
DMS-100* FAMILY

ALL PRODUCT COMPUTING-MODULE LOADS

Volume 2 of 15

ACTIVE ENGINEERING MANUALS

97Q4 Standard 05.03 December 1997

TM8 PRODUCT CHANGE KIT

PEC CODE: NT2X52AU

| CPC CODE: B0236477

| RATING: A&M

| REPLACES: Not Applicable

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NT2X52AU allows connectorized cabling to be installed on a TM8 frame to accomodate the connection of MONTALK circuits to WTA panel header connectors.
The NT2X52AU upgrades the following TM8 shelves to a NT2X52AV vintage:

NT2X52AP
NT2X52AG
NT2X52AC

REFERENCE DOCUMENTATION: SL2X52AU 01 01

| MARKETS: Applicable markets:

| US
| Canada
| CALA

| ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Steve Martin Dept. 3471 (PPK)

NT2X52AU EMA2-99-TM8-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 09 12	----- ECM 601 34	Previous history not available MD per EC018-48743 Status left as A&M as this may still be required in the future to retrofit TM8 Modules in the field per request from Engineering Product Service Assurance Group.

The TM8 Product Change Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TMB-WTA Flip-plate	P0737681		1	X		AP
LC Assy TIP & RING for TM8 shelf	NT2X5236		1	X		AP
Connector hardware, screw lk	C0030540		15	X		AP
GUP cable tie, self locking	P0633700		3	X		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) X = Shelf Position 04,18,32,51 or 65.

RULES:

- AP 1) When PEC NT2X52AU is ordered, these items are provided.

EXPANDED SIGNALING PROCESSOR CHANGE KIT

PEC CODE: NT6X02ZJ

CPC CODE: B0227511

RATING: Standard

REPLACES: None

REPLACED BY: None

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to the DTE/LGE/LTE/SME/MS7E frame when converting a DTC/LGC/LTC/SMU/RCC/MSB7/SMS/SMR module equipped with NT6X46AB Signal Processor CP to a DTC/LGC/LTC/SMU/RCC/MSB7/SMS/SMR module equipped with NT6X46AC Signal Processor CP. This retrofit provides increased processor memory.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
CALA
Canada

| ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

| MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NT6X02ZJ EMA2-99-XPM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available.
97 01 07	ECM 373 47	Per EC 24-96637, MD NT6X40BA and replace it with NT6X40AC.

The Expanded Signaling Processor Change Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

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.

ACTION POS	EQUIPMENT RULE	PEC	SHF ABBR	CP QTY	POS
REMOVE	Signaling Processor NT6X46AB		2	XX	AP
REMOVE	Des Strip (NT6X46AB) P0668442		2	XX	
ADD	SP Memory Plus CP NT6X46AC		2	XX	AP
ADD	Des Strip (NT6X46AC) P0696600		2	XX	

NOTES:

RULES:

- 1) Provide minimum one (1) maximum two (2) NT6X02ZJ Common Circuit Pack Kit per frame when converting NT6X02 XPM Modules as follows:

DESCRIPTION	FROM	TO
DTC Common CP	NT6X02AQ	NT6X02AS
LGC Common CP	NT6X02AH	NT6X02AT
LTC Common CP	NT6X02AG	NT6X02AU
SMS Common CP	NT6X02EA	NT6X02AW
SMS Common CP	NT6X02DA	NT6X02DC *
SMU Common CP	NT6X02DB	NT6X02DC *
SMR Common CP	NT6X02CA	NT6X02CQ

* - See Note 9

- 2) The NT6X02ZJ Product Change Kit changes Slots 08,09,12,15-17,19,22-23 , and 25 of the upgraded modules to provisionable slots. These slots are being made provisionable to ease future design development. On SMR, slots 8, 12, and 19 remain always provided. New packs do not need to be ordered for slots 08,09,12,19,22-23,25.
- 3) The NT6X02AS,AT,AU,AW,DC,CQ Common CP Fills are PECs used for the field upgrade of existing peripheral modules ONLY. The NT6X02AS,AT,AU, AW,DC,CQ Common CP Fills CANNOT be ordered.
- 4) Provide one (1) NT6X02ZJ Common Circuit Pack Kit per frame when converting NT6X12 XPM modules as follows:

DESCRIPTION	FROM	TO

RCC Common CP	NT6X12AB	NT6X12AD

Slots 08, 10 and 13 of the upgraded modules are now provisionable slots.

- 5) The NT6X02ZJ Product Change Kit changes slots 08, 10 and 13 of the RCC module to provisionable slots. These slots are being made provisionable to ease future design development. New circuit packs do not need to be ordered for these slots.
- 6) The NT6X12AD Common CP Fill is a PEC used for the field upgrade of existing peripheral module ONLY. The NT6X12AD Common CP Fill CANNOT be ordered.
- 7) When modifying DTC/LGC/LTC/SMU/SMS/SMR modules, XX in SHF POS is equal to 18,32 or 51,65. The CP POS is 11.

When modifying RCC module, XX in SHF POS is equal to 18,32 only. The CP POS is 12.

When modifying MSB7 module, XX in SHF POS is equal to 18,32 only. The CP POS is 15.

- 8) Provide minimum one (1) maximum two (2) NT6X02ZJ Product Change Kit per frame when converting NT6X32 MSB7 modules as follows:

DESCRIPTION	FROM	TO
MSB7 Common CP	NT6X32AA	NT6X32AB

Slots 08, 10 and 13 of the upgraded modules are now provisionable slots.

- 9) The NT6X02ZJ Product Change Kit changes slots 06-08,12,16,18,22-23, & 25 of the upgraded SMS modules to provisionable slots. These slots are being made provisionable to ease future design development. Provide (2) NT6X69AC CPs for each SMS module being upgraded.
- 10) If CLASS feature/hardware (NT6X78AA) and NT6X85AA SCM DS1 Interface are provided in the NT6X02DC module, replace the two (2) NT6X40AA packs with one (1) NT6X40AC pack in slot 22. If the NT6X85AB is used, the NT6X40AA packs do not have to be replaced.

NT6X86AB PRODUCT CHANGE KIT

PEC CODE: NT6X02WC

CPC CODE: B0224742

RATING: Standard

REPLACES: N/A

| REPLACED BY: NT6X02WG

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NT6X02WC provides materials to upgrade one existing SMS or SMS-R with NT6X86AB A-Bit Message packs, which are a requirement for XPM+ on these modules. Application of this kit also makes slots 13 and 19 on each shelf provisionable.

| This kit should no longer be used. Refer to its replacement and associated frame and cabinet EMSs.

REFERENCE DOCUMENTATION: SL6X02WC 00 01
PC6X02WC 00 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Steve Martin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Steve Martin Dept. 3471 (PPK)

NT6X02WC EMA2-99-XPM-12 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 06 30	ECM 678 11	Introduce NT6X02WC NT6X86AB Change Kit
94 07 28	ECM 678 12	Correct contents per latest stocklist
95 08 17	ECM 678 22	This kit should no longer be used per EC#024-94576. See EMS for NT6X02WG and associated frame and cabinet EMSS.

The NT6X86AB Product Change Kit is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	A-Bit Message CP	NT6X86AA		2	X,X+14	13	AP
ADD	A-Bit Message CP	NT6X86AB		2	X,X+14	13	AP
ADD	NT6X86AB Label	P0724376		2	X,X+14	13	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

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

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

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

NOTES:

- 1) "X" in SHF POS is equal to 18 or 51.
- 2) Application of this kit to an SMS module equipped with a NT6X02DR packfill converts the module to the NT6X02DS packfill level.
- 3) Application of this kit to an SMS-R module equipped with a NT6X02PG packfill converts the module to the NT6X02PH packfill level.
- 4) Application of this kit to a module makes slots 13 and 19 provisionable.

RULES:

AP 1) When PEC NT6X02WC is ordered, these items are provided.

CCPE AND RCC XPM PLUS UPGRADE KIT

PEC CODE: NT6X02XG

CPC CODE: B0224695

RATING: STD

REPLACES: NT6X12ZF, NT6X02XA, NT6X02XB, NT6X02XC,
NT6X02XF, NTRX36CA, NTRX36DA

REPLACED BY: None

ABBREVIATION NAME: None

ENGINEERING DESCRIPTION: The NT6X02XG provides materials and instructions to upgrade one existing XPM or RCC module to XPM PLUS. This kit is not to be applied to new equipment. Only field upgrades are supported by this kit.

NT0X50AA Filler Faceplates and NTB01BA ISDN Signaling Pre-processor Circuit Packs are not included as part of the NT6X02XG Kit and must be ordered separately when required.

Application of this kit to an SMS module equipped with NT6X02DH, or to an SMS-R module equipped with NT6X02PD, requires the simultaneous application of NT6X02WG Change Kit which must be ordered separately.

REFERENCE DOCUMENTATION: SL6X02XG 01 02

MARKETS: Applicable markets:

US
Canada
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

| MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NT6X02XG EMA2-99-XPM-14 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 06 30	ECM 678 11	Introduce NT6X02XG
94 07 28	ECM 678 12	Correct contents per latest stocklist
94 08 22	ECM 678 13	Clarify application of NT6X02XG kit
94 11 10	ECM 659 12	Revise title, description, notes and rules. CCPE application added per EC 11-18850.
94 12 07	ECM 643 10	Add to "REPLACES:" list, revise description, add minimum packfills.
95 04 12	ECM 373 39	NTBX01BA replaces NTBX01AB.
95 07 18	ECM 643 14	Changes per ECD 024-93910. Change the of the NTMX71AA CP from 19R to 20R.
95 08 17	ECM 678 22	Update per EC#024-94576 introducing NT6X02WG Product Change Kit
96 03 01	ECM 678 25	ET 33249-Clarify mounting locations for NTMX71AA as 19R for domestic XPMs and 20R for international XPMs.

The CCPE and RCC XPM PLUS Upgrade Kit is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	XPM Processor CP	NT6X45--		2	X,X+14	8	RUL2
REMOVE	MP Memory Plus CP	NT6X47--		2	X,X+14	Y	RUL2
REMOVE	MP Memory Plus CP	NT6X47--		2	X,X+14	Y+1	RUL2
REMOVE	Signaling Processor	NT6X46--		2	X,X+14	Y+2	RUL2
REMOVE	XPM Processor CP	NT6X45--		2	X,X+14	Y+3	RUL2
REMOVE	ISDN Signal Pre-proc	NTBX01AA		2	X,X+14	16	RUL3
ADD	Unified Processor	NTMX77AA		2	X,X+14	Y+3	AP
ADD	NTMX77AA Label	P0735417		2	X,X+14	Y+3	AP
ADD	Termination CP	NTMX71AA		2	X,X+14	YY	AP
ADD	XPM+ Upgrd Paddlecd	NTMX7015		2	X,X+14		AP
ADD	XPM+ Upgrd Paddlebd	NTMX7016		2	X,X+14		AP
ADD	XPM+ CaAssy Padlecd	NTMX7013		1	X,X+14		AP
ADD	XPM+ CaAssy Ribbon	NTMX7014		2	X,X+14		AP
ADD	Insertion Guide	P0749586		6	X,X+14		AP
ADD	ISDN Signal Pre-proc	NTBX01BA		2	X,X+14	16	RUL3
ADD	NTBX01BA Label	P0713794		2	X,X+14	16	RUL3
ADD	Filler Faceplates	NT0X50AA		AR	X,X+14	8-12	RUL1
ADD	NT0X50AA Label	P0578498		AR	X,X+14	8-12	RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

1) ON CABINETIZED COMMON PERIPHERAL EQUIPMENT

For CCPE (cabinet) mounting, X = 5 for one module and X = 33 for the other. For CCPE (cabinet) mounting, Y = 9, and YY = 19R for domestic cabinets or YY = 20R for international cabinets. Check cabinet level Engineering Manual Sections to ensure mounting location.

2) ON COMMON PERIPHERAL EQUIPMENT FRAME

For CPE frame mounting, X = 18 for one module and X = 51 for the other. For CPE frame mounting, Y = 9, and YY = 19R for domestic frames or YY = 20R for international frames. Check frame level Engineering Manual Section to ensure mounting location.

3) ON REMOTE SWITCHING CENTER FRAME

For RSC frame mounting, X = 18 for one module and X = 32 for the other. For RSC frame mounting, Y = 10, and YY = 18R.

4) The existing common circuit packs (packfill) of a module to be upgraded must be at the minimum level shown herein prior to application of this kit.

5) Application of this kit to RCC modules equipped with NT6X12AD, NT6X12AG, or NT6X12CA packfills upgrades the module to NT6X12AL.

6) Application of this kit to DTC modules equipped with NT6X02AS or NT6X02IA packfills upgrades the module to NT6X02IC. The NT6X02XG may be applied to existing DTC modules equipped with NT6X02IC or later packfills and the packfill part number remains the same.

7) Application of this kit to LGC modules equipped with NT6X02AT or NT6X02LA packfills upgrades the module to NT6X02LC. The NT6X02XG may be applied to existing LGC modules equipped with NT6X02LC or later packfills and the packfill part number remains the same.

8) Application of this kit to LTC modules equipped with NT6X02AU or NT6X02MA packfills upgrades the module to NT6X02MC. The NT6X02XG may be applied to existing LTC modules equipped with NT6X02MC or later packfills and the packfill part number remains the same.

- 9) Application of this kit to SMU modules equipped with NT6X02EG packfills upgrades the module to NT6X02EM. The NT6X02XG may be applied to existing SMU modules equipped with NT6X02EM or later packfills and the packfill part number remains the same.
- 10) Application of this kit to SMS modules equipped with NT6X02DH packfills upgrades the module to NT6X02DR; however, the NT6X02DR packfill is an interim level not allowed in the field. The NT6X02WC Change Kit was applied to convert NT6X02DR to NT6X02DS for XPM PLUS operation. The NT6X02XG may be applied to SMS modules equipped with NT6X02DS or later packfills and the packfill part number remains the same.

Where the NT6X02WC Kit has been deployed the NT6X80s must now be replaced with NT6X80BB CPs. Order two NT6X80BBs and two labels per module. The NT6X02WC Kit should not be used for future upgrades. Instead use the NT6X02WG Kit. See EMSs for frame/cabinet and the kit for more information.

- 11) Application of this kit to SMS-R modules equipped with NT6X02PD packfills upgrades the module to NT6X02PG; however, the NT6X02PG packfill is an interim level not allowed in the field. The NT6X02WC Change Kit was applied to convert NT6X02PG to NT6X02PH for XPM PLUS operation. The NT6X02XG may be applied to SMS modules equipped with NT6X02PH or later packfills and the packfill part number remains the same.

Where the NT6X02WC Kit has been deployed the NT6X80s must now be replaced with NT6X80BB CPs. Order two NT6X80BBs and two labels per module. The NT6X02WC Kit should not be used for future upgrades. Instead use the NT6X02WG Kit. See EMSs for frame/cabinet and the kit for more information.

RULES:

AP	1) When PEC NT6X02XG is ordered, these items are provided.
RUL1	1) Provide NT0X50AA Filler Faceplates, with P0578498 Designation Labels, as required to occupy all unequipped slots. The number of filler faceplates required may vary depending on the module configuration at the time of the upgrade.
RUL2	1) The exact part number of these packs may vary depending on the module configuration at the time of the upgrade.

- RUL3 1) When this kit is applied to an ISDN module equipped with NTB01AA ISDN Signaling Pre-processor CPs, provide two NTB01BA Enhanced ISDN Signaling Pre-processor CPs, with two P0713794 Designation Labels, to replace the NTB01AA CPs.

NT6X69AD PRODUCT CHANGE KIT

PEC CODE: NT6X02WB

CPC CODE: B0241060

RATING: Standard

REPLACES: None

REPLACED BY: None

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NT6X02WB Product Change Kit provides two NT6X69AD Message Protocol and Tones Circuit Packs and two P0800014 Designation Labels for field application to upgrade any peripheral which requires the messaging card to be upgraded to a NT6X69AD.

REFERENCE DOCUMENTATION: SL6X02WB 00 01

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NT6X02WB EMA2-99-XPM-15 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 08 01	ECM 616 22	Introduce the NT6X02WB kit.
97 03 11	ECM 714 02	Update section applicability per ECD 024-97013.

The NT6X69AD PRODUCT CHANGE KIT is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Msg Prtcl & Tones CP	NT6X69AC		2	X,X+14	18	AP
ADD	Msg Prtcl & Tones CP	NT6X69AD		2	X,X+14	18	AP
ADD	NT6X69AD Label	P0800014		2	X,X+14	18	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) For frame mounting, X = 18 for one module and X = 51 for the other.
- 2) For cabinet mounting, X = 5 for one module and X= 33 for the other.
- 3) This kit can be applied to any peripheral which requires the messaging card to be upgraded to a NT6X69AD.

RULES:

- AP 1) When PEC NT6X02WB is ordered, these items are provided.

XPM+ PADDLECARD UPGRADE KIT

PEC CODE: NTMX70AB

CPC CODE: B0224709

RATING: STD

REPLACES: NTMX70AA

REPLACED BY: None

ABBREVIATION NAME: None

ENGINEERING DESCRIPTION: The NTMX70AB provides materials and instructions to complete the conversion of an applicable frame/cabinet to accommodate an XPM or RCC module which contains NTMX71AA, NTMX77AA, and P0735417 labels. The kit is used to install wiring modifications on the backplane, but does not provide the NTMX71AA, NTMX77AA, or labels. Check appropriate EMS to see whether or not this kit is applicable.

NT0X50AA Filler Faceplates and NTB01BA ISDN Signaling Pre-processor Circuit Packs are not included as part of the NTMX70AB Kit and must be ordered separately when required.

Application of this kit to an SMS module equipped with NT6X02DH, or to an SMS-R module equipped with NT6X02PD, requires the simultaneous application of NT6X02WG Change Kit which must be ordered separately.

REFERENCE DOCUMENTATION: SLMX70AB 00 01

MARKETS: Applicable markets:

US
Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)
MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTMX70AB EMA2-99-XPM-16 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 01 31	ECM 373 35	Introduce NTMX70AB.
95 04 12	ECM 373 39	NTBX01BA replaces NTBX01AB.
95 08 17	ECM 678 22	Update per EC#024-94576 introducing NT6X02WG Product Change Kit
96 06 14	ECM 678 26	SR RR63752- Update description to clarify the use of the NTMX70AB kit.

The XPM+ Paddlecard Upgrade Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
XPM+ Upgrd Paddlecd	NTMX7015		2	X,X+14		AP
XPM+ Upgrd Paddlebd	NTMX7016		2	X,X+14		AP
XPM+ CaAssy Padlecd	NTMX7013		1	X,X+14		AP
XPM+ CaAssy Ribbon	NTMX7014		2	X,X+14		AP
Insertion Guide	P0749586		4	X,X+14		AP
ISDN Signal Pre-proc	NTBX01BA		2	X,X+14	16	RUL3
NTBX01BA Label	P0713794		2	X,X+14	16	RUL3
Filler Faceplates	NT0X50AA	AR		X,X+14	8-12	RUL1
NT0X50AA Label	P0578498	AR		X,X+14	8-12	RUL1
Unified Processor	NTMX77AA		2	X,X+14	Y+3	RUL4
NTMX77AA Label	P0735417		2	X,X+14	Y+3	RUL4
Termination CP	NTMX71AA		2	X,X+14	YY	RUL4

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) ON CABINETIZED COMMON PERIPHERAL EQUIPMENT

For CCPE (cabinet) mounting, X = 5 for one module and X = 33 for the other. For CCPE (cabinet) mounting, Y = 9, and YY = 19R.

2) ON COMMON PERIPHERAL EQUIPMENT FRAME

For CPE frame mounting, X = 18 for one module and X = 51 for the other. For CPE frame mounting, Y = 9, and YY = 19R.

3) ON REMOTE SWITCHING CENTER FRAME

For RSC frame mounting, X = 18 for one module and X = 32 for the other. For RSC frame mounting, Y = 10, and YY = 18R.

4) The existing common circuit packs (packfill) of a module to be upgraded must be at the minimum level shown herein prior to application of this kit.

5) Application of this kit to RCC modules equipped with NT6X12AD, NT6X12AG, or NT6X12CA packfills upgrades the module to NT6X12AL.

6) Application of this kit to DTC modules equipped with NT6X02AS or NT6X02IA packfills upgrades the module to NT6X02IC. The NTMX70AB may be applied to existing DTC modules equipped with NT6X02IC or later packfills and the packfill part number remains the same.

7) Application of this kit to LGC modules equipped with NT6X02AT or NT6X02LA packfills upgrades the module to NT6X02LC. The NTMX70AB may be applied to existing LGC modules equipped with NT6X02LC or later packfills and the packfill part number remains the same.

8) Application of this kit to LTC modules equipped with NT6X02AU or NT6X02MA packfills upgrades the module to NT6X02MC. The NTMX70AB may be applied to existing LTC modules equipped with NT6X02MC or later packfills and the packfill part number remains the same.

9) Application of this kit to SMU modules equipped with NT6X02EG packfills upgrades the module to NT6X02EM. The NTMX70AB may be applied to existing SMU modules equipped

with NT6X02EM or later packfills and the packfill part number remains the same.

- 10) Application of this kit to SMS modules equipped with NT6X02DH packfills upgrades the module to NT6X02DR; however, the NT6X02DR packfill is an interim level not allowed in the field. The NT6X02WC Change Kit was applied to convert NT6X02DR to NT6X02DS for XPM PLUS operation. The NTMX70AB may be applied to SMS modules equipped with NT6X02DS or later packfills and the packfill part number remains the same.

Where the NT6X02WC Kit has been deployed the NT6X80s must be replaced with NT6X80BB CPs. Order two NT6X80BBs and two labels per module. The NT6X02WC Kit should not be used for future upgrades. Instead use the NT6X02WG kit. See EMSs for frame/cabinet and the kit for more information.

- 11) Application of this kit to SMS-R modules equipped with NT6X02PD packfills upgrades the module to NT6X02PG; however, the NT6X02PG packfill is an interim level not allowed in the field. The NT6X02WC Change Kit was applied to convert NT6X02PG to NT6X02PH for XPM PLUS operation. The NTMX70AB may be applied to SMS modules equipped with NT6X02PH or later packfills and the packfill part number remains the same.

Where the NT6X02WC Kit has been deployed the NT6X80s must be replaced with NT6X80BB CPs. Order two NT6X80BBs and two labels per module. The NT6X02WC Kit should not be used for future upgrades. Instead use the NT6X02WG Kit. See EMSs for frame/cabinet and the kit for more information.

RULES:

- AP 1) When PEC NTMX70AB is ordered, these items are provided.
- RUL1 1) Provide NT0X50AA Filler Faceplates, with P0578498 Designation Labels, as required to occupy all unequipped slots. The number of filler faceplates required may vary depending on the module configuration at the time of the upgrade.
- RUL2 1) The exact part number of these packs may vary depending on the module configuration at the time of the upgrade.
- RUL3 1) When this kit is applied to an ISDN module equipped with NTB01AA ISDN Signaling Pre-processor CPs, provide two

NTBX01BA Enhanced ISDN Signaling Pre-processor CPs, with two P0713794 Designation Labels, to replace the NTBX01AA CPs.

- | RUL4 1) Two each of NTMX71AA, NTMX77AA, and P0735417 are to be installed in the indicated locations.

NT7X05AA PRODUCT CHANGE KIT

PEC CODE: NT6X02WF

CPC CODE: B0242772

| RATING: STD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: None

ENGINEERING DESCRIPTION: The NT6X02WF provides materials and instructions to upgrade one existing DTC/LGC XPM module when the peripheral recovery loader option is required. This upgrade kit is not to be applied to new equipment. Only field upgrades are supported by this kit. The PC6X02WF drawing describes installation and required backplane modifications.

REFERENCE DOCUMENTATION: SL6X02WF 00 01

MARKETS: Applicable markets:

US
Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: Ken Clisso Dept. 3471 (PPK)

NT6X02WF EMA2-99-XPM-17 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 24	ECM 644 18	Introduce NT6X02WF upgrade kit.

The NT7X05AA PRODUCT CHANGE KIT is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Universal Tone Rec.	NT6X92CA		2	X,X+14	9	RUL1
REMOVE	Universal Tone Rec.	NT6X92CA		2	X,X+14	11	RUL1
ADD	Flash EEPROM Pack	NT7X05AA		2	X,X+14	9	RUL2
ADD	NT7X05AA Label	P0808071		2	X,X+14	9	RUL2
ADD	Flash EEPROM Pack	NT7X05AA		2	X,X+14	11	RUL2
ADD	NT7X05AA Label	P0808071		2	X,X+14	11	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) ON CABINETIZED COMMON PERIPHERAL EQUIPMENT

For CCPE (cabinet) mounting, X = 5 for one module and X = 33 for the other. For CCPE (cabinet) mounting, Y = 9, and YY = 19R.

2) ON COMMON PERIPHERAL EQUIPMENT FRAME

For CPE frame mounting, X = 18 for one module and X = 51 for the other. For CPE frame mounting, Y = 9, and YY = 19R.

RULES:

AP 1) When PEC NT6X02WF is ordered, these items are provided.

RUL1 1) Remove the NT6X92CA UTR circuit pack from position 9 for frame XPM and position 11 for a cabinet. This kit will limit the quantity of 2 NT6X92 per module located in position 8.

RUL2 1) Add the NT7X05AA FLASH EEPROM PACK PCB CP to position 9 for a frame and position 11 for a cabinet.

RUL3 1) If the NT6X62 CCITT N5 version special tone receiver is provided then this kit (NT6X02WF) cannot be used.

N5 SIGNALLING KIT

PEC CODE: NTRX4653

CPC CODE: B0247617

RATING: Standard.

REPLACES: None

REPLACED BY: None

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTRX4653 Kit provides material and instructions to upgrade one CDT0 module (NTRX46CA cabinet) to N5 Signalling functionality. This feature is also known as "C5 Digital" and "CCITT Number 5 Signalling".

REFERENCE DOCUMENTATION: MSRX46CA 01 11
ISRX46CA 00 09

MARKETS: Applicable markets:

Europe
Asia/Pacific

ISSUE AUTHOR: Deniece Land Dept. 3471 (PPK)

MAIN CONTACT: Deniece Land Dept. 3471 (PPK)

NTRX4653 EMA2-99-XPM-18 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 09 12 97 07 23	ECM 693 20 ECM 704 04	Per EC 024-97049 introduce NTRX4653. Per EC 024-98050 Change the Mounting position for NT6X62DA from slot 16 to slot 17.

The N5 SIGNALLING KIT is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remove	Channel Sup Msg CP	NT6X42AA		2	05,19	20	NOTE1
ADD	CSM/N5 SPLITTER CP	NT6X42CA		2	05,19	20	AP
ADD	DES.LABEL (NT6X42CA)	P0731400		2	05,19	20	AP
ADD	CCITT N5 VERSION CP	NT6X62DA		2	05,19	17	AP
ADD	DES.LABEL (NT6X62DA)	P0731401		2	05,19	17	AP
ADD	Compliant BP Pin	A0367267		4	05,19	20,17	AP
ADD	26 AWG Green Wire	R0109836		X	05,19	20,17	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NT6X42CA and NT6X62DA CP's are only used as part of this Kit. The NT6X42AA will always be provisioned if N5 functionality is not required. The NT6X42AA CP will be removed prior to adding this kit.
- 2) The NTRX4653 N5 signalling Kit Detailed Instructions are found in the PCRX4653 TEXT document. Refer to this document prior to change.

RULES:

AP 1) When PEC NTRX4653 is ordered, these items are provided.

| NT6X80BB/86AB PRODUCT CHANGE KIT

PEC CODE: NT6X02WG

CPC CODE: B0243561

RATING: Standard

REPLACES: NT6X02WC

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NT6X80BB/86AB Product Change Kit (NT6X02WG) provides CPs and labels to upgrade XPM+ SMS and SMS-R modules on NT6X01AA and NT6X01AD frames, and NTRX36AB and NTRX36BA cabinets with NT6X80BB and NT6X86AB CPs. To be used on existing modules in field.

REFERENCE DOCUMENTATION: SL6X02WG 00 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Steve Martin Dept. 3471 (PPK)

MAIN CONTACT: Steve Martin Dept. 3471 (PPK)

NT6X02WG EMA2-99-XPM-20 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 08 17	ECM 678 22	Introduce NT6X02WG Product Change Kit

The NT6X80BB/86AB PRODUCT CHANGE KIT is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	A-Bit Message CP	NT6X86..		2	X,X+14	13	RUL1
REMOVE	Pad/Ring CP	NT6X80..		2	X,X+14	19	RUL1
ADD	A-Bit Message CP	NT6X86AB		2	X,X+14	13	AP
ADD	Des Strip (NT6X86AB)	P0724376		2	X,X+14	13	AP
ADD	Pad/Ring CP	NT6X80BB		2	X,X+14	19	AP
ADD	Des Strip (NT6X80BB)	P0800015		2	X,X+14	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:

- 1) Shelf position X = 18 and 51 for frames and 5 and 33 for cabinets.

RULES:

- AP 1) When PEC NT6X02WG is ordered, these items are provided.
- RUL1 1) This kit is used to replace existing CPs in position 13 and 19 for upgrading SMS and SMS-R XPM+ modules on NT6X01AA/AD frames and NTRX36AB/BA cabinets.

ENHANCED 3P BACKPLANE XPM+ UPGRADE KIT

PEC CODE: NT6X03DE

CPC CODE: B0245622

| RATING: STD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: None

ENGINEERING DESCRIPTION: The NT6X03DE kit includes all the necessary circuit packs, paddleboards, and cable assemblies to upgrade on PDTC/PLGC module to XPM+. The kit includes the new NTMX71BA terminator paddleboards and the option slot straps. It also includes the wiring templates and labels that are necessary for performing the upgrade to XPM+. The "PLUS+" and "OPT" labels are included for marking the frame/cabinet when the XPM+ upgrade is complete. (This kit is for new production and field upgrades.)

REFERENCE DOCUMENTATION: SL6X03DE 00 01

MARKETS: Applicable markets:

US
Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: Ken Clisso Dept. 3471 (PPK)

NT6X03DE EMA2-99-XPM-21 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 02 15	ECM 644 24	Introduce NT6X03DE Upgrade Kit.

The ENHANCED 3P BACKPLANE XPM+ UPGRADE KIT is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	XPM Processor CP	NT6X45--		2	X,X+14	12	RUL2
REMOVE	Signaling Processor	NT6X46--		2	X,X+14	13	RUL2
REMOVE	XPM Processor CP	NT6X45--		2	X,X+14	14	RUL2
REMOVE	MP Memory Plus CP	NT6X47--		2	X,X+14	15	RUL2
REMOVE	MP Memory Plus CP	NT6X47--		2	X,X+14	16	RUL2
REMOVE	Signaling Processor	NT6X46--		2	X,X+14	17	RUL2
REMOVE	XPM Processor CP	NT6X45--		2	X,X+14	18	RUL2
ADD	Unified Processor	NTMX77AA		2	X,X+14	12	AP
ADD	(NTMX77AA) Label	P0735417		2	X,X+14	12	AP
ADD	Bus Shorter Card	NT7X80AA		2	X,X+14	13	AP
ADD	(NT7X80AA) Label	P0742962		2	X,X+14	13	AP
ADD	Bus Shorter Card	NT7X80AA		2	X,X+14	17	AP
ADD	(NT7X80AA) Label	P0742962		2	X,X+14	17	AP
ADD	Terminator Card PB	NTMX71BA		2	X,X+14	08R	AP
ADD	Insertion Guide	P0749586		2	X,X+14	08R	AP
ADD	Terminator Card PB	NTMX71BA		2	X,X+14	20R	AP
ADD	Insertion Guide	P0749586		2	X,X+14	20R	AP
ADD	XPM+ 3 PROC. PB	NTMX7019		2	X,X+14	12R	AP
ADD	Insertion Guide	P0749586		2	X,X+14	12R	AP
ADD	XPM+ 3 PROC. PB	NTMX7020		2	X,X+14	13R	AP
ADD	Insertion Guide	P0749586		2	X,X+14	13R	AP
ADD	XPM+ CaAssy Jmpr B/P	NTMX7024		2	X,X+14	10R	AP
ADD	XPM+ CaAssy Paddlecd	NTMX7023		2	X,X+14	12R	AP
ADD	XPM+ CaAssy Ribbon	NTMX7014		2	X,X+14	12R	AP
ADD	XPM+ Wiring Template for slot 18 PIN 19A	P0806273		1	X,X+14	18R	AP
ADD	XPM+ Wiring Template for slot 11 PIN 8A	P0806274		1	X,X+14	11R	AP
ADD	XPM Wiring Template	P0832966		2	X,X+14	12R	AP
ADD	XPM+ Label	P0833380		1	X,X+14		AP
ADD	OPT. Slot Ready Lbl	P0833381		1	X,X+14		AP
ADD	Filler Faceplate	NT0X50AA		AR	X,X+14		RUL1
ADD	NT0X50AA Label	P0578498		AR	X,X+14		RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

1) ON CABINETIZED COMMON PERIPHERAL EQUIPMENT

For CCPE (cabinet) mounting, X = 5 for one module and X = 33 for the other. For CCPE (cabinet) mounting, Y = 9, and YY = 19R.

2) ON COMMON PERIPHERAL EQUIPMENT FRAME

For CPE frame mounting, X = 18 for one module and X = 51 for the other. For CPE frame mounting, Y = 9, and YY = 19R.

RULES:

AP 1) When PEC NT6X03DE is ordered, these items are provided.

RUL1 1) Provide filler faceplates as required to occupy all unequipped slots. The number of filler faceplates required may vary depending on the module configuration at the time of the upgrade.

RUL2 1) The exact part number of these packs may vary depending on the module configuration at the time of the upgrade.

FXPM PC Kit

NT6X02BQ

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to DTC/LGC/LTC/MSB7 modules that will interface ENET. The NT6X02BQ kit replaces the new messaging circuit packs with the NT6X69AC new messaging circuit pack.

REFERENCE DOCUMENTATION: N/A

The FXPM PC Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Msg Interface CP	NT6X69AB		2	XX	18	RUL1
REMOVE	Msg Interface CP	NT6X69AB		2	XX	20	RUL2
REMOVE	Des Label NT6X69AB	P0698317		2	XX		
REMOVE	Msg Protocol CP	NT6X69AA		2	XX	18	RUL1
REMOVE	Msg Protocol CP	NT6X69AA		2	XX	20	RUL2
REMOVE	Tone Generator CP	NT6X79AA		2	XX	19	RUL1
REMOVE	Des Label NT6X69AA	P0666353		2	XX		
REMOVE	Des Label NT6X79AA	P0666354		2	XX		
ADD	CPP Msg Protocal CP (For DTC, LGC, LTC)	NT6X69AC		2	XX	18	AP
ADD	CPP Msg Protocal CP (For MSB7)	NT6X69AC		2	XX	20	AP
ADD	Des Label NT6X69AC	P0710476		2	XX		

NOTE:

- 1) Provide minimum one (1) maximum two (2) NT6X02BQ Common Circuit Pack Kit per frame when converting XPM Modules as follows:

DESCRIPTION	FROM	TO
DTC Common CP	NT6X02IA	NT6X02IC
DTC Common CP	NT6X02AS	NT6X02IC
LGC Common CP	NT6X02LA	NT6X02LC
LGC Common CP	NT6X02AT	NT6X02LC
LTC Common CP	NT6X02MA	NT6X02MC
LTC Common CP	NT6X02AU	NT6X02MC
MSB7 Common CP	NT6X32AB	NT6X32CC
MSB7 Common CP	NT6X32CA	NT6X32CC

- 2) The NT6X02BQ Product Change Kit changes slots 10, 11, and 18 and 19 of the upgraded modules, DTC/LGC/LTC/MSB7, to a provisionable slot. These slots are being made provisionable to ease future design development. Mount the NT6X69AC in slot 20 of the MSB7 modules.
- 3) When modifying Series II peripheral modules, XX in SHF POS is equal to 18,32 or 51,65.

RULES:

- AP 1) When PEC NT6X02BQ is ordered, these items are provided.
- RUL1 1) For NT6X02AS/AT/AU modules, the NT6X69AA and NT6X79AA packs are removed from slots 18 and 19 respectively. For NT6X02IA/LA/MA modules, the NT6X69AB pack is removed from slot 18. For each of these modules, NT6X02AS,AT,AU,IA,LA,MA, the NT6X69AC pack is placed in slot 18.
- RUL2 1) For the MSB7 Common CPs NT6X32AB/CA, the NT6X69AA/AB pack is removed from slot 20 and replaced by the NT6X69AC pack.

XPM PC Kit

NT6X02EQ

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to DTC/LGC/LTC modules to meet the 4 MB MP memory requirements. The NT6X02EQ kit replaces the NT6X47AB Master Processor Memory circuit packs with the NT6X47AC Master Processor Memory circuit packs.

REFERENCE DOCUMENTATION: N/A

The XPM PC Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Master Proc Mem Plus	NT6X47AB		2	XX	10	
REMOVE	Des Label (NT6X47AB)	P0666374		2	XX		
ADD	Master Proc Mem Plus	NT6X47AC		2	XX	10	AP
ADD	Des Label (NT6X47AC)	P0711821		2	XX		

NOTE:

- 1) Provide minimum one (1) maximum two (2) NT6X02EQ Common Circuit Pack Kit per frame when converting XPM Modules as follows:

DESCRIPTION	FROM	TO
DTC Common CP	NT6X02IA	NT6X02IC
DTC Common CP	NT6X02AS	NT6X02IC
LGC Common CP	NT6X02LA	NT6X02LC
LGC Common CP	NT6X02AT	NT6X02LC
LTC Common CP	NT6X02MA	NT6X02MC
LTC Common CP	NT6X02AU	NT6X02MC

- 2) The NT6X02EQ Product Change Kit changes slots 10, 11, 18 and 19 of the upgraded modules, DTC/LGC/LTC, to a provisionable slot. These slots are being made provisionable to ease future design development.
- 3) When modifying Series II peripheral modules, XX in SHF POS is equal to 18,32 or 51,65.

RULES:

- AP 1) When PEC NT6X02EQ is ordered, these items are provided.

XPM PC KIT

NT6X02ER

RATING: Standard

ABBREVIATION NAME: N/A

| ENGINEERING DESCRIPTION: This change kit upgrades various DTC/LGC/LTC modules to the NT6X02IC/LC/MC module by making provisionable the appropriate circuit pack positions. This PC Kit does not include any circuit packs. Refer to detailed engineering rules to determine all circuit packs required for any of the associated upgrade situations.

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD Des. Strip for	NT6X02IC	P0708170		2	XX		AP
ADD Des. Strip for	NT6X02LC	P0708171		2	XX		AP
ADD Des. Strip for	NT6X02MC	P0708172		2	XX		AP

NOTE - XX = SH Position 18,32 or 51,65

NOTES:

- 1) Provide minimum one (1) maximum two (2) NT6X02ER Common Circuit Pack Kit per Frame When Converting NT6X02 XPM Modules as Follows:

DESCRIPTION	From	To
DTC Common CP	NT6X02AA (DTC)	NT6X02IC (DTC)
LGC Common CP	NT6X02AA (LGC)	NT6X02LC (LGC)
LTC Common CP	NT6X02AA (LTC)	NT6X02MC (LTC)
DTC Common CP	NT6X02AC (DTC)	NT6X02IC (DTC)
LGC Common CP	NT6X02AC (LGC)	NT6X02LC (LGC)
LTC Common CP	NT6X02AC (LTC)	NT6X02MC (LTC)
DTC Common CP	NT6X02AR (DTC)	NT6X02IC (DTC)
DTC Common CP	NT6X02AM (DTC)	NT6X02IC (DTC)
DTC Common CP	NT6X02RA (DTC)	NT6X02LC (DTC)
LGC Common CP	NT6X02RB (LGC)	NT6X02LC (LGC)
LTC Common CP	NT6X02RC (LTC)	NT6X02MC (LTC)

- 2) The NT6X02ER PC Kit makes slots 6-12, 15-19, 22-23 and 25 provisionable.
- 3) Refer to detailed engineering rules to determine all cards required for the upgrade of any of the modules listed in note 1.

RULES:

- AP 1) When PEC NT6X02ER is ordered, these items are provided.

XPM TO XPM PLUS PRODUCT CHANGE KIT

PEC CODE: NT6X02XC

CPC CODE: B0236656

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NT6X02XF

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NT6X02XC provides materials and instructions to upgrade one existing LGC, LTC or DTC to XPM PLUS capabilities. This kit is not to be applied to new equipment. Only field upgrades are supported by this kit. The PC6X02XC drawing describes installation and required backplane modifications. The module to be upgraded must include "new messaging".

REFERENCE DOCUMENTATION: SL6X02XC 0001

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: William Stanley Dept. 3471 (PPK)

MAIN CONTACT: NTI: William Stanley Dept. 3471 (PPK)

NT6X02XC EMA2-99-XPM-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 02 22 94 03 01	ECM 678 01 ECM 678 10	Introduce NT6X02XC XPM PLUS Change Kit Declare code MD, replaced by NT6X02XF.

The XPM to XPM PLUS Product Change Kit is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	XPM Processor CP	NT6X45--		2	X,X+14	8	RUL2
REMOVE	MP Memory Plus CP	NT6X47--		2	X,X+14	9	RUL2
REMOVE	MP Memory Plus CP	NT6X47--		2	X,X+14	10	RUL2
REMOVE	Signaling Processor	NT6X46--		2	X,X+14	11	RUL2
REMOVE	XPM Processor CP	NT6X45--		2	X,X+14	12	RUL2
ADD	Unified Processor	NTMX77AA		2	X,X+14	12	AP
ADD	NTMX77AA Label	P0735417		2	X,X+14	12	AP
ADD	Termination CP	NTMX71AA		2	X,X+14	19R	AP
ADD	Wiring Modifications	Note 2		AR	X,X+14		AP
ADD	Filler Faceplates	NT0X50AA		AR	X,X+14	8-11	RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) "XX" in SHF POS is equal to 18 or 51.
- 2) Wire and instructions are included in the kit to make the required changes to the XPM backplane.
- 3) Application of this kit to DTC modules equipped with NT6X02AS or NT6X02IA packfills, upgrades the module to NT6X02IC, making the slots for processors and memory provisionable.

- 4) Application of this kit to LGC modules equipped with NT6X02AT or NT6X02LA packfills, upgrades the module to NT6X02LC, making the slots for processors and memory provisionable.
- 5) Application of this kit to LTC modules equipped with NT6X02AU or NT6X02MA packfills, upgrades the module to NT6X02MC, making the slots for processors and memory provisionable.
- 6) This kit can be applied to NT6X02IC/LC/MC modules in existing offices that require XPM PLUS.

RULES:

- AP 1) When PEC NT6X02XC is ordered, these items are provided.
- RUL1 1) Provide filler faceplates as required to fill all unequipped slots. Number will vary depending on exact shelf configuration at time of upgrade to XPM PLUS.
- RUL2 1) The exact vintage of these packs depends on office configuration. All vintages are to be replaced as part of this upgrade.

PROVISIONING TABLE FOR PRODUCT CHANGE KITS
ON LGC/LTC/DTC COMMON CIRCUIT PACK FILLS

PEC CODE: T_XPM_KITS

CPC CODE: N/A

RATING: Always check the status of a change kit before using it.

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This section lists the change kits available for converting from one vintage of a common Peripheral Controller to another vintage.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Barbara Berkley Dept. 3471(PPK)

MAIN CONTACT: NTI: Barbara Berkley Dept. 3471(PPK)

T XPM KITS EMA2-99-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 12	----- ECM 373 15	Previous history not available. ET 20173 - Make corrections to SMS-SMU conversions listed in TABLE 1A. Enhancement - Adds XPM Upgrade flow charts.
92 12 18	ECM 231 09	ECD 011-15666 Introduce the SMR field upgrade kit
93 08 30	ECM 373 21	EC 011-17823 and EC 011-17790 MD chang kits
97 04 01	ECM 714 03	ECD 024 97224 MDs the NT6X02DL, NT6X02EH, NT6X02ET
97 04 23	ECM 714 04	Change history for previous issue listed MD of NT6X02DL -- this should have been listed as MD of NT6X02CL. Also, NT6X02ET should not have been listed (it was not affected). Content of this EMS has not been affected in this issue.

To facilitate the ordering of equipment for field retrofits of new circuit pack fills for DTC,LTC,LGC,SMU,SMS,SMR modules, a number of product change kits are available. Table 1 shows which change kits are provisionable when changing LGC/DTC/LTC/SMU/SMS/SMR common circuit pack fills from one vintage to another.

The rows indicate those circuit pack fills that are being changed while the columns represent the circuit pack fills resulting from the change. A letter in a square represents a change kit in Table 2. A cross reference between a circuit pack fill on the row axis and one on the column axis will indicate the change kit required to change from one circuit pack fill to another.

. TO	NT6X02AD	AE	AG	AH	AY	AZ	AQ	AC	EA	EB
. LTC		LGC	LTC	LGC	LGC	LGC	DTC	LGC	SMU	SMU
. FROM								DTC		

NT6X02AA	V	V	T, NOTE6	T, NOTE6	R, NOTE6	U	T, NOTE6	P LTC	NA	NA
NT6X02AC	Z	Z	W NOTE6	W NOTE6	NA	NA	W NOTE6	NA LTC	NA	NA
NT6X02AD	NA	NA	Y NOTE6	NA	NA	NA	Y NOTE6	NA LTC	NA	NA
NT6X02AE	NA	NA	NA	Y NOTE6	NA	NA	Y NOTE6	NA LTC	NA	NA
NT6X02AY	NA	NA	NA	P, NOTE2 NOTE6	NA	NA	NA	NA LTC	NA	NA
NT6X02AZ	NA	NA	NA	S,P NOTE6	S NOTE6	NA	NA	NA	NA	NA
NT6X02DA	NA	NA	NA	NA	NA	NA	NA	NA	H	A
NT6X02DB	NA	NA	NA	NA	NA	NA	NA	NA	D	A
NT6X02DC	NA	NA	NA	NA	NA	NA	NA	NA	NA	B
NT6X02DD	NA	NA	NA	NA	NA	NA	NA	NA	NA	C
NT6X02CA	NA	NA	NA	G	NA	NA	G	NA	NA	NA

TABLE 1A		
REFERENCE	CHANGE KIT	SECTION
A	NT6X02CK	EMA2-99-SMU-3
B	NT6X02CL	EMA2-99-SMU-4 -- MD'd
C	NT6X02CM	EMA2-99-SMU-5
D	NT6X02ZD	EMA2-99-SMU-2
G	NT6X02ZG	EMA2-99-SMR-1 -- MD'd
H	NT6X02ZH	EMA2-99-SMU-1 -- MD'd
L	NT6X02ZL	Note 7
N	NT6X02ZN	EMA2-99-LTC-6 -- MD'd
		Note 6

P	NT6X02ZP	EMA2-99-LGC-4 -- MD'd
R	NT6X02ZR	EMA2-99-LGC-1 ___ MD'd
S	NT6X02ZS	EMA2-99-LGC-2 ___ MD'd
T	NT6X02ZT	EMA2-99-LTC-1 ___ MD'd
U	NT6X02ZU	EMA2-99-LGC-3 ___ MD'd
V	NT6X02ZV	EMA2-99-LTC-2 ___ MD'd
W	NT6X02ZW	EMA2-99-LTC-3 ___ MD'd
Y	NT6X02ZY	EMA2-99-LTC-4 ___ MD'd
Z	NT6X02ZZ	EMA2-99-LTC-5 ___ MD'd

TABLE 2A

TO FROM	NT6X02AS DTC	AT LGC	AU LTC	AW SMU	IA DTC	LA LGC	MA LTC
NT6X02AA	NA	NA	NA	NA	ZE NOTE6	ZE NOTE6	ZE NOTE6
NT6X02AC	NA	NA	NA	NA	ZE NOTE6	ZE NOTE6	ZE NOTE6
NT6X02AG	NA	NA	ZJ	NA	NA	NA	NA
NT6X02AH	NA	ZJ	NA	NA	NA	NA	NA
NT6X02AQ	ZJ	NA	NA	NA	NA	NA	NA
NT6X02EA	NA	NA	NA	ZJ	NA	NA	NA

TABLE 1B

TO	NT6X02IC	LC	MC
DTC	LGC	LTC	
FROM			

NT6X02AS	BQ note9	NA	NA
NT6X02AT	NA	BQ note9	NA
NT6X02AU	NA	NA	BQ note9
NT6X02IA	BQ note9	NA	NA
NT6X02LA	NA	BQ note9	NA
NT6X02MA	NA	NA	BQ note9

TABLE 2B

TO FROM	NT6X02IC DTC	LC LGC	MC LTC
NT6X02AS	EQ note10	NA	NA
NT6X02AT	NA	EQ note10	NA
NT6X02AU	NA	NA	EQ note10
NT6X02IA	EQ note10	NA	NA
NT6X02LA	NA	EQ note10	NA
NT6X02MA	NA	NA	EQ note10

TABLE 3B

REFERENCE	CHANGE KIT	SECTION
ZE	NT6X02ZE	EMA2-99-XPM-2 -- MD'd
ZJ	NT6X02ZJ	EMA2-99-XPM-1
BQ	NT6X02BQ	EMA2-99-XPM-3
EQ	NT6X02EQ	EMA2-99-XPM-4

TABLE 4B

TO	NT6X02EF	NT6X02DJ
FROM	SMU	SMS
NT6X02EB	EH	N/A
NT6X02AW	EH	N/A
NT6X02DC	N/A	DK
NT6X02DD	N/A	DK

TABLE 1C

REFERENCE	CHANGE KIT	SECTION
DK	NT6X02DK	EMA2-99-SMS-2
EH	NT6X02EH	EMA2-99-SMU-6 -- MD'd

TABLE 2C

TO	NT6X02IC	NT6X02LC	NT6X02MC

FROM	DTC	LGC	LTC
NT6X02AA	NTZZ04EA note11	NTZZ04EA note11	NTZZ04EA note11
NT6X02AC	NTZZ04GA note11	NTZZ04GA note11	NTZZ04GA note11

TABLE 1D

BUILDING BLOCK CHANGE KIT	SECTION
NTZZ04EA NTZZ04GA	reference appropriate section in Building Block Engineering Manual

TABLE 2D

TO FROM	DTC	LGC	LTC
NT6X02IC			
NT6X02RA	ER Note 12	NA	NA
NT6X02RB	NA	ER Note 12	NA
NT6X02RC	NA	NA	ER Note 12
NT6X02AR	ER Note 12	NA	NA
NT6X02AM	ER Note 12	NA	NA

TABLE 1E

REFERENCE	CHANGE KIT	SECTION
ER	NT6X02ER	EMA2-99-XPM-5

TABLE 2E

TO	NT6X02CC	NT6X02CT
FROM	SMR	SMR
NT6X02CA	ZJ	N/A
NT6X02CC	N/A	CU, ZL NOTE 14
NT6X02CQ	N/A	CU, ZL NOTE 14
NT6X02CP	N/A	CU, ZL NOTE 14

TABLE 1F

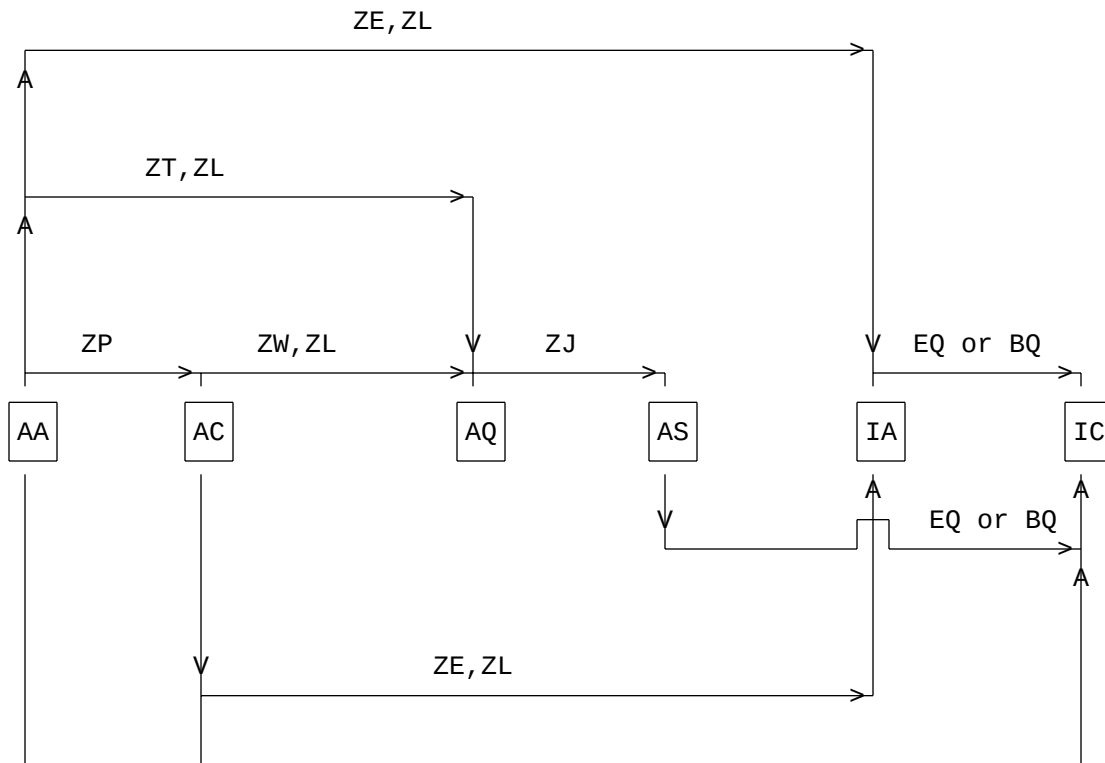
REFERENCE	CHANGE KIT	SECTION
CU	NT6X02CU	EMA2-99-SMR-2
ZJ	NT6X02ZJ	EMA2-99-XPM-1
ZL	NT6X02ZL	See note 7

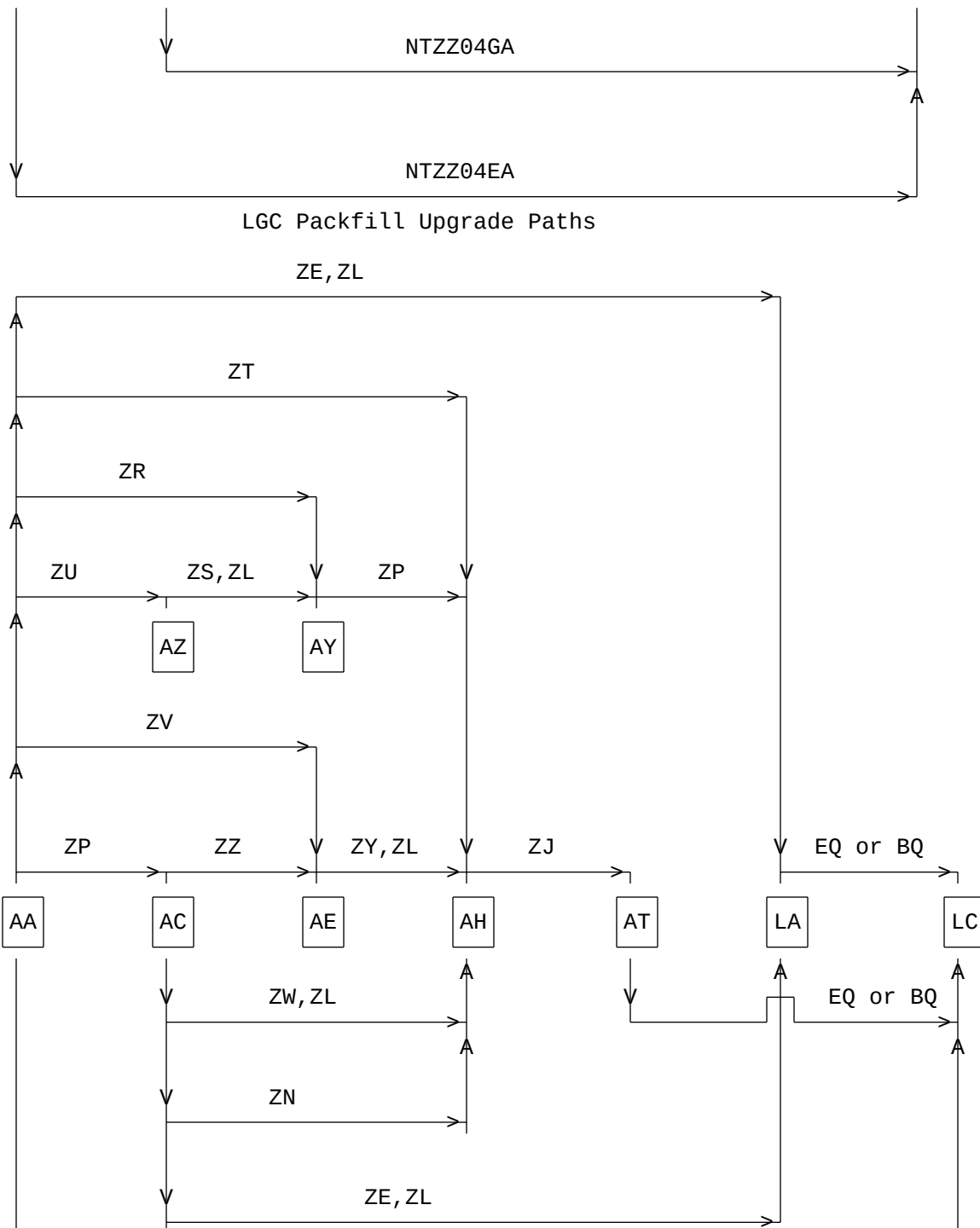
TABLE 2F
XPM UPGRADE PATHS

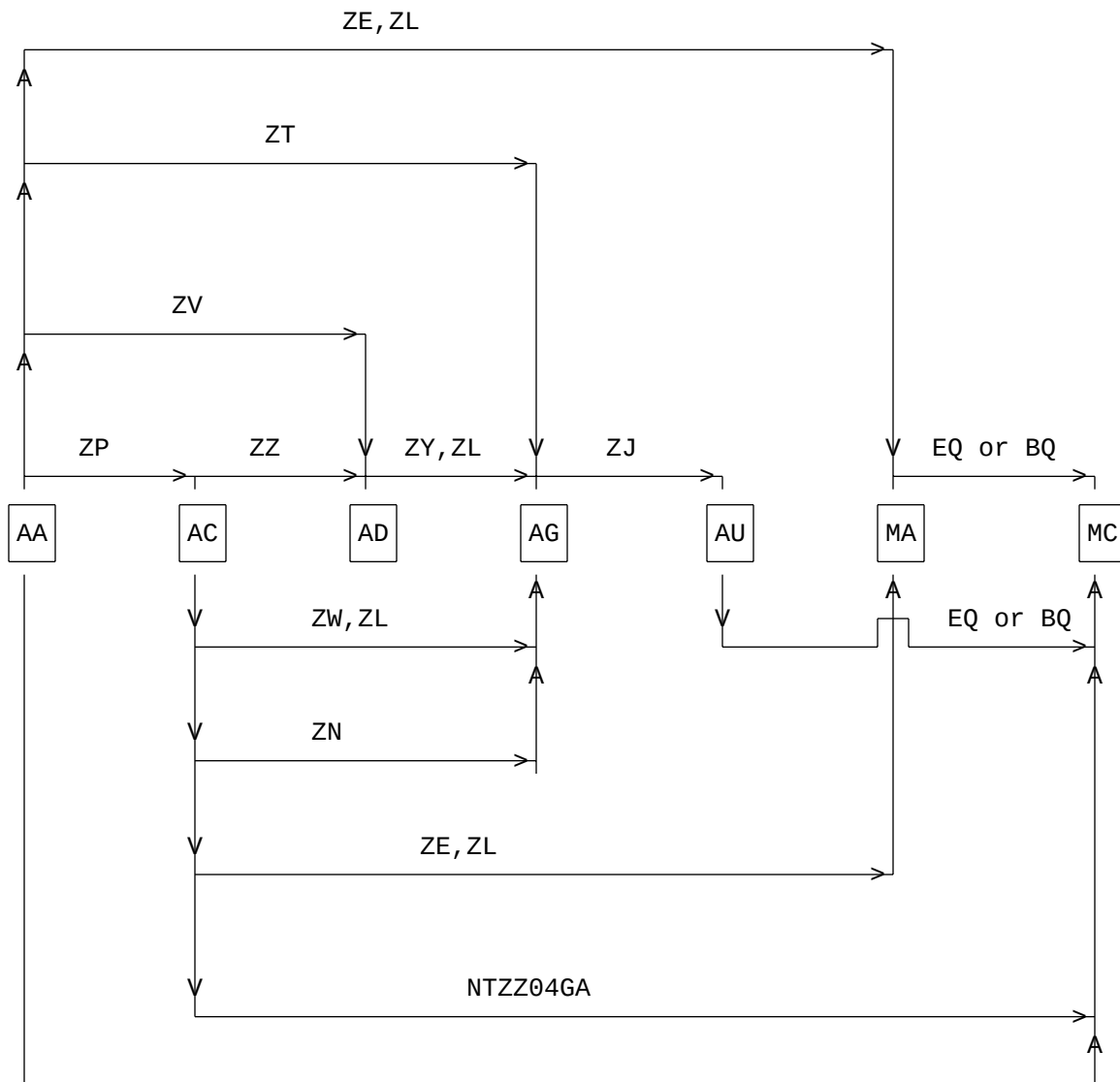
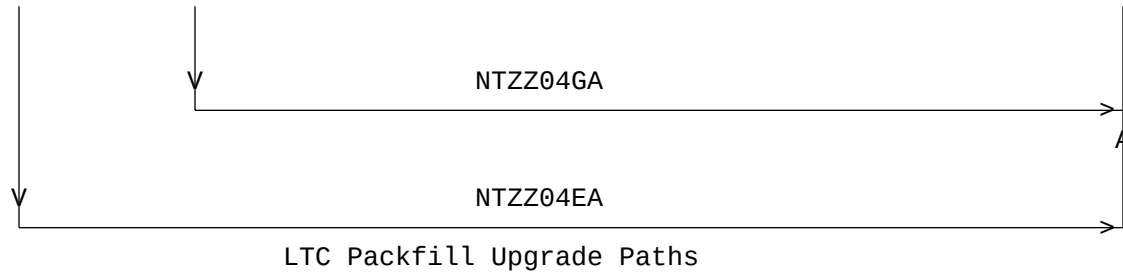
The following charts summarize the upgrade paths that exist for DTC, LGC, LTC, SMS, SMU, and SMR modules. Each flow chart begins with the oldest packfill for the given module type and ends with the most current packfill. When using these charts as an upgrade guide, the following points must be considered:

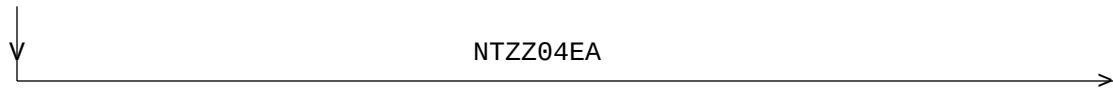
- 1) The following flow charts do not contain packfills and product change kits (PC Kits) that are for Canadian applications only.
- 2) Always check the status of a PC Kit before ordering.
- 3) Product change Kits only replace the "Always Provided" cards in a packfill. Always check ECM and Engineering Manual rules on the upgraded packfill to see if any other circuit packs are required.
- 4) The XPM flow charts utilize the following symbols:

XX	Suffix for NT6X02 packfill (Detail Engineering)
XX	Suffix for NT6X02 PC Kit (Detail Engineering)
NTZZXXXX	PC Kit (Building Block Engineering)
	DTC Packfill Upgrade Paths

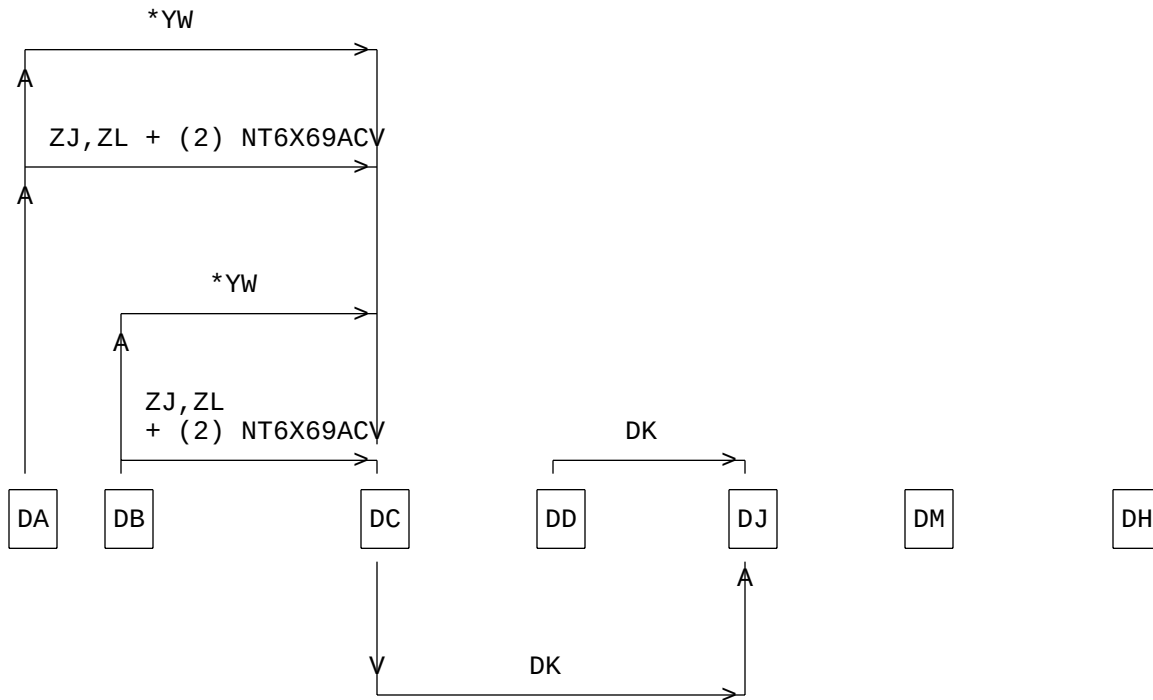






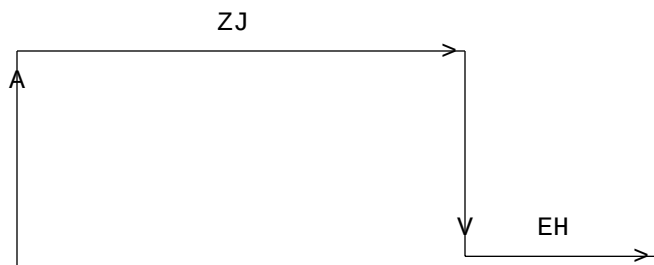


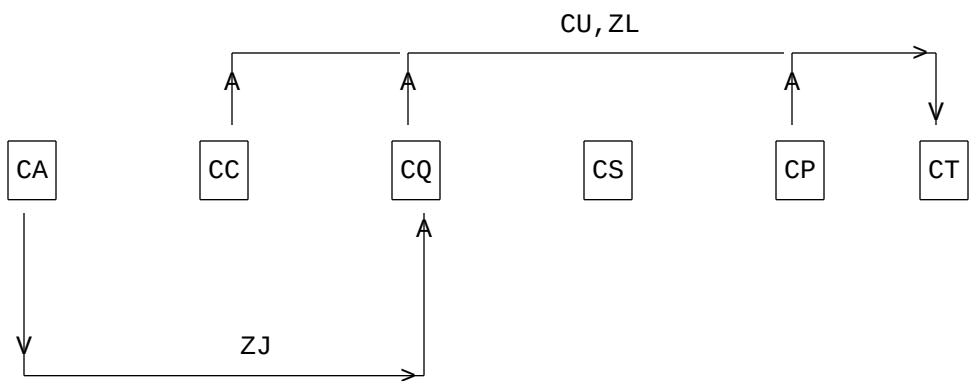
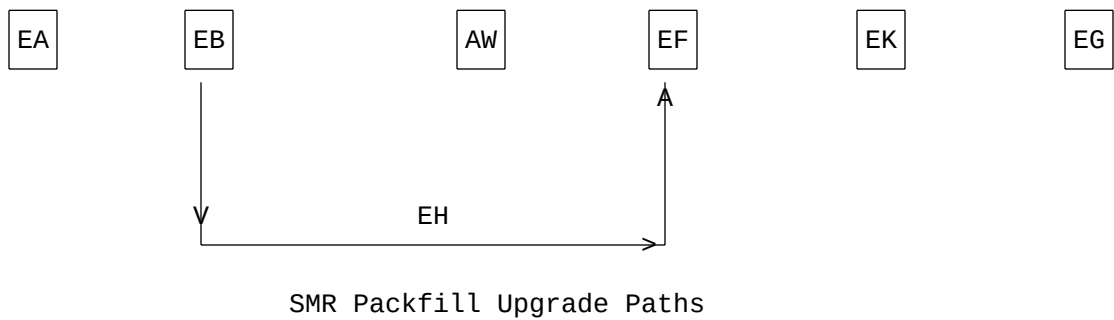
SMS Packfill Upgrade Paths



* Cancelled

SMU Packfill Upgrade Paths





See notes 6, 7, 13 and 14

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X02ZU	MD	NO REPLACEMENT
NT6X02ZG	MD	NO REPLACEMENT
NT6X02ZH	MD	NO REPLACEMENT
NT6X02ZS	MD	NO REPLACEMENT
NT6X02ZV	MD	NO REPLACEMENT
NT6X02ZY	MD	NO REPLACEMENT
NT6X02ZN	MD	NO REPLACEMENT
NT6X02ZR	MD	NO REPLACEMENT
NT6X02ZT	MD	NO REPLACEMENT
NT6X02ZW	MD	NO REPLACEMENT

PEC	RATING	REPLACED BY PEC
NT6X02ZZ	MD	NO REPLACEMENT
NT6X02ZE	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) For further information on each change kit, refer to the appropriate section which follows.

- 2) When converting from NT6X02AY to NT6X02AH, provide two (2) NT2X70AD circuit packs and two (2) P0663291 designation strips. (via the NT6X02ZP PC kit).
- 3) Concerning the field retrofits of DTC,LTC,LGC,SMS,SMR,SMU modules, office records shall be changed and maintained to agree with the common circuit pack fill PEC and not with the product change kit PEC.
- 4) Order the above product change kits on spec 105.
- 5) As part of the field retrofit procedure, Change Application Dept. and Customer Engineering Dept. shall determine which offices will be field retrofitted. Also, Customer Engineers shall be responsible for updating all appropriate job records and providing applicable spares.
- 6) For US offices, the following PC kits must be ordered when field upgrading existing peripheral modules.

FROM	TO	PC KIT
-----	-----	-----
NT6X02AA	NT6X02AG (LTC)	ZV,ZY,ZL
NT6X02AA	NT6X02AH (LGC)	ZV,ZY,ZL
NT6X02AA	NT6X02AQ (DTC)	ZT,ZL
NT6X02AA	NT6X02AY (LGC)	ZU,ZS,ZL
NT6X02AA	NT6X02IA/LA/MA (DTC/LGC/LTC)	*

NT6X02AC	NT6X02AG (LTC)	ZW, ZL
NT6X02AC	NT6X02AH (LGC)	ZW, ZL
NT6X02AC	NT6X02AQ (DTC)	ZW, ZL
NT6X02AC	NT6X02IA/LA/MA (DTC/LGC/LTC)	*
NT6X02AA	NT6X02IC/LC/MC (DTC/LGC/LTC)	NTZZ04EA
NT6X02AC	NT6X02IC/LC/MC (DTC/LGC/LTC)	NTZZ04GA
NT6X02AD	NT6X02AG (LTC)	ZY, ZL
NT6X02AD	NT6X02AQ (DTC)	ZY, ZL
NT6X02AE	NT6X02AH (LGC)	ZY, ZL
NT6X02AE	NT6X02AQ (DTC)	ZY, ZL
NT6X02AG	NT6X02AU (LTC)	ZJ
NT6X02AH	NT6X02AT (LGC)	ZJ
NT6X02AQ	NT6X02AS (DTC)	ZJ
NT6X02AY	NT6X02AH (LGC)	ZP, ZL, and P0663293 Des Label (2)
NT6X02AZ	NT6X02AH (LGC)	ZP, ZS, ZL, and P0663293 Des Label (2)
NT6X02AZ	NT6X02AY (LGC)	ZS, ZL
NT6X02CA	NT6X02AQ (DTC)	ZG, ZL
NT6X02CA	NT6X02AH (LGC)	ZG, ZL
NT6X02AS	NT6X02IC (DTC)	BQ (ENET)
NT6X02IA	NT6X02IC (DTC)	BQ (ENET)
NT6X02AT	NT6X02LC (LGC)	BQ (ENET)
NT6X02LA	NT6X02LC (LGC)	BQ (ENET)
NT6X02AU	NT6X02MC (LTC)	BQ (ENET)
NT6X02MA	NT6X02MC (LTC)	BQ (ENET)
NT6X02AS	NT6X02IC (DTC)	EQ
NT6X02IA	NT6X02IC (DTC)	EQ
NT6X02AT	NT6X02LC (LGC)	EQ
NT6X02LA	NT6X02LC (LGC)	EQ
NT6X02AU	NT6X02MC (LTC)	EQ
NT6X02MA	NT6X02MC (LTC)	EQ
NT6X02DA	NT6X02EA (SMU)	ZH, ZL
NT6X02DB	NT6X02EA (SMU)	ZD, ZL
NT6X02DA/DB	NT6X02EB (SMU)	CK, ZL
NT6X02DC	NT6X02EB (SMU)	CL
NT6X02DD	NT6X02EB (SMU)	CM
NT6X02EA	NT6X02AW (SMU)	ZJ
NT6X02CA	NT6X02CQ (SMR)	ZJ
NT6X02CC	NT6X02CT (SMR)	CU, ZL
NT6X02CP	NT6X02CT (SMR)	CU, ZL
NT6X02CQ	NT6X02CT (SMR)	CU, ZL
NT6X02DC	NT6X02DJ (SMS)	DK
NT6X02DD	NT6X02DJ (SMS)	DK
NT6X02EB	NT6X02EF (SMU)	EH
NT6X02AW	NT6X02EF (SMU)	EH

* Upgrade no longer applicable; NT6X02ZE to be replaced NTZZ04EA/GA.

- 7) For U.S. applications only, the NT6X02ZL product change kit provides back plane wiring to the Common Peripheral Controller Equipment (CPCE) frame (NT6X01AA). This product change kit is for field modifications only to the CPCE frame hosting DTC/LGC/LTC/SMR modules that are equipped with the enhanced messaging circuit packs.

The product change kit modifies the wiring on the array shelf assemblies (NT6X0201) which are always provided on the CPCE frame.

Thus the product change kit will be ordered on a one product change kit per frame basis (i.e. 1 PC kit will accommodate peripheral modifications at shelf position 18,32 and 51,65).

- 8) In Canada, Change Application Dept. 1955 BRW will field upgrade the following existing peripheral modules as required (i.e. Systems Application Engineering will not order these kits). However, after Change Application field upgrades an office, Systems Application Engineering will update the office records accordingly.

FROM	TO	PC KIT
-----	-----	-----
NT6X02AA	NT6X02IA/LA/MA (DTC/LGC/LTC)	ZE
NT6X02AC	NT6X02IA/LA/MA (DTC/LGC/LTC)	ZE
NT6X02AG	NT6X02AU (LTC)	ZJ
NT6X02AH	NT6X02AT (LGC)	ZJ
NT6X02AQ	NT6X02AS (DTC)	ZJ
NT6X02EA	NT6X02AW (SMU)	ZJ

- 9) The NT6X02BQ kit will convert the NT6X02IA/AS, NT6X02LA/AT, and the NT6X02MA/AU modules to the minimum packfill level required for ENET interface. The NT6X02BQ kit contains two (2) NT6X69AC cps.
- 10) Provision NT6X02EQ Product Change Kit to replace the NT6X47AB MP Memory Plus circuit pack in slot 10 with the NT6X47AC pack. The NT6X02EQ kit may only be applied to the following modules:

DTC (CCS7) :	BCS-27 and later	(NT6X02AS/IA)
DTC (other):	BCS-33 and later	(NT6X02AS/IA)

LGC (all) : BCS-31 and later (NT6X02AT/LA)
 LTC (all) : BCS-30 and later (NT6X02AU/MA)

The NT6X02EQ kit will convert the NT6X02IA/AS to NT6X02IC, the NT6X02LA/AT to NT6X02LC and the NT6X02MA/AU to NT6X02MC.

- 11) When applying the NTZZ04EA/NTZZ04GA PC Kit to existing DTC/LGC/LTC modules, also provide four NT6X45BA CP and associated designation labels.
- 12) For Canadian offices, the NT6X02ER PC Kit must be ordered when upgrading the following (Canadian only) packfills:

FROM	TO	PC KIT
-----	-----	-----
NT6X02RA	NT6X02IC (DTC)	ER
NT6X02RB	NT6X02LC (LGC)	ER
NT6X02RC	NT6X02MC (LTC)	ER
NT6X02AR	NT6X02IC (DTC)	ER
NT6X02AM	NT6X02IC (DTC)	ER

- 13) The SMR is now A&Med. The NT6X02CT kit CAN NOT be ordered new, it can only be obtained by field upgrading an existing NT6X02CC/CP/CQ. The existing SMR must be upgraded to the NT6X02CT version when an office reaches BCS 33 and above.
- 14) Wiring kit NT6X02ZL must have been implemented before the NT6X02CT can be applied.

RULES:

97/12/09

EMA3

DIGITAL NETWORK SUBSYSTEMS CHAPTER ALL

THIS PAGE IS INTENTIONALLY LEFT BLANK

97/12/09

DIGITAL NETWORK SUBSYSTEMS CHAPTER ALL

EMA3-01-NET-1	NETWORK COMMON CIRCUIT PACK FILL	NT8X11AD
EMA3-01-NET-2	NETWORK COMMON CIRCUIT PACK FILL (INT'L)	NT8X11BB
EMA3-01-000	DOUBLE SHELF NETWORK EQUIPMENT FRAME	NT8X10AA
EMA3-02-000	SPEECH LINK CONNECTING FRAME	NT0X56AA
EMA3-03-000	DIGITAL NETWORK CONNECTION FRAME	NT0X18CB
EMA3-04-000	MERIDIAN DIGITAL NETWORK INTERCONNECT	NTNX97AA
EMA3-05-CAB	CABLING STRUCTURE CABINET	NT0X35CC
EMA3-05-001	S/DMS ENHANCED NETWORK	NT9X05AC
EMA3-05-002	SINGLE CABINET ENHANCED NETWORK (64K ENE	NT9X05AD
EMA3-05-003	ENET 64K TO 128K UPGRADE KIT	NT9X0560
EMA3-99-AK	NETWORK CHANGE KIT (DMS SUPERNODE)	NT0X48AK
EMA3-99-AL	NETWORK CHANGE KIT (DMS SUPERNODE)	NT0X48AL
EMA3-99-AZ	FIBER RSC INTERFACE UPGRADE KIT	NT3X75AZ
EMA3-99-ZX	DMS-CORE PC KIT	NT5X13ZX

97/12/09

EMA3

DIGITAL NETWORK SUBSYSTEMS CHAPTER ALL

NETWORK COMMON CIRCUIT PACKS

PEC CODE: NT8X11AD

CPC CODE:

| RATING: Standard

| REPLACES:

| REPLACED BY: Not Applicable

| ABBREVIATION NAME:

| ENGINEERING DESCRIPTION: Network Common Circuit Packs for Double
Shelf Network Equipment Frame NT8X10AA.

| REFERENCE DOCUMENTATION: MS8X10AA 00 09

| MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT8X11AD EMA3-01-NET-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 11 16	----- ECM 191 12	Previous history not available Reformat entire section.

The Network Common Circuit Packs is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Crosspoint CP	NT8X13AA		1	X+33	05	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	06	AP
Crosspoint CP	NT8X13AA		1	X+33	07	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	08	AP
Test Code CP	NT8X14AA		1	X+33	09	AP
Crosspoint CP	NT8X13AA		1	X+33	10	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	11	AP
Crosspoint CP	NT8X13AA		1	X+33	12	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	13	AP
Network Port CP	NT8X12AA		4	X+33	14-17	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	18	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	20	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	22	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	24	AP
Designation Strip (NT8X10AA)	P0701589		1	X+33	01	AP
Crosspoint CP	NT8X13AA		1	X	05	AP
Filler Face Plate 0.875	NT0X50AA		1	X	06	AP
Crosspoint CP	NT8X13AA		1	X	07	AP
Filler Face Plate 0.875	NT0X50AA		1	X	08	AP
Test Code CP	NT8X14AA		1	X	09	AP
Crosspoint CP	NT8X13AA		1	X	10	AP
Filler Face Plate 0.875	NT0X50AA		1	X	11	AP
Crosspoint CP	NT8X13AA		1	X	12	AP
Filler Face Plate 0.875	NT0X50AA		1	X	13	AP
Network Port CP	NT8X12AA		4	X	14-17	AP
Filler Face Plate 0.875	NT0X50AA		1	X	18	AP
Filler Face Plate 0.875	NT0X50AA		1	X	20	AP
Filler Face Plate 0.875	NT0X50AA		1	X	22	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP
Designation Strip (NT8X10AA)	P0701589		1	X	01	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 NT8X11AD is ordered, these items are provided.
- 2) One Network Common Circuit Packs can be assigned on the frame (NT8X10AA) to shelf mounting positions 51 and 18 and the other to shelf mounting positions 65 and 32. For one module X=18 and for the other module X=32.
- 3) For more information on the frame refer to the section on NT8X10AA (Section EMA3-01-000).

| NETWORK COMMON CIRCUIT PACKS (INTERNATIONAL)

| PEC CODE: NT8X11BB

| CPC CODE:

| RATING: Standard

| REPLACES:

| REPLACED BY: Not Applicable

| ABBREVIATION NAME:

| ENGINEERING DESCRIPTION: Network Common Circuit Packs for Double
Shelf Network Equipment Frame NT8X10AA.

| REFERENCE DOCUMENTATION: MS8X10AA 00 09

| MARKETS: Applicable markets:

| Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT8X11BB EMA3-01-NET-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 11 16	----- ECM 191 12	Previous history not available Reformat entire section.

The Network Common Circuit Packs (International) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Crosspoint CP	NT8X13BA		1	X+33	05	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	06	AP
Crosspoint CP	NT8X13BA		1	X+33	07	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	08	AP
Test Code CP	NT8X14AA		1	X+33	09	AP
Crosspoint CP	NT8X13BA		1	X+33	10	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	11	AP
Crosspoint CP	NT8X13BA		1	X+33	12	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	13	AP
Network Port CP	NT8X12AA		4	X+33	14-17	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	18	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	20	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	22	AP
Filler Face Plate 0.875	NT0X50AA		1	X+33	24	AP
Designation Strip (NT8X10AA)	P0701588		1	X+33	01	AP
Crosspoint CP	NT8X13BA		1	X	05	AP
Filler Face Plate 0.875	NT0X50AA		1	X	06	AP
Crosspoint CP	NT8X13BA		1	X	07	AP
Filler Face Plate 0.875	NT0X50AA		1	X	08	AP
Test Code CP	NT8X14AA		1	X	09	AP
Crosspoint CP	NT8X13BA		1	X	10	AP
Filler Face Plate 0.875	NT0X50AA		1	X	11	AP
Crosspoint CP	NT8X13BA		1	X	12	AP
Filler Face Plate 0.875	NT0X50AA		1	X	13	AP
Network Port CP	NT8X12AA		4	X	14-17	AP
Filler Face Plate 0.875	NT0X50AA		1	X	18	AP
Filler Face Plate 0.875	NT0X50AA		1	X	20	AP
Filler Face Plate 0.875	NT0X50AA		1	X	22	AP
Filler Face Plate 0.875	NT0X50AA		1	X	24	AP
Designation Strip (NT8X10AA)	P0701588		1	X	01	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 NT8X11BB is ordered, these items are provided.
 - 2) One Network Common Circuit Packs can be assigned on the frame (NT8X10AA) to shelf mounting positions 51 and 18 and the other to shelf mounting positions 65 and 32. For one module X=18 and for the other module X=32.
 - 3) For more information on the frame refer to the section on NT8X10AA (Section EMA3-01-000).

DOUBLE SHELF NETWORK EQUIPMENT FRAME

PEC CODE: NT8X10AA

CPC CODE:

RATING: Standard

REPLACES:

REPLACED BY: Not Applicable

ABBREVIATION NAME: DSNE

ENGINEERING DESCRIPTION: The DSNE houses up to two complete networks per plane in a single bay.

REFERENCE DOCUMENTATION: MS8X10AA 00 09

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT8X10AA EMA3-01-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 11 16	----- ECM 191 12	Previous history not available Reformat entire section. Upgrade NT2X70AE with NT2X70AF Power Packs per ECD 024-93972. Add second DSN Assembly and Filler Faceplates per ET30539.
96 07 22	ECM 191 14	Add NT2X70AY kit per request from Doug Vodick.
96 10 30	ECM 191 16	Add support bar and screws to frame per ECD 018-49649.
96 12 03	ECM 191 17	Add thatsupport bar mounts on rear of frame per SR RR6C390.

The Double Shelf Network Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Double Shelf Network Assy	NT8X11AB	NET0:1		65,32		RUL2,6
Filler Panel	P0575239			65		RUL1
% Network Common CP	NT8X11AA			65,32		RUL2
% Network Common CP (Domestic)	NT8X11AC			65,32		RUL2
Network Common CP (Domestic)	NT8X11AD			65,32		RUL2
& Network Common CP (Int'l)	NT8X11BA			65,32		RUL2
Network Common CP (Int'l)	NT8X11BB			65,32		RUL2
Network Port CP	NT8X12AA			65	01-04	RUL2
Filler Face Plate 0.875	NT0X50AA			65	01-04	RUL4
Filler Face Plate 0.875	NT0X50AA			51	05-24	RUL6
Filler Face Plate 1.750	NT0X50AE			51	25	RUL6
Network P-Side Msg Proc	NT3X75BA			65	19	RUL2
Ntwk P-Side Msg Proc (FRSC)	NT3X75BB			65	19	RUL2
\$ Network Control Proc	NT3X74BA			65	21	RUL2
Net Control Proc (DMS-Core)	NT3X74BB			65	21	RUL2
Network Clock CP	NT3X76AA			65	23	RUL2
Net Clock CP (DMS-Core)	NT3X76AC			65	23	RUL2
Power Converter	NT2X70AF			65	25	RUL10
# Power Converter	NT2X70AE			65	25	RUL10
# Power Converter	NT2X70AD			65	25	RUL10
# Power Converter Kit	NT2X70AZ			65	25	RUL10
Power Converter Kit	NT2X70AY			65	25	RUL10
Network Module Shelf Assy	NT8X1101	NET0:0 1		51,18		AP
% Network Common CP	NT8X11AA			51,18		RUL2
% Network Common CP (Domestic)	NT8X11AC			51,18		RUL2
Network Common CP (Domestic)	NT8X11AD			51,18		RUL2
& Network Common CP (Int'l)	NT8X11BA			51,18		RUL2
Network Common CP (Int'l)	NT8X11BB			51,18		RUL2
Network Port CP	NT8X12AA			51	01-04	RUL2
Filler Face Plate 0.875	NT0X50AA			51	01-04	RUL4
Network P-Side Msg Proc	NT3X75BA			51	19	RUL2
Ntwk P-Side Msg Proc (FRSC)	NT3X75BB			51	19	RUL2
\$ Network Control Proc	NT3X74BA			51	21	RUL2
Net Control Proc (DMS-Core)	NT3X74BB			51	21	RUL2
Network Clock CP	NT3X76AA			51	23	RUL2
Net Clock CP (DMS-Core)	NT3X76AC			51	23	RUL2
Power Converter	NT2X70AF			51	25	RUL10
# Power Converter	NT2X70AE			51	25	RUL10
# Power Converter	NT2X70AD			51	25	RUL10
# Power Converter Kit	NT2X70AZ			51	25	RUL10
Power Converter Kit	NT2X70AY			51	25	RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Supervisory Panel	NT0X28AK	FSP	1	45		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Panel	P0575239	NET1:1		32		RUL1
Network Port CP	NT8X12AA			32	01-04	RUL2
Filler Face Plate 0.875	NT0X50AA			32	01-04	RUL4
Filler Face Plate 0.875	NT0X50AA			51	05-24	RUL6
Filler Face Plate 1.750	NT0X50AE			51	25	RUL6
Network P-Side Msg Proc	NT3X75BA			32	19	RUL2
Ntwk P-Side Msg Proc (FRSC)	NT3X75BB			32	19	RUL2
\$ Network Control Proc	NT3X74BA			32	21	RUL2
Net Control Proc (DMS-Core)	NT3X74BB			32	21	RUL2
Network Clock CP	NT3X76AA			32	23	RUL2
Net Clock CP (DMS-Core)	NT3X76AC			32	23	RUL2
Power Converter	NT2X70AF			32	25	RUL10
# Power Converter	NT2X70AE			32	25	RUL10
# Power Converter	NT2X70AD			32	25	RUL10
# Power Converter Kit	NT2X70AZ			32	25	RUL10
Power Converter Kit	NT2X70AY			32	25	RUL10
Network Port CP	NT8X12AA			18	01-04	RUL2
Filler Face Plate 0.875	NT0X50AA			18	01-04	RUL4
Network P-Side Msg Proc	NT3X75BA			18	19	RUL2
Ntwk P-Side Msg Proc (FRSC)	NT3X75BB			18	19	RUL2
\$ Network Control Proc	NT3X74BA			18	21	RUL2
Net Control Proc (DMS-Core)	NT3X74BB			18	21	RUL2
Network Clock CP	NT3X76AA			18	23	RUL2
Network Clock CP (DMS-Core)	NT3X76AC			18	23	RUL2
Power Converter	NT2X70AF			18	25	RUL10
# Power Converter	NT2X70AE			18	25	RUL10
# Power Converter	NT2X70AD			18	25	RUL10
# Power Converter Kit	NT2X70AZ			18	25	RUL10
Power Converter Kit	NT2X70AY			18	25	RUL10
Cable Assembly	NT8X1001					RUL3
Cable Assembly	NT8X1002					RUL3
Cable Assembly	NT8X1104					RUL3
Logic Return Cable Assembly	NT0X0008					RUL9
@ Cooling Inverter Unit	NT3X90AA	CU		04		RUL8
@ Cooling Inverter Unit	NT3X90AB	CU		04		RUL8
DC Fan Cooling Unit	NT3X90AC	CU		04		RUL8
Fiber RSC Prod Change Kit	NT3X75AZ			65, 32		RUL11
Support Bar	P0558644			31, 16	Rear	RUL12
Screws	P097F813					RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label for NT8X12AA	P0654992					RUL5
Desig. Label for NT0X50AA	P0578498					RUL5
Desig. Label for NT3X74BB	P0686094					RUL5
Desig. Label for NT3X76AC	P0677803					RUL5
Desig. Label for NT3X74BA	P0642641					RUL5
Desig. Label for NT3X75BA	P0700564					RUL5
Desig. Label for NT3X75BB	P0703468					RUL5
Desig. Label for NT3X76AA	P0700565					RUL5
Desig. Label for NT2X70AD	P0664133					RUL5
Desig. Label for NT2X70AE	P0698943					RUL5
Desig. Label for NT2X70AF	P0809660					RUL5

EQUIPMENT FLAGGED '#':

	PEC	RATING	REPLACED BY PEC
#	NT2X70AE	MD	NT2X70AF
#	NT2X70AZ	MD	NT2X70AY
@	NT3X90AA/AB	MD	NT3X90AC
%	NT8X11AA/AC	MD	NT8X11AD
&	NT8X11BA	MD	NT8X11BB
\$	NT3X74BA	MD	NT3X74BB

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) NT8X10AA is a single bay dual plane frame comprising four (4) separate Network Modules (NM), two (2) for plane 0 and two (2) for plane 1. The lower numbered NM is located on pos 51 designated as plane 0 and located on pos 18 designated as plane 1. The higher numbered NM is located on pos

65 designated as plane 0 and located on pos 32 designated as plane 1. The FSP is common to both planes.

- 2) Each NM can terminate sixty-four (64) speech links originating from peripheral modules.
- 3) In the ABBR column, the following notation applies:

NET0:1 - Network Plane 0 for NM 1
NET1:1 - Network Plane 1 for NM 1
NET0:0 - Network Plane 0 for NM 0
NET1:0 - Network Plane 1 for NM 0
- 4) For offices with existing NETC frames, NT5X13AA/BA, when provisioning NT3X72AB, NT3X73AA, and NT3X86AA, refer to MS5X13AA/BA.

RULES:

- RUL1 1) Provide two (2) P0575239 Filler Panels, one on position 65 and one on position 32, when this frame, NT8X10AA, is equipped with one (1) Network Module per plane.
- RUL2 1) Provide Network Common CP (NT8X11) and associated circuit packs (NT3X74/NT3X75/NT3X76) per Table A & B.
- 2) Provide NT8X11AB (Double Shelf Network Assembly), and NT8X12AA (Network Port CP) as per Table C:

TABLE A

DOMESTIC NON DMS-CORE NON ISDN		DOMESTIC DMS-CORE NON ISDN	
QTY	PEC	QTY	PEC
1	NT8X11AD	1	NT8X11AD
2	*NT3X74BA	2	*NT3X74BB
2	NT3X75BA	2	NT3X75BA
2	NT3X76AA	2	NT3X76AC

DOMESTIC NON DMS-CORE ISDN W/O FIBER RSC		DOMESTIC NON DMS-CORE ISDN WITH FIBER RSC	
QTY	PEC	QTY	PEC
1	NT8X11AD	1	NT8X11AD
2	*NT3X74BA	2	*NT3X74BA
2	NT3X75BA	2	NT3X75BB
2	NT3X76AA	2	NT3X76AA

(TABLE A continues on next page)

DOMESTIC DMS-CORE ISDN W/O FIBER RSC		DOMESTIC DMS-CORE ISDN WITH FIBER RSC	
QTY	PEC	QTY	PEC
1	NT8X11AD	1	NT8X11AD
2	*NT3X74BB	2	*NT3X74BB
2	NT3X75BA	2	NT3X75BB
2	NT3X76AC	2	NT3X76AC

* Rating Change Pending. Provision the NT3X74BB circuit pack for all new applications. Existing offices with the NT3X74BA CP provisioned do not have to retrofit to the "BB" CP unless interfacing a DMS-Core.

TABLE B

INTERNATIONAL NON DMS-CORE NON ISDN		INTERNATIONAL DMS-CORE NON ISDN	
QTY	PEC	QTY	PEC
1	NT8X11BB	1	NT8X11BB
2	*NT3X74BA	2	*NT3X74BB
2	NT3X75BA	2	NT3X75BA
2	NT3X76AA	2	NT3X76AC

INTERNATIONAL NON DMS-CORE ISDN WITHOUT FIBER RSC		INTERNATIONAL NON DMS-CORE ISDN WITH FIBER RSC	
QTY	PEC	QTY	PEC
1	NT8X11BB	1	NT8X11BB
2	*NT3X74BA	2	*NT3X74BA
2	NT3X75BA	2	NT3X75BB
2	NT3X76AA	2	NT3X76AA

(TABLE B continues on next page)

INTERNATIONAL DMS-CORE ISDN WITHOUT FIBER RSC		INTERNATIONAL DMS-CORE ISDN WITH FIBER RSC	
QTY	PEC	QTY	PEC
1	NT8X11BB	1	NT8X11BB
2	*NT3X74BB	2	*NT3X74BB
2	NT3X75BA	2	NT3X75BB
2	NT3X76AC	2	NT3X76AC

* Rating Change Pending. Provision the NT3X74BB circuit pack for all new applications. Existing offices with the NT3X74BA CP provisioned do not have to retrofit to the "BB" CP unless interfacing a DMS-Core.

TABLE C

	NT8X11		NT8X11AB		NT8X12AA	
	NETWORK COMMON CP		DOUBLE SHELF NETWORK ASSY		NETWORK PORT CP	
	QTY	POSITION	QTY	POSITION	QTY	POSITION
1 Network Module per frame non-junctored at DNI (i.e. only 1 DSNE in the office)	1	51: 18:	0		0	
2 Network Modules per frame non-junctored at DNI (i.e. only 1 DSNE in the office)	1	51: 18:	1	65: 32:	2	51:01-02 18:01-02 65:01-02 32:01-02
2 Network Modules per frame junctored at DNI (i.e. only 1 DSNE in the office)	1	51: 18:	1	65: 32:	2	51:01-02 18:01-02 65:01-02 32:01-02
Only 2 Network Modules in office: one network of NETC version (NT5X13__) or one network of NET version (NT0X48__) and one network of DSNE version (NT8X10__). NOTE: A DNI is always required.	1	51: 18:	0		2	51:01-02 18:01-02
1 Network Module per frame junctored at DNI (i.e. 3 or more Networks in the office)	1	51: 18:	0		4	51:01-04 18:01-04
2 Network Modules per frame junctored at DNI (i.e. 3 or more Networks in the office)	1	51: 18:	1	65: 32:	4	51:01-04 18:01-04 65:01-04 32:01-04

NOTE: "Qty" refers to the number of PECs to order while "Position" refers to the shelf position and card position (Shelf,Card) of the CP.

- 3) In extensions, when converting from one configuration to another, ensure that additional CP's are provided/removed in order to satisfy the final configuration.

RUL3 1) Provide Cable Assemblies NT8X1104, NT8X1001 and NT8X1002 as per Table D:

TABLE D

	NT8X1104		NT8X1001		NT8X1002	
	CABLE ASSEMBLY		CABLE ASSEMBLY		CABLE ASSEMBLY	
	QTY	FROM/TO	QTY	FROM/TO	QTY	FROM/TO
1 Network Module per frame non-junctored at DNI (i.e. only 1 DSNE in the office)	1	51:01-51:02	0		0	
	1	51:03-51:04				
	1	18:01-18:02				
	1	18:03-18:04				
2 Network Modules per frame non-junctored at DNI (i.e. only 1 DSNE in the office)	1	51:03-51:04	2	18:01-32:02	2	18:01-32:02
	1	18:03-18:04	2	18:02-32:01	2	18:02-32:01
	1	65:03-65:04	2	51:01-65:02	2	51:01-65:02
	1	32:03-32:04	2	51:02-65:01	2	51:02-65:01
2 Network Modules per frame junctored at DNI (i.e. only 1 DSNE in the office)	1	51:03-51:04	0		0	
	1	18:03-18:04				
	1	65:03-65:04				
	1	32:03-32:04				
Only 2 Network Modules in office: one network of NETC version (NT5X13__) or one network of NET version (NT0X48__) and one network of DSNE version (NT8X10__). NOTE: A DNI is always required.	1	51:03-51:04	0		0	
	1	18:03-18:04				
1 Network Module per frame junctored at DNI (i.e. 3 or more Networks in the	0		0		0	

[illegible]

NOTE: "Qty" refers to the number of Cable Assemblies to provide while
"From/To" refers to the two positions on the frame (Shelf
Position, Card Position) that are connected via the Cable Assem-
bly.

	2) In extensions, when converting from one configuration to another, ensure that additional Cable Assemblies are provided/removed in order to satisfy the final configuration.
RUL4	1) Provide one (1) Filler Face Plate, NT0X50AA, for each slot position not requiring a Network Port CP, NT8X12AA.
RUL5	1) Provide one (1) Designation Label corresponding to each card provisioned.
RUL6	1) If required by Customer request, the higher numbered network shelves can be equipped with a blank shelf and filler face plates. This will save installation time for subsequent network additions.
	2) Provide one (1) NT8X11AB Double Shelf Network Assembly for shelf positions 65 and 32.
	3) Provide Filler Face Plates in positions 05-24 for each shelf position.
	4) Provide a Filler Face Plate in position 25 for each shelf position.
RUL7	1) Reserved for future use.
RUL8	1) Provide one (1) Cooling Inverter Unit, NT3X90AB, or DC Fan Cooling Unit, NT3X90AC, for the first or only NT8X10AA frame equipped in the office and each group of frames served by a different PDC. Thereafter, provide one (1) Cooling Inverter Unit, NT3X90AA, or DC Fan Cooling Unit, NT3X90AC, for each subsequent frame. On new jobs, provide NT3X90AC only.

- RUL9 1) Provide one (1) NT0X0008 Logic Return Cable Assembly per frame when extending existing offices not equipped with enhanced grounding per IS0X00.
- RUL10 1) Provide one (1) NT2X70AF Power Converter for each shelf position 65, 51, 32 and 18 at card slot 25 when NT8X11 Common CP is ordered.
- 2) Provide one (1) NT2X70AZ Power Converter Kit to field upgrade one (1) NT2X70AD to a NT2X70AE CP. When upgrading Power Converters, the entire fully equipped frame must be changed thus four (4) NT2X70AZ Kits must be ordered per DSNE frame. However, when adding a second Network to an existing half filled frame, the existing power converter (NT2X70AD) may remain. The NT2X70AZ kit is now Manufacturer Discontinued (MD).
- 3) Provide one (1) NT2X70AY Power Converter Kit to field upgrade one (1) NT2X70AE to a NT2X70AF CP. When upgrading Power Converters, the entire fully equipped frame must be changed thus four (4) NT2X70AY Kits must be ordered per DSNE frame.
- RUL11 1) Provide one (1) NT3X75AZ to upgrade existing NT8X11AA pack fill to NT8X121AC with NT3X75BB Network Messaging packs for Fiber RSC applications.
- RUL12 1) Provide one (1) P0558644 Support Bar and two (2) screws to facilitate holding of cables as required.

SPEECH LINK CONNECTING FRAME

NT0X56AA

RATING: Standard

ABBREVIATION NAME: SLC or SLCC

ENGINEERING DESCRIPTION: The Speech Link Connecting Frame provides a patch cord cross-connecting facility in the speech links between the Peripheral and Network subsystems. The network interface ports of the peripheral equipment terminate on Peripheral Speech Link Connecting panels (PSL) while the peripheral face ports of the network modules terminate on Network Speech Link Connecting panels (NSL). Connectorized patch cords complete the interconnections between ports of the two groups.

REFERENCE DOCUMENTATION: MS0X56AA 01 04

MARKETS: Applicable markets:

Canada
CALA
Asia/Pacific
Europe

NT0X56AA EMA3-02-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 07	----- ECM 672 02	Previous history not available EC #018-39307 - Replace NT0X25AV with NT0X25AH. Change status of NT0X25AV to A&M. ET20223 - '01' is not a valid mounting position when using NT0X25AV/AH Fws.

The Speech Link Connecting Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Network Speech Link Panel	NT0X56AB	NSL		XX		RUL2
% Peripheral Speech Link Pnl	NT0X56AC	PSL		XX		RUL1
Network Speech Link Panel	NT0X56BB	NSL		XX		RUL2
Peripheral Speech Link Panel	NT0X56BC	PSL		XX		RUL1
Digital Net Junctor Cntg Pnl	AR	NJC		XX		RUL4
Speech Link Patch Cords	AR					RUL3

FLAGS:

MD. Replaced by NT0X56BB.
% MD. Replaced by NT0X56BC.

NOTES:

- 1) "XX" can be one of 71, 68, 64, 61, 57, 54, 50, 47, 43, 40, 36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01. Note that, '01' is not a valid mounting position when using NT0X25AV and NT0X25AH Frameworks.
- 2) For offices whose ultimate size will not exceed four (4) NET per plane and depending on the PSL:NSL ratio, speech link panels of both planes may be combined on the same SLC. However, this is not recommended and should be considered only if floor space for the second SLC is not available.

Plane 0 shelf positions are as follows:

71, 68, 64, 61, 57, 54, 50, 47, 43, 40

Plane 1 shelf positions are as follows:

36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01

Note that, '01' is not a valid mounting position when using NT0X25AV and NT0X25AH Frameworks.

- 3) It is a general practice to start connector panel assignments on the speech link connecting frame from the top of

the frame. Alternate PSL panels and NSL panels accordingly.

- 4) Each Speech Link Connecting Frame can accommodate up to 21 PSL plus NSL panels. However, in order to ensure easy access to all panels and to limit cabling congestion it is recommended that one (1) SLC be provided per eight (8) Network Modules in each plane. The number of vacant panel positions at the bottom of each frame will depend on the total NET count and on the ratio of PSL:NSL panels.

RULES:

- RUL1
- 1) As a minimum requirement provide one (1) PSL per plane for every sixteen (16) Speech Link Cable Groups originating from peripheral modules or frames.
 - 2) NT0X56AC has been rated MD. Replace by NT0X56BC.
 - 3) For ease of office administration, separate PSL can be used to segregate Cable Groups according to originating peripheral type.
 - 4) Each Cable Group originating from a given peripheral can contain a maximum of five (5) Speech Links from that peripheral (module) or the individual modules contained on that peripheral (frame).
 - 5) Peripheral types, TM, MTM, OAU and TAN utilize just one Speech Link per module per plane and therefore are not assigned individual Cable Groups. Instead modules on a given frame share a common Cable Group associated with that frame.
- RUL2
- 1) One NSL can terminate all the speech links from one Network Module (NM).
 - 2) NT0X56AB has been rated MD. Replace by NT0X56BB.
 - 3) Provide one (1) Network Speech Link Connecting (NSL) Panel, NT0X56BB, for each Network Frame of base version, NT0X48, provided.
 - 4) Provide two (2) NSL Panels, NT0X56BB, for each Network Frame of base version, NT5X13, provided.

- 5) Provide two (2) Network Speech Link (NSL) Panels, NT0X56BB, for each network (i.e. one per network plane) provided on Double Shelf Network Frame (DSNE) NT8X10AA. On a fully equipped DSNE (equipped with two (2) networks) provide four (4) NSL panels.

- RUL3
- 1) Speech link patch cords are selected according to the running distance between the two ports which are to be interconnected.
 - 2) NOTE: DNI and SLC patch cords are not interchangeable.
 - 3) The following speech link patch cords are required when cross connecting between NSL panels NT0X56AB and PSL panels NT0X56AC:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
0.5	.15	BL	NE-P4QE	A0265763
1.0	.30	Y	NE-P4QF	A0265764
1.5	.46	BK	NE-P4QG	A0265765
2.0	.61	R	NE-P4QH	A0265766
2.5	.76	G	NE-P4QJ	A0265767
3.0	.91	W	NE-P4QK	A0265768
3.5	1.07	O	NE-P4QL	A0265769
4.0	1.22	BL	NE-P4QM	A0265770
4.5	1.37	V	NE-P4QN	A0265771
5.0	1.52	Y	NE-P4QP	A0265772
5.5	1.68	BR	NE-P4QR	A0265773
6.0	1.83	BK	NE-P4QS	A0265774
6.5	1.98	R	NE-P4QT	A0265775
7.0	2.13	O	NE-P4QU	A0265776
7.5	2.29	BL	NE-P4QW	A0265777
8.0	2.44	G	NE-P4QX	A0265778
8.5	2.59	W	NE-P4QY	A0265779
9.0	2.74	V	NE-P4QAA	A0265780
9.5	2.90	Y	NE-P4QAB	A0265781
10.0	3.05	BR	NE-P4QAC	A0265782
10.5	3.20	BK	NE-P4QAD	A0265783
11.0	3.35	R	NE-P4QAE	A0265784
11.5	3.51	G	NE-P4QAF	A0265785
12.0	3.66	W	NE-P4QAG	A0265786
12.5	3.81	O	NE-P4QAH	A0265787
13.0	3.96	BL	NE-P4QAJ	A0265788
13.5	4.11	V	NE-P4QAK	A0265789
14.0	4.27	Y	NE-P4QAL	A0265790
14.5	4.42	BR	NE-P4QAM	A0265791
15.0	4.57	BK	NE-P4QAN	A0265792
15.5	4.72	R	NE-P4QAP	A0265793
16.0	4.88	O	NE-P4QAR	A0265794
16.5	5.03	BL	NE-P4QAS	A0265795
17.0	5.18	G	NE-P4QAT	A0265796
17.5	5.33	W	NE-P4QAU	A0265797
18.0	5.49	V	NE-P4QAW	A0265798
18.5	5.64	Y	NE-P4QAX	A0265799
19.0	5.79	BR	NE-P4QAY	A0265800
19.5	5.94	BK	NE-P4QBA	A0265801
20.0	6.10	R	NE-P4QBB	A0265802
20.5	6.25	O	NE-P4QBC	A0265803
21.0	6.40	BL	NE-P4QBD	A0265804
21.5	6.55	G	NE-P4QBE	A0265805

22.0	6.71	W	NE-P4QBF	A0265806
22.5	6.86	V	NE-P4QBG	A0265807
23.0	7.01	Y	NE-P4QBH	A0265808
23.5	7.16	BR	NE-P4QBJ	A0265809
24.0	7.32	BK	NE-P4QBK	A0265810
24.5	7.47	R	NE-P4QBL	A0265811
25.0	7.62	O	NE-P4QBM	A0265812
25.5	7.77	BL	NE-P4QBN	A0265813
26.0	7.92	G	NE-P4QBP	A0265814
26.5	8.08	W	NE-P4QBR	A0265815
27.0	8.23	V	NE-P4QBS	A0265816
27.5	8.38	Y	NE-P4QBT	A0265817
28.0	8.53	BR	NE-P4QBU	A0265818
28.5	8.69	BK	NE-P4QBW	A0265819
29.0	8.84	R	NE-P4QBX	A0265820
29.5	8.99	O	NE-P4QBY	A0265821
30.0	9.14	BK	NE-P4QCA	A0265822

- 4) The following speech link patch cords are required when cross connecting between NSL panels NT0X56AB and PSL panels NT0X56BC or when cross connecting between PSL panels NT0X56AC and NSL panels NT0X56BB:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	W	NE-P4QEH	A0289630
3.0	.91	Y	NE-P4Q EJ	A0289631
4.0	1.22	O	NE-P4Q EK	A0289632
5.0	1.52	R	NE-P4Q EL	A0289633
6.5	1.98	G	NE-P4Q EM	A0289634
8.0	2.44	BR	NE-P4Q EN	A0289635
10.0	3.05	W	NE-P4Q EP	A0289636
15.0	4.57	Y	NE-P4Q ER	A0289637
20.0	6.10	O	NE-P4Q ES	A0289638
25.0	7.62	R	NE-P4Q ET	A0289639
30.0	9.14	G	NE-P4Q EU	A0289640

- 5) The following speech link patch cords are required when cross connecting between NSL panels NT0X56BB and PSL panels NT0X56BC:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	W	NE-P4QDK	A0289611
3.0	.91	Y	NE-P4QDL	A0289612
4.0	1.22	O	NE-P4QDM	A0289613
5.0	1.52	R	NE-P4QDN	A0289614
6.5	1.98	G	NE-P4QDP	A0289615
8.0	2.44	BR	NE-P4QDR	A0289616
10.0	3.05	W	NE-P4QDS	A0289617
15.0	4.57	Y	NE-P4QDT	A0289618
20.0	6.10	O	NE-P4QDU	A0289619
25.0	7.62	R	NE-P4QDW	A0289620
30.0	9.14	G	NE-P4QDX	A0289621

- RUL4 1) Digital Network Junctor Connecting Panels (NJC) may be provided on the SLC frame. For assignment rules related to NJC, refer to Section EMA3-03-000, Digital Network Connecting Frame.

DIGITAL NETWORK CONNECTING FRAME

PEC CODE: NT0X18CB

| CPC CODE:

RATING: Standard

| REPLACES: N/A

| REPLACED BY: N/A

ABBREVIATION NAME: DNI or DNIC

ENGINEERING DESCRIPTION: The DNI provides a patch cord junctor cross-connect facility for interconnecting between the network junctor face ports of Network Modules in the same plane.

REFERENCE DOCUMENTATION: MS0X18CB 02 06

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT0X18CB EMA3-03-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 06	ECM 671 02	Position '01' is not a valid mounting position for NT0X25AV and NT0X25AH framework. Add reference to NT0X25 Common Framework per SR RR79285.
97 09 09	ECM 671 05	

The Digital Network Connecting Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Framework Assembly	NT0X25					RUL7
Dgtl Net Intercon Frame	NT0X18CB	DNI		XX		AP
# Dgtl Net Junctor Cntg Pnl	NT0X18CA	NJC		XX		RUL1
% Dgtl Net Junctor Cntg Pnl	NT0X18CC	NJC		XX		RUL2
Dgtl Net Junctor Cntg Pnl	NT0X18DB	NJC		XX		RUL3
Dgtl Net Junctor Cntg Pnl	NT0X18DC	NJC		XX		RUL4
Dgtl Net Junctor Cntg Pnl	NT0X18DD	NJC		XX		RUL5
Junctor Patch Cords	AR					RUL6

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.

MD. Replaced by NT0X18DB. % MD. Replaced by NT0X18DC.

NOTES:

- 1) The DNI provides space to mount a nominal 16 (max. 21, subject to cable congestion) digital network junctor connecting panels (NJC).
- 2) "XX" can be one of 71, 68, 64, 61, 57, 54, 50, 47, 43, 40, 36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01.

Update NTZZ20AA. Position '01' is not a valid mounting position for NT0X25AV and NT0X25AH framework

- 3) For small offices plane 0 and 1 may be combined within the same frame.

Plane 0 shelf positions are as follows:

71, 68, 64, 61, 57, 54, 50, 47, 43, 40

Plane 1 shelf positions are as follows:

36, 33, 29, 26, 22, 19, 15, 12, 08, 05, 01

Update NTZZ20AA. Position '01' is not a valid mounting position for NT0X25AV and NT0X25AH framework

- 4) One DNI frame is required for each 16 Network Modules (NM) per plane with the following exceptions:
- a) For small systems (one and two NM per plane) involving either network base version, NT0X48 or NT5X13, but not both in combination, DNI frames may be omitted. Junctoring is furnished by means of cables which directly interconnect network sides (in network NT5X13AA Programmable Junctor Loopback (PJL) eliminate the need for cabling between sides of the same NM).
 - b) For offices whose ultimate network size will not exceed 8 frames per plane and where floor space is at a premium, junctors of both planes may be combined on the same DNI frame.
- 5) Maximum four (4) DNI frames per system.
- 6) For networks consisting of fewer than three modules duplicated, the DNI frame and panel is not required as junctoring is achieved by direct cabling between the Network Module shelves.

RULES:

- AP 1) When PEC NT0X18CB is ordered, these items are provided.

- RUL1 1) Provide one (1) Network Junctor Connecting Panel, NT0X18CA (MD) for each network frame, NT0X48AA (MD) and NT0X48AG (MD) equipped.
- RUL2 1) Provide two (2) Network Junctor Connecting Panels, NT0X18CC (MD), one per plane, for each network frame NT5X13AA equipped.
- RUL3 1) Provide one (1) Network Junctor Connecting Panel, NT0X18DB, for each network frame, NT0X48AA (MD) and NT0X48AG (MD) equipped.
- RUL4 1) Provide two (2) Network Junctor Connecting Panels, NT0X18DC, one per plane, for each network frame NT5X13AA equipped.
- RUL5 1) Provide two (2) Network Junctor Connecting Panels, NT0X18DD, per network i.e. one per network plane, This network is the type that is mounted on the Double Shelf Network Equipment (DSNE) frame. Check application date for DSNE.
- RUL6 1) Junctor patch cords are selected according to the running distance between the two ports which are to be interconnected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18CA/CC and NJC panels NT0X18CA/CC:

LENGTH (FEET) (METRES)		CONNECTOR COLOUR	PRODUCT CODE (PEC) (CPC)	
0.5	.15	BL	NE-P4QCB	A0273266
1.0	.30	Y	NE-P4QCC	A0273267
1.5	.46	BK	NE-P4QCD	A0273268
2.0	.61	R	NE-P4QCE	A0273269
2.5	.76	G	NE-P4QCF	A0273270
3.0	.91	W	NE-P4QCG	A0273271
3.5	1.07	O	NE-P4QCH	A0273272
4.0	1.22	BL	NE-P4QCJ	A0273273
4.5	1.37	V	NE-P4QCK	A0273274
5.0	1.52	Y	NE-P4QCL	A0273275
5.5	1.68	BR	NE-P4QCM	A0273276
6.0	1.83	BK	NE-P4QCN	A0273277

6.5	1.98	R	NE-P4QCP	A0273278
7.0	2.13	O	NE-P4QCR	A0273279
7.5	2.29	BL	NE-P4QCS	A0273280
8.0	2.44	G	NE-P4QCT	A0273281
8.5	2.59	W	NE-P4QCU	A0273282
9.0	2.74	V	NE-P4QCW	A0273283
9.5	2.90	Y	NE-P4QCX	A0273284
10.0	3.05	BR	NE-P4QCY	A0273285
10.5	3.20	BK	NE-P4QDA	A0273286
11.0	3.35	R	NE-P4QDB	A0273287
11.5	3.51	G	NE-P4QDC	A0273288
12.0	3.66	W	NE-P4QDD	A0273289

- 4) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18CA/CC and NJC panels NT0X18DB/DC/DD:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	BK-W	NE-P4QEW	A0289641
3.0	.91	BK-Y	NE-P4QEX	A0289642
4.0	1.22	BK-O	NE-P4QEY	A0289643
5.0	1.52	BK-R	NE-P4QFA	A0289644
6.5	1.98	BK-G	NE-P4QFB	A0289645
8.0	2.44	BK-BR	NE-P4QFC	A0289646
10.0	3.05	BK-W	NE-P4QFD	A0289647
15.0	4.57	BK-Y	NE-P4QFE	A0289648

- 5) The following network junctor patch cords are required when cross connecting between NJC panels NT0X18DB/DC/DD and NJC panels NT0X18DB/DC/DD:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)

2.0	.61	BK-W	NE-P4QDY	A0289622
3.0	.91	BK-Y	NE-P4QEA	A0289623
4.0	1.22	BK-O	NE-P4QEB	A0289624
5.0	1.52	BK-R	NE-P4QEC	A0289625
6.5	1.98	BK-G	NE-P4QED	A0289626
8.0	2.44	BK-BR	NE-P4QEE	A0289627
10.0	3.05	BK-W	NE-P4QEF	A0289628
15.0	4.57	BK-Y	NE-P4QEG	A0289629

RUL7 1) Provide one (1) Framework Assembly according to rules set forth in NT0X25.

| MERIDIAN DIGITAL NETWORK INTERCONNECT

NTNX97AA

RATING: Standard

ABBREVIATION NAME: MDNI

ENGINEERING DESCRIPTION: The MDNI provides a patch cord junctor cross-connect facility for interconnecting between the network junctor face ports of Network Modules in the same plane.

REFERENCE DOCUMENTATION: MSNX97AA 00 01

The Meridian Digital Network Interconnect is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DNI Cabinet Assembly	NTNX25DA					AP
Anchor Kit E'qke Slab Flr	NTNX2540					RUL1
Anchor Kit E'qke Cmptr Flr	NTNX2578					RUL1
Anchor Kit Non E.Q. Slab	NTNX2579					RUL1
Anchor Kit Non E.Q. Cmptr	NTNX2580					RUL1
Right Door Ass'y (grey)	NTNX2513					RUL2
Left Door Ass'y (grey)	NTNX2515					RUL2
Right Door Label (grey)	P0699158					RUL3
Left Door Label (grey)	P0677704					RUL3
Right Door Ass'y (brown)	NTNX2552					RUL4
Left Door Ass'y (brown)	NTNX2550					RUL4
Right Door Label (brown)	P0695230					RUL3
Left Door Label (brown)	P0699464					RUL3
Cabinet Label (grey)	P0710458					RUL4
Cabinet Label (brown)	P0710459					RUL4
Ntwk Junctor Connecting Panl	NTNX97AB	NJC		XX		RUL5
Junctor Patch Cords	AR					RUL6

NOTE:

- 1) The MDNI provides space to mount up to 16 Network Junctor Connecting Panels (NJC).
- 2) "XX" can be one of 09, 13, 16, 20, 23, 27, 30, 34, 37, 41, 44, 48, 51, 55, 58, and 62. Since cables enter the bottom of the cabinet in raised floor applications, the NJC Panels are assigned starting at the bottom of the cabinet and working upwards.

- 3) One MDNI cabinet is required for each 16 Network Modules (NM) per plane except for offices whose ultimate network size will not exceed 8 networks per plane and where floor space is at a premium. In this case, junctors of both planes may be combined on the same MDNI cabinet:

Plane 0 shelf positions are as follows -

37, 41, 44, 48, 51, 55, 58, 62

Plane 1 shelf positions are as follows -

09, 13, 16, 20, 23, 27, 30, 34

- 4) Maximum four (4) MDNI cabinets per system.

RULE:

- AP 1) When PEC NTNX97AA is ordered, these items are provided.
- RUL1 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.
- RUL2 1) When specifying a brown cabinet, provision two (2) NTNX2550 Left Door Assemblies and two (2) NTNX2552 Right Door Assemblies - one each for front and rear respectively.
- 2) When specifying a grey cabinet, provision two (2) NTNX2515 Left Door Assemblies and two (2) NTNX2513 Right Door Assemblies - one each for front and rear respectively.
- RUL3 1) When specifying a brown cabinet, provision two (2) P0699464 Left Door Labels and two (2) P0695230 Right Door Labels - one each for front and rear respectively.
- 2) When specifying a grey cabinet, provision two (2) P0677704 Left Door Labels and two (2) P0699158 Right Door Labels - one each for front and rear respectively.

- RUL4 1) Provide two (2) Cabinet Type Labels. When specifying a brown cabinet, use P0710459. When specifying a grey cabinet, use P0710458.
- RUL5 1) Provide two (2) NTN97AB Network Junctor Connecting Panels per NTN40AA-type network; ie. one Panel per network plane.
- RUL6 1) Junctor patch cords are selected according to the running distance between the two ports which are to be interconnected.
- 2) NOTE: DNI and SLC patch cords are not interchangeable.
- 3) The following network junctor patch cords are required when cross connecting between NTN97AB-type NJC panels:

LENGTH (FEET)	LENGTH (METRES)	CONNECTOR COLOUR	PRODUCT CODE (PEC)	PRODUCT CODE (CPC)
2.0	.61	BK-W	NE-P4QDY	A0289622
3.0	.91	BK-Y	NE-P4QEA	A0289623
4.0	1.22	BK-O	NE-P4QEB	A0289624
5.0	1.52	BK-R	NE-P4QEC	A0289625
6.5	1.98	BK-G	NE-P4QED	A0289626
8.0	2.44	BK-BR	NE-P4QEE	A0289627
10.0	3.05	BK-W	NE-P4QEF	A0289628
15.0	4.57	BK-Y	NE-P4QEG	A0289629

CABINET CABLE TURNING SECTION

PEC CODE: NT0X35CC

CPC CODE: B0232839

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CCTS

ENGINEERING DESCRIPTION: The Cabinet Cable Turning Section (CCTS) provides a mechanical structure for housing inter-cabinet cabling. This cabling structure attaches to the side of a S/DMS ENET cabinet.

REFERENCE DOCUMENTATION: NT0X35CC REL 04
SL0X35CC 01 06
MS0X35CC 00 07

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT0X35CC EMA3-05-CAB CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 08 28	ECM 627 02	NTZZ10CA is MD'd.
92 10 06	ECM 627 03	Mod.to NT0X35CC from MS Stream 00 03
94 06 13	ECM 627 08	Update per MS0X35CC 00 05.
94 11 01	ECM 635 09	Update per MS0X35CC 00 06 for equipment quantities and introduce ECD 024-93303 for cabinet grounding.
95 04 17	ECM 627 11	Update per ECD 018-41935 to change name of cabinet to CCTS.
96 03 08	ECM 683 21	Add GCC Cable Troughs and provisioning rules per EC 018-47016. Also, added A0385037 and A0328550 to equipment list and Rule 6.
96 07 01	ECM 627 17	Add note to Rul10, stating that the C21 Anchor kit is provisioned on the 116 Spec.
96 10 31	ECM 635 20	Add note to Rules 1, 4, 7 and 9 that EAE orders doors and trough.
97 06 30	ECM 635 23	Add note to Rules 3, 5 and 6 that material is assigned to CCTS. Also minor changes to Rules 9 and 11. SR RR76826.

The NT0X35CC (Cabinet Cable Turning Structure) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Welded Cab.Structure (Grey)	NT0X3510		1			AP
TY-Wrap Bar	P0732739		5			AP
ANCHOR CHANNEL, Front	P0732740		1			AP
ANCHOR CHANNEL, Rear	P0733138		1			AP
Door Panel Assembly (Grey)	NT0X3522		2			RUL1
Door Panel Assembly (Brown)	NT0X3526		2			RUL1
Cable Assembly (Frame GRD)	NT0X9591		1			RUL3
Hex-Head Bolt	P0125616		4			
Helical Washer	P0183028		4			
Flat Washer	P0160739		4			
GCC C21 Cable Trough (Grey)	NT0X3747		1			RUL7
Assembly						
GCC C21 Cable Trough (Brown)	NT0X3748		1			RUL7
Assembly						
Cable Trough Assembly(Brown)	NTRX55BH		1			RUL4
Cable Trough Assembly(Grey)	NTRX55BG		1			RUL4
Cable Assembly (Frame GRD)	NTRX1650		1			RUL6
H-Tap Conn Splice	A0385037		1			
Cover	A0355103		1			
C-Tap Conn Splice	A0361880		1			
Cover	A0328550		1			
Hex-Head Bolt	P0125616		2			
Helical Washer	P0183028		2			
Flat Washer	P0160739		2			
Leveling Feet	A0378272		4			RUL5
Horizontal Cable Duct Ass.	NT0X3523		1			RUL9
Earthquake Anchor Kit (C21)	NTNX2562		1			RUL10
Warning Label English	P0675709		1			RUL11
"DO NOT STEP"						
Warning Label English/French	P0689135		1			RUL11
"DO NOT STEP"						

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NT0X35CC (CCTS) mounts on the left and/or right side of a ENC or S/N cabinet. The CCTS provides a larger cabling area for cables connected between cabinets and frames.
- 2) The NT0X35CC MUST be provisioned for ALL 64K and 128K ENET installations. Richardson applications do not require the CCTS on either the 64K or 128K ENETS.
- 3) If two ENET cabinets are in the same lineup, the number of NT0X35CC, CCTS Cabinets provided is equal to the number of NT9X05AC ENC Cabinets plus one (1). See figure below. In the same lineup, one CCTS Cabinet is located on each side of the ENC Cabinets and one CCTS Cabinet is located in between each ENC. When two ENET cabinets are in two different lineups, four (4) cabling cabinets are required.
- 4) The number of CCTS required for 64K ENET (NT9X05AD) must be 2. See figure below.
- 5) If not initially installed with ENET, CCTS Cabinets cannot be added at a later date. From 64K ENET to 128K ENET upgrade refer to item 3.

Cable is intended to run down (or up) this cabinet, and enter the large holes in the side of the SuperNode, ENC, etc. cabinet to reach the connector bulkheads.

A typical cabinetized lineup with the two (2) ENCs and the required quantity of CCTS Cabinets would look as follows:

Rear

END PNL Assy	CCTS Cabinet NT0X35CC	ENC PL. 0 NT9X05AC	CCTS Cabinet NT0X35CC	ENC PL. 1 NT9X05AC	CCTS Cabinet NT0X35CC	END PNL Assy

Front

Rear

END PNL Assy	CCTS Cabinet NT0X35CC	ENC PL.0 & 1 NT9X05AD	CCTS Cabinet NT0X35CC	END PNL Assy

Front

RULES:

- AP 1) When PEC NT0X35CC is ordered, these items are provided.
- RUL1 1) Provide two NT0X3522, Grey door assemblies per cabling cabinet in a grey lineup.
- 2) Provide two NT0X3526, Brown door assemblies per cabling cabinet in a Brown lineup.
- 3) The EAE should order the cabinet doors and cable trough.
- RUL2 1) Deleted.
- RUL3 1) Provide one (1) NT0X9591 Cable Assembly along with four (4) P0125616 Hex-head bolts, four (4) P0183028 helical washers, and four (4) P0160739 flat washers when applying frame grounding at the top of the Cabling Cabinet. The EAE should order and assign this material to CCTS.
- RUL4 1) Provide one (1) NTRX55BH Brown Cable Trough Assembly per brown Cabling Cabinet in all applications, except raised floor or Global Cable Conveyance (GCC) applications.
- 2) Provide one (1) NTRX55BG Grey Cable Trough Assembly per grey Cabling Cabinet in all applications, except raised floor or Global Cable Conveyance (GCC) applications.
- 3) The EAE should order the cabinet doors and cable trough.
- RUL5 1) Provide four (4) A0378272 Leveling Feet per Cabling Cabinet required for raised floor applications. Cabling Cabinet. The EAE should order and assign this material to CCTS.
- RUL6 1) Provide one (1) NTRX1650 Cable Assembly along with one (1) A0385037 H-Tap, one (1) A0361880 C-Tap, two (2) P0125616 Hex-head bolts, two (2) P0183028 helical washers, one (1) A0355103 Cover, one (1) A0328550 Cover and two (2) P0160739 flat washers when applying C and Half Tap frame grounding at the top of the Cabling Cabinet. The EAE should order and assign this material to CCTS.
- RUL7 1) Provide one (1) NT0X3747 (Grey) or NT0X3748 (Brown) Cable Trough Assembly, including upper grilles, per C21 Cabinet for non-raised floor, Global Cable Conveyance (GCC) applications.
- 2) The EAE should order the cabinet doors and cable trough.

RUL8 1) Deleted.

RUL9 1) Provide one (1) NT0X3523 Horizontal Cable Duct Trough when the S/DMS Cabinet is powered up from the CPDC in the same line-up.

2) This material should be ordered (when required) via the 116 spec. (Field Installed)

RUL10 1) For earthquake applications, provide one (1) Earthquake Anchor Kit per Cabling Cabinet. Each kit contains four anchor assemblies. This equipment should be ordered via the 116 spec.

RUL11 1) Provide one (1) P0675709 or P0689135 Warning Label when the NT0X3523 Horizontal Cable Duct Trough is Provided. (See Rule 10)

S/DMS ENHANCED NETWORK CABINET

PEC CODE: NT9X05AC

CPC CODE: B0233964

RATING: Standard

REPLACES: NT9X05AB

REPLACED BY: Not Applicable

ABBREVIATION NAME: ENC

ENGINEERING DESCRIPTION: The S/DMS ENET Cabinet houses up to 4 ENET shelves of one plane in a S/DMS Cabinet. Each shelf provides a nominal Switching capacity of 32K-channels.

REFERENCE DOCUMENTATION: SL9X05AC 01 04
MS9X05AC 01 12
MS9X95BA 00 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT9X05AC EMA3-05-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 06	ECM 627 02	NT9X40BA is A&M and repl. by NT9X40BB
92 12 22	ECM 627 04	Changes due to ECD: #018-39706. Rules for MS ports Provisioning. ET # 15089 - Modifications to RUL1. ET # 15139 - BCS req. for NT9X45BA. ET # 12179 - Worksheets Modified. ET # 14509 - Worksheets Modified. E.T.# 15619,23643: Corr. to RUL18
93 05 18	ECM 627 05	Modifications to RUL14 and RUL18.
94 03 10	ECM 627 07	C42 Mechanical Hardware
94 06 13	ECM 627 08	ET52423 - Add FSP Cover Assembly.
95 01 24	ECM 627 10	Network shelf assembly NT9X0818 replaces NT9X0801 assembly. (ECD 018-41361). Added Streamline Bulkhead (NT9X8909) as option. (ECD 006-20113) Multiple changes to labels per MS. Add new cables (NT9X0546, NT9X0547) per MS
95 04 17	ECM 627 11	Added NT9X13KA CPU CP per ECD 006-21824. Corrected Power Filter label quantity. Revised shelf label rules, Replaced standalone with Vertical for RUL 18.
95 05 19	ECM 627 12	Added quantity for Rear Shelf Desig. label. Add NT9X13KA designation label per ECD 006-23017.
95 10 31	ECM 627 14	Removed frame fail lamps per ECD 018-45801. Correct power filter label quantity per ET 28109.
96 03 18	ECM 627 16	Added -60V FSP, Cooling Unit, Global Power supplies, changed Power filter label, Terminal Block Design. strip, added German optical fiber label per ECD 018-46147. Added CCTS provisioning information as RUL19.
96 12 03	ECM 627 20	Add text to rules for PB provisioning and grouped PB together. Added to rul16 (DS30 I/F PB) to show rating change pending per SR RR6B292.
97 02 11	ECM 627 21	MD the ENET processor card NT9X13FA (NTZZ10CC) per EC 018-49539. Clarify

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 04 10	ECM 627 22	Rule 7 for bulkhead provisioning per SR RR70392. Modify Rule 1 for Terminal Block Cover - now required for all C42 Cabinets. EC 018-48075.
97 05 19	ECM 627 23	Remove MD flag from NT9X13FA label per SR RR73690.
97 09 25	ECM 627 24	MD the DS-30 Interface PB, NT9X41BA per EC 018-50987. Minor cleanup of section. Change the FSP Terminal Block to AP, it is part of the cabinet stock list, per SR RR79781. Add note to shelf provisioning that Crosspoint cards are required for any shelf that is powered. per PRT

The S/DMS ENHANCED NETWORK CABINET is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP
Enhanced Network Shelf Assy	NT9X0818	ENET	1	39		AP
Frame Supv. Panel (-48V)	NT9X03AA	FSP		52		RUL1
Frame Supv. Panel (-60V)	NT9X03BA	FSP		52		RUL1
Cooling Unit (-48V)	NT9X95CU					RUL1
Cooling Unit (-60V)	NT9X95GU					RUL1
FSP Term Blk Cover Assembly	A0368392			52		AP01
Enhanced Network Shelf Assy	NT9X0818	ENET		00,13, 26		RUL1
Blank Shelf Assy	NT0X24BD			00,13, 26		RUL1
Filler Panels	NT9X01FB			00,13, 26		RUL1
Screws & Washers	P097F813			00,13, 26		RUL1
	P0284154					RUL1
	P0183220					RUL1
Global -5V Pwr Converter	NT9X31AB			X	1F,33F	RUL2
Global +5V Pwr Converter	NT9X30AB			X	4F,36F	RUL2
# -5V 20A Power Converter CP	NT9X31AA			X	1F,33F	RUL2
# +5V 80A Power Converter CP	NT9X30AA			X	4F,36F	RUL2
# CPU CP	NT9X13FA			X	7F	RUL2
CPU CP	NT9X13KA			X	7F	RUL2
Remote Terminal I/F PB	NT9X26AB			X	7R	RUL2
Network Clock & MSG CP	NT9X36BA			X	8F	RUL2
Quad DS-512 Fiber I/F PB	NT9X40BB			X	8R	RUL15
16K X 16K Chan Term XPT CP	NT9X35CA			X	9F,10F, 31F,32F	RUL4
16K X 16K Chan XPT CP	NT9X35BA			X	11F-16F, 25F-30F	RUL4
Filler Face Plate	NT9X19AA			X	10F-16F, 25F-32F	RUL5
Filler Face Plate	NT9X19AA			X	17F-24F	RUL3
PB Filler Face Plate	NT9X19BA			X	9R, 17R-24R	RUL6
V-Bus Cable Assembly	NT9X0530			00,13, 26	9R-16R, 25R-32R	RUL13
Quad DS-512 Fiber I/F PB	NT9X40BB			X	10R-16R, 25R-32R	RUL7
16 DS-30/3 DS-512 I/F PB	NT9X45BA			X	10R-16R, 25R-32R	RUL8

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# DS-30 Interface PB	NT9X41BA			X	10R-16R, 25R-32R	RUL16
DS-512/DS-30 Cable Assembly	NT9X0524			X	10R-16R, 25R-32R	RUL12
PB Filler Face Plate	NT9X19BA			X	10R-16R, 25R-32R	RUL9
DS-30 Cable Assembly	NT9X0520			X	10R-16R, 25R-32R	RUL12
Cable Assembly	NT9X0546			X	10R-16R, 25R-32R	RUL12
Cable Assembly	NT9X0547			X	10R-16R, 25R-32R	RUL12
Right Fiber I/F Bulkhead PNL	NT9X6503			X		RUL11
Left Fiber I/F Bulkhead PNL	NT9X6506			X		RUL11
Left Filter Bulkhead PNL (0-48 DS-30's)	NT9X6520			X		RUL11
Right Filter Bulkhead PNL (0-48 DS-30's)	NT9X6521			X		RUL11
Left Filter Bulkhead PNL (0-112 DS-30's)	NT9X6530			X		RUL11
Right Filter Bulkhead PNL (0-112 DS-30's)	NT9X6531			X		RUL11
Streamline Bulkhead Assembly	NT9X8909		2	X		RUL11
Front Bottom Shelf (Plane 0) Label	P0743003		1	X		RUL14
Shelf Strip Rear Top (Plane 0)	P0743005		1	X		RUL14
Rear Bottom Shelf (Plane 0) Label	P0743009		1	X		RUL14
Front Top Desig. label (Plane 0) Label	P0743011		1	X		RUL14
Rear Shelf Desig. Label	P0704530		1	X		RUL14
Front Bottom Shelf (Plane 1) Label	P0743004		1	X		RUL14
Shelf Strip Rear Top (Plane 1)	P0743006		1	X		RUL14
Rear Bottom Shelf (Plane 1) Label	P0743010		1	X		RUL14
Front Shelf Desig. label (Plane 1) Label	P0743012		1	X		RUL14
Optical Fiber Label (Eng.)	P0736273		1	X		RUL14
Optical Fiber Label (Ger.)	P0737638		1	X		RUL14
Design. Label (NT9X13FA)	P0697525		1	X	7F	RUL14
Design. Label (NT9X13KA)	P0814664		1	X	7F	RUL14
Design. Label (NT9X36BA)	P0704531			X	8F	RUL14

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design. Label (NT9X35BA)	P0704526			X	11F-16F, 25F-30F	RUL14
Design. Label (NT9X35CA)	P0704533			X	9F,10F, 31F,32F	RUL14
Design. Label (NT9X26AB)	P0705003			X	7R 10R-16R, 25R-32R	RUL14
Design. Label (NT9X40BB)	P0734155			X	8R, 10R-16R, 25R-32R	RUL14
Design. Label (NT9X41BA)	P0704528			X	10R-16R, 25R-32R	RUL14
Design. Label (NT9X45BA)	P0731527			X	10R-16R, 25R-32R	RUL14
Design. Label (NT9X31AB)	P0709513			X	1F,33F	RUL14
Design. Label (NT9X30AB)	P0737682			X	4F,36F	RUL14
Power Filter Label	P0736059		1			RUL14
Terminal Block Desig. Strip	P0831447		1			RUL14
Horizontal Power Cab. Kit	NT9X9531		1			RUL18
Vertical Power Cab. Kit	NT9X9532		1			RUL18
ESP Ground Terminator Assy.	NT9X0324		1			RUL22
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE2
Cabinet Cable Turn. Sect.	NT0X35CC					RUL19

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X30AA	MD	NT9X30AB
NT9X31AA	MD	NT9X31AB
NT9X13FA	MD	NT9X13KA
NT9X41BA	MD	NT9X45BA

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

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

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

NOTES:

- 1) X can be one of 00, 13, 26, and 39.
- 2) Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

AP 1) When PEC NT9X05AC is ordered, these items are provided.

2) The NT9X95BA contains the NT9X9575 Cabinet Framework.

The NT9X9575 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.

Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 (S/DMS) Cabinet.

RUL1 1) Provide one (1) NT9X03AA, Frame Supervisory Panel per cabinet for offices powered by -48V.

2) Provide one (1) NT9X95CU, Cooling Unit, per cabinet. The Cooling Unit mounts immediately below position 00, and is used by -48V offices. The Cooling unit A0377580 is A&M and replaced by NT9X95CU.

3) Provide one (1) NT9X03BA, Frame Supervisory Panel, per Cabinet for -60V powered installations.

4) Provide one (1) NT9X95GU, Cooling Unit, per cabinet for -60V powered installations.

5) The Dual Cabinet ENET (128K ENET) is always equipped with one (1) NT9X0818 Enhanced Network assembly in position 39 for both planes. Provide one (1) additional NT9X0818 Enhanced Network Shelf Assy for each additional 32K channels required in each plane. A fully equipped cabinet (i.e. four (4) shelves) has the capacity of up to 128K channels. The provisionable shelf must be positioned in 26, 13 and 00 respectively, as required. Each shelf provides switching for speech links interfacing up to 15 I/F PB.

6) Provide a minimum of two (2) NT9X35CA 16K X 16 K Channel Terminating Crosspoint Cards and a minimum of two (2) NT9X35BA 16K X 16K Channel Crosspoint Cards for the first powered ENET shelf.

Provide a minimum of two (2) NT9X35CA 16K X 16 K Channel Terminating Crosspoint Cards and a minimum of six (6) NT9X35BA 16K X 16K Channel Crosspoint Cards for each subsequent powered ENET shelf.

Note that bulkhead provisioning determines if a new ENET shelf must be provisioned while some slots may be unfilled in the preceding shelf.

See Rule 4 for complete Crosspoint Card Provisioning.

- 7) Provide four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 lock washer per Enhanced Network shelf assembly.
- 8) Provide one (1) NT0X24BD Blank Shelf Assy for each unequipped position 26, 13, and 00, to satisfy the forced air cooling requirements of the cabinet, note that no bulkhead provisioning is required.

(OR)

- 8) Provide one (1) NT9X01FB Filler Packfill per each enhanced network shelf assembly when shelf is not equipped with circuit packs. Note, the NT9X0818 Network shelf assembly is required to mount the filler packfill (NT9X01FB) in ENET shelves. Bulkhead provisioning is required when the NT9X0818 shelf assembly is provided or when the shelf is connected to the SuperNode/SNSE. Refer to Rul11 for bulkhead options.

RUL2 1) For each Enhanced Network Shelf Assembly required, provide:

- a) two (2) NT9X30AB +5V 80A Power Converter CP
- b) two (2) NT9X31AB -5V 20A Power Converter CP
- c) one (1) NT9X13KA CPU CP
- d) one (1) NT9X36BA Network Clock & Msg CP
- e) one (1) NT9X26AB Remote Terminal I/F PB for initial applications.

NOTE:

In an ENET retrofit (Upgrade) situation, if existing network in an office which already has NT9X26AA existing, the SAE may provide NT9X26AA instead of NT9X26AB. By doing this, the SAE will be providing just one type of spare.

The only difference between NT9X26AA and 26AB is, 26AB has both RS-232 and current loop. It is NOT a requirement to have 26AB in MS in SuperNode if ENET has 26AB. Thus, MS can have 26AA and ENET can have NT9X26AB.

The NT9X13KA 16 Meg. CPU CP is the next CPU available after the NT9X13FA, and requires NA004. The NT9X13FA CPU is now MD.

The NT9X30AA and NT9X31AA Power Converters have been Manufacturer Discontinued (MD).

- RUL3 1) Always provide one (1) NT9X19AA Filler Face Plate per slot to satisfy the forced air cooling requirements of the cabinet.
- RUL4 1) Odd slots are connected to the PRIMARY BUS (Odd Bus).
- 2) Even Slots are connected to the MATE BUS (Even bus)
- 3) Always provision four (4) NT9X35CA CPs in slots 9F-10F and 31F-32F on the first shelf(i.e. SHF POS 39). The NT9X35CAs are cross points cards but also contain the bus terminators. Then Assign up to a maximum of twelve (12) NT9X35BA CPs on the first shelf in pairs to adjacent slot pairs in the following order : (30F-29F), (12F-11F), (28F-27F), (14F-13F), etc. The NT9X35BAs are provided on a pair basis to provide access to both Buses.
- 4) In subsequent shelves, the Cross point card is assigned in groups of eight (8) as follows: Assign two (2) NT9X35CA CPs to odd numbered slots 9F and 31F. Assign exactly six (6) NT9X35BA CPs to odd slots 11F, 13F, 15F, 25F, 27F, and 29F. The next group of eight (8) Cross point CPs are assigned as follows: Assign two (2) NT9X35CA CPs to even numbered slots 10F and 32F. Assign exactly six (6) NT9X35BA CPs to even slots 12F, 14F, 16F, 26F, 28F, and 30F.
- 5) Assign the CPs on each additional shelf as per item 4) above. Fill each shelf before starting the next.
- 6) For further information, refer to RUL7, RUL11, and RUL16.
- RUL5 1) Provide one (1) NT9X19AA, Filler Face Plate in each slot not equipped with an NT9X35BA/CA Circuit Pack to satisfy the forced air cooling requirements of the cabinet.
- RUL6 1) Provide one (1) NT9X19BA PB Filler Face Plate per slot to satisfy the forced air cooling requirements of the cabinet.
- RUL7 1) Provide one (1) NT9X40BB Quad DS-512 Fiber Interface PB for every four (4) DS-512 fiber speech links to be terminated. Note that the NT9X40BA is A&M and it is replaced by NT9X40BB. The NT9X40BB is a must in slot 8R for every ENET shelf provisioned.
- 2) Fiber speech links originate from Series II peripherals (FXPMs)
- 3) Card slot assignment of the NT9X40BB follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot

be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front.

- 4) For further information, refer to RUL4, RUL11, and RUL16.

RUL8 1) For Initial and ENET Upgrade (Retrofit) jobs provision NT9X45BAs for a combination of 16 DS-30 copper and 3 DS-512 fiber links. For any remaining copper and fiber links, default termination to NT9X41BAs and NT9X40BBs respectively. Note that, offices equipped with NT9X45BA must have at least BCS33 load.

- 2) For ENET installed offices, replace NT9X41BAs with NT9X45BAs as many as required on fiber peripheral extensions. Once all NT9X41BAs are replaced use initial office rules. Note that for offices having excess copper links, give recommendation to the customer to make use of NT9X45BA in case of future SERIES II peripheral extensions.

RUL9 1) Provide one (1) NT9X19BA, PB Filler Face Plate in each slot not equipped with an NT9X40BB, NT9X41BA or NT9X45BA PB to satisfy the forced air cooling requirements of the cabinet.

RUL10 1) This Rule is deleted.

RUL11 1) Two interface bulkhead panels are required for each equipped ENET shelf position, one (1) on the left and one (1) on the right of each equipped ENET shelf (i.e. cabinet viewed from the rear).

- 2) Fiber interconnection to the cabinet is terminated directly to the associated paddleboard. The NT9X40BB paddleboard accommodates four (4) DS-512 transmit ports and four (4) receive ports. These fiber lines exit the cabinet through holes in the bulkhead panel provided.

- 3) Provide one (1) NT9X6506 (left panel) if the corresponding left half of the shelf (slots 32R-25R) will never be equipped with a NT9X41BA PB (i.e. will be equipped with only NT9X40BB PBs). This bulkhead panel will not provide any access to NT9X41BA PBs. Otherwise, provide NT9X6520 or NT9X6530.

- 4) Provide one (1) NT9X6503 (right panel) if the corresponding right half of the shelf (slots 10R-16R) will never be equipped with a NT9X41BA PB (i.e. will be equipped with only NT9X40BB PBs). Otherwise, provide NT9X6521 or NT9X6531.

- 5) Bulkhead panels NT9X6520 & NT9X6521 each provide a maximum of 48 individual DS-30 connections that can be directly linked to DS-30 peripherals (i.e. a Speech Link Connector (SLC) is not required). Each of these bulkhead panels contain six (6) connectors which connect internally to the cabinet and are designated AT,AR, BT,BR,CT,CR. Connectors AT & AR combine on the PCB to provide sixteen (16) external connectors designated A0,A1,A2,A3, etc. to A15. Similarly, internal connectors BT & BR, CT & CR, are combined to provide external connectors B0 to B15 and C0 to C15, respectively.
- 6) Provide one (1) NT9X6520 (i.e. left bulkhead panel provides access for 0 to 48 DS-30s) if there are up to three (3) NT9X41BA PBs per the corresponding left half of the shelf (i.e. card slots 32R-25R). The DS-30 speech links terminating on the left half of the shelf will be cabled directly to the Series I peripherals. The NT9X41BA PBs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly. The remaining card slots (32R-25R) can be provisioned with NT9X40BB PBs.
- 7) Provide one (1) NT9X6521 (i.e. right bulkhead panel provides access for 0 to 48 DS-30s) if there are up to three (3) NT9X41BA PBs per the corresponding right half of the shelf (i.e. between card slots 10R-16R). The DS-30 speech links terminating on the right half of the shelf will be cabled directly to the Series I peripherals. The NT9X41BA PBs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly. The remaining card slots (10R-16R) can be provisioned with NT9X40BB PBs.
- 8) If bulkhead panels NT9X6530 & NT9X6531 are provided, an SLC is required in order to break out the sixteen (16) DS-30s from the ENET cable into PM cable groups.
- 9) Provide one (1) NT9X6530 (i.e. left bulkhead panel provides access for 0 to 112 DS-30s) if there are up to seven (7) NT9X41BA PBs per the corresponding left half of the shelf (i.e. between card slots 32R-25R). The DS-30 speech links terminating on the left half of the shelf will be cross connected at an SLC. The NT9X41BA PBs are restricted to a maximum of seven (7) per half shelf, or fourteen (14) per shelf assembly. The remaining card slots (32R-25R) can be provisioned with NT9X40BB PBs.
- 10) Provide one (1) NT9X6531 (i.e. right bulkhead panel provides access for 0 to 112 DS-30s) if there are up to seven (7) NT9X41BA PBs per the corresponding right half of the

shelf (i.e. between card slots 10R-16R). The DS-30 speech links terminating on the right half of the shelf will be cross connected at an SLC. The NT9X41BA PBs are restricted to a maximum of seven (7) per half shelf, or fourteen (14) per shelf assembly. The remaining card slots (10R-16R) can be provisioned with NT9X40BB PBs.

11) An ENET NT9X6520/NT9X6521 bulkhead can be used if the ENET to PM cables are run directly from the peripherals. An ENET NT9X6530/NT9X6531 bulkhead can be used if these cables are run via SLC. Either bulkhead can then be connected to NT9X41BA or NT9X45BA.

12) For further information, refer to RUL4, RUL7, and RUL16.

13) For Streamline applications only, provision:
two (2) NT9X8909 Streamline Bulkhead Assemblies.

- RUL12 1) Provide one (1) NT9X0520 DS-30 Cable Assembly for each NT9X41BA DS-30 Interface PB provided.
- 2) Provide one (1) NT9X0524 Cable Assembly for each NT9X45BA (16 DS-30/3 DS-512) Interface PB provided.
- 3) In order to provide neat dressing of the NT9X0520/NT9X0524 Cable Assemblies, they must be run as follows:

BULKHEAD PANEL TYPE	FROM BULKHEAD CONNECTORS	TO CARD SLOT ON ENET SHELF ASSY
NT9X6520	AT, AR BT, BR CT, CR	*L1 L2 L3
NT9X6521	AT, AR BT, BR CT, CR	*R1 R2 R3
NT9X6530	CT, CR BT, BR AT, AR ET, ER DT, DR GT, GR FT, FR	*L1 L2 L3 L4 L5 L6 L7
NT9X6531	AT, AR BT, BR CT, CR DT, DR ET, ER FT, FR GT, GR	10 11 12 13 14 15 16
*L1 = LEFT MOST CARD *R1 = RIGHT MOST CARD		

- 4) For Streamline applications without an SLC, provision:
 one (1) NT9X0546 Cable Assembly per NT9X41BA circuit pack,
 one (1) NT9X0547 Cable Assembly per NT9X45BA circuit pack.

RUL13 1) Provide sixteen (16) NT9X0530 V-Bus Cable Assemblies for each additional NT9X0818 Enhanced Network Shelf Assy provisioned under RUL1. Provide V-Bus Cables only when the second, third, or fourth shelves are provided.

RUL14 1) Provide one (1) Designation Label corresponding to each card provisioned.

- 2) Provide one (1) each of P0743003, P0743011, P0743005 and P0743009 for each plane 0 NT9X0818 Enhanced Network Shelf Assy. The P0704534 and P0704536 labels are now MDd.

- 3) Provide one (1) each of P0743004, P0743006, P0743012 and P0743010 for each plane 1 NT9X0818 Enhanced Network Shelf Assy. The P0704535 and P0704537 labels are now MDd.
 - 4) Provide one (1) P0704530 label for each NT9X0818 Enhanced Network Shelf Assy. The P0704529 label is now MDd.
 - 5) Provide one (1) P0736273 Optical Fiber Danger Label (English) per shelf when DS-512 Fiber paddle boards are provided. Provide the English label for applications in English speaking countries.
 - 6) Provide one (1) P0737638 Optical Fiber Danger Label (German) per shelf when DS-512 Fiber paddle boards are provided. Provide the German label for applications in German speaking countries.
 - 7) Provide one (1) P0736059 power filter label per ENC cabinet when powering the NT9X05AC cabinet in a non-Cabinetized DMS (stand-alone) application. (-48V powered installation)
 - 8) Provide one (1) P0831447 ENC terminal block designation strip per ENC when powering the NT9X05AC cabinet in a Cabinetized DMS application
- RUL15 1) Provide one (1) NT9X40BB, Quad DS-512 Fiber Interface PB, in slot 8R per shelf. Note that NT9X40BA is A&M, and it is replaced by NT9X40BB.
- RUL16 1) Each NT9X41BA can terminate sixteen (16) DS-30 copper speech links; however, access to messaging is provided on only 15 of the 16. Therefore, provide one (1) NT9X41BA for every 16 DS-30 copper speech links (15 for single port PMs (i.e. TMs and MTMs)).
- 2) The NT9X41BA is now at MD status, the replacement is the NT9X45BA labelled 16 DS-30/ 3 DS 512 I/F PB, see rul8 for provisioning.
 - 3) Copper speech links originate from Series I peripherals (DCMs, MTMs, TMs, LMs, etc.) or from non-fiberized Series II peripherals.
 - 4) Card slot assignment of the NT9X41BA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. In Initial offices, the DS-30 Paddle board must be assigned to the Enhanced Network in the following order of preference.

- 1) Different ENET shelves where possible or
- 2) Different halves of the ENET shelf or
- 3) Odd/Even slots (but not adjacent slots) or
- 4) Adjacent Slots.

Note, that when few DS-30 PBs are provisioned over multiple ENET shelves, the PBs must be in different slots. (eg. DONOT assign all DS-30 PBs on the same V-Bus slot or horizontal bus.

- 5) For further information, refer to RUL4, RUL7, and RUL11.
- 6) Note that for ENET Upgrade jobs the following rules apply until BCS34 (These rules do not apply for initial or peripheral extensions). DTCs that do not have exactly 4,8,12 or 16 C-side links can not be fiberized. That is they will interface to ENET using copper speech links only. Also DO NOT fiberize peripherals appearing in table SPECCONN (including DTCs) which have fewer than 16 C-Side links.

RUL17 1) This rule is deleted.

RUL18 1) Provide one (1) NT9X9532 Vertical (External) Cabling Interface Kit when powering the NT9X05AC cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from a NTRX31AA or from a NTRX31BA CPDC cabinet which is in the different lineup than the NT9X05AC. This kit includes cables, filters, and miscellaneous mounting hardware.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X05AC cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X05AC. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL19 1) Provide CCTS as required.

The NT0X35CC (CCTS) mounts on the left and/or right side of a ENC cabinet. The CCTS provides a larger cabling area for cables connected between cabinets and frames. Cable is intended to run down (or up) this cabinet, and enter the large holes in the side of the SuperNode, ENC, etc. cabinet to reach the connector bulkheads.

The NT0X35CC MUST be provisioned for ALL 128K and 64K installations. Richardson applications do not require the cabling cabinets on both 64K and 128K ENET installations.

If two ENET cabinets are in the same lineup, the number of NT0X35CC, CCTS cabinets provided is equal to the number of NT9X05AC ENC Cabinets plus one (1). In the same lineup, one CCTS Cabinet is located on each side of the ENC Cabinets and one CCTS Cabinet is located in between each ENC (See figure below). When two ENET cabinets are in two different lineups, four (4) cabling cabinets are required.

For 64K ENET to 128K ENET upgrades refer to ECM 635..

If not initially installed with ENET, CCTS Cabinets cannot be added at a later date.

Rear

END PNL Assy	CCTS Cabinet NT0X35CC	ENC PL. 0 NT9X05AC	CCTS Cabinet NT0X35CC	ENC PL. 1 NT9X05AC	CCTS Cabinet NT0X35CC	END PNL Assy

Front

RUL20 1) Deleted.

RUL21 1) Deleted.

RUL22 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British telephone system.

RUL23 1) Deleted.

RUL24 1) Deleted.

SINGLE CABINET ENHANCED NETWORK (64K ENET)

PEC CODE: NT9X05AD

CPC CODE: B0234962

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: ENC

ENGINEERING DESCRIPTION: The 64K ENET Cabinet houses 2 Network planes in single cabinet. Each plane consists of 2 ENET shelves. Each shelf provides a nominal Switching capacity of 32K-channels. The NT9X05AD has the same functionality as the existing 128K ENET and is contained in a C42 (S/DMS) Cabinet.

REFERENCE DOCUMENTATION: SL9X05AD 01 05
MS9X05AD 01 12
MS9X95BA 00 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT9X05AD EMA3-05-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 09 10	ECM 635 02	New Detail Section in Issue 02
93 03 05	ECM 635 03	Modifications to RUL1, RUL2 and RUL3.
		Modifications to RULs pertaining Power Cabling Kit (NT9X9532 or NT9X9531)
93 08 27	ECM 635 04	Label changes through ECD.: 18-41044
93 11 02	ECM 635 05	ET#17599: RUL10 concerning provisioning of NT9X0530 V-Bus Cable Assemblies is being revised.
94 03 10	ECM 635 08	Changes to C42 Mechanical Hardware
94 11 01	ECM 635 09	Minor changes for readability
94 12 12	ECM 635 10	Introduced NT9X0818 Network shelf (ECD 006-20113), added Streamline Bulkhead (NT9X8909) as option. (ECD 006-20113)
95 04 21	ECM 635 11	Added NT9X13KA CPU CP per ECD 006-21824. Revised shelf designation label rules. Replaced standalone with Vertical for RUL18. Change ICS cabinet to CCTS.
95 07 20	ECM 635 12	Re-added NT9X13KA CPU CP per ECD 006-21824.
95 10 12	ECM 635 13	Reworded provisioning for P0704530 label, ET 29199. Deleted gray and brown frame fail lamps per ECD 018-45801. Added P0814664 designation label for NT9X13KA CPU, ECD 006-23017.
95 12 13	ECM 635 16	Added spare line filter per ET80303. Correct typo on NT9X13KA label per ET 31509.
96 03 08	ECM 635 17	Deleted spare line filter per ET80303
		Added -60V FSP, Cooling Unit, Global power supplies, changed Power filter label, Terminal block Design. strip, added German optical fiber label per ECD 018-46147.
96 04 04	ECM 635 18	Added 'additional' to Rul17 for the provisioning of shelf design. strips per SR 6 1907. Show pending MD against NT9X41BA and NT9X13FA CP per Portfolio Simplification.
96 08 01	ECM 635 19	Change CPC for spare fan per SR6-7002.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 01 07	ECM 635 21	MD the ENET processor card NT9X13FA (NTZZ10CC) per EC 018-49539.
97 06 04	ECM 635 22	MD the DS-30 Interface PB (NT9X41BA) per EC 018-50987. Remove the NT9X8909 Streamline Bulk-heads from provisioning per GPRD.
97 08 22	ECM 635 25	MD the Quad Fiber I/F PB (NT9X40BA) per EC 006-17693. Add to Rule 11 to upgrade the existing DS-30 Paddleboards to DS-30/DS-512 PB. This information is >3 years old and existed in the 128K ENET EMS.

The Single Cabinet Enhanced Network (64K ENET) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP
Frame Supv. Panel (-48V)	NT9X03AA	FSP	1	52		RUL1
Frame Sup. Panel (-60V)	NT9X03BA	FSP	1	52		RUL1
Cooling Unit (-48V)	NT9X95CU					RUL1
Cooling Unit (-60V)	NT9X95GU					RUL1
Enhanced Network Shelf Assy	NT9X0818	ENET	2	39, 13		AP
Enhanced Network Shelf Assy	NT9X0818	ENET	2	26, 00		RUL2
Screws & Washers	P097F813			26, 00		RUL2
	P0284154					RUL2
	P0183220					RUL2
Blank Shelf Assembly	NT0X24BD		2	26, 00		RUL3
Filler Packfill	NT9X01FB		2	26, 00		RUL3
Global -5V Pwr Converter	NT9X31AB			XX	1F, 33F	RUL4
Global +5V Pwr Converter	NT9X30AB			XX	4F, 36F	RUL4
# -5V 20A Power Converter CP	NT9X31AA			XX	1F, 33F	RUL4
# +5V 80A Power Converter CP	NT9X30AA			XX	4F, 36F	RUL4
#CPU CP	NT9X13FA			XX	7F	RUL4
CPU CP	NT9X13KA			XX	7F	RUL4
Network Clock & MSG CP	NT9X36BA			XX	8F	RUL4
16K X 16K Chan Term XPT CP	NT9X35CA			XX	9F, 10F, 31F, 32F	RUL5
16K X 16K Chan XPT CP	NT9X35BA			XX	11F-16F, 25F-30F	RUL5
Filler Face Plate	NT9X19AA			XX	10F-16F, 25F-32F	RUL6
Filler Face Plate	NT9X19AA			XX	17F-24F	RUL7
Remote Terminal I/F PB	NT9X26AB			XX	7R	RUL4
Quad DS-512 Fiber I/F PB	NT9X40BA			XX	8R	RUL8
Quad DS-512 Fiber I/F PB	NT9X40BB			XX	8R	RUL8
PB Filler Face Plate	NT9X19BA			XX	9R,	RUL9
V-Bus Cable Assembly	NT9X0530			XX	9R-16R, 25R-32R	RUL10
#DS-30 Interface PB	NT9X41BA			XX	10R-16R, 25R-32R	RUL11
Quad DS-512 Fiber I/F PB	NT9X40BB			XX	10R-16R, 25R-32R	RUL12
16 DS-30/3 DS-512 I/F PB	NT9X45BA			XX	10R-16R, 25R-32R	RUL13
PB Filler Face Plate	NT9X19BA			XX	10R-16R, 25R-32R	RUL14
DS-30 Cable Assembly	NT9X0520			XX	10R-16R,	RUL15

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS-512/DS-30 Cable Assembly	NT9X0524			XX	25R-32R 10R-16R, 25R-32R	RUL15
Right Fiber I/F Bulkhead PNL	NT9X6503			XX		RUL16
Left Fiber I/F Bulkhead PNL	NT9X6506			XX		RUL16
Left Filter Bulkhead PNL (0-48 DS-30)	NT9X6520			XX		RUL16
Right Filter Bulkhead PNL (0-48 DS-30)	NT9X6521			XX		RUL16
Left Filter Bulkhead PNL (0-112 DS-30)	NT9X6530			XX		RUL16
Right Filter Bulkhead PNL (0-112 DS-30)	NT9X6531			XX		RUL16
# Streamline Bulkhead Assembly	NT9X8909			XX		RUL16
Design. Label (NT9X13FA)	P0697525			XX	7F	RUL17
Design. Label (NT9X13KA)	P0814664			XX	7F	RUL17
Design. Label (NT9X26AB)	P0705003			XX	7R	RUL17
Design. Label (NT9X36BA)	P0704531			XX	8F	RUL17
Design. Label (NT9X40BA)	P0704527			XX	8R, 10R-16R, 25R-32R	RUL17
Design. Label (NT9X40BB)	P0734155			XX	8R, 10R-16R, 25R-32R	RUL17
Design. Label (NT9X35CA)	P0704533			XX	9F, 10F, 31F, 32F	RUL17
Design. Label (NT9X35BA)	P0704526			XX	11F-16F, 25F-30F	RUL17
Design. Label (NT9X41BA)	P0704528			XX	10R-16R, 25R-32R	RUL17
Design. Label (NT9X45BA)	P0731527			XX	10R-16R, 25R-32R	RUL17
Design. Label (NT9X31AB)	P0709513			XX	1F, 33F	RUL17
Design. Label (NT9X30AB)	P0737682			XX	1F, 33F	RUL17
Front Bottom Shelf Strip (Plane 0)	P0743003		1	XX		RUL17
Shelf Strip Rear Top (Plane 0)	P0743005		1	XX		RUL17
Rear Bottom Shelf Strip (Plane 0)	P0743009		1	XX		RUL17
Front Top Desig. Strip (Plane 0)	P0743011		1	XX		RUL17
Rear Shelf Desig. Label	P0704530			XX		RUL17
Front Bottom Shelf Strip (Plane 1)	P0743004		1	XX		RUL17

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Shelf Strip Rear Top (Plane 1)	P0743006		1	XX		RUL17
Rear Bottom Shelf Strip (Plane 1)	P0743010		1	XX		RUL17
Front Shelf Desig. label (Plane 1) Label	P0743012		1	XX		RUL17
Optical Fiber Label (Eng)	P0736273		1	XX		RUL17
Optical Fiber Label (Ger)	P0737638		1	XX		RUL17
Power Filter Labels	P0736059		1			RUL20
Terminal Block Desig. Strip	P0831446		1			RUL21
Horizontal Power Cab. Kit	NT9X9531		1			RUL18
Stand-alone Power Cab. Kit	NT9X9532		1			RUL18
ESP Ground Terminator Assy.	NT9X0324		1			RUL22
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE2
Cabinet Cable Turning Sect.	NT0X35CC					RUL25

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X13FA	MD	NT9X13KA
NT9X8909	PEND	NT9X6520/21
NT9X30AA	MD	NT9X30AB
NT9X31AA	MD	NT9X31AB
NT9X40BA	MD	NT9X40BB
NT9X41BA	MD	NT9X45BA

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

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

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

NOTES:

- 1) Richardson DMS-250 custom and SL-100 custom products use bulkheads designed for DMS-100 custom offices. These are used when EMI compliance is not required.
- 2) Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.
- 3) XX can be one of 00, 13, 26 or 39.

RULES:

- AP 1) When PEC NT9X05AD is ordered, these items are provided.
- 2) The NT9X95BA contains the NT9X9575 Cabinet Framework.
- The NT9X9575 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 (S/DMS) Cabinet.
- RUL1 1) Provide one (1) NT9X03AA, Frame Supervisory Panel, per Cabinet for -48V powered installations.
- 2) Provide one (1) NT9X95CU, Cooling Unit, per cabinet for -48V powered installations. This unit comes with 3 replaceable blower assemblies (A0383325), one (1) MTM alarm card (A0383984), and one (1) relay (A0383985) installed. However, customers may desire spares. The Cooling Unit mounts immediately below position 00. The Cooling unit A0377580 is A&M and replaced by NT9X95CU.
- 3) Provide one (1) NT9X03BA, Frame Supervisory Panel, per Cabinet for -60V powered installations.
- 4) Provide one (1) NT9X95GU, Cooling Unit, per cabinet for -60V powered installations.
- RUL2 1) The Single Cabinet ENET is always equipped with two (2) NT9X0818 Enhanced Network assemblies in position in 39 and 13.
- 2) Provide two (2) additional NT9X0818 Enhanced network shelf assemblies for an additional 32K Channels if required. The additional shelves are to be mounted on the Single Cabinet ENET in position 00 and 26.

- 3) A fully equipped Single Cabinet ENET NT9X05AD, has the capacity of up to 64K Channels.
- 4) Each shelf provides switching for speech links interfacing up to 15 I/F PB.
- 5) Provide four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 locker washer per Enhanced Network shelf assembly.

RUL3 1) Provide one (1) NT0X24BD Blank Shelf Assy for each unequipped position 26 and 00, to satisfy the forced air cooling requirements of the cabinet,

(OR)

- 2) Provide one (1) NT9X01FB Filler Packfill per each enhanced network shelf assembly when shelf is not equipped with circuit packs. Note, you require NT9X0818 Network shelf assembly to mount the filler packfill(NT9X01FB) in ENET shelves.

RUL4 1) For each Enhanced Network Shelf Assembly required, provision:

- a) two (2) NT9X30AB +5V 80A Power Converter CP
- b) two (2) NT9X31AB -5V 20A Power Converter CP
- c) one (1) NT9X13KA CPU CP
- d) one (1) NT9X36BA Network Clock & Msg CP
- e) one (1) NT9X26AB Remote Terminal I/F PB for initial applications.

NOTE: In an ENET retrofit (Upgrade) situation, if the network in an office which already has NT9X26AA existing, the SAE may provide NT9X26AA instead of NT9X26AB. By doing this, the SAE will be providing just one type of spare.

NOTE: The NT9X13FA is now MD and is replaced by the NT9X13KA. The NT9X13KA 16M CPU CP requires CSP0004 software, and offices at CSP0006(NA006) require the upgrade to NT9X13KA.

RUL5 1) Odd slots are connected to the PRIMARY BUS (Odd Bus).

2) Even Slots are connected to the MATE BUS (Even bus)

3) Always provision four (4) NT9X35CA CPs in slots 9F-10F and 31F-32F on the first shelf (i.e. SHF POS 39). The NT9X35CAs are cross point cards but also contain the bus terminators.

Then Assign up to a maximum of twelve (12) NT9X35BA CPs on the first shelf in pairs to adjacent slot pairs in the following order : (30F-29F), (12F-11F), (28F-27F), (14F-13F), etc. The NT9X35BAs are provided on a pair basis to provide access to both Buses.

It is a requirement that each ENET Shelf be fully equipped with X-Point CPs before another is started. Each X-Point CP need not have a PB behind it.

- 4) In subsequent shelves, the Cross point card is assigned in groups of eight (8) as follows: Assign two (2) NT9X35CA CPs to odd numbered slots 9F and 31F. Assign exactly six (6) NT9X35BA CPs to odd slots 11F, 13F, 15F, 25F, 27F, and 29F. The next group of eight (8) Cross point CPs are assigned as follows: Assign two (2) NT9X35CA CPs to even numbered slots 10F and 32F. Assign exactly six (6) NT9X35BA CPs to even slots 12F, 14F, 16F, 26F, 28F, and 30F.
- RUL6 1) Provide one (1) NT9X19AA, Filler Face Plate in each slot not equipped with an NT9X35BA/CA Circuit Pack to satisfy the forced air cooling requirements of the cabinet.
- RUL7 1) Always provide one (1) NT9X19AA Filler Face Plate per slot to satisfy the forced air cooling requirements of the cabinet.
- RUL8 1) Provide one (1) NT9X40BB, Quad DS-512 Fiber Interface PB, in slot 8R per shelf. Note, the NT9X40BA is A&M and replaced by NT9X40BB. NT9X40BB requires a BCS33 load or greater.
- RUL9 1) Provide one (1) NT9X19BA PB Filler Face Plate per slot to satisfy the forced air cooling requirements of the cabinet.
- RUL10 1) For each additional NT9X0818 Enhanced Network Shelf Assy provisioned under RUL2, provide sixteen (16) NT9X0530 V-Bus Cable Assemblies.
- RUL11 1) Each NT9X41BA can terminate sixteen (16) DS-30 copper speech links; however, access to messaging is provided on only 15 of the 16. Therefore, provide one (1) NT9X41BA for every 16 DS-30 copper speech links (15 for single port PMS (i.e. TMs and MTMs)).
- 2) Copper speech links originate from Series I peripherals (DCMs, MTMs, TMs, LMs, etc.) or from non-fiberized Series II peripherals.

- 3) Card slot assignment of the NT9X41BA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Refer to Rule 5 for complete assignment rules.
- 4) Note that for ENET Upgrade jobs the following rules apply until BCS34 (These rules do not apply for initial or peripheral extensions). DTCs that do not have exactly 4,8,12 or 16 C-side links can not be fiberized. That is they will interface to ENET using copper speech links only. Also DO NOT fiberize peripherals appearing in table SPECCONN (including DTCs) which have fewer than 16 C-Side links.
- 5) The NT9X41BA is now at MD status and is replaced by the 3 DS512/16 DS30 Paddleboard (NT9X45BA).
- 6) For ENET installed offices, replace NT9X41BAs with NT9X45BAs, as many as required, on fiber peripheral extensions. Once all NT9X41BAs are replaced use initial offices rules. Note that for offices having excess copper links, recommend that the customer use NT9X45BA for future SERIES II peripheral extensions.

RUL12 1) Provide one (1) NT9X40BB Quad DS-512 Fiber Interface PB for every four (4) DS-512 fiber speech links to be terminated. Note that the NT9X40BA is MD, and it is replaced by NT9X40BB.

- 2) Fiber speech links originate from Series II peripherals (FXPMs)
- 3) Card slot assignment of the NT9X40BB follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Refer to Rule 5 for complete assignment rules.

RUL13 1) For Initial and ENET Upgrade (Retrofit) jobs provision NT9X45BAs for a combination of 16 DS-30 copper and 3 DS-512 fiber links. For any remaining fiber links, default termination to NT9X40BBs. NT9X40BB requires a BCS33 load or greater.

- 2) Each NT9X45BA can terminate sixteen (16) DS-30 copper speech links and 3 DS-512 fiber links; however, access to messaging is provided on only 15 of the 16 DS-30 copper links. Therefore, provide one (1) NT9X45BA for every 16

DS-30 copper speech links, (15 for single port PMs (i.e. TMs and MTMs)).

- 3) Copper speech links originate from Series I peripherals (DCMs, MTMs, TMs, LMs, etc.) or from non-fiberized Series II peripherals.
- 4) NT9X45BA can be mounted in any rear slot that has a NT9X35 card in the front slot. Refer to Rule 5 for complete assignment rules.
- 5) An ENET NT9X6520/NT9X6521 bulkhead can be used if the ENET to PM cables are run directly from the peripherals. An ENET NT9X6530/NT9X6531 bulkhead can be used if these cables are run via SLC. Either bulkhead can then be connected to NT9X45BA. Refer to Rule 16 for bulkhead connections.
- 6) For ENET installed offices, replace NT9X41BAs with NT9X45BAs as many as required on fiber peripheral extensions. Once all NT9X41BAs are replaced use initial office rules. Note that for offices having excess copper links, give recommendation to the customer to make use of NT9X45BA in case of future SERIES II peripheral extensions.

RUL14 1) Provide one (1) NT9X19BA, PB Filler Face Plate in each slot not equipped with an NT9X40BB or NT9X41BA or NT9X45BA PB, to satisfy the forced air cooling requirements of the cabinet.

RUL15 1) Provide one (1) NT9X0520 DS-30 Cable Assembly for each NT9X41BA DS-30 Interface PB provided.

2) Provide one (1) NT9X0524 Cable Assembly for each NT9X45BA (16 DS-30/3 DS-512) Interface PB provided.

3) In order to provide neat dressing of the NT9X0520/NT9X0524 Cable Assemblies, they must be run as follows:

BULKHEAD PANEL TYPE	FROM BULKHEAD CONNECTORS	TO CARD SLOT ON ENET SHELF ASSY
NT9X6520	AT, AR BT, BR CT, CR	*L1 L2 L3
NT9X6521	AT, AR BT, BR CT, CR	*R1 R2 R3
NT9X6530	CT, CR BT, BR AT, AR ET, ER DT, DR GT, GR FT, FR	*L1 L2 L3 L4 L5 L6 L7
NT9X6531	AT, AR BT, BR CT, CR DT, DR ET, ER FT, FR GT, GR	10 11 12 13 14 15 16
*L1 = LEFT MOST CARD *R1 = RIGHT MOST CARD		

- RUL16 1) Two interface bulkhead panels are required for each equipped ENET shelf position, one (1) on the left and one (1) on the right of each equipped ENET shelf (i.e. cabinet viewed from the rear).
- 2) Fiber interconnection to the cabinet is terminated directly to the associated paddleboard. The NT9X40BB paddleboard accommodates four (4) DS-512 transmit ports and four (4) receive ports. These fiber lines exit the cabinet through holes in the bulkhead panel provided.
- 3) Provide one (1) NT9X6506 (left panel) if the corresponding left half of the shelf (slots 32R-25R) will never be equipped with a NT9X41BA PB (i.e. will be equipped with only NT9X40BB PBs). This bulkhead panel will not provide

any access to NT9X41BA PBs. Otherwise, provide NT9X6520 or NT9X6530.

- 4) Provide one (1) NT9X6503 (right panel) if the corresponding right half of the shelf (slots 10R-16R) will never be equipped with a NT9X41BA PB (i.e. will be equipped with only NT9X40BB PBs). Otherwise, provide NT9X6521 or NT9X6531.
- 5) Bulkhead panels NT9X6520 & NT9X6521 each provide a maximum of 48 individual DS-30 connections that can be directly linked to DS-30 peripherals (i.e. a Speech Link Connector (SLC) is not required). Each of these bulkhead panels contain six (6) connectors which connect internally to the cabinet and are designated AT,AR, BT,BR,CT,CR. Connectors AT & AR combine on the PCB to provide sixteen (16) external connectors designated A0,A1,A2,A3, etc. to A15. Similarly, internal connectors BT & BR, CT & CR, are combined to provide external connectors B0 to B15 and C0 to C15, respectively.
- 6) Provide one (1) NT9X6520 (i.e. left bulkhead panel provides access for 0 to 48 DS-30s) if there are up to three (3) NT9X41BA and or NT9X45BA PBs per the corresponding left half of the shelf (i.e. card slots 32R-25R). The DS-30 speech links terminating on the left half of the shelf will be cabled directly to the Series I peripherals. The NT9X41BA/45BA PBs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly. The remaining card slots (32R-25R) can be provisioned with NT9X40BB PBs.
- 7) Provide one (1) NT9X6521 (i.e. right bulkhead panel provides access for 0 to 48 DS-30s) if there are up to three (3) NT9X41BA and or NT9X45BA PBs per the corresponding right half of the shelf (i.e. between card slots 10R-16R). The DS-30 speech links terminating on the right half of the shelf will be cabled directly to the Series I peripherals. The NT9X41BA/45BA are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly. The remaining card slots (10R-16R) can be provisioned with NT9X40BB PBs.
- 8) If bulkhead panels NT9X6530 & NT9X6531 are provided, an SLC is required in order to break out the sixteen (16) DS-30s from the ENET cable into PM cable groups.
- 9) Provide one (1) NT9X6530 (i.e. left bulkhead panel provides access for 0 to 112 DS-30s) if there are up to seven (7)

NT9X41BA and or NT9X45BA PBs per the corresponding left half of the shelf (i.e. between card slots 32R-25R). The DS-30 speech links terminating on the left half of the shelf will be cross connected at an SLC. The NT9X41BA/45BA PBs are restricted to a maximum of seven (7) per half shelf, or fourteen (14) per shelf assembly. The remaining card slots (32R-25R) can be provisioned with NT9X40BB PBs.

- 10) Provide one (1) NT9X6531 (i.e. right bulkhead panel provides access for 0 to 112 DS-30s) if there are up to seven (7) NT9X41BA and or NT9X45BA PBs per the corresponding right half of the shelf (i.e. between card slots 10R-16R). The DS-30 speech links terminating on the right half of the shelf will be cross connected at an SLC. The NT9X41BA/45BA are restricted to a maximum of seven (7) per half shelf, or fourteen (14) per shelf assembly. The remaining card slots (10R-16R) can be provisioned with NT9X40BB PBs.
- 11) An ENET NT9X6520/NT9X6521 bulkhead can be used if the ENET to PM cables are run directly from the peripherals. An ENET NT9X6530/NT9X6531 bulkhead can be used if these cables are run via SLC. Either bulkhead can then be connected to NT9X41BA or NT9X45BA.
- 12) For Streamline applications only using shielded cable, provision two (2) NT9X8909 Streamline Bulkhead Assemblies per shelf. Due to low port utilization, the NT8909 Bulkheads are removed from an active status per GPRD.

- RUL17
- 1) Provide one (1) Designation Label corresponding to each card provisioned.
 - 2) Provide one (1) each of P0743003, P0743011, P0743005 and P0743009 for each additional plane 0 NT9X0818 Enhanced Network Shelf Assy. added to positions 26 and 00.
 - 3) Provide one (1) each of P0743004, P0743006, P0743012 and P0743010 for each additional plane 1 NT9X0818 Enhanced Network Shelf Assy. added to positions 26 and 00.
 - 4) Provide one (1) P0704530 label for each additional NT9X0818 Enhanced Network Shelf Assy. added to positions 26 and 00.
 - 5) Provide one (1) P0736273 Optical Fiber Danger Label (English) per shelf when DS-512 Fiber paddle boards are provided. Provide the English label for applications in English speaking countries.

- 6) Provide one (1) P0737638 Optical Fiber Danger Label (German) per shelf when DS-512 Fiber paddle boards are provided. Provide the German label for applications in German speaking countries.
- RUL18 1) Provide one (1) NT9X9532 Vertical Cabling Interface Kit when powering the NT9X05AD cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X05AD. This kit includes cables, filters, and miscellaneous mounting hardware.
- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X05AD cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X05AD. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL19 1) Deleted.
- RUL20 1) Provide one (1) P0736059 power filter label per ENC cabinet when powering the NT9X05AD cabinet in a non-Cabinetized DMS (stand-alone) application. (-48V powered installation)
- RUL21 1) Provide one (1) P0831446 ENC terminal block designation strip per ENC when powering the NT9X05AD cabinet in a Cabinetized DMS application
- RUL22 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British telephone systems.
- RUL23 1) Deleted.
- RUL24 1) Deleted.
- RUL25 1) Provide CCTS as required.

The NT0X35CC (CCTS) mounts on the left and/or right side of a ENC cabinet. The CCTS provides a larger cabling area for cables connected between cabinets and frames. Cable is intended to run down (or up) this cabinet, and enter the large holes in the side of the SuperNode, ENC, etc. cabinet to reach the connector bulkheads.

The NT0X35CC MUST be provisioned for ALL 64K installations.

The number of cabling cabinets required for 64K ENET (NT9X05AD) must be 2 (See figure below).

From 64K ENET to 128K ENET upgrade refer to ECM 627.

If not initially installed with ENET, CCTS Cabinets cannot be added at a later date.

Rear

END PNL Assy	CCTS Cabinet NT0X35CC	ENC PL.0 & 1 NT9X05AD	CCTS Cabinet NT0X35CC	END PNL Assy

Front

ENET 64K TO 128K UPGRADE KIT

PEC CODE: NT9X0560

CPC CODE: B0249188

| RATING: Standard.

| REPLACES: Not Applicable

| REPLACED BY: Not Applicable

| ABBREVIATION NAME: Not Applicable

| ENGINEERING DESCRIPTION: The ENET 64K to 128K Upgrade Kit provides the labels and cables necessary to convert the common components of a NT9X05AD Cabinet to a NT9X05AC Cabinet.

| REFERENCE DOCUMENTATION: MS9X05AC 01 15

| MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

| ISSUE AUTHOR: Jerry Palmer Dept. 3471 (PPK)

| MAIN CONTACT: Jerry Palmer Dept. 3471 (PPK)

NT9X0560 EMA3-05-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 07 18	ECM 635 24	Initial issue of section, this kit upgrades a 64K to 128K cabinet, common items per EC 018-51316.

The ENET 64K TO 128K UPGRADE KIT is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	Design. Strip PL 0 (Front Top)	P0743011		2	00,13		AP
ADD	Design. Strip PL 0 (Front Bot.)	P0743003		2	00,13		AP
ADD	Design. Strip PL 0 (Rear Top)	P0743005		2	00,13		AP
ADD	Design. Strip PL 0 (Rear Bot.)	P0743009		2	00,13		AP
ADD	Power Filter Label	P0736059		2	00,13		AP
ADD	V-Bus Cable Assembly	NT9X0530		16	00,13	9R-16R 25R-32R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

RULES:

AP 1) When PEC NT9X0560 is ordered, these items are provided.

NETWORK CHANGE KIT (DMS SuperNode)

NT0X48AK

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This product change kit equips the NT0X48AA/AB/AC/AG/AH/AJ NET frame for application with the DMS SuperNode.

REFERENCE DOCUMENTATION: N/A

The Network Change Kit (DMS SuperNode) is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMV	Network C-side Processor CP	NT3X23AA		1	51	21	
ADD	Network C-side Processor CP	NT3X23AD		1	51	21	AP
ADD	Desig Label for NT3X23AD	P0694712		1	51	21	AP

RULE:

AP 1) When PEC NT0X48AK is ordered, these items are provided.

| NETWORK CHANGE KIT (DMS SuperNode)

NT0X48AL

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This product change kit equips the
NT0X48AA/AB/AC/AG/AH/AJ NET frame for appli-
cation with the DMS SuperNode.

REFERENCE DOCUMENTATION:

The Network Change Kit (DMS SuperNode) is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMV	Network I/O I/F	NT3X22AA		1	51	22	
ADD	Network I/O I/F	NT3X22AB		1	51	22	AP
ADD	Desig Label for NT3X22AB	P0694711		1	51	22	AP

RULE:

AP 1) When PEC NT0X48AL is ordered, these items are provided.

FIBER RSC INTERFACE UPGRADE KIT

NT3X75AZ

RATING: Check application date for NT3X75AZ.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides two (2) NT3X75BB P-side Message Processors and converts NT8X11AA packfill to NT8X11AC (with provisionable NT3X75--).

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	P-side Message Proc.	NT3X75BA		2	XX	19	AP
ADD	P-side Message Proc.	NT3X75BB		2	XX	19	AP
ADD	Des Label (NT3X75BB)	P0703468		2			AP

XX denotes Shelf Positions 18,32,51 or 65,as applicable.

NOTE:

- 1) Provide one (1) NT3X75AZ Kit per existing NT8X11AA Network module requiring update for the Fiber RSC application.
- 2) The NT3X75AZ kit is used for field upgrade of existing circuit packfills ONLY.

DMS-CORE KIT

NT5X13ZX

RATING: Standard

ABBREVIATION NAME: N/A

| ENGINEERING DESCRIPTION: This change kit equips the NT5X13AA NETC frame for application with DMS-Core.

REFERENCE DOCUMENTATION: N/A

The DMS-Core Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMV	Ntwk Ctrl Proc CP	NT3X74AA		1	51	10	
RMV	Ntwk Ctrl Proc CP	NT3X74AA		1	32	12	
RMV	Ntwk Clock CP	NT3X76AA		1	51	11	
RMV	Ntwk Clock CP	NT3X76AA		1	32	11	
ADD	Ntwk Ctrl Proc CP	NT3X74AB		1	51	10	AP
ADD	Ntwk Ctrl Proc CP	NT3X74AB		1	32	12	AP
ADD	Ntwk Clock CP	NT3X76AC		1	51	11	AP
ADD	Ntwk Clock CP	NT3X76AC		1	32	11	AP
ADD	Des Label NT3X74AB	P0677834		1	51	10	AP
ADD	Des Label NT3X74AB	P0677834		1	32	12	AP
ADD	Des Label NT3X76AC	P0677803		1	51	11	AP
ADD	Des Label NT3X76AC	P0677803		1	32	11	AP

RULE:

AP 1) When PEC NT5X13ZX is ordered, these items are provided.

97/12/09

EMA4

CENTRAL CONTROL SUBSYSTEMS CHAPTER ALL

CENTRAL CONTROL SUBSYSTEMS CHAPTER ALL

THIS PAGE IS INTENTIONALLY LEFT BLANK

97/12/09

CENTRAL CONTROL SUBSYSTEMS CHAPTER ALL

EMA4-02-CM3	CM PROCESSOR SHELF COMMON CP	NT9X06AF
EMA4-02-MP4	MESSAGE SWITCH COMMON CP	NT9X04AL
EMA4-02-MSPS-3	MESSAGE SWITCH PROCESSOR SHELF CP FILL	NT9X04AH
EMA4-02-SL2	SLM SHELF COMMON CP NT9X07AC	NT9X07AC
EMA4-03-001	SUPERNODE IN C42(S/DMS) CABINET	NT9X01JB
EMA4-07-001	MECHANICAL H/W FOR C42(S/DMS) CABINET	NT9X95BA
EMA4-98-CMPS-2	COMPUTING MODULE CURRENT LOOP UP	NT9X06AZ
EMA4-98-MSPS-3	MESSAGE SWITCH CLOCK INTERFACE UPGRADE K	NT9X04AZ

97/12/09

EMA4

CENTRAL CONTROL SUBSYSTEMS CHAPTER ALL

COMPUTING MODULE PROCESSOR SHELF COMMON CP

NT9X06AF

RATING: Standard

ABBREVIATION NAME: CM

ENGINEERING DESCRIPTION: The Computing Module Processor Shelf Common CP fill provides always provided equipment for the computing module processor shelf. The CM provides duplicated processors, reset controls and provisionable memory circuit packs.

REFERENCE DOCUMENTATION: SL9X06AF 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

NT9X06AF EMA4-02-CM3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 07 27	----- ECM 626 05	Previous history not available New Packfill without Power Converters.

The Computing Module Processor Shelf Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CM Bus Terminator	NT9X21AA		2		7R, 32R	AP
Subsystem Clock	NT9X22CA		2		16R, 23R	AP
DS512 PB	NT9X20AA		4		17R, 18R	AP
					21R, 22R	AP
Shelf CP Fill Front Label	P0700719		1			AP
Shelf CP Fill Rear Label	P0738473		1			AP

RULES:

AP 1) When PEC NT9X06AF is ordered, these items are provided.

MESSAGE SWITCH COMMON CP

NT9X04AL

RATING: Standard

ABBREVIATION NAME: MS

ENGINEERING DESCRIPTION: The Message Switch Shelf Common CP fill contains the Mapper circuit pack, T-Bus Access circuit pack that are always provided for the MS shelf.

REFERENCE DOCUMENTATION: SL9X04AL 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

NT9X04AL EMA4-02-MP4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 07 27	----- ECM 626 05	Previous history not available New Packfill without Power Converters.

The Message Switch Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
T-Bus Access CP	NT9X52AA		1		7F	AP
Mapper CP	NT9X15AA		1		11F	AP
DS-512 Paddle Board	NT9X20AA		2		30R, 31R	AP
Filler Paddle Board	NT9X19BA		2		11R, 32R	AP
MS Load CP	NT9X32AA		2		7R, 10R	AP
Shelf CP Fill Front Label	P0738476		1			AP
Shelf CP Fill Rear Label	P0738475		1			AP

RULES:

AP 1) When PEC NT9X04AL is ordered, these items are provided.

MESSAGE SWITCH PROCESSOR SHELF COMMON CP

PEC CODE: NT9X04AH

CPC CODE:

| RATING: MD

| REPLACES: NT9X04AG

| REPLACED BY: NT9X04AL

| ABBREVIATION NAME: MS

ENGINEERING DESCRIPTION: The Message Switch Processor Shelf Common CP fill contains the power, processor, and port circuit packs that are always provided for an MS processor shelf.

REFERENCE DOCUMENTATION: SL9X04AH 01 03

| MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT9X04AH EMA4-02-MSPS-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 07 27 96 11 22	----- ECM 626 05 ECM 626 34	Previous history not available RTIF CP removed from the packfill. MD the following circuit packs per ECD 018-46903: NT9X13DA, NT9X13DB, NT9X13DC, NT9X17AA, NT9X20BB, NT9X54AA, NT9X54AB, NT9X49CA, NT9X30AA, NT9X31AA MD the following circuit packs per ECD 018-45348: NT9X14BB, NT9X26AA, NT9X26CA MD the following circuit pack per ECD 018-43648: NT9X26DA MD the following circuit pack per ECD 006-17002: NT9X12AB Also clear SR RR6A684 on NT9X13DC.

The Message Switch Processor Shelf Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
* +5V Power Converter CP	NT9X30AA		2		4F, 36F	AP
* -5V Power Converter CP	NT9X31AA		2		1F, 33F	AP
T-Bus Access CP	NT9X52AA		1		7F	AP
Mapper CP	NT9X15AA		1		11F	AP
MS 4-Port CP	NT9X17AA		2		30F, 31F	AP
DS-512 Paddle Board	NT9X20AA		2		30R, 31R	AP
Filler Paddle Board	NT9X19BA		2		11R, 32R	AP
MS Load CP	NT9X32AA		2		7R, 10R	AP
Shelf CP Fill Front Label	P0698334		1			AP
Shelf CP Fill Rear Label	P0690632		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 NT9X04AH is ordered, these items are provided.

SYSTEM LOAD MODULE SHELF COMMON CP

NT9X07AC

RATING: Standard

ABBREVIATION NAME: SLM

ENGINEERING DESCRIPTION: The System Load Module (SLM) Common CP fill contains the Bus terminator PB, Subsystem Clock PB, CM Bus Extender packs that are always provided for a SLM.

REFERENCE DOCUMENTATION: SL9X07AC 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

NT9X07AC EMA4-02-SL2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 07 27	----- ECM 626 05	Previous history not available New Packfill without Power Converters.

The System Load Module Shelf Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT9X19AA		8		7F, 16F, 17F, 19F, 20F, 22F, 23F, 32F	AP
CM BUS Extension PB	NT9X27BA		2		7R, 32R	AP
Parallel Port I/F PB	NT9X46AA		4		8R, 18R 21R, 24R	AP
CM Subys Clock PB	NT9X22CA		2		16R, 23R	AP
CM BUS Terminator PB	NT9X21AA		2		19R, 22R	AP
Pddle Brd Fllr Face Plt	NT9X19BA		16		9R-15R, 17R, 20R, 25R-31R	AP
CM P-Bus EXTN Cable	NT9X0167		2			AP
CM P-Bus EXTN Cable	NT9X0757		6			AP
Des Strip Rear	P0687763					
Des Strip Front	P0738474					

RULES:

AP 1) When PEC NT9X07AC is ordered, these items are provided.

SUPERNODE IN C42(S/DMS) CABINET

PEC CODE: NT9X01JB

CPC CODE: B0233965

RATING: Standard

REPLACES: NT9X01JA

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The SuperNode in C42(S/DMS) Cabinet houses a computing module, two message switches and one System Load Module Shelf assembly.

REFERENCE DOCUMENTATION: MS9X01JB 01 21
SL9X01JB 02 01
MS9X95BA 00 01
MSRX73 00 03

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

97 09 29

NT9X01JB EMA4-03-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 07 27	ECM 626 05	New detailed section for NT9X01JB
92 11 18	ECM 626 06	MS ports calculations corr. in RUL8
93 01 29	ECM 626 07	Updates resulting from ECD 018-39612 ET-15569 Ref of NT9X95AA in main sec. Changes due to ECD: # 018-39706. Rule 15 item 4 is changed as per Richardson requirement.
93 03 18	ECM 626 08	ET. # 16109 - Changes to RUL4. Changes resulting from ECD 006-17324. Intro. of 128 Port card (NT9X17CA). Meridian IML cable included as per Richardson requirement.
93 07 12	ECM 626 09	Introduce CPU 16MHz CP (NT9X13DD). Add Filler Face Plates if memory card 9X14DB/BB is not used.
93 09 20	ECM 626 10	ET29583, see main body change history Update Rul7. ENPM/NPI Input: Add item6 to rule25 to clarify NT9X0196 current loop assembly provisioning.
93 11 26	ECM 626 12	Update RUL6, ET17829
94 01 21	ECM 626 13	Update RUL7 as per PLM input NT9X14EA and NT9X26DB addition.
94 03 10	ECM 626 15	Rules 20, 22 and 25 update.
94 04 19	ECM 626 16	Introduce ECDs 018-41431, 024-89249, 024-89383.
94 06 06	ECM 626 18	Introduce the NT9X53AD clock card. MD the Series 10 Processor. Clarify NT9X17CA provisioning.
94 07 21	ECM 626 19	ECD 006-19420 - Update BRISC info. Correct filler PB provisioning. Solve ET52363.
94 09 02	ECM 626 20	ECD 018-42988 - Current Loop Kits. Put a hold on the NT9X53AD clock card.
94 10 18	ECM 626 22	ECD 006-20443 - Introduce NT9X12AD. Make NT9X26DB available for Series 50. Stop NT9X13DC prov. for initials.
95 02 09	ECM 626 23	Minor changes. Make the NT9X53AD orderable. Rewrite Rule 9 for clarity. Rewrite Rule 31 for clarity.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 06	ECM 626 24	Introduce BRISC Series 70 processor Introduce NT9X20BC per EC 018-44319. Other minor changes.
95 07 11	ECM 626 25	Introduce SLM III for NA004. Introduce Mixed Memory for BRISC 50. MD NT9X01PA.
95 08 28	ECM 626 26	MD the NT9X12AB, replaced by NT9X12AD. MD the NT9X13BB, replaced by NT9X13BC. Refer to ECD 006-17687. Minor changes.
95 12 19	ECM 626 29	EC018-45801 Remove frame fail lights. ET27919 Remove M5 cables.
96 03 22	ECM 626 30	ET80323 - Add A0326932 for sparing. Modified SLM III upgrade information. EC018-44339 - NT9X20BC with 9X17BB/DA. EC018-46147 - NT9X30AB/31AB for -48V. ET84393 - Remove sparing requirement. Correct text of RUL12.
96 05 24	ECM 626 31	Modified Series 70 min. memory req. Update FASTMEM value for NA005.
96 09 30	ECM 626 33	Modified NT9X17CA rule to require that NT9X17CAs, when provisioned, (4) must be ordered, not just (2). This is a temporary requirement until Design releases a fix for the problem of empty slots between NT9X17CAs causing outages. Provisioning change approved by Chet Salkok, MS PLM. Changes for ECM626 33 have been removed. History left for reference.
96 11 22	ECM 626 34	MD the following circuit packs per ECD 018-46903: NT9X13DA, NT9X13DB, NT9X13DC, NT9X17AA, NT9X20BB, NT9X54AA, NT9X54AB, NT9X49CA, NT9X30AA, NT9X31AA MD the following circuit packs per ECD 018-45348: NT9X14BB, NT9X26AA, NT9X26CA MD the following circuit pack per ECD 018-43648: NT9X26DA MD the following circuit pack per ECD 006-17002: NT9X12AB Also clear SR RR6A684 on NT9X13DC. Added market strategy for SN 70

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 01 21	ECM 626 35	processors. Add SR70EM processor and RTIF card. Rewrite Rul7 for clarity. Added NT9X06AW Current Loop Upgrade Kit to Equipment list, EC 024-95822.
97 04 10	ECM 626 36	Changed the FSP Terminal Block Cover from provisionable to required per EC 018-48705. MD the NT9X53AB (MS System Clock CP) per EC 018-48230. Show changes to FASTMEM in SLM provisioning per System Engineering updates. Also clear SR RR73478. Several minor changes for readability and format.
97 06 02	ECM 626 37	Added the SuperNode Data Manager interface to ECM and EMS per EC 018-50981. MD the System Load Module II unit per ED 018-50148.
97 08 18	ECM 626 38	Added the ELPP/FLPP interface application per EC 018-50981.
97 09 29	ECM 626 39	MD the +12V Power Converter per EC 018-51494.

The SuperNode in C42(S/DMS) Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP
Frame Sup.Panel (-48V)	NT9X03AA	FSP	1	52		RUL1
Cooling Unit (-48V)	NT9X95CU	CU	1	00		RUL1
Frame Sup.Panel (-60V)	NT9X03BA	FSP	1	52		RUL1
Cooling Unit (-60V)	NT9X95GU	CU	1	00		RUL1
FSP Term Blk Cover Assembly	A0368392		1	52		RUL35
Msg Sw Simplex Shf Assy	NT9X0440		2	26,39		AP
Msg Switch Common CP Fill	NT9X04AL	MS	2	26,39		RUL2
* -5V Power Converter (-48V)	NT9X31AA		4	26,39	1F,33F	RUL3
* +5V Power Converter (-48V)	NT9X30AA		4	26,39	4F,36F	RUL3
-5V Power Converter	NT9X31AB		4	26,39	1F,33F	RUL3
+5V Power Converter	NT9X30AB		4	26,39	4F,36F	RUL3
% MS System Clock CP	NT9X53AA			26,39	8F	RUL4
* MS Ext System Clock I/F CP	NT9X53AB			26,39	8F	RUL4
% Combined Clock CP	NT9X53AC			26,39	8F	RUL4
DMS-Bus System Clock CP	NT9X53AD			26,39	8F	RUL4
Subsystem Clock PB (Ext I/F)	NT9X54AC			26,39	8R	RUL5
Subsystem Clock PB (Japan)	NT9X54AD			26,39	8R	RUL5
* CPU 16 MHZ CP	NT9X13DA			26,39	9F	RUL6
* CPU 16 MHZ CP	NT9X13DB			26,39	9F	RUL6
* CPU 16 MHZ CP	NT9X13DC			26,39	9F	RUL6
CPU 16 MHZ CP(16 MB)	NT9X13DD			26,39	9F	RUL6
* 6 MB Memory CP	NT9X14BB			26,39	10F	RUL7
% 24 MB Memory CP	NT9X14DB			26,39	10F	RUL7
Filler Circuit Pack	NT9X19AA		2	26,39	10F	RUL7
* MS 4-Port CP	NT9X17AA			26,39	12F-29F	RUL8
MS 4-Port CP	NT9X17AD			26,39	12F-29F	RUL8
MS 4-Port CP	NT9X17AD			26,39	30F,31F	RUL8
MS 32-Port CP	NT9X17BB			26,39	12F-27F	RUL9
MS 64-Port CP	NT9X17DA			26,39	12F-27F	RUL9
MS 128-Port CP	NT9X17CA			26,39	12F-27F	RUL9
Filler Face Plate	NT9X19AA			26,39	12F-29F	RUL10
* Remote Term I/F PB	NT9X26AA			26,39	9R	RUL11
Remote Term I/F Curr Loop	NT9X26AB			26,39	9R	RUL11
4xDS-30 PB	NT9X23AA			26,39	12R-29R	RUL12
4xDS-30 PB	NT9X23BA			26,39	12R-27R	RUL12
16 link DS-30 Paddle Board	NT9X69BA			26,39	26R-27R	RUL12
DS-30 Cable Assembly	NT9X0532			26,39		RUL12
* MS P-Bus Terminator CP	NT9X49CA			26,39	32F	RUL13
DMS-Bus Tracer CP For ENET	NT9X49CB			26,39	32F	RUL13
* DS-512 ENET/MS Fiber I/F PB	NT9X20BB			26,39	12R-27R	RUL9
ENET/MS Fiber Interface PB	NT9X20BC			26,39	12R-27R	RUL9
SR512 Fiber PaddleBoard	NT9X62BA			26,39	12R-27R	RUL8,9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
4Port SR128 PaddleBoard	NT9X62BB			26,39	12R-27R	RUL8
MS Port Expander PB	NT9X25AA			26,39	13R-27R	RUL9
MS Port Terminator PB	NT9X25BA			26,39	13R-27R	RUL9
MS Loading PaddleBoard	NT9X32AA			26,39	12R-29R	RUL14
MS Blkhd I/F (Left) (DMS-100)	NT9X6556		2	26,39		RUL15
DS30 Filtered PCB Blkhd (DMS-100)	NT9X6536		2	26,39		RUL15
DS30 Blkhd I/F (Left) (Cabinetized DMS)	NT9X6546		2	26,39		RUL15
DS30 Blkhd I/F (Right) (Cabinetized DMS)	NT9X6545		2	26,39		RUL15
Bulkhead coverplate assy.	NTEX5070			26,39		RUL15
Screw Retainer	A0279319			26,39		RUL15
DS30 Blkhd I/F (Left) (SL-100)	NT9X6557		2	26,39		RUL15
DS30 Blkhd I/F (Right) (SL-100)	NT9X6537		2	26,39		RUL15
DS30 Blkhd I/F (Left) (Meridian)	NT9X6558		2	26,39		RUL15
DS30 Blkhd I/F (Right) (Meridian)	NT9X6538		2	26,39		RUL15
DS30 I/F Cable Assembly (non-Cabinetized DMS)	NT9X0145			26,39		RUL16
DS30 I/F Cable Assembly (cabinetized DMS)	NT9X6544			26,39		RUL16
DS30 I/F Cable Assembly (SL-100)	NT9X0164			26,39		RUL16
DS30 I/F Ca Assy (Mer)	NT9X0180			26,39		RUL16
DS30 I/F Ca Assy (Mer)	NT9X0182			26,39		RUL16
DS30 I/F Ca Assy (Mer)	NT9X0184			26,39		RUL16
DS30 I/F Ca Assy (Mer)	NT9X0186			26,39		RUL16
DS30 I/F Ca Assy (Mer)	NTEX5009			26,39		RUL16
DS30 I/F Ca Assy (Mer)	NTEX5011			26,39		RUL16
DS30 I/F Ca Assy (Mer)	NTEX5013			26,39		RUL16
DS30 I/F Ca Assy (Mer)	NTEX5015			26,39		RUL16
Inter-MS DS-30 Cable Assy	NTEX5022			26,39		RUL17
Inter-MS DS-30 Cable Assy	NTEX5023			26,39		RUL17
Fiber Optic Cable	A0352268			26,39		RUL17
Meridian IML Cable	NTNX36AR			26,39		RUL17
Optical Fiber Label (Eng.)	P0736273			26,39,13		RUL18
Optical Fiber Label (German)	P0737638			26,39,13		RUL18

Computing Module Duplex Shelf assembly	NT9X0605		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Computing Mod Processor Shelf Circuit Packfill	NT9X06AF	CM		13		RUL19
* -5V Power Converter (-48V)	NT9X31AA		2	13	1F, 33F	RUL3
* +5V Power Converter (-48V)	NT9X30AA		2	13	4F, 36F	RUL3
-5V Power Converter	NT9X31AB		2	13	1F, 33F	RUL3
+5V Power Converter	NT9X30AB		2	13	4F, 36F	RUL3
* 6Mb Memory CP	NT9X14BB			13	7F-16F	RUL20
% 24Mb Memory CP	NT9X14DB			13	7F-16F	RUL20
96Mb Memory CP	NT9X14EA			13	12F-16F	RUL20
Filler Face Plate	NT9X19AA			13	7F-16F	RUL21
% CPU Port CP	NT9X12AB			13	17F-18F	RUL22
% CPU Port CP	NT9X12AC			13	17F-18F	RUL22
CPU Port CP	NT9X12AD			13	17F-18F	RUL22
* CPU Processor CP (BCS24)	NT9X13BA			13	19F-20F	RUL22
* CPU Processor CP (BCS25)	NT9X13BB			13	19F-20F	RUL22
% CPU (68020) Processor CP	NT9X13JA			13	19F-20F	RUL22
% CPU Processor CP (BCS26)	NT9X13BC			13	19F-20F	RUL22
% CPU (68030) 33MHz Proc CP	NT9X13GA			13	19F-20F	RUL22
% CPU (68030) 40MHz Proc CP	NT9X13HB			13	19F-20F	RUL22
33 MHz 88000 BRISC CPU CP	NT9X10AA			13	19F, 20F	RUL22
60 MHz 88110 BRISC CPU CP	NT9X10BA			13	19F, 20F	RUL22
88110 BRISC CPU (SR70EM) CP	NT9X10CA			13	19F, 20F	RUL22
% CPU Port CP	NT9X12AB			13	21F-22F	RUL22
% CPU Port CP	NT9X12AC			13	21F-22F	RUL22
CPU Port CP	NT9X12AD			13	21F-22F	RUL22
* 6Mb Memory CP	NT9X14BB			13	23F-32F	RUL20
% 24Mb Memory CP	NT9X14DB			13	23F-32F	RUL20
96Mb Memory CP	NT9X14EA			13	23F-27F	RUL20
Filler Face Plate	NT9X19AA			13	23F-32F	RUL21
PB Filler Face Plate	NT9X19BA			13	9R-15R 24R-30R	RUL23
PB Filler Face Plate	NT9X19BA			13	8R, 31R	RUL24
CM BUS Extender	NT9X27AA			13	8R, 31R	RUL24
* Remote Term I/F PB	NT9X26AA			13	19R, 20R	RUL25
Remote Term I/F Curr Loop	NT9X26AB			13	19R, 20R	RUL25
* BRISC RTIF PB	NT9X26DA			13	19R, 20R	RUL25
% BRISC RTIF PB	NT9X26DB			13	19R, 20R	RUL25
BRISC RTIF Circuit Pack	NT9X26DC			13	19R, 20R	RUL25
BRISC RTIF PB	NT9X26EA			13	19R, 20R	RUL25
BRISC RTIF PB	NT9X26FA			13	19R, 20R	RUL25
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		RUL25
CM Curr Loop Upgrade Kit	NT9X06AW		1	13		RUL25
CM Bulkhead I/F Assy.(right)	NT9X6539			13		RUL26
CM Bulkhead I/F Assy.(left)	NT9X6540			13		RUL26

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CM SLM Ext Shelf Assy	NT9X0702		1	00		AP
Filler Packfill	NT9X01FB					RUL27
CM SLM Common CP	NT9X07AC			00		RUL27
* +5V Power Converter (-48V)	NT9X30AA		2	00	4F, 36F	RUL3
+5V Power Converter	NT9X30AB		2	00	4F, 36F	RUL3
* +12V Power Converter	NT9X47AA		2	00	1F, 33F	RUL28
Global SLM Power Converter	NT9X47AB		2	00	1F, 33F	RUL28
* System Load Module II	NT9X44AB			00	8F, 24F	RUL27
System Load Module III	NT9X44AD			00	8F, 24F	RUL27
Filler Face Plate	NT9X19AA			00	13, 14, 15	RUL27
					29, 30, 31	RUL27
* CPU Port CP	NT9X12AB			00	18F, 21F	RUL27
% CPU Port CP	NT9X12AC			00	18F, 21F	RUL27
CPU Port CP	NT9X12AD			00	18F, 21F	RUL27
End of Aisle Lamp Cable	NT9X0146					RUL29
End of Aisle Lamp Cable	NT9X0172					RUL29

Des Label (NT9X12AB)	P0700801					RUL29
Des Label (NT9X12AC)	P0727356					RUL29
Des Label (NT9X12AD)	P0725905					RUL29
Des Label (NT9X13BB)	P0696234					RUL29
Des Label (NT9X13JA)	P0705928					RUL29
Des Label (NT9X13BC)	P0696235					RUL29
Des Label (NT9X13GA)	P0705929					RUL29
Des Label (NT9X13HB)	P0713211					RUL29
Des Label (NT9X10AA)	P0734152					RUL29
Des Label (NT9X10BA)	P0806211					RUL29
Des Label (NT9X10CA)	P0865776					RUL29
* Des Label (NT9X13DA)	P0685359					RUL29
* Des Label (NT9X13DB)	P0696239					RUL29
* Des Label (NT9X13DC)	P0696240					RUL29
Des Label (NT9X13DD)	P0743628					RUL29
Des Label (NT9X14BB)	P0689619					RUL29
Des Label (NT9X14DB)	P0700802					RUL29
Des Label (NT9X14EA)	P0736863					RUL29
* Des Label (NT9X17AA)	P0678439					RUL29
Des Label (NT9X17AD)	P0735096					RUL29
Des Label (NT9X62BA)	P0726963					RUL29
Des Label (NT9X62BB)	P0869682					RUL29
Des Label (NT9X17DA)	P0707891					RUL29
Des Label (NT9X17CA)	P0678441					RUL29
Des Label (NT9X17BB)	P0726962					RUL29
Des Label (NT9X69BA)	P0726964					RUL29
* Des Label (NT9X20BB)	P0707894					RUL29
Des Label (NT9X20BC)	P0805929					RUL29

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des Label (NT9X25AA)	P0707896					RUL29
Des Label (NT9X25BA)	P0697531					RUL29
* Des Label (NT9X49CA)	P0712899					RUL29
Des Label (NT9X49CB)	P0697532					RUL29
Des Label (NT9X19AA)	P0709515					RUL29
Des Label (NT9X23AA)	P0678443					RUL29
Des Label (NT9X23BA)	P0697530					RUL29
Des Label (NT9X26AA)	P0705116					RUL29
Des Label (NT9X26AB)	P0705003					RUL29
Des Label (NT9X26DA)	P0734153					RUL29
Des Label (NT9X26DB)	P0747896					RUL29
Des Label (NT9X26DC)	P0810387					RUL29
Des Label (NT9X26EA)	P0806223					RUL29
Des Label (NT9X26FA)	P0865777					RUL29
Des Label (NT9X27AA)	P0678448					RUL29
Des Label (NT9X44AB)	P0726504					RUL29
Des Label (NT9X44AD)	P0809344					RUL29
Des Label (NT9X47AB)	P0738271					RUL29
Des Label (NT9X53AA)	P0705117					RUL29
Des Label (NT9X53AB)	P0705004					RUL29
Des Label (NT9X53AC)	P0726965					RUL29
Des Label (NT9X53AD)	P0803728					RUL29
* Des Label (NT9X54AB)	P0699266					RUL29
Des Label (NT9X54AC)	P0705005					RUL29
Des Label (NT9X54AD)	P0703652					RUL29
Des Label (NT9X30AB)	P0737682					RUL30
Des Label (NT9X31AB)	P0709513					RUL30
% SLM II Led Label (German)	P0737637					RUL30
Horizontal Power Cab. Kit (for Cabinetized Application)	NT9X9531		1			RUL31
Stand-alone Power Cab. Kit (for non-Cabinetized Appl.)	NT9X9532		1			RUL31
Terminal Block Desig. Strip	P0737633		1			RUL31
APC Cab. power Filter Labels	P0736059		1			RUL31
ESP Ground Terminator Assy.	NT9X0324		1			RUL34
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE4

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X13JA	MD	No Replacement
NT9X26AA	MD	NT9X26AB
NT9X26DA	MD	NT9X26DB
NT9X26DB	RCP	NT9X26DC
NT9X01PA	MD	No Replacement
NT9X12AB	MD	NT9X12AD
NT9X13BB	MD	NT9X13BC
NT9X30AA	MD	NT9X30AB
NT9X31AA	MD	NT9X31AB
NT9X13DA	MD	
NT9X13DB	MD	
NT9X17AA	MD	
NT9X20BB	MD	
NT9X54AA	MD	
NT9X54AB	MD	
NT9X49CA	MD	
NT9X14BB	MD	
NT9X26CA	MD	
NT9X10CA	DEV	
NT9X26FA	DEV	
NT9X53AB	MD	NT9X53AD
NT9X44AB	MD	NT9X44AD
NT9X47AA	MD	NT9X47AB

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.

RCP (%) This PEC has a Rating Change Pending.

NOTES:

- 1) NTXF27AA - Cesium, Loran Composite Master. For offices requiring external clock synchronization to Cesium/Rubidium Stratum I standard, provide the NTXF27AA package. Note that this package also supports Loran Composite Master clock

source, but the necessary provisionable cable is not yet available for the latter application.

- 2) SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.
- 3) Richardson DMS-250 custom and SL-100 custom products use bulkheads designed for DMS-100 custom offices. These are used when EMI compliance is not required.
- 4) Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NT9X01JB is ordered, these items are provided.
- 2) The NT9X95BA contains the NT9X9575 Cabinet Framework.
- The NT9X9575 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- 3) Refer to NT9X95BA (EMA4-07-001) section for additional Mechanical Hardware requirements for C42(S/DMS) Cabinet
- RUL1 1) Provide one (1) NT9X03AA, Frame Supervisory Panel, per Cabinet for -48V powered installations.
- 2) Provide one (1) NT9X95CU, Cooling Unit, per cabinet for -48V powered installations. This unit comes with 3 replaceable blower assemblies(A0381714), one (1) MTM alarm card(A0383984), and one (1) relay(A0383985) installed. However, customers may desire spares. The Cooling Unit mounts immediately below position 00.
- 3) Provide one (1) NT9X03BA, Frame Supervisory Panel, per Cabinet for -60V powered installations.
- 4) Provide one (1) NT9X95GU, Cooling Unit, per cabinet for -60V powered installations. This unit comes with 3 replaceable blower assemblies(A0382103), and a replaceable electronics module(A0383326) installed. However, customers may desire spares. The Cooling Unit mounts immediately below position 00.

- RUL2 1) Provide one (1) NT9X04AL Message Switch Common Circuit Packfill per MS shelf.
- RUL3 1) Provide two (2) NT9X31AB -5V, 20A power converter per NT9X04AL, and NT9X06AF Circuit Packfills in -48V or -60V Powered Installations.
- 2) Provide two (2) NT9X30AB +5V, 86A power converter per NT9X04AL, NT9X06AF and NT9X07AC Circuit Packfills in -48V or -60V Powered Installations.
- RUL4 1) Provide one (1) NT9X53AD Combined Clock CP in card slot 8F in shelf position 26,39 for NA002 and higher. For Stratum 2 configurations, provision the NT9X53AC instead of the 9X53AD.
- Note that, the NT9X53AB requires BCS28 or higher. NT9X53AC is incompatible with BCS30 or older BCS's. NT9X53AD is incompatible with BCS36 or older BCS's.
- RUL5 1) Provide one (1) MS External Clock Interface PB (NT9X54AC) in card slot POS 8R in shelf position 26,39 for Stratum I, Stratum II, Stratum 2.5 or Stratum III North American applications.
- 2) Provide one (1) MS External Clock PB (NT9X54AD) in card slot POS 8R in shelf position 26,39 for all Japan offices.
- 3) The NT9X53AD, NT9X53AC and NT9X53AB are all functionally compatible with NT9X54AC. However, the NT9X53AD is the recommended pack.
- Note that, the NT9X53AB requires BCS28 or higher. NT9X53AC is incompatible with BCS30 or older BCS's. NT9X53AD is incompatible with BCS36 or older BCS's. For Stratum 2 applications, provision the NT9X53AC instead of the NT9X53AD.
- RUL6 1) Provide one (1) CPU 16MHZ CP (NT9X13DD) in card slot POS 9F in shelf position 26,39 for applications in BCS-35 AND ABOVE ONLY. This is not a BCS gating requirement.
- 2) Provide one (1) CPU 16MHZ CP (NT9X13DC) in card slot POS 9F in shelf position 26,39 for applications in BCS-29 and higher BCS. The NT9X13DC should not be provisioned on new jobs at BCS-35 and higher. The NT9X13DC is now at MD status.

- 3) Provide one (1) CPU 16MHZ CP (NT9X13DB) in card slot POS 9F in shelf position 26,39 for applications in BCS-26 through BCS-28. The NT9X13DB is now at MD status.
- 4) Provide one (1) CPU 16MHZ CP (NT9X13DA) in card slot POS 9F in shelf position 26,39 for applications in BCS-25 and lower. The NT9X13DA is now at MD status.

- RUL7
- 1) Provide one (1) 6 MB Memory CP (NT9X14BB) in card slot POS 10F in shelf position 26,39. The NT9X14BB is NOT COMPATIBLE with the NT9X13DD CPU 16MHZ CP. The NT9X14BB is now at MD status.

PM Note: New SN DPCCs should not be provided with the NT9X14BB MS memory for BCS-31 and above loads. Also, Offices with NA004 or higher require a minimum of 16M of memory and there will be only one common MS load.

- 2) Provide one (1) 24 MB Memory CP (NT9X14DB) in card slot POS 10F in shelf positions 26, 39 if required, see note 4 below for memory sizing and circuit pack requirements.

WARNING: The NT9X14DB is COMPATIBLE with the NT9X13DD or NT9X13DC ONLY for Series 10-40 Processors. The NT9X13DD and NT9X14DB combination is NOT supported for any BRISC processor and must be changed before attempting the upgrade. In NA004 and above only two configurations are supported for BRISC processors (Series 50-70):

use either the NT9X13DD 16 Meg processor CP.

OR

use the NT9X13DC 4Meg Processor combined with a NT9X14DB 24Meg memory CP

NOTE: the NT9X13DD is NOT COMPATIBLE with the NT9X14BB.

- 3) If an NT9X14BB or NT9X14DB is not used on the message switch, then provide two (2) NT9X19AA to fill the empty slot 10F on shelf 26 and 39.

- 4) Note: New SN DPCCs should not be provided with the NT9X14BB MS memory for BCS-31 and above loads.

Memory Required on the Message Switch	Circuit Packs Required Per MS PLANE
10 Meg	(1)NT9X13DC (1)NT9X14BB
16 Meg	(1)NT9X13DD
28 Meg	(1)NT9X13DC (1)NT9X14DB
40 Meg	(1)NT9X13DD (1)NT9X14DB see Ru17 note 2

MS Memory Configuration and Software Loads.

PM Note: New SN DPCCs should not be provided with the NT9X14BB MS memory for BCS-31 and above loads. Also, Offices with NA004 or higher require a minimum of 16M of memory and there will be only one common MS load.

SOFTWARE	DESCRIPTION	MS MEMORY REQUIREMENT
MS-S	MS LOAD FOR JNET	REQUIRES 7MB
MS-E	MS LOAD FOR JNET/ENET/SSLPP/PH	REQUIRES 10MB
MS-I	MS LOAD FOR JNET/ENET/SSLPP/SCPII	REQUIRES 16MB

HARDWARE	SOFTWARE RELEASE		
	MS-S	MS-E	MS-I
13DB/14BB	YES	NO	NO
13DC/14BB	YES	YES	NO
13DC/14DB	YES	YES	YES
13DD	YES	YES	YES

- RUL8 1) Provision NT9X17ADs in slots 30F and 31F for each MS shelf for CMIC links. The NT9X17AD will be V0-ed in BCS34 and GA in BCS35. The NT9X17AD is recommended for offices running with BCS34 and above.
- 2) For DMS Cabinets provide up to eighteen (18) (from position 29F through 12F) MS 4-Port CPs, NT9X17AD, per each

MSPS shelf as needed. For Meridian Cabinet systems provide up to fourteen (14) (from position 29F through 14F) MS 4-Port CPs, NT9X17AA/AD, per each MSPS shelf, as needed. Assign cards in descending order.

- 3) MS 4-Port CPs are provisioned identically in each of the MSPS shelves.

Provide four (4) NT9X17AA/AD (two Per MS) for each two LIM cabinets connected to the Message Switch. The DS-30 cards must be provisioned in pairs on the Message Switch so that the DS-30 ports from a LIM cabinet may be spread across adjacent DS-30 cards. Provide one (1) NT9X23BA DS-30 Paddleboard for each NT9X17AA/AD MS 4-port CP provisioned.

Two DS-30 ports are connected from each LMS (LMS0 and LMS1) to each MS (MS0 and MS1) as shown in Figure 3. Each MS port is shown with the specific port on the specific LIM cabinet to which it connects. For example:

LMS1 01 indicates LMS Side 1 LIM 01
29R-0 CP Pos 29R Port 0

Additional LIM cabinets will be connected to additional DS-30 port cards using the same pattern as shown in Figure 3.

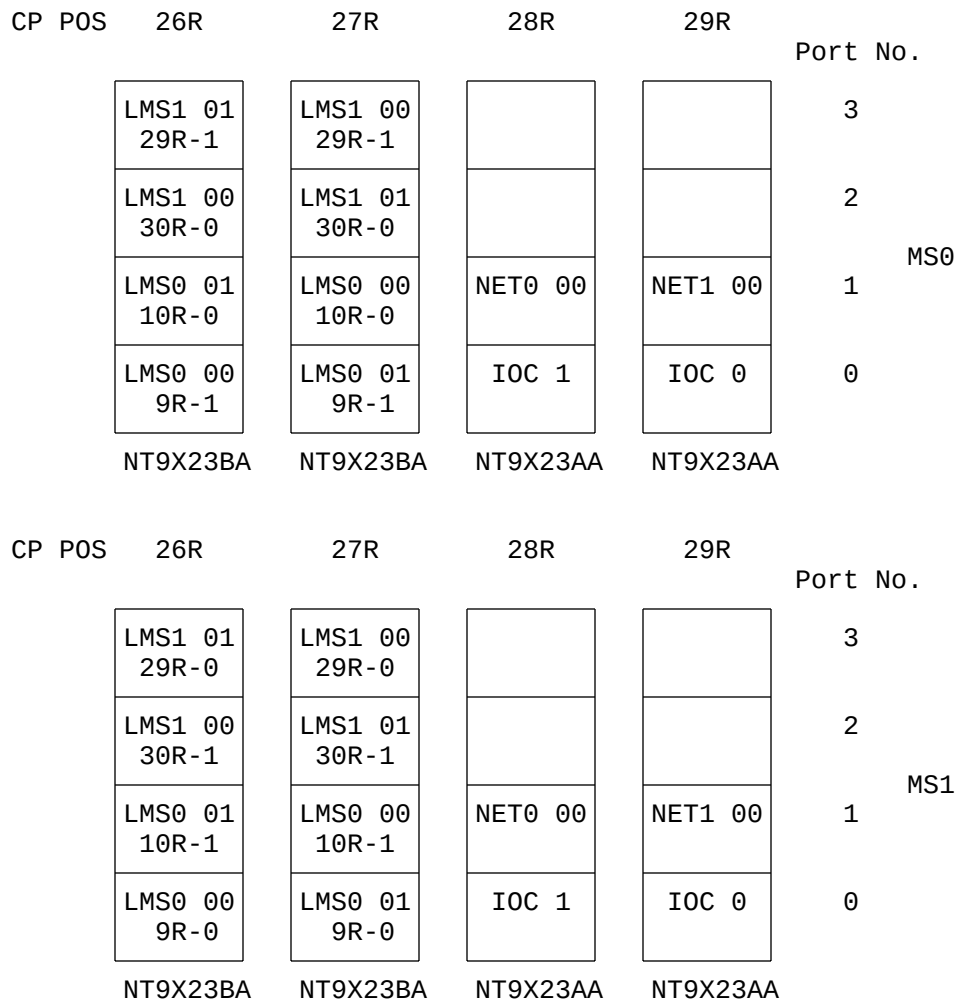


Figure 3
MS DS-30 Port Connections For Two LIM Configuration

- 4) The number of MS 4-Port CPs, NT9X17AA/AD, required per MS is given by the following:

$$\# \text{ 4-Port CPs per MS} = \# \text{ LIM} \left(\text{rounded up to the nearest multiple of 2} \right) + \frac{(\# \text{ NM} \times 2) + \# \text{ IOC}}{4}$$

rounded up to the next even integer as the NT9X17AA/AD circuit packs are assigned in pairs per MS.

If a MS 4-port CP is used to interface to a LIM, it must be dedicated for that function. Network Modules and IOCs cannot share a MS 4-port CP that is also used to interface to a LIM.

- 5) The MS 4-Port CP, NT9X17AA/AD is the universal port card providing four (4) independent port appearances. These CPs support the standard DS-30 link to existing Network Modules (NMs), I/O Controllers (IOCs), Link Interface Modules (LIMs), FLIS, APC Modules and SuperNode Data Manager (SDM-FT).
- 6) IOC:00 and IOC:01 are fixed assigned to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots.

Each IOC has two (2) messaging ports, one port connecting to each plane of the MS. Thus the number of IOC MS ports per MS plane equals the number of IOCs.

- 8) Provision NT9X17AD MS-4 Port Circuit Pack for FLIS Application. This pack can be used with NT9X62BA, SR-512 PaddleBoard. BCS33 is the required software for NT9X17AD in FLIS application.
- 9) For SDM-FT applications, provide two SR256 links on one NT9X17AD card per MS. In the rear of this shelf provide one NT9X62BA rear paddleboard. The length of the cable between the SDM-FT and the NT9X62BA card must be no more than 229.0 meters and the differential length of the pair must be no more than 50 meters.

The SDM-FT requires one slot per Message switch plane and the cards on the two planes should be located using same slot number. The SDM-FT port card can only be used for SDM use, no other application (FLIS, AP/FP etc.) can share any ports on the two slots. Only one SDM-FT is to be connected per SuperNode (DPCC).

- 10) For Enhanced LPP (NT9X70CA) applications, provide eight SR256 links on two NT9X17AD cards per MS. In the rear of this card provide two NT9X62BB rear paddleboards. The length of the cables between the ELPP and the NT9X62BB card must be no more than 229.0 meters and the differential length of the 8 cables must be no more than 7.5 meters.

It is recommended that the cards on the two planes be located in adjacent slot numbers. The ELPP port cards can

only be used for ELPP use, no other application (FLIS, APC, SDM, etc.) can share any ports on the two slots. Another ELPP can be connected via the same cards as used for the first ELPP. For another one (1) or two (2) ELPPs, another 2 slots and 2 sets of cards will be required.

- 11) For Fiberized LPP (NT9X70BB Cabinet) applications, provide eight SR256 links on two NT9X17AD cards per MS. In the rear of this card provide two NT9X62BA rear paddleboards. The length of the cables between the FLPP and the NT9X62BA card must be no more than 229.0 meters and the differential length of the 8 cables must be no more than 7.5 meters.

It is recommended that the cards on the two planes be located in adjacent slot numbers. The FLPP port cards can only be used for FLPP use, no other application (FLIS, APC, SDM, etc.) can share any ports on the two slots. Another FLPP can be connected via the same cards as used for the first FLPP. For another one (1) or two (2) FLPPs, another 2 slots and 2 sets of cards will be required.

- 12 See note after RUL16.

- RUL9 1) ENET Offices: For the first 64 Messaging Ports for each ENET shelf pair, provide one (1) NT9X17DA and one (1) NT9X20BB/BC for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

Two (2) NT9X17DA and two (2) NT9X20BB are required for each ENET shelf interface. One circuit pack is mounted in MS0 (shelf 26). The other circuit pack is mounted in MS1 (shelf 39).

Assign NT9X17DA in the following order:
Slots 12,13,14...25,26,27.

It is recommended that port assignments proceed from lower number slots towards higher number slots.

The NT9X17DA is used only with ENET and requires BCS31 or higher.

- 2) ENET Offices: For the final 64 Messaging Ports for each ENET shelf pair, provide one (1) NT9X17DA and one (1)

NT9X25BA for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

Two (2) NT9X17DA and two (2) NT9X25BA are required for each ENET shelf interface. One circuit pack is mounted in plane 0 (shelf 26). The other circuit pack is mounted in plane 1 (shelf 39).

Assign NT9X17DA in the following order:
13,14,15...25,26,27.

It is recommended that port assignments proceed from lower number slots toward higher number slots.

The NT9X17DA is used only with ENET and requires BCS31 or higher.

- 3) ENET Offices: When the port requirements exceed 128 Messaging Ports for each ENET shelf pair, provide one (1) NT9X17DA and one (1) NT9X25AA for each of the four port groups, for each additional 64 ports. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

Two (2) NT9X17DA and two (2) NT9X25AA are required for each ENET shelf interface. One circuit pack is mounted in MS0 (shelf 26). The other circuit pack is mounted in MS1 (shelf 39).

Assign NT9X17DA in the following order:
13,14,15...24,25,26.

It is recommended that port assignments proceed from lower number slots toward higher number slots.

The NT9X17DA is used only with ENET and requires BCS31 or higher.

- 4) ENET Offices: For the first 128 Messaging Ports for each ENET shelf pair, provide one (1) NT9X17CA and one (1)

NT9X20BC for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

Two (2) NT9X17CA and two (2) NT9X20BC are required for each ENET shelf interface. One circuit pack is mounted in plane 0 (shelf 26). The other circuit pack is mounted in plane 1 (shelf 39).

Assign NT9X17CA in the following order:
Slots 12,13,14,...25,26,27.

It is recommended that port assignments proceed from lower number slots towards higher number slots.

- 5) ENET Offices: For the final 128 Messaging Ports for each ENET shelf pair, provide one (1) NT9X17CA and one (1) NT9X25BA for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

Note: The NT9X17CA/NT9X20BC pair are used at BCS35 or higher.

Two (2) NT9X17CA and two (2) NT9X20BC are required for each ENET shelf interface. One circuit pack is mounted in plane 0 (shelf 26). The other circuit pack is mounted in plane 1 (shelf 39).

Assign NT9X17CA in the following order:
13,14,15,...25,26,27.

It is recommended that port assignments proceed from lower number slots toward higher number slots.

Note: The NT9X17CA and NT9X17DAs can exist in the same port group. However, it is highly recommended that the NT9X17CA occupy the head (first) position in the port group. There is not a significant time difference between switching the order of the cards and adding a card.

- 6) The following figures represent examples of the physical circuit pack assignments to a MS shelf for ENET-MS port groups of the four possible capacities. Please note these are examples and the MS can contain a mixture of ENET-MS port groups of various capacities and circuit pack locations. The NT9X20 and NT9X25 circuit packs (if required) of an ENET-MS port group must occupy adjacent slots on the MS as shown in the examples. The circuit pack locations shall be the same on the second MS shelf of the Supernode.

For ENET Initial, assign IOCs, EIOCs and LPPs to the highest numbered MS slots in descending order starting from slot 29 (i.e. slots 29, 28, etc.). These slots will contain 4-port cards (NT9X17AA/AD) in the front and 4-port DS-30 interface paddleboards (NT9X23AA for IOCs and EIOCs; NT9X23BA for LPPs) in the rear.

Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAEs should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion if necessary, as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BC	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BC	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BC	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BC	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BC	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BC	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BC	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BC	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

7) Provision NT9X62BA, SR-512 Fiber PaddleBoard, when several fiber links are required, and all of which do not have to run at full DS-512 bandwidth. This pack cannot be used for the Inter-MS-Link(IML) feature. BCS33 is the required software for NT9X62BA.

8) Provision NT9X17BB MS-32 Port circuit pack as required. This pack provides the same functionality as an NT9X17DA pack, but with half as many ports, and it requires at least 10 Meg of MS memory capacity.

RUL10 1) Provide one (1) NT9X19AA, Filler Face Plate in each card slot (12F-29F) not equipped with a CP to satisfy the forced air cooling requirements of the frame.

RUL11 1) Provide one (1) NT9X26AB Current Loop Remote Terminal Interface in card slot 9R in shelf position 26,39. The NT9X26AA has been Manufacture Discontinued.

RUL12 1) The number of NT9X23AA 4xDS-30 PBs to be provided is equal to the number of NT9X17AA/AD MS 4-Port CPs provided. Assign cards in descending order per RUL8.

2) Provision NT9X23BA 4xDS-30 PBs in place of NT9X23AA PBs to interface a LIM.

3) For Meridian Cabinet offices, provide a maximum of eight (8) NT9X23AA 4xDS-30 PB. Assign PB in descending order from 29R through 22R.

- 4) The NT9X69BA paddleboard is to be provisioned with the NT9X17BB front CP only. This PB can only be provisioned in slots 26R and 27R. The PB in 27R will connect to the left bulkhead, and the PB in 26R will connect to the right bulkhead. At present this PB is verified to function with the JNET application only.
 - 5) Provision NT9X0532 cable assembly as required. The NT9X69BA PB uses NT9X0532 cable to connect from the PB to the bulkhead.
 - 6) See note after RUL16.
- RUL13
- 1) Provide two (2) NT9X49CB DMS-Bus Tracer CP one per MS, or provide two (2) NT9X49CA MS P-Bus Terminator CP, one per MS in slot 32F, to allow for tracing of messages and aid in fault diagnostics and MS maintenance. The NT9X49CB card must be used in all offices that interface with ENET.
 - 2) The NT9X49CB is the preferred pack for offices with BCS30 and newer BCS's. For earlier releases use the NT9X49CA.
- RUL14
- 1) Provide one (1) NT9X32AA, MS Loading PaddleBoard in any unequipped slot(12R-29R), to provide impedance matching on the backplane. By equipping all unused slots(12R-29R) with NT9X32AA, the backplane impedance will have no discontinuities and will more closely match the termination value.
- RUL15
- 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS (stand-alone or custom frames) application.
 - 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS(streamline) application. Also Provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads.
 - 3) Provide one (1) NT9X6557 DS-30 Bulkhead Interface Left and one (1) NT9X6537 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Interface to SL-100 system.
 - 4) Provide one (1) NT9X6558 DS-30 Bulkhead Interface Left and one (1) NT9X6538 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Interface to Meridian Cabinet

System, or to add a DPCC cabinet to an existing Package Switch System.

RUL16

1) Provide one (1) NT9X0145 cable for each NT9X23__ DS-30 PaddleBoard provided for DMS-100(custom frame) systems. These cables go from the NT9X23__ PBs to the DS-30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 2) Provide one (1) NT9X6544 DS-30 Interface Cable Assembly for each NT9X23__ DS-30 Paddleboard. The MS can accept no more than forty (40) cables per shelf (twenty (20) per bulkhead).

In otherwords, Cabinetized DMS is restricted to 40 Ports per MS shelf. Therefore the maximum number of NT9X17AA/ADs is 10 per MS Shelf for Cabinetized (streamline) DMS only.

- 3) Provide one (1) NT9X0164 cable for each NT9X23__ DS-30 PaddleBoard provided for SL100C systems. These cables go from the NT9X23__ PBs to the DS-30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6537
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6557

- 4) Provide NT9X0180, NT9X0182, NT9X0184, and NT9X0186 DS30 Cable Assemblies for every two (2) NT9X23__ DS-30 PaddleBoard provided for Meridian Cabinet systems. These cables go from the NT9X23__ PBs to the DS30 Bulkheads as follows:

FROM P2 ON NT9X23 PB		TO		
CA ASSY	CARD SLOT	CONN DESIGN	DS30 PORT	BULKHEAD DESIG.
NT9X0180	29R, 28R	C	1, 2	NT9X6558 (LEFT)
		B	1	
		A	1	
		F	1, 2, 3, 4	
NT9X0182	27R, 26R	E		
		D		
NT9X0184	25R, 24R	I		
		H		
NT9X0186	23R, 22R	A		NT9X6514 rated MD. NT9X6538 (RIGHT)
		B		
NTEX5009	21R, 20R	C		
		D		
NTEX5011	19R, 18R	E		
		F		
NTEX5013	17R, 16R	G		
		H		
NTEX5015	15R, 14R	I		NT9X6513
		G		

5) NOTE: For Meridian cabinet systems:

Bulkhead connectors A and B provide one (1) DS30 port. Bulkhead connector C provides two (2) DS30 ports. All other connectors (D to I) provide four (4) DS30 ports.

When the link from a piece of equipment does not use all the available ports on a connector, the unused ports cannot be used for other equipment.

For example: If an IOC shelf (requires one DS30 port) is assigned to connector D (supports 4 ports), the three unused DS30 ports are wasted.

Since each bulkhead connector is associated with a specific MS Port CP slot, the number of MS Port CPs calculated in RUL8 may have to be increased to account for wasted port connections. This will also increase the number of paddleboards required (reference RUL12).

- RUL17 1) Port 0 on NT9X23AA CP in slots 28 and 29 are reserved for links to IOCs. The remaining ports can be used for Inter-MS links.
- 2) Provide NTEX5022 Cable for Inter-MS link option for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when supernode cabinets are provisioned.
- 3) Provide NTEX5023 Cable for Inter-MS link option for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when Cabinetized DMS cabinets are provisioned.
- 4) Provide A0352268 Cable for Inter-MS link option for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.
- 5) Provide two NTNX36AR cables for Inter-MS option for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when Meridian Cabinets are used and Meridian bulkhead connectors "A" & "B". If connectors "A" & "B" are used, then provide one NTNX36AR cable and connect to the first available connector between "D" and "I" on the NT9X6558 (left) bulkhead or the first available connector on the NT9X6538 (right) bulkhead.

- RUL18 1) Provide one (1) P0736273 Optical Fiber Label (English) per shelf when DS-512 Fiber paddleboards are provisioned. (ie. NT9X20xx/NT9X62xx etc..)
- 2) Provide one (1) P0737638 Optical Fiber Label (German) per shelf when DS-512 Fiber paddleboard are provisioned For Germany. (ie. NT9X20xx/NT9X62xx etc..)
- 3) According to Customer based safety regulations, that indicate that "Laser Warning" labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.
- RUL19 1) Provide one (1) NT9X06AF Computing Module Processor Shelf CP Fill.
- RUL20 1) Provision two (2) 6Mb Memory Circuit Packs, NT9X14BB, for each additional 6Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, 1st. Slots 16F and 23F, 2nd. 15F and 24F, 3rd. 14F and 25F, 4th. 13F and 26F, 5th. 12F and 27F, 6th. 11F and 28F, 7th. 10F and 29F, 8th. 9F and 30F, 9th. 8F and 31F, 10th. 7F and 32F.
- 3) All offices must replace existing NT9X14DA 24 MByte Memory CP with NT9X14DB CP when inserting BCS 26.
- 4) All BRISC Series 50 offices must utilize NT9X14DB only.
- 5) BRISC Series 50 Mixed Memory offices may use both the NT9X14DB and the NT9X14EA cards. If two (2) NT9X14EA cards per side are required, mount the cards in slots 15 and 16 for plane 0 and slots 23 and 24 for plane 1. If three (3) NT9X14EA cards per side are required, mount the cards on shelf 13, slots 14, 15, and 16 for plane 0 and slots 23, 24, and 25 for plane 1.

There must be a minimum of two (2) NT9X14EA per side for sparing purposes.

With two (2) NT9X14EA per side, the minimum number of NT9X14DB per side is four (4) and the maximum number is eight (8).

With three (3) NT9X14EA per side, the minimum number of NT9X14DB per side is two (2) and the maximum number is five (5).

Only the following memory configurations for Series 50 Mixed Memory are valid:

		SN50 only						No. NT9X14EA 96 MByte Cards		
		0	2	3	4	5				
No. of NT9X14DB 24 MByte Cards	0	xxx	128	224	320	416		← SN60		
	2	56	xxx	248						
	3	80	xxx	272						
	4	104	200	296						
	5	128	224	320						
	6	152	248							
	7	176	272							
	8	200	296							
	9	224								
	10	248								
	Available Memory in MBytes									

Note: xxx in the preceding diagram represents an unsupported configuration.

- 6) All BRISC Series 60/70 offices must utilize NT9X14EA only.

Number NT9X14EA 96 MByte Cards (with spare)									
	0	1	2	3	4	5	6	7	8
SN60	xxx	xxx	128	224	320	416	512	608	yyy
SN70	224	256	352	448	544	640	736	yyy	yyy

Note: xxx in the preceding diagram represents an unsupported configuration.

Note: yyy in the preceding diagram represents a failure situation.

The maximum addressable memory is 400M when the software load is less than NA005. In NA005, the limit was increased to 608M for Series 60 and 736M for Series 70.

WARNING: A minimum of (2) 96M cards per side are required for Series 70. The real time capacity is impacted when the entire software image resides on the NT9X10BA.

RUL21 1) Provision one (1) Filler Face Plate in each card slot (7F - 16F and 23F - 32F) not equipped with a memory circuit pack to satisfy the forced air cooling requirements of the frame.

RUL22 1) Provide two (2) NT9X13JA CPU (68020) processor CP in card slots 19F and 20F for SuperNode Series 10 office. This processor has been Manufacture Discontinued.

If an existing site is configured with a Series 10 processor, the customer is requested to contact the regional sales representative for details on how to upgrade to a Series 20 processor or higher for BCS-35 and above loads. See Section 4.1.2 ECM body.

2) Provide two (2) NT9X13BC CPU (68030 20 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 20 office.

- 3) Provide two (2) NT9X13GA CPU (68030 33 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 30 office.
- 4) Provide two (2) NT9X13HB CPU (68030 40 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 40 office.
- 5) For jobs requiring BRISC (Series 50 or 60 option), provide two (2) NT9X10AA (88000 33 MHz) BRISC CPU CP in card slots 19F and 20F. The NT9X10AA Processor provides ability to function with either NT9X14EA (96 MBytes memory) or NT9X14DB (24 MBytes memory) for Series 50 offices, or both the NT9X14DB and the NT9X14EA for Series 50 Mixed Memory offices. Series 50 Mixed Memory offices must use the NT9X26DC RTIF if mixed memory is required. The NT9X26DB RTIF does not support mixed memory for Series 50. Series 50 Mixed Memory offices are supported from NA004 and above.

BRISC Series 60 offices do not support mixed memory. The NT9X14EA must be used in a BRISC Series 60 office.

When NT9X10AA is equipped with 24 MBytes memory, the system is called BRISC Series 50 and it is available from BCS-33 and above. When NT9X10AA is equipped with 96 MBytes memory, the system is called BRISC Series 60 option and it is available from BCS-36 and above. The maximum amount of addressable memory for switches using the 96 MByte cards is 400M in less than NA005. In NA005, the limit is 608M for Series 60 and 736M for Series 70.

The NT9X14EA memory boards have the capability to function in Burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC option. This is available in the BCS-36 and above loads. Note that 24 MByte circuit boards do not function in burst mode. The new RTIF NT9X26DB will have to be provisioned with this NT9X10AA processor.

- 6) For jobs requiring Series 70 option, provide two (2) NT9X10BA 60 MHz 88110 BRISC CPU CP in card slots 19F and 20F. The BRISC Series 70 option is available from NA004 and above. The maximum amount of addressable memory for switches using the 96 MByte cards is 400M in less than NA005. In NA005, the limit is 608M for Series 60 and 736M for Series 70.

WARNING: A minimum of (2) 96M cards per side are required for Series 70. The real time capacity is impacted when the entire software image resides on the NT9X10BA. The SE 70 contains 256 MBytes of memory onboard, and one 9X14EA memory card per side is required when provisioning the SE 70.

This rule applies (but not exclusive) to the following applications: NA100 GL100 EUR100 APC DMS250 DMS500 GSM MTX. This rule does not apply to MSL and Austrian Telecom applications. Block sparing is not supported in the SuperNode. The NT9X10BA has 256M of memory, organized in 32 MByte blocks. The NT9X26EA RTIF must be provisioned with the NT9X10BA processor.

- 7) A second Series 70EM option is being readied, provision two (2) NT9X10CA 60 MHz 88110 BRISC CPU CP in card slots 19F and 20F. Product is retired for North American applications. The BRISC Series 70EM option is available from NA007 and above. Contact NPI or NPPI until this product reaches general availability. The maximum amount of addressable memory for switches using the 96 MByte cards is 736M for this Series 70EM. The NT9X10CA has 512M of memory, organized in 32 MByte blocks.

CAUTION: For 17 or more memory blocks per side, provision N memory cards as required, plus one (1) spare memory card. Since offices suffer a real time degradation when external memory cards are added to the 512 Megabyte on-board memory, those offices which will require extra memory should be migrated to XA-Core when those cabinets become available. The NT9X26FA RTIF must be provisioned with the NT9X10CA processor.

- 8) Provide four (4) NT9X12AD CPU Port CP in card slots 17F, 18F, 21F and 22F for each NT9X06AF Computing Module Processor Shelf Circuit Packfill. The NT9X12AD replaces the NT9X12AC, and is the preferred card. The NT9X12AD is required for BRISC.

The NT9X13EA CPU Processor CP has been rated MD. The NT9X13HA CPU has also been rated MD. The NT9X13BB has been rated MD and replaced with the NT9X13BC.

Selection of the NT9X13__ CP is based on availability date of the CP and Hardware-Software Coordination of the CPU Processor to the Memory CP provisioned per the following matrix:

	SOFTWARE RELEASE					
	BCS24	BCS25		BCS26		
PROCESSORS NT9X13__	BA	BA	BB	BA	BB	BC
MEMORY CP NT9X14__	BB	BB	BB or BB/DA mix or BB/DB mix	BB	BB or BB/DA mix or BB/DB mix	BB or BB/DB mix or DB
PORT CP NT9X12__	AA	AA	AA or AB	AA	AA or AB	AB or AC

	SOFTWARE RELEASE					
	BCS27	BCS28		BCS29		
PROCESSORS NT9X13__	BC	BC	JA	BC	JA	GA
MEMORY CP NT9X14__	BB or BB/DB mix or DB	BB or BB/DB mix or DB	BB or BB/DB mix or DB	BB or BB/DB mix or DB	BB or BB/DB mix or DB	BB or BB/DB mix or DB
PORT CP NT9X12__	AB or AC	AB or AC	AB or AC	AB or AC	AB or AC	AB or AC

	SOFTWARE RELEASE				
	BCS30				
PROCESSORS NT9X13__	BC	JA	GA	HA	HB
MEMORY CP NT9X14__	BB or BB/DB mix or DB	BB or BB/DB mix or DB	BB or BB/DB mix or DB	BB or BB/DB mix or DB	BB or BB/DB mix or DB
PORT CP NT9X12__	AB or AC	AB or AC	AB or AC	AB or AC	AB or AC

	SOFTWARE RELEASE			
	BCS32			
PROCESSORS NT9X13__	BC	JA	GA	HB
MEMORY CP NT9X14__	BB or DB BB/DB mix	BB or BB/DB mix or DB	BB or BB/DB mix or DB	DB or BB/DA mix DB/BB mix
PORT CP NT9X12__	AC	AC	AC	AB/AC

	SOFTWARE RELEASE	
	BCS 33 Series 50	BCS 36 Series 60
PROCESSORS NT9X13__	10AA	10AA
MEMORY CP NT9X14__	14DB only	14EA only
PORT CP NT9X12__	12AD only	12AD only
RTIF NT9X26__	26DA/DB only	26DB only

Processor	SR 60 NT9X10AA	SR 70 NT9X10BA	SR 70 EM NT9X10CA
RTIF PB	NT9X26DB	NT9X26EA	NT9X26FA
Memory	96 Meg. NT9X14EA	96 Meg NT9X14EA	96 Meg NT9X14EA
Port Card	NT9X12AD	NT9X12AD	NT9X12AD
Software Release	BCS 36	CSP004	CSP007

- RUL23 1) One (1) PaddleBoard Filler Face Plate (NT9X19BA) must be provided in each card slot POS 9R-15R and 24R-30R in shelf position 13 to satisfy forced air cooling requirements.
- RUL24 1) When the SLM is a requirement, provide two (2) NT9X27AA CM BUS Extender PB, otherwise provide two (2) paddleboard filler face plates (NT9X19BA).

- RUL25 1) Provide one (1) NT9X26AB Current Loop Remote Terminal Interface in card slot 9R in shelf position 26,39. The NT9X26AA has been Manufacture Discontinued.
- 2) If a Supernode is equipped with the Enhanced RTIF circuit pack (NT9X26AB) and the 20mA current loop local port is used, an approved 20mA current loop equipped VDT can be cabled directly to the Supernode RTIF. This connection is ISG compliant. (NOTE: The local port of the Enhanced RTIF circuit pack (NT9X26AB) can be used as either a 20mA current loop or RS232C EIA port). BCS 28 or beyond must be required for the application of NT9X26AB Enhanced RTIF.
- 3) If the Supernode is equipped with the NT9X26AA RTIF circuit pack or the RS232C EIA port of the NT9X26AB is used, the back to back modem or the modem eliminators are still required to maintain ISG compliance. RTIF terminals connected to a Supernode via EIA must be connected through back to back modems or RAD units (U.S. Only).
- 4) For non-BRISC offices, provide two (2) NT9X26AB Current Loop Remote Terminal Interface and two (2) NT9X0196 RS232C & Current Loop Cable Assemblies in card slots 19R, 20R in shelf position 13.
- 5) For BRISC 50/60 offices, provide two (2) NT9X26DC BRISC RTIF PBs in card slots 19R and 20R and two (2) NT9X0196 RS232 & Current Loop Assemblies.
- 6) For BRISC 50 Mixed Memory offices, provide two (2) NT9X26DC BRISC RTIF Circuit Packs in card slots 19R and 20R and two (2) NT9X0196 RS232 & Current Loop Assemblies.
- 7) For BRISC offices, that already have two (2) NT9X26DA BRISC RTIF PB in card slots 19R and 20R, and Current Loop capability is now required, provide two (2) NT9X0196 RS232 and current loop assemblies.
- 8) For BRISC 70 offices, provide two (2) NT9X26EA BRISC RTIF PB in card slots 19R and 20R and two (2) NT9X0196 RS232 & Current Loop Assemblies.
- 9) For BRISC 70EM offices, provide two (2) NT9X26FA BRISC RTIF PB when available in card slots 19R and 20R and two (2) NT9X0196 RS232 & Current Loop Assemblies.
- 10) When upgrading from NT9X26AA to NT9X26DA/DB/DC/EA/FA the engineer will need to provision the following:

- (1) NT9X06AW (CM) Current Loop Upgrade Kit consisting of the following:
 - (2) NT9X0196 RS232C & Current Loop Cable
 - (2) A0336796 D Sub Filter Conn Cap
 - (8) A0279319 D Sub Connector Assy Screw Retainer
 - (8) A0317136 Screw Lock Female
- (2) Cables from DPCC Bulkhead to RTIF Term.
The PEC for the cables depends on type of VDUs as shown on CA0X15.

RUL26 1) For all offices, provide one (1) NT9X6539 and one (1) NT9X6540 cable bulkheads.

RUL27 1) When the System Load Module (SLM) is a requirement, provide one (1) NT9X07AC CM SLM Common CP fill, two (2) NT9X12AD CPU Port CP, and either two (2) NT9X44AB SLM II or two (2) NT9X44AD SLM III units. The NT9X44AA SLM I has been manufacture discontinued. The NT9X12AD replaces the NT9X12AC and is the preferred card. The NT9X12AD is required for BRISC.

2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB to satisfy the forced air cooling requirements of the frame.

3) Provide SLM II when office images will exceed 30 MBytes during the engineering interval. The SLM II is a hardware requirement for offices ordering NA001 or higher Product Layers. The NT9X44AB SLM II has been manufacture discontinued.

4) Provide SLM III when either a disk drive capacity of 1 GByte or a maximum tape drive capacity of 500 MBytes are required in offices with a software load of NA004 or greater.

5) An upgrade from SLM II to SLM III is required when load image size exceeds 240 MBytes. The load image is not the same as CM load size. The formula for calculating load image is: $PS + .6*DS + .72*MS + FASTMEM$, where PS = Program Store, DS = Data Store, MS = Message Switch load size, and FASTMEM = 27.82M (28.00M in NA005 and higher) when the processor type is a Series 50 or 60. Fastmem is automatically calculated for NA005 and above software loads. The MS load size is 7M, 10M, or 16M depending on office configuration. 16M is the only MS load supported in NA004 and higher. The raw PS and DS values in KBytes can be obtained from MEMCALC and converted to MBytes by dividing by 1024.

- 6) Provide six (6) NT9X19AA filler face plates when SLM III is provided.
- RUL28 1) Provision two (2) NT9X47AA, +12V Power Converter per NT9X07AC Circuit Packfill in -48V powered Installation. The NT9X47AA is now at MD status.
- 2) Provision two (2) NT9X47AB, Global SLM Power Converter per NT9X07AC Circuit Packfill in -60V powered Installation.
- RUL29 1) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up. This cable should be provided during the M5 cabling spec. Refer to the CA drawing when this cable is required for end aisle cabling.
- 2) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NTRX49AA) is located between the NT9X01JB and the end of the line-up. This cable should be provided during the M5 cabling spec. Refer to the CA drawing when this cable is required for end aisle cabling.
- 3) Provide 1 Designation Label corresponding to each card provisioned.
- 5) The NT9X32AA Designation Labels are always provided on Shelves 26 & 39 at Card Slots 12R-29R.
- RUL30 1) Provide one (1) P0737682 designation label per NT9X30AB provided.
- 2) Provide one (1) P0709513 designation label per NT9X31AB provided.
- 3) Provide two (2) P0737637 SLM II LED Label (German) per NT9X44AB SLM II or NT9X44AD SLM III unit.
- RUL31 1) Provide one (1) NT9X9532 stand-alone cabling interface kit when powering the NT9X01JB cabinet from the 7 foot PDC frame, OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.

When an NT9X9532 stand-alone cabling interface kit is required, P0736059 APC cabinet power filter labels are also required. Provide one (1) P0736059 per DPCC Cabinet requiring NT9X9532 interface kit.

Customers may require (1) one spare EMI line filter (A0326932) per office. This filter is part of the stand-alone interface kit. The new versions of this filter are no longer prone to failure and do not require sparing.

- 2) Provide one (1) NT9X9531 horizontal power cabling interface kit when powering the NT9X01JB cabinet from the NTRX31AA, or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

When an NT9X9531 horizontal power cabling interface kit is required, a P0737633 DPCC terminal block designation strip is also required. Provide one (1) P0737633 DPCC terminal block designation strip per DPCC requiring the NT9X9531 interface kit.

RUL32) Deleted.

RUL33) 1) Deleted.

2) Deleted.

RUL34) 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British telephone system.

RUL35) 1) Provide one (1) A0368392 Terminal Block Cover Assembly for each SN Cabinet.

MECHANICAL H/W FOR C42(S/DMS) CABINET

PEC CODE: NT9X95BA

CPC CODE: B0238864

RATING: STD

REPLACES: NT9X95AA

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: This Engineering Manual Section describes the provisionable mechanical hardware for the S/DMS Cabinet.

| REFERENCE DOCUMENTATION: MS9X95BA 00 02
SL9X95BA 00 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: Scott Maggiolo Dept. 3471 (PPK)

NT9X95BA EMA4-07-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 10	ECM 626 15	Create Section.
94 05 12	ECM 626 17	Update Cable Trough Provisioning.
94 09 02	ECM 626 20	Clarify C42 Mechanical Hardware prov.
94 11 22	ECM 632 12	Clarify Cable Trough provisioning.
95 02 09	ECM 626 23	Clarify Rule 1.
95 04 17	ECM 627 11	Reword Rule 1. Added blue boots for UK applications.
95 07 11	ECM 626 25	Update door provisioning.
95 12 19	ECM 626 29	Minor corrections.
96 03 08	ECM 683 21	Add GCC Cable Troughs and provisioning rules per EC 018-47016.

The MECHANICAL H/W FOR C42(S/DMS) CABINET is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
C42 Cabinet Weldment	NT9X9575					AP
C42 Door Kit (Brown)	NT9X9568					RUL1
C42 Door Kit (Grey)	NT9X9569					RUL1
Door Kit (Top Latch) Grey	NT9X9570					RUL1
Door Kit (Top Latch) Brown	NT9X9571					RUL1
Cable Trough Junction	NT0X24BJ					RUL3
Cabinet Isolator	P0729947					RUL4
Cabinet Levelling Equipment	NTRX2523					RUL5
Front & Rear X-Aisle Assy (3 shield) (Grey)	NT0X24CX					RUL6, RUL14, RUL26
Rear X-Aisle Assembly (3 shield) (Grey)	NT0X24CY					RUL6, RUL14, RUL26
Front & Rear X-Aisle Assy (3 shield) (Brown)	NT0X24CR					RUL7, RUL13, RUL26
Rear X-Aisle Assembly (3 shield) (Brown)	NT0X24CS					RUL7, RUL13, RUL26
Lighting Kit Equipment	NT0X24DE					RUL8
Single Hotslide Junction kit	NT0X24CV					RUL9
Double Hotslide Junction kit	NT0X24CW					RUL10
Door Plastic Washers	P0640498					RUL12
C42 Grey Cable Trough	NTRX55BE					RUL15
C42 Brown Cable Trough	NTRX55BF					RUL15
C42 Light Mounting	NTRX55BJ					RUL16
Adapter Kit						
GCC C42 Cable Trough (Grey) Assembly	NT0X3743					RUL25
GCC C42 Cable Trough (Brown) Assembly	NT0X3744					RUL25
Warning Label English "Do Not Step"	P0675709					RUL17
Warning Label Eng/French "Do Not Step"	P0689135					RUL18
Earthquake Anchoring Kit	NTNX2568					RUL19
C42 Frame Junction Material	P0741484					RUL20
EMI Contact Strip Upright Cable Trough (Grey) (without busbars)	NTEX70AA					RUL21
Cable Trough (Brown)	NT0X24BH					RUL22
Cable Trough (Grey)	NT0X25AX					RUL23

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(with busbars) 2 Hole Lug Boot, Blue	P0808928					RUL24

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES: 1) Reserved.

RULES:

- AP 1) When PEC NT9X95BA is ordered, these items are provided.
- RUL1) 1) For all applications: Provide one (1) NT9X9568 (brown) or NT9X9569 (grey) Center Latch door kit. These can be applied to the NT9X9575 C42 Cabinet. The new doors are contained in these kits.
- 2) For applications where top latch is absolutely required instead of center latch: Provide one (1) NT9X9570 (grey) or NT9X9571 (brown) door kit. The old doors, which are being phased out, are contained in these kits. These can be applied to the NT9X9501 or NT9X9575 C42 Cabinets on office extensions.
- RUL2) 1) Deleted.
- RUL3 1) NT0X24BJ provides all mechanical hardware necessary to join two Cable Troughs together. Quantity one is required whenever two Cable Troughs are side by side in a lineup or N-1 kits for N frames. (Eg. 5 kits for 6 Frames)
- RUL4 1) Provide one (1) P0729947 Isolator pad when anchors are provided.
- RUL5 1) Provide one NTRX2523 Levelling Kits per cabinet except in earthquake zone application.
- RUL6 1) NT0X24CX (Grey) provides all hardware for one front & rear X-Aisle Junction for a C42 cabinet.
- 2) NT0X24CY (Grey) provides all hardware for rear X-Aisle Junction for a C42 Cabinet.
- RUL7 1) NT0X24CR (Brown) provides all hardware for one front & rear X-Aisle Junction from a C42 Cabinet to a DMS-100 lineup.
- 2) NT0X24CS (Brown) provides all hardware for rear X-Aisle Junction from a C42 cabinet to a DMS-100 lineup.
- RUL8 1) Provide one (1) NT0X24DE Cabinet Lighting Assembly per C42 cabinet per job spec. (When equipped with NT0X24BH, NT0X25AX, or NTEX70AA cable troughs)
- RUL9 1) NT0X24CV provides the mechanical hardware necessary to interface a single cabinet at the beginning or middle or end of a DMS Lineup.

- RUL10 1) NT0X24CW provides the mechanical hardware necessary to interface a double cabinet at the beginning or middle or end of a DMS Lineup.
- RUL11 1) Deleted
- RUL12 1) Provide sixteen (16) P0640498 Plastic Washers per C42 cabinet. Install plastic washers prior to door installation. The number of washers per hinge can be varied from one to ten with a nominal value of four.
- RUL13 1) This is for a cabinet with Brown exterior parts.
- RUL14 1) This is for a cabinet with Grey exterior parts.
- RUL15 1) Provide one (1) NTRX55BE (Grey) or NTRX55BF (Brown) Cable Trough per C42 cabinet, except in raised floor applications with under floor distribution or Global Cable Conveyance (GCC) applications if so requested by the Customer. Cable troughs may be ordered for offices with raised floors if requested by the Customer. These cable troughs replace the NT0X25AX, NTEX70AE, and NT0X24BH.
- RUL16) 1) Provide one NTRX55BJ Light Mounting Adapter Kit when installing the NT0X24DE Light Assembly to the NTRX55BE or NTRX55BF Cable Troughs
- RUL17) 1) Provide eight (8) P0675709 Labels per cable trough (NT0X24BH, NT0X25AX, NTEX70AA) English Language Only.
- RUL18) 1) Provide eight (8) P0689135 Labels per cable trough (NT0X24BH, NT0X25AX, NTEX70AA) Bilingual Documentation Only.
- RUL19) 1) Provide one (1) NTN2568 Earthquake Anchor Kit per C42 Cabinet for earthquake zone applications or at customer request in non earthquake zones.
- RUL20) 1) Provide Two (2) P0741484 EMI Contact Strip Uprights to each C42 cabinet (front and rear). This is not required for standalone applications.
- RUL21) 1) Provide one (1) Cable Trough Assembly (grey) per C42 Cabinet in a Cabinetized DMS office, except in raised floor application with under floor distribution or Global Cable Conveyance (GCC) applications. This cable trough will be replaced by the NTRX55BE when phase in plan is established.

- RUL22) 1) Provide one (1) Cable Trough (brown) per C42 Cabinet, except in raised floor application with under floor distribution and Global Cable Conveyance (GCC) applications. The NT0X24BH is one complete cable trough including upper grilles. This cable trough will be replaced by the NTRX55BF when phase in plan is established.
- RUL23) 1) Provide one (1) Cable Trough (grey) per C42 Cabinet, except in raised floor application with under floor distribution and Global Cable Conveyance (GCC) applications. The NT0X25AX is one complete cable trough including upper grilles (Richardson applications). This cable trough is replaced by the NTRX55BE.
- RUL24) 1) For UK applications only. Provide eight (8) Blue, 2 Hole Lug Boots to designate the negative DC voltage conductor for all Model B cabinets equipped for external powering. These boots must be ordered ship loose to replace the white boots that are provided with the standard external power filter kit. The blue boots will be required until the UK is able to procure blue power cable and thus eliminate the need for blue boots.
- RUL25) 1) Provide one (1) NT0X3743 (Grey) or NT0X3744 (Brown) Cable Trough assembly per C42 Cabinet for non-raised floor, Global Cable Conveyance (GCC) applications.
- RUL26) 1) For provisioning of cross aisle hardware for Global Cable Conveyance (GCC) applications, refer to Handbook HB0X37GC, "EF&I Cabinet Applications" section.

COMPUTING MODULE CURRENT LOOP UPGRADE KIT

PEC CODE: NT9X06AZ

CPC CODE: B0230164

RATING: STD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MS

ENGINEERING DESCRIPTION: The Computing Module Current Loop Upgrade Kit provides hardware modification provide for a current loop and RS232 interface to the Remote Terminal of the Enhanced Core.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

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

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

NT9X06AZ EMA4-98-CMPS-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
95 07 11	ECM 626 25	Reformat section.
95 08 28	ECM 626 26	Minor corrections.

The Computing Module Current Loop Upgrade Kit is comprised of the following:

The codes of the Frames to which this change is applicable are as follows: NT9X01BA and NT9X01JA.

The NT9X06AZ Product Change Kit is comprised of the following removals and additions.

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Cable Assy E/W two 25 pin conn	NT9X0160		2	13	19R 20R	
ADD	RS232C & CL Ca Assy (at each Bulkhead)	NT9X0196		2	13	19R 20R	AP
REMOVE	Remote Term I/F PB	NT9X26AA		2	13	19R 20R	
ADD	CL Rem Term I/F PB	NT9X26AB		2	13	19R 20R	AP

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	Desig Label (NT9X26AB)	P0705003		2	13	19R 20R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

NOTES:

- 1) Stocklist for the PC Kit contains equipment to modify both planes of the CM shelf.
- 2) Refer to the Engineering Manual Section on the affected frame (i.e. NT9X01BA, or NT9X01JA) for provisioning criteria.
- 3) Office must be equipped with BCS28 Software.

RULES:

- AP 1) When PEC NT9X06AZ is ordered, these items are provided.

MESSAGE SWITCH CLOCK INTERFACE UPGRADE KIT

PEC CODE: NT9X04AZ

CPC CODE: B0230190

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MS

ENGINEERING DESCRIPTION: The Message Switch Clock Interface Upgrade Kit provides hardware modification to directly interface the Message Switch with an external clock source for Stratum 1,2,2.5, or Stratum 3 synchronization.

REFERENCE DOCUMENTATION: SL9X04AZ 01 03

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

| ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NT9X04AZ EMA4-98-MSPS-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 07 21 97 04 10	----- ECM 626 19 ECM 626 36	Previous history not available ECD 018-42988 Add connectors. MD the NT9X53AB (MS System Clock CP) per EC 018-48230.

The codes of the Frames to which this change is applicable are as follows:

Compatible Frame Code

NT9X01BA
NT9X01JA

The NT9X04AZ Product Change Kit is comprised of the following removals and additions.

The Message Switch Clock Interface Upgrade Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Coax Cable Assy	NT9X0150		2	26,39	8R	
REMOVE	Cable Assy	NT9X0158		2	26,39	8R	
REMOVE	Cable Assy	NT9X0159		2	26,39	8R	
ADD	Coax Cable Assy	NT9X0192		4	26,39	8R	AP
ADD	Composite Clk Ca Assy	NT9X0175		2	26,39	8R	AP
ADD	Conn Coax BNC Straight	A0344948		4	26,39	8R	AP
REMOVE	MS System Clock CP	NT9X53AA		2	26,39	8F	
ADD	MS System Clock CP	NT9X53AB		2	26,39	8F	RUL1
ADD	Combined Clock CP	NT9X53AC		2	26,39	8F	RUL1
REMOVE	MS System Clock PB	NT9X54AA/AB		2	26,39	8R	
ADD	Sys Clk Ext I/F PB	NT9X54AC		2	26,39	8R	RUL2
ADD	Japan Sys Clk I/F PB	NT9X54AD		2	26,39	8R	RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X53AB	MD	NT9X53AD

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) Stocklist for the PC Kit contains equipment to modify both MS shelves of a Dual Plane Combined Core Cabinet.
- 2) Refer to the Engineering Manual Section on the affected frame (i.e. NT9X01BA, or NT9X01JA) for provisioning criteria.
- 3) Addition and/or removal of all connectors and cable assemblies are located at the right bulkhead.
- 4) Office must be equipped with BCS28 or higher for NT9X53AB. The NT9X53AB CP is at MD status.
- 5) In Canada, office must be equipped with BCS31 or higher for NT9X53AC. In the US, office must be equipped with BCS32 or higher for NT9X53AC.

RULES:

- AP 1) When PEC NT9X04AZ is ordered, these items are provided.
- RUL1 1) Provision one (1) NT9X53AB MS System Clock CP in card slot 8F of MS position 26 and 39 for all applications of the NT9X04AZ PC Kit. The NT9X53AB is now at MD status and is replaced by the NT9X53AD.
- 2) Provision one (1) NT9X53AC Combined Clock CP in card slot 8F of MS position 26 and 39 for all applications of the NT9X04AZ PC Kit.
- RUL2 1) Provide one (1) NT9X54AC System Clock External Interface PB in card slot 8R of MS position 26 and 39 for all North American applications of the NT9X04AZ PC Kit.
- 2) Provide one (1) NT9X54AD (Japan) System Clock External Interface in card slot 8R in shelf positions 26 and 39 for all Japan offices applying the NT9X04AZ PC Kit.

97/12/09

EMA5

INPUT/OUTPUT SUBSYSTEMS CHAPTER ALL

INPUT/OUTPUT SUBSYSTEMS CHAPTER ALL

THIS PAGE IS INTENTIONALLY LEFT BLANK

97/12/09

INPUT/OUTPUT SUBSYSTEMS CHAPTER ALL

EMA5-01-BMCA-1	REDUNDANT BMC LSSGR BISYNC PSEUDO	NT8M04_C
EMA5-01-BMCA-4	REDUNDANT BMC LSSGR, BX.25	NT8M04_E
EMA5-01-BMCA-41	BMC SYSTEM, DMS-100, AMAT	NT8M04GE
EMA5-01-BMCA-42	BMC SYSTEM, DMS-100, AMAT	NT8M04HE
EMA5-01-BMCA-43	BMC SYSTEM, DMS-100, AMAT	NT8M04IE
EMA5-01-BMCA-5	REDUNDANT BMC AMA NT, HDLC ADU, PS	NT8M04_J
EMA5-01-BMCB-1	BMC SYSTEM, DMS-100, INDEPENDANT, BISYNC	NT8M04GC
EMA5-01-BMCS-1	REDUNDANT BMC SMDR/NT FORMAT	NT8M04_A
EMA5-01-BMCS-2	REDUNDANT BMC SMDR/NT FORMAT ASCII	NT8M04_M
EMA5-01-DPP-1	DISTRIBUTED PROCESSING PERIPHERAL	NT8X48AB
EMA5-01-DPP-3	DISTRIBUTED PROCESSING PERIPHERAL	NT8X48AD
EMA5-01-DPP-4	DISTRIBUTIVE PROCESSING PERIPHERAL	NT8M05AB
EMA5-01-DPP-5	UL DPP SHELF,	NT8X48BD
EMA5-01-DSM-1	DATA SET MODULE SHELF	NT5X08AC
EMA5-01-IOC-3	INPUT/OUTPUT CONTROLLER MODULE (IOC)	NT1X61AG
EMA5-01-ROS-1	REMOTE OSCILLATOR SHELF	NT3X95AB
EMA5-01-ROS-2	REMOTE OSCILLATOR DMS-CORE SHELF	NT3X95BB
EMA5-01-000	INPUT/OUTPUT EQUIPMENT FRAME	NT0X43AD
EMA5-03-IOM-001	IOM PERTEC SMART CABLE ASSEMBLY	NTFX36AA
EMA5-03-IOM-002	IOM - DPP/BMC INTERFACE	NTRX33DW
EMA5-03-IOM-003	CIOE RETROFIT KIT FOR IOM TO MTD	NTRX33DX
EMA5-99-BMC-1	FIELD UPGRADE KITS FOR BMC PRODUCTS	T_BMC_KITS
EMA5-99-BMC-2	BMC UPGRADE KIT,	NT6M97IM
EMA5-99-BMC-3	BMC UPGRADE KIT,	NT6M97IN
EMA5-99-BMC-4	BMC UPGRADE KIT,	NT6M97IT
EMA5-99-BMC-5	BMC UPGRADE KIT,	NT6M97JH
EMA5-99-BMC-6	BMC UPGRADE KIT,	NT6M97LC
EMA5-99-BMC-7	BMC UPGRADE KIT,	NT6M97JF
EMA5-99-BMC-8	BMC UPGRADE KIT, BISYNC, INDEP	NT6M97IK
EMA5-99-DDU-1	14 INCH DDU ENHANCEMENT	NT4X00AZ
EMA5-99-DPP-1	DPP CONVERSION PC KIT	NT8X48AC
EMA5-99-DPP-10	DPP UPGRD, NON-TURBO TO 1GB TURBO/COMPRES	NT6M97FC
EMA5-99-DPP-11	DPP UPGRD, NON-TURBO TO 2GB TURBO	NT6M97FD
EMA5-99-DPP-12	DPP UPGRD, NON-TURBO TO 2GB TURBO/COMPRES	NT6M97FE
EMA5-99-DPP-13	DPP UPGRD, TURBO TO 1GB TURBO	NT6M97FF
EMA5-99-DPP-14	DPP UPGRD, TURBO TO 2GB TURBO	NT6M97FG
EMA5-99-DPP-15	DPP UPGRD, TURBO TO 1GB TURBO/COMPRESSIO	NT6M97FH
EMA5-99-DPP-16	DPP UPGRD, TURBO TO 2GB TURBO/COMPRESSIO	NT6M97FI
EMA5-99-DPP-2	DPP CONVERSION PC KIT	NT6M97EA
EMA5-99-DPP-3	DPP CONVERSION PC KIT	NT6M97EB
EMA5-99-DPP-4	DPP CONVERSION PC KIT	NT6M97EC
EMA5-99-DPP-5	DPP CONVERSION PC KIT	NT6M97ED
EMA5-99-DPP-6	DPP CONVERSION PC KIT	NT6M97EF
EMA5-99-DPP-7	DPP CONVERSION PC KIT	NT6M97EG
EMA5-99-DPP-8	DPP UPGRD, NON-TURBO TO 1 GB NON-TURBO	NT6M97FA
EMA5-99-DPP-9	DPP UPGRD, NON-TURBO TO 1GB TURBO	NT6M97FB
EMA5-99-IOC-2	I/O MESSAGE CONTROLLER REPLACEMENT KIT	NT1X61AY
EMA5-99-ROS-1	STRATUM II REMOTE OSCILLATOR SHELF ISG K	NT0X43XB
EMA5-99-ROS-2	STRATUM 2.5 REMOTE OSCILLATOR SHELF ISG	NT0X43XC

97/12/09

REDUNDANT BMC AMA LSSGR BISYNC PSEUDO

PEC CODE: NT8M04_C

CPC CODE: N/A

RATING: Standard

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: BMCA

ENGINEERING DESCRIPTION: The NSD Redundant Billing Media Converter II for Automatic Message Accounting (AMA), provides for the acquisition, storage, formatting, and forwarding of AMA data from the switch. In operation, the BMCA accepts AMA data from the DMS100F, temporarily stores the collected data on hard disk, and when requested, retrieves, reformats, and sends the stored data to the Host Collector. For 3.5 inch disk LSSGR BiSync Independent BMC see EMA5-01-BMCB-1 for NT8M04GC.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

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

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT8M04 C EMA5-01-BMCA-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 202 08	Previous history not available Updates this section per the following: - ET-14369 Replace NT6M72AD and NT6M66AC with NT6M72AE and NT6M66AL Respectively per Cook ECO 70573. - Change all references to Cook/Cook Division to NSD - Add Market and Change History Info.
96 05 31	ECM 202 14	Introduce 3.5" disk BiSync LSSGR BMC per ECD 011-21862.

The Redundant BMC AMA LSSGR BISYNC Pseudo is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Hardware Unit BMCA EMC	NT8M54AC		1	X		AP
CPU PCB	NT6M62BA		1	X	1A1	AP
EPR0M PCB	NT6M63DE		1	X	1A2	AP
Memory Expansion PCB	NT6M64AA		1	X	1A3	AP
Error Control PCB	NT6M65AB		1	X	1A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X	1A6	AP
Disk Interface PCB	NT6M66AL		1	X	1A11	AP
Data Stream Interface PCB	NT6M70AB		1	X	1A12	AP
Data Stream Interface PCB	NT6M70AB		1	X	1A13	AP
Bus Terminator PCB	NT6M68AA		1	X	1A14	AP
Disk Crossover PCB	NT6M72AE		1	X	1A15	AP
PWR/ALM Communications PCB	NT6M84BA		1	X	1A16	AP
4-Chan Communications PCB	NT6M85AA		1	X	1A17	AP
Fan Assembly	NT6M55DD		1	X	1A18	AP
Fan Foam Filter	680-7859		-	X	1A18	AP
Switch & Status Panel	NT8M59AA		1	X	1A19	AP
Power Supply Assembly	NT6M71AB		1	X	1A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X	1A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X	1A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X	1A21	RUL5
Disk Controller PCB	680-9143		-	X	1A21	AP
Hardware Unit BMCD EMC	NT8M54AC			x+14		AP
CPU PCB	NT6M62BA		1	x+14	2A1	AP
EPR0M PCB	NT6M63DE		1	x+14	2A2	AP
Memory Expansion PCB	NT6M64AA		1	x+14	2A3	AP
Error Jumper Control	NTM609AB		1	x+14	2A5	AP
Quad Serial I/O PCB	NT6M60BA		1	x+14	2A6	AP
Disk Interface PCB	NT6M66AL		1	x+14	2A11	AP
Data Stream Interface PCB	NT6M70AB		1	x+14	2A12	AP
Data Stream Interface PCB	NT6M70AB		1	x+14	2A13	AP
Bus Terminator PCB	NT6M68AA		1	x+14	2A14	AP
Disk Crossover PCB	NT6M72AE		1	x+14	2A15	AP
Fan Assembly	NT6M55DD		1	x+14	2A18	AP
Fan Foam Filter	680-7859		-	x+14	2A18	AP
Filler Panel	NT8M59BB		1	x+14	2A19	AP
Power Supply Assembly	NT6M71AB		1	x+14	2A20	AP
72MB Disk Drive Unit	NT6M72AA		1	x+14	2A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	x+14	2A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	x+14	2A21	RUL5
Disk Controller PCB	680-9143		-	x+14	2A21	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Interface Box	NT6M98AA	A2	1			AP
Connector/Transformer Kit	NT6M96AA		2			AP
Mounting Adapter 19-26"	NT6M97AA		1			AP
BMCA MIN Kit W/O Disk Opt C	NT8M94BC					RUL1
BMCA MIN Kit W/30MB Opt C	NT8M94GC					RUL1
BMCA MIN Kit W/72MB Opt C	NT8M94AC					RUL1
BMCA MIN Kit W/140MB Opt C	NT8M94EC					RUL1
BMCA MAX Kit W/72MB Opt C	NT8M94CC					RUL1
BMCA MAX Kit W/O Disk Opt C	NT8M94DC					RUL1
BMCA MAX Kit W/140MB Opt C	NT8M94FC					RUL1
BMCA MAX Kit W/30MB Opt C	NT8M94HC					RUL1
AC Mounting Plate	NT0X07AU					RUL2
Duplex AC Outlet	ED351670G30					RUL2
KSR Printer						RUL3
Modem						RUL4

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 "X" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is

used to indicate the second shelf of the two shelf arrangement.

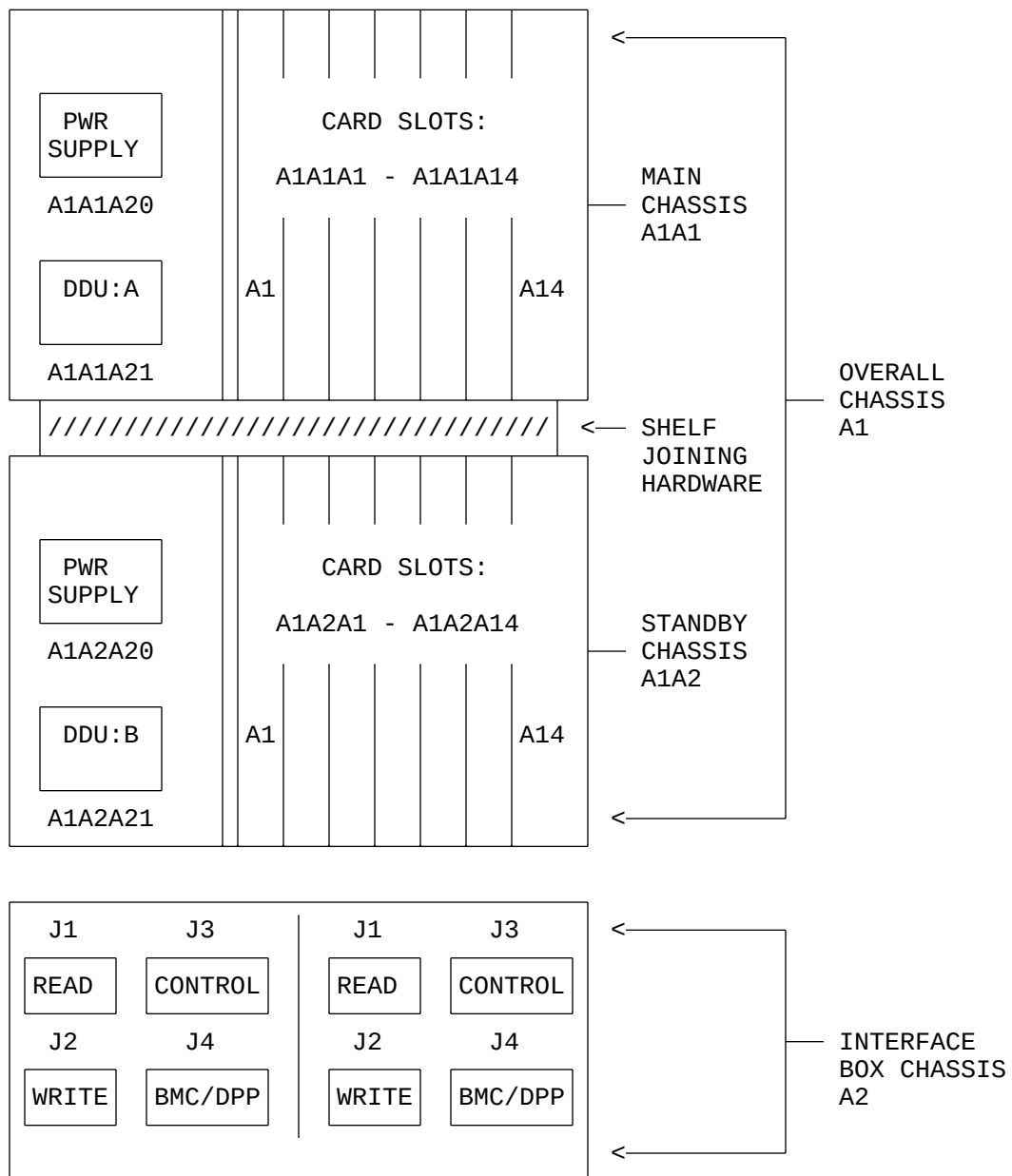
- 2) The underline "_" in the PEC NT8M04_C must be substituted for one of three variables which are used to indicate the required Disk Drive Unit (DDU) size, where:

A = 72 Megabyte Disk Drive Unit, or
B = 140 Megabyte Disk Drive Unit, or
C = 30 Megabyte Disk Drive Unit.

- a) The resulting possibilities for the Redundant BMCA PECs are:

NT8M04AC - BMCA w/72MB LSSGR Bisync Pseudo
NT8M04BC - BMCA w/140MB LSSGR Bisync Pseudo
NT8M04CC - BMCA w/30MB LSSGR Bisync Pseudo

- 3) See Table B I/O Controller Module Provisionable Cards for device controller card assignment rules.
- 4) The diagram below depicts the Redundant BMC architecture:



RULES:

- RUL1 1) Provide the BMCA spares kits as per telco instructions.
- RUL2 1) The BMCA is equipped with three crystal clocks which are used to provide time stamps for log messages. One is DC powered and is always active when the BMCA is powered. The other two may be powered from a 110VAC 60Hz signal or 8KHz signal. However, the 8KHz clock is not to be used in the DMS100F environment. When the 110VAC clock is connected it becomes the prime clock and the DC clock switches to the standby mode. If the 110VAC clock is not connected then the DC clock will provide the log message time stamps, however there is not a backup clock in this configuration.
- 2) Connecting this equipment as described below is optional; it should not be connected in ISG offices. Providing this equipment and connections would introduce a ISG violations.
- 3) If the commercial AC (non-generator) supply is required to drive the BMCA clock interrupt circuit in the Power & Alarm PCB. Provide one NT0X07AU (AC Mounting Plate) to accommodate the ED3516_30 Group (Duplex Outlet Box) and cabling provided by Building Studies. A 16 VAC stepdown transformer is always provided with the BMCA unit.
- RUL3 1) Provide a KSR printer for BMCA installation, testing, and maintenance purposes.
- RUL4 1) The BMCA employs two modems, one is used for the polling of call record data and the other is for downloading of software.

CAUTION: UDS modems will not work properly with the BMCA Automatic Dial-Up (ADU) function and emergency software downloads.

- 2) The modems selected may be either Desk Set (DS) or Desk Set Card (DSC) Dial-Up modems, which operates at 12/24/4800 bps. The modem model numbers are T212, 201c, or 208A/B. These modems do not require autodial capabilities. Refer to the Engineering Manual Sections EMA13-01-UDS-1 for detailed engineering information for these modems.
- 3) The Maintenance Terminal Port baud rate can not exceed 1200bps. Therefore provide the 212 modem model only for this port.

- RUL5 1) The DDU provided with the BMCA will be one of the following DDUs depending on the variable selected per NOTE 2 above.

NT6M72AA - 72MB DDU or, NT6M72BA - 140MB DDU, or NT6M72CA - 30MB DDU

REDUNDANT BMC LSSGR, BX.25
30MB - 720MB DISK DRIVES

PEC CODE: NT8M04_E

CPC CODE: N/A

RATING: Standard

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: BMCA

ENGINEERING DESCRIPTION: The Redundant Billing Media Converter II for Automatic Message Accounting (AMA), provides for the acquisition, storage, formatting, and forwarding of AMA data from the switch. In operation, the BMCA accepts AMA data from the DMS100F, temporarily stores the collected data on hard disk, and when requested, retrieves, reformats, and sends the stored data to the Host Collector. See EMA5-01-BMCA-41 for NT8M04GE (1GB Non-Turbo BMC), EMA5-01-BMCA-42 for NT8M04HE (1GB Turbo BMC), or EMA5-01-BMCA-43 for NT8M04IE (2GB Turbo BMC).

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

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

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT8M04 E EMA5-01-BMCA-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 202 08	Previous history not available Includes the following Updates: - Cook ECO #70573 DTD: 911014 Add 56K Polling Option for the NT8M04_E Series BMC.
96 04 08	ECM 202 13	- ET-14369 Replace NT6M72AD and NT6M66AC with NT6M72AE and NT6M66AL Respectively per Cook ECO 70573. - Change all references to Cook/Cook Division to NSD Add reference to NT8M04GE/HE/IE 3.5" BMCs in Engineering discription. - Change all references to NSD to Nortel.

The Redundant BMC LSSGR, BX.25 30MB - 720MB Disk Drives is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Hardware Unit BMCA EMC	NT8M54AE		1	X		AP
CPU PCB	NT6M62BA		1	X	1A1	AP
EPROM PCB	NT6M63DC		1	X	1A2	RUL6
EPROM PCB	NT6M63CM		1	X	1A2	RUL6
Memory Expansion PCB	NT6M64AA		1	X	1A3	AP
Error Control PCB	NT6M65AG		1	X	1A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X	1A6	AP
Quad Serial I/O PCB	NT6M60BA		1	X	1A7	RUL9
56K Interface PCB	NT6M94AA		1	X	1A8	RUL9
Disk Interface PCB 30,72,140	NT6M66AL		1	X	1A11	RUL7
Disk Interface PCB 380MB	NT6M66AH		1	X	1A11	RUL7
Disk Interface PCB 380,760	NT6M66BA		1	X	1A11	RUL7
Data Stream Interface PCB	NT6M70BD		1	X	1A12	AP
Data Stream Interface PCB	NT6M70BD		1	X	1A13	AP
Bus Terminator PCB	NT6M68AA		1	X	1A14	AP
Disk Crossover PCB	NT6M72AE		1	X	1A15	RUL8
Disk Crossover PCB	NT6M93AA		1	X	1A15	RUL8
PWR/ALM Communications PCB	NT6M84BA		1	X	1A16	AP
4-Chan Communications PCB	NT6M85AA		1	X	1A17	AP
Fan Assembly	NT6M55DD		1	X	1A18	AP
Fan Foam Filter	680-7859		-	X	1A18	AP
Switch & Status Panel	NT8M59AA		1	X	1A19	AP
Power Supply Assembly	NT6M71AB		1	X	1A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X	1A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X	1A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X	1A21	RUL5
380MB Disk Drive Unit	NT6M72DA		1	X	1A21	RUL5
380MB Disk Drive Unit TURBO	NT6M72DD		1	X	1A21	RUL5
760MB Disk Drive Unit TURBO	NT6M72EA		1	X	1A21	RUL5
Disk Controller PCB	680-9143		-	X	1A21	RUL5
4-Chan Communications PCB	NT6M85AA		1	X	1A26	AP
CPU PCB	NT6M62BA		1	X+14	2A1	AP
EPROM PCB	NT6M63DC		1	X+14	2A2	RUL6
EPROM PCB	NT6M63CM		1	X+14	2A2	RUL6
Memory Expansion PCB	NT6M64AA		1	X+14	2A3	AP
Error Control Jumper PCB	NTM609AB		1	X+14	2A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X+14	2A6	AP
Quad Serial I/O PCB	NT6M60BA		1	X+14	2A7	RUL9
56K Interface PCB	NT6M94AA		1	X+14	2A8	RUL9
Disk Interface PCB 30,72,140	NT6M66AL		1	X+14	2A11	RUL7
Disk Interface PCB 380MB	NT6M66AH		1	X+14	2A11	RUL7
Disk Interface PCB 380,760	NT6M66BA		1	X+14	2A11	RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Data Stream Interface PCB	NT6M70BD		1	X+14	2A12	AP
Data Stream Interface PCB	NT6M70BD		1	X+14	2A13	AP
Bus Terminator PCB	NT6M68AA		1	X+14	2A14	AP
Disk Crossover PCB	NT6M72AE		1	X+14	2A15	RUL8
Disk Crossover PCB	NT6M93AA		1	X+14	2A15	RUL8
56K Crossover PCB	NT6M48AA		1	X+14	2A16	RUL9
Fan Assembly	NT6M55DD		1	X+14	2A18	AP
Fan Foam Filter	680-7859		-	X+14	2A18	AP
Filler Panel	NT8M59BB		1	X+14	2A19	AP
Power Supply Assembly	NT6M71AB		1	X+14	2A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X+14	2A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X+14	2A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X+14	2A21	RUL5
380MB Disk Drive Unit	NT6M72DA		1	X+14	2A21	RUL5
Disk Controller PCB	680-9143		-	X+14	2A21	AP
Interface Box	NT6M98AA	A2	1			AP
Connector/Transformer Kit	NT6M96AA		2			AP
Mounting Adapter 19-26"	NT6M97AA		1			AP
Spare Kit MIN W/72MB	NT8M94AE					RUL1
Spare Kit MIN W/O Disk	NT8M94BE					RUL1
Spare Kit MIN W/140MB	NT8M94EE					RUL1
Spare Kit MIN W/30MB	NT8M94GE					RUL1
Spare Kit MIN W/380MB	NT8M94JE					RUL1
Spare Kit MIN W/O Disk 380	NT8M94LE					RUL1
Spare Kit MIN W/380MB TURBO	NT8M94NE					RUL1
Spare Kit MIN W/760MB TURBO	NT8M94QE					RUL1
Spare Kit MIN W/O disk TURBO	NT8M94SE					RUL1
Spare Kit MAX W/72MB	NT8M94CE					RUL1
Spare Kit MAX W/O Disk	NT8M94DE					RUL1
Spare Kit MAX W/140MB	NT8M94FE					RUL1
Spare Kit MAX W/30MB	NT8M94HE					RUL1
Spare Kit MAX W/380MB	NT8M94KE					RUL1
Spare Kit MAX W/O Disk 380	NT8M94ME					RUL1
Spare Kit MAX W/380MB TURBO	NT8M94PE					RUL1
Spare Kit MAX W/760MB TURBO	NT8M94RE					RUL1
Spare Kit MAX W/O disk TURBO	NT8M94TE					RUL1
AC Mounting Plate	NT0X07AU					RUL2
Duplex AC Outlet	ED351670G30					RUL2
AC Mounting Plate	NT0X07AU					RUL2
Duplex AC Outlet	ED351670G30					RUL2
KSR Printer						RUL3
Modem						RUL4
Administrative Information						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

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 "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.

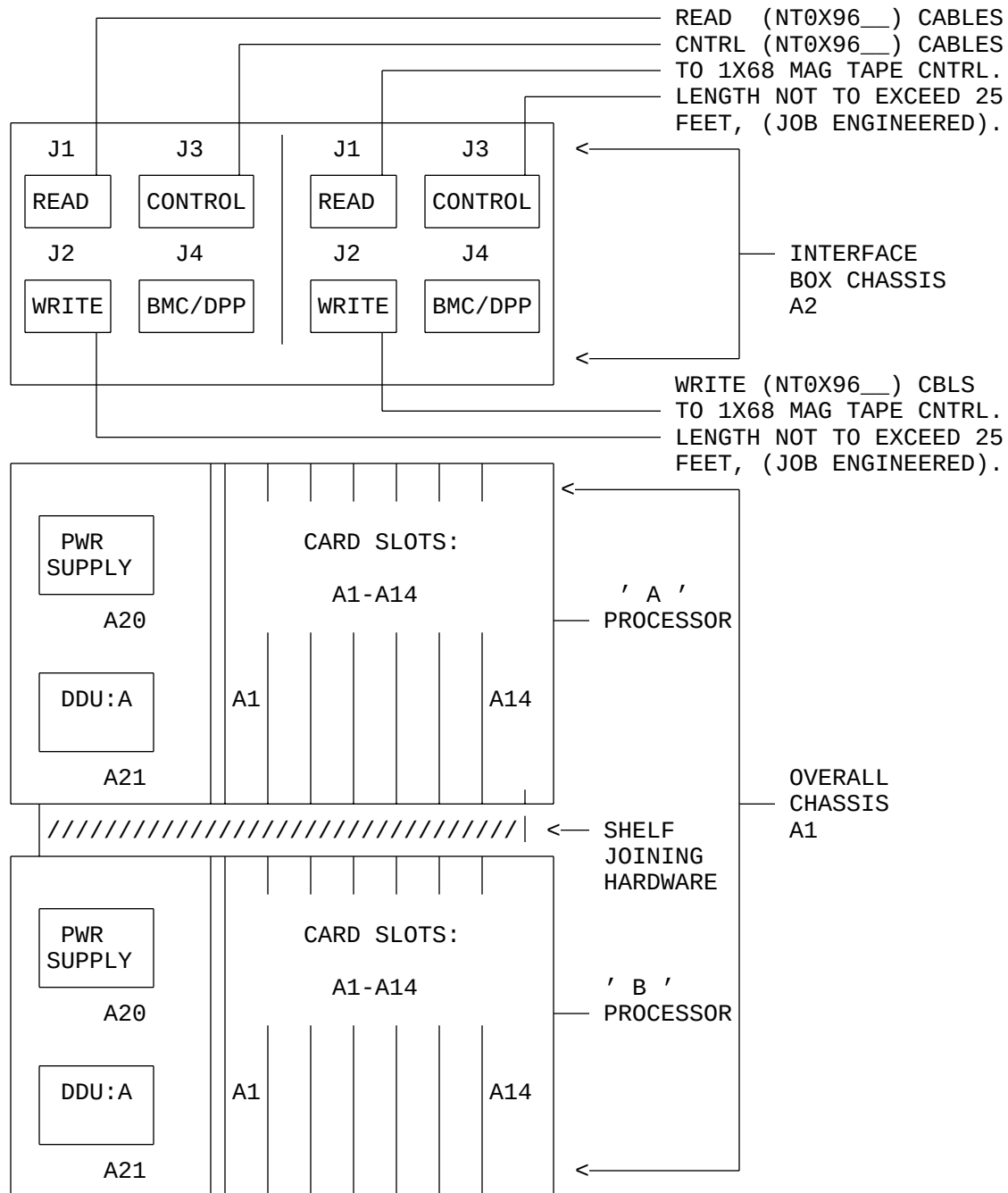
- 2) The underline "_" in the PEC NT8M04_E must be substituted for one of six variables which are used to indicate the required Disk Drive Unit (DDU) size, where:

A = 72 Megabyte Disk Drive Unit, or
 B = 140 Megabyte Disk Drive Unit, or
 C = 30 Megabyte Disk Drive Unit, or
 D = 380 Megabyte Disk Drive Unit, or
 E = 380 Megabyte Disk Drive Unit TURBO, or
 F = 760 Megabyte Disk Drive Unit TURBO

- a) The resulting possibilities for the Redundant BMC PECs are:

NT8M04AE - BMCA w/72MB DDU LSSGR, BX.25
NT8M04BE - BMCA w/140MB DDU LSSGR, BX.25
NT8M04CE - BMCA w/30MB DDU LSSGR, BX.25
NT8M04DE - BMCA w/380MB DDU LSSGR, BX.25
NT8M04EE - BMCA w/380MB DDU LSSGR, BX.25, TURBO
NT8M04FE - BMCA w/760MB DDU LSSGR, BX.25, TURBO

- 3) See Table B I/O Controller Module Provisionable Cards for device controller card assignment rules.
- 4) The diagram below depicts the Redundant BMC architecture.



* NOTE: Read, Write and Control cables are to be Engineered,
Furnished and Installed by DMS-100 engineering.

RULES:

- RUL1 1) Provide the spares kits as per telco instructions.
- RUL2 1) The BMCA is equipped with three crystal clocks which are used to provide time stamps for log messages. One is DC powered and is always active when the BMCA is powered. The other two may be powered from a 110VAC 60Hz signal or 8KHz signal. However, the 8KHz clock is not to be used in the DMS100F environment. When the 110VAC clock is connected it becomes the prime clock and the DC clock switches to the standby mode. If the 110VAC clock is not connected then the DC clock will provide the log message time stamps, however there is not a backup clock in this configuration.
- 2) Connecting this equipment as described below is optional; it should not be connected in ISG offices. Providing this equipment and connections would introduce a ISG violations.
- 3) If the commercial AC (non-generator) supply is required to drive the BMCA clock interrupt circuit in the Power & Alarm PCB. Provide one NT0X07AU (AC Mounting Plate) to accommodate the ED3516_30 Group (Duplex Outlet Box) and cabling provided by Building Studies. A 16 VAC stepdown transformer is always provided with the BMCA unit.
- RUL3 1) Provide a KSR printer for installation, testing, and maintenance purposes.
- RUL4 1) The BMCA for Feature Group E employs as few as two modems or as many as five, depending on customer preference. One modem, 1200-9600, must be attached for software updates. At least one modem must be attached for polling. For non-TURBO BMC's, NT8M04(A-D)E, it is possible to connect two modems, 1200-9600 baud. Only one is active at a time. The BMC is shipped with 3 modem cables (NT8M99AG) compatible with any 1200-9600 baud RS232 modem. For TURBO BMC's, NT8M04(E,F)E, it is possible to connect up to four polling modems. Only one of the four may be active at any given time.

Cables to attach 56K modems are NOT supplied with the BMC. The cables are length job engineered and vary with the modem manufacturer:

UDS 56K modems use NTNX36BG or NTNX36BZ
GDC 56K modems use NTNX69AA
AT&T 2600 modems use NTNX69AD

- 2) The modems selected may be either a Data Set (DS) or Data Set Card (DSC) Dial-Up modems, which operates at 12/24/4800 bps. The modem model numbers are 212, 201c, or 208A/B. These modems do not require autodial capabilities. Refer to the Engineering Manual Sections EMA13-01-UDS-1 for detailed engineering information for these modems.
- 3) The Maintenance Terminal Port baud rate can not exceed 1200bps. Therefore provide the 212 modem model only for this port.
- RUL5 1) The DDU provided with the BMCA depends on the variable selected per NOTE 2 above:
- NT6M72AA (72MB DDU), or NT6M72BA (140MB DDU), or NT6M72CA (30MB DDU), or NT6M72DA (380MB DDU), NT6M72DD (380MB TURBO), or NT6M72EA (760 DDU).
- 680-9143 Disk Controller PCB is an integral part of 30-140 DDU's and is not used on 380-760 DDU's.
- RUL6 1) The EPROM PCB provided with the BMCA depends on the variable selected per NOTE 2 above:
- NT6M63DC is provided when disk size is 30-380 non-TURBO.
NT6M63CM is provided when disk size is 380-760 TURBO.
- RUL7 1) The DISK INTERFACE PCB provided with the BMCA depends on the variable selected per NOTE 2 above:
- NT6M66AL is provided when disk size is 30-140.
NT6M66AH is provided when disk size is 380 non-TURBO.
NT6M66BA is provided when disk size is 380-760 TURBO.
- RUL8 1) The DISK CROSSOVER PCB provided with the BMCA depends on the variable selected per NOTE 2 above:
- NT6M72AE is provided when disk size is 30-380 non-TURBO.
NT6M93AA is provided when disk size is 380-760 TURBO.
- RUL9 1) Other PCB's and Assy's are provided or not provided depending on the variable selected per NOTE 2 above:
- * Provide NT6M60BA in slot A7 only when disk size is 30-380 non-TURBO.
- * Provide NT6M94AA in slot A8 only when disk size is 380-760 TURBO.

- * Provide NT6M48AA in slot 2A16 only when disk size is 380-760 TURBO.
- * Provide NT6M54AL in slot 2A26 only when disk size is 380-760 TURBO.

BMC SYSTEM, DMS-100, AMAT
3.5" 1GB DISK, NON-TURBO

PEC CODE: NT8M04GE

CPC CODE: A0627682

RATING: Standard.

REPLACES: NT8M04A-DE

REPLACED BY: Not Applicable

ABBREVIATION NAME: BMC

ENGINEERING DESCRIPTION: The Billing Media Converter (BMC) is offered with 3.5" disk drive technology which allows for a disk capacity offering of 1GB, Non-Turbo, LSSGR, and BX.25. The BMC is designed to capture, store, and forward AMA call records from the DMS-100 family of switches.

REFERENCE DOCUMENTATION: SL8M04GE 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NT8M04GE EMA5-01-BMCA-41 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" drive BMC per 011-21706.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC System, DMS-100, AMAT 3.5" 1GB Disk, Non-Turbo is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
BMC System	NT8M55AB		1			AP
Cable Braid Assy	NT0X9501		2			AP
CPU PCB	NT6M62BA		2	X, X+14	01	AP-01
EPROM PCB	NT6M63FL		2	X, X+14	02	AP-01
Extended Memory PCB	NT6M64AA		2	X, X+14	03	AP-01
Error Control II	NT6M65AG		1	X	05	AP
56 Kbps I/F CP	NT6M94AA		2	X, X+14	07	AP
SCSI INTF CP	NT6M66CA		2	X, X+14	11	AP
Data Stream I/F	NT6M70BD		4	X, X+14	12, 13	AP
SCSI X0VR CP	NT6M93BA		2	X, X+14	15	AP
56K Crossover CP	NT6M48AA		1	X+14	16	AP
1GB Disk Drive Assy	NT6M72GA		2	X, X+14	21	AP
56K Conn CP	NT6M54AL		1	X+14	26	AP
Fan Mounting Bracket	NT6M56AA		1			AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
SCSI X0VR-Drive Cbl	NT6M83AE		2			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
Keyed Status Panel Assy	NT6M59AA		1	X		AP
Fuse Kit	NT6M96AA		1			AP
Kit, Modem Conn & Shell	NT6M96AB		1			AP
Kit, Power Label	NT6M96AL		1			AP
Mounting Kit	NT6M97AA		1			AP
DMS-100 I/F Box	NT6M98AA		1			AP
Tape Emulator Cbl	NT6M99AF		1			AP
Tape Emulator Cbl	NT6M99AG		1			AP
Filler Panel Assy	NT8M59BB		1	X+14		AP
Cbl Assy, Terminal	NT8M99AB		1			AP
Cassy, Modem BMC/DPP	NT8M99AG		1			AP
Cassy, Logic Return	NT8M99AH		1			AP
BMC Nameplate	P0686423		1	X		AP
BMC Upgrd, 1GB T to 2GB T	NT6M97JH					RUL3
Spare Kit MIN W/O Disk	NT8M94WE					RUL4
Spare Kit MIN W/O Disk	NT8M94XE					RUL4
Alarm Cable Assy (IOE)	NT8M99AN					RUL5
Power & Alarm Cable (CIOE)	NT8M99AR					RUL5
Power Cable	NT8M99AL					RUL6
HSDA Cable	NTNX36BZ					RUL7
HSDA Cable	NTNX69AA					RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
HSDA Cable	NTNX69AD					RUL7
RS232-C Modem Cable	NT8M99AG					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) Calculate disk size requirements per ECM 306.
- 2) The "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.
- 3) Throughput equivalent for ports is 2400-9600 baud.
- 4) S/W load NT6M06AP and CP software NT6M9431 are loaded during the manufacturing process for each disk drive. If BMC upgrade from non- turbo to turbo, then NT6M06AR will be loaded for each turbo drive. If BMC upgrade from 1GB to 2GB, then NT6M06AS will be loaded for each 2GB drive (BMC becomes NT8M04IE).

RULES:

AP 1) When PEC NT8M04GE is ordered, these items are provided.

AP-01 1) This PEC is always provided in the NT8M55AB and is shown here for completeness.

| RUL1 1) Reserved for future use.

| RUL2 1) Reserved for future use.

| RUL3 1) Provide Upgrade Kit NT6M97JH if 2GB disk drive is required.

RUL4 1) Provide the spares kits as per telco instructions.

2) Spares Kits DO NOT contain disk drive. If required provide NT6M72GA per telco instructions.

3) Ordering of S/W for spare disk drive is not required.

RUL5 1) If BMC is mounting in IOE NT0X43AD then provide one NT8M99AN Alarm Cable. This is a job engineered cable length.

2) If BMC is mounting in CIOE NTRX33DA then provide one NT8M99AR Power & Alarm Cable.

RUL6 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.

RUL7 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.

1) If customer chooses to use V.35 Port 1 and/or 2 for BX.25 Polling functions, provide one additional modem cable for V.35 modem communication for each port per the following table;

MODEM TYPE	CABLE PEC
=====	=====
Universal Data Systems DSU (D56)	NTNX36BZ
DATATEL DCP 3080	NTNX36BZ
General DATACOM 048P034-001	NTNX69AA
General DATACOM A20-011/-014 (500C 56K)	NTNX69AA
General DATACOM A20-001/004 (500C 56KD)	NTNX69AA
SYNT 920A	NTNX69AA
AT&T 2600 Series	NTNX69AD
MR1	NTNX69AD

Active Equipment
BMC System, DMS-100, AMAT
3.5" 1GB Disk, Non-Turbo

NT8M04GE
EMA5-01-BMCA-41
Page 5

BMC SYSTEM, DMS-100, AMAT
3.5", 1GB DISK, TURBO

PEC CODE: NT8M04HE

CPC CODE: A0627683

RATING: Standard.

REPLACES: NT8M04EE-FE, AF-DF, AJ-CJ

REPLACED BY: Not Applicable

ABBREVIATION NAME: BMC

ENGINEERING DESCRIPTION: The Billing Media Converter (BMC) is offered with 3.5" disk drive technology which allows for a disk capacity offering of 1GB, Turbo, LSSGR, and BX.25. The BMC is designed to capture, store, format, and forward AMA call records from the DMS-100 family of switches.

REFERENCE DOCUMENTATION: SL8M04HE 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NT: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: NT: Barbara Berkley Dept. 3471 (PPK)

NT8M04HE EMA5-01-BMCA-42 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" drive BMC per 011-21706.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC System, DMS-100, AMAT 3.5", 1GB Disk, Turbo is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
BMC System	NT8M55AB		1			AP
Cable Braid Assy	NT0X9501		2			AP
56K Crossover CP	NT6M48AA		1	X+14	16	AP
56K Conn CP	NT6M54AL		1	X+14	26	AP
Fan Mounting Bracket	NT6M56AA		1			AP
Keyed Status Panel Assy	NT6M59AA		1	X		AP
CPU PCB	NT6M62BA		2	X, X+14	01	AP-01
EPR0M PCB	NT6M63FL		2	X, X+14	02	AP-01
Extended Memory PCB	NT6M64AA		2	X, X+14	03	AP-01
Error Control II	NT6M65AG		1	X	05	AP
SCSI INTF CP	NT6M66CA		2	X, X+14	11	AP
Data Stream I/F	NT6M70BD		4	X, X+14	12, 13	AP
1GB Disk Drive Assy	NT6M72GA		2	X, X+14	21	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
SCSI X0VR-Drive Cbl	NT6M83AE		2			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
SCSI X0VR CP	NT6M93BA		2	X, X+14	15	AP
56 Kbps I/F CP	NT6M94AA		2	X, X+14	07	AP
Fuse Kit	NT6M96AA		1			AP
Kit, Modem Conn & Shell	NT6M96AB		1			AP
Kit, Power Label	NT6M96AL		1			AP
Mounting Kit	NT6M97AA		1			AP
DMS-100 I/F Box	NT6M98AA		1			AP
Tape Emulator Cbl	NT6M99AF		1			AP
Tape Emulator Cbl	NT6M99AG		1			AP
Filler Panel Assy	NT8M59BB		1	X+14		AP
Cbl Assy, Terminal	NT8M99AB		1			AP
Cassy, Modem BMC/DPP	NT8M99AG		1			AP
Cassy, Logic Return	NT8M99AH		1			AP
BMC Nameplate	P0686423		1	X		AP
BMC Upgrd, 1GB T to 2GB T	NT6M97JH					RUL2
Spare Kit MIN W/O Disk	NT8M94WE					RUL3
Spare Kit MAX W/O Disk	NT8M94XE					RUL3
Alarm Cable Assy (IOE)	NT8M99AN					RUL4
Power & Alarm Cable (CIOE)	NT8M99AR					RUL4
Power Cable	NT8M99AL					RUL5
HSDA Cable	NTNX36BZ					RUL6
HSDA Cable	NTNX69AA					RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
HSDA Cable	NTNX69AD					RUL6
RS232-C Modem Cable	NT8M99AG					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) Calculate disk size requirements per ECM 306.
- 2) The "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.
- 3) Throughput equivalent for ports is 2400-56K baud.
- 4) S/W load NT6M06AR and C/P software NT6M9431 are loaded during the manufacturing process for each 1GB disk drive. If BMC upgrade to 2GB drive, then NT6M06AS will be loaded for each 2GB drive.

RULES:

Active Equipment
BMC System, DMS-100, AMAT
3.5", 1GB Disk, Turbo

NT8M04HE
EMA5-01-BMCA-42
Page 4

- AP 1) When PEC NT8M04HE is ordered, these items are provided.
- AP-01 1) This PEC is always provided in the NT8M55AB and is shown here for completeness.
- RUL1 1) Reserved for future use.
- RUL2 1) Provide Upgrade Kit NT6M97JH if 2GB disk drive is required.
- RUL3 1) Provide the spares kits as per telco instructions.
- 2) Spares Kits DO NOT contain disk drive. If required, provide NT6M72GA per telco instructions.
- 3) Ordering of S/W for spare disk drive is not required.
- RUL4 1) If BMC is mounting in IOE NT0X43AD then provide one NT8M99AN Alarm Cable. This is a job engineered cable length.
- 2) If BMC is mounting in CIOE NTRX33DA then provide one NT8M99AR Power & Alarm Cable.
- RUL5 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.
- RUL6 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.
- 2) If customer chooses to use V.35 Port 1 and/or 2 for BX.25 Polling functions, provide one additional modem cable for V.35 modem communication for each port per the following table;

MODEM TYPE	CABLE PEC
Universal Data Systems DSU (D56)	NTNX36BZ
DATATEL DCP 3080	NTNX36BZ
General DATACOM 048P034-001	NTNX69AA
General DATACOM A20-011/-014 (500C 56K)	NTNX69AA
General DATACOM A20-001/004 (500C 56KD)	NTNX69AA
SYNT 920A	NTNX69AA
AT&T 2600 Series	NTNX69AD
MR1	NTNX69AD

BMC SYSTEM, DMS-100, AMAT
3.5", 2GB DISK, TURBO

PEC CODE: NT8M04IE

CPC CODE: A0627684

RATING: Standard.

REPLACES: NT8M04EE-FE

REPLACED BY: Not Applicable

ABBREVIATION NAME: BMC

ENGINEERING DESCRIPTION: The Billing Media Converter (BMC) is offered with 3.5" disk drive technology which allows for a disk capacity offering of 2GB, Turbo, LSSGR, and BX.25. The BMC is designed to capture, store, format, and forward AMA call records from the DMS-100 family of switches.

REFERENCE DOCUMENTATION: SL8M04IE 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NT8M04IE EMA5-01-BMCA-43 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" drive BMC per 011-21706.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC System, DMS-100, AMAT 3.5", 2GB Disk, Turbo is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
BMC System	NT8M55AB		1			AP
Cable Braid Assy	NT0X9501		2			AP
CPU PCB	NT6M62BA		2	X, X+14	01	AP-01
EPROM PCB	NT6M63FL		2	X, X+14	02	AP-01
Extended Memory PCB	NT6M64AA		2	X, X+14	03	AP-01
Error Control II	NT6M65AG		1	X	05	AP
56 Kbps I/F CP	NT6M94AA		2	X, X+14	07	AP
SCSI INTF CP	NT6M66CA		2	X, X+14	11	AP
Data Stream I/F	NT6M70BD		4	X, X+14	12, 13	AP
SCSI X0VR CP	NT6M93BA		2	X, X+14	15	AP
56K Crossover CP	NT6M48AA		1	X+14	16	AP
2GB Disk Drive Assy	NT6M72HA		2	X, X+14	21	AP
56K Conn CP	NT6M54AL		1	X+14	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
SCSI X0VR-Drive Cbl	NT6M83AE		2			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
Keyed Status Panel Assy	NT6M59AA		1	X		AP
Fuse Kit	NT6M96AA		1			AP
Kit, Modem Conn & Shell	NT6M96AB		1			AP
Kit, Power Label	NT6M96AL		1			AP
Mounting Kit	NT6M97AA		1			AP
Fan Mounting Bracket	NT6M56AA		1			AP
DMS-100 I/F Box	NT6M98AA		1			AP
Tape Emulator Cbl	NT6M99AF		1			AP
Tape Emulator Cbl	NT6M99AG		1			AP
Filler Panel Assy	NT8M59BB		1	X+14		AP
Cbl Assy, Terminal	NT8M99AB		1			AP
Cassy, Modem BMC/DPP	NT8M99AG		1			AP
Cassy, Logic Return	NT8M99AH		1			AP
BMC Nameplate	P0686423		1	X		AP
Spare Kit MIN W/O Disk	NT8M94WE					RUL2
Spare Kit MAX W/O Disk	NT8M94XE					RUL2
Alarm Cable Assy (IOE)	NT8M99AN					RUL3
Power & Alarm Cable (CIOE)	NT8M99AR					RUL3
Power Cable	NT8M99AL					RUL4
HSDA Cable	NTNX36BZ					RUL5
HSDA Cable	NTNX69AA					RUL5
HSDA Cable	NTNX69AD					RUL5
RS232-C Modem Cable	NT8M99AG					RUL5

Active Equipment
BMC System, DMS-100, AMAT
3.5", 2GB Disk, Turbo

NT8M04IE
EMA5-01-BMCA-43
Page 3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) Calculate disk size requirements per ECM 306.
- 2) The "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.
- 3) Throughput equivalent for ports is 2400-56K baud.
- 4) S/W load NT6M06AS and CP software NT6M9431 are loaded during the manufacturing process for each 2GB disk drive.

RULES:

- AP 1) When PEC NT8M04IE is ordered, these items are provided.
- AP-01 1) This PEC is always provided in the NT8M55AB and is shown here
- RUL1 1) Reserved for future use.
- RUL2 1) Provide the spares kits as per telco instructions.

- 2) Spares Kits DO NOT contain disk drive. If required, provide NT6M72HA per telco instructions.
- 3) Ordering of S/W for spare disk drive is not required.
- RUL3 1) If BMC is mounting in IOE NT0X43AD then provide one NT8M99AN Alarm Cable. This is a job engineered cable length.
- 2) If BMC is mounting in CIOE NTRX33DA then provide one NT8M99AR Power & Alarm Cable.
- RUL4 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.
- RUL5 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.
- 2) If customer chooses to use V.35 Port 1 and/or 2 for BX.25 Polling functions, provide one additional modem cable for V.35 modem communication for each port per the following table;

MODEM TYPE	CABLE PEC
=====	=====
Universal Data Systems DSU (D56)	NTNX36BZ
DATATEL DCP 3080	NTNX36BZ
General DATACOM 048P034-001	NTNX69AA
General DATACOM A20-011/-014 (500C 56K)	NTNX69AA
General DATACOM A20-001/004 (500C 56KD)	NTNX69AA
SYNT 920A	NTNX69AA
AT&T 2600 Series	NTNX69AD
MR1	NTNX69AD

REDUNDANT BMC AMA NT, HDLC ADU, PSEUDO

PEC CODE: NT8M04_J

CPC CODE:

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: Not Applicable

ABBREVIATION NAME: BMCA

ENGINEERING DESCRIPTION: The NSD Redundant Billing Media Converter II for Automatic Message Accounting (AMA), provides for the acquisition, storage, formatting, and forwarding of AMA data from the switch. In operation, the BMCA accepts AMA data from the DMS100F, temporarily stores the collected data on hard disk, and when requested, retrieves, reformats, and sends the stored data to the Host Collector.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

| ISSUE AUTHOR: NTI Barbara Berkley Dept. 3471 (PPK)

| MAIN CONTACT: NTI Barbara Berkley Dept. 3471 (PPK)

NT8M04 J EMA5-01-BMCA-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 202 08	Previous history not available Includes the following Updates: - ET-14369 Replace NT6M72AD and NT6M66AC with NT6M72AE and NT6M66AL Respectively per Cook ECO 70573. - Change all references to Cook/Cook Division to NSD
97 04 23	ECM 202 18	Several BMC units are MD'd per ECD 024-97670, this EMS is retired as a result of those products being MD'd.

The Redundant BMC AMA NT, HDLC ADU, Pseudo is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Hardware Unit BMCA EMC	NT8M54AJ		1	X		AP
CPU PCB	NT6M62BA		1	X	1A1	AP
EPROM PCB	NT6M63DE		1	X	1A2	AP
Memory Expansion PCB	NT6M64AA		1	X	1A3	AP
Error Control PCB	NT6M65AB		1	X	1A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X	1A6	AP
Automatic Dial-UP (ADU) PCB	212744-107		1	X	1A8	AP
Disk Interface PCB	NT6M66AL		1	X	1A11	AP
Data Stream Interface PCB	NT6M70AB		1	X	1A12	AP
Data Stream Interface PCB	NT6M70AB		1	X	1A13	AP
Bus Terminator PCB	NT6M68AA		1	X	1A14	AP
Disk Crossover PCB	NT6M72AE		1	X	1A15	AP
PWR/ALM Communications PCB	NT6M84BA		1	X	1A16	AP
4-Chan Communications PCB	NT6M85AA		1	X	1A17	AP
Fan Assembly	NT6M55DD		1	X	1A18	AP
Fan Foam Filter	680-7859		-	X	1A18	AP
Switch & Status Panel	NT8M59AA		1	X	1A19	AP
Power Supply Assembly	NT6M71AB		1	X	1A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X	1A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X	1A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X	1A21	RUL5
Disk Controller PCB	680-9143		-	X	1A21	AP
4-Chan Communications PCB	NT6M85AA		1	X	1A26	AP
CPU PCB	NT6M62BA		1	X+14	2A1	AP
EPROM PCB	NT6M63DE		1	X+14	2A2	AP
Memory Expansion PCB	NT6M64AA		1	X+14	2A3	AP
Error Control Jumper PCB	NTM609AB		1	X+14	2A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X+14	2A6	AP
Automatic Dial-UP (ADU) PCB	212744-107		1	X+14	2A8	AP
Disk Interface PCB	NT6M66AL		1	X+14	2A11	AP
Data Stream Interface PCB	NT6M70AB		1	X+14	2A12	AP
Data Stream Interface PCB	NT6M70AB		1	X+14	2A13	AP
Bus Terminator PCB	NT6M68AA		1	X+14	2A14	AP
Disk Crossover PCB	NT6M72AE		1	X+14	2A15	AP
Fan Assembly	NT6M55DD		1	X+14	2A18	AP
Fan Foam Filter	680-7859		-	X+14	2A18	AP
Filler Panel	NT8M59BB		1	X+14	2A19	AP
Power Supply Assembly	NT6M71AB		1	X+14	2A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X+14	2A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X+14	2A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X+14	2A21	RUL5
Disk Controller PCB	680-9143		-	X+14	2A21	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Interface Box	NT6M98AA	A2	1			AP
Connector/Transformer Kit	NT6M96AA		2			AP
Mounting Adapter 19-26"	NT6M97AA		1			AP
BMCA MIN Kit W/30MB Opt J	NT8M94GJ					RUL1
BMCA MIN Kit W/72MB Opt J	NT8M94AJ					RUL1
BMCA MIN Kit W/O Disk Opt J	NT8M94BJ					RUL1
BMCA MIN Kit W/140MB Opt J	NT8M94EJ					RUL1
BMCA MAX Kit W/30MB Opt J	NT8M94HJ					RUL1
BMCA MAX Kit W/72MB Opt J	NT8M94CJ					RUL1
BMCA MAX Kit W/O Disk Opt J	NT8M94DJ					RUL1
BMCA MAX Kit W/140MB Opt J	NT8M94FJ					RUL1
AC Mounting Plate	NT0X07AU					RUL2
Duplex AC Outlet	ED351670G30					RUL2
KSR Printer						RUL3
Modem						RUL4
Administrative Information						

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 "x" is used to indicate variable shelf mounting positions. The Redundant BMC (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51

only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.

- 2) The underline "_" in the PEC NT8M04_J must be substituted for one of three variables which are used to indicate the required Disk Drive Unit (DDU) size, where:

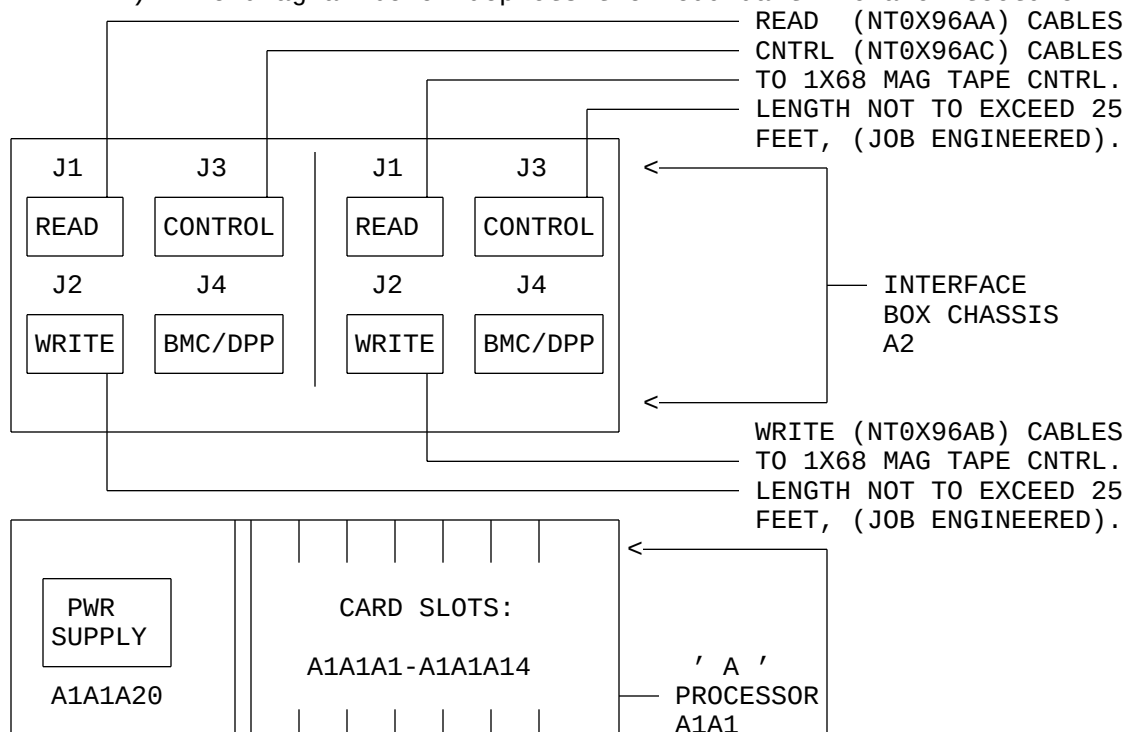
A = 72 Megabyte Disk Drive Unit, or
B = 140 Megabyte Disk Drive Unit, or
C = 30 Megabyte Disk Drive Unit.

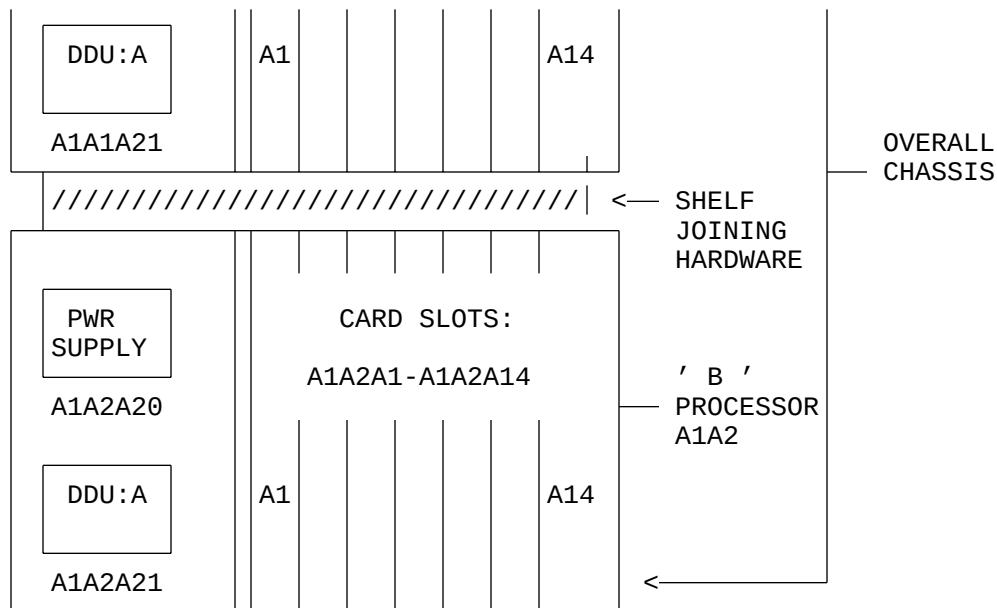
The resulting possibilities for the Redundant BMC PECs are:

NT8M04AJ - BMCA w/72MB DDU NT, HDLC ADU, Pseudo
NT8M04BJ - BMCA w/140MB DDU NT, HDLC ADU, Pseudo
NT8M04CJ - BMCA w/30MB DDU NT, HDLC ADU, Pseudo

- 3) See Table B I/O Controller Module Provisionable Cards for device controller card assignment rules.

- 4) The diagram below depicts the Redundant BMC architecture.





* NOTE: Read, Write and Control cables are to be Engineered, Furnished and Installed by DMS-100 engineering.

RULES:

- RUL1 1) Provide the BMCA spares kits as per telco instructions.
- RUL2 1) The BMCA is equipped with three crystal clocks which are used to provide time stamps for log messages. One is DC powered and is always active when the BMCA is powered. The other two may be powered from a 110VAC 60Hz signal or 8KHz signal. However, the 8KHz clock is not to be used in the DMS100F environment. When the 110VAC clock is connected it becomes the prime clock and the DC clock switches to the standby mode. If the 110VAC clock is not connected then the DC clock will provide the log message time stamps, however there is not a backup clock in this configuration.
- 2) Connecting this equipment as described below is optional; it should not be connected in ISG offices. Providing this equipment and connections would introduce a ISG violations.
- 3) If the commercial AC (non-generator) supply is required to drive the BMCA clock interrupt circuit in the Power & Alarm PCB. Provide one NT0X07AU (AC Mounting Plate) to accommo-

date the ED3516_30 Group (Duplex Outlet Box) and cabling provided by Building Studies. A 16 VAC stepdown transformer is always provided with the BMCA unit.

RUL3 1) Provide a KSR printer for installation, testing, and maintenance purposes.

RUL4 1) The BMCA employs two modems, one is used for the polling of call record data and the downloading of software, and another is used for the Automatic Dial-Up (ADU) function and emergency software downloads.

CAUTION: UDS modems will not work properly with the BMCA Automatic Dial-Up (ADU) function and emergency software downloads.

2) The modems selected may be either a Data Set (DS) or Data Set Card (DSC) Dial-Up modems, which operates at 12/24/4800 bps. The modem model numbers are 212, 201c, or 208A/B. These modems do not require autodial capabilities. Refer to the Engineering Manual Sections EMA13-01-UDS-1 for detailed engineering information for these modems.

3) The Maintenance Terminal Port baud rate can not exceed 1200bps. Therefore provide the 212 modem model only for this port.

RUL5 1) The DDU provided with the BMCA will be one of the following DDUs depending on the variable selected per NOTE 2 above.

NT6M72AA - 72MB DDU or, NT6M72BA - 140MB DDU, or NT6M72CA - 30MB DDU

BMC SYSTEM, DMS-100, INDEPENDANT, BISYNC
LSSGR, 3.5", 1GB

PEC CODE: NT8M04GC

| CPC CODE: A06276803

| RATING: Standard.

| REPLACES: Not Applicable

| REPLACED BY: Not Applicable

| ABBREVIATION NAME: BMC

ENGINEERING DESCRIPTION: The Billing Media Converter (BMC) is offered with 3.5" disk drive technology which allows for a disk capacity offering of 1GB, LSSGR, and BiSync. The BMC is designed to capture, store, format, and forward AMA call records from the DMS-100 family of switches.

REFERENCE DOCUMENTATION: SL8M04GC 01 01

MARKETS: Applicable markets:

US
Canada

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

MAIN CONTACT: NT: Bob Belvin Dept. 3471 (PPK)

NT8M04GC EMA5-01-BMCB-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 05 31	ECM 202 14	Introduce new 3.5" drive BiSync BMC per ECD 011-21862.

The BMC System, DMS-100, Independant, BiSync LSSGR, 3.5", 1GB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
BMC System	NT8M55AB		1			AP
Cable Braid Assy	NT0X9501		2			AP
56K Crossover CP	NT6M48AA		1	X+14	16	AP
56K Conn CP	NT6M54AL		1	X+14	26	AP
Fan Mounting Bracket	NT6M56AA		1			AP
Keyed Status Panel Assy	NT6M59AA		1	X		AP
CPU PCB	NT6M62BA		2	X, X+14	01	AP-01
EPROM PCB	NT6M63FL		2	X, X+14	02	AP-01
Extended Memory PCB	NT6M64AA		2	X, X+14	03	AP-01
Error Control II	NT6M65AG		1	X	05	AP
SCSI INTF CP	NT6M66CA		2	X, X+14	11	AP
Data Stream I/F	NT6M70BD		4	X, X+14	12, 13	AP
1GB Disk Drive Assy	NT6M72GA		2	X, X+14	21	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
SCSI XOVR-Drive Cbl	NT6M83AE		2			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
SCSI XOVR CP	NT6M93BA		2	X, X+14	15	AP
56 Kbps I/F CP	NT6M94AA		2	X, X+14	07	AP
Fuse Kit	NT6M96AA		1			AP
Kit, Modem Conn & Shell	NT6M96AB		1			AP
Kit, Power Label	NT6M96AL		1			AP
Mounting Kit	NT6M97AA		1			AP
DMS-100 I/F Box	NT6M98AA		1			AP
Tape Emulator Cbl	NT6M99AF		1			AP
Tape Emulator Cbl	NT6M99AG		1			AP
Filler Panel Assy	NT8M59BB		1	X+14		AP
Cbl Assy, Terminal	NT8M99AB		1			AP
Cassy, Modem BMC/DPP	NT8M99AG		1			AP
Cassy, Logic Return	NT8M99AH		1			AP
BMC Nameplate	P0686423		1	X		AP
S/W Load Indep, LSSGR, BiSync	NT6M06A0					RUL1
CP S/W BMC/DMS-100 BiSync	NT6M9449					RUL1
Spare Kit MIN W/O Disk	NT8M94WE					RUL2
Spare Kit MAX W/O Disk	NT8M94XE					RUL2
Alarm Cable Assy (IOE)	NT8M99AN					RUL3
Power & Alarm Cable (CIOE)	NT8M99AR					RUL3
Power Cable	NT8M99AL					RUL4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
HSDA Cable	NTNX36BZ					RUL5
HSDA Cable	NTNX69AA					RUL5
HSDA Cable	NTNX69AD					RUL5
RS232-C Modem Cable	NT8M99AG					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) Calculate disk size requirements per ECM 306.
- 2) The "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.
- 3) Throughput equivalent for ports is 2400-56K baud.

RULES:

- AP 1) When PEC NT8M04GC is ordered, these items are provided.

- AP-01 1) This PEC is always provided in the NT8M55AB and is shown here for completeness.
- RUL1) 1) Provide S/W Load NT6M06A0 for each 1GB disk drive.
2) Provide CP S/W NT6M9449 for each 1GB disk drive.
- RUL2 1) Provide the spares kits as per telco instructions.
2) Spares Kits DO NOT contain disk drive. If required, provide NT6M72GA per telco instructions.
3) Ordering of S/W for spare disk drive is not required.
- RUL3 1) If BMC is mounting in IOE NT0X43AD then provide one NT8M99AN Alarm Cable. This is a job engineered cable length.
2) If BMC is mounting in CIOE NTRX33DA then provide one NT8M99AR Power & Alarm Cable.
- RUL4 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.
- RUL5 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.
2) If customer chooses to use V.35 Port 1 and/or 2 for BX.25 Polling functions, provide one additional modem cable for V.35 modem communication for each port per the following table;

MODEM TYPE	CABLE PEC
=====	=====
Universal Data Systems DSU (D56)	NTNX36BZ
DATATEL DCP 3080	NTNX36BZ
General DATACOM 048P034-001	NTNX69AA
General DATACOM A20-011/-014 (500C 56K)	NTNX69AA
General DATACOM A20-001/004 (500C 56KD)	NTNX69AA
SYNT 920A	NTNX69AA
AT&T 2600 Series	NTNX69AD
MR1	NTNX69AD

REDUNDANT BMC SMDR/NT FORMAT BISYNC

PEC CODE: NT8M04_A

CPC CODE:

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: Not Applicable

ABBREVIATION NAME: BMCS

ENGINEERING DESCRIPTION: The NSD Redundant Billing Media Converter II for Station Message Detailed Recording (SMDR), provides for the acquisition, storage, formatting, and forwarding of SMDR data from the switch for one Customer Group. In operation, the BMCS accepts SMDR data from the DMS100F, temporarily stores the collected data on hard disk, and when requested, retrieves, reformats, and sends the stored data to the Host Collector, using the BISYNC Data Polling Format.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

| ISSUE AUTHOR: NTI Barbara Berkley Dept. 3471 (PPK)

| MAIN CONTACT: NTI Barbara Berkley Dept. 3471 (PPK)

NT8M04 A EMA5-01-BMCS-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 202 08	Previous history not available Includes the following Updates: - Cook ECO #70509 DTD: 910307 Add NT8M04_L Series BMC. - ET-14369 Replace NT6M72AD and NT6M66AC with NT6M72AE and NT6M66AL Respectively per Cook ECO 70573. - Change all references to Cook/Cook Division to NSD
97 04 23	ECM 202 18	- Add Market and Change History Info. Several BMC units are MD'd per ECD 024-97670, this EMS is retired as a result of those products being MD'd.

The Redundant BMC SMDR/NT Format Bisync is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Hardware Unit BMCA EMC	NT8M54AA		1	X		AP
CPU PCB	NT6M62BA		1	X	1A1	AP
EPROM PCB	NT6M63DE		1	X	1A2	AP
Memory Expansion PCB	NT6M64AA		1	X	1A3	AP
Error Control PCB	NT6M65AB		1	X	1A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X	1A6	AP
Disk Interface PCB	NT6M66AL		1	X	1A11	AP
Data Stream Interface PCB	NT6M70BF		1	X	1A12	AP
Data Stream Interface PCB	NT6M70BF		1	X	1A13	AP
Bus Terminator PCB	NT6M68AA		1	X	1A14	AP
Disk Crossover PCB	NT6M72AE		1	X	1A15	AP
PWR/ALM Communications PCB	NT6M84BA		1	X	1A16	AP
4-Chan Communications PCB	NT6M85AA		1	X	1A17	AP
Fan Assembly	NT6M55DD		1	X	1A18	AP
Fan Foam Filter	680-7859		-	X	1A18	AP
Switch & Status Panel	NT8M59AA		1	X	1A19	AP
Power Supply Assembly	NT6M71AB		1	X	1A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X	1A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X	1A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X	1A21	RUL5
Disk Controller PCB	680-9143		-	X	1A21	AP
CPU PCB	NT6M62BA		1	X+14	2A1	AP
EPROM PCB	NT6M63DE		1	X+14	2A2	AP
Memory Expansion PCB	NT6M64AA		1	X+14	2A3	AP
Error Control Jumper PCB	NTM609AB		1	X+14	2A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X+14	2A6	AP
Disk Interface PCB	NT6M66AL		1	X+14	2A11	AP
Data Stream Interface PCB	NT6M70BF		1	X+14	2A12	AP
Data Stream Interface PCB	NT6M70BF		1	X+14	2A13	AP
Bus Terminator PCB	NT6M68AA		1	X+14	2A14	AP
Disk Crossover PCB	NT6M72AE		1	X+14	2A15	AP
4-Chan Communications PCB	NT6M85AA		1	X+14	2A17	AP
Fan Assembly	NT6M55DD		1	X+14	2A18	AP
Fan Foam Filter	680-7859		-	X+14	2A18	AP
Filler Panel	NT8M59BB		1	X+14	2A19	AP
Power Supply Assembly	NT6M71AB		1	X+14	2A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X+14	2A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X+14	2A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X+14	2A21	RUL5
Disk Controller PCB	680-9143		-	X+14	2A21	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Interface Box	NT6M98AA	A2	1			AP
Connector/Transformer Kit	NT6M96AA		2			AP
Mounting Adapter 19-26"	NT6M97AA		1			AP
BMCS MIN Kit W/30MB Opt A	NT8M94GA					RUL1
BMCS MIN Kit W/72MB Opt A	NT8M94AA					RUL1
BMCS MIN Kit W/O Disk Opt A	NT8M94BA					RUL1
BMCS MIN Kit W/140MB Opt A	NT8M94EA					RUL1
BMCS MAX Kit W/72MB Opt A	NT8M94CA					RUL1
BMCS MAX Kit W/O Disk Opt A	NT8M94DA					RUL1
BMCS MAX Kit W/140MB Opt A	NT8M94FA					RUL1
BMCS MAX Kit W/30MB Opt A	NT8M94HA					RUL1
AC Mounting Plate	NT0X07AU					RUL2
Duplex AC Outlet	ED351670G30					RUL2
KSR Printer						RUL3
Modem						RUL4

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 "X" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCS which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is

use to indicate the second shelf of the two shelf arrangement

- 2) The underline "-" in the PEC (NT8M04_A) must be substituted for one of three variables which are used to indicate the required Disk Drive Unit (DDU) size, where:

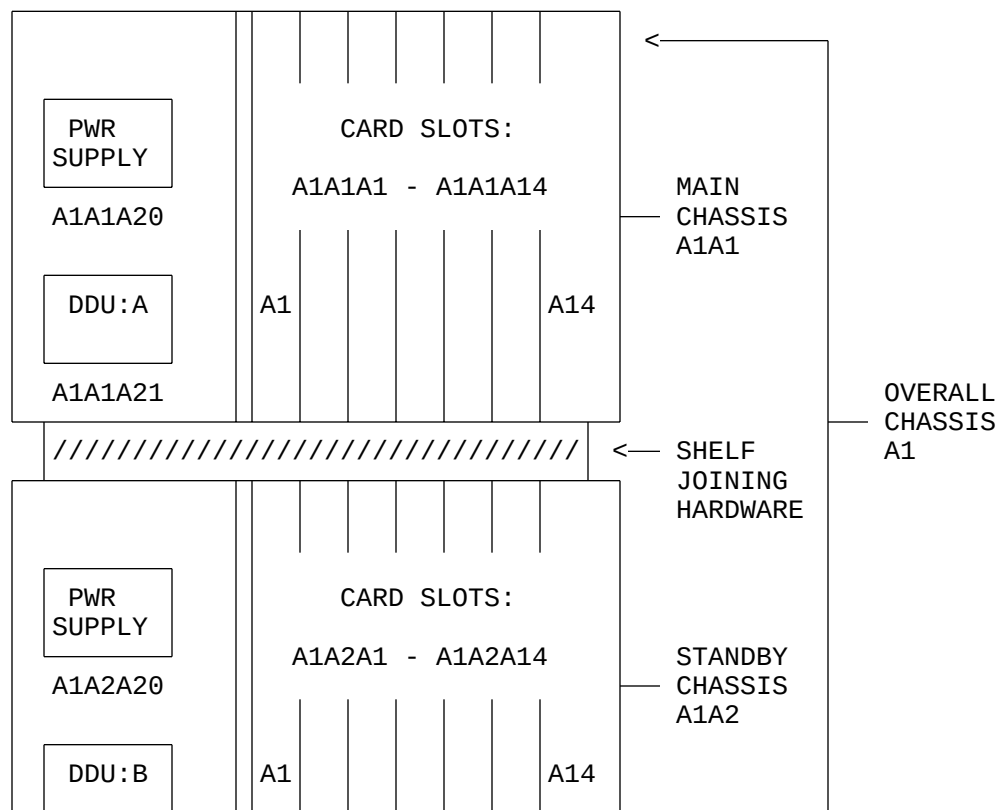
A = 72 Megabyte Disk Drive Unit, or
B = 140 Megabyte Disk Drive Unit, or
C = 30 Megabyte Disk Drive Unit.

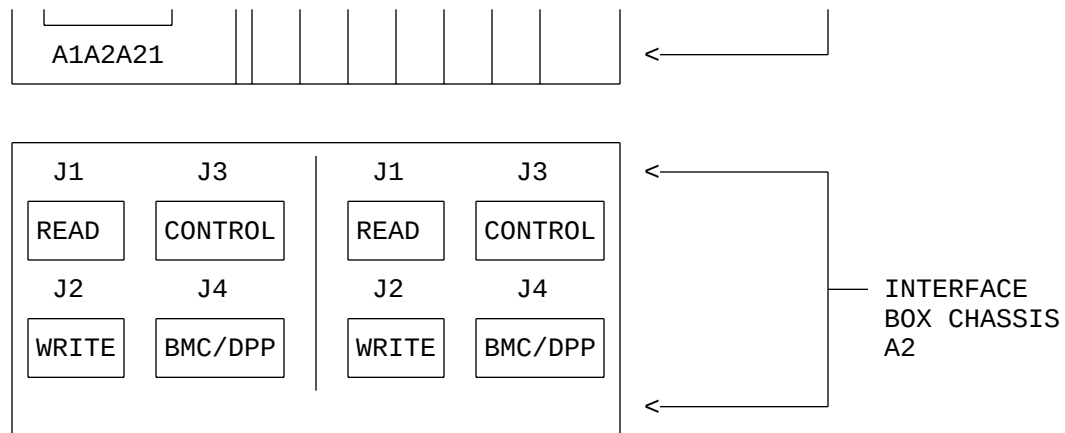
- a) The resulting possibilities for the Redundant BMC PECs are:

NT8M04AA - BMCS w/72MB DDU SMDR/NT BISYNC
NT8M04BA - BMCS w/140MB DDU SMDR/NT BISYNC
NT8M04CA - BMCS w/30MB DDU SMDR/NT BISYNC

- 3) See Table B I/O Controller Module Provisionable Cards for device controller card assignment rules.

- 4) The diagram below depicts the Redundant BMC architecture.





RULES:

- RUL1 1) Provide the BMCS spares kits as per telco instructions.
- RUL2 1) The BMCS is equipped with three crystal clocks which are used to provide time stamps for log messages. One is DC powered and is always active when the BMCS is powered. The other two may be powered from a 110VAC 60Hz signal or 8KHz signal. However, the 8KHz clock is not for use in the DMS100F environment. When the 110VAC clock is connected it becomes the prime clock and the DC clock switches to the standby mode. If the 110VAC clock is not connected then the DC clock will provide the log message time stamps, however there is not a backup clock in this configuration.
- 2) Connecting this equipment as described below is optional; it should not be connected in ISG offices. Providing this equipment and connections would introduce a ISG violations.
- 3) If the commercial AC (non-generator) supply is required to drive the BMCS clock interrupt circuit in the Power & Alarm PCB. Provide one NT0X07AU (AC Mounting Plate) to accommodate the ED3516_30 Group (Duplex Outlet Box) and cabling provided by Building Studies. A 16 VAC stepdown transformer is always provided with the BMCS unit.
- RUL3 1) Provide a KSR printer for BMCS installation, testing, and maintenance purposes.

- RUL4 1) The BMCS employs two modems, one is used for the polling of call record data and the other is for downloading of software.

CAUTION: UDS modems will not work properly with the BMCS Automatic Dial-Up (ADU) function and emergency software downloads.

- 2) The modems selected may be either Desk Set (DS) or Desk Set Card (DSC) Dial-Up modems, which operates at 12/24/48/9600 bps. The modem model numbers are 212, 201c, or 208A/B, R96. These modems do not require autodial capabilities. Refer to the Engineering Manual Sections EMA13-01-UDS-1 for detailed engineering information for these modems.
- 3) The Maintenance Terminal Port baud rate can not exceed 1200bps. Therefore provide the 212 modem model only for this port.

- RUL5 1) The DDU provided with the BMCS will be on the following DDUs depending on the variable selected per NOTE 2) above:

NT6M72AA - 72MB DDU or, NT6M72BA - 140MB DDU, or NT6M72CA - 30MB DDU

REDUNDANT BMC SMDR/NT FORMAT ASCII

PEC CODE: NT8M04_M

CPC CODE:

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: Not Applicable

ABBREVIATION NAME: BMCS

ENGINEERING DESCRIPTION: The NSD Redundant Billing Media Converter II for Station Message Detailed Recording (SMDR), provides for the acquisition, storage, formatting, and forwarding of SMDR data from the switch for one Customer Group. In operation, the BMCS accepts SMDR data from the DMS100F, temporarily stores the collected data on hard disk, and when requested, retrieves, reformats, and sends the stored data to the Host Collector using the ASCII Polling Format.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

| ISSUE AUTHOR: NTI: Barbara Berkley Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Barbara Berkley Dept. 3471 (PPK)

NT8M04 M EMA5-01-BMCS-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 202 08	Previous history not available Updates this section per the following: - Cook ECO #70517 DTD: 910312 Add NT8M04_M Series BMC.
93 04 28	ECM 202 09	Clarify RUL5 Per ET-16059
97 04 23	ECM 202 18	Several BMC units are MD'd per ECD 024-97670, this EMS is retired as a result of those products being MD'd.

The Redundant BMC SMDR/NT Format ASCII is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Hardware Unit BMCA EMC	NT8M54AA		1	X		AP
CPU PCB	NT6M62BA		1	X	1A1	AP
EPROM PCB	NT6M63DE		1	X	1A2	AP
Memory Expansion PCB	NT6M64AA		1	X	1A3	AP
Error Control PCB	NT6M65AB		1	X	1A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X	1A6	AP
Disk Interface PCB	NT6M66AL		1	X	1A11	AP
Data Stream Interface PCB	NT6M70BF		1	X	1A12	AP
Data Stream Interface PCB	NT6M70BF		1	X	1A13	AP
Bus Terminator PCB	NT6M68AA		1	X	1A14	AP
Disk Crossover PCB	NT6M72AE		1	X	1A15	AP
PWR/ALM Communications PCB	NT6M84BA		1	X	1A16	AP
4-Chan Communications PCB	NT6M85AA		1	X	1A17	AP
Fan Assembly	NT6M55DD		1	X	1A18	AP
Fan Foam Filter	680-7859		-	X	1A18	AP
Switch & Status Panel	NT8M59AA		1	X	1A19	AP
Power Supply Assembly	NT6M71AB		1	X	1A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X	1A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X	1A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X	1A21	RUL5
Disk Controller PCB	680-9143		-	X	1A21	AP
CPU PCB	NT6M62BA		1	X+14	2A1	AP
EPROM PCB	NT6M63DE		1	X+14	2A2	AP
Memory Expansion PCB	NT6M64AA		1	X+14	2A3	AP
Error Control Jumper PCB	NTM609AB		1	X+14	2A5	AP
Quad Serial I/O PCB	NT6M60BA		1	X+14	2A6	AP
Disk Interface PCB	NT6M66AL		1	X+14	2A11	AP
Data Stream Interface PCB	NT6M70BF		1	X+14	2A12	AP
Data Stream Interface PCB	NT6M70BF		1	X+14	2A13	AP
Bus Terminator PCB	NT6M68AA		1	X+14	2A14	AP
Disk Crossover PCB	NT6M72AE		1	X+14	2A15	AP
4-Chan Communications PCB	NT6M85AA		1	X+14	2A17	AP
Fan Assembly	NT6M55DD		1	X+14	2A18	AP
Fan Foam Filter	680-7859		-	X+14	2A18	AP
Filler Panel	NT8M59BB		1	X+14	2A19	AP
Power Supply Assembly	NT6M71AB		1	X+14	2A20	AP
72MB Disk Drive Unit	NT6M72AA		1	X+14	2A21	RUL5
140MB Disk Drive Unit	NT6M72BA		1	X+14	2A21	RUL5
30MB Disk Drive Unit	NT6M72CA		1	X+14	2A21	RUL5
Disk Controller PCB	680-9143		-	X+14	2A21	AP
Interface Box	NT6M98AA	A2	1			AP
Connector/Transformer Kit	NT6M96AA		2			AP
Mounting Adapter 19-26"	NT6M97AA		1			AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
BMCS MIN Kit W/30MB Opt M	NT8M94GM					RUL1
BMCS MIN Kit W/72MB Opt M	NT8M94AM					RUL1
BMCS MIN Kit W/O Disk Opt M	NT8M94BM					RUL1
BMCS MIN Kit W/140MB Opt M	NT8M94EM					RUL1
BMCS MAX Kit W/72MB Opt M	NT8M94CM					RUL1
BMCS MAX Kit W/O Disk Opt M	NT8M94DM					RUL1
BMCS MAX Kit W/140MB Opt M	NT8M94FM					RUL1
BMCS MAX Kit W/30MB Opt M	NT8M94HM					RUL1
AC Mounting Plate	NT0X07AU					RUL2
Duplex AC Outlet	ED351670G30					RUL2
KSR Printer						RUL3
Modem						RUL4

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 "X" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is

use to indicate the second shelf of the two shelf arrangement

- 2) The underline "-" in the PEC (NT8M04_M) must be substituted for one of three variables which are used to indicate the required Disk Drive Unit (DDU) size, where:

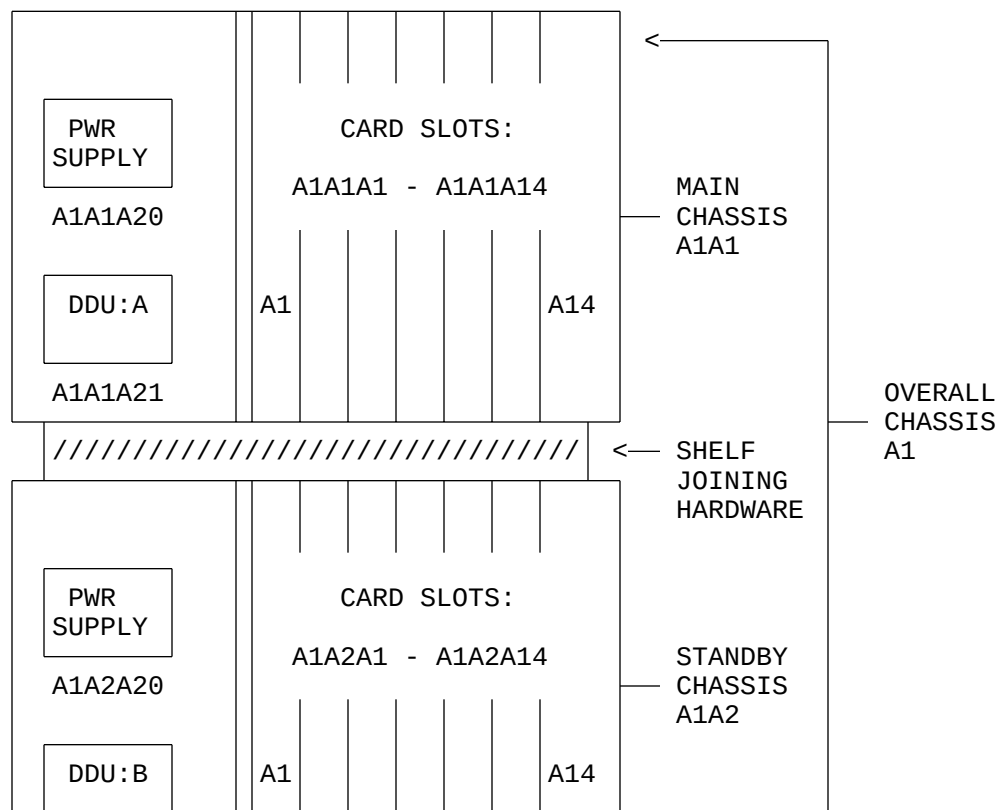
A = 72 Megabyte Disk Drive Unit, or
B = 140 Megabyte Disk Drive Unit, or
C = 30 Megabyte Disk Drive Unit.

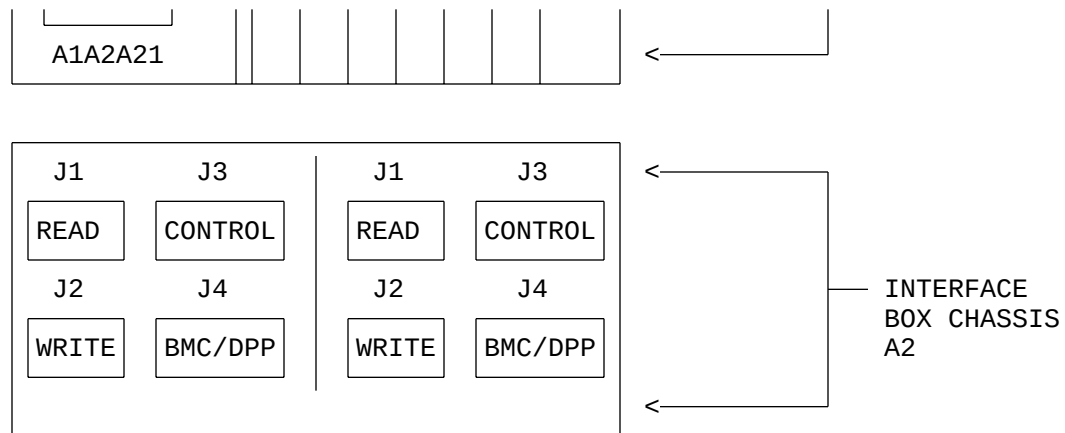
- a) The resulting possibilities for the Redundant BMC PECs are:

NT8M04AM - BMCS w/72MB DDU SMDR/NT ASCII
NT8M04BM - BMCS w/140MB DDU SMDR/NT ASCII
NT8M04CM - BMCS w/30MB DDU SMDR/NT ASCII

- 3) See Table B I/O Controller Module Provisionable Cards for device controller card assignment rules.

- 4) The diagram below depicts the Redundant BMC architecture.





RULES:

- RUL1 1) Provide the BMCS spares kits as per telco instructions.
- RUL2 1) The BMCS is equipped with three crystal clocks which are used to provide time stamps for log messages. One is DC powered and is always active when the BMCS is powered. The other two may be powered from a 110VAC 60Hz signal or 8KHz signal. However, the 8KHz clock is not for use in the DMS100F environment. When the 110VAC clock is connected it becomes the prime clock and the DC clock switches to the standby mode. If the 110VAC clock is not connected then the DC clock will provide the log message time stamps, however there is not a backup clock in this configuration.
- 2) Connecting this equipment as described below is optional; it should not be connected in ISG offices. Providing this equipment and connections would introduce a ISG violations.
- 3) If the commercial AC (non-generator) supply is required to drive the BMCS clock interrupt circuit in the Power & Alarm PCB. Provide one NT0X07AU (AC Mounting Plate) to accommodate the ED3516_30 Group (Duplex Outlet Box) and cabling provided by Building Studies. A 16 VAC stepdown transformer is always provided with the BMCS unit.
- RUL3 1) Provide a KSR printer for BMCS installation, testing, and maintenance purposes.

- RUL4 1) The BMCS employs two modems, one is used for the polling of call record data and the other is for downloading of software.

CAUTION: UDS modems will not work properly with the BMCS Automatic Dial-Up (ADU) function and emergency software downloads.

- 2) The modems selected may be either Desk Set (DS) or Desk Set Card (DSC) Dial-Up modems, which operates at 12/24/48/9600 bps. The modem model numbers are 212, 201c, or 208A/B, R96. These modems do not require autodial capabilities. Refer to the Engineering Manual Sections EMA13-01-UDS-1 for detailed engineering information for these modems.
- 3) The Maintenance Terminal Port baud rate can not exceed 1200bps. Therefore provide the 212 modem model only for this port.

- RUL5 1) The DDUs (NT6M72AA [72 MB DDU] or NT6M72BA [140 MB DDU]) are always provided with the BMCD unit depending on the variable selected per NOTE 1 above. THIS RULE IS FOR REFERENCE ONLY.

Note:

DO NOT ORDER THE NT6M72AA - 72MB DDUs or, NT6M72BA - 140MB DDUs in ADDITION TO THE BMCD UNIT(s).

DISTRIBUTED PROCESSING PERIPHERAL

PEC CODE: NT8X48AB

CPC CODE: B0226837

| RATING: A&M

REPLACES: Not Applicable

REPLACED BY: NT8X48AD

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP)
allows remote polling of Automatic Messaging
Accounting (AMA) information.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

NT8X48AB EMA5-01-DPP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 09 21	ECM 306 18	Say replace NT6M66AC with NT6M66AL when upgrading 72 MB to 140MB Disk. Also, change status to A&M.
95 09 25	ECM 306 21	MD NT8X48AB.
95 11 10	ECM 306 23	Change rating of NT8X48AB from MD to A&M.

The Distributed Processing Peripheral is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Distrib Process Periph	NT6M01AB		1	A, B		AP
EPR0M (BCS20) CP Assy	NT6M63CE			A, B	2	RUL1
# EPR0M (BCS21-24) CP Assy	NT6M63CF			A, B	2	RUL1
# EPR0M (BCS21-29) CP Assy	NT6M63CH			A, B	2	RUL1
EPR0M (BCS21-29) CP Assy	NT6M63CL			A, B	2	RUL1
EPR0M (BCS29) CP	NT6M63CJ			A, B	2	RUL1
# Quad S10	NT6M60AA			A, B	6	RUL4
Quad S10	NT6M60BA			A, B	6	RUL4
56 Kbps I/F CP	NT6M94AA			A, B	7	RUL9
56K/Compression I/F CP	NT6M94BA			A, B	7	RUL9
# Disk Drive I/F CP Assy	NT6M66AC			A, B	11	RUL3
Disk Drive I/F CP Assy	NT6M66AL			A, B	11	RUL3
Disk Drive I/F CP Assy	NT6M66AH			A, B	11	RUL3
SCSI Disk Drive I/F CP	NT6M66BA			A, B	11	RUL3
SCSI Disk Drive I/F CP	NT6M66BC			A, B	11	RUL3
# Data Stream I/F CP	NT6M70CF			A, B	12, 13	RUL5
Data Stream I/F CP	NT6M70AC			A, B	12, 13	RUL5
# Disk Crossover CP	NT6M72AC			A, B	15	RUL6
# Disk Crossover CP	NT6M72AD			A, B	15	RUL6
Disk Crossover CP	NT6M72AE			A, B	15	RUL6
SCSI Disk Crossover CP	NT6M93AA			A, B	15	RUL6
# Pwr/Alarm Common CP	NT6M84AA			A	16	RUL7
Pwr/Alarm Common CP	NT6M84BA			A	16	RUL7
56K Crossover CP	NT6M48AA			B	16	RUL7
# 72MB Disk Drive Assy	NT6M72AA			A, B	21	RUL2
140MB Disk Drive Assy	NT6M72BA			A, B	21	RUL2
140MB Disk Drive Assy	NT6M72DE			A, B	21	RUL2
380MB Disk Drive Assy	NT6M72DA			A, B	21	RUL2
380MB Disk Drive Assy	NT6M72DD			A, B	21	RUL2
760MB Disk Drive Assy	NT6M72EA			A, B	21	RUL2
56K Conn Panel Assy	NT6M54AL			B	26	RUL8
56K I/F Xover A Cable Assy	NT6M73AJ					RUL10
56K I/F Xover B Cable Assy	NT6M73AK					RUL10
56K Xover Conn Cable Assy	NT6M85CA					RUL10
DPP Upgrd, NT to 1GB NT	NT6M97FA					RUL11
DPP Upgrd, NT to 1GB T	NT6M97FB					RUL11
DPP Upgrd, NT to 1GB TC	NT6M97FC					RUL11
DPP Upgrd, NT to 2GB T	NT6M97FD					RUL11
DPP Upgrd, NT to 2GB TC	NT6M97FE					RUL11
DPP Upgrd, T to 1GB T	NT6M97FF					RUL11
DPP Upgrd, TC to 1GB TC	NT6M97FF					RUL11
DPP Upgrd, T to 2GB T	NT6M97FG					RUL11
DPP Upgrd, TC to 2GB TC	NT6M97FG					RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DPP Upgrd, T to 1GB TC	NT6M97FH					RUL11
DPP Upgrd, T to 2GB TC	NT6M97FI					RUL11

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6M63CF	A&M	NT6M63CH
NT6M63CH	A&M	NT6M63CL
NT6M60AA	A&M	NT6M60BA
NT6M66AC	A&M	NT6M66AL
NT6M70CF	A&M	NT6M70AC
NT6M72AC	A&M	NT6M72AE
NT6M72AD	A&M	NT6M72AE
NT6M84AA	A&M	NT6M84BA
NT6M72AA	A&M	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 manufac-
tured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NT8X48AB is ordered, these items are provided.
- RUL1 1) Provide two (2) NT6M63CE Circuit packs if the office is
running a BCS20 load. One Circuit Pack in position 2 of
the A (upper) Chassis and one Circuit Pack in position 2 of
the B (lower) Chassis.

- 2) Provide two (2) NT6M63CF Circuit Packs if the office is running a BCS21, 22, 23 or 24 load. Mount Circuit Packs in position 2 of the upper (A) Chassis and lower (B) Chassis. (NT6M63CF CP is rated A&M.)
 - 3) Provide two (2) NT6M63CH Circuit packs if the office is running a BCS21 through 28 load, or if running at BCS29 and without the 56K bps polling option. Assign one Circuit Pack in position 2 of the upper (A) Chassis and lower (B) Chassis. (NT6M63CH CP is rated A&M.)
 - 4) Provide two (2) NT6M63CL Circuit packs for initial DPP offices running a BCS21 through 28 load, or BCS29 without the 56k bps polling option. Assign one Circuit Pack in position 2 of the upper (A) Chassis and lower (B) Chassis.
 - 5) Provide two (2) NT6M63CJ Circuit packs for any DPP office running a BCS29 load and the 56K/Compression polling option. Assign one Circuit Pack in position 2 of the upper (A) Chassis and the lower (B) Chassis.
- RUL2 1) Provide two (2) NT6M72BA 140MB without 56K/Compression polling, or two (2) NT6M72DE 140MB with 56K/Compression polling, or two (2) NT6M72DA 380MB without 56K/Compression polling, or two (2) NT6M72DD 380MB with 56K/Compression polling, or two (2) NT6M72EA 760MB Disk Drives per office requirements. Mount the Disk Drives in position 21 of the A (upper) and B (lower) Chassis.
- RUL3 1) Provide two (2) NT6M66AL Disk Drive I/F Circuit Packs for initial DPP offices when 140MB Disk Drive does not require 56K/Compression. Mount one Circuit Pack in position 11 of the A (upper) and B (lower) Chassis. Existing 72 MByte Disk offices that are upgraded to a 140 MByte Disk will remove the existing NT6M66AC CPs and replace them with NT6M66AL CPs. (NT6M66AC CP is rated A&M.)
- 2) Provide two (2) NT6M66AH Disk Drive I/F Circuit Pack for the 380MB Disk Drive when the 56K/Compression polling option is not selected. Mount one Circuit Pack in position 11 of the A (upper) and B (lower) Chassis.
 - 3) Provide two (2) NT6M66BA when the 760 MByte Disk or the 380 MByte Disk and 56K/Compression polling option is selected. Mount one Circuit Pack in position 11 of the A (upper) and B (lower) Chassis.
 - 4) Provide two (2) NT6M66BC Disk Drive I/F Circuit Packs for DPP offices when 140MB Disk Drive does require

56K/Compression. Mount one Circuit Pack in position 11 of the A (upper) and B (lower) Chassis.

- RUL4 1) Provide two (2) NT6M60BA Quad SIO Circuit Packs for initial DPP offices to support IOC channels to the DPP main processor bus. Mount one circuit pack in position 6 of the A (upper) Chassis and A2 (lower) Chassis.
- RUL5 1) Provide four (4) NT6M70AC Data Stream Interface Circuit Packs for initial DPP offices to provide a path from the AMA ports to the DPP main processor bus. Mount two (2) circuit packs in positions 12 and 13 of the A (upper) Chassis and B (lower) Chassis.
- RUL6 1) Provide two (2) NT6M72AE Disk Crossover Circuit Packs for initial DPP offices to provide a path from the Disk Interface CP to the DPP Disk Drive units. Existing 72 MB Disk DPPs that are being upgraded to 140 MB Disks can maintain the NT6M72AC or AD originally provided. However, the NT6M72AE must be specified for all 380 MByte applications without the 56k polling option selected. Mount one (1) circuit pack in position 15 of the A (upper) and B (lower) Chassis.
- 2) Provide two (2) NT6M93AA SCSI Crossover CP when the 140, 380 or 760 MByte Disk and 56K polling option is selected. Mount one (1) circuit pack in position 15 of the A (upper) and B (lower) Chassis.
- RUL7 1) Provide one (1) NT6M84BA Power/Alarm Circuit Pack in position 16 of the A (upper) Chassis.
- 2) Provide one (1) NT6M48AA 56K bps Crossover CP when the 760 MByte, 380 MByte, or the 140 MByte Disk and 56K/Compression polling option is selected. Mount one (1) circuit pack in position 16 of the B (lower) chassis.
- RUL8 1) Provide one (1) NT6M54AL 56K bps Conn Panel when the 760 MByte, 380 MByte, or the 140 MByte Disk and 56K/Compression polling option is selected. Mount one (1) Conn Panel in position 26 of the B (lower) Chassis.
- RUL9 1) Provide two (2) NT6M94AA 56K bps interface CP when the 760 MByte Disk or the 380 MByte Disk and 56K bps polling option is selected. Mount one (1) Circuit Pack in position 07 of the A (upper) Chassis, and (1) Circuit Pack in position 07 of the B (lower) Chassis.

- 2) Provide two (2) NT6M94BA 56K/Compression interface CP when the compression feature is selected. Mount one (1) Circuit Pack in position 07 of the A (upper) Chassis, and (1) Circuit Pack in position 07 of the B (lower) Chassis.

RUL10 1) Provide one (1) each of cable assemblies NT6M73AJ, NT6M73AK and NT6M85CA when the 56K or 56K/Compression polling option is selected.

RUL11 1) Apply NT6M97FA DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 1GB disk size and non-Turbo polling option.

- 2) Apply NT6M97FB DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 1GB disk size and Turbo polling option.

- 3) Apply NT6M97FC DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 1GB disk size and Turbo/Compression polling option.

- 4) Apply NT6M97FD DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 2GB disk size and Turbo polling option.

- 5) Apply NT6M97FE DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 2GB disk size and Turbo/Compression polling option.

- 6) Apply NT6M97FF DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size either 380MB or 760MB and Turbo to a 3.5" disk DPP with a 1GB disk size and Turbo polling option. This kit can also be used to upgrade a 5.25" disk DPP with disk size either 380MB or 760MB and Turbo/Compression to a 3.5" disk DPP with a 1GB disk size and Turbo/Compression polling option.

- 7) Apply NT6M97FG DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size either 380MB or 760MB and Turbo to a 3.5" disk DPP with a 2GB disk size and Turbo polling option. This kit can also be used to upgrade a 5.25" disk DPP with disk size either 380MB or 760MB and Turbo/Compression to a 3.5" disk DPP with a 2GB disk size and Turbo/Compression polling option.

- 8) Apply NT6M97FH DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size either 380 or 760 MB and Turbo to a 3.5" disk DPP with a 1GB disk size and Turbo/Compression polling option.
- 9) Apply NT6M97FI DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size either 380 or 760 MB and Turbo to a 3.5" disk DPP with a 2GB disk size and Turbo/Compression polling option.

DISTRIBUTED PROCESSING PERIPHERAL U.L.

PEC CODE: NT8X48AD

CPC CODE: B0230263

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: NT8X48AD

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP)
allows remote polling of Automatic Messaging
Accounting (AMA) information.

| REFERENCE DOCUMENTATION: MS8X48AD 01 02

MARKETS: Applicable markets:

US
Canada

| ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Barbara Berkley Dept. 3471 (PPK)

NT8X48AD EMA5-01-DPP-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 09 21	ECM 306 18	Delete reference of 140 MB DD with NT6M72DD in RUL2 and add all upgrade kits with rules. Also, add reference to 56 Kbps along with 56K/Compression.
96 12 16	ECM 306 26	Add reference table for upgrade kits to upgrade from NT8X48AD to NT8X48BD (per SR RR6C361).

The Distributed Processing Peripheral U.L. is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Distrib Process Periph	NT8M05AB		1			AP
EPR0M (BCS21-29) CP	NT6M63CL			A, B	2	RUL1
EPR0M (BCS29) CP	NT6M63CJ			A, B	2	RUL1
56 Kbps I/F CP	NT6M94AA			A, B	7	RUL7
56K/Compression I/F CP	NT6M94BA			A, B	7	RUL7
Disk Drive I/F CP	NT6M66AL			A, B	11	RUL3
Disk Drive I/F CP	NT6M66AH			A, B	11	RUL3
SCSI Disk Drive I/F CP	NT6M66BA			A, B	11	RUL3
SCSI Disk Drive 140 I/F CP	NT6M66BC			A, B	11	RUL3
Disk Crossover CP	NT6M72AE			A, B	15	RUL4
SCSI Disk Crossover CP	NT6M93AA			A, B	15	RUL4
56K Crossover CP	NT6M48AA			B	16	RUL5
Keyed Status Panel Assy	NT6M59AA			A	19	RUL9
Keyless Status Panel Assy	NT6M59AB			A	19	RUL9
Filler Panel Assy	NT8M59BB			B	19	RUL10
Filler Panel Assy, rover	NT6M59BB			B	19	RUL10
140MB Disk Drive Assy	NT6M72BA			A, B	21	RUL2
140MB Disk Drive Assy	NT6M72DE			A, B	21	RUL2
380MB Disk Drive Assy	NT6M72DA			A, B	21	RUL2
380MB Disk Drive Assy	NT6M72DD			A, B	21	RUL2
760MB Disk Drive Assy	NT6M72EA			A, B	21	RUL2
56K Conn CP	NT6M54AL			B	26	RUL6
56K I/F Xover A Cable Assy	NT6M73AJ					RUL8
56K I/F Xover B Cable Assy	NT6M73AK					RUL8
56K Xover Conn Cable Assy	NT6M85CA					RUL8
CA, Emergency Access Term.	NT8M99AB			A		RUL11
DPP Field Upgrade Kit	NT6M97EA					RUL12
DPP Field Upgrade Kit	NT6M97EB					RUL12
DPP Field Upgrade Kit	NT6M97EC					RUL12
DPP Field Upgrade Kit	NT6M97ED					RUL12
DPP Field Upgrade Kit	NT6M97EF					RUL12
DPP Field Upgrade Kit	NT6M97EG					RUL12
DPP Field Upgrade Kit	NT6M97FA					RUL13
DPP Field Upgrade Kit	NT6M97FB					RUL13
DPP Field Upgrade Kit	NT6M97FC					RUL13
DPP Field Upgrade Kit	NT6M97FD					RUL13
DPP Field Upgrade Kit	NT6M97FE					RUL13
DPP Field Upgrade Kit	NT6M97FF					RUL13
DPP Field Upgrade Kit	NT6M97FG					RUL13
DPP Field Upgrade Kit	NT6M97FH					RUL13
DPP Field Upgrade Kit	NT6M97FI					RUL13

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

RULES:

- AP 1) When PEC NT8X48AD is ordered, these items are provided.
- RUL1 1) Provide two (2) NT6M63CL Circuit packs if the office is running at BCS21 through 28 load, or if running at BCS29 and without the 56K/compression or 56 Kbps polling option. Assign one Circuit Pack in position 2 of the A (upper) Chassis and one Circuit Pack in position 2 of the B (lower) Chassis.
- 2) Provide two (2) NT6M63CJ Circuit packs if the office is running a BCS29 load and the 56k/Compression or 56Kbps polling option is selected. Assign one Circuit Pack in position 2 of the A (upper) Chassis and one Circuit pack in position 2 of the B (lower) Chassis.
- RUL2 1) Provide two (2) NT6M72BA 140MB w/o compression, two (2) NT6M72DE 140MB with Compression, two NT6M72DA 380MB, two (2) NT6M72DD 380MB with 56 Kbps or 56K/Compression polling, or two (2) NT6M72EA 760 MB Disk Drives per office requirements. Mount the Disk Drives in position 21 of the A (upper) and B (lower) Chassis.
- RUL3 1) Provide two (2) NT6M66AL Disk Drive I/F Circuit Packs when the 140MB Drive DPP is selected. Mount one Circuit pack in position 11 of the A (upper) and B (lower) Chassis.

56K/Compression polling is not supported by this configuration.

- 2) Provide two (2) NT6M66AH Disk Drive I/F Circuit Pack for the 380MB Disk Drive DPP when the 56K/Compression or 56 Kbps polling option is not selected. Mount one Circuit Pack in position 11 of the A (upper) and B (lower) Chassis.
 - 3) Provide two (2) NT6M66BA when the 760 MByte Disk or the 380 MByte Disk and 56K/Compression or 56 Kbps polling option is selected. Mount one Circuit Pack in position 11 of the A (upper) and B (lower) Chassis.
 - 4) Provide two (2) NT6M66BC when the 140 MByte Disk and 56K/Compression polling option is selected. Mount one Circuit Pack in position 11 of the A (upper) and B (lower) Chassis.
- RUL4 1) Provide two (2) NT6M72AE Disk Crossover Circuit Packs to provide a path from the Disk Interface CP to the DPP Disk Drive units. The NT6M72AE must be specified for 140 MByte or 380 MByte applications without 56K/Compression or 56 Kbps polling option selected. Provide two (2) NT6M93AA SCSI Crossover CP when the 140 MByte, 380 MByte or 760 MByte and 56K/Compression or 56 Kbps polling option is selected. Mount one (1) circuit pack in POSITION 15 of the upper (A) and the lower (B) Chassis.
- RUL5 1) Provide one (1) NT6M48AA 56 Kbps Crossover CP when the 56K/Compression or 56Kbps polling option is selected. Mount one (1) circuit pack in position 16 of the B (lower) Chassis.
- RUL6 1) Provide one (1) NT6M54AL 56 Kbps Conn Panel when the 56K/Compression or 56 Kbps polling option is selected. Mount one (1) Conn Panel in position 26 of the B (lower) Chassis.
- RUL7 1) Provide two (2) NT6M94AA 56 Kbps Interface CP when the 56Kbps polling option is selected. Mount one (1) Circuit Pack in position 07 of the A (upper) Chassis, and one (1) circuit pack in position 07 of the B (lower) Chassis.
- 2) Provide two (2) NT6M94BA 56 Kbps Interface CP when the 56K/Compression polling option is selected. Mount one (1) Circuit Pack in position 07 of the A (upper) Chassis, and one (1) circuit pack in position 07 of the B (lower) Chassis.

- RUL8 1) Provide one (1) each of cable assemblies NT6M73AJ, NT6M73AK and NT6M85CA when the 56K/compression or 56 Kbps polling option is selected. Cable assemblies are internal to the DPP.
- RUL9 1) A status panel is needed to provide a display to DPP processor status and manual switch for forcing DPP processor changes.
- 2) If a keylock type switch is ordered, provide one (1) NT6M59AA Keyed status panel in position 19 of the A (upper) Chassis.
- 3) If a keyless type switch is ordered, provide one (1) NT6M59AB Keyless status panel in position 19 of the A (upper) Chassis.
- RUL10 1) A filler panel is needed to provide a point for attaching anti-static wrist straps. We provide two types, one with a connector jack that is compatible with 20 ma loop rover (portable) maintenance terminal, and one without the connector jack.
- 2) If the customer orders the filler panel without the jack, provide one (1) NT8M59BB filler panel in position 19 of the B (lower) chassis.
- 3) If the customer orders the filler panel with the jack, provide one (1) NT6M59BB panel in position 19 of the B (lower) chassis.
- RUL11 1) An emergency access terminal port is provided on every DPP to allow maintenance interface even if both MMI links are out of service. If the customer wants to use an emergency access terminal with the DPP, provide one (1) 25 ft. NT8M99AB E.A.T. cable and attach it to the J4 connector on the A (upper) chassis.
- RUL12 1) Apply NT6M97EA DPP Field Upgrade Kit to upgrade a 56Kbps DPP to 56Kbps/Compression DPP without changing disk size. See NT6M97EA Engineering Manual Section (EMS) for details.
- 2) Apply NT6M97EB to upgrade 380 MB 56 Kbps DPP to 56K/Compression while increasing disk size to 760 MB. See NT6M97EB EMS for details.
- 3) Apply NT6M97EC to upgrade a NON-56 Kbps DPP with 380 MB disk size to 56K/Compression while increasing disk size to 760 MB. See NT6M97EC EMS for details.

- 4) Apply NT6M97ED to upgrade a NON-56 Kbps 380 MB DPP to 56K/Compression without increasing disk size. See NT6M97ED EMS for details.
- 5) Apply NT6M97EF to upgrade 140 MB DPP to Compression while increasing disk size to 380 MB. See NT6M97EF EMS for details.
- 6) Apply NT6M97EG to upgrade 140 MB DPP to Compression without increasing disk size. See NT6M97EG EMS for details.

RUL13

Existing UL 5.25" disk DPPs (NT8X48AD) may be upgraded to UL 3.5" disk DPPs (NT8X48BD) as follows:
The following abbreviations are used in the tables below:

GB = GigaByte (refers to disk size)
 MB = MegaByte (refers to disk size)
 MDd = Manufacture Discontinued. Models from 1984-1989. These models may be upgraded to 3.5" DPPs but cannot be purchased as new systems. They are not UL recognized. They use terminal blocks for power/ground input instead of shielded d-sub connectors.
 NT = non-Turbo (9600 baud polling max)
 T = Turbo (56k baud polling max)
 TC = Turbo/Compression (56k baud or 9600/Compression)
 UL = UL recognized

Provisionable UL DPPs (MDd)

EXISTING DPP PEC	EXISTING DPP DESCRIPTION	UPGRADE KIT PEC	FINAL DPP PEC	FINAL DPP DESCRIPTION
NT8X48AD	72-380MB NT	NT6M97FA	NT8X48BD	1GB NT
NT8X48AD	72-380MB NT	NT6M97FB	NT8X48BD	1GB T
NT8X48AD	72-380MB NT	NT6M97FC	NT8X48BD	1GB TC
NT8X48AD	72-380MB NT	NT6M97FD	NT8X48BD	2GB T
NT8X48AD	72-380MB NT	NT6M97FE	NT8X48BD	2GB TC
NT8X48AD	380-760MB T	NT6M97FF	NT8X48BD	1GB T
NT8X48AD	380-760MB T	NT6M97FG	NT8X48BD	2GB T
NT8X48AD	380-760MB T	NT6M97FH	NT8X48BD	1GB TC
NT8X48AD	380-760MB T	NT6M97FI	NT8X48BD	2GB TC
NT8X48AD	380-760MB TC	NT6M97FF	NT8X48BD	1GB TC
NT8X48AD	380-760MB TC	NT6M97FG	NT8X48BD	2GB TC

DISTRIBUTED PROCESSING PERIPHERAL EMC

NT8M05AB

RATING: Standard

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The DPP allows remote polling of AMA information in Bellcore record format on provisionable 140, 380 or 760 MByte 5 1/4" Disk Drive Units.

REFERENCE DOCUMENTATION: MS8M05AB 02 01

MARKETS: Applicable markets:

US
Canada

NT8M05AB EMA5-01-DPP-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 306 19	Previous history not available To remove NT6M56AB as AP. Was MD'd in 1987 per Cook.

The Distributed Processing Peripheral EMC is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPU/DMA CP	NT6M62BA		2	A, B	01	AP
Extended Memory	NT6M64AA		2	A, B	03	AP
Error Control II	NT6M65AA		1	A	05	AP
Error Control Jumper	NTM609AB		1	B	05	AP
Quad SIO	NT6M60BA		2	A, B	06	AP
Data Stream I/F	NT6M70AC		4	A, B	12, 13	AP
Bus Terminator	NT6M68AA		2	A, B	14	AP
Pwr/Alm Comm CP	NT6M84BA		1	A	16	AP
4-Channel Communication CP	NT6M85AA		1	A	17	AP
Fan Filter CP	NT6M56AD		2	A, B	18	AP
# Fan Filter	NT6M56AB		1	B	19	AP
Power Supply Assy	NT6M71AB		2	A, B	20	AP

FLAGS:

| # MD. Replace by NT6M56AD.

NOTES:

RULES:

AP 1) When PEC NT8M05AB is ordered, these items are provided.

UL DPP SHELF,
3.5" DISK

PEC CODE: NT8X48BD

CPC CODE: A0629365

RATING: Standard.

REPLACES: NT8X48AD

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP) is offered with 3.5" disk drive technology which allows for a disk capacity offering of 1GB or 2GB. The DPP is designed to capture, store, and forward AMA call records from the DMS-100 family of switches.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

| ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Barbara Berkley Dept. 3471 (PPK)

NT8X48BD EMA5-01-DPP-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	Introduce new 3.5 " drive DPP for gate requirements.
96 12 16	ECM 306 26	Remove reference and RUL8 for upgrade kits that are to be applied to the NT8X48AD (Per SR RR6C361). Update RUL9 for upgrade kits that are to be applied to the NT8X48BD.

The UL DPP SHELF, 3.5" DISK is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DPP System	NT8M05BB		1			AP
Cable Braid Assy	NT0X9501		2			AP
CPU/DMA CP	NT6M62BA		2	A, B	01	AP-01
EPROM CP	NT6M63FE		2	A, B	02	AP-01
Extended Memory	NT6M64AA		2	A, B	03	AP-01
Error Control II	NT6M65AA		1	A	05	AP-01
Error Control Jumper	NTM609AB		1	B	05	AP-01
Quad SIO	NT6M60BA		2	A, B	06	AP-01
SCSI INTF CP	NT6M66CA		2	A, B	11	AP-01
Data Stream I/F	NT6M70AC		4	A, B	12, 13	AP-01
Bus Terminator	NT6M68AA		2	A, B	14	AP-01
SCSI XOVR CP	NT6M93BA		2	A, B	15	AP-01
Pwr/Alm Comm CP	NT6M84BA		1	A	16	AP-01
4-Channel Communication CP	NT6M85AA		1	A	17	AP-01
Fan Filter CP	NT6M56AD		2	A, B	18	AP-01
Power Supply Assy	NT6M71AB		2	A, B	20	AP-01
1GB Disk Drive Assy	NT6M72GA			A, B	21	RUL1
2GB Disk Drive Assy	NT6M72HA			A, B	21	RUL1
56 Kbps I/F CP	NT6M94AA			A, B	7	RUL2
56K/Compression I/F CP	NT6M94BA			A, B	7	RUL2
56K Crossover CP	NT6M48AA			B	16	RUL3
56K Conn CP	NT6M54AL			B	26	RUL3
56K I/F Xover A Cable Assy	NT6M73AJ					RUL4
56K I/F Xover B Cable Assy	NT6M73AK					RUL4
56K Xover Conn Cable Assy	NT6M85CA					RUL4
Keyed Status Panel Assy	NT6M59AA			A	19	RUL5
Keyless Status Panel Assy	NT6M59AB			A	19	RUL5
Filler Panel Assy	NT8M59BB			B	19	RUL6
Filler Panel Assy, rover	NT6M59BB			B	19	RUL6
RS232-C Modem Cable Assy	NT8M99AG					RUL7
DPP Upgrd, 1GB to 1GB T	NT6M97GA					RUL9
DPP Upgrd, 1GB to 1GB TC	NT6M97GB					RUL9
DPP Upgrd, 1GB to 2GB T	NT6M97GC					RUL9
DPP Upgrd, 1GB to 2GB TC	NT6M97GD					RUL9
DPP Upgrd, 1GB T to 2GB T	NT6M97GE					RUL9
DPP Upgrd, 1GB TC to 2GB TC	NT6M97GE					RUL9
DPP Upgrd, 1GB T to 1GB TC	NT6M97GF					RUL9
DPP Upgrd, 2GB T to 2GB TC	NT6M97GF					RUL9
DPP Upgrd, 1GB T to 2GB TC	NT6M97GG					RUL9

Active Equipment
UL DPP SHELF,
3.5" DISK

NT8X48BD
EMA5-01-DPP-5
Page 3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

RULES:

- AP 1) When PEC NT8X48BD is ordered, these items are provided.
- RUL1 1) Calculate disk size requirements per ECM 306. If a 1GB disk is required, provide two NT6M72GA disks in position 21 of the A (upper) chassis and position 21 of the B (lower) chassis. 1 GB disk drives can be provisioned with either standard polling (9600 baud max.), Turbo (56K baud max.), or 56K/Compression polling (9600 baud max. with Compression turned on or 56K baud max. with Compression turned off).
- 2) If a 2GB disk is required, provide two NT6M72HA disks in position 21 of the A chassis and position 21 of the B chassis. The 2GB DPP can be provisioned with either Turbo (56K baud max.) or 56K/Compression polling (9600 baud max. with Compression turned on or 56K baud max. with Compression turned off).
- RUL2 1) Provide two NT6M94AA 56 Kbps Interface CP to provide the path between the CPU and 56K XOVVR CP when the 56K polling option is selected. Mount one CP in position 07 of the A (upper) Chassis, and one circuit pack in position 07 of the B (lower) Chassis.

- 2) When the 56K/Compression polling option is selected, provide two NT6M94BA 56 Kbps I/F CPs, one in position 07 of the A chassis and one in position 07 of the B chassis.
- RUL3 1) If 56K or 56K/Compression polling option is selected, one 56K XOVR CP and one 56K Connector panel assy are required to provide a path between the 56K or 56K/Compression I/F CPs and the DSU (Data Set Unit). See ECM 306 for information on the DSUs.
- 2) Provide one NT6M48AA 56 Kbps XOVR CP when the 56K/Compression or 56K polling option is selected and mount it in position 16 of the B (lower) Chassis.
- 3) Provide one NT6M54AL 56 Kbps Conn Panel when the 56K/Compression or 56K polling option is selected and mount it in position 26 of the B (lower) Chassis.
- RUL4 1) Provide one each of cable assemblies NT6M73AJ, NT6M73AK and NT6M85CA when the 56K/compression or 56K polling option is selected. Cable assemblies are internal to the DPP.
- RUL5 1) A status panel is needed to provide a display to DPP processor status and manual switch for forcing DPP processor changes.
- 2) If a keylock type switch is ordered, provide one NT6M59AA Keyed status panel in position 19 of the A (upper) Chassis.
- 3) If a keyless type switch is ordered, provide one NT6M59AB Keyless status panel in position 19 of the A (upper) Chassis.
- RUL6 1) A filler panel is needed to provide a point for attaching anti-static wrist straps. Two types are provided, one with a connector jack that is compatible with 20 ma loop rover (portable) maintenance terminal, and one without the connector jack.
- 2) If the customer orders the filler panel without the jack, provide one NT8M59BB filler panel in position 19 of the B (lower) chassis.
- 3) If the customer orders the filler panel with the jack, provide one NT6M59BB panel in position 19 of the B (lower) chassis.
- RUL7 1) If either the 56K or 56K/Compression polling option is selected, the DPP comes equipped with an additional modem

port for RS232-C modem communications. Provide one RS232-C Modem Cable Assy if the customer requests to use it for a back-up modem. This cable has a length of 50 feet (15.24 meters).

RUL8 1) Reserved for future use.

RUL9 Existing 3.5" UL DPPs may be upgraded as follows:
The following abbreviations are used in the tables below:

GB = GigaByte (refers to disk size)
MB = MegaByte (refers to disk size)
MDd = Manufacture Discontinued. Models from 1984-1989.
These models may be upgraded to 3.5" DPPs but cannot be purchased as new systems.
They are not UL recognized. They use terminal blocks for power/ground input instead of shielded d-sub connectors.
NT = non-Turbo (9600 baud polling max)
T = Turbo (56k baud polling max)
TC = Turbo/Compression (56k baud or 9600/Compression)
UL = UL recognized

EXISTING DPP PEC	EXISTING DPP DESCRIPTION	UPGRADE KIT PEC	FINAL DPP PEC	FINAL DPP DESCRIPTION
NT8X48BD	1GB NT	NT6M97GA	NT8X48BD	1GB T
NT8X48BD	1GB NT	NT6M97GB	NT8X48BD	1GB TC
NT8X48BD	1GB NT	NT6M97GC	NT8X48BD	2GB T
NT8X48BD	1GB NT	NT6M97GD	NT8X48BD	2GB TC
NT8X48BD	1GB T	NT6M97GE	NT8X48BD	2GB T
NT8X48BD	1GB T	NT6M97GF	NT8X48BD	1GB TC
NT8X48BD	1GB T	NT6M97GG	NT8X48BD	2GB TC
NT8X48BD	1GB TC	NT6M97GE	NT8X48BD	2GB TC
NT8X48BD	2GB T	NT6M97GF	NT8X48BD	2GB TC

DATA SET MODULE SHELF

NT5X08AC

RATING: Standard

ABBREVIATION NAME: DSM

ENGINEERING DESCRIPTION: The Data Set Module Shelf houses Data Set
Modems (MTX) per office requirements.

REFERENCE DOCUMENTATION: MS5X08AL 01 01

The Data Set Module Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Modem Shelf	NPS50426L1		1	XX		AP
* 9600 GDC Modem, Rckmnt	049M020-001			XX	1-16	RUL3
9600 GDC Modem, Rckmnt	049M037-011			XX	1-16	RUL3
4800 GDC Modem, Rckmnt	051P006-002			XX	1-16	RUL1
1200 GDC Modem, Rckmnt	053P001-002			XX	1-16	RUL2
Isolated Mounting H/W	NT0X0013			XX		AP

FLAGS:

* MD. Replaced by 049M037-011.

NOTE:

- 1) The following stand alone modems are approved for use with DMS100

PEC	DESCRIPTION
049A020-011	GDC 9600 Baud Stand Alone Modem
051A005-001	GDC 4800 Baud Stand Alone Modem
202-9D	GDC 1200 Baud Stand Alone Modem
108-3M	GDC 300 Baud Stand Alone Modem

- 2) "X" Can be one of 19,33,52,66

RULE:

- AP 1) When PEC NT5X08AC is ordered, these items are provided.
- RUL1 1) Provide one (1) 4800 Plug-in modem for each MTX link Controller NT6X91AB (Active and Standby) A maximum of 9 modems are associated with each IOC shelf (NT1X61AB) containing a maximum of 9 MTX Link Controllers (NT6X91AB)
- 2) Circuit positions 1 to 8 are powered by plug P1, circuit positions 9 to 16 are powered by plug P2.

- RUL2 1) Provide GDC 202 S/T 1200 Baud rack mounted modems as required.
- RUL3 1) Provide one (1) 9600 Plug-in modem for each MTX Link Controller NT6X91CA (Active and Standby) mounted in the IOC shelf (NT1X61AB/AD).

INPUT/OUTPUT CONTROLLER MODULE (IOC)

PEC CODE: NT1X61AG

CPC CODE: B0238665

RATING: Standard

REPLACES: NT1X61AD, NT1X61AB

REPLACED BY: Not Applicable

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The Input/Output Controller Module accommodates up to nine (9) Input/Output Device Controller Circuit Packs, each of which has its own subsidiary map position.

REFERENCE DOCUMENTATION: MS1X61AG 01 04

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NT1X61AG EMA5-01-IOC-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 27	ECM 613 16	Initial introduction.
93 12 20	ECM 613 18	ECD 018-40186 - Replace NT1X62AB/CA by NT1X62CB.
94 10 07	ECM 613 24	ECD 018-43363 - Replaces NT1X61AE with its stocklist contents NT0X50AA, NT0X67AA, and P0588099.
95 02 03	ECM 613 26	Show correct slot mounting locations for NT0X50AA filler faceplates.
95 04 06	ECM 316 08	EC 024-93972- Introduces the NT2X70AF and its label to replace the NT2X70AE and its label. The design documents will be updated after this EMS.

The Input/Output Controller Module (IOC) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Controller Shelf Assy.	NT1X6113		1	X		AP
# I/O Msg Controller	NT1X62AB			X	02	RUL1
# I/O Msg Controller	NT1X62CA			X	02	RUL1
I/O Msg Controller	NT1X62CB			X	02	RUL1
# Desig. Label (NT1X62CA)	P0686038			X	02	RUL1
Desig. Label (NT1X62CB)	P0745105			X	02	RUL1
# I/O Controller Common CP	NT1X61AE			X		RUL2
I/O Control Terminator	NT0X67AA		1	X	22	RUL2
Designation Strip	P0588099		1	X		RUL2
I/O Device Controller CP	AR			X	4,6,8,	RUL3
				X	10,12,	
				X	14,16,	
				X	18,20	
Desg Label For I/O Cntrl CP	AR			X	4,6,8,	RUL3
				X	10,12,	
				X	14,16,	
				X	18,20	
Filler Face Plate 0.875	NT0X50AA			X	1,4-21	RUL4
					23-24	
# Power Converter	NT2X70AE			X	25	RUL5
# Desig. Label (NT2X70AE)	P0698943			X	25	RUL5
Power Converter	NT2X70AF			X	25	RUL5
Desig. Label (NT2X70AF)	P0809960			X	25	RUL5
Power Converter (-60V)	NT2X70KA			X	25	RUL5
Desig. Label (NT2X70KA)	P0737462			X	25	RUL5
26AWG Single Green Wire	R0109836			X		RUL6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT1X62AB	MD	NT1X62CB
NT1X62CA	MD	NT1X62CB
P0686038	MD	
NT1X61AE	MD	NT0X50AA, NT0X67AA and P0588099
NT2X70AE	MD	NT2X70AF
P0698943	MD	P0809960

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

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

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

NOTES:

- 1) X = Shelf Position 04, 18, 32.

RULES:

AP 1) When PEC NT1X61AG is ordered, these items are provided.

RUL1 1) Provide one (1) I/O Message Controller NT1X62CB in each IOC module for both NT-40 and SuperNode applications. The NT1X62CB replaces both NT1X62AB (for NT-40 applications) and NT1X62CA (for SuperNode applications).

- 2) Provide Designation Label P0745105 for each NT1X62CB I/O Message Controller ordered.

RUL2 1) The NT1X61AE I/O Controller Common CP Fill is MD and replaced by its stocklist contents. Always Provide one (1) NT0X67AA, I/O Terminal Controller Card, and one (1) P0588099, Des Strip, for each NT1X61AG ordered.

RUL3 1) The IOC Module NT1X61AG provides space to accommodate up to nine (9) I/O device control cards. Refer to Table B, Section EMA14-02-000, for the types of control cards and their respective labels which can mount on NT1X61AG and related assignment restrictions.

RUL4 1) Provide one (1) NT0X50AA for each empty slot position including even and odd numbered slot positions.

| RUL5 1) Provide one (1) NT2X70AF Power Converter per IOC module for all applications except Germany.

- 2) Provide one (1) NT2X70KA Power Converter per IOC module for Germany applications requiring -60V power.

- | 3) Provide one (1) Designation Label P0809960 for each NT2X70AF ordered and one (1) Designation Label P0737462 for each NT2X70KA ordered.

- RUL6 1) When IOC NT1X61AG is field installed, provide 5.0 metres of NT-26CR (R0109836) wire coloured green.

REMOTE OSCILLATOR SHELF

NT3X95AB

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Stratum II clock system will provide the ability to synchronize from a Stratum I or to a Stratum II clock.

REFERENCE DOCUMENTATION: N/A

The Remote Oscillator DMS-Core Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Osc. Shelf Assy	NT3X9507		1			AP
Osc. (DMS-Core) & I/F CP	NT3X16AB		2		01,15	AP
Osc. (DMS-Core) & I/F CP	NT3X16AB				09,23	RUL1
Pwr Converter (+5,+12,+24V)	NT1X78AA		2		06,20	AP
Filler Face Plate 2.62	NT0X50BE		1		12	AP
Filler Face Plate 2.62	NT0X50BE				09,23	RUL2
Filler Face Plate 1.72	NT0X50BF		3		04,18,26	AP
Filler Face Plate 0.875	NT0X50BA		1		14	AP
Desig. Strip (NT3X95AB)	P0699935					AP

RULE:

AP 1) When PEC NT3X95AB is ordered, these items are provided.

| RUL1 1) If 'hot' spares are requested by the customer they may be equipped in positions 09 and 23.

| RUL2 1) Equip Filler Face Plates in slots 09 and 23 if any of these slots are not used for 'hot' spares.

REMOTE OSCILLATOR DMS-CORE SHELF

NT3X95BB

RATING: Standard

ABBREVIATION NAME: ROS

ENGINEERING DESCRIPTION: This shelf houses the DMS clock for DMS-Core applications. This clock provides a capability that is not Stratum rated, however, in terms of accuracy, falls in between Stratum II and Stratum III.

REFERENCE DOCUMENTATION: N/A

The Remote Oscillator DMS-Core Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Osc. Shelf Assy	NT3X9507		1			AP
Osc. (DMS-Core) & I/F CP	NT3X16BB		2		01,15	AP
Osc. (DMS-Core) & I/F CP	NT3X16BB				09,23	RUL1
Pwr Converter (+5,+12,+24V)	NT1X78AA		2		06,20	AP
Filler Face Plate 2.62	NT0X50BE		1		12	AP
Filler Face Plate 2.62	NT0X50BE				09,23	RUL2
Filler Face Plate 1.72	NT0X50BF		3		04,18,26	AP
Desig. Strip (NT3X95BB)	P0699936					AP

RULE:

AP 1) When PEC NT3X95BB is ordered, these items are provided.

| RUL1 1) If 'hot' spares are requested by the customer they may be equipped in positions 09 and 23.

| RUL2 1) Equip Filler Face Plates in slots 09 and 23 if any of these slots are not used for 'hot' spares.

INPUT OUTPUT EQUIPMENT FRAME

PEC CODE: NT0X43AD

CPC CODE: B0214463

RATING: Standard

REPLACES: NT0X43AA/AB/AC

REPLACED BY: Not Applicable

ABBREVIATION NAME: IOE

ENGINEERING DESCRIPTION: The Input/Output Equipment Frame houses all the input/output devices, mountable on a frame, that interface the map with the DMS machines.

REFERENCE DOCUMENTATION: MS0X43AD 01 47
MS1X61AG 01 05

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NT0X43AD EMA5-01-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 09 25	ECM 202 07	Change ROS shelf power cable ordering
92 10 28	ECM 502 08	Add rules for power cables for 5.25" DDU shelf. (ET 13629)
92 11 27	ECM 471 04	ET12419, EC 018-37103 - Introduce the LaMarche Inverter in place of NT0X87AA Inverter. EC 018-37532 - Add rules for powering IOC, DDU and DPP shelves in the IOE frame.
92 12 14	ECM 202 08	The Following Changes Are Included: - Cook ECO #70509 DTD: 910307 Add NT8M04_L Series BMC - Cook ECO #70517 DTD: 910312 Add NT8M04_M Series BMC
93 03 17	ECM 613 12	ET27053 - Add provisioning rules for J6738AR-1.
93 04 26	ECM 613 13	ET29183 - Correct RUL39.
93 07 08	ECM 613 14	ET16819, ET16629 - Correct RUL5.
93 10 27	ECM 613 16	EC 018-41170 - Introduce NT1X61AG to replace NT1X61AD. Remove RUL41. Update DPP cables in RUL5. ET 5819 - Added rules for IOC field installation.
94 07 08	ECM 613 22	EC 018-42525 - Introduce new read, write, and control cables to connect MTD to IOC, NT1X61AG. EC 018-42674 - Introduces new message controller upgrade kit NT1X61AY. EC 018-41414 - MD's NT1X61AB, NT1X61AD and NT1X61AX.
94 07 22	ECM 561 01	EC 018-42674 - Introduce new SCSI DDU into IOC so show existing DDU as rate change pending. Also, correct an error on RUL3 part 8 to remove reference to providing NT1X61AG for DMS-Core conversion.
94 10 07	ECM 613 24	EC 018-43363 - Replace NT1X61AE with its stocklist contents.
95 02 03	ECM 613 26	Show rating of MTD-IOC cables.
95 02 21	ECM 613 27	EC 018-44074 MDs NT0X87AA for IOE. EC 018-44155 MDs NT0X44AC HP MTD h/w.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 03 17	ECM 613 28	EC 006-21517 MD LaMarche Inverter A036733 and replace it with the NTRX31DH Inverter and the NT0X43XD IOE Inverter ISG Kit. MD NTRX34DA Kit. MD NT0X0009 Cable Assembly. MD NT0X4306 Cable Assembly.
95 04 06	ECM 316 08	EC 024-93972- Introduces the NT2X70AF and its label to replace the NT2X70AE and its label. The design documents will be updated after this EMS. The NT2X70AZ is replaced by NT2X70AY.
95 05 18	ECM 613 29	Remove reference to NT2X70AY since it is not required.
95 09 25	ECM 613 30	EC 018-45526 Introduces new NT8X48BD DPP into IOE frame. EC 006-20826 introduces Enhanced Alarm Cables for the new NT8X48BD and NT8X48AD DPPs.
96 03 25	ECM 306 24	Introduce 3.5" DPP BBs to IOE.
96 04 08	ECM 613 33	EC 018-46732 Introduces 3.5" Disk Drive BMCs. Refer Read, Write, and Control cable provisioning to CA0X15 cable dwg.
96 05 31	ECM 202 14	Reinstate NT4X00BZ disk upgrade kit per ECD 018-47913. Introduce 3.5 in. BiSync BMC per ECD 011-21862.
96 08 16	ECM 613 34	Modify position rule for MTDs.
96 10 18	ECM 613 35	EC 018-46279 introduces hardware and associated cabling to enable control of DPP/BMC and MTD devices via the new IOM controller. EC 018-45462 MD'd the NT0X4301 and NT0X4302 power cables. EC 018-46903 MD'd the NT3X95AA and NT3X95BA stratum oscillator shelves. Update rules to indicate that read, write, and control cables are fixed length and not job engineered (per current MSs).
97 03 26	ECM 613 36	EC 018-45600 MD'd the NT4X2591 with no replacement (EC released 950929). Clarify notes re: NT1X55FA prov.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 04 23	ECM 202 18	Per ECD 024-97670 MD several BMC units Per ECD 018-51074 un-MD NT0X4301 and NT0X4302 cables. Remove flag on NT8M04_E, as it is NOT at MD status.
97 07 31	ECM 613 38	EC 018-49762 MD'd the NT5X0806 and NT5X0810 with no replacements.
97 09 26	ECM 613 40	EC 018-51379 MD'd the NT5X09AA.

The Input Output Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Framework Assembly	NT0X25					RUL40
# Mag Tape Drive Unit (HP)	NT0X44AA	MTD		18, 51		RUL1
# Mag Tape Drive Unit (HP)	7970E-151	MTD		18, 51		RUL1
	-048					
Mag Tape Drive Unit (Cook)	NT0X44AB	MTD		21, 51		RUL1
Mag Tape Drive Unit (Cook)	NT0X44BB	MTD		21, 51		RUL1
Mag Tape Drive Unit (Cook)	209800	MTD		21, 51		RUL1
	-153					
# Mtg Hardware for HP MTD	NT0X44AC			18, 51		RUL1
Mtg Hardware for Cook MTD	NT0X44AD			21, 51		RUL1
# Magnetic Tape Ctrl Cables	210566			18, 51		RUL14
# Magnetic Tape Ctrl Cables	210567			18, 51		RUL14
# Magnetic Tape Ctrl Cables	210568			18, 51		RUL14
# Magnetic Tape Ctrl Cables	NT0X96AA			18, 51		RUL14
# Magnetic Tape Ctrl Cables	NT0X96AB			18, 51		RUL14
# Magnetic Tape Ctrl Cables	NT0X96AC			18, 51		RUL14
Read Cable Assembly (J1)	NT0X96__			18, 51		RUL14
Write Cable Assembly (J2)	NT0X96__			18, 51		RUL14
Control Cable Assembly (J3)	NT0X96__			18, 51		RUL14
IOM Pertec Smart Conn Assy (MTD)	NTFX36AA			34, 67		RUL17
IOM Pertec Smart Conn Assy (DPP)	NTFX36AA			65 & 67 32 & 41		RUL17 RUL17
Pertec Interface Cable Assy	NT0X4320			32, 41, 65, 67		RUL14, RUL17
Frame Supervisory Panel	NT0X28AL	FSP	1	45		AP
Power Control and Alarm CP	NT0X36AB			45		RUL39
FSP Cover	P0673914			45		RUL12
# Filler Panel	P0654621			50		RUL12
# Disk Drive Unit Shelf	NT4X00AA	DDU		04, 18		RUL2
# Disk Drive Unit Shelf	NT4X00AB	DDU		04, 18		RUL2
# Disk Drive Unit Shelf	NT4X00AC	DDU		04, 18		RUL2
# Disk Drive Unit Shelf	NT4X00AF	DDU		04		RUL25
Cable Support Bracket	P0642031			04		RUL25
Mounting Screws	P097F813			04		RUL25
# Enhancement Kit	NT4X00AY	DDU		04		RUL36
# Enhancement Kit	NT4X00AZ	DDU		04, 18		RUL36
Isolation Hardware Kit	NT4X00BZ			04, 18		RUL37
# Univ 5.25" DDU Upgrade Kit	NTZZ99AG			04, 18		RUL38

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# I/O Controller Module	NT1X61AB	IOC			04,18,32	RUL3
# I/O Controller Module	NT1X61AD	IOC			04,18,32	RUL3
I/O Controller Module	NT1X61AG	IOC			04,18,32	RUL3
# I/O Common CP Fill	NT1X61AC				04,18,32	RUL3
# I/O Controller Common CP	NT1X61AE				X	RUL2
I/O Control Terminator	NT0X67AA			1	X 22	RUL2
Designation Strip	P0588099			1	X	RUL2
# IOC PC Kit	NT1X61AX					RUL3
I/O Msg Contr Upgrade Kit	NT1X61AY					RUL3
# Power Converter Kit	NT2X70AZ					RUL16
# Cook Billing Media Conv	2129WW-X	BMC			51	RUL4
	-YY-Z-S					
# BMC Mounting Bracket Kit	P0656447				51	RUL4
# BMC Redund SMDR BSC Pseudo	NT8M04_A	BMCS			18,51	RUL33
BMC Redund LSSGR BSC Pseudo	NT8M04_C	BMCA			18,51	RUL33
BMC Redund LSSGR BSC 1GB	NT8M04GC	BMCA			18,51	RUL33
# BMC Redund LSSGR HDLC Lap B	NT8M04_D	BMCA			18,51	RUL33
BMC Redund LSSGR BX.25	NT8M04_E	BMCA			18,51	RUL33
BMC Redund LSSGR BX.25 1GB	NT8M04GE	BMCA			18,51	RUL33
BMC Redund LSSGR BX.25 1GB	NT8M04HE	BMCA			18,51	RUL33
BMC Redund LSSGR BX.25 2GB	NT8M04IE	BMCA			18,51	RUL33
BMC Upg Kit, 1GB NT to 2GB T	NT6M97JF				18,51	RUL33
BMC Upg Kit, 1GB T to 2GB T	NT6M97JH				18,51	RUL33
BMC Upg Kit, INDP, Bisync, NT/LSSGR, EMC, DMS100	NT6M97IK				18,51	RUL33
# BMC Redund LSSGR HDLC ADU	NT8M04_F	BMCA			18,51	RUL33
# BMC Deuce e/w 72MB Disk Dr	NT8M04AG	BMCD			04,32, 51,65	RUL34
# BMC Deuce e/w 140MB DDU	NT8M04BG	BMCD			04,32, 51,65	RUL34
# BMC Redund NT HDLC ADU	NT8M04_J	BMCA			18,51	RUL33
# BMC Deuce SMDR ASCII	NT8M04_L	BMCA			18,51	RUL34
# Redundant BMC SMDR/NT ASCII	NT8M04_M	BMCA			18,51	RUL33
Read Cable Assembly (J1)	NT0X96__				18,51	RUL14
Write Cable Assembly (J2)	NT0X96__				18,51	RUL14
Control Cable Assembly (J3)	NT0X96__				18,51	RUL14
# Dist. Processor Peripheral	NT8X48AA	DPP			18,51	RUL5
# Dist. Processor Peripheral	NT8X48BA	DPP			18,51	RUL5
# Dist. Processor Peripheral	NT8X48AB	DPP			18,51	RUL5
# Dist. Processor Peripheral	NT8X48AD	DPP			18,51	RUL5
Dist. Processor Peripheral	NT8X48BD	DPP			18,51	RUL5
3.5" DPP Shelf w/1GB NON T	NTZZ09AD	DPP			18,51	RUL5
3.5" DPP Shelf w/1GB TURBO	NTZZ09BD	DPP			18,51	RUL5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
3.5" DPP Shelf w/2GB TURBO	NTZZ09CD	DPP			18,51	RUL5
3.5" DPP Shelf w/1GB 56K/C	NTZZ09DD	DPP			18,51	RUL5
3.5" DPP Shelf w/2GB 56K/C	NTZZ09ED	DPP			18,51	RUL5
# DPP Control Cables	NT0X96DB				18,51	RUL5
# DPP Control Cables	NT0X96DC				18,51	RUL5
# DPP Control Cables	NT0X96DD				18,51	RUL5
# DPP Control Cables	NT0X96HD				18,51	RUL5
# DPP Control Cables	NT0X96HE				18,51	RUL5
# DPP Control Cables	NT0X96HF				18,51	RUL5
DPP/BMC Power Cable	NT8M99AL				18,51	RUL5
Read Cable Assembly (J1)	NT0X96__				18,51	RUL14
Write Cable Assembly (J2)	NT0X96__				18,51	RUL14
Control Cable Assembly (J3)	NT0X96__				18,51	RUL14
Data Set Module Shelf	NT5X08AC	DSM			19,33,52,	RUL7
# Data Set Module Shelf	NT5X09AA	DSM			05,19,33, 52,66	RUL24
# Data Unit Gnd & Mounting H/W	NT4X2591					RUL24
# Data Set Module Shelf Cover	NT5X0806				22,36,55, 69	RUL8
# Mounting Hardware	NT5X0810					RUL8
# Inverter	NT0X87AA	INV			04,11,18, 25,32,39, 51,58,65	RUL9
# LaMarche Inverter	A0367433				04,11,18	RUL9
# Isolation/Mounting Eqpt. for LaMarche Inverter	NTRX34DA				04,11,18	RUL9
Inverter	NTRX31DH				04,12	RUL9
IOE Inverter ISG Kit	NT0X43XD				04,12	RUL9
Logic Return Cable Assy	NT0X0008					RUL21
# Logic Return Cable Assy	NT0X0009					RUL9
# Local Cable Assembly	NT0X4306					RUL9
# Stratum II Rmt Osc. Shelf (NT-40, Non-ISG)	NT3X95AA	ROS			04,32	RUL10
Stratum II Rmt Osc. Shelf (DMS-Core, ISG)	NT3X95AB	ROS			04,32	RUL10
# Stratum 2.5 Rmt Osc Shelf (DMS-Core, Non-ISG)	NT3X95BA	ROS			04,32	RUL23
Stratum 2.5 Rmt Osc Shelf (DMS-Core, ISG)	NT3X95BB	ROS			04,32	RUL23
Filler Panel	P0575239				04,18,32, 51,65	RUL11
Filler Panel	P0654622				17	RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Cable	NT0X95BA			18, 32		RUL15
Power Cable	NT0X95BD			32		RUL15
Power Cable	NT0X95BF			18, 32		RUL15
Power Cable	NT0X95BG			18		RUL15
Power Cable	NT0X95BJ			04		RUL15
Power Cable	NT0X95BK			04		RUL15
Power Cable	NT0X95CD			18		RUL15
Power Cable	NT0X95CE			32		RUL15
Power Cable	NT0X95CN			04		RUL15
Power Cable	NT0X95CP			04		RUL15
Power Cable	NT0X4301			04		RUL15
Power Cable	NT0X4302			04		RUL15
Cable Braid Assembly	NT0X9587					RUL35
Cable Braid Assembly (7 in)	NT0X9501					RUL35
Cable Term Hardware	NT4X0040					RUL35
Wiring: Stratum II w NT40	NT0X43WA					RUL26
Wiring: Stratum II w NT40	NT0X43WB					RUL27
Wiring: Stratum II/2.5	NT0X43WC					RUL28
DMS-Core						
Wiring: Stratum II/2.5	NT0X43WD					RUL29
DMS-Core						
PC Kit for NT40 to DMS-Core	NT0X43XA					RUL30
Retrofit with Stratum II						
Stratum II R0S ISG Upg Kit	NT0X43XB					RUL31
Stratum 2.5 R0S ISG Upg Kit	NT0X43XC					RUL32

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X44AA	MD	209800-153
7970E-151-048	MD	209800-153
210566	MD	NT0X96AA/AB/AC
210567	MD	NT0X96AA/AB/AC
210568	MD	NT0X96AA/AB/AC
NT0X96AA	MD	NT0X96DB, NT0X96__
NT0X96AB	MD	NT0X96DC, NT0X96__
NT0X96AC	MD	NT0X96DD, NT0X96__
NT0X96DB for DPP	MD	NT0X96HD
NT0X96DC for DPP	MD	NT0X96HE
NT0X96DD for DPP	MD	NT0X96HF
P0654621	A&M	P0673914

PEC	RATING	REPLACED BY PEC
NT4X00AA	MD	NT4X00AF
NT4X00AB	MD	NT4X00AF
NT4X00AC	MD	NT4X00AF
NT4X00AY	MD	NT4X00AZ
NT1X61AC	MD	NT1X61AE
NT1X61AX	MD	NT1X61AY
NT1X61AB	MD	NT1X61AG
NT1X61AD	MD	NT1X61AG
2129WW-X-YY-Z-S	MD	NT8M04XX(RUL33)
P0656447	MD	NT8M04XX(RUL33)
NT8X48AA	A&M	NT8X48AD
NT8X48BA	A&M	NT8X48AD
NT8X48AB	A&M	NT8X48AD
NT1X60AB	MD	NT5X09AA
NT0X87AA	MD	A0367433
NT4X00AF	MD	NT1X55FA
NT1X61AE	MD	NT0X50AA, NT0X67AA and P0588099
NT0X44AC	MD	NT0X44AD
A0367433	MD	NTRX31DH
NTRX34DA	MD	NT0X43XD
NT0X0009	MD	NT0X43XD
NT0X4306	MD	NT0X43XD
NT2X70AZ	MD	NT2X70AF and label
NT8X48AD	MD	NT8X48BD
NT4X00AZ	MD	NO REPLACEMENT
NT0X96HD	MD	NT0X96__ (Ru114)
NT0X96HE	MD	NT0X96__ (Ru114)
NT0X96HF	MD	NT0X96__ (Ru114)
NT3X95AA	MD	NT3X95AB
NT3X95BA	MD	NT3X95BB
NT5X0806	MD	No replacement
NT5X0810	MD	No replacement
NT4X2591	MD	No replacement
NT8M04_A	MD	No direct repl.
NT8M04_D	MD	No direct repl.
NT8M04_F	MD	No direct repl.
NT8M04AG	MD	No direct repl.
NT8M04BG	MD	No direct repl.
NT8M04_J	MD	No direct repl.
NT8M04_L	MD	No direct repl.
NT8M04_M	MD	No direct repl.
NT5X09AA	MD	No direct repl.

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) The quantity of equipment that may be mounted in an IOE frame is limited by available shelf positions and by the number of connections available on FSP terminal block TB1. There are four types of TB1 connection to consider: -48V Fused at FSP, -48V Unfused, Battery Return, and Switched Power. The following table lists the requirements for each type of equipment. The sum of all connections for all equipment to be mounted must not exceed the 12 available connections on TB1.

Example:	1 Dual DDU shelf	=	6	
	1 IOC Shelf	=	3	
	1 DPP/BMC Shelf	=	4	
			--	
	Total	=	13	(this is not a valid IOE Frame shelf combination)

Example:	1 Single DDU Shelf	=	3	
	1 IOC Shelf	=	3	
	1 DPP/BMC Shelf	=	4	
			--	
	Total	=	10	(this is a valid IOE Frame shelf combination)

Example:	2 Single DDU Shelf	=	6	
	1 IOC Shelf	=	3	
	1 DPP/BMC Shelf	=	4	
			--	
	Total	=	13	(this is not a valid IOE Frame shelf combination)

EQUIPMENT	TB1 TOTAL AVAILABLE CONNECTIONS				
	FUSED 3	UNFUSED 2	BR 4	SW PWR 3	TOTAL 12
BMC	0	2	2	0	4
DPP	0	2	2	0	4
IOC	1	0	1	1	3
Cook MTD	0	1	1	0	2
HP MTD	0	0	0	0	0
ROS	2	0	2	2	6
Dual DDU Shelf (NT4X00AF)	2	0	2	2	6
Single DDU Shelf (NT4X00AA, NT4X00AB, NT4X00AC)	1	0	1	1	3

- 2) The power connection from the PDC to the FSP of the IOE frame at the terminal block TB1-3, 4 & 5 should each have the option of power 'A' and 'B' according to the shelf power requirement. Job engineering shall provide the information.
- 3) When engineering the shelves in an IOE frame considering the 'A' and 'B' power feeds, the following rules should apply:
 - a) DPP/BMC chassis 'A' and 'B' should be connected to different power feeds.
 - b) DPP/BMC controller CP for chassis 'A' resides in IOC with same feed, and DPP/BMC controller CP for chassis 'B' resides in IOC with same feed.
 - c) ROS requires power interlocked feeds 'A' and 'B' but no connections to the IOC.
 - d) Dual DDU requires power interlocked feeds 'A' and 'B'.
 - e) Any IOC pair controlling DPP, DDU or AMA devices must have different feeds and are power interlocked. These IOC pairs should reside in either the same frame or a mating IOE frame.

- f) Each device assigned to an IOC must have the same power feed as the IOC it is assigned to.
- g) IOC frame 00 and 01 must be powered from different feeds.
- h) IOC shelves that are not controlling DPP or AMA devices may have any power feeds as required. However, for reliability, devices should be spread across IOCs with different power feeds.

RULES:

- AP 1) When PEC NT0X43AD is ordered, these items are provided.
- 2) Each NT0X28AL, FSP, comes equipped with one NT0X36AB, Power Control and Alarm card, which serves IOC or DDU shelves in positions 32 and 04.
- RUL1 1) The standard DMS MTD is the Cook Electric drive, NT0X44AB or 209800-153.
- 2) If MTD is to be drop-shipped, the drive (209800-153) and its mounting hardware (NT0X44AD) are ordered separately on the appropriate specs.
- 3) If MTD is not to be drop-shipped, the combined drive and hardware is ordered using NT0X44AB. 4) The NT0X44AC is now MD and is no longer orderable for a customer- provided HP MTD or if 7970E-151-048 MTD is drop-shipped. The Hewlett Packard 7970E-151-048 MTD has been Manufacture Discontinued and can no longer be ordered.
- 5) For an office in which the existing HP MTD's will be retrofitted with DDU's, provide one (1) HP MTD Packing Box, R0107733, per HP MTD for shipping and storing purposes.
- 6) The first MTD on an IOE frame should mount on position 51 for ease of mounting and dismounting tapes.
- 7) See figures one (1) through seven (7) for various frame configurations of MTD's.
- 8) For all International applications where 50 Hz AC power is used, order the NT0X44BB Magnetic Tape Drive in place of the NT0X44AB MTD.

This is a standard Cook magnetic tape drive. The only difference is that the capstan disk has been changed to allow the speed to be adjusted using 50 Hz lighting. The tape drive itself is DC powered and so is not affected by the AC power employed.

For the purposes of drop shipping, the code for the Cook tape drive equipped with 50 Hz capstan is A0326502. This is no change in the mounting hardware.

- RUL2
- 1) In a disk office the Disk Drive Unit Shelf (DDU) replaces the MTD as the office primary mass storage system.
 - 2) Each DDU NT4X00AA/AB/AC occupies one standard (14") shelf space and houses one disk drive unit which is mounted on extendable slider arms for easy maintenance access.
 - 3) Equip the DDU per MS4X00AB.
 - 4) The first DDU on an IOE frame must mount on position 04.
 - 5) Never mount a DDU above an IOC as there could be a problem with heat generated from a fully loaded IOC shelf.
 - 6) See figures one (1) through seven (7) for various frame configurations of DDU's.
 - 7) Refer to the appropriate 14" NT4X00 DDU shelf Engineering Manual Section for DDU provisioning details.
 - 8) When two single DDU shelves (NT4X00AA/AB/AC) in position 04 on separate IOE frames require power interlock, provide RE-26CR wire colour green on FSP NT0X28AL for the following connection:

Shelf	Connection
04	PWR & ALM 1 (07) to CONN C04 (21)
04	PWR & ALM 1 (11) to CONN C04 (11)

The two power interlocked DDU shelves should have different power feeds (ref. CA0X04).

- RUL3
- 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) is required per system. These may be provisioned either as functional modules within the Central Message I/O Controller shelf (MDC) (NT2X76BA) or as independent shelves here (see guidelines, MS2X76BA, rule AP, Section EMR4-10-MDC-1).

- 2) If provisioned as independent shelves then provide two (2) NT1X61AG. Number these shelves IOC:00 and IOC:01. (NT1X61AG replaces NT1X61AB/AD).
- 3) Each shelf accommodates up to nine (9) I/O device controller cards.
- 4) Provide one (1) NT1X61AG I/O Controller Module, one (1) NT0X67AA I/O Terminal Controller, and one (1) P0588099 Designation Strip for each additional nine I/O Device Controller Cards to be accommodated. Number these shelves IOC:02 and up. (The NT1X61AC and NT1X61AE are MD).
- 5) Equip each shelf per Engineering Manual EMA5-01-IOC-3.
- 6) See figures one (1) through seven (7) for various frame configurations of IOC's.
- 7) The IOC shelf and the devices (MTD, DDU, MAP etc.) it interfaces should be cabled to the same power feed on the Power Distribution Center (PDC).
- 8) Provide one (1) PC Kit NT1X61AY when converting an existing IOC Module (NT1X61AA/AB/AD) for DMS-Core applications. This kit upgrades the existing I/O Message Controller CP to NT1X62CB.
- 9) When two NT1X61AG/AD/AB IOC shelves that are mounted on the same frame require power interlock, provide RE-26CR wire colour green on FSP NT0X28AL for the following connections:

* Provide connection when IOC shelves on position 04 & 18 require interlock:

PWR & ALM 2 (34) to PWR & ALM 1 (11)
PWR & ALM 2 (38) to PWR & ALM 1 (07)

* Provide connection when IOC shelves on position 18 & 32 require interlock:

PWR & ALM 2 (34) to PWR & ALM 1 (38)
PWR & ALM 2 (38) to PWR & ALM 1 (34)

In all cases above, the two power interlocked IOC shelves should have different power feeds.

- 10) When two NT1X61AG/AD/AB IOC shelves that are mounted on separate mating IOE frames require power interlock, provide RE-26CR wire colour green on FSP NT0X28AL for interlock connections on each frame. Provide one and only one of the connections on each frame as follows:

Shelf	Connection
04	PWR & ALM 1 (07) to CONN C03 (21)
04	PWR & ALM 1 (11) to CONN C03 (11)
18	PWR & ALM 2 (34) to CONN C03 (21)
18	PWR & ALM 2 (38) to CONN C03 (11)
32	PWR & ALM 1 (34) to CONN C03 (21)
32	PWR & ALM 1 (38) to CONN C03 (11)

In all cases above, the two power interlocked IOC shelves should have different power feeds (ref. CA0X04).

- 11) When ordering this shelf for field installation, order 5 metres of NT-26CR (R0109836) wire coloured green.

- RUL4 1) This unit is Manufacture Discontinued effective June 4, 1988. On new jobs provide equipment per Rules 26 and 5 for this application. The following information per RUL4 is maintained for historical reference, this includes Figures 1 and 2.
- 2) The Cook Media Converter II (BMC II) will allow remote polling of Automatic Message Accounting (AMA) in the DMS-100F.
- 3) Each BMC will require one (1) P0656447 mounting bracket kit.
- 4) See figures one (1) and two (2) for frame configurations of BMC's. Initial application with the DMS-100F will be limited to the redundant configuration.
- 5) 2129-indicates custom features and protocol of device.

WW - indicates the protocol of the device. The orderable codes are:

- BP for GTE offices (NT Format)
- A2 for ALLTEL offices
- RI for a Redundant unit for all other USTA offices
- CE for Contel Eastern Region

- CC for Contel Central Region
- CW for Contel Western Region
- LH for ALLTEL/CONTEL (LSSGR)
- CL for Independent (LSSGR)
- CX for Independent or CENTREX (BiSync)
- CH for Independent or CENTREX (HDLC)
- BL for GTE BIP Compatible (LSSGR)
- AM for BELL (BOC) Catagory B (LSSGR)

X - indicates the DMS System-type interfacing the BMC. The orderable codes are:

- 3 for a DMS-100
- 4 for a DMS-200 or DMS-100/200

YY - indicates the disk size of the BMC. The orderable sizes are:

- 30 M Bytes (NTI Standard)
- 72 M Bytes (Optional Size)
- 14 M Bytes (Optional Size)
- 38 M Bytes (Optional Size)

Z - indicates the printer.

- 0 NTI or Telco to provide printer.
- 1 Cook is to supply printer.

(This option should not be chosen as NTI or Telco should always provide printer.)

S - indicates sparing option. The orderable options are:

- 0 No spares provided
- 1 Critical spares with disk
- 2 Critical spares without disk
- 3 Full spares with disk
- 4 Full spares without disk

(MTBF information is not available at this time.)

Option 0 usually provided when depot spares exist.

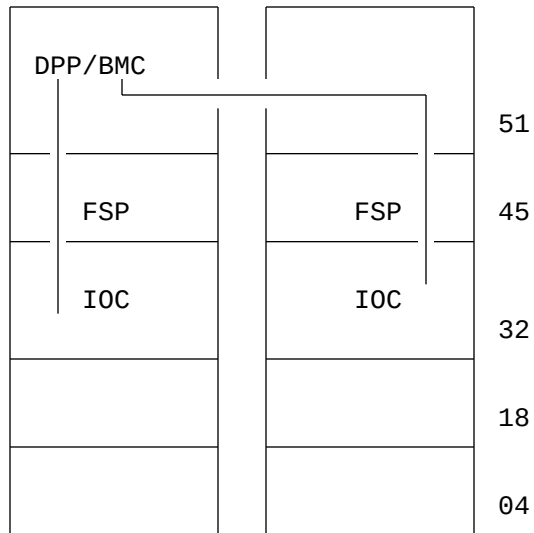
- RUL5 1) The Distributed Processor Peripheral (DPP) allows remote polling of Automatic Message Accounting (AMA) in the DMS-100F. The current ordering code for an initial DPP is NT8X48BD. Refer to the DPP ECM 306 and NT8X48BD EMS for detail ordering information for initials and upgrades to NT8X48BD.

2) When a DPP/BMC is mounted in an IOE frame, the following restrictions should apply:

- * A DPP/BMC unit should be mounted on shelf position 51 on initial order.
- * A Cook MTD and a DPP/BMC should not be mounted in the same frame.
- * An HP MTD and a DPP/BMC can be mounted in the same frame. In this case, the HP MTD should be mounted on shelf position 51, and the DPP/BMC should be mounted on shelf position 18.
- * DPP/BMC chassis "A" and chassis "B" should be connected to different power feeds. The two controller CP's for chassis "A" should reside in an IOC which has the same power feed as chassis "A". The two controller CP's for chassis "B" should reside in an IOC which has the same power feed as chassis "B". The two IOC's should be power interlocked. These restrictions are demonstrated by the following three configurations shown in item 3), 4) and 5).

3) When a DPP/BMC unit and its controllers are configured to reside in mating paired IOE frames, the following rules should apply:

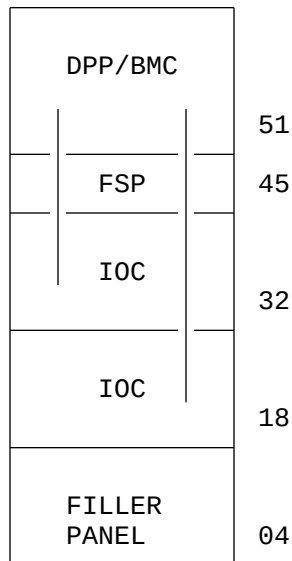
- * The two IOE frames must have different power feeds and are power interlocked.
- * The IOC units can be mounted on shelf position 04, 18 or 32 (refer to the following figure).
- * This is a standalone system and is independent of other IOE locations.



IOE 00 IOE 01
(Or any paried IOE numbers)

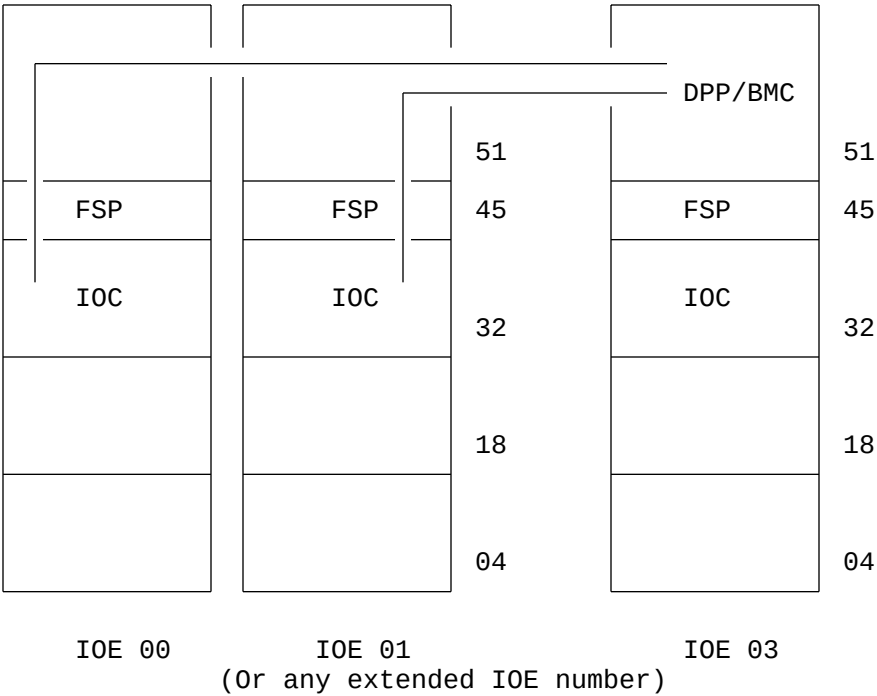
4) When a DPP/BMC and its controllers are configured to reside in the same IOE frame, the following rules should apply:

- * The two IOC units must have different power feeds and are power interlocked.
- * Shelf 04 should not be used because of FSP limitation. Provide a filler panel on shelf 04 (refer to the following figure).
- * This is a standalone system and is independent of other IOE locations. This configuration is used only when single IOE extension is required and must be converted to the configuration as specified in RULE 5(3).



IOE 03
(Or any extended IOE number)

- 5) When a DPP/BMC and its controllers are configured to reside in separate frames, the following rules should apply:
- * IOE 03 must be in the same line-up as the other mating paired IOE 00 and 01 where the DPP controller reside (refer to the following figure). Cable length limitations shall apply.
 - * The two IOC units where the DPP controllers reside must have different power feeds and are power interlocked.
 - * If IOC is not required in IOE 03 frame, a ROS unit or a Dual DDU unit can be mounted on shelf 04.
 - * If space is not available on the IOC units in IOE 00 and 01 for the DPP controllers, the circuit packs which do not require power interlock must be moved to the IOC in IOE 03. If none of the circuit packs can be moved, this configuration should not be used.
 - * This configuration should be used upon telco request only.



6) Even though customers have the option of deploying DPP units in non-mating paired IOE's and devising their own interlock scheme, this is neither supported nor recommended by NT design control. All risk in such cases must be carried by the customers.

7)

- * When a DPP module (NT8X48AB/AD/BB/BD) is controlled by an NT1X61AD IOC, provide two (2) NT0X96DB (read), two (2) NT0X96DC (write) and two (2) NT0X96DD (control) control cables. Job engineered not to exceed 25 feet of length. Refer to CA0X15 for job engineering information.
- * When a DPP module (NT8X48AB/AD/BB/BD) is controlled by an NT1X61AG IOC, provide two (2) NT0X96HD (read), two (2) NT0X96HE (write) and two (2) NT0X96HF (control) control cables. Job engineered not to exceed 25 feet of length. Refer to CA0X15 for job engineering information.

8) Provide a quantity of two NT8M99AL power cables per DPP NT8X48BD ordered.

- RUL6 1) Provide one as required to accommodate up to sixteen modems.
- 2) Equip the Data Set Module per MS1X60AB.
- 3) Locate in position 09 if IOC or DDU are not to be equipped in position 04. Locate in position 23 if MTD, DDU or IOC are not to be equipped in position 18. Locate in position 37 if MTD or IOC are not to be equipped in position 32. Locate in position 56 or 70 if MTD is not to be equipped in position 51. Else locate on Miscellaneous Equipment Frame (MIS) at job engineered location.
- 4) Locate within fifty feet of connecting IOC.
- 5) Maximum of one (1) NT1X60AB per IOE frame.
- RUL7 1) Provide one (1) NT5X08AC Data Set Module Shelf to accommodate up to sixteen (16) Data Set Modems (MTX) equipped per MS5X08AC.
- 2) Locate within fifty feet of connecting IOC.
- RUL8 1) Reserved for future use.
- RUL9 1) The NTRX31DH Inverter and the NT0X43XD Kit is provisioned in place of the LaMarche Inverter (A0367433). Provide one (1) NTRX31DH Inverter and one (1) NT0X43XD IOE Inverter ISG Kit when 120VAC is required in the IOE frame.
- 2) Mount NTRX31DH Inverters in positions 04 and 12 when providing inverters for the NT5X08AD/AC data set module shelves. A minimum of two inches of space is required between adjacent inverters, and also between inverters and other adjacent equipment mounted in an IOE frame. This space is required for proper air circulation.
- 3) The NTRX31DH Inverter provides an on/off switch and standard AC socket outlets for four (4) circuits (two dual outlets). The maximum total consumption of units connected to the inverter is not to exceed 500 Watts (120VAC nominal 4.15 Amps output).

The A0367433 is MD and the following is shown for historical purposes:

- 4) The LaMarche Inverter (A0367433) is provisioned on jobs in place of the NT0X87AA Inverter Unit. The Inverter provides standard AC socket outlets for four (4) circuits (two dual outlets), and the maximum total consumption of units connected is not to exceed 500 Watts (120VAC nominal 4.15 Amps output).
 - 5) Provide one LaMarche Inverter in position 04 per frame for units requiring 115VAC power feeds. If position 04 is used, provide the LaMarche Inverter in either position 18 or 32.
 - 6) The NT0X87AA is MD in the IOE frame and the following is shown for historical purposes. When the NT0X87AA Inverter is provisioned, each NT5X08AC Data Set Module Shelf is to be fed by two (2) Inverters. One (1) Inverter can feed up top two (2) halves of two (2) NT5X08AC.
 - 7) When providing the NT0X87AA Inverters for NT5X08AC Data Set Module Shelves, mount in position 04, 11, 18, 25, 32, 39, 51, 58.
 - 8) When the NT0X87AA Inverter is provisioned, provide one (1) Inverter unit for each NT1X60AB Data Set Module provided. Locate directly below its associated NT1X60AB DSM.
 - 9) Provide one (1) Logic Return Cable Assembly NT0X0009 when an inverter (LaMarche or NT0X87AA) is provided in position 04 and one (1) Local Cable Assembly NT0X4306 for each inverter (LaMarche or NT0X87AA) provided in any other position on the IOE frame for Isolated System Grounding (ISG). These cables are provided to connect the inverter chassis to the logic return bar. (Canadian applications only)
 - 10) Always provide a LaMarche Inverter Isolation/mounting (ISG) Equipment kit (NTRX34DA) for each LaMarche Inverter (A0367433) provided.
- RUL10
- 1) Provide one (1) NT3X95AA Stratum II Oscillator Shelf (remote shelf) when Stratum II feature is required in a NT-40 Non-ISG office. The NT3X95AA has been manufacture discontinued.
 - 2) Provide one (1) NT3X95AB Stratum II Oscillator Shelf (remote shelf) when Stratum II feature is required in a DMS-Core ISG office.
 - 3) The Remote Oscillator Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.

- 4) If Stratum II Remote Oscillator Shelf is job provisioned the following rules apply:

- * There must be two available shelf positions in the IOE frame.
- * The IOE frame must be located within 200 feet of the CMC's or SuperNode cabinet.
- * The ROS shelf must be powered from the same PDC as the CMC shelf or SuperNode cabinet.

- 5) The Remote Oscillator Shelf has two backplanes mounted on the same shelf. Backplane "A" is located at slot positions 1 through 14 and backplane "B" is located at slot positions 15 through 27. There is a power converter located at slot 6 for backplane "A" and at position 20 for backplane "B".
- 6) When ordering this shelf for field installation, order the LWJ-0X43AD drawing for the installer. In addition, provision 5 metres of NT-26CR (R0109836) wire coloured green.

RUL11 1) Provide fourteen inch (355.6 millimeters) filler panels in positions not equipped.

RUL12 1) Provide one (1) Frame Supervisory Panel Cover (P0673914) in position 45 when NT0X44AB/AD is installed in position 51.

- 2) The FSP Cover P0673914 may be added to an existing frame if requested by the customer. If the frame is already equipped with Filler Panel P0654621 (Rated A&M), the FSP cover would not be required.

RUL13 1) Provide a three inch filler panel (P0654622) in position 17 when a NT1X61AB is installed in position 04 and NT0X44AB/AD is installed in position 21.

RUL14 1) Provide one each Read, Write, and Control Cable Assemblies NT0X96__ per CA0X15 cable drawing for each MTD, or two(2) each for NT8X48BD DPP or NT8M04CG/GE/HE/IE BMC, when the controlling IOC is NT1X61AG. These cables are fixed length.

- 2) Provide a quantity of two NT8M99AL power cables per DPP NT8X48BD ordered.

- 3) When a DPP/BMC or MTD is controlled by an IOM, these cables (NT0X96GY, NT0X96GZ, NT0X96HA) are not required; they have

been replaced with the NT0X4320 cable assembly (see Rule 13).

For historical purposes, NT0X96AA (read), NT0X96AB (write) and NT0X96AC (control) were replaced by NT0X96DB, NT0X96DC and NT0X96DD. Note that these cables were always provided with the Cook Mag Tape Drive (MTD) and thus DID NOT need to be provisioned for the MTD. Cables 210568 (read), 210566 (write) and 210567 (control) are Manufacture Discontinued.

RUL15 Depending on position of IOC (NT1X61) and the disk drive (NT4X00) or ROS shelf (NT3X95AA/BA) power cables will be ordered as follows: (note: the NT3X95AA and NT3X95BA have been MD'd).

1. IOC Position

- * IOC position 04 NT0X95BK & NT0X95BJ
- * IOC position 32 NT0X95BA & NT0X95BD
- * IOC position 18 NT0X95BF & NT0X95BG

2. DDU Position

- * 14" DDU position 04 NT0X95CP & NT0X95CN
- * 14" DDU position 18 NT0X95CD & NT0X95BA

3. ROS Position

- * ROS position 04 NT0X4301 & NT0X4302 for "A" back-plane
- * ROS position 04 NT0X95BJ & NT0X95BK for "B" back-plane
- * ROS position 32 NT0X95BF & NT0X95CE for "A" back-plane
- * ROS position 32 NT0X95BA & NT0X95BD for "B" back-plane

4. Shelf for 8" DDU

- * Shelf for 8" DDU position 04 one NT0X4301 & one NT0X4302

- * Shelf for 8" DDU position 04 one NT0X95CN & one NT0X95CP

5. NT4X00AF 5.25" DDU in shelf position 04

- * Power converter in position 02, NT0X4301 and NT0X4302
- * Power converter in position 26, NT0X95CN and NT0X95CP

RUL16 1) The NT2X70AX is no longer orderable. To field upgrade any NT2X70 to NT2X70AF, provide the NT2X70AF CP and its label. Refer to EMA5-01-IOC-3 for further information.

RUL17 1) Provide a quantity of two NTFX36AA IOM Pertec Smart Connector Assemblies and quantity of two NT0X4320 Pertec Interface Cable Assemblies for each new DPP/BMC controlled by an IOM.

2) Provide a quantity of one NTFX36AA IOM Pertec Smart Connector Assembly and quantity of one NT0X4320 Pertec Interface Cable Assy for each new MTD controlled by an IOM.

RUL18 1) Reserved for future use.

RUL19 1) Reserved for future use.

RUL20 1) Reserved for future use.

RUL21 1) Provide one (1) NT0X0008 Logic Return Cable Assembly per frame when extending existing offices not equipped with enhanced grounding per IS0X00.

RUL22 1) Reserved for future use.

RUL23 1) Provide one (1) NT3X95BA Remote Oscillator DMS-Core Shelf when the DMS clock is to be equipped with DMS-Core applications.

2) There must be two available shelf positions on the IOE frame - either shelf position 04 & 18 or 32 & 18. The ROS shelf will be mounted in either positions 04 or 32.

3) The Remote Oscillator Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.

4) The IOE frame must be located within 200 feet of the DMS-Core Message Switch Shelf.

- 5) The Remote Oscillator Shelf has two backplanes mounted on the same shelf. Backplane 'A' is located at slot positions 1 through 14 and backplane 'B' is located at slot positions 15 through 27. There is a power converter located at slot 6 for backplane 'A' and at position 20 for backplane 'B'.
- 6) When ordering this shelf for field installations, order the LWJ-0X43AD drawing for the installer. In addition provide 5 metres of NT-26CR (R0109836) wire coloured green.

RUL24 1) The NT5X09AA has been MD'd, with no direct replacement. Provide one (1) NT5X09AA Data Set Module Shelf (-48V DC) to accommodate up to sixteen (16) Data Set Interfaces (Modems) or 9600/4800 baud Modems (MTX) equipped per MS5X09AA. NT5X09AA replaces NT1X60AB.

- 2) Provide 100 feet of NT-26CR wire to be used to wire NT5X09AA to the Frame Supervisory Panel as shown below:

NT5X09AA

FSP

(J1) CONN 2 to (J2) CONN 2 to (TB2) TB 6B
(J1) CONN 6 to (J2) CONN 6 to (TB2) TB 5B

- 3) Reserved for future use.

RUL25 1) The NT4X00AF shelf is to mounted in IOE shelf position 04 only. Refer to the NT4X00AF Engineering Manual Section for the DDU's that can be provisioned on this shelf.

- 2) The 1st 5.25" DDU shall be located on the left side (slot 10) of the NT4X00AF Dual Disk Drive shelf (located in shelf Position 04). If a 2nd 5.25" DDU is required on the same shelf, it shall be located on the right side (slot 18). The 8" DDU is no longer available.
- 3) Provide one additional NT0X36AB (for the 2nd 5.25" DDU) when the NT4X00AF Dual Disk Drive shelf is provisioned. The 8" DDU is no longer available.
- 4) With two 5.25" DDU's equipped on a NT4X00AF, IOE shelf position 18 must be unequipped.
- 5) Provide one (1) P0642031 Cable Support Bracket and two (2) P097F813 Mounting Screws per NT4X00AF provisioned.
- 6) Refer to the NT4X00AF DDU shelf Engineering Manual Section for DDU provisioning details.

- 7) The NT4X00AF and its Controller CP NT1X55DA are replaced by the SCSI Disk Drive Unit (SCSI-DDU) NT1X55FA which is a circuit pack mounted on the IOC shelf in any of the following nine (9) slot positions: 4, 6, 8, 10, 12, 14, 16, 18 and 20. Refer to TABLE B or T_IOC_BB_CP for provisioning of the SCSI DDU.

For initial jobs, provide the SCSI-DDU NT1X55FA when GA, as the DDU shelf on the IOE frame is no longer provisioned. Refer to SCSI-DDU ECM for software restrictions.

For field upgrades, the NT1X55FA can be mounted in any of the slot positions listed above. If, per the IOC layout, the NT1X55FA is to be mounted in the same slot as the current NT1X55DA, then remove the NT1X55DA, neighboring NT0X50AA, and cables connected to the associated ESDI-DDU and the DDU shelf.

The elimination of the separate DDU shelf frees up space that can be used to accommodate another IOC shelf if needed. For example, a typical IOE frame can have one MTD, which occupies two shelf positions, and three IOC shelves.

- RUL26 1) Provide Interlock Wiring NT0X43WA for the Stratum II Remote Oscillator Shelf (NT3X95AA) with the NT40 Core and when the NT3X95AA shelf is mounted in position 04. The NT3X95AA has been MD'd.
- RUL27 1) Provide Interlock Wiring NT0X43WB for the Stratum II Remote Oscillator Shelf (NT3X95AA) with the NT40 Core and when the NT3X95AA shelf is mounted in position 32. The NT3X95AA has been MD'd.
- RUL28 1) Provide Interlock Wiring NT0X43WC for the Stratum II or Stratum 2.5 Remote Oscillator Shelf (NT3X95AA/BA/BB) when used with the DMS-Core and when the NT3X95AA/BA/BB shelf is mounted in position 04. Note: The NT3X95AA and NT3X95BA have been MD'd.
- RUL29 1) Provide Interlock Wiring NT0X43WD for the Stratum II or Stratum 2.5 Remote Oscillator Shelf (NT3X95AA/BA/BB) when used with the DMS-Core and when the NT3X95AA/BA/BB shelf is mounted in position 32. Note: The NT3X95AA and NT3X95BA have been MD'd.
- RUL30 1) Provide one PC Kit NT0X43XA to convert the Interlock Wiring of the Stratum II Remote Oscillator Shelf (NT3X95AA) when the extension office is being retrofitted from a NT40 Core

with Stratum II to DMS-Core with Stratum II. Note: The NT3X95AA has been MD'd.

RUL31 1) Provide one PC Kit NT0X43XB to convert the Stratum II Remote Oscillator Shelf (NT3X95AA) (Non-ISG) to the Stratum II Remote Oscillator Shelf (NT3X95AB) (ISG). Note: The NT3X95AA and NT3X95AB have been MD'd.

2) The NT0X43XB Change Kit is applicable to the DMS-Core offices only.

RUL32 1) Provide one PC Kit NT0X43XC to convert the Stratum 2.5 Remote Oscillator Shelf (NT3X95BA) (Non-ISG) to the Stratum 2.5 Remote Oscillator Shelf (NT3X95BB) (ISG).

2) The NT0X43XC Change Kit is applicable to DMS-Core offices only.

RUL33 1) Several configurations of the NSD Billing Media Converter (BMC) are available. The variables used in these configurations are the System Feature Group Protocols and Hard Disk technology. The variations are detailed in separate Engineering Manual sections as follows:

a) NT8M04_C: For BMC Redund LSSGR BSC Pseudo, See Section EMA5-01-BMCA-1 and ECM 202

b) NT8M04GC: For BMC Redund LSSGR BSC Indep 1GB, See Section EMA5-01-BMCA-1 and ECM 202

c) NT8M04_E: For BMC Redund LSSGR BX.25, See Section EMA5-01-BMCA-4 and ECM 202

d) NT8M04GE: For BMC Redund LSSGR BX.25, 1GB NON-TURBO
See section EMA5-01-BMCA-41 and
ECM 202 Issue 13 & Later

e) NT8M04HE: For BMC Redund LSSGR BX.25, 1GB TURBO
See section EMA5-01-BMCA-41 and
ECM 202 Issue 13 & Later

f) NT8M04IE: For BMC Redund LSSGR BX.25, 2GB TURBO
See section EMA5-01-BMCA-41 and
ECM 202 Issue 13 & Later

NOTE: The underscore in the above PECs in the seventh character position are used as a variable in lieu of the actual character which indicates the disk drive size. Refer to the referenced Engineering Manual section for details.

- 2) Provide one dual shelf (Redundant) BMC for remote polling of Automatic Message Accounting (AMA) for one Customer Group. See Figure 9 for a typical frame layout.
- 3) The Magnetic Tape Control Cables NT0X96AA (read), NT0X96AB (write), and NT0X96AC (control) are MD'd and replaced by NT0X96DB, NT0X96DC, and NT0X96DD, respectively. Provide one of each of these cables when NT8M04_ Billing Media Converter (BMC) is controlled by an IOC.

RUL34 Reserved for future use.

- RUL35
- 1) Provide Cable Braid Assembly NT0X9587 and hardware NT4X0040 for the NT4X00AF shelf's first DDU if its serving NT1X55DA IOC CP is in the same IOE frame.
 - 2) Provide Cable Braid Assembly NT0X9501 and hardware NT4X0040 for the NT4X00AF shelf's second DDU if its serving NT1X55DA IOC CP is in the same IOE frame.
 - 3) When the serving NT1X55DA IOC CP for a DDU in either position on the NTX00AF DDU shelf is in a different IOE frame, refer to CA0X15 for ground cable requirements.

RUL36 1) Refer to appropriate 14" NT4X00 DDU shelf Engineering Manual Section and the NT4X00AZ Engineering Manual Section for provisioning details. The NT4X00AY is no longer available.

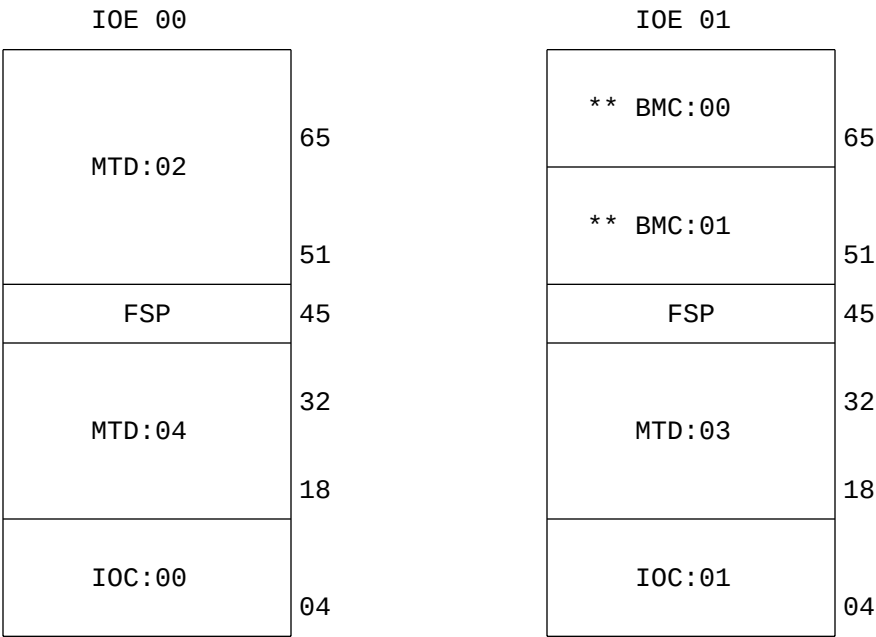
RUL37 1) Refer to appropriate 14" NT4X00 DDU shelf Engineering Manual Section for provisioning details.

RUL38 1) Refer to appropriate 14" NT4X00 DDU shelf Engineering Manual Section or the NT4X00AF Engineering Manual Section for provisioning details.

RUL39 1) Provide one additional NT0X36AB if an IOC is to be equipped in shelf position 18, if an ROS is equipped in either shelf position 04 or 32, if a NT4X00AF DDU shelf is equipped in position 04 or if a Distributed Processing Peripheral (DPP) is equipped in shelf position 18 or 51.

RUL40 1) Provide one framework per MS0X25. Refer to Engineering Manual Section EMA15-01-000 for provisioning details.

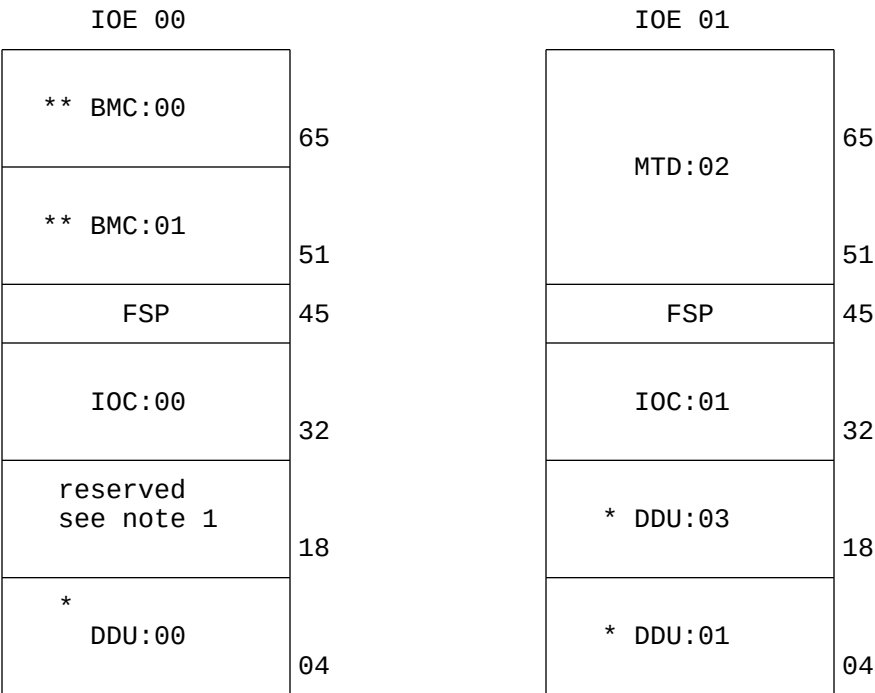
RUL41 1) The Flexible Unified Voice Frequency Shelf J6738AR-1 is used to provide voice transmission between a DMS office and a non-digital office. Provide one (1) J6738AR-1 shelf and mounting hardware per IOE frame as required by customers.



MTD'S AND REDUNDANT BMC ONLY

FIGURE 1

** This layout and numbering scheme is associated with the old style redundant BMC (2129WW-X-YY-Z-S).

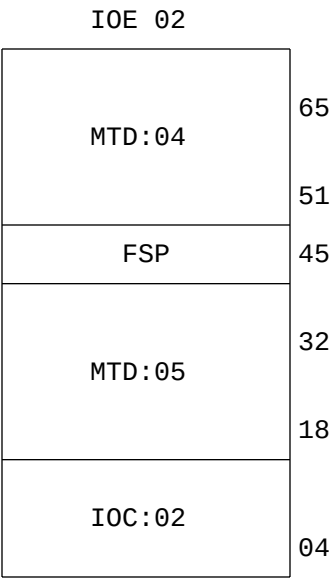
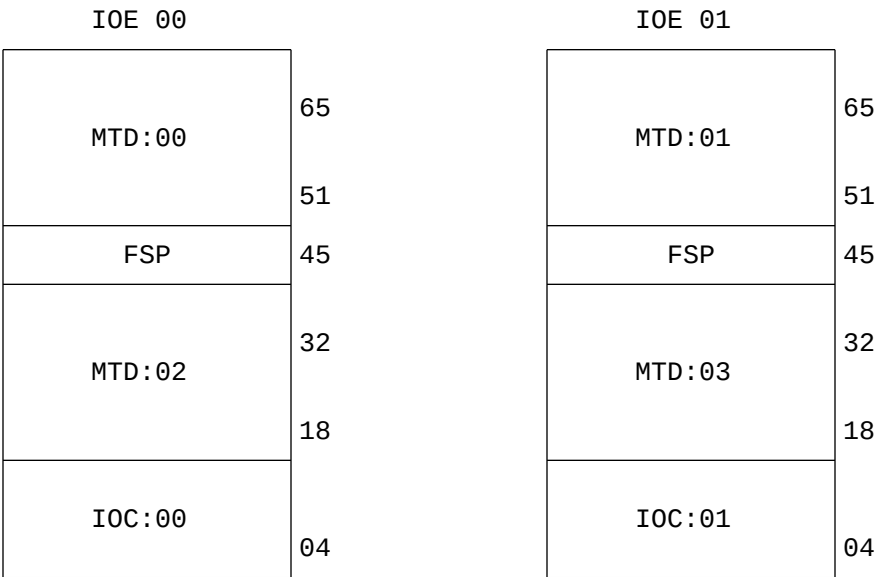


ONLY ONE MTD AND ONE OR MORE DDU'S AND REDUNDANT BMC

FIGURE 2

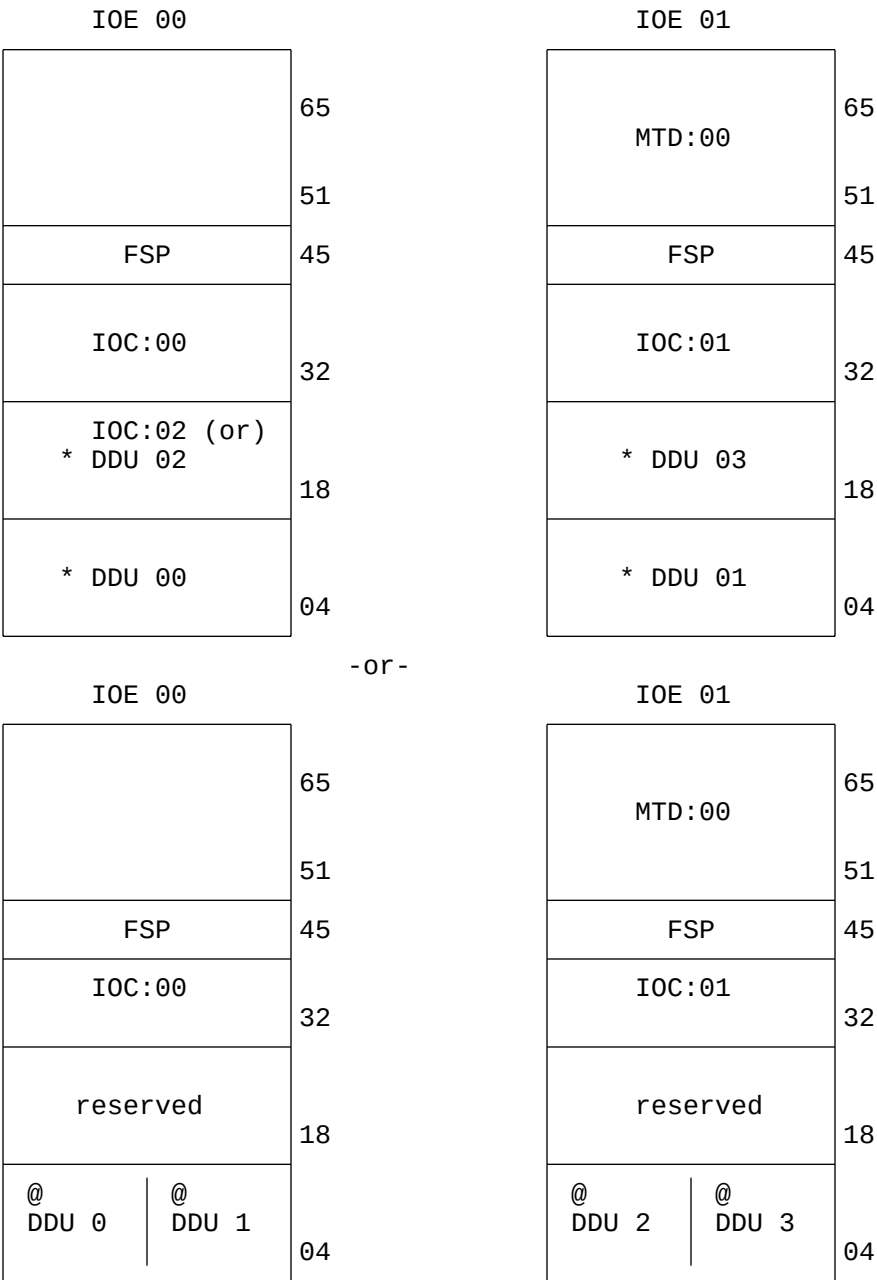
* Each of the Disk Drive units denoted by this symbol are shown mounted on a single disk drive shelf, NT4X00AA, NT4X00AB or NT4X00AC. 14" DDUS can be replaced with 5.25 or 8" DDUs on a one to one basis. (i.e. 5.25" DDU can be provisioned on NT4X00AA, NT4X00AB or NT4X00AC shelf in position 04 and/or 18. A NT4X00AZ must be provided with each 5.25" DDU provided as a replacement for a 14" DDU). Refer to note 1 for calculation of valid IOE frame shelf configurations.

** This layout and numbering scheme is associated with the old style redundant BMC (2129WW-X-YY-Z-S).



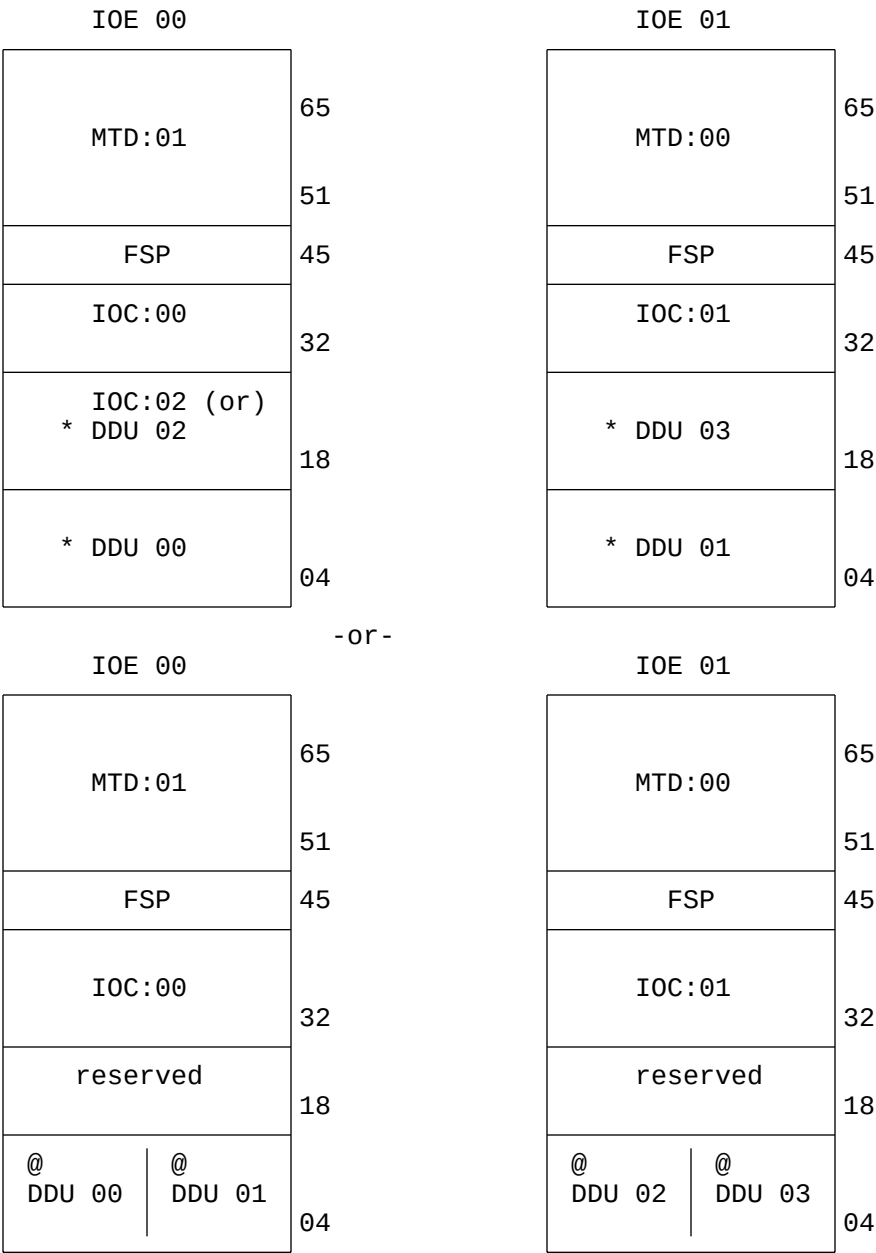
OFFICE WITH MTD'S ONLY

FIGURE 3



ONLY ONE MTD AND ONE OR MORE DDU'S
FIGURE 4

- @ Each of the Disk Drive Units denoted by this symbol are shown mounted on a dual disk drive shelf, NT4X00AF.
The Dual Disk Drive shelf, NT4X00AF, is restricted to shelf position 04 and shelf position 18 must be unequipped.
Refer to note 1 for calculation of valid IOE frame shelf configurations.
- * Each of the Disk Drive Units denoted by this symbol are shown mounted on a single disk drive shelf, NT4X00AA, NT4X00AB or NT4X00AC. 14" DDUs can be replaced with 5.25 or 8" DDUs on a one to one basis. (i.e. 5.25" DDU can be provisioned on NT4X00AA, NT4X00AB or NT4X00AC shelf in position 04 and/or 18. A NT4X00AZ must be provided with each 5.25" DDU provided as a replacement for a 14" DDU).
Refer to note 1 for calculation of valid IOE frame shelf configurations.

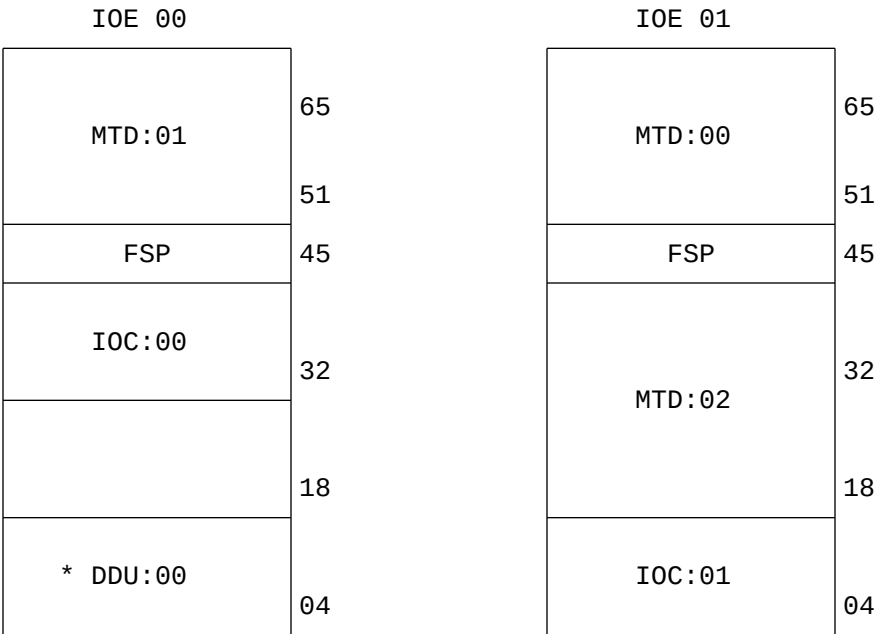


TWO (2) OR MORE MTD'S AND TWO (2) OR MORE DDU'S

FIGURE 5

@ Each of the Disk Drive Units denoted by this symbol are shown mounted on a dual disk drive shelf, NT4X00AF. The Dual Disk Drive shelf, NT4X00AF, is restricted to shelf position 04 and shelf position 18 must be unequipped. Refer to note 1 for calculation of valid IOE frame shelf configurations.

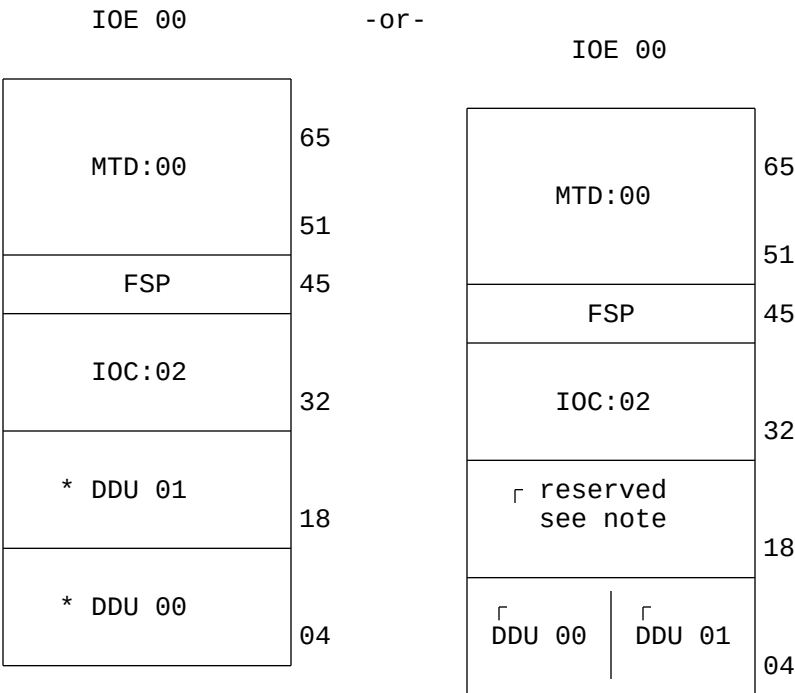
* Each of the Disk Drive Units denoted by this symbol are shown mounted on a single disk drive shelf, NT4X00AA, NT4X00AB or NT4X00AC. 14" DDUs can be replaced with 5.25 or 8" DDUs on a one to one basis. (i.e. 5.25" DDU can be provisioned on NT4X00AA, NT4X00AB or NT4X00AC shelf in position 04 and/or 18. A NT4X00AZ must be provided with each 5.25" DDU provided as a replacement for a 14" DDU). Refer to note 1 for calculation of valid IOE frame shelf configurations.



ONE (1) OR MORE MTD'S AND ONLY ONE (1) DDU

FIGURE 6

* The Disk Drive Units denoted by this symbol are shown mounted on a single disk drive shelf, NT4X00AA, NT4X00AB or NT4X00AC. 14" DDUs can be replaced with 5.25 or 8" DDUs on a one to one basis. (i.e. 5.25" DDU can be provisioned on NT4X00AA, NT4X00AB or NT4X00AC shelf in position 04 and/or 18. A NT4X00AZ must be provided with each 5.25" DDU provided as a replacement for a 14" DDU). Refer to note 1 for calculation of valid IOE frame shelf configurations.

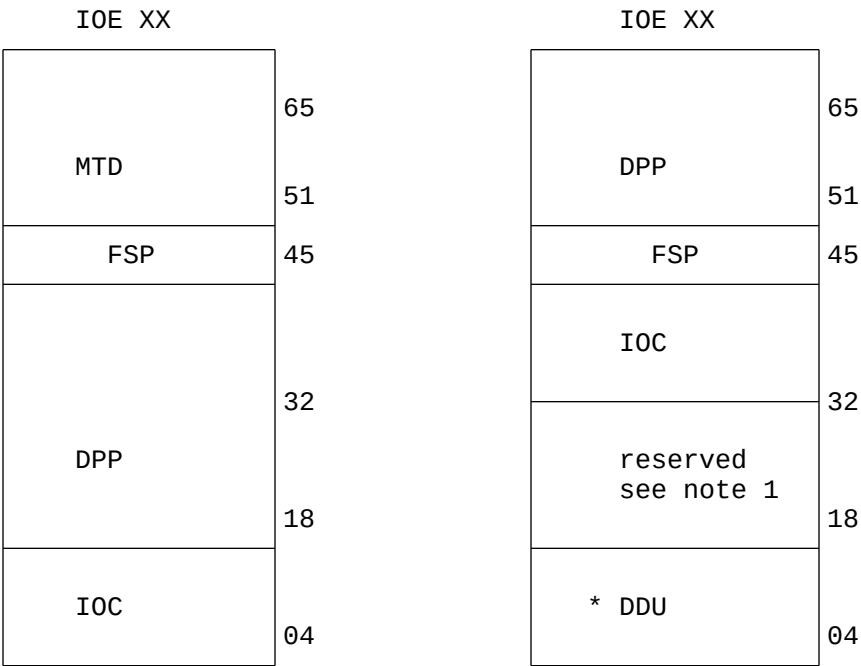


ONLY ONE (1) MTD AND TWO (2) DDU'S

FIGURE 7

@ Each of the Disk Drive Units denoted by this symbol are shown mounted on a dual disk drive shelf, NT4X00AF. The Dual Disk Drive shelf, NT4X00AF, is restricted to shelf position 04 and shelf position 18 must be unequipped. Refer to note 1 for calculation of valid IOE frame shelf configurations.

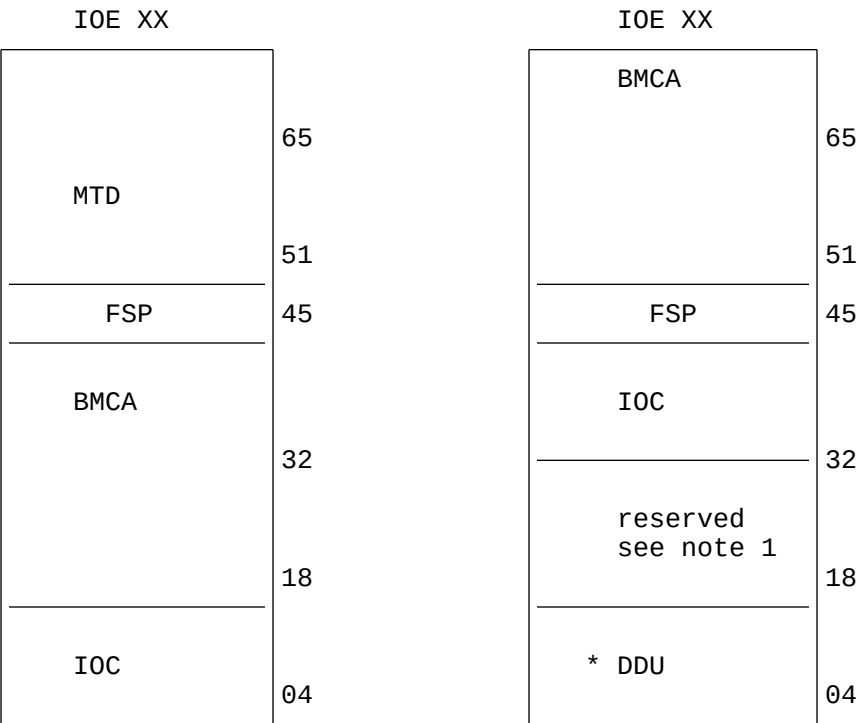
* Each of the Disk Drive Units denoted by this symbol are shown mounted on a single disk drive shelf, NT4X00AA, NT4X00AB or NT4X00AC. 14" DDUs can be replaced with 5.25 or 8" DDUs on a one to one basis. (i.e. 5.25" DDU can be provisioned on NT4X00AA, NT4X00AB or NT4X00AC shelf in position 04 and/or 18. A NT4X00AZ must be provided with each 5.25" DDU provided as a replacement for a 14" DDU). Refer to note 1 for calculation of valid IOE frame shelf configurations.



DPP MOUNTING RESTRICTIONS

FIGURE 8

* The Disk Drive Units denoted by this symbol are shown mounted on a single disk drive shelf, NT4X00AA, NT4X00AB or NT4X00AC. 14" DDUs can be replaced with 5.25 or 8" DDUs on a one to one basis. (i.e. 5.25" DDU can be provisioned on NT4X00AA, NT4X00AB or NT4X00AC shelf in position 04 and/or 18. A NT4X00AZ must be provided with each 5.25" DDU provided as a replacement for a 14" DDU). Refer to note 1 for calculation of valid IOE frame shelf configurations.



BMCA MOUNTING RESTRICTIONS

FIGURE 9

* The Disk Drive Units denoted by this symbol are shown mounted on a single disk drive shelf, NT4X00AA, NT4X00AB or NT4X00AC. 14" DDUs can be replaced with 5.25 or 8" DDUs on a one to one basis. (i.e. 5.25" DDU can be provisioned on NT4X00AA, NT4X00AB or NT4X00AC shelf in position 04 and/or 18. A NT4X00AZ must be provided with each 5.25" DDU provided as a replacement for a 14" DDU). Refer to note 1 for calculation of valid IOE frame shelf configurations.

IOM PERTEC SMART CABLE ASSEMBLY

PEC CODE: NTFX36AA

CPC CODE: B0243141

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION:

The NTFX36AA is a new approach for user interfaces. This is the concept of Smart Connectors (or Smart Box) where the user end of the cable terminates with a connector sized box containing logic devices. RS-232C, Current Loop, or V.35 links are embedded in the connector. The Pertec Smart Box is mounted on the MTD or the DPP/BMC frame, upright with cables from the box connected to the MTD, DPP, or BMC. A label on the Smart Box identifies its protocol conversion type. The Smart Box provides ISG compliance, farther reach than conventional RS-232C (from 50 to 750 ft) and reduces cable congestion. Each port of the IOM can be configured under firmware control as RS-232C, V.35, Current Loop, or Pertec interface to an MTD, DPP, or BMC.

REFERENCE DOCUMENTATION: SLFX36AA 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NTFX36AA EMA5-03-IOM-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 10 18	ECM 613 35	Initial release, per EC 18-46279.

The IOM PERTEC SMART CABLE ASSEMBLY is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IOM Pertec Smart Box Top Half	P0843062		1	XX		AP
IOM Pertec Smart Box Bottom Half	P0843061		1	XX		AP
IOM Pertec Smart Bracket	P0843063		1	XX		AP
IOM Pertec Smart ID Label	P0843064		1	XX		AP
IOM Pertec Smart Connector CP	NTFX3601		1	XX		AP
Smart Connector Power Supply	NTFX3404		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

RULES:

AP 1) When PEC NTFX36AA is ordered, these items are provided.

IOM - DPP/BMC INTERFACE

PEC CODE: NTRX33DW

CPC CODE: B0245773

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION:

This kit contains two Pertec Smart Boxes, cables, bulkhead plates and hardware to allow DPPs or BMCs in a CIOE to connect to and be controlled by the IOM.

REFERENCE DOCUMENTATION: SLRX33DW 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NTRX33DW EMA5-03-IOM-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 10 18	ECM 613 35	Initial release, per EC 18-46279.

The IOM - DPP/BMC INTERFACE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IOM Pertec Smart Connector Assembly	NTFX36AA		2	XX		AP
Pertec Interface Cable Assembly	NT0X4320		2	XX		AP
CIOE Bulkhead - FX36AA Smart Box Cable Assembly	NT0X4321		2	XX		AP
Bulkhead DPP Connector Plate	P0821302		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:

RULES:

AP 1) When PEC NTRX33DW is ordered, these items are provided.

CIOE RETROFIT KIT FOR IOM TO MTD

PEC CODE: NTRX33DX

CPC CODE: B0244672

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION:

This kit contains one Pertec Smart Box, cable, bulkhead plate, and hardware to allow MTDs in a CIOE to connect to and be controlled by the IOM.

REFERENCE DOCUMENTATION: SLRX33DX 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: Barbara Berkley Dept. 3471 (PPK)

NTRX33DX EMA5-03-IOM-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 10 18	ECM 613 35	Initial release, per EC 18-46279.

The CIOE RETROFIT KIT FOR IOM TO MTD is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IOM Pertec Smart Connector Assembly	NTFX36AA		1	XX		AP
Pertec Interface Cable Assembly	NT0X4320		1	XX		AP
CIOE Bulkhead - FX36AA Smart Box Cable Assembly	NT0X4321		1	XX		AP
Bulkhead MTD Connector Plate	P0835229		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:

RULES:

AP 1) When PEC NTRX33DX is ordered, these items are provided.

FIELD UPGRADE KITS
FOR BMC PRODUCTS

PEC CODE: T_BMC_KITS

CPC CODE: N/A

RATING: Standard

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Cook Redundant Billing Media Converter II (BMC) is adaptable to a variety of configurations based on disk storage capacity, call record formats, polling speeds, and polling protocols.

This section contains a list of all currently available Field Upgrade Kits.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: Barbara Wilson Dept. 3471 (PPK)

MAIN CONTACT: NTI: Barbara Wilson Dept. 3471 (PPK)

T BMC KITS EMA5-99-BMC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
96 04 08	ECM 202 13	Introduce 3.5in. disk kits per ECD 011-21706.
96 05 31	ECM 202 14	Introduce 3.5in. BiSync kit per ECD 011-21862.
96 08 14	ECM 202 15	Add note to check RST dates on new 3.5 in. kits. Corrections from issue 13.

The Field Upgrade Kits For BMC Products is comprised of the following:
 IF EXISTING KIT # CREATES DESCRIPTION:
 CONFIG. IS: NEW CONFIG.

A2-4-yy-z	214744-109	HL-4-yy-z	NT C/R Format
CE-4-yy-z			HDLC protocol
CC-4-yy-z			ADU equipped
CW-4-yy-z			4800 baud max poll speed.
			Kit changes BMC from:
			NT C/R format to:
			LSSGR C/R format
A2-4-yy-z	214744-115	LH-4-yy-z	NT C/R Format
CE-4-yy-z			HDLC protocol
CC-4-yy-z			ADU equipped
CW-4-yy-z			4800 baud max poll speed.
			Kit changes BMC from:
			NT C/R format
			4800 baud max poll speed. to:
			LSSGR C/R format
			9600 baud max poll speed
xx-4-12-z	214744-121	xx-4-14-z	Kit changes any 'plexiglass
xx-4-30-z			door' model BMC from:
xx-4-72-z			12, 30, or 72MB disks to:
			140MB disks
CX-4-yy-z	214744-123	CL-4-yy-z	SMDR C/R Format
			Bisync protocol
			9600 baud max poll speed
			'plexiglass door' model
			Kit changes BMC from:
			SMDR C/R format to:
			LSSGR C/R format
NT8M04_A	NT6M97BG	NT8M04_C	SMDR C/R Format
			Bisync protocol
			9600 baud max poll speed
			EMI Chassis model
			Kit changes BMC from:
			SMDR C/R format to:
			LSSGR C/R format
NT8M04_C	NT6M97IK	NT8M04GC	LSSRG Format, Bisync protocol
	(see note 1)		9600 baud max poll speed
			EMI Chassis model
			Kit changes BMC from:
			5.25" disk to:
			3.5" disk w/1GB

IF EXISTING CONFIG. IS:	KIT #	CREATES NEW CONFIG.	DESCRIPTION:
AM-4-30-Z AM-4-72-Z AM-4-14-Z	NT6M97BJ	AM-4-38-Z	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed 'plexiglass door' model Kit changes BMC from: 30, 72, or 140MB disks to: 380MB disks
NT8M04(A-C)E	NT6M97BK	NT8M04DE	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 30, 72, or 140MB disks to: 380MB disks
NT8M04(A-D)E	NT6M97CD	NT8M04FE	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 30, 72, 140, or 380MB disk to: 760MB disks & 56K max polling speed
NT8M04(A-C)E	NT6M97CE	NT8M04EE	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 30, 72, or 140MB disk to: 380MB disks & 56K max polling speed
NT8M04DE	NT6M97CF	NT8M04EE	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 9600 baud max poll speed 56K max poll speed

IF EXISTING CONFIG. IS:	KIT #	CREATES NEW CONFIG.	DESCRIPTION:
NT8M04(A-D)E	NT6M97IT (see note 1)	NT8M04GE	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 30, 72, 140, or 380MB disk to: 1GB disks NON-TURBO
NT8M04(E-F)E	NT6M97IM (see note 1)	NT8M04HE	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 380 or 760MB disk to: 1GB disks TURBO
NT8M04(A-D)E	NT6M97IT & NT6M97JF (see note 1)	NT8M04IE	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 30, 72, 140, or 380MB disk to: 2GB disks TURBO
NT8M04(E-F)E	NT6M97IN (see note 1)	NT8M04IE	LSSGR C/R Format BX.25 protocol 56K baud max poll speed EMI Chassis model Kit changes BMC from: 380 or 760MB disk TURBO to: 2GB disks TURBO
NT8M04HE	NT6M97JH (see note 1)	NT8M04IE	LSSGR C/R Format BX.25 protocol 56K baud max poll speed EMI Chassis model Kit changes BMC from: 1GB disk TURBO to: 2GB disk TURBO

IF EXISTING CONFIG. IS:	KIT #	CREATES NEW CONFIG.	DESCRIPTION:
NT8M04GE	NT6M97JF (see note 1)	NT8M04IE	LSSGR C/R Format BX.25 protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 1GB disk NON TURBO to: 2GB disk TURBO
NT8M04(A-D)F	NT6M97LC (see note 1)	NT8M04HE	LSSGR ADU Format HDLC protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 30/72/140/380MB disk to: BMC 1GB disk TURBO
NT8M04(A-D)J	NT6M97LC (see note 1)	NT8M04HE	NT/STD ADU Format HDLC protocol 9600 baud max poll speed EMI Chassis model Kit changes BMC from: 30/72/140/380MB disk to: BMC 1GB disk TURBO
NT8M04_G	NT6M97DG	NT8M04_G	SMDR C/R Format Bisync protocol 9600 baud max poll speed DEUCE Kit changes DEUCE from: standard block polling to: 'Real-time' block polling (Blocks received at DEUCE during a polling session are polled as part of the same session.)

IF EXISTING CONFIG. IS:	KIT #	CREATES NEW CONFIG.	DESCRIPTION:
NT8M04_A CX-4-yy-z	NT6M97DH	NT8M04_A CX-4-yy-z	SMDR C/R Format Bisync protocol 9600 baud max poll speed Redundant BMC Kit changes BMC from: standard block polling to: 'Real-time' block polling (Blocks received at DEUCE during a polling session are polled as part of the same session.)

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

NOTES: 1) Provide the above BMC field upgrade kits per job require-
ments. Check URTS dates for availability before ordering
3.5 in. SCSI BMC systems or kits.

RULES:

BMC UPGRADE KIT,
TURBO TO 1GB TURBO

PEC CODE: NT6M97IM

CPC CODE: A0627819

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97IM BMC Field Upgrade Kit to upgrade a 5.25" disk BMC with disk size either 380MB or 760MB, Turbo polling option, LSSGR, and BX.25 to a 3.5" disk BMC with a 1GB disk size, Turbo polling option, LSSGR, and BX.25.

REFERENCE DOCUMENTATION: SL6M97IM 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NT: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: NT: Barbara Berkley Dept. 3471 (PPK)

NT6M97IM EMA5-99-BMC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" BMC per EC 011-21706.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC UPGRADE KIT, TURBO TO 1GB TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS29) CP	NT6M63CM		1	X,	1A1,	
				1	X+14	2A1	
REMOVE	SCSI Disk Drive I/F	NT6M66BA		1	X,	1A11,	
				1	X+14	2A11	
REMOVE	SCSI Disk X0VR CP	NT6M93AA		1	X,	1A15,	
				1	X+14	2A15	
REMOVE	380MB Disk Drive	NT6M72DD		1	X,	1A21,	
				1	X+14	2A21	
		or					
REMOVE	760MB Disk Drive	NT6M72EA		1	X,	1A21,	
				1	X+14	2A21	
ADD	EPROM CP	NT6M63FL		1	X,	1A1,	AP
				1	X+14	2A1	AP
ADD	SCSI I/F PCA	NT6M66CA		1	X,	1A11,	AP
				1	X+14	2A11	AP
ADD	SCSI X0VR PCA	NT6M93BA		1	X,	1A15,	AP
				1	X+14	2A15	AP
ADD	1GB Disk Drive Assy	NT6M72GA		1	X,	1A21,	AP
				1	X+14	2A21	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		1	X,		AP
				1	X+14		AP
ADD	BMC Nameplate	P0686423		1			AP
ADD	Power Cable	NT8M99AL					RUL2
ADD	HSDA Cable	NTNX36BZ					RUL3
ADD	HSDA Cable	NTNX69AA					RUL3
ADD	HSDA Cable	NTNX69AD					RUL3
ADD	RS232-C Modem Cable	NT8M99AG					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 "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.
- 2) S/W load NT6M06AR and C/P software NT6M9431 are loaded during manufacturing process for each 1GB disk drive.

RULES:

- AP 1) When PEC NT6M97IM is ordered, these items are provided.
- RUL1 1) Reserved for future use.
- RUL2 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.
- RUL3 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.

- 2) If customer chooses to use V.35 Port 1 and/or 2 for BX.25 Polling functions, provide one additional modem cable for V.35 modem communication for each port per the following table;

MODEM TYPE	CABLE PEC
=====	=====
Universal Data Systems DSU (D56)	NTNX36BZ
DATATEL DCP 3080	NTNX36BZ
General DATACOM 048P034-001	NTNX69AA
General DATACOM A20-011/-014 (500C 56K)	NTNX69AA
General DATACOM A20-001/004 (500C 56KD)	NTNX69AA
SYNT 920A	NTNX69AA
AT&T 2600 Series	NTNX69AD
MR1	NTNX69AD

BMC UPGRADE KIT,
TURBO TO 2GB TURBO

PEC CODE: NT6M97IN

CPC CODE: A0627820

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97IN BMC Field Upgrade Kit to upgrade a 5.25" disk BMC with disk size either 380MB or 760MB, Turbo polling option, LSSGR, and BX.25 to a 3.5" disk BMC with a 2GB disk size, Turbo polling option, LSSGR, and BX.25.

REFERENCE DOCUMENTATION: SL6M97IN 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NT: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: NT: Barbara Berkley Dept. 3471 (PPK)

NT6M97IN EMA5-99-BMC-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" BMC per EC 011-21706.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC UPGRADE KIT, TURBO TO 2GB TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS29) CP	NT6M63CM		1	X,	1A1,	
				1	X+14	2A1	
REMOVE	SCSI Disk Drive I/F	NT6M66BA		1	X,	1A11,	
				1	X+14	2A11	
REMOVE	SCSI Disk X0VR CP	NT6M93AA		1	X,	1A15,	
				1	X+14	2A15	
REMOVE	380MB Disk Drive	NT6M72DD		1	X,	1A21,	
				1	X+14	2A21	
		or					
REMOVE	760MB Disk Drive	NT6M72EA		1	X,	1A21,	
				1	X+14	2A21	
ADD	EPROM CP	NT6M63FL		1	X,	1A1,	AP
				1	X+14	2A1	AP
ADD	SCSI I/F PCA	NT6M66CA		1	X,	1A11,	AP
				1	X+14	2A11	AP
ADD	SCSI X0VR PCA	NT6M93BA		1	X,	1A15,	AP
				1	X+14	2A15	AP
ADD	2GB Disk Drive	NT6M72HA		1	X,	1A21,	AP
				1	X+14	2A21	AP
ADD	SCSI X0VR-Drive Cbl	NT6M83AE		1	X,		AP
				1	X+14		AP
ADD	BMC Nameplate	P0686423		1			AP
ADD	Power Cable	NT8M99AL					RUL2
ADD	HSDA Cable	NTNX36BZ					RUL3
ADD	HSDA Cable	NTNX69AA					RUL3
ADD	HSDA Cable	NTNX69AD					RUL3
ADD	RS232-C Modem Cable	NT8M99AG					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:

AP 1) When PEC NT6M97IN is ordered, these items are provided.

1) The "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.

2) S/W load NT6M06AS and C/P software NT6M9431 are loaded during manufacturing process for each 2GB disk drive.

RULES:

AP 1) When PEC NT6M97IN is ordered, these items are provided.

RUL1 1) Reserved for future use.

RUL2 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.

RUL3 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.

- 2) If customer chooses to use V.35 Port 1 and/or 2 for BX.25 Polling functions, provide one additional modem cable for V.35 modem communication for each port per the following table;

MODEM TYPE	CABLE PEC
=====	=====
Universal Data Systems DSU (D56)	NTNX36BZ
DATATEL DCP 3080	NTNX36BZ
General DATACOM 048P034-001	NTNX69AA
General DATACOM A20-011/-014 (500C 56K)	NTNX69AA
General DATACOM A20-001/004 (500C 56KD)	NTNX69AA
SYNT 920A	NTNX69AA
AT&T 2600 Series	NTNX69AD
MR1	NTNX69AD

BMC UPGRADE KIT,
LSSGR, BX.25 TO 1GB NON-TURBO

PEC CODE: NT6M97IT

CPC CODE: A0627826

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97IT BMC Field Upgrade Kit to upgrade a 5.25" disk BMC with disk size from 30-380MB, Non-Turbo polling option, LSSGR, BX.25 to a 3.5" disk BMC with a 1GB disk size, Non-Turbo polling option, LSSGR, and BX.25.

REFERENCE DOCUMENTATION: SL6M97IT 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NT: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: NT: Barbara Berkley Dept. 3471 (PPK)

NT6M97IT EMA5-99-BMC-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" drive BMC per 011-21706.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC Upgrade Kit, LSSGR, BX.25 TO 1GB Non-Turbo is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM CP	NT6M63DC		1	X,	1A02	
				1	X+14	2A02	
REMOVE	Quad Serial I/O CP	NT6M60BA		1	X,	1A07	
				1	X+14	2A07	
REMOVE	Disk Drive I/F CP	NT6M66AL		1	X,	1A11	
				1	X+14	2A11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AH		1	X,	1A11	
				1	X+14	2A11	
REMOVE	Disk Crossover CP	NT6M72AE		1	X,	1A15	
				1	X+14	2A15	
REMOVE	72MB Disk Drive	NT6M72AA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	140MB Disk Drive	NT6M72BA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	30MB Disk Drive	NT6M72CA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	380MB Disk Drive	NT6M72DA		1	X,	1A21	
				1	X+14	2A21	
ADD	EPROM CP	NT6M63FL		1	X,	1A02	AP
				1	X+14	2A02	AP
ADD	PCA 56K I/F	NT6M94AA		1	X,	1A07	AP
				1	X+14	2A07	AP
ADD	SCSI I/F PCA	NT6M66CA		1	X,	1A11	AP
				1	X+14	2A11	AP
ADD	SCSI X0VR PCA	NT6M93BA		1	X,	1A15	AP
				1	X+14	2A15	AP
ADD	PCA 56K X0VR	NT6M48AA		1	X+14	2A16	AP
ADD	1GB Disk Drive	NT6M72GA		1	X,	1A21	AP
				1	X+14	2A21	AP
ADD	56K Conn CP	NT6M54AL		1	X+14	2A26	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		1	X,		AP
				1	X+14		AP
ADD	56K X0VR Conn Cassy	NT6M85CA		1	X+14		AP
ADD	56K I/F X0VR A Cassy	NT6M73AJ		1			AP
ADD	56K I/F X0VR B Cassy	NT6M73AK		1	X+14		AP
ADD	BMC Nameplate	P0686423		1	X		AP
ADD	Power Cable	NT8M99AL					RUL2

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	HSDA Cable	NTNX36BZ					RUL3
ADD	HSDA Cable	NTNX69AA					RUL3
ADD	HSDA Cable	NTNX69AD					RUL3
ADD	RS232-C Modem Cable	NT8M99AG					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 "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.

2) S/W load NT6M06AR is loaded during manufacturing process for each 1GB disk drive.

RULES:

AP 1) When PEC NT6M97IT is ordered, these items are provided.

RUL1 1) Reserved for future use.

RUL2 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.

RUL3 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.

2) If customer chooses to use V.35 Port 1 and/or 2 for BX.25 Polling functions, provide one additional modem cable for V.35 modem communication for each port per the following table;

MODEM TYPE	CABLE PEC
=====	=====
Universal Data Systems DSU (D56)	NTNX36BZ
DATATEL DCP 3080	NTNX36BZ
General DATACOM 048P034-001	NTNX69AA
General DATACOM A20-011/-014 (500C 56K)	NTNX69AA
General DATACOM A20-001/004 (500C 56KD)	NTNX69AA
SYNT 920A	NTNX69AA
AT&T 2600 Series	NTNX69AD
MR1	NTNX69AD

BMC UPGRADE KIT,
1GB TURBO TO 2GB TURBO

PEC CODE: NT6M97JH

CPC CODE: A0627834

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97JH BMC Field Upgrade Kit to upgrade a 3.5" disk BMC with disk size 1GB and Turbo polling option to a 3.5" disk BMC with a 2GB disk size and Turbo polling option.

REFERENCE DOCUMENTATION: SL6M97JH 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NT: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: NT: Barbara Berkley Dept. 3471 (PPK)

NT6M97JH EMA5-99-BMC-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" BMC per EC 011-21706.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC UPGRADE KIT, 1GB TURBO TO 2GB TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	1GB Disk Drive	NT6M72GA		1	X,	1A21,	AP
				1	X+14	2A21	AP
ADD	2GB Disk Drive	NT6M72HA		1	X,	1A21,	AP
				1	X+14	2A21	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.
- 2) S/W load NT6M06AS is loaded during manufacturing process for each 2GB disk drive.

RULES:

AP 1) When PEC NT6M97JH is ordered, these items are provided.

| RUL1 1) Reserved for future use.

BMC UPGRADE KIT,
EMC/HDLC/ADU TO 1GB TURBO A

PEC CODE: NT6M97LC

CPC CODE: A0627856

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97LC BMC Field Upgrade Kit to upgrade a 5.25" disk BMC with disk size from 30-380MB, non-Turbo polling option, LSSGR or NT, HDLC, ADU, and Pseudo to a 3.5" disk BMC with a 1GB disk size, Turbo polling option, LSSGR or NT, HDLC, ADU, and Pseudo.

REFERENCE DOCUMENTATION: SL6M97LC 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NT: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: NT: Barbara Berkley Dept. 3471 (PPK)

NT6M97LC EMA5-99-BMC-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" drive BMC per 011-21706.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC Upgrade Kit, EMC/HDLC/ADU TO 1GB TURBO A is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS21-29) CP	NT6M63CL		1	X,	1A02	
				1	X+14	2A02	
REMOVE	Disk Drive I/F CP	NT6M66AC		1	X,	1A11	
				1	X+14	2A11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AL		1	X,	1A11	
				1	X+14	2A11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AH		1	X,	1A11	
				1	X+14	2A11	
REMOVE	Disk Crossover CP	NT6M72AE		1	X,	1A15	
				1	X+14	2A15	
REMOVE	72MB Disk Drive	NT6M72AA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	140MB Disk Drive	NT6M72BA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	30MB Disk Drive	NT6M72CA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	380MB Disk Drive	NT6M72DA		1	X,	1A21	
				1	X+14	2A21	
ADD	EPROM CP	NT6M63FL		1	X,	1A02	AP
				1	X+14	2A02	AP
ADD	PCA 56K I/F	NT6M94AA		1	X,	1A07	AP
				1	X+14	2A07	AP
ADD	SCSI I/F PCA	NT6M66CA		1	X,	1A11	AP
				1	X+14	2A11	AP
ADD	SCSI X0VR PCA	NT6M93BA		1	X,	1A15	AP
				1	X+14	2A15	AP
ADD	PCA 56K X0VR	NT6M48AA		1	X+14	2A16	AP
ADD	1GB Disk Drive	NT6M72GA		1	X,	1A21	AP
				1	X+14	2A21	AP
ADD	56K Conn CP	NT6M54AL		1	X+14	2A26	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		1	X,		AP
				1	X+14		AP
ADD	56K X0VR Conn Cassy	NT6M85CA		1			AP
ADD	56K I/F X0VR A Cassy	NT6M73AJ		1			AP
ADD	56K I/F X0VR B Cassy	NT6M73AK		1			AP
ADD	BMC Nameplate	P0686423		1	X		AP

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	Power Cable	NT8M99AL					RUL2
ADD	HSDA Cable	NTNX36BZ					RUL3
ADD	HSDA Cable	NTNX69AA					RUL3
ADD	HSDA Cable	NTNX69AD					RUL3
ADD	RS232-C Modem Cable	NT8M99AG					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 "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.
- 2) S/W load NT6M06AR and C/P software NT6M9431 are loaded during the manufacturing process for each 1GB disk drive.

RULES:

- AP 1) When PEC NT6M97LC is ordered, these items are provided.

Active Equipment
BMC Upgrade Kit,
EMC/HDLC/ADU TO 1GB TURBO A

NT6M97LC
EMA5-99-BMC-6
Page 4

- RUL1 1) Reserved for future use.
- RUL2 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.
- RUL3 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.
- 2) If customer chooses to use V.35 Port 1 and/or 2 for BX.25 Polling functions, provide one additional modem cable for V.35 modem communication for each port per the following table;

MODEM TYPE	CABLE PEC
=====	=====
Universal Data Systems DSU (D56)	NTNX36BZ
DATATEL DCP 3080	NTNX36BZ
General DATACOM 048P034-001	NTNX69AA
General DATACOM A20-011/-014 (500C 56K)	NTNX69AA
General DATACOM A20-001/004 (500C 56KD)	NTNX69AA
SYNT 920A	NTNX69AA
AT&T 2600 Series	NTNX69AD
MR1	NTNX69AD

BMC UPGRADE KIT,
1GB NON-TURBO TO 2GB TURBO

PEC CODE: NT6M97JF

CPC CODE: A0627832

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97JF BMC Field Upgrade Kit to upgrade a 3.5" disk BMC with disk size 1GB, and Non Turbo polling option to a 3.5" disk BMC with a 2GB disk size, and Turbo polling option.

REFERENCE DOCUMENTATION: SL6M97JF 01 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Barbara Berkley Dept. 3471 (PPK)

MAIN CONTACT: NTI: Barbara Berkley Dept. 3471 (PPK)

NT6M97JF EMA5-99-BMC-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 08	ECM 202 13	Introduce new 3.5" BMC per EC 011-21706.
96 08 14	ECM 202 15	Correct product description.
96 09 27	ECM 202 16	Per RR69069, update notes and rules sections to reflect that circuit pack software loads are performed during manufacturing, and are not orderable (spec'd) items.

The BMC UPGRADE KIT, 1GB NON-TURBO TO 2GB TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	1GB Disk Drive	NT6M72GA		1	X,	1A21,	AP
				1	X+14	2A21	AP
ADD	2GB Disk Drive	NT6M72HA		1	X,	1A21,	AP
				1	X+14	2A21	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The "X" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.
- 2) S/W load NT6M06AS and C/P software NT6M9431 are loaded during the manufacturing process for each 2GB disk drive. BMC becomes NT8M04IE.

RULES:

AP 1) When PEC NT6M97JF is ordered, these items are provided.

| RUL1 1) Reserved for future use.

BMC UPGRADE KIT, BISYNC, INDEP
LSSGR, BISYNC 1GB NON-TURBO

PEC CODE: NT6M97IK

| CPC CODE: A0627817

| RATING: Standard.

| REPLACES: Not Applicable

| REPLACED BY: Not Applicable

| ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97IK BMC Field Upgrade Kit to upgrade a 5.25" disk BMC with disk size from 30-380MB, Non-Turbo polling option, LSSGR, BiSync to a 3.5" disk BMC with a 1GB disk size, Non-Turbo polling option, LSSGR, and BiSync.

REFERENCE DOCUMENTATION: SL6M97IT 01 01

MARKETS: Applicable markets:

US
Canada

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

MAIN CONTACT: NT: Bob Belvin Dept. 3471 (PPK)

NT6M97IK EMA5-99-BMC-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 05 31	ECM 202 14	Introduce new 3.5" drive BiSync BMC Upgrade Kit per ECD 011-21706.

The BMC Upgrade Kit, BiSync, Indep LSSGR, BiSync 1GB Non-Turbo is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPR0M CP	NT6M63DC		1	X,	1A02	
				1	X+14	2A02	
REMOVE	Error Control PCB	NT6M65AB		1	X	1A05	
REMOVE	Quad Serial I/O CP	NT6M60BA		1	X,	1A07	
				1	X+14	2A07	
REMOVE	Disk Drive I/F CP	NT6M66AL		1	X,	1A11	
				1	X+14	2A11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AH		1	X,	1A11	
				1	X+14	2A11	
REMOVE	DSI PCB	NT6M70AB		1	X,	1A12	
				1	X,	1A13	
				1	X+14,	2A12	
				1	X+14	2A13	
REMOVE	Disk Crossover CP	NT6M72AE		1	X,	1A15	
				1	X+14	2A15	
REMOVE	72MB Disk Drive	NT6M72AA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	140MB Disk Drive	NT6M72BA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	30MB Disk Drive	NT6M72CA		1	X,	1A21	
				1	X+14	2A21	
		or					
REMOVE	380MB Disk Drive	NT6M72DA		1	X,	1A21	
				1	X+14	2A21	
ADD	EPR0M CP	NT6M63FL		1	X,	1A02	AP
				1	X+14	2A02	AP
ADD	Error Control PCB	NT6M65AG		1	X	1A05	AP
ADD	PCA 56K I/F	NT6M94AA		1	X,	1A07	AP
				1	X+14	2A07	AP
ADD	SCSI I/F PCA	NT6M66CA		1	X,	1A11	AP
				1	X+14	2A11	AP
ADD	DSI PCB	NT6M70BD		1	X	1A12	AP
				1	X	1A13	AP
				1	X+14	2A12	AP
				1	X+14	2A13	AP
ADD	SCSI X0VR PCA	NT6M93BA		1	X,	1A15	AP
				1	X+14	2A15	AP

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	PCA 56K X0VR	NT6M48AA		1	X+14	2A16	AP
ADD	1GB Disk Drive	NT6M72GA		1	X,	1A21	AP
				1	X+14	2A21	AP
ADD	56K Conn CP	NT6M54AL		1	X+14	2A26	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		1	X,		AP
				1	X+14		AP
ADD	56K X0VR Conn Cassy	NT6M85CA		1	X+14		AP
ADD	56K I/F X0VR A Cassy	NT6M73AJ		1			AP
ADD	56K I/F X0VR B Cassy	NT6M73AK		1	X+14		AP
ADD	BMC Nameplate	P0686423		1	X		AP
ADD	S/W Ld LSSGR BiSync	NT6M06A0					RUL1
ADD	CP S/W DMS100 BiSync	NT6M9449					RUL1
ADD	Power Cable	NT8M99AL					RUL2
ADD	HSDA Cable	NTNX36BZ					RUL3
ADD	HSDA Cable	NTNX69AA					RUL3
ADD	HSDA Cable	NTNX69AD					RUL3
ADD	RS232-C Modem Cable	NT8M99AG					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 "x" is used to indicate variable shelf mounting positions. The Redundant Billing Media Converters (those BMCs which have the two shelf arrangement) shall be mounted in shelf

position 51 only when mount on IOC 00 or 01. However, if mounted on IOE 02 and higher then the mounting position may be shelf position 18 or 51 if space is available or if this does not conflict with mounting a DDU. X+14 is used to indicate the second shelf of a two shelf arrangement.

RULES:

- AP 1) When PEC NT6M97IK is ordered, these items are provided.
- RUL1) 1) Provide S/W Load NT6M06A0 for each 1GB disk drive.
2) Provide CP S/W NT6M9449 for each 1GB disk drive.
- RUL2 1) If BMC is mounting in IOE NT0X43AD then provide two NT8M99AL Power Cables.
- RUL3 1) If customer chooses to use Maintenance Port 2 and/or 3 for remote maintenance functions, provide one additional NT8M99AG modem cable for RS232-C modem communication (2400-9600 baud) for each port.

14 INCH DDU ENHANCEMENT

NT4X00AZ

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides an enhancement to the 14" DDU by allowing the 14 inch disk drive to be replaced with an 8" DDU while it remains available, or a 5.25" DDU when it becomes available. When the 5.25" DDU becomes available, the 8" DDU will become MD. Please reference availability reports for DDU status.

REFERENCE DOCUMENTATION: PC4X00AZ

The NT4X00AZ is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Disk to IOC Interconnect Cable	NT4X0006		1	XX		
REMOVE	Disk Power Cable	NT4X0009		1	XX		
REMOVE	14 Inch Disk Drive	See Note		1	XX		
REMOVE	Chassis Bracket	P0631776		1	XX		
REMOVE	IOC/Disk Drive Interface BP	NT4X0004		1	XX		
ADD	Dual Disk Drive Connector Assembly	NT4X0025		1	XX		AP
ADD	Mounting Tray Assembly	NT4X0044		1	XX		AP
REMOVE	Disk Drive Controller CP	NT1X55AB		1	XX		RUL1
REMOVE	Cable Braid Assy	NT0X9538		1	XX		NOTE1
REMOVE	Cable Braid Assy	NT0X9501		1	XX		NOTE1
REMOVE	DDCS00 Switchbrd Cable	NT0X26BV		1	XX		NOTE1
REMOVE	DDCS01 Switchbrd Cable	NT0X26BW		1	XX		NOTE1
ADD	DDCS02 Switchbrd Cable	NT0X26ZV		1	XX		NOTE1
ADD	DDCS03 Switchbrd Cable	NT0X26ZW		1	XX		NOTE1
ADD	DDSC04 Switchbrd Cable						NOTE1
ADD	Disk Drive Mtg Brk Assembly	NT4X0043		2	XX		AP

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	\$ 8" Mercury DDU	8211D-19-061		1	XX		RUL2
OR	\$ 8" Mercury DDU	8211D-19-062		1	XX		RUL2
OR	& 8" Mercury DDU	8211D-19-063		1	XX		RUL2
OR	5.25" DDU	NT4X00AG		1	XX		RUL2
ADD	DDU Pwr Cable	NT4X0045		1	XX		AP
ADD	Disk to IOC Interconn Cable	NT4X0048		1	XX		AP
ADD	8" Disk Drive Controller CP	NT1X55DA		1	XX		RUL1
ADD	Designation Label	P0688790		1	XX		AP

FLAGS:

\$ Rated MD. Replaced by 8211D-19-063.

& Rating Change Pending. Check Availability Reports.

NOTES:

- 1) Refer to PC4X00AZ and CA0X15 for specific information concerning removal of existing 14 inch DDU switchboard cables and the addition of 8 inch DDU/5.25" DDU switchboard cables.
- 2) 'XX' refers to either position 04 or 18.
- 3) The PEC code for the 14 Inch Disk Drive may be A0300005, A0300006, or A0300006.

RULES:

- RUL1 1) Replace the associated disk drive controller CP NT1X55AB in an IOC shelf (NT1X61) or MDC shelf (NT2X76) with disk drive controller CP NT1X55DA.
- RUL2 1) Replace the existing A03000005, A03000006, or A03000007 14 Inch Disk Drive Unit with the 8211D-19, as long as a version is available, or the 5.25" DDU (NT4X00AG), when it becomes available on the NT4X00AA, NT4X00AB, or NT4X00AC shelf.

DPP Conversion Change Kit

NT8X48AC

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit converts the NT8X48AA (72 MB) & NT8X48BA (140 MB) Distributive Processing Peripheral (DPP) to the NT8X48AB provisionable DPP unit.

REFERENCE DOCUMENTATION: N/A

The DPP Conversion Change Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ADD	DPP PEC ID Des Label	P0694755		1	18 or 51		AP
ADD	DPP Model\H/W Des Lbl	P0694757		1	18 or 51		AP

NOTE:

1. Removing the existing Designation Labels on the NT8X48AA or NT8X48BA DPP and replacing them with the provided labels will convert the DPP unit to the NT8X48AB provisionable DPP.

RULE:

AP 1) When PEC NT8X48AC is ordered, these items are provided.

DPP UPGRD, NON-TURBO TO 1GB TURBO/COMPRESSION

PEC CODE: NT6M97FC

CPC CODE: A0616393

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FC DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 1GB disk size and Turbo/Compression polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FC EMA5-99-DPP-10 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, NON-TURBO TO 1GB TURBO/COMPRESSION is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS21-29) CP	NT6M63CL		2	A,B	02	
REMOVE	Disk Drive I/F CP	NT6M66AC		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AL		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AH		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
REMOVE	72MB Disk Drive Assy	NT6M72AA		2	A,B	21	
		or					
REMOVE	140MB Disk Drive	NT6M72BA		2	A,B	21	
		or					
REMOVE	380MB Disk Drive	NT6M72DA		2	A,B	21	
ADD	EPROM CP	NT6M63FE		2	A,B	02	AP
ADD	56K/Comp I/F CP	NT6M94BA		2	A,B	07	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI X0VR PCA	NT6M93BA		2	A,B	15	AP
ADD	PCA 56K X0VR	NT6M48AA		1	B	16	AP
ADD	1GB Disk Drive Assy	NT6M72GA		2	A,B	21	AP
ADD	56K Conn CP	NT6M54AL		1	B	26	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	56K X0VR Conn Cassy	NT6M85CA		1			AP
ADD	56K I/F X0VR A Cassy	NT6M73AJ		1			AP
ADD	56K I/F X0VR B Cassy	NT6M73AK		1			AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FC is ordered, these items are provided.

DPP UPGRD, NON-TURBO TO 2GB TURBO

PEC CODE: NT6M97FD

CPC CODE: A0616401

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FD DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 2GB disk size and Turbo polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FD EMA5-99-DPP-11 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, NON-TURBO TO 2GB TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS21-29) CP	NT6M63CL		2	A,B	02	
REMOVE	Disk Drive I/F CP	NT6M66AC		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AL		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AH		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
REMOVE	72MB Disk Drive Assy	NT6M72AA		2	A,B	21	
		or					
REMOVE	140MB Disk Drive	NT6M72BA		2	A,B	21	
		or					
REMOVE	380MB Disk Drive	NT6M72DA		2	A,B	21	
ADD	EPROM CP	NT6M63FE		2	A,B	02	AP
ADD	56K I/F CP	NT6M94AA		2	A,B	07	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI X0VR PCA	NT6M93BA		2	A,B	15	AP
ADD	PCA 56K X0VR	NT6M48AA		1	B	16	AP
ADD	2GB Disk Drive Assy	NT6M72HA		2	A,B	21	AP
ADD	56K Conn CP	NT6M54AL		1	B	26	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	56K X0VR Conn Cassy	NT6M85CA		1			AP
ADD	56K I/F X0VR A Cassy	NT6M73AJ		1			AP
ADD	56K I/F X0VR B Cassy	NT6M73AK		1			AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FD is ordered, these items are provided.

DPP UPGRD, NON-TURBO TO 2GB TURBO/COMPRESSION

PEC CODE: NT6M97FE

CPC CODE: A0616403

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FE DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 2GB disk size and Turbo/Compression polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FE EMA5-99-DPP-12 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, NON-TURBO TO 2GB TURBO/COMPRESSION is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS21-29) CP	NT6M63CL		2	A,B	02	
REMOVE	Disk Drive I/F CP	NT6M66AC		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AL		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AH		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
REMOVE	72MB Disk Drive Assy	NT6M72AA		2	A,B	21	
		or					
REMOVE	140MB Disk Drive	NT6M72BA		2	A,B	21	
		or					
REMOVE	380MB Disk Drive	NT6M72DA		2	A,B	21	
ADD	EPROM CP	NT6M63FE		2	A,B	02	AP
ADD	56K/Comp I/F CP	NT6M94BA		2	A,B	07	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI XOVR PCA	NT6M93BA		2	A,B	15	AP
ADD	PCA 56K XOVR	NT6M48AA		1	B	16	AP
ADD	2GB Disk Drive Assy	NT6M72HA		2	A,B	21	AP
ADD	56K Conn CP	NT6M54AL		1	B	26	AP
ADD	SCSI XOVR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	56K XOVR Conn Cassy	NT6M85CA		1			AP
ADD	56K I/F XOVR A Cassy	NT6M73AJ		1			AP
ADD	56K I/F XOVR B Cassy	NT6M73AK		1			AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FE is ordered, these items are provided.

DPP UPGRD, TURBO TO 1GB TURBO

PEC CODE: NT6M97FF

CPC CODE: A0616404

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FF DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size either 380MB or 760MB and Turbo to a 3.5" disk DPP with a 1GB disk size and Turbo polling option. This kit can also be used to upgrade a 5.25" disk DPP with disk size either 380MB or 760MB and Turbo/Compression to a 3.5" disk DPP with a 1GB disk size and Turbo/Compression polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FF EMA5-99-DPP-13 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, TURBO TO 1GB TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS29) CP	NT6M63CJ		2	A,B	02	
REMOVE	SCSI Disk Drive I/F	NT6M66BA		2	A,B	11	
REMOVE	SCSI Disk X0VR CP	NT6M93AA		2	A,B	15	
REMOVE	380MB Disk Drive	NT6M72DD		2	A,B	21	
		or					
REMOVE	760MB Disk Drive	NT6M72EA		2	A,B	21	
ADD	EPROM CP	NT6M63FE		2	A,B	02	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI X0VR PCA	NT6M93BA		2	A,B	15	AP
ADD	1GB Disk Drive Assy	NT6M72GA		2	A,B	21	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FF is ordered, these items are provided.

DPP UPGRD, TURBO TO 2GB TURBO

PEC CODE: NT6M97FG

CPC CODE: A0616405

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FG DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size either 380MB or 760MB and Turbo to a 3.5" disk DPP with a 2GB disk size and Turbo polling option. This kit can also be used to upgrade a 5.25" disk DPP with disk size either 380MB or 760MB and Turbo/Compression to a 3.5" disk DPP with a 2GB disk size and Turbo/Compression polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FG EMA5-99-DPP-14 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, TURBO TO 2GB TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS29) CP	NT6M63CJ		2	A,B	02	
REMOVE	SCSI Disk Drive I/F	NT6M66BA		2	A,B	11	
REMOVE	SCSI Disk X0VR CP	NT6M93AA		2	A,B	15	
REMOVE	380MB Disk Drive	NT6M72DD		2	A,B	21	
		or					
REMOVE	760MB Disk Drive	NT6M72EA		2	A,B	21	
ADD	EPROM CP	NT6M63FE		2	A,B	02	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI X0VR PCA	NT6M93BA		2	A,B	15	AP
ADD	2GB Disk Drive Assy	NT6M72HA		2	A,B	21	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FG is ordered, these items are provided.

DPP UPGRD, TURBO TO 1GB TURBO/COMPRESSION

PEC CODE: NT6M97FH

CPC CODE: A0616406

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FH DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size either 380 or 760 MB and Turbo to a 3.5" disk DPP with a 1GB disk size and Turbo/Compression polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FH EMA5-99-DPP-15 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, TURBO TO 1GB TURBO/COMPRESSION is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPR0M (BCS29) CP	NT6M63CJ		2	A,B	02	
REMOVE	SCSI Disk Drive I/F	NT6M66BA		2	A,B	11	
REMOVE	SCSI Disk X0VR CP	NT6M93AA		2	A,B	15	
REMOVE	56K I/F CP	NT6M94AA		2	A,B	07	
REMOVE	380MB Disk Drive	NT6M72DD		2	A,B	21	
		or					
REMOVE	760MB Disk Drive	NT6M72EA		2	A,B	21	
ADD	EPR0M CP	NT6M63FE		2	A,B	02	AP
ADD	56K/Comp I/F CP	NT6M94BA		2	A,B	07	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI X0VR PCA	NT6M93BA		2	A,B	15	AP
ADD	1GB Disk Drive Assy	NT6M72GA		2	A,B	21	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FH is ordered, these items are provided.

DPP UPGRD, TURBO TO 2GB TURBO/COMPRESSION

PEC CODE: NT6M97FI

CPC CODE: A0616407

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FI DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size either 380 or 760 MB and Turbo to a 3.5" disk DPP with a 2GB disk size and Turbo/Compression polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FI EMA5-99-DPP-16 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, TURBO TO 2GB TURBO/COMPRESSION is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPR0M (BCS29) CP	NT6M63CJ		2	A,B	02	
REMOVE	SCSI Disk Drive I/F	NT6M66BA		2	A,B	11	
REMOVE	SCSI Disk X0VR CP	NT6M93AA		2	A,B	15	
REMOVE	56K I/F CP	NT6M94AA		2	A,B	07	
REMOVE	380MB Disk Drive	NT6M72DD		2	A,B	21	
		or					
REMOVE	760MB Disk Drive	NT6M72EA		2	A,B	21	
ADD	EPR0M CP	NT6M63FE		2	A,B	02	AP
ADD	56K/Comp I/F CP	NT6M94BA		2	A,B	07	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI X0VR PCA	NT6M93BA		2	A,B	15	AP
ADD	2GB Disk Drive Assy	NT6M72HA		2	A,B	21	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FI is ordered, these items are provided.

DISTRIBUTED PROCESSING PERIPHERAL FIELD UPGRADE KIT NT6M97EA

RATING: Standard

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP)
Field Upgrade Kit upgrades any Turbo DPP to
Compression DPP without Disk size change.

REFERENCE DOCUMENTATION: N/A

The Distributed Processing Peripheral Field Upgrade Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	56Kbps I/F CP	NT6M94AA		2	A,B	7	
ADD	56K/Compr. I/F PCA	NT6M94BA		2	A,B	7	AP
ADD	Nameplate	P0665413		1			AP
ADD	Manufacturing Notes	MN6M97EA		1			AP

NOTES:

- 1) This upgrade kit adds the Compression feature to 380/760MB Turbo DPPs.

RULES:

- AP 1) When PEC NT6M97EA is ordered, these items are provided.

DISTRIBUTED PROCESSING PERIPHERAL FIELD UPGRADE KIT NT6M97EB

RATING: Standard

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP) Field Upgrade Kit upgrades 380MB Turbo DPP to Compression while increasing disk size to 760MB.

REFERENCE DOCUMENTATION: N/A

The Distributed Processing Peripheral Field Upgrade Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	56Kbps I/F CP	NT6M94AA		2	A,B	7	
REMOVE	380MB Disk Assy	NT6M72DD		2	A,B	21	
ADD	56K/Compr. I/F PCA	NT6M94BA		2	A,B	7	AP
ADD	760MB Disk Assy	NT6M72EA		2	A,B	21	AP
ADD	Nameplate	P0665413		1			AP
ADD	Manufacturing Notes	MN6M97EB		1			AP

NOTES:

- 1) This upgrade kit increases 380MB Turbo DPP to 760MB Compression DPP.

RULES:

- AP 1) When PEC NT6M97EB is ordered, these items are provided.

DISTRIBUTED PROCESSING PERIPHERAL FIELD UPGRADE KIT NT6M97EC

RATING: Standard

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP) Field Upgrade Kit upgrades Non Turbo DPP to Compression while increasing disk size to 760MB.

REFERENCE DOCUMENTATION: N/A

The Distributed Processing Peripheral Field Upgrade Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS20) CP	NT6M63CE		2	A,B	2	
REMOVE	EPROM (BCS21-24) CP	NT6M63CF		2	A,B	2	
REMOVE	EPROM (BCS21-29) CP	NT6M63CH		2	A,B	2	
REMOVE	EPROM (BCS21-29) CP	NT6M63CL		2	A,B	2	
REMOVE	56Kbps I/F CP	NT6M94AA		2	A,B	7	
REMOVE	Disk Drive I/F CP	NT6M66AH		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
REMOVE	380MB Disk Assy	NT6M72DA		2	A,B	21	
ADD	EPROM PCA	NT6M63CJ		2	A,B	2	AP
ADD	56K/Compr. I/F PCA	NT6M94BA		2	A,B	7	AP
ADD	SCSI Disk I/F PCA	NT6M66BA		2	A,B	11	AP
ADD	SCSI Disk Xovr PCA	NT6M93AA		2	A,B	15	AP
ADD	56K Xovr PCA	NT6M48AA		1	B	16	AP
ADD	760MB Disk Assy	NT6M72EA		2	A,B	21	AP
ADD	56K Conn. Pnl Assy	NT6M54AL		1	B	26	AP
ADD	56K Cable Assy	NT6M73AJ		1			AP
ADD	56K Cable Assy	NT6M73AK		1			AP
ADD	56K Cable Assy	NT6M85CA		1			AP
ADD	Nameplate	P0665413		1			AP
ADD	Manufacturing Notes	MN6M97EC		1			AP

NOTES:

- 1) This upgrade kit increases 380MB Non-Turbo DPP to 760MB Compression DPP.

RULES:

- AP 1) When PEC NT6M97EC is ordered, these items are provided.

DISTRIBUTED PROCESSING PERIPHERAL FIELD UPGRADE KIT NT6M97ED

RATING: Standard

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP) Field Upgrade Kit upgrades Non Turbo 380MB DPP to Compression without increasing disk size.

REFERENCE DOCUMENTATION: N/A

The Distributed Processing Peripheral Field Upgrade Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS20) CP	NT6M63CE		2	A,B	2	
REMOVE	EPROM (BCS21-24) CP	NT6M63CF		2	A,B	2	
REMOVE	EPROM (BCS21-29) CP	NT6M63CH		2	A,B	2	
REMOVE	EPROM (BCS21-29) CP	NT6M63CL		2	A,B	2	
REMOVE	56Kbps I/F CP	NT6M94AA		2	A,B	7	
REMOVE	Disk Drive I/F CP	NT6M66AH		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
ADD	EPROM PCA	NT6M63CJ		2	A,B	2	AP
ADD	56K/Compr. I/F PCA	NT6M94BA		2	A,B	7	AP
ADD	SCSI Disk I/F PCA	NT6M66BA		2	A,B	11	AP
ADD	SCSI Disk Xovr PCA	NT6M93AA		2	A,B	15	AP
ADD	56K Xovr PCA	NT6M48AA		1	B	16	AP
ADD	56K Conn. Pnl Assy	NT6M54AL		1	B	26	AP
ADD	56K Cable Assy	NT6M73AJ		1			AP
ADD	56K Cable Assy	NT6M73AK		1			AP
ADD	56K Cable Assy	NT6M85CA		1			AP
ADD	Nameplate	P0665413		1			AP
ADD	Manufacturing Notes	MN6M97ED		1			AP

NOTES:

- 1) This upgrade kit adds Compression to 380MB Non-Turbo DPP.

RULES:

- AP 1) When PEC NT6M97ED is ordered, these items are provided.

DISTRIBUTED PROCESSING PERIPHERAL FIELD UPGRADE KIT NT6M97EF

RATING: Standard

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP) Field Upgrade Kit upgrades 140MB DPP to Compression while increasing disk size to 380MB.

REFERENCE DOCUMENTATION: N/A

The Distributed Processing Peripheral Field Upgrade Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS20) CP	NT6M63CE		2	A,B	2	
REMOVE	EPROM (BCS21-24) CP	NT6M63CF		2	A,B	2	
REMOVE	EPROM (BCS21-29) CP	NT6M63CH		2	A,B	2	
REMOVE	EPROM (BCS21-29) CP	NT6M63CL		2	A,B	2	
REMOVE	56Kbps I/F CP	NT6M94AA		2	A,B	7	
REMOVE	Disk Drive I/F CP	NT6M66AL		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
REMOVE	140MB Disk Assy	NT6M72BA		2	A,B	21	
ADD	EPROM PCA	NT6M63CJ		2	A,B	2	AP
ADD	56K/Compr. I/F PCA	NT6M94BA		2	A,B	7	AP
ADD	SCSI Disk I/F PCA	NT6M66BA		2	A,B	11	AP
ADD	SCSI Disk Xovr PCA	NT6M93AA		2	A,B	15	AP
ADD	56K Xovr PCA	NT6M48AA		1	B	16	AP
ADD	380MB Disk Assy	NT6M72DD		2	A,B	21	AP
ADD	56K Conn. Pnl Assy	NT6M54AL		1	B	26	AP
ADD	56K Cable Assy	NT6M73AJ		1			AP
ADD	56K Cable Assy	NT6M73AK		1			AP
ADD	56K Cable Assy	NT6M85CA		1			AP
ADD	Nameplate	P0665413		1			AP
ADD	Manufacturing Notes	MN6M97EF		1			AP

NOTES:

- 1) This upgrade kit increases 140MB Non-Turbo DPP to 380MB Compression DPP.

RULES:

- AP 1) When PEC NT6M97EF is ordered, these items are provided.

DISTRIBUTED PROCESSING PERIPHERAL FIELD UPGRADE KIT NT6M97EG

RATING: Standard

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The Distributed Processing Peripheral (DPP) Field Upgrade Kit upgrades 140MB DPP to Compression without increasing disk storage capacity.

REFERENCE DOCUMENTATION: N/A

The Distributed Processing Peripheral Field Upgrade Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPR0M (BCS20) CP	NT6M63CE		2	A,B	2	
REMOVE	EPR0M (BCS21-24) CP	NT6M63CF		2	A,B	2	
REMOVE	EPR0M (BCS21-29) CP	NT6M63CH		2	A,B	2	
REMOVE	EPR0M (BCS21-29) CP	NT6M63CL		2	A,B	2	
REMOVE	56Kbps I/F CP	NT6M94AA		2	A,B	7	
REMOVE	Disk Drive I/F CP	NT6M66AL		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
REMOVE	140MB Disk Assy	NT6M72BA		2	A,B	21	
ADD	EPR0M PCA	NT6M63CJ		2	A,B	2	AP
ADD	56K/Compr. I/F PCA	NT6M94BA		2	A,B	7	AP
ADD	SCSI Disk I/F PCA	NT6M66BC		2	A,B	11	AP
ADD	SCSI Disk Xovr PCA	NT6M93AA		2	A,B	15	AP
ADD	56K Xovr PCA	NT6M48AA		1	B	16	AP
ADD	380MB Disk Assy	NT6M72DD		2	A,B	21	AP
ADD	56K Conn. Pnl Assy	NT6M54AL		1	B	26	AP
ADD	56K Cable Assy	NT6M73AJ		1			AP
ADD	56K Cable Assy	NT6M73AK		1			AP
ADD	56K Cable Assy	NT6M85CA		1			AP
ADD	Nameplate	P0665413		1			AP
ADD	Manufacturing Notes	MN6M97EG		1			AP

NOTES:

- 1) This upgrade kit adds Compression to the 140MB DPP.

RULES:

- AP 1) When PEC NT6M97EG is ordered, these items are provided.

DPP UPGRD, NON-TURBO TO 1 GB NON-TURBO

PEC CODE: NT6M97FA

CPC CODE: A0616391

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FA DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 1GB disk size and non-Turbo polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FA EMA5-99-DPP-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, NON-TURBO TO 1 GB NON-TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPR0M (BCS21-29) CP	NT6M63CL		2	A,B	02	
REMOVE	Disk Drive I/F CP	NT6M66AC		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AL		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AH		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
REMOVE	72MB Disk Drive Assy	NT6M72AA		2	A,B	21	
		or					
REMOVE	140MB Disk Drive	NT6M72BA		2	A,B	21	
		or					
REMOVE	380MB Disk Drive	NT6M72DA		2	A,B	21	
ADD	EPR0M CP	NT6M63FE		2	A,B	02	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI X0VR PCA	NT6M93BA		2	A,B	15	AP
ADD	1GB Disk Drive Assy	NT6M72GA		2	A,B	21	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FA is ordered, these items are provided.

DPP UPGRD, NON-TURBO TO 1GB TURBO

PEC CODE: NT6M97FB

CPC CODE: A0616392

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Apply NT6M97FB DPP Field Upgrade Kit to upgrade a 5.25" disk DPP with disk size from 72-380MB and non-Turbo to a 3.5" disk DPP with a 1GB disk size and Turbo polling option.

REFERENCE DOCUMENTATION: MS8X48BD 01 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NT6M97FB EMA5-99-DPP-9 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 09 25	ECM 306 21	EC 006-21444 Introduces new 3.5" DPP and upgrade kits for gate 2.

The DPP UPGRD, NON-TURBO TO 1GB TURBO is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	EPROM (BCS21-29) CP	NT6M63CL		2	A,B	02	
REMOVE	Disk Drive I/F CP	NT6M66AC		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AL		2	A,B	11	
		or					
REMOVE	Disk Drive I/F CP	NT6M66AH		2	A,B	11	
REMOVE	Disk Crossover CP	NT6M72AE		2	A,B	15	
REMOVE	72MB Disk Drive Assy	NT6M72AA		2	A,B	21	
		or					
REMOVE	140MB Disk Drive	NT6M72BA		2	A,B	21	
		or					
REMOVE	380MB Disk Drive	NT6M72DA		2	A,B	21	
ADD	EPROM CP	NT6M63FE		2	A,B	02	AP
ADD	PCA 56K I/F	NT6M94AA		2	A,B	07	AP
ADD	SCSI I/F PCA	NT6M66CA		2	A,B	11	AP
ADD	SCSI X0VR PCA	NT6M93BA		2	A,B	15	AP
ADD	PCA 56K X0VR	NT6M48AA		1	B	16	AP
ADD	1GB Disk Drive Assy	NT6M72GA		2	A,B	21	AP
ADD	56K Conn CP	NT6M54AL		1	B	26	AP
ADD	SCSI X0VR-Drive Cab.	NT6M83AE		2	A,B		AP
ADD	56K X0VR Conn Cassy	NT6M85CA		1			AP
ADD	56K I/F X0VR A Cassy	NT6M73AJ		1			AP
ADD	56K I/F X0VR B Cassy	NT6M73AK		1			AP
ADD	DPP Nameplate	P0665413		1	A		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 NT6M97FB is ordered, these items are provided.

I/O MESSAGE CONTROLLER REPLACEMENT KIT

PEC CODE: NT1X61AY

CPC CODE: B0240861

RATING: Standard.

REPLACES: NT1X61AX

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The Input/Output Message Controller Replacement kit modifies the IOC Module NT1X61AD for DMS-Core applications.

REFERENCE DOCUMENTATION: MS1X61AG 01 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NT1X61AY EMA5-99-IOC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 07 08	ECM 613 22	ECD 018-42674 - Introduces NT1X61AY.

The I/O MESSAGE CONTROLLER REPLACEMENT KIT is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	I/O Mst Cont CP	NT1X62CA		1	X	2	AP
REMOVE	Des Label (NT1X62CA)	P0686038		1	X	2	AP
ADD	I/O Msg Cont CP	NT1X62CB		1	X	2	AP
ADD	Des Label (NT1X62CB)	P0745105		1	X	2	AP

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:

RULES:

AP 1) When PEC NT1X61AY is ordered, these items are provided.

STRATUM II REMOTE OSCILLATOR SHELF ISG UPGRADE KIT NT0X43XB

RATING: Check application date for NT0X43XB.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to the Stratum II Remote Oscillator Shelf (NT3X95AA) to provide Isolated System Ground (ISG).

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Stratum II Osc	NT3X16AA		2	XX	1,15	
REMOVE	Des Strip (NT3X95AA)	P0668444		1	XX	1	
ADD	Stratum II Osc (ISG)	NT3X16AB		2	XX	1,15	AP
ADD	Des Strip (NT3X95BA)	P0699935		1	XX	1	AP

NOTE:

- 1) "XX" in shelf position can be one of 04, 32.
- 2) Provide one (1) NT0X43XB Stratum II Remote Oscillator Shelf ISG Upgrade Kit when converting NT3X95AA Remote Oscillator Shelf to NT3X95AB Remote Oscillator Shelf.
- 3) Office Records shall be changed and maintained to agree with the Common Circuit Pack Fills and not the Common Circuit Pack Kits.
- 4) The order in which the items appear above is not necessarily the order in which they are to be removed from or added to the shelf.

STRATUM 2.5 REMOTE OSCILLATOR SHELF ISG UPGRADE KIT NT0X43XC

RATING: Check application date for NT0X43XC.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to the Stratum 2.5 Remote Oscillator Shelf (NT3X95BA) to provide Isolated System Ground (ISG).

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Stratum 2.5 Osc	NT3X16BA		2	XX	1,15	
REMOVE	Des Strip (NT3X95BA)	P0687681		1	XX	1	
ADD	Stratum 2.5 Osc ISG	NT3X16BB		2	XX	1,15	AP
ADD	Des Strip (NT3X95BB)	P0699936		1	XX	1	AP

NOTE:

- 1) "XX" in shelf position can be one of 04, 32.
- 2) Provide one (1) NT0X43XC Stratum 2.5 Remote Oscillator Shelf ISG Upgrade Kit when converting NT3X95BA Remote Oscillator Shelf to NT3X95BB Remote Oscillator Shelf.
- 3) Office Records shall be changed and maintained to agree with the Common Circuit Pack Fills and not the Common Circuit Pack Kits.
- 4) The order in which the items appear above is not necessarily the order in which they are to be removed from or added to the shelf.

97/12/09

EMA6

OFFICE ALARM VISUAL AND AUDIBLE EQPT CHAPTER

OFFICE ALARM VISUAL AND AUDIBLE EQPT CHAPTER

THIS PAGE IS INTENTIONALLY LEFT BLANK

97/12/09

OFFICE ALARM VISUAL AND AUDIBLE EQPT CHAPTER

EMA6-01-000

OFFICE ALARM VISUAL AND AUDIBLE EQUIPMEN OFFALARM

97/12/09

OFFICE ALARM VISUAL AND AUDIBLE EQUIPMENT

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This is not an MS but an equipment list and provisioning information for system-level visual and audible alarm equipment. This equipment is driven by the Office Alarm System (OAS) via the Alarm Cross-Connect field shelf.

REFERENCE DOCUMENTATION: N/A

The Office Alarm Visual and Audible Equipment is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Alarm Ctrl & Display Panel	NT0X63AA					RUL1
Alarm Display Panel	NT0X63AB					RUL2
Alm Ctrl & Dis Pnl w Com Aud	NT0X63AC					RUL1
Exit Alarm Display Panel	NT0X64AA					RUL3
Audible Alarm Panel	NT0X66AA					RUL4
* Trk Tst Centre Aud Alm Pnl	NT0X61AA					RUL5
Trk Tst Centre Aud Alm Pnl	NT0X61AB					RUL5
Aud Alm Cutoff Key Panel	NT5X86AB					RUL6
Central Alarm Display Panel	NT5X72AA					RUL7
Common Audible Alarm Panel	NT5X92AA					RUL8

FLAGS:

* MD. Replaced by NT0X61AB.

RULES:

- RUL1 1) Provide one (1) Alarm Control and Display Panel with Common Audible, NT0X63AC, per office only if all of the following ultimate conditions can be met:
- a) office is of limited area and a single audible tone (Sonalert beeper) can be heard from all locations,
 - b) unique audibles (different sounds for different alarm types) are not required,
 - c) alarm grouping with other floors is not required, and
 - d) local data loop switching is not required.
- Otherwise provide a maximum of one (1) Alarm Control and Display Panel, NT0X63AA.
- 2) This unit (NT0X63AA or NT0X63AC) functions as the main alarm control and display center and is located at the General Maintenance MAP.

- 3) A maximum of one (1) NT0X63AC is to be provided per remote office. A maximum of two (2) NT0X63AC can be provided if the NT5X92AB alarm extension panel is provided and mounted on the RSE/RME frame (see MS0X02AB, Section EMA13-01-000 for more information on NT5X92AB). NT0X63AC in this application is to be located at the remote site.
- RUL2 1) Provide as required to allow detailed alarm display at various co-located areas including cross-aisle locations. Maximum three per office.
- 2) Use in an office where a NT0X63AA is provided per RUL1 above.
- RUL3 1) Provide as required to allow exit alarm display at main exit doors on floors of a multi-floored office. Maximum four per office.
- 2) Maximum can be extended to 14 with the use of an Audible and Visual Alarm Extension Unit, NT5X85AA which is mounted on the MIS frame (see MS0X02AB, Section EMA13-01-000 for more information on NT5X85AA).
- 3) Locate at main exits on floors of a multi-floored office.
- 4) For remote offices, a maximum of five (5) NT0X64AA can be provided. Alarm extension panel, NT5X92AB must be provided and mounted on RSE/RME frame if at least one (1) NT0X64AA is provided for a remote office (see MS0X02AB, Section EMA13-01-000 for more information on NT5X92AB).
- RUL4 1) Provide a minimum of one per office where a NT0X63AA is provided per RUL1 above; otherwise do not provide. Maximum 2 per office.
- 2) Maximum can be extended to 6 with the use of an Audible and Visual Alarm Extension Unit, NT5X85AA (see also RUL3 above).
- 3) Locate on a convenient central wall at main MAP and other co-located areas.
- RUL5 1) Provide a minimum of one per DMS-200 Toll office. Maximum 3 per office.
- 2) This unit provides a TTC chime to signal incoming 101 Communications Test Line calls.

- 3) Locate at the Trunk Test Center (TTC) and other co-located areas.
- RUL6 1) Provide one (1) in conjunction with Audible Alarm Cutoff Control Unit, NT5X86AA, (see MS0X02AB, Section EMA13-01-000) when selective audible alarm cutoff control is required. Up to six (6) NT0X66AA panels are controlled.
- RUL7 1) The Central Alarm Display Panel, NT5X72AA, is not used in DMS offices. NT5X72AA mounts in the Alarm Center and is used to centralize alarms from various DMS offices.
- 2) Provide as required for the Alarm Center. Each Central Alarm Display Panel can service up to fifteen (15) DMS offices.
 - 3) One (1) NT5X72AB applique circuit must be provided with each NT5X72AA.
- RUL8 1) A Common Audible Alarm Panel, NT5X92AA, can be provided when an audible alarm is required at a location different from the NT0X63AC alarm within a remote office.
- 2) A maximum of ten (10) NT5X92AA may be provided per remote office.
 - 3) Alarm extension panel, NT5X92AB, must be provided and mounted on the RSE/RME frame if at least one (1) NT5X92AA is provided (see MS0X02AB Section EMA13-01-000 for more information on NT5X92AB).

97/12/09

EMA7

MERIDIAN BUSINESS SERVICES EQUIPMENT CHAPTER

THIS PAGE IS INTENTIONALLY LEFT BLANK

97/12/09

MERIDIAN BUSINESS SERVICES EQUIPMENT CHAPTER

EMA7-BSAC-1	BUSINESS SERVICE ATTENDANT CONSOLE	NT4X09BB
EMA7-BSAC-2	BUSINESS SERVICE ATTENDANT CONSOLE	NT4X09BC
EMA7-BSAC-3	SCOPEDIAL U.K. BUSINESS SERV ATTEND CONS	NT4X09BA
EMA7-DATA-1	DATA UNIT FAMILY	NT4X25
EMA7-P-PHONE-2	MDC MERIDIAN BUSINESS SETS (MBS)	P_PHONE
EMA7-POWER-1	PYLON POWER SUPPLY	PYLONPS
EMA7-VMX-1	VOICE MESSAGE EXCHANGE INTERFACE	T_VMX_IF

97/12/09

BUSINESS SERVICE ATTENDANT CONSOLE

NT4X09BB

RATING: STANDARD

ABBREVIATION NAME: BSAC

ENGINEERING DESCRIPTION: The Business Service Attendant Console is an optional feature of the Integrated Business Network (IBN). The NT4X09BB BSAC has English descriptions on the face plate.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

NT4X09BB EMA7-BSAC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 10 28	----- ECM 218 06	Previous history not available Replace the Plantronics Supra Monaural Headset (HS0552-1) and Supra Binaural Headset (HS0554-1) with the HSB552-1 ADD Market Application Information ADD Change History Table.

The Business Service Attendant Console is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Attend Cons-1200B Main CP	NT4X08BB					AP
Keyboard Assembly	NT4X0926					AP
KLD Assembly	NT4X0906					AP
Keybrd Faceplate Assy (ENG)	NT4X0928					AP
KLD Hooded Faceplate Assy	NT4X0912					AP
Cable Assembly	NT4X0916					AP
Designation Insert (English)	P0623522					AP
Console Stand Assembly	NT4X0914					AP
Headset Jack Assembly	NT4X0927					AP
Headset W/T Mark Std w/o Acc	QSR2F2					RUL1
Headset Std w/15 ft Cord	QSR2G1					RUL1
Headset Acc. Kit	QKP1A					RUL1
\$ Supra Monaural Headset	HS0552-1					RUL1
\$ Supra Binaural Headset	HS0554-1					RUL1
Supra Monaural Headset Black	HSB552-1					RUL1
Pylon KTS-3 Power Supply	KTS-3					RUL2

FLAGS:

| \$ MD. Replaced by HSB552-1.

NOTES: 1) NT4X09BB is a replacement for the NT4X09AG to clarify procedure for jumper between terminals 7 and 8 and db loss at 1KHz.

- 2) The BSAC comes equipped with an 8 foot connectorized cable assembly (cord), NT4X0916.
- 3) Provide one Business Service Attendant Console (NT4X09BB) for each customer site required.
- 4) The wiring beyond the eight (8) foot cable is to be engineered according to the CA4X09 drawing, Digital Multiplex Switching System DMS-100 Cabling Information For Business Service Attendant Console.
- 5) Customers who place merchandise orders will perform their own installation.

RULES:

- AP 1) When PEC NT4X09BB is ordered, these items are provided.
- 2) The console stand assembly, NT4X0914 is to be shipped loose.

- RUL1 1) Provide a minimum of one Head Set for each Attendant Console provided or as specified by the customer.
- 2) For Canadian offices, the QSR2F2, QSR2G1 or the QKP1A can be provided per customer requirements.
- 3) Currently the HSB552-1 headset is the only headset available for the BSAC. This Headset replaced the headset described below.

Note the following information is for historical purposes only. This equipment is MD'ed.

* For U.S. offices, Provide the Plantronics HS0552-1 Monaural headset as the default standard. This headset provides one eartip as opposed to the HS0554-1 which provides an eartip for each ear.

- RUL2 1) When the BSAC is installed less than 600 feet from the central office then it shall be powered from the MIS frame FSP using a 1 1/3 amp fuse, specify Fuse 12 of PIN 26 CONN (PWR & ALM).
- 2) For BSAC installations greater than 600 feet from the central office, provide the Pylon NF-3 Power system per Section EMA7-POWER-1.

BUSINESS SERVICE ATTENDANT CONSOLE

NT4X09BC

RATING: STANDARD

ABBREVIATION NAME: BSAC

ENGINEERING DESCRIPTION: The Business Service Attendant Console is an optional feature of the Integrated Business Network (IBN). The NT4X09BC BSAC has French descriptions on the face plate.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada

NT4X09BC EMA7-BSAC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 10 28	----- ECM 218 06	Previous history not available Replace the Plantronics Supra Monaural Headset (HS0552-1) and Supra Binaural Headset (HS0554-1) with the HSB552-1 ADD Market Application Information ADD Change History Table.

The Business Service Attendant Console is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Attend Cons-1200B Main CP	NT4X08BB					AP
Keyboard Assembly	NT4X0926					AP
KLD Assembly	NT4X0906					AP
Keybrd Faceplate Assy (FR)	NT4X0929					AP
KLD Hooded Faceplate Assy	NT4X0912					AP
Cable Assembly	NT4X0916					AP
Designation Insert (French)	P0631768					AP
Console Stand Assembly	NT4X0914					AP
Headset Jack Assembly	NT4X0927					AP
Headset W/T Mark Std w/o Acc	QSR2F2					RUL1
Headset Std w/15 ft Cord	QSR2G1					RUL1
Headset Acc. Kit	QKP1A					RUL1
\$ Supra Monaural Headset	HS0552-1					RUL1
\$ Supra Binaural Headset	HS0554-1					RUL1
Supra Monaural Headset Black	HSB552-1					RUL1
Pylon KTS-3 Power Supply	KTS-3					RUL2

FLAGS:

\$ MD. Replaced by HSB552-1.

NOTES:

- 1) NT4X09BC is a replacement for the NT4X09AH to clarify procedure for jumper between terminals 7 and 8 and db loss at 1KHz.
- 2) The BSAC comes equipped with an 8 foot connectorized cable assembly (cord), NT4X0916.
- 3) Provide one Business Service Attendant Console (NT4X09BC) for each customer site requirement.
- 4) The wiring beyond the eight (8) foot cable is to be engineered according to the CA4X09 drawing, Digital Multiplex Switching System DMS-100 Cabling Information For Business Service Attendant Console.
- 5) Customers who place merchandise orders will perform their own installation.

RULES:

- AP 1) When PEC NT4X09BC is ordered, these items are provided.
- 2) The console stand assembly, NT4X0914 is to be shipped loose.

- RUL1 1) Provide a minimum of one Head Set for each Attendant Console provided or as specified by the customer.
- 2) For Canadian offices, the QSR2F2, QSR2G1 or the QKP1A can be provided per customer requirements.
- 3) Currently the HSB552-1 headset is the only headset available for the BSAC. This Headset replaced the headset described below.

Note the following information is for historical purposes only. This equipment is MD'ed.

* For U.S. offices, Provide the Plantronics HS0552-1 Monaural headset as the default standard. This headset provides one eartip as opposed to the HS0554-1 which provides an eartip for each ear.

- RUL2 1) When the BSAC is installed less than 600 feet from the central office then it shall be powered from the MIS frame FSP using a 1 1/3 amp fuse, specify Fuse 12 of PIN 26 CONN (PWR & ALM).
- 2) For BSAC installations greater than 600 feet from the central office, provide the Pylon NF-3 Power System per section EMA7-POWER-1.

SCOPEDIAL U.K. BUSINESS SERV ATTENDANT CONSOLE NT4X09BA

RATING: Standard

ABBREVIATION NAME: BSAC

ENGINEERING DESCRIPTION: The Business Service Attendant Console is an optional feature of the Integrated Business Network (IBN). The NT4X09BA is used for Scopedial U.K. international applications.

REFERENCE DOCUMENTATION: N/A

The Scopedia U.K. Business Service Attendant Console is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Attend Cons Scopedia UK CP	NT4X08BA		1			AP
Keyboard Assembly	NT4X0904		1			AP
Keybrd Faceplate Assy (Eng)	NT4X0905		1			AP
KLD Assembly	NT4X0906		1			AP
KLD Hooded Faceplate Assy	NT4X0912		1			AP
Designation Insert (English)	P0623522		1			AP
Console Stand Assembly	NT4X0914		1			AP
Supra Monaural Headset	HS0552-1					RUL1
Supra Binaural Headset	HS0554-1					RUL1
Pylon KTS-3 Power Supply	KTS-3					RUL2

MD. Replaced by MH0530-1.

- NOTE:
- 1) The NT4X09BA is provisioned the same as domestic BSAC's.
 - 2) The console stand assembly NT4X0914 is to be shipped loose.
 - 3) Provide one Business Service Attendant Console (NT4X09BA) for each customer site requirement.
 - 4) The wiring beyond the six (6) foot cable is to be engineered according to the CA4X09 drawing, Digital Multiplex Switching System DMS-100 Cabling Information For Business Service Attendant Console.
 - 5) Customers who place merchandise orders will perform their own installation.

RULE:

AP	1) When PEC NT4X09BA is ordered, these items are provided.
	2) The BSAC comes equipped with a six foot connectorized cable assembly (cord) NT4X0903.
RUL1	1) Provide a minimum of one Head Set for each Attendant Console provided or as specified by the customer.

| 2) Provide the Plantronics HS0552-1 Monaural headset as the default standard. This headset provides one eartip as opposed to the HS0554-1 which provides an eartip for each ear.

RUL2 1) When the BSAC is installed less than 600 feet from the central office then it shall be powered from the MIS frame FSP using a 1-1/3 amp fuse, specify Fuse 12 of PIN 26 CONN (PWR & ALM).

2) For BSAC installations greater than 600 feet from the central office, provide the Pylon NF-3 Power System per Section EMA7-POWER-1.

DATA UNIT FAMILY

PEC CODE: NT4X25

CPC CODE: Not applicable

RATING: Standard

REPLACES: Not applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The Data Unit is a data communication interface between the DMS/SL-100 equipment and the user's terminal equipment.

REFERENCE DOCUMENTATION: NA

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: Samuel Zhou Dept. S646 (BRW)

MAIN CONTACT: Jerry Thong Dept. S646 (BRW)

NT4X25 EMA7-DATA-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 03	----- ECM 346 03	Previous history not available ET 12619 The NT4X25AE is rated MD and replaced by the NT4X25AG (dolphin grey) or the NT4X25AK (chameleon grey) ECD 006-17182 - Introduce Single Slot Data Line Card NT6X71BA.
93 09 24	ECM 346 04	

The DATA UNIT FAMILY is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EIA RS232C Interface						
# L.S. Data Unit	NT4X25AA					RUL1
L.S. Keyboard Dialed D.U.	NT4X25AX					RUL1
\$ L.S. Feature Enhanced D.U.	NT4X25AN					RUL2
Data Unit DTU Low Speed	NT4X25AT					RUL3
L.S. Rackmount Data Unit	NT4X25AD					RUL4
L.S. FE Elastomer Keybd DU	NT4X25AF					RUL5
L.S. FE Elastomer Keybd DU	NT4X25AH					RUL5
CCITT V.35 Interface						
% H.S. Data Unit	NT4X25AE					RUL1
% H.S. Feature Enhanced D.U.	NT4X25AP					RUL2
* Data Unit DTU High Speed	NT4X25AU					RUL6
H.S. Rackmount Data Unit	NT4X25AV					RUL7
H.S. FE Elastomer Keybd DU	NT4X25AG					RUL5
H.S. FE Elastomer Keybd DU	NT4X25AK					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 manufac-
tured and cannot be ordered.

FLAGS:

* Cancelled.

Rated MD.

\$ On new jobs replaced by NT4X25AF or NT4X25AH.

% On new jobs replaced by NT4X25AG or NT4X25AK.

NOTES:

- 1) The Data Unit is a stand-alone module, equipped to transmit and receive data. It provides keypad dialing to establish asynchronous or synchronous calls. A standard 500/2500 telephone set may operate normally via the Data Unit to a standard 500 set line card in the DMS-100 Family switch for making voice calls.
- 2) The Data Unit connects to the DMS-100 Family switch via a 4-conductor line cord which eventually terminates on a data line card.
- 3) The Data Unit interfaces with the Data Terminal Equipment (DTE) in one of two ways:

- a) EIA RS232 Interface - The RS232C interface is for connection to data terminal equipment (DTE) for serial binary data transmission. It utilizes a DB25 type mechanical connector, which is a 25 pin interface. It is recommended for operation at data transmission speeds up to 19.2 kbps.

The low speed data units NT4X25AA/AN/AT/AD/AF/AX have the RS232C interface.

- b) CCITT V.35 Interface - The V.35 Interface is for connection to DTE for serial binary synchronous data transmission. The interface is implemented on a DB25 mechanical connector or NT data units. An adapter cable is also provided to connect to terminals that have the 37 pin V.35 plug interface. The V.35 interface must be used for high speed synchronous data transmission up to 64 kbps.

The high speed data units NT4X25AE/AP/AU/AV/AG/AK have the V.35 interface.

- 4) For Canadian applications, the customer shall order the required quantity of data units on a merchandise order basis only (i.e. these units are not to be ordered on a COEO).

For U.S. applications, when data units are required in the central office, then these units can be provisioned on a COEO basis via the 110 Spec. Otherwise, the customer shall order the required quantity of units on a merchandise order basis.

RULES:

- AP 1) When PEC NT4X25 is ordered, these items are provided.
- RUL1 1) The NT4X25AA is the basic Low Speed Data Unit. The Low Speed Data Unit offers access to an extensive range of features plus a choice of various asynchronous and synchronous data transmission rates.
- 2) The NT4X25AX is the basic Low Speed Data Unit with keyboard dialing.
- 3) The NT4X25AG or the NT4X25AK are the basic High Speed Data Units.
- 4) The NT4X25AA/AX/AE/AG/AK is connected to the Data Line Card Type D, NT6X71AA/AB/BA.
- RUL2 1) The NT4X25AF or the NT4X25AH are the Low Speed Enhanced Data Units.
- 2) The NT4X25AG or the NT4X25AK are the High Speed Enhanced Data Units. It provides the same additional features to the basic high speed data unit (NT4X25AE/AP) as does the NT4X25AF or the NT4X25AH to the NT4X25AA/AX.

For more information, see the following:

NTP 297-2121-101 DMS-100 Family DATAPATH Data Unit
General Description

NTP 297-1101-003 General Feature Description NTX250AA -
DATAPATH

- 3) Both NT4X25AN and NT4X25AD must be connected to the enhanced data line card type D, NT6X71AB/BA in order to provide the Profile feature and Speed Restriction features. The Single Slot Data Line Card NT6X71BA replaces

NT6X71AA/AB for offices with BCS-32 or higher. Offices with BCS-31 or lower will continue to provision NT6X71AB.

- 4) The loop length range of the Enhanced Data Units to the DMS-100 switch is:

26 Awg - 4.0 Km
24 Awg - 5.5 Km
22 Awg - 5.7 Km

RUL3 1) TO BE COMPLETED AT A LATER DATE

RUL4 1) TO BE COMPLETED AT A LATER DATE

- RUL5 1) The NT4X25AF and NT4X25AH are the Low Speed Feature Enhanced Elastomer Keyboard Data Units.

The NT4X25AF has an Electronic Business Set (EBS) Grey plastic case whereas the NT4X25AH has a Chameleon Grey plastic case. Otherwise, both units are the same.

- 2) The NT4X25AG and NT4X25AK are the High Speed Feature Enhanced Elastomer Keyboard Data Units.

The NT4X25AG has an EBS Grey plastic case whereas the NT4X25AK has a Chameleon Grey plastic case. Otherwise, both units are the same.

- 3) NT4X25AF/AH and NT4X25AG/AK support all features of the Feature Enhanced Data Units (i.e. NT4X25AN and NT4X25AP) they are replacing.

For more information, see the following:

NTP 297-2121-101 DMS-100 Family DATAPATH Data Unit
General Description

NTP 297-1101-003 General Feature Description NTX250AA -
DATAPATH

- 4) Both NT4X25AF/AH and NT4X25AG/AK must be connected to the enhanced data line card type D, NT6X71AB/BA, in order to provide the profile feature and speed restriction features. The Single Slot Data Line Card NT6X71BA replaces NT6X71AA/AB for offices with BCS-32 or higher. Offices with BCS-31 or lower will continue to provision NT6X71AB.

- 5) Data units NT4X25AF/AH/AG/AK may coexist on a switch with other types of data units.

- RUL6 1) NT4X25AU is cancelled.

- RUL7 1) TO BE COMPLETED AT A LATER DATE

MDC MERIDIAN BUSINESS SETS (MBS)

P_PHONE

RATING: Standard. Replaces NT4X20.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The DMS-100 Meridian Business Set (MBS), designed to operate with Northern Telecom's Meridian Digital Centrex, provides subscribers with pushbutton access to a host of business features. The software assignable keys and the modular add-on units of the Business Set allow users to customize the set with the features that best suit their particular needs.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US

P_PHONE EMA7-P-PHONE-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 02 18	ECM 195 04	Introduce Meridian Business Sets (MBS)

The MDC Meridian Business Sets (MBS) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
M5009 Business Set (Black)	NT4X35JB					RUL1
M5009 Business Set (Ash)	NT4X35EB					RUL1
M5112 Business Set (Black)	NT4X31JB					RUL2
M5112 Business Set (Ash)	NT4X31EB					RUL2
M5209 Business Set (Black)	NT4X36JB					RUL3
M5209 Business Set (Ash)	NT4X36EB					RUL3
M5312 Business Set (Black)	NT4X37JB					RUL4
M5312 Business Set (Ash)	NT4X37EB					RUL4
M5212 Business Set (Black)	NT4X39JA					RUL5
M5212 Business Set (Ash)	NT4X39EA					RUL5
M518 Add-on Module (Black)	NT4X38JA					RUL6
M518 Add-on Module (Ash)	NT4X38EA					RUL6
M536 Add-on Module (Black)	NT4X34JA					RUL7
M536 Add-on Module (Ash)	NT4X34EA					RUL7

FLAGS:

NOTES:

- 1) The Teladapt connector is a connectorized jack (at the wall outlet side).
- 2) Line Card Type C, NT6X21

The Line Card Type C (NT6X21) is required to support the MBS.
- 3) The Business Set operates over a 2-wire (single pair) unloaded loop connected to a Line Card Type C located in either a DMS-100/MDC host office or a DMS-100 remote.

Each loop (line card) can support a Business Set having the capability of carrying a maximum of three 18 Button Add-on modules, OR one 36 Button Add-on.
- 4) Meridian Business Sets shall be provided on Merchandise Orders only for Canadian jobs.

RULES:

RUL1 1) The M5009 Business Set is equipped with the following:

- A standard 12-button telephone key pad
- Nine assignable feature keys with associated Liquid Crystal Display (LCD) indicators
- Dedicated volume up/down rocker key
- Dedicated hold feature key
- Dedicated release feature key

The M5009 Business Set requires a minimum of BCS-20.

RUL2 1) The M5112 Business Set has all the features of the M5009 Business Set plus a handsfree capability. There are 12 feature keys of which 2 are used for handsfree and mute.

The M5112 Business Set requires a minimum of BCS-21.

RUL3 1) The M5209 Business Set has all the features of the M5009 Business Set plus a 48 character alphanumeric digit LCD display. The display, made up of two lines of 24 characters centered above the key pad, is controlled by an internal microprocessor and shows information such as the following:

- Called Number
- Calling Number
- Time
- Feature Programming

The M5209 Business Set requires a minimum of BCS-24.

RUL4 1) The M5312 Business Set has all the features of the M5009 Business Set plus a handsfree capability. There are 12 feature keys of which 2 are used for handsfree and mute. The M5312 Business Set also has a 48 character alphanumeric digit LCD display. The display, made up of two lines of 24 characters centered above the key pad, is controlled by an internal microprocessor and shows information such as the following:

- Called Number
- Calling Number
- Time

- Feature Programming

The M5312 Business Set requires a minimum of BCS-24.

- RUL5 1) The M5212 ACD Business Set has all the features of the M5009 business set with 12 feature keys and it has a 48 character alphanumeric digit LCD display. The display, made up of two lines of 24 characters centered above the key pad, is controlled by an internal microprocessor and shows information such as the following:

- Called Number
- Calling Number
- Time
- Feature Programming

The M5212 also provides support for headset capability.

- RUL6 1) Up to three (3) M518, 18 Button Add-on Module, can be used with each business set.

The M518 Add-on Module requires a minimum of BCS-26.

- RUL7 1) Up to one (1) M536, 36 Button Add-on Module, can be used with each business set.

The M536 Add-on Module requires a minimum of BCS-21.

PYLON POWER SUPPLY

PYLONPS

RATING: Standard

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This is not an MS but an equipment list and provisioning information for the Pylon Power Supply required for the Business Service Attendant Console.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada

PYLONPS EMA7-POWER-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 10 28	----- ECM 218 06	Previous history not available ADD Market Application Information ADD Change History Table.

The Pylon Power Supply is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Pylon KTS-3 Power Supply	PYLON-KTS-3PS					RUL1
Pylon NF-3 I/F Unit	PYLON-NF-3-INTF					RUL1
Pylon LB-3 Batt. Holder	PYLON-LB-3-BATT					RUL1
Gates X Cells #0800-0008	GATES-0800-0008					RUL2

FLAGS:

NOTES:

- 1) Customers who place merchandise orders will perform their own installation.

RULES:

- AP 1) When PEC PYLONPS is ordered, these items are provided.
- RUL1 1) If the Business Service Attendant Console is more than 600 feet from the power source or fuse, a local 120V AC/-48V DC power supply unit must be provided at the Business Service Attendant Console site. The power supply unit to be used is a Pylon system.
- 2) The Pylon Power Supply unit can provide power to up to two (2) Business Service Attendant Consoles.
- 3) The Business Service Attendant Console power system with battery back up is to be ordered as the Pylon NF-3 System. This consists of the following:
- a) Pylon KTS-3 Power Supply
 - b) Pylon NF-3 Interface Unit
 - c) Pylon LB-3 Battery Holder (less batteries)

The optional battery back up is to be used in conjunction with the power supply, in case of AC power failures.

- 4) The Business Service Attendant Console power system without battery back up shall consist of the following:

- a) Pylon KTS-3 Power Supply
- b) Pylon NF-3 Interface Unit

- 5) Pylon will deliver the Pylon NF-3 System in two (2) separate packages.

One package will contain the Pylon KTS-3 power supply and the Pylon NF-3 interface unit assembled together with the interconnections. It will also include the two (2) leads for connections to the batteries.

The second package will contain the Pylon LB-3 battery holder (less batteries) and three (3) wire straps for the battery interconnections.

- 6) Both the power system with battery back up and the power system without battery back up can be installed on the wall or on a 19" or 23" relay rack. The former power system will require 17.5" of mounting space on the relay rack, the latter will require 9" of mounting space on the relay rack.

- 7) Pylon will provide with each Pylon NF-3 System the following documents:

- a) Instruction manuals for: the KTS-3 No. 1300-110
 the NF-3 No. 1300-108
 the LB-3 No. 1300-109

- b) NF-3 System Assembly drawings

- c) NF-3 System Installation instructions

The instruction manuals include the circuit schematics and the outline dimensions.

- 8) The input to the power supply is from a regular AC outlet. The power supply comes equipped with a six (6) foot AC cord.

- 9) The Pylon NF-3 interface unit comes equipped with alarms and fuses.

- RUL2 1) For the optional battery back up, the following type of battery has been selected to be used with the Pylon NF-3 System:

a) Quantity of four (4) Gates X Cells No. 0800-0008.

The above type meets the required specifications and fits into the Pylon battery holder without any modification.

The choice of the battery type will be decided by the customer.

VOICE MESSAGE EXCHANGE INTERFACE

RATING: Standard

ABBREVIATION NAME: VMX

ENGINEERING DESCRIPTION: This is not an MS but an equipment list and provisioning information for the Voice Message Exchange (VMX) system.

REFERENCE DOCUMENTATION: N/A

The Voice Message Exchange Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
VMX Interface						RUL1
2-Way, 4-Wire E&M Trunk	AR					RUL2
Scan Card	NT0X10AA					RUL3

- Note:
- 1) The VMX is a system manufactured by the VMX Corporation for storing spoken messages and providing the called party with the ability of playing these messages back at a later time. Voice messages are sent, stored and retrieved using a microprocessor which is interfaced to the host DMS-100 through 2-way, 4-wire E&M trunks.
 - 2) The NTX411AA VMX Interface package provides an interface between the DMS-100 and a Voice Message Exchange (VMX) system.
 - 3) Note that the VMX Feature is only available to IBN subscribers.

RULE:

- RUL1 1) A VMX system is available in 8, 16, 24, 32, 48, or 64 voice port configurations. Each voice port is bidirectional and interfaces with a 4-wire E&M NT2X72AA trunk circuit or a digital trunk circuit through a channel bank.
- RUL2 1) Provide one (1) 4-wire E&M NT2X72AA trunk circuit or digital trunk circuit through a channel bank for each voice port. In addition to the analog/digital interface trunk circuits, an equivalent number of digital loop-around trunks (i.e. two (2) physical trunk circuits per loop-around trunk) are required to isolate the VMX calls to only the IBN trunk group, eliminating any VMX interaction directly with POTS.
- RUL3 1) The VMX system when configured with an External Alarm interface provides major and minor alarm indications by a relay contact closure. The Engineer must ensure that two (2) NT0X10AA Scan Points are available in the DMS for VMX alarm detection.

97/12/09

EMA8

OPERATOR EQUIPMENT CHAPTER ALL

OPERATOR EQUIPMENT CHAPTER ALL

THIS PAGE IS INTENTIONALLY LEFT BLANK

97/12/09

OPERATOR EQUIPMENT CHAPTER ALL

EMA8-ITOPS4-2	ITOPS-PC OPERATOR POSITION KIT	NTZ000AP
EMA8-ITOPS4-3	ITOPS-PC IN-CHARGE POSITION KIT	NTZ000AU
EMA8-ITOPS4-7	ITOPS-PC FRENCH OPERATOR POSITION KIT	NTZ000AV
EMA8-ITOPS4-8	ITOPS-PC FRENCH IN-CHARGE POSITION KIT	NTZ000AW
EMA8-NACD-1	NACD SYSTEM	NTMX96AA
EMA8-TUTOR-1	TOPS TUTOR 3B TRAINING ADAPTOR	NT4X77AA
EMA8-03-001	TOPS IWS ISA POSITION	IWS_PLATFORM
EMA8-98-000	PROVISIONABLE KEYCAPS	MS4X76AE
EMA8-99-TOPSMP	IBM-DA KEYBOARD PC KIT	NT0M36AK

97/12/09

ITOPS-PC ENGLISH OPERATOR POSITION KIT

PEC CODE: NTZ000AP

CPC CODE: A0634300

RATING: Standard

REPLACES: NT4X71DD

REPLACED BY: Not Applicable

ABBREVIATION NAME: ITOPS

| ENGINEERING DESCRIPTION: ITOPS is an international version of the standard TOPS hardware. Order this kit via the Rochester Directory and Operator Services Division at (716) 482-5000. This section does not contain the PC and monitor which should be ordered in country.

| REFERENCE DOCUMENTATION: SLZ000AP 00 02

MARKETS: Applicable markets:

Asia/Pacific
CALA
Europe

| ISSUE AUTHOR: NTI: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZ000AP EMA8-ITOPS4-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- --	--- --- --	Previous history not available
95 03 17	ECM 361 07	Introduce new ITOPS-PC position.
95 04 05	ECM 361 08	Replace codes for chair provisioning.
95 08 14	ECM 361 10	Correct quantity of plug boxes and cables.
95 12 22	ECM 361 12	Change Y cable PEC, delete headset recommendation and remove cable termination kit.
96 07 08	ECM 361 13	Introduction of French Keyboard positions EC 024-96329 and MD TOPS 04 furniture.

The ITOPS-PC ENGLISH OPERATOR POSITION KIT is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Bell 108-3M Standalone Modem	NTAR13AB		1			AP
Custom Audio/Modem Cable	A0647520		1			AP
Op. Hdset. Plugbox Assy.	NTAR13AC		2			AP
PC to Modem Cable	A0385639		1			AP
PRS-500AT Audio Card	NTAR13AD		1			AP
Keyboard, Operator Position	NTAR13AK		1			AP
# Chair	AR					RUL1
# TOPS-04 Adjust. Furniture	NT4X78AA					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 number of ITOPS-PC Operator Positions will be determined by the customer.

RULES:

AP 1) When PEC NTZ000AP is ordered, these items are provided.

RUL1 1) All chairs have been Manufactured Discontinued with no replacements.

RUL3 1) TOPS 04 Adjustable Furniture have been Manufacture Discontinued with no replacements.

ITOPS-PC ENGLISH IN-CHARGE POSITION KIT

PEC CODE: NTZ000AU

CPC CODE: A0634301

RATING: Standard

REPLACES: NT4X71DD

REPLACED BY: Not Applicable

ABBREVIATION NAME: ITOPS

| ENGINEERING DESCRIPTION: ITOPS is an international version of the standard TOPS hardware. Order this kit via the Rochester Directory and Operator Services Division at (716) 482-5000. This section does not contain the PC and monitor which should be ordered in country.

| REFERENCE DOCUMENTATION: SLZ000AU 00 02

MARKETS: Applicable markets:

Asia/Pacific
CALA
Europe

| ISSUE AUTHOR: NTI: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZ000AU EMA8-ITOPS4-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-- -- --	--- --- --	Previous history not available
95 03 17	ECM 361 07	Introduce new ITOPS-PC position.
95 04 05	ECM 361 08	Replace codes for chair provisioning.
95 08 14	ECM 361 10	Correct quantity of plug boxes and cables.
95 12 22	ECM 361 12	Change Y cable PEC, delete headset recommendation and remove cable termination kit.
96 07 08	ECM 361 13	Introduction of French Keyboard positions EC 024-96329 and MD TOPS 04 furniture.

The ITOPS-PC ENGLISH IN-CHARGE POSITION KIT is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Bell 108-3M Standalone Modem	NTAR13AB		1			AP
Custom Audio/Modem Cable	A0647520		1			AP
Op. Hdset. Plugbox Assy.	NTAR13AC		2			AP
PC to Modem Cable	A0385639		1			AP
PRS-500AT Audio Card	NTAR13AD		1			AP
Keyboard, In-charge Position	NTAR13AJ		1			AP
# Chair	AR					RUL1
# TOPS-04 Adjust. Furniture	NT4X78AA					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 number of ITOPS-PC In-Charge Positions will be determined by the customer.

RULES:

- AP 1) When PEC NTZ000AU is ordered, these items are provided.

- RUL1 1) All chairs have been Manufacture Discontinued with no replacements.

RUL3 1) TOPS 04 Adjustable Furniture have been Manufacture Discontinued with no replacements.

ITOPS-PC FRENCH OPERATOR POSITION KIT

PEC CODE: NTZ000AV

| CPC CODE: A0656215

| RATING: Standard.

| REPLACES: Not Applicable

| REPLACED BY: Not Applicable

| ABBREVIATION NAME: ITOPS

| ENGINEERING DESCRIPTION: ITOPS is an international version of the standard TOPS hardware. Order this kit via the Rochester Directory and Operator Services Division at (716) 482-5000. This section does not contain the PC and monitor which should be ordered in country.

| REFERENCE DOCUMENTATION: SLZ000AV 00 01

| MARKETS: Applicable markets:

| Europe
| Asia/Pacific
| CALA

| ISSUE AUTHOR: Richard Mathias Dept. 3471 (PPK)

| MAIN CONTACT: Richard Mathias Dept. 3471 (PPK)

NTZ000AV EMA8-ITOPS4-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 07 08	ECM 361 13	Introduction of French Keyboard positions EC 024-96329 and MD TOPS 04 furniture.

The ITOPS-PC FRENCH OPERATOR POSITION KIT is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Bell 108-3M Standalone Modem	NTAR13AB		1			AP
Custom Audio/Modem Cable	A0647520		1			AP
Op. Hdset. Plugbox Assy.	NTAR13AC		2			AP
PC to Modem Cable	A0385639		1			AP
PRS-500AT Audio Card	NTAR13AD		1			AP
Keyboard, French Operator Position	NTAR13AM		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAR13AM	STD	-----

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 NTZ000AV is ordered, these items are provided.

ITOPS-PC FRENCH IN-CHARGE POSITION KIT

PEC CODE: NTZ000AW

| CPC CODE: A0656216

| RATING: Standard.

| REPLACES: Not Applicable

| REPLACED BY: Not Applicable

| ABBREVIATION NAME: ITOPS

| ENGINEERING DESCRIPTION: ITOPS is an international version of the standard TOPS hardware. Order this kit via the Rochester Directory and Operator Services Division at (716) 482-5000. This section does not contain the PC and monitor which should be ordered in country.

| REFERENCE DOCUMENTATION: SLZ000AW 00 01

| MARKETS: Applicable markets:

| Europe
| Asia/Pacific
| CALA

| ISSUE AUTHOR: Richard Mathias Dept. 3471 (PPK)

| MAIN CONTACT: Richard Mathias Dept. 3471 (PPK)

NTZ000AW EMA8-ITOPS4-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 07 08	ECM 361 13	Introduction of French Keyboard positions EC 024-96329 and MD TOPS 04 furniture.

The ITOPS-PC FRENCH IN-CHARGE POSITION KIT is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Bell 108-3M Standalone Modem	NTAR13AB		1			AP
Custom Audio/Modem Cable	A0647520		1			AP
Op. Hdset. Plugbox Assy.	NTAR13AC		2			AP
PC to Modem Cable	A0385639		1			AP
PRS-500AT Audio Card	NTAR13AD		1			AP
Keyboard, French In-Charge Position	NTAR13AL		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAR13AL	STD	-----

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 NTZ000AW is ordered, these items are provided.

NACD SYSTEM

PEC CODE: NTMX96AA

CPC CODE: Not applicable

RATING: Standard

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: Not applicable

ENGINEERING DESCRIPTION: NACD System is not an orderable code. It is a "pointer" to all the components of an RT-1000 system.

The NACD RT-1000 System is a MIS (Management Information System) for NACD (Network Automatic Call Distribution). NACD is a network of MACDs (Meridian Automatic Call Distributor) and/or MACD Servers.

The non-DMS Central Office portions of this product are NOT to be ordered through NTACCESS/CADES, but will be ordered through a Purchase Planner.

REFERENCE DOCUMENTATION: NACD MIS / RT-1000 Product Specification
MSMX96AA 00 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

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

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

NTMX96AA EMA8-NACD-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 08	ECM 549 01	Initial release of NACD RT-1000 ECM

The NACD System is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
repeat						
RULE						
RT-100 HP Host Servers	NTMX96AP		1	1		RUL1
Cbl, FDDI 1M	C3550137					RUL1
Cbl, FDDI 3M	A0605107					RUL1
Cbl, FDDI 6M	A0605106					RUL1
Cbl, FDDI 10M	C3550136					RUL1
Add-on RDMS Disk Array	NTMX96AK					RUL1
Add-on RTS NFS Disk	NTMX96AQ					RUL1
Bud Series Cabinet	C3550132					RUL2
Xyplex Chassis Assembly	NTMX96AF		2	2, 3		RUL3
Cbl, RJ-12/RJ-25 Modem	A0384680					RUL3
X.25 Gateway CP	A0384253					RUL4
Cbl,DB-25M/DB-25F 15ft	A0384685					RUL4
Modem, Dowty Desk Top 9.6KB	A0351641					RUL4
EMPC CP	NT1X89BA					RUL4
EMPC Cable	NTOX26LY					RUL4
8-Port Asynch CP	A0384678					RUL5
Cbl, Telco/8 RS232, 10ft	A0384683					RUL5
Cbl, Extension 50M/50F, 50ft	A0384684					RUL5
Cbl,DB-25F/DB-9F N Modem 6ft	A0371730					RUL5
Cbl,DB-25F/DB-9F N Modem 10ft	A0371734					RUL5
Cbl,DB-25F/DB-9F N Modem 25ft	A0365566					RUL5
Cbl,DB-25F/DB-9F N Modem 50ft	A0365567					RUL5
Modem Telebit Desk Top 19.2	C3550140					RUL5
CBL,DB-25M/DB-9F,STRA 50ft	A0365571					RUL5
CBL,DB-25M/DB-9F,STRA 25ft	A0333534					RUL5
CBL,DB-25M/DB-9F,STRA 10ft	A0333533					RUL5
CBL,DB-25M/DB-9F,STRA 2ft	A0371733					RUL5
Cbl,DB-25F/DB-25M,Strt,50ft	A0365573					RUL5
Cbl,DB-25F/DB-25M,Strt,25ft	A0365572					RUL5
Cbl,DB-25F/DB-25M,Strt,10ft	A0371732					RUL5
Cbl,DB-25F/DB-25M,Strt, 6ft	A0371731					RUL5
Cbl,50M TELCO/8 RS232F 10ft	A0384682					RUL5
Null Modem Adapter, F-F	A0610059					RUL5
Modem Shelf GDC 117VAC	A0601477					RUL5
Modem GDC Desk Top 914ADR	A0600061					RUL5
Modem GDC Rack Mount 914ADR	A0601468					RUL5
DSU GDC Desk Top 500A (1)	A0386041					RUL5
DSU GDC Rack Mount 500A (1)	A0601469					RUL5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RT-1000 486 Remote Terminal	NTMX96AM					RUL5
RT-1000 486 Controller	NTMX96AL					RUL5
RT-1000 486 Remote Terminal	NTMX96AM					RUL6
Cbl,DB-25F/DB-9F N Modem 6ft	A0371730					RUL6
Cbl,DB-25F/DB-9F N Modem 10ft	A0371734					RUL6
Cbl,DB-25F/DB-9F N Modem 25ft	A0365566					RUL6
Cbl,DB-25F/DB-9F N Modem 50ft	A0365567					RUL6
GDC Desk Top 914ADR Modem	A0600061					RUL6
GDC Desk Top 500A DSU (1)	A0386041					RUL6
Cbl,DB-25F/DB-25M,Strt,50ft	A0365573					RUL6
Cbl,DB-25F/DB-25M,Strt,25ft	A0365572					RUL6
Cbl,DB-25F/DB-25M,Strt,10ft	A0371732					RUL6
Cbl,DB-25F/DB-25M,Strt, 6ft	A0371731					RUL6
Modem Telebit Desk Top 19.2	C3550140					RUL6
Cbl,DB-25M/DB-9F,Strt,50ft	A0365571					RUL6
Cbl,DB-25M/DB-9F,Strt,25ft	A0333534					RUL6
Cbl,DB-25M/DB-9F,Strt,10ft	A0333533					RUL6
Cbl,DB-25M/DB-9F,Strt, 2ft	A0371733					RUL6
Line Driver	A0322496					RUL6
GDC Desk Top 914ADR Modem	A0600061					RUL6
GDC Desk Top 500A DSU (1)	A0386041					RUL6
Printer, Epson FX-870	A0386016					RUL7
Printer Cable, 10 ft	A0333529					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 manufac-
tured and cannot be ordered.

NOTES:

- 1) GDC Desk Top/Rack Mount 500A DSU is the Preferred Equipment

RULES:

- RUL1 1) The NACD System equipment is always required. The (4) Modems Telebit Desk Top 19.2 C3550140 included connect to the HP Servers, one to each Server. The FDDI Concentrator is a shelf assembly that goes at the bottom of the provisioned, or customer supplied, cabinet. The 1M FDDI Cable connects to the assembly to provide loop back. Additional FDDI cables are required but since they have optional lengths, they are provisioned separately.
- 2) Always provision (3) additional FDDI cables to connect the FDDI Concentrator to the HP RTDB and Terminal Servers (length determined by customer requirements from the options listed below).

The available cable lengths to connect the FDDI Concentrator to the HP RTDB and (2) HP Terminal Servers are:

Cbl, FDDI 1M	C3550137
Cbl, FDDI 3M	A0605107
Cbl, FDDI 6M	A0605106
Cbl, FDDI 10M	C3550136

- 3 One Disk Array is always provided with the RDBMS subsystem. For RT-1000 Systems running 30.2 and below this is the only Array allowed.

Systems running 32.0 or above may provision additional Disk Arrays. If more than 5.4Gb of RDBMS storage is required (disk usage equal to or greater than 75%), additional Disk Arrays must be provisioned, in 5.4Gb increments. A maximum of (6) Arrays may be provisioned, in addition to the (1) always provided. Refer to System Engineering Bulletin for disk space calculation method.

- 4 One RTS NFS Disk is always provided with the HP RTDB Server. If more than 1.3GB of RTDB storage is required (disk usage equal to or greater than 75%), additional Disks must be provisioned, in 1.3GB increments. A maximum of 2 Disks may be provisioned, in addition to the (1) always

provided. Refer to System Engineering Bulletin for disk space calculation method.

RUL2 1 The Xyplex Chassis Assemblies and Modem Shelves must be mounted in a 19" cabinet. Provision (1) Bud Series Cabinet C3550132 unless the customer wishes to use their own cabinet.

2 If Cabinet is ordered, install equipment from bottom to top as follows:

Item	Item Height
Top of Cabinet	
Rack Mount Modem Shelf	7.0" If required (see RUL5)
Rack Mount Modem Shelf	7.0" If required (see RUL5)
Rack Mount Modem Shelf	7.0" If required (see RUL5)
Stand Alone Modem Shelf	14.0"
XYPLEX X.25 Gateway	10.5"
XYPLEX Comm. Server	10.5"
FDDI Concentrator	12.5"

RUL3 1 Two of these Xyplex Chassis Assemblies are required for each RT-1000. One is used as an X.25 Gateway, the other as a Communications Server. They go in the provisioned, or customer supplied, cabinet and should be located immediately above the FDDI Concentrator, with the Comm. Server Chassis between the FDDI and X.25 Gateway Chassis.

2 If it is necessary to manually configure the Comm. Server, the necessary cables are always included with every X.25 CP to directly connect a configuration terminal. If it is necessary to connect a configuration terminal remotely using modems, provision (1) Modem Cbl, RJ-12/RJ-25 A0384680. If a modem connection is required, modems must be supplied by the customer. The terminal is a temporary item supplied by the installation or maintenance personnel, if needed, since the Chassis are automatically configured by the software.

RUL4 1 In the XYPLEX X.25 Gateway Chassis, always provision (1) X.25 Gateway CP, (1) Modem, Dowty Desk Top 9.6KB, and (1) Cbl, DB-25M/DB-25F 15ft for each link required to an ACD node (MACD or MACD Server) to be installed .

2 In the DMS-100, for each link provision (1) NT1X89BA and (1) Modem, (1) Dowty Desk Top 9.6KB, and (1) EMPC Cable NTOX26LY.

A minimum of one link is required for each ACD node in the system. The capacity of a single link is six calls per second. If the traffic from any single ACD node will exceed six calls per second, an additional link (or links) must be provisioned for that node. The maximum number of links in an RT-1000 system is twelve. Total calls for an RT-1000 system must not exceed fifty-four per second.

- RUL5 1 The 8-port asynch CPs are installed in the Xyplex Comm. Server Chassis. Provision 8-Port Asynch CPs as follows. # 8-Port Asynch CP = $(1 + ((\# \text{ of Controllers} - 4) / 8))$. One card is always required. The first 4 ports of this card are reserved for login terminals. Since there are 8 ports per card, this leaves four ports which may be used to connect Controllers on this first card.

NOTE: A maximum of (8) 8-Port Asynch CPs may be provisioned even though 15 slots are available in the Comm. Server chassis.

- 2 For each 8-Port Asynch CP provisioned provision (1) Cbl, Telco/8 RS232, 10ft A0384683 unless there are more than (8) directly connected Controllers. In that event, provision (1) Cbl, Telco/8 RS232, 10ft A0384682 for each group of (8) directly connected Controllers. To connect directly connected Controllers in any quantity beside an increment of 8 (i.e., 8, 16, 24...), provision the A0384683 cable.
- 3 If ALL of the devices connected to one of the Telco/8 RS232 "Octopus" cables are more than 10ft from the Comm. Server, and located in the same general area, provision (1) Cbl, Extension 50M/50F, 50ft A0384684 for each cable thus configured. This single extension cable will eliminate the need for eight separate extension cable, one for each "arm" of the Octopus cable.

Between (0) and (4) Login terminals, one direct and up to three remote, and (1) to (60) Controllers, direct or remote, may be connected to the Comm. Server. At least (1) Controller must be connected. These devices are connected to the 8-Port Asynch CPs in the Comm. Server.

- 4 If a direct connect Login Terminal, used for maintenance, is requested, provision (1) Cbl,DB-25F/DB-9F N Modem (length determined by customer requirements from the options listed below) and (1) Remote Terminal NTMX96AM. This cable must be connected to the Telco/8 RS232 10ft cable connected to port one of the first (always required) 8-Port Asynch CP.

The available cable lengths to connect the Comm. Server to a Login Terminal are:

Cbl,DB-25F/DB-9F N Modem 6ft A0371730
Cbl,DB-25F/DB-9F N Modem 10ft A0371734
Cbl,DB-25F/DB-9F N Modem 25ft A0365566
Cbl,DB-25F/DB-9F N Modem 50ft A0365567

- 5 If remote Login Terminals, used for maintenance, are requested, provision, for each Terminal - max. of (3), (2) Modem Telebit Desk Top 19.2 C3550140, (1) Cbl,DB-25M/DB-9F,STRA THRU (length determined by customer requirements from the options listed below) and (1) Remote Terminal NTMX96AM.

The available cable lengths to connect a Remote Login Terminal to a remote desk top maintenance modem are:

CBL,DB-25M/DB-9F,STRA THRU,50FT A0365571
CBL,DB-25M/DB-9F,STRA THRU,25FT A0333534
CBL,DB-25M/DB-9F,STRA THRU,10FT A0333533
CBL,DB-25M/DB-9F,STRA THRU, 2FT A0371733

The Comm. Server side modem of the remote Login Terminal modem pair must be connected to the Telco/8 RS232 10ft cables connected to ports two through four of the first (always required) 8-Port Asynch CP.

- 6 If the Comm. Server side remote Login Terminal modem is more than 10ft from the Comm. Server, provision (1) Cbl,DB-25F/DB-25M,Strt (between the modem and the Cbl, Telco/8 RS232) for each modem. (Length determined by customer requirements from the options listed below).

The available cable lengths to connect the Comm. Server to a local desk top maintenance modem are:

Cbl,DB-25F/DB-25M,Strt,50ft A0365573
Cbl,DB-25F/DB-25M,Strt,25ft A0365572
Cbl,DB-25F/DB-25M,Strt,10ft A0371732
Cbl,DB-25F/DB-25M,Strt, 6ft A0371731

- 7 For individual Controllers, if any, to be directly connected to the Comm. Server, provision (1) Null Modem Adapter, F-F, A0610059 and (1) RT-1000 486 Controller NTMX96AL. This adapter connects to a Telco/8 RS232 10ft cable, A0384683, connected to an 8- Port Asynch CP. A maximum of 60 Controllers, regardless of how they are connected, may be connected to the Comm. Server.

If increments of (8) Controllers are to be directly connected to the Comm. Server, provision only the Controllers. Cbl,50M TELCO/8 RS232F 10ft A0384682 is used to directly connect eight Controllers. Only directly connected Controllers may be connected to this cable and the Null Modem Adapter, used to directly connect individual Controllers, is not required.

- 8 For each Controller, if any, to be connected via modems or DSUs to the Comm. Server (2) modem/DSUs, (1) Cbl,DB-25F/DB-25M,Strt, and (1) Controller is required. Additional cables may be required, depending on the distance of the local devices from the Comm. Server. The following rules detail these requirements.

Provision (1) of the following devices, used at the Comm. Server (local) side, for each Controller. A combination of devices may be used but they must be matched to similar devices (modem or DSU) at the far end. A maximum of 60 Controllers, regardless of how they are connected, may be connected to the Comm. Server.

DSU GDC Desk Top 500A *	A0386041
DSU GDC Rack Mount 500A *	A0601469
Modem GDC Desk Top 914ADR	A0600061
Modem GDC Rack Mount 914ADR	A0601468

* GDC Desk Top/Rack Mount 500A DSU is Preferred

Modem shelves may not be required if desk top modems are used. If rack mount versions of these devices are used they must be placed in a modem shelf. Unless the customer supplies their own modem shelves, provision (1) Modem Shelf GDC 117VAC A0601477 for each (16) rack mounted modem/DSUs. The devices may be placed anywhere in the shelf. If the Bud Series Cabinet was provisioned these modem shelves must be provisioned if rack mounted modem/DSUs are used. The customer may not supply their own shelves for use in this cabinet.

If more than (48) rack mounted modem/DSUs are provisioned a second Bud Series Cabinet must be provisioned, unless the customer uses their own cabinets and shelves. A maximum of (60) modems may be provisioned, one for each Controller. Only (3) modem shelves will fit in the first Bud cabinet.

If a modem/DSU is greater than 10 feet away from the Comm. Server, provision (1) Cbl,DB-25F/DB-25M,Strt (between the modem/DSU and the Cbl, Telco/8 RS232) for each modem/DSU.

(Length determined by customer requirements from the options listed below).

The available cable lengths to connect the Comm. Server to a local desk top maintenance modem are:

Cbl,DB-25F/DB-25M,Strt,50ft	A0365573
Cbl,DB-25F/DB-25M,Strt,25ft	A0365572
Cbl,DB-25F/DB-25M,Strt,10ft	A0371732
Cbl,DB-25F/DB-25M,Strt, 6ft	A0371731

For each modem/DSU provisioned at the Comm. Server side, provision (1) desk top version of the modem (GDC Desk Top 914ADR A0600061) or DSU (GDC Desk Top 500A A0386041), (1) Cbl,DB-25F/DB-25M,Strt, and (1) 486 Controller NTMX96AL. The modem/DSU must match the device type at the far end (e.i. a modem must connect to a modem, DSU to DSU). Length of the cable is determined by customer requirements from the options listed below. A maximum of 60 Controllers, regardless of how they are connected, may be connected to the Comm. Server.

The available cable lengths to connect a Controller to a desk top modem/DSU are:

Cbl,DB-25F/DB-25M,Strt,50ft	A0365573
Cbl,DB-25F/DB-25M,Strt,25ft	A0365572
Cbl,DB-25F/DB-25M,Strt,10ft	A0371732
Cbl,DB-25F/DB-25M,Strt, 6ft	A0371731

- RUL6 1 At least one Supervisory Terminal must be connected to each Controller. Each Controller can support up to (3) Supervisory Terminals, each of which can be connected in any of three ways - direct, modem/DSU, or line driver. A maintenance modem may also be provisioned with each Controller.
- 2 If a Supervisory Terminal is to be direct connected, provision (1) Remote Terminal NTMX96AM and (1) Cbl,DB-25F/DB-9F N Modem (length determined by customer requirements from the options listed below).

The available cable lengths to direct connect a Controller to a Supervisory Terminal are:

Cbl,DB-25F/DB-9F N Modem 6ft	A0371730
Cbl,DB-25F/DB-9F N Modem 10ft	A0371734
Cbl,DB-25F/DB-9F N Modem 25ft	A0365566
Cbl,DB-25F/DB-9F N Modem 50ft	A0365567

- 3 For each Supervisor Terminal to be connected to a Controller via modems or DSUs, (1) Cbl,DB-25F/DB-25M,Strt, (2) modem/DSUs, (1) Cbl,DB-25M/DB-9F,Strt and (1) Remote Terminal is required. Additional cables may be required, depending on the distance of the modem/DSUs from the Controller. The following rules detail these requirements.

Provision (1) Cbl,DB-25F/DB-25M,Strt (length determined by customer requirements from the options listed below) and (1) desk top version of the modem (GDC Desk Top 914ADR A0600061) or DSU (GDC Desk Top 500A A0386041) to be connected to the Controller. The device must match the device type at the Remote Terminal end.

The available cable lengths to connect the Controller to the desk top modem/DSU are:

Cbl,DB-25F/DB-25M,Strt,50ft	A0365573
Cbl,DB-25F/DB-25M,Strt,25ft	A0365572
Cbl,DB-25F/DB-25M,Strt,10ft	A0371732
Cbl,DB-25F/DB-25M,Strt, 6ft	A0371731

For each modem/DSU provisioned at the Controller, provision (1) 486 Remote Terminal NTMX96AM, and (1) Cbl,DB-25M/DB-9F,Strt (length determined by customer requirements from the options listed below) and (1) desk top version of the modem (GDC Desk Top 914ADR A0600061) or DSU (GDC Desk Top 500A A0386041). The device must match the device type at the Controller end.

The available cable lengths to connect the Remote Login Terminal to the desk top modem are:

Cbl,DB-25M/DB-9F,Strt,50ft	A0365571
Cbl,DB-25M/DB-9F,Strt,25ft	A0333534
Cbl,DB-25M/DB-9F,Strt,10ft	A0333533
Cbl,DB-25M/DB-9F,Strt, 2ft	A0371733

- 4 Line drivers may be used to "directly" connect Controllers to Supervisory Terminals if they are located over 50 ft, but less than 1.8 miles (using 26 AWG), apart.

For each Supervisor Terminal to be connected to a Controller using line drivers, (1) Cbl,DB-25F/DB-25M,Strt, (2) Line Drivers, (1) Cbl,DB-25M/DB-9F,Strt and (1) Remote Terminal is required.

Provision (1) Line Driver A0322496 and (1) Cbl,DB-25F/DB-25M,Strt (length determined by customer re-

quirements from the options listed below) to be connected to the Controller.

The available cable lengths to connect the Controller to the Line Driver are:

Cbl,DB-25F/DB-25M,Strt,50ft	A0365573
Cbl,DB-25F/DB-25M,Strt,25ft	A0365572
Cbl,DB-25F/DB-25M,Strt,10ft	A0371732
Cbl,DB-25F/DB-25M,Strt, 6ft	A0371731

For each Line Driver provisioned at the Controller, provision (1) 486 Remote Terminal NTMX96AM, (1) Line Driver A0322496 and (1) Cbl,DB- 25M/DB-9F,Strt (length determined by customer requirements from the options listed below).

The available cable lengths to connect the Remote Terminal to the Line Driver are:

Cbl,DB-25M/DB-9F,Strt,50ft	A0365571
Cbl,DB-25M/DB-9F,Strt,25ft	A0333534
Cbl,DB-25M/DB-9F,Strt,10ft	A0333533
Cbl,DB-25M/DB-9F,Strt, 2ft	A0371733

- 5 Each Controller may also have a maintenance modem attached. If required by the customer, provision (1) Modem Telebit Desk Top 19.2 C3550140 and (1) Cbl,DB-25M/DB-9F,Strt (length determined by customer requirements from the options listed below)

The available cable lengths to connect the Controller to the desk top maintenance modem are:

Cbl,DB-25M/DB-9F,Strt,50ft	A0365571
Cbl,DB-25M/DB-9F,Strt,25ft	A0333534
Cbl,DB-25M/DB-9F,Strt,10ft	A0333533
Cbl,DB-25M/DB-9F,Strt, 2ft	A0371733

- RUL7 1 For each Supervisor Terminal, provision printer(s) and associated cable(s) per customer requirements. A printer can support not only the terminal to which it connects, but can also support other terminals in the same group (i.e. connected to the same Controller - each Terminal does not require it's own printer).

TOPS TUTOR 3B TRAINING ADAPTOR

NT4X77AA

RATING: Standard

ABBREVIATION NAME: TUTOR-3B

ENGINEERING DESCRIPTION: Tutor-3B training adaptor attaches to a Tops
Operator Position for training purposes.

REFERENCE DOCUMENTATION: MS4X77 01 02

The Tutor-3B Training Adaptor is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Traffic Simulator	NT4X77AB		1			AP
Display Unit	NT4X77AC		1			AP
Maintenance kit	NT4X77AD		1			RUL1

- NOTE: 1) The Tops positions supplied for training purposes will be the same as those supplied for normal TOPS operator purposes.
- 2) One set of training material is required per training adaptor. Tops training material is required for use with the training adaptors. It consists of magnetic tapes and documentation. Arrangements for this material should be made with NTCL Marketing since training material will change from time to time in accordance with the addition of new features.

RULE:

- AP 1) When PEC NT4X77AA is ordered, these items are provided.
- RUL1 1) The NT4X77AD maintenance kit provides all materials required to clean the heads of the Tutor-3B cassette deck. Provide 1 maintenance kit per NT4X77AA.

TOPS IWS ISA POSITION

PEC CODE: IWS_PLATFORM

CPC CODE: Not Applicable

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: This EMS provisions workstations for TOPS IWS Release 6.0 (06BF version) or higher. To use the workstations in this EMS, the operator must be at IWS Release 6.0 (06BF version) or higher. Lower software releases (i.e. 4.1 or 6.0 version BE or lower) are not supported by this EMS.

This EMS provisions only the position hardware and MAU numbering labels.

REFERENCE DOCUMENTATION: MSNX51BA 00 29

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

| ISSUE AUTHOR: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: Dawn Yost Dept. 3471 (PPK)

IWS PLATFORM EMA8-03-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 06 20	ECM 695 17	Created this detailed section to introduce the Intel Platform per EC 011-22462. This EC also covers changes made by EC 011-22461.

The TOPS IWS ISA Position is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS IWS ISA Intel	NTNX51VB					RUL1
ISA RTIC Card	A0619552					RUL2
ISA Token Ring Card	A0619543					RUL3
ISA Audio Card	NTNX52BC					RUL4
PCI Audio Card	NTNX52CC					RUL4
TOPS MPX Keybd, Combined Eng	NTNX51HB					RUL5
TOPS MPX Keybd, Combined Fre	NTNX51HD					RUL5
TOPS MPX Number Row Template	P0740628					RUL5
15" Color Monitor	NTNX51LH					RUL6
17" Color Monitor	NTNX51LL					RUL6
15" Color Monitor	NTNX51LM					RUL6
17" Color Monitor	NTNX51LN					RUL6
DSU (GDC DT500N 56K 110V)	A0602029					RUL7
DSU (GDC DT500N 56K 220V)	A0616226					RUL7
GDC (V.FAST) (110V)	A0620530					RUL8
Cable, 25P Male - 9P Female	A0601464					RUL8
Twist-lock Power Strip 110V	A0384297					RUL9
Straight Blade Pwr Str 110V	A0384296					RUL9
Power Strip 220V	A0617131					RUL9
Power Cord (use w/ A0617131)	A0618649					RUL9
Headset Jack Assembly	NTNX5309		2			RUL10
Spacer	P098D178		1			RUL10
Screw	P0113616		1			RUL10
Washer	P0286117		1			RUL10
PCI Stereo Headset Jack Assy	NTNX5310					RUL10
4 to 6-pin Headset Adapter	NTNT5312					RUL10
PCI Mono Headset Jack Assy	NTNT5313					RUL10
Position Numbering Labels						RUL11
- (Pos. #0000 - #0071)	P0709162					
- (Pos. #0072 - #0143)	P0709163					
- (Pos. #0144 - #0215)	P0709164					
- (Pos. #0216 - #0287)	P0709165					
- (Pos. #0288 - #0359)	P0709166					
- (Pos. #0360 - #0431)	P0709167					
- (Pos. #0432 - #0503)	P0709168					
- (Pos. #0504 - #0575)	P0709169					
- (Pos. #0576 - #0647)	P0709170					

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
- (Pos. #0648 - #0719)	P0709171					
- (Pos. #0720 - #0791)	P0709172					
- (Pos. #0792 - #0863)	P0709173					
- (Pos. #0864 - #0935)	P0709174					
- (Pos. #0936 - #1007)	P0709175					
- (Pos. #1008 - #1023)	P0709176					
- (Pos. #1100 - #1171)	P0869129					
TOPS IWS MAU Numbering Labels						RUL12
- (MAU #0000 - #0050)	P0709177					
- (MAU #0051 - #0101)	P0709178					
Belkin MAU Test Tool	A0379352					RUL13
Key Cap (Single Width Blank)	P0714148					RUL14
Keycap Removal Tool	A0379341					RUL15
Keycap Upgr Kit (HA to HB)	NTNX51HC					RUL16
Keycap Upgr Kit (HB to HD)	NTNX51HE					RUL17
Universal Wiring Duct	P0803055					RUL18
T.R. Data Cbl, Posn-Junc Box	A0385644					RUL18
Voice Cbl, Posn-Junc Box	NT0R82AB					RUL18
Relegendable Key Cap Assy	P0802113					RUL19
Designation Label Instr.	P0844816					RUL20
Key desig. label instruct.	P0844816					RUL20
Keycap #124 - "Start" key	P0854527					RUL21
Keycap #126 - "POS RLS"	P0854528					RUL21
Application Key	P0725519					RUL21

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) Each cluster (of four, sixteen, or twenty positions) requires two DMS gateway positions (for redundant configurations). Non-redundant configurations (one DMS gateway position per cluster) are NOT RECOMMENDED.

ASN routers are required to access IWS D1 (NTDA) and CCDB.

DSUs are required to access FT databases and IBM DA databases.

Note: OA does NOT require database gateway positions.

Non-gateway positions are called operator positions. One operator position on each token ring may be equipped with a modem for dial-in maintenance. This position is referred to as a combined operator/maintenance (RAMP).

- 2) The following monitors are compatible with the NTNX51VB: NTNX51LA/LB/LD/LF/LG/LH/LJ/LL/LM/LN.
- 3) The NTNX51VB slots are provisioned as follows:
 - * slot 1 - ISA audio card
 - * slot 2 - PCI audio card
 - * slot 3 - ISA RTIC card
 - * slot 4 - token ring card
 - * slot 5 - PCI ethernet card (included in workstation by Intel; however, it is currently not used by Nortel)
- 4) The NTNX52BC and NTNX52CC audio cards can be used in the NTNX51VB.
- 5) Not all markets can use the integrated ISA approach. Currently, the integrated approach is most commonly used in the North American market (US, Canada, and 110V CALA market). For non-North American markets, contact PLM and marketing to see if the integrated approach can be used.
- 6) US applications require 110V equipment.
- 7) The PCI Audio Card and the ISA RTIC Card should be used in all international installations with direct G.703 audio

connections and RS-422 data connections to the E1 channel bank.

RULES:

- RUL1
- 1) For integrated ISA, provision positions according to traffic requirements. Provision for sparing if required.
 - 2) For modular ISA, the customer supplies the positions but must purchase the cards (RTIC, Audio, Token Ring), keyboards, etc. from Nortel.
 - 3) The NTZZ36HA (NTNX51VB with ISA Audio Card) is compatible with IWS Release 6.0 (06BF version) and up.
 - 4) The NTZZ36HB (NTNX51VB with PCI Audio Card) is compatible with IWS Release 7.0 and up.
- RUL2
- 1) Provision one (1) RTIC card (A0619552) for each DMS gateway and database gateway position. Provision for sparing if required.
 - 2) For D1 and CCDB database access, ASN routers, not database gateway positions, are used; therefore, no RTIC cards should be provisioned for database gateway positions.
 - 3) The RTIC card mounts in slot 3 of the NTNX51VB.
- RUL3
- 1) For integrated ISA, the Token Ring card is included in the position building blocks and does NOT need to be ordered separately. Provision for sparing if required. The Token Ring card mounts in slot 4 of the NTNX51VB.
 - 2) For modular ISA, provision one token ring card (A0619543) per position. Provision for sparing if required.
- RUL4
- 1) For integrated ISA, the Digital Telephony Audio card (both ISA and PCI) is included in the position building blocks, and does not need to be ordered separately. Provision for sparing if required.

The PCI Audio Card is compatible only with the NTNX51TB and NTNX51VB positions and IWS Release 7.0 software. Eventually, the PCI Audio Card will be compatible with the NTNX51NB (XM2); however, IWS Release 7.0 will still be a requirement.

The ISA Audio card mounts in slot 1 of the NTNX51VB. The PCI Audio card mounts in slot 2 of the NTNX51VB.

- 2) For modular ISA, provision one Audio card per position. Provision for sparing if required.
- 3) Order two (2) audio card diagnostic diskettes and two (2) audio card DSP SW and Flash downloader per OSC (Operator Service Center). These are ordered through SOLID.

- RUL5
- 1) Provision one (1) keyboard (English or French) for each position. Provision for sparing if required.
 - 2) When upgrading earlier Combined Keyboards to the current software release, provide one P0740628 Number Row Template per position supporting IBM DA IWS.

- RUL6
- 1) For domestic integrated ISA, provide either the 15" monitor (NTNX51LH or NTNX51LM) or the 17" Monitor (NTNX51LL or NTNX51LN) per customer requirements.
 - 2) For international integrated ISA, provide either the NTNX51LM, 15" monitor or the NTNX51LN, 17" Monitor per customer requirements.
 - 3) The following MD'd monitors are compatible with the NTNX51VB in the domestic market: NTNX51LA/LB/LD/LF/LG/LL
 - 4) For modular ISA, the customer will supply the monitor.

- RUL7
- 1) Provide one 56K Data Set Unit (DSU) for each DMS gateway position and database gateway position supplied. Select the DSUs per voltage requirement and customer preference. Provision for sparing if required.

With RS-422 connections from DMS gateway positions, DSUs are not required. RS-422 should be used in all international markets.

When ASN routers are used (for D1 and CCDB database access), DSUs are not required in database gateway positions. (There are no database gateway positions since access to the database(es) is through routers.)

- RUL8
- 1) Provide one (1) modem and one (1) cable per RAMP for dial-up maintenance capability.

This modem is for US, Canada, and 110V CALA markets. Maintenance modems for Europe are country-specific, and must go through the NT qualification process.

- RUL9
- 1) Provide one power strip per position. Select the type of power strip according to the voltage requirement and the type of outlets available (twist-lock or straight-blade).
 - 2) For the 110V market and Japan, provision the A0384297. Provision the A0384296 at customer request.
 - 3) For the 220V market, provision the the A0617131. With the A0617131, provide one (1) A0618649 power cord for each device at the position (position base, monitor, DSU).

The DMS gateway and combined operator/maintenance position (RAMP) will require three power cords. The Operator position will require two power cords. The country-specific power cord supplied with the position will be used to connect the power strip to the outlet.

- RUL10
- 1) For all positions with the ISA, NTNX52BC Audio Card, provide one NTZZ36EA (TOPS MPX headset jack assembly) per position. It provides two headset jack assemblies and grounding hardware.

The customer is to provide headsets.

- 2) For the NTNX52CC Audio Card, provide headset jack assemblies as follows:

For stereo headsets, provide (2) NTNX5310, PCI Stereo Headset Jack Assemblies per workstation.

For mono headsets, provide (2) NTNX5313, PCI Mono Headset Jack Assemblies per workstation.

Provide (2) NTNX5312 PCI Headset Jack Adapters per workstation to connect older headsets jacks (Building block = NTZZ36EA and PEC=NTNX5309) to the PCI Audio Card.

The customer is to provide headsets.

- RUL11
- 1) Provide two sets of position numbering labels per job requirements. The second set will allow the customer to label spares when replacing failed equipment.

- RUL12
- 1) Provide one P0709177 TOPS IWS MAU Numbering Label Sheet for each TOPS IWS system installation requiring up to four MIS

frames. Provide one P0709178 TOPS IWS MAU Numbering Label Sheet for each system requiring five or more MIS frames. Each MIS frame supports up to four token rings. RUL13 1) Provide (1) Belkin MAU Test Tool per site to properly maintain the IWS token ring(s).

RUL14 1) Provide ten (10) blank key caps per keyboard for Bell South ONLY. Also, these are ONLY required if the (Bell South) customer is using DA WITHOUT OIA or OA.

RUL15 1) Provide one keycap removal tool per office.

RUL16 1) Order one Keycap Upgrade Kit for each A0379250 or NTNX51HA keyboard being upgraded to support IWS applications. This kit upgrades the A0379250 or NTNX51HA keyboard to the equivalent of the NTNX51HB. The NTNX51HB Combined English functionality is required for all English IWS applications. (An A0369201 keyboard with the A0379322 keycap kit is equivalent to an A0379250 keyboard, and can therefore be upgraded with the NTNX51HC to support IWS applications.)

RUL17 1) Order one Keycap Upgrade Kit (HB to HD) for each Combined English (NTNX51HB) keyboard being converted from English to French. Note that an A0379250 or NTNX51HA keyboard must be upgraded to NTNX51HB (see RUL16) in order to use this upgrade kit.

RUL18 1) For modular ISA, provide one (1) each of the following per position: Universal Wiring Duct, T.R. Data Cable, Voice Cable.

For integrated ISA, these components are included in the building block.

RUL19 1) Provide re-legendable key cap(s) if required by the customer.

RUL20 1) Provide (1) P0844816 keytop label per A0379250 keyboard when upgrading to IWS Release 6.0. These adhesive labels fit under the clear (re-legendable) keys and are provisioned one per existing A0379250 keyboard per customer request. Provision for spare the P0844816 which is included in the NTNX51HA/HB, per customer requirements. The P0741755 has been replaced by P0844816 because of Keycap label changes.

RUL21 1) Provide P0854528 "Pos Rls" keys, P0854527 "Start" keys and P0725519 "Appl" keys per customer requirements.

TOPS-4 PROVISIONABLE KEYCAPS TABLE

MS4X76AE

RATING: STANDARD

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: TOPS-4 Provisionable Key Cap Legends are defined in Tables 1 thru 6 below. These engraved key caps are provisionable for the seven vacant transfer key position on the TOPS-4 Keyboard. Key Cap positions not equipped with an engraved keycap must be provisioned with a blank keycap.

Table 1 lists all provisionable Ivory/Beige TOPS-4 Keycaps

Table 2 lists all provisionable Red TOPS-4 Keycaps

Table 3 lists all provisionable Black TOPS-4 Keycaps

Table 4 lists all provisionable Light Brown TOPS-4 Keycaps

Table 5 lists all provisionable Orange TOPS-4 Keycaps

Table 6 lists all provisionable Red Orange TOPS-4 Keycaps

REFERENCE DOCUMENTATION: MS4X76EA 01 03

The Table 1: Ivory/Beige TOPS-4 Provisionable Keycaps is comprised of the following:

PRODUCT STATUS	PEC/CPC	TITLE	KEYCAP LEGEND
STD	B0210604	AMBULANCE	AMBL
STD	B0207573	ASSISTANCE	ASST
STD	B0204179	AUTOMATIC ELECTRIC BOARD	AEI BRD
STD	B0207574	BELL BUSINESS OFFICE	BELL BUS OFC
STD	B0214744	BELL SWITCHBOARD	BELL SWBD
STD	B0217547	BILLING VALIDATION	BLG VAL
STD	B0204174	BLANK KEYCAP BEIGE SHELL	(NO LEGEND)
STD	B0204184	BUSINESS OFFICE	BUS OFC
STD	B0217546	BUSINESS OFFICE BUSINESS	BUS OFC BUS
STD	B0205703	BUSINESS OFFICE HAMILTON	BUS OFC HAM
STD	B0217545	BUSINESS OFFICE RESIDENCE	BUS OFC RES
STD	A0355540	CENTRAL COIN REFUND CENTER	CCRC
STD	B0216087	CLOSE PORT	CLS PORT
STD	B0207575	COMMUNITY DIAL OFFICE	CDO DA
		DIRECTORY ASSISTANCE	
STD	B0204177	CONFERENCE	CONF
STD	B0216090	CONFERENCE 1	CONF 1
STD	B0216091	CONFERENCE 2	CONF 2
STD	B0216092	CONFERENCE 3	CONF 3
STD	B0216093	CONFERENCE 4	CONF 4
STD	B0217548	CREDIT CARD VERIFY	CC VY
STD	B0204176	DIRECTORY ASSISTANCE	DIR ASST
STD	B0204201	DIRECTORY ASSISTANCE	DA
STD	B0204192	DIRECTORY ASSISTANCE LOCAL	DA LOC
STD	B0204193	DIRECTORY ASSISTANCE TOLL	DA TOLL
STD	B0204198	DIRECTORY ASSISTANCE TOLL	DIR ASST TOLL
STD	B0205658	DIRECTORY ASSISTANCE 23A DESK	AA
STD	B0210194	DISTRICT MANAGER	DIST MNGR
STD	B0204196	EAST GATEWAY	EAST GTWY
STD	B0214737	EMERGENCY	EMER
STD	B0204197	EMERGENCY 361-1111	EMER 361-1111
STD	B0207577	FIRE	FIRE
STD	A0355515	HOSPITAL	HOSP
STD	B0204183	INTERCEPT	IC
STD	B0205659	INTERCEPT 23A DESK	INT
STD	B0210996	INUIT TRANS	INUIT TRANS
STD	B0204181	LOCAL DIRECTORY ASSISTANCE	LOC DA
STD	B0204191	MARINE	MAR
STD	B0204182	MOBILE	MOB

PRODUCT STATUS	PEC/CPC	TITLE	KEYCAP LEGEND
STD	B0214734	MOBILE & MARINE	MOB & MAR
STD	A0355538	NON PUBLISHED	NON PUB
STD	B0216086	OPEN PORT	OPEN PORT
STD	B0205698	OVERSEAS	OV
STD	B0210602	POLICE	PLCE
STD	B0207578	RADIO	RADIO
STD	B0204175	RATE & ROUTE	R&R
STD	B0210605	RATE & ROUTE	RATE & ROUTE
STD	B0216088	RELEASE CONFERENCE	REL CONF
STD	B0216089	RELEASE PORT	REL PORT
STD	B0204195	REPAIR	REP
STD	B0204180	REPAIR DESK	REPR DESK
STD	B0205710	REPAIR DESK	RPD
STD	B0205704	REPAIR HAMILTON	REP HAM
STD	B0204199	REPAIR SERVICE	REP SERV
STD	B0207576	REPAIR 611	611
STD	B0204194	RESIDUAL BOARD	RESID
STD	B0205711	ROUTE 'A'	RTA
STD	B0205712	ROUTE 'B'	RTB
STD	B0204187	ROUTE A	RTE A
STD	B0204188	ROUTE B	RTE B
STD	B0205700	ROUTE ET TARIF	R&T
STD	B0212389	SEQUENCE CALLING	SEQ CLG
STD	B0205699	SERVICE SPECIAL DE TRAFFIC	SST
STD	B0210603	SHERIFF	SHRF
STD	A0355539	SHERIFF/AMBULANCE	SHRF/AMBL
STD	B0204189	SPECIAL OPERATOR SERV TRAFFIC	SOST
STD	B0205660	SPECIAL SERVICE	SERV SPC
STD	B0205709	SUPERVISOR	SUPV
STD	B0204186	SWITCH ROOM	SW ROOM
STD	B0207572	TAUX & RTES	TAUX & RTES
STD	B0204178	TEST	TST
STD	B0204200	TEST BOARD	TEST BRD
STD	B0204190	TEST BOARD 11	TST BRD 11
STD	B0204185	TOLL DIRECTORY ASSISTANCE	TOLL DA
STD	B0210192	TOLL EQUIPMENT MAINTENANCE	TOLL EQPT MTCE
STD	B0210193	TOLL SUPERVISOR	TOLL SUPV
STD	B0216084	TRANSFER BACK	XFER BACK
STD	B0216085	TRANSFER FORWARD	XFER FWD
STD	P0592484	BLANK TOP SURFACE WITH /U ON THE FRONT SURFACE FOR AABS	/U
STD	B0205702	URGENCE	URG
STD	B0205701	VERIFICATION	VER
STD	B0210191	101 TEST	101 TEST

PRODUCT STATUS	PEC/CPC	TITLE	KEYCAP LEGEND
STD	B0214735	416 DIRECTORY ASSISTANCE	416 DA
STD	B0214736	519 DIRECTORY ASSISTANCE	519 DA
STD	B0210994	613 LOCAL DIRECTORY ASSISTANCE	613 LOCAL DA
STD	B0217544	705 DIRECTORY ASSISTANCE	705 DA
STD	B0210995	819 LOCAL DIRECTORY ASSISTANCE	819 LOCAL DA
STD	B0210601	DIRECTORY ASSISTANCE & RATE & ROUTE	DA & R&R

NOTES:

- (1) Keycaps listed above are Ivory/Beige in color, and the legend text is BLACK in color.

The Table 2: Red TOPS-4 Provisionable Keycaps is comprised of the following:

PRODUCT STATUS	PEC/CPC	TITLE	KEYCAP LEGEND
STD	B0205705	EMERGENCY 911	911

NOTES:

- (1) Keycaps referenced with this note are RED in color, and the legend text is WHITE in color.

The Table 3: Black TOPS-4 Provisionable Keycaps is comprised of the following:

PRODUCT STATUS	PEC/CPC	TITLE	KEYCAP LEGEND
STD	B0216127	ASSISTANCE	ASSIS
STD	B0216143	BLANK KEYCAP BLACK SHELL	(NO LEGEND)
STD	B0209253	CALL TRANSFER	XFR1
STD	B0216129	CONFERENCE	CONF
STD	B0216132	INFORMATION	INFOR
STD	B0216138	KEY PULSE BRIDGE	KEY BRDG
STD	B0216139	KEY PULSE MEET	KP MEET
STD	B0216140	KEY PULSE REMARKS	KP REM
STD	B0205713	KEY PULSE-HOTEL ROOM NUMBER	KP ROOM OTHR
STD	B0216100	NO CALL DETAIL RECORDED	NO CDR
STD	B0210163	REMOTE ON1	RON1
STD	B0209254	TRANSFER	TFR
STD	B0210164	TRANSFER 1	XFER1
STD	B0210165	TRANSFER 2	XFER2
STD	B0216130	UP AREA	UP AREA
STD	B0216128	UP PRECEDENCE	UP PREC AREA
STD	B0216126	UP PRECEDENCE	UP PREC

NOTES:

- (1) Keycaps listed above are BLACK in color, and the legend text is WHITE in color.

The Table 4: Light Brown TOPS-4 Provisionable Keycaps is comprised of the following:

PRODUCT STATUS	PEC/CPC	TITLE	KEYCAP LEGEND
STD	B0216142	BLANK KEYCAP LIGHT BROWN SHELL	(NO LEGEND)
STD	B0216083	CALL SUPERVISOR ASSISTANCE	SR
STD	B0216141	QUE QUERY	QUE QRY
STD	P0594285	sV" Keycap Blank See Note 1:)	"V" (on front)
STD	P0702791	GENERATE AMA/V (See Note 2:)	GEN AMA V

NOTES:

- (1) Keycaps listed above are LIGHT BROWN in color, and the legend text is BLACK in color.
- (2) The legend engraved on the P0594285 Keycap is the letter "V" stamped centered on the front side of the keycap and the top is blank.
- (3) GEN AMA shall be stamped on the top surface of the keycap, and the letter "V" stamped centered on the front side of the keycap.

The Table 5: Orange TOPS-4 Provisionable Keycaps is comprised of the following:

PRODUCT STATUS	PEC/CPC	TITLE	KEYCAP LEGEND
STD	B0216095	AUTOVON ASSISTANCE OPERATOR COMPLETE	AAO COMP
STD	B0216096	BUSY	BUSY
STD	B0216094	CALL COMPLETE	CALL COMP
STD	B0216098	CANCELLED	CANC
STD	B0216137	DATA	DATA
STD	B0216097	NO ANSWER	NO ANSW
STD	B0216099	OTHER	OTHER

NOTES:

- (1) Keycaps listed above are ORANGE in color, and the legend text is BLACK in color.

The Table 6: Red Orange TOPS-4 Provisionable Keycaps is comprised of the following:

PRODUCT STATUS	PEC/CPC	TITLE	KEYCAP LEGEND
STD	B0216134	FLASH	FL
STD	B0216133	FLASH OVERRIDE	FO
STD	B0216135	IMMEDIATE	I
STD	B0216136	PRIORITY	P
STD	P0702790	SPLIT JOIN/R (See Note 1)	SPLIT JOIN/R
STD	P0594283	R on Front (See Note 2)	R
STD	P0710773	AUTOMATED ALTERNATE BILLING SERVICE /U	AABS/U

NOTES:

- (1) Keycaps listed above are RED ORANGE in color, and the legend text is WHITE in color.
- (2) The Key cap P0702790 is stamped Split/Join on the top surface and "R" is stamped centered on the front surface.
- (3) The Key Cap P0594283 has a blank top surface, and the letter "R" is stamped centered on the front surface.
- (4) The Key Cap P0710773 has "AABS" engraved on the top surface, and the letter "U" is stamped centered on the front surface, ped AABS. If a White Key Cap with /U stamped on the front and a blank top surface is desired - provide key cap P0592484 as required per Table 1.

IBM-DA KEYBOARD PRODUCT CHANGE KIT

NT0M36AK

RATING: Check Application Date.

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NT0M36AK IBM-DA Product Change Kit provides the necessary equipment to convert one NT0M36AE keyboard for use in TOPS MP IBM-DA applications. For English applications.

| REFERENCE DOCUMENTATION: SL0M36AK

The NT0M36AK is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	Keycaps (per instructions)						
ADD	17 Piece Keycap Kit	NT0M3602		1			AP
ADD	Label, Option	P0671530		1			AP
ADD	Keytop Removal Tool	P0701509		1			AP
ADD	Installation Instr.	P0710081		1			AP
ADD	Box and Packaging	R0107899		1			AP

RULE:

AP 1) When PEC NT0M36AK is ordered, these items are provided.

97/12/09

EMA9

CELLULAR MOBILE SUBSYSTEM CHAPTER ALL

CELLULAR MOBILE SUBSYSTEM CHAPTER ALL

THIS PAGE IS INTENTIONALLY LEFT BLANK

97/12/09

CELLULAR MOBILE SUBSYSTEM CHAPTER ALL

EMA9-01-PMTC-3	PMTC COMMON CP FILL		NT7X52DF
EMA9-01-000	MOBILE TELEPHONE EXCHANGE MINI		NTZX04
EMA9-02-CSC-1	CELL SITE CONTROLLER COMMON CP FILL		NT6X16BC
EMA9-02-CSC-2	ENHANCED CELL SITE CONTROLLER CP FILL		NT6X16BB
EMA9-02-CSC-3	CELL SITE CONTROLLER COMMON CP FILL		NT6X16BE
EMA9-02-CSC-4	CELL SITE CONTROLLER COMMON CP FILL		NT6X16BF
EMA9-02-CSC-5	CELL SITE CONTROLLER COMMON CP FILL		NT6X16BG
EMA9-02-CSC-6	CELL SITE CONTROLLER COMMON CP FILL		NT6X16BH
EMA9-02-000	DUPLEX CELL SITE EQUIPMENT FRAME		NT6X15AB
EMA9-03-EDSPM-1	FLD UPG KIT: DSPM SHELF (DICP OR MDSP) T		NTAX75KA
EMA9-03-EDSPM-2	FLD UPG KIT: EDSPM SHELF ADDITION TO DIC		NTAX82ZD
EMA9-03-000	DIGITAL INTELLIGENT CELLULAR PERIPHERAL		NTAX75AA
EMA9-04-000	NOVATEL COMMON EQUIPMENT FRAME FOR CSC		NT3P60AB
EMA9-07-000	NOVATEL COMMON EQUIPMENT FRAME		NT3P60AD
EMA9-08-000	NOVATEL RADIO FREQUENCY FRAME		NT3P61AB
EMA9-09-000	NOVATEL RADIO FREQUENCY FRAME		NT3P61AC
EMA9-10-ICRM-1	ICRM UNIT AND FSP	NTAX86AA	NTAX86AA
EMA9-10-ICRM-2	ICRM EXPANSION SHELF	NTAX86AC	NTAX86AC
EMA9-10-ICRM-3	ICRM COMMON CP		NTAX86AB
EMA9-10-000	NOVATEL COMMON EQUIPMENT FRAME		NT3P64AA
EMA9-10-001	CE1 DR OMNI W/O RCMI, RMC	NT3P64AD	NT3P64AD
EMA9-11-000	NOVATEL COMMON EQUIPMENT FRAME (CE2)		NT3P64BA
EMA9-12-000	NOVATEL COMMON EQUIPMENT FRAME (CE2)		NT3P68BA
EMA9-13-000	NOVATEL COMMON EQUIPMENT FRAME (CE2)		NT3P68BB
EMA9-13-001	CE2 ICP OTSR W/O RCMI	NT3P68BC	NT3P68BC
EMA9-14-000	CE1 DR OMNI W/O RCMI	NT3P62AB	NT3P62AB
EMA9-15-000	MERIDIAN DIGITAL SIGNAL PROCESSOR		NTAX82AA
EMA9-16-000	COMPACT CE01 FRAME		NT3P64CA
EMA9-17-000	COMPACT RF FRAME		NT3P63FA
EMA9-18-000	COMPACT CE02 FRAME		NT3P66CA
EMA9-19-000	NT800DR CE1 ICP OMNI W/O RMC		NT3P62AA
EMA9-20-000	NT800DR CE1 ICP SECTORED W/O RMC		NT3P64AB
EMA9-21-000	NT800DR CE1 ICP SECTORED W/O RCMI		NT3P64AC
EMA9-22-000	MERIDIAN ENHANCED DIGITAL SIGNALING PROC		NTAX82AB
EMA9-99-CSC-1	CSC INCREASED MEMORY PRODUCT CHANGE KIT		NT6X15AT
EMA9-99-CSC-2	CSC ENHANCED MESSAGING PRODUCT CHANGE KI		NT6X15AU
EMA9-99-CSC-3	9600 BAUD HDLC PRODUCT CHANGE KIT		NT6X15AS
EMA9-99-CSC-4	CSC ENHANCED PROCESSOR PRODUCT CHANGE KI		NT6X15AW
EMA9-99-ICP-1	DICP XPM PLUS PACKFILL CHANGE KIT		NTAX75ZB

97/12/09

EMA9

CELLULAR MOBILE SUBSYSTEM CHAPTER ALL

PMTC COMMON CP (MTXM)

PEC CODE: NT7X52DF

CPC CODE:

RATING: STD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NT7X52DF is the common circuit pack
fill for the third PMTC frame (PMTC 02) in
the MTX Mini Packaged Switch System.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

| ISSUE AUTHOR: NTI: Jim Large Dept. 5849 (RICH)

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

NT7X52DF EMA9-01-PMTC-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 05 17	ECM 319 07	JEL: MD product per EC's 002-16188, 002-16146 and 002-16134.

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

The PMTC Common CP (MTXM) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate 0.875	NT0X50AA		1	51	19	AP
DS1 Interface CP	NT6X50AA		1	32	05	AP
Filler Face Plate 0.875	NT0X50AA		8	32	06,07, 09,13, 15,16, 17,24	AP
LGC/DTC Processor CP	NT6X45AC		2	32	08,12	AP
Master Processor Memory CP	NT6X47AB		1	32	10	AP
Signal Processor Memory CP	NT6X46AB		1	32	11	AP
Comm Periph Ctl Term Bd	NT6X1205		1	32	11R	AP
Time Switch CP	NT6X44AB		1	32	14	AP
CPP Message Protocol CP	NT6X69AA		1	32	18	AP
CPCE Tone Generator CP	NT6X79AA		1	32	19	AP
Channel Supervision Msg CP	NT6X42AA		1	32	20	AP
Speech Bus Formatter CP	NT6X41AA		1	32	21	AP
DS30 Network Interface CP	NT6X40AA		2	32	22,23	AP
DS1 Interface CP	NT6X50AA		1	18	05	AP
Filler Face Plate 0.875	NT0X50AA		8	18	06,07, 09,13, 15,16, 17,24	AP
LGC/DTC Processor CP	NT6X45AC		2	18	08,12	AP
Master Processor Memory CP	NT6X47AB		1	18	10	AP
Signal Processor Memory CP	NT6X46AB		1	18	11	AP
Comm Periph Ctl Term Bd	NT6X1205		1	18	11R	AP
Time Switch CP	NT6X44AB		1	18	14	AP
CPP Message Protocol CP	NT6X69AA		1	18	18	AP
CPCE Tone Generator CP	NT6X79AA		1	18	19	AP
Channel Supervision Msg CP	NT6X42AA		1	18	20	AP
Speech Bus Formatter CP	NT6X41AA		1	18	21	AP
DS30 Network Interface CP	NT6X40AA		2	18	22,23	AP
Desig. Strip (NT7X52AA)	P0687194		1	65		AP
Desig. Strip (NT7X52AA)	P0687193		1	51		AP
Desig. Strip (NT7X52AA)	P0705460		2	32,18		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT7X52DF	MD	MSL-100 Cab. Sys

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:

NOTE: 1) For more information on the frame refer to the section on NT7X52AA.

RULES:

AP 1) When PEC NT7X52DF is ordered, these items are provided.

MOBILE TELEPHONE EXCHANGE MINI

NTZX04

RATING: Standard

ABBREVIATION NAME: MTXM

ENGINEERING DESCRIPTION: This is not an MS but a supercode list used in ordering the DMS-MTX Mini. The MTXM is a modular packaged Cellular Switch System which provides cellular service in the smaller urban and suburban markets.

REFERENCE DOCUMENTATION: N/A

The Mobile Telephone Exchange Mini is comprised of the following:

SUPERCODE	DESCRIPTION	FRAME PEC	ABBR	QTY	RULE
NTZX04AA	Basic MTXM System	NT7X41AA	PMPM00	1	RUL1
		NT7X42AA	SNPC00	1	RUL1
NTZX04EA	Increment #1 Ports 0-479	NT7X52AA	PMTC00	1	RUL1
NTZX04CA	Increment #2 Ports 480-959	NT7X52AA	PMTC01	1	RUL2
NTZX04DA	Increment #3 Ports 960-1439	NT7X52AA	PMTC02	1	RUL3

NOTE: 1) The corresponding MS document assigned to each NTZX04 supercode contains the always required and provisionable equipment associated with that particular supercode.

2) The MS7X16 DMS Packaged Switch Systems Common Hardware (section EMA9-01-004) outlines the common hardware required for each of the NTZX04 supercodes.

3) The CAZX04 Cabling Information for DMS-MTXM Packaged Switch document outlines the cabling required for each NTZX04 supercode.

4) The CAZX00 Cabling Information document for Provisionable Cables for DMS Packaged Systems outlines the provisionable cables available for each of the packaged switch systems.

5) Presently this product is for Canadian, Richardson and CALA application.

RULE:

RUL1 1) The first two supercodes, NTZX04AA and NTZX04EA provide all equipment, cabling, and circuit packs for an operating system of up to 480 ports. A working system cannot only have NTZX04AA. NTZX04EA is considered to be the first increment.

RUL2 1) NTZX04CA is the second increment for the MTX Mini Packaged Switch System. This supercode brings the system port count to 960 ports.

- RUL3 1) NTZX04DA is the third increment for the MTX Mini Packaged Switch System. This supercode brings the system port count to 1440 ports.

Cell Site Controller Common CP

NT6X16BC

RATING: Check application date for NT6X16BC

ABBREVIATION NAME: CSC

ENGINEERING DESCRIPTION: The NT6X16BC Cell Site Controller Common CP provides circuit pack fill needed for the Cell Site Controller Module in Duplex mode. Cards placed in shelf position 48 are for the cell site controller 1 (CSC1) while cards placed in shelf position 29 are for the Cell Site Controller 0 (CSC0)

REFERENCE DOCUMENTATION: N/A

The CSC Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Serial I/O CP	NT6X82AA		1	48	5	AP
Filler Face Plate 0.875	NT0X50AA		2	48	6, 7	AP
LGC/DTC Processor CP	NT6X45AC		1	48	8	AP
Filler Face Plate 0.875	NT0X50AA		2	48	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	48	11	AP
Signal Processor Memory CP	NT6X46AB		1	48	12	AP
Comm Periph Ctl BP Paddle	NT6X1205		1	48	12	AP
LGC/DTC Processor CP	NT6X45AC		1	48	13	AP
Filler Face Plate CP	NT0X50AA		1	48	14	AP
Time Switch CP	NT6X44AA		1	48	15	AP
Filler Face Plate CP	NT0X50AA		1	48	16	AP
Message Interface CP	NT6X43AA		1	48	17	AP
Serial Link Interface CP	NT6X90AB		1	48	18	AP
Host Link Formatter CP	NT6X72AA		1	48	19	AP
Filler Face Plate CP	NT0X50AA		5	48	20-24	AP
Pwr Conv +/-4V & 12V CP	NT2X70AB		1	48	25	AP
Designation Strip	P0687357		1	48		AP
Serial I/O CP	NT6X82AA		1	29	5	AP
Filler Face Plate 0.875	NT0X50AA		2	29	6, 7	AP
LGC/DTC Processor CP	NT6X45AC		1	29	8	AP
Filler Face Plate 0.875	NT0X50AA		2	29	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	29	11	AP
Signal Processor Memory CP	NT6X46AB		1	29	12	AP
Comm Periph Ctl BP Paddle	NT6X1205		1	29	12	AP
LGC/DTC Processor CP	NT6X45AC		1	29	13	AP
Filler Face Plate CP	NT0X50AA		1	29	14	AP
Time Switch CP	NT6X44AA		1	29	15	AP
Filler Face Plate CP	NT0X50AA		1	29	16	AP
Message Interface CP	NT6X43AA		1	29	17	AP
Serial Link Interface CP	NT6X90AB		1	29	18	AP
Host Link Formatter CP	NT6X72AA		1	29	19	AP
Filler Face Plate CP	NT0X50AA		5	29	20-24	AP
Pwr Conv +/-4V & 12V CP	NT2X70AB		1	29	25	AP
Designation Strip	P0687357		1	29		AP

RULE:

AP 1) When PEC NT6X16BC is ordered, these items are provided.

ENHANCED CELL SITE CONTROLLER COMMON CP

NT6X16BB

RATING: Check application date for NT6X16BB

ABBREVIATION NAME: CSC

ENGINEERING DESCRIPTION: The NT6X16BB Enhanced CSC Common CP provides circuit pack fill including enhanced messaging needed for the CSC Module in Duplex Mode. The NT6X16BB covers Shelf Position 48 (Cell Site Controller 1 (CSC1)) and Shelf Position 29 (Cell Site Controller 0 (CSC0)).

REFERENCE DOCUMENTATION: N/A

The Enhanced CSC Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Serial I/O CP	NT6X82AA		1	48	5	AP
Filler Face Plate 0.875	NT0X50AA		2	48	6, 7	AP
LGC/DTC Processor CP	NT6X45AC		1	48	8	AP
Filler Face Plate 0.875	NT0X50AA		2	48	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	48	11	AP
Signal Processor Memory CP	NT6X46AB		1	48	12	AP
Comm Periph Ctl BP Paddle	NT6X1205		1	48	12	AP
LGC/DTC Processor CP	NT6X45AC		1	48	13	AP
Filler Face Plate CP	NT0X50AA		1	48	14	AP
Time Switch CP	NT6X44AA		1	48	15	AP
Filler Face Plate CP	NT0X50AA		1	48	16	AP
CPP MSC Protocol CP	NT6X69AA		1	48	17	AP
Serial Link Interface CP	NT6X90AB		1	48	18	AP
Host Link Formatter CP	NT6X72AA		1	48	19	AP
Filler Face Plate CP	NT0X50AA		5	48	20-24	AP
Pwr Conv +/-4V & 12V CP	NT2X70AB		1	48	25	AP
Designation Strip	P0687356		1	48		AP
Serial I/O CP	NT6X82AA		1	29	5	AP
Filler Face Plate 0.875	NT0X50AA		2	29	6, 7	AP
LGC/DTC Processor CP	NT6X45AC		1	29	8	AP
Filler Face Plate 0.875	NT0X50AA		2	29	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	29	11	AP
Signal Processor Memory CP	NT6X46AB		1	29	12	AP
Comm Periph Ctl BP Paddle	NT6X1205		1	29	12	AP
LGC/DTC Processor CP	NT6X45AC		1	29	13	AP
Filler Face Plate CP	NT0X50AA		1	29	14	AP
Time Switch CP	NT6X44AA		1	29	15	AP
Filler Face Plate CP	NT0X50AA		1	29	16	AP
CPP MSG Protocol CP	NT6X69AA		1	29	17	AP
Serial Link Interface CP	NT6X90AB		1	29	18	AP
Host Link Formatter CP	NT6X72AA		1	29	19	AP
Filler Face Plate CP	NT0X50AA		5	29	20-24	AP
Pwr Conv +/-4V & 12V CP	NT2X70AB		1	29	25	AP
Designation Strip	P0687356		1	29		AP

RULE:

AP 1) When PEC NT6X16BB is ordered, these items are provided.

Cell Site Controller Common CP

NT6X16BE

RATING: Check application date for NT6X16BE

ABBREVIATION NAME: CSC

ENGINEERING DESCRIPTION: The NT6X16BE Cell Site Controller Common CP provides circuit pack fill needed for the Cell Site Controller Module in Duplex mode. Cards placed in shelf position 48 are for the cell site controller 1 (CSC1) while cards placed in shelf position 29 are for the Cell Site Controller 0 (CSC0). The NT6X16BE is for 9600 baud link capabilities.

REFERENCE DOCUMENTATION: N/A

The CSC Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Serial I/O CP	NT6X82AA		1	48	5	AP
Filler Face Plate 0.875	NT0X50AA		2	48	6, 7	AP
LGC/DTC Processor CP	NT6X45AC		1	48	8	AP
Filler Face Plate 0.875	NT0X50AA		2	48	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	48	11	AP
Signal Processor Memory CP	NT6X46AB		1	48	12	AP
Comm Periph Ctl BP Paddle	NT6X1205		1	48	12	AP
LGC/DTC Processor CP	NT6X45AC		1	48	13	AP
Filler Face Plate CP	NT0X50AA		1	48	14	AP
Time Switch CP	NT6X44AA		1	48	15	AP
Filler Face Plate CP	NT0X50AA		1	48	16	AP
Message Interface CP	NT6X43AA		1	48	17	AP
9.6 kBD MTX Link Cont. CP	NT6X90CA		1	48	18	AP
Host Link Formatter CP	NT6X72AA		1	48	19	AP
Filler Face Plate CP	NT0X50AA		5	48	20-24	AP
Pwr Conv +/-4V & 12V CP	NT2X70AB		1	48	25	AP
Designation Strip	P0687357		1	48		AP
Serial I/O CP	NT6X82AA		1	29	5	AP
Filler Face Plate 0.875	NT0X50AA		2	29	6, 7	AP
LGC/DTC Processor CP	NT6X45AC		1	29	8	AP
Filler Face Plate 0.875	NT0X50AA		2	29	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	29	11	AP
Signal Processor Memory CP	NT6X46AB		1	29	12	AP
Comm Periph Ctl BP Paddle	NT6X1205		1	29	12	AP
LGC/DTC Processor CP	NT6X45AC		1	29	13	AP
Filler Face Plate CP	NT0X50AA		1	29	14	AP
Time Switch CP	NT6X44AA		1	29	15	AP
Filler Face Plate CP	NT0X50AA		1	29	16	AP
Message Interface CP	NT6X43AA		1	29	17	AP
9.6 kBD MTX Link Cont. CP	NT6X90CA		1	29	18	AP
Host Link Formatter CP	NT6X72AA		1	29	19	AP
Filler Face Plate CP	NT0X50AA		5	29	20-24	AP
Pwr Conv +/-4V & 12V CP	NT2X70AB		1	29	25	AP
Designation Strip	P0687357		1	29		AP

RULE:

AP 1) When PEC NT6X16BE is ordered, these items are provided.

CELL SITE CONTROLLER COMMON CP

NT6X16BF

RATING: Check application date for NT6X16BF

ABBREVIATION NAME: CSC

ENGINEERING DESCRIPTION: The NT6X16BF CSC Common CP provides circuit pack fill including enhanced messaging needed for the CSC Module in Duplex Mode. The NT6X16BF covers Shelf Position 48 (Cell Site Controller 1 (CSC1)) and Shelf Position 29 (Cell Site Controller 0 (CSC0)). The NT6X16BF is used for 9600 Baud link capabilities.

REFERENCE DOCUMENTATION: N/A

The Enhanced CSC Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Serial I/O CP	NT6X82AA		1	48	5	AP
Filler Face Plate 0.875	NT0X50AA		2	48	6, 7	AP
LGC/DTC Processor CP	NT6X45AC		1	48	8	AP
Filler Face Plate 0.875	NT0X50AA		2	48	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	48	11	AP
Signal Processor Memory CP	NT6X46AB		1	48	12	AP
Comm Periph Ctl BP Paddle	NT6X1205		1	48	12	AP
LGC/DTC Processor CP	NT6X45AC		1	48	13	AP
Filler Face Plate CP	NT0X50AA		1	48	14	AP
Time Switch CP	NT6X44AA		1	48	15	AP
Filler Face Plate CP	NT0X50AA		1	48	16	AP
CPP MSC Protocol CP	NT6X69AA		1	48	17	AP
9.6 kBD MTX Link Cont. CP	NT6X90CA		1	48	18	AP
Host Link Formatter CP	NT6X72AA		1	48	19	AP
Filler Face Plate CP	NT0X50AA		5	48	20-24	AP
Pwr Conv +/-4V & 12V CP	NT2X70AB		1	48	25	AP
Designation Strip	P0687356		1	48		AP
Serial I/O CP	NT6X82AA		1	29	5	AP
Filler Face Plate 0.875	NT0X50AA		2	29	6, 7	AP
LGC/DTC Processor CP	NT6X45AC		1	29	8	AP
Filler Face Plate 0.875	NT0X50AA		2	29	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	29	11	AP
Signal Processor Memory CP	NT6X46AB		1	29	12	AP
Comm Periph Ctl BP Paddle	NT6X1205		1	29	12	AP
LGC/DTC Processor CP	NT6X45AC		1	29	13	AP
Filler Face Plate CP	NT0X50AA		1	29	14	AP
Time Switch CP	NT6X44AA		1	29	15	AP
Filler Face Plate CP	NT0X50AA		1	29	16	AP
CPP MSG Protocol CP	NT6X69AA		1	29	17	AP
9.6 kBD MTX Link Cont. CP	NT6X90CA		1	29	18	AP
Host Link Formatter CP	NT6X72AA		1	29	19	AP
Filler Face Plate CP	NT0X50AA		5	29	20-24	AP
Pwr Conv +/-4V & 12V CP	NT2X70AB		1	29	25	AP
Designation Strip	P0687356		1	29		AP

RULE:

AP 1) When PEC NT6X16BF is ordered, these items are provided.

CELL SITE CONTROLLER COMMON CP

NT6X16BG

RATING: Check application date for NT6X16BG

ABBREVIATION NAME: CSC

ENGINEERING DESCRIPTION: The NT6X16BG CSC Common CP provides circuit pack fill including enhanced messaging needed for the CSC Module in Duplex Mode. The NT6X16BG covers Shelf Position 48 (Cell Site Controller 1 (CSC1)) and Shelf Position 29 (Cell Site Controller 0 (CSC0)). The NT6X16BG is used for 9600 baud link capabilities.

REFERENCE DOCUMENTATION: N/A

The Cell Site Controller Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Serial I/O CP	NT6X82AA		1	48	5	AP
Filler Face Plate 0.875	NT0X50AA		2	48	6, 7	AP
LGC/DTC Processor CP	NT6X45BA		1	48	8	AP
Filler Face Plate 0.875	NT0X50AA		2	48	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	48	11	AP
Signal Processor Memory CP	NT6X46BA		1	48	12	AP
LGC/DTC Processor CP	NT6X45BA		1	48	13	AP
Filler Face Plate CP	NT0X50AA		1	48	14	AP
Time Switch CP	NT6X44AA		1	48	15	AP
Filler Face Plate CP	NT0X50AA		1	48	16	AP
CPP Msg Protocol & Tone CP	NT6X69AB		1	48	17	AP
9.6 kBD MTX Link Cont. CP	NT6X90CA		1	48	18	AP
Host Link Formatter CP	NT6X72AA		1	48	19	AP
Filler Face Plate CP	NT0X50AA		5	48	20-24	AP
Designation Strip	P0702330		1	48		AP
Serial I/O CP	NT6X82AA		1	29	5	AP
Filler Face Plate 0.875	NT0X50AA		2	29	6, 7	AP
LGC/DTC Processor CP	NT6X45BA		1	29	8	AP
Filler Face Plate 0.875	NT0X50AA		2	29	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	29	11	AP
Signal Processor Memory CP	NT6X46BA		1	29	12	AP
LGC/DTC Processor CP	NT6X45BA		1	29	13	AP
Filler Face Plate CP	NT0X50AA		1	29	14	AP
Time Switch CP	NT6X44AA		1	29	15	AP
Filler Face Plate CP	NT0X50AA		1	29	16	AP
CPP Msg Protocol & Tone CP	NT6X69AB		1	29	17	AP
9.6 kBD MTX Link Cont. CP	NT6X90CA		1	29	18	AP
Host Link Formatter CP	NT6X72AA		1	29	19	AP
Filler Face Plate CP	NT0X50AA		5	29	20-24	AP
Designation Strip	P0702330		1	29		AP

RULE:

AP 1) When PEC NT6X16BG is ordered, these items are provided.

CELL SITE CONTROLLER COMMON CP

NT6X16BH

RATING: Check application date for NT6X16BH

ABBREVIATION NAME: CSC

ENGINEERING DESCRIPTION: The NT6X16BH CSC Common CP provides circuit pack fill including enhanced messaging needed for the CSC Module in Duplex Mode. The NT6X16BH covers Shelf Position 48 (Cell Site Controller 1 (CSC1)) and Shelf Position 29 (Cell Site Controller 0 (CSC0)). The NT6X16BH is used for 4800 baud link capabilities.

REFERENCE DOCUMENTATION: N/A

The Cell Site Controller Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Serial I/O CP	NT6X82AA		1	48	5	AP
Filler Face Plate 0.875	NT0X50AA		2	48	6, 7	AP
LGC/DTC Processor CP	NT6X45BA		1	48	8	AP
Filler Face Plate 0.875	NT0X50AA		2	48	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	48	11	AP
Signal Processor Memory CP	NT6X46BA		1	48	12	AP
LGC/DTC Processor CP	NT6X45BA		1	48	13	AP
Filler Face Plate CP	NT0X50AA		1	48	14	AP
Time Switch CP	NT6X44AA		1	48	15	AP
Filler Face Plate CP	NT0X50AA		1	48	16	AP
CPP Msg Protocol & Tone CP	NT6X69AB		1	48	17	AP
MTX Link Cont. CP	NT6X90AB		1	48	18	AP
Host Link Formatter CP	NT6X72AA		1	48	19	AP
Filler Face Plate CP	NT0X50AA		5	48	20-24	AP
Designation Strip	P0702328		1	48		AP
Serial I/O CP	NT6X82AA		1	29	5	AP
Filler Face Plate 0.875	NT0X50AA		2	29	6, 7	AP
LGC/DTC Processor CP	NT6X45BA		1	29	8	AP
Filler Face Plate 0.875	NT0X50AA		2	29	9, 10	AP
Master Processor Memory CP	NT6X47AB		1	29	11	AP
Signal Processor Memory CP	NT6X46BA		1	29	12	AP
LGC/DTC Processor CP	NT6X45BA		1	29	13	AP
Filler Face Plate CP	NT0X50AA		1	29	14	AP
Time Switch CP	NT6X44AA		1	29	15	AP
Filler Face Plate CP	NT0X50AA		1	29	16	AP
CPP Msg Protocol & Tone CP	NT6X69AB		1	29	17	AP
MTX Link Cont. CP	NT6X90AB		1	29	18	AP
Host Link Formatter CP	NT6X72AA		1	29	19	AP
Filler Face Plate CP	NT0X50AA		5	29	20-24	AP
Designation Strip	P0702328		1	29		AP

RULE:

AP 1) When PEC NT6X16BH is ordered, these items are provided.

DUPLEX CELL SITE EQUIPMENT FRAME

NT6X15AB

RATING: Standard

ABBREVIATION NAME: DCSE

ENGINEERING DESCRIPTION: The Cellular Telephone System is a trunked, cellular system designed to provide communications between subscribers using mobile or portable radio units and the telephone network.

REFERENCE DOCUMENTATION: MS6X15AB 01 01

The Duplex Cell Site Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# CSC Common CP	NT6X16AB			29		RUL2
CSC Common CP	NT6X16BC			29		RUL2
Enhanced CSC Common CP	NT6X16BB			29		RUL2
CSC Common CP (4800 Baud Lk)	NT6X16BH			29		RUL2
CSC Common CP (9600 Baud Lk)	NT6X16BE			29		RUL2
CSC Common CP (9600 Baud Lk)	NT6X16BF			29		RUL2
CSC Common CP (9600 Baud Lk)	NT6X16BG			29		RUL2
Cell Site Array Shelf Assy	NT6X1604	CSC1	1	48		AP
Serial I/O CP	NT6X82AA			48	1-4	RUL3
Filler Face Plate 0.875	NT0X50AA			48	1-4	RUL3
Power Converter	NT2X70AE			48		RUL9
SCSE Frame Supervisory Panel	NT6X26AA	FSP	1	42		AP
Cell Site Array Shelf Assy	NT6X1605	CSC0	1	29		AP
Serial I/O CP	NT6X82AA			29	1-4	RUL3
Filler Face Plate 0.875	NT0X50AA			29	1-4	RUL3
Power Converter	NT2X70AE			29		RUL9
CSC Radio Channel I/F Unit	NT6X15AG			29RL	1	RUL5
CSC Radio Channel I/F Unit	NT6X15AH			29RR	1	RUL5
CSC Shelf Assembly	NT6X15AL		1	15		AP
CSC Radio Channel I/F Unit	NT6X15AJ			15RL	1	RUL5
CSC Radio Channel I/F Unit	NT6X15AK			15RR	1	RUL5
Equipment Shelf Assembly	NT6X1503		1	09		AP
DC/AC Inverter 117V AC, 50W	NPS50353L1			09	2	AP
4800 Baud Modem	051A005-001			09R	1	RUL4
% 9600 Baud Modem	049A020-001			09R	1	RUL4
9600 Baud Modem	049A020-011			09R	1	RUL4
Equipment Shelf Assembly	NT6X1503		1	04	1	AP
DC/AC Inverter 117V AC, 50W	NPS50353L1		1	04	2	AP
Duplex Modem Cover	P0638281			03	1	AP
4800 Baud Modem	051A005-001			04R	1	RUL4
% 9600 Baud Modem	049A020-001			04R	1	RUL4
9600 Baud Modem	049A020-011			04R	1	RUL4
Desig. Label for NT6X82AA	P0636539					RUL6
Cover Plate	P0647834					RUL10
Mounting Screws	P0180922					RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
* EMI Package for 70" Frwrk	NT0X34CA					RUL7
EMI Package for 70" Frwrk	NT0X34CB					RUL7
Earthquake Protection Frame Level Equipment	NT0X21AH					RUL8
Earthquake Protection Frame Anchoring Equipment (0.38")	NT0X21AI					RUL8
Earthquake Protection Frame Isolation Equipment	NT0X21AK					RUL8

FLAGS:

Replaced by 'NT6X16BB or NT6X16BC'.
 | % MD. Replaced by 049A020-011.
 * MD. Replaced by NT0X34CB.

- NOTE: 1) NT6X15AB is the Duplex Cell Site Equipment Frame. It is a short frame, 70 inches high. It houses the Cell Site Controller (CSC) Module (in duplex mode), two stand alone mod-ems and two inverters.
- 2) The CSC is a double shelf module. The upper shelf is Cell Site Controller 1 (CSC1) and the lower shelf is Cell Site Controller 0 (CSC0). One shelf is active and the other shelf is in standby mode. The CSC operates under the controller of the Mobile Telephone Exchange (MTX) to control each of the radio channels at the site.
- 3) In the SHF POS column, L (example 04L) means that the equipment mentioned is located on the left half of the shelf while R (example 04R) indicates the right half of the shelf. RL (example 15RL) and RR example 15RR) indicates that the unit is attached to the rear of the shelf assembly on the left half and the right half respectively.

RULE:

- AP 1) When PEC NT6X15AB is ordered, these items are provided.
- 2) NT6X15AB is a single bay frame.
- RUL1 1) Reserved for future use.

- RUL2
- 1) Provide one (1) NT6X16BC, CSC Common CP for the Cell Site Controller Module in Duplex mode when increased memory is required.
 - 2) Provide one (1) NT6X16BB Enhanced CSC Common CP for the Cell Site Controller Module in Duplex mode when increased memory and new messaging is required.
 - 3) Provide one (1) NT6X16BE, CSC Common CP for the Cell Site Controller Module in Duplex mode when 9600 Baud link capability with increased memory is required.
 - 4) Provide one (1) NT6X16BF Enhanced CSC Common CP for the Cell Site Controller Module in Duplex mode when 9600 Baud link capability with increased memory and new messaging is required.
 - 5) Provide one (1) NT6X16BG CSC Common CP fill for the Cell Site Controller Module in Duplex mode when 9600 Baud link capability with increased memory, new messaging and enhanced process (1 MEG SP memory) is required. This CP fill is required for offices with BCS-27 (or higher).
 - 6) Provide one (1) NT6X16BH CSC Common CP fill for the Cell Site Controller Module in Duplex mode when 4800 Baud link capability with increased memory, new messaging and enhanced process (1 MEG SP memory) is required. This CP fill is required for offices with BCS-27 (or higher).
- RUL3
- 1) One (1) pair of NT6X82AA, Serial I/O CP has a capacity for up to twenty radio channels. The number of NT6X82AA pairs must be equal to the number of multiples of twenty radio channels. for the purposes of this rule, the number of radio channels is to be rounded up to the nearest multiple of twenty. The two members of the same NT6X82AA pair must be assigned to the same CP slot positions on the shelves CSC1 and CSC0 of the CSC module. The provisioning and assignment rules are as follows:
 - 2) For the first twenty radio channels (channels 0-19) the two (2) NT6X82AA are located on slot 5 of CSC1 and CSC0 and are always provided.
 - 3) If the second group of twenty radio channels (channels 20-39) are required then provide two (2) NT6X82AA which are to be assigned to CP slot positions 04 on CSC0 and CSC1 shelves. If these two NT6X82AA are not required, then the CP slot positions 04 are to be equipped (provisioned) with two (2) NT0X50AA, Filler Face Plate 0.875.

- 4) If the third group of twenty radio channels (channels 40-59) are required then provide two (2) NT6X82AA which are to be assigned to CP slot positions 03 on CSC0 and CSC1 shelves. If these two NT6X82AA are not required, then the CP slot positions 03 are to be equipped (provisioned) with two (2) NT0X50AA, Filler Face Plate 0.875.
- 5) If the fourth group of twenty radio channels (channels 60-79) are required then provide two (2) NT6X82AA which are to be assigned to CP slot positions 02 on CSC0 and CSC1 shelves. If these two NT6X82AA are not required, then the CP slots positions 02 are to be equipped (provisioned) with two (2) NT0X50AA, Filler Face Plate 0.875.
- 6) If the fifth group of twenty radio channels (channels 80-99) are required then provide two (2) NT6X82AA which are to be assigned to CP slot positions 01 on CSC0 and CSC1 shelves. If these two NT6X82AA are not required, then the CP slots positions 01 are to be equipped (provisioned) with two (2) NT0X50AA, Filler Face Plate 0.875.

RUL4 1) Provide two (2) 051A005-001, 4800 Baud Modems for the Duplex Cell Site Equipment Frame when Northern Telecom is to supply the modems. These are GDC Data Comm 4800 stand alone modems (CPC A0297086).

- | 2) Provide two (2) 049A020-011, 9600 Baud Modems for the Duplex Cell Site Equipment Frame when Northern Telecom is to supply the modems. These are GDC Data Comm 9600SP Baud standalone modems (CPC A0336487).

RUL5 1) One CSC Radio Channel Interface Unit has a capacity for up to twenty radio channels. The number of CSC Radio Channel Interface Units must be equal to the number of multiples of twenty radio channels. For the purposes of this rule the number of radio channels are rounded up to the nearest multiple of twenty. The provisioning and assignment rules are as follows:

- 2) For the first twenty radio channels (channels 0-19) one (1) CSC Radio Channel Interface Unit is always provided on the rear of shelf mounting position 48. This unit has no PEC of its own but it is identified by the code of its sub units (eg. NT6X84AA etc.).
- 3) For the second group of twenty radio channels (channels 20-39) if required provide one (1) CSC Radio Channel Interface Unit, NT6X15AG on the rear left of shelf on mounting position 29.

- 4) For the third group of twenty radio channels (channels 40-59), if required provide one (1) CSC Radio Channel Interface Unit, NT6X15AH on the rear right of shelf on mounting position 29.
 - 5) For the fourth group of twenty radio channels (channels 60-79) if required provide one (1) CSC Radio Channel Interface Unit, NT6X15AJ on the rear left of shelf on mounting position 15.
 - 6) For the fifth group of twenty radio channels (channels 80-99) if required provide one (1) CSC Radio Channel Interface Unit, NT6X15AK on the rear right of shelf on mounting position 15.
- RUL6 1) Provide one (1) corresponding designation label for each NT6X82AA supplied. The label is to be affixed to the respective equipped NT6X82AA slot position.
- RUL7 1) Provide one (1) NT0X34CB for each Duplex Cell Site Equipment Frame.
- RUL8 1) Provide one (1) NT0X21AH, NT0X21AI and NT0X21AK for each Duplex Cell Site Equipment Frame.
- RUL9 1) Provide one Power Converter NT2X70AE as required.
- RUL10 1) Provide one (1) Cover Plate P0647834 for every four (4) unequipped EMI filtered connector mounting positions on the bulkhead.
- 2) Provide four (4) Mounting Screws P0180922 per Cover Plate provisioned.

FLD UPG KIT: DSPM SHELF (DICP OR MDSP) TO EDSPM

PEC CODE: NTAX75KA

CPC CODE: B0247208

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: Field Upgrade Kit: Converts DSPM shelf to
EDSPM in DICP and MDSP.

REFERENCE DOCUMENTATION: SLAX75KA 00 01

MARKETS: Applicable markets:
Wireless

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

NTAX75KA EMA9-03-EDSPM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 10 08	ECM 470 24	Previous history not available

The FLD UPG KIT: DSPM SHELF (DICP OR MDSP) TO EDSPM is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EDP Backplane Terminator	NTEX90AA		4	XX	8R,13R, 19R,24R	AP
DSPM 5V Fld Upg Pwr Cable	NTAX8237		2	XX		AP
DSPM -48v Fld Upg Pwr Cable	NTAX8239		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:

RULES:

AP 1) When PEC NTAX75KA is ordered, these items are provided.

FLD UPG KIT: EDSPM SHELF ADDITION TO DICP

PEC CODE: NTAX82ZD
CPC CODE: B0246917
RATING: Standard.
REPLACES: Not Applicable
REPLACED BY: Not Applicable
ABBREVIATION NAME: Not Applicable
ENGINEERING DESCRIPTION: Field Upgrade Kit: EDSPM Shelf Addition to
DICP or MDSP.
REFERENCE DOCUMENTATION: SLAX82ZD 00 01
MARKETS: Applicable markets:
Wireless

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

NTAX82ZD EMA9-03-EDSPM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 10 08	ECM 470 24	Previous history not available

The FLD UPG KIT: EDSPM SHELF ADDITION TO DICP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EDP Shelf Assembly	NTAX7604		1	XX		AP
EDP Backplane Terminator	NTEX90AA		4	XX	8R, 13R, 19R, 24R	AP
Filler Face Plate	NT0X50AA		1	XX	14	AP
DSP DS-30A Cable Assy	NTAX7521		8	XX		AP
DSPM -48v Fld Upg Pwr Cable	NTAX8239		1	XX		AP
Lockwasher	P0183220		1	XX		AP
Washer, Flat (Metallic)	P0284154		1	XX		AP
Cable Support Bracket	P0642031		1	XX		AP
Fuse, Non-Delay, 10A	A0315462		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:

RULES:

AP 1) When PEC NTAX82ZD is ordered, these items are provided.

DIGITAL INTELLIGENT CELLULAR PERIPHERAL

PEC CODE: NTAX75AA

CPC CODE: B0230331

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DICP

ENGINEERING DESCRIPTION: The DICP is a cabinet that houses one ICP module and one or two DSP shelves as required.

This frame is part of the DMS-MTX system.

REFERENCE DOCUMENTATION: ADAX75AA 00 15

ISAX75AA 00 22

MSAX75AA 00 22

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Kevin Neville Dept. 5849 (RICH)

MAIN CONTACT: Kevin Neville Dept. 5849 (RICH)

CONTACT: Rich McNeill Dept. 5849 (RICH)

NTAX75AA EMA9-03-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 07 19	ECM 470 23	KMN: EC 002-16832 EDSPP updates.
96 10 08	ECM 470 24	KMN: EC 002-17052 NT6X40AC/AD and NT6X40FA/FB.
96 11 05	ECM 470 25	KMN: Update Rule 3 to reflect that NTEX93 and NTAX81 cannot be colocated.
97 02 03	ECM 470 26	KMN: ADD EFRC (NTAX80AB)
97 06 11	ECM 492 41	KMN: Remove Jim Large as contact. Add reference to AD, IS, and MS. Remove NTAX75DC.
97 07 30	ECM 470 27	KMN: ADD MISP (NTBX01CA).

The Digital Intelligent Cellular Peripheral is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Top Cooling Unit	NTAX77AA		1	65		AP
Frame Supervisory Panel	NTNX26GA		1	60		AP
Filler Panel	NT0X84AA	DSPM		33,47		RUL1
DSP Shelf	NTAX7601			33,47		RUL1
Power Converter	NT2X70AF			33,47	1,25	RUL2, RUL3
Filler Face Plate	NT0X50AE			33,47	1,25	RUL2, RUL3
DSP Control Processor	NTAX80AA			33,47	4,9, 15,20	RUL2, RUL3
EFRC Control Processor	NTAX80AB			33,47	4,9, 15,20	RUL2, RUL3
Filler Face Plate	NT0X50AA			33,47	4,9, 15,20	RUL2, RUL3
DSP Card	NTAX81AA			33,47	5-8 10-13 16-19 21-24	RUL3
NXSP CP	NTEX93AA			33,47	5-8, 10-13 16-19 21-24	RUL3
Filler Face Plates	NT0X50AA			33,47	5-8, 10-14 16-19 21-24	RUL2, RUL3
Backplane Terminator	NTAX79AA			33,47	8R,13R 19R, 24R	RUL2
FLD UPG. KIT DICP TO EDSPM	NTAX75KA			33,47		RUL4
FLD UPG. KIT DICP TO EDSPM	NTAX82ZD			33,47		RUL5
Backplane Terminator	NTEX90AA		4	33,47	8R,13R 19R, 24R	RUL4, RUL5
DS30A Cable	NTAX7521			33,47		RUL6
Wiring for DSP	R0109478			33,47		RUL7
Peripheral Processor Shelf	NT6X0215		2	X,X+14		AP
ICP Circuit Pack Fill	NTAX75DD			X,X+14		RUL8
DS1 Interface	NT6X50AB			X,X+14	1-5	RUL9
Filler Face Plate	NT0X50AA			X,X+14	1-5	RUL9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
PCM30 I/F CP	NT6X27BB			X, X+14	2-5	RUL10
DS-30 Interface	NT6X48AA			X, X+14	6, 7	RUL11
CAP XPM Plus	NTAX74AA		2	X, X+14	12	RUL12
Unified Processor	NTMX77AA		2	X, X+14	12	RUL12
Time Switch	NT6X44AA		2	X, X+14	14	RUL12
Time Switch	NTAX78AA		2	X, X+14	14	RUL12
Universal Tone Receiver	NT6X92BC		2	X, X+14	15	RUL12
Universal Tone Receiver	NT6X92CA		2	X, X+14	15	RUL12
ISDN Signal Proc	NTBX01BA		2	X, X+14	16	RUL12
MISP Signal Proc	NTBX01CA		2	X, X+14	16	RUL12
MSG Interface	NT6X69AC		2	X, X+14	18	RUL12
MSG Interface (Hong-Kong)	NT6X69HA		2	X, X+14	18	RUL12
Msg Prot & Download Tones	NT6X69LB		2	X, X+14	18	RUL12
PCM30 Signalling CP	NT6X28AA			X, X+14	19	RUL13
PCM30 Signalling CP	NT6X28AC			X, X+14	19	RUL13
XPM PLUS Bus Terminator PB	NTMX71AA		2	X, X+14	19R	RUL12
Channel Sup Msg	NT6X42AA		2	X, X+14	20	RUL12
Speech Bus Formatter	NT6X41AA		2	X, X+14	21	RUL12
Speech Bus Formatter (Turky)	NT6X41AB		2	X, X+14	21	RUL12
DS-30 Ntwk Interface	NT6X40AD		2	X, X+14	22	RUL12
Link Control CP	NT6X40FB		2	X, X+14	22	RUL14
DS-512 Paddleboard	NT6X40GA		2	X, X+14	22R	RUL14
Power Converter	NT2X70AF		2	X, X+14	25	RUL12
Filler Face Plate	NT0X50AA		24	X, X+14	6-11, 13, 17, 19, 22, 23, 24	RUL12
Shelf Design Strip (ICP)	P0737463					RUL15
Desg. Label for NTAX74AA	P0800860					RUL15
Desg. Label for NTAX78AA	P0737140					RUL15
Desg. Label for NTAX80AA	P0737139					RUL15
Desg. Label for NTAX80AB	P0868327					RUL15
Desg. Label for NTAX81AA	P0739914					RUL15
Desg. Label for NTBX01BA	P0713794					RUL15
Desg. Label for NTBX01CA	P0873166					RUL15
Desg. Label for NTMX77AA	P0739085					RUL15
Desg. Label for NT0X50AA	P0578498					RUL15
Desg. Label for NT0X50AE	P0591361					RUL15
Desg. Label for NT2X70AF	P0809960					RUL15
Desg. Label for NT6X27BB	P0739157					RUL15
Desg. Label for NT6X28AA	P0653635					RUL15
Desg. Label for NT6X28AC	P0725257					RUL15
Desg. Label for NT6X40AD	P0834806					RUL15
Desg. Label for NT6X40FB	P0834807					RUL15
Desg. Label for NT6X41AB	P0683208					RUL15

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desg. Label for NT6X44AA	P0698316					RUL15
Desg. Label for NT6X48AA	P0626877					RUL15
Desg. label for NT6X50AB	P0690976					RUL15
Desg. Label for NT6X69AC	P0710476					RUL15
Desg. Label for NT6X69HA	P0743766					RUL15
Desg. Label for NT6X69LB	P0713213					RUL15
Desg. Label for NT6X92BC	P0737431					RUL15
Desg. Label for NT6X92CA	P0677831					RUL15
Cooling Unit	NTNX27CA		1	00		AP
Door Right - Gray	NTNX2513		2			RUL16
Door Left - Gray	NTNX2515		2			RUL16
Door Label Left (Gray)	P0818848		2			RUL16
Door Label Right (Gray)	P0699158		2			RUL16
End Panel Left - Gray	NTNX2518					RUL16
End Panel Right - Gray	NTNX2517					RUL16
Cabinet Type Label (Gray)	P0706567		2			RUL16
Door Right - Brown	NTNX2552		2			RUL16
Door Left - Brown	NTNX2550		2			RUL16
Door Label Left (Brown)	P0818849		2			RUL16
Door Label Right (Brown)	P0695230		2			RUL16
End Panel Left - Brown	NTNX2553					RUL16
End Panel Right - Brown	NTNX2546					RUL16
Cabinet Type Label (Brown)	P0706566		2			RUL16
Earthquake Mounting Kit	NTNX2540					RUL17
Earthquake Mounting Kit	NTNX2578					RUL17
Frame Mounting Kit	NTNX2579					RUL17
Frame Mounting Kit	NTNX2580					RUL17
Cable Duct Cover Kit (Bot.)	NTNX2557					RUL18
Cable Duct Cover Kit (Top)	NTNX2556					RUL18
Cable Trough-Gray	NTNX5511					RUL19
Cable Trough-Brown	NTNX55AA					RUL19
Fiber Adaptor Plate	P0738373		2			RUL14
Duplex Fiber Cable	NT0X97AJ		2			RUL14
DS-30 Cables	NTAX7524		1	05	22R	RUL20
DS-30 Cables	NTAX7525		1	05	22R	RUL20
D SUB Filter Conn	A0380978		8	05,19		RUL20
Stand Off	A0317136		32	05,19		RUL20
Flat Washer	P0148330		32	05,19		RUL20
Fiber Upgrade Kit	NTAX75ZC		1			RUL21
Universal Fiber XPM Kit	NT6X02UF		1			RUL21

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LGCI/DTCI Offshore Common CP	NT6X02UB		1			RUL22
XPM Plus Upgrade Kit	NTNX33ZA		1			RUL23
CAP XPM Plus Upgrade Kit	NTAX75ZB		1			RUL23

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTBX01CA P0873166	DEV DEV	

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

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

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

NOTES:

- 1) X = 05.
- 2) Power for the DICP is provided off of the PDC frame from 2 30 AMP fuses in the MTX system.

There are two connections on the bulkhead for each A+B power and ground runs, however only one cable is needed because the connections are linked.

The connections for EMI bulkhead are as follows:

-48V(A) to FL00 linked to FL01
BAT.RTN(A) to FL04 linked to FL05
-48V(B) to FL02 linked to FL03
BAT.RTN(B) to FL06 linked to FL07
-48V(ALARM) to FL08
RTN(ALARM) to FL09

There are two connections on the bulkhead for each A+B power and ground runs, however, only one cable is needed because the connections are linked.

Power for the MTXM comes from the PMPM end panel with the connections being the same on the DICP bulkhead. Power alarm connects to the PMPM FSP.

- 3) The following are the designation labels that need to be ordered :
 1. P0709277 Frame Des. Label (DICP 00 - 10) for FSP
P0741382 Frame Des. Label (DICP 11 - 54) for FSP
P0741383 Frame Des. Label (DICP 55 - 99) for FSP
 2. P0709278 Des. Labels for the PDC Frame (DICP 00 - 10)
P0741384 Des. Labels for the PDC Frame (DICP 11 - 99)
 3. P0736858 Shelf Des. Labels for FSP and PDC (ICP 00 - 9)
P0736859 Shelf Des. Labels for FSP and PDC (ICP 10 - 43)
 4. P0736861 Shelf Des. Labels for FSP and PDC (DSPM 00 - 88)
- 4) For cable information reference these documents:
 1. CA0X04 Tables 1KA-KH, 1KJ, 4AAZ, 4ABA-ABC
 2. CA0X06 Tables 1HH-HZ

5) DIGITAL FUNCTIONALITY:
PART A - NEW DICP EQUIPPED WITH DSPMS

When digital functionality is required, provide the following:

- A) Provide one or two DSP shelves depending on how many DSPMS are required.
- B) Provide circuit packs as required, according to the rules outlined in the following sections. It is recommended that the initial DSPMS are provided over split A and B Power feeds for redundancy. In other words, instead of fully providing DSPM 0 with 4 DSP cards, partially provide DSPM 0 and DSPM 2. Once DSPM 0 and DSPM 2 are fully provisioned continue with DSPM 1 and DSPM 3.

- C) Also provide the following per shelf:

	CPC/PEC	DESCRIPTION	QTY
1)	A0315462	10A Fuse	2 PER DSP SHELF
2)	A0205202	1.33A Fuse Indicator	2 PER DSP SHELF
3)	NTAX7521	DS30A Cable	8 PER DSP SHELF
4)	R0109478	Wiring	3 Meters

NOTE: THE FUSES MOUNT IN THE DICP FSP.

- D) The ICP also requires specific pack upgrades, such as:

- 1) The NTAX78AA must be used instead of the NT6X44AA.
- 2) The NTB01AB must be used instead of the NTB01AA.
- 3) Provide 4 NT6X48AA for DS30 interface to the DSPMS.

- E) THE NTAX7604 SHELF SHOULD NOT BE PROVISIONED IN NEW DICP FRAMES FROM THE FACTORY. PROVIDE THE MEDP CABINET.

PART B - DSPM FIELD UPGRADE

If the DSPs are being provided as a field upgrade:

- A) If the DICP cabinet was shipped before Sept 12, 1991 the DSPM power cabling may not be installed on the frame. Verify if the power cabling is already installed and if not order the following cables:

CODE	LENGTH (inches)	QTY (per frame)
6X1406	43.5	2
6X0318	39.5	2
6X0331	53.5	2
6X0322	57.0	2

- B) Provide a Field Upgrade Kit comprised of:

CPC/PEC	DESCRIPTION	QTY
-----	-----	-----
DSP EQUIPMENT		
NTAX7601	DSP Shelf	1 or 2 as required
NT2X70AF	Power Converter	As required (note 1)
NTAX80AA	DSP Control Processor	As required (note 1)
NTAX81AA	DSP Card	As required (note 1)
NTAX79AA	Backplane Terminator	As required (note 1)
NT0X50AA	Filler Face Plate	Min 1 per shelf + as req.
NTAX7521	DS30A Cable	8 per DSP Shelf
A0315462	10A Fuse	2 per DSP Shelf
A0205202	1.33A Fuse Indicator	2 per DSP Shelf
P0183220	Washer	1 per DSP Shelf
P0284154	Washer	1 per DSP Shelf
P0642031	Cable support bracket	1 per DSP Shelf
NT0X9538	Logic Ground Strap	3 per DSP Shelf
ICP EQUIPMENT		
NTAX78AA	Time Switch	2 per ICP (note 2)
NTBX01AB	ISDN Signal Proc	2 per ICP (note 2)
NT6X48AA	DS-30 Interface	4 per ICP

NOTES:

- 1) Provide per standard rules and philosophy outlined in Part A of this section.
- 2) Provide only if ICP is not already equipped with these packs.

RULES:

- AP 1) When PEC NTAX75AA is ordered, these items are provided.
- RUL1 1) Provide two filler panels for the blank shelves 33,47 when not provisioned with DSP shelves or EDSPM shelves.
- 2) Provide one (1) NTAX7601 shelf for mounting positions 33,47 for the DSP modules. Check with your marketing prime for DSP deployment strategy.
- 3) THE NTAX7604 SHELF SHOULD NOT BE PROVISIONED DIRECTLY FROM THE FACTORY, THE MEDP CABINET SHOULD BE ORDERED. See Rules 4 and 5 for Upgrade Kits.
- RUL2 1) Provide DSPM circuit packs NT2X70AF, NTAX80AA or NTAX80AB, and NTAX81AA and Terminator NTAX79AA as required by Job Engineer and according with the following table:

PEC	Description	Slot	Note
NT2X70AF NTAX80AA or NTAX80AB NTAX81AA NTAX79AA	Power Converter DSP Control Processor EFRC Control Processor DSP Board DSP Terminator	01 04 04 05,06 07,08 08R	Module 0 (Shelf 33) Module 4 (Shelf 47)
NT2X70AF NTAX80AA or NTAX80AB NTAX81AA NTAX79AA	Power Converter DSP Control Processor EFRC Control Processor DSP Board DSP Terminator	25 15 15 16,17 18,19 19R	Module 2 (Shelf 33) Module 6 (Shelf 47)
NTAX80AA or NTAX80AB NTAX81AA NTAX79AA	DSP Control Processor EFRC Control Processor DSP Board DSP Terminator	09 09 10,11 12,13 13R	Module 1 (Shelf 33) or Module 5 (Shelf 47)
NTAX80AA or NTAX80AB NTAX81AA NTAX79AA	DSP Control Processor EFRC Control Processor DSP Board DSP Terminator	20 20 21,22 23,24 24R	Module 1 (Shelf 33) or Module 5 (Shelf 47)

Figure 1. DSP Circuit Pack Table.

- 2) Provision one (1) NTAX80AA or (1) NTAX80AB for each DSP for DS-30A connections to the ICP. Each NTAX80AA/AB interfaces two DS-30 links. the ICP.
- 3) Provide NTAX80AB for EFRC (IS-641) for DS-30A connections to the ICP. The NTAX80AB is supported in E-DSPM NTAX7604 Backplane/Shelf and DSPM NTAX7601 Backplane/Shelf assemblies in the MTX04 S/W Stream. The NTAX80AB is backward compatible to the NTAX80AA. Contact PLM Prime for availability.
- 4) Provide one (1) NTAX81AA circuit packs for every two (2) digital DRU's.
- 5) Provide one backplane terminator per DSP. This pack is used to distinguish between the DSP's on the shelf.

- 6) Provision NT0X50AA Filler Face Plates for each slot that the NTAX80AA and NTAX81AA CP's are not provided in.
- 7) Always provide a NT0X50AA Filler Face Plate in slot 14 on shelf 33,47.
- 8) Provision NT0X50AE Filler Face Plate for slots 1,25 if unequipped.
- 9) Provide either NTAX81AA or NTEX93AA, NOT a combination of both.
- 10) The DSP modules are defined as follows:

		DSP 4								DSP 5								DSP 6								DSP 7							
		/								\ /								\ /								\ /							
SLOT		8								1								1								2							
		1	2	3	4	5	6	7	8	R	9	0	1	2	3	R	4	5	6	7	8	9	R	0	1	2	3	4	R	5	6	7	
S H E L F	47	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
S H E L F	33	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		\ / \ / \ / \ / \ / \ / \ /								\ / \ / \ / \ / \ / \ / \ /								\ / \ / \ / \ / \ / \ / \ /															
		DSP 0								DSP 1								DSP 2								DSP 3							

Figure 2. DSP Module Definition.

- RUL3 1) Provide EDSPM circuit packs NT2X70AF, NTAX80AA or NTAX80AB, and NTEX93AA as required by Job Engineer and according with the following table:

PEC	Description	Slot	Note
NT2X70AF NTAX80AA or NTAX80AB NTEX93AA	Power Converter DSP Control Processor EFRC Control Processor EDSP Board	01 04 04 05,06 07,08	Module 0 (Shelf 33) or Module 4 (Shelf 47)
NT2X70AF NTAX80AA or NTAX80AB NTEX93AA	Power Converter DSP Control Processor EFRC Control Processor EDSP Board	25 15 15 16,17 18,19	Module 2 (Shelf 33) or Module 6 (Shelf 47)
NTAX80AA or NTAX80AB NTEX93AA	DSP Control Processor EFRC Control Processor EDSP Board	09 09 10,11 12,13	Module 1 (Shelf 33) or Module 5 (Shelf 47)
NTAX80AA or NTAX80AB NTEX93AA	DSP Control Processor EFRC Control Processor EDSP Board	20 20 21,22 23,24	Module 1 (Shelf 33) or Module 5 (Shelf 47)

Figure 3. EDSP Circuit Pack Table.

- 2) Provision one (1) NTAX80AA or (1) NTAX80AB for each DSP for DS-30A connections to the ICP. Each NTAX80AA/AB interfaces two DS-30 links. the ICP.
- 3) Provide NTAX80AB for EFRC (IS-641) for DS-30A connections to the ICP. The NTAX80AB is supported in E-DSPM NTAX7604 Backplane/Shelf and DSPM NTAX7601 Backplane/Shelf assemblies in the MTX04 S/W Stream. The NTAX80AB is backward compatible to the NTAX80AA. Contact PLM Prime for availability.
- 4) Provision NT0X50AA Filler Face Plates for each slot that the NTAX80AA and NTEX93AA CP's are not Provided in
- 5) Always provide a NT0X50AA Filler Face Plate in slot 14 on shelf 33,47.

- 6) Provision NT0X50AE Filler Face Plate for slots 1,25 if unequipped.
- 7) The NTEX90AA Backplane Terminators are always installed when the NTAX7604 Shelf assembly is installed or the NTAX7601 Shelf assembly is upgraded to EDSP Features. See Rules 1,4, and 5.
- 8) Provide either NTAX81AA or NTEX93AA, NOT a combination of both.
- 9) The DSP modules are defined as follows:

		DSP 4								DSP 5								DSP 6								DSP 7							
		/				\ /				\ /				\ /				\ /				\ /											
SLOT						8				1				1				1				1				2							
		1	2	3	4	5	6	7	8	R	9	0	1	2	3	R	4	5	6	7	8	9	R	0	1	2	3	4	R	5	6	7	
S H E L F	47	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
S H E L F	33	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F
		\				/ \				\				/ \				\				/ \				\							
		DSP 0				DSP 1				DSP 2				DSP 3																			

Figure 4. EDSP Module Definition.

- RUL4
- 1) Provide one (1) Field Upgrade Kit NTAX76KA per DSPM shelf NTAX7601 when upgrade to the Enhanced DSPM features (TDMA-6) is required. The DSPM or EDSPM circuit packs may be used with upgraded NTAX7601 shelf.
 - 2) Four (4) NTEX90AA Backplane Terminators are always provided with the NTAX76KA.

- RUL5 1) Provide one (1) Field Upgrade Kit NTAX82ZD per unequipped shelf position 33 or/and 47, when the Enhanced DSPM features (TDMA-6) is required. The DSPM or EDSPM circuit packs may be used with upgraded NTAX7601 shelf.
- 2) Four (4) NTEX90AA Backplane Terminators are always provided with the NTAX82ZD.
- RUL6 1) Two NTAX7521 DS30A cables are required per DSPM. However, for consistency provide all 8 DS30A cables per shelf when DSP shelves are provided.
- RUL7 1) Provide 3 meters of R0109478 when providing the DSPM shelves as a field upgrade.
- RUL8 1) Provide Circuit pack fill (NTAX75DD) for shelf positions 05 and 19 for ICP configuration. Provide circuit packs per Job Engineer requirements.
- RUL9 1) Provide a maximum of ten (10) NT6X50AB, DS1 Interface CP for each ICP module as per customer requirements. One NT6X50AB provides interfaces for up to two (2) T-1 spans.

When engineering a digital ICP that supports TDMA (digital mobile subscribers), three times the quantity of DS-1 spans must be engineered relative to analogue provisioning requirements. The two additional DS-1 spans are cabled to loop into each other and do not connect to other peripherals. The extra DS-1 spans are for virtual trunks that are used in order to triple the call capacity from analogue to digital. The two additional DS-1 spans must be datafilled in table TRKMEM as part of the same TRKGRP as the physical DS-1 span from the ICP to the ICRM.

- 2) Assign the T-1 spans sequentially from 0 to 19 as follows:

T-1 I/F Port	DICP Position
0/1	05 - 5
2/3	19 - 5
4/5	05 - 4
6/7	19 - 4
8/9	05 - 3
10/11	19 - 3
12/13	05 - 2
14/15	19 - 2
16/17	05 - 1
18/19	19 - 1

Figure 5. T-1 Span Assignment.

- 3) Provide one NT0X50AA Filler Face Plate for each card slot 1-5, shelf position 5 and 19, unequipped.
- RUL10 1) Provide a maximum of eight (8) NT6X27BB PCM-30 Interface CP per module as per customer requirements. Provide in sequence from slot 5-2 for ICP-0 applications. The ICP-0 is available only with MTX02 software and higher. Assign PCM-30 spans sequentially from 0 to 15 as shown below.

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

Figure 6. PCM-30 Interface Circuit Pack Assignment.

- RUL11 1) All four (4) NT6X48AA circuit packs must be provisioned when adding the DSP shelves. The software configures channels on all 4 cards.
- RUL12 1) If an ICP is being provisioned at a software release less than BCS32+, provide:
- eighteen (18) Filler Face Plates (NT0X50AA),
four (4) XPM Processor CP (NT6X45BA),
two (2) Master Proc Memory Plus CP (NT6X47AC),

two (2) Sig Proc Memory Plus CP (NT6X46BB),
two (2) Time Switch (NT6X44AA),
two (2) Universal Tone Receiver (NT6X92BC),
two (2) ISDN Pre-Processor CP (NTBX01BA),
two (2) CPP Msg Protocol & Tone CP (NT6X69AC),
two (2) Speech Bus (NT6X41AA),
two (2) Channel Sup Message (NT6X42AA),
two (2) Power Convertor +/-5,12V (NT2X70AF),
two (2) Shelf Desig. Strip (ICP) (P0737463),

- 2) If an ICP is being provisioned at a software release greater than or equal to BCS32+, provide:

eighteen (18) Filler Face Plates (NT0X50AA),
four (4) XPM Processor CP (NT6X45BA),
two (2) Master Proc Memory Plus CP (NT6X47AC),
two (2) Sig Proc Memory Plus CP (NT6X46BB),
two (2) Universal Tone Receiver (NT6X92BC),
two (2) Enhanced ISDN Pre-Processor CP (NTBX01BA),
two (2) CPP Msg Protocol & Tone CP (NT6X69AC),
two (2) Speech Bus (NT6X41AA),
two (2) Channel Sup Message (NT6X42AA),
two (2) Power Convertor +/-5,12V (NT2X70AF),
two (2) Shelf Desig. Strip (ICP) (P0737463),

For the >= BCS32+ option, the Time Switch CPs are provisionable.

If digital and analog functionality are required, provide:

two (2) NTAX78AA Time Switch CPs.
two (2) Designation Labels (NTAX78AA) P0737140.

If analog functionality is required, provide:

two (2) NT6X44AA Time Switch CPs.
two (2) Designation Labels (NT6X44AA) P0698316.

- 3) If an ICP/ICP-0 is being provisioned at a software release greater than or equal to BCS35 (CAB.REL 06 and higher) there is a requirement for XPM PLUS, provide:

twenty-four (24) Filler Face Plates (NT0X50AA),
two (2) Unified Processor (NTMX77AA),
two (2) XPM PLUS Term PB (NTMX71AA),
two (2) Universal Tone Receiver (NT6X92BC),
two (2) Enhanced ISDN Pre-Processor CP (NTBX01BA),
two (2) CPP Msg Protocol & Tone CP (NT6X69AC),
two (2) Speech Bus (NT6X41AA),

two (2) Speech Bus (NT6X41AB), Turkey application
two (2) Channel Sup Message (NT6X42AA),
two (2) Power Convertor +/-5,12V (NT2X70AF),
two (2) Shelf Desig. Strip (ICP) (P0737463),

4) If an ICP is being provisioned at a software release of MTX02 or greater and there is a requirement for CAP XPM Plus provide:

twenty-four (24) Filler Face Plates (NT0X50AA),
two (2) Cellular Access Processor (NTAX74AA),
two (2) XPM PLUS Term PB (NTMX71AA),
two (2) Universal Tone Receiver (NT6X92BC)
two (2) Enhanced ISDN Pre-Processor CP (NTBX01BA),
two (2) CPP Msg Protocol & Tone CP (NT6X69AC),
two (2) Speech Bus (NT6X41AA),
two (2) Channel Sup Message (NT6X42AA),
two (2) Power Convertor +/-5,12V (NT2X70AF),
two (2) Shelf Desig. Strip (ICP) (P0737463),

For the XPM PLUS option (at BCS35 or higher), the Time Switch CPs are provisionable.

If digital and analog functionality are required, provide:

two (2) NTAX78AA Time Switch CPs.
two (2) Designation Labels (NTAX78AA) P0737140.

If analog functionality is required, provide:

two (2) NT6X44AA Time Switch CPs.
two (2) Designation Labels (NT6X44AA) P0698316.

- 5) If an ICP is being provisioned at a software release of MTX06 or greater and there is a requirement ICP Metro ES provide:

twenty-four (24) Filler Face Plates (NT0X50AA),
two (2) Cellular Access Processor (NTAX74AA),
two (2) XPM PLUS Term PB (NTMX71AA),
two (2) Universal Tone Receiver (NT6X92BC)
two (2) MISP Pre-Processor CP (NTBX01CA),
two (2) CPP Msg Protocol & Tone CP (NT6X69AC),
two (2) Speech Bus (NT6X41AA),
two (2) Channel Sup Message (NT6X42AA),
two (2) Power Convertor +/-5,12V (NT2X70AF),
two (2) Shelf Desig. Strip (ICP) (P0737463),

Note: ICP Metro ES (NTBX01CA) Requires the CAP Processor (NTAX74AA).

For the XPM PLUS option (at BCS35 or higher), the Time Switch CPs are provisionable.

If digital and analog functionality are required, provide:

two (2) NTAX78AA Time Switch CPs.
two (2) Designation Labels (NTAX78AA) P0737140.

If analog functionality is required, provide:

two (2) NT6X44AA Time Switch CPs.
two (2) Designation Labels (NT6X44AA) P0698316.

- 6) Provide two (2) NT6X40AD (DS-30 Network Interface) CPs in order to allow the interfacing of the ICP to the DMS network module.
Provide one NTAX7524 and one NTAX7525 DS-30 cable for the NT6X40ADs.

- 7) Provide eight (8) A0380978 filter adapters and associated mounting hardware (A0317136 (32) and P0148330 (32)) when DS30 interface to the network is required.

- 8) Provide two (2) NT6X69HA MSG Interface CPs for Hong-Kong applications.

- RUL13 1) Two (2) NT6X28AC PCM-30 Signalling CP circuits packs per controller ILGC/IDTC/PDTC/ICP-0 are required when NT6X27__ is provided.

- 2) The NT6X28AC is not available at this time. Contact PLM prime for availability. Provide NT6X28AA until further notice.

- RUL14 1) Provide the following for fiberized connections on the DICP in new production:

2 NT6X40FB Link Controller CP
2 NT6X40GA DS-512 Paddleboard
2 P0738373 Fiber Adaptor Plate
2 NT0X97AJ Duplex Fiber Cable

- RUL15 1) Provide designation labels as required.

- RUL16 1) For each brown cabinet required, provide:

two (2) Door Right - Brown (NTNX2552)
two (2) Door Left - Brown (NTNX2550)
two (2) Door Label Left (Brown) (P0818849)
two (2) Door Label Right (Brown) (P0695230)
two (2) cabinet labels, Brown (P0706566).

2) For each Brown ICP cabinet line-up, provision:

one (1) End Panel left, NTNX2553
one (1) End Panel right, NTNX2546.

3) For each grey cabinet required, provide:

two (2) Door Right - Gray (NTNX2513)
two (2) Door Left - Gray (NTNX2515)
two (2) Door Label Left (Gray) (P0818848)
two (2) Door Label Right (Gray) (P0699158)
two (2) cabinet labels, Gray (P0706567).

4) For each Gray ICP cabinet line-up, provision:

one (1) End Panel left, NTNX2518
one (1) End Panel right, NTNX2517.

5) Assign the door assembly to the frame on the hardware specs. Do not ship the door assemblies as loose items.

RUL17 1) Anchoring kits are an option to be purchased by the customer. When purchased these anchoring kits are to be shipped loose.

2) Provision one NTNX2540 kit for slab type flooring or one NTNX2578 for computer flooring when installing frames in an earthquake zone ATC Zone 7, NEBS Zone 4, or UBC Zone 4 (Ship loose).

3) Provision one NTNX2579 kit for slab type flooring and one NTNX2580 kit for computer flooring in a non-earthquake zone (Ship loose).

RUL18 1) When cables enter the bottom of the cabinet, provide one NTNX2556 Cable Duct Cover Kit (Top).

2) When cables enter the top of the cabinet, provide one NTNX2557 Cable Duct Cover Kit (Bottom).

RUL19 1) When a cable trough is required, provide one NTNX55AA for brown products and one NTNX5511 for gray products.

- RUL20 1) Provide NTAX7524 and NTAX7525 Connectorized Cables per cabinet when DS30 interface to the network is required. Use cable NTAX7524 for shelf pos. 05 and NTAX7525 for shelf pos. 19. The NT6X02UF Universal Fiber XPM Kit (Always provided) is used to attach the cables to the backpanels of the ICP modules. Filter Adapters A0380978 (Qty 8) and associated mounting hardware A0317136 (Qty 32), P0148330 (Qty 32) must be provided on the EMI bulkhead.
- RUL21 1) For DICP cabinets with release levels less than or equal to 6, provide one NTAX75ZC Fiber Upgrade Kit and one NT6X02UF Universal Fiber XPM Kit only when making fiber connections to the Network.
- 2) For DICP cabinets with release levels greater than or equal to 7, provide one NTAX75ZC Fiber Upgrade Kit only when making fiber connections to the Network.
- 3) The NT6X02UF Fiber Kit is AP on NEW Frames coming from the factory.
- RUL22 1) Provide one DTCI/LGCI Offshore circuit packfill NT6X02UB per shelf positions 05 and 19 for ICP-0 configuration per customer requirements with provisionable circuit packs. ICP-0 is available with MTX02 software or higher. Three (3) jumpers must be applied to shelves positions 05 & 19 to provide ICP-0 configuration. These wirings are backward compatible with ICP configuration and will be permanently added to NTAX74AA wiring from Cabinet Release 10 and higher. CP used for ICP-0.

NT6X27BB	Slot 05-02	
NT6X48AA	Slot 06,07	
NTMX77AA	Slot 12	
NTAX78AA	Slot 14	
NT6X92CA	Slot 15	
NTBX01BA	Slot 16	
NT6X69LA	Slot 18	Provision for J-NET only.
NT6X69LB	Slot 18	Provision for J-NET or E-NET.
NT6X28AA	Slot 19	
NTMX71AA	Slot 19R	
NT2X70AF	Slot 25	

NOTE:

The following circuit packs are provisionable per customer req.

NT6X40AD	Slot 22	Provision for DS-30 to J-NET.
NT6X40FB	Slot 22	Provision for DS-512 Fiber I/F to E-NET.
NT6X40GA	Slot 22R	"" "" "" "" "" ""
NT0X50AA	Slots 01,08,09,10,11,13 &17	

- RUL23 1) For field upgrade to XPM Plus (for CAB REL.05 and lower) use kit NTNX33ZA. Use XPM Plus CAP field upgrade kit NTAX75ZB for ICP field upgrade to XPM Plus with Cellular Access Processor (for CAB REL.05 and lower).The NTAX75ZB kit must be used with MTX02 software or higher.
- 2) When the XPM PLUS feature with CAP (only ICP configuration) is required in the field, for cabinets Rel 05 and lower provide NTAX75ZB Kit. Apply only with MTX02 software and higher (required for NTAX74AA CAP processor). The NTAX74AA is used with ICP packfill, which includes EISP NTB01BA processor.
- 3) When the XPM PLUS feature with CAP (only ICP configuration on shelves pos. 05 & 19) on CAB REL.06 and higher provide: NTAX74AA in slot pos. 12, NTMX71AA in slot pos. 19R, NT0X50AA in slot pos. 08,09,10 & 11 when required by job engineering. Apply NTAX74AA CAP Circuit pack with MTX02 software and higher. The NTAX74AA CAP is used in ICP packfill with EISP NTB01BA processor.

NT800DR CE1 CSC OMNI STD FRAME

PEC CODE: NT3P60AB

CPC CODE: A0371378

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard CSC OMNI CE Bay. Use the provisioning tables to order the correct frame pec code for frames that deviate from the standard.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Keith Zaletsky Dept. 5849 (RICH)

NT3P60AB EMA9-04-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 24	ECM 534 07	Added NTAX40CA and NTAX40DA DRUM's and MD'd NTAX40AA and NTAX40BA DRUM's. Added NT3P20FB Enhanced ACU Input Card as provisionable on the ACU(NOTE: The NT3P20FB is not available as of this ECM release; check availability before using!).
93 02 11	ECM 438 09	
93 06 10	ECM 438 12	Make NT3P20FB Enhanced ACU Input Card available for provisionable slots.
94 01 28	ECM 438 16	Make NT3P19AA CSC Cellsite Manual provisionable as misc. equipment. Make TAU shipped loose and not assigned to the frame.

The NT800DR CE1 CSC Omni STD Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BC	RIP	1	42		AP
TAU OMNI ES	NT3P55BA			35		RUL1
TAU Kit ES STSR	NT3P55BB					RUL1
Alarm Control Unit	NT3P20GB	ACU	1	33		AP
Input Circuit Pack	NT3P20FA		8	33	1-8	AP
Input Circuit Pack	NT3P20FB		8	33	1-8	RUL6
Input Circuit Pack	NT3P20FB		4	33	9-12	RUL6
Output Circuit Pack	NT3P20EA		1	33	13,16	RUL5
Output Circuit Pack	NT3P20EA		1	33	14	AP
Ribbon Cable	NT3P31AA			35		RUL5
Master Oscillator	NT3P20JB	HSMO	1	31		AP
RX Multicoupler	NT3P20HK	RMC	1	25		AP
8-16 Port Exp.	NT3P20HM					RUL4
Blank Panel	NT3P25AC		2	27,29		AP
NTPAD	NT3P20CA	NTPAD	1	19		AP
Port Card	NT3P20KA		1	19	1	AP
Port Card	NT3P20KA			19	2-24	RUL3
NTPAD	NT3P20CA	NTPAD		13		RUL2
Port Card	NT3P20KA			13	2-24	RUL3
Blank Panel	NT3P25AB		1	01		AP
Anchoring Kit	NT3P40AA		1			AP
CSC Cellsite Manual	NT3P19AA		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 ACU Input CP's are always provided in slots 1-8. Slot 8 alarm points are for customer optional alarms.
- 2) Provide the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing
- 3) Only the NT3P20HK RMC is expandable from 8 to 16 ports. All other RMC's are limited to 8 ports.
- 4) The NT3P20CA NTPAD shelf is equipped with 1 channel card.

RULES:

AP 1) When PEC NT3P60AB is ordered, these items are provided.

RUL1 1) Provide one (1) TAU per CSC per site - NT3P55BA OMNI expanded spectrum. The TAU must be shipped loose and not assigned to the frame.

2) Provide one (1) NT3P55BB OMNI to SECTORIZED upgrade kit for expanded spectrum sectorization with the NT3P55BA TAU.

3) Always provide one (1) NT3P55CB wiring kit per TAU.

RUL2 1) Provide an additional NTPAD shelf if required.

- RUL3 1) Provisioning rules for NTPAD shelf is as follows:
1. Maximum 48 transceiver channels per shelf.
 2. One port card for every two transceivers.
- 2) For sectorized sites NTPAD cards may be provisioned on a per RF frame. Provide 8 NTPAD cards for each fully loaded RF frame. Marketing must be consulted as there is a cost issue. This can ONLY WORK on a per RF frame basis. To calculate the number of NTPAD cards count the number of radios and divide by 2. For a sectorized site make the calculation per frame or you will end up short one card. For example on a 120 degree site with 7 radios per frame the provisioning rule will give you $21/2 = 11$ when in fact you will need $7/2 + 7/2 + 7/2 = 12$ NTPAD cards.
- RUL4 1) Provide one (1) NT3P20HM to increase the 8 port RMC to 16 ports for sites with more than 4 RF frames.
- RUL5 1) Provide one NT3P31AA ribbon cable for every two (2) extra alarm cp's ordered.
- 2) A maximum of 4 extra input cards may be provided.
 - 3) A maximum of 2 extra output cards may be provided.
- RUL6 1) The NT3P20FB Enhanced ACU Input Card is available for use in slots 9-12 for optional alarms. The NT3P20FB will replace the NT3P20FA in slots 1-8 when the current stock of the NT3P20FA is depleted.
- RUL7 1) Provide at least one NT3P19AA CSC Cellsite Manual for each CSC based cellsite. If not requested, please confirm with the engineering group.

NT800DR CE1 ICP OMNI STD FRAME

PEC CODE: NT3P60AD

CPC CODE: A0387871

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard ICP OMNI CE Bay. Use the provisioning tables to order the correct frame pec code for frames that deviate from the standard.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Keith Zaletsky Dept. 5849 (RICH)

NT3P60AD EMA9-07-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 24	ECM 534 07	Added NTAX40CA and NTAX40DA DRUM's and MD'd NTAX40AA and NTAX40BA DRUM's.
93 02 11	ECM 438 09	Added NT3P20FB Enhanced ACU Input Card as provisionable on the ACU(NOTE: The NT3P20FB is not available as of this ECM release; check availability before using!).
93 03 10	ECM 438 10	Make blank panels provisionable for the DRUM and ICRM positions. Reference ECD-00215296.
93 04 16	ECM 534 08	Add ICRM building blocks.
93 06 02	ECM 534 10	Make blank panels for DRUM & ICRM AP. Add 40dB attenuator for AX40CA DRUM. Clarify DRUM cabling notes.
93 06 10	ECM 438 12	Make NT3P20FB Enhanced ACU Input Card available for provisionable slots.
93 08 02	ECM 438 13	Add Installation Manual P0745134.
93 11 16	ECM 438 15	Update Novatel numbers.
94 01 28	ECM 438 16	Make NT3P19AB ICP Cellsite Manual provisionable as misc. equipment. Add NT3P70AA CSM2 for VO ONLY. Add note for 8X47BA cabling.

The NT800DR Common Equipment Frame for ICP/RCMI is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BC	RIP	1	42		AP
# DRUM	NTAX40AA	DRUM	1	37		RUL5
# DRUM	NTAX40BA	DRUM	1	37		RUL5
DRUM-Whip Antenna Config.	NTAX40CA	DRUM	1	37		RUL6
DRUM-Sniffer Port Config.	NTAX40DA	DRUM	1	37		RUL7
8-Way Divider Kit	NT3P03NC		1			RUL10
Cable CSM to RF2 Dup.	NT3P00DJ		1			RUL10
Cable CSM to RF3 Dup.	NT3P30AD		1			RUL10
Whip Antenna	NT3P01KR		1			RUL9
RF Cable	NTAX4021		1			RUL9
40db Attenuator	A0601731		1			RUL9
10dB Attenuator	A0297287		1			RUL8
20dB Attenuator	A0382091		1			RUL8
30dB Attenuator	A0381688		1			RUL8
Blank Panel (5 POS)	NT3P25AH		1	37		AP
Alarm Control Unit	NT3P20GA	ACU	1	35		AP
Input Circuit Pack	NT3P20FA		8	35	1-8	AP
Input Circuit Pack	NT3P20FB		8	35	1-8	RUL11
Input Circuit Pack	NT3P20FB		4	35	9-12	RUL11
Output Circuit Pack	NT3P20EA		1	35	13,16	RUL4
Output Circuit Pack	NT3P20EA		1	35	14	AP
Ribbon Cable	NT3P31AA			35		RUL4
Master Oscillator	NT3P20JB	HSMO	1	33		AP
Cell Site Monitor	NT3P20MA	CSM	1	31		AP
# Cell Site Monitor-2	NT3P70AA	CSM	1	31		RUL25
RX Multicoupler	NT3P20HK	RMC	1	25		AP
8-16 Port Exp.	NT3P20HM					RUL3
Blank Panel	NT3P25AC		2	27,29		AP
Rem. Cell Multiplexor I/F	NT3P50AA	RCMI	1	19		AP
LAPD Link Card	NT3P50BA		2	19	1,14	AP
Port Card	NT3P50CA		2	19	4,17	AP
Port Card	NT3P50CA			19	5-13 18-26	RUL2
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI		13		RUL1
Expansion Card	NT3P50DA		2	13	1,14	RUL1
Port Card	NT3P50CA			13	6-13	RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Blank Panel	NT3P25AA		1	13	19-26	AP
ICRM - Duplex	NTZZ38AA			1		RUL12
ICRM - Simplex	NTZZ38BA			1		RUL15
Terminal Plug	NTAX8650			1		RUL16
DS-1 Interface Card	NT6X50AB			1	12-14	RUL17
Desig Label NT6X50AB	P0690976			1	12-14	RUL22
Rem Mod Digital Port	NT8X47BA	RMDP		1	4-8	RUL18
					17-20	
Desig Label NT8X47BA	P0689233			1	4-8	RUL22
					17-20	
Rem Mod Manchester Port	NTAX83AA	RMMP		1	4-8	RUL19
					17-20	
Desig Label NTAX83AA	P0734827			1	4-8	RUL22
					17-20	
Rem Mod Radio Port	NTAX87AA	RMRP		1	4-8	RUL20
					17-20	
Desig Label NTAX87AA	P0727626			1	4-8	RUL22
					17-20	
Filler Face Plate	NT0X50AA			1	4-8	RUL21
					12-14	
					17-20	
Desig Label NT0X50AA	P0578498			1	4-8	RUL22
					12-14	
					17-20	
Blank Panel (12 POS)	NT3P25AL		1	1		AP
Anchoring Kit	NT3P40AA		1			AP
Installation Manual	P0745134		1			RUL23
ICP Cellsite Manual	NT3P19AB		1			RUL24

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX40AA/BA NT3P70AA	MD DEV	NTAX40CA/DA

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 the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing
- 2) When the DRUM, ICRM, or second RCMI are needed in this frame, manufacturing will remove the AP blank panels and add the appropriate shelves.

RULES:

- AP
- 1) When PEC NT3P60AD is ordered, these items are provided.
 - 2) The ACU Input CP,s are always provided in slots 1-8. Slot 8 alarm points are for customer optional alarms.
 - 3) The NT3P50AA RCMI shelf is always equipped with 2 LAPD cp's and 2 port cards.
 - 4) Only the NT3P20HK RMC is expandable from 8 to 16 ports. All other RMC's are limited to 8 ports.
- RUL1
- 1) The NT3P50EA RCMI expansion shelf comes equipped with 2 expansion cards. All expansion cabling is included with this pec.

- 2) Provisioning rules for RCMI shelf is as follows:
 - 1-32 Channels - 1 RCMI
 - 1-64 Channels - 2 RCMI
 - 1-96 Channels - 3 RCMI
 - 1-128 Channels - 4 RCMI
- 3) Two expansion cards are always provided with the expansion shelf.
- 4) The RCMI shelf is a redundant configured shelf consisting of an A and B side. The A side going from slots 1-13 and the B side going from slots 14-26.

- RUL2 1) Port card provisioning. Each circuit pack has four ports and are always provisioned in pairs. The first two port cards are always provided. These cards are included in the following tables.

CHANNELS	CARDS

0-8	8
16	12
24	16
32	20
40	24
48	28
56	32
64	36
72	40
80	44
88	48
96	52
104	56
112	60
120	64
128	68

The first two port cards are always provided so subtract two (2) from the total.

- RUL3 1) Provide one (1) NT3P20HM to increase the 8 port RMC to 16 ports for sites with more than 4 RF frames.
- RUL4 1) Provide one NT3P31AA ribbon cable for every two (2) extra alarm cp's ordered.
- 2) A maximum of 4 extra input cards may be provided.
 - 3) A maximum of 2 extra output cards may be provided.

- RUL5 1) Provide one (1) DRUM when a cell site is operating in the digital mode. This unit will monitor the digital voice channel.
- RUL6 1) Provide one (1) NTAX40CA DRUM when a 60 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel. (NOTE: The NTAX40CA DRUM can also be used in OMNI and 120 degree sectored systems but is not recommended by BNR).
- RUL7 1) Provide one (1) NTAX40DA DRUM when an OMNI or 120 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel.
- RUL8 1) The DRUM has an attenuator that is provisionable in three different values(10dB, 20dB, and 30dB). A detailed analysis of the selection criteria for this attenuator is provided in IM1547. It is recommended that the customer be provided with one of each since each site may be different.
- 2) For the NTAX40CA, DRUM-Whip Antenna Configuration, the selection criteria is summarized as follows:
- i) The sum of the coupling from the base station antennas to the DRUM/CSM antenna, plus the cable loss of NTAX4021, plus the value of the attenuator must sum to a total in the range of 60 to 90dB.
- 3) For the NTAX40DA, DRUM-Sniffer Port Configuration, the selection criteria is summarized as follows:
- i) The attenuator will not usually be required when using the standard duplexer, however, for non-standard configurations the sniffer port coupling plus the value of the attenuator must sum to a total of 50dB.
- RUL9 1) Provide one (1) NT3P01KR Whip Antenna, one (1) NTAX4021 RF Cable, and one (1) A0601731 40dB attenuator when using the NTAX40CA DRUM. The NTAX4021 RF Cable is length provisionable.
- RUL10 1) Existing sites may already have accessory equipment which comes in the RF cable kits.
- 2) When using the NTAX40DA DRUM for OMNI configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit

- 3) When using the NTAX40DA DRUM for 120 STSR configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit
1	NT3P00DJ	CSM to RF2 Duplexer Cable
1	NT3P30AD	CSM to RF3 Duplexer Cable

- 4) When more than 16 channels per sector are being used, additional CSM to Duplexer cables are needed.

- 5) 8-Way Divider Kit(NT3P03NC) includes the following parts:

8-Way Divider	A0603342	(QTY 1)
RF Cable	NT3P30AK	(QTY 1)
Cable CSM to RF1 Dup.	NT3P0311	(QTY 1)
Screw	A0603053	(QTY 4)
Nut	A0603054	(QTY 4)
Washer	A0603262	(QTY 4)
Bracket	P0720029	(QTY 1)
Attenuator	A0603113	(QTY 1)
Connector	A0601216	(QTY 1)

RUL11 1) The NT3P20FB Enhanced ACU Input Card is available for use in slots 9-12 for optional alarms. The NT3P20FB will replace the NT3P20FA in slots 1-8 when the current stock of the NT3P20FA is depleted.

RUL12 1) Provide one (1) NTZZ38AA for an ICRM in DUPLEX mode.

RUL13 1)

RUL14 1)

RUL15 1) Provide one (1) NTZZ38BA for an ICRM in SIMPLEX mode.

RUL16 1) Provide two (2) NTAX8650 terminal plugs for the connectors when an expansion shelf IS NOT provided.

RUL17 1) The SIMPLEX building block provides one NT6X50AB in position 11. The DUPLEX building block provides two NT6X50ABs

in positions 11 & 12. Use the following tables to provide additional NT6X50ABs:

T1 SPANS	PROVIDE NT6X50ABs IN POSITIONS	
	SIMPLEX	DUPLEX
1-2	AP	AP
3-4	12	AP
5-6	12, 13	13
7-8	12, 13, 14	13, 14

- RUL18 1) Provide one (1) NT8X47BA in position 20 when the DRUM is required.
- 2) When using an ICRM WITHOUT a DRUM, only one NT8X47BA is absolutely necessary, regardless of whether the ICRM is configured in simplex or duplex mode. However, two NT8X47BAs can still be used. If configured in duplex mode without a DRUM with only one NT8X47BA, the cable that connects between the ICRM and RMFS MUST be connected to the connector labeled "SIMPLEX" on the ICRM backpanel. SPEC WRITERS MUST INCLUDE A MANUFACTURING NOTE IN THEIR SPECS INDICATING WHICH CONNECTOR AND CONFIGURATION IS BEING USED.
- 3) Provision one NT8X47BA for each RF frame. RF frames not fully equipped may use ports off the cp's in positions 20 and 21. THIS IS NOT RECOMMENDED because special cables are required.
- 4) For 60 & 120 OTSR, cp's in positions 18-20 must be provisioned for the control and locate channels on the GCL shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the cp's in positions 18-21 to be used for RF frames.
- RUL19 1) Provide one (1) NTAX83AA for every 8 GE radios. Each circuit pack can be assigned either one control channel or one locate channel.
- RUL20 1) Provide one (1) NTAX87AA for every shelf in which P2/P3 will mount. Each circuit pack can be assigned either one control channel or one locate channel.

- RUL21 1) Provide one (1) NT0X50AA for each position not equipped.
- RUL22 1) Provide one (1) designation label for each circuit pack ordered.
- RUL23 1) Provide at least one (1) P0745134 ICP Cell Site Installation Methods Manual (IM02) for each cell site.
- RUL24 1) Provide at least one NT3P19AB ICP Cellsite Manual for each ICP based cellsite. If not requested, please confirm with the engineering group.
- RUL25 1) The NT3P70MA CSM is to ONLY be used for V0 at this time.

NT800DR RADIO FREQUENCY FRAME

PEC CODE: NT3P61AB

CPC CODE: A0375734

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: RF

ENGINEERING DESCRIPTION: This equipment is a layout of a standard RF 16 channel Bay. Use the provisioning tables to order the correct frame that deviates from the standard.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

NT3P61AB EMA9-08-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 10	ECM 438 10	Correct code for MPA fuse.
93 04 16	ECM 534 08	MPA fuse is only ordered when MPA is shipped loose.
93 08 02	ECM 438 13	Change isolator pad part number CND02658 to A0367429
93 08 23	ECM 438 14	Update transceiver information.
93 11 16	ECM 438 15	Add NTAX98AA TRU for V0 purposes.

The NT800DR Radio Frequency Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P21BB	RIP	1	42		AP
Duplexer	NT3P21GD	DUP	1	39		AP
Power Amplifier Shelf	NT3P21QB	PA	4	36,28 09,01		AP
Power Amplifiers	NT3P21CD			36,28 09,01	1-4	RUL1
Modulating Power Amp.	NTAX96BA	MPA		36,28 09,01	1-4	RUL1
Transceiver Shelf	NT3P21NC	TCVR	2	31,04		AP
# Transceiver	NT3P21HA			31,04	1-8	RUL2
# Transceiver	NT3P21HB			31,04	1-8	RUL2
# Transceiver	NT3P21HC			31,04	1-8	RUL2
Transceiver	NT3P21HD			31,04	1-8	RUL2
Transceiver	NT3P21HE			31,04	1-8	RUL2
Transceiver Radio Unit	NTAX97BA			31,04	1-8	RUL2
Transceiver Radio Unit	NTAX98AA			31,04	1-8	RUL2
Transmit Combiner (8 CH)	NT3P21JC	COMB	1	20		AP
Transmit Combiner (8 CH)	NT3P21JD	COMB	1	12		AP
Anchoring Kit	NT3P40AA		1			AP
Phasing Harness	NT3P33BA					RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT3P21HA	MD	NT3P21HD
NT3P21HB	MD	NT3P21HE
NT3P21HC	MD	NT3P21HE

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 the following hardware for frame isolation with the anchoring kits:

1 - A0367429 - Newton A7058-2 Isolator Pad
4 - P0667992 - Newton A3062-2 Isolator Bushing

RULES:

AP 1) When PEC NT3P61AB is ordered, these items are provided.

RUL1 1) Provide a maximum of 4 per Power Amp shelf. Provide one power amplifier for each transceiver.

2) Provide one FUS01C10 (10 amp fuse) with each MPA that is shipped loose.

3) The NTAX97BA TRU and the NTAX98AA TRU MUST be provisioned with an MPA (NTAX96BA). The NT-ARU is provisioned with the NT3P21CD.

RUL2 1) The NT3P21HB(P2NES) is MANUFACTURED DISCONTINUED and was used for ICP non-expanded spectrum.

2) The NT3P21HC(P2ES) is MANUFACTURED DISCONTINUED and was used for ICP expanded spectrum.

3) The NT3P21HA(P1NES) is MANUFACTURED DISCONTINUED and was used for CSC non-expanded spectrum.

4) Provide a maximum of 8 NT3P21HD(P1ES) per transceiver shelf for CSC expanded spectrum. Only these P1 transceivers can be used for CSC. The ICRM does not support P1 radios.

5) Provide a maximum of 8 NT3P21HE(P3) per transceiver shelf for all sectorized sites.

- 6) Provide a maximum of 8 NTAX97BA per transceiver shelf for dual- mode operation.
- 7) Provide a maximum of 8 NTAX98AA per transceiver shelf for dual- mode operation. The NTAX98AA IS ONLY AVAILABLE FOR V0 IN BCS35+ AND OMNI/120 STSR SITES AT THIS TIME. FOR OTHER CONFIGURATIONS, PLEASE CONTACT Ziad Fazel with NPPM, Ken Davey with PLM, and Doug Suess with Validation. The NTAX98AA is scheduled to be released for BCS34+ in 94/16 and MTX01 in 94/18.

RUL3 1) Provide one phasing harness for the each RF frame if required for Expanded Spectrum.

NT800DR RADIO FREQUENCY FRAME

PEC CODE: NT3P61AC

CPC CODE: A0387872

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: RF

ENGINEERING DESCRIPTION: This equipment layout is for a standard 8 channel RF frame. Use the provisioning tables to order the correct frame that deviate from the standard.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

NT3P61AC EMA9-09-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 10	ECM 438 10	Correct code for MPA fuse.
93 04 16	ECM 534 08	MPA fuse is only ordered when MPA is shipped loose.
93 08 02	ECM 438 13	Change isolator pad part number CND02658 to A0367429
93 08 23	ECM 438 14	Update transceiver information.
93 11 16	ECM 438 15	Add NTAX98AA TRU for V0 purposes.

The NT800DR Radio Frequency Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P21BB	RIP	1	42		AP
Duplexer	NT3P21GD	DUP	1	39		AP
Blank Panel	NT3P25AB		1	28		AP
Power Amplifier Shelf	NT3P21QB	PA	2	09,01		AP
Power Amplifiers	NT3P21CD			09,01	1-4	RUL1
Modulating Power Amp.	NTAX96BA	MPA		09,01	1-4	RUL1
Transceiver Shelf	NT3P21NC	TCVR	1	04		AP
# Transceiver	NT3P21HA			04	1-8	RUL2
# Transceiver	NT3P21HB			04	1-8	RUL2
# Transceiver	NT3P21HC			04	1-8	RUL2
Transceiver	NT3P21HD			04	1-8	RUL2
Transceiver	NT3P21HE			04	1-8	RUL2
Transceiver Radio Unit	NTAX97BA			04	1-8	RUL2
Transceiver Radio Unit	NTAX98AA			04	1-8	RUL2
Transmit Combiner (8 CH)	NT3P21JD	COMB	1	12		AP
Anchoring Kit 8 Channel Exp.	NT3P40AA		1			AP RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT3P21HA	MD	NT3P21HD
NT3P21HB	MD	NT3P21HE
NT3P21HC	MD	NT3P21HE

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 the following hardware for frame isolation with the anchoring kits:

1 - A0367429 - Newton A7058-2 Isolator Pad
4 - P0667992 - Newton A3062-2 Isolator Bushing

RULES:

AP 1) When PEC NT3P61AC is ordered, these items are provided.

RUL1 1) Provide a maximum of 4 per Power Amp shelf. Provide one power amplifier for each transceiver.

2) Provide one FUS01C10 (10 amp fuse) with each MPA shipped loose.

3) The NTAX97BA TRU and the NTAX98AA TRU MUST be provisioned with an MPA (NTAX96BA). The NT-ARU is provisioned with the NT3P21CD.

RUL2 1) The NT3P21HB(P2NES) is MANUFACTURED DISCONTINUED and was used for ICP non-expanded spectrum.

2) The NT3P21HC(P2ES) is MANUFACTURED DISCONTINUED and was used for ICP expanded spectrum.

3) The NT3P21HA(P1NES) is MANUFACTURED DISCONTINUED and was used for CSC non-expanded spectrum.

4) Provide a maximum of 8 NT3P21HD(P1ES) per transceiver shelf for CSC expanded spectrum. Only these P1 transceivers can be used for CSC. The ICRM does not support P1 radios.

5) Provide a maximum of 8 NT3P21HE(P3) per transceiver shelf for all sectorized sites.

6) Provide a maximum of 8 NTAX97BA per transceiver shelf for dual-mode operation.

- 7) Provide a maximum of 8 NTAX98AA per transceiver shelf for dual- mode operation. The NTAX98AA IS ONLY AVAILABLE FOR V0 IN BCS35+ AND OMNI/120 STSR SITES AT THIS TIME. FOR OTHER CONFIGURATIONS, PLEASE CONTACT Ziad Fazel with NPPM, Ken Davey with PLM, and Doug Suess with Validation. The NTAX98AA is scheduled to be released for BCS34+ in 94/16 and MTX01 in 94/18.

- RUL3 1) 8 Channel expansion kits are available to upgrade existing 8 channel RF bays to 16. The incremental cable kit must also be provided. See ordering tables at back for available kits.

ICRM UNIT AND FSP

NTAX86AA

RATING: LTD

ABBREVIATION NAME: ICRM

ENGINEERING DESCRIPTION: The ICRM is assigned to the NT800DR frames
for interface to DRU's, RCU's, and ARU's.

REFERENCE DOCUMENTATION: MSAX86AA 01 02

MARKETS: Applicable markets:
Wireless

NTAX86AA EMA9-10-ICRM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 08 10	ECM 534 05	change of provisioning rules

The ICRM Unit and FSP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rem Mod FSP	NTAX90AB	RMFS	1			AP
Rem Mod Alarm Card	NTAX92AA	RMAC				RUL1
Rem Mod TCM PAD	NTAX91AA	RMTP				RUL2
Terminal Plug	NTAX8650					RUL14
Design Strip (ICRM)	P0727625					RUL3
Rem Mod Time Switch	NTAX88AA	RMTS		1, 13	10, 15	RUL4
Rem Mod Controller	NTAX89AA	RMCP		1, 13	9, 16	RUL5
DS-1 Interface Card	NT6X50AB			1, 13	11-14	RUL6
Design Label NT6X50AB	P0690976			1, 13		RUL13
Power Converter	NT2X70CA			1, 13	1, 22	RUL7
Design Label NT2X70CA	P0727627			1, 13		RUL13
Rem Mod Digital Port	NT8X47BA	RMDP		1, 13	4-8 17-21	RUL8
Design Label NT8X47BA	P0689233			1, 13		RUL13
Rem Mod Manchester Port	NTAX83AA	RMMP		1, 13	4-8 17-20	RUL9
Design Label NTAX83AA	P0734827			1, 13		RUL13
Rem Mod Radio Port	NTAX87AA	RMRP		1, 13	4-8 17-20	RUL10
Design Label NTAX87AA	P0727626			1, 13		RUL13
Filler Face Plate	NT0X50AA			1, 13	4-8, 12-14, 17-20	RUL11
Design Label NT0X50AA	P0578498			1, 13	4-8, 12-14, 17-20	RUL13
Filler Face Plate (3 slot)	NT0X50AE			1, 13	22	RUL12
Design Label NT0X50AE	P0591361			1, 13	22	RUL13

NOTES:

- 1) There is no standard pack fill. Each item is provisionable. The preference is to provision the ICRM in DUPLEX. Comments to this effect are in the rules.
- 2) When an expansion shelf is added to the ICRM, the provisioning of the circuit packs on the expansion shelf must match with the circuit packs in the adjacent slots on the ICRM shelf or be filler face plates.

RULES:

- AP 1) When PEC NTAX86AA is ordered, these items are provided.
- RUL1 1) Provide one (1) NTAX92AA for simplex and two (2) NTAX92AA for duplex alarm connections to the ACU.
- RUL2 1) Provide three (3) NTAX91AA for simplex or duplex for RS232 interface to the ACU, CSM and loopback capabilities.
- RUL3 1) One (1) Designation Strip (P0727625) must always be provided for the ICRM.
- RUL4 1) For DUPLEX operation, provide two (2) NTAX88AA in slots 10 and 15. For simplex operation provide one (1) NTAX88AA in slot 10.
- RUL5 1) For DUPLEX operation, provide two (2) NTAX89AA in slots 9 and 16. For simplex operation provide one (1) NTAX89AA in slot 9.

RUL6 1) Provide NT6X50ABs as per the table below:

T1 SPANS	NT6X50AB CPs	
	SIMPLEX	DUPLEX
1	1	N/A
2	1	2
3	2	2
4	2	2
5	3	3
6	3	3
7	4	4
8	4	4

If only one NT6X50AB is provisioned, it mounts in slot 11.

RUL7 1) For DUPLEX operation, provide two (2) NT2X70CAs in slots 1 and 22. For simplex operation, provide one (1) NT2X70CA in slot 1.

- RUL8 1) For DRUM operation two (2) NT8X47BAs must be provided in slots 20 and 21. Without DRUM only one NT8X47BA is required in slot 21, however you can use a two card configuration. The TCM links to the ACU, MTC, CSM are on one NT8X47BA. When the DRUM is added the links are split over two NT8X47BA cp's where the ACU, MTC are on the cp in slot 21 and the DRUM and CSM are linked to the cp in slot 20.
- 2) Provision one NT8X47BA for each RF frame. RF frames not fully equipped may use ports off the cp's in slots 20 and 21. This is not recommended because special cables are required.
- 3) For 60 OTSR sectorization cp's in slots 18-21 must be provisioned for the control and locate channels on the GCL shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the circuit packs in slots 18-21 to be used for RF frames.
- 4) For 120 OTSR sectorization cp's in slots 18-21 must be provisioned for the control and locate channels on the GCL shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the circuit packs in slots 18-21 to be used for RF frames.

- RUL9 1) Provide one (1) NTAX83AA circuit pack for every 8 GE radios. Each circuit pack can be assigned either one control channel or one locate channel.
- RUL10 1) Provide one (1) NTAX87AA circuit pack for every shelf in which P2/P3 will mount. Each circuit pack can be assigned either one control channel or one locate channel.
- RUL11 1) Provide one (1) NT0X50AA for each slot not equipped.
- RUL12 1) Provide one (1) NT0X50AE to cover slots 22-24 if only one NT2X70CA is provided.
- RUL13 1) Provide one (1) designation label for each circuit pack ordered.
- RUL14 1) Provide two (2) NTAX8650 terminal plugs for the connectors when an expansion shelf IS NOT required.

ICRM EXPANSION SHELF

NTAX86AC

RATING: LTD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The ICRM Expansion Shelf is used when more than 10 slots are required to mount all necessary radio interface circuit packs.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:
Wireless

NTAX86AC EMA9-10-ICRM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 08 10	ECM 534 05	change of provisioning rules

The ICRM Expansion Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter	NT2X70CA			3	1, 22	RUL1
Desig Label NT2X70CA	P0727627			3	1, 22	RUL6
Rem Mod Manchester Port	NTAX83AA	RMMP		3	4-8 17-20	RUL2
Desig Label NTAX83AA	P0734827			3		RUL6
Rem Mod Radio Port	NTAX87AA	RMRP		3	4-8 17-20	RUL3
Desig Label NTAX87AA	P0727626			3		RUL6
Rem Mod Data Buffer	NTAX84AA	RMDP		3	10, 15	RUL4
Desig Label NTAX84AA	P0735133			3		RUL6
Filler Face Plate	NT0X50AA			3	4-21	RUL5
Desig Label NT0X50AA	P0578498			3	4-21	RUL6
Filler Face Plate	NT0X50AE			3	22	RUL5
Desig Label NT0X50AE	P0591361			3	22	RUL6

NOTES:

- 1) All associated cables needed to connect the expansion shelf to the ICRM are included in the NTAX86AC stock list.
- 2) The circuit packs provisioned in the expansion shelf must match with the circuit packs that are in the adjacent slots in the main ICRM shelf or be provisioned with a filler face plate.

RULES:

- RUL1 1) Provide one (1) NT2X70CA in slot 1 for simplex power.
- 2) Provide two (2) NT2X70CA, in slots 1 and 22, for duplex power.
- RUL2 1) Provide one (1) NTAX83AA for every 8 GE radios. Each circuit pack can be assigned one control channel or one locate channel.

- RUL3 1) Provide one (1) NTAX87AA circuit pack for every shelf in which P2/P3 radios will mount. Each circuit pack can be assigned one control channel or one locate channel.
- RUL4 1) Provide one (1) NTAX84AA in slot 10 for simplex operation.
2) Provide two (2) NTAX84AA, in slots 10 and 15, for duplex operation.
- RUL5 1) Always provide seven (7) NT0X50AA into slots 9,11-14,16,21. These slots are unoccupied.
2) Provide NT0X50AA into slots that are not being used.
3) Provide one (1) NT0X50AE into slot 22 when a second NT2X70CA is not provisioned.
- RUL6 1) Provide one (1) designation label for each circuit pack ordered.

ICRM COMMON CP

NTAX86AB

RATING: LTD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This ICRM Common Circuit Pack Fill contains those cards that are to be provided with Each ICRM shelf Assembly (NTAX86AA) in the simplex mode.

REFERENCE DOCUMENTATION: N/A

The ICRM Pack Fill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter	NT2X70CA		1	1	01	AP
Controller CP	NTAX89AA	RMCP	1	1	09	AP
Time Switch CP	NTAX88AA	RMTS	1	1	10	AP
DS-1 Interface CP	NT6X50AB		1	1	11	AP
Port Card	NT8X47BA	RMDP	1	1	21	AP
Designation Strip	P0727625		1	1		AP

AP 1) When PEC NTAX86AB is ordered, these items are provided.

NT800DR CE1 SECT STD FRAME

PEC CODE: NT3P64AA

CPC CODE: A0375743

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard ICP STSR/OTSR CE1 Bay. Use provisioning tables to order frames that deviate from the standard.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Keith Zaletsky Dept. 5849 (RICH)

NT3P64AA EMA9-10-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 24	ECM 534 07	Added NTAX40CA and NTAX40DA DRUM's and MD'd NTAX40AA and NTAX40BA DRUM's.
93 02 11	ECM 438 09	Added NT3P20FB Enhanced ACU Input Card as provisionable on the ACU(NOTE: The NT3P20FB is not available as of this ECM release; check availability before using!).
93 03 10	ECM 438 10	Make blank panels provisionable for the DRUM and ICRM positions. Reference ECD-00215296.
93 04 16	ECM 534 08	Add ICRM building blocks.
93 06 02	ECM 534 10	Add 40dB attenuator for AX40CA DRUM. Clarify DRUM cabling notes. Clarify 8X47BA notes when using ICRM in duplex without DRUM.
93 06 10	ECM 438 12	Make NT3P20FB Enhanced ACU Input Card available for provisionable slots.
93 08 02	ECM 438 13	Add Installation Manual P0745134.
93 11 16	ECM 438 15	Update Novatel to NT numbers.
94 01 28	ECM 438 16	Make NT3P19AB ICP Cellsite Manual provisionable as misc. equipment. Add NT3P70AA CSM2 for VO ONLY. Add note for 8X47BA cabling.

The NT800DR Common Equipment Frame for ICP/RCMI is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BC	RIP	1	42		AP
# DRUM	NTAX40AA	DRUM	1	37		RUL3
# DRUM	NTAX40BA	DRUM	1	37		RUL3
DRUM-Whip Antenna Config.	NTAX40CA	DRUM	1	37		RUL4
DRUM-Sniffer Port Config.	NTAX40DA	DRUM	1	37		RUL5
8-Way Divider Kit	NT3P03NC		1			RUL8
Cable CSM to RF2 Dup.	NT3P00DJ		1			RUL8
Cable CSM to RF3 Dup.	NT3P30AD		1			RUL8
Whip Antenna	NT3P01KR		1			RUL7
RF Cable	NTAX4021		1			RUL7
40dB Attenuator	A0601731		1			RUL7
10dB Attenuator	A0297287		1			RUL6
20dB Attenuator	A0382091		1			RUL6
30dB Attenuator	A0381688		1			RUL6
Blank Panel (5 POS)	NT3P25AH		1	37		RUL12
Alarm Control Unit	NT3P20GA	ACU	1	35		AP
Input Circuit Pack	NT3P20FA		8	35	1-8	AP
Input Circuit Pack	NT3P20FB		8	33	1-8	RUL9
Input Circuit Pack	NT3P20FB		4	33	9-12	RUL9
Output Circuit Pack	NT3P20EA		1	33	13,16	RUL2
Output Circuit Pack	NT3P20EA		1	35	14	AP
Ribbon Cable	NT3P31AA			35		RUL2
Master Oscillator	NT3P20JB	HSMO	1	33		AP
Cell Site Monitor	NT3P20MA	CSM	1	31		AP
# Cell Site Monitor-2	NT3P70AA	CSM	1	31		RUL23
RX Multicoupler	NT3P20HK	RMC	3	25,27, 29		AP
8-16 Port Exp.	NT3P20HN		3			AP
Rem. Cell Multiplexor I/F	NT3P50AA	RCMI	1	19		AP
LAPD Link Card	NT3P50BA		2	19	1,14	AP
Port Card	NT3P50CA		2	19	4,17	AP
Port Card	NT3P50CA			19	5-13 18-26	RUL1
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI	1	13		AP
Port Card	NT3P50CA			13	6-13	RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Expansion Card	NT3P50DA			13	19-26 1, 14	AP
ICRM - Duplex	NTZZ38AA			1		RUL10
ICRM - Simplex	NTZZ38BA			1		RUL13
Terminal Plug	NTAX8650			1		RUL14
DS-1 Interface Card	NT6X50AB			1	12-14	RUL15
Desig Label NT6X50AB	P0690976			1	12-14	RUL20
Rem Mod Digital Port	NT8X47BA	RMDP		1	4-8	RUL16
					17-20	
Desig Label NT8X47BA	P0689233			1	4-8	RUL20
					17-20	
Rem Mod Manchester Port	NTAX83AA	RMMP		1	4-8	RUL17
					17-20	
Desig Label NTAX83AA	P0734827			1	4-8	RUL20
					17-20	
Rem Mod Radio Port	NTAX87AA	RMRP		1	4-8	RUL18
					17-20	
Desig Label NTAX87AA	P0727626			1	4-8	RUL20
					17-20	
Filler Face Plate	NT0X50AA			1	4-8	RUL19
					12-14	
					17-20	
Desig Label NT0X50AA	P0578498			1	4-8	RUL20
					12-14	
					17-20	
Blank Panel (12 POS)	NT3P25AL		1	1		RUL11
Anchoring Kit	NT3P40AA		1			AP
Installation Manual	P0745134		1			RUL21
ICP Cellsite Manual	NT3P19AB		1			RUL22

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX40AA/BA NT3P70AA	MD DEV	NTAX40CA/DA

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 ACU Input CP,s are always provided in slots 1-8. Slot 8 alarm points are for customer optional alarms.
- 3) The NT3P50AA RCMi shelf is always equipped with 2 LAPD cp's and 2 port cards.
- 4) Provide the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing
- 5) Only the NT3P20HK RMC is expandable from 8 to 16 ports. All other RMC's are limited to 8 ports.
- 6) The NT3P20HN expands all 3 RMC's from 8 to 16 ports and is always provided with the sectorization frames.
- 7) For STSR the RCMi #1 will be located in the CE2 bay. RCMi #2,#3 are located in CE1. The LAPD circuit packs will be changed from CE1 to CE2 on site.
- 8) For OTSR the RCMi #1,#4 are located in the CE2 bay. RCMi #2,#3 are located in CE1. The LAPD circuit packs will be changed from CE1 to CE2 on site.

RULES:

- AP 1) When PEC NT3P64AA is ordered, these items are provided.
- RUL1 1) Port card provisioning. Each circuit pack has four ports and should be provisioned in pairs. The total number of port cards is the sum of port cards required for each sector.

CHANNELS	TOTAL CARDS	TOTAL CARDS	Sector 1 (120\60) + Sector 2 (120\60) + Sector 3 (120\60) + Sector 4 (60) + Sector 5 (60) + Sector 6 (60) + 2 (ACU) + 2 (CSM) + 16 (CCH, LCR - OTSR)
4	2		
8	4		
12	6		
16	8		
20	10		
24	12		
28	14		
32	16		
			----- TOTAL CARDS

The first two port cards are always provided so provision two less than the total cards needed.

- RUL2 1) Provide one NT3P31AA ribbon cable for every two (2) extra alarm cp's ordered.
- 2) A maximum of 4 extra input cards may be provided.
- 3) A maximum of 2 extra output cards may be provided.
- RUL3 1) Provide one (1) DRUM when a cell site is operating in the digital mode. This unit will monitor the digital voice channel.
- RUL4 1) Provide one (1) NTAX40CA DRUM when a 60 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel. (NOTE: The NTAX40CA DRUM can also be used in OMNI and 120 degree sectored systems but is not recommended by BNR).
- RUL5 1) Provide one (1) NTAX40DA DRUM when an OMNI or 120 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel.
- RUL6 1) The DRUM has an attenuator that is provisionable in three different values(10dB, 20dB, and 30dB). A detailed analysis of the selection criteria for this attenuator is pro-

vided in IM1547. It is recommended that the customer be supplied with one of each since each site may be different.

- 2) For the NTAX40CA, DRUM-Whip Antenna Configuration, the selection criteria is summarized as follows:

- i) The sum of the coupling from the base station antennas to the DRUM/CSM antenna, plus the cable loss of NTAX4021, plus the value of the attenuator must sum to a total in the range of 60 to 90dB.

- 3) For the NTAX40DA, DRUM-Sniffer Port Configuration, the selection criteria is summarized as follows:

- i) The attenuator will not usually be required when using the standard duplexer, however, for non-standard configurations the sniffer port coupling plus the value of the attenuator must sum to a total of 50dB.

- RUL7 1) Provide one (1) NT3P01KR Whip Antenna, one (1) NTAX4021 RF Cable, and one (1) A0601731 40dB attenuator when using the NTAX40CA DRUM. The NTAX4021 RF Cable is length provisionable.

- RUL8 1) Existing sites may already have accessory equipment which comes in the RF cable kits.

- 2) When using the NTAX40DA DRUM for OMNI configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit

- 3) When using the NTAX40DA DRUM for 120 STSR configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit
1	NT3P00DJ	CSM to RF2 Duplexer Cable
1	NT3P30AD	CSM to RF3 Duplexer Cable

- 4) When more than 16 channels per sector are being used, additional CSM to Duplexer cables are needed.

- 5) 8-Way Divider Kit(NT3P03NC) includes the following parts:

8-Way Divider	A0603342	(QTY 1)
RF Cable	NT3P30AK	(QTY 1)
Cable CSM to RF1 Dup.	NT3P0311	(QTY 1)
Screw	A0603053	(QTY 4)
Nut	A0603054	(QTY 4)
Washer	A0603262	(QTY 4)
Bracket	P0720029	(QTY 1)
Attenuator	A0603113	(QTY 1)
Connector	A0601216	(QTY 1)

RUL9 1) The NT3P20FB Enhanced ACU Input Card is available for use in slots 9-12 for optional alarms. The NT3P20FB will replace the NT3P20FA in slots 1-8 when the current stock of the NT3P20FA is depleted.

RUL10 1) Provide one (1) NTZZ38AA for an ICRM in DUPLEX mode.

RUL11 1) Provide one (1) 12 position blank panel when the ICRM shelf is not provided.

RUL12 1) Provide one (1) 5 position blank panel when the DRUM is not provided.

RUL13 1) Provide one (1) NTZZ38BA for an ICRM in SIMPLEX mode.

RUL14 1) Provide two (2) NTAX8650 terminal plugs for the connectors when an expansion shelf IS NOT provided.

RUL15 1) The SIMPLEX building block provides one NT6X50AB in position 11. The DUPLEX building block provides two NT6X50ABs in positions 11 & 12. Use the following tables to provide additional NT6X50ABs:

T1 SPANS	PROVIDE NT6X50ABs IN POSITIONS	
	SIMPLEX	DUPLEX
1-2	AP	AP
3-4	12	AP
5-6	12, 13	13
7-8	12, 13, 14	13, 14

- RUL16 1) Provide one (1) NT8X47BA in position 20 when the DRUM is required.
- 2) When using an ICRM WITHOUT a DRUM, only one NT8X47BA is absolutely necessary, regardless of whether the ICRM is configured in simplex or duplex mode. However, two NT8X47BAs can still be used. If configured in duplex mode without a DRUM with only one NT8X47BA, the cable that connects between the ICRM and RMFS MUST be connected to the connector labeled "SIMPLEX" on the ICRM backpanel. SPEC WRITERS MUST INCLUDE A MANUFACTURING NOTE IN THEIR SPECS INDICATING WHICH CONNECTOR AND CONFIGURATION IS BEING USED.
- 3) Provision one NT8X47BA for each RF frame. RF frames not fully equipped may use ports off the cp's in positions 20 and 21. THIS IS NOT RECOMMENDED because special cables are required.
- 4) For 60 & 120 OTSR, cp's in positions 18-20 must be provisioned for the control and locate channels on the GCL shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the cp's in positions 18-21 to be used for RF frames.
- RUL17 1) Provide one (1) NTAX83AA for every 8 GE radios. Each circuit pack can be assigned either one control channel or one locate channel.
- RUL18 1) Provide one (1) NTAX87AA for every shelf in which P2/P3 will mount. Each circuit pack can be assigned either one control channel or one locate channel.
- RUL19 1) Provide one (1) NT0X50AA for each position not equipped.
- RUL20 1) Provide one (1) designation label for each circuit pack ordered.
- RUL21 1) Provide at least one (1) P0745134 ICP Cell Site Installation Methods Manual (IM02) for each cell site. required.
- RUL22 1) Provide at least one NT3P19AB ICP Cellsite Manual for each ICP based cellsite. If not requested, please confirm with the engineering group.
- RUL23 1) The NT3P70AA CSM2 is to ONLY be used for V0.

NT800DR CE1 OMNI W/O RCMI,RMC

PEC CODE: NT3P64AD

CPC CODE: A0390220

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard ICP OMNI CE Bay for use with the ICRM shelf, less Receive Multicouplers. Use the provisioning tables to order the correct frame that deviates from the standard.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:
Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Keith Zaletsky Dept. 5849 (RICH)

NT3P64AD EMA9-10-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 24	ECM 534 07	Added NTAX40CA and NTAX40DA DRUM's and MD'd NTAX40AA and NTAX40BA DRUM's. Added NT3P20FB Enhanced ACU Input Card as provisionable on the ACU(NOTE: The NT3P20FB is not available as of this ECM release; check availability before using!).
93 02 11	ECM 438 09	
93 03 10	ECM 438 10	Make blank panels provisionable for the DRUM and ICRM positions. Reference ECD-00215296.
93 04 16	ECM 534 08	Add ICRM building blocks. Make blank panels in RMC positions provisionable to match SBOM.
93 06 02	ECM 534 10	Add 40dB attenuator for AX40CA DRUM. Clarify DRUM cabling notes. Clarify 8X47BA notes when using ICRM in duplex without DRUM.
93 06 10	ECM 438 12	Make NT3P20FB Enhanced ACU Input Card available for provisionable slots.
93 08 02	ECM 438 13	Add Installation Manual P0745134.
93 11 16	ECM 438 15	Update Novatel to NT numbers.
94 01 28	ECM 438 16	Make NT3P19AB ICP Cellsite Manual provisionable as misc. equipment. Add NT3P70AA CSM2 for VO ONLY. Add note for 8X47BA cabling.

The NT800DR Common Equipment Frame for ICP/ICRM is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BC	RIP	1	42		AP
# DRUM	NTAX40AA	DRUM	1	37		RUL5
# DRUM	NTAX40BA	DRUM	1	37		RUL5
DRUM-Whip Antenna Config.	NTAX40CA	DRUM	1	37		RUL6
DRUM-Sniffer Port Config.	NTAX40DA	DRUM	1	37		RUL7
8-Way Divider Kit	NT3P03NC		1			RUL10
Cable CSM to RF2 Dup.	NT3P00DJ		1			RUL10
Cable CSM to RF3 Dup.	NT3P30AD		1			RUL10
Whip Antenna	NT3P01KR		1			RUL9
RF Cable	NTAX4021		1			RUL9
40dB Attenuator	A0601731		1			RUL9
10dB Attenuator	A0297287		1			RUL8
20dB Attenuator	A0382091		1			RUL8
30dB Attenuator	A0381688		1			RUL8
Blank Panel (5 POS)	NT3P25AH		1	37		RUL12
Alarm Control Unit	NT3P20GA	ACU	1	35		AP
Input Circuit Pack	NT3P20FA		8	35	1-8	AP
Input Circuit Pack	NT3P20FB		8	35	1-8	RUL11
Input Circuit Pack	NT3P20FB		4	35	9-12	RUL11
Output Circuit Pack	NT3P20EA		2	35	13,16	RUL1
Output Circuit Pack	NT3P20EA		1	35	14	AP
Ribbon Cable	NT3P31AA			35		RUL1
Master Oscillator	NT3P20JB	HSMO	1	33		AP
Cell Site Monitor	NT3P20MA	CSM	1	31		AP
# Cell Site Monitor-2	NT3P70AA	CSM	1	31		RUL24
Blank Panel (2 POS)	NT3P25AC		1	25, 27, 29		RUL21
Blank Panel (6 POS)	NT3P25AA		1	19		RUL13
ICRM - Duplex	NTZZ38AA			1, 13		RUL2
ICRM - Simplex	NTZZ38BA			1, 13		RUL2
ICRM EXP - Duplex	NTZZ38CA			3		RUL2
ICRM EXP - Simplex	NTZZ38DA			3		RUL2
Terminal Plug	NTAX8650			1, 13		RUL14
DS-1 Interface Card	NT6X50AB			1, 13	12-14	RUL15
Desig Label NT6X50AB	P0690976			1, 13	12-14	RUL20
Rem Mod Digital Port	NT8X47BA	RMDP		1, 13	4-8	RUL16

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig Label NT8X47BA	P0689233			1, 13	17-20 4-8	RUL20
Rem Mod Manchester Port	NTAX83AA	RMMP		1, 3, 13	17-20 4-8	RUL17
Desig Label NTAX83AA	P0734827			1, 3, 13	17-20 4-8	RUL20
Rem Mod Radio Port	NTAX87AA	RMRP		1, 3, 13	17-20 4-8	RUL18
Desig Label NTAX87AA	P0727626			1, 3, 13	17-20 4-8	RUL20
Filler Face Plate	NT0X50AA			1, 3, 13	17-20 12-14	RUL19
Desig Label NT0X50AA	P0578498			1, 3, 13	17-20 4-8 12-14	RUL20
Blank Panel (12 POS)	NT3P25AL		1	1		RUL3
Blank Panel (2 POS)	NT3P25AC		1	1		RUL4
Anchoring Kit	NT3P40AA		1			AP
Installation Manual	P0745134		1			RUL22
ICP Cellsite Manual	NT3P19AB		1			RUL23

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX40AA/BA NT3P70AA	MD DEV	NTAX40CA/DA

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 the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing
- 2) The ACU Input CP,s are always provided in slots 1-8. Slot 8 alarm points are for customer optional alarms.
- 3) When an expansion shelf is added to the ICRM, the provisioning of the circuit packs on the expansion shelf must match with the circuit packs in the adjacent slots on the ICRM shelf or be filler face plates.

RULES:

- AP 1) When PEC NT3P64AD is ordered, these items are provided.
- RUL1 1) Provide one NT3P31AA ribbon cable for every two (2) extra alarm cp's ordered.
- 2) A maximum of 4 extra input cards may be provided.
- 3) A maximum of 2 extra output cards may be provided.
- RUL2 1) Provide one (1) ICRM building block for radio interface.
- 2) Provide one (1) ICRM EXP building block when more than 72 analog radios (DRUM not provided) or 64 analog radios (DRUM provided) are needed.

- 3) On new installations the ICRM shelf will be provisioned in position 13.

The following table illustrates the positioning of the ICRM and ICRM Expansion shelf in various configurations:

CONFIGURATION	ICRM	ICRM EXP. (if req)
0 RCM I	13	3
1 RCM I	1	N/A
2 RCM I	1	N/A

- RUL3 1) Provide one (1) 12 position blank panel when the ICRM Expansion shelf is not provided.
- RUL4 1) Provide one (1) 2 position blank panel when the ICRM Expansion shelf is provided.
- RUL5 1) Provide one (1) DRUM when a cell site is operating in the digital mode. This unit will monitor the digital voice channel.
- RUL6 1) Provide one (1) NTAX40CA DRUM when a 60 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel. (NOTE: The NTAX40CA DRUM can also be used in OMNI and 120 degree sectored systems but is not recommended by BNR).
- RUL7 1) Provide one (1) NTAX40DA DRUM when an OMNI or 120 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel.
- RUL8 1) The DRUM has an attenuator that is provisionable in three different values(10dB, 20dB, and 30dB). A detailed analysis of the selection criteria for this attenuator is provided in IM1547. It is recommended that the customer be supplied with one of each since each site may be different.
- 2) For the NTAX40CA, DRUM-Whip Antenna Configuration, the selection criteria is summarized as follows:
- i) The sum of the coupling from the base station antennas to the DRUM/CSM antenna, plus the cable loss of NTAX4021, plus

the value of the attenuator must sum to a total in the range of 60 to 90dB.

- 3) For the NTAX40DA, DRUM-Sniffer Port Configuration, the selection criteria is summarized as follows:

- i) The attenuator will not usually be required when using the standard duplexer, however, for non-standard configurations the sniffer port coupling plus the value of the attenuator must sum to a total of 50dB.

RUL9 1) Provide one (1) NT3P01KR Whip Antenna, one (1) NTAX4021 RF Cable, and one (1) A0601731 40dB attenuator when using the NTAX40CA DRUM. The NTAX4021 RF Cable is length provisionable.

RUL10 1) Existing sites may already have accessory equipment which comes in the RF cable kits.

- 2) When using the NTAX40DA DRUM for OMNI configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit

- 3) When using the NTAX40DA DRUM for 120 STSR configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit
1	NT3P00DJ	CSM to RF2 Duplexer Cable
1	NT3P30AD	CSM to RF3 Duplexer Cable

- 4) When more than 16 channels per sector are being used, additional CSM to Duplexer cables are needed.

- 5) 8-Way Divider Kit(NT3P03NC) includes the following parts:

8-Way Divider	A0603342	(QTY 1)
RF Cable	NT3P30AK	(QTY 1)
Cable CSM to RF1 Dup.	NT3P0311	(QTY 1)
Screw	A0603053	(QTY 4)
Nut	A0603054	(QTY 4)
Washer	A0603262	(QTY 4)
Bracket	P0720029	(QTY 1)

Attenuator A0603113 (QTY 1)
Connector A0601216 (QTY 1)

- RUL11 1) The NT3P20FB Enhanced ACU Input Card is available for use in slots 9-12 for optional alarms. The NT3P20FB will replace the NT3P20FA in slots 1-8 when the current stock of the NT3P20FA is depleted.
- RUL12 1) Provide one (1) 5 position blank panel when the DRUM is not provided.
- RUL13 1) Provide one (1) 6 position blank panel when the ICRM is not provided.
- RUL14 1) Provide two (2) NTAX8650 terminal plugs for the connectors when an expansion shelf IS NOT provided.
- RUL15 1) The SIMPLEX building block provides one NT6X50AB in position 11. The DUPLEX building block provides two NT6X50ABs in positions 11 & 12. Use the following tables to provide additional NT6X50ABs:

T1 SPANS	PROVIDE NT6X50ABs IN POSITIONS	
	SIMPLEX	DUPLEX
1-2	AP	AP
3-4	12	AP
5-6	12,13	13
7-8	12,13,14	13,14

- RUL16 1) Provide one (1) NT8X47BA in position 20 when the DRUM is required.
- 2) When using an ICRM WITHOUT a DRUM, only one NT8X47BA is absolutely necessary, regardless of whether the ICRM is configured in simplex or duplex mode. However, two NT8X47BAs can still be used. If configured in duplex mode without a DRUM with only one NT8X47BA, the cable that connects between the ICRM and RMFS MUST be connected to the connector labeled "SIMPLEX" on the ICRM backpanel. SPEC WRITERS MUST INCLUDE A MANUFACTURING NOTE IN THEIR SPECS INDICATING WHICH CONNECTOR AND CONFIGURATION IS BEING USED.

- 3) Provision one NT8X47BA for each RF frame. RF frames not fully equipped may use ports off the cp's in positions 20 and 21. THIS IS NOT RECOMMENDED because special cables are required.
- 4) For 60 & 120 OTSR, cp's in positions 18-20 must be provisioned for the control and locate channels on the GCL shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the cp's in positions 18-21 to be used for RF frames.

RUL17 1) Provide one (1) NTAX83AA for every 8 GE radios. Each circuit pack can be assigned either one control channel or one locate channel.

RUL18 1) Provide one (1) NTAX87AA for every shelf in which P2/P3 will mount. Each circuit pack can be assigned either one control channel or one locate channel.

RUL19 1) Provide one (1) NT0X50AA for each position not equipped.

RUL20 1) Provide one (1) designation label for each circuit pack ordered.

RUL21 1) Provide three (3) blank panels.

RUL22 1) Provide at least one (1) P0745134 ICP Cell Site Installation Methods Manual (IM02) for each cell site. required.

RUL23 1) Provide at least one NT3P19AB ICP Cellsite Manual for each ICP based cellsite. If not requested, please confirm with the engineering group.

RUL24 1) The NT3P70AA is to ONLY be used for V0.

COMMON EQUIPMENT FRAME (CE2)

NT3P64BA

RATING: Standard

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard
OMNI and 120 STSR ICP CE2 Bay.

REFERENCE DOCUMENTATION: N/A

The NovAtel Common Equipment Frame 2 for ICP/RCMI is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BD	RIP	1	42		AP
Blank Panel	NT3P25AC		1	40		AP
Blank Panel	NT3P25AE		1	25		AP
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI	1	19		RUL1
Expansion Card	NT3P50DA		2	13	1, 14	AP
Port Card	NT3P50CA			19	5-13	RUL1
					18-26	
Blank Panel	NT3P25AA		1	19		RUL2
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI		13		RUL1
Port Card	NT3P50CA			13	5-13	RUL1
					18-26	
Blank Panel	NT3P25AB		1	01		AP
Anchoring Kit	NT3P40AA		1			AP

NOTES:

- 1) For 60 degree sectorization see the ordering tables for the proper frame pec code. The RCMI for 60 degree has LAPD cards instead of expansion cards.
- 2) For 60 degree STSR a second TCMI shelf must always be provided. The 6 sectors must be divided to 3 sectors for each CE bay.

RULES:

- AP 1) When PEC NT3P64BA is ordered, these items are provided.
- RUL1 1) The provisioning rules for the RCMI are as per CE1
- RUL2 1) Provide one (1) blank panel in position 19 when not equipped.

COMMON EQUIPMENT FRAME (CE2)

NT3P68BA

RATING: Standard

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard 60
OTSR ICP CE2 Bay.

REFERENCE DOCUMENTATION: N/A

The NovAtel Common Equipment Frame 2 for ICP/RCMI is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BD	RIP	1	42		AP
Duplexor	NT3P21GD		2	36, 39		AP
Global Locate Control	NT3P20NA		1	28		AP
Tranceiver	NT3P21HE			28	1-8	RUL2
Power Amplifiers	NT3P21CD			28	1, 4	RUL3
Blank Panel	NT3P25AJ		1	25		AP
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI	1	19		AP
Expansion Card	NT3P50DA		4	19	1, 14	AP
Port Card	NT3P50CA			19	5-13	RUL1
					18-26	
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI	1	13		AP
Expansion Card	NT3P50DA		4	13	1, 14	AP
Port Card	NT3P50CA			13	5-13	RUL1
					18-26	
Blank Panel	NT3P25AB		1	01		AP
Anchoring Kit	NT3P40AA		1			AP

NOTES:

- 1) LAPD circuit packs will be moved from the CE1 frame and put into the CE2 bay which has RCMI 1. Expansion cp's will be moved to CE1.

RULES:

- AP 1) When PEC NT3P68BA is ordered, these items are provided.
- RUL 1) The provisioning rules for the RCMI are as per CE1
- RUL 2) Provide tranceiver NT3P21HE 1-4 for the control channels.
Provide transceivers 5-8 for the locate channels.

- RUL 3) Provide power amplifier NT3P21CD for each control channel pair for a total of 2. The locate channels do not require power amplifiers.

COMMON EQUIPMENT FRAME (CE2)

NT3P68BB

RATING: Standard

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard 120
OTSR ICP CE2 Bay.

REFERENCE DOCUMENTATION: N/A

The NovAtel Common Equipment Frame 2 for ICP/RCMI is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BD	RIP	1	42		AP
Duplexor	NT3P21GD		2	36, 39		AP
Global Locate Control	NT3P20NA		1	28		AP
Tranceiver	NT3P21HE			28	1-8	RUL2
Power Amplifiers	NT3P21CD			28	1, 4	RUL3
Blank Panel	NT3P25AJ		1	25		AP
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI	1	13		AP
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI		19		RUL1
Expansion Card	NT3P50DA		2	13, 19	1, 14	AP
Port Card	NT3P50CA			13, 19	5-13 18-26	RUL1
Blank Panel	NT3P25AA		1	19		AP
Blank Panel	NT3P25AB		1	01		AP
Anchoring Kit	NT3P40AA		1			AP

NOTES:

- 1) LAPD circuit packs will be moved from the CE1 frame and put into the CE2 bay which has RCMI 1. Expansion cp's will be moved to CE1.

RULES:

- AP 1) When PEC NT3P68BB is ordered, these items are provided.
- RUL 1) The provisioning rules for the RCMI are as per CE1
- RUL 2) Provide tranceiver NT3P21HE 1-4 for the control channels.
Provide transceivers 5-8 for the locate channels.

- RUL 3) Provide power amplifier NT3P21CD for each control channel pair for a total of 2. The locate channels do not require power amplifiers.

| CE2 ICP OTSR W/O RCMI

NT3P68BC

RATING: Standard

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard 120
OTSR ICP CE2 Bay.

REFERENCE DOCUMENTATION: N/A

The NT800DR Common Equipment Frame 2 for ICP/RCMI is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BD	RIP	1	42		AP
Duplexer	NT3P21GD		2	36, 39		AP
Global Locate Control Transceiver	NT3P20NA		1	28		AP
Power Amplifiers	NT3P21HE			28	1-8	RUL1
Transceiver Radio Unit	NT3P21CD			28	1, 4	RUL2
Modulating Power Amp.	NTAX97AA			28	1-8	RUL3
	NTAX96AA			28	1, 4	RUL3
Blank Panel	NT3P25AJ		1	25		AP
Blank Panel	NT3P25AA		1	19		AP
Blank Panel	NT3P25AB		1	01		AP
Anchoring Kit	NT3P40AA		1			AP

NOTES:

- 1) LAPD circuit packs will be moved from the CE1 frame and put into the CE2 bay which has RCMI 1. Expansion cp's will be moved to CE1.

RULES:

- AP 1) When PEC NT3P68BC is ordered, these items are provided.
- RUL1 1) Provide transceiver NT3P21HE 1-4 for the control channels. Provide transceivers 5-8 for the locate channels.
- RUL2 1) Provide power amplifier NT3P21CD for each control channel pair for a total of 2. The locate channels do not require power amplifiers.
- RUL3 1) Provide NTAX97AA transceivers in slots 1-4 for each control channel needed and in slots 5-8 for each locate channel

needed when DRU's are configured in digital only or dual-mode modes in the cell site.

- 2) Provide one (1) NTAX96AA power amplifier for each control pair. Locate channels do not need power amplifiers. Also provide 1 FUS01C10DC 10 Amp fuse with with every MPA.

NT800DR CE1 OMNI W/O RCMI

PEC CODE: NT3P62AB

CPC CODE: A0390228

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard ICP OMNI CE Bay for use with the ICRM shelf. Use the provisioning tables to order the frame that deviates from the standard.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Keith Zaletsky Dept. 5849 (RICH)

NT3P62AB EMA9-14-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 24	ECM 534 07	Added NTAX40CA and NTAX40DA DRUM's and MD'd NTAX40AA and NTAX40BA DRUM's.
93 02 11	ECM 438 09	Added NT3P20FB Enhanced ACU Input Card as provisionable on the ACU(NOTE: The NT3P20FB is not available as of this ECM release; check availability before using!).
93 03 10	ECM 438 10	Make blank panels provisionable for the DRUM and ICRM positions. Reference ECD-00215296.
93 04 16	ECM 534 08	Add ICRM building blocks.
93 06 02	ECM 534 10	Add 40dB attenuator for AX40CA DRUM. Clarify DRUM cabling notes. Clarify 8X47BA notes when using ICRM in duplex without DRUM.
93 06 10	ECM 438 12	Make NT3P20FB Enhanced ACU Input Card available for provisionable slots.
93 08 02	ECM 438 13	Add Installation Manual P0745134.
93 11 16	ECM 438 15	Update Novatel numbers.
94 01 28	ECM 438 16	Make NT3P19AB ICP Cellsite Manual provisionable as misc. equipment. Add NT3P70AA CSM2 for VO ONLY. Add note for 8X47BA cabling.

The NT800DR Common Equipment Frame for ICP/ICRM is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BC	RIP	1	42		AP
# DRUM	NTAX40AA	DRUM	1	37		RUL7
# DRUM	NTAX40BA	DRUM	1	37		RUL7
DRUM-Whip Antenna Config.	NTAX40CA	DRUM	1	37		RUL8
DRUM-Sniffer Port Config.	NTAX40DA	DRUM	1	37		RUL9
8-Way Divider Kit	NT3P03NC		1			RUL12
Cable CSM to RF2 Dup.	NT3P00DJ		1			RUL12
Cable CSM to RF3 Dup.	NT3P30AD		1			RUL12
Whip Antenna	NT3P01KR		1			RUL11
RF Cable	NTAX4021		1			RUL11
40dB Attenuator	A0601731		1			RUL11
10dB Attenuator	A0297287		1			RUL10
20dB Attenuator	A0382091		1			RUL10
30dB Attenuator	A0381688		1			RUL10
Blank Panel (5 POS)	NT3P25AH		1	37		RUL14
Alarm Control Unit	NT3P20GA	ACU	1	35		AP
Input Circuit Pack	NT3P20FA		8	35	1-8	AP
Input Circuit Pack	NT3P20FB		8	35	1-8	RUL13
Input Circuit Pack	NT3P20FB		4	35	9-12	RUL13
Output Circuit Pack	NT3P20EA		2	35	13,16	RUL1
Output Circuit Pack	NT3P20EA		1	35	14	AP
Ribbon Cable	NT3P31AA			35		RUL1
Master Oscillator	NT3P20JB	HSMO	1	33		AP
Cell Site Monitor	NT3P20MA	CSM	1	31		AP
# Cell Site Monitor-2	NT3P70AA	CSM	1	31		RUL25
RX Multicoupler	NT3P20HK	RMC	1	25		AP
8-16 Port Exp.	NT3P20HM					RUL2
Blank Panel (2 POS)	NT3P25AC		1	27,29		AP
Blank Panel (6 POS)	NT3P25AA		1	19		RUL15
ICRM - Duplex	NTZZ38AA			1,13		RUL3
ICRM - Simplex	NTZZ38BA			1,13		RUL3
ICRM EXP - Duplex	NTZZ38CA			3		RUL3
ICRM EXP - Simplex	NTZZ38DA			3		RUL3
Terminal Plug	NTAX8650			1,13		RUL16
DS-1 Interface Card	NT6X50AB			1,13	12-14	RUL17

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig Label NT6X50AB	P0690976			1,13	12-14	RUL22
Rem Mod Digital Port	NT8X47BA	RMDP		1,13	4-8 17-20	RUL18
Desig Label NT8X47BA	P0689233			1,13	4-8 17-20	RUL22
Rem Mod Manchester Port	NTAX83AA	RMMP		1,3, 13	4-8 17-20	RUL19
Desig Label NTAX83AA	P0734827			1,3, 13	4-8 17-20	RUL22
Rem Mod Radio Port	NTAX87AA	RMRP		1,3, 13	4-8 17-20	RUL20
Desig Label NTAX87AA	P0727626			1,3, 13	4-8 17-20	RUL22
Filler Face Plate	NT0X50AA			1,3, 13	4-8 12-14 17-20	RUL21
Desig Label NT0X50AA	P0578498			1,3, 13	4-8 12-14 17-20	RUL22
Blank Panel (12 POS)	NT3P25AL		1	1		RUL5
Blank Panel (2 POS)	NT3P25AC		1	1		RUL6
Anchoring Kit	NT3P40AA		1			AP
Installation Manual	P0745134		1			RUL23
ICP Cellsite Manual	NT3P19AB		1			RUL24

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX40AA/BA NT3P70AA	MD DEV	NTAX40CA/DA

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 the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing
- 2) The ACU Input CP,s are always provided in slots 1-8. Slot 8 alarm points are for customer optional alarms.
- 3) When an expansion shelf is added to the ICRM, the provisioning of the circuit packs on the expansion shelf must match with the circuit packs in the adjacent slots on the ICRM shelf or be filler face plates.

RULES:

- AP 1) When PEC NT3P62AB is ordered, these items are provided.
- RUL1 1) Provide one NT3P31AA ribbon cable for every two (2) extra alarm cp's ordered (input or output).
- 2) A maximum of 4 extra input cards may be provided.
- 3) A maximum of 2 extra output cards may be provided.
- RUL2 1) Provide one (1) NT3P20HM to increase the 8 port RMC to 16 ports for sites with more than 4 RF frames.
- RUL3 1) Provide one (1) ICRM building block for interface of the Radios.
- 2) On new installations the ICRM shelf will be provisioned in position 13.
- 3) Provide one (1) ICRM EXP building block when more than 72 analog radios (DRUM not provided) or 64 analog radios (DRUM provided) are needed.

The following table illustrates the positioning of the ICRM and ICRM Expansion shelf in various configurations:

CONFIGURATION	ICRM	ICRM EXP. (if req)
0 RCM I	13	3
1 RCM I	1	N/A
2 RCM I	1	N/A

- RUL5 1) Provide one (1) 12 position blank panel when the ICRM Expansion shelf is not provisioned.
- RUL6 1) Provide one (1) 2 position blank panel if an ICRM Expansion shelf is provided.
- RUL7 1) Provide one (1) DRUM when a cell site is operating in the digital mode. This unit will monitor the digital voice channel.
- RUL8 1) Provide one (1) NTAX40CA DRUM when a 60 degree sectorized cell site is operating in digital mode. This unit will monitor the digital voice channel. (NOTE: The NTAX40CA DRUM can also be used in OMNI and 120 degree sectorized systems but is not recommended by BNR).
- RUL9 1) Provide one (1) NTAX40DA DRUM when an OMNI or 120 degree sectorized cell site is operating in digital mode. This unit will monitor the digital voice channel.
- RUL10 1) The DRUM has an attenuator that is provisionable in three different values (10dB, 20dB, and 30dB). A detailed analysis of the selection criteria for this attenuator is provided in IM1547. It is recommended that the customer be supplied with one of each since each site may be different.
- 2) For the NTAX40CA, DRUM-Whip Antenna Configuration, the selection criteria is summarized as follows:
- i) The sum of the coupling from the base station antennas to the DRUM/CSM antenna, plus the cable loss of NTAX4021, plus the value of the attenuator must sum to a total in the range of 60 to 90dB.
- 3) For the NTAX40DA, DRUM-Sniffer Port Configuration, the selection criteria is summarized as follows:
- i) The attenuator will not usually be required when using the standard duplexer, however, for non-standard configurations

the sniffer port coupling plus the value of the attenuator must sum to a total of 50dB.

RUL11 1) Provide one (1) NT3P01KR Whip Antenna, one (1) NTAX4021 RF Cable, and one (1) A0601731 40dB attenuator when using the NTAX40CA DRUM. The NTAX4021 RF Cable is length provisionable.

RUL12 1) Existing sites may already have accessory equipment which comes in the RF cable kits.

2) When using the NTAX40DA DRUM for OMNI configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit

3) When using the NTAX40DA DRUM for 120 STSR configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit
1	NT3P00DJ	CSM to RF2 Duplexer Cable
1	NT3P30AD	CSM to RF3 Duplexer Cable

4) When more than 16 channels per sector are being used, additional CSM to Duplexer cables are needed.

5) 8-Way Divider Kit(NT3P03NC) includes the following parts:

8-Way Divider	A0603342	(QTY 1)
RF Cable	NT3P30AK	(QTY 1)
Cable CSM to RF1 Dup.	NT3P0311	(QTY 1)
Screw	A0603053	(QTY 4)
Nut	A0603054	(QTY 4)
Washer	A0603262	(QTY 4)
Bracket	P0720029	(QTY 1)
Attenuator	A0603113	(QTY 1)
Connector	A0601216	(QTY 1)

RUL13 1) The NT3P20FB Enhanced ACU Input Card is available for use in slots 9-12 for optional alarms. The NT3P20FB will replace the NT3P20FA in slots 1-8 when the current stock of the NT3P20FA is depleted.

- RUL14 1) Provide one (1) 5 position blank panel when the DRUM is not provided.
- RUL15 1) Provide one (1) 6 position blank panel when the ICRM is not provided.
- RUL16 1) Provide two (2) NTAX8650 terminal plugs for the connectors when an expansion shelf IS NOT provided.
- RUL17 1) The SIMPLEX building block provides one NT6X50AB in position 11. The DUPLEX building block provides two NT6X50ABs in positions 11 & 12. Use the following tables to provide additional NT6X50ABs:

T1 SPANS	PROVIDE NT6X50ABs IN POSITIONS	
	SIMPLEX	DUPLEX
1-2	AP	AP
3-4	12	AP
5-6	12,13	13
7-8	12,13,14	13,14

- RUL18 1) Provide one (1) NT8X47BA in position 20 when the DRUM is required.
- 2) When using an ICRM WITHOUT a DRUM, only one NT8X47BA is absolutely necessary, regardless of whether the ICRM is configured in simplex or duplex mode. However, two NT8X47BAs can still be used. If configured in duplex mode without a DRUM with only one NT8X47BA, the cable that connects between the ICRM and RMFS MUST be connected to the connector labeled "SIMPLEX" on the ICRM backpanel. SPEC WRITERS MUST INCLUDE A MANUFACTURING NOTE IN THEIR SPECS INDICATING WHICH CONNECTOR AND CONFIGURATION IS BEING USED.
- 3) Provision one NT8X47BA for each RF frame. RF frames not fully equipped may use ports off the cp's in positions 20 and 21. THIS IS NOT RECOMMENDED because special cables are required.
- 4) For 60 & 120 OTSR, cp's in positions 18-20 must be provisioned for the control and locate channels on the GCL

shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the cp's in positions 18-21 to be used for RF frames.

- RUL19 1) Provide one (1) NTAX83AA for every 8 GE radios. Each circuit pack can be assigned either one control channel or one locate channel.
- RUL20 1) Provide one (1) NTAX87AA for every shelf in which P2/P3 will mount. Each circuit pack can be assigned either one control channel or one locate channel.
- RUL21 1) Provide one (1) NT0X50AA for each position not equipped.
- RUL22 1) Provide one (1) designation label for each circuit pack ordered.
- RUL23 1) Provide at least one (1) P0745134 ICP Cellsite Installation Methods Manual (IM02) for each cell site. required.
- RUL24 1) Provide at least one NT3P19AB ICP Cellsite Manual for each ICP based cellsite. If not requested, please confirm with the engineering group.
- RUL25 1) The NT3P70AA CSM2 is to ONLY be used for V0.

MERIDIAN DIGITAL SIGNAL PROCESSOR

PEC CODE: NTAX82AA

CPC CODE: B0232164

RATING: STD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MDSP

ENGINEERING DESCRIPTION: The Meridian Digital Signal Processor (MDSP) is a Meridian Cabinet which houses 16 DSP modules, four per shelf, on four shelves. This frame can be part of the DMS-MTX or MTX-D system.

| REFERENCE DOCUMENTATION: MSAX82AA 00 04

| ISAX82AA 00 04

| SLAX82AA 00 05

MARKETS: Applicable markets:

Wireless

| ISSUE AUTHOR: NTI: Kevin Neville Dept. 5849 (RCH)

| MAIN CONTACT: NTI: Kevin Neville Dept. 5849 (RCH)

| CONTACT: NTI: Rich McNeill Dept. 5849 (RCH)

NTAX82AA EMA9-15-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 06 18	ECM 492 32	KMN: Clarify rules per ISAX82AA.
96 07 25	ECM 492 35	KMN: UPDATE PER EC 002-16850.
96 11 05	ECM 492 38	KMN: Update rule 6 and 13 for NTAX82AA add incombatability of NTEX93AA and NTAX81AA in same DSP.
97 02 03	ECM 492 39	KMN: Add EFRC to NTAX82AA.
97 06 11	ECM 492 41	KMN: Add MS,AD,IS references and remove Jim Large as contact.

The Meridian Digital Signal Processor is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DSP Shelf	NTAX7601	DSPM	1	05		AP
Frame Supervisory Panel	NTNX26HA		1	60		AP
Cooling Unit	NTNX27CA		1	00		AP
DSP Shelf	NTAX7601	DSPM		19, 33 47		RUL1
Field Upgrade Kit	NTAX75KA			05, 19 33, 47		RUL1
Field upgrade Kit	NTAX82ZE			19, 33 47		RUL1
Filler Panel	NT0X84AA			19, 33 47		RUL2
DSP Cooling Unit	NTAX77AA		1	65		RUL3
Cooling Unit Filler Panel	P0684448		1	65		RUL3
Power Converter	NT2X70AF			XX	1, 25	RUL4
Filler Face Plate	NT0X50AE			XX	1, 25	RUL4
DSP Control Processor	NTAX80AA			XX	4, 9, 15, 20	RUL5
EFRC Control Processor	NTAX80AB			XX	4, 9, 15, 20	RUL5
DSP Card	NTAX81AA			XX	5-8 10-13 16-19 21-24	RUL6
NXSP CP	NTEX93AA			XX	5-8 10-13 16-19 21-24	RUL13
Filler Face Plate	NT0X50AA			XX	5-24	RUL7
Backplane Terminator	NTAX79AA			XX	8R, 13R, 19R, 24R	RUL8
Backplane Terminator	NTAX90AA			XX	8R, 13R, 19R, 24R	RUL13
Desg. Label NT2X70AF	P0809960					RUL9
Desg. Label NT0X50AE	P0591361					RUL9
Desg. Label NTAX80AA	P0737139					RUL9
Desg. Label NTAX80AB	P0868327					RUL9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desg. Label NTAX81AA	P0739914					RUL9
Desg. Label NT0X50AA	P0578498					RUL9
Door Right - Brown	NTNX2552					RUL10
Door Left - Brown	NTNX2550					RUL10
Door Right - Grey	NTNX2513					RUL10
Door Left - Grey	NTNX2515					RUL10
Earthquake Mounting Kit	NTNX2540					RUL11
Earthquake Mounting Kit	NTNX2578					RUL11
Frame Mounting Kit	NTNX2579					RUL11
Frame Mounting Kit	NTNX2580					RUL11
End Panel (right,grey)	NTNX2517					RUL11
End Panel (left,grey)	NTNX2518					RUL11
End Panel (right,brown)	NTNX2546					RUL11
End Panel (left,brown)	NTNX2553					RUL11
Cabinet Type Label (Grey)	P0738784					RUL12
Cabinet Type Label (Brown)	P0738783					RUL12
Door Label Left (Brown)	P0818849					RUL12
Door Label Right (Brown)	P0695230					RUL12
Door Label Left (Grey)	P0818848					RUL12
Door Label Right (Grey)	P0699158					RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) XX = Shelf Pos. 05,19,33,47
- 2) Each NTN36AS MDSP-ICP cable can be routed to different ICPS.

RULES:

- AP 1) When PEC NTAX82AA is ordered, these items are provided.
- RUL1 1) Provide one NTAX7601 shelf for mounting positions 19,33,47 for every four (4) DSP's required. Provide in sequence 19,33, then 47. APPLY THIS RULE ONLY TO EXISTING FIELD POPULATIONS, ORDER MEDP CABINET, NTAX82AB AS A NEW PRODUCT FOR EDSPM FEATURES.
- 2) When additional EDCPM shelves are required in the field provide one (1) NTAX82ZE Upgrade Kit per required shelf. APPLY THIS RULE ONLY TO EXISTING FIELD POPULATIONS, ORDER MEDP CABINET, NTAX82AB AS A NEW PRODUCT FOR EDSPM FEATURES.
- 3) Provide one (1) Field Upgrade Kit NTAX75KA per NTAX7601 DSPM shelf in shelf positions 05,19,33 and 47 when upgrade to the Enhanced DSP features.
- RUL2 1) Provide one NT0X84AA filler panel for each shelf (19,33,47) not equipped with a DSPM shelf.
- RUL3 1) Provide one NTAX77AA Top Cooling Unit when providing DSPM shelves at 33 or 47. The cooling unit at the bottom supplies airflow for shelves 05, 19 and the cooling unit at the top supplies airflow for shelves 33,47.
- 2) Provide one P0684448 Cooling Unit Filler Panel if DSPM shelves at positions 33 and 47 are not provided.
- RUL4 1) Provision two (2) NT2X70AF power converter in slot 1 and 25 of each DSPM shelf provisioned. Only provide the NT2X70AF power converters for the DSP's in use: shelf 05 provide one (1) NT2X70AF in slot one (1) for DSP 0-1, slot 25 for DSP 2-3; for shelf 19 slot 1 for DSP 4-5, for DSP 6-7 slot 25; for shelf 33 slot 1 for DSP 8-9, slot 25 for DSP 10-11; for shelf 47 slot 1 for DSP 12-13, slot 25 for DSP 14-15.
- 2) Provision one (1) NT0X50AE for slot 1,25 on shelf where respective DSP's are not in use.
- RUL5 1) Provision 1 NTAX80AA for each DSP for DS-30A connections to the ICP. Each NTAX80AA will interface two DS-30 links.
- 2) Provide 1 NTAX80AB for EFRC (IS-641) for DS-30A connections to the ICP. The NTAX80AB is supported in E-DSPM NTAX7604 Backplane/Shelf and DSPM NTAX7601 Backplane/Shelf assemblies in the MTX04 S/W stream. The NTAX80AB is backward

compatible to the NTAX80AA. Contact PLM prime for availability.

- RUL6 1) Provide one (1) NTAX81AA circuit packs for every 2 digital DRU's.
Provide in sequence slots 5,6,7,8 for DSP's 0,4,8,12.
Provide in sequence slots 10,11,12,13 for DSP's 1,5,9,13.
Provide in sequence slots 16,17,18,19 for DSP's 2,6,10,14.
Provide in sequence 21,22,23,24 for DSP's 3,7,11,15.
- 2) Provide either NTAX81AA or NTEX93AA, NOT a combinations of both.
- 3) The DSP modules are defined as follows.

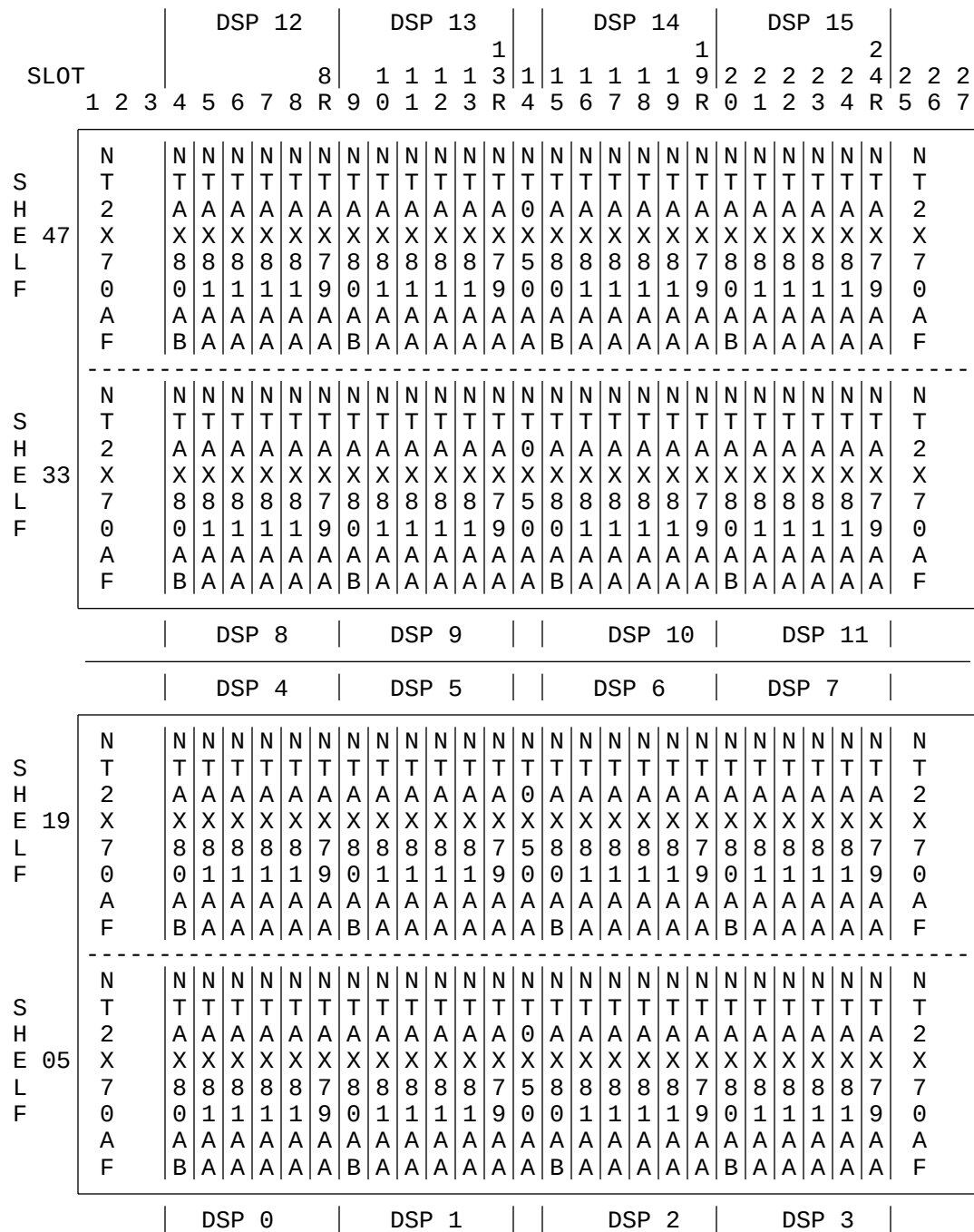


Figure 1. MDSP Shelf Layout

- RUL7 1) Provide one NT0X50AA filler face plate for each slot 04 thru 13 and 15 thru 24 when unequipped.
- 2) Always provide a NT0X50AA in slot 14 of shelves 19,33,47.
- RUL8 1) Provide one backplane terminator per DSP. This pack is used to distinguish between the DSP's on the shelf.
- RUL9 1) Provide labels to circuit pack slots as required.
- RUL10 1) For each brown cabinet required, provide two (2) Door Assembly Left (Brown), NTN2550, and two (2) Door Assembly Right (Brown), NTN2552.
- 2) For each grey cabinet required, provide two (2) Door Assembly Left (Grey), NTN2515, and two (2) Door Assembly Right (Grey), NTN2513.
- 3) Assign the door assembly to the frame on the hardware specs. Do not ship these items loose.
- RUL11 1) Anchoring kits are an option to be purchased by the customer.
- 2) Provision one NTN2540 kit for slab type flooring or one NTN2578 for computer flooring when installing frames in an earthquake zone ATC Zone 7, NEBS Zone 4, or UBC Zone 4.
- 3) Provision one NTN2579 kit for slab type flooring or one NTN2580 kit for computer flooring in a non-earthquake zone.
- 4) End panels are only provisioned if a cabinet is the first or last cabinet in a lineup.
If a cabinet is the first in a lineup, provide a left end panel.
If a cabinet is the last in a lineup, provide a right end panel.

The available end panels are as follows:

End Panel (right,grey) : NTN2517
End Panel (left,grey) : NTN2518

End Panel (right,brown) : NTN2546
End Panel (left,brown) : NTN2553

- RUL12 1) Provide two cabinet type label P0738784 for each grey cabinet.
- 2) Provide two cabinet type label P0738783 for each brown cabinet.
- 3) Provide door labels as required per color, one per door.
- RUL13 1) Provide EDSPM circuit packs NT2X70AF, NTAX80AA, and NTEX93AA as required by job engineering and according with the following table:

PEC	DESCRIPTION	SLOT	NOTE
NT2X70AF NTAX80AA NTAX80AB NTEX93AA	POWER CONVERTER DSP CONTROL PROCESSOR OR EFRC CONTROL PROCCESSOR EDSP BOARD	01 04 04 05,06 07,08	MODULES 0,4,8,12
NT2X70AF NTAX80AA NTAX80AB NTEX93AA	POWER CONVERTER DSP CONTROL PROCESSOR OR EFRC CONTROL PROCCESSOR EDSP BOARD	25 15 15 16,17 18,19	MODULES 2,6,10,14
NTAX80AA NTAX80AB NTEX93AA	DSP CONTROL PROCESSOR OR EFRC CONTROL PROCCESSOR EDSP BOARD	09 09 10,11 12,13	MODULES 1,5,9,13
NTAX80AA NTAX80AB NTEX93AA	DSP CONTROL PROCESSOR OR EFRC CONTROL PROCCESSOR EDSP BOARD	20 20 21,22 23,24	MODULES 3,7,11,15

Figure 2. EDSP CIRCUIT PACK TABLE

- 2) Provision one (1) NTAX80AA or (1) NTAX80AB for each DSP for DS-30A connections to the ICP. Each NTAX80AA interfaces two DS-30A links. See Rule 5 for Rules on NTAX80AB.
- 3) Provision NT0X50AA Filler Face Plates for each slot that the NTAX80AA and NTEX93AA CPs are not provided.

- 4) Always provision a NT0X50AA Filler Face Plate for slot 14.
- 5) Provision NT0X50AE Filler Face Plates for Slots 1,25 if un-equipped.
- 6) Provide either NTAX81AA or NTEX93AA, NOT a combinations of both.
- 7) The NTEX90AA Backplane Terminators are always installed when the NTAX7604 Shelf Assembly is installed or the NTAX7601 Shelf Assembly is upgraded to EDSP features. See Rule 1.

UNIVERSAL CE01 FRAME

PEC CODE: NT3P64CA

CPC CODE: B0237954

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a Universal CE Frame. Only shelf assignment information for CADES is included in this EMS. For engineering information, see ECM546 and the Universal Cell Site Engineering Guide.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:
Wireless

ISSUE AUTHOR: NTI: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: NTI: Mike Brunet Dept. W720 (CALG)

NT3P64CA EMA9-16-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 03	ECM 546 01	Initial release.
93 09 08	ECM 546 03	Update Novatel numbers to NT numbers.
94 04 08	ECM 546 04	Update Novatel numbers to NT numbers. Add NT3P82AA CE Frame ATC Alarm Cabling Harness. Change format to only include shelf assignment information for CADES.

The Compact NT800DR Common Equipment Frame is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	Rack Interface Panel	NT3P20BC	RIP	1	41		AP
	DRUM-Whip Antenna Config.	NTAX40CA	DRUM	1	36		RUL1
	DRUM-Sniffer Port Config.	NTAX40DA	DRUM	1	36		RUL1
	Blank Panel (5 POS)	NT3P25AH		1	36		RUL1
	Alarm Control Unit	NT3P20GA	ACU	1	34		RUL1
	Input Circuit Pack	NT3P20FA		8	34	1-8	RUL1
	Input Circuit Pack	NT3P20FB		8	34	1-8, 9-12	RUL1 RUL1
	Output Circuit Pack	NT3P20EA			34	13,14, 16	RUL1 RUL1
	Blank Panel (2 POS)	NT3P25AC		1	34		RUL1
	Master Oscillator	NT3P20JB	HSMO	1	32		RUL1
	Blank Panel (2 POS)	NT3P25AC		1	32		RUL1
#	Cell Site Monitor	NT3P20MA	CSM	1	30		RUL1
	Cell Site Monitor-2	NT3P70AA	CSM	1	30		RUL1
	Blank Panel (2 POS)	NT3P25AC		1	30		RUL1
	Receive Multicoupler	NT3P20HP	RMC		28,26 24,22 20,18		RUL1
	Blank Panel (2 POS)	NT3P25AC			28,26 24		RUL1
	Blank Panel (6 POS)	NT3P25AA		1	18		RUL1
	ICRM - Duplex	NTZZ38AA			06		RUL1
	ICRM - Simplex	NTZZ38BA			06		RUL1
	Blank Panel (12 POS)	NT3P25AL		1	06		RUL1
	Terminal Plug	NTAX8650		2	06		RUL1
	DS-1 Interface Card	NT6X50AB			06	12-14	RUL1
	Desig Label NT6X50AB	P0690976			06	12-14	RUL1
	Rem Mod Digital Port	NT8X47BA	RMDP		06	4-8 17-20	RUL1
	Desig Label NT8X47BA	P0689233			06	4-8 17-20	RUL1
	Filler Face Plate	NT0X50AA			06	4-8 12-14 17-20	RUL1
	Desig Label NT0X50AA	P0578498			06	4-8	RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
					12-14 17-20	
Blank Panel (6 POS)	NT3P25AA		1	00		RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT3P70AA	DEV	

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

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

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

NOTES:

- 1) Only shelf assignment information for CADES is included in this EMS.

RULES:

AP 1) When PEC NT3P64CA is ordered, these items are provided.

RUL1 1) See ECM546 and the Universal Cell Site Engineering Guide for engineering this frame.

UNIVERSAL RF FRAME

PEC CODE: NT3P63FA

CPC CODE: B0237953

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: RF

ENGINEERING DESCRIPTION: This equipment is a layout of a Universal RF Frame. Only shelf assignment information for CADES is included in this EMS. For engineering information, see ECM546 and the Universal Cell Site Engineering Guide.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:
Wireless

ISSUE AUTHOR: NTI: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: NTI: Mike Brunet Dept. W720 (CALG)

NT3P63FA EMA9-17-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 03	ECM 546 01	Initial release.
93 08 18	ECM 546 02	Add autotune combiner as provisionable for V0 purposes.
93 09 08	ECM 546 03	Update Novatel numbers to NT numbers. Clarify ATC information.
94 04 08	ECM 546 04	Update Novatel numbers to NT numbers. Add P3 transceiver. Add NTAX98AA TRU transceiver for V0 purposes. Correct PA & TR positions. Add more ATC related parts. Change RIP PEC. Change format to only include shelf assignment information for CADES.

The Compact RF Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P21BE	RIP	1	41		AP
Compact Duplexer	NT3P21GE	DUP	1	38		RUL1
Dual Compact Duplexer	NT3P2101	DUP	1	38		RUL1
Dual Compact Duplexer Assy	NT3P21GF	DUP	1	38		RUL1
Blank Panel (3 POS)	NT3P25AJ		1	38		RUL1
PA/XCVR/PA Shelf Upper	NT3P21NE		1	27		RUL1
Blank Panel (11 POS)	NT3P25AB		1	27		RUL1
Modulating Power Amp.	NTAX96BA	MPA		27	9-16	RUL1
Power Amplifier	NT3P21CD			27	9-16	RUL1
Transceiver Radio Unit	NTAX97BA			27	1-8	RUL1
# Transceiver Radio Unit	NTAX98AA			27	1-8	RUL1
Transceiver	NT3P21HE			27	1-8	RUL1
Basic-2 Combiner (8 CH)	NT3P03RW	COMB	1	19		RUL1
Exp Combiner (8 CH)	NT3P01HL	COMB	1	19		RUL1
ATC Basic 8 Channel Kit	NT3P80AA		1	19		RUL1
ATC Exp 8 Channel Kit	NT3P85AA		1	19		RUL1
Blank Panel (8 POS)	NT3P25AD		1	19		RUL1
Basic-2 Combiner (8 CH)	NT3P03RW	COMB	1	11		RUL1
ATC Basic 8 Channel Kit	NT3P80AA		1	11		RUL1
Blank Panel (8 POS)	NT3P25AD		1	11		RUL1
PA/XCVR/PA Shelf Lower	NT3P21NG		1	00		RUL1
Blank Panel (11 POS)	NT3P25AB		1	00		RUL1
Modulating Power Amp.	NTAX96BA	MPA		00	9-16	RUL1
Power Amplifier	NT3P21CD			00	9-16	RUL1
Transceiver Radio Unit	NTAX97BA			00	1-8	RUL1
# Transceiver Radio Unit	NTAX98AA			00	1-8	RUL1
Transceiver	NT3P21HE			00	1-8	RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX98AA	DEV	

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

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

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

NOTES:

- 1) Only shelf assignment information for CADES is included in this EMS.

RULES:

AP 1) When PEC NT3P63FA is ordered, these items are provided.

RUL1 1) See ECM546 and the Universal Cell Site Engineering Guide for engineering this frame.

COMPACT CE02 FRAME

PEC CODE: NT3P66CA

CPC CODE: B0238239

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a Compact CE02 Frame.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:
Wireless

ISSUE AUTHOR: NTI: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: NTI: Mike Brunet Dept. W720 (CALG)

NT3P66CA EMA9-18-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 03	ECM 546 01	Initial release of this section.
93 09 08	ECM 546 03	Update Novatel numbers to NT numbers.
94 04 08	ECM 546 04	Update Novatel numbers to NT numbers.

The Compact NT800DR Common Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BD	RIP	1	41		AP
Blank Panel (3 POS)	NT3P25AJ		1	38		RUL3
Dual Compact Duplexer Assy	NT3P21GF	DUP	1	35		RUL1
Blank Panel (3 POS)	NT3P25AJ		1	35		RUL3
Cable	NT3P00CY		2			RUL2
GCL Shelf	NT3P20NA		1	27		RUL4
GCL Shelf TX Cable	NT3P0340		2			RUL5
GCL Shelf RX Cable	NT3P30AK		2			RUL5
GCL Audio & Data Cable	NT3P31CA		2			RUL5
Modulating Power Amp	NTAX96BA	MPA		27	1, 4	RUL6
Transceiver Radio Unit	NTAX97BA			27	1-8	RUL7
Blank Panel (11 POS)	NT3P25AB		1	24		RUL8
Blank Panel (3.4 POS)	P0720115		1	24		RUL8
Blank Panel (6 POS)	NT3P25AA		1	18		RUL3
Blank Panel (6 POS)	NT3P25AA		1	12		RUL3
Receive Multicoupler	NT3P20HP	RMC	3	10,08 06		RUL9
RMC Alarm Cable	NT3P0312		1			RUL10
RMC Exp. Cable Kit	NT3P03RZ		2			RUL10
Blank Panel (6 POS)	NT3P25AA		1	06		RUL11
Blank Panel (6 POS)	NT3P25AA		1	00		RUL3
Anchoring Kit	NT3P40AA		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) Provide the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing

RULES:

- AP 1) When PEC NT3P66CA is ordered, these items are provided.
- RUL1 1) Provide one (1) Dual Compact Duplexer Assembly when required.
- RUL2 1) Provide two (2) NT3P00CY cables when the Dual Compact Duplexer Assembly is required.
- RUL3 1) Provide blank panels when equipment is not supplied.
- RUL4 1) Provide one (1) GCL shelf when required for OTSR systems.
- RUL5 1) Provide the following cables when the GCL shelf is required:

QTY	CABLE	DESCRIPTION
===	=====	=====
2	NT3P0340	GCL Shelf Transmit Cable
2	NT3P30AK	GCL Shelf Receive Cable
2	NT3P31CA	GCL Shelf Audio and Data Cable

- RUL6 1) Provide one (1) NTAX96BA MPA for each control pair. Locate channels do not need MPAs. Also provide 1 FUS01C10 10A fuse with every MPA that is shipped loose.
- RUL7 1) Provide NTAX97BA transceivers in slots 1-4 for each control channel needed and in slots 5-8 for each locate channel needed.
- RUL8 1) Provide one (1) P0720115 blank panel in frame position 24 when the GCL shelf is required.
- 2) Provide one (1) NT3P25AB blank panel in frame position 24 when the GCL shelf is NOT required.
- RUL9 1) Provide three RMCs when there is insufficient space to mount them in the CE1 frame. For compact configurations, these will be mounted in the CE1 frame.
- RUL10 1) Provide the following cables when the three RMCs are required:

QTY	CABLE	DESCRIPTION
===	=====	=====
1	NT3P0312	RMC Alarm Cable
2	NT3P03RZ	RMC Exp. Cable Kit (Contains 1 each NT3P34AA & NT3P34BA)

- RUL11 1) Provide one 6 position blank panel when the three RMCs are not required.

NT800DR CE1 ICP OMNI W/O RMC

PEC CODE: NT3P62AA

CPC CODE: A0375733

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard ICP based OMNI CE1 bay without RMCs.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:
Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Keith Zaletsky Dept. 5849 (RICH)

NT3P62AA EMA9-19-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 02	ECM 438 13	First release of this EMS although it has already been in CADES.
93 11 16	ECM 438 15	Update Novatel numbers.
94 01 28	ECM 438 16	Make NT3P19AB ICP Cellsite Manual provisionable as misc. equipment. Add NT3P70AA CSM2 for VO ONLY. Add note for 8X47BA cabling.

The NT800DR Common Equipment Frame for ICP/RCMI/ICRM is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BC	RIP	1	42		AP
# DRUM	NTAX40AA	DRUM	1	37		RUL3
# DRUM	NTAX40BA	DRUM	1	37		RUL3
DRUM-Whip Antenna Config.	NTAX40CA	DRUM	1	37		RUL4
DRUM-Sniffer Port Config.	NTAX40DA	DRUM	1	37		RUL5
8-Way Divider Kit	NT3P03NC		1			RUL8
Cable CSM to RF2 Dup.	NT3P00DJ		1			RUL8
Cable CSM to RF3 Dup.	NT3P30AD		1			RUL8
Whip Antenna	NT3P01KR		1			RUL7
RF Cable	NTAX4021		1			RUL7
40dB Attenuator	A0601731		1			RUL7
10dB Attenuator	A0297287		1			RUL6
20dB Attenuator	A0382091		1			RUL6
30dB Attenuator	A0381688		1			RUL6
Blank Panel (5 POS)	NT3P25AH		1	37		RUL12
Alarm Control Unit	NT3P20GA	ACU	1	35		AP
Input Circuit Pack	NT3P20FA		8	35	1-8	AP
Input Circuit Pack	NT3P20FB		8	33	1-8	RUL9
Input Circuit Pack	NT3P20FB		4	33	9-12	RUL9
Output Circuit Pack	NT3P20EA		1	33	13,16	RUL2
Output Circuit Pack	NT3P20EA		1	35	14	AP
Ribbon Cable	NT3P31AA			35		RUL2
Master Oscillator	NT3P20JB	HSMO	1	33		AP
Cell Site Monitor	NT3P20MA	CSM	1	31		AP
# Cell Site Monitor-2	NT3P70AA	CSM	1	31		RUL24
Blank Panel (6 POS)	NT3P25AA		1	25		AP
Rem. Cell Multiplexor I/F	NT3P50AA	RCMI	1	19		AP
LAPD Link Card	NT3P50BA		2	19	1,14	AP
Port Card	NT3P50CA		2	19	4,17	AP
Port Card	NT3P50CA			19	5-13	RUL1
					18-26	
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI	1	13		RUL22
Port Card	NT3P50CA			13	6-13	RUL1
					19-26	
Expansion Card	NT3P50DA			13	1,14	RUL22
Blank Panel (6 POS)	NT3P25AA		1	13		RUL22

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ICRM - Duplex	NTZZ38AA			1		RUL10
ICRM - Simplex	NTZZ38BA			1		RUL13
Terminal Plug	NTAX8650			1		RUL14
DS-1 Interface Card	NT6X50AB			1	12-14	RUL15
Desig Label NT6X50AB	P0690976			1	12-14	RUL20
Rem Mod Digital Port	NT8X47BA	RMDP		1	4-8	RUL16
					17-20	
Desig Label NT8X47BA	P0689233			1	4-8	RUL20
					17-20	
Rem Mod Manchester Port	NTAX83AA	RMMP		1	4-8	RUL17
					17-20	
Desig Label NTAX83AA	P0734827			1	4-8	RUL20
					17-20	
Rem Mod Radio Port	NTAX87AA	RMRP		1	4-8	RUL18
					17-20	
Desig Label NTAX87AA	P0727626			1	4-8	RUL20
					17-20	
Filler Face Plate	NT0X50AA			1	4-8	RUL19
					12-14	
					17-20	
Desig Label NT0X50AA	P0578498			1	4-8	RUL20
					12-14	
					17-20	
Blank Panel (12 POS)	NT3P25AL		1	1		RUL11
Anchoring Kit	NT3P40AA		1			AP
Installation Manual	P0745134		1			RUL21
ICP Cellsite Manual	NT3P19AB		1			RUL23

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX40AA/BA NT3P70AA	MD DEV	NTAX40CA/DA

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 ACU Input CP,s are always provided in slots 1-8. Slot 8 alarm points are for customer optional alarms.
- 3) The NT3P50AA RCMi shelf is always equipped with 2 LAPD cp's and 2 port cards.
- 4) Provide the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing
- 5) Only the NT3P20HK RMC is expandable from 8 to 16 ports. All other RMC's are limited to 8 ports.
- 6) The NT3P20HN expands all 3 RMC's from 8 to 16 ports and is always provided with the sectorization frames.
- 7) For STSR the RCMi #1 will be located in the CE2 bay. RCMi #2,#3 are located in CE1. The LAPD circuit packs will be changed from CE1 to CE2 on site.
- 8) For OTSR the RCMi #1,#4 are located in the CE2 bay. RCMi #2,#3 are located in CE1. The LAPD circuit packs will be changed from CE1 to CE2 on site.

RULES:

- AP 1) When PEC NT3P62AA is ordered, these items are provided.
- RUL1 1) Port card provisioning. Each circuit pack has four ports and should be provisioned in pairs. The total number of port cards is the sum of port cards required for each sector.

	TOTAL	TOTAL	Sector 1 (120\60)
CHANNELS	CARDS	CARDS +	Sector 2 (120\60)

-----		+ Sector 3 (120\60)
4	2	+ Sector 4 (60)
8	4	+ Sector 5 (60)
12	6	+ Sector 6 (60)
16	8	+ 2 (ACU)
20	10	+ 2 (CSM)
24	12	+ 16 (CCH, LCR - OTSR)
28	14	-----
32	16	TOTAL CARDS

The first two port cards are always provided so provision two less than the total cards needed.

- RUL2 1) Provide one NT3P31AA ribbon cable for every two (2) extra alarm cp's ordered.
- 2) A maximum of 4 extra input cards may be provided.
- 3) A maximum of 2 extra output cards may be provided.
- RUL3 1) Provide one (1) DRUM when a cell site is operating in the digital mode. This unit will monitor the digital voice channel.
- RUL4 1) Provide one (1) NTAX40CA DRUM when a 60 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel. (NOTE: The NTAX40CA DRUM can also be used in OMNI and 120 degree sectored systems but is not recommended by BNR).
- RUL5 1) Provide one (1) NTAX40DA DRUM when an OMNI or 120 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel.
- RUL6 1) The DRUM has an attenuator that is provisionable in three different values(10dB, 20dB, and 30dB). A detailed analysis of the selection criteria for this attenuator is provided in IM1547. It is recommended that the customer be supplied with one of each since each site may be different.
- 2) For the NTAX40CA, DRUM-Whip Antenna Configuration, the selection criteria is summarized as follows:
- i) The sum of the coupling from the base station antennas to the DRUM/CSM antenna, plus the cable loss of NTAX4021, plus the value of the attenuator must sum to a total in the range of 60 to 90dB.

- 3) For the NTAX40DA, DRUM-Sniffer Port Configuration, the selection criteria is summarized as follows:

- i) The attenuator will not usually be required when using the standard duplexer, however, for non-standard configurations the sniffer port coupling plus the value of the attenuator must sum to a total of 50dB.

RUL7 1) Provide one (1) NT3P01KR Whip Antenna, one (1) NTAX4021 RF Cable, and one (1) A0601731 40dB attenuator when using the NTAX40CA DRUM. The NTAX4021 RF Cable is length provisionable.

RUL8 1) Existing sites may already have accessory equipment which comes in the RF cable kits.

- 2) When using the NTAX40DA DRUM for OMNI configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit

- 3) When using the NTAX40DA DRUM for 120 STSR configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit
1	NT3P00DJ	CSM to RF2 Duplexer Cable
1	NT3P30AD	CSM to RF3 Duplexer Cable

- 4) When more than 16 channels per sector are being used, additional CSM to Duplexer cables are needed.

- 5) 8-Way Divider Kit(NT3P03NC) includes the following parts:

8-Way Divider	A0603342	(QTY 1)
RF Cable	NT3P30AK	(QTY 1)
Cable CSM to RF1 Dup.	NT3P0311	(QTY 1)
Screw	A0603053	(QTY 4)
Nut	A0603054	(QTY 4)
Washer	A0603262	(QTY 4)
Bracket	P0720029	(QTY 1)
Attenuator	A0603113	(QTY 1)
Connector	A0601216	(QTY 1)

- RUL9 1) The NT3P20FB Enhanced ACU Input Card is available for use in slots 9-12 for optional alarms. The NT3P20FB will replace the NT3P20FA in slots 1-8 when the current stock of the NT3P20FA is depleted.
- RUL10 1) Provide one (1) NTZZ38AA for an ICRM in DUPLEX mode.
- RUL11 1) Provide one (1) 12 position blank panel when the ICRM shelf is not provided.
- RUL12 1) Provide one (1) 5 position blank panel when the DRUM is not provided.
- RUL13 1) Provide one (1) NTZZ38BA for an ICRM in SIMPLEX mode.
- RUL14 1) Provide two (2) NTAX8650 terminal plugs for the connectors when an expansion shelf IS NOT provided.
- RUL15 1) The SIMPLEX building block provides one NT6X50AB in position 11. The DUPLEX building block provides two NT6X50ABs in positions 11 & 12. Use the following tables to provide additional NT6X50ABs:

T1 SPANS	PROVIDE NT6X50ABs IN POSITIONS	
	SIMPLEX	DUPLEX
1-2	AP	AP
3-4	12	AP
5-6	12,13	13
7-8	12,13,14	13,14

- RUL16 1) Provide one (1) NT8X47BA in position 20 when the DRUM is required.
- 2) When using an ICRM WITHOUT a DRUM, only one NT8X47BA is absolutely necessary, regardless of whether the ICRM is configured in simplex or duplex mode. However, two NT8X47BAs can still be used. If configured in duplex mode without a DRUM with only one NT8X47BA, the cable that connects between the ICRM and RMFS MUST be connected to the connector labeled "SIMPLEX" on the ICRM backpanel. SPEC WRITERS MUST

INCLUDE A MANUFACTURING NOTE IN THEIR SPECS INDICATING WHICH CONNECTOR AND CONFIGURATION IS BEING USED.

- 3) Provision one NT8X47BA for each RF frame. RF frames not fully equipped may use ports off the cp's in positions 20 and 21. THIS IS NOT RECOMMENDED because special cables are required.
- 4) For 60 & 120 OTSR, cp's in positions 18-20 must be provisioned for the control and locate channels on the GCL shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the cp's in positions 18-21 to be used for RF frames.

RUL17 1) Provide one (1) NTAX83AA for every 8 GE radios. Each circuit pack can be assigned either one control channel or one locate channel.

RUL18 1) Provide one (1) NTAX87AA for every shelf in which P2/P3 will mount. Each circuit pack can be assigned either one control channel or one locate channel.

RUL19 1) Provide one (1) NT0X50AA for each position not equipped.

RUL20 1) Provide one (1) designation label for each circuit pack ordered.

RUL21 1) Provide at least one (1) P0745134 ICP Cell Site Installation Methods Manual (IM02) for each cell site.

RUL22 1) Provide one RCM1 Expansion shelf when required.

2) Provision two NT3P50DA Expansion Cards when the RCM1 expansion shelf is required.

3) Provide one blank panel when the RCM1 Expansion shelf is not required.

RUL23 1) Provide at least one NT3P19AB ICP Cellsite Manual for each ICP based cellsite. If not requested, please confirm with the engineering group.

RUL24 1) The NT3P70AA CSM2 is to ONLY be used for V0.

NT800DR CE1 ICP SECTORED W/O RMC

PEC CODE: NT3P64AB

CPC CODE: A0375744

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard ICP based sectorized CE1 bay without RMCs.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:
Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Keith Zaletsky Dept. 5849 (RICH)

NT3P64AB EMA9-20-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 02	ECM 438 13	First release of this EMS although it has already been in CADES.
93 11 16	ECM 438 15	Update Novatel to NT numbers.
94 01 28	ECM 438 16	Make NT3P19AB ICP Cellsite Manual provisionable as misc. equipment. Add NT3P70AA CSM2 for VO ONLY. Add note for 8X47BA cabling.

The NT800DR Common Equipment Frame for ICP/RCMI is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BC	RIP	1	42		AP
# DRUM	NTAX40AA	DRUM	1	37		RUL3
# DRUM	NTAX40BA	DRUM	1	37		RUL3
DRUM-Whip Antenna Config.	NTAX40CA	DRUM	1	37		RUL4
DRUM-Sniffer Port Config.	NTAX40DA	DRUM	1	37		RUL5
8-Way Divider Kit	NT3P03NC		1			RUL8
Cable CSM to RF2 Dup.	NT3P00DJ		1			RUL8
Cable CSM to RF3 Dup.	NT3P30AD		1			RUL8
Whip Antenna	NT3P01KR		1			RUL7
RF Cable	NTAX4021		1			RUL7
40dB Attenuator	A0601731		1			RUL7
10dB Attenuator	A0297287		1			RUL6
20dB Attenuator	A0382091		1			RUL6
30dB Attenuator	A0381688		1			RUL6
Blank Panel (5 POS)	NT3P25AH		1	37		RUL12
Alarm Control Unit	NT3P20GA	ACU	1	35		AP
Input Circuit Pack	NT3P20FA		8	35	1-8	AP
Input Circuit Pack	NT3P20FB		8	33	1-8	RUL9
Input Circuit Pack	NT3P20FB		4	33	9-12	RUL9
Output Circuit Pack	NT3P20EA		1	33	13,16	RUL2
Output Circuit Pack	NT3P20EA		1	35	14	AP
Ribbon Cable	NT3P31AA			35		RUL2
Master Oscillator	NT3P20JB	HSMO	1	33		AP
Cell Site Monitor	NT3P20MA	CSM	1	31		AP
# Cell Site Monitor-2	NT3P70AA	CSM	1	31		RUL23
Blank Panel (6 POS)	NT3P25AA		1	25		AP
Rem. Cell Multiplexor I/F	NT3P50AA	RCMI	1	19		AP
LAPD Link Card	NT3P50BA		2	19	1,14	AP
Port Card	NT3P50CA		2	19	4,17	AP
Port Card	NT3P50CA			19	5-13	RUL1
					18-26	
Rem. Cell Multiplexor I/F	NT3P50EA	RCMI	1	13		AP
Port Card	NT3P50CA			13	6-13	RUL1
					19-26	
Expansion Card	NT3P50DA			13	1,14	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ICRM - Duplex	NTZZ38AA			1		RUL10
ICRM - Simplex	NTZZ38BA			1		RUL13
Terminal Plug	NTAX8650			1		RUL14
DS-1 Interface Card	NT6X50AB			1	12-14	RUL15
Desig Label NT6X50AB	P0690976			1	12-14	RUL20
Rem Mod Digital Port	NT8X47BA	RMDP		1	4-8	RUL16
					17-20	
Desig Label NT8X47BA	P0689233			1	4-8	RUL20
					17-20	
Rem Mod Manchester Port	NTAX83AA	RMMP		1	4-8	RUL17
					17-20	
Desig Label NTAX83AA	P0734827			1	4-8	RUL20
					17-20	
Rem Mod Radio Port	NTAX87AA	RMRP		1	4-8	RUL18
					17-20	
Desig Label NTAX87AA	P0727626			1	4-8	RUL20
					17-20	
Filler Face Plate	NT0X50AA			1	4-8	RUL19
					12-14	
					17-20	
Desig Label NT0X50AA	P0578498			1	4-8	RUL20
					12-14	
					17-20	
Blank Panel (12 POS)	NT3P25AL		1	1		RUL11
Anchoring Kit	NT3P40AA		1			AP
Installation Manual	P0745134		1			RUL21
ICP Cellsite Manual	NT3P19AB		1			RUL22

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX40AA/BA NT3P70AA	MD DEV	NTAX40CA/DA

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 ACU Input CP,s are always provided in slots 1-8. Slot 8 alarm points are for customer optional alarms.
- 3) The NT3P50AA RCMi shelf is always equipped with 2 LAPD cp's and 2 port cards.
- 4) Provide the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing
- 5) Only the NT3P20HK RMC is expandable from 8 to 16 ports. All other RMC's are limited to 8 ports.
- 6) The NT3P20HN expands all 3 RMC's from 8 to 16 ports and is always provided with the sectorization frames.
- 7) For STSR the RCMi #1 will be located in the CE2 bay. RCMi #2,#3 are located in CE1. The LAPD circuit packs will be changed from CE1 to CE2 on site.
- 8) For OTSR the RCMi #1,#4 are located in the CE2 bay. RCMi #2,#3 are located in CE1. The LAPD circuit packs will be changed from CE1 to CE2 on site.

RULES:

- AP 1) When PEC NT3P64AB is ordered, these items are provided.
- RUL1 1) Port card provisioning. Each circuit pack has four ports and should be provisioned in pairs. The total number of port cards is the sum of port cards required for each sector.

	TOTAL	TOTAL	Sector 1 (120\60)
CHANNELS	CARDS	CARDS +	Sector 2 (120\60)

Active Equipment
NT800DR CE1 ICP SECTORED W/O RMC

NT3P64AB
EMA9-20-000
Page 5

-----		+ Sector 3 (120\60)
4	2	+ Sector 4 (60)
8	4	+ Sector 5 (60)
12	6	+ Sector 6 (60)
16	8	+ 2 (ACU)
20	10	+ 2 (CSM)
24	12	+ 16 (CCH, LCR - OTSR)
28	14	-----
32	16	TOTAL CARDS

The first two port cards are always provided so provision two less than the total cards needed.

- RUL2 1) Provide one NT3P31AA ribbon cable for every two (2) extra alarm cp's ordered.
- 2) A maximum of 4 extra input cards may be provided.
- 3) A maximum of 2 extra output cards may be provided.
- RUL3 1) Provide one (1) DRUM when a cell site is operating in the digital mode. This unit will monitor the digital voice channel.
- RUL4 1) Provide one (1) NTAX40CA DRUM when a 60 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel. (NOTE: The NTAX40CA DRUM can also be used in OMNI and 120 degree sectored systems but is not recommended by BNR).
- RUL5 1) Provide one (1) NTAX40DA DRUM when an OMNI or 120 degree sectored cell site is operating in digital mode. This unit will monitor the digital voice channel.
- RUL6 1) The DRUM has an attenuator that is provisionable in three different values (10dB, 20dB, and 30dB). A detailed analysis of the selection criteria for this attenuator is provided in IM1547. It is recommended that the customer be supplied with one of each since each site may be different.
- 2) For the NTAX40CA, DRUM-Whip Antenna Configuration, the selection criteria is summarized as follows:
- i) The sum of the coupling from the base station antennas to the DRUM/CSM antenna, plus the cable loss of NTAX4021, plus the value of the attenuator must sum to a total in the range of 60 to 90dB.

- 3) For the NTAX40DA, DRUM-Sniffer Port Configuration, the selection criteria is summarized as follows:

- i) The attenuator will not usually be required when using the standard duplexer, however, for non-standard configurations the sniffer port coupling plus the value of the attenuator must sum to a total of 50dB.

RUL7 1) Provide one (1) NT3P01KR Whip Antenna, one (1) NTAX4021 RF Cable, and one (1) A0601731 40dB attenuator when using the NTAX40CA DRUM. The NTAX4021 RF Cable is length provisionable.

RUL8 1) Existing sites may already have accessory equipment which comes in the RF cable kits.

- 2) When using the NTAX40DA DRUM for OMNI configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit

- 3) When using the NTAX40DA DRUM for 120 STSR configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit
1	NT3P00DJ	CSM to RF2 Duplexer Cable
1	NT3P30AD	CSM to RF3 Duplexer Cable

- 4) When more than 16 channels per sector are being used, additional CSM to Duplexer cables are needed.

- 5) 8-Way Divider Kit(NT3P03NC) includes the following parts:

8-Way Divider	A0603342	(QTY 1)
RF Cable	NT3P30AK	(QTY 1)
Cable CSM to RF1 Dup.	NT3P0311	(QTY 1)
Screw	A0603053	(QTY 4)
Nut	A0603054	(QTY 4)
Washer	A0603262	(QTY 4)
Bracket	P0720029	(QTY 1)
Attenuator	A0603113	(QTY 1)
Connector	A0601216	(QTY 1)

- RUL9 1) The NT3P20FB Enhanced ACU Input Card is available for use in slots 9-12 for optional alarms. The NT3P20FB will replace the NT3P20FA in slots 1-8 when the current stock of the NT3P20FA is depleted.
- RUL10 1) Provide one (1) NTZZ38AA for an ICRM in DUPLEX mode.
- RUL11 1) Provide one (1) 12 position blank panel when the ICRM shelf is not provided.
- RUL12 1) Provide one (1) 5 position blank panel when the DRUM is not provided.
- RUL13 1) Provide one (1) NTZZ38BA for an ICRM in SIMPLEX mode.
- RUL14 1) Provide two (2) NTAX8650 terminal plugs for the connectors when an expansion shelf IS NOT provided.
- RUL15 1) The SIMPLEX building block provides one NT6X50AB in position 11. The DUPLEX building block provides two NT6X50ABs in positions 11 & 12. Use the following tables to provide additional NT6X50ABs:

T1 SPANS	PROVIDE NT6X50ABs IN POSITIONS	
	SIMPLEX	DUPLEX
1-2	AP	AP
3-4	12	AP
5-6	12,13	13
7-8	12,13,14	13,14

- RUL16 1) Provide one (1) NT8X47BA in position 20 when the DRUM is required.
- 2) When using an ICRM WITHOUT a DRUM, only one NT8X47BA is absolutely necessary, regardless of whether the ICRM is configured in simplex or duplex mode. However, two NT8X47BAs can still be used. If configured in duplex mode without a DRUM with only one NT8X47BA, the cable that connects between the ICRM and RMFS MUST be connected to the connector labeled "SIMPLEX" on the ICRM backpanel. SPEC WRITERS MUST

INCLUDE A MANUFACTURING NOTE IN THEIR SPECS INDICATING WHICH CONNECTOR AND CONFIGURATION IS BEING USED.

- 3) Provision one NT8X47BA for each RF frame. RF frames not fully equipped may use ports off the cp's in positions 20 and 21. THIS IS NOT RECOMMENDED because special cables are required.
- 4) For 60 & 120 OTSR, cp's in positions 18-20 must be provisioned for the control and locate channels on the GCL shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the cp's in positions 18-21 to be used for RF frames.

RUL17 1) Provide one (1) NTAX83AA for every 8 GE radios. Each circuit pack can be assigned either one control channel or one locate channel.

RUL18 1) Provide one (1) NTAX87AA for every shelf in which P2/P3 will mount. Each circuit pack can be assigned either one control channel or one locate channel.

RUL19 1) Provide one (1) NT0X50AA for each position not equipped.

RUL20 1) Provide one (1) designation label for each circuit pack ordered.

RUL21 1) Provide at least one (1) P0745134 ICP Cell Site Installation Methods Manual (IM02) for each cell site. required.

RUL22 1) Provide at least one NT3P19AB ICP Cellsite Manual for each ICP based cellsite. If not requested, please confirm with the engineering group.

RUL23 1) The NT3P70AA CSM2 is to ONLY be used for V0.

NT800DR CE1 ICP SECTORED W/O RCMI

PEC CODE: NT3P64AC

CPC CODE: A0390218

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CE

ENGINEERING DESCRIPTION: This equipment is a layout of a standard
ICP based sectorized CE1 Bay for use with
the ICRM shelf.

REFERENCE DOCUMENTATION: Not Applicable

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Richard Martin Dept. 5849 (RICH)

MAIN CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Keith Zaletsky Dept. 5849 (RICH)

NT3P64AC EMA9-21-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 02	ECM 438 13	First release of this EMS although it has been available in CADES.
93 11 16	ECM 438 15	Update Novatel to NT numbers.
94 01 28	ECM 438 16	Make NT3P19AB ICP Cellsite Manual provisionable as misc. equipment. Add NT3P70AA CSM2 for VO ONLY. Add note for 8X47BA cabling.

The NT800DR Common Equipment Frame for ICP/ICRM is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rack Interface Panel	NT3P20BC	RIP	1	42		AP
# DRUM	NTAX40AA	DRUM	1	37		RUL5
# DRUM	NTAX40BA	DRUM	1	37		RUL5
DRUM-Whip Antenna Config.	NTAX40CA	DRUM	1	37		RUL6
DRUM-Sniffer Port Config.	NTAX40DA	DRUM	1	37		RUL7
8-Way Divider Kit	NT3P03NC		1			RUL10
Cable CSM to RF2 Dup.	NT3P00DJ		1			RUL10
Cable CSM to RF3 Dup.	NT3P30AD		1			RUL10
Whip Antenna	NT3P01KR		1			RUL9
RF Cable	NTAX4021		1			RUL9
40dB Attenuator	A0601731		1			RUL9
10dB Attenuator	A0297287		1			RUL8
20dB Attenuator	A0382091		1			RUL8
30dB Attenuator	A0381688		1			RUL8
Blank Panel (5 POS)	NT3P25AH		1	37		RUL12
Alarm Control Unit	NT3P20GA	ACU	1	35		AP
Input Circuit Pack	NT3P20FA		8	35	1-8	AP
Input Circuit Pack	NT3P20FB		8	35	1-8	RUL11
Input Circuit Pack	NT3P20FB		4	35	9-12	RUL11
Output Circuit Pack	NT3P20EA		2	35	13,16	RUL1
Output Circuit Pack	NT3P20EA		1	35	14	AP
Ribbon Cable	NT3P31AA			35		RUL1
Master Oscillator	NT3P20JB	HSMO	1	33		AP
Cell Site Monitor	NT3P20MA	CSM	1	31		AP
# Cell Site Monitor-2	NT3P70AA	CSM	1	31		RUL24
Receive Multicoupler	NT3P20HK	RMC	3	25,27, 29		AP
8-16 Port Exp.	NT3P20HM					RUL22
Receive Multicoupler	NT3P20HK	RMC	3	23,21, 19		RUL13
8-16 Port Exp.	NT3P20HM					RUL22
Blank Panel (6 POS)	NT3P25AA		1	19		RUL13
ICRM - Duplex	NTZZ38AA			1,13		RUL2
ICRM - Simplex	NTZZ38BA			1,13		RUL2
ICRM EXP - Duplex	NTZZ38CA			3		RUL2
ICRM EXP - Simplex	NTZZ38DA			3		RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Terminal Plug	NTAX8650			1, 13		RUL14
DS-1 Interface Card	NT6X50AB			1, 13	12-14	RUL15
Desig Label NT6X50AB	P0690976			1, 13	12-14	RUL20
Rem Mod Digital Port	NT8X47BA	RMDP		1, 13	4-8	RUL16
					17-20	
Desig Label NT8X47BA	P0689233			1, 13	4-8	RUL20
					17-20	
Rem Mod Manchester Port	NTAX83AA	RMMP		1, 3,	4-8	RUL17
				13	17-20	
Desig Label NTAX83AA	P0734827			1, 3,	4-8	RUL20
				13	17-20	
Rem Mod Radio Port	NTAX87AA	RMRP		1, 3,	4-8	RUL18
				13	17-20	
Desig Label NTAX87AA	P0727626			1, 3,	4-8	RUL20
				13	17-20	
Filler Face Plate	NT0X50AA			1, 3,	4-8	RUL19
				13	12-14	
					17-20	
Desig Label NT0X50AA	P0578498			1, 3,	4-8	RUL20
				13	12-14	
					17-20	
Blank Panel (12 POS)	NT3P25AL		1	1		RUL3
Blank Panel (2 POS)	NT3P25AC		1	1		RUL4
Anchoring Kit	NT3P40AA		1			AP
Installation Manual	P0745134		1			RUL21
ICP Cellsite Manual	NT3P19AB		1			RUL23

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX40AA/BA NT3P70AA	MD DEV	NTAX40CA/DA

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 the following hardware for frame isolation with the anchoring kits:
 - 1 - A0367429 - Newton A7058-2 Isolator Pad
 - 4 - P0667992 - Newton A3062-2 Isolator Bushing
- 2) The ACU Input CP,s are always provided in slots 1-8. Slot 8 alarm points are for customer optional alarms.
- 3) When an expansion shelf is added to the ICRM, the provisioning of the circuit packs on the expansion shelf must match with the circuit packs in the adjacent slots on the ICRM shelf or be filler face plates.

RULES:

- AP 1) When PEC NT3P64AC is ordered, these items are provided.
- RUL1 1) Provide one NT3P31AA ribbon cable for every two (2) extra alarm cp's ordered.
- 2) A maximum of 4 extra input cards may be provided.
- 3) A maximum of 2 extra output cards may be provided.
- RUL2 1) Provide one (1) ICRM building block for radio interface.
- 2) Provide one (1) ICRM EXP building block when more than 72 analog radios (DRUM not provided) or 64 analog radios (DRUM provided) are needed.

- 3) On new installations the ICRM shelf will be provisioned in position 13.

The following table illustrates the positioning of the ICRM and ICRM Expansion shelf in various configurations:

CONFIGURATION	ICRM	ICRM EXP. (if req)
0 RCM I	13	3
1 RCM I	1	N/A
2 RCM I	1	N/A

- RUL3 1) Provide one (1) 12 position blank panel when the ICRM Expansion shelf is not provided.
- RUL4 1) Provide one (1) 2 position blank panel when the ICRM Expansion shelf is provided.
- RUL5 1) Provide one (1) DRUM when a cell site is operating in the digital mode. This unit will monitor the digital voice channel.
- RUL6 1) Provide one (1) NTAX40CA DRUM when a 60 degree sector cell site is operating in digital mode. This unit will monitor the digital voice channel. (NOTE: The NTAX40CA DRUM can also be used in OMNI and 120 degree sector systems but is not recommended by BNR).
- RUL7 1) Provide one (1) NTAX40DA DRUM when an OMNI or 120 degree sector cell site is operating in digital mode. This unit will monitor the digital voice channel.
- RUL8 1) The DRUM has an attenuator that is provisionable in three different values (10dB, 20dB, and 30dB). A detailed analysis of the selection criteria for this attenuator is provided in IM1547. It is recommended that the customer be supplied with one of each since each site may be different.
- 2) For the NTAX40CA, DRUM-Whip Antenna Configuration, the selection criteria is summarized as follows:
- i) The sum of the coupling from the base station antennas to the DRUM/CSM antenna, plus the cable loss of NTAX4021, plus

the value of the attenuator must sum to a total in the range of 60 to 90dB.

- 3) For the NTAX40DA, DRUM-Sniffer Port Configuration, the selection criteria is summarized as follows:

- i) The attenuator will not usually be required when using the standard duplexer, however, for non-standard configurations the sniffer port coupling plus the value of the attenuator must sum to a total of 50dB.

RUL9 1) Provide one (1) NT3P01KR Whip Antenna, one (1) NTAX4021 RF Cable, and one (1) A0601731 40dB attenuator when using the NTAX40CA DRUM. The NTAX4021 RF Cable is length provisionable.

RUL10 1) Existing sites may already have accessory equipment which comes in the RF cable kits.

- 2) When using the NTAX40DA DRUM for OMNI configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit

- 3) When using the NTAX40DA DRUM for 120 STSR configurations, provide the following (or equivalent piece parts):

QTY	PEC	DESCRIPTION
===	=====	=====
1	NT3P03NC	8-Way Divider Kit
1	NT3P00DJ	CSM to RF2 Duplexer Cable
1	NT3P30AD	CSM to RF3 Duplexer Cable

- 4) When more than 16 channels per sector are being used, additional CSM to Duplexer cables are needed.

- 5) 8-Way Divider Kit(NT3P03NC) includes the following parts:

8-Way Divider	A0603342	(QTY 1)
RF Cable	NT3P30AK	(QTY 1)
Cable CSM to RF1 Dup.	NT3P0311	(QTY 1)
Screw	A0603053	(QTY 4)
Nut	A0603054	(QTY 4)
Washer	A0603262	(QTY 4)
Bracket	P0720029	(QTY 1)

Attenuator A0603113 (QTY 1)
Connector A0601216 (QTY 1)

- RUL11 1) The NT3P20FB Enhanced ACU Input Card is available for use in slots 9-12 for optional alarms. The NT3P20FB will replace the NT3P20FA in slots 1-8 when the current stock of the NT3P20FA is depleted.
- RUL12 1) Provide one (1) 5 position blank panel when the DRUM is not provided.
- RUL13 1) If the ICRM is not being used, either three extra RMCs or a 6 position blank panel can be provided.
- RUL14 1) Provide two (2) NTAX8650 terminal plugs for the connectors when an expansion shelf IS NOT provided.
- RUL15 1) The SIMPLEX building block provides one NT6X50AB in position 11. The DUPLEX building block provides two NT6X50ABs in positions 11 & 12. Use the following tables to provide additional NT6X50ABs:

T1 SPANS	PROVIDE NT6X50ABs IN POSITIONS	
	SIMPLEX	DUPLEX
1-2	AP	AP
3-4	12	AP
5-6	12, 13	13
7-8	12, 13, 14	13, 14

- RUL16 1) Provide one (1) NT8X47BA in position 20 when the DRUM is required.
- 2) When using an ICRM WITHOUT a DRUM, only one NT8X47BA is absolutely necessary, regardless of whether the ICRM is configured in simplex or duplex mode. However, two NT8X47BAs can still be used. If configured in duplex mode without a DRUM with only one NT8X47BA, the cable that connects between the ICRM and RMFS MUST be connected to the connector labeled "SIMPLEX" on the ICRM backpanel. SPEC WRITERS MUST INCLUDE A MANUFACTURING NOTE IN THEIR SPECS INDICATING WHICH CONNECTOR AND CONFIGURATION IS BEING USED.

- 3) Provision one NT8X47BA for each RF frame. RF frames not fully equipped may use ports off the cp's in positions 20 and 21. THIS IS NOT RECOMMENDED because special cables are required.
- 4) For 60 & 120 OTSR, cp's in positions 18-20 must be provisioned for the control and locate channels on the GCL shelf. The NTAX8657 cable is needed for this application. It will allow the remaining ports on the cp's in positions 18-21 to be used for RF frames.

RUL17 1) Provide one (1) NTAX83AA for every 8 GE radios. Each circuit pack can be assigned either one control channel or one locate channel.

RUL18 1) Provide one (1) NTAX87AA for every shelf in which P2/P3 will mount. Each circuit pack can be assigned either one control channel or one locate channel.

RUL19 1) Provide one (1) NT0X50AA for each position not equipped.

RUL20 1) Provide one (1) designation label for each circuit pack ordered.

RUL21 1) Provide at least one (1) P0745134 ICP Cell Site Installation Methods Manual (IM02) for each cell site.

RUL22 1) Provide one (1) NT3P20HM to increase the 8 port RMC to 16 ports for sites with more than 4 RF frames. required.

RUL23 1) Provide at least one NT3P19AB ICP Cellsite Manual for each ICP based cellsite. If not requested, please confirm with the engineering group.

RUL23 1) The NT3P70AA CSM2 is to ONLY be used for V0.

MERIDIAN ENHANCED DIGITAL SIGNALING PROCESSOR
(MEDP)

PEC CODE: NTAX82AB

CPC CODE: B0241397

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MEDP

ENGINEERING DESCRIPTION: The Meridian Enhanced Digital Signaling Processor (MEDP) is a Meridian Cabinet which houses 16 E-DSPM's, four per shelf, on four shelves.

This frame can be part of the DMS-MTX or MTXD system.

REFERENCE DOCUMENTATION: MSAX82AB 00 03
ISAX82AB 00 06
SLAX82AB 00 06

MARKETS: Applicable markets:
Wireless

ISSUE AUTHOR: Kevin Neville Dept. 5849 (RICH)

MAIN CONTACT: Kevin Neville Dept. 5849 (RICH)

CONTACT: Rich McNeill Dept. 5849 (RICH)

NTAX82AB EMA9-22-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 08 12	ECM 703 01	Previous history not available
97 02 12	ECM 703 02	KMN : Update per EC-011-22298.
97 03 27	ECM 703 03	KMN : Correction to provisioning rules
97 06 12	ECM 703 04	KMN : Add EFRC NTAX80AB.
97 06 16	ECM 703 05	KMN : Clarify NTEX93AA Provisioing.

The MERIDIAN ENHANCED DIGITAL SIGNALING PROCESSOR (MEDP) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EDP Shelf Assembly	NTAX7604	DSPM	1	05		AP
Modular Supervisory Panel	NTAX82ZC		1	60		AP
Cooling Unit	NTNX27CA		1	00		AP
EDP Shelf Assembly	NTAX7604	DSPM		19, 33 47		RUL1
Filler Panel	NT0X84AA			19, 33 47		RUL2
SIGNGND 6 AWG Cable	NTNX1650		1			AP
PWR & CTRL Harness 05/19	NTAX8217		1			AP
PWR & CTRL Harness 05/19	NTAX8219		1			AP
PWR & CTRL Harness 33/47	NTAX8220		1			AP
PWR & CTRL Harness 33/47	NTAX8221		1			AP
PWR & CTRL Harness 05/19	NTAX8222		1			AP
PWR & CTRL Harness 33/47	NTAX8224		1			AP
35' Power Cable Harness	NTAX8223		1			AP
35' Power Cable Harness	NTAX8225		1			AP
Aisle Alarm Harness	NTAX8227		1			AP
Cooling Unit Cable	NTAX8228		1			AP
ABS Cable Harness	NTAX8229		1			AP
Top Cooling Unit	NTAX77AA		1	65		RUL4
Cooling Unit Filler Panel	P0684448		1	65		RUL4
Power Converter	NT2X70AF			XX	1, 25	RUL5
Filler Face Plate	NT0X50AE			XX	1, 25	RUL5
Filler Face Plate	NT0X50AA			XX	14	RUL5
EFRC Control Proccessor	NTAX80AB			XX	4	RUL6
DSP Controller Processor	NTAX80AA			XX	4	RUL6
Filler Face Plate	NT0X50AA			XX	4	RUL6
DSP CP	NTAX81AA			XX	5-8	RUL6
NXSP CP	NTEX93AA			XX	5-8	RUL6
Filler Face Plate	NT0X50AA			XX	5-8	RUL6
EFRC Control Proccessor	NTAX80AB			XX	9	RUL7
DSP Controller Processor	NTAX80AA			XX	9	RUL7
Filler Face Plate	NT0X50AA			XX	9	RUL7
DSP CP	NTAX81AA			XX	10-13	RUL7
NXSP CP	NTEX93AA			XX	10-13	RUL7
Filler Face Plate	NT0X50AA			XX	10-13	RUL7
EFRC Control Proccessor	NTAX80AB			XX	15	RUL8
DSP Controller Processor	NTAX80AA			XX	15	RUL8

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT0X50AA			XX	15	RUL8
DSP CP	NTAX81AA			XX	16-19	RUL8
NXSP CP	NTEX93AA			XX	16-19	RUL8
Filler Face Plate	NT0X50AA			XX	16-19	RUL8
EFRC Control Proccessor	NTAX80AB			XX	20	RUL9
DSP Controller Processor	NTAX80AA			XX	20	RUL9
Filler Face Plate	NT0X50AA			XX	20	RUL9
DSP CP	NTAX81AA			XX	21-24	RUL9
NXSP CP	NTEX93AA			XX	21-24	RUL9
Filler Face Plate	NT0X50AA			XX	21-24	RUL9
Backplane Terminator	NTEX90AA			XX	8R, 13R 19R, 24R	RUL10
MEDP EMI Kit	NTAX82ZB					RUL11
Personality Plate	P0815241			19, 33 47		RUL11
Bulkhead Blank Panel	P0715616			19, 33 47		RUL11
DSP DS30A Cable Assy	NTAX8231			19, 33 47		RUL11
Top cover plate	P0739498		1			RUL11
Bottom cover	P0740185		1			RUL11
Hex Washer Roll Screw	P0578123		38			RUL11
Door Right - Grey	NTNX2513		2			RUL12
Door Left - Grey	NTNX2515		2			RUL12
Right Door Label - Grey	P0699158		2			RUL12
Left Door Label - Grey	P0818848		2			RUL12
Right, Ext. Skin Assy. Grey	NTRX73AM		1			RUL12
Left, Ext. Skin Assy. Grey	NTRX73AL		1			RUL12
Door Right - Brown	NTNX2552		2			RUL13
Door Left - Brown	NTNX2550		2			RUL13
Right Door Label - Brown	P0695230		2			RUL13
Left Door Label - Brown	P0818849		2			RUL13
Right, Ext. Skin Assy. Brown	NTRX73AP		1			RUL13
Left, Ext. Skin Assy. Brown	NTRX73AN		1			RUL13
Earthquake Anchor Kit	NTRX2564					RUL14
Leveling Foot Kit	NTRX2523					RUL14

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTAX80AA	A&M	NTAX80AB

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 = Shelves 05,19,33,47.

RULES:

- AP 1) When PEC NTAX82AB is ordered, these items are provided.
- RUL1 1) Provide one (1) NTAX7604 shelves for mounting positions 19,33,47. Provision pos. 19 first then 33, then 47 last. See RUL11.
- RUL2 Provide one (1) NT0X84AA filler panel for each shelf 19,33,47 not equiped with a EDP shelf.
- RUL3 1) Reserved for future use.
- RUL4 1) Provide one (1) NTAX77AA Top Cooling Unit when providing EDP shelf in shelf 47.
- 2) Provide one (1) P0684448 Cooling Unit Filler Panel if EDP shelf at position 47 is not provided.
- RUL5 1) Provision two (2) NT2X70AF power converter in slot 1 and 25 of each DSPM shelf provisioned. Only provide the NT2X70AF power converters for the DSP's in use: shelf 05 provide one (1) NT2X70AF in slot 1 for DSP 0-1, slot 25 for DSP 2-3; for shelf 19 slot 1 for DSP 4-5, for DSP 6-7 slot 25; for

shelf 33 slot 1 for DSP 8-9, slot 25 for DSP 10-11; for shelf 47 slot 1 for DSP 12-13, slot 25 for DSP 14-15.

- 2) Provision one (1) NT0X50AE for slot 1,25 on shelf 05,19,33,47 when respective DSP's are not in use.
- 3) Provision one (1) NT0X50AA for slot 14 on shelf 05,19,33,47.

RUL6 1) Provision (1) NTAX80AA for each DSP for DS-30A connections to the ICP. Each NTAX80AA will interface two DS-30 links.

- 2) Provide NTAX80AB for EFRC (IS-641) for DS-30A connections to the ICP. The NTAX80AB is supported in E-DSPM NTAX7604 Backplane/Shelf and DSPM NTAX7601 Backplane/Shelf assemblies in the MTX04 S/W Stream. The NTAX80AB is backward compatible to the NTAX80AA. Contact PLM Prime for availability.

- 3) Provision a NT0X50AA for each vacant unprovisioned NTAX80xx position.

- 4) Provide one (1) NTAX81AA circuit packs for every 2 digital DRU's. Provide in sequence 5,6,7,8.

- 5) For VSELP applications provide one (1) NTEX93AA circuit packs for 1st eight digital DRU's. Provide the 2nd NTEX93AA for next seven digital DRU's. Provide in sequence 5,6.

- 6) For EFRC/ACELP applications provide one (1) NTEX93AA circuit pack for the first 4 digital DRU's. Provide the 2nd NTEX93AA for the next four digital DRU's. Provide the 3rd NTEX93AA for the next four digital DRU's. and the 4th for the next 3 digital DRU's. Provide in sequence 5,6,7,8.

- 7) Provide one (1) NT0X50AA for each vacant slot 5-8.

- 8) Provide either NTAX81AA or NTEX93AA, NOT a combination of both.

RUL7 1) Provision (1) NTAX80AA for each DSP for DS-30A connections to the ICP. Each NTAX80AA will interface two DS-30 links.

- 2) Provide NTAX80AB for EFRC (IS-641) for DS-30A connections to the ICP. The NTAX80AB is supported in E-DSPM NTAX7604 Backplane/Shelf and DSPM NTAX7601 Backplane/Shelf assemblies in the MTX04 S/W Stream. The NTAX80AB is backward compatible to the NTAX80AA. Contact PLM Prime for availability.

- 3) Provision (1) NT0X50AA for each vacant, unprovisioned NTAX80AA position.
- 4) Provide one (1) NTAX81AA circuit packs for every 2 digital DRU's. Provide in sequence 10,11,12,13.
- 5) For VSELP applications provide one (1) NTEX93AA circuit packs for 1st eight digital DRU's. Provide the 2nd NTEX93AA for next seven digital DRU's. Provide in sequence 10,11.
- 6) For EFRC/ACELP applications provide one (1) NTEX93AA circuit pack for the first 4 digital DRU's. Provide the 2nd NTEX93AA for the next four digital DRU's. Provide the 3rd NTEX93AA for the next four digital DRU's. and the 4th for the next 3 digital DRU's. Provide in sequence 10,11,12,13.
- 7) Provide one (1) NT0X50AA for each vacant slot 10-13
- 8) Provide either NTAX81AA or NTEX93AA, NOT a combination of both.

- RUL8
- 1) Provision (1) NTAX80AA for each DSP for DS-30A connections to the ICP. Each NTAX80AA will interface two DS-30 links.
 - 2) Provide NTAX80AB for EFRC (IS-641) for DS-30A connections to the ICP. The NTAX80AB is supported in E-DSPM NTAX7604 Backplane/Shelf and DSPM NTAX7601 Backplane/Shelf assemblies in the MTX04 S/W Stream. The NTAX80AB is backward compatible to the NTAX80AA. Contact PLM Prime for availability.
 - 3) Provision (1) NT0X50AA for each vacant, unprovisioned NTAX80AA position.
 - 4) Provide one (1) NTAX81AA circuit packs for every 2 digital DRU's. Provide in sequence 16,17,18,19.
 - 5) For VSELP applications provide one (1) NTEX93AA circuit packs for 1st eight digital DRU's. Provide the 2nd NTEX93AA for next seven digital DRU's. Provide in sequence 16,17.
 - 6) For EFRC/ACELP applications provide one (1) NTEX93AA circuit pack for the first 4 digital DRU's. Provide the 2nd NTEX93AA for the next four digital DRU's. Provide the 3rd NTEX93AA for the next four digital DRU's. and the 4th for the next 3 digital DRU's. Provide in sequence 16,17,18,19.
 - 7) Provide one (1) NT0X50AA for each vacant slot 16-19

- 8) Provide either NTAX81AA or NTEX93AA, NOT a combination of both.
- RUL9
- 1) Provision (1) NTAX80AA for each DSP for DS-30A connections to the ICP. Each NTAX80AA will interface two DS-30 links.
 - 2) Provide NTAX80AB for EFRC (IS-641) for DS-30A connections to the ICP. The NTAX80AB is supported in E-DSPM NTAX7604 Backplane/Shelf and DSPM NTAX7601 Backplane/Shelf assemblies in the MTX04 S/W Stream. The NTAX80AB is backward compatible to the NTAX80AA. Contact PLM Prime for availability.
 - 3) Provision (1) NT0X50AA for each vacant, unprovisioned NTAX80AA position.
 - 4) Provide one (1) NTAX81AA circuit packs for every 2 digital DRU's. Provide in sequence 21,22,23,24.
 - 5) For VSELP applications provide one (1) NTEX93AA circuit packs for 1st eight digital DRU's. Provide the 2nd NTEX93AA for next seven digital DRU's. Provide in sequence 21,22.
 - 6) For EFRC/ACELP applications provide one (1) NTEX93AA circuit pack for the first 4 digital DRU's. Provide the 2nd NTEX93AA for the next four digital DRU's. Provide the 3rd NTEX93AA for the next four digital DRU's. and the 4th for the next 3 digital DRU's. Provide in sequence 21,22,23,24.
 - 7) Provide one (1) NT0X50AA for each vacant slot 21-24
 - 8) Provide either NTAX81AA or NTEX93AA, NOT a combination of both.
- RUL10
- 1) Provide four (4) NTEX90AA backplane terminator paddle boards per shelf. This pack is used to distinguish between the DSP's on the shelf

		DSP 12								DSP 13					DSP 14					DSP 15															
										1					1					2															
SLOT		8								1 1 1 1 3					1 1 1 1 1 9					2 2 2 2 2 4															
		1	2	3	4	5	6	7	8	R	9	0	1	2	3	R	4	5	6	7	8	9	R	0	1	2	3	4	R	5	6	7			
S H E L F	47	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		DSP 8								DSP 9										DSP 10							DSP 11								
		DSP 4								DSP 5										DSP 6							DSP 7								
S H E L F	19	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		DSP 0								DSP 1										DSP 2							DSP 3								
S H E L F	05	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		
		N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F	N	T	2	X	7	0	A	F		

Figure 1. Shelf layout equipped with NTAX81AA.

				DSP 12					DSP 13					DSP 14					DSP 15												
SLOT				8					1					1					2					2 2 2							
1 2 3				4	5	6	7	8	R	9	0	1	2	3	R	4	5	6	7	8	9	R	0	1	2	3	4	R	5	6	7
S H E L F	47	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		2	A	E	E	E	E	A	E	E	E	E	E	0	A	E	E	E	E	E	A	E	E	E	E	E	E	E	E	2	
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		7	8	9	9	9	9	8	9	9	9	9	9	5	8	9	9	9	9	9	8	9	9	9	9	9	9	9	9	7	
S H E L F	33	0	0	3	3	3	3	0	0	3	3	3	3	0	0	0	3	3	3	3	0	0	3	3	3	3	0	0	0	0	0
		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
		F	B	A	A	A	A	A	B	A	A	A	A	A	A	B	A	A	A	A	A	B	A	A	A	A	A	A	A	A	F
		DSP 8								DSP 9					DSP 10					DSP 11											
		DSP 4								DSP 5					DSP 6					DSP 7											
S H E L F	19	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		2	A	E	E	E	E	A	E	E	E	E	E	0	A	E	E	E	E	E	A	E	E	E	E	E	E	E	E	2	
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		7	8	9	9	9	9	8	9	9	9	9	9	5	8	9	9	9	9	9	8	9	9	9	9	9	9	9	9	7	
S H E L F	05	0	0	3	3	3	3	0	0	3	3	3	3	0	0	0	3	3	3	3	0	0	3	3	3	3	0	0	0	0	0
		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
		F	B	A	A	A	A	A	B	A	A	A	A	A	A	B	A	A	A	A	A	B	A	A	A	A	A	A	A	A	F
		DSP 0								DSP 1					DSP 2					DSP 3											

Figure 2. Shelf layout equipped with NTEX93AA.

- RUL11 1) Provide one (1) NTAX82ZB MEDP EMI Kit with frame configuration for EMI compliance.
- 2) Provide one (1) P0815241 Personality Plate per NTAX7604 shelf for shelf position 19,33, or 47 when the MEDP EMI Kit is provided.
- 3) Provide one (1) NTAX8231 DSP DS30A Cable Assy. per NTAX7604 shelf that is provided in shelf positions 19,33, or 47 for connection from the backplane to the EMI bulkhead when the MEDP EMI Kit is provided. See RUL1.
- 4) Provision one (1) P0715616 Bulkhead Blank Panel per shelf for each shelf when the NTAX7604 is not provisioned in position 19,33, or 47 and the MEDP EMI Kit is provided. See RUL1.
- 5) Provide one Top cover plate and one bottom cover when EMI kit is not provisioned.
- 6) Provide thirty eight (38) P0578123 Hex Washer Roll Screws for mounting the top cover plate and bottom cover when the MEDP EMI Kit is not provisioned.
- 7) The MEDP EMI KIT should always be provided in MTXD applications.
- RUL12 1) Always Provision two (2) NTN2513 Right Door,two (2) NTN2515 Left Door,two (2) P0699158 and two (2) P0818848 labels when the color of the cabinet is specified to be grey.
- 2) Provided NTRX73AM and NTRX73AL Exterior Skins as required depending on the position of the cabinet in the lineup when the color is specified to be grey.
- RUL13 1) Always Provision two (2) NTN2552 Right Door,two (2) NTN2550 Left Door,two (2) P0695230 and two (2) P0818849 labels when the color of the cabinet is specified to be brown.
- 2) Provided NTRX73AP and NTRX73AN Exterior Skins as required depending on the position of the cabinet in the lineup when the color is specified to be brown.
- RUL14 1) Provide one earthquake anchor kit per cabinet. The kit should be shipped loose in the 121 or 411 spec in CADES. The kit contains the following items:.

- (4) P0610736 - Shim .031 Thk
 - (4) P0610737 - Shim .062 Thk
 - (4) P0610738 - Shim .125 Thk
 - (4) P0677746 - Anchor Plate
 - (1) P0740946 - Isolation Pad (C28B)
 - (1) NT0x21AG - Concrete Floor M12 Anchor
- 2) A single earthquake anchor may be provided upon customer request. Provide one (1) P0601852 Threaded Rod Anchor Assy. and one (1) P0741690 Earthquake Anchor Bushing as well as any shims, isolation pads, and anchor plates that may be required. Anchors may be used with leveling feet in order to keep the cabinet(s) from shifting out of position or to provide extra protection against tipping in non-earthquake zone 0 only. The anchors, after being set per the manufacture's instructions, should be torqued to 10-15 ft-lbs.
- 3) Provide on leveling foot kit per cabinet. For use in non-earthquake zones. Leveling feet are used in seismic zone 0 only.

CSC Increased Memory Product Change Kit

NT6X15AT

RATING: Check application date for NT6X15AT.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to the Cell Site Controller frame (NT6X15AB) when converting a CSC module equipped with NT6X16AB to NT6X16BC common circuit pack fill. This retrofit provides increased memory.

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	SP Memory	NT6X46AA		2	29,48	12	
REMOVE	MP Memory	NT6X47AA		4	29,48	10,11	
ADD	SP Memory	NT6X46AB		2	29,48	12	
ADD	Comm Per Ctl Term Bd	NT6X1205		2	29,48	12R	
ADD	MP Memory	NT6X47AB		2	29,48	11	
ADD	Filler Face Plate	NT0X50AA		2	29,48	10	
ADD	Des Strip (NT6X16BC)	P0687357		2	29,48	1	

NOTE:

- 1) Provide one (1) NT6X16AT Common Circuit Kit per frame when converting a CSC Module equipped with NT6X16AB Common Circuit Pack Fill to (NT6X16BC) Common Circuit Pack Fill.
- 2) Office Records shall be changed and maintained to agree with the Common Circuit Pack Fills and not the Common Circuit Pack Kits.
- 3) The order in which the circuit cards appear above is not necessarily the order in which they are to be removed from or added to the controller module.

CSC ENHANCED MESSAGING PRODUCT CHANGE KIT

NT6X15AU

RATING: Check application date for NT6X15AU.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to the Cell Site Controller frame (NT6X15AB) when converting a CSC module equipped with NT6X16BC common circuit pack fill to NT6X16BB common circuit pack fill. The retrofit provides revised messaging function.

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	MSG Interface	NT6X43AA		2	48,29	17	
ADD	CPP MSG Protocol	NT6X69AA		2	48,29	17	
ADD	Des Strip (NT6X16BB)	P0687356		2	48,29	1	

NOTE:

- 1) Provide one (1) NT6X15AU Common Circuit Pack Kit per frame when converting an CSC Module equipped with NT6X16BC Common Circuit Pack Fill to NT6X16BB Common Circuit Pack Fill.
- 2) For offices equipped with NT6X16AB Common Circuit Pack Fill provide one (1) NT6X15AT product change kit the converts the Circuit Pack Fill to NT6X16BB Common Circuit Pack Fill in order that NT6X16AU can be applied.
- 3) Office Records shall be changed and maintained to agree with the Common Circuit Pack Fills and not the Common Circuit Pack Kits.
- 4) The order in which the circuit cards appear above is not necessarily the order in which they are to be removed from or added to the controller module.

9600 BAUD HDLC PRODUCT CHANGE KIT

NT6X15AS

RATING: Check application date for NT6X15AS.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to the Cell Site Controller frame (NT6X15AB) to provide 9600 Baud capability.

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	4.8 kBD Link Cont CP	NT6X90AB		2	48,29	18	
REMOVE	4800 Baud Modem	A0297086		2	09,04	1	
ADD	9.6 kBD Link Cont CP	NT6X90CA		2	48,29	18	
ADD	Des Strip (NT6X90CA)	P0690974		2	48,29	18	
ADD	9600 Baud Modem	NPS50479-01L5		2	09,04	1	

NOTE:

- 1) Provide one (1) NT6X15AS Common Circuit Pack Kit per frame when converting to 9600 Baud Capability.
- 2) For offices equipped with NT6X16AB Common Circuit Pack Fill provide one (1) NT6X15AT product change kit the converts the Circuit Pack Fill to NT6X16BB Common Circuit Pack Fill in order that NT6X16AU can be applied.
- 3) Office Records shall be changed and maintained to agree with the Common Circuit Pack Fills and not the Common Circuit Pack Kits.
- 4) The order in which the circuit cards appear above is not necessarily the order in which they are to be removed from or added to the controller module.

CSC ENHANCED PROCESSOR PRODUCT CHANGE KIT

NT6X15AW

RATING: Check application date for NT6X15AW.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This change kit provides hardware modification to the Cell Site Controller frame (NT6X15AB) to equip the CSC module with enhanced processor, new messaging and increased memory required for BCS-27.

REFERENCE DOCUMENTATION: N/A

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	LGC/DTC Processor CP	NT6X45AC		4	29,48	8,13	
REMOVE	SP Memory	NT6X46AB		2	29,48	12	
REMOVE	CPP Msg Protocol	NT6X69AA		2	29,48	17	
REMOVE	Message Interface CP	NT6X43AA		2	29,48	17	
ADD	LGC/DTC Processor CP	NT6X45BA		4	29,48	8,13	
ADD	SP Memory Plus CP	NT6X46AC		2	29,48	12	
ADD	CPP Msg Prot. & Tone	NT6X69AB		2	29,48	17	
ADD	Des Strip (NT6X45BA)	P0665152		4	29,48	8,13	
ADD	Des Strip (NT6X46AC)	P0696600		2	29,48	12	
ADD	Des Strip (NT6X69AB)	P0698317		2	29,48	17	

NOTE:

- 1) Provide one (1) NT6X16AW Common Circuit Kit per CSC module when the office has been upgraded to BCS-27 (converting to NT6X16BG/BH from NT6X16BB/BC/BE/BF).
- 2) Office Records shall be changed and maintained to agree with the Common Circuit Pack Fills and not the Common Circuit Pack Kits.
- 3) The order in which the circuit cards appear above is not necessarily the order in which they are to be removed from or added to the controller module.

DICP XPM PLUS PACKFILL CHANGE KIT

PEC CODE: NTAX75ZB

CPC CODE: B0237308

RATING: STD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: EICP

ENGINEERING DESCRIPTION: The DICP XPM Plus Packfill Change Kit provides circuit packs, paddleboards, filler cards and designation labels to upgrade a DICP frame to be at the XPM Plus baseline. This is for enhanced real-time processing capacity.

REFERENCE DOCUMENTATION: SLAX75ZB

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: NTI: Jim Large Dept. 5849 (RICH)

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

NTAX75ZB EMA9-99-ICP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 28	ECM 470 08	Adds XPM+ optionality to the DICP
95 04 25	ECM 470 19	JEL: Correct EMA to match the stock-list for the NTAX75ZB.
95 08 03	ECM 470 21	JEL: EC 002-16253 replaces the NTB01AC with the NTB01BA.

The DICP XPM Plus Packfill Change Kit is comprised of the following:

ACTION	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
REMOVE	LGC/DTC Processor	NT6X45BA		4	5,19	8,12	
REMOVE	Signaling Processor	NT6X46BB		2	5,19	11	
REMOVE	Master Processor Mem	NT6X47AB		4	5,19	9,10	
or							
REMOVE	Master Processor Mem	NT6X47AC		2	5,19	10	
ADD	Unified Processor	NTAX74AA		2	5,19	12	AP
ADD	Des Label (NTAX74AA)	P0800860		2	5,19	12	AP
ADD	XPM Plus Term PB	NTMX71AA		2	5,19	19R	AP
ADD	Filler Face Plate	NT0X50AA		8	5,19	8-11	AP
ADD	Des Label (NT0X50AA)	P0578498		8	5,19	8-11	AP
ADD	Paddlecard Upgrade K	NTMX70AB		1			AP
ADD	Enhanced ISDN Signal	NTBX01BA		2	5,19	16	AP
ADD	CP Insertion Guide	P0746993		2			AP
ADD	Des Label (NTBX01BA)	P0713794		2	5,19	16	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTBX01AC	MD	NTBX01BA

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

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

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

NOTES: Provide eight filler face plates if the ICP is equipped with four NT6X47AB MP Mem Plus cards OR provide six filler face plates if the ICP is equipped with two NT6X47AC MP Mem Plus cards.

RULES:

AP 1) When PEC NTAX75ZB is ordered, these items are provided.

97/12/09

EMA10

MERIDIAN CABINET EQUIPMENT CHAPTER ALL

MERIDIAN CABINET EQUIPMENT CHAPTER ALL

THIS PAGE IS INTENTIONALLY LEFT BLANK

97/12/09

MERIDIAN CABINET EQUIPMENT CHAPTER ALL

EMA10-MACB-3	MERIDIAN APPLICATIONS CABINET BAY 1	NT1M41CG
EMA10-MACB-4	MERIDIAN APPLICATIONS CABINET BAY 2	NT1M41CH
EMA10-MACLA-1	MERIDIAN AUXILIARY CABINET FOR RAISED FL	NT1M41BL
EMA10-MACUA-1	MERIDIAN AUXILIARY CABINET	NT1M41AB
EMA10-MASC-1	MERIDIAN APPLICATIONS STORAGE CABINET	NT1M40AN
EMA10-01-000	MCAM-3, MERIDIAN CABINET AUXILARY MODULE	NTNX37AD
EMA10-02-IDTC-1	MERIDIAN IDTC COMMON CP FILL	NTNX33TA
EMA10-02-IDTC-4	INTERNATIONAL DTC COMMON CP	NTNX33FC
EMA10-02-I00	MERIDIAN CABINET TRUNK MODULE FRAME	NTNX33DA
EMA10-02-I01	MERIDIAN CABINET TRUNK MODULE	NTNX33FA
EMA10-03-ELM-1	MERIDIAN CABINET LINE MODULE UPPER ENHAN	NTNX38LB
EMA10-03-ELM-2	LOWER ENHANCED LINE MODULE COMMON CP	NTNX38LA
EMA10-03-000	MERIDIAN CABINET LINE MODULE FRAME	NTNX38AA
EMA10-08-DSN-3	MCNM LOWER NUMBERED NETWORK PACKFILL	NTNX40LC
EMA10-08-DSN-4	MCNM HIGHER NUMBERED NETWORK PACKFILL	NTNX40LD
EMA10-08-000	MERIDIAN CABINET NETWORK MODULE FRAME	NTNX40AA
EMA10-10-MCRM-2	MERIDIAN CABINET REMOTE MODULE COMMON CP	NTNX17BD
EMA10-10-MCRM-3	MCRM PACKFILL	NTNX17BF
EMA10-11-MCPM-2	MERIDIAN CABINET POWER MODULE	NTNX24LB
EMA10-12-MCAM-1	MCAM COMMON CP FILL	NTNX37NF
EMA10-12-MCAM-2	MCAM COMMON CP FILL	NTNX37NB
EMA10-12-MCAM-3	MCAM COMMON CP FILL	NTNX37NC
EMA10-12-MCAM-4	MCAM COMMON CP FILL	NTNX37NG
EMA10-12-MCAM-5	MCAM COMMON CP FILL	NTNX37NH
EMA10-12-MCAM-6	MCAM STM PACKFILL	NTNX37NK
EMA10-12-MCAM-7	MCAM MTM PACKFILL	NTNX37NR
EMA10-12-000	MERIDIAN CABINET AUXILIARY MODULE FRAME	NTNX37AB
EMA10-13-000	MERIDIAN MODULE GENERAL MODULE FRAME	NTNX47BA
EMA10-14-001	MERIDIAN CABINET SPARE STORAGE	NTNX22BA
EMA10-15-MCEM-1	MERIDIAN EIOC MEMORY MODULE	NTNX35MA
EMA10-15-000	MERIDIAN EIOC MEMORY MODULE FRAME	NTNX35AA
EMA10-16-MCEP-1	MCEP COMMON CP FILL	NTNX31MA
EMA10-16-000	MERIDIAN EIOC PROCESSOR MODULE FRAME	NTNX31AA
EMA10-17-MCEX-1	MCEX COMMON CP FILL	NTNX32MA
EMA10-17-MCEX-2	MCEX COMMON CP FILL	NTNX32NA
EMA10-17-000	MERIDIAN EIOC EXTENSION MODULE FRAME	NTNX32AA
EMA10-18-MCOR-1	MERIDIAN CORE MODULE COMMON CP FILL	NTMX42NA
EMA10-20-CPCI-4	DTC/DTCI/LTC/LTCI COMMON CP (LOWER MODUL	NTNX33NL
EMA10-20-CPCI-5	DTC/DTCI/LTC/LTCI COMMON CP (UPPER MODUL	NTNX33NM
EMA10-20-ICPC-1	DTC/DTCI/LTC/LTCI COMMON CP (LOWER MODUL	NTNX33NQ
EMA10-20-ICPC-2	DTC/DTCI/LTC/LTCI COMMON CP (UPPER MODUL	NTNX33NN
EMA10-20-ICPC-3	PDTC/PLGC/PLTC COMMON PACKFILL (LOWER &	NTNX33NR
EMA10-20-000	MERIDIAN CABINET TRUNK MODULE - ISDN	NTNX33CA
EMA10-21-MLNK-1	MERIDIAN LINK MODULE COMMON CP FILL	NTMX44NA
EMA10-21-000	MERIDIAN LINK MODULE	NTMX44AA
EMA10-22-MSB7-2	INTERNATIONAL MSB7 (LOWER MODULE) CP FIL	NTNX12PA
EMA10-24-PWR-1	MERIDIAN CABINET MISC. POWER ASSEMBLY	NTNX9601
EMA10-24-PWR-2	MERIDIAN CABINET MISC. POWER ASSEMBLY	NTNX9606
EMA10-24-000	MERIDIAN CABINET MISCELLANEOUS	NTNX96AA
EMA10-25-MSB6-1	MSB6 (LOWER MODULE) COMMON CP FILL	NTNX34PA
EMA10-27-LCME-1	MCLM-E ISDN 2B1Q COMMON CP (LOWER MODULE	NTNX38LE
EMA10-27-LCME-2	MCLM-E ISDN 2B1Q COMMON CP (UPPER MODULE	NTNX38LF
EMA10-27-000	MERIDIAN CABINET LINE MODULE ENHANCED IS	NTNX38CA

97/12/09

EMA10-29-000	INTELLIGENT PERIPHERAL EQUIPMENT COLUMN	NTND04AA
EMA10-29-001	INTELLIGENT PERIPHERAL EQUIP MODULE ASSY	NTND03AA
EMA10-29-002	IPE PEDESTAL/TOP CAP ASSEMBLY, AC	NTND04BA
EMA10-29-003	IPE MODULE ASSEMBLY, AC	NTND03BA
EMA10-30-000	MPDC BOTTOM FEED	NTNX16AA
EMA10-31-000	MPDC TOP FEED	NTNX16BA
EMA10-32-001	MERIDIAN CABINET REMOTE MODULE - SONET	NTNX17AC
EMA10-34-RLCC-2	RLCC COMMON PACKFILL	NTNX14LC
EMA10-34-RLCC-3	MCRU PACKFILL KIT	NTNX14LD
EMA10-34-000	REMOTE LINE CONCENTRATING CABINET	NTNX14AA

97/12/09

EMA10

MERIDIAN CABINET EQUIPMENT CHAPTER ALL

MERIDIAN APPLICATIONS CABINET BAY 1

PEC CODE: NT1M41CG

| CPC CODE: A0375798

RATING: STANDARD

| REPLACES: NT1M41AA

| REPLACED BY: N/A

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The Meridian Applications Cabinet Bay 1 houses SRU's (Shared Resource Units) required for the TOPS VSN 24-Port and 48-Port system.

| REFERENCE DOCUMENTATION: IS1M4151 Release 04

| MARKETS: Applicable markets:

| Canada
| US

| ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

| MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NT1M41CG EMA10-MACB-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available.
94 02 22	ECM 495 12	MD NT4G20TB disk and introduce NT4G20WA replacement. MD NT4G20LC disk/tape and introduce NT4G20VA replacement. Change to latest EMS format.

The Meridian Applications Cabinet Bay 1 is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Upper Cooling Unit	NT1M4114		1	66		AP
Frame Supervisory Panel	NT1M4137	FSP	1	61		AP
# T1 SRU	NT4G23DA			33	02U, 04U	RUL1
T1 SRU	NT4G23EA			33	02U, 04U	RUL1
App. Processor 68020-10	NT4G25GB			33	06U, 08U	RUL2
1/4 Wide SRU Filler	NT1M41AD			33	09U	RUL3
Rack Converter SRU	NT4G50FA			33	10U	RUL4
Double Shelf Assembly	NT1M41AN		1	33		AP
Voice Interface SRU	NT4G27CA			33	02L, 04L 06L, 08L	RUL5
1/4 Wide SRU Filler	NT1M41AD			33	09L	RUL3
Rack Converter SRU	NT4G50FA			33	10L	RUL4
Voice Interface SRU	NT4G27CA			05	02U	RUL5
App. Processor 68020-10	NT4G25GB			05	04U	RUL2
# SCSI 350MB Disk Storage	NT4G20TB			05	08U	RUL6
1/4 Wide 160MB Disk	NT4G20WA			05	05U	RUL6
1/4 Wide SRU Filler	NT1M41AD			05	06U	RUL3
1/2 Wide SRU Filler	NT1M41AE			05	08U	RUL20
1/4 Wide SRU Filler	NT1M41AD			05	09U	RUL3
Rack Converter SRU	NT4G50FA			05	10U	RUL4
Double Shelf Assembly	NT1M41AN		1	05		AP
App. Processor 68020-10	NT4G25GB			05	02L, 07L	RUL2
Prime Processor XP-6MB	NT4G16EF			05	04L	RUL7
# SCSI 80MB Storage SRU	NT4G20LC			05	05L	RUL8
1/4W 160MB Disk/QIC-150 Tape	NT4G20VA			05	05L	RUL8
Lanlink SRU	NT4G14DB			05	08L	RUL9
1/4 Wide SRU Filler	NT1M41AD			05	09L	RUL3
Rack Converter SRU	NT4G50FA			05	10L	RUL4
Lower Cooling Unit	NT1M4113		1	01		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Designation Strip (Lime)	P0711389					RUL10
Designation Strip (Aqua)	P0711388					RUL11
# NT Logo (Lime)	P0695226					RUL15
NT Logo (Lime)	P0728013					RUL15
# NT Logo (Aqua)	P0677704					RUL16
NT Logo (Aqua)	P0728012					RUL16
Frame Fail Lamp (Brown)	NT1M41BC					RUL12
Right Front Door (Brown)	NT1M41AT					RUL12
Left Front Door (Brown)	NT1M41AU					RUL12
Rgt Front/Rear Door (Brown)	NTNX2552					RUL12
Lft Front/Rear Door (Brown)	NTNX2550					RUL12
Right End Panel (Brown)	NTNX2531					RUL17
Left End Panel (Brown)	NTNX2532					RUL17
Frame Fail Lamp (Gray)	NT1M4104					RUL13
Right Front Door (Gray)	NT1M41AV					RUL13
Left Front Door (Gray)	NT1M41AW					RUL13
Rgt Front/Rear Door (Gray)	NTNX2513					RUL13
Lft Front/Rear Door (Gray)	NTNX2515					RUL13
Right End Panel (Gray)	NTNX2517					RUL18
Left End Panel (Gray)	NTNX2518					RUL18
Information Labels Kit	NT1M41CE					RUL14
Matrix Lbls A-Z,00-99 (Aqua)	P0728015					RUL14
Matrix Lbls A-Z,00-99 (Lime)	P0728016					RUL14
Prime Processor to FSP Cable	NT1M40AK					RUL19
T1 SRU to Bulkhead Cable	NT1M41DW					RUL19
Lanlink to Bulkhead Cable	NT1M41BD					RUL19
SCSI/SCSI (2ft) Cable	NT4G09AE					RUL19
SCSI/SCSI (5ft) Cable	NT4G09CE					RUL19

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT4G23DA	MD	NT4G23EA
P0695226	MD	P0728013
P0677704	MD	P0728012
NT4G20TB	MD	NT4G20WA+NT1M41AD+
	MD	NT1M41AE
NT4G20LC	MD	NT4G20VA

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 NT1M41CG is required for both 24-Port and 48-Port Meridian-Cabinet TOPS VSN applications.
- 2) There are ten SRU mounting positions in each shelf position. Each mounting position is determined by the rightmost slot the SRU occupies. For example, the NT4G16EF Prime Processor occupies slots 03 and 04; hence the NT4G16EF is assigned to slot 04.

Furthermore, each NT1M41AN Double Shelf Assembly houses two shelf positions: a Lower and an Upper shelf position. This is designated by the suffix following the SRU mounting position -- eg. 05L, 09U.

RULES:

- AP 1) When PEC NT1M41CG is ordered, these items are provided.
- RUL1 1) Provide 1 NT4G23EA T1 SRU in each of the specified mounting positions. A total of 2 NT4G23EA is required for this cabinet. NT4G23DA has been rated MD and is replaced by NT4G23EA.
- RUL2 1) Provide 1 NT4G25GB Application Processor 68020-10 in each of the specified mounting positions. A total of 5 NT4G25GB is required for this cabinet.
- RUL3 1) Provide 1 NT1M41AD 1/4 Wide SRU Filler in each of the specified mounting positions. A total of 5 NT1M41AD is required for this cabinet.

- RUL4 1) Provide 1 NT4G50FA Rack Converter SRU in each of the specified mounting positions. A total of 4 NT4G50FA is required for this cabinet.
- RUL5 1) Provide 1 NT4G27CA Voice Interface SRU in each of the specified mounting positions. A total of 5 NT4G27CA is required for this cabinet.
- RUL6 1) Provide 1 NT4G20WA 160MB Disk in the specified mounting position. A total of 1 NT4G20WA is required for this cabinet.
- RUL7 1) Provide 1 NT4G16EF Prime Processor XP-6MB in the specified mounting position. A total of 1 NT4G16EF is required for this cabinet.
- RUL8 1) Provide 1 NT4G20VA 160MB Disk/QIC-150 Tape in the specified mounting position. A total of 1 NT4G20VA is required for this cabinet.
- RUL9 1) Provide 1 NT4G14DB Lanlink SRU in the specified mounting position. A total of 1 NT4G14DB is required for this cabinet.
- RUL10 1) Provision two Designation Strips (Lime) if this is a brown cabinet.
- RUL11 1) Provision two Designation Strips (Aqua) if this is a gray cabinet.
- RUL12 1) Provision the NT1M41AT and NT1M41AU as the front doors and the NTNX2552 and NTNX2550 as the rear doors. The doors are installed in the shop and not in the field; they should be specified on the 134 spec only. Provision one (1) NT1M41BC per cabinet.
- RUL13 1) Provision the NT1M41AV and NT1M41AW as the front doors and the NTNX2513 and NTNX2515 as the rear doors. The doors are installed in the shop and not in the field; they should be specified on the 134 spec only. Provision one (1) NT1M4104 per cabinet.
- RUL14 1) Provision one NT1M41CE per system.
- 2) Provision one P0728015 per gray system.
- 3) Provision one P0728016 per brown system.
- RUL15 1) Provision two P0728013 NT Logos (Lime) if this is a brown cabinet.

- RUL16 1) Provision two P0728012 NT Logos (Aqua) if this is a gray cabinet.
- RUL17 1) Provide 1 per brown cabinet line-up, if required.
- RUL18 1) Provide 1 per gray cabinet line-up, if required.
- RUL19 1) Provide one (1) NT1M40AK Prime Processor to FSP Cable, two (2) NT1M41DW T1 SRU to Bulkhead Cable, one (1) NT1M41BD Lanlink to Bulkhead Cable, one (1) NT4G09AE SCSI/SCSI (2 ft) Cable and one (1) NT4G09CE SCSI/SCSI (5 ft) Cable.
- RUL20 1) Provide one (1) 1/2 Wide Filler SRU in the specified mounting location.

MERIDIAN APPLICATIONS CABINET BAY 2

NT1M41CH

RATING: STANDARD

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The Meridian Applications Cabinet Bay 2 houses SRU's (Shared Resource Units) required for the TOPS VSN 48-Port system in addition to Bay 1.

REFERENCE DOCUMENTATION:

The Meridian Applications Cabinet Bay 2 is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Upper Cooling Unit	NT1M4114		1	66		AP
Frame Supervisory Panel	NT1M4137	FSP	1	61		AP
1/2 Wide SRU Filler	NT1M41AE			33	02U, 04U 06U, 08U	RUL1
1/4 Wide SRU Filler	NT1M41AD			33	09U	RUL2
Rack Converter SRU	NT4G50FA			33	10U	RUL3
Double Shelf Assembly	NT1M41AN		1	33		AP
* T1 SRU	NT4G23DA			33	02L	RUL4
T1 SRU	NT4G23EA			33	02L	RUL4
1/2 Wide SRU Filler	NT1M41AE			33	04L, 08L	RUL1
App. Processor 68020-10	NT4G25GB			33	06L	RUL5
1/4 Wide SRU Filler	NT1M41AD			33	09L	RUL2
Rack Converter SRU	NT4G50FA			33	10L	RUL3
Voice Interface SRU	NT4G27CA			05	02U, 04U 06U, 08U	RUL6
1/4 Wide SRU Filler	NT1M41AD			05	09U	RUL2
Rack Converter SRU	NT4G50FA			05	10U	RUL3
Double Shelf Assembly	NT1M41AN		1	05		AP
1/2 Wide SRU Filler	NT1M41AE			05	02L, 04L 06L, 08L	RUL1
1/4 Wide SRU Filler	NT1M41AD			05	09L	RUL2
Rack Converter SRU	NT4G50FA			05	10L	RUL3
Lower Cooling Unit	NT1M4113		1	01		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Jumper Cable	NT1M41AR		2			AP
Designation Strip (Lime)	P0711392					RUL7
Designation Strip (Aqua)	P0711391					RUL8
* NT Logo (Lime)	P0695226					RUL13
NT Logo (Lime)	P0728013					RUL13
* NT Logo (Aqua)	P0677704					RUL14
NT Logo (Aqua)	P0728012					RUL14
Frame Fail Lamp (Brown)	NT1M41BC					RUL9
Right Front Door (Brown)	NT1M41AT					RUL9
Left Front Door (Brown)	NT1M41AU					RUL9
Rgt Front/Rear Door (Brown)	NTNX2552					RUL9
Lft Front/Rear Door (Brown)	NTNX2550					RUL9
Right End Panel (Brown)	NTNX2531					RUL10
Left End Panel (Brown)	NTNX2532					RUL10
Frame Fail Lamp (Gray)	NT1M4104					RUL11
Right Front Door (Gray)	NT1M41AV					RUL11
Left Front Door (Gray)	NT1M41AW					RUL11
Rgt Front/Rear Door (Gray)	NTNX2513					RUL11
Lft Front/Rear Door (Gray)	NTNX2515					RUL11
Right End Panel (Gray)	NTNX2517					RUL12
Left End Panel (Gray)	NTNX2518					RUL12
Matrix Lbls A-Z,00-99 (Aqua)	P0728015					RUL15
Matrix Lbls A-Z,00-99 (Lime)	P0728016					RUL15
T1 SRU to Bulkhead Cable	NT1M41DW					RUL16

FLAGS:

* This item has been rated MD.

NOTES:

- 1) The NT1M41CH is required for 48-Port Meridian-Cabinet TOPS VSN applications.
- 2) There are ten SRU mounting positions in each shelf position. Each mounting position is determined by the right-most slot the SRU occupies. For example, the NT4G23EA T1

SRU occupies slots 01 through 01: hence the NT4G23EA mounts on slot 02.

Furthermore, each NT1M41AN Double Shelf Assembly houses two shelf positions: a Lower and an Upper shelf position. This is designated by the suffix following the SRU mounting position -- eg. 05L, 09U.

RULES:

- AP 1) When PEC NT1M41CH is ordered, these items are provided.
- RUL1 1) Provide 1 NT1M41AE 1/2 Wide SRU Filler in each of the specified mounting positions. A total of 10 NT1M41AE is required for this cabinet.
- RUL2 1) Provide 1 NT1M41AD 1/4 Wide SRU Filler in each of the specified mounting positions. A total of 4 NT1M41AD is required for this cabinet.
- RUL3 1) Provide 1 NT4G50FA Rack Converter SRU in each of the specified mounting positions. A total of 4 NT4G50FA is required for this cabinet.
- RUL4 1) Provide 1 NT4G23EA T1 SRU in the specified mounting position. A total of 1 NT4G23EA is required for this cabinet. NT4G23DA has been rated MD and is replaced by NT4G23EA.
- RUL5 1) Provide 1 NT4G25GB Application Processor 68020-10 in each of the specified mounting positions. A total of 1 NT4G25GB is required for this cabinet.
- RUL6 1) Provide 1 NT4G27CA Voice Interface SRU in each of the specified mounting positions. A total of 4 NT4G27CA is required for this cabinet.
- RUL7 1) Provision two Designation Strips (Lime) if this is a brown cabinet.
- RUL8 1) Provision two Designation Strips (Aqua) if this is a gray cabinet.
- RUL9 1) Provision the NT1M41AT and NT1M41AU as the front doors and the NTN2552 and NTN2550 as the rear doors. The doors are installed in the shop and not in the field; they should be

specified on the 134 spec only. Provision one (1) NT1M41BC per cabinet.

RUL10 1) Provide 1 per brown cabinet line-up, if required.

RUL11 1) Provision the NT1M41AV and NT1M41AW as the front doors and the NTNX2513 and NTNX2515 as the rear doors. The doors are installed in the shop and not in the field; They should be specified on the 134 spec only. Provision one (1) NT1M4104 per cabinet.

RUL12 1) Provide 1 per gray cabinet line-up, if required.

RUL13 1) Provision two P0728013 NT Logos (Lime) if this is a brown cabinet.

RUL14 1) Provision two P0728012 NT Logos (Aqua) if this is a gray cabinet.

RUL15 1) Provision one P0728015 per gray system. 2) Provision one P0728016 per brown system.

| RUL16 1) Provide one (1) NT1M41DW T1 SRU to Bulkhead Cable.

MERIDIAN AUXILIARY CABINET FOR RAISED FLOOR

PEC CODE: NT1M41BL

CPC CODE: A0372371

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The Meridian Auxiliary Cabinet houses the modem shelves, LIU shelves and spares storage shelves for the Meridian-Cabinet TOPS VSN system.

The NT1M41BL is cabled from below, making it suitable for raised floor applications. For cable trough applications, where cable entry occurs at the top of the cabinet, use the NT1M41AB Meridian Auxiliary Cabinet instead.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NT1M41BL EMA10-MACLA-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 09 10	ECM 495 10	Change modem provisioning. Provision external X-connect panel.
93 09 15	ECM 495 11	Correct shelf position of modems.
94 11 23	ECM 495 13	MD A0379708 modem and replace with A0385558.

The Meridian Auxiliary Cabinet for Raised Floor is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Upper Cooling Unit	NT1M4114		1	66		AP
Frame Supervisory Panel	NT1M4116	FSP	1	61		AP
Filler Panel (7")	P0711183			54		RUL5
UDS 16 Slot Modem Shelf	NT1M41BA			47		RUL3
# UDS 19.2K Modem Card	64565022			47	1-16	RUL4
# UDS 19.2K Modem Card	A0379708			47	1-16	RUL4
UDS DDS/MR1 RM16M Modem Card	A0385558			47	1-16	RUL4
UDS 212A/D Modem Card	A0336306			47	1-16	RUL4
LIU Shelf	NT1M41AC			33		RUL6
LIU Option Card	NT1M41AF			33	1-18	RUL7
ALIU Option Card	NT1M41BW			33	1-18	RUL7
LIU Filler Face Plate	P0709868			33	1-18	RUL8
Storage Shelf	NT1M41AN			05		RUL1
Lower Cooling Unit	NT1M4113		1	01		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Cable	NT1M4111		1			AP
Designation Strip (Lime)	P0711395					RUL10
Designation Strip (Aqua)	P0711394					RUL11
# NT Logo (Lime)	P0695226					RUL16
NT Logo (Lime)	P0728013					RUL16
# NT Logo (Aqua)	P0677704					RUL17
NT Logo (Aqua)	P0728012					RUL17
Frame Fail Lamp (Brown)	NT1M41BC					RUL12
Right Front Door (Brown)	NT1M41AT					RUL12
Left Front Door (Brown)	NT1M41AU					RUL12
Rgt Front/Rear Door (Brown)	NTNX2552					RUL12
Lft Front/Rear Door (Brown)	NTNX2550					RUL12
Right End Panel (Brown)	NTNX2531					RUL13
Left End Panel (Brown)	NTNX2532					RUL13
Frame Fail Lamp (Gray)	NT1M4104					RUL14
Right Front Door (Gray)	NT1M41AV					RUL14
Left Front Door (Gray)	NT1M41AW					RUL14
Rgt Front/Rear Door (Gray)	NTNX2513					RUL14
Lft Front/Rear Door (Gray)	NTNX2515					RUL14
Right End Panel (Gray)	NTNX2517					RUL15
Left End Panel (Gray)	NTNX2518					RUL15
# X-Connect Panel	NT1M41BZ					RUL2
X-Connect Panel (Internal)	NT1M41DL					RUL2
External X-Connect Panel	A0321335					RUL2
Matrix Lbls A-Z,00-99 (Aqua)	P0728015					RUL18
Matrix Lbls A-Z,00-99 (Lime)	P0728016					RUL18
FSP - ALIU Cable	NT0M96SD					RUL19
Bulkhead to Modem Shlf Cable	NT1M41BJ					RUL19
Modem Cable (2.5 ft)	NT0M96SH					RUL19
LanLink/BIX-Bulkhead cable	NT1M41BN					RUL19
BIX-Bulkhead Cable	NT1M41BP					RUL19
Bulkhead-ALIU Cable	NT1M41BM					RUL19

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
64565022	MD	A0379708
A0379708	MD	A0385558
P0695226	MD	P0728013
P0677704	MD	P0728012
NT1M41BZ	MD	NT1M41DL

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 NT1M41BL is required for 24-Port and 48-Port Meridian-Cabinet TOPS VSN applications.

RULES:

- AP 1) When PEC NT1M41BL is ordered, these items are provided.
- RUL1 1) Provide one NT1M41AN Storage Shelf to house spare VSN equipment and provide a mounting position for the NT1M41DL Cross-Connect Panel. Only one is required per Auxiliary Bay. Each double Storage Shelf occupies 10 1/4 SRU positions per shelf (total of 20 1/4 SRU positions).
- RUL2 1) Provide one internal cross connect panel per Auxiliary Bay.
2) Provide one external cross connect panel per Auxiliary Bay.

RUL3 1) Provide one shelf per Meridian Auxiliary Cabinet. The UDS Modem Shelf contains 16 slots of which four are required for each VSN system.

RUL4 1) Two (2) are required per VSN system. Mounting positions are shown in Table 1.

SLOT	PEC	VSN SYSTEM
1	A0336306	1
2	A0336306	1
3	A0385558	1
4	A0385558	1
9	A0336306	2
10	A0336306	2
11	A0385558	2
12	A0385558	2

Table 1
Modem Shelf Assignments

RUL5 1) Provide one P0711183 Filler Panel per Meridian Auxiliary Cabinet.

RUL6 1) Provide one NT1M41AC LIU shelf per two VSN Systems.

RUL7 1) Provide NT1M41AF LIU Option Cards and NT1M41BW Option Cards as shown in Table 2.

2) If a second TOPS VSN is not used, all slots reserved for System 2 shall contain Filler Face Plates.

3) The LIU Shelf mounting positions are numbered from 1 through 18 from left to right facing the shelf from the rear.

SLOT	PEC	FUNCTION
1	NT1M41BW	ALIU for Bay 1 Sys 2
2	NT1M41AF	LIU for Alarms Sys 2
3	NT1M41BW	ALIU for Bay 2 Sys 2
4	NT1M41AF	LIU for Dialup Sys 2
5	NT1M41BW	ALIU Aux Frame
6	NT1M41AF	LIU for Alarms Aux Bay
7	NT1M41AF	LIU for X.25 System 2
8	NT1M41AF	LIU for X.25 System 1
9		Filler
10		Filler
11	NT1M41AF	LIU for X.25 Sys 2
12	NT1M41AF	LIU for X.25 Sys 1
13	NT1M41BW	ALIU for Bay 1 Sys 1
14	NT1M41AF	LIU for Alarms Sys 1
15	NT1M41BW	ALIU for Bay 2 Sys 1
16	NT1M41AF	LIU for Dialup Sys 1
17		Filler
18		Filler

Table 2
LIU Shelf Assignments

- RUL8 1) Provision one P0709868 LIU Filler Face Plate in each empty LIU Shelf slot.
- RUL10 1) Provision two Designation Strips (Lime) if this is a brown cabinet.
- RUL11 1) Provision two Designation Strips (Aqua) if this is a gray cabinet.
- RUL12 1) Provision the NT1M41AT and NT1M41AU as the front doors and the NTN2552 and NTN2550 as the rear doors. The doors are installed in the shop and not in the field; they should be specified on the 134 spec only. Provision one (1) NT1M41BC per cabinet.
- RUL13 1) Provide 1 per brown cabinet line-up, if required.
- RUL14 1) Provision the NT1M41AV and NT1M41AW as the front doors and the NTN2513 and NTN2515 as the rear doors. The doors are

installed in the shop and not in the field; they should be specified on the 134 spec only. Provision one (1) NT1M4104 per cabinet.

- RUL15 1) Provide 1 per gray cabinet line-up, if required.
- RUL16 1) Provision two P0728013 NT Logos (Lime) if this is a brown cabinet.
- RUL17 1) Provision two P0728012 NT Logos (Aqua) if this is a gray cabinet.
- RUL18 1) Provision one P072815 per gray system.
2) Provision one P072816 per brown system.
- RUL19 1) Provision one (1) NT0M96SD FSP - ALIU Cable, two (2) NT1M41BJ Bulkhead to Modem Shelf Cable, two (2) NT1M41BN LanLink/ BIX-Bulkhead Cable and one (1) NT1M41BP BIX-Bulkhead Cable.
2) Provision four (4) NT0M96SH Modem Cable (2.5 ft) for each TOPS VSN System sharing the Auxiliary cabinet (one cable per modem card).
3) Provision one (1) NT1M41BM Bulkhead-ALIU Cable for each Meridian Applications Cabinet connected to the Auxiliary Cabinet.

MERIDIAN AUXILIARY CABINET

PEC CODE: NT1M41AB

CPC CODE: A0366495

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The Meridian Auxiliary Cabinet houses the modem shelves, LIU shelves and spares storage shelves for the Meridian-Cabinet TOPS VSN system.

The NT1M41AB is cabled from above. For raised floor applications, where cable entry occurs at the bottom of the cabinet use the NT1M41BL Meridian Auxiliary Cabinet instead.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NT1M41AB EMA10-MACUA-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 04 16	ECM 495 07	Correct typo per ET 15769.
93 09 10	ECM 495 10	Change modem provisioning. Provision external X-connect panel.
94 11 23	ECM 495 13	MD A0379708 modem and replace with A0385558.

The Meridian Auxiliary Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Upper Cooling Unit	NT1M4114		1	66		AP
Frame Supervisory Panel	NT1M4116	FSP	1	61		AP
Storage Shelf	NT1M41AN			33		RUL1
LIU Shelf	NT1M41AC			19		RUL6
LIU Option Card	NT1M41AF			19	1-18	RUL7
ALIU Option Card	NT1M41BW			19	1-18	RUL7
LIU Filler Face Plate	P0709868			19	1-18	RUL8
UDS 16 Slot Modem Shelf	NT1M41BA			12		RUL3
# UDS 19.2K Modem Card	64565022			12	1-16	RUL4
# UDS 19.2K Modem Card	A0379708			12	1-16	RUL4
UDS DDS/MR1 RM16M Modem Card	A0385558			12	1-16	RUL4
UDS 212A/D Modem Card	A0336306			12	1-16	RUL4
Filler Panel (7")	P0711183			05		RUL5
Lower Cooling Unit	NT1M4113		1	01		AP
Power Cable	NT1M4111		1			AP
Designation Strip (Lime)	P0711395					RUL10
Designation Strip (Aqua)	P0711394					RUL11
# NT Logo (Lime)	P0695226					RUL16
NT Logo (Lime)	P0728013					RUL16
# NT Logo (Aqua)	P0677704					RUL17
NT Logo (Aqua)	P0728012					RUL17
Frame Fail Lamp (Brown)	NT1M41BC					RUL12
Right Front Door (Brown)	NT1M41AT					RUL12
Left Front Door (Brown)	NT1M41AU					RUL12
Rgt Front/Rear Door (Brown)	NTNX2552					RUL12
Lft Front/Rear Door (Brown)	NTNX2550					RUL12
Right End Panel (Brown)	NTNX2531					RUL13
Left End Panel (Brown)	NTNX2532					RUL13
Frame Fail Lamp (Gray)	NT1M4104					RUL14
Right Front Door (Gray)	NT1M41AV					RUL14
Left Front Door (Gray)	NT1M41AW					RUL14
Rgt Front/Rear Door (Gray)	NTNX2513					RUL14
Lft Front/Rear Door (Gray)	NTNX2515					RUL14
Right End Panel (Gray)	NTNX2517					RUL15
Left End Panel (Gray)	NTNX2518					RUL15
# X-Connect Panel	NT1M41BZ					RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
X-Connect Panel (Internal)	NT1M41DL					RUL2
External X-Connect Panel	A0321335					RUL2
Matrix Lbls A-Z,00-99 (Aqua)	P0728015					RUL18
Matrix Lbls A-Z,00-99 (Lime)	P0728015					RUL18
FSP - ALIU Cable	NT0M96SD					RUL19
Bulkhead to Modem Shlf Cable	NT1M41BJ					RUL19
Modem Cable (2.5ft)	NT0M96SH					RUL19
LanLink/BIX-Bulkhead Cable	NT1M41BN					RUL19
BIX-Bulkhead Cable	NT1M41BP					RUL19
Bulkhead-ALIU Cable	NT1M41BP					RUL19

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
64565022	MD	A0379708
A0379708	MD	A0385558
P0695226	MD	P0728013
P0677704	MD	P0728012
NT1M41BZ	MD	NT1M41DL

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 NT1M41AB is required for 24-Port and 48-Port Meridian-Cabinet TOPS VSN applications.

RULES:

- AP 1) When PEC NT1M41AB is ordered, these items are provided.
- RUL1 1) Provide one NT1M41AN double Storage Shelf to house spare VSN equipment and provide a mounting position for the NT1M41DL Cross-Connect Panel in the rear. Only one is required per Auxiliary Bay. Each double Storage Shelf occupies 10 1/4 SRU positions per shelf (total of 20 1/4 SRU positions).
- RUL2 1) Provide one internal cross connect panel per Auxiliary Bay.
2) Provide one external cross connect panel per Auxiliary Bay.
- RUL3 1) Provide one shelf per Meridian Auxiliary Cabinet. This UDS Modem shelf contains 16 slots of which four are required for each VSN system.
- RUL4 1) Two (2) are required per VSN system. Mounting positions are shown in Table 1.

SLOT	PEC	VSN SYSTEM
1	A0336306	1
2	A0336306	1
3	A0385558	1
4	A0385558	1
9	A0336306	2
10	A0336306	2
11	A0385558	2
12	A0385558	2

Table 1
Modem Shelf Assignments

- RUL5 1) Provide one P0711183 Filler Panel per Meridian Auxiliary Cabinet.
- RUL6 1) Provide one NT1M41AC LIU shelf per Auxiliary Bay.
- RUL7 1) Provide NT1M41AF LIU Option Cards and NT1M41BW Option Cards as shown in Table 2.
2) If a second TOPS VSN is not used, all slots reserved for System 2 shall contain Filler Face Plates.

- 3) The LIU Shelf mounting positions are numbered from 1 through 18 from left to right facing the shelf from the rear.

SLOT	PEC	FUNCTION
1	NT1M41BW	ALIU for Bay 1 Sys 2
2	NT1M41AF	LIU for Alarms Sys 2
3	NT1M41BW	ALIU for Bay 2 Sys 2
4	NT1M41AF	LIU for Dialup Sys 2
5	NT1M41BW	ALIU Aux Frame
6	NT1M41AF	LIU for Alarms Aux Bay
7	NT1M41AF	LIU for X.25 System 2
8	NT1M41AF	LIU for X.25 System 1
9		Filler
10		Filler
11	NT1M41AF	LIU for X.25 Sys 2
12	NT1M41AF	LIU for X.25 Sys 1
13	NT1M41BW	ALIU for Bay 1 Sys 1
14	NT1M41AF	LIU for Alarms Sys 1
15	NT1M41BW	ALIU for Bay 2 Sys 1
16	NT1M41AF	LIU for Dialup Sys 1
17		Filler
18		Filler

Table 2
LIU Shelf Assignments

- RUL8 1) Provision one P0709868 LIU Filler Face Plate in each empty LIU Shelf slot.
- RUL9 1) Reserved.
- RUL10 1) Provision two Designation Strips (Lime) if this is a brown cabinet.
- RUL11 1) Provision two Designation Strips (Aqua) if this is a gray cabinet.
- RUL12 1) Provision the NT1M41AT and NT1M41AU as the front doors and the NTN2552 and NTN2550 as the rear doors. The doors are installed in the shop and not in the field; they should be specified on the 134 spec only. Provision one (1) NT1M41BC per cabinet.

- RUL13 1) Provide 1 per brown cabinet line-up, if required.
- RUL14 1) Provision the NT1M41AV and NT1M41AW as the front doors and the NTNX2513 and NTNX2515 as the rear doors. The doors are installed in the shop and not in the field; they should be specified on the 134 spec only. Provision one (1) NT1M4104 per cabinet.
- RUL15 1) Provide 1 per gray cabinet line-up, if required.
- RUL16 1) Provision two P0728013 NT Logos (Lime) if this is a brown cabinet.
- RUL17 1) Provision two P0728012 NT Logos (Aqua) if this is a gray cabinet.
- RUL18 1) Provision one P0728015 per gray system.
2) Provision one P0728016 per brown system.
- RUL19 1) Provision one P0728015 NT0M96SD FSP - ALIU Cable, Two (2) NT1M41BJ Bulkhead to Modem Shelf Cable, two (2) NT1M41BN Lanlink/ BIX-Bulkhead Cable and one (1) NT1M41BP BIX-Bulkhead Cable.
2) Provision four (4) NT0M96SH Modem Cable (2.5 ft) for each TOPS VSN System sharing the Auxiliary Cabinet (one cable per modem card).
3) Provision one (1) NT1M41BM Bulkhead-ALIU Cable for each Meridian Applications Cabinet connected to the Auxiliary Cabinet.

MERIDIAN APPLICATIONS STORAGE CABINET

NT1M40AN

RATING: STANDARD

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The Meridian Applications Storage Cabinet houses spare SRU's (Shared Resource Units) required for the TOPS VSN. Bay 1.

REFERENCE DOCUMENTATION:

The Meridian Applications Storage Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Panel (7")	P07111183		1	61		AP
Double Shelf Assembly	NT1M41AN		1	33		AP
Double Shelf Assembly	NT1M41AN		1	05		AP
Filler Panel (4")	P0696914		1	01		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Designation Strip (Lime)	P0711402					RUL1
Designation Strip (Aqua)	P0711181					RUL2
* NT Logo (Lime)	P0695226					RUL7
NT Logo (Lime)	P0728013					RUL7
* NT Logo (Aqua)	P0677704					RUL8
NT Logo (Aqua)	P0728012					RUL8
Rgt Front/Rear Door (Brown)	NTNX2552		2			RUL3
Rgt Front/Rear Door (Brown)	NTNX2552		2			RUL3
Lft Front/Rear Door (Brown)	NTNX2550		2			RUL3
Right End Panel (Brown)	NTNX2531					RUL4
Left End Panel (Brown)	NTNX2532					RUL4
Rgt Front/Rear Door (Gray)	NTNX2513		2			RUL5
Lft Front/Rear Door (Gray)	NTNX2515		2			RUL5
Right End Panel (Gray)	NTNX2517					RUL6
Left End Panel (Gray)	NTNX2518					RUL6

FLAGS:

* This item has been rated MD.

NOTES:

- 1) Each NT1M41AN Double Shelf Assembly houses two shelf positions: a Lower and an Upper shelf position.

RULES:

- AP 1) When PEC NT1M40AN is ordered, these items are provided.
- RUL1 1) Provision two Designation Strips (Lime) if this is a brown cabinet.
- RUL2 1) Provision two Designation Strips (Aqua) if this is a gray cabinet.
- RUL3 1) The doors are installed in the shop and not in the field; they should be specified on the 134 spec only.

- RUL4 1) Provide 1 per brown cabinet line-up, if required.
- RUL5 1) The doors are installed in the shop and not in the field; they should be specified on the 134 spec only.
- RUL6 1) Provide 1 per gray cabinet line-up, if required.
- | RUL7 1) Provision two P072813 NT Logos (Lime) if this is a brown cabinet.
- | RUL8 1) Provision two P0728012 NT Logos (Aqua) if this is a gray cabinet.

MCAM-3, MERIDIAN CABINET AUXILARY MODULE 3.

PEC CODE: NTNX37AD
CPC CODE: B0242865
RATING: Standard.
REPLACES: Not Applicable
REPLACED BY: Not Applicable
ABBREVIATION NAME: MCAM-3

ENGINEERING DESCRIPTION: The Meridian Cabinet Auxilary Module 3 is the latest in the series of cabinet products in the MSL100 product line. MCAM-3 can house 3 ISM (Integrate Service Module) shelves or 2 ISM shelves and 1 DIO shelf. The introduction of the IOM on any of the ISM shelves replaces the DIO functionality in later cabinets.

REFERENCE DOCUMENTATION: ISNX37AD 00 03

MARKETS: Applicable markets:

US
Canada
Asia/Pacific
CALA

ISSUE AUTHOR: Doug Cooley Dept. 2D69 (H)

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

NTNX37AD EMA10-01-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 12 10	ECM 706 01	Previous history not available.
97 03 03	ECM 706 02	Update per ECD 002-17144. Delete NT2X57AB as it's not available
97 04 01	ECM 706 03	Change Rules 35 and 38 of the Engineering Manual to indicate equipment to be shipped loose.
97 04 16	ECM 706 04	Move System Level cabling from Rule 38 to a reference Note.
97 06 13	ECM 706 05	Update per ECD 011-22367 1) Replace NT1X00AA/AB/AC/AD by NT1X80AA. 2) Replace NT1X67DB/FA & NT6X91BB by NT1X89BB. 3) Replace NT1X90AA & NT2X47AD by NT4X45AA. 4) Replace NT2X56AB & NT2X96AA by NT4X45AA, (DOMESTIC MSL-100 MARKET ONLY) 5) NT5X25AA MD'd - NO REPLACEMENT. 6) Added to Rule 38, NTRX25ML/MM Kits are to be ordered shiploose. 7) Changed Rule 4 AP MDF cable NTNX36AT to provisionable and added cables NTNX36GD/CW to EMI Bulkhead to MDF connections for ISM Shelves 47, 33 and 19. 8) Added circuit packs NT2X01AA, NT2X65AA, NT2X66AA, NT2X72AC, NT3X02BA and NT5X29AA. 9) Added new Rules 40, 41, and 42. 10) Changed slot assignment for all NT5X29's and added provisioning information. 11) Rule 21, deleted NT1X90BA, NT2X47BA, NT2X56BA, and NT2X96BA from circuit pack list. Added for (DOMESTIC MSL-100 MARKET ONLY).
97 07 25	ECM 706 06	Update per ECD 101-00417 1) Added NTNX37UA/UB/UC MCAM III Retrofit Kits for IOM.
97 07 29	ECM 706 07	2) Added provisioning information for IOM Update per ECD 101-00417 1) Corrected NOTE 15 to indicate IOM to be applied in the field only at this point. 2) Also indicated in RULE 36 to provide skin assy.'s as loose equipment. 3) Deleted duplicate MDF cable listing in MTA.

The MCAM-3, Meridian Cabinet Auxilary Module 3. is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
C28-B Cabinet Assembly	NTRX25AA		1			AP
Two Inches Filter Plate	P0684448		1	65		AP
MCAM-3 MSP Kit	NTNX37WE		1	61		AP
Cooling Unit Assembly 10"	NTRX91AA		1	15		AP
Circuit Breaker Pn'l (30Amp)	NTRX02CA		1	01		AP
Network Cable (CO-0N, CO-01)	NTNX3751		2	33, 47		AP
MDF Cable to bulkhead CO-00	NTNX3756		1	33		AP
MDF Cable to bulkhead CO-00	NTNX3766		1	47		AP
Option <Z> ISM Shelf at 19 (3 ISM's in Cabinet)						
ISM Shelf Assembly	NTFX4101	ISM	2	33, 47		AP
Option <Z> hardware kit	NTNX37WF		1	19		RUL6
Option <Y> DIO shelf at 19 (2 ISM's/1 DIO in Cabinet)						
ISM Shelf Assembly	NTFX4101	ISM	2	33, 47		AP
Option <Y> hardware kit	NTNX37WG		1	19		RUL29
Option <W> Office Alarm Configuration						
OAU Dead Sys. W/common AUD	NT3X82AJ		1	47	20	RUL4
OAU Alarm Transfer	NT3X83AC		1	47	19	RUL4
Miscellaneous Scanner Card	NT0X10AA		1	47	18	RUL4
Scan Distribution Card	NT2X57AA		1	47	17	RUL4
Office Alarm Kit Pre-wired	NTNX37WC		1			RUL4
MDF Cable to bulkhead CO-05	NTNX3761		2	33, 47		RUL4
MDF Cable to bulkhead CO-06	NTNX3762		2	33, 47		RUL4
OAU Dead Sys. W/common AUD	NT3X82AJ		1	33	20	RUL4
Option <V> Metallic Test Access Configuration						
Metallic Test Access	NT3X09BA	MTA	4	47	13-16	RUL5
Multi-line Test Unit	NT2X10BB	MTU	1	33	14	RUL5
Multi-line Test Unit	NT2X11BA		1	33	13	RUL5
INC/OG Test TRK	NT2X90AD		2	33	15-16	RUL5, 16
MTA Internal Jumper Cable	NTNX3754		1			RUL5
MTA Internal Jumper Cable	NTNX3755		1			RUL5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Option <Q> ISM Retrofit Kits for IOM						
SHLF 47 Retrofit Kit for IOM	NTNX37UA	NOTE	19 1	47	03-04	RUL43
SHLF 33 Retrofit Kit for IOM	NTNX37UB	NOTE	19 1	33	03-04	RUL43
SHLF 19 Retrofit Kit for IOM	NTNX37UC	NOTE	19 1	19	03-04	RUL43
IOM Provisionable Equipment						
IOM Main Controller	NTFX30AA	NOTE	15 1	XX	03	RUL44
IOM Storage Media Card	NTFX32AA	NOTE	15 1	XX	04	RUL45
DDU Plug-In Module Assembly	NTFX32BA		1	XX	04	RUL45
DAT Plug-In Module Assembly	NTFX32CA		1	XX	04	RUL45
Storage Media Filler Card	NTFX32DA		1	XX	04	RUL45
IOM RS232 Smart Connector	NTFX34AA		1	XX	XX	RUL46
IOM V.35 Smart Connector	NTFX35AA		1	XX	XX	RUL46
512Kbps V.35 Smart Connector	NTFX35BA		1	XX	XX	RUL46
IOM PERTEC Smart Connector	NTFX36AA		1	XX	XX	RUL46
Current Loop Smart Connector	NTFX38AA		1	XX	XX	RUL46
Smart Conn. DB25S Gender	NTFX40UD			X		RUL47
Adapter Cable						
Smart Conn. Rollover Cable	NTFX40UE			X		RUL47
Male/Female						
Smart Conn. Rollover Cable	NTFX40UF			X		RUL47
Female/Female						
Designation Label IOC 00-19	P0831731			X		RUL48
Options <U><S><T> Provisionable MDF Cables From ISM To Bulkhead						
MDF Cable to bulkhead CO-01	NTNX3757	NOTE	16 1	XX	09-10	RUL25
MDF Cable to bulkhead CO-02	NTNX3758	NOTE	16 1	XX	11-12	RUL25
MDF Cable to bulkhead CO-03	NTNX3759	NOTE	17 1	XX	13-14	RUL5
MDF Cable to bulkhead CO-04	NTNX3760	NOTE	17 1	XX	15-16	RUL5
MDF Cable to bulkhead CO-05	NTNX3761	NOTE	18 1	XX	17-18	RUL4
MDF Cable to bulkhead CO-06	NTNX3762	NOTE	18 1	XX	19-20	RUL4
Common Circuit Packs For An ISM Shelf						
ISM DC Converter	NTFX43AA		1	XX	01	RUL1
Filler Plate (Power Conv.)	NT0X50AG		1	XX	01	RUL1
ISM Processor CP	NTFX42AA		1	XX	21	RUL1
Filler Plate (ISM Proc.)	NT0X50AC		1	XX	21	RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Provisionable ISM Shelf Service Circuit Packs						
Filler Face Plate 1.12	NT0X50AC			XX	03-21	RUL2
Miscellaneous Scanner Card	NT0X10AA	NOTE 20		XX	07-19	RUL7
# 102 TST Milliwatt	NT1X00AA			XX	06-20	RUL8
# 102 TST Milliwatt	NT1X00AB			XX	06-20	RUL8
# ROH Tone GEN	NT1X00AC			XX	06-20	RUL9
# ROH Tone GEN	NT1X00AD			XX	06-20	RUL9
# TTT TST Signal GEN	NT1X90AA			XX	08-20*	RUL10
TTT TST Signal GEN	NT1X90BA			XX	08-20*	RUL10
Auto ID of Outward Dialing	NT2X01AA			XX	07-19**	RUL40
# Transmission TST Unit	NT2X47AD			XX	08-20*	RUL11
Transmission TST Unit	NT2X47BA			XX	08-20*	RUL11
# Digital Filter	NT2X56AB			XX	07-19**	RUL11
Digital Filter	NT2X56BA			XX	07-19**	RUL11
4 Channel MF RECVR	NT2X48BA			XX	07-20	RUL12
4 Channel DTMF RECVR	NT2X48BB			XX	07-20	RUL12
4 Channel DTMF RECVR TURKEY	NT2X48CA			XX	07-20	RUL12
4 Channel DTMF RECVR BRITISH	NT2X48CB			XX	07-20	RUL12
4 Channel DTMF RECVR A-LAW	NT2X48CC			XX	07-20	RUL12
Scan Distribution Card	NT2X57AA	NOTE 20		XX	07-19	RUL13
CAMA Pos Signaling Trunk	NT2X65AA			XX	07-20	RUL41
CAMA CW Susp LP Trunk	NT2X66AA			XX	07-20	RUL42
Transmission Termination	NT2X71AA			XX	06-20	RUL14
Ter. Flash-Transmission	NT2X71AB			XX	06-20	RUL14
Loop Around Test Line Card	NT2X75AA			XX	06-20	RUL15
Loop Around Test Line Card	NT2X75BA			XX	06-20	RUL15
Comp Bal Netwk 900 OHM	NT2X77AA			XX	07-20	RUL16
# PCM Level Meter	NT2X96AA			XX	07-19**	RUL10
PCM Level Meter	NT2X96BA			XX	07-19**	RUL10
Tops CNTL PROC	NT3X02AA			XX	08-20*	RUL17
Dial up Auto/TOPS Cont Proc	NT3X02BA			XX	08-20*	RUL17
Tops Digital CONT	NT3X03AA			XX	07-19**	RUL17
Tone GEN PRE-EMPT	NT3X68AA			XX	07-20	RUL18
MULT FREQ Dual Tone Gen	NT3X68AB			XX	07-20	RUL19
Tone GEN Call Waiting	NT3X68AC			XX	07-20	RUL20
Preempt, Tone Gen UK	NT3X68BA			XX	07-20	RUL20
MULT FREQ Dual Tone Gen UK	NT3X68BB			XX	07-20	RUL20
Tone GEN Call Waiting UK	NT3X68BC			XX	07-20	RUL20
Enhanced Dig. Test Unit	NT4X45AA	ETDU		XX	07-20	RUL21
CCIS Continuity Checker Cp	NT5X29AA			XX	20	RUL22
Service Observing CP	NT5X29AB			XX	20	RUL22
Audio Tone DET	NT5X29AC			XX	20	RUL22
Audio Tone DET UK	NT5X29BA			XX	20	RUL22

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
101 Comm. Test Line Card	NT5X30AA			XX	07-20	RUL23, 16
101 Comm. Test Line Card	NT5X30BA			XX	07-20	RUL23
Enhanced Digital Recorded Announcement Machine, EDRAM	NT1X80AA	NOTE	19	XX	05, 09-12	RUL25
Conference Trunk Module, CTM	NT1X81AA	CTM-NOTE	19	XX	03-05, 09-12	RUL25
Edram/CTM DS-30 Cable (Option <X>)	NTNX3752			XX	09-12	RUL25
Jack End Trunk Card	NT1X54AA			XX	07-20	RUL26
4W E&M Type D-1 trunk Card	NT2X72AA			XX	07-20	RUL27
4W E&M Type D-1 trunk Card	NT2X72AB			XX	07-20	RUL27
4W E&M 600 L GN E SUPR CONT	NT2X72AC			XX	07-20	RUL43
4W E&M Type D-1 DC5A A-LAW	NT2X72BA			XX	07-20	RUL27
4W E&M Type D-1 600 Ohm Cala	NT2X72BB			XX	07-20	RUL27
Precision bal netwk -H88	NT2X80AA			XX	07-20	RUL28
2W E&M 900 2WY INC/OG MF/DP	NT2X81AA			XX	07-20	RUL28
2W E&M 600 2WY INC/OG MF/DP	NT2X81AB			XX	07-20	RUL28
2W DC5A Tie Trunk	NT2X81BA			XX	07-20	RUL28
2W LP 900 INC REV BAT MF/DP	NT2X82AA			XX	07-20	RUL28
2W LP 900 OG REV BAT MF/DP	NT2X83AA			XX	07-20	RUL28
Earth Calling Trunk	NT2X84BA			XX	07-20	RUL28
DG COMPL TRK H-L Coin	NT2X85AA			XX	07-20	RUL28
Toll SW 3RD W Coin FX Ring	NT2X86AA			XX	07-20	RUL28
4W INC/OG 600 E&M MF/DP	NT2X88AA			XX	07-20	RUL28
2W LP 900 OG REV BAT MF	NT2X92AA			XX	07-20	RUL28
2WY PBX TRK DID/DOD	NT2X95AA			XX	07-20	RUL28
Direct Dial Inward Trunk	NT2X95BA			XX	07-20	RUL28
2W JUSMAG 600 ohm DDO Trunk	NT2X95BB			XX	07-20	RUL28
2W INC 900 DP RB SLV CONT	NT2X98AA			XX	07-20	RUL28
INC TST from AECO LTD	NT3X04AA			XX	07-20	RUL28
2W OGT TRK to AE/3CL CO-LO	NT3X06AA			XX	07-20	RUL28
2W INC TRK to AE/3CL CO-LO	NT3X07AA			XX	07-20	RUL28
REM OFF. TST Line I/F TRK	NT3X91AA			XX	07-20	RUL28
CCITT R1 Trk 101 Tst Ln	NT5X03AA			XX	07-20	RUL28
# CCITT #5 Trk	NT5X04AA			XX	07-20	RUL28
CCITT #5 Trk	NT5X04AB			XX	07-20	RUL28
CCITT #6 Trk	NT5X06AA			XX	07-20	RUL28
# 1WY CO TRK OG GRD ST or	NT5X25AA			XX	07-20	RUL28

Common Circuit Pack for DIO Shelf

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter CP	NT2X70AF		2	19	1, 25	RUL30
I/O MSG Cont CP (DPCC)	NT1X62CB		2	19	4, 15	RUL30
Bus Terminator CP	NT0X67AA		2	19	14, 24	RUL30
I/O Circuit Packs For DIO Shelf						
I/O Terminal Control CP	NT1X67BD			19	6-13, 17-23	RUL31
# Bit Synch Data Link CP	NT1X67DB			19	6-13 17-23	RUL31
# X25LAPB Link Cont CP	NT6X91BB			19	6-13 17-23	RUL31
X25LAPB Link Cont CP	NT6X91CA			19	6-13 17-23	RUL31
Enhanced MPC CP	NT1X89BB			19	6-23 17-23	RUL31
SCSI DDU CP	NT1X55FA			19	6-12 17-22	RUL32
MTD Controller CP	NT1X68BC			19	11, 21	RUL32
I/O Message Controller CP	NT1X62CB			19	4, 15	
EMPC V.35 Cable	NTMX4723				6-13 17-23	RUL33
EMPC RS232 Cable	NTMX4724				6-13 17-23	RUL33
HDLC Cable	NTMX4725				6-13 17-23	RUL33
RS232 or Current Loop	NTMX4726				6-13 17-23	RUL33
Filler Face Plate	NT0X50BE			19	1, 25	RUL34
Filler Face Plate	NT0X50BF			19	4, 15	RUL34
Filler Face Plate 0.875	NT0X50BA		17	19	6-14 17-24	RUL34
Door and End Panel						
Ext. Skin Assy Left-Grey	NTRX73AL		1			RUL35
Ext. Skin Assy Right-Grey	NTRX73AM		1			RUL35
End Panel Assy. Right-Grey	NTNX2517					RUL35
End Panel Assy. Left-Grey	NTNX2518					RUL35
Door Kit Top Latch-Grey	NTRX2567		1			RUL35
Door Kit Center Latch-Grey	NTRX2568		1			RUL35
Right Door Label Top Latch grey	P0699158		2			RUL35
Right Door Label Center	P0832051		2			RUL35

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Latch Grey						
Left Door Label Grey	P0818848		2			RUL35
Cabinet Type Label Grey	P0831787		2			RUL35
Ext. Skin Assy Left-Brown	NTRX73AN		1			RUL36
Ext. Skin Assy Right-Brown	NTRX73AP		1			RUL36
End Panel Assy. Right-Brown	NTNX2546					RUL36
End Panel Assy. Left-Brown	NTNX2553					RUL36
Door Kit Top Latch-Brown	NTRX2566		1			RUL36
Door Kit Center Latch-Brown	NTRX2569		1			RUL36
Right Door Label Top Latch Brown	P0695230		2			RUL36
Right Door Label Center Latch Brown	P0832050		2			RUL36
Left Door Label Brown	P0818849		2			RUL36
Cabinet Type Label Brown	P0831786		2			RUL36
Earthquake Anchor/ Non-Earthquake						
Earthquake Anchor Kit	NTRX2564		1			RUL37
Earthquake Anchor Assy.	P0601852		1			RUL37
Leveling Foot Kit	NTRX2523		1			RUL37
Grounding Kit And Aisle Alarm Cable						
MSL-Mod.B GND Kit (Horiz)	NTRX25ML		1			RUL38
Mod.B-Mod.B GND kit	NTRX25MM		1			RUL38
Designation Label						
Des'n Label (NTFX32AA)	P0831733					RUL39
Des'n Label (NTFX32BA)	P0831474					RUL45
Des'n Label (NTFX32CA)	P0831732					RUL45
Des'n Label (NTFX32DA)	P0843602					RUL45
Des'n Label (NTFX42AA)	P0745438					RUL39
Des'n Label (NTFX43AA)	P0745439					RUL39
Des'n Label (NT0X10AA)	P0656328					RUL39
Des'n Label (NT0X50AA)	P0578498					RUL39
Des'n Label (NT0X50AC)	P0580258					RUL39
Des'n Label (NT0X50AE)	P0591361					RUL39
Des'n Label (NT0X50AG)	P0685986					RUL39
Des'n Label (NT0X67AA)	P0657673					RUL39

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des'n Label (NT1X00AB)	P0661425					RUL39
Des'n Label (NT1X00AC)	P0661420					RUL39
Des'n Label (NT1X00AE)	P0677809					RUL39
Des'n Label (NT1X54AA)	P0656330					RUL39
Des'n Label (NT1X62CB)	P0745105					RUL39
Des'n Label (NT1X67BD)	P0657675					RUL39
Des'n Label (NT1X67DB)	P0599148					RUL39
Des'n Label (NT1X68BC)	P0616642					RUL39
Des'n Label (NT1X80AA)	P0742808					RUL39
Des'n Label (NT1X81AA)	P0724225					RUL39
Des'n Label (NT1X89BB)	P0800156					RUL39
Des'n Label (NT1X90AA)	P0661423					RUL39
Des'n Label (NT2X11BA)	P0707876					RUL39
Des'n Label (NT2X47AD)	P0676174					RUL39
Des'n Label (NT2X47BA)	P0677812					RUL39
Des'n Label (NT2X48BA)	P0656335					RUL39
Des'n Label (NT2X48BB)	P0653620					RUL39
Des'n Label (NT2X48CC)	P0678469					RUL39
Des'n Label (NT2X56AB)	P0661422					RUL39
Des'n Label (NT2X56BA)	P0677815					RUL39
Des'n Label (NT2X57AA)	P0656327					RUL39
Des'n Label (NT2X57AB)	P0705542					RUL39
Des'n Label (NT2X70AF)	P0809960					RUL39
Des'n Label (NT2X71AA)	P0661419					RUL39
Des'n Label (NT2X72AA)	P0656333					RUL39
Des'n Label (NT2X72AC)	P0656334					RUL39
Des'n Label (NT2X72BA)	P0675052					RUL39
Des'n Label (NT2X72BB)	P0677818					RUL39
Des'n Label (NT2X75AA)	P0657680					RUL39
Des'n Label (NT2X75BA)	P0677212					RUL39
Des'n Label (NT2X81BA)	P0675053					RUL39
Des'n Label (NT2X83AA)	P0558345					RUL39
Des'n Label (NT2X84BA)	P0675054					RUL39
Des'n Label (NT2X85AA)	P0688412					RUL39
Des'n Label (NT2X88AA)	P0656331					RUL39
Des'n Label (NT2X90AD)	P0688244					RUL39
Des'n Label (NT2X95BA)	P0675055					RUL39
Des'n Label (NT2X95BB)	P0677820					RUL39
Des'n Label (NT2X96AA)	P0661424					RUL39
Des'n Label (NT2X98AA)	P0661424					RUL39
Des'n Label (NT3X02AA)	P0661202					RUL39
Des'n Label (NT3X03AA)	P0661203					RUL39
Des'n Label (NT3X07AA)	P0661426					RUL39
Des'n Label (NT3X09BA)	P0664847					RUL39
Des'n Label (NT3X68AA)	P0661782					RUL39
Des'n Label (NT3X68AB)	P0665193					RUL39

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des'n Label (NT3X68AC)	P0657674					RUL39
Des'n Label (NT3X68BA)	P0675056					RUL39
Des'n Label (NT3X68BB)	P0675057					RUL39
Des'n Label (NT3X68BC)	P0675058					RUL39
Des'n Label (NT3X82AJ)	P0865780					RUL39
Des'n Label (NT3X83AC)	P0865779					RUL39
Des'n Label (NT3X91AA)	P0656332					RUL39
Des'n Label (NT5X03AA)	P0702197					RUL39
Des'n Label (NT5X04AA)	P0702198					RUL39
Des'n Label (NT5X04AB)	P0705934					RUL39
Des'n Label (NT5X29AB)	P0694963					RUL39
Des'n Label (NT5X29AC)	P0654974					RUL39
Des'n Label (NT5X29BA)	P0742815					RUL39
Des'n Label (NT5X30AA)	P0656329					RUL39
Des'n Label (NT5X30BA)	P0675059					RUL39

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT1X00AA	MD	NT1X80AA
NT1X00AB	MD	
NT1X00AC	MD	
NT1X00AD	MD	
NT1X90AA	STD	NT4X45AA
NT2X47AD	DEV	
NT2X56AB	STD	
NT2X96AA	STD	
NT1X67DB	MD	NT1X89BB
NT1X67FA	MD	
NT6X91BB	MD	
NT5X25AA	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 manufac-
tured and cannot be ordered.

NOTES:

- 1) For MCAM-3 cabinet NTNX37AD, XX = shelf position 19, 33 and 47.
- 2) * = Even slot number
** = Odd slot number
- 3) On the ISM shelf the slot numbers are configured from left to right, and the circuit numbers are configured from right to left, as viewed from the front. Note that slot 3, 4 and 5 have no trunk enable signals. Please refer to below diagram for details:

Slot Number As Viewed From The Front																					
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	
@																					
NTFX 43AA	I N D E P E N D E N T	I N D E P E N D E N T	C O M P A N I O N	TE 02	TE 04	TE 06	TE 08	TE 08	TE 08	TE 14	TE 08	TE 08	TE 08	TE 08	TE 08	TE 08	TE 08	TE 08	TE 16	N T F X 4 2 A A	
P W R																					
C O N V E R T E R																					
								29	27	25	29	21	19	17	15	13	11	09	15	29	
								28	26	24		20	18	16	14	12	10	08			
							29	27	25	23	T	19	17	15	13	11	09	07	T	T	
							28	26	24	22	H	18	16	14	12	10	08	06	H	H	
							29	27	25	23	21	R	17	15	13	11	09	07	05	R	R
							28	26	24	22	20	U	16	14	12	10	08	06	04	U	U
					29	27	25	23	21	19	18	16	14	12	10	08	06	04	02	00	00
\$						29															

cent slots, 4-circuit cards to be assigned in alternating slot, 8-circuit cards to be assigned in every four slot, and 16-circuit cards to be assigned in every eight slot. CPs that use fewer than the total available enables for their assigned slots will access the lowest numbered available enables in the corresponding slot.

Please note that this rule does not apply to those CPs that operates in pairs.

PM Service Circuit Packs do not require access to circuit enables on the ISM backplane since it has its own DS-30 link to the network.

- 6) Refer to -- Figure id 'gggg706' unknown -- of ECM706 for ISM shelf 47.
- 7) Refer to -- Figure id 'hhhh706' unknown -- of ECM706 for ISM shelf 33.
- 8) As seen in -- Figure id 'gggg706' unknown -- and -- Figure id 'hhhh706' unknown -- , there are seven (7) MDF connectors from CO-00 to CO-06 in each ISM shelf of the MCAM-3 cabinet. Only slots associated with these MDF connectors will have cable lead to the MDF.
- 9) The connector CO-01, MDF cable is not required when slots 9 and 10 are equipped with single PM circuit pack.
- 10) The connector CO-02, MDF cable is not required when slots 11 and 12 are equipped with single PM circuit pack.
- 11) The four (4) always provided DS-30 ports to the network are from slots 21, 3, 4 and 5. Slot 21 is the ISM processor. Slots 3 and 4 only have -48V power supply; therefore; only independent service circuit can be assigned to these two slots, i.e CTM. Since slot 5 has a DS-30 port, it is recommended that this slot should be reserved for EDRAM or CTM. However, slot 5 may also be used for service circuits such as companion circuit of a pair service circuits. Please note that slot 5 only supports those companion circuits that do not require a direct connection, via the backplane, to the ISM processor.
- 12) The maximum number of DS-30 link per ISM shelf in the MCAM-3 is eight (8). Connectors CO-0N & CO-1N provide the first four DS-30 links to the network and connectors CO-2N & CO-3N provide the second four (4) DS-30 to the network.

The mapping between circuit slots and these network connectors are as follows:

CONNECTORS	SLOT POSITION	PORT NUMBER
CO-0N & 1N	21	00
	03	01
	04	02
	05	03
CO-2N & 3N	09	04
	10	05
	11	06
	12	07

- 13) The ISM shelf is labelled with the abbreviation TM8 or MTM depending on the software load applied.
- 14) See CANX11AB Cable Table 29 for external cabling of the MCAM 3.
- 15) PROVIDE FOR FIELD UPGRADES ONLY. IOM IS CURRENTLY NOT AVAILABLE FOR FACTORY INSTALLATION. IOM mounts in slots 3 to 5 on the ISM shelf with the SMC CP in slots 4 and 5. Relocate any CP's (NT1X81's) located in slots 03 to 05 to accommodate IOM. Refer to PC Kit PCNX37UA and NOTE 19.
- 16) Option <U> MDF cables: Always provide for shelf positions 19, 33, and 47 if DS30 wiring option <X> is not provided.
- 17) Option <S> MDF cables: Always provide for shelf positions 33 and 47 if option <V> Metallic Test Access (MTA) is not provided.
- 18) Option <T> MDF cables: Always provide for shelf positions 33 and 47 if option <W> Office Alarms (OAU) is not provided. Always provide with option <Z> shelf position 19 ISM shelf regardless.
- 19) When providing IOM, DS30 wiring on ISM slots 03 to 05 to the bulkhead for PM CP's must be relocated. See RULE 25. Also to eliminate removing -48VABS from the line-up when the personality plate is replaced, IOM should be applied to shelf positions 19 and 33 first.
- 20) The NT0X10 and NT2X57 CP's must be provisioned in odd numbered slots except when providing Office Alarm option <W>

(RULE 4). Refer to RULES 25, 5, and 4 to provide MDF cables for these circuit packs (CP's).

RULES:

- AP 1) When PEC NTN37AD is ordered, these items are provided.
- 2) P0699441, P0674502, P097Y566 and A0328413 are included in NTRX25AA.
- 3) P0740946 isolation pad is now part of the NTRX2564.
- RUL1 1) Provide one (1) ISM Processor (NTFX42AA) in slot position 21 when one or more NON-PM service circuits are provisioned in an ISM shelf.
- 2) For ISM shelf that only has Peripheral Module (PM) Service Circuits, i.e EDRAM or CTM; there is NO need for the ISM processor CP.
- 3) Provide one (1) 1.12" Filler Face Plate (NT0X50AC) in slot position 21 if the ISM Processor (NTFX42AA) is not provided.
- 4) The NTFX43AA ISM DC Converter converts the battery feed input to power supplies of +5V, +12V, +25V and -15V DC required by service circuits. The NTFX43AA ISM DC Converter occupies slot positions 01 and 02.
- 5) Provide one (1) ISM DC Converter at slot position 01 when one or more NON-PM service circuits on the shelf are required. The power supplies listed in RUL1 4) above will be required.
- 6) Provide one (1) Filler Panel (NT0X50AG) if ISM DC Converter, NTFX43AA is not provided.
- RUL2 1) Provide one (1) 1.12" Filler Face Plate (NT0X50AC) for each physically unoccupied slot position 03 thru 20.
- RUL3 RESERVED FOR FUTURE USE.
- RUL4 1) If office alarms are NOT provided always provision two (2) NTN3761 and two (2) NTN3762 MDF cables to bulkhead connectors CO-05 & CO-06 for ISM shelf 33 a shelf 47.

@	Cables	ISM shelf	ISM slots	EMI BKHD	#
	NTNX3761	33 & 47	17 & 18	CO-05	
	NTNX3762	33 & 47	19 & 20	CO-06	
\$					%

- 2) Always provision one (1) NTNX3761 and one (1) NTNX3762 to MDF bulkhead connectors CO-05 & CO-06 if shelf 19 is provisioned with option <Z> (ISM shelf).

@	Cables	ISM shelf	ISM slots	EMI BKHD	#
	NTNX3761	19	17 & 18	CO-05	
	NTNX3762	19	19 & 20	CO-06	
\$					%

- 3) Provision one (1) NTNX37WC office alarm kit with pre-wired S66 block when office alarm is a requirement.
- 4) Two Dead System Alarm circuits are required per office, one on the primary MTM and one on the secondary MTM. Provide two (2) NT3X82AJ CPs with the NT0X63AC alarm panel.
- 5) Provision one NT3X83AC to transfer major/minor alarm to a remote office receiving circuit.
- 6) One NT0X10AA Miscellaneous Scan Card Ciuit Pack and one NT2X57AA Signal Distribution Card are required to mount on the primary MTM for visual and audible alarm indications.
- 7) Provide the following CPs for system alarm in the MCAM-3:
- | Circuit Pack | ISM Shelf | ISM Slot |
|--------------|-----------|----------|
| NT3X82AJ | 47 & 33 | 20 |
| NT3X83AC | 47 | 19 |
| NT0X10AA | 47 | 18 |
| NT2X57AA | 47 | 17 |
- 8) If system alarm is NOT a requirement other service circuit packs may be provisioned in slots 17 through 20 per engineering rules.
- 9) Provision either NTNX36AT, NTNX36GD or NTNX36GW cables for bulkhead connectors CO-00 & CO-06 for system MDF cables even when shelf 47 is equipped with Office Alarms. Bulkhead connector CO-00 is always provided for MDF cabling on the MCAM-3. CO-06 will be also be provided when provi-

sioning for Office Alarms which will bring out un-used scan and signal distribution points from the Office Alarm NT0X10 & NT2X57 circuit packs to the bulkhead for MDF connection.

- RUL5 1) If Metallic Test Access is not a requirement, provision two (2) NTNX3759 and two (2) NTNX3760 to MDF bulkhead connectors CO-03 & CO-04 at shelf positions 33 and 47.

@	Cables	ISM shelf	ISM slots	EMI BKHD	#
	NTNX3759	33,47	13 & 14	CO-03	
	NTNX3760	33,47	15 & 16	CO-04	
\$					%

- 2) Always provision one (1) NTNX3759 and one (1) NTNX3760 to connector CO-03 & CO-04 of shelf 19 if shelf 19 is provisioned with an ISM shelf (option <Z>).

@	Cables	ISM shelf	ISM slots	EMI BKHD	#
	NTNX3759	19	13 & 14	CO-03	
	NTNX3760	19	15 & 16	CO-04	
\$					%

- 3) MTU circuits are used to perform DC and AC voltage measurements as well as resistance, capacitance and frequency measurements on subscriber loops and line circuits.
- 4) Each MTU pair (NT2X10BB and NT2X11BA pair) has two test circuits (2 sets of tip and ring). Thus it can test two 2B1Q lines at the same time.
- 5) Provide the following CPs to the MCAM-3 line up only when line testing is a requirement. I.e there is one or more LCM/LCME modules in the MCAM-3 line up.

Circuit Pack	ISM Shelf	ISM Slot
NT2X10BB	33	14
NT2X11BA	33	13
NT2X90AD	33	15
NT2X90AD	33	16
NT3X09BA	47	13-16

- 6) Each NT3X09BA CP can provide testing for two (2) MCLM/MCLM-E cabinet or four (4) LCM/LCME modules. Provision NT3X09BA CP as required per this rule.

- 7) The maximum number of MLCM/MLCM-E cabinet in any Meridian Cabinet line up is eight (8) since a maximum assignable number of NT3X09BA CPs in the MCAM-3 is four (4).
- 8) Provision the following MTA jumper cables required for MTA:
- One (1) NTNX3754
 - One (1) NTNX3755
- RUL6 1) Provision one NTNX37WF option 'Z' hardware kit when ISM shelf 19 is required. NTNX37WF includes the following:
- One (1) NTNX4101
 - One (1) NTNX3751
 - One (1) NTNX3756
 - One (1) NTNX3734
 - Ten (10) P0732389
 - Ten (10) P0743593
 - One (1) P0850382
- RUL7 1) Provision additional NT0X10AA as required. Each NT0X10AA CP has two (2) circuit and each circuit can provide up to seven (7) scan points. One NT0X10AA provides 14 scan points.
- RUL8 1) The 102 Test Trunk (Milliwatt) provides either a 1004 Hz milliwatt or a quiet termination for maintenance applications in in a DMS-100 and DMS-200 office. NT1X00AA is scheduled to be 'MD'. Replace NT1X00AA by NT1X80AA.
- 2) Provision 102 Test Milliwatt as required. NT1X00AB can be mounted in any slot from 7-20 in an ISM shelf of the MCAM-3. NT1X00AB is scheduled to be 'MD'. Replace NT1X00AB by NT1X80AA.
- RUL9 1) NT1X00AD CP provides receiver off-hook tones to subscriber line in an attempt to alert subscribers by annoying tones of existing permanent signal conditions caused by receivers being left off the hook. NT1X00AC is scheduled to be 'MD'. Replace NT1X00AC by NT1X80AA. NT1X00AD is scheduled to be 'MD'. Replace NT1X00AD by NT1X80AA.
- 2) Provision ROH Tone Generation as required. NT1X00AD can be mounted in any slot from 6-20 in an ISM shelf of the MCAM-3.
- RUL10 1) The TTT is a 104 test line and test soue consisting of a test signal generator and a level meter operating digitally samples. NT1X90AA and NT2X96AA are scheduled to be 'MD'.

Replace NT1X90AA and NT2X96AA by NT4X45AA (DOMESTIC MSL-100 MARKET ONLY)

- 2) Each TTT circuit consists of one PCM Test Signal Generator and one PCM Level Meter. Provision the NT1X90 & NT2X96 in pairs as required.
- 3) Provision NT1X90AA & NT2X96AA for North American (Mu Law) Applications. Provision NT1X90BA & NT2X96BA for International (A-Law) Applications.
- 4) The NT1X90's is assignable in an EVEN slot (right orientation) and the NT2X96's is assignable in an ODD slot (left orientation).
- 5) EDTU is a preferable circuit pack for TTT application. Please check with Nortel Technology for availability.

RUL11 1) TTU circuit is a programmable digital signal generator & processor which is capable of performing a variety of transmission measurements trunk circuits. (e.g ATMS, ALT...) NT2X47AD and NT2X56AB are scheduled to be 'MD'. Replace NT2X47AD and NT2X56AB by NT4X45AA (DOMESTIC MSL-100 MARKET ONLY)

- 2) Each TTU circuit consists of a Control Signal Generator card , NT2X47's and a Digital Filter card, NT2X56's. Provision the NT2X47 & NT2X56 in pairs as required.
- 3) The NT2X47's is assignable in an EVEN slot (right orientation) and the NT2X56's is assignable in an ODD slot (left orientation).
- 4) Provision NT2X47AD & NT2X56AB for North American (Mu-Law) Applications and NT2X47BA & NT2X56BA for International (A-Law) Applications.
- 5) EDTU is a preferable circuit pack for TTU application. Please check with Nortel Technology for availability.

RUL12 1) MF receiver, NT2X48BA/CA card receives and interprets multi-frequency address signalling on analog and digital trunk.

- 2) Provision NT2X48BA for North American (Mu-Law) Applications and NT2X48CA for International (A-Law) Applications. NT2X48BA/CA is a four circuits card so you might have to fill the next slot with a NT0X50.

- 3) Digitone Receiver, NT2X48BB/CB/CC card receives and interprets the digitone signals pulsed on a customer line equipped digitone feature.
 - 4) Provision NT2X48BB for North American (Mu-Law), NT2X48CB for British Telecom (Mu-Law) and NT2X48CC for International (A-Law) Applications. NT2X48BB/CB/CC is a FOUR circuits card so you might have to fill the next slot with a NT0X50.
 - 5) Always provision one (1) MF & one (1) DTMF receiver per system for test purposes. Additional MF & DTMF receiver may be provisioned as required.
- RUL13
- 1) Signal Distributor circuits enable the DMS Central Control to control external equipment by activating relays, lamps, audibles etc. Each SD card provides fourteen SD points configured as two SD circuits known as 'SD Groups' with seven (7) points per group.
 - 2) Provision NT2X57AB card when OAU Monitor Circuit is a requirement per customer. Provision additional NT2X57's card as required.
- RUL14
- 1) Always provision one NT2X71's per office for an AC open or short termination test to check stability of trunks with negative impedance type repeaters. Additional NT2X71's may be provisioned as required.
- RUL15
- 1) The NT2X75's uses to measure near to far end trunk transmission losses. Provision one NT2X75's per office when loop around test line is a requirement.
 - 2) Provision additional NT2X75's to slot 7-20 as required.
- RUL16
- 1) Provide One (1) NT2X77AA, balance network 900 ohm for each NT5X30AA and NT2X90AD provisioned.
- RUL17
- 1) Provision NT3X02 & NT3X03 for TOPs or Attendant Console. One NT3X02 & NT3X03 pairs may be provisioned for 2-4 TOPs or 2-4 Attendant Console depending on specific traffic per system.
 - 2) The NT3X02's will mount in an EVEN slot (right orientation) and the NT3X03's will mount in an ODD slot (left orientation).
 - 3) The Dial-Up Autoquote feature requires the NT3X02BA to be used in a Stand-Alone configuration.

- 4) This circuit pack is generally used with the NT3X03AA but this must not be done for the Dial-Up Autoquote feature, since it would disable all four (4) ports on the NT3X02BA. Therefore, provision an NT0X50AA (.875 inch Filler Face Plate). Use TM250P Exec Line-Up.
- RUL18 1) The Tone Gen Pre-Empt provides tone for end to end signaling used in Attendant Console. Provision a minimum of one (1) NT3X68AA per MSL100 system.
- 2) The NT3X68AA has 4 circuit enables per circuit pack. Leave the next lower slot vacant OR provide a PM service circuit pack to this next lower (if applicable) slot since the PM service circuit pack does not require circuit enable from ISM shelf.
- RUL19 1) Provision Mult Freq Dual Tone Gen as required.
- 2) The NT3X68AB has 4 circuit enables per circuit pack. Leave the next lower slot vacant OR provide a PM service circuit pack to this next lower slot (if applicable) since the PM service circuit pack does not require circuit enable from ISM shelf.
- RUL20 1) Provision NT3X68AC when tone generation is a requirement for call waiting. Provide a minimum of one (1) per MSL100 system.
- 2) The NT3X68AC has 4 circuit enables per circuit pack. Leave the next lower slot vacant OR provide a PM service circuit pack to this next lower slot since the PM service circuit pack does not require circuit enable from ISM shelf.
- 3) Provision NT3X68BA/BB/BC for international application. These circuit packs also have 4 circuit enables per circuit pack. Leave the next lower slot vacant OR provide a PM service circuit pack to this next lower slot since the PM service circuit pack does not require circuit enable from ISM shelf.
- RUL21 1) The NT4X45AA design provides a new platform to house the DTU, TTT and TTU functionality. When fully introduced, the EDTU will replace the following current service circuit packs (DOMESTIC MSL-100 MARKETS ONLY):
- 1) Replace two (2) of NT4X23AA - Digital Test Unit (DTU)
 - OR
 - 2) Replace four (4) of NT1X90AA - Test Signal Gen (TTT)
 - 3) Replace four (4) of NT2X96AA - PCM Level Meter (TTT)
 - OR

- 4) Replace four (4) of NT2X47AD - Test Signal Gen (TTU)
 - 5) Replace four (4) of NT2X56AB - PCM Level Meter (TTU)
- 2) The NT4X45AA has four (4) circuit enable and is provisionable in slots 7 to 20. Since it is a 4 circuit enable, the next lower slot must be provisioned with a filler face plate OR provisioned with an PM service circuit pack such as EDRAM or CTM.
- 2) The CC S/W associated with the EDTU will provide mechanisms of static selection of any combination of DTU, TTT and TTU applications.
- 3) EDTU is a preferable circuit pack for TTU, TTT & DTU application. Please check with Nortel Technology for availability.
- 4) Currently, EDTU pack can not be mixed with the alarm circuit pack in the same ISM shelf. EDTU must be assigned in an ISM shelf with No Alarm circuit packs (3X82, 3X83). ;5);To achieve robustness, all offices deploying EDTUs should provision at least two (2) separate EDTU CPs, and these should be installed on at least two (2) separate shelves.
- RUL22 1) Provide NT5X29's as required. Each NT5X29 version provide different functionality as listed below:
- 1) Common Channel Interoffice Signaling (CCIS) continuity check
 - 2) Autovon Service Observing Tone Detector - NT5X29AB
 - 3) Tone Detector/DTMF Tone Detector - NT5X29AC
- The NT5X29's require 16 Trunk Enables, (TE00 - TE15) making position 16 the next available slot to access Trunk Enables eg. (TE16 & TE17)
- Refer to PSFX4001 or Sheet C12 of ISNX37AD for available Trunk Enables on a per slot basis.
- Provision Filler Face Plate NT0X50BA in slot positions 16 thru 20. If an NT5X59__ Cp is provisioned in position 20.
- 2) Provide NT5X29BA for UK application.
- RUL23 1) The 101 Communication Test Line provides communication between a MAP and CO trunk. Provide a minimum of three (3) NT5X30's per MSL100 system. Provision additional NT5X30's as required.
- 2) Provision NT5X30BA CP for UK application.

RUL24 1) Reserved

RUL25 1) If IOM is provisioned on the ISM shelf for field upgrades, slots 03 thru 05 will NOT be available for provisioning CTM/EDRAM. DS30 connectors will be relocated to slots 06, 07, and 08. MDF cables will be removed from slots 07 and 08 and tied back. CTM/EDRAM must then be provisioned in ISM slots 06, 07, and 08 instead of slots 03, 04, and 05 respectively.

- 2) When EDRAM/CTM is NOT provisioned in slots 09 thru 12, (option <X>), on shelves 19, 33 or 47, always provision both of the following MDF bulkhead cables on any ISM shelf when option <X> is NOT provided:

@	-----#			
	Cables	ISM shelf	ISM slots	EMI BKHD
	NTNX3757	19, 33, 47	09 & 10	CO-01
	NTNX3758	19, 33, 47	11 & 12	CO-02
\$	-----%			

- 3) Provision up to five (5) NT1X80AA EDRAM cards in slots 05 (or slot 08 if IOM provisioned on the ISM shelf) and 09 thru 12. EDRAM is an independent Peripheral Module circuit pack. It has its own DS-30 link to the network. Refer to figure 1 & 2 and note 10 for detail information.
- 4) Provision up to seven (7) NT1X81AA CTM cards in slots 3 thru 5, (or slots 06 to 08 if IOM provisioned on the ISM shelf), and 09 thru 12. CTM is an Independent Peripheral Module circuit pack. It has its own DS-30 link to the network. Refer to figure 1 & 2 and notes 9 & 10 for detail information.
- 5) Provide one NTNX3752, DS-30 bulkhead cable per ISM shelf 19, 33, or 47 when provisioning EDRAM/CTM CP to any slot 09 thru 12. The NTNX3752 cable connects the backplane of slots 09 thru 12 to the bulkhead connector CO-2N & CO-3N.
- 6) Provide DS-30 cable to the network as required for EDRAM/CTM. Please note that connector CO-0N/1N and CO-2N/3N provide 4 DS-30 ports per connector per network plane. See detail in note 10.

RUL26 1) Provision NT1X54AA CP as required for test jack at the MAP. Each NT1X54AA has 1.5 circuit enable. NT1X54AA is provisionable in either a MTM or TM8.

- RUL27 1) Provision NT2X72's CP as required for 4W E&M analog trunk. NT2X72's is provisionable either in TM8 or MTM module in MSL100 switch.
- RUL28 1) Refer to EMA14-01-000 for detail provisioning rules. NT5X25AA is 'MD'. 'THERE IS NO REPLACEMENT'
- RUL29 1) Provision one NTN37WG option 'Y' hardware kit when DIO shelf is required in shelf 19. NTN37WG includes the following:
- One (1) NTN3401 - DIO Shelf
 - One (1) NTN3753 - MS Ports to BH Cable
 - One (1) NTN3735 - 2 ISM's/DIO Shelf Power Cable
 - One (1) NTN3742 - DIO Logic Rtn. Cable
 - Two (2) P0708909 - Universal Key Bracket
 - Seven (7) P0732389 - Bolt Hd. Cover
 - Seven (7) P0743593 - Insulating Boot
 - One (1) P0850381 - Sh.19 BH Personality Plate
- RUL30 1) Provision the following common CPs with a DIO shelf:
- Two (2) NT2X70AF, Positions 01, and 25.
 - Two (2) NT1X62CB, Positions 04, and 15.
 - Two (2) NT0X67AA, Positions 14, and 24.
- RUL31 1) Provision the I/O CPs as required for each I/O device. NT1X67DB and NT6X91BB are scheduled to be 'MD'. Replace NT1X67DB and NT6X91BB by NT1X89BB.
- 2) There are 26 physical connectors (25 pin type) on the bulkhead for I/O devices. (22 connectors on personal plate, P0850381 of shelf 19 and 4 connectors on personal plate, P0850380 of shelf 33) This is the physical limitation of DIO shelf on the MCAM-3 as far as the number of I/O cards and I/O devices that can be assignable to the DIO shelf. Refer to RULE 33 for the type, usage and number of connectors on each bulkhead cable.
- RUL32 1) Provision a minimum of two (2) NT1X55FA per system. NT1X55FA CP is a two slot circuit pack. Assign the first DDU to IOC 01 circuit 04, and the second DDU to IOC 00 circuit 04.
- 2) NT1X68BC CP is required for the MTD. For the first MTD in an office, assign NT1X68BC CP in IOC 00 circuit 00.
- 3) Provide read, write and control cables when provisioning NT1X68BC CP.

- RUL33 1) Provision the following cables as required per I/O card and its application. Make sure that NO MORE than 26 connectors are provided per one DIO shelf.

@	Cables	Applications	# of connector	#
	NTMX4723	One V.35 Port (1X89's)	One (1)	
	NTMX4724	Two EMPC Ports (1X89's)	Two (2)	
	NTMX4725	One HDLC Port (6X91's)	One (1)	
	NTMX4726	Four EIA/CLoop (1X67's)	Four (4)	
\$				%

- RUL34 1) Provision filler face plate as required for each unoccupied slot.

- RUL35 1) Provision one door kit-grey per MCAM-3 cabinet. There are two different types of door latch - top latch and center latch.

- 2) Provision one (1) NTRX2567 door kit for top latch-grey.
- 3) Provision one (1) NTRX2568 door kit for center latch-grey.
- 4) Provision one (1) NTRX73AL exterior skin assembly left-grey. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.
- 5) Provision one (1) NTRX73AM exterior skin assembly right-grey. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.
- 6) Since MCAM-3 is a C-28B cabinet, its external skin assembly (end panel) will not fit with the MSL100 cabinet. Therefore, when the MCAM-3 cabinet is in the same line up with the MSL100 cabinet, you 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.

- RUL36 1) Provision one door kit-brown per MCAM-3 cabinet. There are two different types of door latch - top latch and center latch.

- 2) Provision one (1) NTRX2566 door kit for top latch-brown.
- 3) Provision one (1) NTRX2569 door kit for center latch-brown.

- 4) Provision one (1) NTRX73AN exterior skin assembly left-brown. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.
 - 5) Provision one (1) NTRX73AP exterior skin assembly right-brown. Provide exterior skin assembly as loose equipment, DO NOT assign to cabinet.
 - 6) Since MCAM-3 is a C-28B cabinet, its external skin assembly (end panel) will not fit with the MSL100 cabinet. Therefore, when the MCAM-3 cabinet is in the same line up with the MSL100 cabinet, you need to provision one end panel for the MSL100 cabinet.
 - 7) Provide door label as required.
- RUL37 1) Provide one earthquake anchor kit per MCAM-3 cabinet. The kit contains four (4) anchor assemblies. NTRX2564 also includes isolation pad, P06740946.
- 2) Individual earthquake anchor assembly, P0601852 may be provided per customer requirement.
- 3) Provide one leveling foot kit per cabinet for non-earthquake zone.
- RUL38 1) When grounding MCAM-3 cabinet to an MSL100 cabinet in the line-up, always provision one grounding hardware kit NTRX25ML. NTRX25ML Kit to be ordered shiploose.
- 2) When grounding MCAM-3 cabinet to another C-28B cabinet in the line-up, always provision one grounding hardware kit NTRX25MM. NTRX25MM Kit to be ordered shiploose.
- RUL39 1) Provide designation label per circuit pack.
- RUL40 1) Quantities of NT2X01AA packs are dependant upon the security or standby arrangement selected by the customer. When multiple receivers are provided for a single data link or for links from a single PBX, it is recommended that these receivers not on the same NT2X01AA pack and that additional packs not be located ISM shelf.
- RUL41 1) One physical circuit per card with two (2) speech channel appearances (loop around): Treat as two circuits per card, each to be assigned to a separate Trunk Group. Each card contains one Talk circuit (on TLC1) and one Key circuit

Talk circuit must be provisioned with a Compromise Balance Network NT2X77AB or NT2X77AD.

- RUL42 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.
 3. One Call Waiting Lamp Indication ED26764-11 GRP 1.

The above equipment will mount on a MIS Frame.

- RUL43 1) Provide one (1) NTFX37UA ISM Retrofit Kit for IOM for shelf position 47.

On field upgrades to IOM provide IOM on shelf 47 only after providing IOM on shelf positions 19 (if equipped with an ISM shelf option <Z>) and shelf position 33 to eliminate removing -48VABS from the line-up to replace the bulkhead personality plate. This only applies to release 01 cabinets. On release 02 and above cabinets the BH personality plate does not have to be replaced.

- 2) Provide one (1) NTFX37UB ISM Retrofit Kit for IOM for shelf position 33.
- 3) Provide one (1) NTFX37UC ISM Retrofit Kit for IOM for shelf position 19.

Each Kit includes all hardware to provision one IOM in ISM slot 03 and also one SCSI Storage Media Carrier (SMC) CP in ISM slots 04 & 05. The IOM circuit packs must be provisioned separately. DAT or DDU's for the SMC CP also provisioned separately.

- RUL44 1) Provide one (1) NTFX30AA IOM Main Controller CP per customer requirements, max. one per ISM Shelf. IOM 00 (IOC 00) and IOM 01 (IOC 01) must mount in separate ISM Shelves and in slot 03.

- 2) The maximum number of IOMs is 20 (IOM 00-19) per Office.

- RUL45 1) Provide one (1) NTFX32AA Storage Media CP per customer requirements, one per ISM Shelf, and mount in slot 04. The CP requires two slots, 04 and 05.

- 2) Provide one (1) NTFX32BA DDU Plug-in Module per customer requirements, max. two per NTFX32AA. The DDU module plugs into slots P16 and P17 on the Storage Media CP NTFX32AA. The first DDU is always assigned to port 16 on the MAP dis-

play or SCSI port 1 (slot 00 or top position on the SMC pack).

A second DDU may be provided at SCSI port 1 on the SMC circuit pack.

- 3) Provide one (1) P0831474 Designation Label per NTFX32BA DDU. To be applied to the NTFX32AA faceplate in slots 04 and 05.
- 4) Provide one (1) NTFX32CA DAT Plug-in Module per customer requirements, max. one per NTFX32AA. The DAT module plugs into slot P17 on the Storage Media CP NTFX32AA. The DAT will always be provided in SCSI port 2 presented as port 17 on the MAP display (slot 01 on the SMC or bottom position).
- 5) Provide one (1) P0831732 Designation Label per NTFX32CA DAT. To be applied to the NTFX32AA faceplate in slots 04 and 05.
- 6) Provide one (1) NTFX32DA Plug-in Module Filler Face Plate for each slot P16 and P17 on the NTFX32AA Storage Media CP not provisioned with a DDU or DAT CP.
- 7) Provide one (1) P0843602 Designation Label per NTFX32DA Plug-in Module Filler Face Plate. To be applied to the NTFX32AA faceplate in slots 04 and 05.

RUL46 1) Provide one (1) NTFX34AA RS-232C Smart Connector assembly per RS232C device requiring IOM to RS-232C message protocol conversion circuitry.

- 2) Provide one (1) NTFX35AA V.35 Smart Connector assembly per device requiring IOM to V.35 message protocol conversion circuitry.

Provide one (1) A0300753 Passive Adapter per NTFX35AA if conversion from 25 pin V.35 connector to 34 pin V.35 connector is required.

- 3) Provide one (1) NTFX36AA PERTEC Smart Connector assembly per device requiring IOM to PERTEC protocol conversion circuitry for 9 track MTD support.
- 4) Provide one (1) NTFX38AA Current Loop Smart Connector for each 20 mA current loop port requiring IOM to Current Loop protocol conversion circuitry.

- 5) Provide two (2) NTFX35BA 512Kbps V.35 Compatible Smart Connector assemblies per device requiring MCI specific 512Kbps synchronous communications support on IOM. Supports X.25 links at 512Kbps synchronous speed for up to a maximum of 2 links per IOM. One NTFX35BA acts as a standby for the other unit connected to another DS30 connector on the splitter.

Additional I/O devices cannot be deployed on an IOM with 512Kbps interface. Also the IOM requires a different Base Load.

- RUL47
- 1) For modems provide one (1) NTFX40UD Smart Connector DB25F Gender Adapter Cable to connect to each modem with a male RS232 (DB25F) connector.
 - 2) Smart Connector Rollover Cable is required to connect the IOM Smart Connectors to the MAP Terminals or printers. Provide one (1) NTFX40UE if a plug (male) end is required or one (1) NTFX40UF if a receptacle (female) end is required.
- RUL48
- 1) Provide one (1) P0831731 Designation Label IOC 00-19 per office when adding IOM to the office.

INTERNATIONAL DTC COMMON CP

PEC CODE: NTN33TA

CPC CODE: B0230718

| RATING: MD

REPLACES:

REPLACED BY:

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTN33TA is the common circuit pack fill used in the Digital Trunk Controller for International DTE applications such as NTN33FA International Cabinet DTE Fiber.

| NTN33TA is replaced by NTN33FC International DTC Common CP and provisionable CPs.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Europe
Asia/Pacific
CALA

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

MAIN CONTACT: NTI: Ken Clisso Dept. 3471 (PPK)

NTNX33TA EMA10-02-IDTC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 15	ECM 648 01	ECD 011-16850.
95 04 27	ECM 648 10	A&M NTNX33TA.
95 08 04	ECM 648 11	MD NTNX33TA.

The International DTC Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate	NT0X50AA		4	X+14,X	05,06	AP
Universal Time Switch CP	NT6X44EA		2	X+14,X	07	AP
Protocol & Downld Messg CP	NT6X69LA		2	X+14,X	10	AP
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	12	AP
SP Memory Plus CP	NT6X46BA		2	X+14,X	13	AP
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	14	AP
MP Memory Plus CP	NT6X47AB		4	X+14,X	15,16	AP
SP Memory Plus CP	NT6X46BA		2	X+14,X	17	AP
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	18	AP
Filler Faceplate	NT0X50AA		2	X+14,X	20	AP
Channel Supervision Msg CP	NT6X42AA		2	X+14,X	21	AP
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	22	AP
DS30 Network Interface CP	NT6X40AC		2	X+14,X	23	AP
Filler Faceplate	NT0X50AA		2	X+14,X	24	AP
Designation Strip	P0703371		2	X+14,X		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) One Meridian IDTC Common CP can be assigned to the cabinet in shelf mounting positions 47 and 33 (X=33), and the other to shelf positions 19 and 05 (X=05).
- 2) Refer to the section on NTN33FA MCTM for more information on the cabinet.

RULES:

AP 1) When PEC NTN33TA is ordered, these items are provided.

INTERNATIONAL DTC COMMON CP

PEC CODE: NTN33FC

CPC CODE: B0242784

RATING: STD

REPLACES: NTN33FB

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTN33FC is the common circuit pack fill used in the Digital Trunk Controller for International DTE applications such as NTN33FA International Cabinet DTE Fiber. replace NTN33TA and NT6X02GJ Common CPs in NTN33FA.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ken Clisso Dept. 3471 (PPK)

NTNX33FC EMA10-02-IDTC-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 03	ECM 648 09	ECD 024-93969. Introduce NTNX33FC.
95 04 27	ECM 648 10	Correct ENG. Description.

The International DTC Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate	NT0X50AA		4	X+14,X	05,06	AP
Filler Faceplate	NT0X50AA		2	X+14,X	20	AP
Filler Faceplate	NT0X50AA		2	X+14,X	24	AP
Power Converter	NT2X70AF		2	X+14,X	25	AP
Designation Label (NT2X70AF)	P0809960		2	X+14,X	25	AP
Designation Strip	P0741035		2	X+14,X		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) One Meridian IDTC Common CP can be assigned to the cabinet in shelf mounting positions 47 and 33 (X=33), and the other to shelf positions 19 and 05 (X=05).
- 2) Refer to the section on NTN33FA MCTM for more information on the cabinet.

RULES:

- AP 1) When PEC NTN33FC is ordered, these items are provided.

MERIDIAN CABINET TRUNK MODULE FRAME

PEC CODE: NTNX33DA

CPC CODE: B0228623

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCTM-I

ENGINEERING DESCRIPTION: The MCTM-I is a general purpose common peripheral controller equipment frame which houses International Digital Trunk Controller (IDTC) equipment. The MCTM-I bay is comprised of one or two modules. The lower 2-shelf module is mounted on shelves 5 & 19 and the upper 2-shelf module is mounted on shelves 33 & 47. Either module may be configured as Japan DTC (JDTC), PCM-30 DTC (PDTC), or International DTC (IDTC).

The NTNX33CA (MCTM-I) now provides all the functionality supplied by the NTNX33DA in a MTX. The NTNX33CA must be provided for all new jobs and extensions on a MTXD.

REFERENCE DOCUMENTATION: MSNX33DA

ISNX33DA

MARKETS: Applicable markets:

US
CANADA
WIRELESS

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

NTNX33DA EMA10-02-I00 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 02 20	ECM 492 30	KMN: Update per EC 002-16524 to provide ten additional 37 pin connectors to the bulkhead.
96 06 18	ECM 492 32	KMN: Update per ISNX33DA
96 07 01	ECM 492 33	KMN: Update per EC 002-16715.
96 07 11	ECM 492 34	KMN: Update per EC 002-16830.
96 07 25	ECM 492 35	KMN: Remove MD status for NT6X28AA.
96 09 24	ECM 492 36	KMN: Add NT6X40AD and NT6X40FB to replace NT6X40AC and NT6X40FA
97 06 11	ECM 492 41	KMN: Add MS,AD,IS references and remove Jim Large as contact.

The Meridian Cabinet Trunk Module Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Supervisory Panel	NT7X34DA	FSP	1	60		AP
# CPCE Pack Fill	NTNX33PB	ICPC1		33		RUL1
CPCE Shelf Assembly	NT6X0211			XX		AP
Enhanced PCM-30 I/F CP	NT6X27BB			XX	1-4	RUL2
Japan TTC Port Card	NT6X27JA			XX	1-4	RUL2
DS30A Interface	NT6X48AA			XX	5,6	RUL3
Time Switch	NT6X44EA			XX	7	RUL4
Universal Tone Receiver	NT6X92CA			XX	8,9,11	RUL5
N5 Specialized Tone Rec.	NT6X62DA			XX	8,11	RUL24
CMR Card	NT6X78AA			XX	8,9,11	RUL25
CMR Card	NT6X78AB			XX	8,9,11	RUL25
Peripheral Loader CP	NT7X05AA			XX	8,9,11	RUL26
Continuity Tone Detector	NT6X70AA			XX	9	RUL6
Msg Prot & Download Tones	NT6X69LB			XX	10	RUL7
Unified Processor	NTMX77AA			XX	12	RUL8
XPM Processor	NT6X45BA			XX	12,14, 18	RUL8
4MB MP Memory	NT6X47AC			XX	16	RUL8
SP Memory	NT6X46BB			XX	13,17	RUL8
Bus Shorter	NT7X80AA			XX	13,17	RUL8
PCM30 Signaling	NT6X28AA			XX	19	RUL9
PCM30 Signaling	NT6X28AC			XX	19	RUL9
Bus Terminator PB	NTMX71BA			XX	8R,20R	RUL8
Channel Supervisor Msg.	NT6X42AA			XX	21	RUL10
CSM & N5 Splitter	NT6X42CA			XX	21	RUL10
Speech Bus Formatter	NT6X41AB			XX	22	RUL11
DS-30 Interface	NT6X40AD			XX	22	RUL12
DS-512 Link Controller	NT6X40FB			XX	23	RUL13
DS-512 Link Controller	NT6X40GA			XX	23R	RUL13
Power Converter	NT2X70AF			XX	25	RUL14
Filler Face Plate	NT0X50AA			XX	1-24	RUL15
CPC Filler	NT6X02AB			33		RUL16
Cooling Unit	NTNX27CA	CU	1	00		AP
Common Framework	NTNX25AA	FW	1			AP
Universal Fiber Kit	NT6X02UF		1			AP
Right Door Assembly-Grey	NTNX2513					RUL17
Left Door Assembly-Grey	NTNX2515					RUL17
Cabinet Type Label (Grey)	P0687618					RUL17

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Left Door Label (Grey)	P0818848					RUL17
Right Door Label (Grey)	P0699158					RUL17
Right Door Assembly-Brown	NTNX2552					RUL17
Left Door Assembly-Brown	NTNX2550					RUL17
Cabinet Type Label (Brown)	P0699471					RUL17
Left Door Label (Brown)	P0818849					RUL17
Right Door Label (Brown)	P0695230					RUL17
Anchor Kit (Earthquake Slab)	NTNX2540					RUL18
Anchor Kit (EQ cmptr Floor)	NTNX2578					RUL18
Anchor Kit (Non-EQ Slab)	NTNX2579					RUL18
Anchor Kit (Non-EQ cmp Flr)	NTNX2580					RUL18
Desig. Label (NT0X50BA)	P0595141					RUL19
Desig. Label (NT2X70AF)	P0809960					RUL19
Desig. Label (NT6X28AC)	P0725257					RUL19
Desig. Label (NT6X27AA)	P0647825					RUL19
Desig. Label (NT6X27AB)	P0678466					RUL19
Desig. Label (NT6X27BB)	P0739157					RUL19
Desig. Label (NT6X27JA)	P0703369					RUL19
Desig. Label (NT6X42CA)	P0731400					RUL19
Desig. Label (NT6X62DA)	P0731401					RUL19
Desig. Label (NT6X70AA)	P0628358					RUL19
Desig. Label (NT6X78AA)	P0731980					RUL19
Desig. Label (NT6X92CA)	P0677831					RUL19
Desig. Label (NT6X44EA)	P0705061					RUL19
Desig. Label (NT6X45BA)	P0665152					RUL19
Desig. Label (NT6X46BB)	P0716164					RUL19
Desig. Label (NT6X47AC)	P0711821					RUL19
Desig. Label (NT6X42AA)	P0737138					RUL19
Desig. Label (NT6X41AB)	P0683208					RUL19
Desig. Label (NT6X40AC)	P0695397					RUL19
Desig. Label (NT6X40AD)	P0854869					RUL19
Desig. Label (NT6X40FB)	P0854870					RUL19
Desig. Label (NT6X69LB)	P0713213					RUL19
Desig. Label (NT7X05AA)	P0845116					RUL19
Desig. Label (NT7X80AA)	P0742962					RUL19
Fiber Kit	NT6X0251					RUL20
Fiber Cover Plate	P0738373					RUL20
Cont. Tone Det. Wiring	NTNX33WA				33, 47	RUL22
DS-30 Cable Kit	NTNX33DS					RUL23
External DS-30 Cable Kit	NTNX33EE					RUL23
N5 Spec. Tone Wiring Kit	NTNX33ST					RUL24
CMR Option Slot Upg. Kit	NT6X03DD					RUL25

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30A I/F Cable Assy	NTNX3305					RUL3
DS30A I/F Cable Assy	NTNX3306					RUL3
DS30A I/F Cable Assy	NTNX3307					RUL3
DS30A I/F Cable Assy	NTNX3308					RUL3
DS-30 I/F Cable Assy	NTNX3309					RUL3
DS-30 I/F Cable Assy	NTNX3310					RUL3
DS-30 I/F Cable Assy	NTNX3311					RUL3
DS-30 I/F Cable Assy	NTNX3312					RUL3
DS30A I/F Cable Assy	NTNX3313					RUL3
DS30A I/F Cable Assy	NTNX3314					RUL3
DS30A I/F Cable Assy	NTNX3315					RUL3
DS30A I/F Cable Assy	NTNX3316					RUL3
DS30A I/F Cable Assy	NTNX3317					RUL3
DS30A I/F Cable Assy	NTNX3318					RUL3
DS30A I/F Cable Assy	NTNX3319					RUL3
DS30A I/F Cable Assy	NTNX3320					RUL3
DS30A I/F Cable Assy	NTNX3321					RUL3
DS30A I/F Cable Assy	NTNX3322					RUL3
DS30A I/F Cable Assy	NTNX3323					RUL3
DS30A I/F Cable Assy	NTNX3324					RUL3
Bushing	P0638259					RUL3
Washers	P0423631					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 manufac-
tured and cannot be ordered.

NOTES:

- 1) The XPM PLUS upgrade when required will replace QTY six (6) NT6X45BA, QTY four (4) NT6X46BB, QTY two (2) NT6X47AC packs per module.
- 2) XX = 05, 19, 33, 47

RULES:

- AP 1) When PEC NTN33DA is ordered, these items are provided.
- RUL1 1) NTN33PB is MDd. Pack Fill NTN33PB mounts on shelves 05,19 and 33,47 for international systems. (The dual shelves are pack filled identically.)
- RUL2 1) For International Systems DTC application, provide a maximum of eight (8) NT6X27AA (U.K. applications), NT6X27BB (PCM-30 applications), or NT6X27JA (M20B Japan applications) I/F circuits (as required) in slots 1-4 in both shelves of an IDTC.
- 2) One NT6X27AA/BB Circuit Pack provides two PCM-30 ports.
- One NT6X27JA Circuit Pack provides two M20B ports.
- The PCM-30 ports are assigned in the following order:

ICPP0 LOWER SHELF 05/19			ICPP1 UPPER SHELF 33/47		
CP POS.	SHELF	PORT ₁	CP POS.	SHELF	PORT ₁
04	05	0/1	04	33	0/1
04	19	2/3	04	47	2/3
03	05	4/5	03	33	4/5
03	19	6/7	03	47	6/7
02	05	8/9	02	33	8/9
02	19	10/11	02	47	10/11
01	05	12/13	01	33	12/13
01	19	14/15	01	47	14/15

Figure 1. PCM-30 Port Assignment Order.

The M20B ports are assigned in the following sequential order: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

- RUL3 1) Provide NT6X48AA as required.
- 2) When the NT6X48AA are provided, the following DS30A back-panel to bulkhead cables must also be provisioned based on CCS/Line requirements. These cables connect the MCTM back panels with the EMI bulkhead. Cables are equipped with ei-

ther 6 level-5 connectors (6 ports) or 4 level-5 connectors (4 ports) and shall be provisioned based on porting requirements.

6-port cables		Bulkhead Connector
NTNX3305	shelf 05	0P0
NTNX3313	shelf 05	0P1
NTNX3314	shelf 05	0P2
NTNX3315	shelf 05	0P3
NTNX3305	shelf 33	1P0
NTNX3313	shelf 33	1P1
NTNX3314	shelf 33	1P2
NTNX3315	shelf 33	1P3
4-port cables		
NTNX3306	shelf 05	0P4
NTNX3316	shelf 05	0P5
NTNX3317	shelf 33	0P6
NTNX3318	shelf 33	0P7
NTNX3308	shelf 05	1P4
NTNX3322	shelf 05	1P5
NTNX3323	shelf 33	1P6
NTNX3324	shelf 33	1P7

- 3) Provide two P0638259 bushings and two P0423631 washers with each DS30A cable assembly.
- 4) The following cables are to be provisioned when linking XPM shelf to the Network via DS-30 Links:

NTNX3309	shelf 05
NTNX3310	shelf 19
NTNX3311	shelf 33
NTNX3312	shelf 47

In addition one NT6X02UF Universal Fiber XPM Kit should be provided per module to attach DS-30 cables to the Back Panels for field upgrades.

- RUL4 1) Provide NT6X44EA as required.
- RUL5 1) When providing for international systems, the NT6X92CA 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 NT6X92CA provides up to thirty circuits.
- 2) The UTR is assignable to slots 08, 09, and 11 in the shelf. The first provisionable UTR pair is assigned to slot 08.

The second provisionable UTR pair is assigned to slot 09 (if the slot is not equipped with NT6X70AA). When equipping for the DMS-300, the second provisionable UTR pair is assigned to slot 11. One member of the UTR pair is assigned to the lower shelf in the module and it's mate is assigned to slot 08, 09, and 11 in the upper shelf of the same module.

- RUL6 1) Provide two (2) NT6X70AA Continuity Tone Detector (CTD) to handle CCS voice trunking for each DTC/LTC in which it is located.

The CTD is assignable to slot 09 in the shelf. One member of the CTD pair is assigned to the lower shelf in the module and it's mate is assigned to slot 09 in the upper shelf of the same module.

- RUL7 1) Provide two NT6X69LB for ENET.

- RUL8 1) For XPM+, required for BCS 36 software and above, provide the following:

NT7X80AA
NTMX77AA
NTMX71BA

- 2) XPM+ may be used with BCS 35 software, but is not required by BCS 35.

- 3) For NON-XPM+, BCS 35 or below, provide the following:

NT6X45BA/BC/BD
NT6X47AC
NT6X46BB

- RUL9 1) Provide one pair NT6X28AA PCM-30 Signaling CP per IDTC/ILTC controller if TS16 signaling is used on PCM link. The NT6X28AC is not available at this time, contact PLM prime for availability.

- 2) Provide one pair NT6X28AC PCM-30 Signaling CP per IDTC/ILTC controller if TS16 signaling is used on PCM link. The PCM-30 Signaling Interface CP is assignable in slot 19 in the shelf. One member of the pair is assigned to the lower shelf in the the module and it's mate is assigned to slot 19 in the uper shelf of the same module.

- RUL10 1) Provide NT6X42AA as required.

- 2) For Digital N5 functionality both the NT6X42CA and NT6X62DA must be provisioned together. (See Rule 24)
- RUL11 1) Provide NT6X41AB as required.
- RUL12 1) Provide NT6X40AD for new NON-FIBER DS30 interface. The NT6X40AC is to be Manufactured Discontinued.
- RUL13 1) Provide NT6X40FB & NT6X40GA for fiber interface. The NT6X40FA is to be Manufactured Discontinued.
- RUL14 1) Provide NT2X70AF to power the shelf.
- RUL15 1) Provide NT0X50AA in all blank slots.
- RUL16 1) Provide NT6X02AB when the upper CPC module is not provided.
- RUL17 1) Provide two door assemblies (2 left and 2 right, one set for front and one set for rear of cabinet).
- 2) Provide two cabinet type labels, one set for front, one set for rear of cabinet.
- 3) Provide one left door label (grey or brown) per cabinet.
- 4) Provide one right door label (grey or brown) per cabinet.
- RUL18 1) Provide one Earthquake Mounting Kit when installing frame in ATC zone 6 and 7; NEBS zone 4; and UBC zone 4. Use NTNX2540 kit for slab type flooring or NTNX2578 for computer flooring.
- 2) Provide one Frame Mounting Kit when installing frame in a Non-Earthquake zone. Use NTNX2579 kit for slab type flooring or NTNX2580 for computer flooring.
- RUL19 1) Provide CP designation labels as required.
- RUL20 1) NT6X02BU is MDd. Provide NT6X02BU Fiber Interface Hardware Assembly when fiber is required.
- 2) Each CPC module requires the following hardware for fiber interface:
- 1 NT6X02UF (AP in new production)
 - 1 NT6X0251
 - 1 P0738373

- 3) The NTNX33DA cabinet is equipped with two NT6X02UF in new production. ONLY provide the NT6X02UF for field upgrades.
- RUL21 1) Provide one (1) NT6X03DE XPM PLUS 3P upgrade wiring kit per module when XPM PLUS upgrade is required. (See Note 1). Replaced the NT6X01XE.
- RUL22 1) Provide one NTNX33WA for each NT6X70AA.
- RUL23 1) Provide one NTNX33DS DS-30 Cable Kit per cabinet when the MCTM-I is to interface to JNET cabinet.
- 2) Provide one NTNX33EE External DS-30 Cable Kit per cabinet when the MCTM-I is to interface to a custom frame Jnet.
- RUL24 1) For Digital N5 Functionality both the NT6X42CA and NT6X62DA must be provisioned together.
- 2) One NTNX33ST Wiring Kit per mod. is required for N5 Splitter Feature when the NT6X42CA and NT6X62DA are provisioned. The following straps are required:
- | From | To |
|---------------|---------------|
| ----- | ----- |
| XX-21 pin 70B | XX-11 pin 70B |
| XX-11 pin 70B | XX-08 pin 70B |
- RUL25 1) When CMR functionality is required provision the NT6X78AB.
- 2) When the NT6X78AB Class Modem Resource card is being provisioned on the shelf NT6X0211 release 70 or earlier provide one NT6X03DD Wiring kit per Module. The following straps are required:
- | From | To |
|---------------|---------------|
| ----- | ----- |
| XX-12 pin 18A | XX-11 pin 18A |
| XX-11 pin 18A | XX-09 pin 18A |
| XX-09 pin 18A | XX-08 pin 18A |
- RUL26 1) Provision (1) NT7X05AA Peripheral Loader CP per processor when required by customer.
- 2) A minimum of Software Load MSL06 is required when the NT7X05AA is provisioned.

INTERNATIONAL CABINET DTE FIBER

PEC CODE: NTNX33FA

CPC CODE: B0229954

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCTM

ENGINEERING DESCRIPTION: NTNX33FA is a general purpose Common Peripheral Controller Equipment cabinet for international applications which houses two independent dual shelf modules.

Each module may be provisioned as a

- PCM30 Digital Trunk Controllers (PDTC),

Or, with DMS100I software in the office, each module may be provisioned as a

- International Digital Trunk Controllers (IDTC).

A IDTC/PDTC may be provisioned to support copper interface (DS-30) or fiber interface (DS-512) to the network, PCM-30 links to other offices, Common Channel Signaling 7 (CCS7),

REFERENCE DOCUMENTATION: MSNX33FA 00 09

MARKETS: Applicable markets:

Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Deniece Land Dept. 3471 (PPK)

MAIN CONTACT: Deniece Land Dept. 3471 (PPK)

NTNX33FA EMA10-02-I01 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 15	ECM 648 01	ECDs 011-16850, 011-17311 & ET 110670.
93 04 08	ECM 648 02	Update frame abbreviation name as IDTE or PDTE.
93 07 08	ECM 648 03	Restore abbreviated name to MCTM.
93 07 14	ECM 648 04	Correct typo under EQUIPMENT FLAGGED: NT6X02TA should be NTNX33TA.
93 11 22	ECM 648 06	Correct omission of NT6X41AB and NT6X42AA as provisionable with Common CP NTNX33FB. Add XPM+ CPs NTMX77AA, NTMX71AA, NT7X80AA, Wiring List NT6X01WK, and Upgrade Kit NT6X01XE.
93 12 14	ECM 648 07	ECD 018-41629: Remove NTNX33SD,P0736273, Add NT6X02UF, NX3346, NX3347, NX3350, NX3351, NX3348, NX3349, NX3352, NX3353, NT6X0250, NT6X0251.
94 01 05	ECM 648 08	ET-45413: correct typo NT0X0251 to read NT6X0251.
95 04 03	ECM 648 09	Changes per ECD 024-93969.
95 08 04	ECM 648 11	MD NTNX33FA and NTNX33TA as per ECM 580
95 11 13	ECM 648 12	Changes per ET 32679 Change NT6X01WA to NTNX33WA.
96 21 16	ECM 648 13	Per ECD 024-95797 NTMX71AA is Replaced by NTMX71BA. NTMX71AA is not MD'd. Per ECD 024-95646 add NT6X03DD Upgrade kit. Add NT6X03DE XPM+ Upgrade kit to replace the NT6X01XE Kit. Add NT6X78AB CMR card.
96 04 19	ECM 648 14	Introduction of GTR, NT6X92EA.
97 03 14	ECM 704 02	Consolidation of ECM 648 issue 14. Show NT6X02UF used with DS30 Copper.

The International Cabinet DTE Fiber is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Two Inch Filler Plate	P0684448		1	65		AP
Frame Supervisory Panel	NT7X34DA	FSP	1	60		AP
CPCE Shelf Assembly	NT6X0211		1	X+14,X		AP
# International DTC Common CP	NTNX33TA	IDTC/PDTC		33,05		RUL1
# International DTC Common CP	NT6X02GJ	IDTC/PDTC		33,05		RUL1
# International DTC Common CP	NTNX33FB	IDTC/PDTC		33,05		RUL1
International DTC Common CP	NTNX33FC	IDTC/PDTC		33,05		RUL1
Filler Faceplate Kit	NT6X02AB			33		RUL1
# PCM-30 Interface CP	NT6X27AC			X+14,X	01-04	RUL2
PCM-30 Interface CP	NT6X27BB			X+14,X	01-04	RUL2
Filler Face Plate .875	NT0X50AA			X+14,X	01-04	RUL2
Filler Faceplate	NT0X50AA		4	X+14,X	05,06	AP-01
Filler Faceplate	NT0X50AA		4	X+14,X	05,06	AP-02
Filler Faceplate	NT0X50AA		4	X+14,X	05,06	AP-03
Universal Time Switch CP	NT6X44EA		2	X+14,X	07	AP-01
Universal Time Switch CP	NT6X44EA		2	X+14,X	07	AP-02
Universal Time Switch CP	NT6X44EA			X+14,X	07	RUL3
# Universal Tone Receiver CP	NT6X92CA			X+14,X	08,09	RUL4
Global Tone Receiver CP	NT6X92EA			X+14,X	08,09	RUL4
Filler Face Plate .875	NT0X50AA			X+14,X	08	RUL4
Class Modem Resource card	NT6X78AB			X+14,X	08	RUL16
Continuity Tone Detector CP	NT6X70AA			X+14,X	09	RUL4
Contin. Tone Detect. Wiring	NTNX33WA			X+14,X	09	RUL4
Filler Face Plate .875	NT0X50AA			X+14,X	09	RUL4
Class Modem Resource card	NT6X78AB			X+14,X	09	RUL16
# Protocol & Downld Messg CP	NT6X69LA		2	X+14,X	10	AP-01
# Protocol & Downld Messg CP	NT6X69LA		2	X+14,X	10	AP-02
Protocol & Downld Messg CP	NT6X69LB		2	X+14,X	10	RUL9
# Universal Tone Receiver CP	NT6X92CA			X+14,X	11	RUL4
Global Tone Receiver CP	NT6X92EA			X+14,X	11	RUL4
Filler Face Plate .875	NT0X50AA			X+14,X	11	RUL4
Class Modem Resource card	NT6X78AB			X+14,X	11	RUL16
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	12	AP-01
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	12	AP-02
LGC/DTC Processor CP	NT6X45BA			X+14,X	12	RUL5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
XPM Plus Processor CP	NTMX77AA		2	X+14,X	12	AP-04
XPM Plus Processor CP	NTMX77AA			X+14,X	12	RUL5
# SP Memory Plus CP	NT6X46BA		2	X+14,X	13	AP-01
# SP Memory Plus CP	NT6X46BB		2	X+14,X	13	AP-02
SP Memory Plus CP	NT6X46BB			X+14,X	13	RUL5
Bus Shorter CP	NT7X80AA		2	X+14,X	13	AP-04
Bus Shorter CP	NT7X80AA			X+14,X	13	RUL5
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	14	AP-01
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	14	AP-02
LGC/DTC Processor CP	NT6X45BA			X+14,X	14	RUL5
Filler Face Plate 0.875	NT0X50AA			X+14,X	14	RUL5
Desig. Label for NT0X50AA	P0578498			X+14,X	14	RUL5
MP Memory Plus CP	NT6X47AB		4	X+14,X	15,16	AP-01
MP Memory Plus CP	NT6X47AB		4	X+14,X	15,16	AP-02
MP Memory Plus CP	NT6X47AB			X+14,X	15,16	RUL5
Filler Face Plate 0.875	NT0X50AA			X+14,X	15,16	RUL5
Desig. Label for NT0X50AA	P0578498			X+14,X	15,16	RUL5
SP Memory Plus CP	NT6X46BA		2	X+14,X	17	AP-01
SP Memory Plus CP	NT6X46BB		2	X+14,X	17	AP-02
SP Memory Plus CP	NT6X46BB			X+14,X	17	RUL5
Bus Shorter CP	NT7X80AA		2	X+14,X	17	AP-04
Bus Shorter CP	NT7X80AA			X+14,X	17	RUL5
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	18	AP-01
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	18	AP-02
LGC/DTC Processor CP	NT6X45BA			X+14,X	18	RUL5
Filler Face Plate 0.875	NT0X50AA			X+14,X	18	RUL5
Desig. Label for NT0X50AA	P0578498			X+14,X	18	RUL5
PCM-30 Signalling I/F CP	NT6X28AA			X+14,X	19	RUL6
Filler Face Plate .875	NT0X50AA			X+14,X	19	RUL6
Filler Faceplate	NT0X50AA		2	X+14,X	20	AP-01
Filler Faceplate	NT0X50AA		2	X+14,X	20	AP-02
Filler Faceplate	NT0X50AA		2	X+14,X	20	AP-03
XPM+ Terminator Paddleboard	NTMX71BA		4	X+14,X	8R,20R	AP-04
XPM+ Terminator Paddleboard	NTMX71BA		4	X+14,X	8R,20R	RUL5
Channel Supervision Msg CP	NT6X42AA		2	X+14,X	21	AP-01
Channel Supervision Msg CP	NT6X42AA		2	X+14,X	21	AP-02
Channel Supervision Msg CP	NT6X42AA			X+14,X	21	RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	22	AP-01
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	22	AP-02
Speech Bus Formatter CP	NT6X41AB			X+14,X	22	RUL8
DS30 Network Interface CP	NT6X40AC		2	X+14,X	23	AP-01
DS30 Network Interface CP	NT6X40AC		2	X+14,X	23	AP-02
DS30 Network Interface CP	NT6X40AC			X+14,X	23	RUL9
# DS-512 Fiber I/F H/W Assy	NTNX33SD			X,X+14	23R	RUL9
# DS-512 Fiber I/F H/W Assy	NTFX33GD			X,X+14	23R	RUL9
UFxPM Kit	NT6X02UF			X,X+14	23R	RUL9
Fiber Adapter Plate	P0744826			X,X+14	23R	RUL9
Screw NPS 50580-01	P0670923			X,X+14	23R	RUL9
Grommet NPS90472	R0113159			X,X+14	23R	RUL9
Fiber Cable Conversion Kit	NT6X0251			X,X+14	23R	RUL9
# DS512 Network Interface CP	NT6X40CA			X,X+14	23	RUL9
# DS512 Paddle Board	NT6X40DA			X,X+14	23R	RUL9
DS512 Network Interface CP	NT6X40FA			X,X+14	23	RUL9
DS512 Paddle Board	NT6X40GA			X,X+14	23R	RUL9
Optical Fiber Danger Label	P0736273					AP-05
Filler Faceplate	NT0X50AA		2	X,X+14	24	AP-01
Filler Faceplate	NT0X50AA		2	X,X+14	24	AP-02
Filler Faceplate	NT0X50AA		2	X,X+14	24	AP-03
# Power Converter	NT2X70AD			X,X+14	25	RUL10
# Power Converter	NT2X70AE			X,X+14	25	RUL10
# Power Converter	NT2X70AE		2	X,X+14	25	AP-03
Power Converter	NT2X70AF			X,X+14	25	RUL10
Power Converter	NT2X70AF		2	X,X+14	25	AP-03
# XPM+ Upgrade Kit	NT6X01XE			X,X+14		RUL5
Wiring List With XPM+	NT6X01WL			5,47		RUL5
Wiring List Without XPM+	NT6X01WK			5,47		RUL5
Enhanced 3P XPM+ Upg. Kit	NT6X03DE		1	05,33		RUL17
Option Slot Upg. Kit for 3P	NT6X03DD		1			RUL18
Cooling Unit	NTNX27CA	CU	1	00		AP
Merid Cab. Common Framework	NTNX25AA	FW	1			AP
Anchor Kit E'qke Slab Flr	NTNX2540					RUL11
Anchor Kit E'qke Cmptr Flr	NTNX2578					RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Anchor Kit Non E.Q. Slab	NTNX2579					RUL11
Anchor Kit Non E.Q. Cmptr	NTNX2580					RUL11
Right Door Ass'y (brown)	NTNX2552					RUL12
Left Door Ass'y (brown)	NTNX2550					RUL12
Right Door Label (brown)	P0695230					RUL12
Left Door Label (brown)	P0699464					RUL12
Cabinet Label (brown)	P0699471					RUL12
Right Door Ass'y (grey)	NTNX2513					RUL12
Left Door Ass'y (grey)	NTNX2515					RUL12
Right Door Label (grey)	P0699158					RUL12
Left Door Label (grey)	P0677704					RUL12
Cabinet Label (grey)	P0687618					RUL12
DS30 Interface Cable Assy	NTNX3346			05		RUL9
DS30 Interface Cable Assy	NTNX3347			05		RUL9
DS30 Interface Cable Assy	NTNX3350			19		RUL9
DS30 Interface Cable Assy	NTNX3351			19		RUL9
DS30 Interface Cable Assy	NTNX3348			33		RUL9
DS30 Interface Cable Assy	NTNX3349			33		RUL9
DS30 Interface Cable Assy	NTNX3352			47		RUL9
DS30 Interface Cable Assy	NTNX3353			47		RUL9
PCM-30 Coaxial I/F Assy	NTNX3366			05, 33		RUL13
PCM-30 Coaxial I/F Assy	NTNX3369			19, 47		RUL13
PCM-30 Twist Pair I/F Assy	NTNX3370			X+14, X		RUL13
PCM-30 Twist Pair I/F Assy	NTNX3371			X+14, X		RUL13
Designation Labels	P0711579			05, 19		RUL13
Universal Ground Point	NT6X0250			60R		RUL14
Desig. Label (NT6X78AB)	P0731980					RUL15
Desig. Label (NT2X70AD)	P0664133					RUL15
Desig. Label (NT2X70AF)	P0809960					RUL15
Desig. Label (NT6X27AC)	P0706381					RUL15
Desig. Label (NT6X27BB)	P0739157					RUL15
Desig. Label (NT6X40CA)	P0710477					RUL15
Desig. Label (NT6X40FA)	P0729895					RUL15
Desig. Label (NT6X92CA)	P0677831					RUL15
Desig. Label for NT6X92EA	P0835224					RUL14
Desig. Label (NT6X70AA)	P0628358					RUL15
Desig. Label (NT6X28AA)	P0653635					RUL15
Desig. Label (NT7X80AA)	P0742962					RUL15
Desig. Label (NTMX77AA)	P0735417					RUL15

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AD NT6X27AC Pair NT6X40CA and NT6X40DA NT6X69LA NTNX33SD NTFX33GD		NT2X70AE NT6X27BB Pair NT6X40FA and NT6X40GA NT6X69LB NTFX33GD P0744826, P0670923, and R0113159 (NT6X02BU in NTFX33GD Not Used)
NT2X70AE NTNX33FB NTNX33TA	MD MD MD	NT2X70AF NTNX33FC NTNX33FB and provisionable CPs
NT6X02GJ	MD	NTNX33FB and provisionable CPs
NT6X01XE NT6X92CA	MD STD *	NT6X03DE 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.

* Meaning NT6X92CA is still STD. It will be replaced by NT6X92EA. Check availability before ordering the NT6X92EA.

NOTES:

- 1) One International DTC Common CP can be assigned on the frame to shelf mounting positions 47 and 33 and the other to shelf mounting positions 19 and 05. For one module X=19 and for the other module X=05.

RULES:

- AP 1) When PEC NTN33FA is ordered, these items are provided.
- AP-01 1) This PEC is always provided with NTN33TA International DTC Common CP.
- AP-02 1) This PEC is always provided with NT6X02GJ International DTC Common CP.
- AP-03 1) This PEC is always provided with NTN33FB/FC International DTC Common CP.
- AP-04 1) This item is always provided in NT6X03DE Enhanced 3P Back-plane XPM+ Upgrade Kit provisioned per RUL17.
- AP-05 1) This item is always provided in NT6X0251 Fiber Cable conversion kit provisioned per RUL9.
- RUL1 1) For each equipped module, provide:
- one (1) NTN33FB/FC International DTC Common CP.
- This Common CP fill contains always provided hardware for both shelves in the module.
- 2) If the second module is not equipped in the cabinet, provide:
- one (1) NT6X02AB CPC Module Filler Faceplate Kit.
- RUL2 1) For each equipped module, provide:
- minimum four (4) and maximum eight (8) NT6X27BB PCM 30 Interface CPs.
- Otherwise provide for each unequipped CP slot:
- one (1) NT0X50AA Filler Faceplate.

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

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

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

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

PCM-30 Signaling Interface: For each equipped DTC which supports PCM-30 links (NT6X27 PCM-30 CP's Provisioned), provide:

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

- RUL3 1) For each module equipped with NTN33FB/FC Common CP, provide:

- two (2) NT6X44EA Universal Time Switch CPs.

When the module is equipped with NTN33TA or NT6X02GJ Common CP, two NT6X44EA are always provided in the NTN33TA and NT6X02GJ.

- RUL4 1) For each equipped International DTC module, provide as per customer requirements:

- zero (0),
two (2) or
four (4) NT6X92CA Universal Tone Receiver (UTR) CPs.

One pair of Universal Tone Receiver CP's contains the equivalent of thirty receivers. The NT6X92CA UTR is a combined service circuit that can perform the function of Digitone Receiver for lines and MF Receiver for trunks.

(OR)

- 1A) Provide two (2) or four (4) NT6X92EA in slots 8, 9 or 11 per PDTC/PLGC module for DIGITONE receivers (LINES) or MF receivers (Trunks). Each of the NT6X92EA circuit pack provides tone reception for PCM 30 Channels. The NT6X92EA is a CCITT compliant tone receiver. (Complies with CCITT Recommendations Q.24, Q.323 and Q.455 for DTMF and MF tone reception) Check availability before ordering the NT6X92EA. DO NOT mix NT6X92 CP types on the same shelf. For DMS-300, the second UTR card may be equipped in slot 11 if slot 9 is occupied by an NT6X70AA Continuity Tone Detector. Otherwise equip in slots 8 & 9.

One member of each UTR pair is assigned to the lower shelf in the module and its mate is assigned to the upper shelf of the same module.

Provide UTR CP's if the module has incoming MF/MFC digital trunks, if the module has lines that originate as digitone lines, and/or if CCIS/CCS7 tones are received for continuity checking.

- 2) When this International DTC is handling CCIS/CCS7 voice trunking, provide for each equipped module, as per customer requirements:

- two (2) NT6X70AA Continuity Tone Detector CPs (in position 9).

NT6X70AA supports a Continuity Test (COT), and is recommended whenever analog facilities are employed in part or all of the transmission path. When the facility is end-to-end digital, this CP is not required since digital facilities employ other means of fault detection.

For each NT6X70AA ordered, provide:

- one (1) NTNX33WA Continuity Tone Detector Wiring.

- 3) Otherwise, for each unequipped CP slot 8 and/or 9 provide:

- one (1) NT0X50AA Filler Face Plate.

RUL5 1) For offices with the XPM (MP/SP) feature, provide for each International DTC module equipped with NTN33FB Common CP:

- six (6) NT6X45BA IDTC Processor CPs,
- four (4) NT6X47AB 4MB MP Memory CPs,
- four (4) NT6X46BB Signal Processor Memory Plus CPs, and
- one (1) NT6X01WK Wiring List Without XPM+ Application

When the module is equipped with NTN33TA or NT6X02GJ Common CP, six NT6X45BA, four NT6X47AB, and four NT6X46BA or four NT6X46BB respectively, are always provided in the NTN33TA and NT6X02GJ.

Alternatively, for offices with the XPM Plus (UP) feature, provide for each DTC module equipped with NTN33FB/FC Common CP:

- two (2) NTMX77AA XPM Plus Processor CPs,
- four (4) NTMX71BA XPM Plus Paddleboards, and
- eight (8) NT0X50AA Filler Face Plates
in CP slots 14, 15, 16 and 18,
- six (6) P0578498 Designation Labels for NT0X50AA
in CP slots 14, 16 and 18,
- four (4) NT7X80AA Bus Shorter CPs, and
- one (1) NT6X01WL Wiring List With XPM+ Application.

2) To convert one PDTC module equipped for XPM to XPM+ provide:(NT6X01XE kit is replaced by the NT6X03DE Upgrade Kit.)

- one (1) NT6X03DE Enhanced 3P Backplane XPM+ Upgrade Kit

The NT6X03DE kit includes:

- two (2) NTMX77AA XPM Plus Processor CPs,
- four (4) NTMX71BA XPM Plus Paddleboards,
- four (4) NT7X80AA Bus Shorter CPs, and
- backplane wiring modifications for XPM+.

The XPM CPs NT6X45BA, NT6X47AB, and NT6X46BA/BB must be removed before the NT6X03DE Enhanced 3P Backplane XPM+ Upgrade Kit is applied.

RUL6 1) For each equipped DTC which supports PCM-30 links (NT6X27 PCM-30 Interface CPs provided per RUL2), provide:

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

- 2) For each unequipped CP slot 19, provide:
- one (1) NT0X50AA Filler Face Plate.

RUL7 1) For each module equipped with NTNX33FB Common CP, provide:

- two (2) NT6X42AA Channel Supervision Msg CPs.

When the module is equipped with NTNX33TA or NT6X02GJ Common CP, two NT6X42AA are always provided in the NTNX33TA and NT6X02GJ.

RUL8 1) For each module equipped with NTNX33FB/FC Common CP, provide:

- two (2) NT6X41AB Speech Bus Formatter CPs.

When the module is equipped with NTNX33TA or NT6X02GJ Common CP, two NT6X41AB are always provided in the NTNX33TA and NT6X02GJ.

RUL9 1) When DS30 copper network interface is required in a non-ENET office, provide for each International DTC module equipped with NTNX33FB/FC Common CP:

- two (2) NT6X40AC packs DS30 Network Interface CPs, and
- two (2) NT6X69LB Msg Protcl & Downldbl Tone CPs, and
- one (1) NT6X02UF Fiber Bracket Kit (used in copper applications)
- for a module equipped on shelves 05 and 19,
 - one (1) NTNX3346 DS30 Interface Cable Assy,
 - one (1) NTNX3347 DS30 Interface Cable Assy,
 - one (1) NTNX3350 DS30 Interface Cable Assy,
 - one (1) NTNX3351 DS30 Interface Cable Assy, or
- for a module equipped on shelves 33 and 47,
 - one (1) NTNX3348 DS30 Interface Cable Assy,
 - one (1) NTNX3349 DS30 Interface Cable Assy,
 - one (1) NTNX3352 DS30 Interface Cable Assy,
 - one (1) NTNX3353 DS30 Interface Cable Assy.

When the module is equipped with NTNX33TA or NT6X02GJ Common CP, two NT6X40AC and two NT6X69LA are always provided in NTNX33TA and NT6X02GJ.

The NT6X69LB is recommended for use in all applications in place of the NT6X69LA. However, depending on availability, the NT6X69LA may be used when fiber network interface is not required.

Otherwise, when fiber network interface is required in an ENET office, provide for each equipped module equipped with NTN33FB/FC International DTC Common CP:

- one (1) NT6X02UF UFXPM Kit,
- one (1) NT6X0251 Fiber Cable Conversion Kit,
- two (2) P0744826 Fiber Adapter Plate,
- Four (4) P0670923 Screw NPS 50580-01,
- 0.2 Meters R0113159 Grommet NPS90472,
- two (2) NT6X40FA DS512 Network Interface CPs,
- two (2) NT6X40GA DS512 Paddle Boards, and
- two (2) NT6X69LB Msg Protcl & Downldbl Tone CPs.

For fiber network interface the NT6X69LB must be used (the NT6X69LA may not be substituted for NT6X69LB when fiber network interface is required).

The preferred bulkhead mounting slots for the NTFX33GD DS-512 Fiber Interface Hardware Assembly is 0P7 and 1P7 for module 0 and module 1 respectively.

- RUL10 1) For each module equipped with NTN33TA or NT6X02GJ Common CP, provide:
- two (2) NT2X70AF Power Converter CPs.

When the module is equipped with NTN33FC Common CP, two NT2X70AF are always provided in the NTN33FC.

- RUL11 1) When installing cabinet in ATC Zone 6 or 7, NEBS Zone 4 and UBC Zone R, provide:
- for slab-type flooring,
 - one (1) NTN2540 Earthquake Anchor Kit, or
 - for computer flooring,
 - one (1) NTN2578 Earthquake Anchor Kit.
- 2) When installing cabinet in a non-earthquake zone, provide:
- for slab-type flooring,
 - one (1) NTN2579 Earthquake Anchor Kit, or
 - for computer flooring,
 - one (1) NTN2580 Earthquake Anchor Kit.

RUL12 1) When specifying a brown cabinet, provide:

- two (2) NTNX2550 Left Door Assemblies and
- two (2) P0699464 Left Door Labels,
- two (2) NTNX2552 Right Door Assemblies,
- two (2) P0695230 Right Door Labels, and
- two (2) P0699471 Cabinet Type Labels.

One each for front and rear respectively.

2) When specifying a grey cabinet, provide:

- two (2) NTNX2515 Left Door Assemblies and
- two (2) P0677704 Left Door Labels,
- two (2) NTNX2513 Right Door Assemblies,
- two (2) P0699158 Right Door Labels, and
- two (2) P0687618 Cabinet Type Labels.

One each for front and rear respectively.

RUL13 1) For PCM-30 interface via coaxial cable, provide, for each equipped module:

- one (1) NTNX3366 Coaxial Interface Assembly (NTNX3366 connects shelves 05 and/or 33), and
- one (1) NTNX3369 Coaxial Interface Cable Assembly (NTNX3369 connects shelves 19 and/or 47).

2) For PCM-30 interface via twisted pair wiring, provide, for each equipped module:

- two (2) NTNX3370 PCM-30 Twisted Pair Interface Assembly,
- two (2) NTNX3371 PCM-30 Twisted Pair Interface Assembly, and

provide, for each cabinet:

- one (1) P0711579 Designation Labels sheet.

One sheet contains sufficient cable connector designation labels for both modules in the cabinet.

RUL14 1) For each cabinet, provide:

- one (1) NT6X0250 Universal Ground Point.

RUL15 1) Provide the appropriate designation label for each CP provided.

- RUL16 1) Provide two (2) NT6X78AB CMR cards per module when Class Modem Resource is required. The CMR cards available slots are 8,9, and 11 per shelf.
- RUL17 1) Provide one (1) NT6X03DE Enhanced 3P Backplane XPM+ Upgrade Kit per module to upgrade to XPM PLUS functionality. This new kit includes all the necessary circuit packs, paddleboards, and cable assemblies to upgrade on PDTC/PLGC module to XPM+. The kit includes the new NTMX71BA terminator paddleboards and the option slot straps. It also includes the wiring templates and labels that are necessary for performing the upgrade to XPM+. The "PLUS+" and "OPT" labels P0833380 and P0833381 are included for marking the frame/cabinet when the XPM+ upgrade is complete.
- RUL18 1) Provide one (1) NT6X03DD Option Slot Upgrade Kit per frame to upgrade to Option Slot Ready functionality. This kit gives the material and instructions for upgrading four NT6X0211 shelves (with NT6X0212 backplane) to "Option Slot Ready" functionality. This kit provides enough green 26 AWG wire to add the option slot straps to an entire frame or cabinet. Wiring templates are included to aid the installer in locating the correct pins. A label is also included which will be installed on the frame or cabinet next to the PEC and release. The label will have the letters "OPT" to signify "Option Slot Ready". This label provides a visual indication of whether the straps have been added to the frame. The presence of the kit in office records will provide a method of tracking to which frames these straps have been applied.

MERIDIAN CABINET LINE MODULE
UPPER ENHANCED LINE MODULE COMMON CP

PEC CODE: NTNX38LB

CPC CODE: B0227072

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTNX38LB Common CP equips the upper two shelves of the MCLM cabinet as an ELM (Enhanced Line Module). Each ELM has eight (8) Line Drawers. Each Line Drawer has two (2) Line Subgroups of thirty-two (32) line card slots each for a maximum capacity of 512 slots per ELM.

REFERENCE DOCUMENTATION: MSNX38AA 00 08

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

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

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

NTNX38LB EMA10-03-ELM-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 07	ECM 550 02	delete NT6x60CA from pack fill
94 04 13	ECM 550 03	Add NT6X51AB notes for CLASS
95 07 21	ECM 550 04	Replace NT6X51AB with NT6X51AC per ECD002-16193.
95 09 25	ECM 550 05	Replace the A0285591 with the A0384362 Line Drawer Cut-off Strap & to introduce the WLCs.

The Meridian Cabinet Line Module Upper Enhanced Line Module Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Line Drawer	NT6X05AA		8	33,47		AP
# Conn. Shorting Link	A0285591		8	05,19		AP
Conn. Shorting Link	A0384362		8	05,19		AP
Digroup Control CP	NT6X52AA		2	33,47	25	AP
Power Converter CP	NT6X53AA		2	33,47	21	AP
North American Ring Gen.	NT6X60CA		1	33	17	AP
LCM Processor CP	NT6X51AC		2	33,47	24	AP
Designation Strip	P0687853		2	33,47		AP
Desig. Label (NT6X51AC)	P0802359		2	33,47	24	AP
Desig. Label (NT6X60CA)	P0740744		1	33	17	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
A0285591	MD	A0384362

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 NTN38LB is ordered, these items are provided.

LOWER ENHANCED LINE MODULE COMMON CP

PEC CODE: NTNX38LA

CPC CODE: B0227071

RATING: Standard.

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTNX38LA Common CP equips the lower two shelves of the MCLM cabinet as an ELM (Enhanced Line Module). Each ELM has eight (8) Line Drawers. Each Line Drawer has two (2) Line Subgroups of thirty-two (32) line card slots each for a maximum capacity of 512 slots per ELM.

REFERENCE DOCUMENTATION: MSNX38AA 00 08

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

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

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

NTNX38LA EMA10-03-ELM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 07	ECM 550 02	DELETE NT6X60CA from pack fill
94 04 13	ECM 550 03	Add NT6X51AB notes for CLASS
95 07 21	ECM 550 04	Replace NT6X51AB with NT6X51AC per ECD002-16193.
95 09 25	ECM 550 05	Replace the A0285591 with the A0384362 Line Drawer Cut-off Strap & to introduce the WLCs.

The Lower Enhanced Line Module Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Line Drawer	NT6X05AA		8	05,19		AP
# Conn. Shorting Link	A0285591		8	05,19		AP
Conn. Shorting Link	A0384362		8	05,19		AP
Digroup Control CP	NT6X52AA		2	05,19	25	AP
Power Converter CP	NT6X53AA		2	05,19	21	AP
North American Ring Gen.	NT6X60CA		1	05	17	AP
LCM Processor CP	NT6X51AC		2	05,19	24	AP
Designation Strip	P0687853		2	05,19		AP
Desig. Label (NT6X51AC)	P0802359		2	05,19	24	AP
Desig. Label (NT6X60CA)	P0740744		1	05	17	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
A0285591	MD	A0384362

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 NTN38LA is ordered, these items are provided.

MERIDIAN CABINET LINE MODULE

PEC CODE: NTNX38AA

CPC CODE: B0225316

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCLM

ENGINEERING DESCRIPTION: The MCLM frame houses two (2) dual shelf ELM (Enhanced Line Module). Each ELM has eight (8) Line Drawers. Each Line Drawer has two (2) line subgroups of thirty-two (32) line card slots each, for a maximum capacity of 512 slots per ELM and a maximum 1024 slots per MCLM.

REFERENCE DOCUMENTATION: ISNX38AA 00 11

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

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

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

NTNX38AA EMA10-03-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 07	ECM 550 02	Updates to rules
94 04 13	ECM 550 03	EC 2-1549 Japan Ring Generator H/W kit
95 07 21	ECM 550 04	Replace NT6X51AB with NT6X51AC per ECD002-16193.
95 09 25	ECM 550 05	Replace the A0285591 with the A0384362 Line Drawer Cut-off Strap & to introduce the WLCs.
95 11 22	ECM 550 06	Implement ECD 18-37578 & include FLI OEM product information.
95 12 18	ECM 550 07	New logo label & provide correct Remote Migration ECD 002-16505.
97 10 28	ECM 550 08	Update the following per ECD 101-00375 1) Added provisioning of NT6X05DA ISDN Line Drawer For Remotes (ILDR). 2) Added provisioning of NT6X05AA LCM Line Drawer.

The Meridian Cabinet Line Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Common Framework	NTNX25AA	FW	1			AP
Frame Supervisory Panel	NTNX26BA	FSP	1	60		AP
Enhanced Fuse Panel	NTNX15AA		1	47	17	AP
ELM Shelf Assembly	NTNX1201	LCA	1	33		AP
Enhanced BP Term	NTNX1203		1	33		AP
ELM Upper Mod. CP Fill	NTNX38LB			47, 33		RUL1
Enhanced Fuse Panel	NTNX15AA		1	19	17	AP
ELM Shelf Assembly	NTNX1201	LCA	1	05		AP
Enhanced BP Term	NTNX1203		1	05		AP
ELM Lower Mod. CP Fill	NTNX38LA			19, 05		RUL1
Cooling Unit	NTNX27DA	CU	1	00		AP
Miscellaneous Line Cards	AS REQU.					RUL2
Ringling Generator CP	NT6X60CA		1	05, 33	17	RUL7
Designation Label (NT6X60CA)	P0740744		1	05, 33	17	RUL7
Japan General Use Line Card	NT6X33AA					RUL4
Desig. Label Japan Line Card	P0747140					RUL4
Ringling generator(Japan)	NT6X60BA			05, 33	17	RUL5
Ring. generator Desig. Label	P0744651			05, 33	17	RUL5
LCM Processor Circuit Pack	NT6X51AC			05, 19, 33, 47	24	RUL6
Desig. Label (NT6X51AC)	P0802359			05, 19, 33, 47	24	RUL6
Hardware kit for (Japan)	NTNX38RG			05, 33		RUL9
Ringling generator.						
Line Drawer Filler	NT6X05AX		X	33, 47		RUL8
ISDN Line Drawer For LCM	NT6X05DA		X	05, 19, 33, 47		RUL11
LCM Line Drawer	NT6X05AA		X	05, 19, 33, 47		RUL12
CONN SHORTING LINK 1X2 ARRAY	A0285591		X	05, 19, 33, 47		RUL12
Anchor Kit (Eq. Slab)	NTNX2540					RUL3
Anchor Kit (Eq. Com. Flr)	NTNX2578					RUL3
Anchor Kit (Non-Eq. Slab)	NTNX2579					RUL3
Anchor Kit (Non-Eq. Com.Flr)	NTNX2580					RUL3
Right Door Assy (Gray)	NTNX2513					RUL3
Left Door Assy (Gray)	NTNX2515					RUL3
Right Door Label(Gray)	P0699158					RUL3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Left Door Label(Gray)	P0677704					RUL3
# Left Door Label(Gray)	P0818848					RUL3
Cabinet Label (Gray)	P0687614					RUL3
Right Door Assy (Brown)	NTNX2552					RUL3
Left Door Assy (Brown)	NTNX2550					RUL3
Right Door Label (Brown)	P0699463					RUL3
# Left Door Label (Brown)	P0699464					RUL3
# Left Door Label (Brown)	P0818849					RUL3
Cabinet Label (Brown)	P0699473					RUL3
EMI Sock Kit	NT0X32DH					RUL10
End Panel Assembly (Left)	NT0X3297					RUL10
End Panel Assembly (Right)	NT0X3298					RUL10
End Guard Assembly (Green)	NT0X73DF					RUL10
End Guard Assembly (Grey)	NT0X73DG					RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
P0699464	MD	P0818849
P0677704	MD	P0818848

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

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

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

NOTES:

- 1) The MCLM must be located in an aisle with a MCAM cabinet
for MTA.
- 2) Maximum of eight (8) MCLM in lineup with MCAM as first cab-
inet.

- 3) Must be within 45 cable feet of the serving MCTM cabinet.
- 4) Does not require direct cabling to network.
- 5) All six DS30A links for each ELM are hardwired to a single connector on the rear bulkhead. The MTA cable is also hardwired to the backpanel and has sufficient length to connect to the MCAM.
- 6) All tip-ring cables from the line drawers are hardwired to EMI filtered, fifty-pin telephony connectors on the rear bulkhead.
- 7) The NT6X60CA ringing generator has been removed from the packfill provisioning and now has it's own provisioning rule(RUL7).
- 8) The MCLM 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 extension.

RULES:

AP 1) When PEC NTN38AA is ordered, these items are provided.

RUL1 1) NTN38LA - ELM Lower Module
NTN38LB - ELM Upper Module

RUL2 1) Miscellaneous Line Cards use standard line card provisioning rules for NT6X05AA ONLY:

EQUIPMENT	PEC	QTY	SLOT QTY
World Line Card Type A	NT6X17BA	A/R	1 Slot/Card
World Line Card Type B	NT6X18BA	A/R	1 Slot/Card
P-Phone Line Card	NT6X21AD	A/R	1 Slot/Card
Single Slot Data LC	NT6X71BA	A/R	1 Slots/Card
Type E Line Card	NT6X19AA	A/R	1 Slot/Card
Power Converter	NT6X20AA	A/R	2 Slots/Card
Async. I/F Line Card	NT6X76AA	A/R	2 Slots/Card
IBERT Test Card	NT6X99AA	A/R	2 Slots/Card
Japan General Use LC	NT6X33AA	A/R	1 Slot/Card

- 2) For ILDR (NT6X05DA) 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, 13, 15, 17.
00-13	Lower LSG's 2, 4, 6, 12, 14, 16.

- RUL3
- 1) Provide one (1) earthquake mounting kit when installing frame in ATC zone 6-7, NEBS zone 4 and UBC zone 4. Use NTN2540 for slab type flooring or NTN2578 for computer flooring.
 - 2) Provide one frame mounting kit when installing in a non-earthquake zone. Use NTN2579 for slab floors and NTN2580 for computer floors.
 - 3) Provide two doors left and right per cabinet.
 - 4) Provide two doors labels left and right per cabinet.
 - 5) Provide two cabinet type label per cabinet.
- RUL4
- 1) Provide one NT6X33AA circuit pack and one Designation label P0747140 per line card slot as required for the Japan market.

NEW CABINETS:

- RUL5
- 1) Provide one NT6X60BA circuit pack and one Designation label P0744651 per ELM module as required for the Japan market. The NT6X60BA must ALWAYS be provisioned in both lower and upper modules(ELM00 &ELM01) whether line drawers are being provisioned or not.

FIELD UPGRADES:

- RUL6
- 1) The NTN38LM has been replaced by the NT6X51AC which is to be used for all new cabinets and field replacements. The NT6X51AC provides protection against inrush current on the active side when maintenance is being performed on the inactive side. The need for the Capacitor Upgrade Kit (NTN38LM) is eliminated when the NT6X51AC is used and therefore should be removed. Also provide the Designation Label (P0802359) for the NT6X51AC. Spare NT6X51AA/AB must also be replaced with the NT6X51AC at the time of upgrade.

- RUL7 1) Provide one NT6X60CA circuit pack and one Designation label P0740744 per ELM module as required. The NT6X60CA must ALWAYS be provisioned in both lower and upper modules(ELM00 &ELM01)whether line drawers are being provisioned or not.
- RUL8 1) Provide one NT6X05AX Line Drawer Filler for every line drawer space left unprovisioned.
- RUL9 1) Provide one NTN38RG hardware kit for field upgrades of existing cabinets only when provisioning NT6X60BA Japan Ringing generator.
- RUL10 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 MCLM(s) power, ABS, alarm, MTA cabling in the new lineup. The DS30A cables are seperate shielded cables and will be terminated on the normal MCLM bulkhead ports. This hardware is only required on (1) end of the lineup.
- 1) Select & provision (1) either left or right End Panel of the MCLM in the new extension lineup and minimize distance to the controller. See NOTE8.
 - 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 End Panel.

ISDN LINE DRAWER FOR REMOTES - ILDR (NT6X05DA):

- RUL11 1) For Remote ISDN applications ONLY, provide one (1) NT6X05DA ISDN Line Drawer per ELM shelf, (LCA) with a maximum two (2) per ELM Module.

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 for Remotes be provisioned in the right hand drawer position of each shelf in physical position 1 and 5 (logical drawers 02/03 and 12/13) in order to permit an an optimal heat dispersion in the LCM.

However, ISDN Line Drawers for Remotes can be provisioned in any drawer position on the ELM shelf except physical position 0 and 4 (logical drawers 00/01 and 10/11). This because BIC Relay Test diagnostics require those positions for systems use.

Quantity and mounting positions of the NT6X05DA are job engineerable. Maximum per ELM Line Module is TWO. Maximum per MCLM cabinet is FOUR.

Provision NTB27AA ISDN 2B1Q Single Slot Line Cards in Line Drawers NT6X05DA as per Rule 2.

Mounting positions are as follows:

SHELF MOUNTING POS		CONTAINING LINE DRAWERS

MODULE XX 0	05	LSG 02-07
	19	LSG 12-17
MODULE XX 1	33	LSG 02-07
	47	LSG 12-17

+-----+		
ELM	SHELF	LINE DRAWER
MODULE	MOUNTING POSITION	LOGICAL SUB-GROUPS
+-----+		
0	05-05	LSG 02 to 03
0	05-09	LSG 04 to 05
0	05-13	LSG 06 to 07
0	19-05	LSG 12 to 13
0	19-09	LSG 14 to 15
0	19-13	LSG 16 to 17
+-----+		
1	33-05	LSG 02 to 03
1	33-09	LSG 04 to 05
1	33-13	LSG 06 to 07
1	47-05	LSG 12 to 13
1	47-09	LSG 14 to 15
1	47-13	LSG 16 to 17
+-----+		

Implement the ISDN Line Drawer for Remotes (ILDR) in the MCLM & MCRU. Maximum of 2 line drawers per ELM 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 ($4 \times 6 + 4 \times 2 + 1$), 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.

- RUL12 1) Provide up to four (4) NT6X05AA LCM Line Drawers per LCA shelf, along with one (1) A0285591 CONN SHORTING LINK 1X2 ARRAY per Line Drawer for all NON-ISDN applications.

MCNM LOWER NUMBERED NETWORK PACKFILL

PEC CODE: NTNX40LC

CPC CODE: B0242807

| RATING: STD

| REPLACES: NTNX40LA

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTNX40LC Common Pack Fill provides the lower numbered of two networks on the MCNM cabinet.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: Joe Bragg Dept. 6457 (RNS)

NTNX40LC EMA10-08-DSN-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 06 14	----- ECM 491 06	Previous history not available Replace the NT2X70AE with the NT2X70AF per ECD002-16217.

The MCNM Lower Numbered Network Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Shelf Filler Kit	NT6X02AB		1	19, 47		AP
Network Port CP	NT8X12AA		16	5, 33	1-4, 14-17	AP
Crosspoint CP	NT8X13AA		8	5, 33	5, 7, 10, 12	AP
Filler Face Plate	NT0X50AA		16	5, 33	6, 8, 11, 13, 18, 20, 22, 24	AP
Test Code CP	NT8X14AA		2	5, 33	9	AP
Net P-Side Msg Processor	NT3X75BA		2	5, 33	19	AP
Network Control Processor	NT3X74BB		2	5, 33	21	AP
Network Clock CP	NT3X76AC		2	5, 33	23	AP
#Power Converter	NT2X70AF		2	5, 33	25	AP
Designation Strip	P0687851		2	5, 33		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE	MD	NT2X70AF

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

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

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

NOTES:

RULES:

AP 1) When PEC NTNX40LC is ordered, these items are provided.

MCNM HIGHER NUMBERED NETWORK PACKFILL

PEC CODE: NTNX40LD

CPC CODE: B0242808

| RATING: STD

| REPLACES: NTNX40LB

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTNX40LD Common Pack Fill provides the higher numbered of two networks on the MCNM cabinet.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: Joe Bragg Dept. 6457 (RNS)

NTNX40LD EMA10-08-DSN-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 06 14	----- ECM 491 06	Previous history not available Replace the NT2X70AE with the NT2X70AF per ECD002-16217.

The MCNM Higher Numbered Network Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network Port CP	NT8X12AA		16	19,47	1-4, 14-17	AP
Crosspoint CP	NT8X13AA		8	19,47	5,7, 10,12	AP
Filler Face Plate	NT0X50AA		16	19,47	6,8,11, 13,18, 20,22, 24	AP
Test Code CP	NT8X14AA		2	19,47	9	AP
Net P-Side Msg Processor	NT3X75BA		2	19,47	19	AP
Network Control Processor	NT3X74BB		2	19,47	21	AP
Network Clock CP	NT3X76AC		2	19,47	23	AP
#Power Converter	NT2X70AF		2	19,47	25	AP
Designation Strip	P0687851		2	19,47		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE	MD	NT2X70AF

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

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

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

NOTES:

RULES:

AP 1) When PEC NTNX40LD is ordered, these items are provided.

MERIDIAN CABINET NETWORK MODULE

PEC CODE: NTNX40AA

CPC CODE: B0225313

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCNM

ENGINEERING DESCRIPTION: The MCNM frame houses up to two (2) 64-port network modules.

REFERENCE DOCUMENTATION: MSNX40AA 00 05

MARKETS: Applicable markets:

US

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

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

CONTACT: NTC: David Cheek Dept. 6457 (RNS)

NTNX40AA EMA10-08-000 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 and XPM+ information
94 04 07	ECM 492 10	Note: These changes were made to MNET sections that didn't belong to MCNM. Add NTNX40BB Cable kit. Corrected contents due to MNET engineering manual section having been included in this section since 92 10 01
95 06 14	ECM 491 06	Replace the NT2X70AE with the NT2X70AF per ECD002-16217.

The Meridian Cabinet Network Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Supervisory Panel	NT7X34AA	FSP	1	60		AP
DSN Shelf Assembly	NT8X1101		1	47		AP
#DSN Pack Fill	NTNX40LB	DSN		47		RUL1
DSN Pack Fill	NTNX40LD	DSN		47		RUL1
DSN Shelf Assembly	NT8X1101		1	33		AP
#DSN Pack Fill	NTNX40LA	DSN		33		RUL1
DSN Pack Fill	NTNX40LC	DSN		33		RUL1
DSN Shelf Assembly	NT8X1101		1	19		AP
#DSN Pack Fill	NTNX40LB	DSN		19		RUL1
DSN Pack Fill	NTNX40LD	DSN		19		RUL1
DSN Shelf Assembly	NT8X1101		1	05		AP
#DSN Pack Fill	NTNX40LA	DSN		05		RUL1
DSN Pack Fill	NTNX40LC	DSN		05		RUL1
Network Con Processor CP	NT3X74BB		1	05, 19 33, 47	21	RUL6
Network Clock CP	NT3X76AC		1	05, 19 33, 47	23	RUL7
Cooling Unit	NTNX27CA	CU	1	00		AP
Common Framework	NTNX25AA	FW	1			AP
Anchor Kit (EQ Slab Flr)	NTNX2540					RUL2
Anchor Kit (EQ Com. Flr)	NTNX2578					RUL2
Anchor Kit (Non-EQ Slab)	NTNX2579					RUL2
Anchor Kit (Non-EQ Com.Flr)	NTNX2580					RUL2
Right Door Assy (Gray)	NTNX2513					RUL3
Left Door Assy (Gray)	NTNX2515					RUL3
Door Label Right (Gray)	P0699158					RUL4
Door Label Left (Gray)	P0677704					RUL4
Right Door Assy (Brown)	NTNX2552					RUL3
Left Door Assy (Brown)	NTNX2550					RUL3
Door Label Right (Brown)	P0695230					RUL4
Door Label Left (Brown)	P0699464					RUL4
Cabinet Type Label (Gray)	P0687613					RUL4
Cabinet Type Label (Brown)	P0699474					RUL4
Filler Shelf Kit	NT6X02AB					RUL5
Desig. Label for NT3X74BB	P0686094					RUL8
Desig. Label for NT3X76AC	P0677803					RUL9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Network cable kit	NTNX40BB					RUL10
25 Pin cover plate	P0686749					RUL10
Screw, thread forming	P0670923					RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX40LA NTNX40LB	MD MD	NTNX40LC NTNX40LD

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) Can be placed in any aisle except first aisle (Aisle A).
- 2) Must have aisle space for four MCTM cabinets (see MCTM rules).
- 3) Can serve MCAM and MCGM from any aisle via bulkhead to bulkhead cabling and MCSM cabinets within same aisle.

RULES:

- AP
- 1) When PEC NTNX40AA is ordered, these items are provided.
 - 2) The two networks on the MCNM frame have the following numbering convention:

NET0:XX	Shelf 33	Network XX, Plane 0
NET1:XX	Shelf 05	Network XX, Plane 1
NET0:YY	shelf 47	Network YY, Plane 0
NET1:YY	shelf 19	Network YY, Plane 1

The first network on the frame is provisioned on shelves 33 and 05. The second network on the frame is provisioned on shelves 47 and 19.

- 3) Note that with the provisioning of the third network (NET:02), pack fill NTN20LC must be provided on the MCCM bays (see MSNX20AA, RUL3).

RUL1 1) The DSN Pack Fill NTN40LC on shelves 05 and 33, provisions the third, fifth, seventh and ninth networks (networks 02, 04, 06 and 08).

The DSN Pack Fill NTN40LD on shelves 19 and 47 provisions the fourth, sixth, eighth and tenth networks (networks 03, 05, 07 and 09).

RUL2 1) Provide one (1) earthquake mounting kit when installing frame in ATC zone 6-7, NEBS zone 4 and UBC zone 4. Use NTN2540 for slab type flooring or NTN2578 for computer flooring.

- 2) Provide one frame mounting kit when installing in a non-earthquake zone. Use NTN2579 for slab floors and NTN2580 for computer floors.

RUL3 1) Provide two (2) NTN2513 right (gray) doors for gray cabinets.

- 2) Provide two (2) NTN2515 left (gray) doors for gray cabinets.

- 3) Provide two (2) NTN2550 left (brown) doors for brown cabinets.

- 4) Provide two (2) NTN2552 right (brown) doors for brown cabinets.

RUL4 1) Provide two (2) P0677704 Door labels left for gray cabinets.

- 2) Provide two (2) P0699158 Door labels right for gray cabinets.

- 3) Provide two (2) P0699464 Door labels left for brown cabinets.
 - 4) Provide two (2) P0695230 Door labels right for brown cabinets.
 - 5) Provide one (1) P0687613 cabinet type label (gray) for the cabinet.
 - 6) Provide one (1) P0699474 cabinet type label (brown) for the cabinet.
- RUL5 1) Provide one (1) NT6X02AB filler kit when the upper network module is not provided.
- RUL6 1) Provide one (1) NT3X74BB CP on each shelf where there is a network in the installed base MCNM cabinet for SuperNode upgrades.
- RUL7 1) Provide one (1) NT3X76AC CP on each shelf where there is a network in the installed base MCNM cabinet for SuperNode upgrades.
- RUL8 1) Provide one (1) P0686094 Desig. Label for each NT3X74BB provisioned.
- RUL9 1) Provide one (1) P0677803 Desig. Label for each NT3X76AC provisioned.
- RUL10 1) Provide one (1) NTNX40BB cable kit if additional network ports are needed on the bulkhead to connect to other cabinets in the system.
- 2) Provide eight (8) P0686749 25 pin cover plates if NTNX40BB is not provisioned.
 - 3) Provide sixteen (16) P0670923 screws if NTNX40BB is not provisioned.

MERIDIAN CABINET REMOTE MODULE COMMON CP

PEC CODE: NTNX17BD

CPC CODE: B0242775

RATING: Standard.

REPLACES: NTNX17BA

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTNX17BD is the common XPM+ circuit pack fill to equip the MCRM bay. It contains circuit packs for one RMM and one two-shelf RCC.

REFERENCE DOCUMENTATION: SLNX17BD 00 02

MARKETS: Applicable markets:

US

ISSUE AUTHOR: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: Joe Bragg Dept. 6457 (RNS)

NTNX17BD EMA10-10-MCRM-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 04 26	----- ECM 326 08	Previous history not available Replace NT2X70AE with NT2X70AF with new pack fills
95 06 22	ECM 326 09	Make changes per ECD002-16256.
95 07 19	ECM 326 10	Make changes per ET26029,ET26009 & ET26019.

The MERIDIAN CABINET REMOTE MODULE COMMON CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Group CODEC	NT2X59AA		1	49	1	AP
RMM Control CP	NT6X74AB		1	49	2	AP
Signal Scan CP	NT0X10AA		1	49	3	AP
Incoming/Outgoing Test Trk	NT2X90AD		1	49	4	AP
Balance Network	NT2X77AA		1	49	4	AP
LTU Analog Card	NT2X10AB		1	49	5	AP
Signal Distribution CP	NT2X57AA		1	49	7	AP
Incoming/Outgoing Test Trk	NT2X90AD		1	49	8	AP
Balance Network	NT2X77AA		1	49	8	AP
LTU Analog Card	NT2X10AB		1	49	9	AP
MTA CP	NT3X09BA		1	49	11	AP
Multi O/P Power Converter	NT2X09AA		1	49	17	AP
Filler Face Plate	NT0X50AA		1	49	19	AP
Power Converter CP	NT2X06AB		1	49	20	AP
Designation Strip	P0705923		1	49		AP
Desig. Label (NT0X50AA)	P0578498		1	49	19	AP
Filler Face Plate	NT0X50AA		13	35 21	8-12, 24 5, 8-12, 24	AP
DS30A Interface CP	NT6X48AA		4	35, 21	6, 7	AP
Unified Processor	NTMX77AA		2	35, 21	13	AP
Time Switch CP	NT6X44AA		2	35, 21	15	AP
Universal Tone Receiver	NT6X92BC		2	35, 21	16	AP
CPP Message Protocol CP	NT6X69AC		2	35, 21	17	AP
Host Link Formatter	NT6X72AB		2	35, 21	19	AP
XPM Bus Terminator	NTMX71AA		2	35, 21	19R	AP
Power Converter	NT2X70AF		2	35, 21	25	AP
Designation Strip	P0705923		2	35, 21		AP
Desig. Label (NT0X50AA)	P0578498		13	35 21	8-12, 24 5, 8, 12, 24	AP
Desig. Label (NT6X69AC)	P0710476		2	35, 21	17	AP
Desig. Label (NT6X72AB)	P0733837		2	35, 21	19	AP
Desig. Label (NTMX77AA)	P0735417		2	35, 21	13	AP
Desig. Label (NT6X92BC)	P0737431		2	35, 21	16	AP
Desig. Label (NT2X70AF)	P0809960		2	35, 21	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

RULES:

AP 1) When PEC NTN17BD is ordered, these items are provided.

MCRM PACKFILL

PEC CODE: NTNX17BF

CPC CODE: B0242777

RATING: Standard.

REPLACES: NTNX17BC

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTNX17BF provides XPM+ circuit packs for the MCRM bay. It contains circuit packs for a two shelf RCC module.

REFERENCE DOCUMENTATION: SLNX17BF 00 02

MARKETS: Applicable markets:

US

ISSUE AUTHOR: Joe Bragg Dept. 6457 (RNS)

MAIN CONTACT: Joe Bragg Dept. 6457 (RNS)

NTNX17BF EMA10-10-MCRM-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 04 26	----- ECM 326 08	Previous history not available Replace NT2X70AE with NT2X70AF with new pack fills
95 06 22	ECM 326 09	Make changes per ECD002-16256.
95 07 19	ECM 326 10	Make changes per ET26029,ET26009 & ET26019.

The MCRM PACKFILL is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT0X50AA		13	35 21	8-12, 24 5, 8-12, 24	AP
Unified Processor	NTMX77AA		2	35, 21	13	AP
Time Switch	NT6X44AA		2	35, 21	15	AP
Universal Tone Receiver	NT6X92BC		2	35, 21	16	AP
CPP Message Protocol	NT6X69AC		2	35, 21	17	AP
Host Link Formatter	NT6X72AB		2	35, 21	19	AP
XPM Bus Terminator	NTMX71AA		2	35, 21	19R	AP
Power Converter	NT2X70AF		2	35, 21	25	AP
Designation Strip	P0740493		2	35, 21		AP
Desig. Label (NT0X50AA)	P0578498		13	35, 21	8-12, 24 5, 8-12, 24	AP
Desig. Label (NTMX77AA)	P0735417		2	35, 21	13	AP
Desig. Label (NT6X92BC)	P0737431		2	35, 21	16	AP
Desig. Label (NT2X70AF)	P0809960		2	35, 21	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) Use this Circuit Packfill for XPM+ applications. The packfill provides the latest circuit pack vintages.
- 2) When using this pack fill (NTNX17BF) also provide the following circuit packs to the RMM shelf:

Equipment	PEC	QTY	SHF	POS
Group CODEC	NT2X59AA	1	49	1
RMM Control	NT6X74AB	1	49	2
SC - Scanner	NT0X10AA	1	49	3
INC/OUT Test Trunk	NT2X90AD	1	49	4
Balanced Network	NT2X77AA	1	49	4
LTU or MTU Analog Crd	rule 1	1	49	5
LTU or MTU Digital Crd	rule 1	1	49	6
SD - Signal Distributor	NT2X57AA	1	49	7
Balanced Network	NT2X77AA	1	49	8
Inc/Out Test Trunk	NT2X90AD	1	49	8
LTU Analog Card	rule 1	1	49	9
LTU Digital Card	rule 1	1	49	10
Metalic Test Access	NT3X09BA	1	49	11
Metalic Test Access	rule 1	1	49	12
Metalic Test Access	rule 1	1	49	13
Maintenance Trunk Card	rule 1	1	49	14
Maintenance Trunk Card	rule 1	1	49	15
Maintenance Trunk Card	rule 1	1	49	16
Power Converter	NT2X09AA	1	49	17
Filler 0.875	NT0X50AA	1	49	19
Power Converter	NT2X06AB	1	49	20

- 3) If CLASS Modem Resource is required for Calling Number Delivery/Calling Number Display (CND) provide two NT6X78AB circuit packs in slot 18 of shelves 21 and 35. Because of power restrictions, the use of NT6X50AA/ABs with the NT6X78AB is restricted. The sum of C-side and P-side NT6X50AA/ABs must NOT exceed 10 in the RCC.

RULES:

AP 1) When PEC NTNX17BF is ordered, these items are provided.

RUL1 1)With out any provisionable equipment (see below) the RMM is equipped with 14 Scan Points (SC), 14 Signal Distribution Points (SD), 2 Incoming/Outgoing Test Trunks attached to the LTUs/MTUs to provide talk monitor feature, 1 MTA for a capacity of four line modules, and LTU or MTU.

2)The following is provisionable on the RMM shelf:

Equipment	PEC	Position	Note
Scan Card Signal Distribution Card Incoming Test Trunk Inc/Out Test Trunk Balanced Network	NT0X10AA NT2X57AA NT3X04AA NT2X90AD NT2X77AA	49-14,15, 16	Provisionable (The NT2X77AA a daughter board to the NT2X90A
Metalic Test Access	NT3X09BA	49-12	Provide for th MCLM or MCLME
Metalic Test Access	NT3X09BA	49-13	Provide for fi MCLM or MCLME
LTU Analog Card LTU Digital Card or MTU Analog Card MTU Digital Card	NT2X10AB NT2X11AD NT2X10BA NT2X11BA	49-5,9 49-6,10 49-5 49-6	Provide either or two LTUs or MTU and no LTU 1 LTU = 1 circ 1 MTU = 2 circ
Filler Card 1.12	NT0X50AC	49-3 to 49-16	Provide if slo unequipped

MERIDIAN CABINET POWER MODULE COMMON CP

NTNX24LB

RATING: Standard

ABBREVIATION NAME: N/A

| ENGINEERING DESCRIPTION: The NTNX24LB is the common circuit pack fill for the Meridian Cabinet Power Module bay application. It consists of all non-provisionable Circuit packs on the MCPM bay including PTM 00, PTM 01 and the DDU. This packfill is for DMS250 applications.

REFERENCE DOCUMENTATION: N/A

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

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TM Interface	NT2X45AB		1	47	1	AP
TM Processor	NT0X70AC		1	47	2	AP
TM Control	NT2X53AA		1	47	3	AP
Group CODEC	NT2X59AA		1	47	4	AP
OAU Dead Sys w/Comm Audible	NT3X82AB		1	47	5	AP
Miscellaneous Scanner	NT0X10AA		1	47	7	AP
Signal Distribution CP	NT2X57AA		1	47	8	AP
TTU Cont & Signal Gen	NT2X47AD		1	47	9	AP
TTU Digital Filter	NT2X56AB		1	47	10	AP
TTT Signal Generator	NT1X90AA		1	47	11	AP
PCM Level Meter	NT2X96AA		1	47	12	AP
101 Communication Line	NT5X30AA		1	47	13	AP
Com Balance Network	NT2X77AA		1	47	13	AP
Jack Ended Trunk	NT1X54AA		1	47	14	AP
Multi O/P Power Converter	NT2X09AA		1	47	17	AP
Filler Face Plate	NT0X50AA		1	47	19	AP
Power Converter CP	NT2X70AE		1	47	20	AP
Designation Strip	P0687820		1	47		AP
TM Interface	NT2X45AB		1	33	1	AP
TM Processor	NT0X70AC		1	33	2	AP
TM Control	NT2X53AA		1	33	3	AP
Group CODEC	NT2X59AA		1	33	4	AP
OAU Dead Sys w/Comm Audible	NT3X82AB		1	33	5	AP
101 Communication Line	NT5X30AA		1	33	6	AP
Com Balance Network	NT2X77AA		1	33	6	AP
101 Communication Line	NT5X30AA		1	33	7	AP
Com Balance Network	NT2X77AA		1	33	7	AP
Jack Ended Trunk	NT1X54AA		1	33	8	AP
Misc Scanner	NT0X10AA		1	33	9	AP
Signal Distribution	NT2X57AA		1	33	10	AP
TTT Signal Generator	NT1X90AA		1	33	13	AP
PCM Level Meter	NT2X96AA		1	33	14	AP
Multi O/P Power Converter	NT2X09AA		1	33	17	AP
Filler Face Plate	NT0X50AA		1	33	19	AP
Power Converter CP	NT2X70AE		1	33	20	AP
Designation Strip	P0687819		1	33		AP

RULE:

AP 1) When PEC NTN24LB is ordered, these items are provided.

| MCAM COMMON CP

NTNX37NF

RATING: Standard

ABBREVIATION NAME: MCAM

ENGINEERING DESCRIPTION: This MCAMII Common CP will equip two (2) PTM, (one each on shelf position 33 and 47) and two (2) STM (one odd, one even numbered) on shelf position 19. This packfill NTNX37NF replaces MCAM Common CP NTNX37NA.

REFERENCE DOCUMENTATION: N/A

The MCAM Common Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate 1.125	NT0X50AC		1	47	01,02	AP
TM Control	NT4X65AB		1	47	3	AP
Group Codec Card	NT2X59AA		1	47	4	AP
OAU Dead SYS/Comm Aud	NT3X82AB		1	47	5	AP
OAU alarm transfer cp	NT3X83AA		1	47	6	AP
Miscellaneous Scanner	NT0X10AA		1	47	7	AP
MTA	NT3X09BA		1	47	8	AP
102 mw Test	NT1X00AB		1	47	11	AP
Signal Dist'n Card	NT2X57AA		1	47	12	AP
LTU - Analog Cp	NT2X10AB		1	47	13	AP
LTU - Digital Cp	NT2X11AD		1	47	14	AP
IC/OG Test Trunk	NT2X90AD		1	47	15	AP
900 Ohm Com Bal NTWK DtrBrd	NT2X77AA		1	47	15	AP
ROH Tone Gen	NT1X00AC		1	47	16	AP
Multi O/P Pwr Conv	NT2X09AA		1	47	17	AP
Filler Face Plate .875	NT0X50AA		1	47	19	AP
Power Converter	NT2X70AE		1	47	20	AP
PTM Des'n Strip (Shf 47)	P0715602		1	47		AP
Filler Face Plate 1.125	NT0X50AC		1	33	01,02,07	AP
TM Control	NT4X65AB		1	33	3	AP
Group Codec Card	NT2X59AA		1	33	4	AP
OAU Dead SYS/Comm Aud	NT3X82AB		1	33	5	AP
Call Waiting Tone Gen	NT3X68AC		1	33	6	AP
TTT-Test Sig Gen	NT1X90AA		1	33	9	AP
PCM Level Meter	NT2X96AA		1	33	10	AP
TTU-trans Test Module	NT2X47AD		1	33	11	AP
Dig'l Filter Cp	NT2X56AB		1	33	12	AP
Multi O/P Pwr Conv	NT2X09AA		1	33	17	AP
Filler Face Plate .875	NT0X50AA		1	33	19	AP
Power Converter	NT2X70AE		1	33	20	AP
PTM Des'n Strip (Shf 33)	P0715601		1	33		AP
Filler Face Plate 2.22	NT0X50AG		1	19	1	AP
Filler Face Plate 1.25	NT0X50AC		1	19	3	AP
TM Control Card	NT4X65AB		2	19	4,12	AP
4 Chnl Mf RCVR	NT2X48BA		1	19	16	AP
Group Codec Card	NT2X59AA		1	19	17	AP
Filler Face Plate .875	NT0X50AA		1	19	19	AP
4 Chnl DTMF RCVR	NT2X48BB		1	19	18	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter	NT2X70AE		1	19	20	AP
STM/STM Des'n Strip	P0701719		1	19		AP

RULES:

AP 1) When PEC NTN37NF is ordered, these items are provided.

| MCAM COMMON CP

NTNX37NB

RATING: Standard

ABBREVIATION NAME: MCAM

ENGINEERING DESCRIPTION: This MCAM common CP will equip one (even numbered, left side) of two STM on the STM/STM shelf at position 19.

REFERENCE DOCUMENTATION: N/A

The NTN37NB MCAM Common Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MCAM Various Shf Des Strip	P0701713		1	47		AP
MCAM Various Shf Des Strip	P0701713		1	33		AP
Filler Face Plate 2.22	NT0X50AG		1	19	1	AP
Filler Face Plate 1.25	NT0X50AC		8	19	3,12-18	AP
TM Control Card	NT4X65AB		1	19	4	AP
Filler Face Plate .875	NT0X50AA		1	19	19	AP
Power Converter	NT2X70AE		1	19	20	AP
STM/XXX Des'n Strip	P0701762		1	19		AP

RULE:

AP 1) When PEC NTN37NB is ordered, these items are provided.

| MCAM COMMON CP

NTNX37NC

RATING: Standard

ABBREVIATION NAME: MCAM

ENGINEERING DESCRIPTION: This MCAM common CP will equip one (odd numbered, right side) of two STM on the STM/STM shelf at position 19.

REFERENCE DOCUMENTATION: N/A

The NTN37NC MCAM Common Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MCAM Various Shf Des Strip	P0701713		1	47		AP
MCAM Various Shf Des Strip	P0701713		1	33		AP
TM Control Card	NT4X65AB		1	19	12	AP
XXX/STM MCAM Des Strip	P0701718		1	19		AP

AP 1) When PEC NTN37NC is ordered, these items are provided.

| MCAM COMMON CP

NTNX37NG

RATING: Standard

ABBREVIATION NAME: MCAM

ENGINEERING DESCRIPTION: This MCAMII Common CP NTNX37NG will equip one PTM on Shelf Position 33. This packfill NTNX37NG replaces MCAM Common Cp NTNX37ND.

REFERENCE DOCUMENTATION: N/A

The NTN37NG MCAM Common Packfill is comprised of the following:

EQUIPMENT		PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	1.125	NT0X50AC		2	33	1, 2	AP
TM Control Card		NT4X65AB		1	33	3	AP
Group Codec		NT2X59AA		1	33	4	AP
Multi O/P Pwr Conv		NT2X09AA		1	33	17	AP
Filler Face Plate	.875	NT0X50AA		1	33	19	AP
Power Converter		NT2X70AE		1	33	20	AP
MCAM PTM Shf Des Strip		P0715603		1	33		AP

RULES:

AP 1) When PEC NTN37NG is ordered, these items are provided.

| MCAM COMMON CP

NTNX37NH

RATING: Standard

ABBREVIATION NAME: MCAM

ENGINEERING DESCRIPTION: This MCAMII Common CP NTNX37NH will equip one PTM on Shelf Position 47. This packfill NTNX37NH replaces MCAM Common CP NTNX37NE.

REFERENCE DOCUMENTATION: N/A

The NTN37NH MCAM Common Packfill is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate 1.125	NT0X50AC		2	47	1,2	AP
TM Control Card	NT4X65AB		1	47	3	AP
Group Codec	NT2X59AA		1	47	4	AP
Multi O/P Pwr Conv	NT2X09AA		1	47	17	AP
Filler Face Plate .875	NT0X50AA		1	47	19	AP
Power Converter	NT2X70AE		1	47	20	AP
MCAM PTM Shf Des Strip	P0715603		1	47		AP

RULES:

AP 1) When PEC NTN37NH is ordered, these items are provided.

MCAM STM PACKFILL

PEC CODE: NTNX37NK

CPC CODE: B0242801

| RATING: Standard.

REPLACES: NTNX37NG and NTNX37NH

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: NTNX37NK common packfill provides common circuit packs for the STM, shelf 19 in the MCAM cabinet. The NTNX37NK replaces NTNX37NB and NTNX37NC packfills.

REFERENCE DOCUMENTATION: MSNX37AB 00 14

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Phuong Ly Dept. 6457 (RCH)

MAIN CONTACT: Phuong Ly Dept. 6457 (RCH)

NTNX37NK EMA10-12-MCAM-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 05 06	ECM 523 07	Replace NTNX37NB/NC by NTNX37NK

The MCAM STM PACKFILL is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate 2.22	NT0X50AG		1	19	01	AP
Filler Faceplate 1.12	NT0X50AC		1	19	03	AP
TM Control Card	NT4X65AB		1	19	12	AP
Group Codec CP	NT2X59AA		1	19	17	AP
Filler Faceplate 0.875	NT0X50AA		1	19	19	AP
+/- 5/12V PWR CONV 50 AMPS	NT2X70AF		1	19	20	AP
Des'n Label (NT2X59AA)	P0643110		1			AP
Des'n Label (NT2X70AF)	P0809960		1			AP
Des'n Strip	P0710762		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) First note.
- 2) Second note.

RULES:

AP 1) When PEC NTN37NK is ordered, these items are provided.

MCAM MTM PACKFILL

PEC CODE: NTNX37NR

CPC CODE: B0242806

| RATING: Standard.

REPLACES: NTNX37NG and NTNX37NH

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: NTNX37NR common packfill provides common circuit packs for the PTM, shelves 33 and 47 in the MCAM cabinet. The NTNX37NR replaces NTNX37NG and NTNX37NH packfills.

REFERENCE DOCUMENTATION: MSNX37AB 00 14

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Phuong Ly Dept. 6457 (RCH)

MAIN CONTACT: Phuong Ly Dept. 6457 (RCH)

NTNX37NR EMA10-12-MCAM-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 05 06	ECM 523 07	Replace NTNX37NG/NH by NTNX37NR

The MCAM MTM PACKFILL is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate 1.12	NT0X50AC		2	XX	01-02	AP
TM Control Card	NT4X65AB		1	XX	03	AP
Group Codec CP	NT2X59AA		1	XX	04	AP
Multi Output Pwr Converter	NT2X09AA		1	XX	17	AP
Filler Faceplate 0.875	NT0X50AA		1	XX	19	AP
+/- 5/12V PWR CONV 50 AMPS	NT2X70AF		1	XX	20	AP
Designation label	P0715603		1	XX		AP
Des'n Label (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) First note.
- 2) Second note.

RULES:

AP 1) When PEC NTN37NR is ordered, these items are provided.

MERIDIAN CABINET AUXILIARY MODULE

PEC CODE: NTNX37AB

CPC CODE: B0230013

RATING: Standard

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCAM

ENGINEERING DESCRIPTION: The Meridian Cabinet Auxiliary Module (MCAM) can house two PTMs (which can be configured for OAU function), one dual STM shelf and a Power Distribution Panel (PDP).

The MCAM II has five (5) Common CP configurations allowing for the provisioning of all four (4) modules (2 STMs, 2 PTMs) or any combination of single modules. The EDRAM wiring kit allows for the possible provisioning of: 3 EDRAM, 2 CTM or MAXIMUM OF 3 CTM/EDRAM combinations. 1 STM and 2 PTM.

REFERENCE DOCUMENTATION: ISNX37AB STM 00 ISS 15
MSNX37AB

MARKETS: Applicable markets:

US
CANADA
WIRELESS

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

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

CONTACT: George Levisky Dept. 2D69 (RICH)

NTNX37AB EMA10-12-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 03	ECM 492 04	Update DRAM Controller and add international service circuits
93 03 16	ECM 492 06	Add international service circuits
93 05 05	ECM 492 07	Add EDRAM NT1X80AA and associated EDRAM Wiring Option NTNX37ED Remove IDRAM from STM shelf Add MTM Wiring Kit NTNX37WA Add MTM Controller Wiring Kit NTNX37WW Add ATD Wiring Kit NT5X29HK Add DS30 MTM & STM Internal Wiring Option NTNX37LK Add DS30 MTM & STM Bulkhead Wiring Option NTNX37LJ
93 10 26	ECM 492 08	Change EDRAM NT1X80AA slot positions per ECD 002-15441 Add the following international A-LAW circuit packs per ECD 002-15441: A-LAW DRAM Controller (IDRAM) CP, NT1X75DA Loop Around TST Line CP, NT2X75BA A-LAW CODEC and Tones (Turkey), NT2X59BA OAU DEAD SYS w/ Common Audible, NT3X82AB OAU Alarm Transfer, NT3X83AA Add PDP Fuse Position Labels for MTXD Add A-LAW TST SIG GEN, NT1X90BA
94 06 06	ECM 492 12	Remove NT3X83AA from shelf 33 slot 6. Clarify rules for NTNX37LK and NTNX37LJ kits.
94 09 02	ECM 523 02	Add NT1X81AA to left STM position.
94 10 19	ECM 492 16	Update MTM circuit pack assignments for proper even/odd allocation.
94 11 16	ECM 523 03	Fix many MTM/ STM rules.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 02 16	ECM 492 18	Corrections per ET 58703.
95 04 25	ECM 492 19	JEL: EC 024-93972 replaces the NT2X70AE with the NT2X70AF. Also make EDRAM clarifications and rules changes per Phuong Ly.
95 06 06	ECM 492 20	JEL: Corrects EDRAM/CTM provisioning rules for the MCAM cabinet.
95 08 24	ECM 492 24	DKG: Clarify Rule 49 to resolve ET 73553.
95 10 23	ECM 523 05	Update rule for NT2X72AA
95 12 01	ECM 492 27	JEL: Clarify rule 25.2.
95 12 18	ECM 523 06	Update door label per ECD 002-16400 1) Replace P0669464 by P0818848 2) Replace P0677704 by P0818849
96 05 14	ECM 523 07	Update the following per ECD 002-16415 1) Replace NTN37NB/NC by NTN37NK 2) Replace NTN37NG/NH by NTN37NR 3) Replace NT2X10AB/BA by NT2X10BB 4) Replace NT2X11AD by NT2X11BA 4) Replace 1X75AA&1X77AA by NT1X80AA 5) Correct the provisioning rules for NTN37LJ, NTN37LK, NTN37WA and PDP label P0696905.
96 12 09	ECM 523 08	Add provisioning rules for EDRAM16 and CTM-J for Japan market per ECD 2-17067. Update NT3X82AB and NT3X83AA to NT3X82AJ and NT3X83AC.
97 01 20	ECM 523 09	Add NTlogo P0728012 per SR RR68781.
97 05 27	ECM 523 10	Update the following per ECD 011-22366 1) Replace NT1X00AB/AC/AE by NT1X80AA 2) Replace NT1X90AA/BA & NT2X47AD/BA by NT4X45AA. 3) Replace NT2X56AB/BA & NT2X96AA/BA by NT4X45AA.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 08 07	ECM 523 11	4) Replace CSA Label P0749878 by P0869723. Update the following per ECD: 101-00417 1) UnMD'd NT1X90BA, NT2X47BA, NT2X56BA and NT2X96BA. 2) Correct Rating of Equipment Flagged with '#'.

The Meridian Cabinet Auxiliary Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MERIDIAN CABINET AUXILIARY MODULE - ALWAYS PROVIDED EQUIPMENT						
Frame Supv Panel	NT7X34AA	FSP	1	60		AP
Package Trk Mod Shelf Assy	NT2X58CA	PTM	1	47		AP
Package Trk Mod Shelf Assy	NT2X58CA	PTM	1	33		AP
Service Trk Mod Shelf Assy	NT7X3004	STM	1	19		AP
Power Dist'n Panel	NTNX24BA	PDP	1	01		AP
MCAM PDP Label (NTNX24BA)	P0696905					AP
Meridian Cabinet Assy	NTNX25AA	FW	1			AP
NTNX37AB COMMON CIRCUIT PACKFILL AND WIRING OPTIONS						
MCAM Common CP (Even # STM)	NTNX37NB					RUL1
MCAM Common CP (Odd # STM)	NTNX37NC					RUL1
MCAM Common CP (2 STM/2 PTM)	NTNX37NF					RUL1
MCAM Common CP (PTM SH 33)	NTNX37NG					RUL1
MCAM Common CP (PTM SH 47)	NTNX37NH					RUL1
MCAM STM common packfill	NTNX37NK					RUL1
MCAM MTM common packfill	NTNX37NR					RUL1
MTM Wiring Kit (NT4X65AB)	NTNX37WA		1	33,47		RUL1
MTU CKT Packs Wiring Kit	NTNX37WB		1			RUL31
CODEC Wiring Option	NTNX29AC			19		RUL28
MTM CONT Wiring Kit	NTNX37WW		1	33,47		RUL1
ATD Wiring Kit (NT5X29AA)	NT5X29HK			19		RUL1
DRAM Wiring Option	NTNX29AB			19		RUL26
EDRAM Wiring Option Kit	NTNX37ED			19		RUL49
EDRAM Wiring Option Kit	NTNX37EE			19		RUL49
for NT2X45 MTM controllers						
DS30 MTM & STM Int. Bhkd	NTNX37LK					RUL1
DS30 MTM & STM Ext. Bhkd	NTNX37LJ					RUL1
MU_LAW - PROVISIONABLE CIRCUIT PACKS: SHELF 47						
Trunk Module Interface	NT2X45AB			47	1	RUL51
Trunk Module Processor	NT0X70AA			47	2	RUL51
Trunk Module DCM Control	NT2X53AA			47	3	RUL51
Filler Face plate	NT0X50AC			47	5-16	RUL24
TM Control Card	NT4X65AB			47	3	RUL25
Group CODEC Card	NT2X59AA			47	4	RUL25
Transmission Termination	NT2X71AA			47	5-16	RUL4
Loop Around TST Line	NT2X75AA			47	5-16	RUL9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Tone GEN PRE-EMPT	NT3X68AA			47	5-15	RUL20
MULT FREQ Dual Tone GEN	NT3X68AB			47	5-15	RUL20
Tone GEN Call Waiting	NT3X68AC			47	5-15	RUL17
# OAU DEAD SYS W/ Common AUD	NT3X82AB			47	5	RUL39
OAU DEAD SYS W/ Common AUD	NT3X82AJ			47	5	RUL39
OAU Alarm Transfer	NT3X83AA			47	6	RUL39
OAU Alarm Transfer	NT3X83AC			47	6	RUL39
101 COMM TST Line	NT5X30AA			47	5-7, 12, 16	RUL2
Balance Network 900 Ohm	NT2X77AA			47		RUL3
PCM Level Meter	NT2X96AA			47	6-16	RUL15
Tops CNTL PROC	NT3X02AA			47	5-15	RUL16
Tops Digital CONT	NT3X03AA			47	6-16	RUL16
# 102 TST Milliwatt	NT1X00AB			47	5-16	RUL10
# ROH Tone GEN	NT1X00AC			47	5-16	RUL11
# Transmission TST Unit	NT2X47AD			47	5-15	RUL14
# Digital Filter	NT2X56AB			47	6-16	RUL14
# TTT TST Signal GEN	NT1X90AA			47	5-15	RUL15
Enhanced Digital Test Unit	NT4X45AA			47	5-16	RUL12
Jack Ended Trunk	NT1X54AA			47	6, 7, 12, 16	RUL7
Scan Dist'n Card	NT2X57AA			47	7, 12, 16	RUL6
Miscellaneous Scanner	NT0X10AA			47	7, 12, 16	RUL5
TRK - 4W E&M Type D-1	NT2X72AA			47	7, 12, 16	RUL37
Metallic TST Access	NT3X09BA			47	8-11	RUL23
LTU - Analog CP	NT2X10AB			47	13	RUL31
LTU - Digital CP	NT2X11AD			47	14	RUL31
MTU - Analog CP	NT2X10BB			47	13	RUL31
MTU - Digital CP	NT2X11BA			47	14	RUL31
INC/OG TST Trunk	NT2X90AD			47	15	RUL8
MULTI Output Power CONV	NT2X09AA			47	17	RUL52
Filler Face plate	NT0X50AA			47	19	RUL24
+/- 5/12V PWR CONV 50 AMPS	NT2X70AF			47	20	RUL52

MU_LAW - PROVISIONABLE CIRCUIT PACKS: SHELF 33

Trunk Module Interface	NT2X45AB			33	1	RUL51
Trunk Module Processor	NT0X70AA			33	2	RUL51
Trunk Module DCM Control	NT2X53AA			33	3	RUL51
TM Control Card	NT4X65AB			33	3	RUL25
Group CODEC Card	NT2X59AA			33	4	RUL25
Transmission Termination	NT2X71AA			33	5-16	RUL4
Loop Around TST Line	NT2X75AA			33	5-16	RUL9
Tone GEN PRE-EMPT	NT3X68AA			33	5-15	RUL20
MULT FREQ Dual Tone GEN	NT3X68AB			33	5-15	RUL20
Tone GEN Call Waiting	NT3X68AC			33	5-15	RUL17

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# OAU DEAD SYS W/ Common AUD	NT3X82AB			33	5	RUL39
OAU DEAD SYS W/ Common AUD	NT3X82AJ			33	5	RUL39
101 COMM TST Line	NT5X30AA			33	5-12, 16	RUL2
Balance Network 900 Ohm	NT2X77AA			33		RUL3
PCM Level Meter	NT2X96AA			33	6-16	RUL15
Tops CNTL PROC	NT3X02AA			33	5-15	RUL16
Tops Digital CONT	NT3X03AA			33	6-16	RUL16
# 101 TST Milliwatt	NT1X00AB			33	5-16	RUL10
# ROH Tone GEN	NT1X00AC			33	5-16	RUL11
# Transmission TST Unit	NT2X47AD			33	5-15	RUL14
# Digital Filter	NT2X56AB			33	6-16	RUL14
# TTT TST Signal GEN	NT1X90AA			33	5-15	RUL15
Enhanced Digital Test Unit	NT4X45AA			33	5-16	RUL12
Jack Ended Trunk	NT1X54AA			33	6-12, 16	RUL7
Scan Dist'n Card	NT2X57AA			33	7-9, 12, 16	RUL6
Miscellaneous Scanner	NT0X10AA			33	7-9, 12, 16	RUL5
TRK - 4W E&M Type D-1	NT2X72AA			33	7-13, 16	RUL37
LTU - Analog CP	NT2X10AB			33	13	RUL31
MTU - Analog CP	NT2X10BA			33	13	RUL31
MTU - Analog CP	NT2X10BB			33	13	RUL31
LTU - Digital CP	NT2X11AD			33	14	RUL31
MTU - Digital CP	NT2X11BA			33	14	RUL31
INC/OG TST Trunk	NT2X90AD			33	15	RUL8
Filler Face plate	NT0X50AG			33	17	RUL24
MULTI Output Power CONV	NT2X09AA			33	17	RUL52
Filler Face plate	NT0X50AA			33	19	RUL24
Filler Face plate	NT0X50AE			33	20	RUL24
+/- 5/12V PWR CONV 50 AMPS	NT2X70AF			33	20	RUL52

MU_LAW - PROVISIONABLE CIRCUIT PACKS: SHELF 19

Filler Face Plate	NT0X50AG			19	1	RUL25
Filler Face Plate	NT0X50AC			19	3	RUL25
TM Control Card	NT4X65AB			19	4, 12	RUL25
EDRAM CP	NT1X80AA			19	5, 6, 7	RUL49
CTM CP	NT1X81AA			19	5, 6, 7	RUL49
# DRAM Controller CP	NT1X75BA			19	5	RUL26
# DRAM Memory CP	NT1X77AA			19	6-11	RUL26
# 101 Test Milliwatt	NT1X00AB			19	5-8, 10, 11, 13-16, 18	RUL10
# ROH Tone GEN	NT1X00AC			19	5-8, 10, 11, 13-16, 18	RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Loop Around TST	NT2X75AA			19	5-8,10, 11,13-16, 18	RUL9
6 Party CONF CP	NT3X67AA			19	5-8,10 13-16,18	RUL29
Tone GEN PRE-EMPT	NT3X68AA			19	5-8,10, 13-16,18	RUL20
MULT FREQ Dual Tone GEN	NT3X68AB			19	5-8,10, 13-16,18	RUL20
Tone GEN Call Waiting	NT3X68AC			19	5-8,10, 13-16,18	RUL17
Service Observing CP	NT5X29AB			19	5,8,13, 16	RUL32
Audio Tone DET	NT5X29AC			19	5,8,13, 16	RUL32
4 Channel MF RECVR	NT2X48BA			19	5-8,10, 13-16,18	RUL30
4 Channel DTMF RECVR	NT2X48BB			19	5-8,10, 13-16,18	RUL30
Tops Digital CNTL	NT3X03AA			19	6,14	RUL16
Tops CNTL PROC	NT3X02AA			19	7,15	RUL16
Group CODEC Card	NT2X59AA			19	9,17	RUL25
Filler Face Plate	NT0X50AA			19	19	RUL25
+/- 5/12V PWR CONV 50 AMPS	NT2X70AF			19	20	RUL25

A_LAW - PROVISIONABLE CIRCUIT PACKS: SHELF 47

Scan Dist'n Card	NT2X57AA			47	7,12,16	RUL6
Miscellaneous Scanner	NT0X10AA			47	7,12,16	RUL5
Metallic TST Access	NT3X09BA			47	8-11	RUL23
# LTU - Analog CP	NT2X10AB			47	13	RUL31
# LTU - Digital CP	NT2X11AD			47	14	RUL31
MTU - Analog CP	NT2X10BB			47	13	RUL31
MTU - Digital CP	NT2X11BA			47	14	RUL31
EDRAM16 CP	NT1X80BA			47	5,6,7	RUL49
CTM-J CP	NT1X81BA			47	5,6,7	RUL49
EDRAM16/CTM-J wiring kit	NTNX37EF					RUL49
INC/OG TST Trunk	NT2X90AD			47	15	RUL8
MULTI Output Power CONV	NT2X09AA			47	17	RUL52
Filler Face plate	NT0X50AA			47	19	RUL24
+/- 5/12V PWR CONV 50 AMPS	NT2X70AF			47	20	RUL52
Trunk Module Interface	NT2X45BA			47	1	RUL47
Trunk Module PROC (UK)	NT0X70AA			47	2	RUL45

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
INT'L Trunk Module PROC	NT0X70BA			47	2	RUL45
Trunk Module CNTL	NT2X53AA			47	3	RUL46
CODEC & Tones (Turkey)	NT2X59BA			47	4	RUL48
TM CODEC E/W BT Tone	NT2X59CA			47	4	RUL48
CODEC E/W CEP Tone	NT2X59DA			47	4	RUL48
A-Law Test Signal Gen CP	NT1X90BA			47	5-15	RUL15
Transmission TST Unit	NT2X47BA			47	5-15	RUL21
PCM Level Meter	NT2X96BA			47	6-16	RUL15
Digital Filter	NT2X56BA			47	6-16	RUL21
Enhanced Digital Test Unit	NT4X45AA			47	5-16	RUL12
CONF Tone GEN	NT3X68BA			47	5-15	RUL41
MULT FREQ Dual Tone GEN	NT3X68BB			47	5-15	RUL41
Call Waiting Tone GEN	NT3X68BC			47	5-15	RUL41
# OAU DEAD SYS W/ Common AUD	NT3X82AB			47	5	RUL39
OAU DEAD SYS W/ Common AUD	NT3X82AJ			47	5	RUL39
# OAU Alarm Transfer	NT3X83AA			47	6	RUL39
OAU Alarm Transfer	NT3X83AC			47	6	RUL39
# 102 TST mW -20 dB Int'l	NT1X00AE			47	5-16	RUL22

A_LAW - PROVISIONABLE CIRCUIT PACKS: SHELF 33

# LTU - Analog CP	NT2X10AB			33	13	RUL31
# MTU - Analog CP	NT2X10BA			33	13	RUL31
MTU - Analog CP	NT2X10BB			33	13	RUL31
# LTU - Digital CP	NT2X11AD			33	14	RUL31
MTU - Digital CP	NT2X11BA			33	14	RUL31
INC/OG TST Trunk	NT2X90AD			33	15	RUL8
Filler Face plate	NT0X50AC			33	5-16	RUL24
MULTI Output Power CONV	NT2X09AA			33	17	RUL52
Filler Face plate	NT0X50AA			33	19	RUL24
+/- 5/12V PWR CONV 50 AMPS	NT2X70AF			33	20	RUL52
Trunk Module Interface	NT2X45BA			33	1	RUL47
Trunk Module PROC (UK)	NT0X70AA			33	2	RUL45
INT'L Trunk Module PROC	NT0X70BA			33	2	RUL45
Trunk Module CNTL	NT2X53AA			33	3	RUL46
CODEC & Tones (Turkey)	NT2X59BA			33	4	RUL48
TM CODEC E/W BT Tone	NT2X59CA			33	4	RUL48
CODEC E/W CEP Tone	NT2X59DA			33	4	RUL48
A-LAW Test Signal Gen CP	NT1X90BA			33	5-15	RUL15
Transmission TST Unit	NT2X47BA			33	5-15	RUL21
PCM Level Meter	NT2X96BA			33	6-16	RUL15
Digital Filter	NT2X56BA			33	6-16	RUL21
Enhanced Digital Test Unit	NT4X45AA			33	5-16	RUL12
CONF Tone GEN	NT3X68BA			33	5-15	RUL41
MULT FREQ Dual Tone GEN	NT3X68BB			33	5-15	RUL41

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Call Waiting Tone GEN	NT3X68BC			33	5-15	RUL41
OAU DEAD SYS W/ Common AUD	NT3X82AB			33	5	RUL39
OAU DEAD SYS W/ Common AUD	NT3X82AJ			33	5	RUL39
# 102 TST mW -20 dB Int'l	NT1X00AE			33	5-16	RUL22

A-LAW - PROVISIONABLE CIRCUIT PACKS: SHELF 19

Filler Face Plate	NT0X50AG			19	1	RUL25
Filler Face Plate	NT0X50AC			19	3	RUL25
Filler Face Plate	NT0X50AA			19	19	RUL25
TM Control Card	NT4X65AB			19	4,12	RUL25
EDRAM CP	NT1X80AA			19	5,6,7	RUL49
CTM CP	NT1X81AA			19	5,6,7	RUL49
EDRAM16 CP	NT1X80BA			19	5,6,7	RUL49
CTM-J CP	NT1X81BA			19	5,6,7	RUL49
EDRAM16/CTM-J wiring kit	NTNX37EF					RUL49
# A-Law Dram Controller CP	NT1X75DA			19	5	RUL26
# DRAM Memory CP	NT1X77AA			19	6-11	RUL26
# ROH Tone Generator	NT1X00AC			19	5-8,10, 11,13-16, 18	RUL10
# 102 TST mW -20 dB Int'l	NT1X00AE			19	5-8,10, 11,13-16, 18	RUL22
Tops Digital CNTL	NT3X03AA			19	6,14	RUL16
Tops CNTL PROC	NT3X02AA			19	7,15	RUL16
CODEC & Tones (Turkey)	NT2X59BA			19	9,17	RUL48
TM CODEC E/W BT Tone	NT2X59CA			19	9,17	RUL48
CODEC E/W CEP Tone	NT2X59DA			19	9,17	RUL48
+/- 5/12V PWR CONV 50 AMPS	NT2X70AF			19	20	RUL25
Loop Around Test Line	NT2X75BA			19	5-8,10, 13-16,18	RUL9
Audio Tone DET (For UK)	NT2X48CC			19	5-8,10, 13-16,18	RUL43
6 Party CONF CP	NT3X67BA			19	5-8,10, 13-16,18	RUL29
CONF CKT w/ TBI Tone	NT3X67BB			19	5-8,10, 13-16,18	RUL29
CONF Tone GEN	NT3X68BA			19	5-8,10, 13-16,18	RUL41
MULT FREQ Dual Tone GEN	NT3X68BB			19	5-8,10, 13-16,18	RUL41
Call Waiting Tone GEN	NT3X68BC			19	5-8,10,	RUL41

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Audio Tone DET (For UK)	NT5X29BA			19	13-16, 18 5, 8, 13, 16	RUL44
Filler Face Plate	NT0X50AA			XX		RUL24
Filler Face Plate	NT0X50AC			XX		RUL24
Filler Face Plate	NT0X50AG			XX		RUL24
Filler Face Plate	NT0X50AE			XX		RUL24
NTNX37AB CABINET HARDWARE						
Right Door Assembly-Grey	NTNX2513					RUL33
Left Door Assembly-Grey	NTNX2515					RUL33
End Panel Ass'y Right-Grey	NTNX2517					RUL33
End Panel Ass'y Left-Grey	NTNX2518					RUL33
Cabinet Type Label (Grey)	P0687608					RUL34
Nortel left door(Grey)	P0818848					RUL34
Right Door Label (Grey)	P0699158					RUL34
Right Door Assembly-Brown	NTNX2552					RUL33
Left Door Assembly-Brown	NTNX2550					RUL33
End Panel Ass'y Right-Brown	NTNX2546					RUL33
End Panel Ass'y Left-Brown	NTNX2553					RUL33
Cabinet Type Label (Brown)	P0699472					RUL34
Nortel left door(Brown)	P0818849					RUL34
Right Door Label (Brown)	P0695230					RUL34
Anchor Kit (Earthquake Slab)	NTNX2540					RUL35
Anchor Kit (EQ cmptr Floor)	NTNX2578					RUL35
Anchor Kit (Non-EQ Slab)	NTNX2579					RUL36
Anchor Kit (Non-EQ cmp Flr)	NTNX2580					RUL36
NTNX37AB DESIGNATION LABELS						
NTlogo label	P0728012					RUL50
FSP MTXD Label	P0712628					RUL50
MSL Labels #1 for PDC	P0742431					RUL50
MSL Labels #2 for PDC	P0742432					RUL50
MSL Labels #3 for PDC	P0743549					RUL50
MSL Labels #4 for PDC	P0743551					RUL50
MSL Labels #5 for PDC	P0743552					RUL50
LPP, SNSE & DPCC Labels for PDC	P0742436					RUL50
Fuse Labels 5,10,20 & 30	P0742438					RUL50

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AMPS for PDC						
MSL Labels for FSP	P0695393					RUL50
MSL Labels for FSP	P0695394					RUL50
CSA Label	P0869723					RUL50
Des'n Label (NT1X80BA)	P0858643					RUL19
Des'n Label (NT1X81BA)	P0847437					RUL19
Des'n Label (NT3X82AJ)	P0865780					RUL19
Des'n Label (NT3X83AC)	P0865779					RUL19
Des'n Label (NT1X80AA)	P0742808					RUL19
Des'n Label (NT1X81AA)	P0724225					RUL19
Des'n Label (NT1X75BA)	P0666365					RUL19
Des'n Label (NT1X77AA)	P0661427					RUL19
Des'n Label (NT2X48BA)	P0656335					RUL19
Des'n Label (NT2X48BB)	P0653620					RUL19
Des'n Label (NT2X59AA)	P0643110					RUL19
Des'n Label (NT3X67AA)	P0653623					RUL19
Des'n Label (NT3X67BA)	P0677822					RUL19
Des'n Label (NT4X65AB)	P0689662					RUL19
Des'n Label (NT5X29AC)	P0654974					RUL19
Des'n Label (NT5X29AB)	P0694963					RUL19
Des'n Label (NT0X10AA)	P0656328					RUL19
Des'n Label (NT0X50AA)	P0578498					RUL19
Des'n Label (NT0X50AC)	P0580258					RUL19
Des'n Label (NT0X50AE)	P0591361					RUL19
Des'n Label (NT0X50AG)	P0685986					RUL19
Des'n Label (NT1X00AB)	P0661425					RUL19
Des'n Label (NT1X00AC)	P0661420					RUL19
Des'n Label (NT1X00AE)	P0677809					RUL19
Des'n Label (NT1X54AA)	P0656330					RUL19
Des'n Label (NT1X90AA)	P0661423					RUL19
Des'n Label (NT2X10AB)	P0664835					RUL19
Des'n Label (NT2X11AD)	P0710810					RUL19
Des'n Label (NT2X10BA)	P0707874					RUL19
Des'n Label (NT2X11BA)	P0707876					RUL19
Des'n Label (NT2X47AD)	P0676174					RUL19
Des'n Label (NT2X47BA)	P0677812					RUL19
Des'n Label (NT2X56AB)	P0661422					RUL19
Des'n Label (NT2X56BA)	P0677815					RUL19
Des'n Label (NT2X57AA)	P0656327					RUL19
Des'n Label (NT2X70AF)	P0809960					RUL19
Des'n Label (NT2X71AA)	P0661419					RUL19
Des'n Label (NT2X72AA)	P0656333					RUL19

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des'n Label (NT2X75AA)	P0657680					RUL19
Des'n Label (NT2X90AD)	P0688244					RUL19
Des'n Label (NT2X96AA)	P0661424					RUL19
Des'n Label (NT3X02AA)	P0661202					RUL19
Des'n Label (NT3X03AA)	P0661203					RUL19
Des'n Label (NT3X09BA)	P0664847					RUL19
Des'n Label (NT3X68AA)	P0661782					RUL19
Des'n Label (NT3X68AC)	P0657674					RUL19
Des'n Label (NT5X30AA)	P0656329					RUL19
Des'n Label (NT3X68BA)	P0675056					RUL19
Des'n Label (NT3X68BB)	P0675057					RUL19
Des'n Label (NT3X68BC)	P0675058					RUL19
Des'n Label (NT2X75BA)	P0677212					RUL19
Des'n Label (NT2X48CC)	P0678469					RUL19
Des'n Label (NT5X29BA)	P0742815					RUL19
Des'n Label (NT0X70AA)	P0622869					RUL19
Des'n Label (NT0X70BA)	P0664115					RUL19
Des'n Label (NT2X53AA)	P0558337					RUL19
Des'n Label (NT2X45BA)	P0677811					RUL19
Des'n Label (NT2X59BA)	P0678465					RUL19
Des'n Label (NT2X59CA)	P0677817					RUL19
Des'n Label (NT2X59DA)	P0677246					RUL19

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X10AB/BA	STD	NT2X10BB
NT2X11AD	STD	NT2X11BA
NT1X75BA	STD	NT1X80AA
NT1X75DA	MD	NT1X80AA
NT1X77AA	DEV	NT1X80AA
NT3X82AB	MD	NT3X82AJ
NT3X83AA	MD	NT3X83AC
NT1X00AB/AC/AE	MD	NT1X80AA
NT1X90AA	STD	NT4X45AA
NT2X47AD	DEV	NT4X45AA
NT2X56AB	STD	NT4X45AA
NT2X96AA	STD	NT4X45AA

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:

@ International A-Law Circuit Packs

NOTES:

NOT1 1) XX represents shelves 19, 33 and 47.

RULES:

- AP 1) When PEC NTN37AB is ordered, these items are provided.
- 2) The MCAM PDP comes equipped with "A" feed fuse panel and "B" feed fuse panel equipped with 42 ea. 20a fuses, 43 ea. 1-1/3 fuses and 1 ea. 10a fuse.
- 3) For more information on the PTM (MTM) Shelf Assembly NT2X58CA, see EMA2-01-MTM-1.

RUL1) The MCAM NTN37AB cabinet may be packfilled as follows:

NTN37NB: will equip one (1) STM, (even numbered, left side) at shelf position 19. No longer required since EDRAM/CTM will be ordered for new job. NTN37NB will be scheduled for 'MD'.

NTN37NC: will equip one (1) STM, (odd numbered, right side) at shelf position 19. NTN37NC will be scheduled for 'MD'. Order NTN37NK packfill for new job.

NTN37NF: will equip two (2) PTM, (one each on shelf position 33 and 47) and two (2) STM (one odd, one even num-

bered) on shelf position 19. This packfill NTN37NF includes the MTM control cp NT4X65AB. Always provide MTM Controller Wiring Kit NTN37WA when NTN37NF Common CP is provided. NTN37NF will be scheduled for 'MD'. There is no replacement for this packfill.

NTN37NG: will equip one (1) PTM on shelf position 33 only. This packfill NTN37NG includes the MTM control cp NT4X56AB. NTN37NG will be scheduled for 'MD'. Order NTN37NR for new job.

NTN37NH: will equip one (1) PTM on shelf position 47 only. This packfill NTN37NH includes the MTM control cp NT4X56AB. NTN37NH will be scheduled for 'MD'. Order NTN37NR for new job.

NT5X29HK: Provide one (1) NT5X29HK Wiring Option Kit for the STM shelf when the NT5X29AA CP is provisioned in slot 19-08 & 16.

Provision one wiring kit per MCAM cabinet as follows:

Option	Processor	1 wiring kit/MCAM cabinet
U	2X53AA 0X70AC 2X45AB	NTN37LJ for external connection (i.e bulkhead)
W	2X53AA 0X70AC 2X45AB	NTN37WW for internal connection (i.e same line up with JNET)
X	4X65AB	NTN37WA for external connection (i.e bulkhead)
Z	4X65AB	NTN37LK for internal connection (i.e same line up with JNET)
R	4X65AB & EDRAM/CTM	NTN37ED
Q	2X53AA 0X70AC 2X45AB & EDRAM/CTM	NTN37EE for field upgrade with old processor.

The stocklist of NTNX37WA & NTNX37WW have been updated to provide necessary cables so that ONLY one cable kit is required per MCAM cabinet.

NTNX37ED: This option adds two new bulkhead connectors CO 2N and CO 3N for the EDRAM/CTM network connections. Do not provide wiring kit NTNX29AB with NTNX37ED for the same MCAM cabinet. The NTNX37ED kit is the preferred method of providing a new MCAM. When it is provided, other kits such as: NTNX37LK, LJ, WW and WA are not required.

NTNX37EE: Provide one NTNX37EE wiring option when Enhanced DRAM is required on existing cabinets with NT2X45AA controllers on the MTM shelves.

- RUL2 1) Provide NT5X30AA on MCAM as required when additional test lines are required (see RUL3).
2) No more than four (4) per shelf.
- RUL3 1) Provide one (1) NT2X77AA Balance Network 900 ohms on MCAM for each NT5X30AA and NT2X90AD provisioned.
- RUL4 1) Provide NT2X71AA on MCAM as required for MSL-100C system for an AC open or short termination test to check stability of trunks with negative impedance type repeaters.
- RUL5 1) Provide NT0X10AA on MCAM as required when scan points are required (two circuits per pack, and seven scan points per circuit).
- RUL6 1) Provide NT2X57AA on MCAM as required when signal distribution points are required (two circuits per pack and seven points per circuit). The first eight circuits only are wired to the MDF.
- RUL7 1) Provide NT1X54AA on MCAM as required when additional circuits for access to switching network for analog (vf) test equipment required (two circuits per pack).
- RUL8 1) Provide NT2X90AD on MCAM as required for MSL-100C system test trunks and 14 local test desk or 3 local test cabinet (provides interface for one test trunk) (see RUL3).
- RUL9 1) Provide NT2X75AA on MCAM as required when loop around test line is required for measuring near to far end trunk transmission losses (one loop around circuit per pack).

- 2) For international markets, provide the NT2X75BA on MCAM in accordance with RULE9, item 1.
- RUL10 1) Provide NT1X00AB on MCAM as required when additional 102 test milliwatt is required. NT1X00AB is scheduled to be 'MD'. Replace NT1X00AB by NT1X80AA.
- RUL11 1) Provide one (1) NT1X00AC on MCAM as required for MSL-100C system when receiver off hook tone generator is required. NT1X00AC is scheduled to be 'MD'. Replace NT1X00AC by NT1X80AA.
- RUL12 1) The NT4X45AA design provides a new platform to house the DTU, TTT, and TTU functionality. When fully introduced, the EDTU will replace the following current service circuit packs.
- Replace (2) NT4X23AA - Digital Test Unit (DTU) or Replace (4) NT1X90AA - Test Signal Gen (TTT) or Replace (4) NT2X96AA - PCM Level Meter (TTT) or Replace (4) NT2X47AD - Test Signal Gen (TTT) or Replace (4) NT2X56AB - PCM Level Meter (TTT)
- The NT4X45AA has four (4) circuit enables so the next highest slot must be provisioned with a Filler Face Plate, NT0X50AC.
- RUL13 1) Reserved.
- RUL14 1) Provide one (1) NT2X47AD (left, odd slot) and one (1) NT2X56AB (right, even slot) for each additional transmission test unit required. NT2X47AD and NT2X56AB are scheduled to be 'MD'. Replace NT2X47AD and NT2X56AB by NT4X45AA.
- RUL15 1) Provide one (1) NT1X90AA (left, odd slot) and NT2X96AA (right, even slot) for additional transmission termination trunks. Max. two (2) NT1X90__ per shelf. NT1X90AA and NT2X96AA are scheduled to be 'MD'. Replace NT1X90AA and NT2X96AA by NT4X45AA.
- 2) Provision the NT1X90BA and the NT2X96BA for international markets in accordance with RUL15, item 1.
- RUL16 1) Provide one (1) NT3X02AA (left, odd slot) and one (1) NT3X03AA (right, even slot) to provide additional TOPS data channels (one pair required for each four TOPS position/TOPS TTY served) or 1 pair required for every two BSAC (NT4X09AG).

- RUL17 1) Provide NT3X68AC for the MSL-100C system when tone generator call circuit pack is required. This circuit pack requires two slots, leave next highest slot vacant.
- RUL18 1) Reserved for future use.
- RUL19 1) Provide one per circuit pack provisioned of the appropriate label (NT codes on label should be same as circuit pack provisioned). Affix label on shelf upper designation strip in appropriate position.
- RUL20 1) Provide NT3X68AA and / or the NT3X68AB as required for the MSL-100C system when tone-generator/pre-emption pack is required. This circuit pack requires two slots; leave next highest slot vacant.
- RUL21 1) Provide one (1) NT2X47BA (left, odd slot) and one (1) NT2X56BA (right, even slot) for International Transmission Test Unit required.
- RUL22 1) Provide NT1X00AE when International 102 milliwatt test is required. NT1X00AE is scheduled to be 'MD'. Replace NT1X00AE by NT1X80AA.
- RUL23 1) Provide one (1) NT3X09BA MTA circuit pack on PTM as follows:
- One NT3X09BA Slot 8 for 1st & 2nd MCLM bays in the lineup
One NT3X09BA Slot 9 for 3rd & 4th MCLM bays in the lineup
One NT3X09BA Slot 10 for 5rd & 6th MCLM bays in the lineup
One NT3X09BA Slot 10 for 7rd & 8th MCLM bays in the lineup
- 2) When the NTN37EF wiring kit is provisioned, the MTA (metallic test access) can not be provisioned.
- RUL24 1) Provide Filler Face Plates on unequipped STMs/PTMs as follows:
- | Unequipped STM shelf | Unequipped PTM shelf |
|----------------------|----------------------|
| Slot 1: NT0X50AG | Slots 5-16: NT0X50AC |
| Slots 3-18: NT0X50AC | Slot 17: NT0X50AG |
| Slot 19: NT0X50AA | Slot 19: NT0X50AA |
| Slot 20: NT0X50AE | Slot 20: NT0X50AE |
- RUL25 1) When any STM is required on MCAM shelf position 19, and the slots are not equipped by packfills, the following circuit packs must first be provisioned as indicated:
- Filler Face Plate NT0X50AG slot 1

Filler Face Plate	NT0X50AC	slot	3
TM Control Card	NT4X65AB	slots	4,12
Group Codec Card	NT2X59AA	slots	9,17
Filler Face Plate	NT0X50AA	slot	19
Power Converter	NT2X70AF	slot	20

- 2) When one or more EDRAM are in the even numbered STM, the NT4X65AB in slot position four (4) and the NT2X59AA in slot position nine (9) are not required. These slot positions are to be filled with NT0X50AC Filler Face Plates.

RUL26 1) Provide one (1) NT1X75BA DRAM Control CP and NT1X77AA DRAM Memory CP as required for DRAM in even numbered (left) STM. The NT1X75BA replaces the NT1X75AA and is required for two stage dialing. NT1X75BA is scheduled to be 'MD'. Replace NT1X75BA by NT1X80AA.

- 2) Each NT1X77AA provides up to 31 seconds of recording. NT1X77AA is scheduled to be 'MD'. Replace NT1X77AA by NT1X80AA.

- 3) Provision the NTN29AB DRAM Wiring Option Kit when the NT1X75BA DRAM Controller and the NT1X77AA DRAM Memory CP are provisioned.

- 4) Provide one (1) NT1X75DA DRAM Control CP and NT1X77AA DRAM Memory CP as required for international applications of the DRAM in even numbered (left) STM. The NT1X75DA is the A-Law version of the NT1X75BA and functions similarly. NT1X75DA is scheduled to be 'MD'. Replace NT1X75DA by NT1X80AA.

- 5) Provide one (1) NT0X50AC filler face plate in slots 8-16 if option NTN37ED is provided.

RUL28 1) D1 CODEC wiring option NTN29AC is required when other than DRAM STMs are equipped on shelf 19 (even numbered or left most STM).

RUL29 1) Provide NT3X67AA 6-port conference circuit pack for 3 or 6 port conference requirements.

RUL30 1) Quantity one of each NT2X48BA and NT2X48BB is required for test purposes.

- 2) For international markets, provision NT2X48CC A-LAW based Dual-Tone Multifrequency Receiver in accordance with RULE30, item 1.

- RUL31 1) Quantity of one each NT2X10AB and NT2X11AD is required for every 5 MLCM (10 LCM) plus one each for rover. NT2X10AB and NT2X11AD are 'MD'. Order NT2X10BB and NT2X11BA for new job.
- 2) Quantity of one each NT2X10BA and NT2X11BA is required for every 8 MLCM (16 LCM/LCME). The MTU pair (NT2X10BA/NT2X11BA) is required for 2B1Q LCME and is backward compatible to replace the LTU pair (NT2X10AB/NT2X11AD) for LCMs. NT2X10BA is 'MD'. Order NT2X10BB for new job.
- 3) Provision one MTU wiring kit, NTN37WB per cabinet when MTU pair (NT2X10BB/NT2X11BA) is assigned slots 13 & 14 of shelf 33. This wiring kit is required to wire multi circuits on MTU pair for shelf 33 ONLY.
- 4) Provide one MTU pair in MTM slot 13 & 14 of shelf 47 for special fiber LCME interface (FLI) application. Do not provide the NTN37WB wiring kit for fiber LCME interface (FLI) application since there is only one circuit required on MTU for this application.

- RUL32 1) Provide NT5X29__ on STM as required for:
Autovon Service Observing Tone Detector - NT5X29AB
Tone Detector/DTMF Tone Detector - NT5X29AC
- 2) Provide NT5X29HK in position 8 if there are NT5X29 cards in slots 5 or 8. Provide the NT5X29HK in position 16 if NT5X29 cards are located in slots 13 and 16.
- 3) Provide NT0X50AC in positions 6 & 7 if NT5X29 cards are in position 5. Provide the same filler face plates in the two positions following the NT5X29 cards for the other locations of these cards, if they are equipped.

- RUL33 1) Provide two right doors (grey or brown) for each cabinet.
- 2) Provide two left doors (grey or brown) for each cabinet.
- 3) Provide one right end panel assembly and one left end panel assembly (grey or brown) for each lineup.

NOTE: It is important to always associate the end panels (in the CADES spec) to the first cabinet in the lineup. Otherwise, the end panels will appear in the spec as a "loose item". They will be shipped loose and can be damaged in shipment.

- 4) When a C28 cabinet is provisioned at the end of an existing MCAM-2 (NTNX37AB) line up, a new C28 end panel is required for the new C28 cabinet. Please refer to NTRX73 Engineering Manual Section for provisioning information.
- RUL34 1) Provide two (2) left door labels, P0818848 per grey cabinet.
- 2) Provide two (2) left door labels, P0818849 per brown cabinet.
- 3) Provide two (2) right door labels, P0699158 per grey cabinet.
- 4) Provide two (2) right door labels, P0695230 per brown cabinet.
- RUL35 1) Provide one Earthquake Mounting Kit when installing cabinet in ATC zone 6 and 7; NEBS zone 4; and UBC zone 4. Use NTNX2540 kit for slab type flooring or NTNX2578 for computer flooring.
- RUL36 1) Provide one Frame Mounting Kit when installing cabinet in a Non-Earthquake zone. Use NTNX2579 kit for slab type flooring or NTNX2580 for computer flooring.
- RUL37 1) NT2X72AA is a 4W E&M type D-1 analog trunk card. Provision NT2X72AA for music on hold in an ACD application OR other applications that require 4W E&M analog trunk card.
- 2) Use RMTMKA01 PM-Load and TM250P EXEC Line-Up when provisioning NT2X72AA CP in the PTM shelf.
- 3) Provision NT2X72AA to shelf 33 slots 7-13 and 16 as required.
- 4) Provision NT2X72AA to shelf 47 slots 7, 12 and 16 as required.
- RUL38 1) Provision NT3X67BB as one (1) 6-port circuit or as two (2) 3-port circuits.
- RUL39 1) Refer to section EMA14-01-000 for further information on the NT3X82AB and the NT3X83AA.
- 2) Provide the NT3X82AB on both MTM shelves 33 and 47 in slot 5 for office alarms.
- 3) Provide the NT3X83AA on both MTM shelf 47 in slot 6.

- 4) Do not mix NT3X82AA and NT3X82AB on the same MTM shelf. When used in a small office, 20Hz for NT0X61AB may be obtained from the 1A key set. In addition, provide one NT0X63__ alarm control and display panel (NT0X63AA or NT0X63AC) per customer requirement. NT0X63AA is ordered when NT3X82AB is equipped. NT3X83AA must be provided in even circuit pack positions.
- 5) The NT3X82AB is 'MD'. Order the NT3X82AJ for all new jobs.
- 6) The NT3X83AA is 'MD'. Order the NT3X83AC for all new jobs.

RUL40 1) Reserved

RUL41 1) Provision (1 or more) of these circuit packs on an MTM shelf along with (1 or more) designation labels per customer requirement. An NT0X50AC Filler Plate should be placed in the next higher position.

RUL42 1) Provision (1 or more) of this circuit pack along with the designation label P0677212 per customer requirement.

RUL43 1) Provision (1 or more) of this circuit pack along with the designation label P0678469 per customer requirement.

RUL44 1) Provision (1 or more) of this circuit pack along with the designation label P0742815 when ATD is required by the customer. An NT0X50AC Filler Plate should be provided in the next two (higher) slot positions.

RUL45 1) Provision two (2) of these circuit packs along with its designation label when a module processor is required by the customer.

RUL46 1) Provision two (2) of these circuit packs along with its designation label when a TM control pack is required by the customer.

RUL47 1) Provision two (2) of these circuit packs along with its designation label when a Trunk Module Interface is required by the customer.

RUL48 1) Provision two (2) of these circuit packs along with its designation label when A-Law is required by the customer.

RUL49 1) Provision up to three NT1X80AA EDRAM cards in slots 5,6 or 7 of shelf 19 as required by the customer. Provide the first EDRAM in slot 5. Since the EDRAM displaces the STM controller, when EDRAM is provided in the even numbered

(left) STM, the even numbered (left) STM is no longer available for provisionable trunk module cards.

- 2) Provision up to two (2) NT1X81AA CTM cards in slots 5,6 or 7 of shelf 19 as required by the by the customer. Provide the first CTM in slot 5 unless an EDRAM card is already in that position. When providing only one (1) CTM in slot 5, the network port required is contained in the cable already in place for STM 0/1 and PTM 0/1. Provide an additional two (2) NTN36AQ cables (one per plane) when a second CTM (slot 6) is required. These two (2) cables provide the necessary network port connections for the second CTM in slot 6 and the final CTM in slot 7.
- 3) When providing only one (1) EDRAM in slot 5, the network port required is contained in the cable already in place for STM 0/1 and PTM 0/1. Provide an additional two (2) NTN36AQ cables (one per plane) when a second EDRAM (slot 6, DTM 1) is required. These two (2) cables provide the necessary network port connections for the second EDRAM in slot 6 (DTM 1) and the final EDRAM in slot 7 (DTM 2).
- 4) The NTN36AQ cable is required for SNSE, MCNM, and J-NET. The NTN37EM cable is required for the 64K and the 128K ENET. The NTN36AQ cable is a four port cable, however, when connecting to J-NET, only two ports may be used. Port 0 corresponds to the EDRAM in slot 6 and port 1 corresponds to the final EDRAM in slot 7. This two port restriction does not apply when connecting to SNSE, and also does not apply to the NTN37EM cable used for the 64K and 128K ENET.
- 5) Provision one NTN37ED wiring upgrade option when Enhanced DRAM (EDRAM), DS-30 and CODEC (w/NT4X65 in MTM shelf) are required. This option adds two new bulkhead connectors C0 2N and C0 3N, for the EDRAM network connections. Wiring kit NTN29AB can not be provided if the NTN37ED (EDRAM) kit is provided.
- 6) Provision one NTN37EE wiring upgrade option when Enhanced DRAM (EDRAM), DS-30 and CODEC (w/NT2X45 in MTM shelf) are required. This option adds two new bulkhead connectors C0 2N and C0 3N, for the EDRAM network connections. Wiring kit NTN29AB can not be provided if the NTN37EE (EDRAM) kit is provided.
- 7) For Japan application provision up to five (5) NT1X80BA's to shelf 19, slot 5, 6 & 7 and shelf 47, slot 13 & 14. Assign NT1X80BA to shelf 19 slot 5 first. Refer to item 4 of

rule 49 when provisioning NT1X80BA to office with MCNM or J-NET.

- 8) For Japan application provision up to four (4) NT1X81BA's to shelf 19, slot 5, 6 & 7 and shelf 47, slot 13 & 14. Provision a maximum of two (2) NT1X81BA to shelf 19. Refer to item (4) of rule 49 when provisioning NT1X81BA to office with MCNM or J-NET.
- 9) Provision one NTNX37EF wiring kit per MCAM cabinet. This wiring kit provides four (4) DS30 network ports for shelf 19 slot 6 & 7 and shelf 47 slot 13 & 14. Provide NTNX37EF wiring kit for Japan application only.
- 10) When the NTNX37EF wiring kit is provisioned, the MTA (metallic test access) can not be provisioned.
- 11) Remove NTNX3730 cable from wiring kits NTNX37ED, NTNX37EE before applying wiring kit NTNX37EF. This is for field upgrade only.
- 12) If the cabinet was previously provisioned with either wiring kits NTNX37WA, NTNX37LJ or NTNX37WW then move the DS30 port wiring from shelf 19 slot 04 to slot 05 for EDRAM16 or CTM-J as follows:

From 19-04	To 19-05
49A	7A
49B	8A
46A	5A
46B	6A
48A	26A
48B	27A
46A	24A
46B	25A

Refer to PCNX37EF kit for wiring table.

- RUL50
- 1) Provide one (1) P0712628 FSP MTXD Label for MTXD Logo.
 - 2) Provide one (1) P0742438 Fuse Amperage Labels for PDC (5 amp, 10 amp, 20 amp & 30 amp).
 - 3) Provide one (1) P0742431 MSL Labels #1 for PDC in an MTXD configuration (For MCAM, MNET, MCEX & MCSM Cabinets).
 - 4) Provide one (1) P0742432 MSL Labels #2 for PDC in an MTXD configuration (For MCTMI, MCTM, MCGM & MCOR Cabinets).

- 5) Provide one (1) P0742436 LPP, SNSE & DPCC in an MTXD configuration (For LPP, SNSE & DPCC Cabinets).
 - 6) Provide one (1) P0743549 MSL Labels #3 for PDP in an MTXD configuration (For MCRM, MCRMS, RLCC & IPEC Cabinets).
 - 7) Provide one (1) P0743551 MSL Labels #4 for PDP in an MTXD configuration (For MCDM, MCPM & MCNM Cabinets).
 - 8) Provide one (1) P0743552 MSL Labels #5 for PDP in an MTXD configuration (For MCLM & MCMLC Cabinets).
 - 9) Provide one (1) P0695393 and one (1) P0695394 MSL Labels for FSP in an MSL100 configuration. (For the shelves in the cabinet.)
 - 10) Provide two (2) P0728012 NTlogo per MCAM cabinet.
 - 11) Provide one (1) P0869723 CAS Label per MCAM cabinet.
- RUL51 1) These circuit packs may have been used in older PTM's. Do not provide these for new orders, use the NT4X65 instead.
- RUL52 1) These circuit packs are common on MTM shelves 33 and 47 for both Mu-law and A-law applications.

MERIDIAN CABINET GENERAL MODULE

PEC CODE: NTNX47BA

CPC CODE: B0229100

RATING: Standard

REPLACES: NTNX32AA

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCGM

ENGINEERING DESCRIPTION: The MCGM frame provides the capability to add custom feature hardware when required, for example; DIO, MTD, DDU, ROS, TM8, T8A, MTM, STM and TAN modules.

Note that the MCGM cabinet can interface to four (4) network ports maximum.

REFERENCE DOCUMENTATION: MSNX47BA 00 19

MARKETS: Applicable markets:

US
CANADA
WIRELESS
ASIA/PACIFIC

ISSUE AUTHOR: NTI: Doug Cooley Dept. 2D69 (RICH)

MAIN CONTACT: NTI: Doug Cooley Dept. 2D69 (RICH)

CONTACT: NTI: George Levisky Dept. 2D69 (RICH)

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

NTNX47BA EMA10-13-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 20	ECM 492 04	Update DRAM Controller and add international service circuits
93 02 14	ECM 492 05	Fix error: change 049M037-001 to 049M037-011.
93 05 05	ECM 492 07	Compare with current version of IS
93 10 26	ECM 492 08	Modify provisioning rules for NTNX47AN/BC/BL/BM DIO Hardware Kits
93 12 20	ECM 492 09	EC 018-36231 - Replace NT1X62CA with NT1X62CB.
94 03 18	ECM 449 09	Add EMI bulkhead kits for ENET retros
94 06 06	ECM 492 12	Add note for provisioning controller cards in DIO shelf.
94 07 22	ECM 449 10	Add EDRAM/ CTM wiring kits
94 08 05	ECM 492 13	Adds TurboLink requirements.
94 08 23	ECM 449 11	Adds CC MIS requirements.
95 02 16	ECM 492 18	EC 018-43966 - Replaces NT1X67FA with NT1X89BB.
95 04 05	ECM 449 13	EC 02-16042 MCI CC-MIS options
95 04 25	ECM 492 19	JEL: 018-45164 replaces the NT2X70AAE with the NT2X70AF.
95 05 19	ECM 449 15	Make changes per EC 002-16042, EC 002-16128, EC 002-161146 and EC 002-15973
95 05 23	ECM 449 16	Change NTNX39ES to NTNX29ES.
95 06 02	ECM 449 17	Make changes per ET 24329.
95 07 07	ECM 492 22	Make clarifications to option V provisioning for the NTNX47BA
95 08 04	ECM 492 23	Make clarifications to RUL 49, for the NT6X91BB.
95 08 24	ECM 492 24	DKG: Delete part 2 of Rule 53 to resolve ET 28339. Part 2 is invalid.
95 10 06	ECM 492 26	DKG: Clarify modem card replacement for A0301068. Clarify replacement for NT6X91AB. Clarify Rules 49 and 51.
95 11 30	ECM 449 18	Make following changes per EC-16338: 1) Change MCGM labeling to NORTEL. 2) Correct MCGM bulkhead connector. 3) Correct MTD PEC to A0397416. 4) Change MTD mounting kit. 5) Rule for EDRAM on DRA MTM shelf. 6) Add NT1X55FA SCSI DDU.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 12 01	ECM 449 19	7) Add NTMX47AR MTM kit.
96 02 09	ECM 377 12	8) Add FSP labels for DIO, DDM, MTD Correct MTM kit to NTNX47AR
96 05 14	ECM 449 20	ECD 002-16505 MD MCEX replaced by MCGM
96 07 25	ECM 449 22	Change provisioning rule to allow 4 STM shelves to be provisionable to the MCGM2 cabinet. This is done specifically for Japan market. When 4 STM shelves are provisioned in a MCGM2 cabinet, the top 2 STM shelves will only be used for CTM/EDRAM cp. Reference EC 002-16639. Add the following engineering rules per ECD 002-16760: 1) Add NT1X81BA, CTM for Japan. 2) Replace NT4X00AG br NT1X55FA. 3) Replace NT1X75BA & NT3X67BA by NT1X80AA & NT1X81AA. 4) Change NT2X59AB to NT2X59A for U.S application. 5) Add NT3X68AB as a provisionable PEC in STM. 6) MD NT5X00AD, NTNX47AY, NTNX47AZ & NTNX47BB.
97 02 24	ECM 449 25	Update provisioning rule of MCGM cabinet per SR# RR72413
97 05 05	ECM 449 26	Update provisioning as follows: NT3X82AA & AB to NT3X82AJ, NT3X83AA to NT3X83AC, NT1X00AB & AC to NT1X80AA, and NT6X91BB to NT1X89BB for MTXD X.25 inter-switch links. Also added NT1X80BA for Japan installations.

The Meridian Cabinet General Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Supv Panel	NTNX26MA	FSP	1	60		AP
MCGM2 Bulkhead kit modems kit.	NTNX47DJ		1			RUL51
DS-5R Modem Shelf	NT5X09BA			47		RUL1
9600 Bd Modem Card	049P026-004			47	1-16	RUL1
1200 Bd S/T Modem Card	053P001-002			47	1-16	RUL1
1200 Bd T Modem Card	053P001-003			47	1-16	RUL1
MCGM Modem Hardware Kit	NTNX47AN			47		RUL1
Dual I/O Equipment Shelf	NTNX3401	DIO		47		RUL2
MCGM2 Bulkhead Kit	NTNX47DJ		1			RUL2
MCGM2 Bulkhead Kit	NTNX47DN		1			RUL2
MCGM DIO Hardware Kit	NTNX47BC			47		RUL2
Power Converter CP	NT2X70AF			47	01,25	RUL2
I/O MSG Cont CP (DPCC)	NT1X62CB			47	04,15	RUL2
Bus Terminator CP	NT0X67AA			47	14,24	RUL2
I/O Terminal Control CP	NT1X67BD			47	6-13, 17-22	RUL2
Bit Synch Data Link CP	NT1X67DB			47	6-13, 17-22	RUL2
# X25LAPB Link Cont CP	NT6X91BB			47	6-13, 17-22	RUL2
MTD Control CP	NT1X68BC			47	11,21	RUL2
DDU Control CP	NT1X55DA			47	6,17	RUL2
SCSI DDU CP	NT1X55FA			47	06-12 17-22	RUL2
Enhanced MPC CP	NT1X89BB			47	06-13, 17-22	RUL2
MCGM2 V.35 CABLE ASSY	NTMX4723			47	6-13, 17-23	RUL50
MCGM2 RS232 (EMPC) CBL ASSY	NTMX4724			47	6-13, 17-23	RUL50
MCGM2 RS232 (HDLC) CBL ASSY	NTMX4725			47	6-13, 17-23	RUL50
RS232 OR CURR. LOOP CABLE	NTMX4726			47	6-13, 17-23	RUL50
Filler Face Plate	NT0X50BA			47	6-14, 17-24	RUL2
Filler Face Plate	NT0X50BE			47	01,25	RUL2
Filler Face Plate	NT0X50BF			47	04,15	RUL2
FSP Label	P0699343		1	60		RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual I/O Equipment Shelf	NTNX3401	DIO		47,19		RUL29
2 DIO Shelves to External HDLC cp for CSC link(9600 BD)	NTNX47DI NT6X91CA	BH	1	47,19	6-13	RUL49 RUL29
HDLC cp for MTX link(9600 BD)	NT6X91BA			47,19	6-13 17-23	RUL29
Power Converter CP	NT2X70AF			19,47	01,25	RUL49
I/O MSG Cont CP (DPCC)	NT1X62CB			19,47	04,15	RUL49
Bus Terminator CP	NT0X67AA			19,47	14,24	RUL49
SCSI DDU CP	NT1X55FA			19,47	06-12 17-22	RUL49
I/O Terminal Control CP	NT1X67BD			19,47	6-13, 17-23	RUL49
Enhanced MPC CP	NT1X89BB			19,47	6-13, 17-23	RUL49
# X25LAPB Link Cont CP	NT6X91BB			19,47	6-13, 17-23	RUL49
MCGM2 V.35 CABLE ASSY	NTMX4723			19,47	6-13, 17-23	RUL50
MCGM2 RS232 (EMPC) CBL ASSY	NTMX4724			19,47	6-13, 17-23	RUL50
MCGM2 RS232 (HDLC) CBL ASSY	NTMX4725			19,47	6-13, 17-23	RUL50
RS232 OR CURR. LOOP CABLE	NTMX4726			19,47	6-13, 17-23	RUL50
Filler Face Plate	NT0X50BA			19,47	6-14, 17-24	RUL49
Filler Face Plate	NT0X50BE			19,47	1,25	RUL49
Filler Face Plate	NT0X50BF			19,47	4,15	RUL49
DS-5R Modem Shelf	NT5X09BA			33,05		RUL30
9600SP BD Modem Card	049M037-011			33,05	1-15	RUL30
* 9600 BD Modem (A0378923)	049P026-004			33,05	1-15	RUL30
DIO/Modem hardware Kit(1pr)	NTNX47BL			47,33		RUL31
DIO/Modem hardware Kit(2pr)	NTNX47BM			47,33,19,05		RUL31
Magnetic Tape (A0397416)	209800-173 MTD			05,19,33		RUL3
MTD Mounting Hardware	NTNX47AQ			33		RUL3
MTD Mounting Hardware	NTNX47AP			05,19		RUL3
MTD Cable (READ)	NTNX4757					RUL3
MTD Cable (WRITE)	NTNX4758					RUL3
MTD Cable (CONTROL)	NTNX4759					RUL3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Dual Disc Drive Unit	NT4X00AF	DDU		05		RUL4
# MCGM DDU Hardware Kit	NTNX47AK			05		RUL4
# 5.25" 220 MB Disk Drive	NT4X00AG			05	10, 18	RUL4
# DDU H/W Kit	NT4X0038			05		RUL4
Power Converter CP	NT1X78AA			05	02, 26	RUL4
Filler Face Plate 2.6"	NT0X50BE			05	02, 26	RUL4
Strat II Rem Osc Shelf	NT3X95AA	ROS		19, 33		RUL5
Stratum 2.5 ISG ROS	NT3X95BB	ROS		19, 33		RUL5
MCGM ROS Hardware Kit	NTNX47AS			33		RUL5
MCGM ROS Hardware Kit	NTNX47AT			19		RUL5
Trunk Module/8 Wire	NT2X5201	TM8		05, 19, 33		RUL7
Trunk Module Assembly	NT2X5228	T8A		05, 19, 33		RUL8
DS30 Filter Bulkhead	NTNX29ES					RUL53
Trunk Module I/F CP	NT2X45AB				01	RUL27
Trunk Module Proc CP (32K)	NT0X70AC				02	RUL27
Trunk Module Control CP	NT2X53AA				03	RUL27
Group Codec CP	NT2X59AA				04	RUL27
Multi OP Power Conv CP	NT2X09AA				20	RUL27
MCGM TM8 Hardware Kit	NTNX47AC			33		RUL7
MCGM TM8 Hardware Kit	NTNX47AD			19		RUL7
MCGM TM8 Hardware Kit	NTNX47AE			05		RUL7
MCGM T8A Hardware Kit	NTNX47AV			33		RUL8
MCGM T8A Hardware Kit	NTNX47AW			19		RUL8
MCGM T8A Hardware Kit	NTNX47AX			05		RUL8
# Test Access Network Shf	NT5X00AD	TAN		05, 19, 33		RUL09
DS30 Filter Bulkhead	NTNX29ES					RUL53
# MCGM TAN Hardware Kit	NTNX47AY			33		RUL09
# MCGM TAN Hardware Kit	NTNX47AZ			19		RUL09
# MCGM TAN Hardware Kit	NTNX47BB			05		RUL09
Maint Trunk Module	NT2X58CA	MTM		05, 19, 33		RUL10
Maint Trunk Module/DRAM	NT2X58CB	MTM		05, 19, 33		RUL10
DS30 Filter Bulkhead	NTNX29ES					RUL53
Trunk Module Controll CP	NT4X65AB				03	RUL28
MTM Wiring Kit	NTNX47AR					RUL28
# Trunk Module I/F CP	NT2X45AB				01	RUL28
# Trunk Module Proc CP (32K)	NT0X70AC				02	RUL28
# Trunk Module Control CP	NT2X53AA				03	RUL28
Group Codec CP	NT2X59AA				04	RUL28
Group Codec A-Law	NT2X59BA				04	RUL28
Multi OP Power Conv CP	NT2X09AA				17	RUL28
Filler Face Plate	NT0X50AA				19	RUL28
+5/12V Power Conv CP	NT2X70AF				20	RUL28

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Dead Sys Alm w/Unique Aud	NT3X82AA					RUL10
# Dead Sys Alm w/Common Aud	NT3X82AB					RUL10
Dead Sys Alm w/Common Aud	NT3X82AJ					RUL10
# OAU Alm Transfer CP	NT3X83AA					RUL10
OAU Alm Transfer CP	NT3X83AC					RUL10
Misc Scan CP	NT0X10AA					RUL10
Signal Dist CP	NT2X57AA					RUL10
EDRAM CP	NT1X80AA				05-08	RUL48
EDRAM CP (16 Minute) (Japan)	NT1X80BA				05-08	RUL48
CTM CP	NT1X81AA				05-08	RUL48
CTM Japanese CP	NT1X81BA				05-08	RUL48
MCGM MTM Hardware Kit	NTNX47AJ			33		RUL10
MCGM MTM Hardware Kit	NTNX47AH			19		RUL10
MCGM MTM Hardware Kit	NTNX47AG			05		RUL10
MCGM MTM/DRA Hardware Kit	NTNX47BK			33		RUL10
MCGM MTM/DRA Hardware Kit	NTNX47BJ			19		RUL10
MCGM MTM/DRA Hardware Kit	NTNX47BH			05		RUL10
MTM EDRAM DS30 Cable Kit	NTNX47BN			05,19, 33		RUL45
Key Lock Bracket	P0745311				05-08	RUL45
Service Trunk Module	NT7X3004	STM		05,19, 33,47		RUL11
DS30 Filter Bulkhead	NTNX29ES					RUL53
MCGM STM Hardware Kit	NTNX47BG			47		RUL11
MCGM STM Hardware Kit	NTNX47BF			33		RUL11
MCGM STM Hardware Kit	NTNX47BE			19		RUL11
MCGM STM Hardware Kit	NTNX47BD			05		RUL11
STM EDRAM DS30 Cable Kit	NTNX47BP			05,19, 33		RUL46
STM EDRAM DS30 Cable Kit	NTNX47BQ			47		RUL47
TM Controler CP	NT4X65AB				04,12	RUL12
Power Converter CP	NT2X70AF				20	RUL12
Filler Face Plate	NT0X50AG				1	RUL12
Filler Face Plate	NT0X50AC					RUL12
Filler Face Plate	NT0X50AA				19	RUL12
STM DRAM Wiring Option	NTNX29AB			05,19, 33,47		RUL13
# Dram Controler CP	NT1X75BA				05	RUL13
# A-Law Dram Controller CP	NT1X75DA				05	RUL13
# Dram Memory CP	NT1X77AA				06-11	RUL13
EDRAM CP	NT1X80AA				05-08	RUL48
EDRAM CP (16 Minute) (Japan)	NT1X80BA				05-08	RUL48
CTM CP	NT1X81AA				05-08	RUL48
CTM Japanese CP	NT1X81BA				05-08	RUL48

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
STM CODEC Wiring Option	NTNX29AC			05, 19, 33, 47		RUL14
Group Codec CP	NT2X59AA				09	RUL14
# 6 Pt Conf CP	NT3X67BA				05-08, 10	RUL14
4 Ch MF Rcvr CP	NT2X48BA				05-08, 10	RUL14
4 Ch DTMF Rcvr CP	NT2X48BB				05-08, 10	RUL14
4 Ch DTMF Rcvr (A-Law)	NT2X48CC				05-08, 10	RUL14
Tone Gen.- Pre-Empt	NT3X68AA				05-08, 10	RUL14
DTMF Gen.	NT3X68AB				05-08, 10	RUL14
Tone Gen.- Call Waiting	NT3X68AC				05-08, 10	RUL14
Tops CNTL. Proc.	NT3X02AA				07	RUL14
Tops DGTL. CNTL.	NT3X03AA				06	RUL14
# 102 Test Milliwatt	NT1X00AB				05-08, 10	RUL14
# ROH Tone Generator	NT1X00AC				05-08, 10	RUL14
Loop Around Test	NT2X75AA				05-08, 10	RUL14, RUL34
STM CODEC Wiring Option	NTNX29AC			05, 19, 33, 47		RUL15
Group Codec CP	NT2X59AA				17	RUL15
# 6 Pt Conf CP	NT3X67BA				13-16, 18	RUL15
4 Ch MF Rcvr CP	NT2X48BA				13-16, 18	RUL15
4 Ch DTMF Rcvr CP	NT2X48BB				13-16, 18	RUL15
Tone Gen.- Pre-Empt	NT3X68AA				13-16, 18	RUL15
DTMF Gen.	NT3X68AB				13-16, 18	RUL15
Tone Gen.- Call Waiting	NT3X68AC				13-16, 18	RUL15
Tops CNTL. Proc.	NT3X02AA				15	RUL15
Tops DGTL. CNTL.	NT3X03AA				14	RUL15
# 102 Test Milliwatt	NT1X00AB				13-16, 18	RUL15

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# ROH Tone Generator	NT1X00AC				13-16, 18	RUL15
Loop Around Test	NT2X75AA				13-16, 18	RUL15
Audio Tone Detector CP	NT5X29AB				05,08, 13,16	RUL16
Auto Service Observing CP	NT5X29AC				05,08, 13,16	RUL16
ATD Wiring kit	NT5X29HK			05,19, 33,47		RUL16
Filler Face Plate	NT0X50AC				06,07, 09-11, 14,15, 17-19	RUL16
Network Port Cable (PL0)	NTNX4740					RUL6
Network Port Cable (PL1)	NTNX4741					RUL6
14" Filler Panel	NT0X84AA			05,19, 33,47		RUL18
4 Mntg Screws(14" panel)	P097F813		4			RUL18
Washer	P0183220		1			RUL18
Washer	P0284154		1			RUL18
10" Cooling Unit	NTNX27CA	CU		00		AP
Common Framework	NTNX25AA	FW	1			AP
International MTM						
IMTM Common Packfill	NT2X58AY			05,19 33		RUL32
Trans'n Term Trunk	NT2X71AA				05-16	RUL33
Loop Around TST LN A-LAW	NT2X75BA				05-16	RUL34
102 mw Test	NT1X00AB				05-16	RUL10
TTU-trans Test Module Int'l	NT2X47BA				05-16	RUL21
Dig'l Filter CP Int'l	NT2X56BA				05-16	RUL21
A-LAW Test Signal Gen CP	NT1X90BA				05-16	RUL15
A-LAW PCM Level Meter CP	NT2X96BA				05-16	RUL15
# 6 Party Conf Ckt A-Law	NT3X67BB				04-07, 12-15	RUL38
# OAS Dead SYS w Common AUD	NT3X82AB				05	RUL39
OAS Dead SYS w Common AUD	NT3X82AJ				05	RUL39
# OAS Alarm Transfer	NT3X83AA				07	RUL39
OAS Alarm Transfer	NT3X83AC				07	RUL39
101 Comm Test LIne	NT5X30AA				05-07,	RUL40
Jack Ended Trunk CP	NT1X54AA				06,07,	RUL43

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Miscellaneous Scanner	NT0X10AA				07,12, 16	RUL41
Scan Dist'n Card	NT2X57AA				07,12, 16	RUL42
Desig. Strip (STM)	P0706655					RUL14
Desig. Strip (ATD)	P0698920					RUL16
Desig. Strip (TM8 & T8A)	P0586970					RUL27
Desig. Strip (TM8 & T8A)	P0558196					RUL27
Desig. Strip (MTM)	P0701655					RUL28
Desig. Label (NT0X10AA)	P0656328					RUL26
Desig. Label (NT0X50AA)	P0578498					RUL26
Desig. Label (NT0X50AC)	P0580258					RUL26
Desig. Label (NT0X50AC)	P0580258					RUL26
Desig. Label (NT0X50AG)	P0685986					RUL26
Desig. Label (NT0X50BA)	P0599141					RUL26
Desig. Label (NT0X50BE)	P0599142					RUL26
Desig. Label (NT0X50BE)	P0599142					RUL26
Desig. Label (NT0X50BF)	P0599143					RUL26
Desig. Label (NT0X67AA)	P0657673					RUL26
Desig. Label (NT0X70AC)	P0664846					RUL26
Desig. Label (NT1X00AB)	P0661425					RUL26
Desig. Label (NT1X00AC)	P0661420					RUL26
Desig. Label (NT1X55DA)	P0688790					RUL26
Desig. Label (NT1X55FA)	P0800155					RUL26
Desig. Label (NT1X62BB)	P0599146					RUL26
Desig. Label (NT1X62CB)	P0745105					RUL26
Desig. Label (NT1X67BD)	P0657675					RUL26
Desig. Label (NT1X67DB)	P0599148					RUL26
Desig. Label (NT1X68BC)	P0616642					RUL26
Desig. Label (NT1X78AA)	P0668410					RUL26
Desig. Label (NT1X80AA)	P0742808					RUL26
Desig. Label (NT1X80BA)	P0858643					RUL26
Desig. Label (NT1X81AA)	P0724225					RUL26
Desig. Label (NT1X81BA)	P0847437					RUL26
Desig. Label (NT1X89BB)	P0800156					RUL26
Desig. Label (NT2X48BA)	P0656335					RUL26
Desig. Label (NT2X48BB)	P0653620					RUL26
Desig. Label (NT2X57AA)	P0656327					RUL26
Desig. Label (NT2X59AA)	P0643110					RUL26
Desig. Label (NT2X59AB)	P0706694					RUL26
Desig. Label (NT2X70AE)	P0698943					RUL26
Desig. Label (NT2X70AF)	P0809960					RUL26
Desig. Label (NT2X75AA)	P0657680					RUL26
Desig. Label (NT3X02AA)	P0800338					RUL26
Desig. Label (NT3X03AA)	P0800339					RUL26

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label (NT3X67BA)	P0677822					RUL26
Desig. Label (NT3X68AA)	P0661782					RUL26
Desig. Label (NT3X68AC)	P0657674					RUL26
Desig. Label (NT3X82AA)	P0689912					RUL26
Desig. Label (NT3X82AB)	P0702196					RUL26
Desig. Label (NT3X82AJ)	P0865780					RUL26
Desig. Label (NT3X83AA)	P0688413					RUL26
Desig. Label (NT3X83AC)	P0865779					RUL26
Desig. Label (NT4X65AB)	P0689662					RUL26
Desig. Label (NT5X29AB)	P0706693					RUL26
Desig. Label (NT5X29AC)	P0654974					RUL26
Desig. Label (NT6X91BB)	P0689833					RUL26
Anchor Kit E'qke Slab	NTNX2540					RUL22
Anchor Kit E'qke Cmptr	NTNX2578					RUL22
Anchor Kit Non-e.q Slab	NTNX2579					RUL22
Anchor Kit Non-e.q Cmptr	NTNX2580					RUL22
Right Door Assembly-Gray	NTNX2513					RUL23
Left Door Assembly-Gray	NTNX2515					RUL23
Right Door Label-Gray	P0699158					RUL24
Left Door Label-Gray	P0818848					RUL24
Cabinet Type Label-Gray	P0687611					RUL25
Right Door Assembly-Brown	NTNX2552					RUL23
Left Door Assembly-Brown	NTNX2550					RUL23
Right Door Label-Brown	P0699463					RUL24
Right Door Label-Brown, MTXD	P0695230					RUL24
Left Door Label-Brown	P0818849					RUL24
Cabinet Type Label-Brown	P0699475					RUL25

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT1X75BA	MD	NT1X80AA
NT3X67BA/BB	MD	NT1X81AA
NT4X00AG	MD	NT1X55FA
NT5X00AD	MD	N/A
NTNX47AY	MD	N/A
NTNX47AZ	MD	N/A
NTNX47BB	MD	N/A
NT3X82AA	STD	NT3X82AJ
NT3X82AB	STD	NT3X82AJ
NT3X83AA	STD	NT3X83AC

PEC	RATING	REPLACED BY PEC
NT1X00AB	STD	NT1X80AA
NT1X00AC	STD	NT1X80AA
NT6X91BB	MD	NT1X89BB
NT2X53AA	MD	N/A
NT2X45AB	MD	N/A
NT0X70AC	MD	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.

FLAGS:

NOTES:

- 1) The MTD is to be installed in the MCGM cabinet just prior to shipment to job site.
- 2) All provisioned items are to be installed by the shop unless otherwise specified in the MCGM cabinet assembly drawing.
- 3) ROS shelf cannot be provisioned in the same MCGM cabinet with a DDU. When a DIO is provided at shelf position 47, shelf position 05 must be reserved for DDU or MTD. MTD requires two (2) shelf positions.
- 4) When the MCGM cabinet is ordered as an extension, the following labels should be ordered:

QTY 1 P0687620
QTY 1 P0695393
QTY 1 P0695425

QTY 1 P0580231
 QTY 1 P0580232
 QTY 1 P0695392 (FOR MSL100 JOBS)
 QTY 1 P0588059 (FOR DMS300 JOBS)
 QTY 1 P0622886 (FOR DMS250 JOBS)

- 5) The 25-pin, 50-pin bulkhead cover plate and their mounting screws will be provided by manufacturing as required. (ECM449 issue18)

RULES:

- AP 1) When PEC NTN47BA is ordered, these items are provided.
 2) For more information on the PTM (MTM) Shelf Assembly NT2X58CA, see EMA2-01-MTM-1.

- RUL1 1) Provide NT5X09BA GDC modem shelf per customer requirements. The NT5X09BA Modem Shelf can accommodate up to 16 rack mounted modem cards. The NT5X09BA GDC modem shelf may be provisioned as follows:

9600 Bd Modem Card	049P026-004	A0378923	GDC Sync/Async
4800 Bd Modem Card	051P006-002	A0301068	GDC R Sync
1200 Bd S/T Modem Card	053P001-002	A0328524	GDC S/T Async
1200 Bd T Modem Card	053P001-003	A0336184	GDC 202T

- 2) The NT5X09BA GDC modem shelf is for Richardson or Bramalea use only. It is not approved for INS (RTP).
 3) Provide one NTN47AN MCGM Modem hardware kit when a modem shelf is provisioned at shelf 47. The Modem Shelf hardware kit includes all cables and associated hardware required when the modem shelf is provisioned in the MCGM cabinet.

- RUL2 1) Provision the DIO shelf in shelf 47 of the MCGM cabinet. See rule 49 for the provisioning rules of two (2) DIO shelves. The DIO shelf can be provisioned for one IOC on the left of the shelf, plus a second IOC on the right of the shelf. The following circuit packs are always required when a DIO is equipped:

		LEFT IOC	RIGHT IOC
NT2X70AF	Power Converter CP	Slot 01	Slot 25
NT1X62CB	I/O MSG Controller CP (NT40)	Slot 04	Slot 15
or			

NT1X62CB	I/O MSG Controller CP (DPCC)	Slot 04	Slot 15
NT0X67AA	Bus Terminator CP	Slot 14	Slot 24

2) Following are the MD I/O cards and their replacement:

- NT1X67BC & EA replaced by NT1X67BD
- NT1X62BB & CA replaced by NT1X62CB
- NT1X89AA & BA replaced by NT1X89BB

3) The following circuit packs are provisionable when a DIO is first equipped as above:

		LEFT IOC	RIGHT IOC
# NT1X67BC	I/O Terminal Control CP	Slot 07,08,09,10	Slot 19,20
# NT1X89AA	Multi Protocol Cont CP	Slot 07,08,09,10	Slot 19,20
# NT1X89BA	Enhanced MPC CP	Slot 07,08,09,10	Slot 19,20
NT1X89BB	Enhanced MPC CP	Slot 07,08,09,10	Slot 19,20
NT1X67BD	I/O Terminal Control CP	Slot 07,08,09,10	Slot 19,20
# NT1X67EA	I/O Terminal Control CP	Slot 07,08,09,10	Slot 19,20
# NT1X67FA	I/O Terminal Control CP	Slot 07,08,09,10	Slot 19,20
NT1X67DB	Bit Synch Data Link CP	Slot 07,08,09,10	Slot 19,20
# NT6X91BB	X25LAPB Link Cont CP	Slot 07,08,09,10	Slot 19,20
NT1X68BC	MTD Control CP	Slot 11	Slot 21
NT1X55DA	DDU Control CP	Slot 06	Slot 17
NT1X55FA	SCSI DDU CP	Slot 12,06	Slot 22,17

4) I/O circuit packs such as NT1X67BD, NT1X89BB can be assigned to DIO shelf 47 from slots 06-13 and 17-22 for new MCGM cabinet order after 7/24/96 (implementation of EC 002-16760). Because there might not be enough connectors on the bulkhead to support all 15 I/O cards, please refer to item 19 of RUL2 for the number of physical connectors on a specific bulkhead. For existing MCGM cabinets in the field, refer to RUL2 item 3 above.

5) The following filler face plates are to be provisioned when a slot is not equipped as above:

		LEFT IOC	RIGHT IOC
NT0X50BA	Filler Face Plate	Slot 06-14	Slot 17-24
NT0X50BE	Filler Face Plate	Slot 01	Slot 25
NT0X50BF	Filler Face Plate	Slot 04	Slot 15

- 6) Provision the Mag Tape Controller circuit packs in slot 11 of the DIO shelf if the MTD is mounted in shelf position 05 or 33 of the MCGM.

Provision the MAG Tape Controller circuit packs in slot 21 of the DIO shelf if the MTD is mounted in shelf position 19 of the MCGM.

Provision the Disc Drive Controller circuit packs in slots 6 and 17 of the DIO.

When the DIO and DSM shelves are used together in the MCGM, all assignable slots on the DIO are used for the DSM shelf. Other controller card types are not allowed.

- 7) Provide one NTN47BC MCGM DIO hardware kit when a DIO shelf is provided in the MCGM cabinet at shelf 47 when used alone (NOT with a modem).
- 8) Always provision a minimum of one NT1X89BB on initial installations for TurboLink Interface.
- 9) Provision a minimum of one NT1X89BB for a single CC MIS link. If redundant links are required provision two dedicated NT1X89BB cp's.
- 10) The SCSI DDU is a two slots circuit pack that replaces the 5.25" Disk Drive Unit (ESDDU). The SCSI DDU uses a 2.5" disk drive and requires a single source of 5 volt power supply. Currently, the SCSI DDU provides 250 MB capacity.
- 11) Power supply circuit pack for SCSI DDU is NT2X70AD or later version. If the existing power supply circuit pack is not a NT2X70AD or later version then provision a new power supply circuit pack for SCSI DDU application.
- 12) SCSI DDU is a two slots circuit pack. For a single DIO shelf NT1X55FA will be provisionable at slots 06, 12, 17 and 22. Since the NT1X55FA is a two slots CP, it is preferable to assign the first two NT1X55FAs to slots 12 and 22 in an initial job. The circuit number associated to these slot locations are as follows:

Slot Location	Circuit Number
12	24 (1st IOC)
22	20 (2nd IOC)
06	00 (1st IOC)
17	00 (2nd IOC)

13) SCSI DDU can be assigned to DIO shelf 47 from slots 6-12 and 17-22 for MCGM cabinet ordered after 7/24/96 (implementation of ECD 002-16760). For existing MCGM in the field, refer to RUL 2 items 3 & 11.

14) A maximum number of six (6) SCSI DDU is allowed per office.

15) SCSI DDU software support is available at BCS36 via NTX074AA software package. This software is included in the new software structure (PCL).

16) Due to the limitation of thru-put in the MS, Each IOC can only handle a maximum combination of three (3) MPC/EMPC/SCSI DDU. Any combination exceeding three (3) will adversely affect the real-time of the Message Switch. Reference ECM561 issue 03.

17) Order SCSI DDU for all initial and extension job.

18) Provide one FSP label, P0699343 if a DIO, DDM or MTD is provisioned in the MCGM cabinet.

19) Provide either one (1) NTN47DJ or one (1) NTN47DN when the NTN3401 DIO Shelf is provisioned and the NTN47DI Bulkhead Kit is NOT provisioned. Provide the NTN47DJ when the MCGM will be equipped with MTM, TM8, T8A, STM, TAN and ROS shelves along with a DIO. Provide the NTN47DN when only a single DIO is provisioned and additional DB25 connectors are required. MTMs, TM8s, T8As, STM, TAN and ROS shelves CAN NOT be used in the MCGM if the NTN47DN is provisioned. The NTN47DI and NTN47DN contain the same bulkhead (P0686030) which has 40 DB25 connectors. The bulkhead in the NTN47DJ has only 24 DB25 connectors. The slots in the DIO may be provisioned until all DB25 connectors are used.

- RUL3
- 1) Provide per requirements of office features (see note 1). MTD requires two (2) shelf positions, ie; 05(&19), 19(&33) or 33(&47).
 - 2) If the MTD is mounted in shelf 05 then the MTD controller, NT1X68BC must be assigned to slot 11 of the DIO shelf located in shelf 47. (A-Feed powered)

- 3) If the MTD is mounted in shelf 19 then the MTD controller, NT1X68BC must be assigned to slot 21 of the DIO shelf located in shelf 47. (B-Feed powered)
- 4) Always provide the READ, WRITE & CONTROLLER cables when MTD is provisioned.
- 5) Provide NTN47AP, MTD mounting hardware kit when MTD is mounted on shelf 05 or 19.
- 6) Use PEC 209800-173 in Cades for the MTD. 209800-173 replaces A0277744.
- 7) NTN47AQ replaces NT0X44AD. Provide NTN47AQ MTD mounting hardware kit when MTD is mounted on shelf 33.

- RUL4
- 1) Provision one (1) NT4X00AF DDU shelf at position 05 to accommodate a max of two (2) NT-MERCURY Disk Drives 8211D-19-063 or two (2) 5.25" Disk Drives NT4X00AG.
 - 2) Provide one NTN47AK MCGM DDU hardware kit when DDU shelf assembly NT4X00AF is provisioned. The DDU hardware kit includes all cables and associated hardware required when a DDU shelf is provisioned in the MCGM cabinet.
 - 3) Provide a maximum of two (2) disk drives per NT4X00AF Dual Disk Drive Unit shelf. The first DDU will mount in position 12 and the second DDU will mount in position 18.
 - 4) Provide one NT1X78AA and one designation label P0668410 per Disk Drive provided. Otherwise, provide one Filler Face Plate NT0X50AE and one Designation Label P0599142.
 - 5) Provide one (1) NT4X0032 DDU H/W kit per disk drive to mount disk drive on the NT4X00AF DDU shelf (maximum of two per shelf).
 - 6) The NT4X00AG is 'MD' status. Order NT1X55FA to replace NT4X00AG for all new jobs.

- RUL5
- 1) Provision per MS3X95AA or MS3X95BB Remote Oscillator Shelf (ROS) to accommodate customer requirements for Stratum Clocking as required. Refer to the respective Engineering Manual sections for packfill requirements and provisioning on the shelf.

NT3X95AA	ROS	Stratum II/NT40/Non-ISG Office
NT3X95BB	ROS	Stratum 2.5/DMS-Core/ISG Office

- 2) NT3X95AA and NT3X95BB may be provisioned in shelf 19 or 33, but not both.
- 3) Provide one (1) MCGM ROS Hardware Kit NTNX47AS when the ROS shelf is in shelf position 33.
- 4) Provide one (1) MCGM ROS Hardware Kit NTNX47AT when the ROS shelf is in shelf position 19.

RUL6 1) One each of these cables to be provided when one or more of the following shelves are provisioned on the MCGM:

NT2X52AG TM8 NT2X58CA MTM NT7X3004 STM
NT2X5228 T8A NT2X58CB MTM

- 2) See rule 53 for additional bulkhead kit required when MCGM connects to ENET frame or SNSE cabinet.
- 3) A MAXIMUM of three (3) TM8's, T8A's, MTM's, or TAN shelves may be provisioned.
- 4) DRAM is always provided in the left STM module. A MAXIMUM of two (2) DRAM per cabinet is allowed.
- 5) A MAXIMUM of Four (4) STM shelves may be provisioned. The NTNX4740 & NTNX4741 network port cables will always be wired to the bottom 2 STM shelves (4 STM modules). The top 2 STM shelves will not be wired to the network. These top 2 STM shelves will be used mainly for CTM/EDRAM card. Each STM shelf can have up to four (4) EDRAM/CTM combination. However, NO MORE than two (2) CTM packs are allowed in one STM
- 6) If three or four STM shelves are already in the MCGM2 cabinet, then no other shelf (MTM, TM8) can be provisioned to this MCGM2 cabinet.

RUL7 1) Provision basic shelf circuit packs per RULE 27 to accommodate customer requirements for each TM8 required.

- 2) Provide one of the following hardware kits as required for each TM8 shelf provided. The hardware kits include all cables and associated hardware required when TM8 shelf is provisioned in the MCGM cabinet except Network Port cables. (see RUL6)

NTNX47AC when a TM8 shelf is provisioned in SHF POS 33.
NTNX47AD when a TM8 shelf is provisioned in SHF POS 19.
NTNX47AE when a TM8 shelf is provisioned in SHF POS 05.

- RUL8 1) Provision basic shelf circuit packs per RULE 27 to accommodate customer requirements for each T8a required.
- 2) Provide one of the following hardware kits as required for each T8A shelf provided. The hardware kits include all cables and associated hardware required when T8A shelf is provisioned in the MCGM cabinet except Network Port cables. (see RUL6)

NTNX47AV when a T8A shelf is provisioned in SHF POS 33.

NTNX47AW when a T8A shelf is provisioned in SHF POS 19.

NTNX47AX when a T8A shelf is provisioned in SHF POS 05.

- RUL9 1) Provision per MS5X00AD to accommodate customer requirements for each TAN required. Refer to engineering manual for packfill requirements and circuit pack provisioning on the shelf. -- Figure id '' unknown --
- 2) Provide one of the following hardware kits as required for each TAN shelf provided. The hardware kits include all cables and associated hardware required when TAN shelf is provisioned in the MCGM cabinet except Network Port cables. (see RUL6)

NTNX47AY when a TAN shelf is provisioned in SHF POS 33.

NTNX47AZ when a TAN shelf is provisioned in SHF POS 19.

NTNX47BB when a TAN shelf is provisioned in SHF POS 05.

- 3) The NT5X00AD, Test Access Network Shelf is 'Md' status. There is no replacement of this shelf.

- RUL10 1) Provision per MS2X58CA or MS2X58CB to accommodate customer requirements for each MTM required. Refer to engineering manual for packfill requirements as follows:

NT2X58CA EMA2-01-MTM-1

NT2X58CB EMA2-01-MTM-2

- 2) When OAU (Office Alarm Unit) function is to be provided in the MCGM cabinet, provide two (2) NT2X58CA MTMs and appropriate Common CP (see RUL10, item 1). Mount the MTM in shelf position 05 and 19. MTM in shelf position 05 is MTM 00; MTM in shelf position 19 is MTM 01. Configure the MTM/OAU as follows:

	PEC	NAME	SH POS	SLOT
Dead System Alarm	NT3X82**	MTM:00	05	05
Dead System Alarm	NT3X82**	MTM:01	19	05
# OAU Alm Transfer	NT3X83AA	MTM:01	19	07

OAU Alm Transfer	NT3X83AC	MTM:01	19	07
Misc Scan CP	NT0X10AA	MTM:01	19	08
Signal Dist CP	NT2X57AA	MTM:01	19	09

** = AA for Unique Audible Alarms
AB for Common Audible Alarms
** = AJ for Common Audible Alarms

- 3) Provide one of the following hardware kits as required for each MTM shelf provided. The hardware kits include all cables and associated hardware required when MTM shelf is provisioned in the MCGM cabinet except Network Port cables. (see RUL6)

NTNX47AJ when a MTM shelf is provisioned in SHF POS 33.
NTNX47AH when a MTM shelf is provisioned in SHF POS 19.
NTNX47AG when a MTM shelf is provisioned in SHF POS 05.

- 4) Provide one of the following hardware kits as required for each MTM/DRA NT2X58CB shelf provided. The hardware kits include all cables and associated hardware required when MTM/DRA shelf is provisioned in the MCGM cabinet except Network Port cables. (see RUL6)

NTNX47BK when a MTM/DRA shelf is provisioned in SHF POS 33.
NTNX47BJ when a MTM/DRA shelf is provisioned in SHF POS 19.
NTNX47BH when a MTM/DRA shelf is provisioned in SHF POS 05.

- 5) Refer to EMA14-01-000 for additional provisioning rules of services circuits.
- 6) Provision NT2X58CA for new application with EDRAM/CTM. For field upgrade with NT2X58CB shelves, apply NTNX47BN cable kit and remove the following jumpers per PCNX47BN from NTX258CB shelf:

- Slots 6-7, 8-9, 10-11 and 13-14
- Pins 5B-11B and 17B-31B

- RUL11 1) Provision one NT7X3004 STM/STM shelf and one of the following hardware kits as required for each STM/STM required. The hardware kits include all cables and associated hardware required when STM/STM shelf is provisioned except for network port cables. A maximum of four (4) STM shelves may be provisioned per MCGM cabinet. (see RUL6)

NTNX47BG when a STM shelf is provisioned in SHF POS 47.
NTNX47BF when a STM shelf is provisioned in SHF POS 33.
NTNX47BE when a STM shelf is provisioned in SHF POS 19.

NTNX47BD when a STM shelf is provisioned in SHF POS 05.

- 2) A MAXIMUM of Four (4) STM shelves may be provisioned. The NTNX4740 & NTNX4741 network port cables will always be wired to the bottom 2 STM shelves (4 STM modules). The top 2 STM shelves will not be wired to the network. These top 2 STM shelves will be used mainly for CTM/EDRAM card. Each STM shelf can have up to four (4) EDRAM/CTM combination. However, NO MORE than two (2) CTM packs are allowed in one STM
- 3) If three or four STM shelves are already in the MCGM2 cabinet, then no other shelf (MTM, TM8) can be provisioned to this MCGM2 cabinet.

- RUL12 1) Always provide the following CPs when STM shelf NT7X3004 is provisioned for shelf locations 05, 19, 33 or 47:

	PEC	SH POS	SLOTS
TM Controller CP	NT4X65AB	XX	04,12
Power Converter	NT2X70AF	XX	20
Filler Face Plate	NT0X50AG	XX	01
Filler Face Plate	NT0X50AA	XX	19

XX = 05, 19, 33, and 47.

- 2) Provide Filler Face Plate NT0X50AC and Designation Label P0580258 as required in slots 5-11, 13-16 and 8 of shelves 05, 19, 33 or 47 when these STM slots are unequipped.

- RUL13 1) Provision NTNX29AB DRAM Wiring option and listed circuit packs when a STM shelf is provisioned for shelf locations 05, 19, 33 or 47 and DRAM option is a customer requirement. DRAM is always provisioned on the LEFT (even numbered) STM of the STM/STM shelf. Also, see RUL12, item 2.
- 2) Wiring option NTNX29AB also adds CODEC wiring for a NT2X59's circuit pack in the RIGHT STM (slots 13-18). DO NOT PROVIDE NTNX29AC when NTNX29AB is provisioned.
 - 3) The NT1X75BA replaces the NT1X75AA and is required for two stage dialing.
 - 4) Provide one (1) NT1X75DA DRAM Control CP and NT1X77AA DRAM Memory CP as required for international applications of the DRAM in even numbered (left) STM. The NT1X75DA is the A-Law version of the NT1X75BA and functions similarly.

- 4) Only circuits 0 to 15 can be used due to circuit restrictions on the STM shelf. This will restrict the DRAM announcement datafill to announcements 1 to 15.
 - 5) The NT1X75AA & NT1X75BA Dram controller are 'MD' status. Order Edram NT1X80AA for all new jobs.
- RUL14
- 1) Provision NTNX29AC CODEC Wiring option for shelf locations 05, 19, 33 or 47 when both STMs (LEFT & RIGHT) require CODEC wiring option. Also provision two (2) NTN2X59AB to slots 9 & 17 and any combination of the following service circuits: NT3X67's, NT2X48's, NT3X68's, NT3X02AA, NT3X03AA, NT1X00's, and NT2X75AA. Provision des. label for each circuit pack provided. Also see RUL12, item 2. DO NOT provision this wiring option with DRAM wiring option, NTNX29AB. Provision designation P0706655 as required.
 - 2) For international markets, provision NT2X48CC A-LAW based Dual-T one Multifrequency Receiver in accordance with RULE14, item 1.
 - 3) Provision DTMF gen. as required. NT3X68AB pack requires 2 slots.
 - 4) NT1X81AA replaces the NT3X67BA (see Rule 48).
- RUL15
- 1) Provision NTNX29AC CODEC Wiring option when a STM shelf is provisioned for shelf locations 05, 19, 33 or 47 and CODEC option is a requirement for the RIGHT half of the shelf. Also provision one (1) NT2X59AA to slot 17 and any combination of the following service circuits: NT3X67's, NT2X48's, NT3X68's, NT3X02AA, NT3X03AA, NT1X00's, and NT2X75AA. Provision des. label for each circuit pack provided. Also see RUL12, item 2. DO NOT provision this wiring option with DRAM wiring option (NTNX29AB).
 - 2) For international markets, provision NT2X48CC A-LAW based Dual-T one Multifrequency Receiver in accordance with RULE14, item 1.
 - 3) NT3X67BA is 'MD' status. Order NT1X81AA for new all jobs (see Rule 48).
- RUL16
- 1) Provision either NT5X29AB and designation label P0706693 or NT5X29AC and designation label P0654974 Audio Tone Detectors as needed when NT7X3004 STM shelf has been provisioned in shelf locations 05, 19, 33 or 47. Provision one P0698920 shelf designation strip when Audio Tone Detectors are specified for all four slot positions of an STM shelf.

Provision the NT5X29HK wiring kit for 56 Audio Tone Detector circuits (ATD's) on a single STM shelf. (Both STM peripherals)

2) Provision Filler Face Plates per the following table:

NT5X29 CP POS	Filler CP POS
-----	-----
05	06,07
08	09-11
13	14,15
16	17-19

RUL17 1) Reserved.

RUL18 1) Provide one for each unequipped shelf position 05, 19, 33, 47.

RUL19 1) Reserved.

RUL20 1) Reserved.

RUL21 1) Reserved.

RUL22 1) Provide one (1) earthquake kit per MCGM cabinet when cabinet is installed at site in the following seismic (earthquake) zones:

ATC	Zones 6 & 7
NEBS	Zone 4
UBC	Zone 4

Provide one (1) NTN2540 earthquake kit for slab type flooring. Provide one (1) NTN2578 earthquake kit for computer floor.

2) Provide one (1) NTN2579 anchor kit for non-earthquake zone site with a slab floor.

3) Provide one (1) NTN2580 anchor kit for non-earthquake zone site with a computer floor.

RUL23 1) Provide two door assemblies (2 left and 2 right, one set for front and one set for rear of cabinet).

RUL24 1) Provide two right door labels and two left door labels per MCGM cabinet.

- 2) Provide right door label-brown, P0699463 for MSL100. Provide right door label-brown, P0695230 for MTXD.
 - 3) Provide new NORTEL label for left door label-grey, P0818848. Provide new NORTEL label for left door label-brown, P0818849
- RUL25 1) Provide two cabinet type labels, one for front, one for rear of cabinet.
- RUL26 1) Provide one (1) label per circuit pack provisioned. (NT code on label should be the same as circuit pack provisioned.) Affix designation label to appropriate position on the designation strip.
- RUL27 1) These circuit packs must be provided whenever a TM8 or T8A shelf assembly is provisioned for shelf positions 05, 19, or 33. Additional packs may be provisioned for slot positions 05-19 as needed for customer requirements (see Engineering Manual EMA 14-01-000, Tables A-3 and A-4.
- RUL28 1) These circuit packs must be provided whenever an MTM or MTM/DRA shelf assembly is provisioned for shelf positions 05, 19, or 33. Additional packs may be provisioned for slot positions 05-16 as needed for customer requirements (see Engineering Manual EMA 14-01-000, Tables A-3 and A-4.
- 2) The NT2X59BA is used in the NT2X59CB shelf for CALA applications.
 - 3) The NT4X65AB replaces NT2X45AB, NT0X70AC and NT2X53AA. Provision also the NTNX47AR, MTM wiring kit when NT4X65AB CP is used. Order NT4X65AB CP for all new MTM application.
 - 4) The NT2X59AA is used for all domestic applications.
- RUL29 1) For MTXD applications only: provision the modem shelves and DIO's in pairs. The first pair will assign at pos.47(DIO) and 33(DS-5) and the second pair will assign at pos. 19(DIO) and 05(DS-5).
- 2) Due to bulkhead limitations DS-5 modem shelves located at positions 33 and 05 may only be connected internally to DIO and externally VIA tip & ring connections only at C001 and C002 on the bulkhead. THERE ARE NO RS232 CONNECTIONS AVAILABLE FOR THIS MTXD CONFIGURATION.
 - 3) Provision one NT6X91AB or one NT6X91CA per each CSC active link plus an additional amount for modem pooling determined

by Customer Engineering. Provision one NT6X91BA for each MTX link. The maximum number of HDLC cp's per DIO is 15: slots 6-23.

Provision a minimum of two (2) NT6X91's per IOC for proper loading in the IOC backplane.

- 4) Provision the HDLC cp's evenly accross both IO's in the DIO starting with slot 6,17,07,18,08,19 etc. For detail information , please see -- Figure id 'BBBB449' unknown --

RUL30 1) For MTXD applications only: provision the modem shelves and DIO's in pairs. The first pair will assign at pos.47(DIO) and 33(DS-5) and the second pair will assign at pos. 19(DIO) and 05(DS-5).

- 2) Provision one 4800 baud modem for each NT6X91AB cp for a CSC link. Provision one 9600 baud modem for each NT6X91CA cp for a CSC link. Provision one 9600 baud modem for each NT6X91BA cp for an MTX link.

RUL31 1) For MTX applications only: provide one NTN47BL when provisioning one (1) DIO shelf and one (1) modem shelf for MTX applications. The DIO and modem shelves are provided in pairs, the first pair being assigned at shelf positions 47 and 33. THIS KIT IS REQUIRED WHEN PROVIDING ONLY ONE PAIR. The kit contains all hardware and cables required for this application.

- 2) For MTX applications only: provide one NTN47BM when provisioning two (2) DIO shelves and two (2) modem shelves for MTX applications. The DIO and modem shelves are provided in pairs; the first pair being assigned at shelf positions 47 and 33, the second pair being assigned at shelf positions 19 and 05. THIS KIT IS REQUIRED WHEN PROVIDING BOTH PAIRS, THUS FULLY PROVISIONING THE CABINET. The kit contains all hardware and cables required for this application.

- 3) Both kits, the NTN47BL and NTN47BM, include all hardware and cable harnessing required to install and cable the two units together and to the bulkhead.

RUL32 1) The IMTM Common Circuit Packfill contains those cards that are to be provisioned with each IMTM Shelf Assembly ordered for international applications (Turkey).

- 2) The IMTM Cmmn Circuit Packfill must be provisioned with NT2X58CB.

- 3) Refer to EMA14-01-000 for additional provisioning rules of services circuits.
- RUL33 1) Provide NT2X71AA on MCGM as required for MSL-100C system for an AC open or short termination test to check stability of trunks with negative impedance type repeaters.
- RUL34 1) Provide NT2X75AA on MCGM as required when loop around test line is required for measuring near to far end trunk transmission losses (one loop around circuit per pack).
- 2) For international markets, provide the NT2X75BA on MCGM in accordance with RULE9, issue 1.
- RUL35 1) Provide NT1X00AB on MCGM as required when additional 102 test milliwatt is required.
- RUL36 1) Provide one (1) NT2X47BA (left, odd slot) and one (1) NT2X56BA (right, even slot) for International Transmission Test Unit required.
- RUL37 1) Provide one (1) NT1X90AA (left, odd slot) and NT2X96AA (right, even slot) for additional transmission termination trunks.
- 2) Provision the NT1X90BA and the NT2X96BA for international markets in accordance with RUL15, issue 1.
- RUL38 1) Provision NT3X67BB as one (1) 6-port circuit or as two (2) 3-port circuits. NT3X67BB is 'MD' circuit pack.
- 2) NT3X67BB is replaced by NT1X81AA. Order NT1X81AA for new job.
- RUL39 1) Refer to section EMA14-01-000 for further information on the NT3X82AJ and the NT3X83AC.
- RUL40 1) Provide NT5X30AA on MCGM as required when additional test lines are required (see RUL3).
- 2) No more than four (4) per shelf.
- RUL41 1) Provide NT0X10AA on MCGM as required when scan points are required (two circuits per pack, and seven scan points per circuit).
- RUL42 1) Provide NT2X57AA on MCGM as required when signal distribution points are required (two circuits per pack and seven points per circuit).

- RUL43 1) Provide NT1X54AA on MCGM as required when additional circuits for access to switching network for analog (vf) test equipment required (two circuits per pack).
- RUL44 1) Reserved.
- RUL45 1) Provide NTN47BN MTM EDRAM DS30 cable kit when this shelf is provided with EDRAM or CTM circuit packs. One cable may be provided per shelf. This kit provides the DS30 network cabling from the MTM shelf to the bulkhead for slots 5, 6, 7 and 8. More than one shelf may be provisioned in this way.
- 2) When providing EDRAM kit, NTN47BN on the NT2X58CB DRA MTM, Provision four (4) keylock brackets per DRA MTM shelf. See rul10.
- RUL46 1) Provide NTN47BP STM EDRAM DS30 cable kit when this shelf is provided with EDRAM or CTM circuit packs. One cable may be provided per shelf. This kit provides the DS30 network cabling from the STM shelf to the bulkhead for slots 5, 6, 7 and 8. More than one shelf may be provisioned in this way.
- RUL47 1) Provide NTN47BQ STM EDRAM DS30 cable kit when this shelf is provided with EDRAM or CTM circuit packs at cabinet position 47.
- RUL48 1) Provide NT1X80AA EDRAM or NT1X81AA CTM circuit packs when these functions are required. These packs can be provisioned in slots 5, 6, 7 or 8. Each pack requires a DS30 network port which must be cabled out of the lineup via bulkhead connections. Consult the system cable documentation for the correct cable, be sure that network ports are available in the MCNM or other network. (This may require provisioning a bulkhead port kit) When cabling from a MCGM2 for EDRAM to a MCNM only two EDRAM's can be provisioned since only two (2) network sub-groups appear on any one network port bulkhead connector of a MCNM. Use either STM or MTM slots 05 & 06 or 07 & 08. This restriction does not apply when cabling to an ENET.
- 2) Starting in BCS34, the EDRAM is available for domestic market (mu-law). EDRAM is available for international market at BCS35.
- 3) Full equivalency to the DRA module is available in BCS36 and later.

- 4) Up to two (2) CTM packs can be provisioned in one STM module.
- 5) Up to four (4) CTM packs can be provisioned in one MTM module.
- 6) The NT1X81BA is an CTM pack used only for Japan application. Items 4 & 5 of rule 48 still applies for this pack. The only difference between NT1X81AA & NT1X81BA is that NT1X81BA will generate a set of Japanese tones used in conferencing application.
- 7) The NT1X81BA and NT1X81AA CAN NOT coexist in the same office. All NT1X81AA packs must be removed when NT1X81BA pack is provisioned in a Japanese office. Also the office parm 'PM_PCM_PROTOCOL_SECTION' in table OFCENG must be changed to 'JPNTONES'.
- 8) The NT1X80BA is currently only provisionable for Japan applications. Item 1 of rule 48 stills applies for this pack.

RUL49 1) Provide one NTN47DI when two (2) DIO shelves (19 & 47) are required. External modems will be required when two DIO shelves are provisioned in the MCGM. Do Not provide NTN47DJ or NTN47DN with the NTN47DI. For two DIO applications, MCGM cabinet only contains DIO shelves.

- 2) The DIO shelf can be provisioned in shelf location 19 & 47. The DIO shelf can be provisioned for one IOC on the left of the shelf, plus a second IOC on the right of the shelf. The following circuit packs are always required when a DIO is equipped:

		LEFT IOC	RIGHT IOC
NT2X70AF	Power Converter CP	Slot 01	Slot 25
NT1X62BB	I/O MSG Controller CP (NT40)	Slot 04	Slot 15
or			
NT1X62CB	I/O MSG Controller CP (DPCC)	Slot 04	Slot 15
NT0X67AA	Bus Terminator CP	Slot 14	Slot 24

- 3) The following circuit packs are provisionable when a DIO is first equipped as above:

		LEFT IOC	RIGHT IOC
NT1X89BB	Enhanced MPC CP	Slot 06-13	17-23
NT1X67BC	I/O Terminal Control CP	Slot 06-13	17-23

NT1X67BD	I/O Terminal Control CP	Slot 06-13	17-23
NT1X67EA	I/O Terminal Control CP	Slot 06-13	17-23
# NT6X91BB	X25LAPB Link Cont CP	Slot 06-13,	17-23

- 4) The following filler face plates are to be provisioned when a slot is not equipped as above:

		LEFT IOC	RIGHT IOC
NT0X50BA	Filler Face Plate	Slot 06-14	Slot 17-24
NT0X50BE	Filler Face Plate	Slot 01	Slot 25
NT0X50BF	Filler Face Plate	Slot 04	Slot 15

- 5) All 15 slots in a Dual IOC can be configured using NT1X89BA/B EMPC cards running V.35 when the NTN47DI kit is provisioned in an MCGM.
- 6) For two DIO shelves option, NT1X55FA CP can be provisionable to slots 06 thru 12 and 17 thru 22. See rule 2 for detail provisioning information.

- RUL50 1) Provide one of the following cables if the NTN47DI or NTN47BC (for MCGM cabinet ordered after 7/24/96) kit has been provisioned.
- 2) Provide one NTMX4723 cable for each NT1X89BB card that is provisioned to provide V.35 service.
- 3) Provide one NTMX4724 cable for each NT1X89BB card that is provisioned for asynchronous or synchronous RS-232 service.
- 4) Provide one NTMX4725 cable per card when NT1X67FA, NT1X67DB, and NT6X91AB/BB/CA is provisioned.
- 5) Provide one NTMX4726 cable when NT1X67BC or NT1X67BD is provisioned.

- RUL51 1) Provide NTN47DJ MCGM2 Bulkhead kit when internal modems (mounted on the frame) are required. The MCGM2 Bulkhead kit will always be required except when external modems (not mounted on the frame) and the NTN47DI kit are required. This NTN47DJ kit provides the original MCGM2 bulkhead.

- RUL52 1) Reserved.

- RUL53 1) Provide one NTN29ES DS30 filter kit for bulkhead connectors CO-0N & CO-1N when cabling to ENET for the following shelves:

SHELF	PEC
MTM	NT2X58CA
DRA MTM	NT2X58CB
TAN	NT5X00AD
T8A	NT2X5228
TM8	NT2X5201
STM	NT7X3004

- 2) Always provide this kit with NTN4740 & NTN4741 cables.
- 3) Provision one NTN29ES kit per MCGM cabinet.

MCSS

PEC CODE: NTNX22BA

CPC CODE: B0229134

RATING: Standard

REPLACES: NTNX22AA

REPLACED BY: Not Applicable

ABBREVIATION NAME: MCSS

ENGINEERING DESCRIPTION: The MCSS frame/cabinet is used to store spare circuit packs. This cabinet can be provisioned with shelf assembly for storing Supernode circuit packs. It can be accessed from front and rear.

REFERENCE DOCUMENTATION: MSNX22BA

MARKETS: Applicable markets:

Wireless

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

NTNX22BA EMA10-14-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 02 16	ECM 492 18	Corrections per ET 21019.
95 04 25	ECM 492 19	JEL: Clarifications per MSNX22.
95 06 06	ECM 492 20	JEL: So replaces by for the NTNX22AA.
95 08 04	ECM 492 23	DGB: Correct cabinet provisioning.
95 12 21	ECM 492 29	JEL: Replacing the door labels left with the new NORTEL door labels left.
97 05 02	ECM 492 40	KMN: Update Per EC 011-22407.

The MCSS is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Common Framework	NTNX25AA	FW	1			AP
Storage Shelf Assembly	NTNX2201		2	03, 17		AP
Universal Ground Point	NT6X0250		2			AP
Utility Tray	P0700829		1	59		AP
Storage Shelf Assembly	NTNX2201			31, 45		RUL1
Supernode spares CP shf assy	NTNX2203			32, 45 46		RUL2
Line Card Storage Chassis	NT3X55BA					RUL3
Left Door Assembly (Brown)	NTNX2550					RUL4
Right Door Assembly (Brown)	NTNX2552					RUL4
Left Door Assembly-Grey	NTNX2515					RUL4
Right Door Assembly-Grey	NTNX2513					RUL4
Right Door Label (Grey)	P0677703					RUL5
Left Door Label (Grey)	P0818848					RUL5
Right Door Label (Brown)	P0699463					RUL5
Left Door Label (Brown)	P0818849					RUL5
Cabinet Type Label (Grey)	P0687619					RUL6
Cabinet Type Label (Brown)	P0699468					RUL6
Anchor Kit (Earthquake Slab)	NTNX2540					RUL7
Anchor Kit (EQ cmptr Floor)	NTNX2578					RUL7
Anchor Kit (Non-EQ Slab)	NTNX2579					RUL8
Anchor Kit (Non-EQ cmp Flr)	NTNX2580					RUL8
Storage Shelf Assembly	NTNX2204			03		RUL9
End Panel Right (Brown)	NTNX2546					RUL10
End Panel Left (Brown)	NTNX2553					RUL10
End Panel Right (Grey)	NTNX2518					RUL10
End Panel Left (Grey)	NTNX2517					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:

RULES:

AP 1) When PEC NTN22BA is ordered, these items are provided.

RUL1 1) Circuit Pack Shelf Assembly NTN2201 provides card cage plus sliders in front and rear for mounting spare circuit packs. A maximum of fifty four (54) circuit packs (.875 inches wide) or forty two (42) circuit packs (1.125 inches wide). NTN2201 can be provisioned in positions 31 and 45. Provision one (1) NTN2201 per mounting position.

2) When provisioning two NTN2201 they will be mounted in shelf pos. 31 and 45. 3) When provisioning a NTN2201 and NTN2203, the NTN2203 must mount in shelf pos. 46 and the NTN2201 in pos. 31. See Rul2.

RUL2 1) Circuit Pack Shelf Assembly NTN2203 provides card cage with sliders for mounting spare Super-Node packs. Maximum of two (2) Power Converters per shelf. A maximum of twenty (20) full size packs and a maximum of twenty-six (26) paddle cards. NTN2203 can be provisioned in positions 32,45,46. Provision one (1) NTN2203 per mounting position.

2) Provision NTN2203 in position 46 only when NTN2201 is provisioned in position 31.

- RUL3 1) Provide line card storage chassis NT3X55BA when line cards are provisioned in the system. If there are line cards in the system and there are three (3) or more networks in the system, provide two (2) line card storage chassis.
- 2) When the NT3X55BA is supplied, it first shall be installed in the left side of shelf located at position 03. If two are required, the second chassis will be installed in the left side of position 17.
- RUL4 1) When specifying brown cabinets, provision two NTNX2550 left door assemblies and two NTNX2552 right door assemblies.
- 2) When specifying grey cabinets, provision two NTNX2515 left door assemblies and two NTNX2513 right door assemblies.
- RUL5 1) When specifying brown cabinets, provision two P0699463 right door labels and two P0818849 left door labels.
- 2) When specifying grey cabinets, provision two P0818848 left door labels and two P0677703 right door labels.
- RUL6 1) Provision two cabinet type labels. When specifying grey cabinet, use P0687619. When specifying brown cabinet, use P0699468.
- RUL7 1) Provision one earthquake mounting kit when installing frame in ATC zones 6 and 7, NEBS zone 4, and UBC zone 4. Use NTNX2540 kit for slab type floor or NTNX2578 for computer type (raised) flooring.
- RUL8 1) Provision one frame mounting kit when installing frame in a non earthquake zone. Use NTNX2579 kit for slab type flooring or NTNX2580 for computer type (raised) flooring.
- RUL9 1) Circuit Pack shelf insert assembly NTNX2204 provides storage for odd size circuit packs. Maximum of twenty two (22) circuit packs can be stored within shelf insert. Two (2) shelf insert assemblies may be installed into the bottom NTNX2201 shelf at location 03.
- 2) Locate one (1) shelf insert NTNX2204 in left side of NTNX2201 from the front and the second NTNX2204 shelf in the left side of NTNX2201 from the rear of the frame.
- 3) When line card storage chassis NT3X55BA and shelf insert NTNX2204 are provisioned, install NT3X55BA in left side of NTNX2201 and install NTNX2204 in right side of shelf NTNX2201.

RUL10 1) When cabinet is not located in line up, provision one right end panel and one left end panel. (Color as required)

Release 05.03
December 1997

DMS-100 Family
North American DMS-100
ALL PRODUCTS COMPUTING-MODULE LOADS Vol 2 of 15

CR 1997 NORTEL
ALL RIGHTS RESERVED

NORTEL CONFIDENTIAL: The information contained in this document is the property of NORTEL. Except as specifically authorized in writing by NORTEL, the holder of this document shall keep the information contained herein confidential and shall protect same in whole or in part from disclosure and dissemination to third parties and use same for evaluation, operation, and maintenance purposes only.

Information is subject to change without notice. NORTEL reserves the right to make changes in design or components as progress in engineering and manufacturing may warrant.

DMS, DMS SuperNode, Map, and NT are trademarks of NORTEL.
Publication number: PLN-8991-103
Product release: LEC and up
Document release: 05.03
Date: 09 December 1997
Printed in the United States of America

VOLUME SEPARATOR - BACK PAGE