unit, NT0X30AD, has no cards and therefore is not listed.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

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

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

TABLE D EMA14-04-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
93 03 12	ECM 617 07	Add NTMX26BA spares; reformat Table D.
93 07 12	ECM 616 12	Incorporate The following Changes: - Add NTBX37AB spares to Table D-2. - Reposition Author and Contact entries - Add CPC, Replaces, and Replaced By entries
93 11 18	ECM 690 01	Update Table D with equipment that is required for EAS.
94 03 09	ECM 690 03	ECD 018-41172 Introduction of the NT3X89CA AXU for TME.
95 08 29	ECM 691 12	Show NTMX26BA as MD per EC 24-94287.

The Table D - FSP, INV, CU, AXU Included Cards is comprised of the following:

UNIT PEC	RATING	USED ON FRAMES:	RULE
FRAME SUPERVISORY PANELS:			
NT0X28AA	MD	NT0X41AC, NT3X45AA,	
NT0X28AB	MD	NT0X41AJ, NT0X41AB, NT0X41AK, NT3X45AB,	
NT0X28AC	MD	NT0X48AA, NT0X48AB, NT0X48AC,	
NT0X28AD	MD	NT0X43AA, NT0X43AB,	
NT0X28AE	MD	NT5X08AA	
NT0X28AF		NT3X45CA, NT3X45CB, NT3X45DA, NT3X45DB, NT3X45DW, NT3X45EA, NT3X45EW	
NT0X28AG		NT0X48AG, NT0X48AH, NT0X48AJ,	
NT0X28AH		NT5X08AB	
NT0X28AJ		NT0X43AC	
NT0X28AK		NT5X13AA, NT5X13BA, NT8X10AA	
NT0X28AL		NT0X43AC, NT0X43AD	
NT0X28AM		NT6X01AA, NT6X01BA, NT6X06AA, NT6X06AB, NT6X06AC	
NT0X28AN		NT6X06AA, NT6X06AB, NT6X06AC	
NT0X28AP		NT6X09AA, NT6X31AA	
NT0X28AR		NT6X10AA	
NT0X28AS		NT6X10AC	
NT0X28EB		NT6X01AB	
NT0X29AA		NT0X45AA, NT0X45AB, NT0X45BA,	
NT0X29AB		NT0X45AC, NT0X45BB, NT0X45BC, NT0X45BD, NT0X45AD, NT0X45BE, NT0X45BF, NT0X45BG	
NT0X40AB		NT0X42AA, NT0X02AB (RSE when e/w Pwr Pnl Assy Opt)	
NT0X82AA	MD	NT0X46AA, NT5X12AA,	
NT0X82AB		NT0X46AB, NT5X12AB,	
NT0X88AA	MD	NT0X02AA (MIS), NT0X02AB (MIS),	
NT0X88AB		NT0X02AB (MIS), NT6X92AA	
NT0X88AC	MD	NT0X02AA (RSE), NT0X02AB (RSE)	
NT0X88AD		NT0X02AB (RSE),	
NT0X88AE		NT0X02AB	
NT0X88AF		NT0X02AB	
NT6X25AA		NT6X14AA	
NT6X25BA		NT6X14AA	
NT6X25BB		NT8X01AA	
NT9X03AA		NT9X01BA	
NTBX37AB		NTBX30AB	
NTMX26BA	MD	NTMX88AA, NTMX89AA, NTMX89CA	

TABLE D-1
UNIT/FRAME LEGAL ASSOCIATIONS

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.

UNIT PEC	RATING	USED ON FRAMES:	NOTE
INVERTER UNIT:			
NT0X87AA		NT0X41AC, NT0X41AJ, NT3X45AA, NT0X41AB,- NT0X41AK, NT3X45AB, NT0X48AA, NT0X48AB,- NT0X48AC, NT0X43AA, NT0X43AB, NT0X43AC,- NT0X02AA, NT0X02AB, NT5X08AA, NT5X08AB, NT6X06AA, NT6X06AB, NT6X06AC, NT6X29AA	
NT0X87AB		NT0X02AA, NT0X02AB, NT0X43AA, NT0X43AB, NT0X43AC, NT0X48AA, NT0X48AB, NT0X48AC	
COOLING (INVERTER) UNIT:			
NT3X90AA		NT0X41AB, NT0X41AK, NT0X48AG, NT0X48AH, NT0X48AJ, NT3X45AB, NT3X45CA, NT3X45CB, NT3X45DA, NT3X45EA, NT5X13AA, NT5X13BA, NT6X01AA, NT6X01BA, NT6X09AA, NT6X10AC, NT6X31AA, NT8X10AA	
NT3X90AB		NT5X13AA, NT5X13BA, NT6X01AA, NT6X01BA, NT6X03AA, NT6X03CA, NT6X03RA, NT6X03RB, NT6X06AA, NT6X06AB, NT6X09AA, NT6X10AC, NT6X31AA, NT8X10AA	
NT3X90AC		NT3X45DW, NT3X45EW, NT5X13AA, NT5X13BA, NT6X01AA, NT6X01AB, NT6X01BA, NT6X06AC, NT6X09AA, NT6X10AC, NT6X31AA, NT8X10AA	
D.C. FAN UNIT:			
NTBX63AA		NTBX30AB	
OFFICE ALARM X-CONNECT FIELD UNITS:			
NT0X62AA		NT0X46AA,	
NT3X89AA		NT0X46AB,	
NT3X89AB			
NT3X89CA			

TABLE D-1 (Continued)

UNIT/FRAME LEGAL ASSOCIATIONS

FSP PEC	FSP INCLUDED CARDS 0X36AB	0X91AA	0X91AB	0X51AB	0X91AD	0X91AE	6X36AA/AB	NOTE
NT0X28AA	2							
NT0X28AB	2							
NT0X28AC	2							
NT0X28AD	1							
NT0X28AE	2							
NT0X28AF	2							
NT0X28AG		1			1			
NT0X28AH		1			1			
NT0X28AJ	1							
NT0X28AK		1				1		
NT0X28AL	1-2							c
NT0X28AM		1				1		
NT0X28AN		1				1		
NT0X28AP		1				1		
NT0X28AR		1				1		
NT0X28AS		1				1		
NT0X28EB		1				1		
NT0X29AA	2							
NT0X29AB		1			1			
NT0X40AB				2				
NT0X82AA	3							
NT0X82AB		1	1		1			
NT0X88AA	1-3							a
NT0X88AB		1						
NT0X88AC	1-2							b
NT0X88AD		1			1			
NT0X88AE			1					
NT0X88AF		1						
NT6X25AA		1				1	1/0	d
NT6X25BA		1				1	1/0	d
NT6X25BB		1				1	1/0	d
NT9X03AA		1					1/0	d
NTMX26BA		1					1/1	d
NTBX37AB							2/0	d

TABLE D-2

FSP INCLUDED CONTROL CARDS

NOTES:

RULES:

a) Unit comes equipped with one card; up to two additional cards may be provisioned. Equip per MS0X88AA.

b) Unit comes equipped with one card; one additional card may be provisioned. Equip per MS0X88AC.

c) Unit comes equipped with one card; one additional card may be provisioned. Equip per MS0X28AL.

d) The two numbers in the column labeled NT6X36AA/AB show the number of each card, respectively. (i.e. 1/1 means one NT6X36AA and one NT6X36AB.)

	UNIT INCLUDED CARDS				
UNIT PEC	NT2X15AA	NT0X93AA	NT0X89AA	NT0X89AB	NOTE
INVERTER UNIT:					
NT0X87AA	1				
COOLING (INVERTER) UNITS:					
NT3X90AA		1			
NT3X90AB		2			
NT3X90AC					
OFFICE ALARM X-CONNECT FIELD UNITS:					
NT0X62AA			4		
NT0X62AB			4		
NT3X89AA				4	
NT3X89AB				4	
NT3X89CA				4	
NT3X8906				4	
NT3X8907				4	

TABLE D-3

INV, CU, AXU INCLUDED CONTROL CARDS

OPD VERSABLOCK CTB AND NON-CTB

PEC CODE: T_OPD_VERSABLK

CPC CODE: N/A

RATING: N/A

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Northern Telcom Outside Plant Division (OPD) Versablock is a molded plastic assembly measuring 7-7/8 inches wide, 3-7/8 inches high, and 4-3/4 inches deep. The block is designed to mount on either the horizontal or the vertical side of a conventional Type "L" distributing frame with 8-inch centers. Versablocks are avilable as a Connectorized Terminal Block (CTB) or Non-Connectorized Terminal Block (Non-CTB).

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
CANADA

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

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

T OPD VERSABLK EMA14-05-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
		Previous history not available.
93 11 12	ECM 522 06	Change PEC of this Engman Section from TABLE E to T_OPD_VERSABLK Update contents to current EMIRT spec. Add the QBB66QP096SG3-36 08X24 Block for Canadian market only.
93 11 18	ECM 522 07	Change PEC QBB66QP096SG3-36 to QBB66QP096SG336 to accomodate CADES PEC field-width limits.
94 12 09	ECM 522 09	Added QBB66QP8X32G437 08X32 Block for, Canadian market only, per request from K. Neild.

The OPD Versablock CTB and Non-CTB is comprised of the following:

EQUIPMENT	PEC	RULE
08X32 CTB Single Post	130-A4128W001	RUL1
08X32 CTB Bifurcated	130-A4128L001	RUL1
08X32 CTB Single Post	130-A4128W002	RUL2
08X32 CTB Bifurcated	130-A4128L002	RUL2
08X32 CTB Single Post	130-A4128W003	RUL3
08X32 CTB Bifurcated	130-A4128L003	RUL3
08X32 CTB Single Post	130-A4128W011	RUL4
08X32 CTB Bifurcated	130-A4128L011	RUL4
08X24 CTB Bifurcated QC	QBB66QP096SG336	RUL8
08X32 CTB Bifurcated QC	QBB66QP8X32G437	RUL8
08X25 Non-CTB Single Post	130-N0100W012	RUL5
08X25 Non-CTB Bifurcated	130-N0100L012	RUL5
08X30 Non-CTB Single Post	130-N0120W020	RUL6
08X30 Non-CTB Bifurcated	130-N0120L005	RUL6
08X32 Non-CTB Single Post	130-N0128W001	RUL7
08X32 Non-CTB Bifurcated	130-N0128L001	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) All Versablocks contain the following items always provided:

EQUIPMENT	PEC
Front Cover	P0634496
Single Post Wire-Wrap Pins	P0684933
Bifurcated Wire-Wrap Pins	P0634931
Mounting Bkt Adjustable	P0634493
Top Plate	P0673470

2) All Connectorized terminal blocks where Part Number starts with "130-" are equipped with 4 interlocking 32 pair male (plug) ribbon connectors.

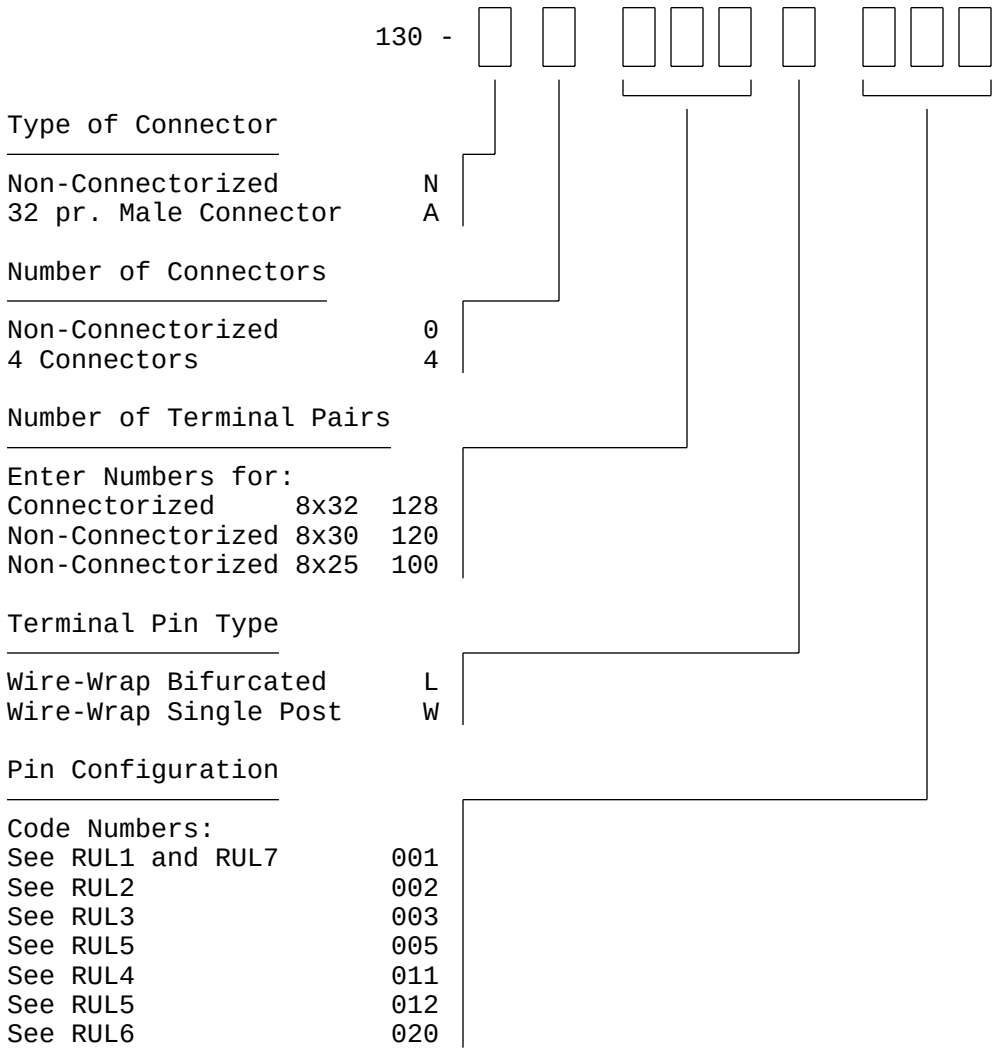
3) The mounting bracket provided with the Versablock will mount on a Distributing Frame (DF) with mounting holes, 8.0 inches on center.

4) The block facilitates horizontal or vertical installations.

5) Cross connect field will terminate 22 to 26 AWG (.64 to 0.4 MM) wire. Single Post and Bifurcated terminal pins are only available on the cross connect field.

6) Maximum terminal field configuration is 128 pairs (8 X 32). Other configurations are 100 pairs (8 X 30).

7) The part-numbering diagram below is designed to help identify the specific function of each digit in the part number.



8) The following table have been designed to define block ordering options for each block.

COLUMN HEADING	DESCRIPTION
PEC	Vendors manufacturers part number.
BLOCK SIZE	Terminal pin field array.
EQT. SIDE	Equipment Side, Block side which DMS-100 Equipment is terminated. Terminations can be made by 32 pair male connectors (CONN) or Bifurcated Wire Wrap pins (BIF).
X-CON SIDE	Cross Connect Side, Block side which incoming circuits to the office are terminated. Terminations can be made by Bifurcated Wire Wrap pins (BIF) or Single Post Wire Wrap pins (SP).
FUNCTION	Block application termination functions. Line Sub Group terminations (LINES), Trunk Module terminations (TRUNKS) and Miscellaneous terminations (MISC).

COLUMN HEADING	**DESCRIPTION**
TERMINAL PATTERN	Four factors define a unique terminal pattern: Frame mount (Horizontal or Vertical), Ring to Tip relationship, LSG or connector growth, and circuit number growth. Each terminal pattern is identified by the letter P followed by a number from 1 to 10. All of the terminal patterns (P1 thru P10) are described below. For NON-CTB's (N/A).
.....P1	Horizontal Mount..... Ring Below Tip..... LSG growth Left to Right..... Circuit growth Top to Bottom.....
.....P2	Horizontal Mount..... Ring Below Tip..... LSG growth Top to Bottom..... Circuit growth Left to Right.....
.....P3	Horizontal Mount..... Ring Above Tip..... LSG growth Bottom to Top..... Circuit growth Left to Right.....
.....P4	Horizontal Mount..... Ring Above Tip..... LSG growth Left to Right..... Circuit growth Bottom to Top.....
.....P5	Vertical mount..... Ring Left of Tip..... LSG growth Top to Bottom..... Circuit growth Right to Left.....
.....P6	Vertical mount..... Ring Left of Tip..... LSG growth Right to Left..... Circuit growth Top to Bottom.....
.....P7	Vertical mount..... Ring Right of Tip..... LSG growth Left to Right..... Circuit growth Top to Bottom.....
.....P8	Vertical mount..... Ring Right of Tip.....

LSG growth Top to Bottom.....
Circuit growth Left to Right.....

.....**P9** Canadian applications only.....
Vertical mount.....
Ring Above Tip.....
LSG growth Bottom to Top.....
Circuit growth Left to Right.....

.....**P10** Canadian applications only.....
Horizontal mount.....
Ring Above Tip.....
LSG growth Bottom to Top.....
Circuit growth Left to Right.....

HOUSING SIZE OPD Versablocks only have one housing size (N/A).

FANNING STRIP OPD Versablocks can not be ordered with Fanning Strip numbering (N/A).

FRAME MOUNT How the block is mounted on the MDF Frame Horizontal (HOR) or Vertical (VERT).

PEC	BLOCK SIDE	EQT. SIDE	X-CON SIDE	FUNCTION	TERMINAL PATTERN	FRAME MOUNT
130-A4128L001	08X32	CONN	BIF	LINES	P1	HOR
130-A4128W001	08X32	CONN	SP	LINES	P1	HOR
130-A4128L001	08X32	CONN	BIF	LINES	P5	VERT
130-A4128W001	08X32	CONN	SP	LINES	P5	VERT
130-A4128L002	08X32	CONN	BIF	LINES	P2	HOR
130-A4128L002	08X32	CONN	BIF	TRUNKS	P2	HOR
130-A4128W002	08X32	CONN	SP	LINES	P2	HOR
130-A4128W002	08X32	CONN	SP	TRUNKS	P2	HOR
130-A4128L002	08X32	CONN	BIF	LINES	P6	VERT
130-A4128L002	08X32	CONN	BIF	TRUNKS	P6	VERT
130-A4128W002	08X32	CONN	SP	LINES	P6	VERT
130-A4128W002	08X32	CONN	SP	TRUNKS	P6	VERT
130-A4128L003	08X32	CONN	BIF	LINES	P3	HOR
130-A4128L003	08X32	CONN	BIF	TRUNKS	P3	HOR
130-A4128W003	08X32	CONN	SP	LINES	P3	HOR
130-A4128W003	08X32	CONN	SP	TRUNKS	P3	HOR
130-A4128L003	08X32	CONN	BIF	LINES	P7	VERT
130-A4128L003	08X32	CONN	BIF	TRUNKS	P7	VERT
130-A4128W003	08X32	CONN	SP	LINES	P7	VERT
130-A4128W003	08X32	CONN	SP	TRUNKS	P7	VERT
130-A4128L011	08X32	CONN	BIF	LINES	P4	HOR
130-A4128W011	08X32	CONN	SP	LINES	P4	HOR
130-A4128L011	08X32	CONN	BIF	LINES	P8	VERT
130-A4128W011	08X32	CONN	SP	LINES	P8	VERT
QBB66QP096SG336	08X24	CONN	BIF	LINES	P9	VERT
QBB66QP096SG336	08X24	CONN	BIF	LINES	P10	HOR
QBB66QP8X32G437	08X32	CONN	BIF	LINES	P9	VERT
QBB66QP8X32G437	08X32	CONN	BIF	LINES	P10	HOR
130-N0128L001	08X32	BIF	BIF	MISC	N/A	HOR
130-N0128W001	08X32	BIF	SP	MISC	N/A	HOR
130-N0128L001	08X32	BIF	BIF	MISC	N/A	VERT
130-N0128W001	08X32	BIF	SP	MISC	N/A	VERT
130-N0100L012	08X25	BIF	BIF	MISC	N/A	HOR
130-N0100W012	08X25	BIF	SP	MISC	N/A	HOR
130-N0100L012	08X25	BIF	BIF	MISC	N/A	VERT
130-N0100W012	08X25	BIF	SP	MISC	N/A	VERT
130-N0120W020	08X30	BIF	SP	MISC	N/A	HOR
130-N0120W020	08X30	BIF	SP	MISC	N/A	VERT
130-N0120L005	08X30	BIF	BIF	MISC	N/A	HOR
130-N0120L005	08X30	BIF	BIF	MISC	N/A	VERT

NOTE: The QBB66QP096SG336 and QBB66QP8X32G437 are provisionable in the Canadian market only and their wiring patterns are incompatible with the US wiring patterns for lines.

RUL1 1) Provision either the bifurcated or the single post connectorized Versablock to terminate subscriber line circuits at the distributing frame.

2) These blocks offer Ring below Tip pattern, Line Sub Group (LSG) growth Left to Right and circuit number growth Top to Bottom. See RUL4 for Ring above Tip pattern and circuit number growth Bottom to Top.

Block Pin Row numbers for 8X32 CTB											
1	-	8	9	-	16	17	-	24	25	-	32
T 00			T 00			T 00			T 00		
R			R			R			R		
T 01			T 01			T 01			T 01		
R			R			R			R		
T 02			T 02			T 02			T 02		
R			R			R			R		
T 03		T 31	T 03		T 31	T 03		T 31	T 03		T 31
R		R	R		R	R		R	R		R
CONNECTOR A LSG AA			CONNECTOR B LSG BB			CONNECTOR C LSG CC			CONNECTOR D LSG DD		

RUL2 1) Provision either the bifurcated or the single post connectorized Versablock to terminate subscriber line circuits at the distributing frame.

2) These blocks offer Ring below Tip pattern, Line Sub Group (LSG) growth Top to Bottom and circuit number growth Left to Right. See RUL3 for Ring Above Tip pattern and LSG growth Bottom to Top.

	Block Pin Row numbers for 8X32 CTB											
	1	-	-	-	-	16	-	-	-	-	-	32
CONNECTOR A	T 00					T 15						T 31
LSG AA	R					R						R
CONNECTOR B	T 00					T 15						T 31
LSG BB	R					R						R
CONNECTOR C	T 00					T 15						T 31
LSG CC	R					R						R
CONNECTOR D	T 00					T 15						T 31
LSG DD	R					R						R

3) Provision either the bifurcated or the single post connectorized Versablock to terminate Trunk Module 8-Wire circuits at the distributing frame.

4) These blocks offer Ring below Tip pattern, connector growth Top to Bottom and circuit number growth Left to Right. See RUL3 for Ring above Tip pattern and connector growth Bottom to Top.

	Block Pin Row numbers for 8X32 CTB											
	1	-	-	-	-	-	-	-	-	30	31	32
CONNECTOR A	T 00									T 29		
	R									R		
CONNECTOR B	T1									T1		
	R1									R1		
CONNECTOR C	E/ EA									E/ EA		
	M/ EB									M/ EB		
CONNECTOR D	-/ MA									-/ MA		
	-/ MB									-/ MB		

RUL3 1) Provision either the bifurcated or the single post connectorized Versablock to terminate subscriber line circuits at the distributing frame.

2) These blocks offer Ring above Tip pattern, Line Sub Group (LSG) growth Bottom to Top and circuit number growth Left to Right. See RUL2 for Ring below Tip pattern and LSG growth Top to Bottom.

	Block Pin Row numbers for 8X32 CTB											
	1	-	-	-	-	16	-	-	-	-	-	32
CONNECTOR D	R					R						R
LSG DD	T 00					T 15						T 31
CONNECTOR C	R					R						R
LSG CC	T 00					T 15						T 31
CONNECTOR B	R					R						R
LSG BB	T 00					T 15						T 31
CONNECTOR A	R					R						R
LSG AA	T 00					T 15						T 31

3) Provision either the bifurcated or the single post connectorized Versablock to terminate Trunk Module 8-Wire circuits at the distributing frame.

4) These blocks offer Ring above Tip pattern, connector growth Bottom to Top and circuit number growth Left to Right. See RUL2 for Ring below Tip pattern and connector growth Top to Bottom.

	Block Pin Row numbers for 8X32 CTB											
	1	-	-	-	-	-	-	-	-	30	31	32
CONNECTOR D	-/ MB									-/ MB		
	-/ MA									-/ MA		
CONNECTOR C	M/ EB									M/ EB		
	E/ EA									E/ EA		
CONNECTOR B	R1									R1		
	T1									T1		
CONNECTOR A	R									R		
	T 00									T 29		

RUL4 1) Provision either the bifurcated or the single post connectorized Versablock to terminate subscriber line circuits at the distributing frame.

2) These blocks offer Ring above Tip pattern, Line Sub Group (LSG) growth Left to Right and circuit number growth Bottom to Top. See RUL1 for Ring below Tip pattern and circuit number growth Top to Bottom.

Block Pin Row numbers for 8X32 CTB											
1	-	8	9	-	16	17	-	24	25	-	32
R		R	R		R	R		R	R		R
T 03		T 31	T 03		T 31	T 03		T 31	T 03		T 31
R			R			R			R		
T 02			T 02			T 02			T 02		
R			R			R			R		
T 01			T 01			T 01			T 01		
R			R			R			R		
T 00			T 00			T 00			T 00		
CONNECTOR A LSG A			CONNECTOR B LSG B			CONNECTOR C LSG C			CONNECTOR D LSG D		

RULES:

RUL5 1) Provision either bifurcated or the single post non-connectorized Versablock to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 100 pairs (8 X 25).

RUL6 1) Provision either bifurcated or the single post non-connectorized Versablock to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 120 pairs (8 X 30).

RUL7 1) Provision either bifurcated or the single post non-connectorized Versablock to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 128 pairs (8 X 32).

RUL8 1) These blocks offer Ring above Tip pattern, Line Sub Group (LSG) growth Bottom to Top and circuit number growth Left to Right.

2) Provide for Canadian market only. The wiring pattern is incompatible with the US wiring pattern for lines.

TELZON TERMINAL BLOCK CTB AND NON-CTB

PEC CODE: T_TELZON

CPC CODE: N/A

RATING: N/A

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Telzon terminal block is available in two sizes. Both units are 3.99 inches high and 7.95 inches wide when mounted horizontally. The projection on the standard unit is 5.96 inches. A compact unit is available with a projection of 4.71 inches. The Telzon's Connectorized Terminal Block (CTB) and Non-Connectorized Terminal Block (Non-CTB) are designed for end to end mounting in either the vertical or the horizontal positions.

Terminal Blocks from TSI are also included in this section until such time as their quantity justify a separate section. The note containing the Part Numbering diagram, which identifies the specific function of each digit in a Telzon part number, is not accurate for TSI.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
CANADA

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

MAIN CONTACT: NTI: Tim Worsham Dept. 3471 (PPK)

T TELZON EMA14-06-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
		Previous history not available.
93 11 12	ECM 522 06	Change PEC of this Engineering Manual Section from TABLE F to T_TELZON. Update contents to current EMIRT spec. Change CPC Code for TELZON Block 482-1064-345 from A0302386 to A0614548.
95 02 10	ECM 522 11	Added additional Terminal Blocks and Note 8 concerning TSI parts per ET20659.

The Telzon Terminal Block CTB and Non-CTB is comprised of the following:

EQUIPMENT	PEC	RULE
08X32 CTB Single Post 6"	482-1004-301	RUL1
08X32 CTB Single Post 4 3/4"	482-1004-341	RUL1
08X32 CTB Bifurcated 6"	582-1004-301	RUL1
08X32 CTB Bifurcated 4 3/4"	582-1004-341	RUL1
08X32 CTB Bifurcated 4 3/4"	582-1004-345	RUL1
08X32 CTB Q-Conn 6"	982-1004-301	RUL1
08X32 CTB Q-Conn 4 3/4"	982-1004-341	RUL1
08X32 CTB Single Post 6"	482-1064-301	RUL2
08X32 CTB Single Post 4 3/4"	482-1064-341	RUL2
08X32 CTB Single Post 4 3/4"	482-1064-345	RUL2
08X32 CTB Bifurcated 6"	582-1064-301	RUL2
08X32 CTB Bifurcated 4 3/4"	582-1064-341	RUL2
08X32 CTB Bifurcated 4 3/4"	582-1064-345	RUL2
08X32 CTB Single Post 6"	482-2004-301	RUL3
08X32 CTB Single Post 4 3/4"	482-2004-341	RUL3
08X32 CTB Bifurcated 6"	582-2004-301	RUL3
08X32 CTB Bifurcated 4 3/4"	582-2004-341	RUL3
08X32 CTB Q-Conn 6"	982-2004-301	RUL3
08X32 CTB Q-Conn 4 3/4"	982-2004-341	RUL3
08X32 CTB Single Post 6"	482-2064-301	RUL4
08X32 CTB Single Post 4 3/4"	482-2064-341	RUL4
08X32 CTB Bifurcated 6"	582-2064-301	RUL4
08X32 CTB Bifurcated 4 3/4"	582-2064-341	RUL4
10X30 Non-CTB Single Post 6"	400-0010-000	RUL5
10X30 Non-CTB Single Post 4 3/4"	400-0010-040	RUL5
08X32 Non-CTB Single Post 6"	482-0000-000	RUL6
08X32 Non-CTB Single Post 4 3/4"	482-0000-040	RUL6
08X32 Non-CTB Single Post 4 3/4"	482-0000-041	RUL6
08X32 Non-CTB Single Post 4 3/4"	482-0000-042	RUL6
08X32 Non-CTB Bifurcated 6"	582-0000-000	RUL6
08X32 Non-CTB Bifurcated 4 3/4"	582-0000-040	RUL6
08X32 Non-CTB Bifurcated 4 3/4"	582-0000-045	RUL6
08X32 Non-CTB Bifurcated 4 3/4"	BRB-0832-333-000-0	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) All Connectorized terminal blocks are equipped with 4 interlocking 32 pair male (plug) ribbon connectors.

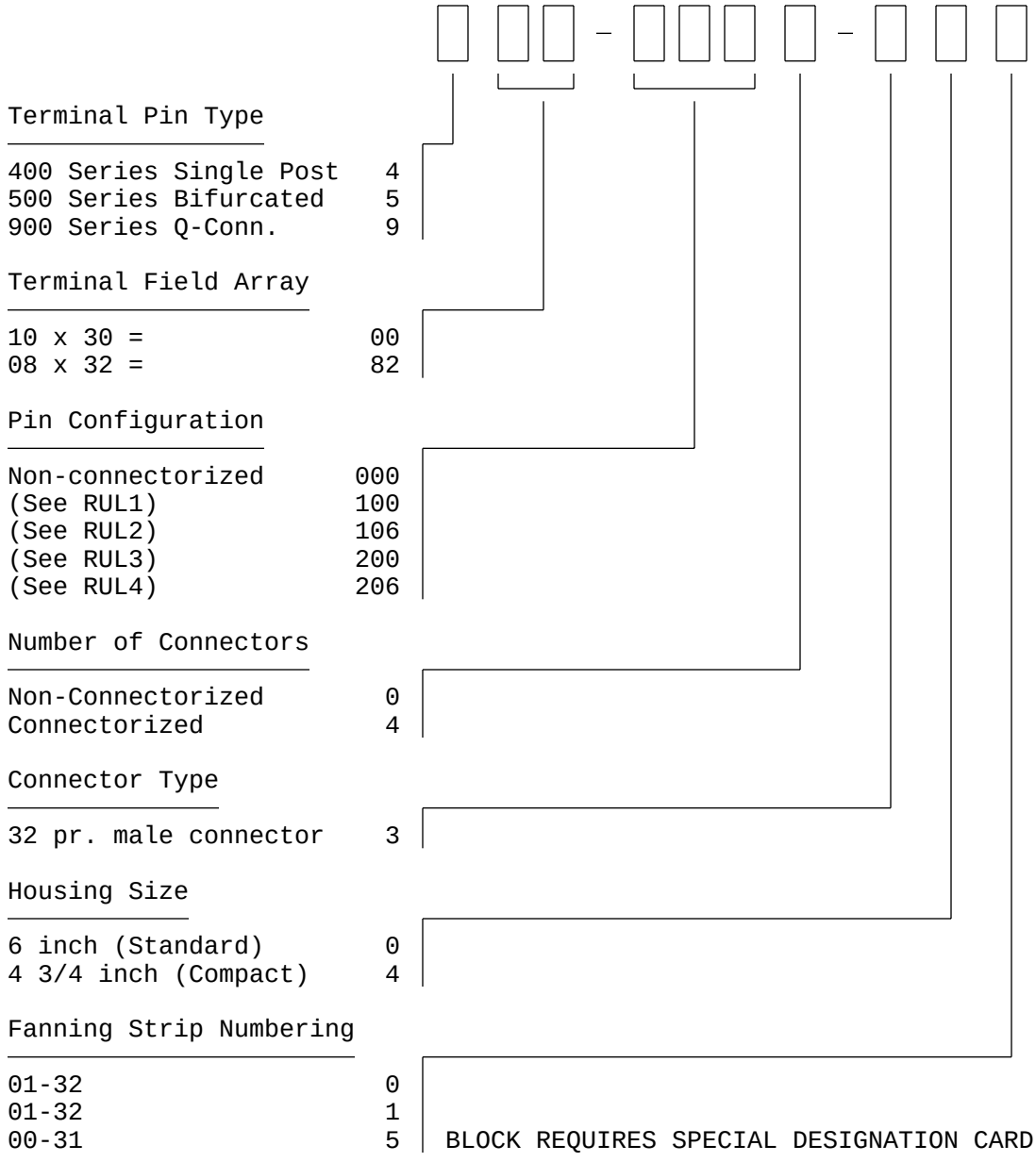
2) The mounting bracket provided with the Telzon block will mount on a Distributing Frame (DF) with mounting holes 8.0 inches on centers.

3) The block facilitate horizontal or vertical installations.

4) Quick Connect (Q-Conn) terminals are also known as Insulation Displacement Bifurcated (IDV) terminals.

5) Cross connect field will terminate 22 to 24 AWG copper wire.

6) The part-numbering diagram below is designed to help identify the specific function of each digit in the part number.



7) The following tables have been designed to define block ordering options for each Telzon blocks.

COLUMN HEADING	DESCRIPTION
PEC	Vendors manufacturers part number.
BLOCK SIZE	Terminal pin field array.
EQT. SIDE	Equipment Side, Block side which DMS-100 Equipment is terminated. Terminations can be made by 32 pair male connectors (CONN), Bifurcated Wire Wrap pins (BIF) or Single Post Wire Wrap pins (SP).
X-CON SIDE	Cross Connect Side, Block side which incoming circuits to the office are terminated. Terminations can be made by Bifurcated Wire Wrap pins (BIF), Single Post Wire Wrap pins (SP) or Quick Connect Wire Wrap pins (QC).
FUNCTION	Block application termination functions. Line Sub Group terminations (LINES), Trunk Module terminations (TRUNKS) and Miscellaneous terminations (MISC).

COLUMN HEADING	DESCRIPTION
TERMINAL PATTERN	There are four standard pin array configurations for CTB's. Each pattern is made up of three parts; Ring to Tip relationship, LSG or connector growth and circuit number growth. For Horizontal mounted blocks : P1= Ring Below Tip, LSG growth Left to Right and circuit growth Top to Bottom. P2= Ring below Tip, LSG growth Top to Bottom and circuit growth Left to Right. P3= Ring above Tip, LSG growth Bottom to Top and circuit growth Left to Right. P4= Ring above Tip, LSG growth Left to Right and circuit growth Bottom to Top. For Vertical mounted blocks: P5= Ring left of Tip, LSG growth Top to Bottom and circuit growth Right to Left. P6= Ring left of Tip, LSG growth Right to Left and circuit growth Top to Bottom. P7= Ring right of Tip, LSG growth Left to Right and circuit growth Top to Bottom. P8= Ring right of Tip, LSG growth Top to Bottom and circuit growth Left to Right. For NON-CTB's (N/A)
HOUSING SIZE	Telzon blocks are made with a 6.0 inch (6.0) or 4.3/4 inch (4.75) housing.
FANNING STRIP	Telzon blocks can be order with Fanning Strip numbering 00-31 (0) or 01-32 (1).
FRAME MOUNT	How the block is mounted on the MDF Frame Horizontal (HOR) or Vertical (VERT).

TELZON TERMINAL BLOCK APPROVED PARTS LIST

PEC	BLOCK SIDE	EQT. SIDE	X-CON SIDE	FUNCTION	TERMINAL PATTERN	HOUSING SIZE	FANNING STRIP	FRAME MOUNT
400-0010-000	10X30	SP	SP	MISC	N/A	6.0	1	HOR
400-0010-000	10X30	SP	SP	MISC	N/A	6.0	1	VERT
400-0010-040	10X30	SP	SP	MISC	N/A	4.75	1	HOR
400-0010-040	10X30	SP	SP	MISC	N/A	4.75	1	VERT
482-0000-000	08X32	SP	SP	MISC	N/A	6.0	1	HOR
482-0000-000	08X32	SP	SP	MISC	N/A	6.0	1	VERT
482-0000-040	08X32	SP	SP	MISC	N/A	4.75	1	HOR
482-0000-040	08X32	SP	SP	MISC	N/A	4.75	1	VERT
482-0000-041	08X32	SP	SP	MISC	N/A	4.75	1	HOR
482-0000-041	08X32	SP	SP	MISC	N/A	4.75	1	VERT
482-0000-042	08X32	SP	SP	MISC	N/A	4.75	blank	HOR
482-0000-042	08X32	SP	SP	MISC	N/A	4.75	blank	VERT
482-1004-301	08X32	CONN	SP	LINE	P2	6.0	1	HOR
482-1004-301	08X32	CONN	SP	TRUNK	P2	6.0	1	HOR
482-1004-301	08X32	CONN	SP	LINE	P6	6.0	1	VERT
482-1004-301	08X32	CONN	SP	TRUNK	P6	6.0	1	VERT
482-1004-341	08X32	CONN	SP	LINE	P2	4.75	1	HOR
482-1004-341	08X32	CONN	SP	TRUNK	P2	4.75	1	HOR
482-1004-341	08X32	CONN	SP	LINE	P6	4.75	1	VERT
482-1004-341	08X32	CONN	SP	TRUNK	P6	4.75	1	VERT
482-1064-301	08X32	CONN	SP	LINE	P3	6.0	1	HOR
482-1064-301	08X32	CONN	SP	TRUNK	P3	6.0	1	HOR
482-1064-301	08X32	CONN	SP	LINE	P7	6.0	1	VERT
482-1064-301	08X32	CONN	SP	TRUNK	P7	6.0	1	VERT
482-1064-341	08X32	CONN	SP	LINE	P3	4.75	1	HOR
482-1064-341	08X32	CONN	SP	TRUNK	P3	4.75	1	HOR
482-1064-341	08X32	CONN	SP	LINE	P7	4.75	1	VERT
482-1064-341	08X32	CONN	SP	TRUNK	P7	4.75	1	VERT
482-1064-345	08X32	CONN	SP	LINE	P3	4.75	0	HOR
482-1064-345	08X32	CONN	SP	TRUNK	P3	4.75	0	HOR
482-1064-345	08X32	CONN	SP	LINE	P7	4.75	0	VERT
482-1064-345	08X32	CONN	SP	TRUNK	P7	4.75	0	VERT
482-2004-301	08X32	CONN	SP	LINE	P1	6.0	1	HOR
482-2004-301	08X32	CONN	SP	LINE	P5	6.0	1	VERT
482-2004-341	08X32	CONN	SP	LINE	P1	4.75	1	HOR
482-2004-341	08X32	CONN	SP	LINE	P5	4.75	1	VERT
482-2064-301	08X32	CONN	SP	LINE	P4	6.0	1	HOR
482-2064-301	08X32	CONN	SP	LINE	P8	6.0	1	VERT
482-2064-341	08X32	CONN	SP	LINE	P4	4.75	1	HOR
482-2064-341	08X32	CONN	SP	LINE	P8	4.75	1	VERT

582-0000-000	08X32	BIF	BIF	MISC	N/A	6.0	1	HOR
582-0000-000	08X32	BIF	BIF	MISC	N/A	6.0	1	VERT
582-0000-040	08X32	BIF	BIF	MISC	N/A	4.75	1	HOR
582-0000-040	08X32	BIF	BIF	MISC	N/A	4.75	1	VERT
582-0000-045	08X32	BIF	BIF	MISC	N/A	4.75	0	HOR
582-0000-045	08X32	BIF	BIF	MISC	N/A	4.75	0	VERT
582-1004-301	08X32	CONN	BIF	LINE	P2	6.0	1	HOR
582-1004-301	08X32	CONN	BIF	TRUNK	P2	6.0	1	HOR
582-1004-301	08X32	CONN	BIF	LINE	P6	6.0	1	VERT
582-1004-301	08X32	CONN	BIF	TRUNK	P6	6.0	1	VERT
582-1004-341	08X32	CONN	BIF	LINE	P2	4.75	1	HOR
582-1004-341	08X32	CONN	BIF	TRUNK	P2	4.75	1	HOR
582-1004-341	08X32	CONN	BIF	LINE	P6	4.75	1	VERT
582-1004-341	08X32	CONN	BIF	TRUNK	P6	4.75	1	VERT
582-1004-345	08X32	CONN	BIF	LINE	P2	4.75	0	HOR
582-1004-345	08X32	CONN	BIF	TRUNK	P2	4.75	0	HOR
582-1004-345	08X32	CONN	BIF	LINE	P6	4.75	0	VERT
582-1004-345	08X32	CONN	BIF	TRUNK	P6	4.75	0	VERT
582-1064-301	08X32	CONN	BIF	LINE	P3	6.0	1	HOR
582-1064-301	08X32	CONN	BIF	TRUNK	P3	6.0	1	HOR
582-1064-301	08X32	CONN	BIF	LINE	P7	6.0	1	VERT
582-1064-301	08X32	CONN	BIF	TRUNK	P7	6.0	1	VERT
582-1064-341	08X32	CONN	BIF	LINE	P3	4.75	1	HOR
582-1064-341	08X32	CONN	BIF	TRUNK	P3	4.75	1	HOR
582-1064-341	08X32	CONN	BIF	LINE	P7	4.75	1	VERT
582-1064-341	08X32	CONN	BIF	TRUNK	P7	4.75	1	VERT
582-1064-345	08X32	CONN	BIF	LINE	P3	4.75	0	HOR
582-1064-345	08X32	CONN	BIF	TRUNK	P3	4.75	0	HOR
582-1064-345	08X32	CONN	BIF	LINE	P7	4.75	0	VERT
582-1064-345	08X32	CONN	BIF	TRUNK	P7	4.75	0	VERT
582-2004-301	08X32	CONN	BIF	LINE	P1	6.0	1	HOR
582-2004-301	08X32	CONN	BIF	LINE	P5	6.0	1	VERT
582-2004-341	08X32	CONN	BIF	LINE	P1	4.75	1	HOR
582-2004-341	08X32	CONN	BIF	LINE	P5	4.75	1	VERT
582-2064-301	08X32	CONN	BIF	LINE	P4	6.0	1	HOR
582-2064-301	08X32	CONN	BIF	LINE	P8	6.0	1	VERT
582-2064-341	08X32	CONN	BIF	LINE	P4	4.75	1	HOR
582-2064-341	08X32	CONN	BIF	LINE	P8	4.75	1	VERT
982-1004-301	08X32	CONN	QC	LINE	P2	6.0	1	HOR
982-1004-301	08X32	CONN	QC	TRUNK	P2	6.0	1	HOR
982-1004-301	08X32	CONN	QC	LINE	P6	6.0	1	VERT
982-1004-301	08X32	CONN	QC	TRUNK	P6	6.0	1	VERT
982-1004-341	08X32	CONN	QC	LINE	P2	4.75	1	HOR
982-1004-341	08X32	CONN	QC	TRUNK	P2	4.75	1	HOR
982-1004-341	08X32	CONN	QC	LINE	P6	4.75	1	VERT
982-1004-341	08X32	CONN	QC	TRUNK	P6	4.75	1	VERT
982-2004-301	08X32	CONN	QC	LINE	P1	6.0	1	HOR
982-2004-301	08X32	CONN	QC	LINE	P5	6.0	1	VERT
982-2004-341	08X32	CONN	QC	LINE	P1	4.75	1	HOR

982-2004-341	08X32	CONN	QC	LINE	P5	4.75	1	VERT
BRB-0832-333	08X32	SP	BIF	TRUNK	N/A	4.75	blank	HOR
BRB-0832-333	08X32	SP	BIF	TRUNK	N/A	4.75	blank	VERT

8) BR series parts are from TSI, not Telzon

RULES:

RUL1 1) Provision either the bifurcated, single post or quick connect connectorized Telzon block to terminate subscriber line circuits at the distributing frame.

2) These blocks offer Ring below Tip pattern, Line Sub Group (LSG) growth Top to Bottom and circuit number growth Left to Right. See RUL2 for Ring above Tip pattern and LSG growth Bottom to Top.

	Block Pin Row numbers for 8X32 CTB											
	1	-	-	-	-	16	-	-	-	-	-	32
CONNECTOR A	T 00					T 15						T 31
LSG AA	R					R						R
CONNECTOR B	T 00					T 15						T 31
LSG BB	R					R						R
CONNECTOR C	T 00					T 15						T 31
LSG CC	R					R						R
CONNECTOR D	T 00					T 15						T 31
LSG DD	R					R						R

3) Provision either the bifurcated, single post or quick connect connectorized Telzon block to terminate Trunk Module 8-Wire circuits at the distributing frame.

4) These blocks offer Ring below Tip pattern, connector growth Top to Bottom and circuit number growth Left to Right. See RUL2 for Ring above Tip pattern and connector growth Bottom to Top.

	Block Pin Row numbers for 8X32 CTB											
	1	-	-	-	-	-	-	-	-	30	31	32
CONNECTOR A	T 00									T 29		
	R									R		
CONNECTOR B	T1									T1		
	R1									R1		
CONNECTOR C	E/ EA									E/ EA		
	M/ EB									M/ EB		
CONNECTOR D	-/ MA									-/ MA		
	-/ MB									-/ MB		

RUL2 1) Provision either the bifurcated, single post or quick connect connectorized Telzon block to terminate subscriber line circuits at the distributing frame.

2) These blocks offer Ring above Tip pattern, Line Sub Group (LSG) growth Bottom to Top and circuit number growth Left to Right. See RUL1 for Ring below Tip pattern and LSG growth Top to Bottom.

	Block Pin Row numbers for 8X32 CTB											
	1	-	-	-	-	16	-	-	-	-	-	32
CONNECTOR D	R					R						R
LSG DD	T 00					T 15						T 31
CONNECTOR C	R					R						R
LSG CC	T 00					T 15						T 31
CONNECTOR B	R					R						R
LSG BB	T 00					T 15						T 31
CONNECTOR A	R					R						R
LSG AA	T 00					T 15						T 31

3) Provision either the bifurcated, single post or quick connect connectorized Telzon block to terminate Trunk Module 8-Wire circuits at the distributing frame.

4) These blocks offer Ring above Tip pattern, connector growth Bottom to Top and circuit number growth Left to Right. See RUL1 for Ring below Tip pattern and connector growth Top to Bottom.

	Block Pin Row numbers for 8X32 CTB											
	1	-	-	-	-	-	-	-	-	30	31	32
CONNECTOR D	-/MB									-/MB		
	-/MA									-/MA		
CONNECTOR C	M/EB									M/EB		
	E/EA									E/EA		
CONNECTOR B	R1									R1		
	T1									T1		
CONNECTOR A	R									R		
	T00									T29		

RUL3 1) Provision either the bifurcated or the single post connectorized Telzon block to terminate subscriber line circuits at the distributing frame.

2) These blocks offer Ring below Tip pattern, Line Sub Group (LSG) growth Left to Right and circuit number growth Top to Bottom. See RUL4 for Ring above Tip pattern and circuit number growth Bottom to Top.

Block Pin Row numbers for 8X32 CTB											
1	-	8	9	-	16	17	-	24	25	-	32
T 00			T 00			T 00			T 00		
R			R			R			R		
T 01			T 01			T 01			T 01		
R			R			R			R		
T 02			T 02			T 02			T 02		
R			R			R			R		
T 03		T 31	T 03		T 31	T 03		T 31	T 03		T 31
R		R	R		R	R		R	R		R
CONNECTOR A LSG AA			CONNECTOR B LSG BB			CONNECTOR C LSG CC			CONNECTOR D LSG DD		

RUL4 1) Provision either the bifurcated or the single post connectorized Telzon block to terminate subscriber line circuits at the distributing frame.

2) These blocks offer Ring above Tip pattern, Line Sub Group (LSG) growth Left to Right and circuit number growth Bottom to Top. See RUL3 for Ring below Tip pattern and circuit number growth Top to Bottom.

Block Pin Row numbers for 8X32 CTB											
1	-	8	9	-	16	17	-	24	25	-	32
R		R	R		R	R		R	R		R
T 03		T 31	T 03		T 31	T 03		T 31	T 03		T 31
R			R			R			R		
T 02			T 02			T 02			T 02		
R			R			R			R		
T 01			T 01			T 01			T 01		
R			R			R			R		
T 00			T 00			T 00			T 00		
CONNECTOR A LSG A			CONNECTOR B LSG B			CONNECTOR C LSG C			CONNECTOR D LSG D		

RUL5 1) Provision either bifurcated or the single post non-connectorized Telzon block to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 150 pairs (10X30) .

RUL6 1) Provision either bifurcated or the single post non-connectorized Telzon block to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 128 pairs (8 X 32).

OPD ROTATING TERMINAL BLOCK

PEC CODE: T_OPD_ROTATING

CPC CODE: N/A

RATING: N/A

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Northern Telcom, Outside Plant Division (OPD) Rotating Terminal Block provides "straight-in" wire wrapping of all terminals from the front of the block. This is accomplished through the use of a 180 degree rotating pin base, in a housing, with jumper terminals on the front and equipment terminals on the rear. The block measurements are 7 7/8 inches wide, 3 7/8 inches high and 3 5/8 inches deep when not rotated.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
CANADA

ISSUE AUTHOR: NTI: Martin Worsham Dept. 3471 (PPK)

MAIN CONTACT: NTI: Martin Worsham Dept. 3471 (PPK)

T OPD ROTATING EMA14-07-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
		Previous history not available
93 03 26	ECM 522 03	Change status of 130-0255 Cover Plate to MD'd.
93 05 05	ECM 522 04	Change status of 130-4824 DF Block to MD'd and show 130-4824 is replaced by 130-N0096W014.
93 11 12	ECM 522 06	Change PEC of this EngMan Section from TABLE G to T_OPD_ROTATING. Update contents to current EMIRT spec.
93 11 18	ECM 522 07	Change any occurences of 130-N096W014 130-N0096W014 to correct typos.

The OPD Rotating Terminal Block is comprised of the following:

EQUIPMENT	PEC	RULE
W-WRAP 10X30 Rotating Block	130-4030	RUL1
W-WRAP 06X20 Rotating Block	130-4620	RUL2
W-WRAP 06X30 Rotating Block	130-4630	RUL3
W-WRAP 08X20 Rotating Block	130-4820	RUL4
W-WRAP 08X24 Rotating Block	130-4824	RUL5
W-WRAP 08X24 Rotating Block	130-N0096W014	RUL5
W-WRAP 08X30 Rotating Block	130-4830	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) All OPD rotating terminal blocks no longer contain the following items always provided item:

EQUIPMENT	PEC
Dust Cover	130-0255

No replacement has been specified. The 130-0255 should be considered to be Manufacture Discontinued.

2) All rotating terminal blocks are equipped with single post wire wrapped terminals.

3) The mounting bracket provided with the block is designed with mounting holes for use on all standard distributing frames.

4) The block facilitate horizontal or vertical installations.

5) Quick Connect (Q-Conn) terminals are also known as Insulation Displacement Bifurcated (IDV) terminals.

6) The dust cover is attached to the terminal block with plastic chain retainers.

7) Wire wrap terminal pins accept three wire wrap connections on the crossconnect (jumper) side and two on the equipment side.

8) PEC 130-4824 (CPC A0334883) is now Manufacture Discontinued and is replaced by PEC 130-N0096W014 (CPC A0333145).

9) The following table have been designed to define block ordering options for each OPD Rotating block.

COLUMN HEADING	DESCRIPTION
PEC	Vendors manufacturers part number.
BLOCK SIZE	Terminal pin field array.
EQT. SIDE	Equipment Side, Block side which DMS-100 Equipment is terminated. Terminations are made by Single Post Wire Wrap pins (SP).
X-CON SIDE	Cross Connect Side, Block side which incoming circuits to the office are terminated. Terminations are made by Single Post Wire Wrap pins (SP).
FUNCTION	Block application termination functions. Miscellaneous termination (MISC).
TERMINAL PATTERN	For non-connectorized blocks (N/A)
HOUSING SIZE	OPD Rotating blocks only have one housing size (N/A).
FANNING STRIP	OPD Rotating blocks can not be ordered with Fanning Strip numbering (N/A).
FRAME MOUNT	How the block is mounted on the MDF Frame Horizontal (HOR) or Vertical (VERT).

jOPD ROTATING APPROVED PARTS LIST

PEC	BLOCK SIDE	EQT. SIDE	X-CON SIDE	FUNCTION	TERMINAL PATTERN	HOUSING SIZE	FANNING STRIP	FRAME MOUNT
130-4030	10X30	SP	SP	MISC	N/A	N/A	N/A	HOR
130-4030	10X30	SP	SP	MISC	N/A	N/A	N/A	VERT
130-4620	06X20	SP	SP	MISC	N/A	N/A	N/A	HOR
130-4620	06X20	SP	SP	MISC	N/A	N/A	N/A	VERT
130-4630	06X30	SP	SP	MISC	N/A	N/A	N/A	HOR
130-4630	06X30	SP	SP	MISC	N/A	N/A	N/A	VERT
130-4820	08X20	SP	SP	MISC	N/A	N/A	N/A	HOR
130-4820	08X20	SP	SP	MISC	N/A	N/A	N/A	VERT
130-4824	08X24	SP	SP	MISC	N/A	N/A	N/A	HOR
130-4824	08X24	SP	SP	MISC	N/A	N/A	N/A	VERT
130-N0096W014	08X24	SP	SP	MISC	N/A	N/A	N/A	HOR
130-N0096W014	08X24	SP	SP	MISC	N/A	N/A	N/A	VERT
130-4830	08X30	SP	SP	MISC	N/A	N/A	N/A	HOR
130-4830	08X30	SP	SP	MISC	N/A	N/A	N/A	VERT

RULES:

RUL1 1) Provision single post wire wrapped non-connectorized OPD rotating terminal block to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 150 pairs (10X30).

RUL2 1) Provision single post wire wrapped non-connectorized OPD rotating terminal block to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 60 pairs (6X20).

RUL3 1) Provision single post wire wrapped non-connectorized OPD rotating terminal block to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 90 pairs (6X30).

RUL4 1) Provision single post wire wrapped non-connectorized OPD rotating terminal block to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 80 pairs (8X20).

RUL5 1) Provision single post wire wrapped non-connectorized OPD rotating terminal block to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 96 pairs (8X24).

3) PEC 130-4824 (CPC A0334883) is now Manufacture Discontinued and is replaced by PEC 130-N0096W014 (CPC A0333145).

RUL6 1) Provision single post wire wrapped non-connectorized OPD rotating terminal block to terminate miscellaneous circuits at the distributing frame.

2) These blocks are equipped with a terminal field of 120 pairs (8X30).

RSC-SONET PROVISIONING AND CONFIGURATION TABLE

PEC CODE: TABLE H

CPC CODE: N/A

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The chart below simplifies the provisioning/configuration of the RCC2 and EXTention shelves by showing hardware combinations of DCHs, PCM30/DS-1s and DS-30As while taking into account the tradeoffs between them. The combinations shown are those that best utilize the hardware from the standpoint of growth without the expense of reconfiguring.

Using TABLE H

Before using the table, office requirements for DS30As, PCM30s or DS1s, DCHs and Dynamic Trunks must be determined. This may be accomplished by using the provisioning algorithms for the RSC-SONET in ECM-497. Referring to TABLE H, DCH quantity is listed in Column B, DS1 or PCM30 quantity in Column F, DS30A quantity in Column K and Dynamic Trunk quantity in Column L. All quantities are maximums and do not need to be supplied unless needed. Start at the top of TABLE H and check each column, proceeding down the table until the first row is located in which the required quantity of each type of interface is listed. This row details port provisioning for the required configuration. When a quantity is shown as a range and only a portion of the range is needed, provide ports in the order shown. DS1/PCM30s should be assigned to the RCC2 shelf until it is full and only then to the Extension shelf.

Dynamic trunks must be assigned on the RCC2 only. Numbers in parenthesis are for the right side of the Extension shelf. Quantity of DCH listed is total and must include the hot spare. If the required combination of interfaces is not listed, the configuration is invalid.

Port 0 (slot 12;packlet 0) and port 8 (slot 16;packlet 0) require special consideration since these ports have specific uses. For an office using Building Integrated Timing System (BITS), ports 0 and 8 must be used for the timing signals and are not usable for traffic. For a Dual configuration without BITS, the first two interlinks must use ports 0 and 8. For a Dual configuration with BITS, ports 0 and 8 must be used for the BITS timing signals and any two DS1 trunking ports that are not on the same packlet may be used as the first interlinks. These factors must be considered when selecting ports for a specific configuration.

Because of the restriction that the first two interlinks in a Dual configuration must be port 0 (slot 12;packlet 0) and port 8 (16:0), care must be used in choosing the best configuration to use. If the office being configured is currently a Single configuration but will likely be evolved to a Dual, port changes will be minimized by reserving ports 0 and 8 for use as interlinks. A configuration with two additional ports for trunking may need to be selected to allow these ports to be reserved.

Since only slots 12, 14 and 16 can mount DCHs on the RCC2 shelf and slots 12 and 16 must be used for interlinks/BITS, a Dual/BITS configuration with ISDN packet data will always require the Extension shelf to mount required EDCHs.

Column A is a reference number for provisioning purposes and has no inherent meaning.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

TABLE H EMA14-08-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 27	ECM 617 04	Change table order per CADES request.
94 02 08	ECM 691 01	Add PCM30 references;correct number of usable DS1/PCM30s on main RCC2 shelf.
95 06 07	ECM 691 10	Add BITS references.

The RSC-SONET Provisioning and Configuration Table is comprised of the following:

TABLE H

A	B	C	D	E	F	G	H	J	K	L
	MAX DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	DS1/ PCM30 REQ'D	RCC2 SLOTS FOR DS1/ PCM30s	QTY OF EXT MX87	EXT SLOTS DS1/ PCM30	DS30As REQ'D QTY	DS1 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	0-20
26	0		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)	0-6	0-20
2	2	14,16	0		0-08	12:0-3	0		0-30	0-6
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	0-18
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: 0-2)	0-8	0-18

TABLE H (Continued)

A	B	C	D	E	F	G	H	J	K	L
	MAX DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	DS1/ PCM30 REQ'D	RCC2 SLOTS FOR DS1/ PCM30s	QTY OF EXT MX87	EXT SLOTS DS1/ PCM30	DS30As REQ'D QTY	DS1 DYN. TRKS
25	02		1	5,3 (22,24)	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)	0-6	0-18
3	3	14,16 12	0		00		0		0-30	0
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	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)	0-8	0-16
6	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	0-14

TABLE H (Continued)

A	B	C	D	E	F	G	H	J	K	L
	MAX DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	DS1/ PCM30 REQ'D	RCC2 SLOTS FOR DS1/ PCM30s	QTY OF EXT MX87	EXT SLOTS DS1/ PCM30	DS30As REQ'D QTY	DS1 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)	0-12	0-14
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)	0-10	0-14
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)	0-8	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)	0-22	0-14

TABLE H (Continued)

A	B	C	D	E	F	G	H	J	K	L
	MAX DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	DS1/ PCM30 REQ'D	RCC2 SLOTS FOR DS1/ PCM30s	QTY OF EXT MX87	EXT SLOTS DS1/ PCM30	DS30As REQ'D QTY	DS1 DYN. TRKS
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)	0-20	0-14
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)	0-18	0-14
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)	0-16	0-14
19	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)	0-14	0-14
7	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	0-12
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	0-12

TABLE H (Continued)

A	B	C	D	E	F	G	H	J	K	L
	MAX DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	DS1/ PCM30 REQ'D	RCC2 SLOTS FOR DS1/ PCM30s	QTY OF EXT MX87	EXT SLOTS DS1/ PCM30	DS30As REQ'D QTY	DS1 DYN. TRKS
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	0-12
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	0-12
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	0-12
30	06	16	1	3,5,7,8,9 (24,22,20, 19,18)	0-23	12:0-3 14:0-2	2	4:0-3 6:0	0-20	0-11
41	06	14	1	3,5,7,8,9, (24,22,20, 19,18)	0-24	12:0-3 16:0 16:3	2	4:0-3 6:0-1	0-18	0-10
29	06	16	1	3,5,7,8,9 (24,22,20, 19,18)	0-25	12:0-3 14:0-2	2	4:0-3 6:0-1	0-18	0-11
40	06	14	1	3,5,7,8,9, (24,22,20, 19,18)	0-26	12:0-3 16:0 16:3	2	4:0-3 6:0-2	0-16	0-10
28	06	16	1	3,5,7,8,9 (24,22,20, 19,18)	0-27	12:0-3 14:0-2	2	4:0-3 6:0-2	0-16	0-11
39	06	14	1	3,5,7,8,9, (24,22,20, 19,18)	0-28	12:0-3 16:0 16:3	2	4:0-3 6:0-3	0-14	0-10

TABLE H (Continued)

A	B	C	D	E	F	G	H	J	K	L
	MAX DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	DS1/ PCM30 REQ'D	RCC2 SLOTS FOR DS1/ PCM30s	QTY OF EXT MX87	EXT SLOTS DS1/ PCM30	DS30As REQ'D QTY	DS1 DYN. TRKS
27	06	16	1	3,5,7,8,9 (24,22,20, 19,18)	0-29	12:0-3 14:0-2	2	4:0-3 6:0-3	0-14	0-11
44	07	14	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-15	12:0-3 16:0 16:3	1	4:0-1	0-26	0-09
34	07	16	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-16	12:0-3 14:0-2	1	4:0	0-27	0-11
43	07	14	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-17	12:0-3 16:0 16:3	1	4:0-2	0-24	0-09
33	07	16	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-18	12:0-3 14:0-2	1	4:0-1	0-25	0-11
42	07	14	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-19	12:0-3 16:0 16:3	1	4:0-3	0-22	0-09
32	07	16	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-20	12:0-3 14:0-2	1	4:0-2	0-23	0-11

TABLE H (Continued)

A	B	C	D	E	F	G	H	J	K	L
	MAX DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	DS1/ PCM30 REQ'D	RCC2 SLOTS FOR DS1/ PCM30s	QTY OF EXT MX87	EXT SLOTS DS1/ PCM30	DS30As REQ'D QTY	DS1 DYN. TRKS
31	07	16	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-22	12:0-3 14:0-2	1	4:0-3	0-21	0-11
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
38	08	16,14	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-10	12:0-3	1	4:0	0-28	0-08
37	08	16,14	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-12	12:0-3	1	4:0-1	0-26	0-08
36	08	16,14	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-14	12:0-3	1	4:0-2	0-24	0-08
35	08	16,14	1	3,5,7,8,9, 6 (24,22,20, 19,18,21)	0-16	12:0-3	1	4:0-3	0-22	0-08
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

TABLE H (Continued)

A	B	C	D	E	F	G	H	J	K	L
	MAX DCH REQD QTY	RCC2 SLOTS FOR DCH	EXT SH REQ	EXT SHELF SLOTS REQ'D FOR DCH CPs	DS1/ PCM30 REQ'D	RCC2 SLOTS FOR DS1/ PCM30s	QTY OF EXT MX87	EXT SLOTS DS1/ PCM30	DS30As REQ'D QTY	DS1 DYN. TRKS
10	10	14,16 12	1	5,3,9,7,8, 6,4 (22,24,18, 20,19,21, 23)	00		0		0-30	0

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:

N/A

RULES:

N/A

DMS 100 MODEM PROVISIONING RTP

PEC CODE: TABLE Z

CPC CODE: N/A

RATING: N/A

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Table Z-1 list all DMS-100 Feature and applicable modem requirements. Tables Z-2 thru Z-4 cross reference the modem model numbers with the technical details about the modem part numbers.

Table Z is comprised of the following five elements:

1. Table Z-1 NT-Feature/Appication To Modem Model Number Cross Reference
2. Table Z-2 UDS Modem Part Number Technical Reference.
3. Table Z-3 GDC Modem Part Number Technical Reference.
4. Table Z-4 CASE Modem Part Number Technical Reference.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: David Terwey Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Terwey Dept. 3471 (PPK)

TABLE Z EMA14-26-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
--------	----------	Previous history not available
93 01 22	ECM 633 03	Introduce the applications for the GDC modems.
93 05 26	ECM 633 06	Change the table format.
93 08 30	ECM 633 07	Add modems to UDS table.
93 11 22	ECM 633 08	Add modems to in table.

The DMS 100 Modem Provisioning RTP is comprised of the following:

1. Table Z-1 NT-Feature/Appication To Modem Model Number Cross Reference

   Use this Table to identify the modem model number which may work with a given feature or application. Note, in some cases more than one modem is listed as compatible with a given feature/application - this may be due to the various baud rates (see Model Definition for Baud Rates) which the feature/application may operate or the other modems may have more than the minimum set of features required to interface the application.

2. Table Z-2 UDS Modem Part Number Cross Referenced to the Model Numbers used in Table Z-1.

   Use this table to cross reference modem model numbers found in Table Z-1 to UDS modem part numbers.

3. Table Z-3 GDC Modem Part Number Cross Referenced to the Model Numbers used in Table Z-1.

   Use this table to cross reference modem model numbers found in Table Z-1 to CASE modem part numbers.

4. Table Z-4 CASE Modem Part Number Cross Referenced to the Model Numbers used in Table Z-1.

   Use this table to cross reference modem model numbers found in Table Z-1 to GDC modem part numbers.

Table Z-1 NT-Feature To Modem Model Cross Reference

NT-FEATURE AND/OR APPLICATION	APPROVED MODEM MODEL NUMBERS
1. NTX210 DMS100 SCCS I/F a. Remote Maintenance	
1. Primary MAP	UDS: 202S/D, 202S/T-R, 202T, CASE: 4202 GDC: 202S/T
2. Logging Channel	UDS: 202S/D, 202S/T-R, 202T, CASE: 4202 GDC: 202S/T
3. BackUp MAP Channel	UDS: 202S/D, 202S/T-R, 202T, CASE: 4202 GDC: 202S/T
b. Remote Surveillance 1. WECO DAS Un	UDS: 202S/T-R, 202T, CASE: Not Available GDC: 202S/T
2. Local Line	UDS: 212A, 212A/D, 212AT/D, 224A, 224A/D, 224AT/D, 2440 CASE: 4212 GDC: DC 596
3. Foreign Exchange (FX) Line	212A, 212A/D, 212AT/D, 224A, 224A/D 224AT/D, 2440 GDC: DC 596
2. NSD BMC a. Automatic Dial-Up (ADU)	UDS: 212A, 212A/D, 212AT/D, 224A, 224A/D, 224AT/D, 2440 CASE: 4212, 4201 GDC: DC 596
b. Maint. Terminal and Download Port	UDS: 212A, 212A/D, 212AT/D, 224A, 224A/D, 224AT/D, 2440, 201BC/AS CASE: 4212, 4201 GDC: DC 596

Table Z-1 NT-Feature To Modem Model Cross Reference

NT-FEATURE AND/OR APPLICATION	APPROVED MODEM MODEL NUMBERS
3. NSD BMC Deuce a. Polling Port #1	UDS: 212A, 212A/D, 212AT/D, 224A, 224A/D, 224AT/D, 2440, 201BC/AS CASE: 4212, 4201 GDC: DC 596
b. Polling Port #2	UDS: 212A, 212A/D, 212AT/D, 224A, 224AT/D, 2440, 201BC/AS CASE: 4212, 4201 GDC: DC 596
c. Maint. Terminal and DwnLoad Port	UDS: 212A, 212A/D, 212AT/D, 224A, 224AT/D, 2440, 201BC/AS CASE: 4212, 4201 GDC: DC 596
4. NTX293 Security Dial Back	UDS: 212AT/D, 224AT/D, 2440, 4222 GDC: DC 596
5. Data Phones a. Logic6 DataPhone (2206-FWR-30-35-S)	UDS: 212A, 212A/D, 212AT/D, 224A, 224A/D, 224AT/D, 2440, 201BC/AS CASE: 4212, 4201 GDC: DC 596
b. Unity1 Dataphone	UDS: 212A, 212A/D, 212AT/D, 224A, 224A/D, 224AT/D, 2440, 201BC/AS CASE: 4212, 4201 GDC: DC 596
6. TOPS TTYs a. HADS,FADS,TADS, TRDS, SADS	UDS: Not Available CASE: Not Available GDC: DC 212A/L

b. T & C Record And Hotel Voice Quote	UDS: 108, 202S/D CASE: Not Available GDC: 212A/L, 202S/T

Table Z-1 NT-Feature To Modem Model Cross Reference

NT-FEATURE AND/OR APPLICATION	APPROVED MODEM MODEL NUMBERS
7. TOPS MP a. TOPS MP DA Voice Quote	UDS: D56 CASE: Not Available GDC: DC500F
b. TOPS MP ORDB	UDS: D56 CASE: Not Available GDC: DC500F
8. NTX140 Dial-UP AUTOQUOTE	UDS: 224AD CASE: Not Available GDC: DC 596
9. NTX218 EADAS I/F	UDS: 201BC/AS CASE: 4201 GDC: 202S/T
10. Remote MAP Ref: DMS-100 Tech Spec a. Remote MAP VDU	UDS: 212A, 212A/D, 212AT/D, 224A 224A/D, 224AT/D, 2440 CASE: 4212 GDC: 202S/T, DC 596
b. Remote MAP PRT 1200bps Max	UDS: 212A, 212A/D, 212AT/D, 224A 224A/D, 224AT/D, 2440 CASE: 4212 GDC: 202S/T, DC 596
11. RTIF a. Local	UDS: 19.2K Modem CASE: Not Available GDC: DC 19202A, DC500F
b. Remote	UDS: 201BC/AS, 202S/D, 19.2K Modem CASE: 4201, 4222 GDC: DC202S/T, 224┼, DC 19202A, DC500F

Table Z-1 NT-Feature To Modem Model Cross Reference

NT-FEATURE AND/OR APPLICATION	APPROVED MODEM MODEL NUMBERS
12. DPP NT8X48AD a. 140 MB DDU	UDS: 201BC/AS, 202S/D, 202S/T, 224A 202S/T-R, 212A, 212A/D, 212At/D 224A/D, 224AT/D, 2440, 208A/B 19.2K, D56, V.3225, 9648T, 202T CASE: 4201, 4222, 4208, 4232, 4296 GDC: DC202S/T, DC 596, DC 19202A, DC500F
b. 380 MB DDU	UDS: 201BC/AS, 202S/D, 202S/T, 224A 202S/T-R, 212A, 212A/D, 212AT/D 224A/D, 224AT/D, 2440, 208A/B 19.2K, D56, V.3225, 9648T, 202T CASE: 4201, 4222, 4208, 4232, 4296 GDC: DC202S/T, DC 596, DC 19202A, DC500F
c. 760 MB DDU	UDS: V.3225, 9648T, 19.2, D56 CASE: 4296 GDC: DC 596, DC 19202A, DC500C
13. NTX251 Modem Pooling a. Inbound	UDS: 212A, 212A/D, 2440, 201BC/AS 202S/D, 208A/B, 9648T, V.3225 CASE: Not Available GDC: DC 596
b. Outbound	UDS: 212A, 212A/D, 2440, 201BC/AS 202S/D, 208A/B, 9648T, V.3225 CASE: Not Available GDC: DC 596
c. Bidirectional	UDS: 212A, 212A/D, 2440, 201BC/AS 202S/D, 208A/B, 9648T, V.3225 CASE: Not Available GDC: DC 596

Table Z-1 NT-Feature To Modem Model Cross Reference

NT-FEATURE AND/OR APPLICATION	APPROVED MODEM MODEL NUMBERS
14. NTXA17 AABS a. IOC Data Link	UDS: 19.2K Modem CASE: Not Available GDC: DC 19202A
b. TAS Terminal	UDS: 212A, 2440 CASE: 4212 GDC: DC 202S/T, DC 596
c. ASCII Dial-Up	UDS: 212A, 2440 CASE: 4212 GDC: DC 202S/T, DC 596
15. NTX732 SMDI a. NT1X67FA	UDS: Not Available CASE: 4222
b. NT1X89AA	UDS: 9648T, V.3225 CASE: 4208
16. NTXA11 Patch Downloading via X.25 Ref: No API/ECM Reference a. NT1X89AA	UDS: 9648T, V.3225 CASE: 4296 GDC: DC 596
17. COMPU CALL a. NT1X89AA/BA	UDS: DDS/MR, D56 CASE: Not Available
18. SS7/CCS7 Data Links a. NT1X89AA/BA	UDS: DDS/MR, D56 CASE: Not Available GDC: DC 500F
19. SuperNode OPC	UDS: CASE: GDC:
20. NACD	UDS: Not Availibale CASE: DCM4296

	GDC: GDC 914 ADR
20. CC MIS	UDS: Not Availibale CASE: DCM4202 GDC: DC 9600 RPA, DC 500C/UXR, GDC 500A
20. OA&M Workstation	UDS: Not Availibale CASE: Not Availible GDC: DC 914 ADR, GDC 500A

Table Z-2 Universal Data System (UDS) Modems

		201BC/AS	201C/D	2022S/D	2022S/T	2022ST-R	2022T	2022T/829	208A/B	208B/D	210A/S-P	DDD/MR1	212A/D	2440	2860	A829L4	9645	9648T	DU100	V.32229	V.32325		
Level 1 Inter.	EIA RS232	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		
	CCITT V.35											X							X				
Trans. Mode	Half Duplex-2W	X	X	X	X	X	X	X	X	X					X			X		X	X		
	Full Duplex-2W												X	X					X	X	X		
	Full Duplex-4W	X	X		X	X	X	X	X			X			X	X	X	X		X	X		
Timing	Asynchronous	X	X	X	X	X	X	X					X	X	X		X	X	X	X	X		
	Synchronous	X	X	X	X	X			X	X			X	X	X		X	X	X	X	X		
Speed (BPS)	110			X	X	X	X	X					X	X									
	150			X	X	X	X	X					X	X									
	300			X	X	X	X	X					X	X					X	X	X		
	600			X	X	X	X	X															
	1200			X	X	X	X	X			X	X	X	X					X	X	X		
	1800						X	X															
	2000																						
	2400	X	X								X	X		X	X				X	X	X		
	3600																						
	4800								X	X	X	X		X	X		X	X	X	X	X		
	7200																X	X					
	9600										X	X					X	X	X	X	X		
	12000																						
	14400																			X			
	19200											X							X	X	X		
	48000																		X				
	56000											X							X	X			
	64000											X							X				
Line Config.	Point/Point																						
	PLL-2W	X		X	X	X	X	X	X	X			X	X	X	X		X	X	X	X		
	PLL-4W	X			X	X	X	X	X			X			X	X	X	X		X	X		
	Multipoint																						
	PLL-2W																						
	PLL-4W	X			X	X	X	X	X			X			X		X	X					
	PSTN	X	X	X	X	X			X	X			X	X	X			X	X	X	X		

Table Z-2 Universal Data System (UDS) Modems

		201BC/AS	201C/D	2022S/D	2022S/T	2022S/T-R	2022T	2022T/829	208A/B	208B/D	210A/S-P	DS/MR1	2124A/D	2440	2860	A8291L4	9645	9648T	DU100	V.32229	V.32225		
Protocol /Modul.	BELL 103												X	X						X	X		
	BELL 201	X	X												X								
	BELL 202			X	X	X	X	X															
	BELL 208								X	X					X								
	BELL 212												X	X									
	BELL 224																						
	CCITT V.21																						
	CCITT V.22													X									
	CCITT V.22 BIS			X	X	X								X						X	X		
	CCITT V.23																						
	CCITT V.26																						
	CCITT V.26 BIS																						
	CCITT V.26 TER																						
	CCITT V.27																						
	CCITT V.29																X	X					
	CCITT V.32																			X	X		
	CCITT V.33																						
Features	Auto Answer	X	X	X	X	X			X	X			X	X	X			X	X	X	X		
	Stand Alone	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	Rack Mount	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
NT Datapath Applic.	Outbound MP				X	X			X										X				
	Inbound MP	X								X					X								
	Bidirectional		X	X									X	X				X			X		

Table Z-3 General Datacomm (GDC) Modems

		DC1083M	DC2017	4800	9600SPA	9600RPA		14433 33	19202	914	COMM-914	DT424	DC2966B	DC596	DT596	DC2208B/A	DC22025/T	DC2202T	DT2202	DC2201C/L	DT2201	DC2242+	DC2212A/L
Level 1 Intrf.	EIA RS232	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CCITT V.35																						
Trans. Mode	Half Duplex-2W	X	X	X						X	X	X					X	X	X	X	X		
	Full Duplex-2W	X								X	X	X	X	X	X	X						X	X
	Full Duplex-4W	X	X	X	X	X		X	X			X	X	X		X	X	X	X	X	X		
Timing	Asynchronous	X			X	X		X	X	X	X	X	X	X	X		X	X	X			X	X
	Synchronous		X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X	X
Speed (BPS)	110																X		X			X	
	150																						
	300	X								X	X	X		X	X		X		X			X	X
	600																						
	1200		X							X	X	X		X	X		X	X	X	X		X	X
	1800																X	X	X				
	2400		X							X	X	X		X	X					X	X	X	
	3600																						
	4800			X						X	X		X	X	X	X							
	7200										X												
	9600				X	X		X	X	X	X		X	X	X								
	12000							X			X												
	14400							X	X	X	X												
	19200								X														
	48000																						
	56000																						
	64000																						

Table Z-3 General Datacomm (GDC) Modems

		DC1083M	DC201-7	4800	9600SPA	9600RPA		14433 33	1922 02	914	COMM-914	DT424	DC2966B	DC596	DT596	DC2088/A	DC2022S/T	DC2022T	DT2022	DC2201C/L	DT2201	DC2242+	DC2212A/L
Line Config.	Point/Point																						
	PLL-2W	X	X	X						X	X	X	X	X			X	X	X	X		X	X
	PLL-4W	X	X	X	X	X		X	X		X		X	X		X	X	X	X	X	X			
	Muiltipoint																						
	PLL-2W	X															X	X	X				
	PLL-4W	X	X	X		X										X	X	X	X	X	X		
	PSTN									X	X	X	X	X	X	X	X			X	X	X	X
Protocol /Modul.	BELL																						
	103	X							X	X	X	X		X	X							X	X
	201		X														X	X	X	X	X		
	202																						
	208			X												X							
	212								X	X	X	X		X	X							X	X
	224																						
	CCITT																						
	V.21									X	X	X		X	X							X	
	V.22					X		X		X	X												
	V.22 BIS									X	X	X		X	X							X	
	V.23									X	X	X					X	X				X	
	V.26		X																	X			
	V.26 BIS																			X			
	V.26 TER																						
	V.27																						
	V.29				X	X		X															
	V.32									X	X			X	X								
	V.32 BIS									X	X												
	V.33							X															
Features	Auto Answer									X	X	X	X	X	X	X	X	X					X
	Stand Alone	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Rack Mount	X	X	X	X	X		X	X		X		X	X		X	X	X		X		X	X
NT Datapath Applic.	Outbound MP																						
	Inbound MP																						
	Bidirectiona																						

Table Z-4 CASE/DATATEL MODEMS

		DCM4201	DCM42028	DCM42128	DCM42228	DCM42328	DCM42296	DCM42299	DCP42256
Level 1 Interf.	EIA RS232	X	X	X	X	X	X	X	
	CCITT V.35								X
Trans. Mode	Half Duplex-2W	X	X	X					
	Full Duplex-2W				X	X	X		
	Full Duplex-4W	X	X	X			X	X		X
Timing	Asynchronous		X		X	X	X			X
	Synchronous	X		X	X	X	X	X		X
Speed (BPS)	110		X		X					
	150		X		X					
	300		X		X	X	X			
	600		X							
	1200	X	X		X	X	X			
	1800		X							
	2000									
	2400	X				X	X			
	3600									
	4800			X			X	X		
	7200							X		
	9600						X	X		
	12000									
	14400									
	19200									X
	48000									
	56000									X
	64000									
Line Config.	Point/Point									
	PLL-2W	X	X			X	X			
	PLL-4W	X	X	X			X	X		X
	MuiltiPoint									
	PLL-2W	X	X			?				
	PLL-4W	X	X	X				X		X
	PSTN	X		X	X	X	X			

Table Z-4 CASE/DATATEL MODEMS

		DCM4201	DCM4202	DCM4208	DCM4212	DCM4222	DCM4232	DCM4296	DCM4229	DCP4256
Protocol Modul.	BELL									
	103				X	X	X			
	201	X								
	202		X							
	208			X						
	212				X	X	X			
	224									
	CCITT									
	V.21					?				
	V.22					?	?			
	V.22 BIS					X	X			
	V.23									
	V.26									
	V.26 BIS									
	V.26 TER									
	V.27									
	V.29							X		
	V.32						X			
	V.33									
Features	Auto Answer	X		X	X	X	X			
	Stand Alone	X	X	X	X	X	X	X	X	X
	Rack Mount	X	X	X	X	X	X	X	X	X
NT Datapath Applic.	Outbound MP				X	X	X			
	Inbound MP				X	X	X			
	Bidirection				X	X	X			

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:

N/A

RULES:

N/A

BCS34 SOFTWARE TO HARDWARE CROSS-REFERENCE.

PEC CODE: T_BCS34_XREF

CPC CODE: N/A

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: BCS34 Software to hardware cross-reference.

REFERENCE DOCUMENTATION: NTP 297-1001-801
BNR Design Documents.

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: Rena Fisher Dept. 3471 (PPK)

T BCS34 XREF EMA14-27-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 07 09	ECM 547 01	Intorduction of the table.
93 08 23	ECM 547 02	Update table with additional info.
97 09 12	ECM 547 09	MD NTBX80AA per EC 018-51334 and MD NT9X69AA per EC 018-51453.
97 09 22	ECM 591 06	Upissue this EMS to MD NT1X75BA and NT1X77AA per EC 018-51451.

The BCS34 Software to Hardware Cross-reference. is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

BCS34 Software to Hardware Cross-reference

NTX000AA BILGE
-DMS Switch
NTX001AA COMMON BASIC
-DMS Switch
-LTC'S/RCC'S
-NT6X45BA RCC EQUIPPED WITH NT6X45BA
-NT6X78 CLASS MODEM RESOURCE CARD (CMR)
-NT9X17AA/AD INTERFACE CARD
NTX006AA BUSINESS LINES
-DMS Switch
NTX007AB PBX INTERFACE I (UPGRADE OF NTX007AA)
-DCM/DTC
NTX008AB PBX INTERFACE II(UPG. OF NTX008AA)
-DCM/DTC
NTX019AA CIVIC SERVICES
-IBN SWITCH
NTX020AC VERTICAL SERVICES I (UPGRADE FROM NTX020AB)
NTX021AA REMOTE CALL FORWARDING
NTX023AB REMOTE LINE MODULE (RLM)
NTX024AA RLM INTRA-RLM CALLING
NTX025AA RLM EMERGENCY STAND-ALONE OPERATION
-NT0X02AB 1 RSM PER RLM REQUIRED
-NT2X48AB E/W DTR
NTX030BA TOPS ACD FEATURES
NTX030CC TOPS CALL PROCESSING FEATURES(REP NTX030CB)
-DMS-100, DMS-100/200, DMS-200 SWITCHS ONLY.
-DMS-TOPS
-DMS-200 TOPS
-VOICE SERVICE NODE (VSN)
-NT1X89 MULTI-PROTOCOL CONTROLLER
-TELETYPEWRITERS WHICH CAN OPERATE AT 1200/300
-BELL 202 MODEM
-OPP OPERATOR POSITIONS
NTX035AA TOPS REMOTE CAMA
-DMS-200 OR DMS-100/200.
-RONI CIRCUITS
-TOPS ENVIRONMENT
NTX036AA TOPS INWARD VALIDATION
NTX039AA HOST OC DATA - LINK HANDLING
-TOPS ENVIRONMENT

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-DMS-200 OR DMS-100/200 TOPS						
-HOST TOPS ENVIRONMENT						
NTX040AA COMMON CHANNEL INTEROFFICE SIGNALLING - BASIC						
NTX041AB CCS7 - MTP/SCCP(SEE NTXR72AA FOR LPP APPLICATION)						
-CCS7 SIGNALLING CONNECTION CONTROL PART (SCCP)						
-SIGNALLING SYSTEM NO. 7 (SS7) NETWORK						
-MULTI-MSB7						
-SIGNALING CONNECTION CONTROL PART (SCCP)						
NTX042AA LOCAL AUTOMATIC MESSAGE ACCOUNTING (LAMA)						
-DMS-100, DMS-100/200, DMS-200						
-SWITCHS ONLY.						
NTX043AA LOCAL CALL DETAIL RECORDING						
NTX044AA CENTRAL AUTOMATIC MESSAGE ACCOUNTING (CAMA)						
-DMS-100, DMS-100/200, DMS-200						
-SWITCHS ONLY.						
NTX045AA USAGE SENSITIVE PRICING(USP BELLCORE FORMAT)						
-NO SPECIFIC HARDWARE						
NTX048AA SYNCHRONIZATION						
-NT9X53AC MESSAGE SWITCH CLOCK						
-NT9X54AC/AD						
NTX048AB SYNCHRONIZATION - CESIUM MASTER CLOCK						
NTX048BA SYNCHRONIZATION - STRATUM 3						
-NT9X53 CLOCK CARD						
NTX048CA SYNCHRONIZATION - STRATUM 2						
-NT3X16AA;						
-NT3X15DA						
-NT3X14BC						
-NT1X78						
-NT3X95						
-NT3X15						
-NT3X16 SYNCLK OSCILLATORS.						
NTX049AC CIRCLE DIGIT IDENTIFICATION						
NTX049AD SINGLE PARTY REVERTIVE CALLING						
NTX049AE NORTH ELECTRIC ANI FORMAT GENERATION						
NTX049AG ITT ANI FORMAT (RECEIPT)						
NTX049AH COME AGAIN SIGNALLING						
NTX049AL TIME AND TEMPERATURE ANNOUNCEMENT						
NTX051AA AUTOMATIC TRUNK TESTING						
NTX052AB REMOTE OFFICE TEST LINE (ROTL)						
-NO SPECIFIC HARDWARE						
NTX053AA MAINTENANCE ASSISTANCE PACKAGE						
-NO SPECIFIC HARDWARE						
NTX054AA LINE TEST POSITION (LTP)						
-NO SPECIFIC HARDWARE						
NTX055AA TRUNK TEST POSITION (TTP)						
-NT4X97AA METALLIC TEST UNIT						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTX055AB TTP-DIGIT VERIFICATION						
-NO SPECIFIC HARDWARE						
NTX055AC TTP-TRANSMISSION MEASUREMENT						
NTX055BA RONI TRUNK TESTING						
-NO SPECIFIC HARDWARE						
NTX056AA ENHANCED ADMINISTRATION						
-NO SPECIFIC HARDWARE						
NTX057AB CUTOVER ASSISTANCE II (NON RESIDENT)						
-NO SPECIFIC HARDWARE						
NTX057BA CUTOVER ASSISTANCE III (NON RESIDENT)						
-NO SPECIFIC HARDWARE						
NTX057EA CUTOVER ASSISTANCE IV(NRES) (UPG. OF NTX057DA)						
-NT40 CCC.						
-NT9X17AA DMS BUS 4-PORT CARD						
-NT9X17DA DMS BUS 64-PORT CARD						
-NT9X20BB DMS BUS DMS BUS-ENET FIBER INTERFACE PADDLEBOARD						
-NT9X25BA DMS BUS DMS BUS CHAIN TERMINATING PADDLEBOARD						
-NT9X25AA DMS BUS DMS BUS CHAIN EXPANSION PADDLEBOARD						
-NT9X49CB DMS BUS TRACER CARD						
-NT9X23AA DMS BUS 4-PORT DS-30 INTERFACE						
-NT9X69AA DMS BUS 16-PORT DS-30 INTERFACE (MDed)						
-NT9X35CA ENET 16K X 16K CROSSPOINTCARD (H-BUS TERM.)						
-NT9X35BA ENET 16K X 16K CROSSPOINTCARD						
-NT9X40BA ENET DS-512 INTERFACE PADDLEBOARD						
-NT9X41BA ENET DS-30 INTERFACE PADDLEBOARD						
-NT6X40AA XPM DS-30 NETWORK INTERFACE CARD (8 DS-30S)						
-NT6X40AB XPM DS-30 NETWORK INTERFACE CARD (8 DS-30S)						
-NT6X40AC XPM DS-30 NETWORK INTERFACE CARD(16 DS-30S)						
-NT6X40CA XPM DS-512 LINK CONTROL CARD						
-NT6X40DA XPM DS-512 FIBER INTERFACE PADDLEBOARD						
-NT6X40EA XPM DS-512/DS-30 SWITCHER PADDLEBOARD						
-NT6X69AA/AB XPM C-SIDE MESSAGING (NON-UPGRADED FIRMWARE)						
-NT6X69AC/MA XPM C-SIDE MESSAGING (UPGRADED FIRMWARE)						
-NT2X33AA/AB PM C-SIDE PROCESSOR (NON-UPGRADED FIRMWARE)						
-NT2X33AE PM C-SIDE PROCESSOR (UPGRADED FIRMWARE)						
NTX059AB POLLING OM & AUT.MSG ACCTG.DATA VIA DATAPAC(UPG.OF NTX058AD						
NTX060AB NETWORK MANAGEMENT						
-NT2X55AA SD CARD						
-NT2X57AA/AB SD CARD						
NTX060BB NETWORK MANAGEMENT - ENHANCED						
-NO SPECIFIC HARDWARE						
NTX063AA ECHO SUPPRESSOR						
NTX064AA AUTOMATIC LINE INSULATION TESTING (ALIT) (REP BY 901AA/Z02AA						
NTX065AA SERVICE ANALYSIS						
-NO SPECIFIC HARDWARE						
NTX066AA BILINGUAL INTERFACE(UPG BY. NTX066AB)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NO SPECIFIC HARDWARE						
NTX072AA INTERNATIONAL DIRECT DISTANCE DIALLING (IDDD)						
NTX074AA DISK DATA STORAGE SYSTEM						
-IOC DISKS ONLY DDU'S						
-NT1X55 DISK CONTROLLER						
NTX076AA AMA - ENHANCED						
NTX077AA ONLINE PERIPHERAL SOFTWARE						
NTX080AA LAMA ENHANCED						
-LAMA HARDWARE						
NTX080BA TERMINATING CALL BILLING(NT FORMAT)						
-LAMA HARDWARE						
NTX081AA AMA SPECIAL FORMAT						
-AMA CAPABILITY						
NTX082AA SUBSCRIBER LINE MEASUREMENTS						
NTX083AA FEATURE GROUP A						
-LAMA HARDWARE						
-NO SPECIFIC HARDWARE						
NTX085AA TRAFFIC SEPARATION PEG COUNT						
-NO SPECIFIC HARDWARE						
NTX087AA TRAFFIC SEPARATION USAGE						
-NO SPECIFIC HARDWARE						
NTX088AA TRAFFIC SEPARATION REPORT						
-NO SPECIFIC HARDWARE						
NTX089AA ENHANCED COIN SERVICES						
-NT3X08AA COIN DETECTION CIRCUITS (CDC)						
NTX090AA COIN SERVICES						
-NO SPECIFIC HARDWARE						
NTX093AA REMOTE/TOLL CALL FORWARDING-TOPS OFFICE						
NTX094AA DIGITAL SUBSCRIBER SERVICES						
-DCM/DTC						
NTX096AA TOPS NOTIS FORMAT						
NTX098AA BELLCORE CAMA FORMAT						
-NO SPECIFIC HARDWARE						
NTX099AA OPERATIONAL MEASUREMENTS ENHANCEMENTS						
-NO SPECIFIC HARDWARE						
NTX100AA INTEGRATED BUSINESS NETWORKS - BASIC (IBN)						
-SUPERNODE BASED SWITCH.						
-DRAMS						
-SD POINT						
NTX101AA IBN - ENHANCED BUSINESS SERVICES						
-NT2X57AA SIGNAL DISTRIBUTION CARD						
NTX102AA IBN - STATION MESSAGE DETAIL RECORDING						
-DMS-100, DMS-100/200, DMS-200						
-SWITCHS ONLY.						
NTX103AA IBN - SMDR ENHANCED						
-NO SPECIFIC HARDWARE						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTX103BA IBN STATION SPECIFIC AUTHORIZATION CODES						
-SL100 ENVIRONMENT						
NTX105AA TRUNK QUEUING						
-NO SPECIFIC HARDWARE						
NTX106AA IBN - PROPRIETARY BUSINESS SET						
-M5212 SET						
-NT6X21AC LINE CARD, AC OR LATER VERSION						
NTX108AA IBN - DISPLAY FEATURES						
-NT4X20AB ELECTRONIC BUSINESS SET WITH A DISPLAY.						
-M5209 AND M5312 NEED LINE CARDS 6X21AC.						
NTX110AA IBN - HOSPITAL						
-NO SPECIFIC HARDWARE						
NTX111AA IBN - LARGE CONFERENCE						
NTX112AB IBN - VIRTUAL FACILITY GROUPS (UPG FROM NTX112AA)						
-NO SPECIFIC HARDWARE						
NTX114AA IBN - GOVERNMENT OF CANADA FEATURES (REPLACED BY NTX410AA)						
NTX119AA IBN-MESSAGE SERVICE						
-NO SPECIFIC HARDWARE						
NTX120AA OFFICE HARDWARE INVENTORY PACKAGE						
-NO SPECIFIC HARDWARE						
NTX121AA OVERLAP OUTPULSING (TRK TO TRK)						
-NO SPECIFIC HARDWARE						
NTX122AA OM - CALL ATTEMPTS SUMMARY						
-NO SPECIFIC HARDWARE						
NTX127AA WARM LINE						
-NO SPECIFIC HARDWARE						
NTX129AA TWO WAY OPERATOR OFFICE TRUNK						
-NO SPECIFIC HARDWARE						
NTX134BA REMOTE OPERATOR CENTRALIZATION DATA LINK HANDLING						
-TOPS ENVIRONMENT						
-DMS-200 OR DMS-100/200.						
-DMS-200 OR DMS-100/200.						
-RONI CIRCUITS						
NTX136AA AUTOMATIC TRANSMISSION MEASURING SYSTEM						
NTX139AA REVERTIVE PULSING ON DIGITAL LINES						
-NO SPECIFIC HARDWARE						
NTX140AA TOPS DIAL UP AUTOQUOTE						
-NT3X02AA SIGNAL PROCESSOR						
-ANALOG MODEM						
-DIGITAL MODEM						
-TOPS						
NTX141AA TOPS CITY ZONE RATING						
-NO SPECIFIC HARDWARE						
NTX142AA DS-1 64 KBPS CLEAR						
NTX143AA DS-1 - ESF						
-NT6X50AB						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTX145AA REMOTE SWITCHING CENTER						
-REMOTE MAINTENANCE MODULE (RMM)						
-NT6X69 NEW MESSAGING CARD.						
-NT6X92 UNIVERSAL TONE RECEIVER (UTR).						
-NT6X72 AND NT6X50 ON AN RCC						
-NT6X50 ON AN LTC						
-NT6X72AA						
-NT6X50						
-DUAL RSC.						
NTX146AA REMOTE LINE CONCENTRATING MODULE (RLCM)						
-REMOTE MAINTENANCE MODULE (RMM)						
-ESA MODULE						
-LINE CONCENTRATING MODULE (LCM)						
NTX147AB OUTSIDE PLANT MODULE MAINTENANCE(UPGRADE OF NTX147AA)						
-NT2X10AA LINE TEST UNIT (LTU) ANALOG CARD						
-NT2X11AA LINE TEST UNIT (LTU) DIGITAL CARD						
-NT2X90AB TEST TRUNK INCOMING/OUTGOING						
-NT0X10AA SCAN CARD MISCELLANEOUS						
-NT2X57AA SIGNAL DISTRIBUTION CARD						
-NT3X09BA REMOTE METALLIC TEST ACCESS						
-NT3X09AA REMOTE METALLIC TEST ACCESS						
-NT8X01AA OPM CABINET						
-NT8X02AA OPM BATTERY CHARGER CONTROLLER						
-XPH0402 OPM RECTIFIER						
-NT3X09BA MTA						
NTX149AA RSC EMERGENCY STAND ALONE OPERATION - LINES						
NTX149AB RSC ESA OPERATION - LINE AND TRUNK						
-REMOTE SWITCH CENTRE (RSC)						
NTX150AA RSC - INTRA RSC CALLING						
-RCC						
-NT6X69AB MESSAGING CARD						
-NT6X78AA CLASS MODEM RESOURCE (CMR)						
NTX152AB RSC TRUNKING (UPG. OF NTX152AA)						
NTX154AA RLCM - EMERGENCY STAND ALONE OPERATION						
NTX156AA INTRA RLCM CALLING						
NTX157AA CCIS - INWATS OSO						
-NO SPECIFIC HARDWARE						
NTX159AA BELLCORE LAMA FORMAT						
-NO SPECIFIC HARDWARE						
NTX160AA MULTIUNIT MESSAGE RATE SERVICES						
-NT0X44 MAG TAPE DRIVE UNITOR OR						
-NT4X00 DISK DRIVE UNIT						
NTX165AA BELLCORE - IBN/ESN DETAIL RECORDING						
-NO SPECIFIC HARDWARE						
NTX167AB CCS7 - TRUNK SIGNALLING (REP.OF NTX167AA)						
-NT6X70 CONTINUITY TONE CARD						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT5X30AA TEST LINE 101						
-NT2X72AB TEST LINE 108						
-TTU HARDWARE AT THE LOCAL OFFICE						
-NT3X91AA TERM105 CARD AND ROTL UNIT OR						
-NT2X47AC TTU CARD (AC OR HIGHER ISSUE) AT REMOTE						
NTX174AA AIOD(AUTO IDENTIFIED OUTWARD DIALING)						
-NT2X01AA AIOD CIRCUIT PACK						
NTX175AA IBN - MULTI BILINGUAL CONSOLE						
-NO SPECIFIC HARDWARE						
NTX176AA NON RESIDENT ADMINISTRATIVE AIDS						
NTX177AA NON RESIDENT GENERAL UTILITIES						
NTX178AA NON RESIDENT DIAGNOSTIC UTILITIES						
NTX181AA NON RES NT SUPPORT SOFTWARE (ORDERABLE BY TIA CUST. ONLY)						
NTX182AA NON RESIDENT NT COMMISSIONING SOFTWARE						
NTX186AA EQUAL ACCESS END OFFICE(UPG BY NTX186AB)						
-NO SPECIFIC HARDWARE						
NTX187AA TOPS - EQUAL ACCESS						
-TOPS POSITION						
NTX188AA TOPS - BCR AMA FORMAT						
-EQUAL ACCESS (EA) ACCESS TANDEM						
-TOPS OFFICE.						
-TOPS DA						
NTX190AA FEAT GRP B AMA - TANDEM (NT FORMAT)						
-NO SPECIFIC HARDWARE						
NTX192AA 4X OPERATION - BELL FORMAT ANI						
-NO SPECIFIC HARDWARE						
NTX193AA 4X OPERATION - AMR 5 FORMAT ANI						
-NO SPECIFIC HARDWARE						
NTX195AA MECHANIZED LOOP TESTER (MLT)	I/F					
NTX196AA CALLING NUMBER ANNOUNCEMENT (CNA)						
-DIGITAL RECORDED ANNOUNCEMENT(DRA)						
NTX197AA CCIS DIRECT SIGNALLING						
-NO SPECIFIC HARDWARE						
NTX202AA DMS-250 OPERATIONAL MEASUREMENTS ON TAPE						
NTX204AA CCIS BANDED SIGNALLING						
-COMMON CHANNEL INTEROFFICE SIGNALLING (CCIS)						
-DIGITAL TRUNK CONTROLLERS (DTC) HANDLING OF CCIS						
-DMS CCS SYSTEM						
NTX206AA UNAUTHORIZED DIGITONE SERVICE DETECTION						
-DIGITONE RECEIVERS						
NTX207AA LCDR ENHANCED						
-NT0X44 MAG TAPE DRIVE OR						
-NT4X00 DISK DRIVE UNIT						
NTX209AB FEATURE GRP B AMA - END (ATT FORMAT)(UPG FR.NTX209AA)						
-NO SPECIFIC HARDWARE						
NTX210AA NO. 2 SCC INTERFACE						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT1X48CA						
-NT1X42AA						
-NT2X57AA SIGNAL DISTRIBUTOR (SD) POINTS						
NTX211AB FEATURE GRP B AMA - TANDEM(ATT FORMAT)(UPG FR.NTX211AA)						
-NO SPECIFIC HARDWARE						
NTX213AC SUBSCRIBER CARRIER MODULE(SCM)(REP. NTX213AB)						
-NT6X81BA A-BIT/B-WORD CIRCUIT PACK						
NTX215AA SES NO.2 - INTERFACE						
-NT2X82AA OR						
-DS1SIG CIRCUIT						
-3-PORT CONFERENCE CIRCUIT						
-DMS TONE GENERATOR						
-NT1X89AA MPC CARD						
-2400 BAUD MODEM						
NTX218AA 1A/1B EADAS INTERFACE						
-NT1X89 MPC CARD						
NTX219AB TEEN SERVICE						
-NT3X68AC TRUNK CARDS						
-LINE MODULES (LM).						
-FREQUENCY SELECTIVE RINGING						
NTX243AA AMA TELEPROCESSING SYSTEM(AMATPS)						
-DPP						
-NT1X67 TERMINAL CONTROLLER CARDS.						
-NT1X68BC MTD CONTROLLERS FOR THE DSI						
NTX244AB ENHANCED SEQUENTIAL TRUNK HUNTING(UPG OF 244AA IN BCS23)						
-NO SPECIFIC HARDWARE						
NTX250AA DATAPATH - BASIC						
-NT4X25AV						
-HIGH SPEED DATA UNITS (ONLY AT 56 & 64 KBPS SPEED SETTINGS)						
-NT4X25CH						
-NT4X25AP HIGH SPEED DATA UNIT						
-HIGH SPEED DATA UNIT						
-NT6X99AA IBERT CARD						
-LCM (OR RLCM).						
-NT6X71AB DATA LINE CARD						
-DATA UNIT (DU)						
-NT5X29AC AUDIO TONE DETECTOR CARD						
-NT4X25AF LOW SPEED DATA UNIT						
-NT6X76AC LINE CARD						
-NT6X76AC ENHANCED ASYNCHRONOUS INTERFACE LINE CARD.						
-NT4X25AL TERMINAL INTERFACE COAX ELIMINATOR DATA UNIT.						
-WORKS WITH ALL DATAPATH PRODUCTS EXCEPT DPX AND THE ORIGINAL AILC (6X76AA)						
NTX251AA DATAPATH - MODEM POOLING						
-NT6X99AA IBERT CARD						
-DATA UNIT (DU)						
-NT5X29AC AUDIO TONE DETECTOR CARD						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTX259AA DATAPATH EXTENSION - DPX						
-DPX CARD (QPP628A) FOR USE IN THE DE-4E CHANNEL BANK.						
-D4 DATAPATH EXTENSION CARD (D4-DPX)						
NTX260AA IBN - PRESET CONFERENCE						
-NO SPECIFIC HARDWARE						
NTX262AA IBN PRIORITY CONSOLE ALERTING						
-NT4X09 ATTENDANTCONSOLE						
NTX268AA FEAT GRP B AMA - END OFFICE (NT FORMAT)						
-NO SPECIFIC HARDWARE						
NTX269AA UNIVERSAL TONE RECEIVER(DOMESTIC)						
-NT6X69 NEW MESSAGING CARD.						
-NT6X92 UNIVERSAL TONE RECEIVER (UTR).						
NTX270AA NEW PERIPHERAL MAINTENANCE PACKAGE						
-NT6X51AB PROCESSOR CARD						
-NT6X45BA						
-NT6X51AB						
-NT6X92 UNIVERSAL TONE RECEIVER (UTR)						
-NT6X45BA EXTENDED MULTIPROCESSOR						
-DTCI/LTCI FOR PRI ISDN						
NTX272AA FOCUSSED MAINTENANCE						
-NO SPECIFIC HARDWARE						
NTX273AA MULTI - PROTOCOL CONTROLLER BX.25						
NTX277AA DIALABLE LINE CIRCUIT IDENTIFICATION						
NTX286AA MCCS - QUERY VIA OC DATALINK (REP BY NTX825AB OR NTX552AD)						
-TOPS OPERATOR CENTRALIZATION REMOTE OFFICE						
NTX290AA TANDEMING/SUPERVISION AND TREATMENT						
-NO SPECIFIC HARDWARE						
NTX291AA ENHANCED REAL TIME INDICATOR						
-NO SPECIFIC HARDWARE						
NTX292AB ENHANCED SECURITY - WITH PASSWORD ENCRYPTION						
-NT1X67BD OR LATER OF THE IOC						
NTX292BA ENHANCED SECURITY - WITHOUT PASSWORD ENCRYPTION						
-NO SPECIFIC HARDWARE						
-NT1X67BD OR LATER OF THE IOC						
NTX293AA ENHANCED SECURITY PACKAGE II						
-NT1X67BD NON ECHO TERMINAL CONTROLLER, ESD FACEPLATE						
NTX297AA BRIDGES SERVICES						
-NT1X31 OR						
-NT3X67 THREE PORT CONFERENCE CIRCUITS						
NTX345AA CNS MCCS (CALLING CARD)						
NTX380AA DUAL RCC						
NTX385AA OM THRESHOLDING AND ALARMS						
-NO SPECIFIC HARDWARE						
NTX386AA ACCESS TANDEM SWITCH(UPG BY NTX386AB)						
-NO SPECIFIC HARDWARE						
NTX387AB SMU - SUBSCRIBER MODULE URBAN (REP NTX387AA)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-RCU						
-NT3A06BA ENHANCED POTS LINE CARD CARRIER						
-NT3A07BA ENHANCED POTS + FSR LINE CARD CARRIER						
-NT3A10HA ENHANCED POTS LINE CARD						
-RCU						
-NT3A06BA ENHANCED POTS LINE CARD CARRIER						
-NT3A07BA ENHANCED POTS + FSR LINE CARD CARRIER						
-NT3A10HA ENHANCED POTS LINE CARD						
-SMU						
-NT6X78AA CLASS MODEM RESOURCE						
-NT1X75BA CONTROLLER CARD (MDed)						
-RCU RTI CARD						
NTX394AA TOPS - CREDIT CARD DIGIT CHECK						
NTX395AA REMOTE MAKE BUZY VIA SCAN POINT						
-NT0X10AA SCAN POINTCARD						
NTX398AA SCM - 100S						
NTX399AA IBN/ESB COMPATIBILITY						
-NO SPECIFIC HARDWARE						
NTX407AB ACD - CALL PROCESSING (REP.NTX407AA)						
-ELECTRONIC TELEPHONE SET.						
NTX410AA DYNAMIC ATTENDANT CONSOLE MEASUREMENTS						
-NO SPECIFIC HARDWARE						
NTX411AA IBN - VOICE MESSAGING						
-NT2X72AA 4W E&M TYPE D1 600 OHM I/F						
-NT6X02IC DTC AND D4 CHANNEL BANK						
-NT0X10AA SCAN POINTCARD						
NTX412CB IBN - CUSTOMER DATA CHANGE (UPG. OF NTX412CA)						
-NO SPECIFIC HARDWARE						
NTX413AA IBN - ENHANCED CALL FORWARDING(UPG. BY NTX413AB)						
-NO SPECIFIC HARDWARE						
NTX413AB IBN - ENHANCED CALL FORWARDING(UPGR. OF NTX413AA)						
-NO SPECIFIC HARDWARE						
NTX414AA IBN - DIRECTED CALL PARK, BUSINESS SET AND 2500 SET						
-NO SPECIFIC HARDWARE						
NTX415AA ACD BASIC						
-NO SPECIFIC HARDWARE						
NTX416AI ACD ENHANCED II(UPG. OF NTX416AH)						
-NT1X67AC TERMINAL CONTROLLER CARD						
-SIX-PORT CONFERENCE CIRCUITS						
-MAINTENANCE TRUNK MODULES						
-NT2X57AA SIGNAL DISTRIBUTION CARD						
-AUTOMATIC CALL DISTRIBUTION (ACD) SWITCH						
-DRAM OR AN ANALOGUE ANNOUNCEMENT						
-INTERNAL TONE CIRCUIT IN THE DTCI						
-EBS/IVD SET WITH A DISPLAY.						
NTX418AA IBN_SERVICE ANALYSIS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NO SPECIFIC HARDWARE						
NTX426AA ASYNCHRONOUS INTERFACE LINE CARD						
-NT6X76AC ASYNC. INTERFACELINE CARD						
NTX427AA END USER TESTING OF TRUNKS						
-NO SPECIFIC HARDWARE						
NTX430AA ESN						
-IBN SWITCH.						
NTX431AA IBN - CUT THROUGH DIALING						
-NO SPECIFIC HARDWARE						
NTX432AA NETWORK SPEED CALLING						
-SL-100						
NTX434AA TIME OF DAY NCOS						
-NO SPECIFIC HARDWARE						
NTX435AA IBN SUPERSET						
-NO SPECIFIC HARDWARE						
NTX436AA IBN ENHANCED DIAL PLAN						
-NO SPECIFIC HARDWARE						
NTX437AA RANDOM CONDITIONAL ROUTING						
-NO SPECIFIC HARDWARE						
NTX445AB O.M. SELECTIVE OUTPUT (UPGRADE OF NTX445AA)						
-NO SPECIFIC HARDWARE						
NTX447AA E911 - TANDEM						
NTX451AA E-911 DATABASE						
-NO SPECIFIC HARDWARE						
NTX455AB 1A EADAS NETWORK MANAGEMENT (UPG. OF NTX455AA)						
-NT1X89AA MULTI-PROTOCAL CARD (MPC)						
NTX479AA INTL UNIV TONE RCVR SUPPORT						
-NT6X92 UNIVERSAL TONE RECEIVER (UTR).						
NTX550AA CCS7 - TRANSACTION SERVICE SUPPORT						
-CCS7 NETWORK.						
NTX560AB NOP - GENERIC RO SERVICE(REP NTX560AA)						
-NO SPECIFIC HARDWARE						
NTX562AA NOS - DATA COLLECTION						
-NO SPECIFIC HARDWARE						
NTX563AA BNM - STATION ADMINISTRATION						
-NO SPECIFIC HARDWARE						
NTX571AA IBN - DIRECTED CALL PARK,2500 SET ONLY						
-NO SPECIFIC HARDWARE						
NTX573AA IBN SECURITY CODE - 2500 ONLY						
-NO SPECIFIC HARDWARE						
NTX574AA IBN SECURITY CODE - 2500 AND BUSINESS SETS						
-NO SPECIFIC HARDWARE						
NTX621AB SMU SPECIAL SERVICES(REP NTX621AA)						
-SMU						
-NT3A11BA/CA						
-4WSSLC, 2WFXB						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTX645AA TOPS - SERVICE BILLING						
-NO SPECIFIC HARDWARE						
NTX710AA LATA EQUAL ACCESS SYSTEM						
-DMS-200 ACCESS TANDEM (AT) SWITCH						
-(DRAM'S)						
NTX711AB EQUAL ACCESS END OFFICE ENHANCEMENTS (UPG. OF NTX711AA)						
-NO SPECIFIC HARDWARE						
NTX712AA CCS7 DATA PORT						
-NT6X55AB DS0 INTERFACE						
NTX713AA LATA-WIDE CENTREX BILLING						
NTX714AA TOPS INTERLATA CARRIER SERVICE						
NTX717AB IBN TRK VERIFICATION DESIGNATED STN(UPGR.OF NTX717AA)						
-NO SPECIFIC HARDWARE						
NTX719AA BUSINESS SET BUSY INDICATOR						
-NO SPECIFIC HARDWARE						
NTX724AA TOPS MP INTERFACE (ORDER VIA MP NTX704,706,708 OR 709)						
-TOPS XMS CONTROLLER						
NTX727AD ACD - LOAD MANAGEMENT III						
-NT1X67AC TERMINAL CONTROLLER CARD IF A DOWN STREAM PROCESSOR IS REQUI						
-MAP TERMINAL						
NTX730AA MULTILINK ASCII DEVICE DRIVER						
-NT1X67EA						
NTX731AA TOPS MP - TERMINAL HANDLER(ORDER VIA MP NTX704)						
-TOPS MULTI-PURPOSE POSITION (TOPS MP).						
-TOPS POSITION CONTROLLER (TPC) AND AT LEAST						
-NT4X82AA (TOPS/HSLI) CARDS.						
-REQUIRES XMS BASED TPC.						
-REQUIRES TUTOR 3B TRAINING SYSTEM.						
-TPC ADMINISTRATION AND MAINTENANCE INTERFACE BC2158						
-(TAMI).						
-VT220 COMPATIBLE TERMINAL (TAMI POSITION).						
-1200 BAUD AUTO ANSWER MODE						
-RS232 SERIAL PRINTER.						
-TOPS POSITION CONTROLLER (TPC)						
-NT4X82AA (TOPS/HSLI) CARDS.						
-NTX66AA HSDA CARD.						
-TPC DIAGNOSTIC FLOPPY DISKS.						
-NTNX65AA(SASI)/5BA(SCSI) PIO CARD						
-NTNX68AA(SASI)/CA(SCSI) FLOPPY DISK PACK						
-NTNX68BA(SASI)/DA(SCSI) HARD DISK PACK						
-ALL COMPONENTS MUST EITHER BE THEIR CORRESPONDING SASI VERSION OR						
-THEY MUST ALL BE THEIR CORRESPONDING SCSI VERSION.						
NTX732AA SIMPLIFIED MESSAGE DESK INTERFACE(SMDI)						
-NT1X67BC TERMINAL CONTROLLER CARD						
-SMDI LINK						
NTX733AE ENHANCED SERVICE ORDER(UPG.OF NTX733AD IN BCS29)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NO SPECIFIC HARDWARE						
NTX734AA EAEO - IBN PIC USING SERVORD						
-NO SPECIFIC HARDWARE						
NTX735AA FLEXIBLE ANI						
-NO SPECIFIC HARDWARE						
NTX737AB FLEXIBLE BELLCORE AMA (UPG. OF NTX737AA)						
NTX738AC SWITCH PERFORMANCE MONITORING SYSTEM (UPG NTX738AB V.O.30)						
-NO SPECIFIC HARDWARE						
NTX750AB ISDN BASIC ACCESS						
-ISDN TERMINALS.						
-D CHANNEL HANDLER SIGNALLING (DCH)						
-PACKET HANDLER (PHI)						
-ISDN TERMINALS						
-ISDN HARDWARE						
-BX34AA ISDN-LCM PROCESSOR BOARD						
-BX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-6X53AA POWER SUPPLY						
-ISDN-LCM FRAME						
-FULLY CONFIGURED ISDN LCM						
-NTBX34AA ISDN LCM PROCESSOR CARD						
-NTBX35AA ISDN LCM DIGROUP CONTROLLER CARD						
-NTBX36AA ISDN LCM BUS INTERFACE CARD						
-NTBX25AA ISDN LCM 1B LINE CARD						
-LCMI						
-NTBX45 BOTH THE BRA AND PRA DCH LOADS RUN ON THE SAME ST CARD.						
-NTBX44 STI CARD IS USED BY THE BRA DCH						
-NT6X68 64KBPS OR 56KBPS STI CARD IS USED BY THE PRA DCH.						
-NTBX01AA ISDN SIGNALLING PRE-PROCESSOR (ISP).						
-ISDN LINE TRUNK CONTROLLER (ISDN LTC)						
-ISDN LCM						
-NTBX01AA (ISP)						
-NTBX01AA ISDN-LTC ISP CIRCUIT PACK						
-NTBX02AA ISDN-LTC DCH CIRCUIT PACK						
-INTEGRATED SERVICES DIGITAL NETWORK (ISDN)						
-ISDN LINE TRUNK CONTROLLER (LTCI)						
-INTEGRATED SERVICES DIGITAL NETWORK (ISDN) BASIC RATE ACCESS (BRA)						
-LTCI						
-NTBX34AB LCMI PROCESSOR CARD.						
-ISDN LINE TRUNK CONTROLLER (LTCI)						
-LINE TRUNK CONTROLLER FOR ISDN (LTCI) OR A						
-LINE GROUP CONTROLLER FOR ISDN (LGCI).						
-NT6X17AA/AB/AC,						
-NT6X18AA/AB,						
-NT6X19AA &						
-NT6X20AA POTS/IBN LINE CARD.						
-NT6X30AA RINGING GENERATOR CARD.						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT6X76AA DATAPATH LINE CARD.						
-NTBX34AB PROCESSOR CARD.						
-NT6X30 RINGING GENERATOR CARD.						
-LTCI WITH A UTR						
-LTCI/LGCI						
-LTCI/LGCI WITH TWO OR MORE DCHS.						
-NTBX26AA						
-NTBX26AA						
-NTBX02 D CHANNEL HANDLERS (DCH)						
-ISDN BRA						
-S/T-ISLC						
-LTCI EQUIPPED WITH DCHS						
-LTCI WITH EQUIPPED DCH’S.						
-LCMI						
-EITHER LTCI OR LGCI PERIPHERAL						
-NTBX02AA D CHANNEL HANDLER (DCH)						
-NTBX01AA ISDN SIGNALLING PREPROCESSOR (ISP)						
-NTBX02AA DCH D-CHANNEL HANDLER						
-NTBX01AA ISP ISDN SIGNALLING PROCESSOR LTCI						
-LTCI						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-NTBX36BA LCME BUS INTERFACE CARD						
-NTBX72AA POWER SUPPLY						
-NT6X53CA POWER SUPPLY						
-NTBX30AA ISDN-LCM FRAME						
-NTBX32BA LINE DRAWER						
-NTBX27AA U INTERFACE LINE CARD						
-NTBX26AA S/T INTERFACE LINE CARD						
-ENCHANCED ISDN LINE CONCENTRATING MODULE (LCME)						
-NTBX01 ISP						
-NTBX02 DCH						
-NO SPECIFIC HARDWARE						
-NO SPECIFIC HARDWARE						
-2B1Q U-LOOP ISDN LINE CARD						
-NT6X30AA RING GENERATOR						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT6X30AA RING GENERATOR						
-FULLY CONFIGURED LCME MODULE CONSISTING OF>						
-NTBX30AA 2B1Q LCME FRAME						
-NTBX32BA 2B1Q LCME LINE DRAWER						
-NTBX34BA 2B1Q LCME PROCESSOR						
-NTBX35AA DIGROUP CONTROL CARD (DCC)						
-NTBX36BA 2B1Q BUS INTERFACE CARD (BIC)						
-NT6X53CA POWER SUPPLY 1						
-NTBX71AA POINT OF USE POWER SUPPLY (PUPS)						
-NTBX72AA POWER SUPPLY 0						
-2B1Q LINECARD AND NT1 >						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STANDALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX30AB LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX30AB LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-FULLY EQUIPPED DUAL UNIT LCME.						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX27AA 2B1Q-U LINECARD						
-NTBX80AA 2B1Q NT1 (STANDALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NO SPECIFIC HARDWARE						
-ISDN LINE CONCENTRATING MODULE (LCME)						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA LCME PROCESSOR						
-NTBX36BA BIC - BUS INTERFACE CARD						
-NTBX35AA DCC - DIGROUP CONTROLLER CARD						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STAND ALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-ISDN LTC						
-NTBX01AA ISP						
-NTBX02AA DCH						
-NT6X50AB DS-1						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA LCME PROCESSOR						
-NTBX36BA BIC - BUS INTERFACE CARD						
-NTBX35AA DCC - DIGROUP CONTROLLER CARD						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT2X90AD NO TEST TRUNK						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STAND ALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NTBX34BA LCME PROCESSOR BOARD						
-NTBX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-NTBX36BA LCME BUS INTERFACE CARD						
-NTBX72AA POWER SUPPLY						
-NT6X53CA POWER SUPPLY						
-NTBX30AA ISDN-LCM FRAME						
-NTBX32BA LINE DRAWER						
-NT6X30AA RING GENERATOR						
-NTBX27AA LINECARDS. 2B1Q NT1						
-NTBX26AA LINECARDS. 2B1Q NT1						
-LTCI/LGCI WITH DCHS						
-MTU						
-ISDN LTC/LGC						
-NTBX01AA ISP						
-NTBX02AA DCH						
-NT6X50AB DS-1						
-ISDN LTC/LGC						
-A FULLY CONFIGURED LCME MODULE CONSISTING OF						
-POTS/EBS/DATAPATH LINECARDS						
-NT6X17AA/AB/AC POTS TYPE A						
-NT6X18AA/AB POTS TYPE B						
-NT6X19AA POTS MSG WAITING						
-NT6X20AA POTS MSG WAITING POWER CONVERTING						
-NT6X21AA/AB/AC EBS						
-NT6X71AA/AB DATAPATH						
-NT6X76AA/AC DATAPATH						
-NT6X99AA IBERT						
NTX750AC ISDN BASIC ACCESS(UPG. FROM NTX750AB						
-ISDN TERMINALS.						
-D CHANNEL HANDLER SIGNALLING (DCH)						
-PACKET HANDLER (PHI)						
-ISDN TERMINALS						
-ISDN HARDWARE						
-BX34AA ISDN-LCM PROCESSOR BOARD						
-BX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-6X53AA POWER SUPPLY						
-ISDN-LCM FRAME						
-FULLY CONFIGURED ISDN LCM						
-NTBX34AA ISDN LCM PROCESSOR CARD						
-NTBX35AA ISDN LCM DIGROUP CONTROLLER CARD						
-NTBX36AA ISDN LCM BUS INTERFACE CARD						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NTBX25AA ISDN LCM 1B LINE CARD						
-LCMI						
-NTBX45 BOTH THE BRA AND PRA DCH LOADS RUN ON THE SAME ST CARD.						
-NTBX44 STI CARD IS USED BY THE BRA DCH						
-NT6X68 64KBPS OR 56KBPS STI CARD IS USED BY THE PRA DCH.						
-NO SPECIFIC HARDWARE						
-NTBX01AA ISDN SIGNALLING PRE-PROCESSOR (ISP).						
-ISDN LINE TRUNK CONTROLLER (ISDN LTC)						
-FULLY EQUIPPED LCMI.						
-ISDN LCM						
-FULLY EQUIPPED DUAL UNIT LCMI						
-NTBX30 LCMI FRAME						
-NTBX01AA (ISP)						
-NTBX01AA ISDN-LTC ISP CIRCUIT PACK						
-NTBX02AA ISDN-LTC DCH CIRCUIT PACK						
-NO SPECIFIC HARDWARE						
-INTEGRATED SERVICES DIGITAL NETWORK (ISDN)						
-LTCI EQUIPPED WITH DCHS						
-ISDN LINE TRUNK CONTROLLER (LTCI)						
-INTEGRATED SERVICES DIGITAL NETWORK (ISDN) BASIC RATE ACCESS (BRA)						
-LTCI						
-NTBX34AB LCMI PROCESSOR CARD.						
-ISDN LINE TRUNK CONTROLLER (LTCI)						
-D-CHANNEL HANDLERS						
-LINE TRUNK CONTROLLER FOR ISDN (LTCI) OR A						
-LINE GROUP CONTROLLER FOR ISDN (LGCI).						
-NT6X17AA/AB/AC,						
-NT6X18AA/AB,						
-NT6X19AA &						
-NT6X20AA POTS/IBN LINE CARD.						
-NT6X30AA RINGING GENERATOR CARD.						
-NT6X76AA DATAPATH LINE CARD.						
-NTBX34AB PROCESSOR CARD.						
-NT6X30 RINGING GENERATOR CARD.						
-LTCI WITH A UTR						
-LTCI WITH EQUIPPED DCH’S.						
-LTCI/LGCI						
-LTCI/LGCI WITH TWO OR MORE DCHS.						
-2B1Q U-LOOP ISDN LINE CARD						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-NTBX36BA LCME BUS INTERFACE CARD						
-NTBX72AA POWER SUPPLY						
-NT6X53CA POWER SUPPLY						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NTBX30AA ISDN-LCM FRAME						
-NTBX32BA LINE DRAWER						
-NTBX27AA U INTERFACE LINE CARD						
-NTBX26AA S/T INTERFACE LINE CARD						
-NT6X30AA RING GENERATOR						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-FULLY CONFIGURED LCME MODULE CONSISTING OF>						
-NTBX30AA 2B1Q LCME FRAME						
-NTBX32BA 2B1Q LCME LINE DRAWER						
-NTBX34BA 2B1Q LCME PROCESSOR						
-NTBX35AA DIGROUP CONTROL CARD (DCC)						
-NTBX36BA 2B1Q BUS INTERFACE CARD (BIC)						
-NT6X53CA POWER SUPPLY 1						
-NTBX71AA POINT OF USE POWER SUPPLY (PUPS)						
-NTBX72AA POWER SUPPLY 0						
-2B1Q LINECARD AND NT1 >						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STANDALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL (MDed)						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-ENCHANCED ISDN LINE CONCENTRATING MODULE (LCME)						
-NTBX30AB LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT6X30AA RING GENERATOR						
-NTBX01 ISP						
-NTBX02 DCH						
-NO SPECIFIC HARDWARE						
-NO SPECIFIC HARDWARE						
-NTBX30AB LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-FULLY EQUIPPED DUAL UNIT LCME.						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX27AA 2B1Q-U LINECARD						
-NTBX80AA 2B1Q NT1 (STANDALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NO SPECIFIC HARDWARE						
-NTBX26AA						
-LCMI						
-NTBX26AA						
-NTBX02 D CHANNEL HANDLERS (DCH)						
-ISDN BRA						
-S/T-ISLC						
-EITHER LTCI OR LGCI PERIPHERAL						
-NTBX02AA D CHANNEL HANDLER (DCH)						
-NTBX01AA ISDN SIGNALLING PREPROCESSOR (ISP)						
-ISDN LINE CONCENTRATING MODULE (LCME)						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX02AA DCH D-CHANNEL HANDLER						
-NTBX01AA ISP ISDN SIGNALLING PROCESSOR LTCI						
-LTCI						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA LCME PROCESSOR						
-NTBX36BA BIC - BUS INTERFACE CARD						
-NTBX35AA DCC - DIGROUP CONTROLLER CARD						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STAND ALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-ISDN LTC						
-NTBX01AA ISP						
-NTBX02AA DCH						
-NT6X50AB DS-1						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA LCME PROCESSOR						
-NTBX36BA BIC - BUS INTERFACE CARD						
-NTBX35AA DCC - DIGROUP CONTROLLER CARD						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NT2X90AD NO TEST TRUNK						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STAND ALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NTBX34BA LCME PROCESSOR BOARD						
-NTBX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-NTBX36BA LCME BUS INTERFACE CARD						
-NTBX72AA POWER SUPPLY						
-NT6X53CA POWER SUPPLY						
-NTBX30AA ISDN-LCM FRAME						
-NTBX32BA LINE DRAWER						
-NT6X30AA RING GENERATOR						
-NTBX27AA LINECARDS. 2B1Q NT1						
-NTBX26AA LINECARDS. 2B1Q NT1						
-LTCI/LGCI WITH DCHS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-MTU						
-ISDN LTC/LGC						
-NTBX01AA ISP						
-NTBX02AA DCH						
-NT6X50AB DS-1						
-ISDN LTC/LGC						
-A FULLY CONFIGURED LCME MODULE CONSISTING OF						
-POTS/EBS/DATAPATH LINECARDS						
-NT6X17AA/AB/AC POTS TYPE A						
-NT6X18AA/AB POTS TYPE B						
-NT6X19AA POTS MSG WAITING						
-NT6X20AA POTS MSG WAITING POWER CONVERTING						
-NT6X21AA/AB/AC EBS						
-NT6X71AA/AB DATAPATH						
-NT6X76AA/AC DATAPATH						
-NT6X99AA IBERT						
NTX753AA ISDN FUNCTIONAL MODE BASIC RATE SERVICES(UPG BY NTX753AB)						
-ISDN XPM (IAC)						
-DMS OFFICE EQUIPMENT SUPPORTING ISDN BRA.						
-LGCI OR LTCI PRESENT IN SYSTEM						
-DMS OFFICE EQUIPMENTSUPPORTING ISDN BRA.						
NTX754AA ISDN ELECTRONIC KEY TELEPHONE SERVICE(UPG BY NTX754AB)						
-NO SPECIFIC HARDWARE						
NTX755AB ISDN SUPPLEMENTARY SERVICES COMPLIANCE(UPG.FR.NTX755AA)						
-MBS SETS						
-ISDN SETS WITH FLEXIBLE CALLING						
-THREE PORT CONFERENCE CIRCUITS						
-6-PORT CONFERENCE CIRCUITS						
NTX757AA TR444 ISUP INTERWORKING						
-DMS-100 ISDN						
NTX767AA TR-448 ISDN DIGIT ANALYSIS COMPLIANCE- END OFFICE						
-NO SPECIFIC HARDWARE						
NTX768AA TR-448 ISDN DIGIT ANALYSIS COMPLIANCE - TOLL						
-NO SPECIFIC HARDWARE						
NTX769AA TR444 ISUP INTERWORKING - TOLL OFFICE						
-DMS-100 ISDN						
NTX790AC ISDN - PRIMARY RATE ACCESS BASE(UPG FR. NTX790AB)						
-IAC WILL BE NEEDED.						
-ISDN PRA ON DMS-100						
-INTEGRATED SERVICES DIGITAL NETWORK (ISDN)						
-NT5X30AA 101 COMMUNICATION TEST LINE CIRCUIT						
-NT4X23AA DIGITAL TEST UNIT						
-ISDN DIGITAL TRUNK CONTROLLER (DTCI)						
-EBS SETS						
NTX791AA ISDN PRA- NETWORK RING AGAIN						
-SL-100 OFFICES EQUIPPED WITH ISDN ACCESS CONTROLLERS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-P-PHONES, IVD SETS						
NTX792AA ISDN PRA- NETWORK NAME DISPLAY						
-NO SPECIFIC HARDWARE						
NTX793AA PRA INTEGRATED SERVICES ACCESS						
-NO SPECIFIC HARDWARE						
NTX794AA PRA CCS7 INTERWORKING						
-NO SPECIFIC HARDWARE						
NTX795AA INFO+ ENHANCED NUMBER DELIVERY- PRIMARY RATE INTERFACE						
-PRA IACS (XPM)						
-ISDN DIGITAL TRUNK CONTROLLER (ISDN DTC)						
NTX796AA INFO+ ENHANCED NUMBER DELIVERY- BASIC RATE INTERFACE						
-NO SPECIFIC HARDWARE						
NTX797AA PRI MESSAGE WAITING INDICATION						
-NO SPECIFIC HARDWARE						
NTX801AA TOLL FEATURES I						
NTX802AA TOLL FEATURES II						
NTX803AA EQUAL ACCESS ALTERNATE SWITCHING POINT						
-NO SPECIFIC HARDWARE						
NTX806AA ENHANCED CALL FORWARDING - POTS						
-NO SPECIFIC HARDWARE						
NTX807AB ENHANCED CALL WAITING - POTS(UPG. OF NTX807AA)						
-NO SPECIFIC HARDWARE						
NTX808AA ENHANCED 3-WAY CALLING - POTS						
-NO SPECIFIC HARDWARE						
NTX812AA CENTRALIZED MAP						
-NO SPECIFIC HARDWARE						
NTX813AA CENTRALIZED ALARMS						
-NO SPECIFIC HARDWARE						
NTX820AA ENHANCED 3-WAY CALLING - IBN						
-NO SPECIFIC HARDWARE						
NTX821AA TANDEM OPERATOR SERVICE ROUTING						
-NO SPECIFIC HARDWARE						
NTX822AA EBS AS MESSAGE CENTRE						
-NO SPECIFIC HARDWARE						
NTX824AB ENHANCED CALL WAITING - IBN(UPGR. OF NTX824AA)						
-NO SPECIFIC HARDWARE						
NTX825AB EXCHANGE ALTERNATE BILLING SERVICE(UPG OF NTX825AA IN BCS34						
-NO SPECIFIC HARDWARE						
NTX827AA NEW PERIPHERALS PERFORMANCE MEASUREMENTS						
-NO SPECIFIC HARDWARE						
NTX829AA INTRALATA PIC FOR LEAS						
NTX835AA STP - SEAS (1.1) OPERATIONS						
-NO SPECIFIC HARDWARE						
NTX836AA LPP - V.35 SUBRATE LINKS						
-NO SPECIFIC HARDWARE						
NTX839AB LPP - ENHANCED MAINTENANCE AND BERT (REP. NTX839AA)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-LIU7						
-NT6X66AC NT40 BASED SIGNALLING TERMINAL (ST) OR						
-NT9X76AA SUPERNODE BASED SIGNALLING TERMINAL (ST) CARD						
-NT9X78BA DS0 INTERFACE CARD						
NTX840AA LIU7 GATEWAY MESSAGE SCREENING						
-DMS SIGNALING TRANSFER POINT(STP)						
NTX843AB CELLULAR INTERCONNECT(UPG. OF NTX843AA IN BCS27)						
-ACCESS TANDEM SWITCH						
NTX850AA TOPS ALTERNATE ANNOUNCEMENT						
-NT1X79AA EEPROM.						
NTX851AA SMDR DERIVED FROM BCR AMA						
-NO SPECIFIC HARDWARE						
NTX853AA IBN ALARM CALL STATUS ON CONSOLES						
-NT2X57AA SD POINTS						
NTX856AA IBN ATTENDANT CONSOLE OM ON AN INDIVIDUAL CONSOLE BASIS						
-NO SPECIFIC HARDWARE						
NTX871AA REMOTE TOPS MP O.C. DATA LINK HANDLING						
-TOPS-MP						
-DMS-200 OR DMS-100/200.						
-RONI CIRCUITS						
NTX873AA HOST TOPS MP O.C. - DATA LINK HANDLING						
-DMS-200 TOPS OC-HOST						
-TOPS_MP						
NTX875AA CCS7 MASS TRUNK CONVERSION						
-HARDWARE FOR SS7 SIGNALLING.						
NTX877AB INTERFACE TO NON-DATA LINK CONSOLE(UPG. OF NTX877AA)						
-NT1X31AA						
-NT3X67AA						
-NT6X17 LINE CARDS						
-LINE CONCENTRATING MODULE (LCM)						
-NT0X10AA SC CARDS						
-NT2X57AA SD CARDS						
NTX878AE ENHANCED ELECTRONIC BUSINESS SET SERVICES(UPG. FR. NTX878AD						
-ELECTRONIC BUSINESS SETS						
-500/2500 SETS.						
-SIX PORT CONFERENCE CIRCUITS						
NTX881AC SWITCH BIT ERROR RATE MAINTENANCE(UPG. OF NTX881AB)						
-NT4X23AA DTU HARDWARE.						
-NT4X23AA DTU HARDWARE.						
-NT6X99AA IBERT LINE CARD (ILC)						
NTX882AA BIT ERROR RATIO INDICATOR FOR TOLL SWITCHES						
-NT4X23AA DTU HARDWARE.						
-NT4X23AA DTU HARDWARE.						
-NT6X99AA IBERT LINE CARD (ILC)						
NTX883AA INTER OFFICE TRK BIT ERROR RATE TESTING						
-NT4X23AA DTU OR						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT6X99 ILC.						
-DIALED LOOPBACK ON TRUNKS TERMINATING TEST LINE.						
NTX885AB SWITCH PATH DIAGNOSTICS (UPG. OF NTX885AA)						
-NO SPECIFIC HARDWARE						
-NT6X69AA/AB MESSAGE CARD						
-IF THE AA MESSAGE CARD IS USED, THEN THE NT6X79AA TONE						
-CARD IS						
-REQUIRED.						
-NO SPECIFIC HARDWARE						
-NT5X13 NETWORKS						
-NT7X27 NETWORKS						
-NT7X40 NETWORKS						
NTX891AA TOPS - EXCHANGE ACCESS OPR SERV SIG						
-TOPS OFFICE						
NTX892AA MPC MULTILINK MANAGEMENT						
NTX898AA VARIABLE SPEED CALL ACCESS CODE - IBN						
-NO SPECIFIC HARDWARE						
NTX899AA CALL TRANSFER ENHANCEMENTS						
-NO SPECIFIC HARDWARE						
NTX901AA LOCAL FEATURES I						
-NO SPECIFIC HARDWARE						
-NT2X90AC/AD TEST TRUNK CARD						
NTX902AA LOCAL FEATURES II						
-NO SPECIFIC HARDWARE						
NTX903AA TRANSMISSION MEASUREMENTS						
-NT2X41 TTU						
NTX913AA MERCURY CENTREX PCM-30 PERIPHERALS						
-REMOTE MAINTENANCE MODULE (RMM)						
-NT6X72AA						
NTX940AA CM BILGE						
-SUPERNODE						
NTX941AA CM COMMON						
-DMS-CORE						
-DMS-BUS						
-NT9X20BA A CHANNELIZED DS512 BACK CARD.						
-NT9X23BA A CHANNELIZED DS30 BACK CARD.						
-NT9X25AA SHORTING BUS INTERFACE CARD.						
-NT9X25BA SHORTING BUS TERMINATION INTERFACE CARD.						
-NT9X17AB 4 PORT INTERFACE CARD.						
-NT9X17CA 128-PORT INTERFACE CARD.						
-DMS-CORE						
-DMS-BUS						
-NT9X20BA A CHANNELIZED DS512 BACK CARD.						
-NT9X23BA A CHANNELIZED DS30 BACK CARD.						
-NT9X25AA SHORTING BUS INTERFACE CARD.						
-NT9X25BA SHORTING BUS TERMINATION INTERFACE CARD.						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT9X17AB 4 PORT INTERFACE CARD.						
-DMS-100 SUPERNODE						
-NT9X10AA PROCESSOR CIRCUIT PACKS.						
-NT9X26DA REMOTE TERMINAL INTERFACE PADDLEBOARDS.						
-NT9X62BA 4-LINK SR-512 PADDLEBOARD AND						
-NT9X17BB/DA/AC.						
-NT9X17AA/AC;						
NTX942AB DMS - SUPERNODE SYSTEM LOAD MODULE(SLM)(UPG.FR. NTX942AB)						
NTX944AA BASE NODE MAINTENANCE						
NTX945AA MS BASE LINK MAINTENANCE						
-NT9X62BA SR512 PADDLE BOARD AND						
-NT9X17DA 64-PORT INTERFACE CARD						
-NT9X62BA						
-NT9X62BA						
NTX946AB EBS - CALL NAME DISPLAY(UPG.OF NTX946AA IN BCS26)						
-NO SPECIFIC HARDWARE						
NTX950AA MS BILGE						
-NT9X49CB DMS-BUS TRACER CARD IN CARD.						
-NT9X13DC PROCESSOR CARD.						
-DMS-SUPERNODE						
NTX951AA MS COMMON						
-NT9X49CB DMS-BUS TRACER CARD						
-NT9X53AC CLOCK CARD						
-DMS-SUPERNODE FAMILY						
-INTER-MS LINKS CONNECTING THE MS PAIR						
-DS30 > NT9X17AA FRONT CARD WITH NT9X23AA OR NT9X23BA BACK CARD						
-DS512> NT9X17DA FRONT CARD WITH NT9X20BB BACK CARD.						
-NT9X62CA DMS-BUS 2-LINK FIBER PB.						
NTX983AB SERVICE SWITCHING POINT PRIVATE VIRTUAL NTWKG(REP NTX983AA)						
NTX984AA SERVICE SWITCHING POINT PRIV.VIRTUAL NETWRKG-ATT.SERVICES						
-NO SPECIFIC HARDWARE						
NTX986AA ANI WITH AMA						
-NO SPECIFIC HARDWARE						
NTX987AA FIBER MAINTENANCE BASIC MODE						
-NO SPECIFIC HARDWARE						
NTX989AA CARRIER ACCESS CODE BLOCKING FOR IC/INC						
-NO SPECIFIC HARDWARE						
NTX991AF ACD-MGMT REP 2 WAY DATA STREAM(UPG OF NTX991AE IN BCS32)						
-NO SPECIFIC HARDWARE						
-NT1X89AA MULTI-PROTOCOL CONTROLLER (MPC)						
-NO SPECIFIC HARDWARE						
-AUTOMATIC CALL DISTRIBUTION (ACD)						
-NO SPECIFIC HARDWARE						
-NT1X89 MPC CARD						
NTXA00AB CLASS - CALL SETUP (UPGRADE OF NTXA00AA IN BCS32)						
-EBS SETS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT1X75BA DRAM CONTROLLER CARD (MDed)						
-NT1X75BA CONTROLLER CARD (MDed)						
-NT1X76AJ/AK CLASS PHRASE LIST PROM CARDS						
-NT1X76JA/JB AR DATE AND TIME PHRASE LIST PROM CARDS						
-NT1X79 EEPROM CARDS COULD BE USED						
NTXA01AA CLASS- CALLING NUMBER DISPLAY						
-NT6X78AA CLASS MODEM RESOURCE CARD REQUIRED IN THE LTC/LGC/RCC						
NTXA02AA CLASS- CUSTOMER ORIGINATED TRACE						
-NT1X76 DRAM CP						
NTXA11AA PATCH ADMINISTRATION & DOWNLOADING VIA X.25						
-NT1X89 MULTI-PROTOCOL CONTROLLER (MPC) CARD.						
NTXA15AA CALL PROGRESS TONES						
-NO SPECIFIC HARDWARE						
NTXA16AA ENHANCED WATS OPERATION (POTS)						
-NO SPECIFIC HARDWARE						
NTXA17AA AUTOMATIC ALTERNATE BILLING SERVICE						
-NO SPECIFIC HARDWARE						
NTXA18AA SUBSCRIBER ACTIVATED CODE BLOCKING						
-NT1X79 EEPROM						
NTXA20AA TOPS MP OPEN INFORMATION ACCESS INTERFACE						
-TOPS MP						
-NTX66AA HSDA						
NTXA22AA ENHANCED ARS						
-NO SPECIFIC HARDWARE						
NTXA24AA EQUAL ACCESS ENHANCED CARRIER TOLL DENIAL						
-NO SPECIFIC HARDWARE						
NTXA26AA TOPS INCOMING FEATURE GROUP D SIGNALLING						
-DMS-200 TOPS						
NTXA27AA EXECUTIVE CONFERENCE						
-6 PORT CONFERENCE CIRCUITS						
NTXA28AA TOPS AWT ENHANCEMENTS						
-NO SPECIFIC HARDWARE						
NTXA30AA VIRTUAL FACILITY GROUP LOOK AHEAD						
-NO SPECIFIC HARDWARE						
NTXA31AA DISA THIRD DIAL TONE - IBN						
-NO SPECIFIC HARDWARE						
NTXA32AA DISTINCTIVE CALL WAITING RINGBACK						
-NO SPECIFIC HARDWARE						
NTXA33AA MADN RING FORWARD						
-NO SPECIFIC HARDWARE						
NTXA35AA NETWORK NUMBER DISPLAY						
-EBS SETS						
NTXA36AA NETWORK WIDE RING AGAIN						
-NO SPECIFIC HARDWARE						
NTXA39AA MERIDIAN NETWORK ATTENDANT SERVICE						
-NT3X68AC SERVICE CIRCUIT						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-ISUP TRUNK						
NTXA41AA CLASS- CALLING NUMBER DELIVERY BLOCKING ADMINISTRATION						
-NO SPECIFIC HARDWARE						
NTXA42AA CLASS DISTINCTIVE RINGING/CALL WAITING						
-NT3X68AC TRUNK CARD						
-SUPPORT LINE TYPES> LCM, RLCM, OPM, LM, RLM,						
-SCM-100U/RCU, SMC-100S/RCS, SMC-100R/RCT.						
-HARDWARE TO SUPPORT RING TYPE ON THE						
-PERIPHERAL MODULE(CODED, FREQUENCY SELECTIVE, AND SUPERIMPOSED)						
NTXA43AA CALL FORWARD REMOTE ACTIVATION						
-NO SPECIFIC HARDWARE						
NTXA45AA CLASS SELECTIVE CALL ACCEPTANCE						
-NO SPECIFIC HARDWARE						
NTXA52AB ACD REMOTE LOAD MANAGEMENT I (REP. NTXA52AA)						
-NT1X89AA MULTI-PROTOCOL CONVERTER CARD (MPC)						
NTXA60AA TOPS CLOSEDOWN(REPLACES NTX134BB AND NTX039AB)						
-TOPS ENVIRONMENT						
-DMS-200 OR DMS-100/200.						
-RONI CIRCUITS						
-TOPS-MP						
NTXA62AA TOPS MP - DA AUDIO RESPONSE CALL HANDLING						
-TOPS MULTI-PUPROSE POSITIONS.						
-NT1X89 MULTI-PROTOCOL CONTROLLERS (MPC'S)						
-ARU TRUNKS BETWEEN THE DMS AND DAS						
NTXA63AA DIRECTORY ASSISTANCE/INTERCEPT CC MESSAGING						
-NO SPECIFIC HARDWARE						
NTXA64AA RES(RESIDENTIAL ENHANCED SERVICES) BASE						
-NO SPECIFIC HARDWARE						
NTXA67AA EXTENDED XPM DIAGNOSTICS						
-NT6X45BA SIGNALLING PROCESSOR CARD (OR HIGHER)						
-NT6X69 NEW MESSAGING CARD.						
NTXA68AA NETWORK MESSAGE SERVICE						
-NT1X67FA TERMINAL CONTROLLER						
NTXA72AA SECONDARY MADN CALL FORWARDING						
-NO SPECIFIC HARDWARE						
NTXA73AA LOUDSPEAKER PAGING ANSWER						
-NO SPECIFIC HARDWARE						
NTXA74AA OUTGOING RESTRICTION CONTROL						
-NO SPECIFIC HARDWARE						
NTXA77AA ENHANCED UCD						
-NT2X57AA SIGNAL DISTRIBUTOR POINTS						
NTXA79AA IBN TRUNKS WITH ISUP SIGNALLING						
-NO SPECIFIC HARDWARE						
NTXA80AA NETWORK NAME DISPLAY						
NTXA81AA EXTENSION BRIDGED SERVICES						
-THREE PORT CONFERENCE CIRCUITS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTXA82AA CLASS LINE OFFICE DATA						
-DRAM HARDWARE						
NTXA83AA TOPS MESSAGE SWITCH						
-STANDARD TMS CONFIGURATION						
-LTCI						
-NTBX01AA ISP						
-NTBX02AA DCH						
-NT6X45BA MP/SP						
-TOPS MESSAGE SWITCH (TMS)						
-DATA LINKS FROM THE TMS TO THE ORDB						
-LINKS ARE REQUIRED FROM THE TPC TO THE TMS						
-NTX66AA HSDA CARD						
NTXA84AA EBS - MUSIC ON HOLD						
-AT LEAST ONE OF THE FOLLOWING WILL BE NEEDED >						
-DRAM, AUDIOCHRON, AND/OR BROADCAST TRUNK INTERFACE.						
NTXA88AA MDR VIA AMA STREAM						
NTXA89AA SMDR TIME DUMP FOR BNM						
-NO SPECIFIC HARDWARE						
NTXA90AA TOPS-MP TERMINAL HANDLER HIGH SPEED						
-NTNX66AA HSDA CARDS						
-TOPS POSITION CONTROLLER (TPC)						
-TAMI HARDWARE CONFIGURATION						
-TOPS MULTI-PURPOSE POSITION (TOPS MP).						
-ONE MP.						
-NT4X82AA (TOPS/HSLI) CARDS.						
-REQUIRES XMS BASED TPC.						
-REQUIRES TUTOR 3B TRAINING SYSTEM.						
-TPC ADMINISTRATION AND MAINTENANCE INTERFACE BC2158						
-(TAMI).						
-VT220 COMPATIBLE TERMINAL (TAMI POSITION).						
-1200 BAUD AUTO ANSWER MODE						
-RS232 SERIAL PRINTER.						
-TOPS MULTI-PURPOSE POSITION (TOPS MP).						
-NTNX65AA(SASI)/5BA(SCSI) PIO CARD						
-NTNX68AA(SASI)/CA(SCSI) FLOPPY DISK PACK						
-NTNX68BA(SASI)/DA(SCSI) HARD DISK PACK						
-ALL COMPONENTS MUST EITHER BE THEIR CORRESPONDING SASI VERSION OR						
-THEY MUST ALL BE THEIR CORRESPONDING SCSI VERSION.						
NTXA91AA STANDARD INTERFACE FOR DA/INTERCEPT APPLICATIONS						
-NO SPECIFIC HARDWARE						
NTXA94AA RES FEATURES						
-NO SPECIFIC HARDWARE						
NTXA95AA CLASS SELECTIVE CALL FORWARDING						
-NO SPECIFIC HARDWARE						
NTXA96AA CLASS SELECTIVE CALL REJECTION						
-NO SPECIFIC HARDWARE						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTXE00AA TOPS OPERATOR PASSWORD						
-TOPS POSITION						
NTXE01AA ENHANCED NETWORK - BASIC						
-NT9X13CA MEMORY/CPU CIRCUIT PACK						
-NT9X13FA CPU/MEMORY CIRCUIT PACK						
-NT9X26AA RTIF PADDLE BOARD						
-NT9X36AA MESSAGE/CLOCK CIRCUIT PACK						
-NT9X66AA MS INTERFACE PADDLE BOARD						
-NT9X35BA						
-NT9X41BA						
-DMS SUPERNODE						
-ENHANCED NETWORK (ENET)						
-NT9X36BA CLOCK/MESSAGE CIRCUIT PACK						
-NT9X40BA QUAD FIBER INTERFACE PADDLE BOARD						
-NT6X40CA/DA						
-NT9X40/41/45 ENET PADDLEBOARDS						
-NT9X45BA PADDLE BOARD						
-NO SPECIFIC HARDWARE						
NTXE05AA TOPS - MP DA/INTERCEPT MESSAGING - OPEN						
-NO SPECIFIC HARDWARE						
NTXE09AB ACD ON 2500 SET (UPG OF NTXE09AA IN BCS32)						
-NO SPECIFIC HARDWARE						
NTXE13AB CCS7 ISUP INTERLATA CONNECTION EAEO (REP. NTXE13AA)						
-ATC MF TRUNKS WILL BE NEEDED FOR CALLS						
-REQUIRING OPERATOR						
NTXE14AB CCS7 ISUP INTERLATA CONN ACCESS TANDEM (REP. NTXE14AA)						
-ATC MF TRUNKS WILL BE NEEDED FOR CALLS						
-REQUIRING OPERATOR						
-COMMON CHANNEL SIGNALLING SYSTEM #7 (CCS7) HARDWARE						
-THE LINKS BETWEEN THE ACCESS TANDEM AND THE						
-INTEREXCHANGE CARRIER MUST BE EQUIPPED WITH						
-COMMON CHANNEL SIGNALLING SYSTEM #7 (CCS7)						
-HARDWARE> MESSAGE SWITCH AND BUFFER FOR CCS7						
-SIGNALLING (MSB7). DIGITAL TRUNK CONTROLLER FOR						
-CCS7 ISDN USER PART TRUNKS (DTC7).SIGNAL						
-TERMINAL FOR CCS7 SIGNALLING LINKS (ST7).						
NTXE20AA TOPS EXTENDED BELLCORE AMA FORMAT(EBAF)						
-NO SPECIFIC HARDWARE						
NTXE22AA ACD SUPERGROUP						
-NO SPECIFIC HARDWARE						
NTXE23AA CELLULAR INTERCONNECT - END OFFICE						
-NO SPECIFIC HARDWARE						
NTXE25AA ISDN CIRCUIT SWITCH MODEM POOLING						
-NO SPECIFIC HARDWARE						
NTXE27AA CLASS DIALABLE NUMBER DELIVERY						
-NT6X78AA CLASS MODEM RESOURCE| (CMR).						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT1X75BA (MDed) CONTROLLER CARD FOR THE DRMUSER ANNOUNCEMENTS.						
NTXE29AA BCS PROCESS ENHANCED						
-NO SPECIFIC HARDWARE						
NTXE32AA CCS7 PREVENTATIVE CYCLICAL RETRANSMISSION						
-NO SPECIFIC HARDWARE						
NTXE35AA ALTERNATE CARRIER SELECTION						
-DMS-200 TOPS OFFICES.						
NTXE36AB AUTOMATIC DA CALL COMPLETION (UPG OF NTXE36AA)						
-TRAFFIC OPERATOR POSITION SYSTEM (TOPS)						
-AUTOMATIC MESSAGE ACCOUNTING (AMA).						
-AUDIO RESPONSE UNIT (ARU).						
NTXE38AA CLASS- CALLING NUMBER DELIVERY ON SCMS(UPG.BY NTXE38AB)						
-NT6X78AA CLASS MODEM RESOURCE (CMR) CARD.						
-NT6X69AB						
-NT6X46BA SP MEMORY						
-IF CUSTOM ANNOUNCEMENTS FOR CND SUSP						
-ACTIVATION AND DEACTIVATION ARE TO BE USED,						
-THEN THE 1X75BA CONTROLLER CARD FOR THE						
-DRAM IS REQUIRED AND THE CLASS DRAM						
-ANNOUNCEMENTCARD						
NTXE39AA CALL FORWARD BUSY/DO NOT ANSWER SPLITS						
-NO SPECIFIC HARDWARE						
NTXE40AB MERIDIAN BUSINESS SET INSPECT KEY (UPG. FROM NTXE40AA)						
-NO SPECIFIC HARDWARE						
NTXE43AA TERMINATING BILLING OPTION						
-NO SPECIFIC HARDWARE						
NTXE44AA EXECUTIVE BUSY OVERRIDE ENHANCEMENT						
NTXE46AA CALLING NAME/NUMBER DELIVERY BLOCKING						
-NO SPECIFIC HARDWARE						
NTXE47AA MERIDIAN DISPLAY COMMUNICATION						
-NO SPECIFIC HARDWARE						
NTXE52AA CALLING NAME DELIVERY SWITCH BASED						
-NT6X78AA CLASS MODEM RESOURCE CARD						
NTXE54AA SYSTEM LOAD MODULE II						
-DMS SUPERNODE SWITCH						
-NT9X27AA/BA						
-NT9X12						
-NT9X46						
-NT9X44 SLM II						
NTXE55AB STP SEAS INTERFACE RELEASE 2.0 (REPLACES NTXE55AA IN BCS31)						
NTXE56AA CLASS SCREENING LIST EDITING						
-DRAM PROM CARDS						
-NT1X76AP-AV DRAM CP						
-NT1X76GA-GC DRAM CP						
NTXE58AA CLASS ON MVP						
-DIGITAL RECORDED ANNOUNCEMENT MACHINE (DRAM)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-CUSTOMER PREMISES EQUIPMENT (CPE)						
-NT6X78 CLASS MODEM RESOURCE (CMR)						
NTXE60AA DATAPATH - CLOSED USER GROUPS (U.S.)						
-THE CUG FEATURE WORKS WITH DATA UNITS WITH REGULAR AND ENHANCED MESSAGING						
-THIS FEATURE WORK FOR BOTH NT6X71AA AND						
-NT6X71AB DATA LINE CARDS (DLCS).						
-THE FOLLOWING ARE TYPICAL TYPES OF DUS WORKING WITH CUG>						
-LOW SPEED DU > NT4X25AN						
-HIGH SPEED DU > NT4X25AP						
-TERMINAL COAX UNIT > NT4X25AL						
-CONTROLLER COAX UNIT > NT4X25AM						
-ELASTOMER HIGH SPEED DU > NT4X25AG						
-ELASTOMER LOW SPEED DU > NT4X25AF						
-RACKMOUNTLOW SPEED DU > NT4X25AD						
-RACKMOUNTHIGH SPEED DU > NT4X25AV						
-R/M LOW SPEED DU W/V.54 LOOPBACK NT4X25CH						
NTXE62AA EBS CALL FORWARD UNIVERSAL PER KEY						
-NO SPECIFIC HARDWARE						
NTXE64AA #4ESS AT&T INTERWORKING						
-NO SPECIFIC HARDWARE						
NTXE65AA MPC X.25 INTERFACE						
-NT1X89AA/BA MULTI PROTOCOL CONTROLER CARD (MPC/EMPC)						
-NTX66AA HSDA						
NTXE66AA CCS7 ISUP OPTION CONTROLS						
-NO SPECIFIC HARDWARE						
-DTC WHICH SUPPORT NO.7 SIGNALLING						
NTXE67AA EQUAL ACCESS INTERMEDIATE TANDEM						
-NO SPECIFIC HARDWARE						
NTXE68AA TOPS EXPANDED CALLING CARD FORMAT						
-NO SPECIFIC HARDWARE						
NTXE70AA TOPS TWO TERMINAL DIRECTORY ASSISTANCE/INTERCEPT						
-NO SPECIFIC HARDWARE						
NTXE71AA TOPS DIRECTORY ASSISTANCE/TOLL BRANDING						
-NT1X79AA DRAM CARDS						
NTXE72AA TOPS EXPANDED CALLING CARD FORMAT - CCS7 VALIDATION (U.S.)						
-NO SPECIFIC HARDWARE						
NTXE73AA IMPROVED STATSPAC						
-MODEM THAT IS BELL108 OR BELL202						
-COMPATIBLE.						
NTXE74AA PRESET CONFERENCE - EXPANDED CAPACITY						
-6 PORT CONFERENCE CIRCUITS						
NTXE94AA SECONDARY DIRECTORY NUMBERS WITH OPTIONS						
-NO SPECIFIC HARDWARE						
NTXE96AA ENHANCED MDC WATS						
-NO SPECIFIC HARDWARE						
NTXE98AA HIGH SPEED MPC						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT1X89BA EMPC						
NTXF10AA AUTOMATED DA CALL COMPLETION WITH ALTERNATE BILLING						
-NO SPECIFIC HARDWARE						
NTXF14AA HIGH CAPACITY DPP						
-NO SPECIFIC HARDWARE						
NTXF15AA DMS-CORE MC68030 33MHZ PROCESSOR						
-DMS-SUPERNODE						
NTXF16AA DMS-CORE MC68030 40 MHZ PROCESSOR						
NTXF20AA LMS ON LPP						
-NT9X13DA/DB CPU						
NTXF26AA SYNCHRONIZATION - BITS COMPOSITE MASTER						
-NT9X53AB CIRCUIT PACK AND						
-NT9X54AD PADDLE BOARD						
NTXF27AA SYNCHRONIZATION - CESIUM,LORAN - C MASTER						
-NT9X53						
-NT9X54AC PADDLE BOARD						
NTXF55AA CLASS BULK CALLING LINE IDENTIFICATION						
-NT6X78AA CLASS MODEM RESOURCE (CMR) CARD						
NTXF56AA CLASS ON MDC (BASE)						
-NO SPECIFIC HARDWARE						
NTXF58AA POTS - INTRALATA PIC IN EAEO						
NTXF60AA CLASS ON MVP II						
-DRAM, CLASS PROM						
NTXF71AB SUPERNODE ENHANCED MESSAGING(UPG. OF NTXF71AA)						
NTXF72AB CLASS ON MBS (UPG OF NTXF72AA)						
-NO SPECIFIC HARDWARE						
NTXF82AA RES SINGLE LINE VARIETY PACKAGE						
-NO SPECIFIC HARDWARE						
NTXF87AA SERVICE ORDER SIMPLIFICATION						
-NO SPECIFIC HARDWARE						
NTXF88AA MBS INTERACTIVE DISPLAYS(UPG BY NTXF88AB)						
-M5209S AND M5312 MERIDIAN BUSINESS SETS CONNECTED TO AN RSC						
NTXF88AB MBS INTERACTIVE DISPLAYS (UPG OF NTXF88AA)						
-M5209S AND M5312 MERIDIAN BUSINESS SETS CONNECTED TO AN RSC						
-M5209S AND M5312 MERIDIAN						
-BUSINESS SETS THAT ARE CONNECTED TO AN RSC						
NTXF92AA ISDN OAM BASE						
-SUN 3/60 OR 3/80, 4 MB MEMORY (MINIMUM), WITH SUNLINK X.25 SOFTWARE						
-CONSOLE TERMINAL (VT100 OR EQUIVALENT)						
-NT40 AND SUPERNODE						
-SYNCHRONOUS MODEM						
-NT1X89 MPC CARD						
NTXF93AA ISDN PROVISIONING						
-SUN WORKSTATION						
-HARDWARE REQUIREMENTS FOR THE ISDN SWITCH						
NTXF94AB ISDN INTEGRATED PH MAINTENANCE W/O OAMP(REP NTXF94AA)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT1X89 MPC CARD						
-PHYSICAL CONNECTION TO A PACKET HANDLER						
-NT1X89AA MULTI PROTOCOL CONTROLER CARD						
-ISDN NODE						
NTXF95AA ISDN OAM PROCESSOR						
-SUN 3/60 (4 MB MEMORY, 141 MB SCSI DISK, 1/4" TAPE DRIVE)						
-CONSOLE TERMINAL						
-PACKET HANDLER						
-RS232C CABLES						
-OAM PROCESSOR> SUN 3/60 OR 3/80, WITH SUNLINK X.25						
-ISDN PACKET HANDLER RUNNING RELEASE G25 SOFTWARE						
-SYNCHRONOUS MODEM TO CONNECT OAMP TO PACKET HANDLER						
-PACKET HANDLER						
-ISDN PACKET HANDLER RUNNING RELEASE G25 SOFTWARE						
-SYNCHRONOUS MODEM TO CONNECT OAMP TO PACKET HANDLER						
-SUN 3/80 (8 MB MEMORY, 141MB DISK)						
-DMS (EXCHANGE TERMINATION)						
NTXJ00AA ISDN ON RSC (REP BY NTXJ00AB)						
-RCCI						
-NTBX02 D-CHANNEL HANDLER						
-NT6X12DA RCCI XPM SHELF						
-ISDN REMOTE CLUSTER CONTROLLER (RCCI)						
-LCME HARDWARE						
-ISDN REMOTE CLUSTER CONTROLLER (RCCI)						
-NT2X10BA METALLIC TEST UNIT (MTU) CARD SET, NT2X10BA AND NT2X11BA						
-NT2X11BA METALLIC TEST UNIT (MTU) CARD SET, NT2X10BA AND NT2X11BA						
-REMOTE MAINTENANCE MODULE (RMM)						
NTXJ10AA OPERATOR HAND OFF TO AABS						
-NO SPECIFIC HARDWARE						
NTXJ35AA MAINTENANCE MANAGERS REPORT						
-NO SPECIFIC HARDWARE						
NTXJ37AA TOPS EXTERNAL PERSONAL AUDIO RESPONSE SYSTEM (PARS)						
-NT1X89 MULTI-PROTOCOL CONTROLLER, (MPC) CARD.						
NTXJ38AA MDC WARM LINE						
-NT6X78AA CLASS MODEM RESOURCE CARD						
NTXJ39AA CLASS VISUAL MESSAGE WAITING INDICATOR						
-NT6X78AA CLASS MODEM RESOURCE CARD						
NTXJ41AA CCS7 TEST TOOLS						
-CCS7 NETWORK						
NTXJ42AA FEATURE GROUP D ON MDC						
-DMS-100/200						
NTXJ43AA #5ESS AT&T INTERWORKING						
-NO SPECIFIC HARDWARE						
NTXJ44AA SLM FILE SYSTEM						
-NO SPECIFIC HARDWARE						
NTXJ47AA TEEN SERVICE ON MDC						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT3X68AC TRUNK CARD						
NTXJ48AA ISDN INTEGRATED PH MAINTENANCE WITH OAMP REQUIRED						
-NT1X89 MPC CARD						
NTXJ51AA ISDN DIGITAL TEST ACCESS						
-LTCI/LGCI EQUIPPED WITH ISDN S/T OR U LOOP INTERFACE						
-DS1 DIGITAL INTERFACE						
-PROTOCOL ANALYZER (PA)						
-DS-1 LINK SUPPORTING 64KBPS CLEAR CHANNEL						
NTXJ54AA ISUP FGD MF/CCS7 INTERWORKING OPTIONS						
-MESSAGE SWITCH AND BUFFER FOR CCS7 SIGNALLING (MSB7)						
-DIGITAL TRUNK CONTROLLER FOR CCS7 ISDN USER PART TRUNKS (DTC7)						
-SIGNAL TERMINAL FOR CCS7 SIGNALLING LINKS (ST7)						
NTXJ58AA CANCEL CALL WAITING PER LINE						
-NO SPECIFIC HARDWARE						
NTXJ59AB COMPUCALL BASE UTILITIES(UPG. FR. NTXJ59AA)						
-NO SPECIFIC HARDWARE						
-NT1X89AA/BA MPC						
NTXJ60AA ISI COORDINATED VOICE AND DATA						
-NO SPECIFIC HARDWARE						
NTXJ62AA THIRD PARTY CALL CONTROL						
-NO SPECIFIC HARDWARE						
NTXJ67AA TOPS DA SUBTENDING TMS						
-NO SPECIFIC HARDWARE						
NTXJ68AA IBN ISUP NETINFO TRANSLATIONS						
-ISUP TRUNKS						
NTXJ69AA RESIDENTIAL CALL HOLD						
NTXJ70AA CALL FORWARD OF CALL WAITING CALLS						
-NO SPECIFIC HARDWARE						
NTXJ73AA TOPS ACCOUNT CODE BILLING						
-NO SPECIFIC HARDWARE						
NTXJ78AA CLASS II ON MDC						
-NO SPECIFIC HARDWARE						
NTXJ82AA CALL HUNTING- 1A TRANSPARENCY						
-NO SPECIFIC HARDWARE						
NTXJ83AA CALL PICKUP - FIFO (REP BY NTX100/106AA)						
-NO SPECIFIC HARDWARE						
NTXJ84AA CALL FORWARDING- 1A TRANSPARENCY						
-NO SPECIFIC HARDWARE						
NTXJ93AA SERVICE ORDER SIMPLIFICATION FOR HUNT GROUPS						
-NO SPECIFIC HARDWARE						
NTXJ94AA MANDATORY PARALLEL AMA						
-NO SPECIFIC HARDWARE						
NTXJ96AA ENHANCED MFADS						
-BELL 108 AND BELL 202 COMPATIBILITY						
NTXJ97AA DIRECT STATION SELECTION/BUSY LAMP FIELD FOR MBS						
-M5209, M5312, PSET> MERDIAN BUSINESS SETS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTXJ98AA MERIDIAN BUSINESS SET CAMP ON						
-NO SPECIFIC HARDWARE						
NTXN01AA MULTI-LOCATION BUSINESS GROUPS(UPG BY NTXN01AB)						
NTXN04AA PARS REMOTE						
-NO SPECIFIC HARDWARE						
NTXN07AA SMDI PRIVATE CLID SUPPRESSION						
-NO SPECIFIC HARDWARE						
NTXN10AA HIGH SPEED SMDI						
NTXN11AA TEN DIGIT GTT FOR CLASS FEATURES						
-NO SPECIFIC HARDWARE						
NTXN12AA NCEO/LEAS INTERFACE						
-NO SPECIFIC HARDWARE						
NTXN18AA FBUS - LIU BASE						
-LIU7						
-NTEX22AA INTEGRATED PROCESSOR AND FBUS INTERFACE						
-NT9X73BA						
-NT9X72BA						
NTXN19AA LIU7 FOR LPP BASED CCS7 APPLICATIONS						
-NT9X76 SIGNALLING TERMINAL						
-NT9X78 DS-0A PADDLEBOARD OR						
-NT9X77 V.35 PADDLEBOARD						
-LINK INTERFACE UNIT (LIU7)						
-NT9X13 LINK GENERAL PROCESSOR						
-NT9X75 PROCESSOR F-BUS INTERFACE						
NTXN29AA IBM DA TPC						
-TOPS MP						
NTXN31AA OSS INTERFACE ENHANCEMENT						
NTXN34AA ISUP/PRA TO SMDI INTERWORKING (REP BY NTX797AA)						
-NT1X67FA TERMINAL CONTROLLER						
NTXN35AA COT ENHANCEMENTS						
-DRAM						
NTXN46AA NETWORKED ACD ON CCS7						
NTXN49AA AUTOMATED INTERCEPT CALL COMPLETION						
NTXN50AA MDC SINGLE BUTTON TRANSFER						
-MERDIAN BUSINESS SETS						
NTXN53AA ENHANCED PRA MAINTENANCE						
-NO SPECIFIC HARDWARE						
NTXN54AA HOST/REMOTE NETWORKING VIA CALL TYPE						
-TOPS						
NTXN59AA RINGBACK TO E911 CALLERS						
-NO SPECIFIC HARDWARE						
NTXN60AA DIAL UP INTO ALI DB FOR SRDB UPDATE						
-NT1X89AA/BA MPC/EMPC						
NTXN65AA MDC FAST TRANSFER						
-NO SPECIFIC HARDWARE						
NTXN66AA E911 DIRECT ACCESS TO DATA MGT. SYSTEM ALI DATABASE						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT1X89 MPC CARD						
NTXN68AA XPM BROADCAST PATCHING						
-NT6X69 CPP MESSAGE PROTOCAL CP						
NTXN75AA REMOTE CALL FORWARD WITHOUT UNIQUE PIN						
-DRAM						
-NT1X75BA CONTROLLER CARD (MDed)						
-NT1X76AM						
-NT1X76AG						
-NT1X76AK MEMORY CARDS						
NTXN80AA ENHANCED TAPE HANDLING						
NTXN82AB RSC ENHANCED ESA (LINES & TRUNKS)(UPG FR NTXN82AA)						
-NO SPECIFIC HARDWARE						
NTXN83AA LIS COMMON - LMS FUNCTIONALITY ON MS						
-NO SPECIFIC HARDWARE						
NTXN85AA MPC 1984 X.25						
-NT1X89 MULTI PROTOCOL CONTROLER CARD						
NTXN99AA ISDN INBOUND MODEM POOLING						
-MODEMS AND DATA UNITS						
NTXP00AA LINE CARD MONITOR						
-NO SPECIFIC HARDWARE						
NTXP01AA INTELLIGENT NETWORK 0.0 BASE						
-NO SPECIFIC HARDWARE						
NTXP10AA NETWORK MODULE SOFTWARE						
-NTEX22AA,						
-NT9X84AA,						
-NT9X85AA						
NTXP12AA CLASS- ANONYMOUS CALLER REJECTION						
-DRAM						
-NT1X75BA (MDed) DRA CONTROLLER CARD, AND						
-NT1X79AA EEPROM CARD OR						
-NT1X77AA RAM CARD (MD’D)						
NTXP13AA ENET SWITCH PATH DIAGNOSTICS						
-NT6X69AA/AB MESSAGE CARD						
-IF THE AA MESSAGE CARD IS USED, THEN THE NT6X79AA TONE						
-CARD IS REQUIRED.						
NTXP14AA DIRP PARALLEL STORAGE SIZE INCREASE						
-NO SPECIFIC HARDWARE						
NTXP48AA CCS7 TWO WIRE EMULATION OF CONTINUITY TEST						
-NT6X70 CONTINUITY TONE DETECTOR CARD						
-DTC7 SHELF						
NTXP53AA ACD ACCESS FEATURE GROUPING						
-NO SPECIFIC HARDWARE						
NTXP57AA CALL WAKE-UP SERVICE						
NTXP73AA CNDB OFFICE-WIDE ACTIVATION						
-NO SPECIFIC HARDWARE						
NTXP78AA FGB CARRIER CODE EXPANSION						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NO SPECIFIC HARDWARE						
NTXP80AA TWO LEVEL AUTOMATIC RECALL ENHANCEMENTS						
-DRAM WITH A 1X75BA CONTROLLER CARD.						
-THE CLASS PHRASE LIST PROM CARDS 1X76AJ						
-AND 1X76AK TO PROVIDE THE STANDARD CLASS						
-ANNOUNCEMENTS. THE AR DATE AND TIME PHRASE						
-LIST PROM CARDS 1X76JA AND 1X76JB						
-ARE RECOMMENDED FOR AR DATE AND TIME						
-ANNOUNCEMENTS.						
NTXP81AA REMOTE ACTIVATION OF LINE LOAD CONTROL						
-NO SPECIFIC HARDWARE						
NTXP92AA RSC-S BASIC						
-MX75AA TIME SWITCH						
-MX77AA PROCESSOR						
-MX74AA DS30A INTERFACE PACK						
-MX76AA MSG & CSM						
-MX73AA PCM (PULSE CODE MODULATION) SIGNALLING						
-REMOTE SWITCHING CENTER (RSC)						
NTXP99AA E911 REMOTE CALL EVENT RECORD(UPG.BY NTXP99AB)						
-NT1X89AA/AB MPC CARD						
NTXQ12AA RSC ENHANCED ESA(LINES ONLY)(FOR BCS34 RELEASE)						
-NO SPECIFIC HARDWARE						
NTXQ29AA CLASS+ CALLING NAME DELIVERY BLOCKING FOR LINES						
-NT1X75BA DRA CONTROLLER CARD (MDed)						
-NT1X79AA EEPROM CARD						
-NT1X77AA RAM CARD (MD’D)						
NTXQ90AA ENHANCED RESIDENTIAL SERVICES						
NTXR34AA XPM PLUS (PRODUCT LIFE UPGRADE STRATEGY) BASIC						
-NTMX77 UNIFIED PORCESSOR CARD (UP)						
-NTBX01AB						
NTXR42AA FIRMWARE DOWNLOADING						
-NTMX77AA UNIFIED PROCESSOR						
-NT6X69 MESSAGING CARD						
NTXR44AA POWER FEATURE AUDIO TRIAL						
-NO SPECIFIC HARDWARE						
NTXR46AA ROBUSTNESS ENHANCEMENTS						
-NO SPECIFIC HARDWARE						
NTXR72AA CCS7 MTP/SCCP FOR LPP BASED PLATFORMS						
-CCS7 SIGNALLING CONNECTION CONTROL PART (SCCP)						
-SIGNALLING SYSTEM NO. 7 (SS7) NETWORK						
-MULTI-MSB7						
NTXZ00AA ACD SUPPORT SOFTWARE 1 (EQ110)						
-SUPERNODE BASED SWITCH.						
-DRAMS						
-SD POINT						
NTXZ01AA ACD SUPPORT SOFTWARE 2 (EQ111)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT2X57AA SIGNAL DISTRIBUTION CARD						
NTXZ02AA ACD SUPPORT SOFTWARE 3 (EQ911)						
-NT2X90AC/AD TEST TRUNK CARD						
NTXZ03AA ACD SUPPORT SOFTWARE 4 (EQ912)						
-NO SPECIFIC HARDWARE						

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTBX80AA	MD	NONE
NT9X69AA	MD	NONE
NT1X75BA	MD	NONE
NT1X77AA	MD	NONE

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:

N/A

RULES:

N/A

BCS35 SOFTWARE TO HARDWARE XREF

PEC CODE: T_BCS35_XREF

CPC CODE: N/A

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: BCS35 Software to Hardware Cross-Reference

REFERENCE DOCUMENTATION: DDOCS

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: Rena Fisher Dept. 3471 (PPK)

T BCS35 XREF EMA14-27-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 14	ECM 547 03	Introduce this table
97 09 12	ECM 547 09	MD NTBX80AA per EC 018-51334 and MD NT9X69AA per EC 018-51453.
97 09 22	ECM 591 06	Upissue this EMS to MD NT1X75BA and NT1X77AA per EC 018-51451.

The BCS35 SOFTWARE TO HARDWARE XREF is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTG230AB TOPS VOICE SERV.NODE FOR AABS (MD FOR BCS STREAM ONLY)						
-SYSTEM CONFIGURED AS A TABS SYSTEM						
-ANY HARDWARE CONFIGURATION CAPABLE OF SUPPORTING A DVIX ENVIRON|MENT,						
-AND THE DNC LOGGER.						
-A SYSTEM CONFIGURED AS A TABS SYSTEM IS THE MINIMUM HARDWARE						
-T1 SRU'S						
-DMS-100/200 HOST SWITCH						
NTX000AA BILGE						
-DMS SWITCH						
NTX001AA COMMON BASIC						
-NT0X10AA SCAN POINT						
-NT1X31AA 3-PORT CONFERENCE						
-NT3X67AA/BA/BB 6-PORT CONFERENCE						
-NT0X63AA ALARM CONTROL AND DISPLAY PANEL						
-NT0X63AB ALARM DISPLAY PANEL						
-NT6X69 MESSAGING CARD						
-DMS-100 FAMILY OF SWITCHES.						
-LTC'S/RCC'S						
-NT40 CENTRAL CONTROL						
-NT3X40 64 KW MEMORY CARD						
-NT3X93 256 KW MEMORY CARD						
-NT4X80 1 MW MEMORY CARD						
-NT40 CENTRAL CONTROL						
-NT1X33						
-NT1X36						
-DISTRIBUTED PROCESSING PERIPHERAL (DPP)						
-NT1X46EA 36 MHZ CPU & 40 MHZ CPU						
-DMS SUPERNODE PLATFORM						
-NT6X45BA RCC EQUIPPED WITH NT6X45BA						
-NT6X78 CLASS MODEM RESOURCE CARD (CMR)						
-NT9X17AA/AD INTERFACE CARD						
NTX006AA BUSINESS LINES						
-No specific hardware						
NTX007AB PBX INTERFACE I (UPGRADE OF NTX007AA)						
-DCM/DTC						
NTX008AB PBX INTERFACE II(UPG. OF NTX008AA)						
-DCM/DTC						
NTX019AA CIVIC SERVICES						
-IBN SWITCH						
NTX020AC VERTICAL SERVICES I (UPGRADE FROM NTX020AB)						
NTX021AA REMOTE CALL FORWARDING						
NTX023AB REMOTE LINE MODULE (RLM)						
NTX024AA RLM INTRA-RLM CALLING						
NTX025AA RLM EMERGENCY STAND-ALONE OPERATION						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT0X02AB 1 RSM PER RLM REQUIRED						
-NT2X48AB E/W DTR						
NTX030BA TOPS ACD FEATURES						
-TOPS						
NTX030CC TOPS CALL PROCESSING FEATURES(REP NTX030CB)						
-DMS-100, DMS-100/200, DMS-200 SWITCHS ONLY.						
-DMS-TOPS						
-DMS-200 TOPS						
-VOICE SERVICE NODE (VSN)						
-NT1X89 MULTI-PROTOCOL CONTROLLER						
-TOPS (TRAFFIC OPERATOR POSITION SYSTEM)						
-TELETYPEWRITERS WHICH CAN OPERATE AT 1200/300						
-BELL 202 MODEM						
-TOPS MP						
-OPP OPERATOR POSITIONS						
NTX035AA TOPS REMOTE CAMA						
-DMS-200 OR DMS-100/200.						
-RONI CIRCUITS						
-TOPS ENVIRONMENT						
NTX036AA TOPS INWARD VALIDATION						
NTX039AA HOST OC DATA - LINK HANDLING						
-TOPS ENVIRONMENT						
-DMS-200 OR DMS-100/200 TOPS						
-HOST TOPS ENVIRONMENT						
NTX040AA COMMON CHANNEL INTEROFFICE SIGNALLING - BASIC						
NTX041AB CCS7 - MTP/SCCP(SEE NTXR72AA FOR LPP APPLICATION)						
-SIGNALLING SYSTEM NO. 7 (SS7) NETWORK						
-MULTI-MSB7						
-SIGNALING CONNECTION CONTROL PART (SCCP)						
-COMMON CHANNEL SIGNALLING NUMBER 7 (CCS7)						
NTX042AA LOCAL AUTOMATIC MESSAGE ACCOUNTING (LAMA)						
-DMS-100, DMS-100/200, DMS-200 SWITCHS ONLY.						
NTX043AA LOCAL CALL DETAIL RECORDING						
-AMA CAPABILITY						
-NT0X44 MAG TAPE DRIVE OR						
-NT4X00 DISK DRIVE UNIT						
NTX044AA CENTRAL AUTOMATIC MESSAGE ACCOUNTING (CAMA)						
-DMS-100, DMS-100/200, DMS-200 SWITCHS ONLY.						
NTX045AA USAGE SENSITIVE PRICING(USP BELLCORE FORMAT)						
-No specific hardware						
NTX048AA SYNCHRONIZATION						
-NT9X53AC MESSAGE SWITCH CLOCK						
-NT9X54AC/AD						
NTX048AB SYNCHRONIZATION - CESIUM MASTER CLOCK						
NTX048BA SYNCHRONIZATION - STRATUM 3						
-NT9X53 CLOCK CARD						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTX048CA SYNCHRONIZATION - STRATUM 2						
-NT3X16AA;						
-NT3X14BC						
-NT1X78						
-NT3X95						
-NT3X15						
-NT3X16 SYNCLK OSCILLATORS.						
NTX049AC CIRCLE DIGIT IDENTIFICATION						
NTX049AD SINGLE PARTY REVERTIVE CALLING						
NTX049AE NORTH ELECTRIC ANI FORMAT GENERATION						
NTX049AG ITT ANI FORMAT (RECEIPT)						
NTX049AH COME AGAIN SIGNALLING						
NTX049AL TIME AND TEMPERATURE ANNOUNCEMENT						
NTX051AA AUTOMATIC TRUNK TESTING						
NTX052AB REMOTE OFFICE TEST LINE (ROTL)						
-No specific hardware						
NTX053AA MAINTENANCE ASSISTANCE PACKAGE						
-No specific hardware						
NTX054AA LINE TEST POSITION (LTP)						
-No specific hardware						
NTX055AA TRUNK TEST POSITION (TTP)						
-NT4X97AA METALLIC TEST UNIT						
NTX055AB TTP-DIGIT VERIFICATION						
-No specific hardware						
NTX055AC TTP-TRANSMISSION MEASUREMENT						
NTX055BA RONI TRUNK TESTING						
-No specific hardware						
NTX056AA ENHANCED ADMINISTRATION						
-No specific hardware						
NTX057AB CUTOVER ASSISTANCE II (NON RESIDENT)						
-No specific hardware						
NTX057BA CUTOVER ASSISTANCE III (NON RESIDENT)						
-No specific hardware						
NTX057EA CUTOVER ASSISTANCE IV(NRES) (UPG. OF NTX057DA)						
-NT40 CENTRAL CONTROL						
-NT9X17AA DMS BUS 4-PORT CARD						
-NT9X17DA DMS BUS 64-PORT CARD						
-NT9X20BB DMS BUS DMS BUS-ENET FIBER INTERFACE PADDLEBOARD						
-NT9X25BA DMS BUS DMS BUS CHAIN TERMINATING PADDLEBOARD						
-NT9X25AA DMS BUS DMS BUS CHAIN EXPANSION PADDLEBOARD						
-NT9X49CB DMS BUS TRACER CARD						
-NT9X23AA DMS BUS 4-PORT DS-30 INTERFACE						
-NT9X69AA DMS BUS 16-PORT DS-30 INTERFACE (MDed)						
-NT9X35CA ENET 16K X 16K CROSSPOINTCARD (H-BUS TERM.)						
-NT9X35BA ENET 16K X 16K CROSSPOINTCARD						
-NT9X40BA ENET DS-512 INTERFACE PADDLEBOARD						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT9X41BA ENET DS-30 INTERFACE PADDLEBOARD						
-NT6X40AA XPM DS-30 NETWORK INTERFACE CARD (8 DS-30S)						
-NT6X40AB XPM DS-30 NETWORK INTERFACE CARD (8 DS-30S)						
-NT6X40AC XPM DS-30 NETWORK INTERFACE CARD(16 DS-30S)						
-NT6X40CA XPM DS-512 LINK CONTROL CARD						
-NT6X40DA XPM DS-512 FIBER INTERFACE PADDLEBOARD						
-NT6X40EA XPM DS-512/DS-30 SWITCHER PADDLEBOARD						
-NT6X69AA/AB XPM C-SIDE MESSAGING (NON-UPGRADED FIRMWARE)						
-NT6X69AC/MA XPM C-SIDE MESSAGING (UPGRADED FIRMWARE)						
-NT2X33AA/AB PM C-SIDE PROCESSOR (NON-UPGRADED FIRMWARE)						
-NT2X33AE PM C-SIDE PROCESSOR (UPGRADED FIRMWARE)						
-NT6X17BA WORLD LINE CARDS TYPE A						
-NT6X18BA WORLD LINE CARDS TYPE B						
NTX059AB POLLING OM & AUT.MSG ACCTG.DATA VIA DATAPAC(UPG.OF NTX058AD						
NTX060AB NETWORK MANAGEMENT						
-NT2X55AA SD CARD						
-NT2X57AA/AB SD CARD						
NTX060BB NETWORK MANAGEMENT - ENHANCED						
-No specific hardware						
NTX063AA ECHO SUPPRESSOR						
NTX065AA SERVICE ANALYSIS						
-No specific hardware						
NTX066AA BILINGUAL INTERFACE(UPG BY. NTX066AB)						
-No specific hardware						
NTX066AB BILINGUAL INTERFACE(UPG FR. NTX066AA)						
-No specific hardware						
NTX072AA INTERNATIONAL DIRECT DISTANCE DIALLING (IDDD)						
NTX074AA DISK DATA STORAGE SYSTEM						
-IOC DISKS ONLY DDU’S						
-NT1X55 DISK CONTROLLER						
NTX076AA AMA - ENHANCED						
NTX077AA ONLINE PERIPHERAL SOFTWARE						
NTX080AA LAMA ENHANCED						
-LAMA HARDWARE						
NTX080BA TERMINATING CALL BILLING(NT FORMAT)						
-LAMA HARDWARE						
NTX081AA AMA SPECIAL FORMAT						
-AMA CAPABILITY						
NTX082AA SUBSCRIBER LINE MEASUREMENTS						
NTX083AA FEATURE GROUP A						
-LAMA HARDWARE						
NTX085AA TRAFFIC SEPARATION PEG COUNT						
-No specific hardware						
NTX087AA TRAFFIC SEPARATION USAGE						
-No specific hardware						
NTX088AA TRAFFIC SEPARATION REPORT						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-No specific hardware						
NTX089AA ENHANCED COIN SERVICES						
-NT3X08AA COIN DETECTION CIRCUITS (CDC)						
NTX090AA COIN SERVICES						
-No specific hardware						
NTX093AA REMOTE/TOLL CALL FORWARDING-TOPS OFFICE						
NTX094AA DIGITAL SUBSCRIBER SERVICES						
-DCM/DTC						
NTX096AA TOPS NOTIS FORMAT						
NTX098AA BELLCORE CAMA FORMAT						
-No specific hardware						
NTX099AA OPERATIONAL MEASUREMENTS ENHANCEMENTS						
-No specific hardware						
NTX100AA INTEGRATED BUSINESS NETWORKS - BASIC (IBN)						
-NT3X02 & NT3X03 DIGITAL MODEM PAIR (DMODEM)						
-NT1X31 THREE PORT CONFERENCE CIRCUIT						
-NT4X09 CONSOLE						
-NT3X68AC SPECIAL TONES CARD						
-SUPERNODE BASED SWITCH.						
-DRAMS						
-SD POINT						
-DTMF SENDERS						
NTX101AA IBN - ENHANCED BUSINESS SERVICES						
-NT2X57AA SIGNAL DISTRIBUTION CARD						
NTX102AA IBN - STATION MESSAGE DETAIL RECORDING						
-DMS-100, DMS-100/200, DMS-200 SWITCHS ONLY.						
NTX103AA IBN - SMDR ENHANCED						
-No specific hardware						
NTX103BA IBN STATION SPECIFIC AUTHORIZATION CODES						
-SL100 ENVIRONMENT						
NTX105AA TRUNK QUEUING						
-No specific hardware						
NTX106AA IBN - PROPRIETARY BUSINESS SET						
-M5212 SET						
-NT6X21AC LINE CARD, AC OR LATER VERSION						
NTX108AA IBN - DISPLAY FEATURES						
-NT4X20 ELECTRONIC BUSINESS SET (EBS)WITH A DISPLAY.						
-M5209 AND M5312 NEED LINE CARDS 6X21AC.						
-M5209						
-M5312						
NTX110AA IBN - HOSPITAL						
-No specific hardware						
NTX111AA IBN - LARGE CONFERENCE						
NTX112AB IBN - VIRTUAL FACILITY GROUPS (UPG FROM NTX112AA)						
-No specific hardware						
NTX114AA IBN - GOVERNMENT OF CANADA FEATURES (REPLACED BY NTX410AA)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-No specific hardware						
NTX119AA IBN-MESSAGE SERVICE						
-No specific hardware						
NTX120AA OFFICE HARDWARE INVENTORY PACKAGE						
-No specific hardware						
NTX121AA OVERLAP OUTPULSING (TRK TO TRK)						
-No specific hardware						
NTX122AA OM - CALL ATTEMPTS SUMMARY						
-No specific hardware						
NTX127AA WARM LINE						
-No specific hardware						
NTX129AA TWO WAY OPERATOR OFFICE TRUNK						
-No specific hardware						
NTX134BA REMOTE OPERATOR CENTRALIZATION DATA LINK HANDLING						
-TOPS ENVIRONMENT						
-DMS-200 OR DMS-100/200.						
-RONI CIRCUITS						
NTX136AA AUTOMATIC TRANSMISSION MEASURING SYSTEM						
NTX139AA REVERTIVE PULSING ON DIGITAL LINES						
-No specific hardware						
NTX140AA TOPS DIAL UP AUTOQUOTE						
-NT3X02AA SIGNAL PROCESSOR						
-ANALOG MODEM						
-DIGITAL MODEM						
-TOPS						
NTX141AA TOPS CITY ZONE RATING						
-No specific hardware						
NTX142AA DS-1 64 KBPS CLEAR						
-NT6X50AB DS-1 INTERFACE CARD						
NTX143AA DS-1 - ESF						
-NT6X50AB DS-1 CARD						
NTX145AA REMOTE SWITCHING CENTER						
-REMOTE MAINTENANCE MODULE (RMM)						
-NT6X69 NEW MESSAGING CARD.						
-NT6X92 UNIVERSAL TONE RECEIVER (UTR).						
-NT6X72 AND						
-NT6X50 ON AN RCC						
-NT6X50 ON AN LTC						
-DUAL RSC.						
NTX146AA REMOTE LINE CONCENTRATING MODULE (RLCM)						
-REMOTE MAINTENANCE MODULE (RMM)						
-ESA MODULE						
-LINE CONCENTRATING MODULE (LCM)						
NTX147AB OUTSIDE PLANT MODULE MAINTENANCE(UPGRADE OF NTX147AA)						
-NT2X10AA LINE TEST UNIT (LTU) ANALOG CARD						
-NT2X11AA LINE TEST UNIT (LTU) DIGITAL CARD						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT2X90AB TEST TRUNK INCOMING/OUTGOING						
-NT0X10AA SCAN CARD MISCELLANEOUS						
-NT2X57AA SIGNAL DISTRIBUTION CARD						
-NT3X09 REMOTE METALLIC TEST ACCESS						
-NT8X01AA OPM CABINET						
-NT8X02AA OPM BATTERY CHARGER CONTROLLER						
-XPH0402 OPM RECTIFIER						
NTX149AA RSC EMERGENCY STAND ALONE OPERATION - LINES						
NTX149AB RSC ESA OPERATION - LINE AND TRUNK						
-REMOTE SWITCH CENTRE (RSC)						
NTX150AA RSC - INTRA RSC CALLING						
-RCC						
-NT6X69AB MESSAGING CARD						
-NT6X78AA CLASS MODEM RESOURCE (CMR)						
NTX152AB RSC TRUNKING (UPG. OF NTX152AA)						
NTX154AA RLCM - EMERGENCY STAND ALONE OPERATION						
NTX156AA INTRA RLCM CALLING						
NTX157AA CCIS - INWATS OSO						
-No specific hardware						
NTX159AA BELLCORE LAMA FORMAT						
-No specific hardware						
NTX160AA MULTIUNIT MESSAGE RATE SERVICES						
-NT0X44 MAG TAPE DRIVE UNITOR OR						
-NT4X00 DISK DRIVE UNIT						
NTX165AA BELLCORE - IBN/ESN DETAIL RECORDING						
-No specific hardware						
NTX167AB CCS7 - TRUNK SIGNALLING (REP.OF NTX167AA)						
-NT6X70 CONTINUITY TONE CARD						
-LOOPBACK TRUNKS						
-NT5X30AA TEST LINE 101						
-NT2X72AB TEST LINE 108						
-TTU HARDWARE AT THE LOCAL OFFICE						
-NT3X91AA TERM105 CARD AND ROTL UNIT OR						
-NT2X47AC TTU CARD (AC OR HIGHER ISSUE) AT REMOTE						
-INTEGRATED SERVICES DIGITAL NETWORK (ISDN)						
-MULTI SWITCH AND BUFFER FOR COMMON CHANNEL SIGNALING NO. 7 (MSB7) OR						
-LINK PERIPHERAL PROCESSOR (LPP)						
NTX174AA AIOD(AUTO IDENTIFIED OUTWARD DIALING)						
-NT2X01AA AIOD CIRCUIT PACK						
NTX175AA IBN - MULTI BILINGUAL CONSOLE						
-No specific hardware						
NTX176AA NON RESIDENT ADMINISTRATIVE AIDS						
NTX177AA NON RESIDENT GENERAL UTILITIES						
NTX178AA NON RESIDENT DIAGNOSTIC UTILITIES						
NTX181AA NON RES NT SUPPORT SOFTWARE (ORDERABLE BY TIA CUST. ONLY)						
NTX182AA NON RESIDENT NT COMMISSIONING SOFTWARE						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT6X17BA WORLD LINE CARDS TYPE A						
-NT6X18BA WORLD LINE CARDS TYPE B						
NTX183AA DMS-250 NON RESIDENT RESTRICTED S/W LAB USE ONLY						
NTX184AA NONRES.RESTRICTED S/W LAB USE ONLY(REP BY NTX184AB & 180AA)						
-No specific hardware						
NTX186AA EQUAL ACCESS END OFFICE(UPG BY NTX186AB)						
-No specific hardware						
NTX186AB EQUAL ACCESS END OFFICE (UPG OF NTX186AA)						
-No specific hardware						
NTX187AA TOPS - EQUAL ACCESS						
-TOPS POSITION						
NTX188AA TOPS - BCR AMA FORMAT						
-EQUAL ACCESS (EA) ACCESS TANDEM						
-TOPS OFFICE.						
-TOPS DA						
NTX189AA SL-100 EQUAL ACCESS ENHANCED						
-No specific hardware						
NTX190AA FEAT GRP B AMA - TANDEM (NT FORMAT)						
-No specific hardware						
NTX192AA 4X OPERATION - BELL FORMAT ANI						
-No specific hardware						
NTX193AA 4X OPERATION - AMR 5 FORMAT ANI						
-No specific hardware						
NTX195AA MECHANIZED LOOP TESTER (MLT)	I/F					
NTX196AA CALLING NUMBER ANNOUNCEMENT (CNA)						
-DIGITAL RECORDED ANNOUNCEMENT(DRA)						
NTX197AA CCIS DIRECT SIGNALLING						
-No specific hardware						
NTX202AA DMS-250 OPERATIONAL MEASUREMENTS ON TAPE						
NTX203AA DMS-250 104 TESTLINES						
NTX204AA CCIS BANDED SIGNALLING						
-COMMON CHANNEL INTEROFFICE SIGNALLING (CCIS)						
-DIGITAL TRUNK CONTROLLERS (DTC) HANDLING OF CCIS						
-DMS CCS SYSTEM						
NTX206AA UNAUTHORIZED DIGITONE SERVICE DETECTION						
-DIGITONE RECEIVERS						
NTX209AB FEATURE GRP B AMA - END (ATT FORMAT)(UPG FR.NTX209AA)						
-No specific hardware						
NTX210AA NO. 2 SCC INTERFACE						
-NT1X48CA						
-NT1X42AA						
-NT2X57AA SIGNAL DISTRIBUTOR (SD) POINTS						
NTX211AB FEATURE GRP B AMA - TANDEM(ATT FORMAT)(UPG FR.NTX211AA)						
-No specific hardware						
NTX213AC SUBSCRIBER CARRIER MODULE(SCM)(REP. NTX213AB)						
-NT6X81BA A-BIT/B-WORD CIRCUIT PACK						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-SUBSCRIBER MODULE RURAL (SMR)						
-RCT TO BE EQUIPPED WITH THE QPP423 LINE TEST REMOTE (SLTD) PACK						
NTX215AA SES NO.2 - INTERFACE						
-NT2X82AA OR						
-DS1SIG CIRCUIT						
-3-PORT CONFERENCE CIRCUIT						
-DMS TONE GENERATOR						
-NT1X89AA MPC CARD						
-2400 BAUD MODEM						
NTX218AA 1A/1B EADAS INTERFACE						
-NT1X89 MPC CARD						
NTX219AB TEEN SERVICE						
-NT3X68AC TRUNK CARDS						
-LINE MODULES (LM).						
-FREQUENCY SELECTIVE RINGING						
NTX243AA AMA TELEPROCESSING SYSTEM(AMATPS)						
-DPP						
-NT1X67 TERMINAL CONTROLLER CARDS.						
-NT1X68BC MTD CONTROLLERS FOR THE DSI						
NTX244AB ENHANCED SEQUENTIAL TRUNK HUNTING(UPG OF 244AA IN BCS23)						
-No specific hardware						
NTX245AA PUERTO RICO LINE OPTION CONTROL						
NTX250AA DATAPATH - BASIC						
-NT4X25AV						
-HIGH SPEED DATA UNITS (ONLY AT 56 & 64 KBPS SPEED SETTINGS)						
-NT4X25CH						
-NT4X25AP HIGH SPEED DATA UNIT						
-NT6X99AA IBERT CARD						
-LCM (OR RLCM).						
-NT6X71AB DATA LINE CARD						
-DATA UNIT (DU)						
-NT5X29AC AUDIO TONE DETECTOR CARD						
-NT4X25AF LOW SPEED DATA UNIT						
-DMS/SL-100						
-NT4X25DA/DB/EB 3194 NSA CONTROL UNIT INTERFACE CUIF						
-NT6X76AC ENHANCED ASYNCHRONOUS INTERFACE LINE CARD.						
-NT4X25AL TERMINAL INTERFACE COAX ELIMINATOR DATA UNIT.						
-WORKS WITH ALL DATAPATH PRODUCTS EXCEPT DPX AND THE ORIGINAL AILC (6X76AA)						
NTX251AA DATAPATH - MODEM POOLING						
-NT6X99AA IBERT CARD						
-DATA UNIT (DU)						
-NT5X29AC AUDIO TONE DETECTOR CARD						
NTX259AA DATAPATH EXTENSION - DPX						
-DPX CARD (QPP628A) FOR USE IN THE DE-4E CHANNEL BANK.						
-D4 DATAPATH EXTENSION CARD (D4DPX)						
NTX260AA IBN - PRESET CONFERENCE						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-No specific hardware						
NTX262AA IBN PRIORITY CONSOLE ALERTING						
-NT4X09 ATTENDANTCONSOLE						
NTX268AA FEAT GRP B AMA - END OFFICE (NT FORMAT)						
-No specific hardware						
NTX269AA UNIVERSAL TONE RECEIVER(DOMESTIC)						
-NT6X69 NEW MESSAGING CARD.						
-NT6X92AA/BA UNIVERSAL TONE RECEIVER (UTR) CARD						
NTX270AA NEW PERIPHERAL MAINTENANCE PACKAGE						
-NT6X50AB DS-1 CARD						
-NT6X45BA SIGNALLING PROCESSOR CARD (OR LATER VERSION.)						
-NT6X51AB PROCESSOR CARD						
-XPM BASED SERIES II PERIPHERALS						
-NT6X92 UNIVERSAL TONE RECEIVER (UTR)						
-DTCI/LTCI FOR PRI ISDN						
-XPMS THAT HAVE LINE CONTROLLING DEVICES (LCDS) AS SUBTENDING NODES						
-NT6X51AB						
-MP/SP OR UP						
-NTBX34AB						
-NTBX34CA						
NTX272AA FOCUSSED MAINTENANCE						
-No specific hardware						
NTX273AA MULTI - PROTOCOL CONTROLLER BX.25						
-NT1X89AA MULTI-PROTOCOL CONTROLLER (MPC)						
NTX277AA DIALABLE LINE CIRCUIT IDENTIFICATION						
NTX290AA TANDEMING/SUPERVISION AND TREATMENT						
-No specific hardware						
NTX291AA ENHANCED REAL TIME INDICATOR						
-NT-40 OR ECORE PROCESSORS						
NTX292AB ENHANCED SECURITY - WITH PASSWORD ENCRYPTION						
-NT1X67BD OR LATER OF THE IOC						
NTX292BA ENHANCED SECURITY - WITHOUT PASSWORD ENCRYPTION						
-NT1X67BD OR LATER OF THE IOC						
NTX293AA ENHANCED SECURITY PACKAGE II						
-NT1X67BD NON ECHO TERMINAL CONTROLLER, ESD FACEPLATE						
NTX297AA BRIDGES SERVICES						
-NT1X31 OR						
-NT3X67 THREE PORT CONFERENCE CIRCUITS						
NTX299AB SPECIAL SERVICES - SCM(UPG OF NTX299AA)						
NTX300AA INTERNATIONAL SWITCHING CENTRE (ISC) BASIC						
-DMS 300 MAP						
NTX301AA ISC - MAINTENANCE						
NTX385AA OM THRESHOLDING AND ALARMS						
-No specific hardware						
NTX386AA ACCESS TANDEM SWITCH(UPG BY NTX386AB)						
-No specific hardware						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTX387AC SMU - SUBSCRIBER MODULE URBAN(UPG.FR NTX387AB)						
-RCU						
-NT3A06BA ENHANCED POTS LINE CARD CARRIER						
-NT3A07BA ENHANCED POTS + FSR LINE CARD CARRIER						
-NT3A10HA ENHANCED POTS LINE CARD						
-NT6X78AA CLASS MODEM RESOURCE						
-NT1X75BA CONTROLLER CARD (MDed)						
-RCU RTI CARD						
-RCU EQUIPPED WITH ISDN LINE CARDS						
-MBS TERMINALS						
-NT7A33AA LINE CARD						
-NT3A11CA LINE CARD CARRIER						
-ESMU EQUIPPED WITH EISP AND D-CHANNEL HANDLERS						
-NT6X50AB DS-1 CARD						
-NT6X92BB UNIVERSAL TONE RECEIVER (UTR)						
-NT6X69AC MESSAGE CARD						
-NT6X47AC MP MEMORY CARD						
-NT6X78AB CLASS MODEM RESOURCE CARD						
-NT6X92BC UNIVERSAL TONE RECEIVER (UTR)						
-NTMX77AA UNIFIED PROCESSOR CARD						
NTX394AA TOPS - CREDIT CARD DIGIT CHECK						
NTX395AA REMOTE MAKE BUZY VIA SCAN POINT						
-NT0X10AA SCAN POINTCARD						
NTX398AA SCM - 100S						
-DMS-100 SUBSCRIBER CARRIER MODULE-100 URBAN (SMU)						
-NT6X92BB UNIVERSAL TONE RECEIVER (UTR)						
-NT6X69AC MESSAGE CARD						
-NT6X47AC MP MEMORY CARD						
-NT6X78AB CLASS MODEM RESOURCE CARD						
NTX399AA IBN/ESB COMPATIBILITY						
-No specific hardware						
NTX407AB ACD - CALL PROCESSING (REP.NTX407AA)						
-ELECTRONIC TELEPHONE SET.						
NTX410AA DYNAMIC ATTENDANT CONSOLE MEASUREMENTS						
-No specific hardware						
NTX411AA IBN - VOICE MESSAGING						
-NT2X72AA 4W E&M TYPE D1 600 OHM I/F						
-NT6X02IC DTC AND D4 CHANNEL BANK						
-NT0X10AA SCAN POINTCARD						
NTX412CB IBN - CUSTOMER DATA CHANGE (UPG. OF NTX412CA)						
-No specific hardware						
NTX413AA IBN - ENHANCED CALL FORWARDING(UPG. BY NTX413AB)						
-No specific hardware						
NTX413AB IBN - ENHANCED CALL FORWARDING(UPGR. OF NTX413AA)						
-No specific hardware						
NTX414AA IBN - DIRECTED CALL PARK, BUSINESS SET AND 2500 SET						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-No specific hardware						
NTX415AA ACD BASIC						
-No specific hardware						
NTX416AJ ACD ENHANCED II (UPG. OF NTX416AI)						
-NT1X67AC TERMINAL CONTROLLER CARD						
-SIX-PORT CONFERENCE CIRCUITS						
-MAINTENANCE TRUNK MODULES						
-NT2X57AA SIGNAL DISTRIBUTION CARD						
-AUTOMATIC CALL DISTRIBUTION (ACD) SWITCH						
-DRAM OR AN ANALOGUE ANNOUNCEMENT						
-INTERNAL TONE CIRCUIT IN THE DTCI						
-EBS/IVD SET WITH A DISPLAY.						
NTX418AA IBN_SERVICE ANALYSIS						
-No specific hardware						
NTX420AA MACD NODAL SERVICE OBSERVING						
-NT3X68AC						
NTX426AA ASYNCHRONOUS INTERFACE LINE CARD						
-NT6X76AC ASYNC. INTERFACELINE CARD						
NTX427AA END USER TESTING OF TRUNKS						
-No specific hardware						
NTX430AA ESN						
-IBN SWITCH.						
NTX431AA IBN - CUT THROUGH DIALING						
-No specific hardware						
NTX432AA NETWORK SPEED CALLING						
-SL-100						
NTX434AA TIME OF DAY NCOS						
-No specific hardware						
NTX435AA IBN SUPERSET						
-No specific hardware						
NTX436AA IBN ENHANCED DIAL PLAN						
-No specific hardware						
NTX437AA RANDOM CONDITIONAL ROUTING						
-No specific hardware						
NTX445AB O.M. SELECTIVE OUTPUT (UPGRADE OF NTX445AA)						
-No specific hardware						
NTX447AA E911 - TANDEM						
NTX451AA E-911 DATABASE						
-No specific hardware						
NTX455AB 1A EADAS NETWORK MANAGEMENT (UPG. OF NTX455AA)						
-NT1X89AA MULTI-PROTOCOL CARD (MPC)						
NTX470AA INTERNATIONAL - COMMON BASIC						
-No specific hardware						
NTX472AB INTERNATIONAL - LOCAL BASIC (UPGR NTX472AA)						
-No specific hardware						
NTX479AA INTL UNIV TONE RCVR SUPPORT						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT6X92 UNIVERSAL TONE RECEIVER (UTR).						
NTX550AA CCS7 - TRANSACTION SERVICE SUPPORT						
-CCS7 NETWORK.						
NTX560AB NOP - GENERIC RO SERVICE(REP NTX560AA)						
-No specific hardware						
NTX562AA NOS - DATA COLLECTION						
-No specific hardware						
NTX563AA BNM - STATION ADMINISTRATION						
-No specific hardware						
NTX571AA IBN - DIRECTED CALL PARK,2500 SET ONLY						
-No specific hardware						
NTX573AA IBN SECURITY CODE - 2500 ONLY						
-No specific hardware						
NTX574AA IBN SECURITY CODE - 2500 AND BUSINESS SETS						
-No specific hardware						
NTX621AB SMU SPECIAL SERVICES(REP NTX621AA)						
-SMU						
-NT3A11BA/CA						
-4WSSLC, 2WFXB						
NTX645AA TOPS - SERVICE BILLING						
-No specific hardware						
NTX710AA LATA EQUAL ACCESS SYSTEM						
-DMS-200 ACCESS TANDEM (AT) SWITCH						
-DIGITAL RECORDED ANNOUNCEMENTMACHINES						
-(DRAM’S)						
-DMS-200 ACCESS TANDEM (AT) SWITCH						
NTX711AB EQUAL ACCESS END OFFICE ENHANCEMENTS (UPG. OF NTX711AA)						
-No specific hardware						
NTX712AA CCS7 DATA PORT						
-NT6X55AB DS0 INTERFACE						
NTX713AA LATA-WIDE CENTREX BILLING						
NTX714AA TOPS INTERLATA CARRIER SERVICE						
NTX717AB IBN TRK VERIFICATION DESIGNATED STN(UPGR.OF NTX717AA)						
-No specific hardware						
NTX719AA BUSINESS SET BUSY INDICATOR						
-No specific hardware						
NTX724AA TOPS MP INTERFACE (ORDER VIA MP NTX704,706,708 OR 709)						
-TOPS XMS CONTROLLER						
NTX727AD ACD - LOAD MANAGEMENT III						
-NT1X67AC IF A DOWN STREAM PROCESSOR IS REQUIRED						
-NT1X67AC TERMINAL CONTROLLER CARD IF A DOWN STREAM PROCESSOR IS REQUI						
-MAP TERMINAL						
NTX730AA MULTILINK ASCII DEVICE DRIVER						
-NT1X67EA						
NTX731AA TOPS MP - TERMINAL HANDLER(ORDER VIA MP NTX704)						
-TOPS MULTI-PURPOSE POSITION (TOPS MP).						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT4X82AA (TOPS/HSLI) CARDS.						
-REQUIRES XMS BASED TPC.						
-REQUIRES TUTOR 3B TRAINING SYSTEM.						
-TOPS POSITION CONTROLLER(TPC).						
-VT220 COMPATIBLE TERMINAL (TAMI POSITION).						
-1200 BAUD AUTO ANSWER MODE						
-RS232 SERIAL PRINTER.						
-TPC ADMINISTRATION AND MAINTENANCE INTERFACE (TAMI).						
-NT4X82AA (TOPS/HSLI) CARDS.						
-NTX66AA HSDA CARD.						
-TPC DIAGNOSTIC FLOPPY DISKS.						
-NTNX65AA(SASI)/BA(SCSI) PIO CARD						
-NTNX68AA(SASI)/CA(SCSI) FLOPPY DISK PACK						
-NTNX68BA(SASI)/DA(SCSI) HARD DISK PACK						
-ALL COMPONENTS MUST EITHER BE THEIR CORRESPONDING SASI VERSION OR						
-THEY MUST ALL BE THEIR CORRESPONDING SCSI VERSION.						
NTX732AA SIMPLIFIED MESSAGE DESK INTERFACE(SMDI)						
-NT1X67BC TERMINAL CONTROLLER CARD						
-SMDI LINK						
NTX733AE ENHANCED SERVICE ORDER(UPG.OF NTX733AD IN BCS29)						
-No specific hardware						
NTX734AA EAEO - IBN PIC USING SERVORD						
NTX735AA FLEXIBLE ANI						
-No specific hardware						
NTX737AB FLEXIBLE BELLCORE AMA (UPG. OF NTX737AA)						
-No specific hardware						
NTX738AC SWITCH PERFORMANCE MONITORING SYSTEM (UPG NTX738AB V.O.30)						
-No specific hardware						
NTX750AC ISDN BASIC ACCESS(UPG. FROM NTX750AB						
-ISDN TERMINALS.						
-D CHANNEL HANDLER SIGNALLING (DCH)						
-PACKET HANDLER (PHI)						
-ISDN TERMINALS						
-BX34AA ISDN-LCM PROCESSOR BOARD						
-BX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-6X53AA POWER SUPPLY						
-NTBX34AA ISDN LCM PROCESSOR CARD						
-NTBX35AA ISDN LCM DIGROUP CONTROLLER CARD						
-NTBX36AA ISDN LCM BUS INTERFACE CARD						
-NTBX25AA ISDN LCM 1B LINE CARD						
-LCMI						
-NTBX45 BOTH THE BRA AND PRA DCH LOADS RUN ON THE SAME ST CARD.						
-NTBX44 STI CARD IS USED BY THE BRA DCH						
-NT6X68 64KBPS OR 56KBPS STI CARD IS USED BY THE PRA DCH.						
-NTBX01AA ISDN SIGNALLING PRE-PROCESSOR (ISP).						
-ISDN LINE TRUNK CONTROLLER (ISDN LTC)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-FULLY EQUIPPED DUAL UNIT LCMI						
-NTBX30 LCMI FRAME						
-NTBX01AA ISDN-LTC ISP CIRCUIT PACK						
-NTBX02AA ISDN-LTC DCH CIRCUIT PACK						
-LTCI EQUIPPED WITH DCHS						
-NTBX34AB LCMI PROCESSOR CARD.						
-ISDN LINE TRUNK CONTROLLER (LTCI)						
-D-CHANNEL HANDLERS						
-LINE TRUNK CONTROLLER FOR ISDN (LTCI) OR A						
-LINE GROUP CONTROLLER FOR ISDN (LGCI).						
-NT6X17AA/AB/AC,						
-NT6X18AA/AB,						
-NT6X19AA &						
-NT6X20AA POTS/IBN LINE CARD.						
-NT6X30AA RINGING GENERATOR CARD.						
-NT6X76AA DATAPATH LINE CARD.						
-NTBX34AB PROCESSOR CARD.						
-NT6X30 RINGING GENERATOR CARD.						
-LTCI WITH A UTR						
-LTCI WITH EQUIPPED DCH’S.						
-LTCI/LGCI						
-LTCI/LGCI WITH TWO OR MORE DCHS.						
-2B1Q U-LOOP ISDN LINE CARD						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX34BA LCME PROCESSOR CARD						
-NTBX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-NTBX36BA LCME BUS INTERFACE CARD						
-NTBX72AA POWER SUPPLY						
-NT6X53CA POWER SUPPLY						
-NTBX30AA ISDN-LCM FRAME						
-NTBX32BA LINE DRAWER						
-NTBX27AA U INTERFACE LINE CARD						
-NTBX26AA S/T INTERFACE LINE CARD						
-NT6X30AA RING GENERATOR						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX71AA PUPS						
-FULLY CONFIGURED LCME MODULE CONSISTING OF>						
-NTBX30AA 2B1Q LCME FRAME						
-NTBX32BA 2B1Q LCME LINE DRAWER						
-NTBX34BA 2B1Q LCME PROCESSOR						
-NTBX35AA DIGROUP CONTROL CARD (DCC)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NTBX36BA 2B1Q BUS INTERFACE CARD (BIC)						
-NT6X53CA POWER SUPPLY 1						
-NTBX71AA POINT OF USE POWER SUPPLY (PUPS)						
-NTBX72AA POWER SUPPLY 0						
-2B1Q LINECARD AND NT1>						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STANDALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-ENCHANCED ISDN LINE CONCENTRATING MODULE (LCME)						
-NTBX30AB LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-FULLY EQUIPPED DUAL UNIT LCME.						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX27AA 2B1Q-U LINECARD						
-NTBX80AA 2B1Q NT1 (STANDALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NTBX26AA						
-LCMI						
-NTBX26AA						
-NTBX02 D CHANNEL HANDLERS (DCH)						
-ISDN BRA						
-S/T-ISLC						
-EITHER LTCI OR LGCI PERIPHERAL						
-NTBX02AA D CHANNEL HANDLER (DCH)						
-NTBX01AA ISDN SIGNALLING PREPROCESSOR (ISP)						
-ISDN LINE CONCENTRATING MODULE (LCME)						
-NTBX30AA LCME FRAME						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NTBX32BA LCME DRAWER						
-NTBX34BA PROCESSOR						
-NTBX35AA DCC						
-NTBX36BA BIC						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX02AA DCH D-CHANNEL HANDLER						
-NTBX01AA ISP ISDN SIGNALLING PROCESSOR	LTCI					
-LTCI						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA LCME PROCESSOR						
-NTBX36BA BIC - BUS INTERFACE CARD						
-NTBX35AA DCC - DIGROUP CONTROLLER CARD						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STAND ALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-ISDN LTC						
-NTBX01AA ISP						
-NTBX02AA DCH						
-NT6X50AB DS-1						
-NTBX30AA LCME FRAME						
-NTBX32BA LCME DRAWER						
-NTBX34BA LCME PROCESSOR						
-NTBX36BA BIC - BUS INTERFACE CARD						
-NTBX35AA DCC - DIGROUP CONTROLLER CARD						
-NTBX72AA POWER 0						
-NT6X53CA POWER 1						
-NTBX71AA PUPS						
-NT6X30AA RING GENERATOR						
-NT2X90AD NO TEST TRUNK						
-NTBX27AA 2B1Q LINECARD						
-NTBX80AA 2B1Q NT1 (STAND ALONE) (MDed)						
-NTBX84AA 2B1Q NT1 (MODULE) OPTIONAL						
-NTBX84BA 2B1Q NT1 (EXTENDED MODULE) OPTIONAL						
-NTBX34BA LCME PROCESSOR BOARD						
-NTBX35AA ISDN-LCM DIGROUP CONTROLLER CARD						
-NTBX36BA LCME BUS INTERFACE CARD						
-NTBX72AA POWER SUPPLY						
-NT6X53CA POWER SUPPLY						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NTBX30AA ISDN-LCM FRAME						
-NTBX32BA LINE DRAWER						
-NT6X30AA RING GENERATOR						
-NTBX27AA LINECARDS. 2B1Q NT1						
-NTBX26AA LINECARDS. 2B1Q NT1						
-LTCI/LGCI WITH DCHS						
-MTU						
-ISDN LTC/LGC						
-NTBX01AA ISP						
-NTBX02AA DCH						
-NT6X50AB DS-1						
-ISDN LTC/LGC						
-A FULLY CONFIGURED LCME MODULE CONSISTING OF						
-POTS/EBS/DATAPATH LINECARDS						
-NT6X17AA/AB/AC POTS TYPE A						
-NT6X18AA/AB POTS TYPE B						
-NT6X19AA POTS MSG WAITING						
-NT6X20AA POTS MSG WAITING POWER CONVERTING						
-NT6X21AA/AB/AC EBS						
-NT6X71AA/AB DATAPATH						
-NT6X76AA/AC DATAPATH						
-NT6X99AA IBERT						
-ENHANCED ISDN LINE CONCENTRATING MODULE (LCME)						
-ISDN XPMS						
-NTMX77 UNIFIED PROCESSOR (UP)						
-NTBX01AB ENAHNCED ISDN PREPROCESSOR (EISP)						
-NTMX77 UNIFIED PROCESSOR						
-DMS SUPERNODE						
-LCME						
NTX753AB ISDN FUNCTIONAL MODE BASIC RATE SERVICES (UPG OF NTX753AA)						
-ISDN XPM (IAC)						
-DMS OFFICE EQUIPMENTSUPPORTING ISDN BRA.						
-LGCI OR LTCI PRESENT IN SYSTEM						
NTX754AB ISDN ELECTRONIC KEY TELEPHONE SERVICE (UPG OF NTX754AA) (UP						
-No specific hardware						
NTX755AC ISDN SUPPLEMENTARY SERVICES COMPLIANCE(UPG.FR. NTX755AB)						
-MBS SETS						
-ISDN SETS WITH FLEXIBLE CALLING						
-THREE PORT CONFERENCE CIRCUITS						
-6-PORT CONFERENCE CIRCUITS						
NTX756AA ISDN ENHANCED DISPLAY SERVICES						
NTX757AA TR444 ISUP INTERWORKING						
-DMS-100 ISDN						
NTX767AA TR-448 ISDN DIGIT ANALYSIS COMPLIANCE- END OFFICE						
-No specific hardware						
NTX768AA TR-448 ISDN DIGIT ANALYSIS COMPLIANCE - TOLL						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-No specific hardware						
NTX769AA TR444 ISUP INTERWORKING - TOLL OFFICE						
-DMS-100 ISDN						
NTX790AC ISDN - PRIMARY RATE ACCESS BASE(UPG FR. NTX790AB)						
-IAC WILL BE NEEDED.						
-PRA IAC (XPM)						
-ISDN PRIMARY RATE ACCESS (PRA)						
-NT5X30AA 101 COMMUNICATION TEST LINE CIRCUIT						
-NT4X23AA DIGITAL TEST UNIT						
-ISDN DIGITAL TRUNK CONTROLLER (DTCI)						
-EBS SETS						
-NTMX77 UNIVERAL PROCESSOR CARD						
-NTBX01 ENHANCED ISDN PREPROCESSOR						
NTX791AA ISDN PRA- NETWORK RING AGAIN						
-SL-100 OFFICES EQUIPPED WITH ISDN ACCESS CONTROLLERS						
-P-PHONES, IVD SETS						
NTX792AA ISDN PRA- NETWORK NAME DISPLAY						
-No specific hardware						
NTX793AA PRA INTEGRATED SERVICES ACCESS						
-No specific hardware						
NTX794AA PRA CCS7 INTERWORKING						
-No specific hardware						
NTX795AA INFO+ ENHANCED NUMBER DELIVERY- PRIMARY RATE INTERFACE						
-PRA IACS (XPM)						
-ISDN DIGITAL TRUNK CONTROLLER (ISDN DTC)						
NTX796AA INFO+ ENHANCED NUMBER DELIVERY- BASIC RATE INTERFACE						
-No specific hardware						
NTX797AA PRI MESSAGE WAITING INDICATION						
-NT1X67FA TERMINAL CONTROLLER						
NTX801AA TOLL FEATURES I						
NTX802AA TOLL FEATURES II						
NTX803AA EQUAL ACCESS ALTERNATE SWITCHING POINT						
-No specific hardware						
NTX804AA OM POLLING & VERTICAL SERVICES(ORDER VIA MP NTX071BG & UP)						
-DCM/DTC						
NTX806AA ENHANCED CALL FORWARDING - POTS						
-No specific hardware						
NTX807AB ENHANCED CALL WAITING - POTS(UPG. OF NTX807AA)						
-No specific hardware						
NTX808AA ENHANCED 3-WAY CALLING - POTS						
-No specific hardware						
NTX812AA CENTRALIZED MAP						
-No specific hardware						
NTX813AA CENTRALIZED ALARMS						
-No specific hardware						
NTX820AA ENHANCED 3-WAY CALLING - IBN						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-No specific hardware						
NTX821AA TANDEM OPERATOR SERVICE ROUTING						
-No specific hardware						
NTX822AA EBS AS MESSAGE CENTRE						
-No specific hardware						
NTX824AB ENHANCED CALL WAITING - IBN(UPGR. OF NTX824AA)						
-No specific hardware						
NTX825AB EXCHANGE ALTERNATE BILLING SERVICE(UPG OF NTX825AA IN BCS34						
-No specific hardware						
NTX827AA NEW PERIPHERALS PERFORMANCE MEASUREMENTS						
-No specific hardware						
NTX829AA INTRALATA PIC FOR LEAS						
NTX835AA STP - SEAS (1.1) OPERATIONS						
-No specific hardware						
NTX836AA LPP - V.35 SUBRATE LINKS						
-No specific hardware						
NTX839AB LPP - ENHANCED MAINTENANCE AND BERT (REP. NTX839AA)						
-LIU7						
-NT6X66AC NT40 BASED SIGNALLING TERMINAL (ST) OR						
-NT9X76AA SUPERNODE BASED SIGNALLING TERMINAL (ST) CARD						
-NT9X78BA DS0 INTERFACE CARD						
NTX840AA LIU7 GATEWAY MESSAGE SCREENING						
-DMS SIGNALING TRANSFER POINT(STP)						
NTX843AB CELLULAR INTERCONNECT(UPG. OF NTX843AA IN BCS27)						
-ACCESS TANDEM SWITCH						
NTX850AA TOPS ALTERNATE ANNOUNCEMENT						
-NT1X79AA EEPROM.						
NTX851AA SMDR DERIVED FROM BCR AMA						
-No specific hardware						
NTX853AA IBN ALARM CALL STATUS ON CONSOLES						
-NT2X57AA SD POINTS						
NTX856AA IBN ATTENDANT CONSOLE OM ON AN INDIVIDUAL CONSOLE BASIS						
-No specific hardware						
NTX857AA CALL FORWARDING SPECIAL - MDC						
-No specific hardware						
NTX871AA REMOTE TOPS MP O.C. DATA LINK HANDLING						
-TOPS-MP						
-DMS-200 OR DMS-100/200.						
-RONI CIRCUITS						
NTX873AA HOST TOPS MP O.C. - DATA LINK HANDLING						
-DMS-200 TOPS OC-HOST						
-TOPS_MP						
NTX875AA CCS7 MASS TRUNK CONVERSION						
-HARDWARE FOR SS7 SIGNALLING.						
NTX877AB INTERFACE TO NON-DATA LINK CONSOLE(UPG. OF NTX877AA)						
-NT1X31AA						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT3X67AA						
-NT6X17 LINE CARDS						
-LINE CONCENTRATING MODULE (LCM)						
-NT0X10AA SC CARDS						
-NT2X57AA SD CARDS						
NTX878AE ENHANCED ELECTRONIC BUSINESS SET SERVICES(UPG. FR. NTX878AD						
-ELECTRONIC BUSINESS SETS						
-500/2500 SETS.						
-SIX PORT CONFERENCE CIRCUITS						
NTX881AC SWITCH BIT ERROR RATE MAINTENANCE(UPG. OF NTX881AB)						
-NT4X23AA DTU HARDWARE.						
-NT6X99AA IBERT LINE CARD (ILC)						
NTX882AA BIT ERROR RATIO INDICATOR FOR TOLL SWITCHES						
-NT4X23AA DTU HARDWARE.						
-NT6X99AA IBERT LINE CARD (ILC)						
NTX883AA INTER OFFICE TRK BIT ERROR RATE TESTING						
-NT4X23AA DTU OR						
-NT6X99 ILC.						
-DIALED LOOPBACK ON TRUNKS TERMINATING TEST LINE.						
NTX885AB SWITCH PATH DIAGNOSTICS (UPG. OF NTX885AA)						
-NT6X69AA/AB MESSAGE CARD						
-IF THE AA MESSAGE CARD IS USED, THEN THE NT6X79AA TONE						
-CARD IS REQUIRED.						
-NT5X13 NETWORKS						
-NT7X27 NETWORKS						
-NT7X40 NETWORKS						
NTX891AA TOPS - EXCHANGE ACCESS OPR SERV SIG						
-TOPS OFFICE						
NTX892AA MPC MULTILINK MANAGEMENT						
NTX898AA VARIABLE SPEED CALL ACCESS CODE - IBN						
-No specific hardware						
NTX899AA CALL TRANSFER ENHANCEMENTS						
-No specific hardware						
NTX901AA LOCAL FEATURES I						
-NT2X90AC/AD TEST TRUNK CARD						
-NT6X17						
-NT6X18						
-TTU						
NTX902AA LOCAL FEATURES II						
-No specific hardware						
NTX903AA TRANSMISSION MEASUREMENTS						
-NT2X41 TTU						
NTX904AA R2 SIGNALLING BASE						
-DMS 200I						
NTX913AA MERCURY CENTREX PCM-30 PERIPHERALS						
-REMOTE MAINTENANCE MODULE (RMM)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

-NT6X72AA
NTX940AA CM BILGE
-DMS SUPERNODE
NTX941AA CM COMMON
-DMS-CORE
-DMS-BUS
-NT9X20BA A CHANNELIZED DS512 BACK CARD.
-NT9X23BA A CHANNELIZED DS30 BACK CARD.
-NT9X25AA SHORTING BUS INTERFACE CARD.
-NT9X25BA SHORTING BUS TERMINATION INTERFACE CARD.
-NT9X17AB 4 PORT INTERFACE CARD.
-NT9X17CA 128-PORT INTERFACE CARD.
-DMS-100 SUPERNODE
-NT9X10AA PROCESSOR CIRCUIT PACKS.
-NT9X26DA REMOTE TERMINAL INTERFACE PADDLEBOARDS.
-NT9X62BA 4-LINK SR-512 PADDLEBOARD AND
-NT9X17BB/DA/AC.
-NT9X17AA/AC;
NTX942AB DMS - SUPERNODE SYSTEM LOAD MODULE(SLM)(UPG.FR. NTX942AB)
NTX944AA BASE NODE MAINTENANCE
NTX945AA MS BASE LINK MAINTENANCE
-NT9X62BA SR512 PADDLE BOARD AND
-NT9X17DA 64-PORT INTERFACE CARD
-NT9X62BA
-NT9X62BA
-DMS-SUPERNODE FAMILY
-INTER-MS LINKS CONNECTING THE MS PAIR
-DS30 > NT9X17AA FRONT CARD WITH NT9X23AA OR NT9X23BA BACK CARD
-DS512> NT9X17DA FRONT CARD WITH NT9X20BB BACK CARD.
NTX946AB EBS - CALL NAME DISPLAY(UPG.OF NTX946AA IN BCS26)
-No specific hardware
NTX950AA MS BILGE
-NT9X49CB DMS-BUS TRACER CARD IN CARD.
-NT9X13DC PROCESSOR CARD.
-DMS-SUPERNODE
NTX951AA MS COMMON
-NT9X49CB DMS-BUS TRACER CARD
-NT9X53AC CLOCK CARD
-DMS-SUPERNODE FAMILY
-INTER-MS LINKS CONNECTING THE MS PAIR
-DS30 > NT9X17AA FRONT CARD WITH NT9X23AA OR NT9X23BA BACK CARD
-DS512> NT9X17DA FRONT CARD WITH NT9X20BB BACK CARD.
-NT9X62CA DMS-BUS 2-LINK FIBER PB.
NTX980AA INTERNATIONAL TRUNK TST POSITION (ITTP)
-NT4X97AA METALLIC TEST UNIT
NTX983AB SERVICE SWITCHING POINT PRIVATE VIRTUAL NTWKG(REP NTX983AA)

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

NTX984AA SERVICE SWITCHING POINT PRIV.VIRTUAL NETWRKG-ATT.SERVICES
-No specific hardware
NTX986AA ANI WITH AMA
-No specific hardware
NTX987AA FIBER MAINTENANCE BASIC MODE
-No specific hardware
NTX989AA CARRIER ACCESS CODE BLOCKING FOR IC/INC
-No specific hardware
NTX991AF ACD-MGMT REP 2 WAY DATA STREAM(UPG OF NTX991AE IN BCS32)
-NT1X89 MULTI-PROTOCOL CONTROLLER (MPC)
-AUTOMATIC CALL DISTRIBUTION (ACD)
NTXA00AB CLASS - CALL SETUP (UPGRADE OF NTXA00AA IN BCS32)
-EBS SETS
-NT1X75BA DRAM CONTROLLER CARD (MDed)
-NT1X76AJ/AK CLASS PHRASE LIST PROM CARDS
-NT1X76JA/JB AR DATE AND TIME PHRASE LIST PROM CARDS
-NT1X79 EEPROM CARDS COULD BE USED
NTXA00AC CLASS - CALL SETUP
-EBS SETS
-NT1X75BA DRAM CONTROLLER CARD (MDed)
-NT1X76AJ/AK CLASS PHRASE LIST PROM CARDS
-NT1X76JA/JB AR DATE AND TIME PHRASE LIST PROM CARDS
-NT1X79 EEPROM CARDS COULD BE USED
NTXA01AA CLASS- CALLING NUMBER DISPLAY
-NT6X78 CLASS MODEM RESOURCE CARD
-NT6X78AA CLASS MODEM RESOURCE CARD REQUIRED IN THE LTC/LGC/RCC
NTXA02AA CLASS- CUSTOMER ORIGINATED TRACE
-NT1X76 DRAM CP
NTXA11AA PATCH ADMINISTRATION & DOWNLOADING VIA X.25
-NT1X89 MULTI-PROTOCOL CONTROLLER (MPC) CARD.
NTXA15AA CALL PROGRESS TONES
-No specific hardware
NTXA16AA ENHANCED WATS OPERATION (POTS)
-No specific hardware
NTXA17AA AUTOMATIC ALTERNATE BILLING SERVICE
-No specific hardware
NTXA18AA SUBSCRIBER ACTIVATED CODE BLOCKING
-NT1X79 EEPROM
NTXA20AA TOPS MP OPEN INFORMATION ACCESS INTERFACE
-TOPS MP
-NTX66AA HSDA
NTXA22AA ENHANCED ARS
-No specific hardware
NTXA24AA EQUAL ACCESS ENHANCED CARRIER TOLL DENIAL
-No specific hardware
NTXA26AA TOPS INCOMING FEATURE GROUP D SIGNALLING

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-DMS-200 TOPS						
NTXA27AA EXECUTIVE CONFERENCE						
-6 PORT CONFERENCE CIRCUITS						
NTXA28AA TOPS AWT ENHANCEMENTS						
-No specific hardware						
NTXA30AA VIRTUAL FACILITY GROUP LOOK AHEAD						
-No specific hardware						
NTXA31AA DISA THIRD DIAL TONE - IBN						
-No specific hardware						
NTXA32AA DISTINCTIVE CALL WAITING RINGBACK						
-No specific hardware						
NTXA33AA MADN RING FORWARD						
-No specific hardware						
NTXA35AA NETWORK NUMBER DISPLAY						
-EBS SETS						
NTXA36AA NETWORK WIDE RING AGAIN						
-No specific hardware						
NTXA39AA MERIDIAN NETWORK ATTENDANT SERVICE						
-NT3X68AC SERVICE CIRCUIT						
-ISUP TRUNK						
NTXA41AA CLASS- CALLING NUMBER DELIVERY BLOCKING ADMINISTRATION						
-No specific hardware						
NTXA42AA CLASS DISTINCTIVE RINGING/CALL WAITING						
-NT3X68AC TRUNK CARD						
-SUPPORT LINE TYPES> LCM, RLCM, OPM, LM, RLM,						
-SCM-100U/RCU, SMC-100S/RCS, SMC-100R/RCT.						
-HARDWARE TO SUPPORT RING TYPE ON THE						
-PERIPHERAL MODULE(CODED, FREQUENCY SELECTIVE,						
-AND SUPERIMPOSED)						
NTXA43AA CALL FORWARD REMOTE ACTIVATION						
-No specific hardware						
NTXA45AA CLASS SELECTIVE CALL ACCEPTANCE						
-No specific hardware						
NTXA52AB ACD REMOTE LOAD MANAGEMENT I (REP. NTXA52AA)						
-NT1X89AA MULTI-PROTOCOL CONVERTER CARD (MPC)						
NTXA60AA TOPS CLOSEDOWN(REPLACES NTX134BB AND NTX039AB)						
-TOPS ENVIRONMENT						
-DMS-200 OR DMS-100/200.						
-RONI CIRCUITS						
-TOPS-MP						
NTXA62AA TOPS MP - DA AUDIO RESPONSE CALL HANDLING						
-NT1X89 MULTI-PROTOCOL CONTROLLERS (MPC'S)						
-ARU TRUNKS BETWEEN THE DMS AND DAS						
-TOPS MULTI-PUPROSE POSITIONS.						
NTXA63AA DIRECTORY ASSISTANCE/INTERCEPT CC MESSAGING						
-No specific hardware						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

NTXA64AA RES(RESIDENTIAL ENHANCED SERVICES) BASE
-No specific hardware
NTXA67AA EXTENDED XPM DIAGNOSTICS
-NT6X45 SIGNALLING PROCESSOR (SP) CARD
-NT6X69 NEW MESSAGING CARD.
NTXA68AA NETWORK MESSAGE SERVICE
-NT1X67FA TERMINAL CONTROLLER
NTXA72AA SECONDARY MADN CALL FORWARDING
-No specific hardware
NTXA73AA LOUDSPEAKER PAGING ANSWER
-No specific hardware
NTXA74AA OUTGOING RESTRICTION CONTROL
-No specific hardware
NTXA77AA ENHANCED UCD
-NT2X57AA SIGNAL DISTRIBUTOR POINTS
NTXA79AA IBN TRUNKS WITH ISUP SIGNALLING
-No specific hardware
NTXA80AA NETWORK NAME DISPLAY
NTXA81AA EXTENSION BRIDGED SERVICES
-THREE PORT CONFERENCE CIRCUITS
NTXA82AA CLASS LINE OFFICE DATA
-DRAM HARDWARE
NTXA83AA TOPS MESSAGE SWITCH
-STANDARD TMS CONFIGURATION
-NTBX01 ISP
-NTBX02 DCH
-LTCI
-NT6X45BA MP/SP
-TOPS MESSAGE SWITCH (TMS)
-TMS (TOPS MESSAGE SWITCH)
-TMS TPCS (TOPS POSITION CONTROLLERS)
-TOPS LTCI HARDWARE
-DATA LINKS FROM THE TMS TO THE ORDB
-LINKS ARE REQUIRED FROM THE TPC TO THE TMS
-NTX66AA HSDA CARD
NTXA84AA EBS - MUSIC ON HOLD
-AT LEAST ONE OF THE FOLLOWING WILL BE NEEDED >
-DRAM, AUDIOCHRON, AND/OR BROADCAST TRUNK
-INTERFACE.
NTXA85AB SUBSCRIBER MODULE SLC-96/REMOTE (UPG OF NTXA85AA)
-NT6X45BA SIGNALPROCESSOR (SP) AND MASTER PROCESS (MP)
-NT6X46BA SIGNAL PROCESSOR MEMORY
-SUBSCRIBER CARRIER MODULE 100S - REMOTE (SMS-R)
-NT6X99 IBERT CARD
-NT4X23 DIGITAL TEST UNIT (DTU)
NTXA86AA SUBSCRIBER CARRIER MODULE SLC-96/REMOTE- SPECIAL SERVICES

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

NTXA88AA MDR VIA AMA STREAM
NTXA89AA SMDR TIME DUMP FOR BNM
-No specific hardware
NTXA90AA TOPS-MP TERMINAL HANDLER HIGH SPEED
-REQUIRES TPC
-NTNX66AA HSDA CARD
-TOPS POSITION CONTROLLER (TPC)
-TAMI HARDWARE CONFIGURATION
-TOPS MULTI-PURPOSE POSITION (TOPS MP).
-NT4X82AA (TOPS/HSLI) CARDS.
-REQUIRES XMS BASED TPC.
-REQUIRES TUTOR 3B TRAINING SYSTEM.
-TPC ADMINISTRATION AND MAINTENANCE INTERFACE BC2158
-(TAMI).
-VT220 COMPATIBLE TERMINAL (TAMI POSITION).
-1200 BAUD AUTO ANSWER MODE
-RS232 SERIAL PRINTER.
-TPC ADMINISTRATION AND MAINTENANCE INTERFACE (TAMI).
-VT220 COMPATIBLE TERMINAL (TAMI POSITION).
-1200 BAUD AUTO ANSWER MODE
-RS232 SERIAL PRINTER.
-NT4X82AA (TOPS/HSLI) CARDS.
-TPC DIAGNOSTIC FLOPPY DISKS.
-TOPS MULTI-PURPOSE POSITION (TOPS MP).
-NTNX65AA(SASI)/5BA(SCSI) PIO CARD
-NTNX68AA(SASI)/CA(SCSI) FLOPPY DISK PACK
-NTNX68BA(SASI)/DA(SCSI) HARD DISK PACK
-ALL COMPONENTS MUST EITHER BE THEIR CORRESPONDING SASI VERSION OR
-THEY MUST ALL BE THEIR CORRESPONDING SCSI VERSION.
-TPC WITH HSDA CARD
NTXA91AA STANDARD INTERFACE FOR DA/INTERCEPT APPLICATIONS
-No specific hardware
NTXA94AA RES FEATURES
-No specific hardware
NTXA95AA CLASS SELECTIVE CALL FORWARDING
-No specific hardware
NTXA96AA CLASS SELECTIVE CALL REJECTION
-No specific hardware
NTXE00AA TOPS OPERATOR PASSWORD
-TOPS POSITION
NTXE01AA ENHANCED NETWORK - BASIC
-NT9X13CA MEMORY/CPU CIRCUIT PACK
-NT9X26AA RTIF PADDLE BOARD
-NT9X36AA MESSAGE/CLOCK CIRCUIT PACK
-NT9X66AA MS INTERFACE PADDLE BOARD
-NT9X36AA

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT9X35BA						
-NT9X41BA						
-NT9X29AA DIAGNOSTIC PORT CARD PADDLE BOARD						
-NT9X66AA FIBRE INTERFACE PADDLE BOARD						
-DMS SUPERNODE						
-ENHANCED NETWORK (ENET)						
-NT9X13FA CPU/MEMORY CIRCUIT PACK						
-NT9X36BA CLOCK/MESSAGE CIRCUIT PACK						
-NT9X40BA QUAD FIBER INTERFACE PADDLE BOARD						
-NT6X40CA/DA						
-NT9X45BA						
-NT9X40/41/45 ENET PADDLEBOARDS						
-NT9X45BA PADDLE BOARD						
NTXE05AA TOPS - MP DA/INTERCEPT MESSAGING - OPEN						
-No specific hardware						
NTXE09AB ACD ON 2500 SET (UPG OF NTXE09AA IN BCS32)						
-No specific hardware						
NTXE13AB CCS7 ISUP INTERLATA CONNECTION EAEO (REP. NTXE13AA)						
-ATC MF TRUNKS WILL BE NEEDED FOR CALLS						
-REQUIRING OPERATOR						
NTXE14AB CCS7 ISUP INTERLATA CONN ACCESS TANDEM (REP. NTXE14AA)						
-ATC MF TRUNKS WILL BE NEEDED FOR CALLS						
-REQUIRING OPERATOR						
-COMMON CHANNEL SIGNALLING SYSTEM #7 (CCS7) HARDWARE						
-ATC MF TRUNKS						
-THE LINKS BETWEEN THE ACCESS TANDEM AND THE						
-INTEREXCHANGE CARRIER MUST BE EQUIPPED WITH						
-COMMON CHANNEL SIGNALLING SYSTEM #7 (CCS7)						
-HARDWARE> MESSAGE SWITCH AND BUFFER FOR CCS7						
-SIGNALLING (MSB7). DIGITAL TRUNK CONTROLLER FOR						
-CCS7 ISDN USER PART TRUNKS (DTC7).SIGNAL						
-TERMINAL FOR CCS7 SIGNALLING LINKS (ST7).						
NTXE18AA TOPS AMA ENHANCEMENTS						
NTXE20AA TOPS EXTENDED BELLCORE AMA FORMAT(EBAF)						
-No specific hardware						
NTXE22AA ACD SUPERGROUP						
-No specific hardware						
NTXE23AA CELLULAR INTERCONNECT - END OFFICE						
-No specific hardware						
NTXE25AA ISDN CIRCUIT SWITCH MODEM POOLING						
-No specific hardware						
NTXE27AA CLASS DIALABLE NUMBER DELIVERY						
-NT6X78AA CLASS MODEM RESOURCE (CMR).						
-NT1X75BA CONTROLLER CARD (MDed) FOR THE DRMUSER ANNOUNCEMENTS.						
NTXE30AA CCS7 SIGNALING LINK ENHANCED MAINTENANCE FOR MSB7						
-NT6X66AC NT40 BASED SIGNALLING TERMINAL (ST) OR						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT9X76AA SUPERNODE BASED SIGNALLING TERMINAL (ST) CARD						
NTXE32AA CCS7 PREVENTATIVE CYCLICAL RETRANSMISSION						
-No specific hardware						
NTXE35AA ALTERNATE CARRIER SELECTION						
-DMS-200 TOPS OFFICES.						
NTXE36AB AUTOMATIC DA CALL COMPLETION (UPG OF NTXE36AA)						
-TRAFFIC OPERATOR POSITION SYSTEM (TOPS)						
-AUTOMATIC MESSAGE ACCOUNTING (AMA).						
-AUDIO RESPONSE UNIT (ARU).						
NTXE38AB CLASS- CND ON SCMS/SMSR(UPG.OF NTXE38AA)						
-NT6X78AA CLASS MODEM RESOURCE (CMR) CARD.						
-NT6X69AB						
-NT6X46BA SP MEMORY						
-IF CUSTOM ANNOUNCEMENTS FOR CND SUSP						
-ACTIVATION AND DEACTIVATION ARE TO BE USED,						
-THEN THE 1X75BA CONTROLLER CARD FOR THE						
-DRAM IS REQUIRED AND THE CLASS DRAM						
-ANNOUNCEMENTCARD						
-SMSR						
-REMOTE CLUSTER CONTROLLER (RCC)						
NTXE39AA CALL FORWARD BUSY/DO NOT ANSWER SPLITS						
-No specific hardware						
NTXE40AB MERIDIAN BUSINESS SET INSPECT KEY (UPG. FROM NTXE40AA)						
-No specific hardware						
NTXE43AA TERMINATING BILLING OPTION						
-No specific hardware						
NTXE44AA EXECUTIVE BUSY OVERRIDE ENHANCEMENT						
NTXE46AA CALLING NAME/NUMBER DELIVERY BLOCKING						
-No specific hardware						
NTXE47AA MERIDIAN DISPLAY COMMUNICATION						
-No specific hardware						
NTXE52AA CALLING NAME DELIVERY SWITCH BASED						
-NT6X78AA CLASS MODEM RESOURCE CARD						
NTXE54AA SYSTEM LOAD MODULE II						
-DMS SUPERNODE SWITCH						
-NT9X27AA						
-NT9X27BA						
-NT9X12						
-NT9X46						
-NT9X44 SLM II						
NTXE55AB STP SEAS INTERFACE RELEASE 2.0 (REPLACES NTXE55AA IN BCS31)						
NTXE56AA CLASS SCREENING LIST EDITING						
-DRAM PROM CARDS						
-NT1X76AP-AV DRAM CP						
-NT1X76GA-GC DRAM CP						
NTXE58AA CLASS ON MVP						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-DIGITAL RECORDED ANNOUNCEMENT MACHINE (DRAM)						
-CUSTOMER PREMISES EQUIPMENT (CPE)						
-NT6X78 CLASS MODEM RESOURCE (CMR)						
NTXE60AA DATAPATH - CLOSED USER GROUPS (U.S.)						
-DATA UNITS WITH REGULAR AND ENHANCED MESSAGING CABPABILITIES.						
-THIS FEATURE WORK FOR BOTH NT6X71AA AND						
-NT6X71AB DATA LINE CARDS (DLCS).						
-THE FOLLOWING ARE TYPICAL TYPES OF DUS WORKING WITH CUG>						
-LOW SPEED DU > NT4X25AN						
-HIGH SPEED DU > NT4X25AP						
-TERMINAL COAX UNIT > NT4X25AL						
-CONTROLLER COAX UNIT > NT4X25AM						
-ELASTOMER HIGH SPEED DU > NT4X25AG						
-ELASTOMER LOW SPEED DU > NT4X25AF						
-RACKMOUNTLOW SPEED DU > NT4X25AD						
-RACKMOUNTHIGH SPEED DU > NT4X25AV						
-R/M LOW SPEED DU W/V.54 LOOPBACK NT4X25CH						
NTXE62AA EBS CALL FORWARD UNIVERSAL PER KEY						
-No specific hardware						
NTXE64AA #4ESS AT&T INTERWORKING						
-No specific hardware						
NTXE65AA MPC X.25 INTERFACE						
-NT1X89AA/BA MULTI PROTOCOL CONTROLER CARD (MPC/EMPC)						
-NTNX66AA HSDA						
NTXE66AA CCS7 ISUP OPTION CONTROLS						
-DTC WHICH SUPPORT NO.7 SIGNALLING						
NTXE67AA EQUAL ACCESS INTERMEDIATE TANDEM						
-No specific hardware						
NTXE68AA TOPS EXPANDED CALLING CARD FORMAT						
-No specific hardware						
NTXE70AA TOPS TWO TERMINAL DIRECTORY ASSISTANCE/INTERCEPT						
-No specific hardware						
NTXE71AA TOPS DIRECTORY ASSISTANCE/TOLL BRANDING						
-NT1X79AA DRAM CARDS						
NTXE72AA TOPS EXPANDED CALLING CARD FORMAT - CCS7 VALIDATION (U.S.)						
-No specific hardware						
NTXE73AA IMPROVED STATSPAC						
-MODEM THAT IS BELL108 OR BELL202						
-COMPATIBLE.						
NTXE74AA PRESET CONFERENCE - EXPANDED CAPACITY						
-6 PORT CONFERENCE CIRCUITS						
NTXE94AA SECONDARY DIRECTORY NUMBERS WITH OPTIONS						
-No specific hardware						
NTXE96AA ENHANCED MDC WATS						
-No specific hardware						
NTXE98AA HIGH SPEED MPC						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT1X89BA EMPC						
NTXF10AA AUTOMATED DA CALL COMPLETION WITH ALTERNATE BILLING						
-No specific hardware						
NTXF14AA HIGH CAPACITY DPP						
-No specific hardware						
NTXF15AA DMS-CORE MC68030 33MHZ PROCESSOR						
-DMS-SUPERNODE						
NTXF16AA DMS-CORE MC68030 40 MHZ PROCESSOR						
NTXF20AA LMS ON LPP						
-NT9X13DA/DB CPU						
NTXF26AA SYNCHRONIZATION - BITS COMPOSITE MASTER						
-NT9X53AB CIRCUIT PACK AND						
-NT9X54AD PADDLE BOARD						
NTXF27AA SYNCHRONIZATION - CESIUM,LORAN - C MASTER						
-NT9X53						
-NT9X54AC PADDLE BOARD						
NTXF42AA MONITOR OF MAP TERMINAL ACTIVITY						
-No specific hardware						
NTXF55AA CLASS BULK CALLING LINE IDENTIFICATION						
-NT6X78AA CLASS MODEM RESOURCE (CMR) CARD						
-No specific hardware						
NTXF56AA CLASS ON MDC (BASE)						
-No specific hardware						
NTXF60AA CLASS ON MVP II						
-DRAM, CLASS PROM						
NTXF71AB SUPERNODE ENHANCED MESSAGING(UPG. OF NTXF71AA)						
-No specific hardware						
NTXF72AB CLASS ON MBS (UPG OF NTXF72AA)						
-No specific hardware						
NTXF82AA RES SINGLE LINE VARIETY PACKAGE						
-No specific hardware						
NTXF87AA SERVICE ORDER SIMPLIFICATION						
-No specific hardware						
NTXF88AB MBS INTERACTIVE DISPLAYS (UPG OF NTXF88AA)						
-M5209S AND M5312 MERIDIAN BUSINESS SETS CONNECTED TO AN RSC						
-BUSINESS SETS THAT ARE CONNECTED TO AN RSC						
NTXF92AA ISDN OAM BASE						
-SUN 3/60 OR 3/80, 4 MB MEMORY (MINIMUM), WITH SUNLINK X.25 SOFTWARE						
-CONSOLE TERMINAL (VT100 OR EQUIVALENT)						
-NT40 AND SUPERNODE						
-SYNCHRONOUS MODEM						
-NT1X89 MPC CARD						
NTXF93AA ISDN PROVISIONING						
-SUN WORKSTATION						
-HARDWARE REQUIREMENTS FOR THE ISDN SWITCH						
NTXF94AB ISDN INTEGRATED PH MAINTENANCE W/O OAMP(REP NTXF94AA)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-NT1X89 MPC CARD						
-PHYSICAL CONNECTION TO A PACKET HANDLER						
-NT1X89AA MULTI PROTOCOL CONTROLER CARD						
-ISDN NODE						
NTXF95AA ISDN OAM PROCESSOR						
-SUN 3/60 (4 MB MEMORY, 141 MB SCSI DISK, 1/4" TAPE DRIVE)						
-CONSOLE TERMINAL						
-PACKET HANDLER						
-RS232C CABLES						
-SYNCHRONOUS MODEM						
-OAM PROCESSOR> SUN 3/60 OR 3/80, WITH SUNLINK X.25						
-ISDN PACKET HANDLER RUNNING RELEASE G25 SOFTWARE						
-SYNCHRONOUS MODEM TO CONNECT OAMP TO PACKET HANDLER						
-EXCHANGE TERMINATION						
NTXG01AA DMS-250 PRA						
-ISDN DIGITAL TRUNK CONTROLLER (DTCI)						
-DTCI HARDWARE						
-ISDN DIGITAL TRUNK CONTROLLER (ISDN DTC)						
NTXG01CA DMS-250 PRA (TYPE III)						
-ISDN DIGITAL TRUNK CONTROLLER (DTCI)						
-DTCI HARDWARE						
-ISDN DIGITAL TRUNK CONTROLLER (ISDN DTC)						
NTXG33AA DMS-250 PRA D-CHANNEL BACKUP						
-No specific hardware						
NTXH38AA GLOBAL TOPS - BASIC						
-TOPS-MP						
NTXJ00AA ISDN ON RSC (REP BY NTXJ00AB)						
-NTBX02 D-CHANNEL HANDLER						
-NT6X12DA ISDN REMOTE CLUSTER CONTROLLER (RCCI)						
-LCME HARDWARE						
-NT2X10BA METALLIC TEST UNIT (MTU) CARD SET, NT2X10BA AND NT2X11BA						
-NT2X11BA METALLIC TEST UNIT (MTU) CARD SET, NT2X10BA AND NT2X11BA						
-REMOTE MAINTENANCE MODULE (RMM)						
NTXJ10AA OPERATOR HAND OFF TO AABS						
-No specific hardware						
NTXJ35AA MAINTENANCE MANAGERS REPORT						
-No specific hardware						
NTXJ37AA TOPS EXTERNAL PERSONAL AUDIO RESPONSE SYSTEM (PARS)						
-NT1X89 MULTI-PROTOCOL CONTROLLER, (MPC) CARD.						
NTXJ38AA MDC WARM LINE						
-NT6X78AA CLASS MODEM RESOURCE CARD						
NTXJ39AA CLASS VISUAL MESSAGE WAITING INDICATOR						
-NT6X78AA CLASS MODEM RESOURCE CARD						
NTXJ41AA CCS7 TEST TOOLS						
-CCS7 NETWORK						
NTXJ42AA FEATURE GROUP D ON MDC						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-DMS-100/200						
NTXJ43AA #5ESS AT&T INTERWORKING						
-No specific hardware						
NTXJ44AA SLM FILE SYSTEM						
-No specific hardware						
NTXJ47AA TEEN SERVICE ON MDC						
-NT3X68AC TRUNK CARD						
NTXJ48AA ISDN INTEGRATED PH MAINTENANCE WITH OAMP REQUIRED						
-NT1X89 MPC CARD						
NTXJ51AA ISDN DIGITAL TEST ACCESS						
-LTCI/LGCI EQUIPPED WITH ISDN S/T OR U LOOP INTERFACE						
-DS1 DIGITAL INTERFACE						
-PROTOCOL ANALYZER (PA)						
-DS-1 LINK SUPPORTING 64KBPS CLEAR CHANNEL						
NTXJ54AA ISUP FGD MF/CCS7 INTERWORKING OPTIONS						
-MESSAGE SWITCH AND BUFFER FOR CCS7 SIGNALLING (MSB7)						
-DIGITAL TRUNK CONTROLLER FOR CCS7 ISDN USER PART TRUNKS (DTC7)						
-SIGNAL TERMINAL FOR CCS7 SIGNALLING LINKS (ST7)						
NTXJ58AA CANCEL CALL WAITING PER LINE						
-No specific hardware						
NTXJ59AB COMPUCALL BASE UTILITIES(UPG. FR. NTXJ59AA)						
-NT1X89AA/BA MPC						
-DMS SUPERNODE						
NTXJ60AB ISI COORDINATED VOICE AND DATA (UPG OF NTXJ60AA)						
-COMPUCALL						
-NT1X89AA MPC OR						
-NT1X89BA EXTENDED MPC						
NTXJ62AA THIRD PARTY CALL CONTROL						
-No specific hardware						
NTXJ67AA TOPS DA SUBTENDING TMS						
-No specific hardware						
NTXJ68AA IBN ISUP NETINFO TRANSLATIONS						
-ISUP TRUNKS						
NTXJ69AA RESIDENTIAL CALL HOLD						
NTXJ70AA CALL FORWARD OF CALL WAITING CALLS						
-No specific hardware						
NTXJ73AA TOPS ACCOUNT CODE BILLING						
-No specific hardware						
NTXJ78AA CLASS II ON MDC						
-No specific hardware						
NTXJ82AA CALL HUNTING- 1A TRANSPARENCY						
-No specific hardware						
NTXJ84AA CALL FORWARDING- 1A TRANSPARENCY						
-No specific hardware						
NTXJ93AA SERVICE ORDER SIMPLIFICATION FOR HUNT GROUPS						
-No specific hardware						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTXJ94AA MANDATORY PARALLEL AMA						
-No specific hardware						
NTXJ96AA ENHANCED MFADS						
-BELL 108 AND BELL 202 COMPATIBILITY						
NTXJ97AA DIRECT STATION SELECTION/BUSY LAMP FIELD FOR MBS						
-M5209, M5312, PSET> MERDIAN BUSINESS SETS						
NTXJ98AA MERIDIAN BUSINESS SET CAMP ON						
-No specific hardware						
NTXL09AA DMS-250 UCS PRA						
-No specific hardware						
NTXL94AA DMS-250 FRAME RELAY BILLING FORMATTER/SEARCH (FOR CM & EIOC						
NTXL95AA DMS-250 FRAME RELAY IEC BILLING (FOR CM ONLY)						
NTXN01AB MULTI-LOCATION BUSINESS GROUPS (UPG OF NTXN01AA)						
NTXN04AA PARS REMOTE						
NTXN07AA SMDI PRIVATE CLID SUPPRESSION						
-No specific hardware						
NTXN10AA HIGH SPEED SMDI						
NTXN11AA TEN DIGIT GTT FOR CLASS FEATURES						
-No specific hardware						
NTXN12AA NCEO/LEAS INTERFACE						
-No specific hardware						
NTXN13AA CCS7 RELEASE LINE TRUNK						
-ISUP TRUNKS AND DTC						
NTXN16AA ENHANCED DRAM						
-NT1X80AA EDRAM CARD.						
NTXN17AA E911 DIRECT INTERFACE TO CCI ALI DATABASE						
NTXN18AA FBUS - LIU BASE						
-LIU7						
-NTEX22AA INTEGRATED PROCESSOR AND FBUS INTERFACE						
-NT9X73BA						
-NT9X72BA						
NTXN19AA LIU7 FOR LPP BASED CCS7 APPLICATIONS						
-NT9X76 SIGNALLING TERMINAL						
-NT9X78 DS-0A PADDLEBOARD OR						
-NT9X77 V.35 PADDLEBOARD						
-LINK INTERFACE UNIT (LIU7)						
-NT9X13 LINK GENERAL PROCESSOR						
-NT9X75 PROCESSOR F-BUS INTERFACE						
-NT9X13 LINK GENERAL PROCESSOR						
NTXN25AA EXTENDED PERIPHERAL EQUIPMENT						
NTXN26AA ANNOUNCEMENTS ENHANCEMENTS						
NTXN28AA INTELLIGENT NETWORK BILLING ATTRIBUTES						
NTXN29AA IBM DA TPC						
-TOPS MP						
NTXN31AA OSS INTERFACE ENHANCEMENT						
NTXN35AA COT ENHANCEMENTS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-DRAM						
NTXN46AA NETWORKED ACD ON CCS7						
NTXN49AA AUTOMATED INTERCEPT CALL COMPLETION						
NTXN50AA MDC SINGLE BUTTON TRANSFER						
-MERDIAN BUSINESS SETS						
NTXN53AA ENHANCED PRA MAINTENANCE						
-No specific hardware						
NTXN54AA HOST/REMOTE NETWORKING VIA CALL TYPE						
-TOPS						
NTXN59AA RINGBACK TO E911 CALLERS						
-No specific hardware						
NTXN60AA DIAL UP INTO ALI DB FOR SRDB UPDATE						
-NT1X89AA/BA MPC/EMPC						
NTXN65AA MDC FAST TRANSFER						
-No specific hardware						
NTXN66AA E911 DIRECT ACCESS TO DATA MGT. SYSTEM ALI DATABASE						
-NT1X89 MPC CARD						
NTXN68AA XPM BROADCAST PATCHING						
-NT6X69 CPP MESSAGE PROTOCAL CP						
NTXN75AA REMOTE CALL FORWARD WITHOUT UNIQUE PIN						
-DRAM						
-NT1X75BA CONTROLLER CARD (MDed)						
-NT1X76AM						
-NT1X76AG						
-NT1X76AK MEMORY CARDS						
NTXN82AB RSC ENHANCED ESA (LINES & TRUNKS)(UPG FR NTXN82AA)						
-No specific hardware						
NTXN83AA LIS COMMON - LMS FUNCTIONALITY ON MS						
-No specific hardware						
NTXN85AA MPC 1984 X.25						
-NT1X89 MULTI PROTOCOL CONTROLER CARD						
NTXN99AA ISDN INBOUND MODEM POOLING						
-MODEMS AND DATA UNITS						
NTXP00AA LINE CARD MONITOR						
-No specific hardware						
NTXP01AA INTELLIGENT NETWORK 0.0 BASE						
-No specific hardware						
NTXP10AA NETWORK MODULE SOFTWARE						
-NTEX22AA,						
-NT9X84AA,						
-NT9X85AA						
NTXP12AA CLASS- ANONYMOUS CALLER REJECTION						
-DRAM						
-NT1X75BA DRA CONTROLLER CARD (MDed), AND						
-NT1X79AA EEPROM CARD OR						
-NT1X77AA RAM CARD (MD’D)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTXP13AA ENET SWITCH PATH DIAGNOSTICS						
-NT6X69AA/AB MESSAGE CARD						
-IF THE AA MESSAGE CARD IS USED, THEN THE NT6X79AA TONE						
-CARD IS REQUIRED.						
NTXP14AA DIRP PARALLEL STORAGE SIZE INCREASE						
-No specific hardware						
NTXP15AA MAP ACCESS VIA MPC PHASE V						
NTXP38AA BD CHANNEL LOOPBACK						
-D CHANNEL HANDLER						
NTXP41AA TOPS HOST QUEUE MANAGEMENT SYSTEM						
-TELETYPEWRITERS						
-DIGITAL MODEMS						
NTXP42AA TOPS REMOTE QUEUE MANAGEMENT SYSTEM						
-TOPS QUEUE MANAGEMENT SYSTEM(QMS)						
NTXP44AA DMS SUPERNODE SE COMMON						
-No specific hardware						
NTXP47AA DMS PACKET HANDLER BASE						
-X.25 AND X.75 LINK INTER FACE UNIT (XLIU)						
-XLIU						
-SUPERNODE OFFICE EQUIPPED WITH AN LPP AND XLIUS						
-NTFX09AA C-BUS INTERFACE PADDLE BOARD						
-NTFX10AA HIGH-LEVEL DATA LINK CONTROL (HDLC)						
-NTEX22AB INTEGRATED PROCESSOR AND F-BUS INTERFACE						
-DMS SUPERNODE LINK PERIPHERAL PROCESSOR (LPP)						
NTXP48AA CCS7 TWO WIRE EMULATION OF CONTINUITY TEST						
-NT6X70 CONTINUITY TONE DETECTOR CARD						
-DTC7 SHELF						
NTXP53AA ACD ACCESS FEATURE GROUPING						
-No specific hardware						
NTXP57AA CALL WAKE-UP SERVICE						
NTXP58AA VFG SPPRT FOR E911(LOC &/OR INC ISUP/ANI CALL)						
NTXP72AA ENET 16K CONFIGURATION						
-ENET CONFIGURED AS AN SNSE						
NTXP73AA CNDB OFFICE-WIDE ACTIVATION						
-No specific hardware						
NTXP75AA DMS PACKET HANDLER SERVORD						
NTXP78AA FGB CARRIER CODE EXPANSION						
-No specific hardware						
NTXP80AA TWO LEVEL AUTOMATIC RECALL ENHANCEMENTS						
-DRAM WITH A 1X75BA CONTROLLER CARD.						
-THE CLASS PHRASE LIST PROM CARDS 1X76AJ						
-AND 1X76AK TO PROVIDE THE STANDARD CLASS						
-ANNOUNCEMENTS. THE AR DATE AND TIME PHRASE						
-LIST PROM CARDS 1X76JA AND 1X76JB						
-ARE RECOMMENDED FOR AR DATE AND TIME						
-ANNOUNCEMENTS.						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
NTXP81AA REMOTE ACTIVATION OF LINE LOAD CONTROL						
-No specific hardware						
NTXP86AA ANI TO ISUP CONVERSION						
NTXP92AA RSC-S BASIC						
-MX75AA TIME SWITCH						
-MX77AA PROCESSOR						
-MX74AA DS30A INTERFACE PACK						
-MX76AA MSG & CSM						
-MX73AA PCM (PULSE CODE MODULATION) SIGNALLING						
-REMOTE SWITCHING CENTER (RSC)						
NTXP99AB E911 REMOTE CALL EVENT RECORD(UPG.OF NTXP99AA)						
-NT1X89AA/AB MPC CARD						
NTXQ12AA RSC ENHANCED ESA(LINES ONLY)(FOR BCS34 RELEASE)						
-No specific hardware						
NTXQ18AA SRDB MEMORY ADMINISTRATION						
NTXQ27AA MFT DISPLAY ENHANCEMENTS						
NTXQ29AA CLASS+ CALLING NAME DELIVERY BLOCKING FOR LINES						
-NT1X75BA DRA CONTROLLER CARD (MDed)						
-NT1X79AA EEPROM CARD						
-NT1X77AA RAM CARD (MD'D)						
NTXQ34AA FRAME RELAY BILLING BASE PACKAGE						
NTXQ35AA FRAME RELAY LEC BILLING						
NTXQ52AA SUPPORT FOR MS RESIDENT, LIS CONTROLLER						
NTXQ65AB CCS7 AUTO ATTENDANT RELEASE LINK TRUNK (UPG OF NTXQ65AA)						
NTXQ81AA CLASS - NAME DISPLAY ON MADN						
-NT6X78AA CLASS MODEM RESOURCE CARD (CMR)						
-NT1X75BA CONTROLLER CARD FOR THE DRMUSER (MDed)						
-ANNOUNCEMENTS						
NTXQ90AA ENHANCED RESIDENTIAL SERVICES						
NTXQ90AB ENHANCED RESIDENTIAL SERVICES (UPG OF NTXQ90AA)						
-No specific hardware						
NTXQ95AA LINE LOG REDUCTION						
NTXR25AA NETWORK FACILITY ACCESS						
-NT1X79 EEPROM						
NTXR28AA FRAME RELAY FRACTIONAL T1 ACCESS						
-NTEX31BA ESF FRAP						
-NTEX22BA 8 MEG INTEGRATED PROCESSOR & FBUS INTERFACE (IPF)						
NTXR34AB XPM PLUS (PRODUCT LINE UPGRADE STRATEGY) BASIC						
-NTMX77 UNIFIED PORCESSOR CARD (UP)						
-NTBX01AB ENAHNCED ISDN SIGNALING PREPROCESSOR (EISP)						
NTXR42AA FIRMWARE DOWNLOADING						
-NTMX77AA UNIFIED PROCESSOR						
-NT6X69 MESSAGING CARD						
NTXR44AA POWER FEATURE AUDIO TRIAL						
-No specific hardware						
NTXR46AA ROBUSTNESS ENHANCEMENTS						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-No specific hardware						
NTXR48AA QMS- CALL AND AGENT MANAGER						
NTXR59AA CLASS- SPLIT NPA MANAGEMENT						
-No specific hardware						
NTXR72AA CCS7 MTP/SCCP FOR LPP BASED PLATFORMS						
-CCS7 SIGNALLING CONNECTION CONTROL PART (SCCP)						
-SIGNALLING SYSTEM NO. 7 (SS7) NETWORK						
-MULTI-MSB7						
-SIGNALING CONNECTION CONTROL PART (SCCP)						
-COMMON CHANNEL SIGNALLING NUMBER 7 (CCS7)						
NTXR83AA PER LINE FEATURE CONTROL						
-No specific hardware						
NTXS05AA XPM PLUS IN RSC						
-NTMX77 UNIFIED PROCESSOR (UP) ON THE REMOTE CLUSTER CONTROLLER						
NTXS36AA XPM+ ON DTCI						
NTXV02AA DN SCREENING ENHANCEMENTS II						
NTXV26AA DN SCREEN ENHANCEMENT III - JAPAN MOBILE						
NTXW00AA WORLD LINE CARD BASE						
NTXW03AA WORLD LINE CARD OVER VOLTAGE REPORT						
NTXW20AA WORLD LINE CARD 900 +2						
NTXW21AA TEMPLATE FOR 900+2 FOR TYPE 2						
-NT6X18BA WLC						
NTXZ00AA ACD SUPPORT SOFTWARE 1 (EQ110)						
-SUPERNODE BASED SWITCH.						
-DRAMS						
-REFER TO AD0990						
-SD POINT						
-NT3X02 & NT3X03 DIGITAL MODEM PAIR (DMODEM)						
-NT1X31 THREE PORT CONFERENCE CIRCUIT						
-NT4X09 CONSOLE						
-NT3X68AC SPECIAL TONES CARD						
-DTMF SENDERS						
NTXZ01AA ACD SUPPORT SOFTWARE 2 (EQ111)						
-NT2X57AA SIGNAL DISTRIBUTION CARD						
NTXZ02AA ACD SUPPORT SOFTWARE 3 (EQ911)						
-NT2X90AC/AD TEST TRUNK CARD						
NTXZ03AA ACD SUPPORT SOFTWARE 4 (EQ912)						
-No specific hardware						

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTBX80AA	MD	NONE
NT9X69AA	MD	NONE
NT1X75BA	MD	NONE
NT1X77AA	MD	NONE

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 T_BCS35_XREF is ordered, these items are provided.

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DMS-100 Family
North American DMS-100
ALL PRODUCTS COMPUTING-MODULE LOADS Vol 3 of 15

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