
DMS-100* FAMILY

ALL PRODUCT COMPUTING-MODULE LOADS

Volume 12 of 15

RETIRED BUILDING BLOCK
ENGINEERING MANUALS

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Volume Separator - Front Page

REMOTE LINE CONCENTRATING MODULE

PEC CODE: NTZZ16AA

CPC CODE: B0232120

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ16AC

ABBREVIATION NAME: RLCM

ENGINEERING DESCRIPTION: The RLCM is a single frame remote concentrating module that can serve up to 640 lines. The RLCM communicates to the host via up to six DS-1 links.

| REFERENCE DOCUMENTATION: SLZZ16AA 00 07
NTZZ16AA REL 05

MARKETS: Applicable markets:

Canada

ISSUE AUTHOR: NTI: Charles Maynard Dept. 3471 (PPK)

MAIN CONTACT: NTI: Charles Maynard Dept. 3471 (PPK)

NTZZ16AA EMC2-14-004 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 04	----- ECM 605 05	Previous history not available EC #018-39307 - Replace NT0X25AV with NT0X25AH. Change status of NT0X25AV to A&M.
93 07 07	ECM 605 06	This EMS is being replaced by the NTZZ16AC.
93 11 29	ECM 605 08	This EMS is being MD'd and replaced by the NTZZ16AC. Previous rating of NTZZ16AA was set to A&M.

The Remote Line Concentrating Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RLCM Frame	NT6X14AA		1			AP
# Earthquake EMI Framework	NT0X25AH	FW	1			AP
FSP Without Power Dist.	NTZZ16BA	FSP		70		RUL1
FSP With Power Distribution	NTZZ16CA	FSP		70		RUL1
Fault Loc & Order Wire Acc	QPP519A			70	1	RUL2
Office Repeaters	QRY18			70	2-7	RUL3
Filler Face Plate	NT0X50AJ			70	1-7	RUL4
# RMT Maint Mod Shf Assy	NT6X1301		1	56		AP-01
RMT Maint Mod Shf Assy	NT6X1306		1	56		AP-01
Remote Maint Mod - Standard	NTZZ16FA	RMM		56		RUL5
Remote Maint Mod - Custom	NT6X13AB	RMM		56		RUL5
Provisionable Circuit Packs	As Req'd			56	3-16	RUL5
Filler Face Plate	NT0X50AC			56	3-16	RUL5
# RLCM ESA CP Package	NTZZ16DA			56	15-16	RUL6
RLCM ESA CP Package	NTZZ16DB			56	15-16	RUL6
ESA Field Application Kit	NT6X14WB			56		RUL6
Baffle Assembly	NT6X1402		1	51		AP-01
# Host I/F Equip Shf Assy	NT6X1101		1	38		AP-01
Host I/F Equip Shf Assy	NT6X1108		1	38		AP-01
HIE Common CP	NT6X11AB	HIE	1	38		AP
Ringin Generator CP	NT6X60AA		2	38	1,5	AP
Filler Face Plate	NT0X50AG		1	38	9	AP
2 DS-1 C-Side Interfaces	NTZZ12DA			38	21	RUL7
Filler Face Plate	NT0X50AA		2	38	13,21	AP
Filler Face Plate	NT0X50AA			38	14-16	RUL6
Pwr Converter + & -5V, 12V	NT2X70AE		2	38	22,25	AP
LCM Common CP	NT6X04AB	LCM0	1	04		AP
Line Conc. Array Shf Assy	NT6X0401	LCA1	1	21		AP-01
Line Drawer	NT6X05AA	LD	5	21	1-5	AP
Line Conc. Array Shf Assy	NT6X0401	LCA0	1	04		AP-01
Line Drawer	NT6X05AA	LD	5	04	1-5	AP
Line Cards	As Req'd					RUL8
Designation Labels, LSG No.	P0631765		1			AP
Desig. Label for NT6X60AA	P0642014		2	38	1,5	AP
Desig. Label for NT2X70AE	P0698943		2	38	22,25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X25AV NTZZ16DA NT6X1101 NT6X1301	A&M MD MD MD	NT0X25AH NTZZ16DB NT6X1108 NT6X1306

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 NTZZ16AA RLCM Frame for Canadian applications.

RULES:

- AP 1) When PEC NTZZ16AA is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT6X14AA and is shown here for completeness.
- RUL1 1) Provide one (1) NTZZ16CA FSP to provide power distribution to the RLCM frame only. When the RLCM site requires additional frames such as the RME frame, provide one (1) NTZZ16BA FSP instead of the NTZZ16CA. When the NTZZ16BA is provisioned, a PDC frame or equivalent is required.
- RUL2 1) Provide one (1) QPP519 when office repeaters are required in the RLCM and customer requires fault locate feature. Select QPP519 as follows:
- QPP519A - provides jacks for 2 wire telephone or 4 wire headset and permits extension of order-wire for subscriber line operation.

QPP519B - The QPP519B provides a simple through connection between the order wire pair and the CO switching equipment with jack access for a 2 wire telephone.

- 2) Also provision one (1) QFB127* or QFB128* fault locate filter for each QPP519.

QFB127* - Dual-amplified Type

QFB128* - Single-passive Type

Order the appropriate filter type and frequency per Telco requirements.

* = A 832Hz
B 928Hz
C 1048Hz
D 1206Hz
E 1340Hz
F 1508Hz
G 1722Hz
H 2008Hz
J 2193Hz
K 2413Hz
L 2680Hz
M 3017Hz

- RUL3 1) Equip RLCM with one of the following office repeaters if office repeaters are required in the RLCM: QRY18A, B1, C, D1, F, G1. Each DS-1 line or T1 line requires one office repeater.

QRY18A - powers the line repeaters
(provides DC power to T1 line)
QRY18B1 - provides DC power and does error monitoring
QRY18C - no power
QRY18D1 - no power and has error monitor
QRY18F - provides -130V for the T1 line
QRY18G1 - provides -130V for the T1 line and has error monitor

OFFICE REPEATER	LINE POWERING	FAULT-SIGNAL LOOPBACK
QRY18A	YES	NO
QRY18B1	YES	YES
QRY18C	NO	NO
QRY18D1	NO	YES

QRY18F
QRY18G1YES
YESNO
YES

- 2) Association of office repeaters to DS-1 lines are in accordance with the following information:

DS1 Port	CP Position on HIE Shelf	CP in FSP
0	19	2
2		3
4	21	4
5		5
3	20	6
1		7

- RUL4 1) Provide one (1) NT0X50AJ Filler Face Plate for each unequipped slot on the FSP.
- RUL5 1) When the telco requires a standard layout of maintenance and service circuits, provision one (1) NTZZ16FA Remote Maintenance Module - Standard. In addition to the pre-equipped circuit packs, there are two available provisionable slots on the Standard RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs. NOTE: when the NTZZ16DB RLCM ESA CP Package is provisioned, both these free slots are consumed.
- 2) When the telco requires fully customized maintenance and service circuits, provision one (1) NT6X13AB Remote Maintenance Module - Custom. There are 14 available provisionable slots on the Custom RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs.
- 3) Provide Filler Face Plate, NT0X50AC in slots 3-16 not equipped with a circuit pack.
- 4) Slots 15-16 are reserved for the NT2X48AB that is required for ESA. This pack is provided as part of NTZZ16DB.
- RUL6 1) Provide one NTZZ16DB RLCM ESA CP Package when the Emergency Stand Alone (ESA) feature is required is required in BCS-33 and above. See the EMI section EMB2-14-ESA-2 (NTZZ16DB) for the mounting positions of the circuit packs.
- 2) Provide one (1) NT6X14WB ESA Field Application Package when the NTZZ16DB ESA CP Package is being provisioned on an existing RLCM in the field. The ESA Field Application Package provides wiring to modify the RLCM in support of ESA for the domestic market only.
- 3) Provide three (3) NT0X50AA Filler Face Plates in slots 14 thru 16 of the HIE shelf when NTZZ16DB ESA CP Package is not equipped.
- 4) When upgrading the NTZZ16DA ESA CP Package to the NTZZ16DB, replace the NT6X47AB with an NT6X47AC.

- RUL7 1) Four (4) C-Side Interfaces are included with the HIE shelf. If host link traffic is sufficiently high to warrant an additional pair of DS-1 interfaces, provide one (1) NTZZ12DA. Refer to NTP 297-1001-450 Section 450/2, Traffic Criteria and Capacities for link provisioning.
- RUL8 1) Provide up to sixty-four (64) line cards in two (2) line sub-groups (LSG's) per line drawer on the RLCM. (Refer to EMA14-03-000 for line card assignment rules.

This LCM is identical to the host LCM and utilizes the same line card types.

REMOTE LINE CONCENTRATING MODULE (US)

PEC CODE: NTZZ16EC

CPC CODE: B0236031

| RATING: MD

REPLACES: NTZZ16EB

REPLACED BY: NTZZ16ED

ABBREVIATION NAME: RLCM

ENGINEERING DESCRIPTION: The RLCM is a single frame remote concentrating module that can serve up to 640 lines. The RLCM communicates to the host via up to six DS-1 links.

| REFERENCE DOCUMENTATION: SLZZ16EC 00 02
NTZZ16EC REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: Charles Maynard Dept. 3471 (PPK)

MAIN CONTACT: NTI: Charles Maynard Dept. 3471 (PPK)

NTZZ16EC EMC2-14-005 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 04	----- ECM 605 05	Previous history not available The NT0X50AC Filler Plate is now provisionable in slot 7 of shelf 56.
93 07 07	ECM 605 06	This EMS is being replaced by the NTZZ16ED.
93 11 29	ECM 605 08	The NTZZ16EC is being MD'd and replaced by the NTZZ16ED. Previous rating of the NTZZ16EC was set to A&M.

The Remote Line Concentrating Module (US) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RLCM Frame	NT6X14AA		1			AP
Common Framework	NT0X25AA	FW	1			RUL1
Earthquake Common Framework	NT0X25AH	FW	1			RUL1
Frame Supervisory Panel	NTZZ16BA	FSP		70		RUL2
Frame Supervisory Panel	NTZZ16CA	FSP		70		RUL2
Fault Loc & Order Wire Acc	QPP519A			70	1	RUL3
Office Repeaters	QRY18			70	2-7	RUL4
Filler Face Plate	NT0X50AJ			70	1-7	RUL5
RMT Maint Mod Shf Assy	NT6X1306		1	56		AP-01
Remote Maintenance Module	NTZZ16HA	RMM	1	56		RUL6
Provisionable Circuit Packs	As Req'd			56	11-14	RUL7
Filler Face Plate	NT0X50AC			56	7, 11-16	RUL7
RLCM ESA CP Package	NTZZ16DB			56	XX	RUL8
Baffle Assembly	NT6X1402		1	51		AP-01
Host I/F Equip Shf Assy	NT6X1108		1	38		AP-01
Host Interface Equipment	NTZZ16JA	HIE	1	38		RUL9
HIE Common CP	NT6X11AB		1	38		AP-02
Filler Face Plate	NT0X50AA			38	13, 21	RUL10
Filler Face Plate	NT0X50AA			38	14-16	RUL10
DS-1 Interface CP	NTZZ03GA			38	21	RUL11
Line Conc. Array Shf Assy	NT6X0401	LCA1	1	21		AP-01
Line Drawer	NT6X05AA	LD	5	21	1-5	RUL12
Line Drawer Filler	NT6X05AX			21	1-5	RUL13
LCM Common CP	NT6X04AB	LCM0	1	04		AP
Line Conc. Array Shf Assy	NT6X0401	LCA0	1	04		AP-01
Line Drawer	NT6X05AA	LD	5	04	1-5	RUL12
Line Drawer Filler	NT6X05AX			04	1-5	RUL13
Line Cards	As Req'd					RUL14
Designation Labels, LSG No.	P0631765		1			AP
Desig. Label for "CLLI"	P0711823		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 NTZZ16EC RLCM Frame for U.S. applications.

RULES:

- AP 1) When PEC NTZZ16EC is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT6X14AA and is shown here for completeness.
- AP-02 1) This PEC is always provided to the NTZZ16JA and is shown here for completeness.
- RUL1 1) Provide one (1) NT0X25AA Common Framework on all non-earthquake type jobs. Provide one (1) NT0X25AH Earthquake Common Framework on all jobs requiring earthquake framework.
- RUL2 1) Provide one (1) NTZZ16CA FSP to provide power distribution to the RLCM frame only. When the RLCM site requires additional frames such as the RME frame, provide one (1) NTZZ16BA FSP instead of the NTZZ16CA. When the NTZZ16BA is provisioned, a PDC frame or equivalent is required.
- RUL3 1) Provide one (1) QPP519 when office repeaters are required in the RLCM and customer requires fault locate feature. Select QPP519 as follows:

QPP519A - provides jacks for 2 wire telephone or 4 wire headset and permits extension of order-wire for subscriber line operation.

QPP519B - The QPP519B provides a simple through connection between the order wire pair and the CO switching equipment with jack access for a 2 wire telephone.

- 2) Also provision one (1) QFB127* or QFB128* fault locate filter for each QPP519.

QFB127* - Dual-amplified Type

QFB128* - Single-passive Type

Order the appropriate filter type and frequency per Telco requirements.

* = A 832Hz
 B 928Hz
 C 1048Hz
 D 1206Hz
 E 1340Hz
 F 1508Hz
 G 1722Hz
 H 2008Hz
 J 2193Hz
 K 2413Hz
 L 2680Hz
 M 3017Hz

- RUL4 1) Equip RLCM with one of the following office repeaters if office repeaters are required in the RLCM: QRY18A, B1, C, D1, F, G1. Each DS-1 line or T1 line requires one office repeater.

QRY18A - powers the line repeaters
 (provides DC power to T1 line)
 QRY18B1 - provides DC power and does error monitoring
 QRY18C - no power
 QRY18D1 - no power and has error monitor
 QRY18F - provides -130V for the T1 line
 QRY18G1 - provides -130V for the T1 line and has error monitor

OFFICE REPEATER	LINE POWERING	FAULT-SIGNAL LOOPBACK
QRY18A	YES	NO
QRY18B1	YES	YES
QRY18C	NO	NO
QRY18D1	NO	YES
QRY18F	YES	NO
QRY18G1	YES	YES

- 2) Association of office repeaters to DS-1 lines are in accordance with the following information:

DS1 Port	CP Position on HIE Shelf	CP in FSP
0	19	2
2		3
4	21	4
5		5
3	20	6
1		7

- RUL5 1) Provide one (1) NT0X50AJ Filler Face Plate for each unequipped slot on the FSP.
- RUL6 1) Provide one (1) NTZZ16HA Remote Maintenance Module to be mounted in shelf position 56, per RLCM. In U.S. applications, a standard layout is always provided, which leaves 4 (four) slots available for customized engineering of 4 (four) additional circuit packs, (NT2X90__, NT0X10__, or NT2X57__). These slots are 11 thru 14. See RUL7 below.
- RUL7 1) There are four available provisionable slots on the RMM. Refer to Table A section EMA14-01-000 for RMM provisionable circuit packs.
- 2) Provide Filler Face Plate, NT0X50AC in slot 7, and slots 11-16 not equipped with a circuit pack.
- RUL8 1) Provide one NTZZ16DB RLCM ESA CP Package when the Emergency Stand Alone (ESA) feature is required in BCS-33 and above. See the EMI section EMB2-14-ESA-2 (NTZZ16DB) for the mounting positions of the circuit packs.
- 2) Provide three (3) NT0X50AA Filler Face Plates in slots 14 thru 16 of the HIE shelf when NTZZ16DB ESA CP Package is not equipped.
- 3) When upgrading the RLCM (equipped with the ESA feature), from BCS-32 and below to BCS-33, replace the NT6X47AB with an NT6X47AC.
- 4) Slots 15-16 are reserved for the NT2X48AB that is required for ESA. This pack is provided as part of NTZZ16DB.
- RUL9 1) Provide one (1) NTZZ16JA Host Interface Equipment Module to be mounted in shelf position 38, per RLCM. This is the Standard layout for U.S. applications, which will leave

slots 14 thru 16 available for the NTZZ16DB RLCM ESA CP Package.

- 2) The NTZZ16DB RLCM ESA CP Package contains one (1) NT6X47AC Master Processor Memory Pack, one (1) NT6X45AF LGC/DTC Processor Pack, and one (1) NT6X75AA ESA Clock and Tone Pack. This package also contains the designation labels for these packs.

RUL10 1) Provide one (1) NT0X50AA Filler Face Plate in positions shown when not equipped with a circuit pack.

RUL11 1) Provide one (1) NTZZ03GA, if more than four (4) T1 lines are required (maximum 6) as per traffic requirements (two (2) NT6X50AA cards are already provided by the HIE Common CP NT6X11AB).

RUL12 1) Provide one (1) NT6X05AA Line Drawer for each quantity of sixty-four line card slots required.

This LCM is identical to the host LCM and utilizes the same line card types.

RUL13 1) Provide one (1) NT6X05AX Line Drawer Filler, in any position not occupied by a line drawer.

RUL14 1) Provide up to sixty-four (64) line cards in two (2) line sub-groups (LSG's) per line drawer on the RLCM. (Refer to EMA 14-03-000 for line card assignment rules.)

REMOTE LINE CONCENTRATING MODULE (US)

PEC CODE: NTZZ16ED

CPC CODE: B0238959

| RATING: MD

REPLACES: NTZZ16EC

| REPLACED BY: NTZZ16AC

ABBREVIATION NAME: RLCM

ENGINEERING DESCRIPTION: The RLCM is a single frame remote concentrating module that can serve up to 640 lines. The RLCM communicates to the host via up to six DS-1 links.

| REFERENCE DOCUMENTATION: SLZZ16ED 00 02
NTZZ16ED REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: Charles Maynard Dept. 3471 (PPK)

MAIN CONTACT: NTI: Charles Maynard Dept. 3471 (PPK)

NTZZ16ED EMC2-14-006 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 07 07	----- ECM 605 06	Previous history not available Introduce the NTZZ16ED for the US market. The NTZZ16ED BBLK is being MD'd and replaced by the NTZZ16AC.
93 11 29	ECM 605 08	

The Remote Line Concentrating Module (US) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RLCM Frame	NT6X14AA		1			AP
Common Framework	NT0X25AA	FW	1			AP
Frame Supervisory Panel	NTZZ16BA	FSP		70		RUL1
Frame Supervisory Panel	NTZZ16CA	FSP		70		RUL1
Fault Loc & Order Wire Acc	QPP519A			70	1	RUL2
Office Repeaters	QRY18			70	2-7	RUL3
Filler Face Plate	NT0X50AJ			70	1-7	RUL4
RMT Maint Mod Shf Assy	NT6X1306		1	56		AP-01
Remote Maintenance Module	NTZZ16HA	RMM	1	56		RUL5
Provisionable Circuit Packs	As Req'd			56	11-14	RUL6
Filler Face Plate	NT0X50AC			56	7, 11-16	RUL6
RLCM ESA CP Package	NTZZ16DB			56	XX	RUL7
Baffle Assembly	NT6X1402		1	51		AP-01
Host I/F Equip Shf Assy	NT6X1108	HIE	1	38		AP-01
Ringling Generator CP	NT6X60CA		2	38	1, 5	AP
Filler Face Plate	NT0X50AG		1	38	9	AP
Filler Face Plate	NT0X50AA			38	12, 13, 21	RUL8
Filler Face Plate	NT0X50AA			38	14-16	RUL8
Link Control Card CP	NT6X73AA		2	38	17, 18	AP
DS-1 Interface CP	NT6X50AA		2	38	19, 20	AP
DS-1 Interface CP	NTZZ03GA			38	21	RUL9
Pwr Converter + & -5V, 12V	NT2X70AE		2	38	22, 25	AP
LCM Common CP	NT6X04AC	LCM0	1	04		AP
Line Conc. Array Shf Assy	NT6X0401	LCA1	1	21		AP-01
Line Drawer	NT6X05AA	LD	5	21	1-5	AP
Line Conc. Array Shf Assy	NT6X0401	LCA0	1	04		AP-01
Line Drawer	NT6X05AA	LD	5	04	1-5	AP
Line Cards	As Req'd					RUL10
Designation Labels, LSG No.	P0631765		1			AP
Desig. Label for "CLLI"	P0711823		1			AP
Desig. Label for NT6X60CA	P0740744		2	38	1, 5	AP
Desig. Strip for HIE Shelf	P0701836		1	38		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 NTZZ16ED RLCM Frame for U.S. applications.

RULES:

AP 1) When PEC NTZZ16ED is ordered, these items are provided.

AP-01 1) This PEC is always provided to the NT6X14AA and is shown here for completeness.

RUL1 1) Provide one (1) NTZZ16CA FSP to provide power distribution to the RLCM frame only. When the RLCM site requires additional frames such as the RME frame, provide one (1) NTZZ16BA FSP instead of the NTZZ16CA. When the NTZZ16BA is provisioned, a PDC frame or equivalent is required.

RUL2 1) Provide one (1) QPP519 when office repeaters are required in the RLCM and customer requires fault locate feature. Select QPP519 as follows:

QPP519A - provides jacks for 2 wire telephone or 4 wire headset and permits extension of order-wire for subscriber line operation.

QPP519B - The QPP519B provides a simple through connection between the order wire pair and the CO switching equipment with jack access for a 2 wire telephone.

- 2) Also provision one (1) QFB127* or QFB128* fault locate filter for each QPP519.

QFB127* - Dual-amplified Type

QFB128* - Single-passive Type

Order the appropriate filter type and frequency per Telco requirements.

* = A 832Hz
 B 928Hz
 C 1048Hz
 D 1206Hz
 E 1340Hz
 F 1508Hz
 G 1722Hz
 H 2008Hz
 J 2193Hz
 K 2413Hz
 L 2680Hz
 M 3017Hz

- RUL3 1) Equip RLCM with one of the following office repeaters if office repeaters are required in the RLCM: QRY18A, B1, C, D1, F, G1. Each DS-1 line or T1 line requires one office repeater.

QRY18A - powers the line repeaters
 (provides DC power to T1 line)
 QRY18B1 - provides DC power and does error monitoring
 QRY18C - no power
 QRY18D1 - no power and has error monitor
 QRY18F - provides -130V for the T1 line
 QRY18G1 - provides -130V for the T1 line and has error monitor

OFFICE REPEATER	LINE POWERING	FAULT-SIGNAL LOOPBACK
QRY18A	YES	NO
QRY18B1	YES	YES
QRY18C	NO	NO
QRY18D1	NO	YES
QRY18F	YES	NO
QRY18G1	YES	YES

- 2) Association of office repeaters to DS-1 lines are in accordance with the following information:

DS1 Port	CP Position on HIE Shelf	CP in FSP
0	19	2
2		3
4	21	4
5		5
3	20	6
1		7

- RUL4 1) Provide one (1) NT0X50AJ Filler Face Plate for each unequipped slot on the FSP.
- RUL5 1) Provide one (1) NTZZ16HA Remote Maintenance Module to be mounted in shelf position 56, per RLCM. In U.S. applications, a standard layout is always provided, which leaves 4 (four) slots available for customized engineering of 4 (four) additional circuit packs, (NT2X90__, NT0X10__, or NT2X57__). These slots are 11 thru 14. See RUL7 below.
- RUL6 1) There are four available provisionable slots on the RMM. Refer to Table A section EMA14-01-000 for RMM provisionable circuit packs.
- 2) Provide Filler Face Plate, NT0X50AC in slot 7, and slots 11-16 not equipped with a circuit pack.
- 3) One NT0X10AA Scan Card is always in the RMM of the first RLCM in a Line-up to provide remote monitoring of the AISLE ALARM. Dedicate two of the 14 scan points on this card for this purpose. If the RLCM is the only frame in the Line-up, then its RMM shall always be provisioned with an NT0X10AA Scan Card.
- RUL7 1) Provide one NTZZ16DB RLCM ESA CP Package when the Emergency Stand Alone (ESA) feature is required in BCS-33 and above. See the EMI section EMB2-14-ESA-2 (NTZZ16DB) for the mounting positions of the circuit packs.
- 2) Provide three (3) NT0X50AA Filler Face Plates in slots 14 thru 16 of the HIE shelf when NTZZ16DB ESA CP Package is not equipped.
- 3) When upgrading the RLCM (equipped with the ESA feature), from BCS-32 and below to BCS-33, replace the NT6X47AB with an NT6X47AC.

4) Slots 15-16 are reserved for the NT2X48AB that is required for ESA. This pack is provided as part of NTZZ16DB.

5) The NTZZ16DB RLCM ESA CP Package contains one (1) NT6X47AC Master Processor Memory Pack, one (1) NT6X45AF LGC/DTC Processor Pack, and one (1) NT6X75AA ESA Clock and Tone Pack. This package also contains the designation labels for these packs.

RUL8 1) Provide one (1) NT0X50AA Filler Face Plate in positions shown when not equipped with a circuit pack.

RUL9 1) Provide one (1) NTZZ03GA, if more than four (4) T1 lines are required (maximum 6) as per traffic requirements (two (2) NT6X50AA cards are already provided by the HIE Common CP NT6X11AB).

This LCM is identical to the host LCM and utilizes the same line card types.

RUL10 1) Provide up to sixty-four (64) line cards in two (2) line sub-groups (LSG's) per line drawer on the RLCM. (Refer to EMA 14-03-000 for line card assignment rules.)

REMOTE LINE CONCENTRATING MODULE

PEC CODE: NTZZ16AC

CPC CODE: B0238958

| RATING: MD

REPLACES: NTZZ16AA NTZZ16ED

| REPLACED BY: NTZZ16AD

ABBREVIATION NAME: RLCM

ENGINEERING DESCRIPTION: The RLCM is a single frame remote concentrating module that can serve up to 640 lines. The RLCM communicates to the host via up to six DS-1 links.

REFERENCE DOCUMENTATION: SLZZ16AC 00 02
NTZZ16AC REL 01

MARKETS: Applicable markets:

Canada
US

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

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

NTZZ16AC EMC2-14-007 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 07 07	ECM 605 06	Introduces the NTZZ16AC RLCM for the US and Canadian market which will utilize earthquake framework.
93 10 15	ECM 605 07	ET 38915 Corrects the description of the NT0X25AH framework by removing reference to the 'EMI'. The NTZZ12DA has been replaced with the NTZZ03GA DS-1 for slot 21.
93 11 29	ECM 605 08	This BBLK replaces the NTZZ16AA BBLK. as well as the NTZZ16ED BBLK. The description of the NT0X25AH Earthquake Framework is being changed to Universal Framework.
93 12 10	ECM 605 09	ET44703 Corrected FLAG note # to show NTZZ12DA replaced by NTZZ03GA, not DA
94 02 18	ECM 605 10	MD, Replaced By NTZZ16AD.

The Remote Line Concentrating Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RLCM Frame	NT6X14AA		1			AP
Universal Framework	NT0X25AH	FW	1			AP
FSP Without Power Dist.	NTZZ16BA	FSP		70		RUL1
FSP With Power Distribution	NTZZ16CA	FSP		70		RUL1
Fault Loc & Order Wire Acc	QPP519A			70	1	RUL2
Office Repeaters	QRY18			70	2-7	RUL3
Filler Face Plate	NT0X50AJ			70	1-7	RUL4
RMT Maint Mod Shf Assy	NT6X1306		1	56		AP-01
Remote Maint Mod - Canada	NTZZ16FA	RMM		56		RUL5
Remote Maint Mod - Custom	NT6X13AB	RMM		56		RUL5
Remote Maint Mod - US	NTZZ16HA	RMM		56		RUL5
Provisionable Circuit Packs	As Req'd			56	3-16	RUL5
Filler Face Plate	NT0X50AC			56	3-16	RUL5
RLCM ESA CP Package	NTZZ16DB			56	15-16	RUL6
Baffle Assembly	NT6X1402		1	51		AP-01
Host I/F Equip Shf Assy	NT6X1108	HIE	1	38		AP-01
Ringing Generator CP	NT6X60CA		2	38	1, 5	AP
Filler Face Plate	NT0X50AG		1	38	9	AP
Filler Face Plate	NT0X50AA		2	38	12, 13, 21	RUL7
Filler Face Plate	NT0X50AA			38	14-16	RUL6
Link Control Card CP	NT6X73AA		2	38	17, 18	AP
DS-1 Interface CP	NT6X50AA		2	38	19, 20	AP
# 2 DS-1 C-Side Interfaces	NTZZ12DA			38	21	RUL8
2 DS-1 C-Side Interfaces	NTZZ03GA			38	21	RUL8
Pwr Converter + & -5V, 12V	NT2X70AE		2	38	22, 25	AP
LCM Common CP	NT6X04AC	LCM0	1	04		AP
Line Conc. Array Shf Assy	NT6X0401	LCA1	1	21		AP-01
Line Drawer	NT6X05AA	LD	5	21	1-5	AP
Line Conc. Array Shf Assy	NT6X0401	LCA0	1	04		AP-01
Line Drawer	NT6X05AA	LD	5	04	1-5	AP
Line Cards	As Req'd					RUL9
Designation Labels, LSG No.	P0631765		1			AP
Desig. Label for NT6X60CA	P0740744		2	38	1, 5	AP
Desig. Strip for HIE Shelf	P0701836		1	38		AP
Desig. Label for "CLLI"	P0711823		1			RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ12DA	STD	NTZZ03GA

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 NTZZ16AC RLCM Frame for Canadian and U.S. applications.

RULES:

- AP 1) When PEC NTZZ16AC is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT6X14AA and is shown here for completeness.
- RUL1 1) Provide one (1) NTZZ16CA FSP to provide power distribution to the RLCM frame only. When the RLCM site requires additional frames such as the RME frame, provide one (1) NTZZ16BA FSP instead of the NTZZ16CA. When the NTZZ16BA is provisioned, a PDC frame or equivalent is required.
- RUL2 1) Provide one (1) QPP519 when office repeaters are required in the RLCM and customer requires fault locate feature. Select QPP519 as follows:
- QPP519A - provides jacks for 2 wire telephone or 4 wire headset and permits extension of order-wire for subscriber line operation.

QPP519B - The QPP519B provides a simple through connection between the order wire pair and the CO switching equipment with jack access for a 2 wire telephone.

- 2) Also provision one (1) QFB127* or QFB128* fault locate filter for each QPP519.

QFB127* - Dual-amplified Type

QFB128* - Single-passive Type

Order the appropriate filter type and frequency per Telco requirements.

* = A 832Hz
B 928Hz
C 1048Hz
D 1206Hz
E 1340Hz
F 1508Hz
G 1722Hz
H 2008Hz
J 2193Hz
K 2413Hz
L 2680Hz
M 3017Hz

- RUL3 1) Equip RLCM with one of the following office repeaters if office repeaters are required in the RLCM: QRY18A, B1, C, D1, F, G1. Each DS- 1 line or T1 line requires one office repeater.

QRY18A - powers the line repeaters
(provides DC power to T1 line)
QRY18B1 - provides DC power and does error monitoring
QRY18C - no power
QRY18D1 - no power and has error monitor
QRY18F - provides -130V for the T1 line
QRY18G1 - provides -130V for the T1 line and has error monitor

OFFICE REPEATER	LINE POWERING	FAULT-SIGNAL LOOPBACK
QRY18A	YES	NO
QRY18B1	YES	YES
QRY18C	NO	NO
QRY18D1	NO	YES

QRY18F
QRY18G1YES
YESNO
YES

- 2) Association of office repeaters to DS-1 lines are in accordance with the following information:

DS1 Port	CP Position on HIE Shelf	CP in FSP
0	19	2
2		3
4	21	4
5		5
3	20	6
1		7

- RUL4 1) Provide one (1) NT0X50AJ Filler Face Plate for each unequipped slot on the FSP.
- RUL5 1) When the telco requires a standard layout of maintenance and service circuits, provision one (1) NTZZ16FA Remote Maintenance Module for Canadian applications. Provide the NTZZ16HA Remote Maintenance Module for US applications. In addition to the pre-equipped circuit packs, there are two available provisionable slots on the Standard RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs. NOTE: when the NTZZ16DB RLCM ESA CP Package is provisioned, both these free slots are consumed.
- 2) When the telco requires fully customized maintenance and service circuits, provision one (1) NT6X13AB Remote Maintenance Module - Custom. There are 14 available provisionable slots on the Custom RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs.
- 3) Provide Filler Face Plate, NT0X50AC in slots 3-16 not equipped with a circuit pack.
- 4) Slots 15-16 are reserved for the NT2X48AB that is required for ESA. This pack is provided as part of NTZZ16DB.
- 5) One NT0X10AA Scan Card is always in the RMM of the first RLCM in a Line-up to provide remote monitoring of the AISLE ALARM. Dedicate two of the 14 scan points on this card for this purpose. If the RLCM is the only frame in the Line-up, then its RMM shall always be provisioned with an NT0X10AA Scan Card.
- RUL6 1) Provide one NTZZ16DB RLCM ESA CP Package when the Emergency Stand Alone (ESA) feature is required is required in BCS-33 and above. See the EMI section EMB2-14-ESA-2 (NTZZ16DB) for the mounting positions of the circuit packs.
- 2) Provide three (3) NT0X50AA Filler Face Plates in slots 14 thru 16 of the HIE shelf when NTZZ16DB ESA CP Package is not equipped.

- RUL7 1) Provide one (1) NT0X50AA Filler Face Plate in positions shown when not equipped with a circuit pack.
- RUL8 1) Four (4) C-Side Interfaces are included with the HIE shelf. If host link traffic is sufficiently high to warrant an additional pair of DS-1 interfaces, provide one (1) NTZZ03GA. Refer to NTP 297-1001-450 Section 450/2, Traffic Criteria and Capacities for link provisioning.
- RUL9 1) Provide up to sixty-four (64) line cards in two (2) line sub-groups (LSG's) per line drawer on the RLCM. (Refer to EMA14-03-000 for line card assignment rules.
- This LCM is identical to the host LCM and utilizes the same line card types.
- RUL10 1) Provide one (1) P0711823 CLLI Label per US office only.

REMOTE LINE CONCENTRATING MODULE

PEC CODE: NTZZ16AD

CPC CODE: B0240691

RATING: MD

REPLACES: NTZZ16AC

REPLACED BY: NTZZ16AE

ABBREVIATION NAME: RLCM

ENGINEERING DESCRIPTION: The RLCM is a single frame remote concentrating module that can serve up to 640 lines. The RLCM communicates to the host via up to six DS-1 links.

REFERENCE DOCUMENTATION: SLZZ16AD 00 02

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: NTI: Mark Sorrell Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NTZZ16AD EMC2-14-008 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 18	ECM 605 10	Initial release. Replaces NTZZ16AC. Changes from NTZZ16AC include - Added CALA to the Market list. Add NT6X50AB provisioning and change NT6X50AA from AP to provisionable. NTZZ03GA replaced by provisionable NT6X50AAs. Added NT6X14WB per ET 47193
94 03 15	ECM 605 11	Change NTZZ16DB location from 38 to 56 per ET 48273.
94 10 31	ECM 605 12	EC 011-20036 Adds requirement for filler in RMM shelf slot 19, if not otherwise equipped. Add requirement that NT6X50 part number be same in RLCM as in host.
94 12 09	ECM 605 13	EC 011-20036 adds NT6X04AD, replaces NT6X04AC. MD and replace this Building Block.
95 03 31	ECM 605 14	ECD 024-93972 Change replaces the NT2X70AE with NT2X70AF Power Converter
96 03 20	ECM 605 20	Clarify shelf location of NTZZ16DB.

The Remote Line Concentrating Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RLCM Frame	NT6X14AA		1			AP
Universal Framework	NT0X25AH	FW	1			AP
FSP Without Power Dist.	NTZZ16BA	FSP		70		RUL1
FSP With Power Distribution	NTZZ16CA	FSP		70		RUL1
Fault Loc & Order Wire Acc	QPP519A			70	1	RUL2
Fault Loc & Order Wire Acc	QPP519B			70	1	RUL2
Office Repeaters	QRY18			70	2-7	RUL3
Filler Face Plate	NT0X50AJ			70	1-7	RUL4
RMT Maint Mod Shf Assy	NT6X1306		1	56		AP-01
Remote Maint Mod - Canada	NTZZ16FA	RMM		56		RUL5
Remote Maint Mod - Custom	NT6X13AB	RMM		56		RUL5
Remote Maint Mod - US	NTZZ16HA	RMM		56		RUL5
Provisionable Circuit Packs	As Req'd			56	3-14	RUL5
Filler Face Plate	NT0X50AC			56	1,2	RUL5
Filler Face Plate	NT0X50AG			56	17	RUL5
Filler Face Plate	NT0X50AA			56	19	RUL5
Filler Face Plate	NT0X50AE			56	20	RUL5
Filler Face Plate	NT0X50AC			56	3-16	RUL5
RLCM ESA CP Package	NTZZ16DB			56	3-16	RUL6
				38	14-16	RUL6
Filler Face Plate	NT0X50AA			38	14-16	RUL6
ESA PC Kit	NT6X14WB			38		RUL6
Baffle Assembly	NT6X1402		1	51		AP-01
Host I/F Equip Shf Assy	NT6X1108	HIE	1	38		AP-01
Ringin Generator CP	NT6X60CA		2	38	1,5	AP
Filler Face Plate	NT0X50AG		1	38	9	AP
Filler Face Plate	NT0X50AA			38	12,13,	RUL7
Link Control Card CP	NT6X73AA		2	38	17,18	AP
DS-1 Interface CP	NT6X50AA			38	19-21	RUL8
DS-1 Interface CP	NT6X50AB			38	19-21	RUL8
Desig. Label for NT6X50AA	P0626878			38	21	RUL8
Desig. Label for NT6X50AB	P0690976			38	21	RUL8
Filler Face Plate	NT0X50AA			38	21	RUL8
Pwr Converter + & -5V, 12V	NT2X70AF		2	38	22,25	AP
LCM Common CP	NT6X04AC	LCM0	1	04		AP
Line Conc. Array Shf Assy	NT6X0401	LCA1	1	21		AP-01
Line Drawer	NT6X05AA	LD	5	21	1-5	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Line Conc. Array Shf Assy	NT6X0401	LCA0	1	04		AP-01
Line Drawer	NT6X05AA	LD	5	04	1-5	AP
Line Cards	As Req'd					RUL9
Designation Labels, LSG No.	P0631765		1			AP
Desig. Label for NT6X60CA	P0740744		2	38	1,5	AP
Desig. Strip for HIE Shelf	P0701836		1	38		AP
Desig. Label for NT2X70AF	P0809960		2	38	22,25	AP
Desig. Label for "CLLI"	P0711823		1			RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE	MD	NT2X70AF

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

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

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

NOTES:

- 1) Provide the NTZZ16AC RLCM Frame for Canadian and U.S. ap-
plications.

RULES:

- AP 1) When PEC NTZZ16AD is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT6X14AA and is shown
here for completeness.

RUL1 1) Provide (1) NTZZ16CA FSP to provide power distribution to the RLCM frame only. When the RLCM site requires additional frames such as the RME frame, provide one (1) NTZZ16BA FSP instead of the NTZZ16CA. When the NTZZ16BA is provisioned, a PDC frame or equivalent is required.

RUL2 1) Provide (1) QPP519 when office repeaters are required in the RLCM and customer requires fault locate feature. Select QPP519 as follows:

QPP519A - provides jacks for 2 wire telephone or 4 wire headset and permits extension of order-wire for subscriber line operation.

QPP519B - The QPP519B provides a simple through connection between the order wire pair and the CO switching equipment with jack access for a 2 wire telephone.

2) Also provision one (1) QFB127* or QFB128* fault locate filter for each QPP519.

QFB127* - Dual-amplified Type

QFB128* - Single-passive Type

Order the appropriate filter type and frequency per Telco requirements.

* = A 832Hz
B 928Hz
C 1048Hz
D 1206Hz
E 1340Hz
F 1508Hz
G 1722Hz
H 2008Hz
J 2193Hz
K 2413Hz
L 2680Hz
M 3017Hz

RUL3 1) Equip RLCM with one of the following office repeaters if office repeaters are required in the RLCM: QRY18A, B1, C, D1, F, G1. Each DS-1 line or T1 line requires one office repeater.

QRY18A - powers the line repeaters
(provides DC power to T1 line)

QRY18B1 - provides DC power and does error monitoring
 QRY18C - no power
 QRY18D1 - no power and has error monitor
 QRY18F - provides -130V for the T1 line
 QRY18G1 - provides -130V for the T1 line and has error monitor

OFFICE REPEATER	LINE POWERING	FAULT-SIGNAL LOOPBACK
QRY18A	YES	NO
QRY18B1	YES	YES
QRY18C	NO	NO
QRY18D1	NO	YES
QRY18F	YES	NO
QRY18G1	YES	YES

- 2) Association of office repeaters to DS-1 lines are in accordance with the following information:

DS1 Port	CP Position on HIE Shelf	CP in FSP
0	19	2
2		3
4	21	4
5		5
3	20	6
1		7

RUL4 1) Provide one (1) NT0X50AJ Filler Face Plate for each unequipped slot on the FSP.

RUL5 1) When the telco requires a standard layout of maintenance and service circuits, provision one (1) NTZZ16FA Remote Maintenance Module for Canadian applications. Provide the NTZZ16HA Remote Maintenance Module for US applications. In addition to the pre-equipped circuit packs, there are two available provisionable slots on the Standard RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs. NOTE: when the NTZZ16DB RLCM ESA CP Package is provisioned, both these free slots are consumed.

- 2) When the telco requires fully customized maintenance and service circuits, provision one (1) NT6X13AB Remote Maintenance Module - Custom. There are 14 available provisionable slots on the Custom RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs.

- 3) Provide Filler Face Plate, NT0X50AC in slots 3-16 not equipped with a circuit pack.
- 4) Slots 15-16 are reserved for the NT2X48AB that is required for ESA. This pack is provided as part of NTZZ16DB.
- 5) One NT0X10AA Scan Card is always in the RMM of the first RLCM in a Line-up to provide remote monitoring of the AISLE ALARM. Dedicate two of the 14 scan points on this card for this purpose. If the RLCM is the only frame in the Line-up, then its RMM shall always be provisioned with an NT0X10AA Scan Card.
- 6) If a Remote Maintenance Module is not provisioned, provide two (2) NT0X50AC Filler Face Plates in slots 1,2, one (1) NT0X50AG Filler Face Plate in slot 17, one (1) NT0X50AA Filler Face Plate in slot 19 and one (1) NT0X50AE Filler Face Plate in slot 20.

RUL6 1) Provide one NTZZ16DB RLCM ESA CP Package when the Emergency Stand Alone (ESA) feature is required in BCS-33 and above. Mounting positions of the circuit packs in section EMB2-14-ESA-2 (NTZZ16DB) are NT6X47AC (pos. 14 shelf 38), NT6X45AF (pos. 15 shelf 38), NT6X75AA (pos. 16 shelf 38), and NT2X48AB (pos. 3-16 shelf 56). Any one of the RMM pack fills is required when ESA is provided.

2) Provide three (3) NT0X50AA Filler Face Plates in slots 14 thru 16 of the HIE shelf when NTZZ16DB ESA CP Package is not equipped.

3) For Canadian applications only, when an existing RLCM is being modified in the field to add in the ESA feature, provide one (1) Product Change Kit NT6X14WB.

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

RUL8 1) Provide two (2) NT6X50AA or NT6X50AB DS-1 Interface Circuit Packs when communication with the host office is via DS-1 links. Two DS-1 Interface CPs will terminate up to four DS-1 links. Provide two (2) P0690976 when the NT6X50AB is provided; the NT6X50AA are already identified on the designation strip for the HIE Common CP.

2) Provide one (1) additional NT6X50AA or NT6X50AB DS-1 Interface CP when additional DS-1 links are required to satisfy traffic requirements. Provide one (1) corresponding design-

nation label when an additional DS-1 Interface CP is provided.

- 3) Either NT6X50AA or NT6X50AB DS-1 Interface CPs may be used at the customer's discretion, however all the DS-1 Interface CPs in an RLCM must be the same part number AND the DS-1 Interface CPs in an RLCM must be the same part number, either NT6X50AA or NT6X50AB, as the DS-1 Interface CPs which terminate the links to that RLCM in the host LGC/LTC/RCC module.
- 4) The LCM Common CP in both shelves must be NT6X04AB or higher for RLCM, or NT6X04BB or higher for IRLCM, in order to provide the LCM processor capacity required when the NT6X50AB is used.
- 5) Provide one (1) NT0X50AA Filler Face Plate in slot 21 of the HIE shelf when not equipped with a circuit pack.

- RUL9 1) Provide up to sixty-four (64) line cards in two (2) line sub-groups (LSG's) per line drawer on the RLCM. (Refer to EMA14-03-000 for line card assignment rules.

This LCM is identical to the host LCM and utilizes the same line card types.

- RUL10 1) Provide one (1) P0711823 CLLI Label per US office only.

REMOTE LINE CONCENTRATING MODULE

PEC CODE: NTZZ16AE

CPC CODE: B0242133

RATING: MD

REPLACES: NTZZ16AD

REPLACED BY: NTZZ16NA

ABBREVIATION NAME: RLCM

ENGINEERING DESCRIPTION: The RLCM is a single frame remote concentrating module that can serve up to 640 lines. The RLCM communicates to the host via up to six DS-1 links.

REFERENCE DOCUMENTATION: SLZZ16AE 00 01

MARKETS: Applicable markets:

Canada
US
CALA

ISSUE AUTHOR: NTI: Mark Sorrell Dept. 3471 (PPK)

MAIN CONTACT: NTI: Mark Sorrell Dept. 3471 (PPK)

NTZZ16AE EMC2-14-010 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 12 09	ECM 605 13	EC 011-20036 adds NT6X04AD, replaces NT6X04AC. Create this new Building Block.
95 03 31	ECM 605 14	ECD 024-93972 Change replaces the NT2X70AE with the NT2X70AF power converter.
96 03 20	ECM 605 20	MD NTZZ16AE and replace with NTZZ16NA per the Functional Block program. Clarify shelf location of NTZZ16DB per SR RR60090.

The Remote Line Concentrating Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RLCM Frame	NT6X14AA		1			AP
Universal Framework	NT0X25AH	FW	1			AP
FSP Without Power Dist.	NTZZ16BA	FSP		70		RUL1
FSP With Power Distribution	NTZZ16CA	FSP		70		RUL1
Fault Loc & Order Wire Acc	QPP519A			70	1	RUL2
Fault Loc & Order Wire Acc	QPP519B			70	1	RUL2
Office Repeaters	QRY18			70	2-7	RUL3
Filler Face Plate	NT0X50AJ			70	1-7	RUL4
RMT Maint Mod Shf Assy	NT6X1306		1	56		AP-01
Remote Maint Mod - Canada	NTZZ16FA	RMM		56		RUL5
Remote Maint Mod - Custom	NT6X13AB	RMM		56		RUL5
Remote Maint Mod - US	NTZZ16HA	RMM		56		RUL5
Provisionable Circuit Packs	As Req'd			56	3-14	RUL5
Filler Face Plate	NT0X50AC			56	1,2	RUL5
Filler Face Plate	NT0X50AG			56	17	RUL5
Filler Face Plate	NT0X50AA			56	19	RUL5
Filler Face Plate	NT0X50AE			56	20	RUL5
Filler Face Plate	NT0X50AC			56	3-16	RUL5
RLCM ESA CP Package	NTZZ16DB			56	3-16	RUL6
				38	14-16	RUL6
Filler Face Plate	NT0X50AA			38	14-16	RUL6
ESA PC Kit	NT6X14WB			38		RUL6
Baffle Assembly	NT6X1402		1	51		AP-01
Host I/F Equip Shf Assy	NT6X1108	HIE	1	38		AP-01
Ringin Generator CP	NT6X60CA		2	38	1,5	AP
Filler Face Plate	NT0X50AG		1	38	9	AP
Filler Face Plate	NT0X50AA			38	12,13,	RUL7
Link Control Card CP	NT6X73AA		2	38	17,18	AP
DS-1 Interface CP	NT6X50AA			38	19-21	RUL8
DS-1 Interface CP	NT6X50AB			38	19-21	RUL8
Desig. Label for NT6X50AA	P0626878			38	21	RUL8
Desig. Label for NT6X50AB	P0690976			38	21	RUL8
Filler Face Plate	NT0X50AA			38	21	RUL8
Pwr Converter + & -5V, 12V	NT2X70AF		2	38	22,25	AP
LCM Common CP	NT6X04AD	LCM0	1	04		AP
Line Conc. Array Shf Assy	NT6X0401	LCA1	1	21		AP-01
Line Drawer	NT6X05AA	LD	5	21	1-5	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Line Conc. Array Shf Assy	NT6X0401	LCA0	1	04		AP-01
Line Drawer	NT6X05AA	LD	5	04	1-5	AP
Line Cards	As Req'd					RUL9
Designation Labels, LSG No.	P0631765		1			AP
Desig. Label for NT6X60CA	P0740744		2	38	1,5	AP
Desig. Strip for HIE Shelf	P0701836		1	38		AP
Desig. Label for NT2X70AF	P0809960		2	38	22,25	AP
Desig. Label for "CLLI"	P0711823		1			RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE	MD	NT2X70AF

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

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

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

NOTES:

- 1) Provide the NTZZ16AC RLCM Frame for Canadian and U.S. ap-
plications.

RULES:

- AP 1) When PEC NTZZ16AE is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT6X14AA and is shown
here for completeness.

RUL1 1) Provide (1) NTZZ16CA FSP to provide power distribution to the RLCM frame only. When the RLCM site requires additional frames such as the RME frame, provide one (1) NTZZ16BA FSP instead of the NTZZ16CA. When the NTZZ16BA is provisioned, a PDC frame or equivalent is required.

RUL2 1) Provide (1) QPP519 when office repeaters are required in the RLCM and customer requires fault locate feature. Select QPP519 as follows:

QPP519A - provides jacks for 2 wire telephone or 4 wire headset and permits extension of order-wire for subscriber line operation.

QPP519B - The QPP519B provides a simple through connection between the order wire pair and the CO switching equipment with jack access for a 2 wire telephone.

2) Also provision one (1) QFB127* or QFB128* fault locate filter for each QPP519.

QFB127* - Dual-amplified Type

QFB128* - Single-passive Type

Order the appropriate filter type and frequency per Telco requirements.

* = A 832Hz
B 928Hz
C 1048Hz
D 1206Hz
E 1340Hz
F 1508Hz
G 1722Hz
H 2008Hz
J 2193Hz
K 2413Hz
L 2680Hz
M 3017Hz

RUL3 1) Equip RLCM with one of the following office repeaters if office repeaters are required in the RLCM: QRY18A, B1, C, D1, F, G1. Each DS-1 line or T1 line requires one office repeater.

QRY18A - powers the line repeaters
(provides DC power to T1 line)

QRY18B1 - provides DC power and does error monitoring
 QRY18C - no power
 QRY18D1 - no power and has error monitor
 QRY18F - provides -130V for the T1 line
 QRY18G1 - provides -130V for the T1 line and has error monitor

OFFICE REPEATER	LINE POWERING	FAULT-SIGNAL LOOPBACK
QRY18A	YES	NO
QRY18B1	YES	YES
QRY18C	NO	NO
QRY18D1	NO	YES
QRY18F	YES	NO
QRY18G1	YES	YES

- 2) Association of office repeaters to DS-1 lines are in accordance with the following information:

DS1 Port	CP Position on HIE Shelf	CP in FSP
0	19	2
2		3
4	21	4
5		5
3	20	6
1		7

RUL4 1) Provide one (1) NT0X50AJ Filler Face Plate for each unequipped slot on the FSP.

RUL5 1) When the telco requires a standard layout of maintenance and service circuits, provision one (1) NTZZ16FA Remote Maintenance Module for Canadian applications. Provide the NTZZ16HA Remote Maintenance Module for US applications. In addition to the pre-equipped circuit packs, there are two available provisionable slots on the Standard RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs. NOTE: when the NTZZ16DB RLCM ESA CP Package is provisioned, both these free slots are consumed.

- 2) When the telco requires fully customized maintenance and service circuits, provision one (1) NT6X13AB Remote Maintenance Module - Custom. There are 14 available provisionable slots on the Custom RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs.

- 3) Provide Filler Face Plate, NT0X50AC in slots 3-16 not equipped with a circuit pack.
- 4) Slots 15-16 are reserved for the NT2X48AB that is required for ESA. This pack is provided as part of NTZZ16DB.
- 5) One NT0X10AA Scan Card is always in the RMM of the first RLCM in a Line-up to provide remote monitoring of the AISLE ALARM. Dedicate two of the 14 scan points on this card for this purpose. If the RLCM is the only frame in the Line-up, then its RMM shall always be provisioned with an NT0X10AA Scan Card.
- 6) If a Remote Maintenance Module is not provisioned, provide two (2) NT0X50AC Filler Face Plates in slots 1,2, one (1) NT0X50AG Filler Face Plate in slot 17, one (1) NT0X50AA Filler Face Plate in slot 19 and one (1) NT0X50AE Filler Face Plate in slot 20.

RUL6 1) Provide one NTZZ16DB RLCM ESA CP Package when the Emergency Stand Alone (ESA) feature is required in BCS-33 and above. Mounting positions of the circuit packs in section EMB2-14-ESA-2 (NTZZ16DB) are NT6X47AC (pos. 14 shelf 38), NT6X45AF (pos. 15 shelf 38), NT6X75AA (pos. 16 shelf 38), and NT2X48AB (pos. 3-16 shelf 56). Any one of the RMM pack fills is required when ESA is provided.

2) Provide three (3) NT0X50AA Filler Face Plates in slots 14 thru 16 of the HIE shelf when NTZZ16DB ESA CP Package is not equipped.

3) For Canadian applications only, when an existing RLCM is being modified in the field to add in the ESA feature, provide one (1) Product Change Kit NT6X14WB.

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

RUL8 1) Provide two (2) NT6X50AA or NT6X50AB DS-1 Interface Circuit Packs when communication with the host office is via DS-1 links. Two DS-1 Interface CPs will terminate up to four DS-1 links. Provide two (2) P0690976 when the NT6X50AB is provided; the NT6X50AA are already identified on the designation strip for the HIE Common CP.

2) Provide one (1) additional NT6X50AA or NT6X50AB DS-1 Interface CP when additional DS-1 links are required to satisfy traffic requirements. Provide one (1) corresponding design-

nation label when an additional DS-1 Interface CP is provided.

- 3) Either NT6X50AA or NT6X50AB DS-1 Interface CPs may be used at the customer's discretion, however all the DS-1 Interface CPs in an RLCM must be the same part number AND the DS-1 Interface CPs in an RLCM must be the same part number, either NT6X50AA or NT6X50AB, as the DS-1 Interface CPs which terminate the links to that RLCM in the host LGC/LTC/RCC module.
- 4) The LCM Common CP in both shelves must be NT6X04AB or higher for RLCM, or NT6X04BB or higher for IRLCM, in order to provide the LCM processor capacity required when the NT6X50AB is used.
- 5) Provide one (1) NT0X50AA Filler Face Plate in slot 21 of the HIE shelf when not equipped with a circuit pack.

- RUL9 1) Provide up to sixty-four (64) line cards in two (2) line sub-groups (LSG's) per line drawer on the RLCM. (Refer to EMA14-03-000 for line card assignment rules.

This LCM is identical to the host LCM and utilizes the same line card types.

- RUL10 1) Provide one (1) P0711823 CLLI Label per US office only.

REMOTE LINE CONCENTRATING MODULE

PEC CODE: NTZZ16NA

CPC CODE: B0246016

RATING: MD

REPLACES: NTZZ16AE, NTZZ16LD

REPLACED BY: NTZZ16NB

ABBREVIATION NAME: RLCM

ENGINEERING DESCRIPTION: The RLCM is a single frame remote concentrating module that can serve up to 640 lines. The RLCM communicates to the host via up to six DS-1 links.

REFERENCE DOCUMENTATION: SLZZ16NA 00 01

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ16NA EMC2-14-011 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 03 20	ECM 605 20	Initial release. Replaces NTZZ16AE & NTZZ16LD per the Functional Block program.
97 02 28	ECM 605 23	Additional information in Rule 8 on DS-1 pack provisioning.
97 04 18	ECM 605 24	MD and replaced by NTZZ16NB.
97 09 19	ECM 605 26	This change is to properly retire the BB in Coda.

The Remote Line Concentrating Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RLCM Frame	NT6X14AA		1			AP
Universal Framework	NT0X25AH	FW	1			AP
FSP Without Power Dist.	NTZZ16BA	FSP		70		RUL1
FSP With Power Distribution	NTZZ16CA	FSP		70		RUL1
Fault Loc & Order Wire Acc	QPP519A			70	1	RUL2
Fault Loc & Order Wire Acc	QPP519B			70	1	RUL2
Office Repeaters	QRY18			70	2-7	RUL3
Filler Face Plate	NT0X50AJ			70	1-7	RUL4
RMT Maint Mod Shf Assy	NT6X1306		1	56		AP-01
Remote Maint Mod - Standard	NTZZ16FA	RMM		56		RUL5
Remote Maint Mod - Custom	NT6X13AB	RMM		56		RUL5
Remote Maint Mod - US	NTZZ16HA	RMM		56		RUL5
Provisionable Circuit Packs	As Req'd			56	3-14	RUL5
Filler Face Plate	NT0X50AC			56	1, 2	RUL5
Filler Face Plate	NT0X50AG			56	17	RUL5
Filler Face Plate	NT0X50AA			56	19	RUL5
Filler Face Plate	NT0X50AE			56	20	RUL5
Filler Face Plate	NT0X50AC			56	3-16	RUL5
RLCM ESA CP Package	NTZZ16DB			56	3-16	RUL6
				38	14-16	RUL6
Filler Face Plate	NT0X50AA			38	14-16	RUL6
ESA PC Kit	NT6X14WB			38		RUL6
Baffle Assembly	NT6X1402		1	51		AP-01
Host I/F Equip Shf Assy	NT6X1108	HIE	1	38		AP-01
Ringin Generator CP	NT6X60CA		2	38	1, 5	RUL11
Filler Face Plate	NT0X50AG		1	38	9	RUL8
Filler Face Plate	NT0X50AA			38	12, 13,	RUL7
Link Control Card	NT6X73AA		2	38	17, 18	AP
DS-1 Interface CP	NT6X50AA			38	19-21	RUL8
DS-1 Interface CP	NT6X50AB			38	19-21	RUL8
Desig. Label for NT6X50AA	P0626878			38	21	RUL8
Desig. Label for NT6X50AB	P0690976			38	21	RUL8
Filler Face Plate	NT0X50AA			38	21	RUL8
Pwr Converter + & -5V, 12V	NT2X70AF		2	38	22, 25	AP
LCM Common CP	NT6X04AD	LCM0	1	04		AP
Line Conc. Array Shf Assy	NT6X0401	LCA1	1	21		AP-01
Line Drawer	NT6X05AA	LD		21	1-5	RUL9
Line Drawer Filler	NT6X05AX			21		RUL9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Line Conc. Array Shf Assy	NT6X0401	LCA0	1	04		AP-01
Line Drawer	NT6X05AA	LD		04	1-5	RUL9
Line Drawer Filler	NT6X05AX			04		RUL9
Line Cards	As Req'd					RUL9
Designation Labels, LSG No.	P0631765		1			RUL9
Desig. Label for NT6X60CA	P0740744		2	38	1,5	RUL11
Desig. Label for NT2X70AF	P0809960		2	38	22,25	AP
Desig. Label for "CLLI"	P0711823		1			RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE	MD	NT2X70AF

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

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

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

NOTES:

RULES:

- AP 1) When PEC NTZZ16NA is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT6X14AA and is shown
here for completeness.
- RUL1 1) Provide one (1) NTZZ16CA FSP to provide power distribution
to the RLCM frame only. When the RLCM site requires addi-
tional frames such as the RME frame, provide one (1)

NTZZ16BA FSP instead of the NTZZ16CA. When the NTZZ16BA is provisioned, a PDC frame or equivalent is required.

- RUL2 1) Provide one (1) QPP519 when office repeaters are required in the RLCM and customer requires fault locate feature. Select QPP519 as follows:

QPP519A - provides jacks for 2 wire telephone or 4 wire headset and permits extension of order-wire for subscriber line operation.

QPP519B - The QPP519B provides a simple through connection between the order wire pair and the CO switching equipment with jack access for a 2 wire telephone.

- 2) Also provision one (1) QFB127* or QFB128* fault locate filter for each QPP519.

QFB127* - Dual-amplified Type

QFB128* - Single-passive Type

Order the appropriate filter type and frequency per Telco requirements.

* = A 832Hz
B 928Hz
C 1048Hz
D 1206Hz
E 1340Hz
F 1508Hz
G 1722Hz
H 2008Hz
J 2193Hz
K 2413Hz
L 2680Hz
M 3017Hz

- RUL3 1) Equip RLCM with one of the following office repeaters if office repeaters are required in the RLCM: QRY18A, B1, C, D1, F, G1. Each DS-1 line or T1 line requires one office repeater.

QRY18A - powers the line repeaters
(provides DC power to T1 line)

QRY18B1 - provides DC power and does error monitoring

QRY18C - no power

QRY18D1 - no power and has error monitor

QRY18F - provides -130V for the T1 line
 QRY18G1 - provides -130V for the T1 line and has error monitor

OFFICE REPEATER	LINE POWERING	FAULT-SIGNAL LOOPBACK
QRY18A	YES	NO
QRY18B1	YES	YES
QRY18C	NO	NO
QRY18D1	NO	YES
QRY18F	YES	NO
QRY18G1	YES	YES

- 2) Association of office repeaters to DS-1 lines are in accordance with the following information:

DS1 Port	CP Position on HIE Shelf	CP in FSP
0	19	2
2		3
4	21	4
5		5
3	20	6
1		7

RUL4 1) Provide one (1) NT0X50AJ Filler Face Plate for each unequipped slot on the FSP.

RUL5 1) When the telco requires a standard layout of maintenance and service circuits, provision one (1) NTZZ16FA Remote Maintenance Module for Canadian applications. Provide the NTZZ16HA Remote Maintenance Module for US applications. In addition to the pre-equipped circuit packs, there are two available provisionable slots on the Standard RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs. NOTE: when the NTZZ16DB RLCM ESA CP Package is provisioned, both these free slots are consumed.

- 2) When the telco requires fully customized maintenance and service circuits, provision one (1) NT6X13AB Remote Maintenance Module - Custom. There are 14 available provisionable slots on the Custom RMM. Refer to Table A section EMB14-01-000 for RMM provisionable circuit packs.

- 3) Provide Filler Face Plate, NT0X50AC in slots 3-16 not equipped with a circuit pack.

- 4) Slots 15-16 are reserved for the NT2X48AB that is required for ESA. This pack is provided as part of NTZZ16DB.
 - 5) One NT0X10AA Scan Card is always in the RMM of the first RLCM in a Line-up to provide remote monitoring of the AISLE ALARM. Dedicate two of the 14 scan points on this card for this purpose. If the RLCM is the only frame in the Line-up, then its RMM shall always be provisioned with an NT0X10AA Scan Card.
 - 6) If a Remote Maintenance Module is not provisioned, provide two (2) NT0X50AC Filler Face Plates in slots 1,2, one (1) NT0X50AG Filler Face Plate in slot 17, one (1) NT0X50AA Filler Face Plate in slot 19 and one (1) NT0X50AE Filler Face Plate in slot 20.
- RUL6
- 1) Provide one NTZZ16DB RLCM ESA CP Package when the Emergency Stand Alone (ESA) feature is required in BCS-33 and above. Mounting positions of the circuit packs in section EMB2-14-ESA-2 (NTZZ16DB) are NT6X47AC (pos. 14 shelf 38), NT6X45AF (pos. 15 shelf 38), NT6X75AA (pos. 16 shelf 38), and NT2X48AB (pos. 3-16 shelf 56). Any one of the RMM pack fills is required when ESA is provided.
 - 2) Provide three (3) NT0X50AA Filler Face Plates in slots 14 thru 16 of the HIE shelf when NTZZ16DB ESA CP Package is not equipped.
 - 3) For Canadian applications only, when an existing RLCM is being modified in the field to add in the ESA feature, provide one (1) Product Change Kit NT6X14WB.
- RUL7
- 1) Provide one (1) NT0X50AA Filler Face Plate in positions shown when not equipped with a circuit pack.
- RUL8
- 1) Provide two (2) NT6X50AA or NT6X50AB DS-1 Interface Circuit Packs when communication with the host office is via DS-1 links. Two DS-1 Interface CPs will terminate up to four DS-1 links. Provide two (2) P0690976 when the NT6X50AB is provided; the NT6X50AA are already identified on the designation strip for the HIE Common CP.
 - 2) Provide one (1) additional NT6X50AA or NT6X50AB DS-1 Interface CP when additional DS-1 links are required to satisfy traffic requirements. Provide one (1) corresponding designation label when an additional DS-1 Interface CP is provided.

- 3) Either NT6X50AA or NT6X50AB DS-1 Interface CPs may be used at the customer's discretion, however all the DS-1 Interface CPs in an RLCM must be the same part number. The DS-1 Interface CPs in an RLCM must be the same part number, either NT6X50AA or NT6X50AB, as the DS-1 Interface CPs which terminate the links to that RLCM in the host LGC/LTC/RCC module.

However, the DS-1 I/F circuit packs can be either NT6X50AA or NT6X50AB when linked to a RSC Sonet equipped with NTMX81AA Dual DS-1 Packlet circuit packs. (All the DS-1 I/F packs in an RLCM must be the same part number, either NT6X50AA or NT6X50AB).

- 4) The LCM Common CP in both shelves must be NT6X04AB or higher for RLCM, or NT6X04BB or higher for IRLCM, in order to provide the LCM processor capacity required when the NT6X50AB is used.
- 5) Provide one (1) NT0X50AA Filler Face Plate in slot 21 of the HIE shelf when not equipped with a circuit pack.
- 6) Provide one (1) NT0X50AG Filler Face Plate in slot 9 of the HIE shelf when not equipped with a circuit pack.

- RUL9
- 1) Provide up to five (5) Line Drawers NT6X05AA for each shelf.
 - 2) Provide up to sixty-four (64) line cards in two (2) line sub-groups (LSGs) per line drawer on the RLCM. (Refer to EMA14-03-000 for line card assignment rules.

This LCM is identical to the host LCM and utilizes the same line card types.

- 3) Provide one (1) NT6X05AX Line Drawer Filler, in any position not occupied by a line drawer.
- 4) Provide one (1) P0631765 LSG Designation labels when providing line drawers.

- RUL10
- 1) Provide one (1) P0711823 CLLI Label per US office only.

- RUL11
- 1) Provide two (2) NT6X60CA Ringing Generators and designation labels when analog ringing is required in RLCMs and IRLCMs.

DS-1 W/O EFF C-SIDE CP

PEC CODE: NTZZ12DA

CPC CODE: B0232133

| RATING: MD

| REPLACES: Not Applicable

REPLACED BY: NT6X50AA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ12DA Module contains the circuit packs required for the RSC C-Side ports DS-1 Interface.

REFERENCE DOCUMENTATION: SLZZ12DA 00 01
NTZZ12DA REL 01

MARKETS: Applicable markets:

US
Canada

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ12DA EMC2-15-DS1-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 23	----- ECM 618 06	Previous history not available Make NTZZ12EA Applicable To The US Market. Also, correct slots assign- ments per Note 1. ET44713 Added Noted 2 MD per BB Rat and GMF recommendations.
93 12 10	ECM 605 09	
96 03 28	ECM 618 25	

The DS-1 W/O EFF C-Side CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS-1 Interface CP	NT6X50AA		1	XX	YY	AP
Desig Label (NT6X50AA)	P0626878		1	XX	YY	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

a2) The Characters XX and YY are used as follows:

XX = Shelf position 18 or 32.

YY = Card position 20, 21, 22, and/or 23.

2) For RLCM applications, the Characters XX and YY are used as follows:

XX = Shelf position 38.

YY = Card position 21.

RULES:

AP 1) When PEC NTZZ12DA is ordered, these items are provided.

DS-1 C-SIDE EFF INTERFACE

PEC CODE: NTZZ12EA

| CPC CODE: B0232132

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: NT6X50AB

| ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: NTZZ12EA contains the circuit packs required
for the RSC C-Side Ports DS-1 Interface.REFERENCE DOCUMENTATION: SLZZ12EA 01 01
MS6X10AC 01 07

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ12EA EMC2-15-DS1-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
90 05 10 92 11 23	API 231 02 ECM 618 06	Release Preliminary Eng. Man Section Release Firm Eng. Manual Section which was incorrectly omitted from ECM 618 Issue: 01, PER ET-18718
96 03 28	ECM 618 25	MD per BB Rat and GMF recommendations.

The DS-1 C-Side EFF Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS-1 Interface Mgs CP	NT6X50AB		1	XX	YY	AP
Desig Label (NT6X50AB)	P0690976		1	XX	YY	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES: 1) The Characters XX and YY are used as follows:

XX = Shelf position 18 or 32.

YY = Card position 20, 21, 22, and/or 23.

RULES:

AP 1) When PEC NTZZ12EA is ordered, these items are provided.

HOST LINK FORMATTER CPS

PEC CODE: NTZZ02TA

CPC CODE: B0242462

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: No Replacement (RSC-S)

ABBREVIATION NAME: HLF

ENGINEERING DESCRIPTION: The NTZZ02TA contains Host Link Formatter
CPS.REFERENCE DOCUMENTATION: NTZZ02TA 00 01
IS6X12 01 10
MS6X10AC 01 14
SL6X10AC 02 10

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ02TA EMC2-15-HLF-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 03 03	ECM 618 19	Initial Release.
97 03 07	ECM 618 28	MD BB per EC 024-96637. (MD NT6X72AB).

The Host Link Formatter CPs is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP
Desig Label (NT6X72AB)	P0733837		2	18,32	19	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

RULES:

AP 1) When PEC NTZZ02TA is ordered, these items are provided.

ISDN REMOTE CLUSTER CONTROLLER COMMON CP

PEC CODE: NTZZ12NA

CPC CODE: B0234855

| RATING: MD

REPLACES: None

REPLACED BY: RSC-SONET

ABBREVIATION NAME: RCCI

ENGINEERING DESCRIPTION: The ISDN Remote Cluster Controller Common CP provides the necessary circuit packs to equip one RCCI module. This Building Block utilizes the NT6X12DC packfill, NT6X47AC Master Processor, NT6X46BB Signal Processor and NT6X69AC Messaging Interface circuit packs.

REFERENCE DOCUMENTATION: MS6X10AD 00 10

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ12NA EMC2-15-RCCI-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 04 18	ECM 610 10	Change to A&M per Product Line Mgr. This product is replaced by RSC-SONET.
96 01 25	ECM 610 13	Change per ECD 024-95280. MD NT2X70AE Pwr. Conv. and replace with NT2X70AF.
96 03 27	ECM 610 14	Change to MD per BB Rat and GMF rec- ommendations. This product has been replaced by RSC-SONET.

The ISDN Remote Cluster Controller Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RCCI Packfill	NT6X12DC		1	XX		AP
LGC/DTC Processor CP	NT6X45BC		4	XX	08,13	AP01
Filler Faceplate .875	NT0X50AA		4	XX	09,24	AP01
Domestic Universal Tone Rcvr	NT6X92BB		2	XX	14	AP01
Time Switch CP	NT6X44AA		2	XX	15	AP01
ISDN Signaling Pre-processor	NTBX01AA		2	XX	16	AP01
Host Link Formatter CP	NT6X72AB		2	XX	19	AP01
DS-1 E.F.F. Card CP	NT6X50AB		2	XX	20	AP01
Designation Label (NT6X12DC)	P0732155		2	XX		AP01
Filler Faceplate	NT0X50AA		2	XX	10	AP
NT0X50AA Label	P0578498		2	XX	10	AP
Master Processor CP	NT6X47AC		2	XX	11	AP
Signal Processor CP	NT6X46BB		2	XX	12	AP
Message Interface CP	NT6X69AC		2	XX	17	AP
# Pwr Converter +/-5V & 12V	NT2X70AE		2	XX	25	AP
NT2X70AE Label	P0698943		2	XX	25	AP
Pwr Converter +/-5V & 12V	NT2X70AF		2	XX	25	AP
NT2X70AF Label	P0809960		2	XX	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) xx denotes either shelf 18 or 32.

- 2) Items marked AP01 are included in NT6X12DC and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ12NA is ordered, these items are provided.

ISDN XPM PLUS CLUSTER
CONTROLLER COMMON CP

PEC CODE: NTZZ12NB

CPC CODE: B0236059

| RATING: MD

REPLACES: None

REPLACED BY: RSC-SONET

ABBREVIATION NAME: RCCI

ENGINEERING DESCRIPTION: The ISDN XPM Plus Remote Cluster Controller
Common CP provides the necessary circuit
packs to equip one RCCI module.REFERENCE DOCUMENTATION: MS6X10AD 00 10
SL6X10DE REL 01
SLZZ12NB REL 02MARKETS: Applicable markets:
US
Canada

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ12NB EMC2-15-RCCI-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 15	ECM 610 05	Initial introduction of this PEC.
93 03 08	ECM 610 08	Correct stocklist errors.
94 04 18	ECM 610 10	Change to A&M per Product Line Mgr. This product is replaced by RSC-SONET.
96 01 25	ECM 610 13	Change per ECD 024-95280. MD NT2X70AE Pwr. Conv. and replace with NT2X70AF.
96 03 27	ECM 610 14	Change to MD per BB Rat and GMF rec- ommendations. This product has been replaced by RSC-SONET.

The ISDN XPM Plus Cluster Controller Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Universal Processor CP	NTMX77AA		1	X+14	13	AP
Filler Faceplate .875	NT0X50AA		4	X+14	09, 11 12, 24	AP
Domestic Universal Tone Rcvr	NT6X92BB		1	X+14	14	AP
Time Switch CP	NT6X44AA		1	X+14	15	AP
Enh ISDN Signal Pre-proc	NTBX01AB		1	X+14	16	AP
XPM Plus Term PB	NTMX71AA		1	X+14	18R	AP
Host Link Formatter CP	NT6X72AB		1	X+14	19	AP
DS-1 E.F.F. Card CP	NT6X50AB		1	X+14	20	AP
Filler Faceplate	NT0X50AA		1	X+14	10	AP
NT0X50AA Label	P0578498		1	X+14	10	AP
Message Interface CP	NT6X69AC		1	X+14	17	AP
# Pwr Converter +/-5V & 12V	NT2X70AE		1	X+14	25	AP
# NT2X70AE Label	P0698943		1	X+14	25	AP
Pwr Converter +/-5V & 12V	NT2X70AF		1	X+14	25	AP
NT2X70AF Label	P0809960		1	X+14	25	AP
Designation Strip (NT6X12DE)	P0737805		1	X+14		AP
Universal Processor CP	NTMX77AA		1	X	13	AP
Filler Faceplate .875	NT0X50AA		4	X	09, 11 12, 24	AP
Domestic Universal Tone Rcvr	NT6X92BB		1	X	14	AP
Time Switch CP	NT6X44AA		1	X	15	AP
Enh ISDN Signal Pre-proc	NTBX01AB		1	X	16	AP
XPM Plus Term PB	NTMX71AA		1	X	18R	AP
Host Link Formatter CP	NT6X72AB		1	X	19	AP
DS-1 E.F.F. Card CP	NT6X50AB		1	X	20	AP
Filler Faceplate	NT0X50AA		1	X	10	AP
NT0X50AA Label	P0578498		1	X	10	AP
Message Interface CP	NT6X69AC		1	X	17	AP
# Pwr Converter +/-5V & 12V	NT2X70AE		1	X	25	AP
# NT2X70AE Label	P0698943		1	X	25	AP
Pwr Converter +/-5V & 12V	NT2X70AF		1	X	25	AP
NT2X70AF Label	P0809960		1	X	25	AP
Designation Strip (NT6X12DE)	P0737805		1	X		AP
Hook-up wire (5M)	R0109836		1			AP
Hook-up wire (1M)	R0113096		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) X denotes Shelf 18
- 2) Items marked AP01 are included in NT6X12DE and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ12NB is ordered, these items are provided.

CUSTOM REMOTE MAINTENANCE MODULE

NTZZ12CA

RATING: MD. Replaced By NTZZ12CB

ABBREVIATION NAME: RMM

ENGINEERING DESCRIPTION: The Building Block Remote Maintenance Module (RMM) 02 contains the Always Provided RMM control cards. However, signaling, maintenance, and service circuits must be provisioned as required and/or filler face plates for unequipped slots.

The RMM is a single shelf service module that supports maintenance and service circuits. It mounts on the Remote Controller Equipment (RCE) frame in shelf positions 51 and 65. This Building Block defines provisioning for a Customized RMM shelf at Shelf position 65 or 51.

REFERENCE DOCUMENTATION: SLZZ12CA 00 01
NTZZ12CA REL 01

The Custom Remote Maintenance Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMM Common CP	NT6X13AB	1				AP
Design Strip (NT6X13AB)	P0653639	1				AP-01
TM Group Codec CP	NT2X59AA	1		XX	01	AP-01
RMM Control Card CP	NT6X74AB	1		XX	02	AP-01
Multi O/P Pwr Converter	NT2X09AA	1		XX	17	AP-01
Filler Face Plate .875	NT0X50AA	1		XX	19	AP-01
Power Converter Comm Feat.	NT2X06AB	1		XX	20	AP-01
Filler Face Plate 1.12	NT0X50AC			XX	3-16	RUL1
Maintenance Trunk Cards	AR			XX	3-16	RUL1

NOTES:

- 1) XX = shelf position 65 or 51.

RULES:

- AP 1) When PEC NTZZ12CA is ordered, these items are provided.
- AP-01 This PEC is Always Provided to the RMM Common CP Fill (NT6X13AB) and is shown here for completeness.
- RUL1 1) When the Building Block NTZZ12CA is provisioned Fourteen (14) card slots are available for maintenance and service circuits as required, or Filled with NT0X50AC (Filler Face Plates). Refer to TABLE X attached and provision Maintenance and Service Circuits as required.
- 2) Provide one (1) NT0X50AC Filler Face Plate 1.12 in slots 5 thru 16 not equipped with a CP.

CUSTOM REMOTE MAINTENANCE MODULE

NTZZ12CB

RATING: MD. Replaces NTZZ12CA. Replaced By NTZZ12CC.

ABBREVIATION NAME: RMM

ENGINEERING DESCRIPTION: The Building Block Remote Maintenance Module (RMM) contains the RMM card cage. However, signaling, maintenance, and service circuits must be provisioned as required and/or filler face plates for unequipped slots.

The RMM is a single shelf service module that supports maintenance and service circuits. It mounts on the Remote Controller Equipment (RCE) frame in shelf positions 51 and 65. This Building Block defines provisioning for a Customized RMM shelf at Shelf position 65 only.

REFERENCE DOCUMENTATION: SLZZ12CB 00 01
NTZZ12CB REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ12CB EMC2-15-RMC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 10 28	----- ECM 618 05	Previous history not available Previous history not available

The Custom Remote Maintenance Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMM Card Cage	NT6X10AB			65		AP
Misc Scanner Cp	NT0X10AA		1	65	10	AP
Pwr Feed Alarm Cable Assy	NT6X1025		1	65		AP

FLAGS:

NOTES: 1) Refer to the RCE Frame for detailed provisioning rules.

RULES:

AP 1) When PEC NTZZ12CB is ordered, these items are provided.

REMOTE MAINTENANCE MODULE - STANDARD

NTZZ12FA

RATING: MD. Replaced By NTZZ12BB

ABBREVIATION NAME: RMM

ENGINEERING DESCRIPTION: The Building Block Remote Maintenance Module NTZZ12FA contains a standard set of Signaling, maintenance, and service circuits. One slot is available for an additional circuit or filler face plate.

The RMM is a single shelf service module that supports maintenance and service circuits. It mounts on the Remote Controller Equipment (RCE) frame in shelf positions 51 or 65.

REFERENCE DOCUMENTATION: SLZZ12FA 00 02
NTZZ12FA REL 01

Release 07.01

92 03 27

The Remote Maintenance Module - Standard is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMM Common CP	NT6X13AB		1	XX		AP
Design Strip (NT6X13AB)	P0653639		1	XX		AP-01
TM Group Codec CP	NT2X59AA		1	XX	01	AP-01
RMM Control Card CP	NT6X74AB		1	XX	02	AP-01
Maintenance Trunk Cards	AR			XX	03	RUL1
Filler Face Plate	NT0X50AC			XX	03	RUL1
Misc. Scan Card	NT0X10AA		1	XX	04	AP
Misc. Scan Card	NT0X10AA		1	XX	05	AP
SD Card I	NT2X57AA		1	XX	06	AP
Multi-line Test Unit Analog	NT2X10BA		1	XX	07	AP
Multi-line Test Unit Cont.	NT2X11BA		1	XX	08	AP
SD Card I	NT2X57AA		1	XX	09	AP
\$ INC/OG Test Trunk	NT2X90AC		1	XX	10	AP
Balance Network	NT2X77AA		1	XX	10	AP
\$ INC/OG Test Trunk	NT2X90AC		1	XX	11	AP
Balance Network	NT2X77AA		1	XX	11	AP
Misc. Scan Card	NT0X10AA		1	XX	12	AP
\$ INC/OG Test Trunk	NT2X90AC		1	XX	13	AP
Balance Network	NT2X77AA		1	XX	13	AP
\$ INC/OG Test Trunk	NT2X90AC		1	XX	14	AP
Balance Network	NT2X77AA		1	XX	14	AP
8X8 Metallic Test Access CP	NT3X09BA		1	XX	15	AP
\$ INC/OG Test Trunk	NT2X90AC		1	XX	16	AP
Balance Network	NT2X77AA		1	XX	16	AP
Multi O/P Pwr Converter	NT2X09AA		1	XX	17	AP-01
Filler Face Plate .875	NT0X50AA		1	XX	19	AP-01
Power Converter Comm Feat.	NT2X06AB		1	XX	20	AP-01
-48V SP Battery Supply Cable	NT6X1438		2	XX		AP
Desig. Label (NT0X10AA)	P0656328		3	XX		AP
Desig. Label (NT2X10BA)	P0707874		1	XX		AP
Desig. Label (NT2X11BA)	P0707876		1	XX		AP
Desig. Label (NT2X57AA)	P0656327		2	XX		AP
Desig. Label (NT2X90AC)	P0667768		5	XX		AP
Desig. Label (NT3X09BA)	P0664847		1	XX		AP
MTU Power Cable Assy	NT6X1435			XX		RUL2

FLAGS:

\$ Rate Change Pending. On New Jobs Provide NTZZ12BB

Retired Equipment
Remote Maintenance Module - Standard

NTZZ12FA
EMC2-15-RMM-1
Page 2

NOTES:

- 1) XX = shelf position 65 or 51.
- 2) An NT0X10AA is always required in card slot 10 of an RMM shelf regardless of its' mounting location. Therefore, on extensions it is necessary to re-assign RMM CPs to address this issue. The NT0X10AA in Card Slot 10 is required to monitor the office Power Feed Alarm and to feed this information to the MAP which requires one Scan Point. The remaining Scan Points (13) on the card may be used for other applications as required.

RULES:

- AP 1) When PEC NTZZ12FA is ordered, these items are provided.
- AP-01 Items marked AP-01 are supplied with NT6X13AB RMM Common CP and are listed for sparing purposes.
- RUL1 1) When the NTZZ12FA RMM is provisioned one (1) card slot is available for maintenance and service circuits as required, or filled with an NT0X50AC Filler Face Plate. Refer to Section EMB14-05-000 Table E and provision Maintenance and Service Circuits as required.
- RUL2 1) When the NT2X10BA and NT2X11BA (MTU Pair) is installed on an RMM shelf this cable is always required.

STANDARD REMOTE MAINTENANCE MODULE

NTZZ12BA

RATING: MD. Replaced By NTZZ12BB

ABBREVIATION NAME: RMM

ENGINEERING DESCRIPTION: The Building Block Remote Maintenance Module (RMM) 01 contains the set of Signaling, maintenance, and service circuits. Included are provisions for the additional maintenance and service circuits and/or filler face plates for unequipped slots.

The RMM is a single shelf service module that supports maintenance and service circuits. It mounts on the Remote Controller Equipment (RCE) frame in shelf positions 65 or 51.

REFERENCE DOCUMENTATION: SLZZ12BA 00 03
NTZZ12BA REL 02

The Standard Remote Maintenance Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
RMM Common CP	NT6X13AB		1			AP
Design Strip (NT6X13AB)	P0653639		1			
TM Group Codec CP	NT2X59AA		1	XX	01	AP-01
RMM Control Card CP	NT6X74AB		1	XX	02	AP-01
Maintenance Trunk Cards	AR			XX	03	RUL1
Inc/Outg Test Trunk CP	NT2X90AD		1	XX	04	AP
Balance Network 9Kft 900ohm	NT2X77AA		1	XX	04	AP
Inc/Outg Test Trunk CP	NT2X90AD		1	XX	05	AP
Balance Network 9Kft 900ohm	NT2X77AA		1	XX	05	AP
Misc. Scan Card	NT0X10AA		1	XX	06	AP
Inc/Outg Test Trunk CP	NT2X90AD		1	XX	07	AP
Balance Network 9Kft 900ohm	NT2X77AA		1	XX	07	AP
8x8 Metallic Test Access CP	NT3X09BA		1	XX	08	AP
Inc/Outg Test Trunk CP	NT2X90AD		1	XX	09	AP
Balance Network 9Kft 900ohm	NT2X77AA		1	XX	09	AP
Misc. Scan Card	NT0X10AA		1	XX	10	AP
Line Test Unit Analog CP	NT2X10AB		1	XX	11	AP
Line Test Unit Digital CP	NT2X11AD		1	XX	12	AP
Inc/Outg Test Trunk CP	NT2X90AD		1	XX	13	AP
Balance Network 9Kft 900ohm	NT2X77AA		1	XX	13	AP
Signal Distributor CP	NT2X57AA		1	XX	14	AP
8x8 Metallic Test Access CP	NT3X09BA		1	XX	15	AP
Signal Distributor CP	NT2X57AA		1	XX	16	AP
Multi O/P Pwr Converter	NT2X09AA		1	XX	17	AP-01
Filler Face Plate .875	NT0X50AA		1	XX	19	AP-01
Power Converter Comm Feat.	NT2X06AB		1	XX	20	AP-01
-48V SP Battery Supply Cable	NT6X1438		2	XX		AP
Desig. Label (NT0X10AA)	P0656328		2	XX		AP
Desig. Label (NT2X10AB)	P0664835		1	XX		AP
Desig. Label (NT2X11AD)	P0710810		1	XX		AP
Desig. Label (NT2X57AA)	P0656327		2	XX		AP
Desig. Label (NT2X90AD)	P0688244		5	XX		AP
Desig. Label (NT3X09BA)	P0664847		2	XX		AP

NOTES:

- 1) XX = shelf position 65 or 51.
- 2) An NT0X10AA CP is always required in Slot 10 to provide a Scan Point for the Power Feed Alarm. This Alarm requires one Scan Point the remaining 13 Scan Points may be assigned to other functions as required.

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

RULES:

- AP 1) When PEC NTZZ12BA is ordered, these items are provided.

ISDN RCC SHELF 65 RMM BUILDING BLOCK

NTZZ12PA

RATING: MD. Replaced By NTZZ12PB

ABBREVIATION NAME: RMM

ENGINEERING DESCRIPTION: This Building Block provides equipment for an RMM in shelf position 65 on an RCEI, when required.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

- Canada
- US
- CALA
- Asia/Pacific
- Europe

NTZZ12PA EMC2-15-RMM-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 15	ECM 610 05	ECD 011-15507 REPLACE NT6X10AB WITH NT6X10AJ

The ISDN RCC Shelf 65 RMM Building Block is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Control Equipment Kit	NT6X10AB		1	65		AP
Remote Mtce. Mod Common CP	NT6X13AB		1	65		AP
RMM Cable Assembly	NT6X1438		1	65		AP
Power Alarm Cable Assy.	NT6X1025		1	65		AP

RULES:

AP 1) When PEC NTZZ12PA is ordered, these items are provided.

RMM SHELF RCEI FRAME (65)

PEC CODE: NTZZ12PB

CPC CODE: B0236652

| RATING: MD

REPLACES: NTZZ12PA

REPLACED BY: RSC-SONET

ABBREVIATION NAME: RMM

ENGINEERING DESCRIPTION: This Building Block provides equipment for an RMM in shelf position 65 on an RCEI frame only, when required.

REFERENCE DOCUMENTATION: MS6X10AD 00 10
SLZZ12MA 00 02
SLZZ12PB 00 01

MARKETS: Applicable markets:

US
Canada

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ12PB EMC2-15-RMM-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 15	ECM 610 05	ECD 011-15507 REPLACE NT6X10AB WITH NT6X10AJ
94 04 18	ECM 610 10	Change to A&M per Product Line Mgr. This product is replaced by RSC-SONET.
96 03 27	ECM 610 14	Change to MD per BB Rat and GMF recommendations. This product has been replaced by RSC-SONET.

The RMM Shelf RCEI Frame (65) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Trunk Module	AR			65		RUL1
Remote Control Equipment Kit	NT6X10AJ		1	65		AP
Remote Mtce. Mod Common CP	NT6X13AB		1	65		AP
Misc Scan Card	NT0X10AA		1	65	10	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) An NT0X10AA is always required in slot 10. One scan point (SC100) is reserved for the PDC Power Fail Alarm. The remaining 13-Scan Points may be assigned to other functions as applicable.

RULES:

- AP 1) When PEC NTZZ12PB is ordered, these items are provided.

REMOTE CONTROLLER EQUIPMENT FRAME

NTZZ12AA

RATING: MD Replaced By NTZZ12AB

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12AA contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12AA 00 06
NTZZ12AA REL 04

MARKETS: Applicable markets:

Canada

NTZZ12AA EMC2-15-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 07	----- ECM 618 07	Previous history not available ECD 018-39307 - change NT0X25AV to NT0X25AH framework

The Remote Controller Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqp Fr	NT6X10AC		1			AP
Common Framework	NT0X25AH		1			AP
RMM Card Cage	NT6X10AB			65		RUL1
Filler Panel	P0575239			65		RUL1
26AWG Pr Blue Grn Wire	R0113096			65		RUL1
Remote Maint. Module Cust.	NTZZ12CA			65, 51		RUL2
Remote Maint. Module STD	NTZZ12BA			65, 51		RUL3
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP-01
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
Rmt Clster Cntrl Commn CP	NT6X12CA		1	32, 18		AP
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32, 18		AP-01
Design Strip (NT6X12CA)	P0698702		2	32, 18		AP-02
DS-1 P-Side Interface	NTZZ03GA			32, 18	1-5	RUL4
Filler Face Plate	NT0X50AA			32, 18	1-5	RUL4
DS-30A LCM Interface	NTZZ02JA			18	6	RUL5
LGC/LTC Processor CP	NT6X45BA		2	32, 18	08	AP
Desig. Label NT6X45BA	P0665152		2	32, 18	08	AP
Filler Face Plate	NT0X50AA			32, 18	09	AP
Master Proc Memory CP	NT6X47AB		2	32, 18	10	AP
Desig. Label NT6X47AB	P0666374		2	32, 18	10	AP
MP Memory Plus CP	NT6X47AB		2	32, 18	11	AP-02
SP Memory Plus CP	NT6X46BA		2	32, 18	12	AP-02
LGC/DTC Processor CP	NT6X45BA		2	32, 18	13	AP
Desig. Label NT6X45BA	P0665152		2	32, 18	13	AP
Universal Tone Receiver	NTZZ02FA			18	14	RUL6
Filler Face Plate	NT0X50AA			32, 18	14	RUL6
Time Switch CP	NT6X44AA		2	32, 18	15	AP-02
Domestic Univtone Rec CP	NT6X92BB		2	32, 18	16	AP-02
CPP MSG Proto & Tone CP	NT6X69AB		2	32, 18	17	AP-02
CLASS Modem Resource PCB	NTZZ02EA			18	18	RUL7
Host Link formatter CP	NT6X72AA		2	32, 18	19	AP-02
DS-1 C-Side Interface	NTZZ12DA			32, 18	20-23	RUL8
Filler Face Plate	NT0X50AA			32, 18	20-23	RUL8
Filler FP .875 (24)	NT0X50AA		2	32, 18	24	AP-02
Pwr Converter +/-5V & 12V	NT2X70AE		2	32, 18	25	AP
Designation Label NT2X70AE	P0698943		2	32, 18	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ12AA is ordered, these items are provided.
- AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.
- AP-02 When PEC NT6X12CA is provided these items are always included. They are shown here for completeness.
- RUL1 1) Provide one (1) NT6X10AB RMM Card Cage when an RMM in Shelf position 65 is required. If an RMM at shelf position 65 is not required
- 2) When PEC NT6X10AB is shipped loose to the job site provide 21.0 meters of this wire. Otherwise, provide one P0575239 Cage Filler Panel.
- RUL2 1) Provide one NTZZ12CA per RCE frame shelf position 51 or 65. Service Circuits for this shelf must be customized per Telco specifications.
- RUL3 1) Provide one NTZZ12BA (U.S. applications only) or one NTZZ12FA (Canadian applications only) for RCE shelf position 51 or 65 when the Telco specifies a Standard RMM Layout of Maintenance and Special Service Circuits for the RSC Office. Additional service circuits may be provisioned as required.
- RUL4 1) For all applications provide the required quantity of NTZZ03GA DS-1 P-side Interface. For any slot 1-5 not equipped with a NTZZ03GA DS-1 P-side Interface provide a NT0X50AA Filler Face Plate.

- 2) Provide maximum nine (9) NTZZ03GA DS-1 Interface for peripheral side trunking, for the RCC per customer requirements.
- 3) One NTZZ03GA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- RUL5
- 1) Provide one (1) NTZZ02JA DS30A LCM Interface for RSC offices equipped with RMM shelf(s) and remote LCMS.
 - 2) One DS30A LCM Interface provides interfaces for up to twenty (20) DS30A ports (links) from LCMS. The block consists of NT6X48AA CPs. NT6X48AA CPs on RCC 0 (lower shelf within the module) and RCC 1 (upper shelf within the module) and occupying the same circuit pack position interface the same DS30A ports for reliability.

- 3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) The ports from each LCM should be spread evenly across both circuit packs.
 The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2.
 RCC DS-30A ports that are assigned to LCM are to be picked from this set of ports (circuits). Then assign the DS-1 Interface CP in the module (See RUL4).

- RUL6 1) Lines and Trunks on a RSC are serviced by the always provided Universal Tone Receiver (UTR) CP in Card Slot 16. When Traffic demands more UTRs then a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA and Desig Label.
- 2) However, if the 2nd UTR pair is installed, the number of NTZZ03GA DS-1 Interfaces is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- RUL7 1) Provide one NTZZ02EA per RCE frame when the Class Feature is used.

- RUL8 1) For all applications provide the required quantity of NTZZ12DA DS-1 C-side Interface. For any slot 20-23 that is not equipped, provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum eight (8) NTZZ12DA DS-1 Interface for C-side trunking, for the RCC per customer requirements.
- 3) One NTZZ12DA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports (Host I/F) per CP location.

CP POS	20	21	22	23
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS 18	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

- 4) The recommended number of RSCs off of the same host LGC/LTC is two if the following conditions are met;
- * 2 RSCs from a single configuration
 - * 1 RSC from a dual configuration and 1 RSC from a single configuration
 - * Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.
 - * A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMS, RSC LCMS, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.
 - * The DS-1 links for a dual RSCs are assigned as follows;
 - 0 and 2 - DMS host

- 1 and 3 interlinks to other RCC (1 & 3 respectively)
- 4 - 15 interlinks to other RCC or to DMS host

REMOTE CONTROLLER EQUIPMENT FRAME

NTZZ12HA

RATING: MD. Replaces NTZZ12HA. Replaced By NTZZ12HB

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12HA contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12HA 00 01
NTZZ12HA REL 12

The Remote Controller Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqp Fr	NT6X10AC		1			AP
Common Framework	NT0X25AA		1			AP
RMM Card Cage	NT6X10AB			65		RUL1
Filler Panel	P0575239			65		RUL1
26AWG Pr Blue Grn Wire	R0113096			65		RUL1
Remote Maint. Module Cust.	NTZZ12CA			65, 51		RUL2
Remote Maint. Module STD	NTZZ12BA			65, 51		RUL3
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP-01
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
Rmt Clster Cntrl Commn CP	NT6X12CA		1	32, 18		AP
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32, 18		AP-01
Design Strip (NT6X12CA)	P0698702		2	32, 18		AP-02
DS-1 P-Side Interface	NTZZ03GA			32, 18	1-5	RUL4
Filler Face Plate	NT0X50AA			32, 18	1-5	RUL4
DS-30A LCM Interface	NTZZ02JA			18	6	RUL5
LGC/LTC Processor CP	NT6X45BA		2	32, 18	08	AP
Desig. Label NT6X45BA	P0665152		2	32, 18	08	AP
Filler Face Plate	NT0X50AA			32, 18	09	AP
Master Proc Memory CP	NT6X47AB		2	32, 18	10	AP
Desig. Label NT6X47AB	P0666374		2	32, 18	10	AP
MP Memory Plus CP	NT6X47AB		2	32, 18	11	AP-02
SP Memory Plus CP	NT6X46BA		2	32, 18	12	AP-02
LGC/DTC Processor CP	NT6X45BA		2	32, 18	13	AP
Desig. Label NT6X45BA	P0665152		2	32, 18	13	AP
Universal Tone Receiver	NTZZ02FA			18	14	RUL6
Filler Face Plate	NT0X50AA			32, 18	14	RUL6
Time Switch CP	NT6X44AA		2	32, 18	15	AP-02
Domestic Univtone Rec CP	NT6X92BB		2	32, 18	16	AP-02
CPP MSG Proto & Tone CP	NT6X69AB		2	32, 18	17	AP-02
CLASS Modem Resource PCB	NTZZ02EA			18	18	RUL7
Host Link formatter CP	NT6X72AA		2	32, 18	19	AP-02
DS-1 C-Side Interface	NTZZ12DA			32, 18	20-23	RUL8
Filler Face Plate	NT0X50AA			32, 18	20-23	RUL8
Filler FP .875 (24)	NT0X50AA		2	32, 18	24	AP-02
Pwr Converter +/-5V & 12V	NT2X70AE		2	32, 18	25	AP
Designation Label NT2X70AE	P0698943		2	32, 18	25	AP
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ12HA is ordered, these items are provided.
- AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.
- AP-02 When PEC NT6X12CA is provided these items are always included. They are shown here for completeness.
- RUL1 1) Provide one (1) NT6X10AB RMM Card Cage when an RMM in Shelf position 65 is required. If an RMM at shelf position 65 is not required
- 2) When PEC NT6X10AB is shipped loose to the job site provide 21.0 meters of this wire. Otherwise, provide one P0575239 Cage Filler Panel.
- RUL2 1) Provide one NTZZ12CA per RCE frame shelf position 51 or 65. Service Circuits for this shelf must be customized per Telco specifications.
- RUL3 1) Provide one NTZZ12BA (U.S. applications only) or one NTZZ12FA (Canadian applications only) for RCE shelf position 51 or 65 when the Telco specifies a Standard RMM Layout of Maintenance and Special Service Circuits for the RSC Office. Additional service circuits may be provisioned as required.
- RUL4 1) For all applications provide the required quantity of NTZZ03GA DS-1 P-side Interface. For any slot 1-5 not equipped with a NTZZ03GA DS-1 P-side Interface provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum nine (9) NTZZ03GA DS-1 Interface for peripheral side trunking, for the RCC per customer requirements.
- 3) One NTZZ03GA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- RUL5 1) Provide one (1) NTZZ02JA DS30A LCM Interface for RSC offices equipped with RMM shelf(s) and remote LCMs.
- 2) One DS30A LCM Interface provides interfaces for up to twenty (20) DS30A ports (links) from LCMs. The block consists of NT6X48AA CPs. NT6X48AA CPs on RCC 0 (lower shelf within the module) and RCC 1 (upper shelf within the module) and occupying the same circuit pack position interface the same DS30A ports for reliability.

- 3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) The ports from each LCM should be spread evenly across both circuit packs.
 The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2.
 RCC DS-30A ports that are assigned to LCM are to be picked from this set of ports (circuits). Then assign the DS-1 Interface CP in the module (See RUL4).

- RUL6 1) Lines and Trunks on a RSC are serviced by the always provided Universal Tone Receiver (UTR) CP in Card Slot 16. When Traffic demands more UTRs then a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA and Desig Label.
- 2) However, if the 2nd UTR pair is installed, the number of NTZZ03GA DS-1 Interfaces is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- RUL7 1) Provide one NTZZ02EA per RCE frame when the Class Feature is used.

- RUL8 1) For all applications provide the required quantity of NTZZ12DA DS-1 C-side Interface. For any slot 20-23 that is not equipped, provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum eight (8) NTZZ12DA DS-1 Interface for C-side trunking, for the RCC per customer requirements.
- 3) One NTZZ12DA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports (Host I/F) per CP location.

CP POS	20	21	22	23
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS 18	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

- 4) The recommended number of RSCs off of the same host LGC/LTC is two if the following conditions are met:
- * 2 RSCs from a single configuration
 - * 1 RSC from a dual configuration and 1 RSC from a single configuration
 - * Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.
 - * A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMS, RSC LCMS, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.
 - * The DS-1 links for a dual RSCs are assigned as follows;
 - 0 and 2 - DMS host

- 1 and 3 interlinks to other RCC (1 & 3 respectively)
- 4 - 15 interlinks to other RCC or to DMS host

REMOTE CONTROLLER EQUIPMENT FRAME

NTZZ12HB

RATING: MD. Replaced By NTZZ12HC

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12HB contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12HB 00 01
NTZZ12HB REL 01

The Remote Controller Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqpt Fr	NT6X10AC		1			AP
Common Framework	NT0X25AA		1			AP
RMM Card Cage	NT6X10AB			65		RUL1
Filler Panel	P0575239			65		RUL1
Remote Maint. Module Cust.	NTZZ12CA			65,51		RUL2
26AWG Pr Blue Grn Wire	R0113096			65		RUL1
Remote Maint. Module STD	NTZZ12BA			65,51		RUL3
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP-01
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
Rmt Clster Cntrl Commn CP	NT6X12AG		1	32,18		AP
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32,18		AP-01
Design Strip (NT6X12AG)	P0713149		2	32,18		AP-02
DS-1 P-Side Interface	NTZZ03GA			32,18	1-5	RUL4
DS-1 P-Side Interface	NTZZ02DA			32,18	1-5	RUL4
Filler Face Plate	NT0X50AA			32,18	1-5	RUL4
DS-30A LCM Interface	NTZZ02JA			18	6-7	RUL5
LGC/LTC Processor CP	NT6X45BC		2	32,18	08	AP
Desig. Label NT6X45BC	P0713576		2	32,18	08	AP
Filler Face Plate	NT0X50AA		4	32,18	09-10	AP-02
Master Proc Memory CP	NT6X47AC		2	32,18	11	AP-02
SP Memory Plus CP	NT6X46BB		2	32,18	12	AP-02
LGC/DTC Processor CP	NT6X45BC		2	32,18	13	AP
Desig. Label NT6X45BC	P0713576		2	32,18	13	AP
Universal Tone Receiver	NTZZ02FA			18	14	RUL6
Filler Face Plate	NT0X50AA			32,18	14	RUL6
Time Switch CP	NT6X44AA		2	32,18	15	AP-02
Domestic Univtone Rec CP	NT6X92BB		2	32,18	16	AP-02
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
CLASS Modem Resource PCB	NTZZ02EA			18	18	RUL7
CLASS Modem Resource PCB	NTZZ97AA			18	18	RUL7
Host Link formatter CP	NT6X72AB		2	32,18	19	AP-02
DS-1 C-Side Interface	NTZZ12DA			32,18	20-23	RUL8
DS-1 C-Side Interface	NTZZ12EA			32,18	20-23	RUL8
Filler Face Plate	NT0X50AA			32,18	20-23	RUL8
Filler FP .875 (24)	NT0X50AA		2	32,18	24	AP-02
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP

FLAGS:

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ12HB is ordered, these items are provided.
- AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.
- AP-02 When PEC NT6X12AG is provided these items are always included. They are shown here for completeness.
- RUL1 1) Provide one (1) NT6X10AB RMM Card Cage when an RMM in Shelf position 65 is required. If an RMM at shelf position 65 is not required provide one P0575239 Cage Filler Panel.
- 2) When PEC NT6X10AB is shipped loose to the job site provide 21.0 meters of this wire.
- RUL2 1) Provide one NTZZ12CA per RCE frame shelf position 51 or 65. Service Circuits for this shelf must be customized per Telco specifications.
- RUL3 1) Provide one NTZZ12BA (U.S. applications only) or one NTZZ12FA (Canadian applications only) for RCE shelf position 51 or 65 when the Telco specifies a Standard RMM Layout of Maintenance and Special Service Circuits for the RSC Office. Additional service circuits may be provisioned as required.
- RUL4 1) For all applications provide the required quantity of NTZZ03GA or NTZZ02DA DS-1 P-side Interface. The NTZZ02DA is

the preferred interface e. For any slot 1-5 not equipped with a NTZZ03GA DS-1 P-side Interface provide a NT0X50AA Filler Face Plate.

- 2) Provide maximum nine (9) NTZZ03GA DS-1 Interface for peripheral side trunking, for the RCC per customer requirements.
- 3) One NTZZ03GA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- RUL5
- 1) Provide one (1) NTZZ02JA DS30A LCM Interface for RSC offices equipped which provides 4 each NT6X48AAs for slots 6-7 on shelves 18 and 32, for RMM shelf(s) and remote LCMs.
 - 2) One DS30A LCM Interface provides interfaces for up to twenty (20) DS30A ports (links) from LCMs. The block con-

sists of NT6X48AA CPs. NT6X48AA CPs on RCC 0 (lower shelf within the module) and RCC 1 (upper shelf within the module) and occupying the same circuit pack position interface the same DS30A ports for reliability.

- 3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) The ports from each LCM should be spread evenly across both circuit packs.

The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2.

RCC DS-30A ports that are assigned to LCM are to be picked from this set of ports (circuits). Then assign the DS-1 Interface CP in the module (See RUL4).

- RUL6 1) Lines and Trunks on a RSC are serviced by the always provided Universal Tone Receiver (UTR) CP in Card Slot 16. When Traffic demands more UTRs then a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA and Desig Label.

- 2) However, if the 2nd UTR pair is installed, the number of NTZZ03GA DS-1 Interfaces is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- RUL7 1) Provide one NTZZ02EA per RCE frame for Canadian jobs or one NTZZ97AA for US applications when the Class Feature is required.
- RUL8 1) For all applications provide the required quantity of NTZZ12DA DS-1 C-side Interface. For any slot 20-23 that is not equipped, provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum eight (8) NTZZ12DA DS-1 Interface for C-side trunking, for the RCC per customer requirements. However, if the second UTR pair is provided, the maximum DS-1 limit is 6 each.
- 3) One NTZZ12DA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports (Host I/F) per CP location.

CP POS	20	21	22	23
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS 18	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

- 4) The recommended number of RSCs off of the same host LGC/LTC is two if the following conditions are met;
- * 2 RSCs from a single configuration
 - * 1 RSC from a dual configuration and 1 RSC from a single configuration
 - * Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.
 - * A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software

nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMS, RSC LCMS, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.

* The DS-1 links for a dual RSCs are assigned as follows;

- 0 and 2 - DMS host
- 1 and 3 interlinks to other RCC (1 & 3 respectively)
- 4 - 15 interlinks to other RCC or to DMS host

| EARTHQUAKE REMOTE CONTROLLER EQUIPMENT FRAME NTZZ12LB

RATING: MD. Replaces NTZZ12LA. Replaced By NTZZ12HC.

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12LB contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12LB 00 01
NTZZ12LB REL 01

The Earthquake Remote Controller Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqpt Fr	NT6X10AC		1			AP
Common Framework	NT0X25AH		1			AP
RMM Card Cage	NT6X10AB			65		RUL1
Filler Panel	P0575239			65		RUL1
Remote Maint. Module Cust.	NTZZ12CA			65,51		RUL2
26AWG Pr Blue Grn Wire	R0113096			65		RUL1
Remote Maint. Module STD	NTZZ12BA			65,51		RUL3
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP-01
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
Rmt Clster Cntrl Commn CP	NT6X12AG		1	32,18		AP
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32,18		AP-01
Design Strip (NT6X12AG)	P0713149		2	32,18		AP-02
DS-1 P-Side Interface	NTZZ03GA			32,18	1-5	RUL4
DS-1 P-Side Interface	NTZZ02DA			32,18	1-5	RUL4
Filler Face Plate	NT0X50AA			32,18	1-5	RUL4
DS-30A LCM Interface	NTZZ02JA			18	6-7	RUL5
LGC/LTC Processor CP	NT6X45BC		2	32,18	08	AP
Desig. Label NT6X45BC	P0713576		2	32,18	08	AP
Filler Face Plate	NT0X50AA		4	32,18	09-10	AP-02
Master Proc Memory CP	NT6X47AC		2	32,18	11	AP-02
SP Memory Plus CP	NT6X46BB		2	32,18	12	AP-02
LGC/DTC Processor CP	NT6X45BC		2	32,18	13	AP
Desig. Label NT6X45BC	P0713576		2	32,18	13	AP
Universal Tone Receiver	NTZZ02FA			18	14	RUL6
Filler Face Plate	NT0X50AA			32,18	14	RUL6
Time Switch CP	NT6X44AA		2	32,18	15	AP-02
Domestic Univtone Rec CP	NT6X92BB		2	32,18	16	AP-02
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
CLASS Modem Resource PCB	NTZZ02EA			18	18	RUL7
CLASS Modem Resource PCB	NTZZ97AA			18	18	RUL7
Host Link formatter CP	NT6X72AB		2	32,18	19	AP-02
DS-1 C-Side Interface	NTZZ12DA			32,18	20-23	RUL8
DS-1 C-Side Interface	NTZZ12EA			32,18	20-23	RUL8
Filler Face Plate	NT0X50AA			32,18	20-23	RUL8
Filler FP .875 (24)	NT0X50AA		2	32,18	24	AP-02
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP

FLAGS:

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ12LB is ordered, these items are provided.
- AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.
- AP-02 When PEC NT6X12AG is provided these items are always included. They are shown here for completeness.
- RUL1 1) Provide one (1) NT6X10AB RMM Card Cage when an RMM in Shelf position 65 is required. If an RMM at shelf position 65 is not required provide one P0575239 Cage Filler Panel.
- 2) When PEC NT6X10AB is shipped loose to the job site provide 21.0 meters of this wire.
- RUL2 1) Provide one NTZZ12CA per RCE frame shelf position 51 or 65. Service Circuits for this shelf must be customized per Telco specifications.
- RUL3 1) Provide one NTZZ12BA (U.S. applications only) or one NTZZ12FA (Canadian applications only) for RCE shelf position 51 or 65 when the Telco specifies a Standard RMM Layout of Maintenance and Special Service Circuits for the RSC Office. Additional service circuits may be provisioned as required.

- RUL4 1) For all applications provide the required quantity of NTZZ03GA or NTZZ02DA DS-1 P-side Interface. The NTZZ02DA is the preferred interface e. For any slot 1-5 not equipped with a NTZZ03GA DS-1 P-side Interface provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum nine (9) NTZZ03GA DS-1 Interface for peripheral side trunking, for the RCC per customer requirements.
- 3) One NTZZ03GA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- RUL5 1) Provide one (1) NTZZ02JA DS30A LCM Interface for RSC offices equipped which provides 4 each NT6X48AAs for slots 6-7 on shelves 18 and 32, for RMM shelf(s) and remote LCMs.

- 2) One DS30A LCM Interface provides interfaces for up to twenty (20) DS30A ports (links) from LCMs. The block consists of NT6X48AA CPs. NT6X48AA CPs on RCC 0 (lower shelf within the module) and RCC 1 (upper shelf within the module) and occupying the same circuit pack position interface the same DS30A ports for reliability.
- 3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) The ports from each LCM should be spread evenly across both circuit packs.
The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2.
RCC DS-30A ports that are assigned to LCM are to be picked from this set of ports (circuits). Then assign the DS-1 Interface CP in the module (See RUL4).

- RUL6 1) Lines and Trunks on a RSC are serviced by the always provided Universal Tone Receiver (UTR) CP in Card Slot 16. When Traffic demands more UTRs then a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA and Desig Label.

- 2) However, if the 2nd UTR pair is installed, the number of NTZZ03GA DS-1 Interfaces is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- RUL7 1) Provide one NTZZ02EA per RCE frame for Canadian jobs or one NTZZ97AA for US applications when the Class Feature is required.
- RUL8 1) For all applications provide the required quantity of NTZZ12DA DS-1 C-side Interface. For any slot 20-23 that is not equipped, provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum eight (8) NTZZ12DA DS-1 Interface for C-side trunking, for the RCC per customer requirements. However, if the second UTR pair is provided, the maximum DS-1 limit is 6 each.
- 3) One NTZZ12DA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports (Host I/F) per CP location.

CP POS	20	21	22	23
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS 18	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

- 4) The recommended number of RSCs off of the same host LGC/LTC is two if the following conditions are met;
- * 2 RSCs from a single configuration
 - * 1 RSC from a dual configuration and 1 RSC from a single configuration
 - * Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.
 - * A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software

nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMS, RSC LCMS, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.

* The DS-1 links for a dual RSCs are assigned as follows;

- 0 and 2 - DMS host
- 1 and 3 interlinks to other RCC (1 & 3 respectively)
- 4 - 15 interlinks to other RCC or to DMS host

EARTHQUAKE REMOTE CONTROLLER EQUIPMENT FRAME

NTZZ12LA

RATING: MD. Replaced By NTZZ12LB

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12LA contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12LA 00 01
NTZZ12LA REL 01

The Earthquake Remote Controller Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqp Fr	NT6X10AC		1			AP
Common Framework	NT0X25AH		1			AP
RMM Card Cage	NT6X10AB			65		RUL1
Filler Panel	P0575239			65		RUL1
Remote Maint. Module Cust.	NTZZ12CA			65,51		RUL2
26AWG Pr Blue Grn Wire	R0113096			65		RUL1
Remote Maint. Module STD	NTZZ12BA			65,51		RUL3
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP-01
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
Rmt Clster Cntrl Commn CP	NT6X12CA		1	32,18		AP
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32,18		AP-01
Design Strip (NT6X12CA)	P0698702		2	32,18		AP-02
DS-1 P-Side Interface	NTZZ03GA			32,18	1-5	RUL4
Filler Face Plate	NT0X50AA			32,18	1-5	RUL4
DS-30A LCM Interface	NTZZ02JA			18	6	RUL5
LGC/LTC Processor CP	NT6X45BA		2	32,18	08	AP
Desig. Label NT6X45BA	P0665152		2	32,18	08	AP
Filler Face Plate	NT0X50AA			32,18	09	AP
Master Proc Memory CP	NT6X47AB		2	32,18	10	AP
Desig. Label NT6X47AB	P0666374		2	32,18	10	AP
MP Memory Plus CP	NT6X47AB		2	32,18	11	AP-02
SP Memory Plus CP	NT6X46BA		2	32,18	12	AP-02
LGC/DTC Processor CP	NT6X45BA		2	32,18	13	AP
Desig. Label NT6X45BA	P0665152		2	32,18	13	AP
Universal Tone Receiver	NTZZ02FA			18	14	RUL6
Filler Face Plate	NT0X50AA			32,18	14	RUL6
Time Switch CP	NT6X44AA		2	32,18	15	AP-02
Domestic Univtone Rec CP	NT6X92BB		2	32,18	16	AP-02
CPP MSG Proto & Tone CP	NT6X69AB		2	32,18	17	AP-02
CLASS Modem Resource PCB	NTZZ02EA			18	18	RUL7
Host Link formatter CP	NT6X72AA		2	32,18	19	AP-02
DS-1 C-Side Interface	NTZZ12DA			32,18	20-23	RUL8
Filler Face Plate	NT0X50AA			32,18	20-23	RUL8
Filler FP .875 (24)	NT0X50AA		2	32,18	24	AP-02
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ12LA is ordered, these items are provided.
- AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.
- AP-02 When PEC NT6X12CA is provided these items are always included. They are shown here for completeness.
- RUL1 1) Provide one (1) NT6X10AB RMM Card Cage when an RMM in Shelf position 65 is required. If an RMM at shelf position 65 is not required
- 2) When PEC NT6X10AB is shipped loose to the job site provide 21.0 provide one P0575239 Cage Filler Panel.
- RUL2 1) Provide one NTZZ12CA per RCE frame shelf position 51 or 65. Service Circuits for this shelf must be customized per Telco specifications.
- RUL3 1) Provide one NTZZ12BA (U.S. applications only) or one NTZZ12FA (Canadian applications only) for RCE shelf position 51 or 65 when the Telco specifies a Standard RMM Layout of Maintenance and Special Service Circuits for the RSC Office. Additional service circuits may be provisioned as required.
- RUL4 1) For all applications provide the required quantity of NTZZ03GA DS-1 P-side Interface. For any slot 1-5 not equipped with a NTZZ03GA DS-1 P-side Interface provide a NT0X50AA Filler Face Plate.

- 2) Provide maximum nine (9) NTZZ03GA DS-1 Interface for peripheral side trunking, for the RCC per customer requirements.
- 3) One NTZZ03GA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- RUL5
- 1) Provide one (1) NTZZ02JA DS30A LCM Interface for RSC offices equipped with RMM shelf(s) and remote LCMS.
 - 2) One DS30A LCM Interface provides interfaces for up to twenty (20) DS30A ports (links) from LCMS. The block consists of NT6X48AA CPs. NT6X48AA CPs on RCC 0 (lower shelf within the module) and RCC 1 (upper shelf within the module) and occupying the same circuit pack position interface the same DS30A ports for reliability.

- 3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) The ports from each LCM should be spread evenly across both circuit packs.
 The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2.
 RCC DS-30A ports that are assigned to LCM are to be picked from this set of ports (circuits). Then assign the DS-1 Interface CP in the module (See RUL4).

- RUL6 1) Lines and Trunks on a RSC are serviced by the always provided Universal Tone Receiver (UTR) CP in Card Slot 16. When Traffic demands more UTRs then a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA and Desig Label.
- 2) However, if the 2nd UTR pair is installed, the number of NTZZ03GA DS-1 Interfaces is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- RUL7 1) Provide one NTZZ02EA per RCE frame when the Class Feature is used.

- RUL8 1) For all applications provide the required quantity of NTZZ12DA DS-1 C-side Interface. For any slot 20-23 that is not equipped, provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum eight (8) NTZZ12DA DS-1 Interface for C-side trunking, for the RCC per customer requirements.
- 3) One NTZZ12DA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports (Host I/F) per CP location.

CP POS	20	21	22	23
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS 18	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

- 4) The recommended number of RSCs off of the same host LGC/LTC is two if the following conditions are met;
- * 2 RSCs from a single configuration
 - * 1 RSC from a dual configuration and 1 RSC from a single configuration
 - * Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.
 - * A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMS, RSC LCMS, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.
 - * The DS-1 links for a dual RSCs are assigned as follows;
 - 0 and 2 - DMS host

- 1 and 3 interlinks to other RCC (1 & 3 respectively)
- 4 - 15 interlinks to other RCC or to DMS host

REMOTE CONTROLLER EQUIPMENT (RCE) FRAME
CANADIAN APPLICATIONS ONLY

PEC CODE: NTZZ12AC

CPC CODE: B0235805

| RATING: MD

REPLACES: NTZZ12AB

| REPLACED BY: NTZZ12HD

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12AB contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12AC 00 01
NTZZ12AC REL 01
NT6X10AC 01 10

MARKETS: Applicable markets:

Canada

| ISSUE AUTHOR: NTI: Merdia Drummer Dept. 3471 (PPK)

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

NTZZ12AC EMC2-15-005 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 12 16	ECM 618 10	ECD 011-18384 Incorporate changes as follows: - Introduce NT6X12AL, and NTMX77/71AA as provisionable. Also, introduce NT6X45BD as minimum processor req'd for Dual RCCs. ECD 011-19126 Incorporate changes as follows: - Introduce NT6X45BD as required for Mono_RCCs when NTZ152AA/AB S/W Pkg is required. - Modify provisioning rulesuired for Mono_RCCs when NTZ152AA/AB S/W Pkg - Modify NT6X50AA VS AB Provisioning Rules when PECs are applied to the RCC C-Side.

The Remote Controller Equipment (RCE) Frame Canadian Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqpt Fr	NT6X10AC		1			AP
Universal Framework	NT0X25AH		1			AP
Filler Panel	P0575239			65		RUL1
Remote Maint. Module Cust.	NTZZ12CC			65		RUL2
PC Kit RMM RCE 65	PC6X10AH			65		RUL1
Jumper Wire NT-26CR BL/GR pr	R0109478			65		RUL1
Jumper Wire NT-26CR GR/OR pr	R0109503			65		RUL1
# Remote Maint. Module Cust.	NTZZ12CB			65		RUL2
# 26AWG Pr Blue Grn Wire	R0113096			65		RUL1
# Remote Maint. Module Cust.	NTZZ12CA			65, 51		RUL2
# Remote Maint. Module STD	NTZZ12BA			65, 51		RUL3
Remote Maint. Module STD	NTZZ12BB			65, 51		RUL3
Remote Maint. Module Com CP	NT6X13AB			65, 51		RUL3
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP-01
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
Rmt Clster Cntrl Commn CP	NT6X12AL		1	32, 18		AP
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32, 18		AP-01
Design Strip (NT6X12AL/DG)	P0739325		2	32, 18		AP-02
DS-1 P-Side Interface	NTZZ03GA			32, 18	1-5	RUL4
DS-1 P-Side Interface	NTZZ02DA			32, 18	1-5	RUL4
Filler Face Plate	NT0X50AA			32, 18	1-5	RUL4
# DS-30A LCM Interface	NTZZ02JA			18	6-7	RUL5
DS-30A LCM Interface	NTZZ02KA			18	6-7	RUL5
Filler Face Plate	NT0X50AA		4	32, 18	09-10	AP-02
RCC MP/SP Processor Kit	NTZZ12YY			18, 32	8	RUL9
Master Proc Memory CP	NT6X47AC		2	32, 18	11	AP-03
SP Memory Plus CP	NT6X46BB		2	32, 18	12	AP-03
LGC/DTC Processor CP	NT6X45BD		4	32, 18	08, 13	AP-03
Desig. Label NT6X45BD	P0739326		4	32, 18	08, 13	AP-03
RCC+ Processor Kit	NTZZ12ZZ			18, 32	8	RUL9
Filler Face Plate	NT0X50AA		6	32, 18	08, 11, 12	AP-04
Unified Processor	NTMX77AA		2	18, 32	13	AP-04
Desig. label (NTMX77AA)	P0735417		2	18, 32	13	AP-04
Terminator Card	NTMX71AA		2	18, 32	18R	AP-04

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Universal Tone Receiver	NTZZ02FA			18	14	RUL6
Filler Face Plate	NT0X50AA			32,18	14	RUL6
Time Switch CP	NT6X44AA		2	32,18	15	AP-02
Domestic Univtone Rec CP	NT6X92BB		2	32,18	16	AP-02
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
CLASS Modem Resource PCB	NTZZ02EA			18	18	RUL7
CLASS Modem Resource PCB	NTZZ97AA			18	18	RUL7
Host Link formatter CP	NT6X72AB		2	32,18	19	AP-02
DS-1 C-Side Interface	NTZZ12DA			32,18	20-23	RUL8
DS-1 C-Side Interface	NTZZ12EA			32,18	20-23	RUL8
Filler Face Plate	NT0X50AA			32,18	20-23	RUL8
Filler FP .875 (24)	NT0X50AA		2	32,18	24	AP-02
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ12CA	MD	NTZZ12CB
NTZZ12CB	MD	NTZZ12CC
NTZZ12BA	MD	NTZZ12BB
R0113096	MD	R0109478 and R0109503
NTZZ02JA	MD	NTZZ02KA

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

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

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

NOTES:

Retired Equipment
Remote Controller Equipment (RCE) Frame
Canadian Applications Only

NTZZ12AC
EMC2-15-005
Page 4

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ12AC is ordered, these items are provided.
- AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.
- AP-02 When PEC NT6X12AL is provided these items are always included. They are shown here for completeness.
- AP-03 When PEC NTZZ12YY is provided these items are always included. They are shown here for completeness.
- AP-04 When PEC NTZZ12ZZ is provided these items are always included. They are shown here for completeness.
- RUL1 1) If an RMM at shelf position 65 is not required provide one P0575239 Cage Filler Panel.
- 2) NTZZ12CC Ship Loose Rule: When the NTZZ12CC is shipped loose to the job site always provide the following:
- * One PC Kit PC6X10AH to provide a loose wiring diagram. Note: An Engineering Manual Insert for PC6X10AH was not created as this kit documents a Change Procedure only and does not include any hardware.
 - * Always provision 8.0 meters of R0109478 and 10.0 meters of R0190503 NT-26CR Jumper wire.
- 3) Material per this item has been replaced with material per item 2 above. However, the following information has been retained for historical purposes.
- When PEC NTZZ12CC is shipped loose to the job site provide 21.0 meters of this wire.
- RUL2 1) Provide one NTZZ12CC per RCE frame shelf position 65. Service Circuits for this shelf must be customized per Telco specifications.
- RUL3 1) Provide one NTZZ12BB for RCE shelf position 65 when the Telco specifies a Standard RMM Layout of Maintenance and

Special Service Circuits for the RSC Office. Additional service circuits may be provisioned as required.

- RUL4 1) For all applications provide the required quantity of NTZZ03GA or NTZZ02DA DS-1 P-side Interface. The NTZZ02DA is the preferred interface. For any slot 1-5 not equipped with a NTZZ03GA DS-1 P-side Interface provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum nine (9) NTZZ03GA DS-1 Interface for peripheral side trunking, for the RCC per customer requirements.
- 3) One NTZZ03GA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- RUL5 1) Provide one (1) NTZZ02KA DS30A LCM Interface for RSC of-fices equipped with LCMs which provides two (2) NT6X48AAs for slots 6 and/or on shelves 18 and 32 and for RMM shelf(s).
- 2) One DS30A LCM Interface provides interfaces for up to twenty (10) DS30A ports (links) for LCMs and RMMs. The DS30A CPs mount2 on RCA 0 (lower shelf within the module) and RCA 1 (upper shelf within the RCC module) and occupying the same circuit pack position interface the same DS30A ports for reliability.
- 3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) The ports from each LCM should be spread evenly across both circuit packs.
The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2.
RCC DS-30A ports that are assigned to LCM are to be picked from this set of ports (circuits). Then assign the DS-1 Interface CP in the module (See RUL4).

- RUL6 1) Lines and Trunks on a RSC are serviced by the always provided Universal Tone Receiver (UTR) CP in Card Slot 16. When Traffic demands more UTRs then a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA and Desig Label.
- 2) However, if the 2nd UTR pair is installed, the number of NTZZ03GA DS-1 Interfaces is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- RUL7 1) Provide one NTZZ02EA per RCE frame for Canadian jobs or one NTZZ97AA for US applications when the Class Feature is required.
- RUL8 1) Provide minimum of two (2) to a maximum eight (8) DS-1 Interface CPs to enable RCC C-Side Connection to the host peripheral. These ports may be either the standard DS-1 Interface CP (NT6X50AA) or the Extended Frame Format (EFF) DS-1 Interface CP (NT6X50AB). Selecting either the NT6X50AA or NT6X50AB is per customer preference. Note: The NT6X50AB does not provide any additional features in the RSC at this time.

The NT6X50AA or NT6X50AB may be provisioned on the C-Side of the of the RCC or RCC+ based on the following:

- * The Host and the RCC DS-1 CP must match (eg. If 6X40ABs on C-Side of RCC, then they must terminate on 6X50ABs on the P-Side of the host XPM.
- * NT6X50AB CPs may be provisioned on the C-Side of the RCC effective in BCS-31. RCC Packfills where slot 20 is Always Provided (AP) with a NT6X50AA must be upgraded
- * The span must be datafilled in table LTCPSINV with a tuple from table CARRMTC which contains the correct card type. This is because the NT6X50s for the C-SIDE interface in an RCC which has received a load and static data, take on the parameters from the datafill of the NT6X50s that they interface with in the host LGC/LTC.
- * When an RCC is at ROM level (i.e. the RCC does not contain a load), the NT6X50s for interfacing the C-SIDE T1 spans get their parameters from an address hardwired on the RCC backplane. The strapping on all RCC shelves release AG and below is configured from the factory for NT6X50AA cards for interfacing the C-SIDE T1 spans. he

strapping can be modified to support the NT6X50AB cards with various formatting modes and zero code mode configurations. If an RCC shelf release NT6X12AG or lower, is currently provisioned with NT6X50AB cards for interfacing the C-SIDE T1 spans or is to be upgraded with NT6X50AB cards then CAP 1411 must be applied to the frame or NT6X50AA cards must be installed.

- 2) The following are the four possible configurations which may be found in the field and the recommended corrective actions. The recommended actions are only for RCCs with NT6X45 type processor cards.

Host	Remote	Actions
6X50AA	6X50AA	- Verify that the spans are datafilled in table LTCPSINV with the DEFAULT tuple for RCCs from table CARRMTC
6X50AA	6X50AB	Preferred: (NT6X50ABs on both ends) - If NT6X45BCs or higher are NOT equipped in the RCC, then they MUST be installed by applying CAP 1203 to the RCC - Replace the 6X50AAs in the host w/6X50ABs by applying CAP 1199 - Apply CAP 1411 to the RCC to modify the backplane strapping for NT6X50ABs Optional: (NT6X50AAs on both ends) - Replace 6X50ABs in the remote w/6X50ABs by applying CAP 1532
6X50AB	6X50AA	Preferred: (NT6X50ABs on both ends) - If NT6X45BCs or higher are NOT equipped in the RCC, then they MUST be installed by applying CAP 1203 to the RCC - Replace the NT6X50AAs in the remote with NT6X50ABs by applying CAP 1411 Optional: (NT6X50AAs on both ends) - Replace the 6X50ABs in the host w/6X50AAs by applying CAP 1532
6X50AB	6X50AB	- If NT6X45BCs or higher are NOT equipped in the RCC, then they MUST be installed by applying CAP 1203 to the RCC - Apply CAP 1411 to the RCC to modify the backplane strapping for NT6X50ABs

- 3) Provide one (1) NT6X12AH per RCC equipped with a NT6X12CA or earlier RCC Common CP Fill. See RULE #9. This kit accommodates the following:

- * Remove the NT6X50AA's in slot 20 and replace them with NT6X50AB's and Labels.
- * Provisioning of the NT6X45BC and label, in slots 8 & 13 as well as the NTMX77/71 and Label in slots 13 & 19R.
- * The Kit NT6X12AH contains the following:
 - 2 P0690976 P0690976 DESIGN LABEL (NT6X50AB)
 - 2 B0222998 NT6X50AB DS-1 E.F.F. CARD CP

Two (2) NT6X50AAs are always provided with the NT6X12AA/AB/AC modules. One NT6X50AA/AB provides interfaces for up to two (2) T-1 spans.

- 4) The following table is a listing of DS1 ports (Host I/F) per CP.

CP POS	20	21	22	23
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS 18	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

- 5) The recommended number of RSC's off of the same host LGC/LTC is two if the following conditions are met:
- 1) 2 RSCs from a single configuration
 - 2) 1 RSC from a dual configuration and 1 RSC from a single configuration
 - 3) Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.
- 6) A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMS, RSC LCMS, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.

The DS1 links for a dual RSCs are assigned as follows;

- 0 and 2 - DMS host
- 1 and 3 interlinks to other RCC (1 & 3 respectively)
- 4 - 15 interlinks to other RCC or to DMS host

RUL9 1) The RCC may be provisioned with one of three Processor CPs as follows:

<u>PROCESSOR</u>	<u>PROCESSOR RULE</u>

NT6X45BC	Provide in the RCC on an Additions and Maintenance (A&M) basis only in cases where NTX152AA/AB S/W is not provisioned.

NT6X45BD	When XPM+ is not required, provision the CP for the following:

	* For all new jobs * For Mono RSCs where NTX152AA/AB is provided. * For all Dual RSCs upgrades/extension

NTMX77/71	Provide for V0 Jobs in BCS-35, Generally Available (GA) in BCS-36 and later.

REMOTE CONTROLLER EQUIPMENT FRAME

PEC CODE: NTZZ12HC

| CPC CODE: B0215003

| RATING: MD.

| REPLACES: NTZZ12HB

| REPLACED BY: NTZZ12HD

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12HC contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12HC 00 01
NTZZ12HC REL 01
MS6X10AC 01 10
IS6X12 01 07

MARKETS: Applicable markets:

US

| ISSUE AUTHOR: NTI: Merdia Drummer Dept. 3471 (PPK)

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

NTZZ12HC EMC2-15-006 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 10 28	----- ECM 618 05	Previous history not available Introduce New RMM 65 Kit NTZZ12CC to replace NTZZ12CB. Resolve ET 13509 Clarify Provisioning The NT6X1438 Cable Resolve ET 13719 Clarify Provisioning The NT6X1438 Cable
93 02 22	ECM 678 01	Add NTZZ46EA to provide the Unified Processor for new RCC shipments and the NT6X12ZF to upgrade existing RCC packfills (NT6X12AD/AG/CA) to RCC+. (EC 011-17959) Minor corrections per ET 15879 are also included.
93 12 16	ECM 618 10	ECD 011-18384 Incorporate changes as follows: - Introduce NT6X12AL, and NTMX77/71AA as provisionable. Also, introduce NT6X45BD as minimum processor req'd for Dual RCCs. - Correct Slot Assignments for MX77AA and NTMX71AA. ECD 011-19126 Incorporate changes as follows: - Introduce NT6X45BD as required for Mono_RCCs when NTX152AA/AB S/W Pkg is required. - Modify NT6X50AA VS AB Provisioning Rules when PECs are applied to the RCC C-Side (SLOTS 20-23). - Correct the Slot assignment rules for the Universal Proc. (MX77/71)

The Remote Controller Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqpt Fr Common Framework	NT6X10AC NT0X25AA		1			AP RUL1
Universal Framework	NT0X25AH					RUL1
Universal Common Framework	NT0X25AV					RUL1
# Remote Maint. Module Cust.	NTZZ12CB			65		RUL2
Remote Maint. Module Cust.	NTZZ12CC			65		RUL2
RMM Card Cage	NT6X10AH			65		AP-02
Misc Scanner Cp	NT0X10AA		1	65	10	AP-02
Filler Panel	P0575239			65		RUL2
# 26AWG Pr Blue Grn Wire	R0113096			65		RUL2
# RMM Cable Assy MTU Pwr	NT6X1435			65		RUL2
Remote Mtce Mod Comm Cp	NT6X13AB			65, 51		RUL2
Remote Maint. Module STD	NTZZ12BB			65, 51		RUL2
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP-01
-48V SP Batt Supply Cable	NT6X1438			51		AP-01
26AWG Ca Assy(RMM Pwr Mon)	NT6X1023		1	51		AP-01
Remote Mtce Mod Comm Cp	NT6X13AB		1	51		AP-03
# RMM Cable Assy MTU Pwr	NT6X1435			51		AP-03
Designation Strip (NT6X13AB)	P0653639		1	51		AP-05
TM Group Codec CP	NT2X59AA		1	51	01	AP-05
RMM Control Card CP	NT6X74AB		1	51	02	AP-05
Filler Face Plate	NT0X50AC		1	51	03	AP-03
Inc/Og Test Trunk CP	NT2X90AD		1	51	04, 05, 07, 09, 13	AP-03
Comprise Bal Netwk 900 Ohm	NT2X77AA		1	51	04R, 05R, 07R, 09R, 13R	AP-03
Misc Scanner Cp	NT0X10AA		1	51	06, 10	AP-03
8X8 Metallic Test Access CP	NT3X09BA		1	51	08, 15	AP-03
Multi-Line Test Unit	NT2X10BA		1	51	11	AP-03
Multi-Line Test Unit Cntlr	NT2X11BA		1	51	12	AP-03
Signal Distributor CP	NT2X57AA		1	51	14, 16	AP-03
Multi O/P Pwr Converter	NT2X09AA		1	51	17	AP-05
Filler Face Plate .875	NT0X50AA		1	51	19	AP-05
Power Converter Comm Feat.	NT2X06AB		1	51	20	AP-05
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
# Rmt Clster Cntrl Commn CP	NTZZ12YA		1	32, 18		RUL3
# Rmt Clster Cntrl Commn CP	NTZZ12YB		1	32, 18		RUL3
# Rmt Clster Cntrl (RCC+)CP	NTZZ46EA		1	32, 18		RUL3
Rmt Clster Cntrl Cmmn CP	NT6X12AK	RCC		18		AP-04

Retired Equipment
Remote Controller Equipment Frame

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler faceplates	NT0X50AA		8	18,32	8,9, 10,11	AP-07
Unified Processor	NTMX77AA		2	18,32	13	AP-07
Desig. label (NTMX77AA)	P0735417		2	18,32	13	AP-07
Universal Tone Receiver	NT6X92BB		2	18,32	16	AP-07
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP-07
Terminator Card	NTMX71AA		2	18,32	18R	AP-07
Desig. Strip (NT6X12AK)	P0713149		2	18,32		AP-07
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32,18		AP-01
Design Strip (NT6X12AG)	P0713149		2	32,18		AP-06
DS-1 P-Side Interface	NTZZ03GA			32,18	1-5	RUL4
DS-1 P-Side Interface	NTZZ02DA			32,18	1-5	RUL4
Filler Face Plate	NT0X50AA			32,18	1-5	RUL4
DS-30A LCM Interface	NT6X48AA		4	32,18	6-7	AP-04
DS-30A LCM Interface	NT6X48AA		4	32,18	6-7	AP-07
Desig. Label NT6X45BC	P0713576		2	32,18	08	AP-04
Filler Face Plate	NT0X50AA		4	32,18	09-10	AP-06
Master Proc Memory CP	NT6X47AC		2	32,18	11	AP-06
Filler Face Plate	NT0X50AA		4	32,18	08-11	AP-07
SP Memory Plus CP	NT6X46BB		2	32,18	12	AP-06
Unified Processor CP	NTMX77AA		2	32,18	13	AP-07
Desig. Label NTMX77AA	P0735417		2	32,18	13	AP-07
Filler Face Plate	NT0X50AA		4	32,18	13,24	AP-07
LGC/DTC Processor CP	NT6X45BC		2	32,18	13	AP-04
Desig. Label NT6X45BC	P0713576		2	32,18	13	AP-04
Universal Tone Receiver	NTZZ02FA			18	14	RUL5
Filler Face Plate	NT0X50AA			32,18	14	RUL5
Time Switch CP	NT6X44AA		2	32,18	15	AP-06
Time Switch CP	NT6X44AA		2	32,18	15	AP-07
Domestic Univtone Rec CP	NT6X92BB		2	32,18	16	AP-06
Domestic Univtone Rec CP	NT6X92BB		2	32,18	16	AP-07
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP-04
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP-04
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP-07
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP-07
CLASS Modem Resource PCB	NTZZ02EA			18	18	RUL6
CLASS Modem Resource PCB	NTZZ97AA			18	18	RUL6
Filler Face Plate	NT0X50AA			32,18	18	RUL6
Host Link formatter CP	NT6X72AB		2	32,18	19	AP-06
Host Link formatter CP	NT6X72AB		2	32,18	19	AP-07
DS-1 C-Side Interface	NTZZ12DA			32,18	20-23	RUL7
DS-1 C-Side Interface	NTZZ12EA			32,18	20-23	RUL7
Filler Face Plate	NT0X50AA			32,18	20-23	RUL7
Filler FP .875 (24)	NT0X50AA		2	32,18	24	AP-06

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP-04
Designation Label NT2X70AE	P0698943		2	32,18	25	AP-04
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP-07
Designation Label NT2X70AE	P0698943		2	32,18	25	AP-07
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP
Maintenance Tool Kit	NT0X58AD					RUL8
Remote Alarm Panel	NT0X63AC					RUL9
Logic Cable Return Assy	NT0X0009					RUL10
RCC to RCCI Change Kit	NT6X1022					RUL11
RCC to XPM+ Change Kit	NT6X12ZF					RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ12YA	MD	NTZZ12YB
NTZZ12CB	MD	NTZZ12CC
NT6X10AB	MD	NT6X10AH
NT6X1438	CAN	Included/NT6X10AH
NT6X1025	CAN	No Replacement
R0113096	MD	R0109478 and R0109503
NT0X25AA	MD	NT0X25AH
NT0X25AH	CHG	Change PEC Desc.

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

A&M - ADDITIONS & 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 information on the frame doors, refer to Section EMA15-01-002.

RULES:

AP 1) When PEC NTZZ12HC is ordered, these items are provided.

AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.

AP-02 When PEC NTZZ12CC is provided these items are always included. They are shown here for completeness.

AP-03 When PEC NTZZ12BB is provided these items are always included. They are shown here for completeness.

AP-04 When PEC NTZZ12YB is provided these items are always included. They are shown here for completeness.

AP-05 When PEC NT6X13AB is provided these items are always included. They are shown here for completeness.

AP-06 When PEC NT6X12AG is provided these items are always included. They are shown here for completeness.

AP-07 When PEC NTZZ46EA is provided these items are always included. They are shown here for completeness.

| RUL1 1) Provide one (1) NT0X25AH Universal/Earthquake Framework for all applications.

RUL2 1) Provide one NTZZ12CC per RCE frame shelf position 65. Service Circuits for this shelf must be customized per Telco specifications. If an RMM at shelf position 65 is not required provide one P0575239 Cage Filler Panel.

2) NTZZ12CC Ship Loose Rule: When the NT6X10AH is shipped loose to the job site always provide the following:

* One PC Kit PC6X10AH to provide a loose wiring diagram. Note: An Engineering Manual Insert for PC6X10AH was not created as this kit documents a Change Procedure only and does not include any hardware.

* Always provision 8.0 meters of R0109478 and 10.0 meters of R0109503 NT-26CR Jumper wire.

- 3) The NT6X1438 cable is no longer required. It is now included in the stocklist for the NT6X10AH.
- 4) RCE RMM at shelf position 51 may be provisioned via a Standard Layout or via a Customized Layout. The RCE RMM at shelf position 65 is via a Custom Layout only. Detailed below are rules for both options:

- * Provision a Standard RMM Layout for Shelf position 51 via the NTZZ12BB. This Layout Contains 6-I/O Tst Ckts, 28-each SD & SC Ckts, 4-Odd/Even MTU Pairs, and 2 8X8 RMTAs. The CPs are Configured As Follows:

Slot	Card	Pec	Slot	Card	Pec
3	Blank		9R	NT2X77AA	
4	NT2X90AD		10	NT0X10AA	
4R	NT2X77AA		11	NT2X10BA	
5	NT2X90AD		12	NT2X11BA	
5R	NT2X77AA		13	NT2X90AD	
6	NT0X10AA		13R	NT2X77AA	
7	NT2X90AD		14	NT2X57AA	
7R	NT2X77AA		15	NT3X09BA	
8	NT3X09BA		16	NT2X57AA	
9	NT2X90AD				

- * The RMM shelf at position 65 is customized differently for the RMM shelf at position 51 due to the absence of an always provided RMM Card Cage at shelf 65, as follows:

1. Shelf 51

Provide One NT6X13AB, one NT0X10AA to be assigned in Slot 10 (which accounts for one always required scan point, leaving 13 Scan Points for other assignments) and refer to T_RMM_Cards to provision service circuits as required.

2. Shelf 65

Provide one NTZZ12CC, one NT6X13AB, and refer to TABLE-X for provisioning information on the other RMM service circuits. Note: One NT0X10AA is always provided in the NTZZ12CC.

- 5) One PC Kit PC6X10AH to provide a loose wiring diagram. Note: An Engineering Manual Insert for PC6X10AH was not created as this kit documents a Change Procedure only and does not include any hardware. Always provision 8.0 meters

of R0109478 and 10.0 meters of R0109503 NT-26CR Jumper wire.

6) The NT6X1435 Local Cable is no longer provisionable.

RUL3 1) Provide one NTZZ12YB per RCE frame for MP/SP processor configurations OR one NTZZ46EA per RCE to utilize the Unified Processor.

2) Included in both packfills are 4 NT6X48AA DS30A Interface CPs which mount in slots 6-7 on shelves 18 and 32. They are used to interface LCMs and RMM shelf(s).

3) One pair of DS30A Interface CP interfaces up to twenty (20) DS30A ports (links), however two pair are provisioned for reliability.

4) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

5) The ports from each LCM should be spread evenly across both circuit packs. The recommended RCC to LCM DS30A port spread is in the following order: 19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, and 2.

- RUL4 1) For all applications provide the required quantity of NTZZ03GA or NTZZ12DA DS-1 P-side Interface. The NTZZ12DA is the preferred interface. For any slot 1-5 not equipped with a DS-1 P-side Interface CP provide a NT0X50AA Filler Face Plate.
- 2) Provide a maximum of nine (9) DS-1 Interface CPs for peripheral side trunking, for the RCC per customer requirements.
- 3) One NTZZ03GA or NTZZ12DA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- RUL5 1) Lines and Trunks on a RSC are serviced by the always provided Universal Tone Receiver (UTR) CP in Card Slot 16. When Traffic demands more UTRs then a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA and Desig Label.

- 2) However, if the 2nd UTR pair is installed, the number of DS-1 Interface CPs is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- RUL6 1) Provide one NTZZ02EA per RCE frame for Canadian jobs or one NTZZ97AA for US applications when the Class Feature is required.
- 2) If CMR CP is not required provide two NT0X50AAs for shelf position 18 & 32 slot 18.
- RUL7 1) For all applications provide the required quantity of NTZZ12DA or NTZZ12EA DS-1 C-side Interface. For any slot 20-23 that is not equipped, provide a NT0X50AA Filler Face Plate. A minimum of two (2) DS-1 I/F CPs are required for the RCC applications.
- 2) Provide maximum eight (8) NTZZ12DA DS-1 Interface for C-side trunking, for the RCC per customer requirements. However, if the second UTR pair is provided, the maximum DS-1 limit is 6 each.
- 3) One NTZZ12DA or NTZZ12EA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports (Host I/F) per CP location.

CP POS	20	21	22	23
SHF POS 32	PORTS 2,3	PORTS 6,7	PORTS 10,11	PORTS 14,15
SHF POS 18	PORTS 0,1	PORTS 4,5	PORTS 8,9	PORTS 12,13

- 4) The recommended number of RSCs off of the same host LGC/LTC is two if the following conditions are met;
- * 2 RSCs from a single configuration
 - * 1 RSC from a dual configuration and 1 RSC from a single configuration

* Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.

* A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMs, RSC LCMs, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.

* The DS-1 links for a dual RSCs are assigned as follows;

- 0 and 2 - DMS host
- 1 and 3 interlinks to other RCC (1 & 3 respectively)
- 4 - 15 interlinks to other RCC or to DMS host

RUL8 1) Provide one (1) NT0X58AD (Maintenance Tool Kit) when maintenance tools are requested by the Telco.

2) PEC NT0X58AD consist of the following equipment:

- 1 - Switchboard lamp extractor
- 1 - Step ladder
- 1 - Lamp cap extractor
- 5 - Lamps
- 1 - Stationary tool
- 5 - Small card circuit pack extractor
- 1 - Portable Lamp
- 1 - Circuit pack extender assembly
- 1 - Fibre stick tool

RUL9 1) Provision the NT0X63AC (Alarm Panel) quantity as required per Telco reques when an Alarm Condition indicator is required at the RSC site.

RUL10 1) Provide one (1) NT0X0009 Logic Return Cable Assembly per frame when extending existing offices not equipped with enhanced grounding per IS0X00. When this frame is equipped for EMI with 8 inch rear extension do not provide this cable assembly.

RUL11 1) Provide one (1) NT6X1022 Product Change Kit to convert one existing NT6X12CA-equipped RCC to a NT6X12AD-equipped RCCI. This kit includes instructions for reusing some circuit

packs from the RCC on the new RCCI. Application of this kit also converts the frame from a NT6X10AC RCE to a NT6X10AD RCEI.

- RUL12 1) Provide one (1) NT6X12ZF Product Change Kit to convert one existing NT6X12AD/AG/CA-equipped RCC to RCC+ (RCC equipped with the NTMX77AA Unified Processor). Application of this kit upgrades the module to NT6X12AK status. Use for upgrades only (no new shipments).

REMOTE CONTROLLER EQUIPMENT (RCE) FRAME
CANADIAN APPLICATIONS ONLY

PEC CODE: NTZZ12AB

CPC CODE: B0235358

RATING: MD

REPLACES: NTZZ12AA

REPLACED BY: NTZZ12AC

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12AB contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12AB 00 03
NTZZ12AB REL 03
MS6X10AC 01 10

MARKETS: Applicable markets:

Canada

ISSUE AUTHOR: NTI: Merdia Drummer Dept. 3471 (PPK)

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

NTZZ12AB EMC2-15-007 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 10 28	----- ECM 618 05	Previous history not available ET 16698 PER ECM 618 ISSUE 04 WE ARE TO REFER TO NOTE 3 WHEN PROVISIONING THE NTZZ12BB AND THE NT6X13AB RMM CARD CAGES. THIS NOTE REFERENCES THE PROVISIONING OF NT6X48AA CARDS WHICH HAS LITTLE TO DO WITH RMM PROVISIONING. PLEASE CALL CLIFTON BEASLEY @ ESN 272-5155 UPON RESOLUTION. Implement ECD 011-15507 which includes: - Replacing NT6X10AB w/NT6X10AH - Changing NT6X1438 From Provisionable to AP in RMM 65. - Remove Requirement for NT6X1025.
92 12 07	ECM 618 07	ECD 018-39307 - change NT0X25AV to NT0X25AH framework
93 12 16	ECM 618 10	MD Replace By NTZZ12HD

The Remote Controller Equipment (RCE) Frame Canadian Applications Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqpt Fr	NT6X10AC		1			AP
Universal Framework	NT0X25AH		1			AP
Filler Panel	P0575239			65		RUL1
Remote Maint. Module Cust.	NTZZ12CC			65		RUL2
PC Kit RMM RCE 65	PC6X10AH			65		RUL1
Jumper Wire NT-26CR BL/GR pr	R0109478			65		RUL1
Jumper Wire NT-26CR GR/OR pr	R0109503			65		RUL1
# Remote Maint. Module Cust.	NTZZ12CB			65		RUL2
# 26AWG Pr Blue Grn Wire	R0113096			65		RUL1
# Remote Maint. Module Cust.	NTZZ12CA			65, 51		RUL2
# Remote Maint. Module STD	NTZZ12BA			65, 51		RUL3
Remote Maint. Module STD	NTZZ12BB			65, 51		RUL3
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP-01
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
Rmt Clster Cntrl Commn CP	NT6X12AG		1	32, 18		AP
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32, 18		AP-01
Design Strip (NT6X12AG)	P0713149		2	32, 18		AP-02
DS-1 P-Side Interface	NTZZ03GA			32, 18	1-5	RUL4
DS-1 P-Side Interface	NTZZ02DA			32, 18	1-5	RUL4
Filler Face Plate	NT0X50AA			32, 18	1-5	RUL4
# DS-30A LCM Interface	NTZZ02JA			18	6-7	RUL5
DS-30A LCM Interface	NTZZ02KA			18	6-7	RUL5
LGC/LTC Processor CP	NT6X45BC		2	32, 18	08	AP
Desig. Label NT6X45BC	P0713576		2	32, 18	08	AP
Filler Face Plate	NT0X50AA		4	32, 18	09-10	AP-02
Master Proc Memory CP	NT6X47AC		2	32, 18	11	AP-02
SP Memory Plus CP	NT6X46BB		2	32, 18	12	AP-02
LGC/DTC Processor CP	NT6X45BC		2	32, 18	13	AP
Desig. Label NT6X45BC	P0713576		2	32, 18	13	AP
Universal Tone Receiver	NTZZ02FA			18	14	RUL6
Filler Face Plate	NT0X50AA			32, 18	14	RUL6
Time Switch CP	NT6X44AA		2	32, 18	15	AP-02
Domestic Univtone Rec CP	NT6X92BB		2	32, 18	16	AP-02
CPP MSG Proto & Tone CP	NT6X69AC		2	32, 18	17	AP
Desig. Label NT6X69AC	P0710476		2	32, 18	17	AP
CLASS Modem Resource PCB	NTZZ02EA			18	18	RUL7
CLASS Modem Resource PCB	NTZZ97AA			18	18	RUL7
Host Link formatter CP	NT6X72AB		2	32, 18	19	AP-02

Retired Equipment
Remote Controller Equipment (RCE) Frame
Canadian Applications Only

NTZZ12AB
EMC2-15-007
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS-1 C-Side Interface	NTZZ12DA			32,18	20-23	RUL8
DS-1 C-Side Interface	NTZZ12EA			32,18	20-23	RUL8
Filler Face Plate	NT0X50AA			32,18	20-23	RUL8
Filler FP .875 (24)	NT0X50AA		2	32,18	24	AP-02
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ12CA	MD	NTZZ12CB
NTZZ12CB	MD	NTZZ12CC
NTZZ12BA	MD	NTZZ12BB
R0113096	MD	R0109478 and R0109503
NTZZ02JA	MD	NTZZ02KA

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

A&M - ADDITIONS & 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 information on the frame doors, refer to Section
EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ12AB is ordered, these items are provided.

- AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.
- AP-02 When PEC NT6X12AG is provided these items are always included. They are shown here for completeness.
- RUL1 1) If an RMM at shelf position 65 is not required provide one P0575239 Cage Filler Panel.
- 2) NTZZ12CC Ship Loose Rule: When the NTZZ12CC is shipped loose to the job site always provide the following:
- * One PC Kit PC6X10AH to provide a loose wiring diagram. Note: An Engineering Manual Insert for PC6X10AH was not created as this kit documents a Change Procedure only and does not include any hardware.
 - * Always provision 8.0 meters of R0109478 and 10.0 meters of R0190503 NT-26CR Jumper wire.
- 3) Material per this item has been replaced with material per item 2 above. However, the following information has been retained for historical purposes.
- When PEC NTZZ12CC is shipped loose to the job site provide 21.0 meters of this wire.
- RUL2 1) Provide one NTZZ12CC per RCE frame shelf position 65. Service Circuits for this shelf must be customized per Telco specifications.
- RUL3 1) Provide one NTZZ12BB for RCE shelf position 65 when the Telco specifies a Standard RMM Layout of Maintenance and Special Service Circuits for the RSC Office. Additional service circuits may be provisioned as required.
- RUL4 1) For all applications provide the required quantity of NTZZ03GA or NTZZ02DA DS-1 P-side Interface. The NTZZ02DA is the preferred interface. For any slot 1-5 not equipped with a NTZZ03GA DS-1 P-side Interface provide a NT0X50AA Filler Face Plate.
- 2) Provide maximum nine (9) NTZZ03GA DS-1 Interface for peripheral side trunking, for the RCC per customer requirements.
- 3) One NTZZ03GA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- RUL5 1) Provide one (1) NTZZ02KA DS30A LCM Interface for RSC offices equipped with LCMS. The NTZZ02KA provides two (2) NT6X48AAs for slots 6 on shelves 18 and 32 which enable 10 DS30A Ports. Provide two (2) NTZZ02KAs to equip slots 6 and 7 on shelf 18 and 32 for a total of 20 DS30A port possibilities. (Refer to NT6X50 rules for more info.
- 2) One DS30A LCM Interface kit NTZZ02KA provides interfaces for up to twenty (10) DS30A ports (links) from LCMS. The block consists of NT6X48AA CPs and labels. NT6X48AA CPs mount on RCC 0 (lower shelf within the module) and RCC 1 (upper shelf within the module) and occupying the same circuit pack position interface the same DS30A ports for reliability.
- 3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) The ports from each LCM should be spread evenly across both circuit packs.

The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2.

RCC DS-30A ports that are assigned to LCM are to be picked from this set of ports (circuits). Then assign the DS-1 Interface CP in the module (See RUL4).

- RUL6 1) Lines and Trunks on a RSC are serviced by the always provided Universal Tone Receiver (UTR) CP in Card Slot 16. When Traffic demands more UTRs then a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA and Desig Label.
- 2) However, if the 2nd UTR pair is installed, the number of NTZZ03GA DS-1 Interfaces is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- RUL7 1) Provide one NTZZ02EA per RCE frame for Canadian jobs or one NTZZ97AA for US applications when the Class Feature is required.

- RUL8 1) For all applications provide the required quantity of NTZZ12DA DS-1 C-side Interface. For any slot 20-23 that is not equipped, provide a NT0X50AA Filler Face Plate. A minimum of two (2) DS-1 I/F CPs are required for RCC applications.
- 2) Provide maximum eight (8) NTZZ12DA DS-1 Interface for C-side trunking, for the RCC per customer requirements. However, if the second UTR pair is provided, the maximum DS-1 limit is 6 each.
- 3) One NTZZ12DA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports (Host I/F) per CP location.

CP POS	20	21	22	23
SHF POS 32	PORTS 2,3	PORTS 6,7	PORTS 10,11	PORTS 14,15
SHF POS 18	PORTS 0,1	PORTS 4,5	PORTS 8,9	PORTS 12,13

- 4) The recommended number of RSCs off of the same host LGC/LTC is two if the following conditions are met;
- * 2 RSCs from a single configuration
 - * 1 RSC from a dual configuration and 1 RSC from a single configuration
 - * Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.
 - * A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMS, RSC LCMS, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.

- * The DS-1 links for a dual RSCs are assigned as follows;
 - 0 and 2 - DMS host
 - 1 and 3 interlinks to other RCC (1 & 3 respectively)
 - 4 - 15 interlinks to other RCC or to DMS host

RCC COMMON CP FILL (XPM+)

PEC CODE: NTZZ46EB

CPC CODE: B0240264

| RATING: MD

REPLACES: NTZZ46EA

| REPLACED BY: NTZZ46EC

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ46EB contains the equipment basic to the RCE frame RCC+ functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ46EB 00 02
NTZZ46EB REL 01
MS6X10AC 01 10
IS6X12 01 06

MARKETS: Applicable markets:

US
Canada
CALA

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

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

NTZZ46EB EMC2-15-008 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 12 16	ECM 618 10	ECD 011-18384 Incorporate changes as follows: - Introduce NT6X12AL, and NTMX77/71AA as provisionable. Also, introduce NT6X45BD as minimum processor req'd for Dual RCCs. ECD 011-19126 Incorporate changes as follows: - Introduce NT6X45BD as required for Mono_RCCs when NTZ152AA/AB S/W Pkg is required. - Modify provisioning rules for Mono_RCCs when NTZ152AA/AB S/W Pkg
94 01 07	ECM 678 09	Show NT6X72AB as provisionable with the NT6X12AL packfill.
94 03 21	ECM 618 12	Added Canada and CALA markets.
94 05 20	ECM 618 13	MD and replaced by NTZZ46EC which has the (2) NT6X72AB CPs removed since they are already in NT6X12AL packfill.

The RCC Common CP Fill (XPM+) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AL	RCC	1	18		AP
Desig. Strip (NT6X12AL/DG)	P0739325		2	18,32		AP-01
Filler Faceplates	NT0X50AA		4	18,32	9,10	AP-01
Unified Processor (UP)	NTMX77AA		2	18,32	13	AP
Design Label (NTMX77AA)	P0735417		2	18,32	13	AP
Time Switch CP	NT6X44AA		2	32,18	15	AP-01
Universal Tone Receiver	NT6X92BB		2	18,32	16	AP-01
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
Terminator Card	NTMX71AA		2	32,18	18R	AP
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP
Filler Faceplates	NT0X50AA		2	18,32	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ46EB is ordered, these items are provided.
- AP-01 1) When PEC NT6X12AL is provided these items are always provided.

RCC COMMON CP FILL (MP/SP)

PEC CODE: NTZZ12YD

CPC CODE: B0240171

| RATING: MD

REPLACES: NTZZ12YB

| REPLACED BY: NTZZ12YE

ABBREVIATION NAME: RCC

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12YD contains the equipment basic to the RCE frame RCC MP/SP Processor functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ12YD 00 02
NTZZ12YD REL 01
MS6X10AC 01 10
IS6X12 01 06

MARKETS: Applicable markets:

US
Canada

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

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

NTZZ12YD EMC2-15-009 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 12 16 94 01 07	ECM 618 10 ECM 678 09	ECD 011-18384 Remove NT6X72AB from NT6X12AL per agreement with Hardware Design and add it to NTZZ12YD stocklist. Change qty. and slot for P0711821 per ET 45333.
94 03 21 94 05 20	ECM 618 12 ECM 618 13	Replaces NTZZ12YB. MD and replaced by NTZZ12YE which has the (2) NT6X72AB CPs removed since they are already in NT6X12AL packfill.

The RCC Common CP Fill (MP/SP) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AL	RCC		18		AP
Desig. Strip (NT6X12AL/DG)	P0739325		2	18,32		AP-01
Filler Faceplates	NT0X50AA		4	18,32	9,10	AP-01
LGC/DTC Processor CP	NT6X45BD		4	32,18	08,13	AP
Desig. Label NT6X45BD	P0739326		4	32,18	08,13	AP
Master Proc Memory CP	NT6X47AC		2	32,18	11	AP
Desig. Label NT6X47AC	P0711821		2	32,18	11	AP
SP Memory Plus CP	NT6X46BB		2	32,18	12	AP
Time Switch CP	NT6X44AA		2	32,18	15	AP-01
Universal Tone Receiver	NT6X92BB		2	18,32	16	AP-01
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP
Filler faceplates	NT0X50AA		2	18,32	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

- 2) Items marked AP01 are included in NT6X12AL and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ12YD is ordered, these items are provided.

RCC COMMON CP FILL (XPM+ W/ADSI-SCWID)

PEC CODE: NTZZ46ED

CPC CODE: B0241139

| RATING: MD

REPLACES: Not Applicable.

| REPLACED BY: NTZZ46EH

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ46ED contains the equipment basic to the RCE frame RCC+ with ADSI/SCWID functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ46ED 00 01
MS6X10AC 01 12

MARKETS: Applicable markets:

US
Canada
CALA

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

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

NTZZ46ED EMC2-15-010 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 07 18	ECM 618 16	Initial Release. This EMS is to be used only when the ADSI/SCHID feature is ordered. If ADSI/SCWID is not ordered, use a standard RCC CP Fill. This EMS is similar to the RCC+ CP Fill except that the NT6X69AD is used instead of the 69AC and NT6X78AB CMR card is included as an AP item. Replaced by NTZZ46EH.
95 03 03	ECM 618 19	

The RCC Common CP Fill (XPM+ w/ADSI-SCWID) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AL	RCC	1	18		AP
Desig. Strip (NT6X12AL/DG)	P0739325		2	18,32		AP-01
Filler Faceplates	NT0X50AA		4	18,32	9,10	AP-01
Unified Processor (UP)	NTMX77AA		2	18,32	13	AP
Design Label (NTMX77AA)	P0735417		2	18,32	13	AP
Time Switch CP	NT6X44AA		2	18,32	15	AP-01
Universal Tone Receiver	NT6X92BB		2	18,32	16	AP-01
CPP MSG Proto & Tone CP	NT6X69AD		2	18,32	17	AP
Desig. Label NT6X69AD	P0800014		2	18,32	17	AP
CLASS Modem Resource CP	NT6X78AB		2	18,32	18	AP
Designation Label NT6X78AB	P0731980		2	18,32	18	AP
Terminator Card	NTMX71AA		2	18,32	18R	AP
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP-01
Filler Faceplates	NT0X50AA		2	18,32	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	18,32	25	AP
Designation Label NT2X70AE	P0698943		2	18,32	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ46ED is ordered, these items are provided.
- AP-01 1) When PEC NT6X12AL is provided these items are always provided.

RCC COMMON CP FILL W/92BC (MP/SP)

PEC CODE: NTZZ12YF

CPC CODE: B0241718

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ12YG

ABBREVIATION NAME: RCC

ENGINEERING DESCRIPTION: This Building Block (BB) contains the equipment basic to the RCE frame RCC MP/SP Processor functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ12YF 00 01
MS6X10AC 01 13
IS6X12 01 09

MARKETS: Applicable markets:

US
CALA
Canada

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

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

NTZZ12YF EMC2-15-011 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 10 17	ECM 618 17	Differences from NTZZ12YE are: Added NT6X72AB and NT6X92BC. Replaced NT6X12AL CP Fill with 6X12AN. (The 72AB and 92BB were in 6X12AL CP Fill but are now provisional. 92BC replaces 92BB.)
95 03 03	ECM 618 19	Replaced by NTZZ12YG.

The RCC Common CP Fill w/92BC (MP/SP) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AN	RCC		18		AP
Desig. Strip (NT6X12AN)	P0802683		2	18,32		AP-01
Filler Faceplates	NT0X50AA		4	18,32	9,10	AP-01
LGC/DTC Processor CP	NT6X45BD		4	32,18	08,13	AP
Desig. Label NT6X45BD	P0739326		4	32,18	08,13	AP
Master Proc Memory CP	NT6X47AC		2	32,18	11	AP
Desig. Label NT6X47AC	P0711821		2	32,18	11	AP
SP Memory Plus CP	NT6X46BB		2	32,18	12	AP
Time Switch CP	NT6X44AA		2	32,18	15	AP-01
Universal Tone Receiver	NT6X92BC		2	18,32	16	AP
Designation Label NT6X92BC	P0737431			18,32	16	AP
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP
Designation Label NT6X72AB	P0733837		2	18,32	19	AP
Filler faceplates	NT0X50AA		2	18,32	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

- 2) Items marked AP01 are included in NT6X12AN and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ12YF is ordered, these items are provided.

RCC COMMON CP FILL W/92BC (XPM+)

PEC CODE: NTZZ46EF

CPC CODE: B0241719

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ46EH

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: This Building Block (BB) contains the equipment basic to the RCE frame RCC+ functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ46EF 00 01
MS6X10AC 01 13
IS6X12 01 09

MARKETS: Applicable markets:

US
Canada
CALA

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

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

NTZZ46EF EMC2-15-012 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 05 20	ECM 618 13	Replaces NTZZ46EB. Difference is this code has the (2) NT6X72AB CPs removed since they are already in NT6X12AL packfill.
94 10 17	ECM 618 17	Differences from NTZZ46EC are: Added NT6X72AB and NT6X92BC. Replaced NT6X12AL CP Fill with 6X12AN. (The 72AB and 92BB were in 6X12AL CP Fill but are now provisional, 6X92BC replaces 6X92BB - per ECD 24-92938)
95 03 03	ECM 618 19	Replaced by NTZZ46EH.

The RCC Common CP Fill w/92BC (XPM+) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AN	RCC	1	18		AP
Desig. Strip (NT6X12AN)	P0802683		2	18,32		AP-01
Filler Faceplates	NT0X50AA		6	18,32	9,10,24	AP-01
Unified Processor (UP)	NTMX77AA		2	18,32	13	AP
Design Label (NTMX77AA)	P0735417		2	18,32	13	AP
Time Switch CP	NT6X44AA		2	32,18	15	AP-01
Universal Tone Receiver	NT6X92BC		2	18,32	16	AP
Designation Label NT6X92BC	P0737431			18,32	16	AP
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
Terminator Card	NTMX71AA		2	32,18	18R	AP
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP
Designation Label NT6X72AB	P0733837		2	18,32	19	AP
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.
- 2) Items marked AP01 are included in NT6X12AN and are shown for completeness.

RULES:

AP 1) When PEC NTZZ46EF is ordered, these items are provided.

RCC COMMON CP FILL W/92BC (XPM+ W/ADSI-SCWID)

PEC CODE: NTZZ46EG

CPC CODE: B0241720

| RATING: MD

REPLACES: Not Applicable.

| REPLACED BY: NTZZ46EH

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: This Building Block (BB) contains the equipment basic to the RCE frame RCC+ with ADSI/SCWID functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ46EG 00 01
MS6X10AC 01 13

MARKETS: Applicable markets:

US
Canada
CALA

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

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

NTZZ46EG EMC2-15-013 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 07 18	ECM 618 16	Initial Release. This EMS is to be used only when the ADSI/SCHID feature is ordered. If ADSI/SCWID is not ordered, use a standard RCC CP Fill. This EMS is similar to the RCC+ CP Fill except that the NT6X69AD is used instead of the 69AC and NT6X78AB CMR card is included as an AP item. Differences from NTZZ46ED are: Added NT6X72AB and NT6X92BC. Replaced NT6X12AL CP Fill with 6X12AN. (The 72AB and 92BB were in 6X12AL CP Fill but are now provisional. 92BC replaces 92BB.) Replaced by NTZZ46EH.
94 10 17	ECM 618 17	
95 03 03	ECM 618 19	

The RCC Common CP Fill w/92BC (XPM+ w/ADSI-SCWID) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AN	RCC	1	18		AP
Desig. Strip (NT6X12AN)	P0802683		2	18,32		AP-01
Filler Faceplates	NT0X50AA		4	18,32	9,10	AP-01
Unified Processor (UP)	NTMX77AA		2	18,32	13	AP
Design Label (NTMX77AA)	P0735417		2	18,32	13	AP
Time Switch CP	NT6X44AA		2	18,32	15	AP-01
Universal Tone Receiver	NT6X92BC		2	18,32	16	AP
Designation Label NT6X92BC	P0737431			18,32	16	AP
CPP MSG Proto & Tone CP	NT6X69AD		2	18,32	17	AP
Desig. Label NT6X69AD	P0800014		2	18,32	17	AP
CLASS Modem Resource CP	NT6X78AB		2	18,32	18	AP
Designation Label NT6X78AB	P0731980		2	18,32	18	AP
Terminator Card	NTMX71AA		2	18,32	18R	AP
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP
Designation Label NT6X72AB	P0733837		2	18,32	19	AP
Filler Faceplates	NT0X50AA		2	18,32	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	18,32	25	AP
Designation Label NT2X70AE	P0698943		2	18,32	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.
- 2) Items marked AP01 are included in NT6X12AN and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ46EG is ordered, these items are provided.

RCC COMMON CP FILL (XPM+)

PEC CODE: NTZZ46EC

CPC CODE: B0224733

| RATING: MD

REPLACES: NTZZ46EB

| REPLACED BY: NTZZ46EH

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ46EC contains the equipment basic to the RCE frame RCC+ functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ46EC 00 01
NTZZ46EC REL 01
MS6X10AC 01 10
IS6X12 01 06

MARKETS: Applicable markets:

US
Canada
CALA

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

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

NTZZ46EC EMC2-15-014 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 05 20	ECM 618 13	Replaces NTZZ46EB. Difference is this code has the (2) NT6X72AB CPs removed since they are already in NT6X12AL packfill. Replaced by NTZZ46EH.
95 03 03	ECM 618 19	

The RCC Common CP Fill (XPM+) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AL	RCC	1	18		AP
Desig. Strip (NT6X12AL/DG)	P0739325		2	18,32		AP-01
Filler Faceplates	NT0X50AA		4	18,32	9,10	AP-01
Unified Processor (UP)	NTMX77AA		2	18,32	13	AP
Design Label (NTMX77AA)	P0735417		2	18,32	13	AP
Time Switch CP	NT6X44AA		2	32,18	15	AP-01
Universal Tone Receiver	NT6X92BB		2	18,32	16	AP-01
CPP MSG Proto & Tone CP	NT6X69AC		2	32,18	17	AP
Desig. Label NT6X69AC	P0710476		2	32,18	17	AP
Terminator Card	NTMX71AA		2	32,18	18R	AP
Host Link Formatter CP	NT6X72AB		2	18,32	19	AP-01
Filler Faceplates	NT0X50AA		2	18,32	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP
Designation Label NT2X70AE	P0698943		2	32,18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

RULES:

- AP 1) When PEC NTZZ46EC is ordered, these items are provided.
- AP-01 1) When PEC NT6X12AL is provided these items are always provided.

RCC COMMON CP FILL (MP/SP)

PEC CODE: NTZZ12YE

CPC CODE: B0224734

| RATING: MD

REPLACES: NTZZ12YD

| REPLACED BY: NTZZ12YG

ABBREVIATION NAME: RCC

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12YE contains the equipment basic to the RCE frame RCC MP/SP Processor functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ12YE 00 01
NTZZ12YE REL 01
MS6X10AC 01 10
IS6X12 01 06

MARKETS: Applicable markets:

US
Canada

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

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

NTZZ12YE EMC2-15-015 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 05 20	ECM 618 13	Replaces NTZZ12YD. Difference is this code has the (2) NT6X72AB CPs removed since they are already in NT6X12AL packfill. Replaced by NTZZ12YG.
95 03 03	ECM 618 19	

The RCC Common CP Fill (MP/SP) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AL	RCC		18		AP
Desig. Strip (NT6X12AL/DG)	P0739325		2	18, 32		AP-01
Filler Faceplates	NT0X50AA		4	18, 32	09, 10	AP-01
LGC/DTC Processor CP	NT6X45BD		4	32, 18	08, 13	AP
Desig. Label NT6X45BD	P0739326		4	32, 18	08, 13	AP
Master Proc Memory CP	NT6X47AC		2	32, 18	11	AP
Desig. Label NT6X47AC	P0711821		2	32, 18	11	AP
SP Memory Plus CP	NT6X46BB		2	32, 18	12	AP
Time Switch CP	NT6X44AA		2	32, 18	15	AP-01
Universal Tone Receiver	NT6X92BB		2	18, 32	16	AP-01
CPP MSG Proto & Tone CP	NT6X69AC		2	32, 18	17	AP
Desig. Label NT6X69AC	P0710476		2	32, 18	17	AP
Host Link Formatter CP	NT6X72AB		2	18, 32	19	AP-01
Filler faceplates	NT0X50AA		2	18, 32	24	AP-01
Pwr Converter +/-5V & 12V	NT2X70AE		2	32, 18	25	AP
Designation Label NT2X70AE	P0698943		2	32, 18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) For information on the frame doors, refer to Section EMA15-01-002.

- 2) Items marked AP01 are included in NT6X12AL and are shown for completeness.

RULES:

- AP 1) When PEC NTZZ12YE is ordered, these items are provided.

ISDN REMOTE CONTROLLER EQUIPMENT FRAME
BUILDING BLOCK

PEC CODE: NTZZ12MA

CPC CODE: B0234857

| RATING: MD

REPLACES: None

REPLACED BY: RSC-SONET

ABBREVIATION NAME: RCEI

ENGINEERING DESCRIPTION: The ISDN Remote Controller Equipment Frame holds a maximum of one (1) dual shelf ISDN Remote Control Cluster (RCCI) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RCCI. The NTZZ12MA Building Block provides equipment for the basic RCEI frame.

REFERENCE DOCUMENTATION: SLZZ12MA 00 01
NTZZ12MA REL 01
MS6X10AD 00 10

MARKETS: Applicable markets:

US
Canada

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ12MA EMC2-15-016 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 15	ECM 610 05	ECD 011-15507 Replace NT6X10AB with NT6X10AJ via NTZZ12PB ADD XPM PLUS
93 03 08	ECM 610 08	Correct errors in the EMS
94 04 18	ECM 610 10	Change to A&M per Product Line Mgr. This product is replaced by RSC-SONET.
96 01 25	ECM 610 13	Change per ECD 024-95280. Add NT6X10ZY Upgrade kit and NT2X70AF PWR CONV.
96 03 27	ECM 610 14	Change to MD per BB Rat and GMF recommendations. This product has been replaced by RSC-SONET.

The ISDN Remote Controller Equipment Frame Building Block is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN Remote Cntrl. Equip.	NT6X10AD	RCEI	1			AP
@ RMM for Sh.65 Building Blk.	NTZZ12PA			65		RUL2
RMM for Sh.65 Building Blk.	NTZZ12PB			65		RUL2
Remote Control Eqpt Kit	NT6X10AB			65		AP03
Remote Mtce Mod Common CP	NT6X13AB	RMM		65		AP03
Maintenance Trunk Card	AR			65	3-16	RUL3
Filler Face Plate 1.12	NT0X50AC			65	3-16	RUL4
Filler Panel	P0575239			65		RUL2
RMM Cable Assembly	NT6X1438			65		AP03
Power Alarm Cable Assembly	NT6X1025			65		AP03
Remote Mtce Mod Shelf Assy	NT6X1301		1	51		AP01
Remote Mtce Mod Common CP	NT6X13AB	RMM		51		RUL2
Maintenance Trunk Card	AR			51	3-16	RUL3
Filler Face Plate 1.12	NT0X50AC			51	3-16	RUL4
-48V SP Batt Supply Cable	NT6X1438			51		AP01
Remote Cntrl Eqpt Fr Panel	NT0X28EC	FSP	1	45		AP01
Remote Cntrl Array Sh Assy	NT6X1206		1	32		AP01
DS-1 Interface CP Bld. Blk.	NTZZ02DA			32	1-4	RUL5
Filler Face Plate 0.875	NT0X50AA			32	1-5	RUL9
D Channel Handler Bld. Blk.	NTZZ17BA			32	1-4	RUL8
DS-30A LCM Intrfc. Bld. Blk.	NTZZ02JA			32	6-7	RUL6
Filler Face Plate 0.875	NT0X50AA			32	6-7	RUL9
Filler Face Plate 0.875	NT0X50AA			32	10	AP02,
						AP04
Master Processor Memory CP	NT6X47AC			32	11	AP02
Signal Processor Memory CP	NT6X46BB			32	12	AP02
Message Interface CP	NT6X69AC			32	17	AP02,
						AP04
CLASS Modem Resource BldBlk	NTZZ02EA			32	18	RUL11
CLASS Modem Resource BldBlk	NTZZ97AA			32	18	RUL11
Filler Face Plate 0.875	NT0X50AA			32	18	RUL9
DS-1 Interface CP Bld. Blk.	NTZZ02DA			32	21-23	RUL7
Filler Face Plate 0.875	NT0X50AA			32	21-23	RUL9
# Pwr Converter +/-5V & 12V	NT2X70AE			32	25	AP02,
						AP04
Pwr Converter +/-5V & 12V	NT2X70AF			32	25	AP02,
						AP04
Designation Label NT0X50AA	P0578498			32	1-7,10, 14,18, 21-23	RUL9

Retired Equipment
ISDN Remote Controller Equipment Frame
Building Block

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Cntrl Array Sh Assy	NT6X1206		1	18		AP01
RCCI Packfill Building Blk.	NTZZ12NA		1	18		RUL1
RCCI XPM Plus Pack Fill	NTZZ12NB		1	18		RUL1
RCCI Common CP	NT6X12DC	RCCI		18		AP02
RCCI XPM Plus Common CP	NT6X12DE	RCCI		18		AP04
DS-1 Interface CP Bld. Blk.	NTZZ02DA			18	2-5	RUL5
Filler Face Plate 0.875	NT0X50AA			18	1-5	RUL9
D Channel Handler Bld. Blk.	NTZZ17BA			18	2-5	RUL8
DS-30A LCM Intrfc. Bld. Blk.	NTZZ02JA			18	6-7	RUL6
Filler Face Plate 0.875	NT0X50AA			18	6-7	RUL9
Filler Face Plate 0.875	NT0X50AA			18	10	AP02, AP04
Master Processor Memory CP	NT6X47AC			18	11	AP02
Signal Processor Memory CP	NT6X46BB			18	12	AP02
Message Interface CP	NT6X69AC			18	17	AP02, AP04
CLASS Modem Resource BldBlk	NTZZ02EA			18	18	RUL11
CLASS Modem Resource BldBlk	NTZZ97AA			18	18	RUL11
Filler Face Plate 0.875	NT0X50AA			18	18	RUL9
DS-1 Interface CP Bld. Blk.	NTZZ02DA			18	21-23	RUL7
Filler Face Plate 0.875	NT0X50AA			18	21-23	RUL9
# Pwr Converter +/-5V & 12V	NT2X70AE			18	25	AP02, AP04
Pwr Converter +/-5V & 12V	NT2X70AF			18	25	AP02, AP04
Desig. Label NT0X50AA	P0578498			18	1-7, 10, 14, 18, 21-23,	RUL9
Cooling Inverter Fan Unit	NT3X90AC	CU	1	04		AP
Logic Cable Return Assy	NT0X0009					RUL10
RCCI XPM Plus Change Kit	NT6X12ZE					RUL13
RCE Filler Panel PC Kit	NT6X10ZY			18, 32		RUL14
#Universal Frame (Canada)	NT0X25AV					RUL12
Common Framework (U.S.)	NT0X25AA					RUL12
Earthquake Frame (U.S.)	NT0X25AH					RUL12

Retired Equipment
ISDN Remote Controller Equipment Frame
Building Block

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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:

@ Rate Change Pending. On new jobs provide the NTZZ12PB. This change impacted other PECs as follows:

MD. NT6X10AB Replaced By NT6X10AJ Per ECD 011-15507 which caused the following changes:

NT6X1438 - included in SL6X10AJ, therefore, the PEC is no longer a provisionable item.

NT6X1025 - ECD 011-15507 Cancelled this requirement. Therefore, the PEC is no longer a provisionable item.

NT6X1435 - ECD 011-15507 Cancelled this requirement. Therefore, the PEC is no longer a provisionable item.

MD'd replaced by NT0X25AH.

- 1) Items marked AP01 are included with NT6X10AD and are shown for completeness.
- 2) Items marked AP02 are included with NTZZ12NA and are shown for completeness.
- 3) Items marked AP03 are included with NTZZ12PB and are shown for completeness.

- 3) Items marked AP04 are included with NTZZ12NB and are shown for completeness.
- 4) The following labels should be provisioned for all RCEI applications:

RCEI FSP Shelf labels: Order one of each P0715228 and P0715229

RCEI PDC Frame labels: Order one of each P0715232, P0715233 and P0715234

RCEI FSP Frame labels: Order one of each P0715235 and P0715236

RULES:

- AP 1) When PEC NTZZ12MA is ordered, these items are provided.
- RUL1 1) Provide one NTZZ12NA RCCI Packfill Building Block to equip the frame with required circuit packs.
- 2) Provide one NTZZ12NB RCCI XPM Plus Packfill for RSCI offices whose Host office as reach BCS 34 or later.
- RUL2 1) Provide one NT6X13AB RMM Common CP for shelf position 51 if service circuits and/or diagnostic circuits are required. If the application requires a second RMM shelf, provision one (1) NTZZ12PB for shelf position 65. Otherwise provide Filler Panel (P0575239) in shelf position 65.
- 2) If RMM Common CP (NT6X13AB) is not specified for shelf position 51, the following filler face plates must be provisioned.

QTY	PEC	CP POS
2	NT0X50AC	1,2
1	NT0X50AG	17
1	NT0X50AE	20
14	NT0X50AC	3-16

- RUL3 1) As per Rule 2, provide one(1) Remote Maintenance Module (RMM) Common CP (NT6X13AB) per Telco requirements to support provisionable service circuits and/or trunks. Circuit packs required for locations 03-16 will be provided with job engineering information.

- 2) Slots 13-16 are currently wired together to allow the operation of DRAM circuitry in these slots when the DRA software becomes available for remotes. The NT2X10AB/AC, NT2X11AA/AC/AD Line Test Unit (LTU) pair and the NT2X10BA, NT2X11BA Multi-Test Unit (LTU) pair and the NT2X10BA NT2X11BA Multi-Line Test Unit (MTU) pair are not operational in these slots because of the DRA wiring and therefore should not be provisioned in slots 13-16. All other applicable RMM CPs are allowed in slots 13-16, however, these slots should be reserved whenever possible to allow for the future DRA application.
- 3) The total -48V power consumption of the provisionable circuit packs in the RMM must not exceed 110 Watts. Power ratings on circuit packs are as follows:

CIRCUIT PACK CODES	MAXIMUM POWER CONSUMPTION
%NT0X10AA	2.0 WATTS
NT2X10AB	9.0 WATTS
* NT2X10AC	6.7 WATTS
* NT2X10BA	15.0 WATTS
NT2X11AA	8.5 WATTS
* NT2X11AC	8.5 WATTS
* NT2X11BA	9.0 WATTS
NT2X57AA	4.5 WATTS
NT2X90AC	1.5 WATTS
NT2X90AD	1.5 WATTS
NT3X04AA	28.0 WATTS
* NT3X09AA	4.0 WATTS
* NT3X09BA	11.5 WATTS

NOTE:

- * NT3X09BA CP replaces NT3X09AA CP.
- NT2X10BA CP replaces NT2X10AB/AC.
- NT2X11BA CP replaces NT2X11AA/AC/AD.
- Check availability date.

% One NT0X10AA Always Required in Slot 10 on Any RMM Provision

- 4) Provide one (1) Scan Point Circuit Pack (NT0X10AA) for every 14 scan points required in a remote office. When connected to out of office leads, these CP must be located in even card slot positions. One NT0X10 is always required in Slot 10 of any RMM provisioned. One Scan Point is used on the NT0X10 in slot 10, the remaining 13 Scan Points are available as required.

- 5) One Line Test Unit (LTU) consists of one (1) NT2X10AB/AC CP and one (1) NT2X11AA/AC/AD CP. One Multi-Line Test Unit (MTU) consists of one (1) NT2X10BA CP and one (1) NT2X11BA CP. The LTU must be installed with the NT2X10AB/AC occupying an odd card slot followed by the NT2X11AA/AC/AD occupying an even card slot. The MTU must be installed with the NT2X10BA occupying an odd card slot followed by the NT2X11BA occupying an even card slot. The LTU pair and MTU pair are not operational in slots 13 to 16 because of the DRA wiring and therefore should not be provisioned in slots 13 to 16.
- 6) Provide one (1) Signal Distributor (SD) Circuit Pack (NT2X57AA) for every 14 SD points required in a remote office. When connected to out of office leads, these CP must be located in even card slot positions.
- 7) Provide one (1) Incoming/Outgoing Test Trunk Circuit Pack (NT2X90AC/AD) with an accompanying Balanced Network (NT2X77AA) on an "as required" basis. A NT2X90AC/AD must be combined with a LTU/MTU on a per circuit basis to provide talk monitor feature. When connected to out of office leads, these CP must be located in even card slot positions.

NT2X90AC is for Canadian application only.

NT2X90AD is for U.S. application only.

- 8) Provide one (1) incoming test trunk (NT3X04AA) for each Automatic Electric CO. local test board interface on an "as required" basis.
- 9) Provide one (1) Remote Metallic Access Circuit Pack (NT3X09AA) for two (2) LCMs at the remote site. One NT3X09AA CP has the capacity to interface up to eight NT2X90AD test multiples.

Provide one (1) 8X8 MTA Circuit Pack (NT3X09BA) for four (4) LCM's at the remote site. One NT3X09BA CP has the capacity to interface up to eight (8) NT2X90AC/AD test multiples. NT3X09BA CP replaces NT3X09AA CP.

- RUL4
- 1) Provide one (1) NT0X50AC Filler Face Plate 1.12 in each CP position not equipped with a CP provisioned in card slots 03-16 of shelf position 51 and/or 65 (RMM) per RUL3.

- RUL5 1) Provide maximum nine (9) NTZZ02DA, DS1 Interface CP Building Block, for the RCC per customer requirements.
- 2) One NTZZ02DA provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2,3	PORTS 6,7	PORTS 10,11	PORTS 14,15	PORTS 18,19
SHF POS 18	RESERVE FOR RMM USE	PORTS 4,5	PORTS 8,9	PORTS 12,13	PORTS 16,17

The DS1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS1 port number equals the circuit number.

- 3) Recommended RCCI DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). Ports 0 and 1 are reserved for RMM use.

- RUL6 1) Provide one (1) NTZZ02JA DS30A LCM Interface CP Building Block for RSC offices equipped with RMM shelf(s) and remote LCMs. This block contains four (4) NT6X48AAs and labels to fully equip both RCCI shelves with DS-30A interfaces.

- 2) One pair of NT6X48AA provides interfaces for up to ten (10) DS30A ports (links) from LCM's. Assign one member of the pair to RCC 0 (lower shelf within the module) and the other to RCC 1 (upper shelf within the module). One member of the pair has the same DS30A ports as the other member of the card pair. Both cards of the pair occupy the same CP position but on different shelves.
- 3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) An RCC Module must be provisioned with four (4) DS-30A LCM Interface CP (NT6X48AA) (i.e. a CP in card slot 6 & 7). The ports from each LCM should be spread evenly across both circuit packs. The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2. RCC DS-30A ports that are assigned to LCM are to be picked from this block of ports (circuits). Then assign the DS-1 Interface CP in the module (see RUL6).

- RUL7 1) Provide maximum six (6) NTZZ02DA, DS1 Interface CP for the host interface from the RCCI per customer requirements. Two (2) NT6X50ABs are Always Provided with the NT6X12DC/DE module which is included in NTZZ12NA/NB. Each NTZZ02DA provides one NT6X50AB and a label.
- 2) One NT6X50AB provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS1 ports (Host I/F) per CP.

CP POS	20	21	22	23
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS 18	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

- 3) The first two host interface ports must be ports 0 and 2.
- 4) In a Dual RCCI configuration, the first two interlinks must be ports 1 and 3, connected to ports 1 and 3 of the mate RCCI. Subsequent interlinks may be assigned to any available port.
- RUL8 1) Provide a maximum of nine (9) NTZZ17BA D Channel Handlers per customer requirements. Each NTZZ17BA includes one DCH and a label.
- 2) The RCCI has a total of 20 accessible P-side ports shared between DS-30A, DS-1 and optional Packet Handler interfaces. D Channel Handlers use one P-side port and one DS-1 slot per DCH. The basic rules are:

DS-30A ports + # DS-1 ports + DCH < or = 19 (excl.RMM)
DS-1 slots < or = 9 (1 slot per DCH)

DCHs are provided in an N+1 sparing arrangement. Each provisioned DCH reduces the number of available P-side DS-1 slots by one, limiting the number of P-side slots for DS-1 links to the Packet Handler. The number of P-side slots

left over for these links can be derived as follows:

$S = 9 - (m+1)$ where $m = \#$ active DCH

- 3) Ports for the DCH should be assigned starting with port 19 and descending, using odd ports only (19,17,15...).

RUL9 1) Provide one NT0X50AA and P0578498 label for each unfilled slot.

RUL10 1) Provide one (1) NT0X0009 Logic Return Cable Assembly per frame when extending existing offices not equipped with enhanced grounding per IS0X00. When this frame is equipped for EMI with 8 inch rear extension do not provide this cable assembly.

- 2) For U.S. offices, this frame does not require the provisionable cable assembly when extending a non-ISG office with current grounding methods. Instead a provisionable switchboard cable is run from the NT0X9504 bus bar assembly in each frame to the PDC battery return plate. (Refer to item 1GZ in the switchboard cabling section of the Grounding Requirements (1.3) of Section 350000000.)

RUL11 1) For Canadian applications, when the Calling Number Delivery/Calling Number Display (CND) feature is ordered, provide one (1) NTZZ02EA, CLASS Modem Resource Building Block for each RCC module requiring the CND feature. This block has been updated for Canadian application to supply two NT6X78AB CPs and labels. Mount circuit packs in slot 18 of the upper and lower shelves of the peripheral modules.

- 2) For U.S. applications, when the Calling Number Delivery/Calling Number Display (CND) feature is ordered, provide one (1) NTZZ97AA CLASS Modem Resource Building Block for each RCC module requiring the CND feature. This block provides two NT6X78AB CPs and labels. Mount circuit packs in slot 18 of the upper and lower shelves of the peripheral modules.

- 3) Due to power restrictions, use of NT6X78-- limits the total number of DS-1 cards (NT6X50AB), including both C-side and P-side, to no more than ten (10) per RCCI.

RUL12 1) For Canadian applications, provide one NT0X25AH framework per RCEI.

- 2) For non-earthquake applications in the United States, provide one NT0X25AA framework per RCEI.

- 3) For earthquake applications in the United States, provide one NT0X25AH framework per RCEI.
- RUL13 1) Provide one NT6X12ZE RCCI XPM Plus Packfill change kit to change a NTZZ12NA RCCI Common CP to a NTZZ12NB RCCI XPM Plus Common CP. The change from an NTZZ12NA to a NTZZ12NB is required when the host office reaches BCS 34 and later.
- RUL14 1) Provision one (1) NT6X10ZY filler panel Pc kit per RCC module during conversion from RCC to RCC2 (For Field Upgrades Only). This kit removes the NT6X12 RCC Controller Shelves and adds two NT0X84AA full shelf filler panels.

REMOTE CONTROLLER EQUIPMENT FRAME

PEC CODE: NTZZ12HD

CPC CODE: B0240170

| RATING: MD

REPLACES: NTZZ12HC

| REPLACED BY: RSC-Sonet

ABBREVIATION NAME: RCE

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12HD contains the equipment that is Always Provided (AP) and equipment that is conditionally provisionable on the RCE frame.

The Remote Controller Equipment Frame holds a maximum of one (1) dual shelf Remote Control Cluster (RCC) and a maximum of two (2) Remote Maintenance Modules (RMM). This frame is required for an RSC.

REFERENCE DOCUMENTATION: SLZZ12HD 00 01
IS6X12 01 10
| MS6X10AC 01 17
SL6X10AC 02 10

MARKETS: Applicable markets:

US
CALA
Canada
Carrier
Wireless

ISSUE AUTHOR: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: Ron Hogan Dept. 3471 (PPK)

NTZZ12HD EMC2-15-016 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 12 16	ECM 618 10	ECD 011-18384 Incorporate changes as follows: - Introduce NT6X12AL, and NTMX77/71AA as provisionable. Also, introduce NT6X45BD as minimum processor req'd for Dual RCCs. - ET-112610: Incorporate changes performed on another ECM. This Chg requests that NTZZ02JA which has 4 NT6X48AAs be MD'ed and R/B NTZZ02KA which contains 2 NT6X48AAs. ECD 011-19126 Incorporate changes as follows: - Introduce NT6X45BD as required for Mono_RCCs when NTZ152AA/AB S/W Pkg is required. - Modify provisioning rulesuired for Mono_RCCs when NTZ152AA/AB S/W Pkg - Modify NT6X50AA VS AB Provisioning Rules when PECs are applied to the RCC C-Side (SLOTS 20-23).
94 01 07	ECM 678 09	Make NT6X12ZG provisionable for Dual RCC applications. Close ET 45373.
94 03 21	ECM 618 12	MD NTZZ12YB, corrected NTZZ12YD and NTZZ46EB equip. list and RUL3 content. Removed RUL1 since item is AP. Moved RUL12 content into RUL3. ET 48033 is resolved with this release.
94 05 20	ECM 618 13	MD NTZZ46EB and NTZZ12YD, replaced by NTZZ46EC and NTZZ12YE. Removed the NT6X72AB pack from the MD codes since it is in the NT6X12AL. This resulted in it being double shipped.
94 06 17	ECM 618 14	Correct typo by changing NTZZ12HD CPC from B0270170 to B0240170.
94 07 05	ECM 618 15	Update Equipment list per latest SL.
94 07 18	ECM 618 16	ECD 11-20918 MD NT6X12ZF kit -replaced by NT6X02XG, Added NTMX70AB kit. Added NTZZ46ED RCC+ w/ASDI-SCWID CP Fill. Added previous issue changes which were omitted. Show XPM+ as default CP Fill for Initials.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 10 17	ECM 618 17	ECD 24-92938 Added NT6X12ZJ RCC CPKit, NTZZ12YF, NTZZ46EF, NTZZ46EG, and NTZZ02FB. These additions are due to the new NT6X12AN RCC CP Fill which makes the NT6X72-- and NT6X92-- provisionable. Also NT6X92BC replaces NT6X92BB, once available.
95 03 03	ECM 618 19	ECD 24-93299 Removed XPM+ requirement for ADSI-SCWID. Simplified RCC Building Blocks as follows: MD: NTZZ12YE, NTZZ12YF, NTZZ46EC, NTZZ46ED, NTZZ46EF, and NTZZ46EG. NEW: NTZZ12YG, NTZZ46EH, and NTZZ02TA. ADDED EXISTING: NTZZ02RA and NTZZ02RB.
95 03 21	ECM 618 20	MD NT2X70AE and Des Label, replaced by NT2X70AF and P0809960 Des Label per ECD 24-93969.
95 05 11	ECM 618 21	Added NTZZ02UA Peripheral Loader CP per ECD 11-21293.
95 10 27	ECM 618 23	EC 024-95229 - Modify rules for NT6X69AC/AD. EC 024-95280 - Introduction of the NT6X10ZY PC Kit for RCC to RCC2 conversions.
96 02 07	ECM 618 24	Add Universal Ground Point NT6X0250.
96 03 28	ECM 618 25	MD NTZZ02DA, NTZZ03GA, NTZZ12DA and NTZZ12EA per BB Rat and GMF recommendations, and replace with detail in the equipment section and notes.
96 04 26	ECM 618 26	Introduce the NTZZ02FC GTR to the RCE per Design information. Modify Rule 4 per EC 024-95240. MD NTZZ12HD per EC 024-96090.

The Remote Controller Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Controller Eqpt Fr	NT6X10AC		1			AP
Universal Framework	NT0X25AH		1			AP
Remote Maint. Module Cust.	NTZZ12CC		1	65		RUL2
Remote Mtce Mod Comm Cp	NT6X13AB			65,51		RUL2
RMM Card Cage	NT6X10AH			65		AP-02
Misc Scanner Cp	NT0X10AA		1	65	10	AP-02
Filler Panel	P0575239		1	65		RUL2
Remote Maint. Module STD	NTZZ12BB			65,51		RUL2
Remote Mtce Mod Shelf Assy	NT6X1306		1	51		AP-01
-48V SP Batt Supply Cable	NT6X1438		1	51		AP-01
26AWG Ca Assy(RMM Pwr Mon)	NT6X1029		1	51		AP-01
Remote Mtce Mod Comm Cp	NT6X13AB		1	51		AP-03
Designation Strip (NT6X13AB)	P0653639		1	51		AP-05
TM Group Codec CP	NT2X59AA		1	51	01	AP-05
RMM Control Card CP	NT6X74AB		1	51	02	AP-05
Filler Face Plate	NT0X50AC		1	51	03	AP-03
Inc/Og Test Trunk CP	NT2X90AD		5	51	04,05, 07,09,13	AP-03
Comprise Bal Netwk 900 Ohm	NT2X77AA		5	51	04R, 05R,07R, 09R,13R	AP-03
Misc Scanner Cp	NT0X10AA		2	51	06,10	AP-03
8X8 Metallic Test Access CP	NT3X09BA		2	51	08,15	AP-03
Multi-Line Test Unit	NT2X10BA		1	51	11	AP-03
Multi-Line Test Unit Cntlr	NT2X11BA		1	51	12	AP-03
Signal Distributor CP	NT2X57AA		2	51	14,16	AP-03
Multi O/P Pwr Converter	NT2X09AA		1	51	17	AP-05
Filler Face Plate .875	NT0X50AA		1	51	19	AP-05
Power Converter Comm Feat.	NT2X06AB		1	51	20	AP-05
Remote Cntrl Eqpt Fr Panel	NT0X28AS	FSP	1	45		AP-01
Remote Cntrl Array Sh Assy	NT6X1201	RCA	2	32,18		AP-01
# RCC Common CP Fill (MP/SP)	NTZZ12YB		1	32,18		RUL3
# RCC Common CP Fill (MP/SP)	NTZZ12YD		1	18,32		RUL3
# RCC Common CP Fill (MP/SP)	NTZZ12YE		1	18,32		RUL3
# RCC Common CP Fill (MP/SP)	NTZZ12YF		1	18,32		RUL3
RCC Common CP Fill (MP/SP)	NTZZ12YG		1	18,32		RUL3
Rmt Clster Cntrl Cmmn CP	NT6X12AN	RCC	1	18		AP-07
Desig. Strip (NT6X12AN)	P0802683		2	18,32		AP-06
Filler faceplates	NT0X50AA		6	18,32	9,10,24	AP-06
Time Switch CP	NT6X44AA		2	32,18	15	AP-06

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LGC/DTC Processor CP	NT6X45BD		4	32,18	08,13	AP-07
Desig. Label NT6X45BD	P0739326		4	32,18	08,13	AP-07
Master Proc Memory CP	NT6X47AC		2	32,18	11	AP-07
Desig. Label NT6X47AC	P0711821		2	32,18	11	AP-07
SP Memory Plus CP	NT6X46BB		2	32,18	12	AP-07
# Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP-07
Pwr Converter +/-5V & 12V	NT2X70AF		2	32,18	25	AP-07
# Designation Label NT2X70AE	P0698943		2	18,32	25	AP-07
Designation Label NT2X70AF	P0809960		2	18,32	25	AP-07
# RCC Common CP Fill (XPM+)	NTZZ46EB		1	32,18		RUL3
# RCC Common CP Fill (XPM+)	NTZZ46EC		1	32,18		RUL3
# RCC Common CP Fill (XPM+)	NTZZ46ED		1	32,18		RUL3
# RCC Common CP Fill (XPM+)	NTZZ46EF		1	32,18		RUL3
# RCC Common CP Fill (ADSI)	NTZZ46EG		1	32,18		RUL3
RCC Common CP Fill (XPM+)	NTZZ46EH		1	32,18		RUL3
Rmt Clster Cntrl Cmmn CP	NT6X12AN	RCC	1	18		AP-08
Desig. Strip (NT6X12AN)	P0802683		2	18,32		AP-06
Filler faceplates	NT0X50AA		6	18,32	9,10,24	AP-06
Time Switch CP	NT6X44AA		2	18,32	15	AP-06
Unified Processor (UP)	NTMX77AA		2	18,32	13	AP-08
Design Label (NTMX77AA)	P0735417		2	18,32	13	AP-08
Terminator Card	NTMX71AA		2	18,32	18R	AP-08
# Pwr Converter +/-5V & 12V	NT2X70AE		2	32,18	25	AP-08
Pwr Converter +/-5V & 12V	NT2X70AF		2	32,18	25	AP-08
# Designation Label NT2X70AE	P0698943		2	18,32	25	AP-08
Designation Label NT2X70AF	P0809960		2	18,32	25	AP-08
Filler faceplates	NT0X50AA		6	18,32	8,11,12	RUL3
DS-1 P-Side Interface	NT6X50AA			32,18	1-5	RUL4
DS-1 P-Side Interface	NT6X50AB			32,18	1-5	RUL4
Filler Face Plate	NT0X50AA			32,18	1-5	RUL4
10 DS30A LCM Interface	NTZZ02KA			32,18	6-7	RUL13
Peripheral Loader CP	NTZZ02UA		1	32,18	12	RUL20
# Universal Tone Receiver	NTZZ02FA		1	32,18	14,16	RUL5
# Universal Tone Receiver	NTZZ02FB		1	32,18	14,16	RUL5
Global Tone Receiver	NTZZ02FC		1	32,18	14,16	RUL5
Filler Face Plate	NT0X50AA		1	32,18	14	RUL5
Message Protocol & Tone	NTZZ02RA		1	32,18	17	RUL18
Message Protocol & Tone ADSI	NTZZ02RB		1	32,18	17	RUL18
CLASS Modem Resource PCB	NTZZ02EA		1	18	18	RUL6
Filler Face Plate	NT0X50AA		1	32,18	18	RUL6
Host Link Formatter	NTZZ02TA		1	32,18	19	RUL19

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS-1 C-Side Interface	NT6X50AA			32,18	20-23	RUL7
DS-1 C-Side Interface	NT6X50AB			32,18	20-23	RUL7
Filler Face Plate	NT0X50AA			32,18	20-23	RUL7
Cooling Inverter Fan Unit	NT3X90AC		1	04		AP
Maintenance Tool Kit	NT0X58AD		1			RUL8
Remote Alarm Panel	NT0X63AC					RUL9
Universal Ground Point	NT6X0250		1	56R		RUL22
Logic Cable Return Assy	NT0X0009					RUL10
RCC to RCCI Change Kit	NT6X1022					RUL11
Dual RCC Product Change Kit	NT6X12ZG		1			RUL14
RCC to XPM+ Change Kit	NT6X02XG					RUL15
Filler Face Plate	NT0X50AA			32,18		RUL15
DES. LABEL (NT0X50AA)	P0578498			32,18		RUL15
XPM+ Paddleboard Kit	NTMX70AB					RUL16
RCC PC Kit NT6X12AL TO AN	NT6X12ZJ			18		RUL17
Filler Panel PC Kit	NT6X10ZY			18		RUL21

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X32AA	MD	NT6X32AB
NT6X45AE	MD	NT6X45AF
NTZZ12YB	MD	NTZZ12YD
NTZZ12YD	MD	NTZZ12YE
NTZZ46EB	MD	NTZZ46EC
NTZZ12YE	MD	NTZZ12YG
NTZZ12YF	MD	NTZZ12YG
NTZZ46EC	MD	NTZZ46EH
NTZZ46ED	MD	NTZZ46EH
NTZZ46EF	MD	NTZZ46EH
NTZZ46EG	MD	NTZZ46EH
NT2X70AE	MD	NT2X70AF
P0698943	MD	P0809960
NTZZ12DA	MD	NT6X50AA
NTZZ12EA	MD	NT6X50AB
NTZZ02DA	MD	NT6X50AB
NTZZ03GA	MD	NT6X50AA
NTZZ02FA	STD*	NTZZ02FC
NTZZ02FB	STD*	NTZZ02FC

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- DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.
- A&M - ADDITIONS & MAINTENANCE. These products can only 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 information on the frame doors, refer to Section EMA15-01-002.
- 2) STD* in flaglist means that the rating of this PEC is still standard pending change. Check availability before ordering replacement PEC.

RULES:

- AP 1) When PEC NTZZ12HD is ordered, these items are provided.
- AP-01 When PEC NT6X10AC is provided these items are always included. They are shown here for completeness.
- AP-02 When PEC NTZZ12CC is provided these items are always included. They are shown here for completeness.
- AP-03 When PEC NTZZ12BB is provided these items are always included. They are shown here for completeness.
- AP-04 Reserved for future use.
- AP-05 When PEC NT6X13AB is provided these items are always included. They are shown here for completeness.
- AP-06 When PEC NT6X12AN is provided these items are always included. They are shown here for completeness.
- AP-07 When PEC NTZZ12YG is provided these items are always included. They are shown here for completeness.

AP-08 When PEC NTZZ46EH is provided these items are always included. They are shown here for completeness.

RUL1 1) Reserved for future use.

RUL2 1) Provide one NTZZ12CC per RCE frame shelf position 65 if a second RMM shelf is required. Service Circuits for this shelf must be customized per Telco specifications. If an RMM at shelf position 65 is not required provide one P0575239 Cage Filler Panel.

2) NTZZ12CC Ship Loose Rule: When the NT6X10AH is shipped loose to the job site always provide the following:

- * One PC Kit PC6X10AH to provide a loose wiring diagram. Note: An Engineering Manual Insert for PC6X10AH was not created as this kit documents a Change Procedure only and does not include any hardware.

- * Always provision 8.0 meters of R0109478 and 10.0 meters of R0109503 NT-26CR Jumper wire.

3) RCE RMM at shelf position 51 may be provisioned via a Standard Layout or via a Customized Layout. The RCE RMM at shelf position 65 is via a Custom Layout only. Detailed below are rules for both options:

- * Provision a Standard RMM Layout for Shelf position 51 via the NTZZ12BB if service circuits and/or diagnostic circuits are required.

- * The RMM shelf at position 65 is customized differently for the RMM shelf at position 51 due to the absence of an always provided RMM Card Cage at shelf 65, as follows:

1. Shelf 51

Provide One NT6X13AB, one NT0X10AA to be assigned in Slot 10 (which accounts for one always required scan point, leaving 13 Scan Points for other assignments) and refer to Table E, EMB14-05-000, T_RMM_Cards to provision service circuits as required.

2. Shelf 65

Provide one NTZZ12CC, one NT6X13AB, and refer to Table E, EMB14-05-000, T_RMM_Cards for provision-

ing information on the other RMM service circuits.
Note: One NT0X10AA is always provided in the NTZZ12CC.

- 4) One PC Kit PC6X10AH to provide a loose wiring diagram.
Note: An Engineering Manual Insert for PC6X10AH was not created as this kit documents a Change Procedure only and does not include any hardware. Always provision 8.0 meters of R0109478 and 10.0 meters of R0109503 NT-26CR Jumper wire.
- 5) This equipment is no longer required. However, when it was required it was provisioned as follows: Provide one NT6X1435 (RMM Cable Assy MTU Pwr) whenever RMM shelf is required.

- RUL3
- 1) Provide (1) NTZZ12YG RCC Common CP Fill (MP/SP) per RCE for all extension jobs where MP/SP processors (NT6X45--) are required. The XPM+ processor (NTMX77--) configuration should be used on all new orders except extensions (i.e. Mono to Dual upgrades) to existing MP/SP offices. The Message Protocol and Tone CPs (NT6X69--), Remote Formatter CPs (NT6X72--), and Universal Tone Receiver Card CPs (NT6X92--) must be provisioned separately.
 - 2) Provide (1) NTZZ46EH RCC Common CP Fill (XPM+) and (6) NT0X50AA Filler Face Plates per RCE for all new jobs where XPM+ is required and the ADSI/SCWID functionality is not required. XPM+ CP Fills should be shipped on all initials. The Message Protocol and Tone CPs (NT6X69--), Remote Formatter CPs (NT6X72--), and Universal Tone Receiver Card CPs (NT6X92--) must be provisioned separately.
 - 3) THE ADSI/SCWID function requires the NT6X69AD vintage of the Message Protocol and Tone CPs and the CLASS Modem Resource CPs (NT6X78- -) in addition to the RCC CP Fill (either MP/SP or XPM+) and associated provisional CPs which are the Remote Formatter CPs (NT6X72--) and Universal Tone Receiver Card CPs (NT6X92--).
 - 4) The RCC may be provisioned with one of three Processor CPs NT6X45BC as existing, NT6X45BD all new jobs not requiring XPM+, or XPM+ based on the following:

NT6X45BC Provide in the RCC on an Additions and Maintenance (A&M) basis only in cases where NTX152AA/AB S/W is not provisioned.

NT6X45BD Provide in all new jobs where XPM+ is not required.

NTMX77/71 Provide for V0 Jobs in BCS-35, Generally Available (GA) in BCS-36 and later. When the Universal Processor (UP) is required in an existing NT6X45-- (MP/SP) office, provision the RCC to XPM+ Change Kit, NT6X02XG, which includes the NTMX77/71 and also the paddleboards required to modify the backplane.

- RUL4 1) Provide a maximum of nine (9) DS-1 Interface CPs for peripheral side (P-Side) trunking, for the RCC per customer requirements.

For any slot 1-5 not equipped with a DS-1 P-side Interface CP provide a NT0X50AA Filler Face Plate.

- 2) DS-1 I/F CPs may be NT6X50AAs or NT6X50ABs as per Customer/Traffic Specifications require. The NT6X50AA and NT6X50AB may be mixed on the P-Side of the RCC. However, the NT6X50AB is the preferred DS-1 Interface CP
- 3) One NT6X50AA or NT6X50AB provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports per circuit pack location.

CP POS	5	4	3	2	1
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15	PORTS 18, 19
SHF POS 18	PORTS 0, 1*	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13	PORTS 16, 17

The DS-1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS-1 port number equals the circuit number. Ports 0 & 1 are reserved for control of the RMM shelves and thus cannot be assigned for DS-1 trunking.

* - Ports 0 and 1 are not available for peripheral side trunking.

- 4) Recommended RCC (P side) trunking DS-1 assignments are as follows:

Assign the DS-1 Interface CP in the module such that DS-1 ports (circuits) start from port 2 and increase in a sequential order (2,3,4 ... 17,18,19). The RCC DS-1 ports (circuits) that are used by digital trunking are to be picked from this block of ports.

- 5) The NT6X50AB should be used in applications where Fiber spans (Sonet) are part of the link. The NT6X50AA should not be used in Sonet applications.

RUL5 1) Lines and Trunks on a RSC are serviced by always required NTZZ02FA Universal Tone Receiver (UTR) CPs in card slot 16 of both shelves 18 and 32. When Traffic demands more UTRs a second pair may be provisioned for card slot 14. Otherwise provide filler face plates NT0X50AA.

The NTZZ02FB (NT6X92BC) replaces the NTZZ402FA (NT6X92BB) UTR card. The NTZZ02FC (NT6X92EA) GTR will replace all previous NT6X92 tone receivers upon general availability.

- 2) However, if the 2nd UTR pair is installed, the number of DS-1 Interface CP pairs is limited to 6. This limitation is due to the additional current drain of the 2nd UTR pair.
- 3) All new orders should use the NTZZ02FC (NT6X92EA) GTR (upon general availability). Do not mix the NT6X92EA with other types of NT6X92 within the same module. The NT6X92EA is a LSSGR/CCITT compliant tone receiver.

RUL6 1) Provide one NTZZ02EA per RCE frame when the Class Feature is required.

- 2) If CMR CP is not required provide one each NT0X50AA for shelf position 18 & 32 slot 18.

RUL7 1) RCC C-Side Ports NT6X50AA or NT6X50AB based the following:

- * The Host and the RCC DS-1 CP must match (e.g. If 6X50ABs on C-Side of RCC, then they must terminate on 6X50ABs on the P-Side of the host XPM.
- * NT6X50AB CPs may be provisioned on the C-Side of the RCC effective in BCS-31. RCC Packfills where slot 20 is Always Provided (AP) with a NT6X50AA must be upgraded
- * The span must be datafilled in table LTCPSINV with a tuple from table CARRMTC which contains the correct card type. This is because the NT6X50s for the C-SIDE

interface in an RCC which has received a load and static data, take on the parameters from the datafill of the NT6X50s that they interface with in the host LGC/LTC.

- * When an RCC is at ROM level (i.e. the RCC does not contain a load), the NT6X50s for interfacing the C-SIDE T1 spans get their parameters from an address hardwired on the RCC backplane. The strapping on all RCC shelves release AG and below is configured from the factory for NT6X50AA cards for interfacing the C-SIDE T1 spans. The strapping can be modified to support the NT6X50AB cards with various formatting modes and zero code mode configurations. If an RCC shelf release NT6X12AG or lower, is currently provisioned with NT6X50AB cards for interfacing the C-SIDE T1 spans or is to be upgraded with NT6X50AB cards then CAP 1411 must be applied to the frame or NT6X50AA cards must be installed.

- 2) The following are the four possible configurations which may be found in the field and the recommended corrective actions. The recommended actions are only for RCCs with NT6X45 type processor cards.

Host	Remote	Actions
-----	-----	-----
6X50AA	6X50AA	- Verify that the spans are datafilled in table LTCPSINV with the DEFAULT tuple for RCCs from table CARRMTC
6X50AA	6X50AB	Preferred Configuration: (NT6X50ABs on both ends) - If NT6X45BCs or higher are NOT equipped in the RCC, then they MUST be installed by applying CAP 1203 to the RCC. - Replace the NT6X50AAs in the host with NT6X50ABs by applying CAP 1199. - Apply CAP 1411 to the RCC to modify the backplane strapping for NT6X50ABs
		Optional Configuration: (NT6X50AAs on both ends) - Replace the NT6X50ABs in the remote with NT6X50AAs by applying CAP 1532
6X50AB	6X50AA	Preferred Configuration: (NT6X50ABs on both ends) - If NT6X45BCs or higher are NOT equipped in the RCC, then they MUST be installed by applying CAP 1203 to the RCC.

- Replace the NT6X50AAs in the remote with NT6X50ABs by applying CAP 1411.

Optional Configuration:

(NT6X50AAs on both ends)

- Replace the NT6X50ABs in the host with NT6X50AAs by applying CAP 1532.

- 6X50AB 6X50AB - If NT6X45BCs or higher are NOT equipped in the RCC, then they MUST be installed by applying CAP 1203 to the RCC.
- Apply CAP 1411 to the RCC to modify the backplane strapping for NT6X50ABs.

- 3) For all applications provide the required quantity of NT6X50AA or NT6X50AB DS-1 C-side Interface. For any slot 20-23 that is not equipped, provide a NT0X50AA Filler Face Plate.

A minimum of two (2) DS-1 I/F CPs are required for the RCC to Host XPM.

- 4) Provide maximum eight (8) NT6X50AA/AB DS-1 Interface for C-side trunking, for the RCC per customer requirements. However, if the second UTR pair is provided, the maximum number of DS-1 Interface CP pairs is limited to 6.
- 5) One NT6X50AA/AB provides interfaces for up to two (2) T-1 spans. The following table is a listing of DS-1 ports (Host I/F) per CP location.

CP POS	20	21	22	23
SHF POS 32	PORTS 2, 3	PORTS 6, 7	PORTS 10, 11	PORTS 14, 15
SHF POS 18	PORTS 0, 1	PORTS 4, 5	PORTS 8, 9	PORTS 12, 13

- 6) The recommended number of RSCs off of the same host LGC/LTC is two if the following conditions are met;

- * 2 RSCs from a single configuration
- * 1 RSC from a dual configuration and 1 RSC from a single configuration

* Traffic, Real Time and software nodal requirements do not exceed the recommended engineering limits.

* A host LGC/LTC can support a maximum software datafilling of 18 Peripheral side (P-side) software nodes up to BCS-22. BCS-23 and later can support up to 62 P-side nodes. A node is defined as follows:

Host LCMs, RSC LCMs, RMMs, RCC, RLCM, OPM, ESA processor (for the RLCM or OPM) and dummy software nodes.

* The DS-1 links for a dual RSCs are assigned as follows;

- 0 and 2 - DMS host
- 1 and 3 interlinks to other RCC (1 & 3 respectively). Cables connecting two (2) RCC can not exceed 200 Meters.
- 4 - 15 interlinks to other RCC or to DMS host

RUL8 1) Provide one (1) NT0X58AD (Maintenance Tool Kit) when maintenance tools are requested by the Telco.

2) PEC NT0X58AD consist of the following equipment:

- 1 - Switchboard lamp extractor
- 1 - Step ladder
- 1 - Lamp cap extractor
- 5 - Lamps
- 1 - Stationary tool
- 5 - Small card circuit pack extractor
- 1 - Portable Lamp
- 1 - Circuit pack extender assembly
- 1 - Fiber stick tool

RUL9 1) Provision the NT0X63AC (Alarm Panel) quantity as required per Telco request when an Alarm Condition indicator is required at the RSC site.

RUL10 1) Provide one (1) NT0X0009 Logic Return Cable Assembly per frame when extending existing offices not equipped with enhanced grounding per ISOX00. When this frame is equipped for EMI with 8 inch rear extension do not provide this cable assembly.

RUL11 1) Provide one (1) NT6X1022 Product Change Kit to convert one existing NT6X12CA-equipped RCC to a NT6X12AD-equipped RCCI.

This kit includes instructions for reusing some circuit packs from the RCC on the new RCCI. Application of this kit also converts the frame from a NT6X10AC RCE to a NT6X10AD RCEI.

RUL12 1) Reserved for future use.

RUL13 1) Provide one (1) NTZZ02KA DS30A LCM Interface for RSC offices equipped with LCMs. The NTZZ02KA provides two (2) NT6X48AAs for slots 6 on shelves 18 and 32 which enable 10 DS30A Ports. Provide two (2) NTZZ02KAs to equip slots 6 and 7 on shelf 18 and 32 for a total of 20 DS30A port possibilities. (Refer to NT6X50 rules for more info.

2) One DS30A LCM Interface kit NTZZ02KA provides interfaces for up to twenty (10) DS30A ports (links) from LCMs. The block consists of NT6X48AA CPs and labels. NT6X48AA CPs mount on RCC 0 (lower shelf within the module) and RCC 1 (upper shelf within the module) and occupying the same circuit pack position interface the same DS30A ports for reliability.

3) The following is a listing of DS30A ports per NT6X48AA CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 4) The ports from each LCM should be spread evenly across both circuit packs.
The recommended RCC to LCM DS30A port spread is in the following order 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3, and 2.
RCC DS-30A ports that are assigned to LCM are to be picked from this set of ports (circuits). Then assign the DS-1 Interface CP in the module (See RUL4).
- RUL14 1) Provide one (1) NT6X12ZG Dual RCC kit per RCC to provide NT6X45BD processors, which are required for Dual RCC applications. Dual RCCs may alternatively be equipped with XPM+, rather than NT6X45BDs. Both new and existing Dual RCCs must be equipped with either NT6X45BDs or XPM+.
- RUL15 1) Provide (1) NT6X02XG RCC to XPM+ Change Kit when upgrading from MP/SP type RCC (NT6X45, 46, and 47) to XPM+ type. The kit provides the MX77/71 processor cards, interconnect cables, and paddleboards to modify the backplane wiring.
- 2) When the RCC to XPM+ Change Kit is provided also provision NT0X50AA Filler Face Plates and P0578498 DES. LABEL (NT0X50AA) to cover the slots left vacant by the removal of the NT6X45/46/47 cards.
- RUL16 1) Provide one NTMX70AB XPM+ Paddleboard kit per module to supply the paddleboards and interconnect cables for the backplane wiring upgrade required for XPM+ on RCCs. This kit should only be provided when the customer already has the required NTMX77AA and NTMX71AA packs but still needs backplane wiring. (This would apply when a customer has previously provided NT6X12ZF kits that have not yet been installed and wants to add the backplane wiring using paddleboards, rather than wire wrap.) Since the contents of NTMX70AB are included in NT6X02XG, both kits should not be provided.
- RUL17 1) Provide NT6X12ZJ, RCC PC Kit NT6X12AL TO AN, to upgrade one NT6X12AL to NT6X12AN. The Remote Formatter CPs (NT6X72--) and Univ. Tone Receiver Card CP (NT6X92--) are made provisionable by this Change Kit.
- RUL18 1) Provide one (1) NTZZ02RB (NT6X69AD) in BCS36 and higher applications. The NTZZ02RB replaces the NTZZ02RA in all new applications. The NTZZ02RA should only be ordered for BCS35 and lower applications. The NTZZ02RB is required for the ADSI/SCWID feature. The ADSI/SCWID feature requires CLASS Modem Resource (NT6X78--), UTR (NT6X92--), and BCS 36+ or above to function.

- RUL19 1) Provide (1) NTZZ02TA (NT6X72--) in slot 19, shelves 18 and 32, to provide the RCC with a Host Link Formatting capability.
- RUL20 1) Provision (1) NTZZ02UA (NT7X05-- Peripheral Loader CPs) in slot 12, shelves 18 and 32, if the Peripheral Recovery Loader Option is specified. This pack and Option require XPM+ hardware and XPM05 based software, such as NA004.
- RUL21 1) Provision one (1) NT6X10ZY Filler Panel PC Kit per RCC module during conversion from RCC to RCC2 (for field upgrades only). This kit removes the NT6X12 RCC controller shelves and adds two NT0X84AA full shelf filler panels.
- RUL22 1) Provide one (1) NT6X0250 Ground Point on new frames for initials and extensions or on existing frames when upgrading to XPM+ and no ground point exists. Only one Ground Point is needed per frame. If the job database does not show the Ground Point as assigned miscellaneously to the frame which is upgrading to XPM+, Equipment Application Engineering shall provide one per frame and contact the System Application Engineer to update the office records. The ground point is required for proper grounding of maintenance personnel when working on the rear of the frame.

RCC COMMON CP FILL (XPM+)

PEC CODE: NTZZ46EH

CPC CODE: B0242464

| RATING: MD

REPLACES: NTZZ46EC, NTZZ46ED, NTZZ46EF, NTZZ46EG

| REPLACED BY: No Replacement (RSC-S)

ABBREVIATION NAME: RCC

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ46EH contains the equipment basic to the RCE frame RCC+ functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ46EH 00 01
MS6X10AC 01 14
IS6X12 01 09
SL6X10AC 02 10

MARKETS: Applicable markets:

US
Canada
CALA

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ46EH EMC2-15-017 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 03 03	ECM 618 19	Initial Release. Differences from NTZZ46-- are: The NT6X69, NT6X72, and NT6X92 CPs are no longer included. They must be provisioned separately as individual Building Blocks. MD NT2X70AE and Des Label, replaced by NT2X70AF and P0809960 Des Label per ECD 24-93969. MD BB per EC 024-96090 (MD NT6X12AN). Replaced by RSC-S.
95 03 21	ECM 618 20	
97 03 07	ECM 618 28	

The RCC Common CP Fill (XPM+) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AN	RCC	1	18		AP
Desig. Strip (NT6X12AN)	P0802683		2	18, 32		AP-01
Filler faceplates	NT0X50AA		6	18, 32	9, 10, 24	AP-01
Time Switch CP	NT6X44AA		2	18, 32	15	AP-01
Unified Processor (UP)	NTMX77AA		2	18, 32	13	AP
Design Label (NTMX77AA)	P0735417		2	18, 32	13	AP
Terminator Card	NTMX71AA		2	18, 32	18R	AP
# Pwr Converter +/-5V & 12V	NT2X70AE		2	32, 18	25	AP
# Designation Label NT2X70AE	P0698943		2	32, 18	25	AP
Pwr Converter +/-5V & 12V	NT2X70AF		2	32, 18	25	AP
Designation Label NT2X70AF	P0809960		2	32, 18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE P0698943	MD MD	NT2X70AF 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) For information on the frame doors, refer to Section EMA15-01-002.
- AP-01 1) When PEC NT6X12AN is provided these items are always provided.

RULES:

AP 1) When PEC NTZZ46EH is ordered, these items are provided.

RCC COMMON CP FILL (MP/SP)

PEC CODE: NTZZ12YG

CPC CODE: B0242463

| RATING: MD

REPLACES: NTZZ12YE, NTZZ12YF

| REPLACED BY: No Replacement (RSC-S)

ABBREVIATION NAME: RCC

ENGINEERING DESCRIPTION: Building Block (BB) NTZZ12YG contains the equipment basic to the RCE frame RCC MP/SP Processor functionality. However, optional equipment must be specified in addition to this PEC as required.

Refer to Engineering Manual Section for PEC NTZZ12HD for additional information.

REFERENCE DOCUMENTATION: SLZZ12YG 00 01
MS6X10AC 01 14
IS6X12 01 09
SL6X10AC 02 10

MARKETS: Applicable markets:

US
Canada
CALA

| ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ12YG EMC2-15-018 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 03 03	ECM 618 19	Initial Release. Differences from NTZZ12YE/F are: The NT6X69, NT6X72, and NT6X92 CPs are no longer included. They must be provisioned separately as individual Building Blocks.
95 03 21	ECM 618 20	MD NT2X70AE and Des Label, replaced by NT2X70AF and P0809960 Des Label per ECD 24-93969.
97 03 07	ECM 618 28	MD BB per EC 024-96090 (MD NT6X12AN). Replaced by RSC-S.

The RCC Common CP Fill (MP/SP) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rmt Clster Cntrl Cmmn CP	NT6X12AN	RCC	1	18		AP
Desig. Strip (NT6X12AN)	P0802683		2	18, 32		AP-01
Filler faceplates	NT0X50AA		6	18, 32	9, 10, 24	AP-01
Time Switch CP	NT6X44AA		2	32, 18	15	AP-01
LGC/DTC Processor CP	NT6X45BD		4	32, 18	08, 13	AP
Desig. Label NT6X45BD	P0739326		4	32, 18	08, 13	AP
Master Proc Memory CP	NT6X47AC		2	32, 18	11	AP
Desig. Label NT6X47AC	P0711821		2	32, 18	11	AP
SP Memory Plus CP	NT6X46BB		2	32, 18	12	AP
# Pwr Converter +/-5V & 12V	NT2X70AE		2	32, 18	25	AP
# Designation Label NT2X70AE	P0698943		2	32, 18	25	AP
Pwr Converter +/-5V & 12V	NT2X70AF		2	32, 18	25	AP
Designation Label NT2X70AF	P0809960		2	32, 18	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT2X70AE P0698943	MD MD	NT2X70AF 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) For information on the frame doors, refer to Section EMA15-01-002.
- AP-01 1) When PEC NT6X12AN is provided these items are always provided.

RULES:

AP 1) When PEC NTZZ12YG is ordered, these items are provided.

CABLE KIT (CABINETIZED)

NTZZ30QA

RATING: MD Pending

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ30QA Building Block contains Horizontal Cable Kit, Power and Return Cable, Terminal Block Designation Label, and EMI Endpanel for use when an enhanced 42" LIM cabinet is provided in a DMS-100 Cabinetized lineup.

REFERENCE DOCUMENTATION: SLZZ30QA 00 01

The NTZZ30QA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Horizontal Pwr Cabling Kit	NT9X9531		1			AP
Power and Return Cable Assy	NTRX1670		20			AP
Terminal Block Desig Strips	P0732510		1			AP
Cabinetized EMI Endpanel	NTRX73AF		1			AP

RULES:

AP 1) When PEC NTZZ30QA is ordered, these items are provided.

DUAL POWER CONVERTER (BCS36 AND ABOVE)

PEC CODE: NTZZ44LA

CPC CODE: B0241294

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ44LA provides Dual Power Redundancy (48V/60V) Power Converters for the Link Interface Shelves.

REFERENCE DOCUMENTATION: SLZZ44LA 00 01
NTZZ44LA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ44LA EMC2-16-CNV-RD CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 08 03	ECM 620 19	Introduce NTZZ44LA (-48V/-60V) Power Converters for LIS Shelves.
95 06 29	ECM 620 28	Solve ET 22129.
95 11 08	ECM 632 16	Detailed mounting locations for LIS and SNSE.
96 03 22	ECM 620 31	Retire this section.

The Power Converter (48V/60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter CP	NTDX16AA		12	XX	4F, 36F 1F, 33F	AP
Design. Label (NTDX16AA)	P0748922		12	XX	4F, 36F 1F, 33F	AP
Power Interface Unit	NT9X2825		06	XX	, 1F-4F 33F-36F	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:

The NT9X2825 (Power Interface panel) mounts on the LIS shelf and the NTDX16AA Dual Power Converter mounts on the Power interface panel.

For LIS the shelf mounting locations are 00, 13 and 26.

For SNSE LIS the shelf mounting location is 26.

RULES:

AP 1) When PEC NTZZ44LA is ordered, these items are provided.

POWER CONVERTER (48V/60V)

PEC CODE: NTZZ44MA

CPC CODE: B0241295

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ44MA provides (-48V/-60V) Power Converters for the Link Interface Shelves.

REFERENCE DOCUMENTATION: SLZZ44MA 00 01
NTZZ44MA REL 01

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ44MA EMC2-16-CNV-60V CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 08 03	ECM 620 19	Introduce NTZZ44MA (-60V) Power Converters for LIS Shelves.
95 11 08	ECM 632 16	Show applications for SNSE LIS as well as for standard LIS shelves.
96 03 22	ECM 620 31	Retire this section.

The Power Converter (-48V/-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
+5V Power Converter CP	NT9X30AB		6	XX	4F, 36F	AP
Design. Label (NT9X30AB)	P0738496		6	XX	4F, 36F	AP
STP Power Filler CP	NT9X19EA		6	XX	1F, 33F	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:

For LIS shelves the mounting locations (XX) are 00, 13 and 26.

For SNSE LIS shelves the mounting location (XX) is 26.

RULES:

AP 1) When PEC NTZZ44MA is ordered, these items are provided.

FLIS POWER CONVERTER (48V/60V)
DUAL POWER REDUNDANCY

PEC CODE: NTZZ30EM

CPC CODE: B0241340

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ34PB

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ30EM provides Dual Power Redundancy (48V/60V) Power Converters for the Link Interface Shelves. It is available at BASE04/ TL03 and above.

| REFERENCE DOCUMENTATION: SLZZ30EM 00 01
NTZZ30EM REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ30EM EMC2-16-CV-RD CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 08 09	ECM 612 11	Introduce NTZZ30EM (-48V/-60V) Power Converters for LIS Shelves on FLIS.
95 03 29	ECM 612 15	Update description of BB pec.
96 03 22	ECM 612 18	Retire this section.

The FLIS Power Converter (48V/60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter CP	NTDX16AA		04	13, 26	4F, 36F 1F, 33F	AP
Design. Label (NTDX16AA)	P0748922		04	13, 26,	4F, 36F 1F, 33F	AP
Power Interface Unit	NT9X2825		02	13, 26,	1F-4F 33F-36F	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 NTZZ30EM is ordered, these items are provided.

FLIS POWER CONVERTER (48V)

PEC CODE: NTZZ30DM

CPC CODE: B0241339

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ34PA

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ30DM provides (-48V) Power Converters for the Link Interface Shelves.

REFERENCE DOCUMENTATION: SLZZTMP4 00 01
NTZZ30DM REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ30DM EMC2-16-CV-48V CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 08 09	ECM 612 11	Introduce NTZZ30DM (-48V) Power Converters for LIS Shelves on FLIS.
96 03 22	ECM 612 18	Retire this section.

The FLIS Power Converter (-48V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
+5V Power Converter CP	NT9X30AA		2	13,26	4F,36F	AP
-5V Power Converter CP	NT9X31AA		2	13,26	1F,33F	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 NTZZ30DM is ordered, these items are provided.

ETHERNET INTERFACE UNIT

PEC CODE: NTZZ30EA

CPC CODE: B0233781

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30EC

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ30EA provides one Ethernet Inter-
face Unit for connection of an Ethernet LAN
through the LIM.

REFERENCE DOCUMENTATION: SLZZ30EA 00 01
NTZZ30EA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Robert Leydig Dept. 3471 (PPK)

NTZZ30EA EMC2-16-EIU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 04 04	----- ECM 620 26	Previous history not available Retire per EC#18-43870.

The Ethernet Interface Unit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IPF Proc and F/Bus I/F	NTEX22AA		1	XX	YYF	AP
Ethernet I/F	NT9X84AA		1	XX	YYF+1	AP
Ethernet I/F PB	NT9X85AA		1	XX	YYR+1	AP
EIU (2 Slot) ID Label	P0711662		1	XX	YYF	AP
Desig. Label NT9X85AA	P0711661		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0190		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30EA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30EA is ordered, these items are provided.

ETHERNET INTERFACE UNIT

PEC CODE: NTZZ30EB

CPC CODE: B0236550

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30EC

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ30EB provides one Ethernet Inter-
face Unit for connection of an Ethernet LAN
through the LIM.

REFERENCE DOCUMENTATION: SLZZ30EB 00 01
NTZZ30EB REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Robert Leydig Dept. 3471 (PPK)

NTZZ30EB EMC2-16-EIU-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 04 04	----- ECM 620 26	Previous history not available Retire per EC#18-43870.

The Ethernet Interface Unit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IPF Proc and F/Bus I/F	NTEX22BA		1	XX	YYF	AP
Ethernet I/F	NT9X84AA		1	XX	YYF+1	AP
Ethernet I/F PB	NT9X85AA		1	XX	YYR+1	AP
EIU (2 Slot) ID Label	P0734383		1	XX	YYF	AP
Desig. Label NT9X85AA	P0711661		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0190		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZeiu can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30EB is ordered, these items are provided.

FILLER FACE PLATES (2 SLOT)

PEC CODE: NTZZ30GA

CPC CODE: B0233783

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ30GA provides two filler face plates and one filler paddleboard for assignment to slots that are not assigned an LIU7, EIU, or FRIU on the Link Interface Module (36 Link)

REFERENCE DOCUMENTATION: SLZZ30GA 00 01
NTZZ30GA REL 01

MARKETS: Applicable markets:

| Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ30GA EMC2-16-FFP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 22	----- ECM 620 31	Previous history not available Retire this section. (GMF Requirement)

The Filler Face Plates (2 Slot) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate	NT9X19AA		2	XX	YYF, YYF+1	AP
PB Filler Faceplate	NT9X19BA		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30GA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30GA is ordered, these items are provided.

FRAME RELAY INTERFACE UNIT

PEC CODE: NTZZ30FA

CPC CODE: B0233782

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30LA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ30FA provides one T1 interface for
Frame Relay Service.REFERENCE DOCUMENTATION: SLZZ30FA 00 01
NTZZ30FA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Robert Leydig Dept. 3471 PPK

MAIN CONTACT: Ken Clisso Dept. 3471 PPK

NTZZ30FA EMC2-16-FIU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 03 14	----- ECM 620 25	Previous history not available MD this item and replace it with 30LA

The Frame Relay Interface Unit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IPF Proc and F/Bus I/F	NTEX22AA		1	XX	YYF	AP
Frame Relay Access Proc	NTEX31AA		1	XX	YYF+1	AP
Frame Relay T1 Access	NTEX30AA		1	XX	YYR+1	AP
FRIU (2 Slot) ID Label	P0711676		1	XX	YYF	AP
Desig. Label NTEX30AA	P0711675		1	XX	YYR+1	AP
FRIU Cable Assembly	NT9X0191		2	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30FA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30FA is ordered, these items are provided.

SINGLE SHELF LPP(FLIS) IN C42 CABINET

PEC CODE: NTZZ30PM

CPC CODE: B0236743

RATING: MD

REPLACES: NTZZ30PA

REPLACED BY: NTZZ30PN

ABBREVIATION NAME: EMC

ENGINEERING DESCRIPTION: The C42 Cabinet houses up to two (2) Link Interface Shelves (LIS). The first shelf, referred to as LIS 1, is mounted in shelf position 26. The second shelf, if equipped, is referred to as LIS 2 and is mounted in shelf position 13.

REFERENCE DOCUMENTATION: NTZZ30PM REL 01
SLZZ30PM 00 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ30PM EMC2-16-FLIS CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 02 01	ECM 612 04	Correct Cooling unit(NT9X95CU) Correction.
93 03 08	ECM 612 05	NTZZ30CA is A&M use NTZZ30UA. NTZZ30DA is A&M use NTZZ30WA.
93 06 08	ECM 612 06	Introduction of DMS Packet Handler and Channelized Access in SSLPP.
94 02 16	ECM 612 08	Solving ET 112970: Modification to RUL1 to cover NIU ad XLIU.
94 03 10	ECM 612 09	Change C42 Mechanical Hardware
94 06 30	ECM 612 10	Changes per EC 018-43057
94 08 09	ECM 612 11	Changes per EC 006-19337
95 01 20	ECM 612 13	Update to add reference to NTZZ30CM V.35 I/F.
95 02 20	ECM 612 14	ET-20899 Add NIU cable routing labels to NTZZ30PM.
95 03 17	ECM 683 15	Clarify provisioning rules for NT9X9532 and NT9X9531 per ET65803.
95 08 28	ECM 612 16	Updated per ECD 018-45801.
95 12 12	ECM 612 17	Included Channalized Access, EIU and FRIU BB information. Solve ET 32989.
96 03 22	ECM 612 18	Retire this section.
96 06 24	ECM 612 19	Included LIU, EIU and FRIU routing labels.

The Single Shelf LPP(FLIS) in C42 Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced Multipurpose Cab.	NTEX01AB	EMC	1			AP
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
Blank Shelf Assembly	NT0X24BD		2	39,00		AP
#Fiberized LIU Shelf Assembly	NTZZ30HA		1	26,13		RUL1
Fiberized LIU Shelf Assembly	NTZZ30HB		1	26,13		RUL1
Power Converter (-48V)	NTZZ30DM		1	26,13		RUL14
Power Converter (-48V/-60V)	NTZZ30EM		1	26,13		RUL15
Blank Shelf Assembly	NT0X24BD		1	13		RUL1
Screws & Washers	P097F813		4	13		RUL1
	P0284154		1	13		RUL1
	P0183220		1	13		RUL1
\$ LIU7 E-DS0A	NTZZ30CA			26,13	8F-30F	RUL2
\$ LIU7 V.35	NTZZ30DA			26,13	8F-30F	RUL3
# LIU7 E-DS0A	NTZZ30UA			26,13	8F-30F	RUL2
# LIU7 V.35	NTZZ30WA			26,13	8F-30F	RUL3
LIU7 E-DS0A	NTZZ30AM			26,13	8F-30F	RUL2
LIU7 V.35	NTZZ30CM			26,13	8F-30F	RUL3
LIU7 V.35 - ISG	NTZZ30CN			26,13	8F-30F	RUL3
LIU7 w Channel Bus I/F (CBI)	NTZZ44DB			26,13	8F-30F	RUL3
EIU (BCS34 and Above)	NTZZ30EC			26,13	8F-30F	RUL3
FRIU	NTZZ30LA			26,13	8F-30F	RUL3
NIU	NTZZ30MA			X	18F	RUL3
XLIU	NTZZ30NA			X	Y	RUL3
Filler Face Plate	NT9X19AA			26,13	8F-31F	RUL4
PADBD Filler Face Plate	NT9X19BA			26,13	9R,11R	RUL4
					13R,15R,	
					17R,19R,	
					21R,23R,	
					25R,27R,	
					29R,31R	
LIU Cable Routing Labels	P0714420		1	26		RUL5
(Sheet)	P0714421		1	13		RUL5
LIU Cable Routing Labels	P0735397		1	26		RUL5
(Sheet)	P0735398		1	13		RUL5
FRIU Cable Routing Labels	P0714414		1	26		RUL5
(Sheet)	P0714415		1	26		RUL5
	P0714416		1	13		RUL5
	P0714417		1	13		RUL5
NIU Cable Rtg Labels (sheet)	P0735393		1	26		RUL6
NIU Cable Rtg Labels (sheet)	P0735391		1	13		RUL6
External Power Cab. kit	NT9X9532		1			RUL7
Horizontal Power Cab.kit	NT9X9531		1			RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Bulkhead Cover Plate Assy.	NTEX5025			26,13		RUL9
Power Filter Labels	P0736059		1			RUL10
Terminal Block Desig. Strip	P0736058		1			RUL10
Optical Fiber label	P0736273					RUL10
ESP Ground Terminal Assy.	NT9X0324		1			RUL10
FSP Terminal Blk Cover Assy	A0368392		1			RUL13
Ext. Cab.Label (EMC 00-05)	P0733690		1			RUL11
Ext. Cab.Label (EMC 06-11)	P0733691		1			RUL11
Ext. Cab.Label (EMC 12-16)	P0733692		1			RUL11
PDC Designation Label	P0733693		1			RUL11
FSP Designation Label	P0733694		1			RUL11
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE3
Cooling Unit	NT9X95CU		1	00		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
A0377580	A&M	NT9X95CU
NTZZ30HA	MD	NTZZ30HB
NTZZ30UA	MD	NTZZ30AM
NTZZ30WA	MD	NTZZ30CM
P0732513	MD*	P0736059

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

A&M - ADDITIONS & 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.

* Meaning this part is MD'd only in this product. It may not
have been MD'd in other products. Check the availability in
other products.

NOTES:

- 1) Shelf mounting positions X = 26, 13.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.
- 4) The Provisionable Frame fail lights NT0X24BT and P0674502 (in Brown) or NT0X24CN and P0699441 (in Grey) have been removed from this document. The new NT9X0105 Black LAMP Bezel will always be provided with the cabinet.

RULES:

- AP 1) When PEC NTZZ30PM is ordered, these items are provided.
- 2) The Cooling Unit NT9X95CU, is for -48V Powered installations. This unit comes with 3 replaceable blower assemblies(A0383325) installed, however customers may desire spares. The Cooling Unit mounts immediately below position 00.
- AP-01 1) This PEC is always provided on the NTEX01AB Cabinet and is shown herein for completeness.
- 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) Provision one (1) NTZZ30HB Fiberized LIU Shelf Assembly in shelf position 26.
- 2) Provision one (1) NTZZ30HB Fiberized LIU Shelf Assembly in shelf position 13 if more than twelve (12) LIUs are required.

(OR)

- 3) Provision one (1) NTZZ30HB Fiberized LIU Shelf Assembly in shelf position 13 if the quantity of LIUs plus XLIUs exceeds ten (10). Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration, and NIUs cannot be split over two shelves.
- 4) Otherwise, provision one (1) NT0X24BD Blank Shelf Assembly.
- 5) Provision four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 locker washer when a link interface shelf assembly NTZZ30HB is required in shelf position 13.

RUL2 1) Provide one (1) NTZZ30AM for each required E-DS0A SS7 link.

- RUL3 1) For Offices requiring V.35 SS7 link,
- For BCS34 and above,
 - one (1) NTZZ30CM CCS7 8MEG LIU (V.35)
 - For offices requiring ISG compliance
 - one (1) NTZZ30CN CCS7 8MEG LIU (V.35) - ISG
- 2) Provide one NTZZ44DB when an LIU7 with Channel Bus Interface (CBI) capability is required.
 - 3) Provide one NTZZ30EC for each Ethernet interface required.
 - 4) For BCS 34 and later, provide one NTZZ30LA for each Frame Relay Service T1 interface required.
 - 5) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of eight XLIUs).
 - 6) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required.
 - 7) One LIS will support up to eight (8) DMS Packet Handler plus two (2) LIU7s per application. The SSLPP cabinet can support up to a maximum of eight (8) DMS packet handler and two LIU7s.

Each DMS Packet Handler is composed of two circuit packs and one paddleboard. Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration, and NIUs cannot be split over two shelves.

Refer to Figure below. The numbers 2,4,8,12 represent the paddle boards connections.

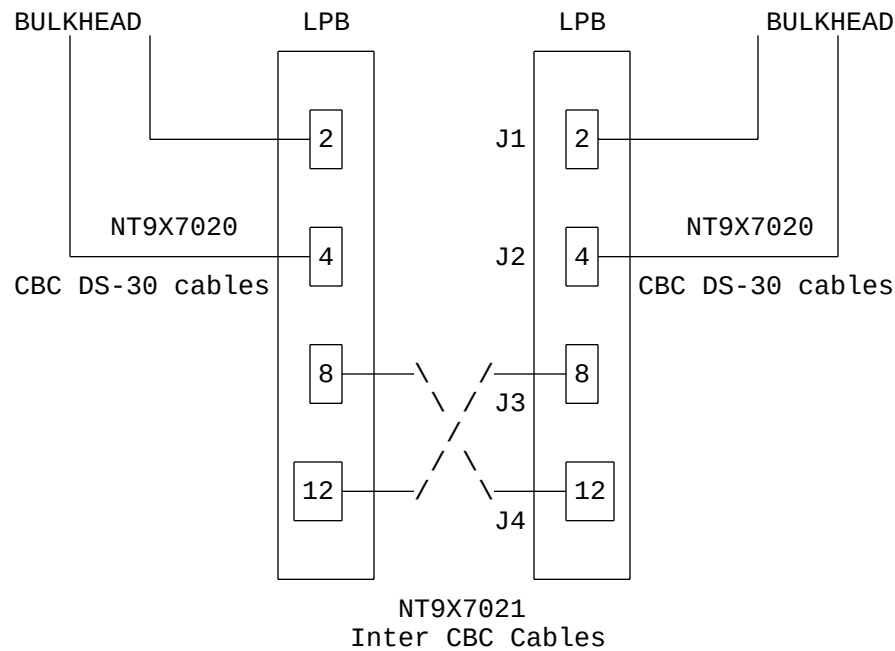


Figure: NIU cable connection

- RUL4
- 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for the unoccupied slots.
- RUL5
- 1) Provide one sheet of Routing Lables per half shelf when ASUs are provisioned in that shelf.

		FRIU	LIU, EIU
SHELF	SLOTS	LABEL	LABEL
26	31R-21R	P0714414	P0735397
26	19R-09R	P0714415	P0714420
13	31R-21R	P0714416	P0735398
13	19R-09R	P0714417	P0714421

- RUL6 1) Provision one (1) sheet of NIU cable routing labels when NIUs are provisioned in this shelf.
- RUL7 1) Provide one (1) NT9X9532 External Power Cabling Interface Kit when powering the NTEX01AB 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 NTEX01AB. This kit includes cables, filters, and miscellaneous mounting hardware. A maximum of three (3) Model B Cabinets, including LIM, with external power arrangements may be configured in a single lineup of Model A Cabinets (i.e. in Model B extensions to Model A offices).
- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NTEX01AB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NTEX01AB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware. A horizontal power arrangement is used in Cabinetization Model A lineups. The NT9X9531 Horizontal Power Kit may be used when LIM Cabinets are included in a Model A lineup (i.e. Model B extensions to Model A offices).
- RUL8) 1) Deleted.
- RUL9 1) Provision one (1) NTEX5025 Bulkhead cover plate assembly for each unequipped position in the NT9X6534 Bulkheads. (The NT9X6534 Bulkheads are provided with the NTZZ30HA. When there is an unequipped position or slot on the NT9X6534 Bulkhead this is to be covered with one (1) NTEX5025 Bulkhead cover plate.
- RUL10) 1) Provide one (1) P0736059 power filter label per EMC cabinet when powering the NTEX01AB cabinet in a non-streamline (stand-alone) application.
- 2) Provide one (1) P0736058 terminal block designation strip per EMC when powering the NTEX01AB cabinet in a streamline application.
- 3) Provide one (1) P0736273 optical fiber danger label per link interface shelf assembly NT9X7204.
- 4) Provide one (1) NT9X0324 ESP Ground terminator assembly in all British Telephone offices.
- RUL11 1) The Following Labels are field applied and they are to be shipped loose to sight.

- 2) Provision P0733690 for EMC cabinets numbered from 00-05.
- 3) Provision P0733691 for EMC cabinets numbered from 06-11.
- 4) Provision P0733692 for EMC cabinets numbered from 12-16.
- 4) Provision one (1) P0733693 PDC label per office.
- 5) Provision one (1) P0733694 FSP label per office.

RUL12 1) Deleted.

RUL13 1) Provide one (1) A0368392 (TB1) fsp terminal block cover assembly for International Applications.

RUL14 1) Provide one (1) NTZZ30DM per LIS shelf when (-48V) power converters are required.

RUL15 1) Provide one (1) NTZZ30EM per LIS shelf when (-48V/-60V) power converters and Dual Power Redundancy is required or as per customer requirements. (-60V power converter option is not yet available on the FLIS LIS shelves). (The -48V power converters are not available until BCS36 and above for the FLIS shelves.)

FIBERIZED LIU SHELF ASSEMBLY

PEC CODE: NTZZ30HA

CPC CODE: B0234460

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ30HB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ30HA provides the Fiberized LIU Shelf Assembly

REFERENCE DOCUMENTATION: SLZZ30HA 00 03
NTZZ30HA REL 03

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Ken Clisso DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Ken Clisso DEPT. 3471 (PPK)

NTZZ30HA EMC2-16-FLIU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 08 27	ECM 612 07	Solving ET #: 16909.
94 06 30	ECM 612 10	Changes per EC 018-43057
94 08 09	ECM 612 11	Changes per EC 006-19337, MD'd NTZZ30HA and replaced with NTZZ30HB.

The Fiberized LIU Shelf Assembly is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1			AP
FLIS Common Circuit Pack Fill	NT9X72CA		1			AP
Bulkhead Assembly Left	NT9X6534		1	XX		AP
Bulkhead Assembly Right	NT9X6580		1	XX		AP
FLIS Cable Assembly	NT9X9820		1			AP
Composite Clock Cable Assy	NTEX0120		2			AP
Rear Bot Design Strip Label	P0739095		1	XX		AP
Rear Top Design Strip Label	P0739096		1	XX		AP
Front Top Design Strip Label	P0800327		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTEX22AA	A&M	NTEX22BA

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 NTZZ30HA mounting positions XX = 26, 13

RULES:

- AP 1) When PEC NTZZ30HA is ordered, these items are provided.

CCS7 8MEG LIU (CBI)

PEC CODE: NTZZ44DA

CPC CODE: B0237348

| RATING: MD

| REPLACES:

| REPLACED BY: NTZZ44DB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ44DA provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one Channelized Bus Interface (CBI) access with 8Meg of memory. There are no cables required for the NTEX26AA Channel Bus Interface paddleboard.

REFERENCE DOCUMENTATION: SLZZ44DA 00 01 REL 01
NTZZ44DA 00 01 REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Robert Leydig Dept. 3471 (PPK)

NTZZ44DA EMC2-16-LI-10 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 02	ECM 620 06	New insert introduced
95 04 17	ECM 620 27	Retire BB;Replace with NTZZ44DB.

The CCS7 8Meg LIU (CBI) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BA		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
Channel Access Bus I/F PB	NTEX26AA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0734382		1	XX	YYF	AP
Desig. Label NTEX26AA	P0733875		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ44DA can be assigned to shelf mounting positions
XX = 26, 13, 00.
The slot positions are defined by
YY = 08, 10, 12, 14, 16, 22, 24, 26, 28, or 30.

F = Front of shelf, R = Rear of shelf.

Note: Slot positions 18 and 20 are taken up by the NIU plane 0 and plane 1 when Channelized Access is provided on an LIS shelf.

RULES:

- 1) When PEC NTZZ44DA is ordered, these items are provided.

CCS7 8MEG LIU (JAPAN ISUP WITH CBI)

PEC CODE: NTZZ44EA

CPC CODE: b0237386

| RATING: MD

| REPLACES:

| REPLACED BY: NTZZ44EB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ44EA provides one Signaling Data Link for interface to other SS7 offices.

The ISUP signaling card (NT9X76CA) can only be used in an office with Channelized Access (NIU).

Each LIU7 provides one Channelized Bus Interface (CBI) access with 8Meg of memory. There are no cables required for the NTEX26AA Channel Bus Interface paddleboard.

REFERENCE DOCUMENTATION: SLZZ44EA 00 01
NTZZ44EA REL 01

MARKETS: Applicable markets:

Asia/Pacific

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Robert Leydig Dept. 3471 (PPK)

NTZZ44EA EMC2-16-LI-11 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 02	ECM 620 06	New insert introduced
95 04 17	ECM 620 27	Retire BB;Replace with NTZZ44EB.

The CCS7 8Meg LIU (JAPAN ISUP with CBI) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BA		1	XX	YYF	AP
ISUP Signaling Terminal I/F	NT9X76CA		1	XX	YYF+1	AP
Channel Access Bus I/F PB	NTEX26AA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0735937		1	XX	YYF	AP
Desig. Label NTEX26AA	P0733875		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ44EA can be assigned to shelf mounting positions
XX = 26, 13, 00.
The slot positions are defined by
YY = 08, 10, 12, 14, 16, 22, 24, 26, 28, or 30.

F = Front of shelf, R = Rear of shelf.

Note: Slot positions 18 and 20 are taken up by the NIU plane 0 and plane 1 when Channelized Access is provided on an LIS shelf.

RULES:

AP 1) When PEC NTZZ44EA is ordered, these items are provided.

CCS7 LINK INTERFACE UNIT (DS0A 2 SLOT)

PEC CODE: NTZZ30BA

CPC CODE: B0233778

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30AM

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ30BA provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one DS0A link.

REFERENCE DOCUMENTATION: SLZZ30BA 00 01
NTZZ30BA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Robert Leydig Dept. 3471 (PPK)

NTZZ30BA EMC2-16-LIU-0 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 04 04	----- ECM 620 26	Previous history not available Retire per EC#18-43870.

The CCS7 Link Interface Unit (DS0A 2 Slot) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IPF Proc and F/Bus I/F	NTEX22AA		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
DS0A I/F PB	NT9X78AA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0709181		1	XX	YYF	AP
Desig. Label NT9X78AA	P0689620		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30BA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30BA is ordered, these items are provided.

| LINK I/F SHELF.

NTZZ30ZA

RATING: MD. Replaced by NTZZ30ZB

ABBREVIATION NAME: LIS

ENGINEERING DESCRIPTION: The NTZZ30ZA Building Block contains the equipment required to provision the Link Interface Shelf common circuit packs.

REFERENCE DOCUMENTATION: SLZZ30ZA 00 01
NTZZ30ZA REL 01

The Link I/F Shelf. is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
+5 Volts Power Converter CP	NT9X30AA		2	X	4F, 36F	AP
STP Power Filler CP	NT9X19EA		2	X	1F, 33F	AP
Filler PB	NT9X19BA		10	X	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP
Intra FBus A Term CPTNA	NTEX20AA		1	X	30R	AP
Intra FBus B Term CPNTA	NTEX20BA		1	X	8R	AP

NOTES:

RULES:

AP 1) When PEC NTZZ30ZA is ordered, these items are provided.

CCS7 8MEG LIU (E-DS0A)

PEC CODE: NTZZ30AM

CPC CODE: B0241226

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ30TB

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ30AM provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one E-DS0A link with 8 Meg of memory. Enhanced maintenance is available with the use of this type DS0A link.

REFERENCE DOCUMENTATION: SLZZ30AM 00 01
NTZZ30AM REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ30AM EMC2-16-LIU-10 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 08 03	ECM 620 19	Introduce NTZZ30AM LIU7 E-DS0A for BCS34 and above.
95 02 20	ECM 612 14	Correct CPC for LIU ID label.
95 08 28	ECM 612 16	Corrected the note section to include FLIS application.
96 11 15	ECM 620 33	As per EC 018-46903, NT9X78BA is MD'd. Hence, retire this section.

The CCS7 8Meg LIU (E-DS0A) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BB		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
E-DS0A I/F PB	NT9X78BA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0738554		1	XX	YYF	AP
Desig. Label NT9X78BA	P0704359		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30AM	MD	NTZZ30TB

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 NTZZ30AM can be assigned to shelf mounting positions XX = 26, 13, 00 in LPP and X = 26,13 in FLIS application. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30AM is ordered, these items are provided.

CCS7 8MEG LIU (E/HC-DS0A)

PEC CODE: NTZZ30BM

CPC CODE: B0241227

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ30TB

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ30BM provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one E-DS0A link with 8Meg of memory. Enhanced maintenance is available with the use of this type DS0A link.

REFERENCE DOCUMENTATION: SLZZ30BM 00 01
NTZZ30BM REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ30BM EMC2-16-LIU-11 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 08 03	ECM 620 19	Introduce NTZZ30BM LIU7 E/HC-DS0A for BCS34 and above.
95 02 20	ECM 620 24	Correct LIU ID label CPC.
96 11 15	ECM 620 33	As per EC 018-46903, NT9X78CA is MD'd. Hence, retire this section.

The CCS7 8Meg LIU (E/HC-DS0A) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BB		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
E/HC-DS0A I/F PB	NT9X78CA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0738554		1	XX	YYF	AP
Desig. Label NT9X78CA	P0732783		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30BM	MD	NTZZ30TB

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 NTZZ30BM can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30BM is ordered, these items are provided.

CCS7 8MEG LIU (V.35)

PEC CODE: NTZZ30CM

CPC CODE: B0241228

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ30CM

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ30CM provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one V.35 link with 8Meg of memory. Use the NTZZ30CM for offices with BCS 34 and above.

REFERENCE DOCUMENTATION: SLZZ30CM 00 04
NTZZ30CM REL 04

MARKETS: Applicable markets:

Canada
US
CALA
Europe

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

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

NTZZ30CM EMC2-16-LIU-12 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 08 03	ECM 620 19	Introduce NTZZ30CM LIU7 V.35 for BCS34 and above.
95 01 20	ECM 612 13	Update to add reference in ECM 612 to NTZZ30CM V.35 I/F (this document)
95 02 20	ECM 612 14	Update per ET#64363 to correct V.35 description and desig.label CPC.
95 03 29	ECM 612 15	ET#21269 to clarify BB usage.
95 08 28	ECM 612 16	Updated per ECD 018-44239 to replace NT9X77AA with NT9X77AB.
95 10 23	ECM 620 29	Corrected the rating of NT9X77AA and updated the refdoc in this section.
96 08 01	ECM 632 20	Release 04 of this SL reinstated the NT9X77AA non-ISG PB.
		MD for all markets per ECD 018-44239.

The CCS7 8Meg LIU (V.35) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BB		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
V.35 I/F PB	NT9X77AA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0738554		1	XX	YYF	AP
Desig. Label NT9X77AA	P0704358		1	XX	YYR+1	AP
V.35 Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30CM can be assigned to shelf mounting positions XX = 26, 13, 00 in LPP and XX = 26, 13 in FLIS application. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30CM is ordered, these items are provided.

| LINK I/F SHELF

NTZZ30ZB

RATING: MD. Replaced by NTZZ30ZC

ABBREVIATION NAME: LIS

ENGINEERING DESCRIPTION: The NTZZ30ZB Building Block contains the equipment required to provision the Link Interface Shelf common circuit packs.

REFERENCE DOCUMENTATION: SLZZ30ZB 00 01
NTZZ30ZB REL 01

The Link I/F Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
Bulkhead	NT9X6534		6			AP
LIS Shelf Desg. Front	P0715483		3	00,13, 26		AP
LIS Shelf Desg. Rear	P0709179		3	00,13, 26		AP

NOTES:

RULES:

AP 1) When PEC NTZZ30ZB is ordered, these items are provided.

CCS7 LINK INTERFACE UNIT (V.35 2 SLOT)

PEC CODE: NTZZ30DA

CPC CODE: B0233780

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30CM

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ30DA provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one V.35 link.

REFERENCE DOCUMENTATION: SLZZ30DA 00 01
NTZZ30DA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Terwey Dept. 3471 (PPK)

NTZZ30DA EMC2-16-LIU-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 12	ECM 620 10	Status is A&M. Use NTZZ30WA.
95 03 14	ECM 620 25	Retire BB. Use NTZZ30CM.

The CCS7 Link Interface Unit (V.35 2 Slot) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IPF Proc and F/Bus I/F	NTEX22AA		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
DS0A I/F PB	NT9X77AA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0709181		1	XX	YYF	AP
Desig. Label NT9X77AA	P0704358		1	XX	YYR+1	AP
V.35 Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30DA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30DA is ordered, these items are provided.

CCS7 LINK INTERFACE UNIT (E-DS0A 2 SLOT)

PEC CODE: NTZZ30CA

CPC CODE: B0233779

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30BM

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ30CA provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one E-DS0A link. Enhanced maintenance is available with the use of this type DS0A link.

REFERENCE DOCUMENTATION: SLZZ30CA 00 01
NTZZ30CA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTi: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Terwey Dept. 3471 (PPK)

NTZZ30CA EMC2-16-LIU-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 12	ECM 620 10	Status is A&M. Use NTZZ30UA.
95 03 14	ECM 620 25	Retire BB. Use NTZZ30BM.

The CCS7 Link Interface Unit (E-DS0A 2 Slot) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IPF Proc and F/Bus I/F	NTEX22AA		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
E-DS0A I/F PB	NT9X78BA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0709181		1	XX	YYF	AP
Desig. Label NT9X78BA	P0704359		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30CA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30CA is ordered, these items are provided.

CCS7 8MEG LIU (DS0A)

PEC CODE: NTZZ30TA

CPC CODE: B0235493

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30AM

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ30TA provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one DS0A link with 8Meg of memory.

REFERENCE DOCUMENTATION: SLZZ30TA 00 01
NTZZ30TA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: David Terwey Dept. 3471 (PPK)

NTZZ30TA EMC2-16-LIU-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 02	ECM 620 06	ET17623 - Change rating from LTD to STD.
93 06 04	ECM 620 12	Manufacture Discontinued.
95 03 14	ECM 620 25	Retire Doc.- Use NTZZ30AM.

The CCS7 8Meg LIU (DS0A) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BA		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
DS0A I/F PB	NT9X78AA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0734382		1	XX	YYF	AP
Desig. Label NT9X78AA	P0689620		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30TA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30TA is ordered, these items are provided.

CCS7 8MEG LIU (E-DS0A)

PEC CODE: NTZZ30UA

CPC CODE: B0235492

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30AM

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ30UA provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one E-DS0A link with 8Meg of memory. Enhanced maintenance is available with the use of this type DS0A link.

REFERENCE DOCUMENTATION: SLZZ30UA 00 01
NTZZ30UA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Robert Leydig Dept. 3471 (PPK)

NTZZ30UA EMC2-16-LIU-50 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 02	ECM 620 06	Change rating from LTD to STD
93 03 12	ECM 620 10	Applicable to all Markets.
95 04 04	ECM 620 26	Retire per EC#18-43870.

The CCS7 8Meg LIU (E-DS0A) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BA		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
E-DS0A I/F PB	NT9X78BA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0734382		1	XX	YYF	AP
Desig. Label NT9X78BA	P0704359		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30UA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30UA is ordered, these items are provided.

CCS7 8MEG LIU (E/HC-DS0A)

PEC CODE: NTZZ30VA

CPC CODE: B0235491

| RATING: MD

REPLACES:

REPLACED BY: NTZZ30BM

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ30VA provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one E-DS0A link with higher capacity and 8Meg of memory. Enhanced maintenance is available with the use of this type DS0A link.

REFERENCE DOCUMENTATION: SLZZ30VA 00 01
NTZZ30VA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Robert Leydig Dept. 3471 (PPK)

NTZZ30VA EMC2-16-LIU-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 02	ECM 620 06	Add restriction on BB because of NT9X78CA which cannot be used until BCS33.
95 04 04	ECM 620 26	Retire per EC#18-43870.

The CCS7 8Meg LIU (E/HC-DS0A) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BA		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
E/HC-DS0A I/F PB	NT9X78CA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0734382		1	XX	YYF	AP
Desig. Label NT9X78CA	P0732783		1	XX	YYR+1	AP
DS0A Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30VA can only be used for applications which are at BCS33 software or higher. This is because of the BCS33 restriction for the use of the NT9X78CA 56/64 Kbs DS0A paddleboard. applications. The only speed available for domestic is 56Kbs. The NT9X78CA can be used for domestic applications, but it can only be datafilled at 56Kbs in domestic software loads at BCS33 and higher.
- 1) The NTZZ30VA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

AP 1) When PEC NTZZ30VA is ordered, these items are provided.

CCS7 8MEG LIU (V.35)

PEC CODE: NTZZ30WA

CPC CODE: B0235490

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ30CM

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The NTZZ30WA provides one Signaling Data Link for interface to other SS7 offices. Each LIU7 provides one V.35 link with 8Meg of memory. Use the NTZZ30WA for non-CBI and Frame relay projects prior to BCS34.

REFERENCE DOCUMENTATION: SLZZ30WA 00 01
NTZZ30WA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Robert Leydig Dept. 3471 (PPK)

NTZZ30WA EMC2-16-LIU-70 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 12	ECM 620 10	Applicable to all Markets.
95 02 20	ECM 612 14	ET#21269 Clarify usage of this BB.
95 04 04	ECM 620 26	Update to correct V.35 description. Retire per EC#18-43870.

The CCS7 8Meg LIU (V.35) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced IPF & F/Bus I/F	NTEX22BA		1	XX	YYF	AP
STP Signaling Terminal I/F	NT9X76AA		1	XX	YYF+1	AP
V.35 I/F PB	NT9X77AA		1	XX	YYR+1	AP
LIU (2 Slot) ID Label	P0734382		1	XX	YYF	AP
Desig. Label NT9X77AA	P0704358		1	XX	YYR+1	AP
V.35 Cable Assembly	NT9X0193		1	XX	YYR+1	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The NTZZ30WA can be assigned to shelf mounting positions XX = 26, 13, 00. The slot positions are defined by YY = 08, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, or 30. F = Front of shelf, R = Rear of shelf.

RULES:

- AP 1) When PEC NTZZ30WA is ordered, these items are provided.

LINK I/F SHELF.

PEC CODE: NTZZ30ZC

CPC CODE: B0236701

| RATING: MD

REPLACES:

REPLACED BY:

ABBREVIATION NAME: LIS

ENGINEERING DESCRIPTION: The NTZZ30ZC Building Block contains the equipment required to provision the Link Interface Shelf common circuit packs.

REFERENCE DOCUMENTATION: SLZZ30ZC 00 01
NTZZ30ZC REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: Robert Leydig Dept. 3471 (PPK)

NTZZ30ZC EMC2-16-LIU-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 04	ECM 620 12	Manufactured Discontinued. Included with NTZZ44CM/44KM/44FM/44GM. Retire document.
95 04 04	ECM 620 26	

The Link I/F Shelf. is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
LIS Shelf Desg. Front	P0715483		3	00,13, 26		AP
LIS Shelf Desg. Rear	P0709179		3	00,13, 26		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 NTZZ30ZC is ordered, these items are provided.

LOCAL MESSAGE SWITCH

NTZZ30YA

RATING: MD. Replaced NTZZ30YB

ABBREVIATION NAME: LMS

ENGINEERING DESCRIPTION: The NTZZ30YA Building Block contains the equipment required to provision the Local Message Switch Shelf common circuit packs.

REFERENCE DOCUMENTATION: SLZZ30YA 00 01
NTZZ30YA REL 01

The Local Message Switch is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LMS DS-30 X-Link Cable Assy.	NT9X0171		1	X		AP
LMS DS-30 X-Link Cable Assy.	NT9X7025		1	X		AP
F-Bus Ext CP W/Term	NT9X79BA		2	X	8R, 31R	AP
+5 Volt Power Conv CP	NT9X30AA		2	X	4F, 36F	AP
Filler Face Plate	NT9X19EA		2	X	1F, 33F	AP
Filler Face Plate	NT9X19AA		8	X	11F-14F, 25F-28F	AP
Filler PB	NT9X19BA		18	X	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP

NOTES:

RULES:

AP 1) When PEC NTZZ30YA is ordered, these items are provided.

LOCAL MESSAGE SWITCH

PEC CODE: NTZZ30YB

CPC CODE: B0236551

| RATING: MD

REPLACES:

REPLACED BY:

ABBREVIATION NAME: LMS

ENGINEERING DESCRIPTION: The NTZZ30YB Building Block contains the equipment required to provision the Local Message Switch Shelf common circuit packs.

REFERENCE DOCUMENTATION: SLZZ30YB 00 01
NTZZ30YB REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: Robert Leydig Dept. 3471 (PPK)

NTZZ30YB EMC2-16-LMS-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 04	ECM 620 12	Manufactured Discontinued. Included with NTZZ44CM/44KM/44FM/44GM. Retire document.
95 04 04	ECM 620 26	

The Local Message Switch is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CA		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
6Meg Memory CP	NT9X14BB		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
LMS Desig. Strip Front	P0689616		1	39		AP
LMS Desig. Strip Rear	P0689618		1	39		AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	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 NTZZ30YB is ordered, these items are provided.

36 LINK LPP -48V BRWN, BCS33 & BELOW

PEC CODE: NTZZ44CM

CPC CODE: B0238734

| RATING: MD

REPLACES:

REPLACED BY: NTZZ44CB

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -48 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel within a brown exterior cabinet. The NTZZ44CM has the capability of housing up to 36 Interface units, such as DS0A, Enhanced DS0A, V.35, and EIU. For applications in the US and International Markets, this NTZZ44CM can be deployed with Cabinetized(Streamline) DMS lineups.

REFERENCE DOCUMENTATION: SLZZ44CM 00 01
NTZZ44CM REL 01

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: Jerry Palmer Dept. 3471 (ppk)

NTZZ44CM EMC2-16-LPP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 04	ECM 620 12	Introduce NTZZ44CM 36 Link LPP This BB can only be used for US and International Markets in Cabinetized (Streamline) lineups.
93 09 17	ECM 620 13	
93 10 04	ECM 682 01	Include ADAS ASU provisioning rules
94 03 10	ECM 620 15	Change NT9X95AA to NT9X95BA
94 04 04	ECM 620 16	Correct door provisioning. Retire section.

The 36 Link LPP -48V Brwn, BCS33 & BELOW is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-48V)	NT9X03AA	FSP	1	52		AP
Frame Fail Light	NT0X24BT		1			AP
Rear Frame Fail Light	P0674502		1			AP
Door Right Front	NT9X9537		2			AP
Door Left Front	NT9X9541		2			AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
LMS DS-30 Cable Assembly	NT9X0100		4	39		AP
LMS DS-30 Cable Assembly	NT9X0107		2	39		AP
NonFiltered DS-30 Blkhd(LT)	NT9X6569		1	39		AP
NonFiltered DS-30 Blkhd(RT)	NT9X6570		1	39		AP
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CA		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
Desig. Label(NT9X19AA)	P0709515		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Memory 6 Meg	NT9X14BB		2	39	16F, 23F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
LMS Desig. Strip Front	P0689616		1	39		AP
LMS Desig. Strip Rear	P0689618		1	39		AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	AP
Desig. Label(NT9X13DB)	P0696239		2	39	17F, 22F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
LIS Shelf Desg. Front	P0715483		3	00,13, 26		AP
LIS Shelf Desg. Rear	P0709179		3	00,13, 26		AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23

Retired Equipment
36 Link LPP -48V Brwn, BCS33 5 BELOW

NTZZ44CM
EMC2-16-LPP-1
Page 5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		2	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit (-48V) Filter	NT9X95CU A0377837	CU	1	BOT		AP AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	

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

A&M - ADDITIONS & 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) Shelf mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIUs, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S LIU/EIU/FRIU												
ASU Numbering Sequence	0		2		4		6		8		11		
ASU Assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4	
ASU Numbering Sequence	12		14		16		18		20		23		
ASU Assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2	
ASU Numbering Sequence	24		26		28		30		32		35		
ASU Assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6	
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

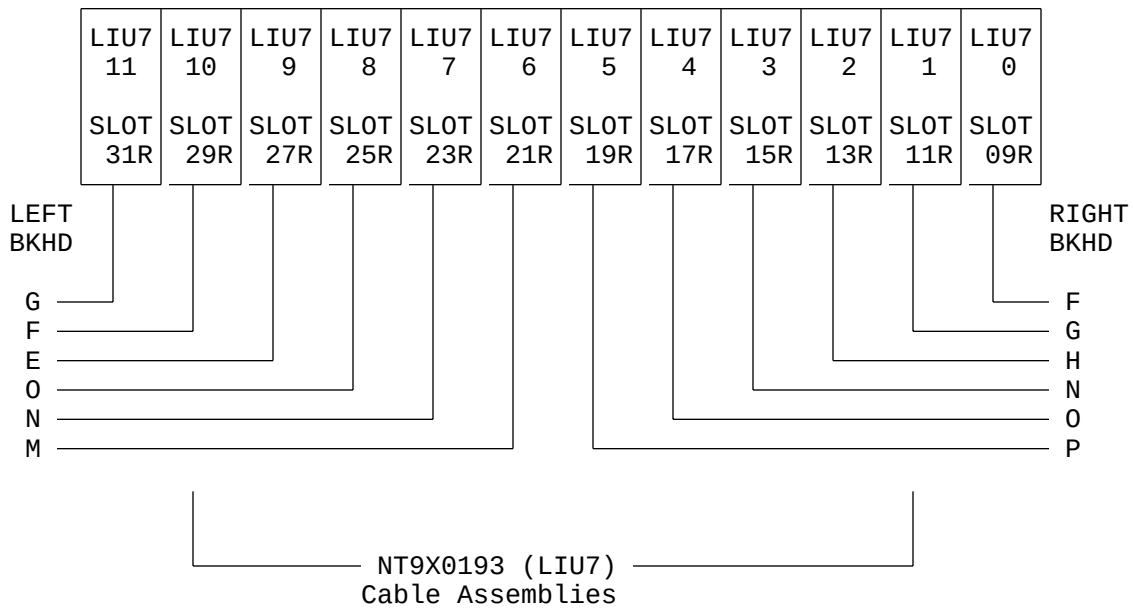
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

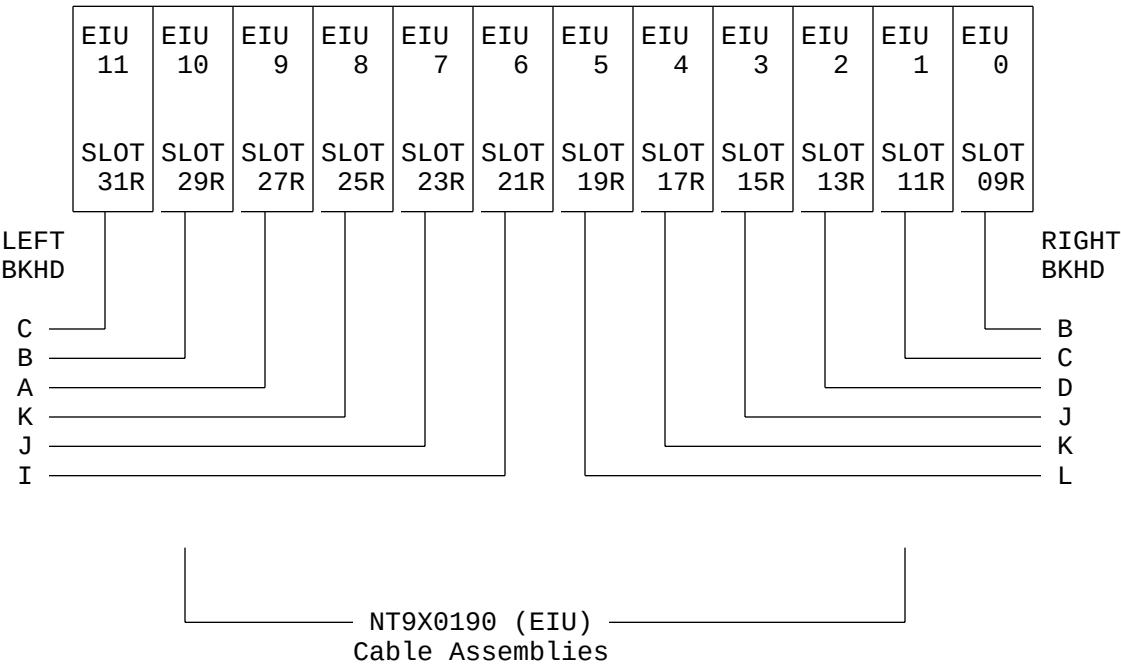
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	0	2	4		6	8		11				
ASU Assignment Sequence for LIS:01	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	12	14	16		18	20		23				
ASU Assignment Sequence for LIS:02	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	24	26	28		30	32		35				
ASU Assignment Sequence for LIS:03	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

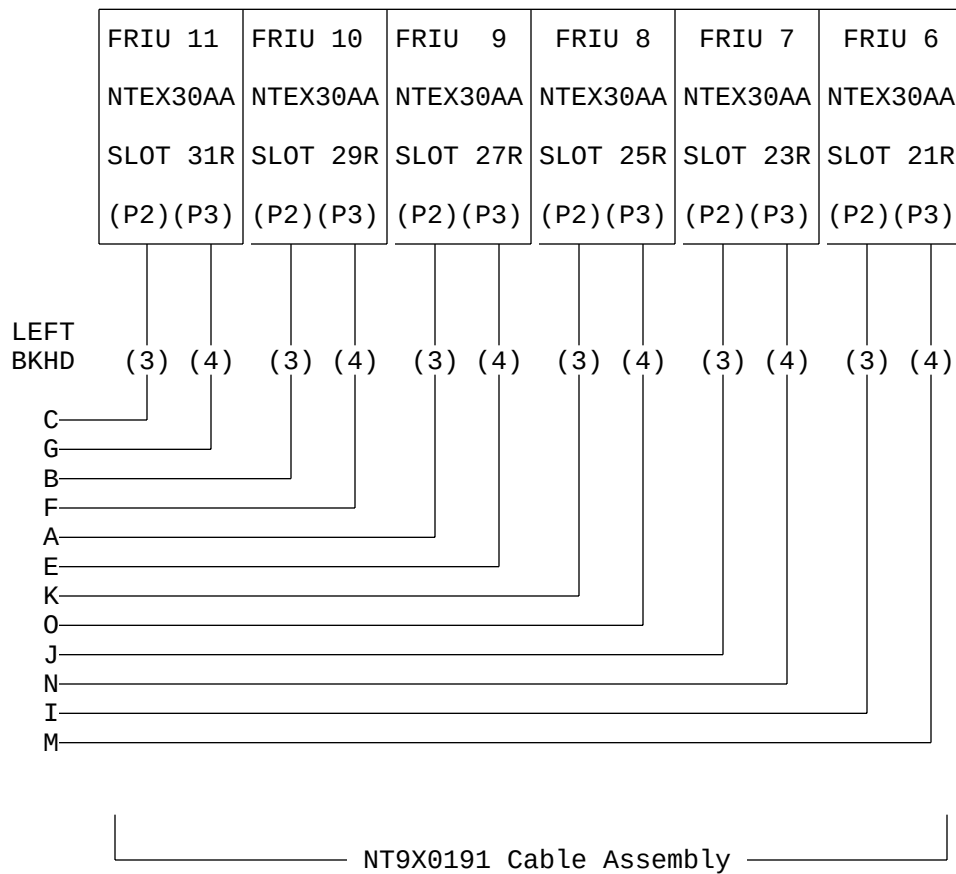
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

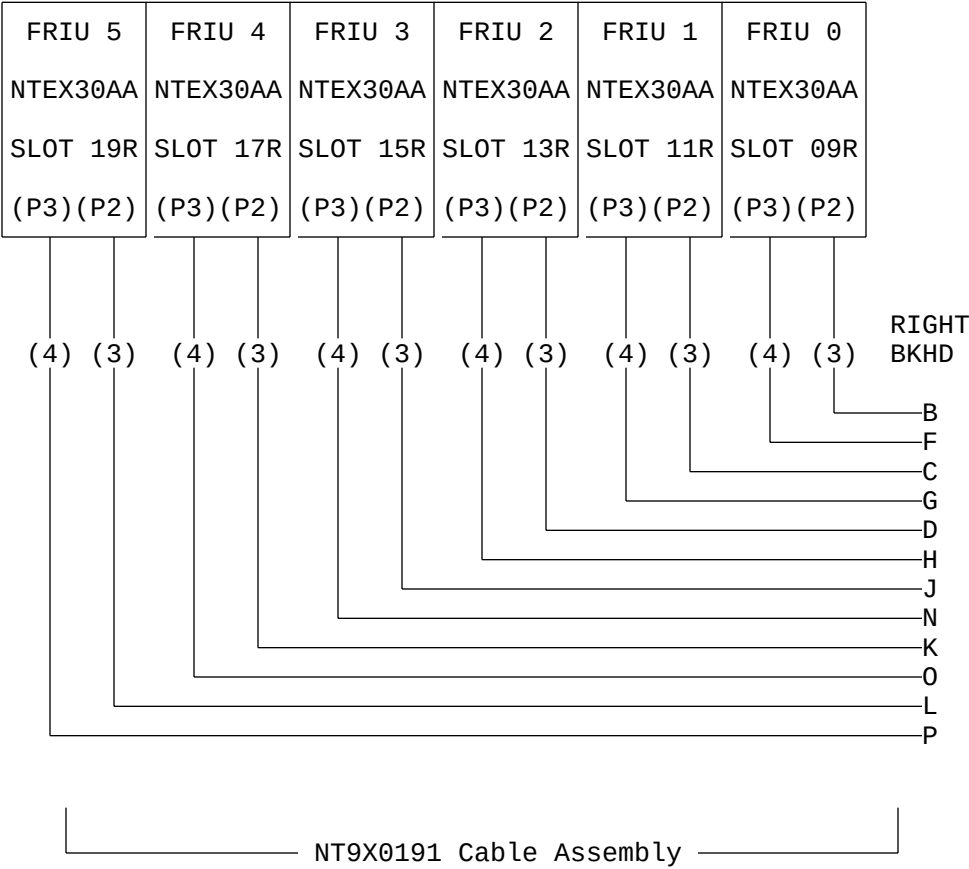




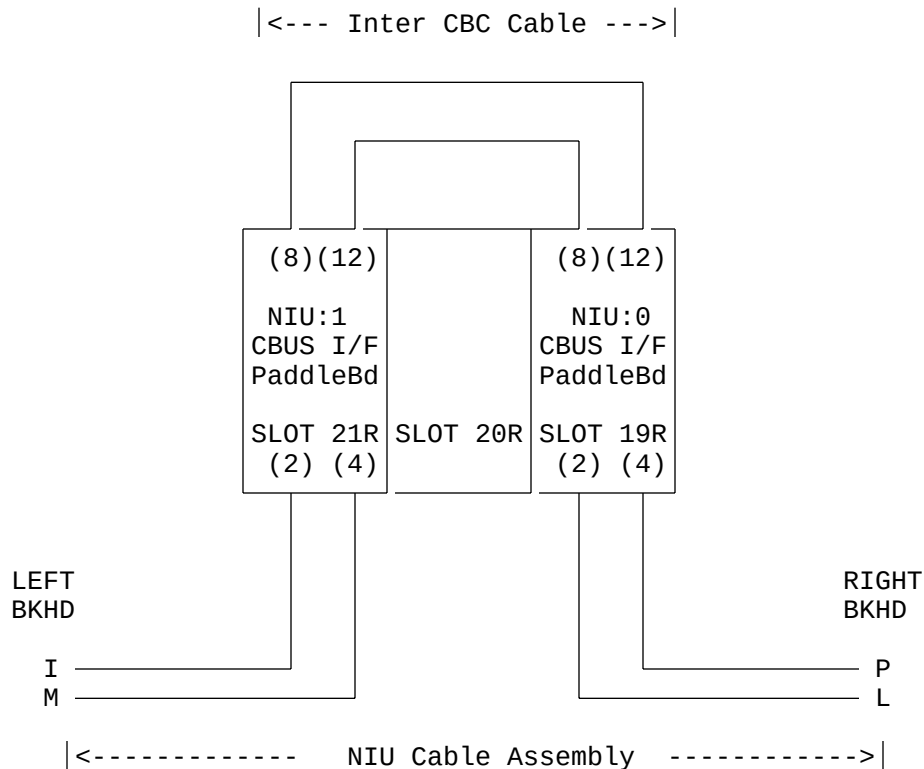
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU

insertion differs from the general rule given in Note 3, above.

LIS's used for ADAS cannot be shared with other applications.

ADAS LIS(s) cannot share the same LPP with other applications with the exception of CCSS7 Signalling applications using the LIU7 ASU.

First ADAS LPP with Single ADAS LIS

ASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	A	N
	P	P	P	P	P	I
	U	U	U	U	U	U
				*	:	:
				**	0	1
				**	**	**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8
						0
						2
						4
						6
						8
						0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :03	ORDER	LIS:01	ASU :02	NO :03
**		10	22				34
**		04	16				28
1		01	13	1	00	12	24
2		08	20	2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		03	15	4	09	21	33

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

First ADAS LPP with Two ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
or	12	14	16	18	20	23
LIS:02	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						E I U *
						**
						**
LIS:02	12	14	16	18	20	23
or	24	26	28	30	32	35
LIS:03	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						A P U *
						**
						**
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8
	2 0	2 2	2 4	2 6	2 8	3 0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		10	22				
**			23 35				
1		01	13	1	00		12
2			20 32	2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		08	20	4		12	24
4			13 25	5	02		14
				6		21	33
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		03	15	7	09		21
6			22 34	8		14	26
				9	04		16
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7			15 27	10		16	28

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU NO :02 :03		ORDER	LIS:01	ASU NO :02 :03	
**		10					
**		23					
1		01		1	00		
2		20		2	19		
				3		24	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3			25	4	07		
4	08			5	12		
				6		31	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		13		7	02		
6		32		8	21		
				9		26	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7	03			10	09		
8		15		11		33	
				12		28	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
9		22		13	04		
10		27		14	14		
				15		35	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
11		34		16	16		

** = Always Provisioned

1 + N ADAS LPP with Single ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	V	N
	P	P	P	P	P	I
	U	U	U	U	U	U
			*			:
			**			0
						**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	ASU LIS:01	NO :02	:03	ORDER	ASU LIS:01	NO :02	:03
**	10	22	34				
**	03	15	27				
				1	00	12	24
				2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1	08	20	32	4	04	16	28
2	01	13	25	5	09	21	33
				6	11	23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

1 + N ADAS LPP with Two ADAS LIS

ASU Numbering

Sequence

LIS:01

or

LIS:02

00	02	04	06	08	11
12	14	16	18	20	23
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **
					N I U : 1 **

ASU assignment

Sequence for:

LIS:02

and for:

LIS:03

12	14	16	18	20	23
24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **
					N I U : 1 **
0	1	1	1	1	1
8	0	2	4	6	8

(CP POS)

* = VPP APUS

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		03	15				
**		10	22				
				1		12	24
				2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1		13	25	4	00		12
2		20	32	5	09		21
				6		14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		01	13	7		21	33
4		08	20	8		16	28
				9	02		14
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		22	34	10	11		23
6		15	27	11	04		16
				12		23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

1 + N ADAS LPP with Three ADAS LIS

ASU Numbering

Sequence

LIS:01

00	02	04	06	08	11
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **

LIS:02

12	14	16	18	20	23
V P U	A P U	V P U	A P U	V P U	N I U : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

LIS:03

24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU		VPU	
ORDER	ASU NO LIS:01 :02 :03	ORDER	ASU NO LIS:01 :02 :03
**	03		
**	10		
		1	00
		2	07
		3	02
- - -	- - -	- - -	- - -
1	13	4	31
2	20	5	24
		6	14
- - -	- - -	- - -	- - -
5	32	7	19
6	25	8	12
		9	33
- - -	- - -	- - -	- - -
7	02	10	21
8	27	11	09
		12	16
- - -	- - -	- - -	- - -
9	34	13	04
10	22	14	26
		15	11
- - -	- - -	- - -	- - -
11	15	16	35
12	08	17	23
		18	16

** = Always Provisioned

- 6) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet. pa

RULES:

- AP 1) When PEC NTZZ44CM 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 (EMA-07-001) for additional mechanical hardware requirements for the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Reserved for future use.
- RUL2 1) Provide one NTZZ30BA for each DS0A SS7 link requiring enhanced maintenance. For all new applications order NTZZ30VA.
- 2) For US applications requiring E-DS0A SS7 Link provide (1) NTZZ30UA. For Canada, Asia/Pacific, Europe, CALA applications requiring E-DS0A SS7 Link provide one (1) NTZZ30VA. The NTZZ30CA is A&M status.
- 3) The NTZZ30UA is functional beyond BCS33 on a 56Kb/s basis. NOT on 64 Kb/s basis. On the other hand NTZZ30VA is functional on both 56 and 64 Kb/s basis. For example if the office requires 56 Kb/s then NTZZ30UA or NTZZ30VA can be used. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.
- RUL3 1) Provide one (1) NTZZ30WA for each V.35 SS7 link. The NTZZ30DA is in A&M status.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.
- 2) For BCS 34 and above provide one NTZZ30EC for each Ethernet interface required.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA, and replace with NTZZ30LA for all applications.

- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.

RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.

RUL7 1) Provide one for all British Offices.

RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below. The NIU labels are provided when the NIU is assigned in slot 18F of a shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

RUL9 1) Reserved for Future Use.

RUL10 1) Provide one (1) NT9X9532, Stand-Alone Power Cabling Kit, and one (1) P0736059, Filter Capacitor Designation Label Sheet, when the LIM cabinet is powered from a 7ft. PDC (Non-Streamline). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.

- 2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0736058 Terminal Block Designation Sheet when powering the LIM from a Cabinetized PDC (Streamline Applications). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL11 1) Reserved for future use.

RUL12 1) Reserved for Future Use.

- RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.
- RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.
- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) Deleted.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:
- NT9X95BA - Mechanical Hardware for S/DMS Cabinet
- RUL19 1) Reserved for future Use.
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:
- 32 - (#FRIUs on LIS shelf * 2
+ #NIUs on LIS shelf * 4
+ #LIUs on LIS shelf
+ #EIUs on LIS shelf)
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.
- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU)

must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.

4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.

RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.

RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.

2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.

RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

36 LINK LPP -48V, NON-CABINETIZED, BCS33 & BELOW

PEC CODE: NTZZ44KM

CPC CODE: B0238737

| RATING: MD

REPLACES:

REPLACED BY: NTZZ44KN

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -48 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel within a gray exterior cabinet. The NTZZ44KM has the capability of housing up to 36 Interface units, such as DS0A, Enhanced DS0A, V.35, and EIU. This BB NTZZ44KM can be deployed into Canada, US and International Markets, in non-cabinetized application.

REFERENCE DOCUMENTATION: SLZZ44KM 00 01
NTZZ44KM REL 01

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: Jerry Palmer Dept. 3471 (PPK)

NTZZ44KM EMC2-16-LPP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 04	ECM 620 12	Introduce NTZZ44KM.
93 09 17	ECM 620 13	This BB can be used in US, Canada and International Markets in Non-Cabinetized application.
93 10 04	ECM 682 01	Includes ADAS ASU Provisioning Rules
94 03 10	ECM 620 15	Change NT9X95AA to NT9X95BA
94 04 04	ECM 620 16	Correct door provisioning. Retire section.

The 36 Link LPP -48V, Non-Cabinetized, BCS33 & BELOW is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-48V)	NT9X03AA	FSP	1	52		AP
Frame Fail Light	NT0X24BT		1			AP
Rear Frame Fail Light	P0674502		1			AP
Door Right Front	NT9X9537		2			AP
Door Left Front	NT9X9541		2			AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
LMS DS-30 Cable Assembly	NT9X0145		4	39		AP
Filtered DS-30 Bulkhead(LT)	NT9X6509		1	39		AP
Filtered DS-30 Bulkhead(RT)	NT9X6536		1	39		AP
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CA		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F,	AP
					29F, 30F	
Filler Face Plate	NT9X19AA		8	39	11F-14F,	AP
					25F-28F	
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
Memory 6 Meg	NT9X14BB		2	39	16F, 23F	AP
Desig. Label(NT9X19AA)	P0709515		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R,	AP
					11R-16R,	
					18R-21R,	
					23R-28R,	
					32R	
DS-30 4 Port	NT9X23BA		4	39	9R, 10R,	AP
					29R, 30R	
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
LMS Desig. Strip Front	P0689616		1	39		AP
LMS Desig. Strip Rear	P0689618		1	39		AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	AP
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	AP

NTZZ44KM

Retired Equipment

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36 Link LPP -48V, Non-Cabinetized, BCS33 3 BELOW

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label(NT9X13DB)	P0696239		2	39	17F, 22F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
LIS Shelf Desg. Front	P0715483		3	00,13, 26		AP
LIS Shelf Desg. Rear	P0709179		3	00,13, 26		AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23

NTZZ44KM

Retired Equipment

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36 Link LPP -48V, Non-Cabinetized, BCS33 5 BELOW

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		2	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit (-48V) Filter	NT9X95CU A0377837	CU	1	BOT		AP AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIUs, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S LIU/EIU/FRIU													
ASU Numbering Sequence	0		2		4		6		8		11			
ASU Assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4		
ASU Numbering Sequence	12		14		16		18		20		23			
ASU Assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2		
ASU Numbering Sequence	24		26		28		30		32		35			
ASU Assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6		
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3		
	8	0	2	4	6	8	0	2	4	6	8	0		

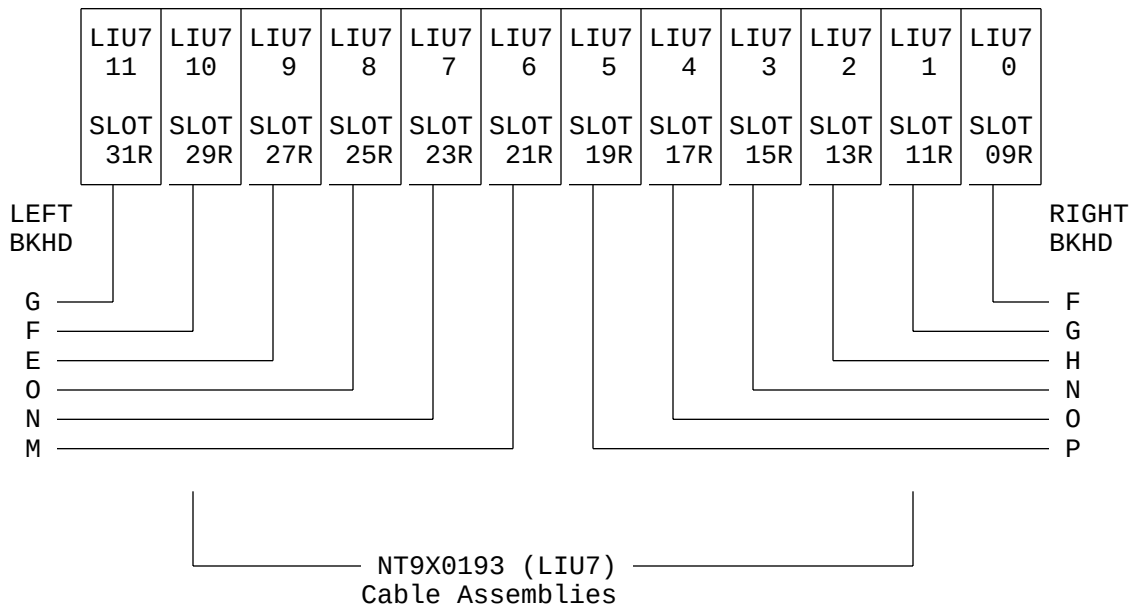
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

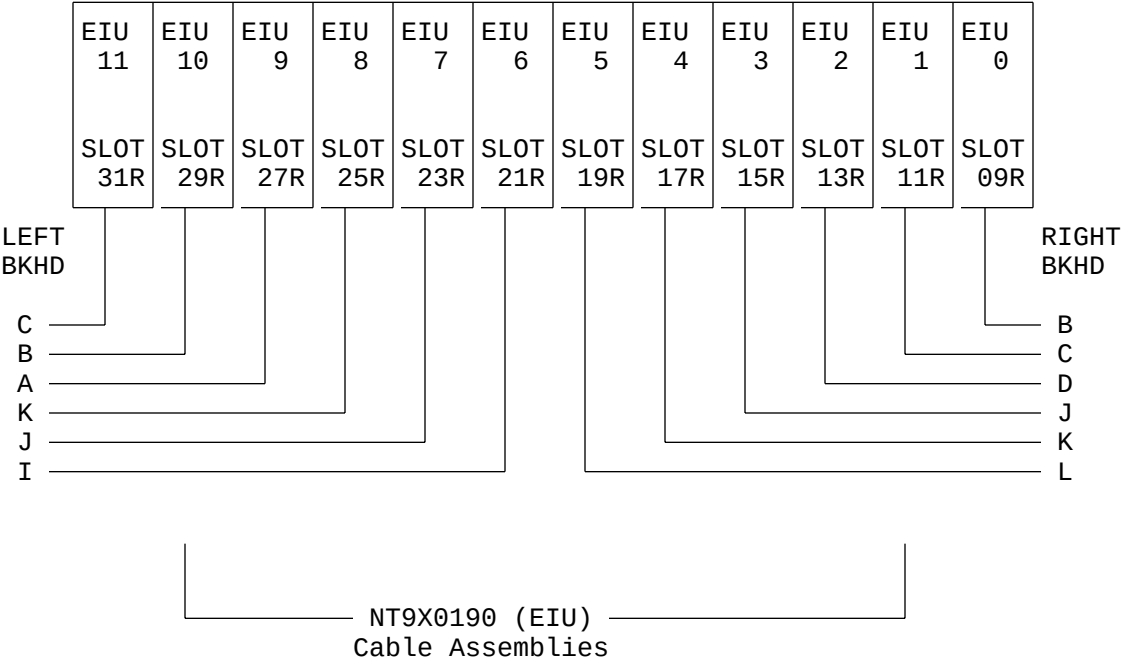
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	0		2		4		6		8		11	
ASU Assignment Sequence for LIS:01	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	12		14		16		18		20		23	
ASU Assignment Sequence for LIS:02	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	24		26		28		30		32		35	
ASU Assignment Sequence for LIS:03	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

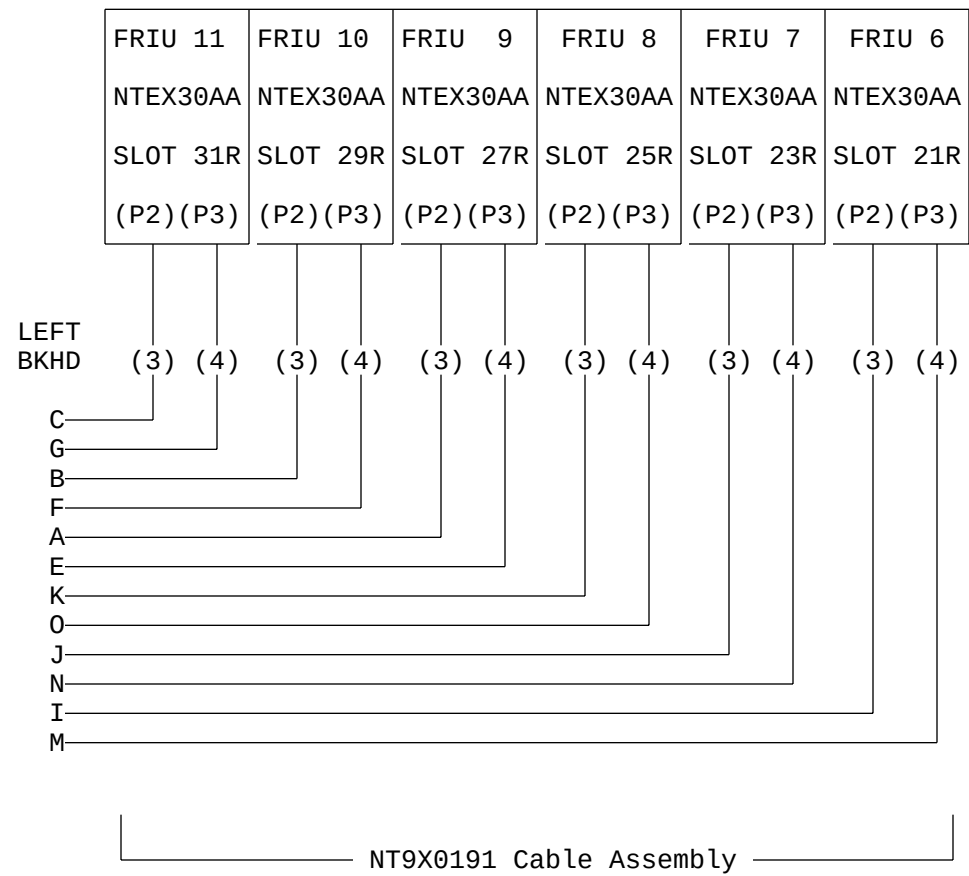
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

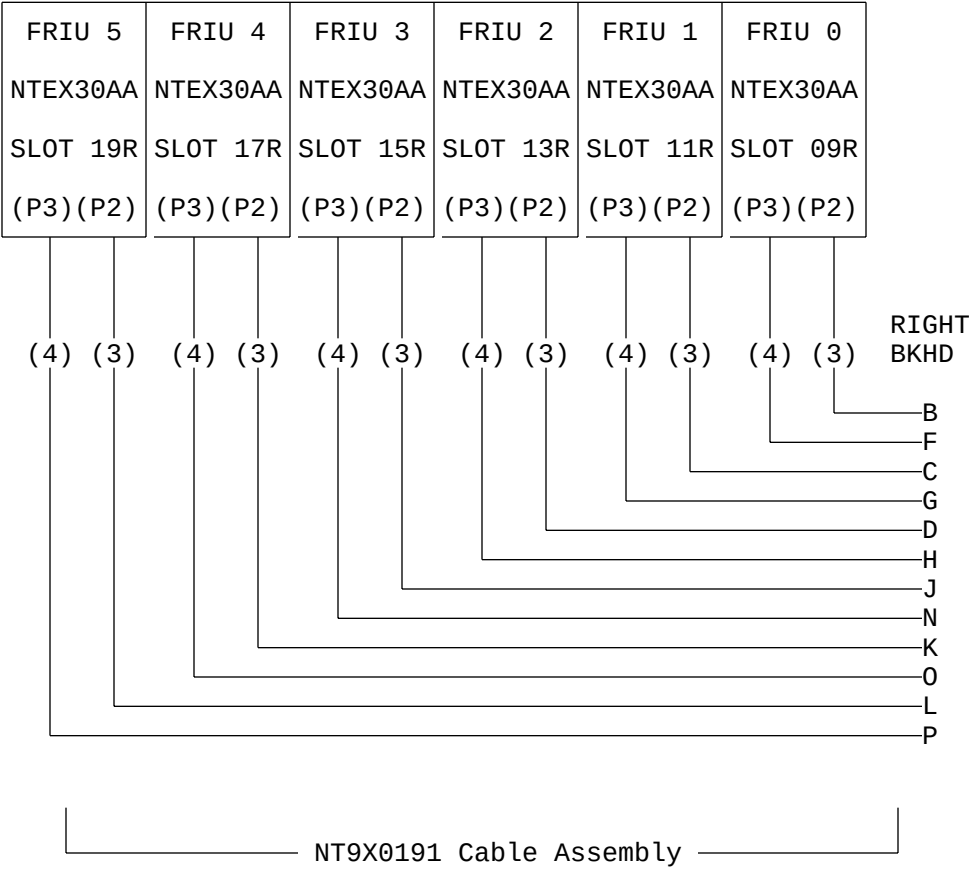




Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



insertion differs from the general rule given in Note 3, above.

LIS's used for ADAS cannot be shared with other applications.

ADAS LIS(s) cannot share the same LPP with other applications with the exception of CCSS7 Signalling applications using the LIU7 ASU.

First ADAS LPP with Single ADAS LIS

ASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	A	N
	P	P	P	P	P	I
	U	U	U	U	U	U
				*	:	:
				**	0	1
				**	**	**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8
						0
						2
						4
						6
						8
						0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :03	ORDER	LIS:01	ASU :02	NO :03
**		10	22				
**		04	16				
1		01	13	1	00	12	24
2		08	20	2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		03	15	4	09	21	33

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

First ADAS LPP with Two ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
or	12	14	16	18	20	23
LIS:02	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						E I U *
						**
						**
LIS:02	12	14	16	18	20	23
or	24	26	28	30	32	35
LIS:03	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						A P U *
						**
						**
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8
	2 0	2 2	2 4	2 6	2 8	3 0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		10	22				
**			23 35				
1		01	13	1	00		12
2			20 32	2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		08	20	4		12	24
4			13 25	5	02		14
				6		21	33
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		03	15	7	09		21
6			22 34	8		14	26
				9	04		16
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7			15 27	10		16	28

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU			VPU		
ORDER	ASU NO LIS:01 :02 :03		ORDER	ASU NO LIS:01 :02 :03	
**	10				
**		23			
1	01		1	00	
2		20	2	19	
			3		24
- - -	- - - - -	- - -	- - -	- - - - -	- - -
3		25	4	07	
4	08		5		12
			6		31
- - -	- - - - -	- - -	- - -	- - - - -	- - -
5		13	7	02	
6		32	8		21
			9		26
- - -	- - - - -	- - -	- - -	- - - - -	- - -
7	03		10	09	
8		15	11		33
			12		28
- - -	- - - - -	- - -	- - -	- - - - -	- - -
9		22	13	04	
10		27	14		14
			15		35
- - -	- - - - -	- - -	- - -	- - - - -	- - -
11		34	16		16

** = Always Provisioned

1 + N ADAS LPP with Single ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	V	N
	P	P	P	P	P	I
	U	U	U	U	U	U
			*			:
			**			0
						**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	ASU LIS:01	ASU NO :02	ASU NO :03	ORDER	ASU LIS:01	ASU NO :02	ASU NO :03
**	10	22	34				
**	03	15	27				
				1	00	12	24
				2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1	08	20	32	4	04	16	28
2	01	13	25	5	09	21	33
				6	11	23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

1 + N ADAS LPP with Two ADAS LIS

ASU Numbering

Sequence

LIS:01

or

LIS:02

00	02	04	06	08	11
12	14	16	18	20	23
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **
					N I U : 1 **

ASU assignment

Sequence for:

LIS:02

and for:

LIS:03

12	14	16	18	20	23
24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **
					N I U : 1 **
0	1	1	1	1	1
8	0	2	4	6	8

(CP POS)

* = VPP APUS

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		03	15				
**		10	22				
				1		12	24
				2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1		13	25	4	00		12
2		20	32	5	09		21
				6		14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		01	13	7		21	33
4		08	20	8		16	28
				9	02		14
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		22	34	10	11		23
6		15	27	11	04		16
				12		23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

1 + N ADAS LPP with Three ADAS LIS

ASU Numbering

Sequence

LIS:01

00	02	04	06	08	11
V P U	A P U	V P U	A P U *	V P U	N I U : : 0 **

LIS:02

12	14	16	18	20	23
V P U	A P U	V P U	A P U	V P U	N I U : : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

LIS:03

24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU		VPU	
ORDER	ASU NO LIS:01 :02 :03	ORDER	ASU NO LIS:01 :02 :03
**	03		
**	10		
		1	00
		2	07
		3	02
- - -	- - - - -	- - -	- - - - -
1	13	4	31
2	20	5	24
		6	14
- - -	- - - - -	- - -	- - - - -
5	32	7	19
6	25	8	12
		9	33
- - -	- - - - -	- - -	- - - - -
7	02	10	21
8	27	11	09
		12	16
- - -	- - - - -	- - -	- - - - -
9	34	13	04
10	22	14	26
		15	11
- - -	- - - - -	- - -	- - - - -
11	15	16	35
12	08	17	23
		18	16

** = Always Provisioned

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

RULES:

- AP 1) When PEC NTZZ44KM 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 the C42 (S/DMS) Cabinet.

- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.

RUL1 1) Reserved for future use.

RUL2 1) Provide one NTZZ30BA for each DS0A SS7 link requiring enhanced maintenance. For all new applications order NTZZ30VA.

- 2) For US applications requiring E-DS0A SS7 Link provide (1) NTZZ30UA. For Canada, Asia/Pacific, Europe, CALA applications requiring E-DS0A SS7 Link provide one (1) NTZZ30VA. The NTZZ30CA is A&M status.

- 3) The NTZZ30UA is functional beyond BCS33 on a 56Kb/s basis. NOT on 64 Kb/s basis. On the other hand NTZZ30VA is functional on both 56 and 64 Kb/s basis. For example if the office requires 56 Kb/s then NTZZ30UA or NTZZ30VA can be used. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.

RUL3 1) Provide one (1) NTZZ30WA for each V.35 SS7 link. The NTZZ30DA is in A&M status.

RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.

- 2) For BCS 34 and above provide one NTZZ30EC for each Ethernet interface required.

RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications.

- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.

- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.

RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.

RUL7 1) Provide one for all British Offices.

RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below. The NIU labels are provided when the NIU is assigned in slot 18F of a shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

RUL9 1) Deleted.

RUL10 1) Provide one (1) NT9X9532, Stand-Alone Power Cabling Kit, and one (1) P0736059, Filter Capacitor Designation Label Sheet, when the LIM cabinet is powered from a 7ft. PDC (Non-Streamline). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.

2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0736058 Terminal Block Designation Sheet when powering the LIM from a Cabinetized PDC (Streamline Applications). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL11 1) Reserved for future use.

RUL12 1) Reserved for Future Use.

RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.

2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.

RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.

- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) Deleted.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:
- NT9X95BA - Mechanical Hardware for S/DMS Cabinet
- RUL19 1) Reserved for future Use.
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:
- 32 - (#FRIUS on LIS shelf * 2
+ #NIUS on LIS shelf * 4
+ #LIUS on LIS shelf
+ #EIUS on LIS shelf)
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUS).
- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.
- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.
- 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.
- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUS, X.25/X.75 Link Interface Unit.

- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.
- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.
- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

*

36 LINK LPP -48V GRAY, BCS33 & BELOW

PEC CODE: NTZZ44FM

CPC CODE: B0238735

| RATING: MD

REPLACES:

REPLACED BY: NTZZ44CB

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -48 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel within a gray exterior cabinet. The NTZZ44FM has the capability of housing up to 36 Interface units, such as DS0A, Enhanced DS0A, V.35, and EIU. This BB can be deployed in US and International markets in a Cabinetized(Streamline) DMS lineups.

REFERENCE DOCUMENTATION: SLZZ44FM 00 01
NTZZ44FM REL 01

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: Jerry Palmer Dept. 3471 (PPK)

NTZZ44FM EMC2-16-LPP-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 04	ECM 620 12	Introduce NTZZ44FM
93 09 17	ECM 620 13	This BB can be used in US and International markets in Cabinetized (Streamline) DMS application.
93 10 04	ECM 682 01	Include ADAS ASU Configuration
94 03 10	ECM 620 15	Change NT9X95AA to NT9X95BA
94 04 04	ECM 620 16	Correct door provisioning. Retire section.

The 36 Link LPP -48V Gray, BCS33 & BELOW is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-48V)	NT9X03AA	FSP	1	52		AP
Frame Fail Light	NT0X24CN		1			AP
Rear Frame Fail Light	P0699441		1			AP
Door Right Front	NT9X9502		2			AP
Door Left Front	NT9X9503		2			AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
LMS DS-30 Cable Assembly	NT9X0100		4	39		AP
LMS DS-30 Cable Assembly	NT9X0107		2	39		AP
NonFiltered DS-30 Blkhd(LT)	NT9X6569		1	39		AP
NonFiltered DS-30 Blkhd(RT)	NT9X6570		1	39		AP
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CA		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
Memory 6 Meg	NT9X14BB		2	39	16F, 23F	AP
Desig. Label(NT9X19AA)	P0709515		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
LMS Desig. Strip Front	P0689616		1	39		AP
LMS Desig. Strip Rear	P0689618		1	39		AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	AP
Desig. Label(NT9X13DB)	P0696239		2	39	17F, 22F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
LIS Shelf Desg. Front	P0715483		3	00,13, 26		AP
LIS Shelf Desg. Rear	P0709179		3	00,13, 26		AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23

Retired Equipment
36 Link LPP -48V Gray, BCS33 5 BELOW

NTZZ44FM
EMC2-16-LPP-3
Page 5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		2	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit (-48V) Filter	NT9X95CU A0377837	CU	1	BOT		AP AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIUs, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S LIU/EIU/FRIU												
ASU Numbering Sequence	0		2		4		6		8		11		
ASU Assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4	
ASU Numbering Sequence	12		14		16		18		20		23		
ASU Assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2	
ASU Numbering Sequence	24		26		28		30		32		35		
ASU Assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6	
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

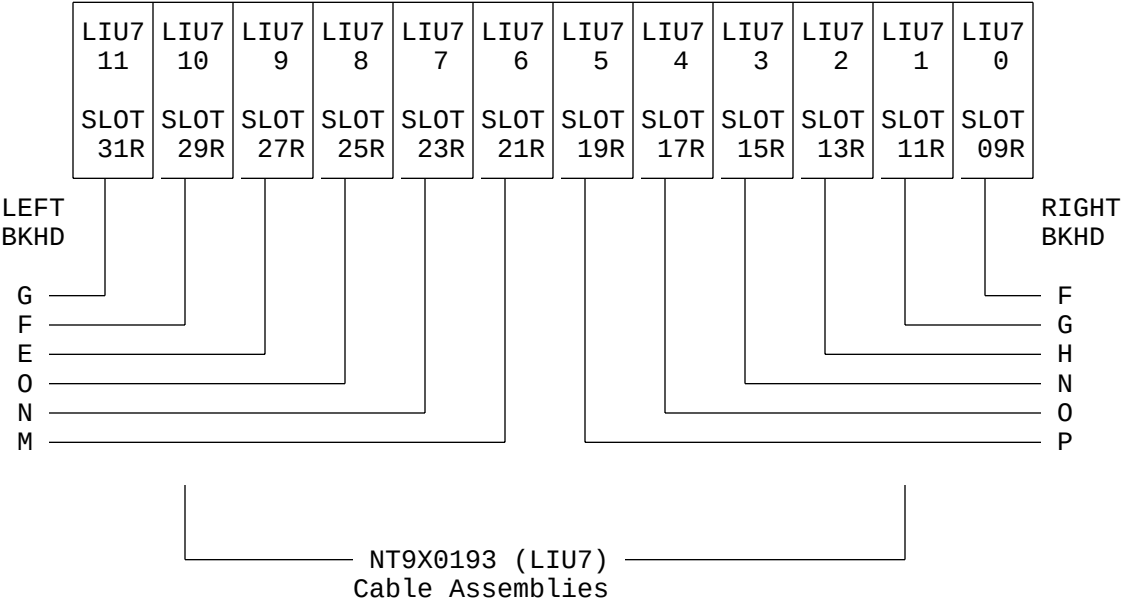
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

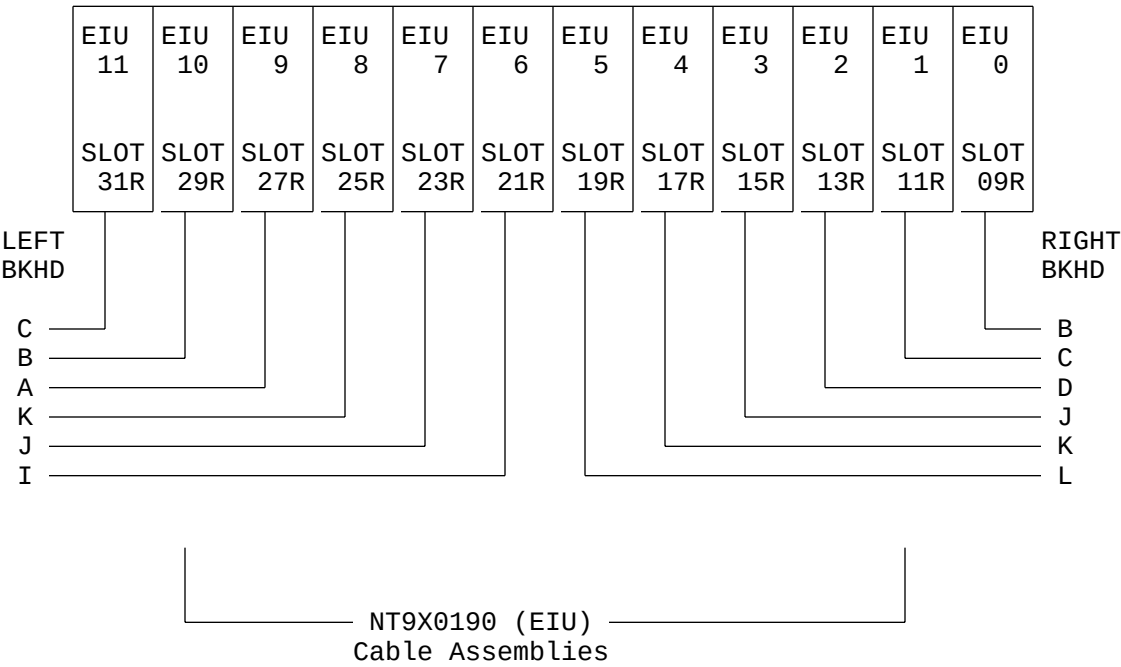
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	0	2	4		6	8		11				
ASU Assignment Sequence for LIS:01	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	12	14	16		18	20		23				
ASU Assignment Sequence for LIS:02	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	24	26	28		30	32		35				
ASU Assignment Sequence for LIS:03	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

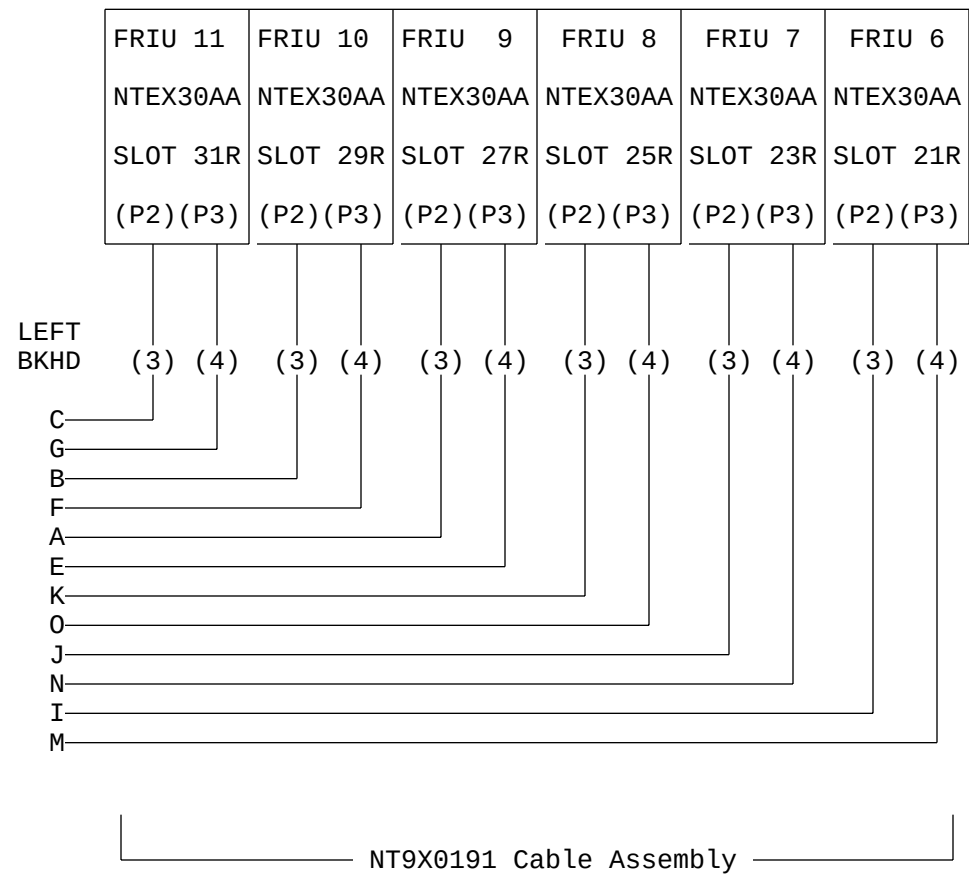
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

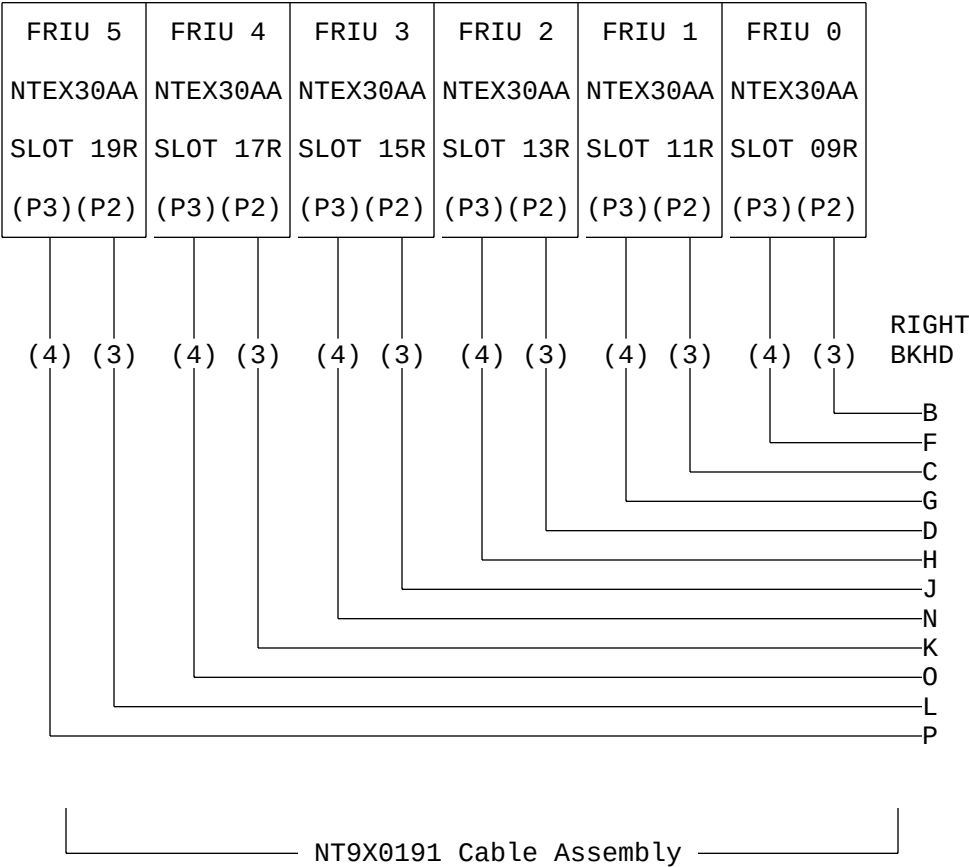




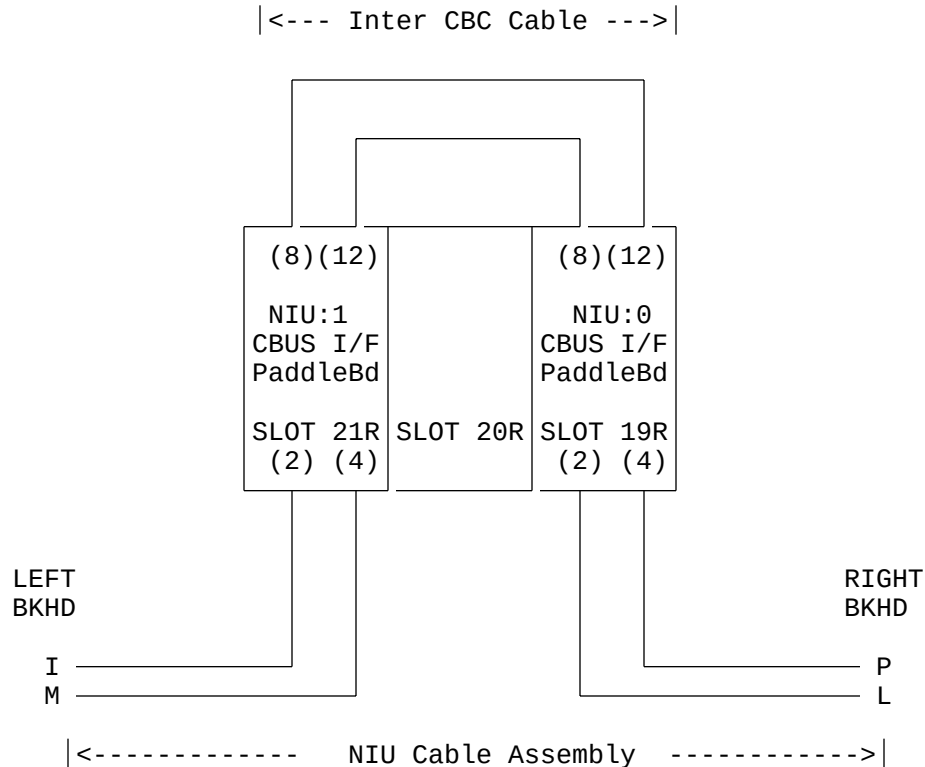
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per. LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU insertion differs from the general rule given in Note 3, above.

First ADAS LPP with Two ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
or	12	14	16	18	20	23
LIS:02	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						E I U *
						**
						**
LIS:02	12	14	16	18	20	23
or	24	26	28	30	32	35
LIS:03	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						A P U *
						**
						**
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8
	2 0	2 2	2 4	2 6	2 8	3 0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		10	22				
**			23 35				
1		01	13	1	00		12
2			20 32	2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		08	20	4		12	24
4			13 25	5	02		14
				6		21	33
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		03	15	7	09		21
6			22 34	8		14	26
				9	04		16
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7			15 27	10		16	28

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU NO :02 :03		ORDER	LIS:01	ASU NO :02 :03	
**		10					
**		23					
1		01		1	00		
2		20		2	19		
				3		24	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3			25	4	07		
4	08			5	12		
				6		31	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		13		7	02		
6		32		8	21		
				9		26	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7	03			10	09		
8		15		11		33	
				12		28	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
9		22		13	04		
10		27		14	14		
				15		35	
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
11		34		16	16		

** = Always Provisioned

1 + N ADAS LPP with Single ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	V	N
	P	P	P	P	P	I
	U	U	U	U	U	U
			*			:
			**			0
						**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	ASU NO			ORDER	ASU NO		
	LIS:01	:02	:03		LIS:01	:02	:03
**	10	22	34				
**	03	15	27				
				1	00	12	24
				2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1	08	20	32	4	04	16	28
2	01	13	25	5	09	21	33
				6	11	23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

1 + N ADAS LPP with Two ADAS LIS

ASU Numbering

Sequence

LIS:01

or

LIS:02

00	02	04	06	08	11
12	14	16	18	20	23
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **
					N I U : 1 **

ASU assignment

Sequence for:

LIS:02

and for:

LIS:03

12	14	16	18	20	23
24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **
					N I U : 1 **
(CP POS)	0	1	1	1	1
	8	0	2	4	6
					8
	2	2	2	2	2
	0	2	4	6	8
					0

* = VPP APUS

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		03	15				
**		10	22				
				1		12	24
				2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1		13	25	4	00		12
2		20	32	5	09		21
				6		14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		01	13	7		21	33
4		08	20	8		16	28
				9	02		14
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		22	34	10	11		23
6		15	27	11	04		16
				12		23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

1 + N ADAS LPP with Three ADAS LIS

ASU Numbering

Sequence

LIS:01

00	02	04	06	08	11
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **

LIS:02

12	14	16	18	20	23
V P U	A P U	V P U	A P U	V P U	N I U : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

LIS:03

24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU		VPU	
ORDER	ASU NO LIS:01 :02 :03	ORDER	ASU NO LIS:01 :02 :03
**	03		
**	10		
		1	00
		2	07
		3	02
- - -	- - -	- - -	- - -
1	13	4	31
2	20	5	24
		6	14
- - -	- - -	- - -	- - -
5	32	7	19
6	25	8	12
		9	33
- - -	- - -	- - -	- - -
7	02	10	21
8	27	11	09
		12	16
- - -	- - -	- - -	- - -
9	34	13	04
10	22	14	26
		15	11
- - -	- - -	- - -	- - -
11	15	16	35
12	08	17	23
		18	16

** = Always Provisioned

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

RULES:

- AP 1) When PEC NTZZ44FM 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 the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Reserved for future use.
- RUL2 1) Provide one NTZZ30BA for each DS0A SS7 link requiring enhanced maintenance. For all new applications order NTZZ30VA.
- 2) For US applications requiring E-DS0A SS7 Link provide (1) NTZZ30UA. For Canada, Asia/Pacific, Europe, CALA applications requiring E-DS0A SS7 Link provide one (1) NTZZ30VA. The NTZZ30CA is A&M status.
- 3) The NTZZ30UA is functional beyond BCS33 on a 56Kb/s basis. NOT on 64 Kb/s basis. On the other hand NTZZ30VA is functional on both 56 and 64 Kb/s basis. For example if the office requires 56 Kb/s then NTZZ30UA or NTZZ30VA can be used. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.
- RUL3 1) Provide one (1) NTZZ30WA for each V.35 SS7 link. The NTZZ30DA is in A&M status.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.
- 2) For BCS 34 and above provide one NTZZ30EC for each Ethernet interface required.

- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications.
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.
- RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.
- RUL7 1) Provide one for all British Offices.
- RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below. The NIU labels are provided when the NIU is assigned in slot 18F of a shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

- RUL9 1) Deleted.
- RUL10 1) Provide one (1) NT9X9532, Stand-Alone Power Cabling Kit, and one (1) P0736059, Filter Capacitor Designation Label Sheet, when the LIM cabinet is powered from a 7ft. PDC (Non-Streamline). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.
- 2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0736058 Terminal Block Designation Sheet when powering the LIM from a Cabinetized PDC (Streamline Applications). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

- RUL11 1) Reserved for future use.
- RUL12 1) Reserved for Future Use.
- RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.
- RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.
- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) Deleted.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:
- NT9X95BA - Mechanical Hardware for S/DMS Cabinet
- RUL19 1) Reserved for future use.
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:
- 32 - (#FRIUS on LIS shelf * 2
+ #NIUS on LIS shelf * 4
+ #LIUS on LIS shelf
+ #EIUS on LIS shelf)
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.

- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.
 - 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.
- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.
- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.
- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.
- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

36 LINK LPP -60V GRAY, BCS33 & BELOW

PEC CODE: NTZZ44GM

CPC CODE: B0238736

| RATING: MD

REPLACES:

REPLACED BY: NTZZ44GB

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -60 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel within a gray exterior cabinet. The NTZZ44GM has the capability of housing up to 36 Interface units, such as DS0A, Enhanced DS0A, V.35, and EIU. This BB can be deployed only in International Markets, in Cabinetized(Streamline) DMS lineups.

REFERENCE DOCUMENTATION: SLZZ44GM 00 01
NTZZ44GM REL 01

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: Jerry Palmer Dept. 3471 (PPK)

NTZZ44GM EMC2-16-LPP-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 04	ECM 620 12	Introduce NTZZ44GM.
93 09 17	ECM 620 13	This BB is to be used only in Inter-national Markets in Non-Cabinetized application.
93 10 04	ECM 682 01	Include ADAS ASU provisioning rules
94 03 10	ECM 620 15	Change NT9X95AA to NT9X95BA
94 04 04	ECM 620 16	Correct door provisioning. Retire section.

The 36 Link LPP -60V Gray, BCS33 & BELOW is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-60V)	NT9X03BA	FSP	1	52		AP
Frame Fail Light	NT0X24CN		1			AP
Rear Frame Fail Light	P0699441		1			AP
Door Right Front	NT9X9502		2			AP
Door Left Front	NT9X9503		2			AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
LMS DS-30 Cable Assembly	NT9X0100		4	39		AP
LMS DS-30 Cable Assembly	NT9X0107		2	39		AP
NonFiltered DS-30 Blkhd(LT)	NT9X6569		1	39		AP
NonFiltered DS-30 Blkhd(RT)	NT9X6570		1	39		AP
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AB		2	39	4F, 36F	AP
Desig. Label(NT9X30AB)	P0738496		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CA		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
Memory 6 Meg	NT9X14BB		2	39	16F, 23F	AP
Desig. Label(NT9X19AA)	P0709515		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
LMS Desig. Strip Front	P0689616		1	39		AP
LMS Desig. Strip Rear	P0689618		1	39		AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	AP
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	AP
Desig. Label(NT9X13DB)	P0696239		2	39	17F, 22F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AB		6	00,13, 26	4F,36F	AP
Desig. Label(NT9X30AB)	P0738496		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
LIS Shelf Desg. Front	P0715483		3	00,13, 26		AP
LIS Shelf Desg. Rear	P0709179		3	00,13, 26		AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
Desig.Label(NT9X74DA)	P0733871		2	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5

Retired Equipment
36 Link LPP -60V Gray, BCS33 5 BELOW

NTZZ44GM
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		2	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit (-60V) Filter	NT9X95GU A0377837	CU	1	BOT		AP AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIUs, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S LIU/EIU/FRIU													
ASU Numbering Sequence	0		2		4		6		8		11			
ASU Assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4		
ASU Numbering Sequence	12		14		16		18		20		23			
ASU Assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2		
ASU Numbering Sequence	24		26		28		30		32		35			
ASU Assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6		
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3		
	8	0	2	4	6	8	0	2	4	6	8	0		

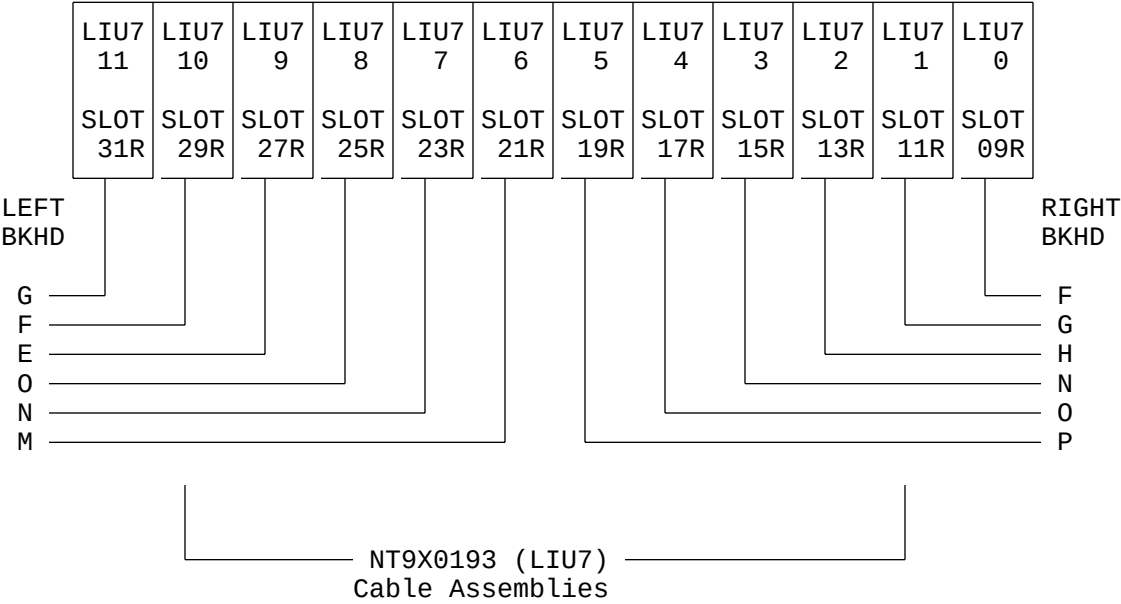
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

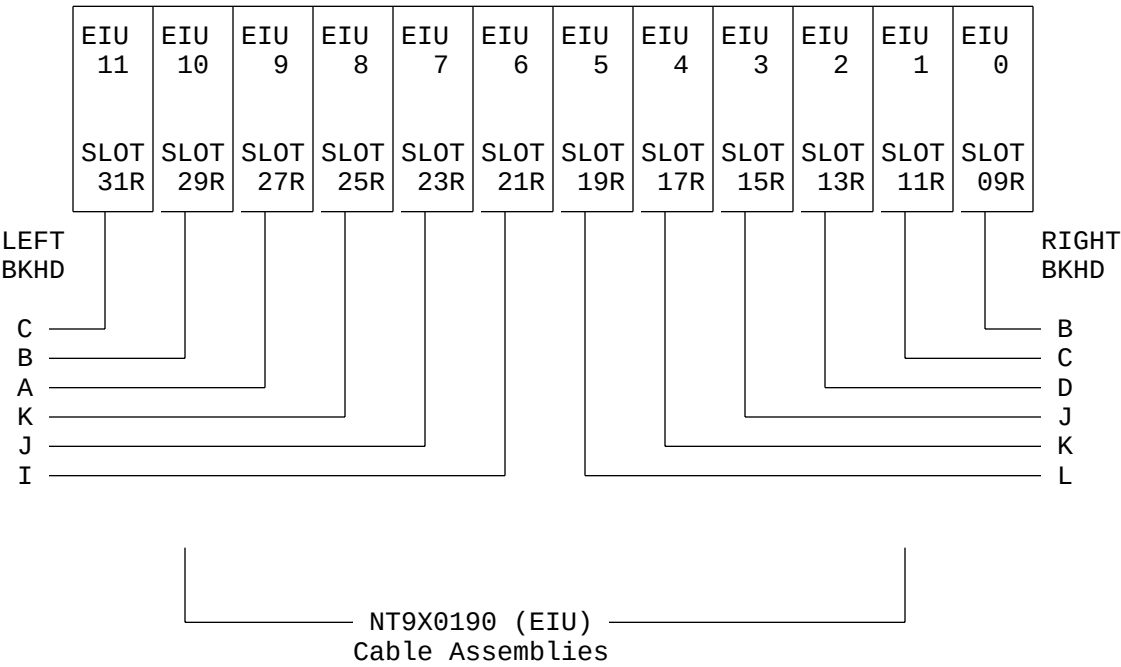
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	0	2	4	6	8	11						
ASU Assignment Sequence for LIS:01	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
ASU Numbering Sequence	12	14	16	18	20	23						
ASU Assignment Sequence for LIS:02	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
ASU Numbering Sequence	24	26	28	30	32	35						
ASU Assignment Sequence for LIS:03	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

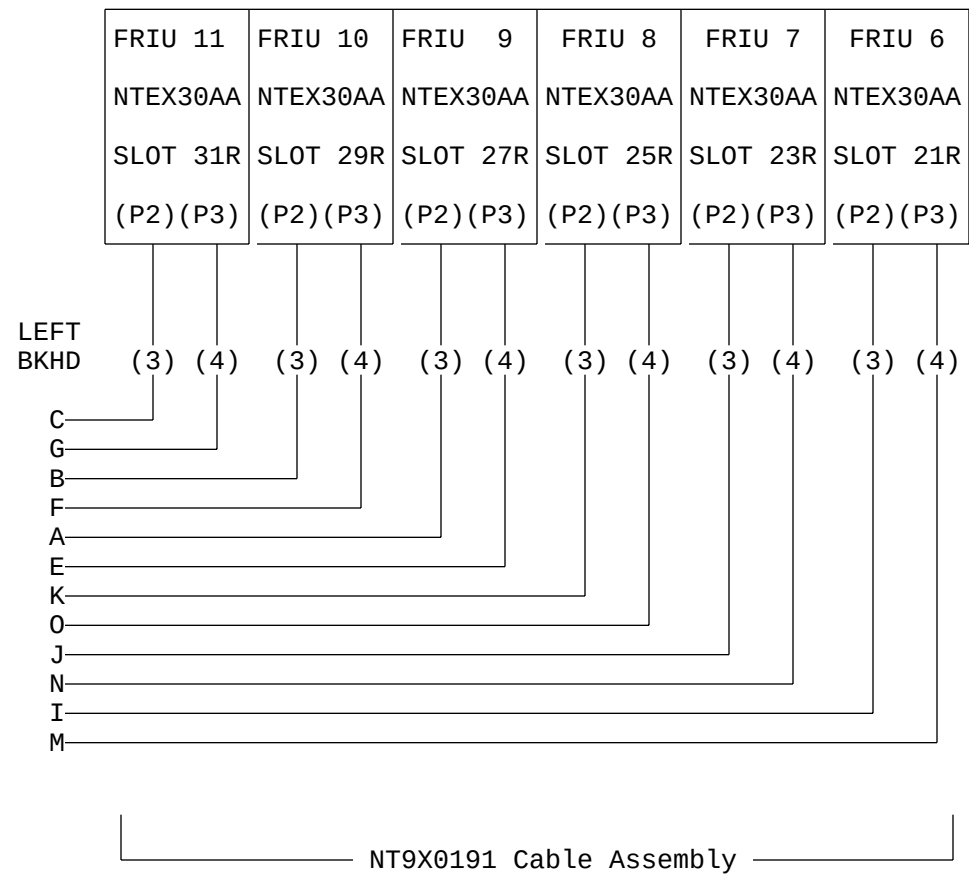
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

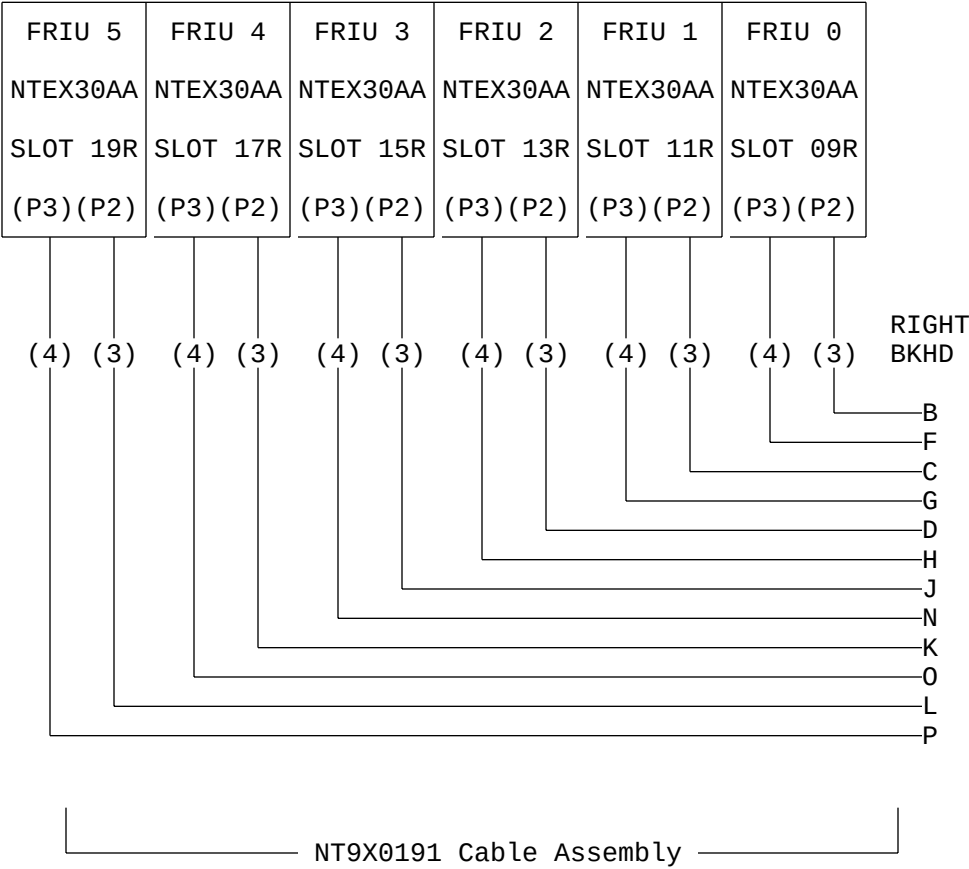




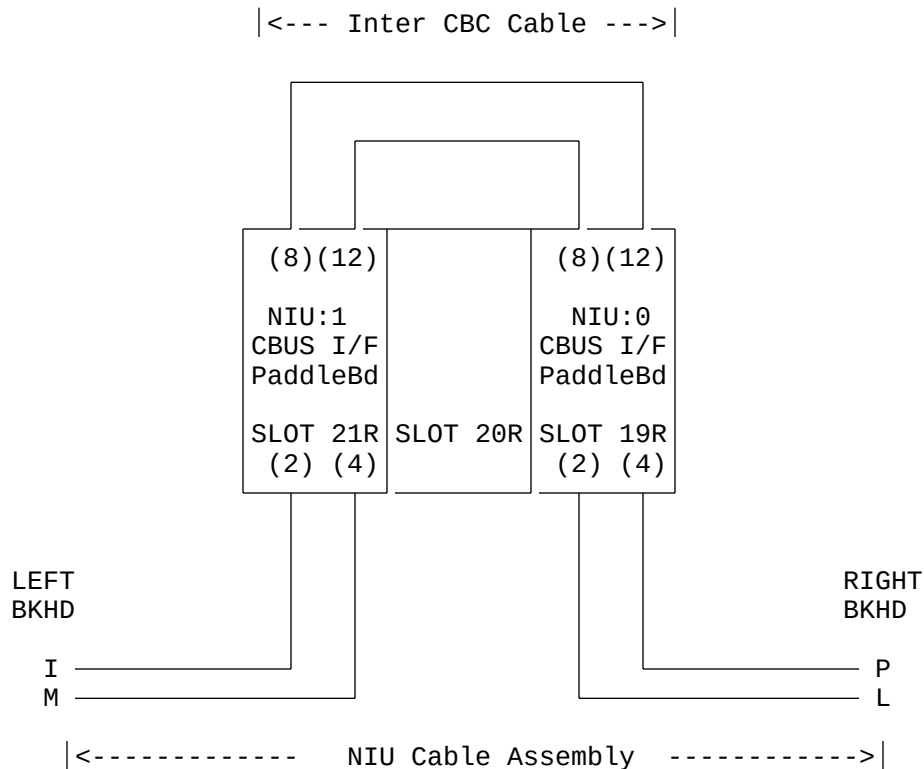
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU

insertion differs from the general rule given in Note 3, above.

LIS's used for ADAS cannot be shared with other applications.

ADAS LIS(s) cannot share the same LPP with other applications with the exception of CCSS7 Signalling applications using the LIU7 ASU.

First ADAS LPP with Single ADAS LIS

ASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	A	N
	P	P	P	P	P	I
	U	U	U	U	U	U
				*	:	:
				**	0	1
				**	**	**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8
						0
						2
						4
						6
						8
						0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :03	ORDER	LIS:01	ASU :02	NO :03
**		10	22				
**		04	16				
1		01	13	1	00	12	24
2		08	20	2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		03	15	4	09	21	33

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

First ADAS LPP with Two ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
or	12	14	16	18	20	23
LIS:02	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						E I U *
						**
						**
LIS:02	12	14	16	18	20	23
or	24	26	28	30	32	35
LIS:03	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						A P U *
						**
						**
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8
	2 0	2 2	2 4	2 6	2 8	3 0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		10	22				
**			23 35				
1		01	13	1	00		12
2			20 32	2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		08	20	4		12	24
4			13 25	5	02		14
				6		21	33
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		03	15	7	09		21
6			22 34	8		14	26
				9	04		16
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7			15 27	10		16	28

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU NO :02 :03		ORDER	LIS:01	ASU NO :02 :03	
**		10					
**			23				
1		01		1		00	
2			20	2		19	
				3			24
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3			25	4		07	
4		08		5			12
				6			31
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5			13	7		02	
6			32	8			21
				9			26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7		03		10		09	
8			15	11			33
				12			28
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
9			22	13		04	
10			27	14			14
				15			35
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
11			34	16			16

** = Always Provisioned

1 + N ADAS LPP with Single ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	V	N
	P	P	P	P	P	I
	U	U	U	U	U	U
			*			:
			**			0
						**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8
						0
						2
						4
						6
						8
						0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU NO :02	:03	ORDER	LIS:01	ASU NO :02	:03
**	10	22	34				
**	03	15	27				
				1	00	12	24
				2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1	08	20	32	4	04	16	28
2	01	13	25	5	09	21	33
				6	11	23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		03	15				
**		10	22				
				1		12	24
				2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1		13	25	4	00		12
2		20	32	5	09		21
				6		14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		01	13	7		21	33
4		08	20	8		16	28
				9	02		14
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		22	34	10	11		23
6		15	27	11	04		16
				12		23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

1 + N ADAS LPP with Three ADAS LIS

ASU Numbering

Sequence

LIS:01

00	02	04	06	08	11
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **

LIS:02

12	14	16	18	20	23
V P U	A P U	V P U	A P U	V P U	N I U : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

LIS:03

24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU		VPU	
ORDER	ASU NO LIS:01 :02 :03	ORDER	ASU NO LIS:01 :02 :03
**	03		
**	10		
		1	00
		2	07
		3	02
- - -	- - - - -	- - -	- - - - -
1	13	4	31
2	20	5	24
		6	14
- - -	- - - - -	- - -	- - - - -
5	32	7	19
6	25	8	12
		9	33
- - -	- - - - -	- - -	- - - - -
7	02	10	21
8	27	11	09
		12	16
- - -	- - - - -	- - -	- - - - -
9	34	13	04
10	22	14	26
		15	11
- - -	- - - - -	- - -	- - - - -
11	15	16	35
12	08	17	23
		18	16

** = Always Provisioned

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

RULES:

- AP 1) When PEC NTZZ44GM 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 the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Reserved for future use.
- RUL2 1) Provide one NTZZ30BA for each DS0A SS7 link requiring enhanced maintenance. For all new applications order NTZZ30VA.
- 2) For Europe applications requiring E-DS0A SS7 Link provide one (1) NTZZ30VA. The NTZZ30CA is A&M status.
- 3) The NTZZ30VA is functional on both 56 and 64 Kb/s basis. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.
- RUL3 1) Provide one (1) NTZZ30WA for each V.35 SS7 link. The NTZZ30DA is in A&M status.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications.
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.

- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.

RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.

RUL7 1) Provide one for all British Offices.

RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below. The NIU labels are provided when the NIU is assigned in slot 18F of a shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

RUL9 1) Deleted.

RUL10 1) Provide one (1) NT9X9532, Stand-Alone Power Cabling Kit, and one (1) P0736059, Filter Capacitor Designation Label Sheet, when the LIM cabinet is powered from a 7ft. PDC (Non-Streamline). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.

- 2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0736058 Terminal Block Designation Sheet when powering the LIM from a Cabinetized PDC (Streamline Applications). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL11 1) Reserved for future use.

RUL12 1) Reserved for Future Use.

RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.

- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.
- RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.
- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 of more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) Deleted.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:
- NT9X95BA - Mechanical Hardware for S/DMS Cabinet
- RUL19 1) Reserved for future Use.
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:
- 32 - (#FRIUs on LIS shelf * 2
+ #NIUs on LIS shelf * 4
+ #LIUs on LIS shelf
+ #EIUs on LIS shelf)
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.
- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.

- 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.
- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.
- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.
- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.
- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

36 LINK LPP -48V, BCS34 AND ABOVE

PEC CODE: NTZZ44CN

CPC CODE: B0239622

| RATING: MD

REPLACES:

| REPLACED BY: NTZZ44CP

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -48 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel. The NTZZ44CN has the capability of housing up to 36 Application Specific Units (ASUs) such as DS0A, Enhanced DS0A, V.35 and EIU. This NTZZ44CN can only be used for -48V applications, and it has Processor, Memory, NTZZ44JA(non-Cabinetized Bulkheads and cable assembly), NTZZ44HA (Cabinetized Bulkheads and cable assembly). Use them as required in each application.

REFERENCE DOCUMENTATION: SLZZ44CN 00 01
NTZZ44CN REL 01
MS9X70BB 01 11

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ken Clisso Dept. 3471 (PPK)

NTZZ44CN EMC2-16-LPP-48 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 09 17	ECM 620 13	Introduction of NTZZ44CN for -48V application.
93 10 04	ECM 682 01	Include ADAS ASU provisioning rules
94 02 15	ECM 620 14	Introduce NTEX22BB for CCS7 LIU7. Introduce NT9X13DD.
94 03 10	ECM 620 15	Change NT9X95AA to NT9X95BA.
94 06 03	ECM 620 17	Add text to RULE 13.
94 06 30	ECM 620 18	ECD 018-43057, ET19079, and ET52573
94 08 03	ECM 620 19	ECD 006-19337. MD'd and replaced by NTZZ44CP.

The 36 Link LPP -48V, BCS34 and ABOVE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-48V)	NT9X03AA	FSP	1	52		AP
Cooling Unit (-48V)	NT9X95CU	CU	1	00		AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CA		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AD		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
CPU 16 MHz CP	NT9X13DB			39	17F, 22F	RUL1
CPU 16 MHz CP	NT9X13DD			39	17F, 22F	RUL1
6Meg Memory CP	NT9X14BB			39	16F, 23F	RUL1
24Meg Memory CP	NT9X14DB			39	16F, 23F	RUL1
Filler Faceplate	NT9X19AA			39	16F, 23F	RUL1
PB Filler Faceplate	NT9X19BA			39	16F, 23F	RUL1
Designation Label NT9X13DB	P0696239			39	17F, 22F	RUL1
Designation Label NT9X13DD	P0743628			39	17F, 22F	RUL1
Designation Label NT9X14DB	P0700802			39	16F, 23F	RUL1
Designation Label NT9X19AA	P0709515			39	16F, 23F	RUL1
Designation Label NT9X19BA	P0709516			39	16F, 23F	RUL1
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label (NT9X26AB)	P0705003		2	39	17R, 22R	AP
Bulkhead and Cable Assembly (for non-Cabinetized appl.)	NTZZ44HA		1	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Bulkhead and Cable Assembly (for Cabinetized appl.)	NTZZ44JA		1	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
Enhanced IPF & F/Bus I/F	NTEX22BB			X	Y	RUL2
STP Signaling Terminal I/F	NT9X76AA			X	Y+1	RUL2
E-DS0A I/F PB	NT9X78BA			X	Y+1	RUL2
LIU (2 Slot) ID Label	P0734382			X	Y	RUL2
Desig. Label NT9X78BA	P0704359			X	Y+1	RUL2
DS0A Cable Assembly	NT9X0193			X	Y+1	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
Enhanced IPF & F/Bus I/F	NTEX22BB			X	Y	RUL2
STP Signaling Terminal I/F	NT9X76AA			X	Y+1	RUL2
E/HC-DS0A I/F PB	NT9X78CA			X	Y+1	RUL2
LIU (2 Slot) ID Label	P0734382			X	Y	RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label NT9X78CA	P0732783			X	Y+1	RUL2
DS0A Cable Assembly	NT9X0193			X	Y+1	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
Enhanced IPF & F/Bus I/F	NTEX22BB			X	Y	RUL3
STP Signaling Terminal I/F	NT9X76AA			X	Y+1	RUL3
DS0A I/F PB	NT9X77AA			X	Y+1	RUL3
LIU (2 Slot) ID Label	P0734382			X	Y	RUL3
Desig. Label NT9X77AA	P0704358			X	Y+1	RUL3
V.35 Cable Assembly	NT9X0193			X	Y+1	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		2	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Frame Fail Lamp (Brown)	NT0X24BT					RUL17
Rear Frame Fail Light	P0674502					RUL17

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Fail Lamp (GREY)	NT0X24CN					RUL17
Rear Frame Fail Light	P0699441					RUL17
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
ESP Ground Terminal Assy	NT9X0324		1			RUL12
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.

- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIUs, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

L M S												
LIU/EIU/FRIU												
ASU Numbering Sequence	0	2	4	6	8	11						
ASU Assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4
ASU Numbering Sequence	12	14	16	18	20	23						
ASU Assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2
ASU Numbering Sequence	24	26	28	30	32	35						
ASU Assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

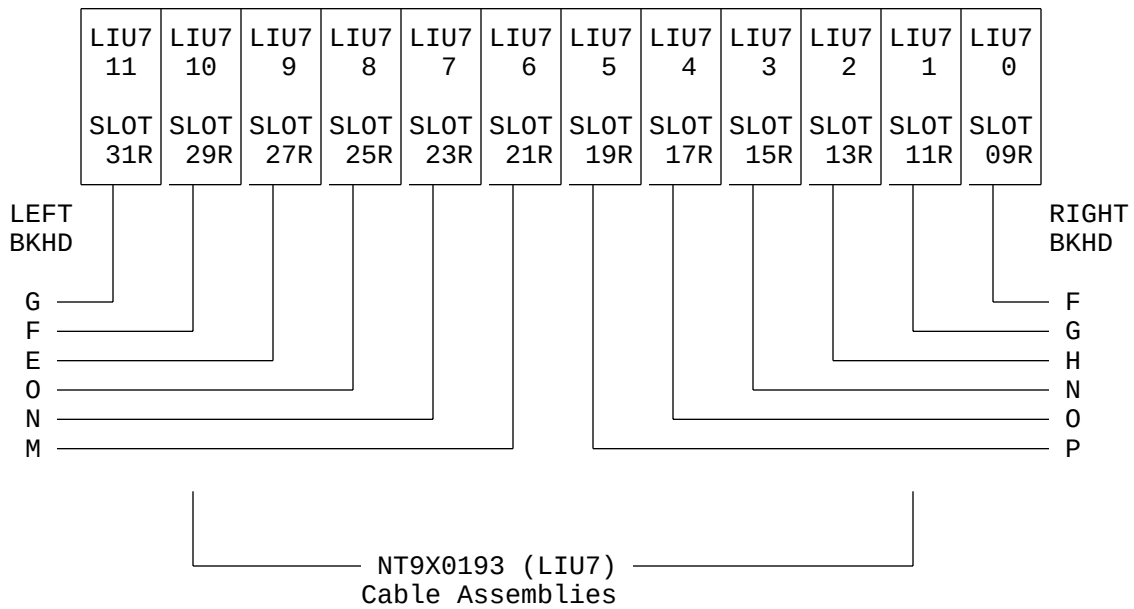
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

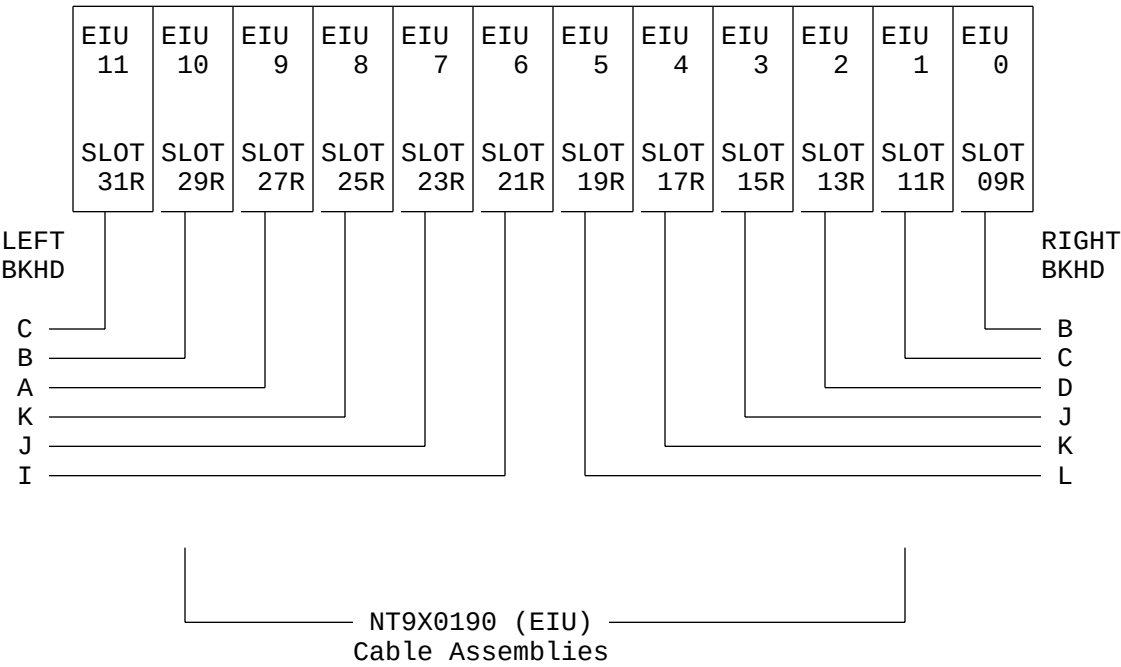
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	0	2	4		6	8		11				
ASU Assignment Sequence for LIS:01	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	12	14	16		18	20		23				
ASU Assignment Sequence for LIS:02	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	24	26	28		30	32		35				
ASU Assignment Sequence for LIS:03	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

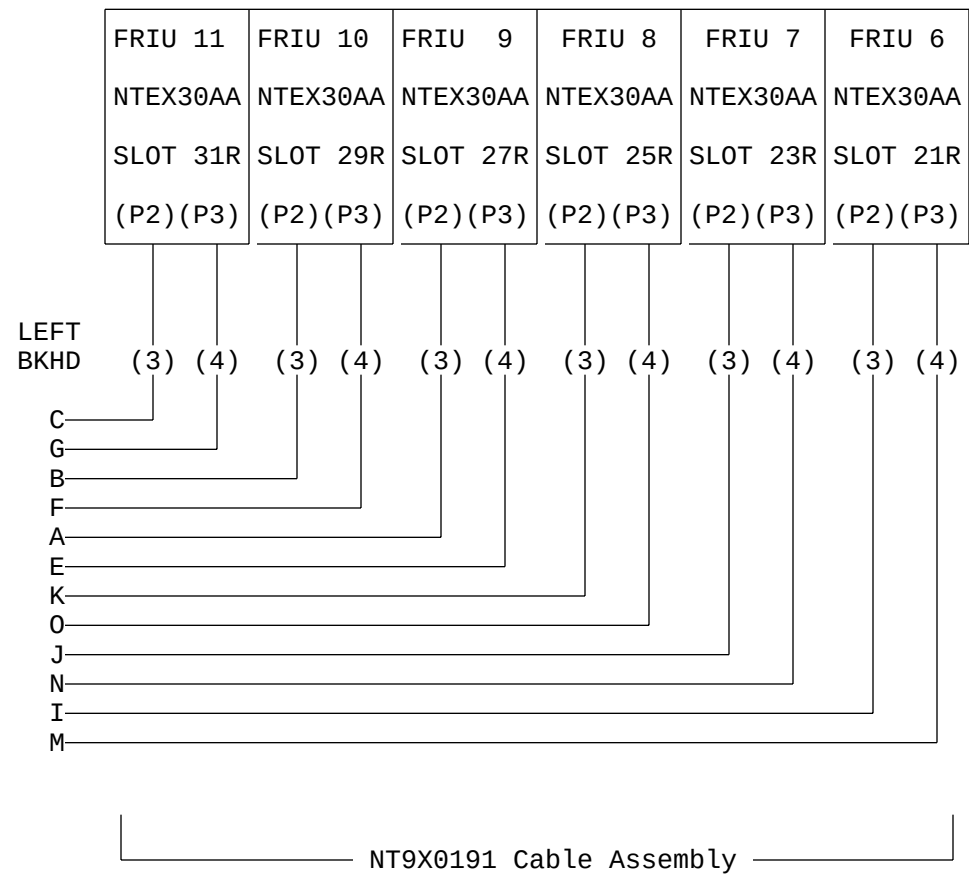
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

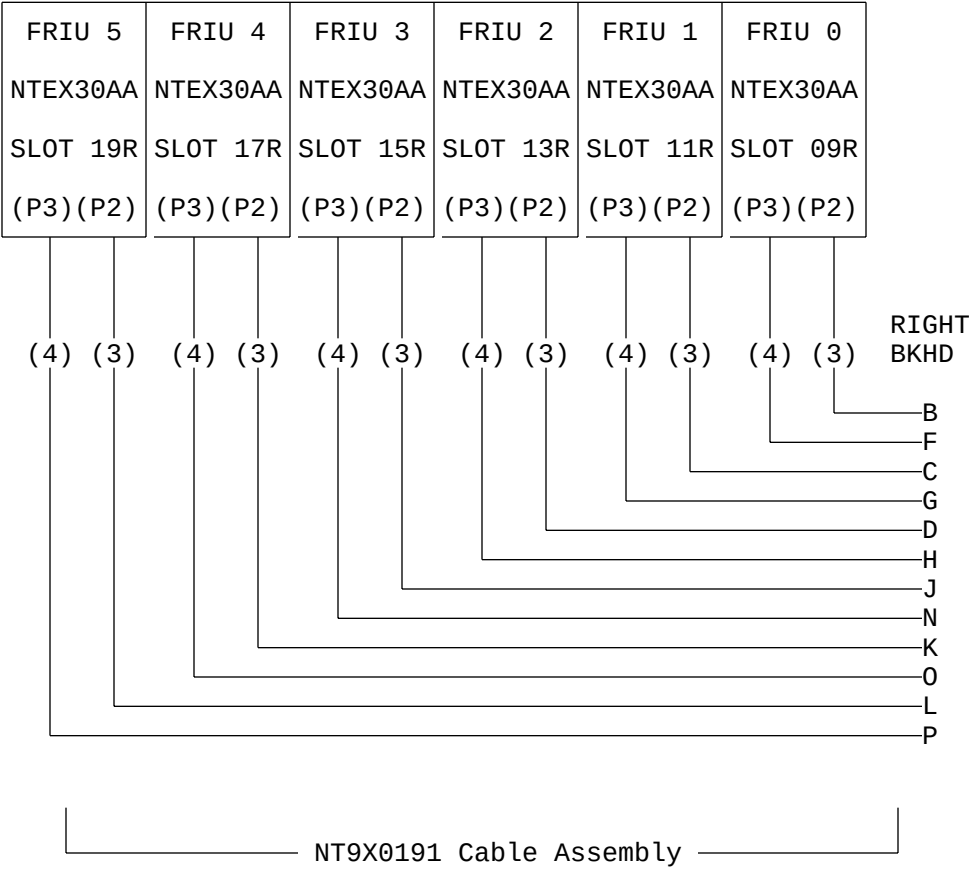




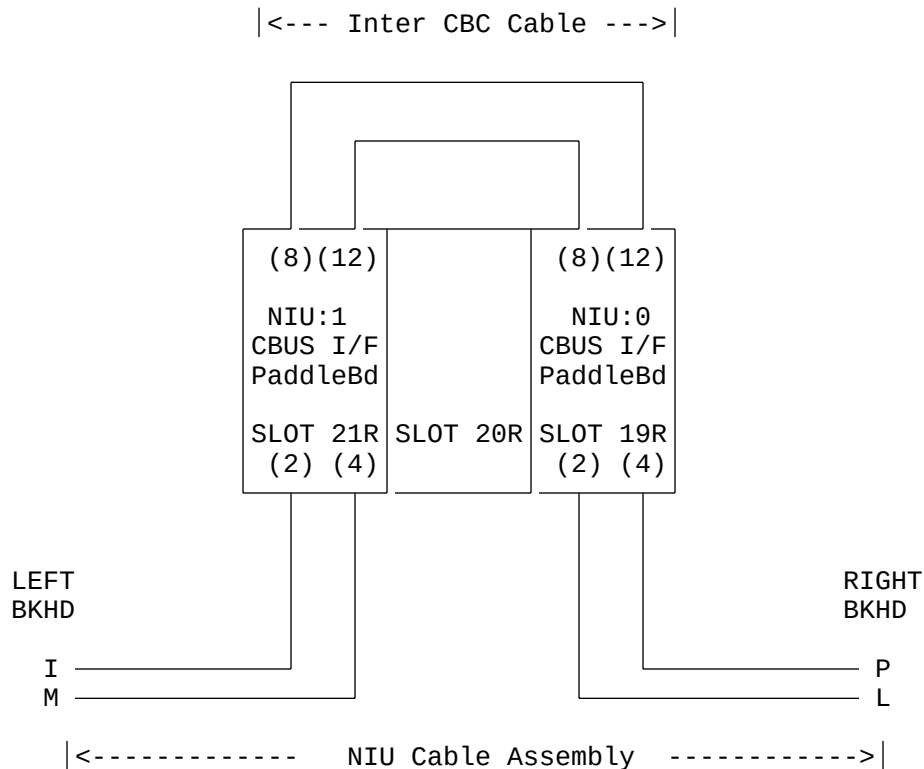
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUS the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUS which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUS are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUS which are provisioned according to expected call traffic, 2 APUS, per. LPP are always required for OA&M functions. In the ADAS context, these APUS are referred to as LPP APUS.

The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :03	ORDER	LIS:01	ASU :02	NO :03
**		10	22				
**		04	16				
1		01	13	1	00	12	24
2		08	20	2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		03	15	4	09	21	33

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		10	22				
**			23 35				
1		01	13	1	00		12
2			20 32	2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		08	20	4		12	24
4			13 25	5	02		14
				6		21	33
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		03	15	7	09		21
6			22 34	8		14	26
				9	04		16
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7			15 27	10		16	28

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU NO :02 :03		ORDER	LIS:01	ASU NO :02 :03	
**		10					
**		23					
1		01		1		00	
2		20		2		19	
				3			24
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3			25	4		07	
4		08		5		12	
				6			31
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		13		7		02	
6			32	8		21	
				9			26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7		03		10		09	
8		15		11			33
				12			28
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
9		22		13		04	
10		27		14		14	
				15			35
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
11			34	16		16	

** = Always Provisioned

1 + N ADAS LPP with Single ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	V	N
	P	P	P	P	P	I
	U	U	U	U	U	U
			*			:
			**			0
						**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	ASU LIS:01	NO :02	:03	ORDER	ASU LIS:01	NO :02	:03
**	10	22	34				
**	03	15	27				
				1	00	12	24
				2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1	08	20	32	4	04	16	28
2	01	13	25	5	09	21	33
				6	11	23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

1 + N ADAS LPP with Two ADAS LIS

ASU Numbering

Sequence

LIS:01

or

LIS:02

00	02	04	06	08	11
12	14	16	18	20	23
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **
					N I U : 1 **

ASU assignment

Sequence for:

LIS:02

and for:

LIS:03

12	14	16	18	20	23
24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **
					N I U : 1 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUS

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		03	15				
**		10	22				
				1		12	24
				2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1		13	25	4	00		12
2		20	32	5	09		21
				6		14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		01	13	7		21	33
4		08	20	8		16	28
				9	02		14
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		22	34	10	11		23
6		15	27	11	04		16
				12		23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

1 + N ADAS LPP with Three ADAS LIS

ASU Numbering

Sequence

LIS:01

00	02	04	06	08	11
V P U	A P U	V P U	A P U *	V P U	N I U : : 0 **

LIS:02

12	14	16	18	20	23
V P U	A P U	V P U	A P U	V P U	N I U : : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

LIS:03

24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU			VPU		
ORDER	ASU NO LIS:01 :02 :03		ORDER	ASU NO LIS:01 :02 :03	
**	03				
**	10				
			1	00	
			2	07	
			3	02	
- - -	- - -	- - -	- - -	- - -	- - -
1		13	4		31
2		20	5		24
			6		14
- - -	- - -	- - -	- - -	- - -	- - -
5		32	7		19
6		25	8	12	
			9		33
- - -	- - -	- - -	- - -	- - -	- - -
7	02		10		21
8		27	11	09	
			12		16
- - -	- - -	- - -	- - -	- - -	- - -
9		34	13	04	
10		22	14		26
			15	11	
- - -	- - -	- - -	- - -	- - -	- - -
11		15	16		35
12	08		17		23
			18		16

** = Always Provisioned

pa

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

RULES:

AP 1) When PEC NTZZ44CN 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.

- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.

RUL1 1) For the LMS shelf in every new cabinet, provide

- FOR BCS34 AND LOWER:
 - two (2) NT9X13DB CPU 16 MHZ CPs,
 - two (2) P0696239 Designation Labels (NT9X13DB), and
 - two (2) NT9X14BB 6Meg Memory CPs.
- FOR BCS35:
 - two (2) NT9X13DB CPU 16 MHZ CPs,
 - two (2) P0696239 Designation Labels (NT9X13DB), and
 - two (2) NT9X14DB 6Meg Memory CPs.
 - two (2) P0700802 Designation Labels NT9X14DB

The NT9X14DB will be retrofitted for the NT9X14BB in existing offices equipped with the NT9X14BB if the BCS35, or higher, software load is too large for the 6Meg NT9X14BB.

- FOR BCS36 AND HIGHER, and depending on availability (check with PLM: if the NT9X13DD is not available then apply the provisioning rule for BCS35 above):
 - two (2) NT9X13DD CPU 16 MHZ CPs, and
 - two (2) P0743628 Designation Labels (NT9X13DD).

The NT9X13DD includes 16MB of DRAM which is adequate for a number of applications. Should additional memory be required, also provide:

- two (2) NT9X14DB 24Meg Memory CPs, and
- two (2) P0700802 Designation Labels NT9X14DB.

NOTE: The NT9X13DD cannot be used with the NT9X14BB 6Meg Memory CPs.

2) For each LMS shelf, provide when no NT9X14 CP is provisioned (in other words, when NT9X13DD is provided and extra NT9X14DB memory is not required):

- two (2) NT9X19AA Filler Faceplates,
- two (2) P0709515 Designation Labels NT9X19AA,
- two (2) NT9X19BA Filler Faceplates, and
- two (2) P0709516 Designation Labels NT9X19BA.

RUL2 1) Provide one (4) meg NTZZ30BA for each DS0A SS7 link required.

For all new applications, provide:

- For BCS33,
 - one (1) NTZZ30VA CCS7 8MEG LIU (E/HC-DS0A), or
- For BCS34 and above,
 - one (1) NTEX22BB Enhanced IPF & F/Bus I/F,
 - one (1) NT9X76AA STP Signaling Terminal I/F,
 - one (1) NT9X78CA E/HC-DS0A I/F PB,
 - one (1) P0734382 LIU (2 Slot) ID Label,
 - one (1) P0732783 Desig. Label NT9X78CA, and
 - one (1) NT9X0193 DS0A Cable Assembly.

2) For US applications requiring E-DS0A SS7 Link, provide:

- For BCS33 and earlier,
 - one (1) NTZZ30UA CCS7 8MEG LIU (E-DS0A), or
- For BCS34 and above,
 - one (1) NTEX22BB Enhanced IPF & F/Bus I/F,
 - one (1) NT9X76AA STP Signaling Terminal I/F,
 - one (1) NT9X78BA E-DS0A I/F PB,
 - one (1) P0734382 LIU (2 Slot) ID Label,
 - one (1) P0704359 Desig. Label NT9X78BA, and
 - one (1) NT9X0193 DS0A Cable Assembly.

For Canada, Asia/Pacific, Europe, CALA applications requiring E-DS0A SS7 Link, provide:

- For BCS33,
 - one (1) NTZZ30VA CCS7 8MEG LIU (E/HC-DS0A), or
- For BCS34 and above,
 - one (1) NTEX22BB Enhanced IPF & F/Bus I/F,
 - one (1) NT9X76AA STP Signaling Terminal I/F,
 - one (1) NT9X78CA E/HC-DS0A I/F PB,
 - one (1) P0734382 LIU (2 Slot) ID Label,
 - one (1) P0732783 Desig. Label NT9X78CA, and
 - one (1) NT9X0193 DS0A Cable Assembly.

The NTZZ30CA is A&M status.

- 3) The NTZZ30UA is functional beyond BCS33 on a 56Kb/s basis. NOT on 64 Kb/s basis. On the other hand NTZZ30VA is functional on both 56 and 64 Kb/s basis. For example if the office requires 56 Kb/s then NTZZ30UA or NTZZ30VA can be used. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.

RUL3 1) When interfacing a V.35 signalling link, provide for each V.35 SS7 link:

- For BCS33 and earlier,
 - one (1) NTZZ30WA CCS7 8MEG LIU (V.35), or
- For BCS34 and above,
 - one (1) NTEX22BB Enhanced IPF & F/Bus I/F,
 - one (1) NT9X76AA STP Signaling Terminal I/F,
 - one (1) NT9X77AA DS0A I/F PB,
 - one (1) P0734382 LIU (2 Slot) ID Label,
 - one (1) P0704358 Desig. Label NT9X77AA, and
 - one (1) NT9X0193 V.35 Cable Assembly.

The NTZZ30DA is in A&M status.

RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.

2) For BCS 34 and above provide one NTZZ30EC for each Ethernet interface required. RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications.

2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.

3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.

RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.

RUL7 1) Provide one for all British Offices.

RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below. The NIU labels are provided when the NIU is assigned in slot 18F of a shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416

13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

RUL9 1) Deleted.

RUL10 1) Provide one (1) NT9X9532, Stand-Alone Power Cabling Kit, and one (1) P0736059, Filter Capacitor Designation Label Sheet, when the LIM cabinet is powered from a 7ft. PDC (Non-Streamline). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.

2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0736058 Terminal Block Designation Sheet when powering the LIM from a Cabinetized PDC (Streamline Applications). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL11 1) Reserved for future use.

RUL12 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone offices.

RUL13 1) Provide one NTZZ44HA Bulkhead and Cable Assembly for LPPs that are to be located in a non-Cabinetized DMS office.

(OR)

2) Provide one NTZZ44JA Bulkhead and Cable Assembly for LPPs that are to be located in a Cabinetized(Streamline) DMS office.

3) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications. Always required when the LPP is not used in DMS Cabinetized offices.

4) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications. Always required when the LPP is not used in DMS Cabinetized offices.

RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.

- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand-alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) For each brown NT9X70BB LIM cabinet, provide:
- one (1) NT0X24BT Frame Fail Lamp (Brown), and
 - one (1) P0674502 Rear Frame Fail Light.
- 2) For each grey NT9X70BB LIM cabinet, provide:
- one (1) NT0X24CN Frame Fail Lamp (Grey), and
 - one (1) P0699441 Rear Frame Fail Light.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:
- NT9X95BA - Mechanical Hardware for S/DMS Cabinet
- RUL19 1) Reserved for future Use.
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:
- 32 - (#FRIUs on LIS shelf * 2
+ #NIUs on LIS shelf * 4
+ #LIUs on LIS shelf
+ #EIUs on LIS shelf)
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.
- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.

- 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.
- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.
- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.
- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.
- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

36 LINK LPP -60V, BCS34 AND ABOVE

PEC CODE: NTZZ44GN

CPC CODE: B0239623

| RATING: MD

REPLACES:

| REPLACED BY: NTZZ44GP

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -60 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel. The NTZZ44GN has the capability of housing up to 36 Application Specific Units (ASUs) such as DS0A, Enhanced DS0A, V.35 and EIU. This NTZZ44GN can only be used for -60V applications, and it has Processor, Memory, NTZZ44JA(non-Cabinetized Bulkheads and cable assembly), NTZZ44HA (Cabinetized Bulkheads and cable assembly). Use them as required in each application.

REFERENCE DOCUMENTATION: SLZZ44GN 00 01
NTZZ44GN REL 01
MS9X70BB 01 11

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ken Clisso Dept. 3471 (PPK)

NTZZ44GN EMC2-16-LPP-60V CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 09 17	ECM 620 13	Introduction of new NTZZ44GN BB for markets requiring -60V application.
93 10 04	ECM 682 01	Include ADAS ASU provisioning rules
94 02 15	ECM 620 14	Introduce NTEX22BB for CCS7 LIU7. Introduce NT9X13DD.
94 03 10	ECM 620 15	Change NT9X95AA to NT9X95BA.
94 06 03	ECM 620 17	Add text to RULE 13.
94 06 30	ECM 620 18	ECD 018-43057, ET19079, and ET52573
94 08 03	ECM 620 19	ECD 006-19337. MD'd and replaced by NTZZ44GP.

The 36 Link LPP -60V, BCS34 and ABOVE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-60V)	NT9X03BA	FSP	1	52		AP
Cooling Unit (-60V)	NT9X95GU	CU	1	00		AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AB		2	39	4F, 36F	AP
Desig. Label(NT9X30AB)	P0738496		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CA		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AD		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
CPU 16 MHZ CP	NT9X13DB			39	17F, 22F	RUL1
CPU 16 MHZ CP	NT9X13DD			39	17F, 22F	RUL1
6Meg Memory CP	NT9X14BB			39	16F, 23F	RUL1
24Meg Memory CP	NT9X14DB			39	16F, 23F	RUL1
Filler Faceplate	NT9X19AA			39	16F, 23F	RUL1
PB Filler Faceplate	NT9X19BA			39	16F, 23F	RUL1
Designation Label NT9X13DB	P0696239			39	17F, 22F	RUL1
Designation Label NT9X13DD	P0743628			39	17F, 22F	RUL1
Designation Label NT9X14DB	P0700802			39	16F, 23F	RUL1
Designation Label NT9X19AA	P0709515			39	16F, 23F	RUL1
Designation Label NT9X19BA	P0709516			39	16F, 23F	RUL1
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label (NT9X26AB)	P0705003		2	39	17R, 22R	AP
Bulkhead and Cable Assembly	NTZZ44HA		1	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(for non-Cabinetized appl.) Bulkhead and Cable Assembly	NTZZ44JA		1	39		RUL13
(for Cabinetized appl.) LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AB		6	00,13, 26	4F,36F	AP
Desig. Label(NT9X30AB)	P0738496		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
Desig.Label(NT9X74DA)	P0733871		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
Enhanced IPF & F/Bus I/F	NTEX22BB			X	Y	RUL2
STP Signaling Terminal I/F	NT9X76AA			X	Y+1	RUL2
E-DS0A I/F PB	NT9X78BA			X	Y+1	RUL2
LIU (2 Slot) ID Label	P0734382			X	Y	RUL2
Desig. Label NT9X78BA	P0704359			X	Y+1	RUL2
DS0A Cable Assembly	NT9X0193			X	Y+1	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
Enhanced IPF & F/Bus I/F	NTEX22BB			X	Y	RUL2
STP Signaling Terminal I/F	NT9X76AA			X	Y+1	RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
E/HC-DS0A I/F PB	NT9X78CA			X	Y+1	RUL2
LIU (2 Slot) ID Label	P0734382			X	Y	RUL2
Desig. Label NT9X78CA	P0732783			X	Y+1	RUL2
DS0A Cable Assembly	NT9X0193			X	Y+1	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
Enhanced IPF & F/Bus I/F	NTEX22BB			X	Y	RUL3
STP Signaling Terminal I/F	NT9X76AA			X	Y+1	RUL3
DS0A I/F PB	NT9X77AA			X	Y+1	RUL3
LIU (2 Slot) ID Label	P0734382			X	Y	RUL3
Desig. Label NT9X77AA	P0704358			X	Y+1	RUL3
V.35 Cable Assembly	NT9X0193			X	Y+1	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		2	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Fail Lamp (Brown)	NT0X24BT					RUL17
Rear Frame Fail Light	P0674502					RUL17
Frame Fail Lamp (GREY)	NT0X24CN					RUL17
Rear Frame Fail Light	P0699441					RUL17
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
ESP Ground Terminal Assy	NT9X0324		1			RUL12
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	

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

A&M - ADDITIONS & 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) Shelf mounting positions X = 26, 13, 00.

- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIUs, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

L M S												
LIU/EIU/FRIU												
ASU Numbering Sequence	0	2	4	6	8	11						
ASU Assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4
ASU Numbering Sequence	12	14	16	18	20	23						
ASU Assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2
ASU Numbering Sequence	24	26	28	30	32	35						
ASU Assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

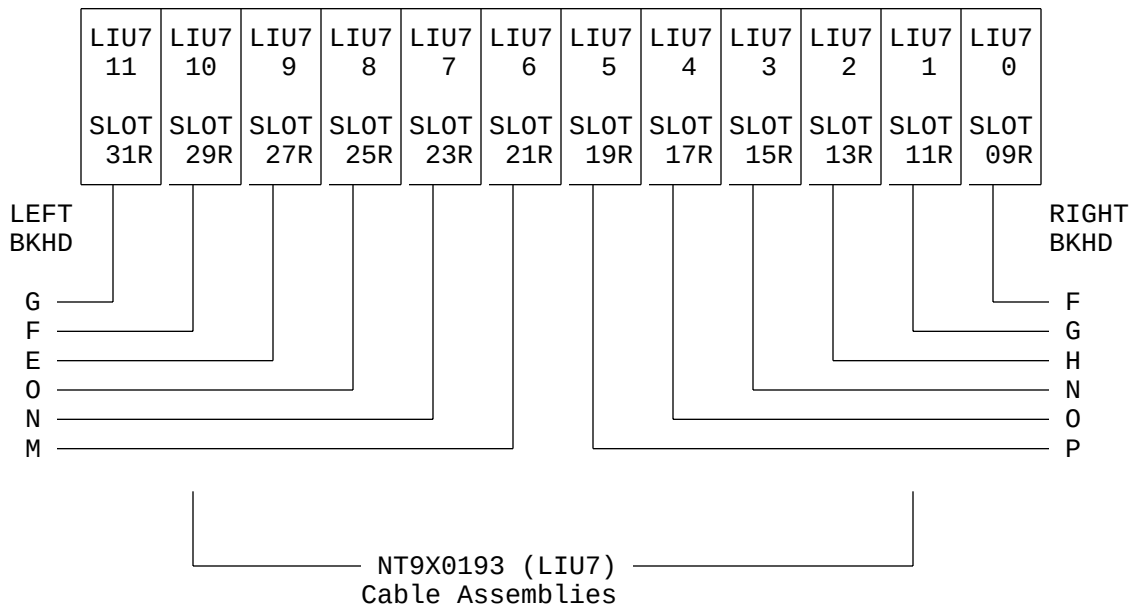
ASSIGNMENT SEQUENCE OF ASUs TO LINK INTERFACE MODULE

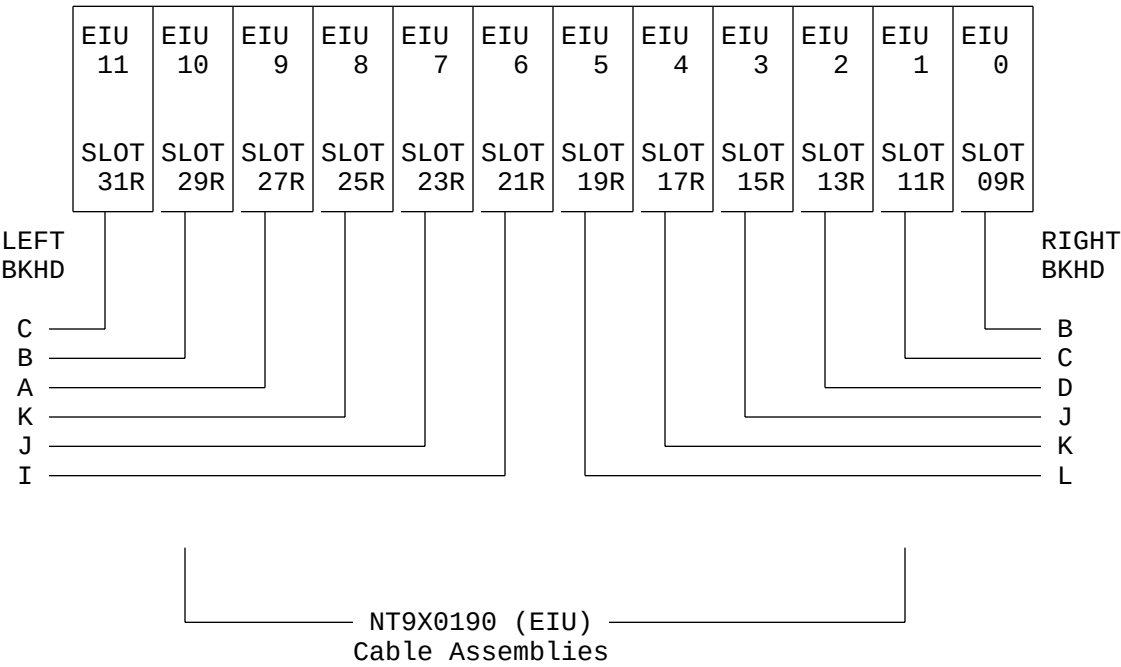
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	0	2	4		6	8		11				
ASU Assignment Sequence for LIS:01	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	12	14	16		18	20		23				
ASU Assignment Sequence for LIS:02	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	24	26	28		30	32		35				
ASU Assignment Sequence for LIS:03	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

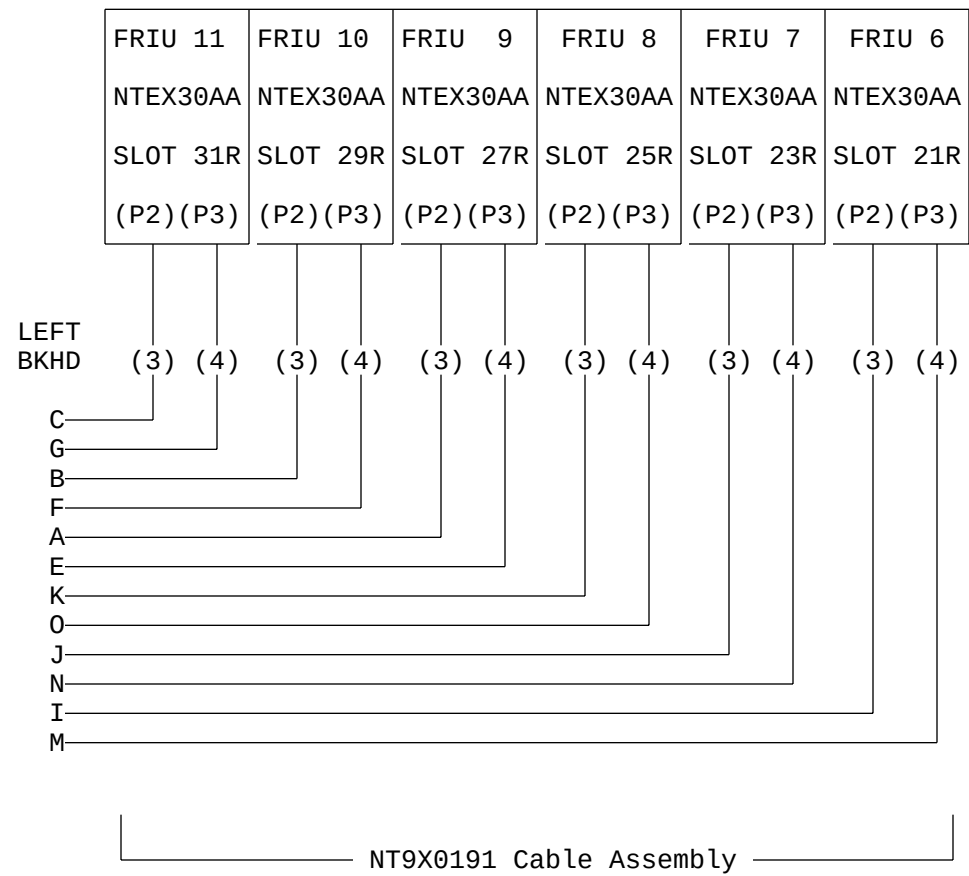
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

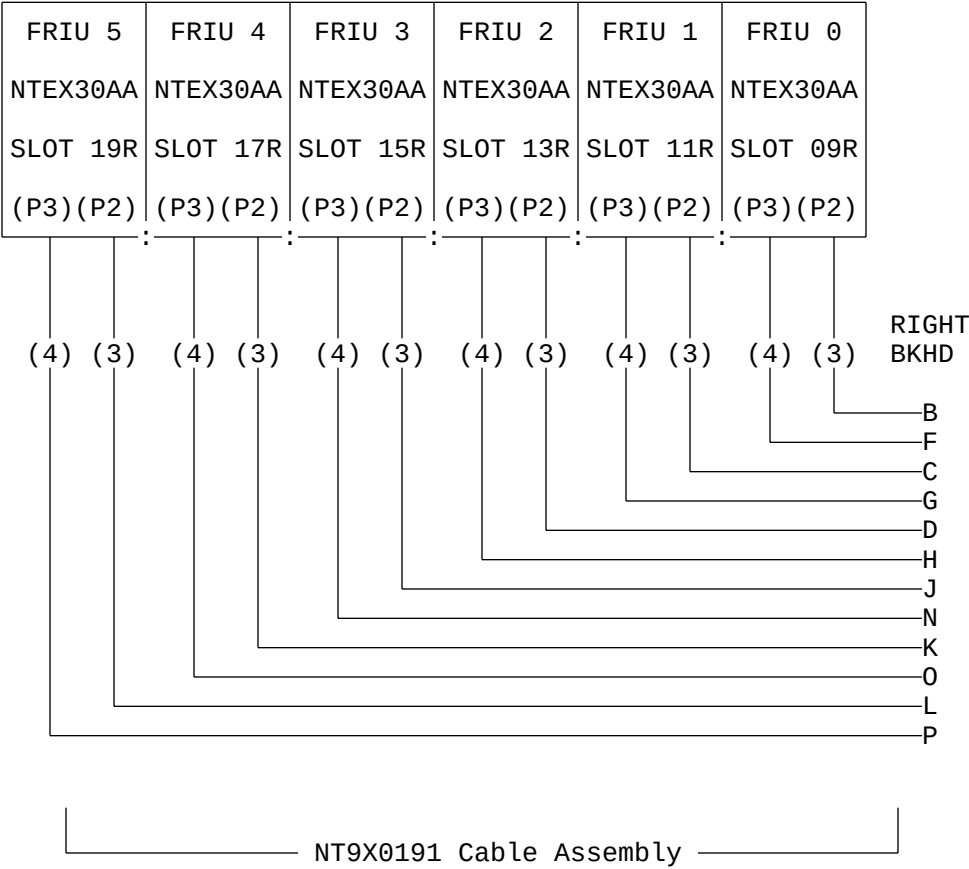




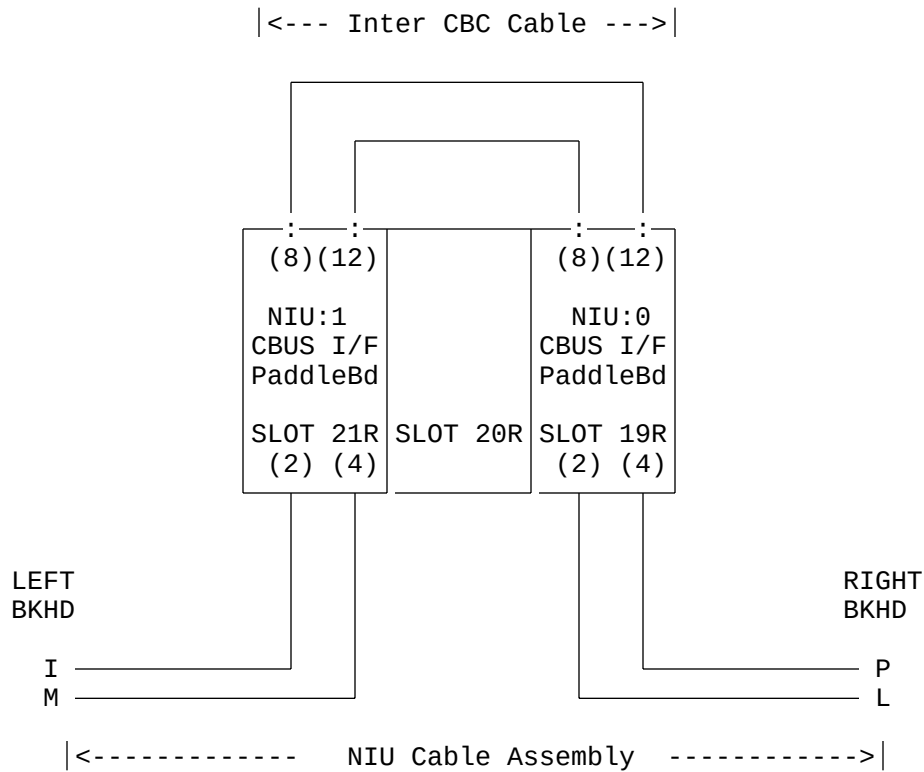
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :03	ORDER	LIS:01	ASU :02	NO :03
**		10	22				34
**		04	16				28
1		01	13	1	00	12	24
2		08	20	2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		03	15	4	09	21	33

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		10	22				
**			23 35				
1		01	13	1	00		12
2			20 32	2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		08	20	4		12	24
4			13 25	5	02		14
				6		21	33
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		03	15	7	09		21
6			22 34	8		14	26
				9	04		16
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7			15 27	10		16	28

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

ORDER OF ASSIGNMENT

APU			VPU		
ORDER	ASU NO LIS:01 :02 :03		ORDER	ASU NO LIS:01 :02 :03	
**	10				
**		23			
1	01		1	00	
2		20	2	19	
			3		24
- - -	- - - - -	- - -	- - -	- - - - -	- - -
3		25	4	07	
4	08		5		12
			6		31
- - -	- - - - -	- - -	- - -	- - - - -	- - -
5		13	7	02	
6		32	8		21
			9		26
- - -	- - - - -	- - -	- - -	- - - - -	- - -
7	03		10	09	
8		15	11		33
			12		28
- - -	- - - - -	- - -	- - -	- - - - -	- - -
9		22	13	04	
10		27	14		14
			15		35
- - -	- - - - -	- - -	- - -	- - - - -	- - -
11		34	16		16

** = Always Provisioned

1 + N ADAS LPP with Single ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	V	N
	P	P	P	P	P	I
	U	U	U	U	U	U
			*			:
			**			0
						**
						1
						**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8
						0
						2
						4
						6
						8
						0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	ASU NO			ORDER	ASU NO		
	LIS:01	:02	:03		LIS:01	:02	:03
**	10	22	34				
**	03	15	27				
				1	00	12	24
				2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1	08	20	32	4	04	16	28
2	01	13	25	5	09	21	33
				6	11	23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

1 + N ADAS LPP with Two ADAS LIS

ASU Numbering

Sequence

LIS:01

or

LIS:02

00	02	04	06	08	11
12	14	16	18	20	23
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **
					N I U : 1 **

ASU assignment

Sequence for:

LIS:02

and for:

LIS:03

12	14	16	18	20	23
24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **
					N I U : 1 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUS

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		03	15				
**		10	22				
				1		12	24
				2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1		13	25	4	00		12
2		20	32	5	09		21
				6		14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		01	13	7		21	33
4		08	20	8		16	28
				9	02		14
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		22	34	10	11		23
6		15	27	11	04		16
				12		23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

1 + N ADAS LPP with Three ADAS LIS

ASU Numbering

Sequence

LIS:01

00	02	04	06	08	11
V P U	A P U	V P U	A P U *	V P U	N I U : : 0 **

LIS:02

12	14	16	18	20	23
V P U	A P U	V P U	A P U	V P U	N I U : : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

LIS:03

24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : : 0 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU		VPU	
ORDER	ASU NO LIS:01 :02 :03	ORDER	ASU NO LIS:01 :02 :03
**	03		
**	10		
		1	00
		2	07
		3	02
- - -	- - - - -	- - -	- - - - -
1	13	4	31
2	20	5	24
		6	14
- - -	- - - - -	- - -	- - - - -
5	32	7	19
6	25	8	12
		9	33
- - -	- - - - -	- - -	- - - - -
7	02	10	21
8	27	11	09
		12	16
- - -	- - - - -	- - -	- - - - -
9	34	13	04
10	22	14	26
		15	11
- - -	- - - - -	- - -	- - - - -
11	15	16	35
12	08	17	23
		18	16

** = Always Provisioned

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

RULES:

AP 1) When PEC NTZZ44GN 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 for the C42 (S/DMS) Cabinet.

- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.

RUL1 1) For the LMS shelf in every new cabinet, provide

- FOR BCS34 AND LOWER:
 - two (2) NT9X13DB CPU 16 MHZ CPs,
 - two (2) P0696239 Designation Labels (NT9X13DB), and
 - two (2) NT9X14BB 6Meg Memory CPs.
- FOR BCS35:
 - two (2) NT9X13DB CPU 16 MHZ CPs,
 - two (2) P0696239 Designation Labels (NT9X13DB),
 - two (2) NT9X14DB 24Meg Memory CPs, and
 - two (2) P0700802 Designation Labels NT9X14DB.

The NT9X14DB will be retrofitted for the NT9X14BB in existing offices equipped with the NT9X14BB if the BCS35, or higher, software load is too large for the 6Meg NT9X14BB.

- FOR BCS36 AND HIGHER, and depending on availability (check with PLM: if the NT9X13DD is not available then apply the provisioning rule for BCS35 above):
 - two (2) NT9X13DD CPU 16 MHZ CPs, and
 - two (2) P0743628 Designation Labels (NT9X13DD).

The NT9X13DD includes 16MB of DRAM which is adequate for a number of applications. Should additional memory be required, also provide:

- two (2) NT9X14DB 24Meg Memory CPs, and
- two (2) P0700802 Designation Labels NT9X14DB.

NOTE: The NT9X13DD cannot be used with the NT9X14BB 6Meg Memory CPs.

2) For each LMS shelf, provide when no NT9X14 CP is provisioned (in other words, when NT9X13DD is provided and extra NT9X14DB memory is not required):

- two (2) NT9X19AA Filler Faceplates,
- two (2) P0709515 Designation Labels NT9X19AA,
- two (2) NT9X19BA Filler Faceplates, and
- two (2) P0709516 Designation Labels NT9X19BA.

RUL2 1) Provide one (4) meg NTZZ30BA for each DS0A SS7 link required.

For all new applications, provide:

- For BCS33,
 - one (1) NTZZ30VA CCS7 8MEG LIU (E/HC-DS0A), or
 - For BCS34 and above,
 - one (1) NTEX22BB Enhanced IPF & F/Bus I/F,
 - one (1) NT9X76AA STP Signaling Terminal I/F,
 - one (1) NT9X78CA E/HC-DS0A I/F PB,
 - one (1) P0734382 LIU (2 Slot) ID Label,
 - one (1) P0732783 Desig. Label NT9X78CA, and
 - one (1) NT9X0193 DS0A Cable Assembly.
- 2) For European applications requiring E-DS0A SS7 Link, provide:

- For BCS33,
 - one (1) NTZZ30VA CCS7 8MEG LIU (E/HC-DS0A), or
- For BCS34 and above,
 - one (1) NTEX22BB Enhanced IPF & F/Bus I/F,
 - one (1) NT9X76AA STP Signaling Terminal I/F,
 - one (1) NT9X78CA E/HC-DS0A I/F PB,
 - one (1) P0734382 LIU (2 Slot) ID Label,
 - one (1) P0732783 Desig. Label NT9X78CA, and
 - one (1) NT9X0193 DS0A Cable Assembly.

The NTZZ30CA is A&M status.

- 3) The NTZZ30VA is functional on both 56 and 64 Kb/s basis. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.

RUL3 1) When interfacing a V.35 signalling link, provide for each V.35 SS7 link:

- For BCS33 and earlier,
 - one (1) NTZZ30WA CCS7 8MEG LIU (V.35), or
- For BCS34 and above,
 - one (1) NTEX22BB Enhanced IPF & F/Bus I/F,
 - one (1) NT9X76AA STP Signaling Terminal I/F,
 - one (1) NT9X77AA DS0A I/F PB,
 - one (1) P0734382 LIU (2 Slot) ID Label,
 - one (1) P0704358 Desig. Label NT9X77AA, and
 - one (1) NT9X0193 V.35 Cable Assembly.

The NTZZ30DA is in A&M status.

- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications.
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.
- RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.
- RUL7 1) Provide one for all British Offices.
- RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below. The NIU labels are provided when the NIU is assigned in slot 18F of a shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

- RUL9 1) Delete.
- RUL10 1) Provide one (1) NT9X9532, Stand-Alone Power Cabling Kit, and one (1) P0736059, Filter Capacitor Designation Label Sheet, when the LIM cabinet is powered from a 7ft. PDC (Non-Streamline). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.
- 2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0736058 Terminal Block Designation Sheet when powering

the LIM from a Cabinetized PDC (Streamline Applications). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL11 1) Reserved for future use.

RUL12 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone offices.

RUL13 1) Provide one NTZZ44HA Bulkhead and Cable Assembly for LPPs that are to be located in a non-Cabinetized DMS office.

(OR)

2) Provide one NTZZ44JA Bulkhead and Cable Assembly for LPPs that are to be located in a Cabinetized(Streamline) DMS office.

3) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications. Always required when the LPP is not used in DMS Cabinetized offices.

4) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications. Always required when the LPP is not used in DMS Cabinetized offices.

RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.

RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.

RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.

RUL17 1) For each brown NT9X70BB LIM cabinet, provide:

- one (1) NT0X24BT Frame Fail Lamp (Brown), and
- one (1) P0674502 Rear Frame Fail Light.

2) For each grey NT9X70BB LIM cabinet, provide:

- one (1) NT0X24CN Frame Fail Lamp (Grey), and
- one (1) P0699441 Rear Frame Fail Light.

- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet

- RUL19 1) Reserved for future Use.

- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:

32 - (#FRIUs on LIS shelf * 2
+ #NIUs on LIS shelf * 4
+ #LIUs on LIS shelf
+ #EIUs on LIS shelf)

- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).

- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.

- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.

- 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.

- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.

- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.

- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.

- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

| LINK INTERFACE MODULE CABINET (36 LINK) BROWN NTZZ30AA

RATING: MD. Replaced by NTZZ30SD

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) houses 36 interface units. These units can be DS0A Link Interface Units, DS0A Enhanced Link Interface Units, or V.35 Link Interface Units for interface of CCS7 links as a functional block of Signaling Terminal Point (STP) or Signaling Service Point (SSP). The links can also be Ethernet Interface Units (EIU) or Frame Relay Services interface units (FRIU).

REFERENCE DOCUMENTATION: SLZZ30AA 00 02

NTZZ30AA REL 02

The Link Interface Module Cabinet (36 Link) Brown is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BA	LIM	1			AP
Overhead Power Block Kit	NTEX5001					RUL13
Power Connection Boot Kit	NT9X0322					RUL13
Common Cabinet Equipment	NT9X0101	FW	1			AP-01
Bulkhead Assembly (LF)	NT9X6509		1	39		AP-01
Bulkhead Assembly (RT)	NT9X6536		1	39		AP-01
Local Msg Switch Shf Assy	NT9X7101		1	39		AP-01
Local Msg Switch Shf Com CP	NT9X71AB	LMS	1	39		AP
LMS DS-30 X-Link Cable Assy	NT9X0171			39		RUL9
LMS DS-30 X-Link Cable Assy	NT9X7025			39		RUL9
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP-02
Memory 6M CP	NT9X14BB		2	39	16F, 23F	AP-02
Mapper CP	NT9X15AA		2	39	15F, 24F	AP-02
MS 4-Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP-02
MS P-Bus Terminator	NT9X49CA		2	39	7F, 32F	AP-02
MS Clock CP	NT9X53AA		2	39	18F, 21F	AP-02
Rem Term Intf	NT9X26AA		2	39	17R, 22R	AP-02
DS-30 4-Port CPNTA (STP)	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP-02
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP-02
+5 Volts Power Conv CP	NT9X30AA		2	39	4F, 36F	AP-02
Filler CP	NT9X19AA		8	39	11F-14F 25F-28F	AP-02
STP Power Filler CP	NT9X19EA		2	39	1F, 33F	AP-02
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP-02
LMS F-BUS Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
CPU 16 MHz CP	NT9X13DB		2	39	17F, 22F	AP
Designation Label NT9X13DB	P0696239		2	39	17F, 22F	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Link I/F Unit Shelf Assy	NT9X7204		1	26		AP
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS	1	26		AP
Bulkhead Assembly	NT9X6534		2	26		AP
Bulkhead Conn Cover Plate	NTEX5025			26		RUL10
F-Bus Extender PB	NT9X79AA		2	26	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		2	26	7R, 32R	AP

NTZZ30AA

Active Equipment

EMB2-16-000

Link Interface Module Cabinet (36 Link) Brown

Page 2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
+5 Volts Power Converter CP	NT9X30AA		2	26	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	26	1F, 33F	AP-03
Filler PB	NT9X19BA		10	26	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	26	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	26	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	26	8R	AP-03
LIU7 DS0A	NTZZ30BA			26	8-31	RUL1
CCS7 8Meg LIU (DS0A)	NTZZ30TA					
LIU7 E-DS0A	NTZZ30CA			26	8-31	RUL2
CCS7 8Meg LIU (E-DS0A)	NTZZ30UA			26	8-31	RUL2
CCS7 8Meg LIU (E/HC-DS0A)	NTZZ30VA			26	8-31	RUL2
LIU7 V.35	NTZZ30DA			26	8-31	RUL3
CCS7 8Meg LIU (V.35)	NTZZ30WA			26	8-31	RUL3
EIU	NTZZ30EA			26	8-31	RUL4
FRIU	NTZZ30FA			26	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			26	8-31	RUL6
LIU Cable Routing Label	P0714420			26		RUL7
FRU Cable Routing Label	P0714414			26		RUL8
FRU Cable Routing Label	P0714415			26		RUL8
Link I/F Unit Shelf Assy	NT9X7204		1	13		AP
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS	1	13		AP
Bulkhead Assembly	NT9X6534		2	13		AP
Bulkhead Conn Cover Plate	NTEX5025			13		RUL10
F-Bus Extender PB	NT9X79AA		2	13	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		2	13	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	13	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	13	1F, 33F	AP-03
Filler PB	NT9X19BA		10	13	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	13	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	13	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	13	8R	AP-03
LIU7 DS0A	NTZZ30BA			13	8-31	RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CCS7 8Meg LIU (DS0A)	NTZZ30TA			13	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			13	8-31	RUL2
CCS7 8Meg LIU (E-DS0A)	NTZZ30UA			13	8-31	RUL2
CCS7 8Meg LIU (E/HC-DS0A)	NTZZ30VA			13	8-31	RUL2
LIU7 V.35	NTZZ30DA			13	8-31	RUL3
CCS7 8Meg LIU (V.35)	NTZZ30WA			13	8-31	RUL3
EIU	NTZZ30EA			13	8-31	RUL4
FRIU	NTZZ30FA			13	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			13	8-31	RUL6
LIU Cable Routing Label	P0714421			13		RUL7
FRU Cable Routing Label	P0714416			13		RUL8
FRU Cable Routing Label	P0714417			13		RUL8
Link I/F Unit Shelf Assy	NT9X7204		1	00		AP
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS	1	00		AP
Bulkhead Assembly	NT9X6534		2	00		AP
Bulkhead Conn Cover Plate	NTEX5025			00		RUL10
F-Bus Extender PB	NT9X79BA		2	00	7R, 32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	00	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	00	1F, 33F	AP-03
Filler PB	NT9X19BA		10	00	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	00	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	00	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	00	8R	AP-03
LIU7 DS0A	NTZZ30BA			00	8-31	RUL1
CCS7 8Meg LIU (DS0A)	NTZZ30TA			00	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			00	8-31	RUL2
CCS7 8Meg LIU (E-DS0A)	NTZZ30UA			00	8-31	RUL2
CCS7 8Meg LIU (E/HC-DS0A)	NTZZ30VA			00	8-31	RUL2
LIU7 V.35	NTZZ30DA			00	8-31	RUL3
CCS7 8Meg LIY (V.35)	NTZZ30WA			00	8-31	RUL3
EIU	NTZZ30EA			00	8-31	RUL4
FRIU	NTZZ30FA			00	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			00	8-31	RUL6
LIU Cable Routing Label	P0714422			00		RUL7
FRU Cable Routing Label	P0714418			00		RUL8
FRU Cable Routing Label	P0714419			00		RUL8

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Kick Plate Assembly (Brown)	NT0X2430		1			AP
Frame Fail Lamp (Brown)	NT0X24BT		1			AP
Exterior Cabinet Label-Brown	P0696930					RUL12
Exterior Cabinet Label-Brown	P0702398					RUL12
DMS-STP Cabinet Label-Brown	P0710445					RUL12
Interior Cabinet FSP Label	P0709837					RUL12
FSP LIS ID Labels	P0702397					RUL12
FSP LIS ID Labels	P0713189					RUL12
FSP LIS ID Labels	P0713190					RUL12
PDC LIS/LMS ID Labels	P0701886					RUL12
PDC LIM IS Labels	P0713182					RUL12
High Voltage Label English	P0675711					RUL11
High Voltage Label English	P0675712					RUL11
High Voltage Lbl Eng/French	P0689137					RUL11
High Voltage Lbl Eng/French	P0689138					RUL11

NOTES:

- 1) LIU7, EIU and FRIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to engineering rules to be specified. The physical assignment of such a mixture shall be accomplished by first assigning the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.
- 2) The cards which make up an LIU7 are assigned to the following CP positions on the LIS:

LIS CP POS			
LIU7 POSITION NUMBER/SHELF	-----		
	NTZZ30BA, NTZZ30CA, or NTZZ30DA		
			NT9X77AA
			NT9X78AA
	NTEX22AA	NT9X76AA	NT9X78BA
-----	-----	-----	-----
LIU7 #1	8	9	9R
LIU7 #2	10	11	11R
LIU7 #3	12	13	13R
LIU7 #4	14	15	15R
LIU7 #5	16	17	17R
LIU7 #6	18	19	19R
LIU7 #7	20	21	21R
LIU7 #8	22	23	23R
LIU7 #9	24	25	25R
LIU7 #10	26	27	27R
LIU7 #11	28	29	29R
LIU7 #12	30	31	31R

- 3) The cards which make up an EIU are assigned to the following CP positions on the LIS:

EIU POSITION NUMBER/SHELF	LIS CP POS		
	NTZX22AA	NTZZ30EA NT9X84AA	NT9X85AA
EIU #1	8	9	9R
EIU #2	10	11	11R
EIU #3	12	13	13R
EIU #4	14	15	15R
EIU #5	16	17	17R
EIU #6	18	19	19R
EIU #7	20	21	21R
EIU #8	22	23	23R
EIU #9	24	25	25R
EIU #10	26	27	27R
EIU #11	28	29	29R
EIU #12	30	31	31R

- 4) The cards which make up an FRIU are assigned to the following CP positions on the LIS:

FRIU POSITION NUMBER/SHELF	LIS CP POS		
	NTZX22AA	NTZZ30FA NTX31AA	NTX30AA
FRIU #1	8	9	9R
FRIU #2	10	11	11R
FRIU #3	12	13	13R
FRIU #4	14	15	15R
FRIU #5	16	17	17R
FRIU #6	18	19	19R
FRIU #7	20	21	21R
FRIU #8	22	23	23R
FRIU #9	24	25	25R
FRIU #10	26	27	27R
FRIU #11	28	29	29R
FRIU #12	30	31	31R

- 5) It is recommended for reliability that LIU7/EIU/FRIUs be assigned to shelf positions 00, 13, and 26 in the following order:

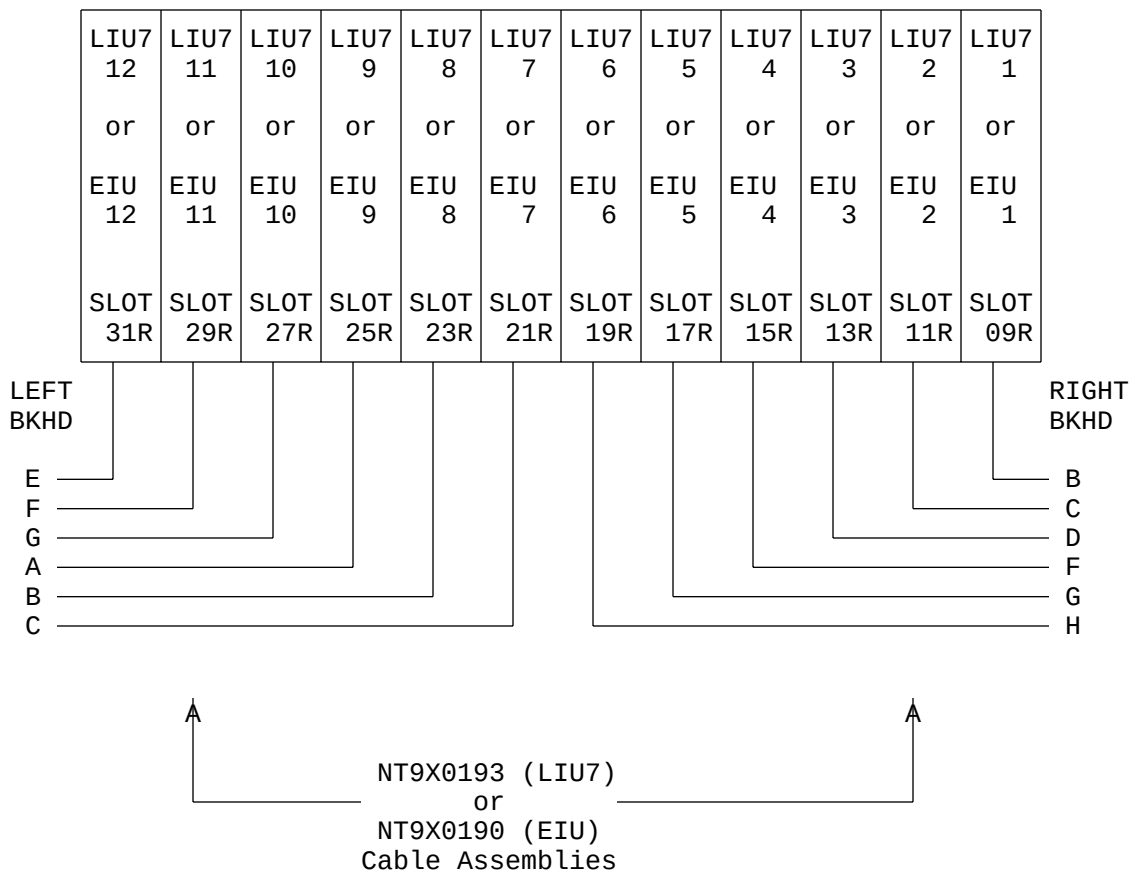
L M S												
LIU7/EIU/FRIU												
	#1		#3		#5		#7		#9		#12	
LIS 01	1	7	13	19	25	31	34	28	22	16	10	4
LIS 02	5	11	17	23	29	35	32	26	20	14	8	2
LIS 03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

ASSIGNMENT SEQUENCE OF LIU7/EIU/FRIU
TO LINK INTERFACE MODULE (NT9X70BA)

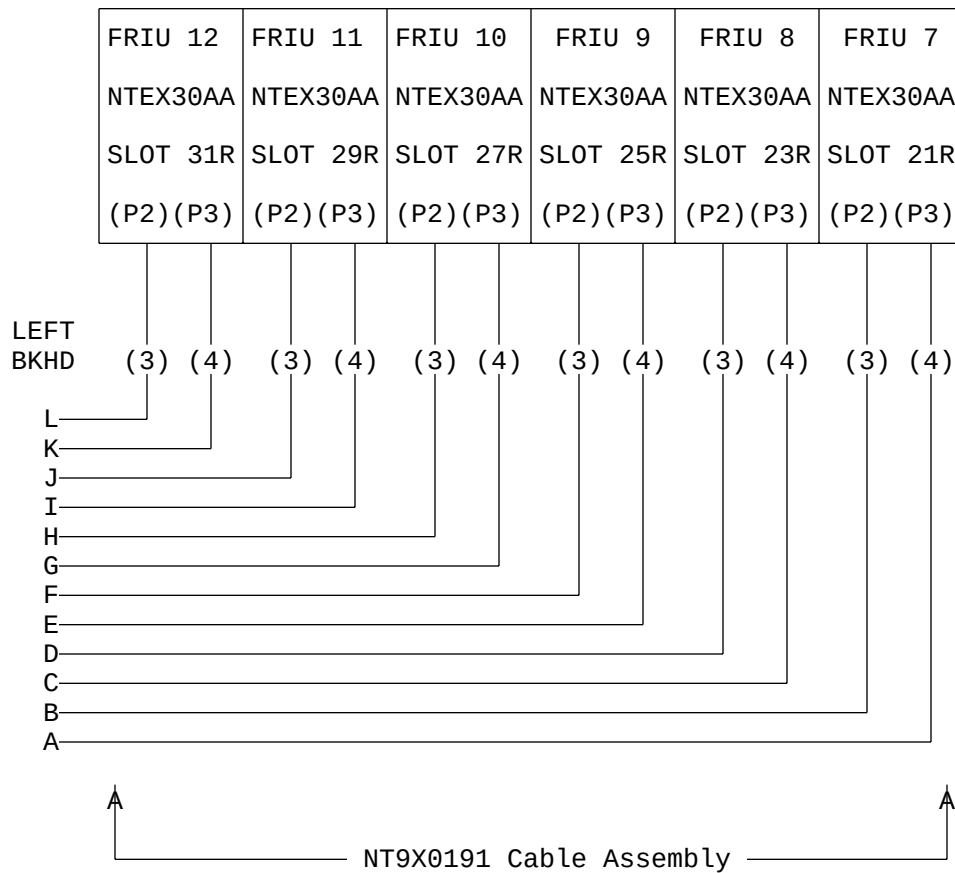
In an office, the LIU7s can be number from LIU 0 to LIU 750. The FRIU can be number from FRIU 0 to FRIU 407.

The LIU7/EIU/FRIU are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26) (#1 through #12), followed by LIS 02 (shelf position 13) (#1 through #12), followed by LIS 03 (shelf position 00) (#1 through #12). The LIU7/EIU/FRIU positions will be numbered consecutively whether the LIU7 is equipped or not.

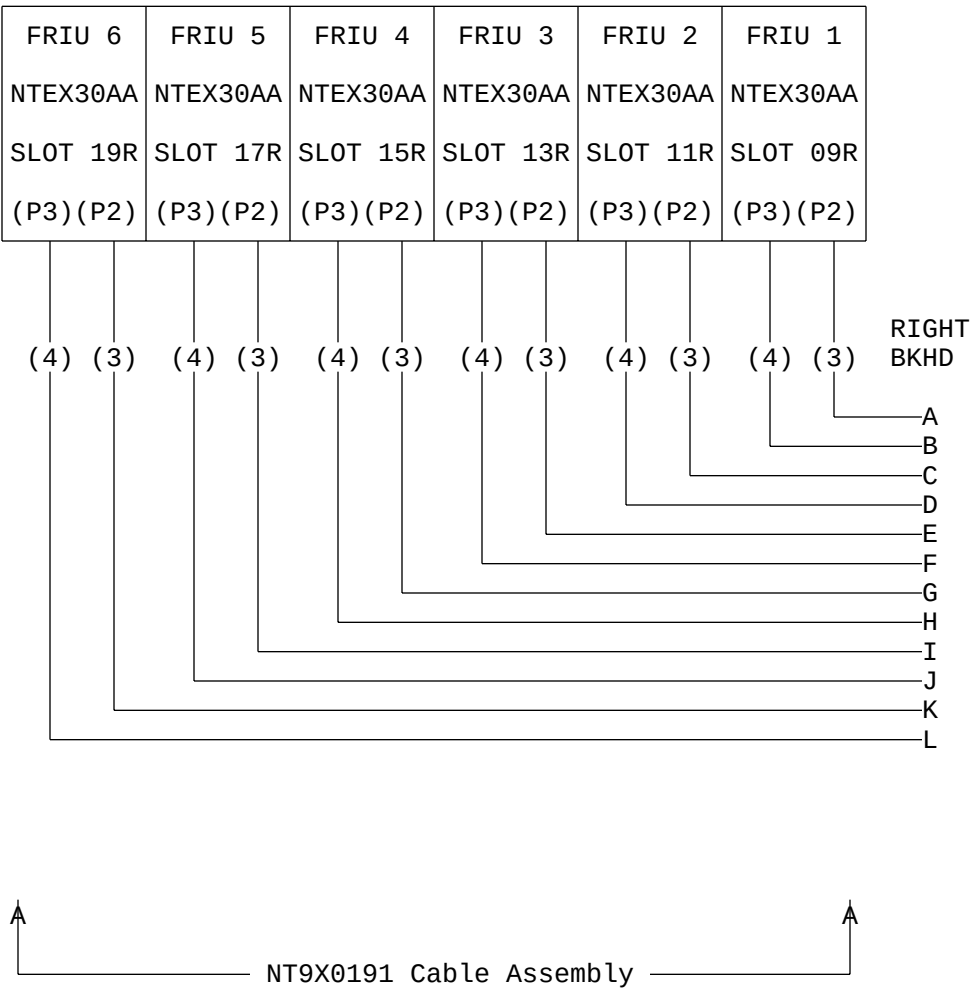
- 6) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:



7) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only).

RULES:

- AP 1) When PEC NTZZ30AA is ordered, these items are provided.
- 2) The NT9X0101 is comprised of the following:
- NT0X24AA Cabinet Framework
NT9X03AA Frame Supervisory Panel
A0345301 Core Cooling Unit
Cabinet Common Cabling & FSP Cabling
- The NT0X24AA framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide. The NT9X03AA FSP is mounted at position 52. The A0345301 Cooling Unit is located immediately below position 0.
- 3) AP-02: These PEC are always provided on the NT9X71AB and are shown herein for completeness.
- 4) AP-03: These PEC are always provided on the NT9X72BA and are shown herein for completeness.
- RUL1 1) Provide one NTZZ30BA for each required DS0A SS7 link not requiring enhanced maintenance.
- 2) Provide one NTZZ30TA for each DS0A SS7 link requiring 8Meg of memory.
- RUL2 1) Provide one NTZZ30CA for each required E-DS0A SS7 link requiring enhanced maintenance.
- 2) Provide one NTZZ30UA for each E-DS0A SS7 link requiring enhanced maintenance and 8Meg of memory.
- 3) Provide one NTZZ30VA for each E/HC--DS0A SS7 link requiring enhanced maintenance with high capacity (56/64KB) and 8Meg of memory.
- RUL3 1) Provide one NTZZ30DA for each required V.35 SS7 link.
- 2) Provide one NTZZ30WA for each V.35 SS7 link requiring 8Meg of memory.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required.

- RUL5 1) Provide one NTZZ30FA for each Frame Relay Service T1 interface required.
- RUL6 1) Provide one NTZZ30GA for each set of CP and PB positions not assigned to an LIU7, EIU, or FRIU.
- RUL7 1) Provide one sheet of LIU cable routing labels per shelf when LIUs or EIUs are provisioned on that shelf.
- RUL8 1) Provide one sheet of FRIU cable routing labels per half shelf as shown below when FRIU a provided on that half shelf.

Shelf	Slots	Label
26	31R-21R	P0714414
26	19R-09R	P0714415
13	31R-21R	P0714416
13	19R-09R	P0714417
00	31R-21R	P0714418
00	19R-09R	P0714419

- RUL9 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor office applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor office applications.
- RUL10 1) Provide one NTEX5025, Bulkhead Connector Cover Plate, for each unused connector on the NT9X6534 bulkhead. A maximum of 16 cover plates can be provided per bulkhead.
- RUL11 1) Provide one P0675711, Warning Label English "High Voltage", per cabinet for English only applications.
- 2) Provide four P0675712, Warning Label English "High Voltage", per cabinet for English only applications.

- 3) Provide one P0689137, Warning Label Eng/French "High Voltage/Haute Tension", per cabinet for English/French applications.
- 4) Provide four P0689138, Warning Label Eng/French "High Voltage/Haute Tension", per cabinet for English/French applications.

RUL12 1) The following labels are to be ordered when the DMS-SCP LIM cabinets have been provided:

DESCRIPTION	PEC	PROVISIONING RULES
Exterior Cabinet Label (Brown)	P0696930	Provide one per office. Contains the LIM 00 to LIM 11 labels.
Exterior Cabinet Label (Brown)	P0702398	Provide one per office. Contains the LIM 12 to LIM 16 labels.
DMS-STP Cabinet Label (Brown)	P0710445	Provide one per STP/LPP frame.
Interior Cabinet FSP Label	P0709837	Provide one per two LIM frames (NT9X70AA and/or NT9X70BA).
FSP LIS ID Label	P0702397	Provide one per office. Contains the LIS 01/LIS 02/LIS 03 labels.
FSP LIM ID Label	P0713189	Provide one per office. Contains the LIM 00 to LIM 16 labels.
FSP LMS ID Label	P0713190	Provide one per office. Contains the LMS 00 to LMS 16 labels.
PDC LIS ID Label	P0701886	Provide one per office. Contains the LIS 01/LIS 02/LIS 03 labels and the LMS 0/LMS 1 labels.
PDC LIM ID Label	P0713182	Provide one per office. Contains the LIM B1-ABS labels.

- RUL13 1) Provide one NTEX5001, Overhead (Frame) Power Block Kit, when overhead cabling is required.
- 2) Provide one NT9X0322, Power Connection Boot Kit, per LPP not provisioned with the NTEX5001 Kit.

LIM ENHANCED CABINET BUILDING BLOCK

PEC CODE: NTZZ30AB

CPC CODE: B0234618

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module cabinet houses 36 interface units. These units can be DS0A Link Interface Units, DS0A Enhanced Link Interface Units, or V.35 Link Interface Units for interface of CCS7 links as a functional block of Signaling Terminal Point (STP) or Signaling Service Point (SSP). The links can also be Ethernet Interface Units (EIU) or Frame Relay Services interface units (FRIU).

REFERENCE DOCUMENTATION: SLZZ30AB 00 02
NTZZ30AB REL 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ30AB EMC2-16-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 12 06	----- ECM 620 30	Previous history not available Remove MD Pending and state MD

The NTZZ30AB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
Enhanced Cabinet Assembly	NT9X95AA	FW	1			AP-01
Bulkhead Assembly (LF)	NT9X6509		1	39		AP-01
Bulkhead Assembly (RT)	NT9X6536		1	39		AP-01
Local Msg Switch Shf Assy	NT9X7101		1	39		AP-01
Local Msg Switch Shf Com CP	NT9X71AB	LMS	1	39		AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP-02
Memory 6M CP	NT9X14BB		2	39	16F, 23F	AP-02
Mapper CP	NT9X15AA		2	39	15F, 24F	AP-02
MS 4-Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP-02
MS P-Bus Terminator	NT9X49CA		2	39	7F, 32F	AP-02
MS Clock CP	NT9X53AA		2	39	18F, 21F	AP-02
Rem Term Intf	NT9X26AA		2	39	17R, 22R	AP-02
DS-30 4-Port CPNTA (STP)	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP-02
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP-02
+5 Volts Power Conv CP	NT9X30AA		2	39	4F, 36F	AP-02
Filler CP	NT9X19AA		8	39	11F-14F 25F-28F	AP-02
STP Power Filler CP	NT9X19EA		2	39	1F, 33F	AP-02
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP-02
LMS F-BUS Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
CPU 16 MHz CP	NT9X13DB		2	39	17F, 22F	AP
Designation Label NT9X13DB	P0696239		2	39	17F, 22F	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171			39		RUL16
LMS DS-30 X-Link Cable Assy	NT9X7025			39		RUL16
Link I/F Unit Shelf Assy	NT9X7204		1	26		AP-01
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS		26		RUL14
Bulkhead Assembly	NT9X6534		2	26		AP
Bulkhead Conn Cover Plate	NTEX5025			26		RUL15
F-Bus Extender PB	NT9X79AA		2	26	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		2	26	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	26	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	26	1F, 33F	AP-03
Filler PB	NT9X19BA		10	26	10R, 12R, 14R, 16R,	AP-03

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
					18R, 20R, 22R, 24R, 26R, 28R	
FBus Repeater CP	NT9X74CA		2	26	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	26	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	26	8R	AP-03
LIU7 DS0A	NTZZ30BA			26	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			26	8-31	RUL2
LIU7 V.35	NTZZ30DA			26	8-31	RUL3
EIU	NTZZ30EA			26	8-31	RUL4
FRIU	NTZZ30FA			26	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			26	8-31	RUL6
LIU Cable Routing Label	P0714420			26		RUL7
FRU Cable Routing Label	P0714414			26		RUL8
FRU Cable Routing Label	P0714415			26		RUL8
Link I/F Unit Shelf Assy	NT9X7204		1	13		AP-01
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS		13		RUL14
Bulkhead Assembly	NT9X6534		2	13		AP
Bulkhead Conn Cover Plate	NTEX5025			13		RUL15
F-Bus Extender PB	NT9X79AA		2	13	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		2	13	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	13	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	13	1F, 33F	AP-03
Filler PB	NT9X19BA		10	13	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	13	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	13	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	13	8R	AP-03
LIU7 DS0A	NTZZ30BA			13	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			13	8-31	RUL2
LIU7 V.35	NTZZ30DA			13	8-31	RUL3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EIU	NTZZ30EA			13	8-31	RUL4
FRIU	NTZZ30FA			13	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			13	8-31	RUL6
LIU Cable Routing Label	P0714421			13		RUL7
FRU Cable Routing Label	P0714416			13		RUL8
FRU Cable Routing Label	P0714417			13		RUL8
Link I/F Unit Shelf Assy	NT9X7204		1	00		AP-01
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS		00		RUL14
Bulkhead Assembly	NT9X6534		2	00		AP
Bulkhead Conn Cover Plate	NTEX5025			00		RUL15
F-Bus Extender PB	NT9X79BA		2	00	7R, 32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	00	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	00	1F, 33F	AP-03
Filler PB	NT9X19BA		10	00	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	00	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	00	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	00	8R	AP-03
LIU7 DS0A	NTZZ30BA			00	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			00	8-31	RUL2
LIU7 V.35	NTZZ30DA			00	8-31	RUL3
EIU	NTZZ30EA			00	8-31	RUL4
FRIU	NTZZ30FA			00	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			00	8-31	RUL6
LIU Cable Routing Label	P0714422			00		RUL7
FRU Cable Routing Label	P0714418			00		RUL8
FRU Cable Routing Label	P0714419			00		RUL8
Cooling Unit	A0377580					AP
Filter	A0377837					AP-01
Miscellaneous H/W, Grey	NTZZ30JA					RUL9
Miscellaneous H/W, Brown	NTZZ30KA					RUL9
Cable Trough Assy (Brown)	NT0X24BH					RUL12
Cable Trough Assy (Grey)	NT0X25AX					RUL12
Stand-Alone Pwr Cabling Kit	NT9X9532					RUL10
Filter Capacitor Desig Sheet	P0732513					RUL10
Cabinetized Power Cable Kit	NTZZ30QA					RUL10
Leveling Feet	NTRX2523					RUL13
Base Isolation Pad	P0729947					RUL13
Exterior Cabinet Label-Grey	P0709852					RUL11
Exterior Cabinet Label-Brown	P0696930					RUL11
Exterior Cabinet Label-Brown	P0702398					RUL11
DMS-STP Cabinet Label-Brown	P0710445					RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS-STP Cabinet Label-Grey	P0710446					RUL11
Interior Cabinet FSP Label	P0709837					RUL11
FSP LIS ID Labels	P0702397					RUL11
FSP LMS ID Labels	P0713190					RUL11
FSP LIM ID Labels	P0713189					RUL11
PDC LIS/LMS ID Labels	P0701886					RUL11
PDC LIM ID Labels	P0713182					RUL11
FCC 15/CSA C108.8 Label	P0679484		1			AP
Shelf I.D. Label	P0714754		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) LIU7, EIU and FRIU may be mixed on the LIM in BCS33 and beyond subject to engineering rules to be specified. The physical assignment of such a mixture shall be accomplished by first assigning the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

- 2) The cards which make up an LIU7 are assigned to the following CP positions on the LIS:

LIU7 LIU7 POSITION NUMBER/SHELF	LIS CP POS		
	NTZZ30BA,	NTZZ30CA,	or NTZZ30DA
	NTEX22AA	NT9X76AA	NT9X77AA NT9X78AA NT9X78BA
LIU7 #1	8	9	9R
LIU7 #2	10	11	11R
LIU7 #3	12	13	13R
LIU7 #4	14	15	15R
LIU7 #5	16	17	17R
LIU7 #6	18	19	19R
LIU7 #7	20	21	21R
LIU7 #8	22	23	23R
LIU7 #9	24	25	25R
LIU7 #10	26	27	27R
LIU7 #11	28	29	29R
LIU7 #12	30	31	31R

For reliability the LIU7s must be assigned to shelf positions 00, 13, and 26 in the following order:

L M S												
LIU7												
#1 #3 #5 #7 #9 #12												
LIS 01	1	7	13	19	25	31	34	28	22	16	10	4
LIS 02	5	11	17	23	29	35	32	26	20	14	8	2
LIS 03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

ASSIGNMENT SEQUENCE OF LIU7s

In an office, the LIU7s can be number from LIU 0 to LIU 750.

The LIU7s are to be numbered sequentially in a LIM cabinet starting with LIS 01 (shelf position 26) (LIU #1 through to LIU #12), followed by LIS 02 (shelf position 13) (LIU #1 through to LIU #12), followed by LIS 03 (shelf position 00) (LIU #1 through to LIU #12). The LIU7 positions will be numbered consecutively regardless of whether the LIU7 is equipped or not.

- 3) The cards which make up an EIU are assigned to the following CP positions on the LIS:

EIU POSITION NUMBER/SHELF	LIS CP POS		
	-----	NTZZ30EA	
	NTEX22AA	NT9X84AA	NT9X85AA
-----	-----	-----	-----
EIU #1	8	9	9R
EIU #2	10	11	11R
EIU #3	12	13	13R
EIU #4	14	15	15R
EIU #5	16	17	17R
EIU #6	18	19	19R
EIU #7	20	21	21R
EIU #8	22	23	23R
EIU #9	24	25	25R
EIU #10	26	27	27R
EIU #11	28	29	29R
EIU #12	30	31	31R

For reliability the EIUs must be assigned to shelf positions 00, 13, and 26 in the following order:

L M S												
EIU												
#1 #3 #5 #7 #9 #12												
LIS 01	1	7	13	19	25	31	34	28	22	16	10	4
LIS 02	5	11	17	23	29	35	32	26	20	14	8	2
LIS 03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

ASSIGNMENT SEQUENCE OF EIUS

In an office, the EIUs can be number from EIU 0 to EIU 750.

The EIU's are to be numbered sequentially in a LIM cabinet starting with LIS 01 (shelf position 26) (EIU #1 through to EIU #12), followed by LIS 02 (shelf position 13) (EIU #1 through to EIU #12), followed by LIS 03 (shelf position 00) (EIU #1 through to EIU #12). The EIU positions will be numbered consecutively regardless of whether the EIU is equipped or not.

- 4) The cards which make up an FRIU are assigned to the following CP positions on the LIS:

LIS CP POS			
FRIU POSITION NUMBER/SHELF	NTZZ30FA		
	NTEX22AA	NTEX31AA	NTEX30AA
FRIU #1	8	9	9R
FRIU #2	10	11	11R
FRIU #3	12	13	13R
FRIU #4	14	15	15R
FRIU #5	16	17	17R
FRIU #6	18	19	19R
FRIU #7	20	21	21R
FRIU #8	22	23	23R
FRIU #9	24	25	25R
FRIU #10	26	27	27R
FRIU #11	28	29	29R
FRIU #12	30	31	31R

For reliability the FRIU must be assigned to shelf positions 00, 13, and 26 in the following order:

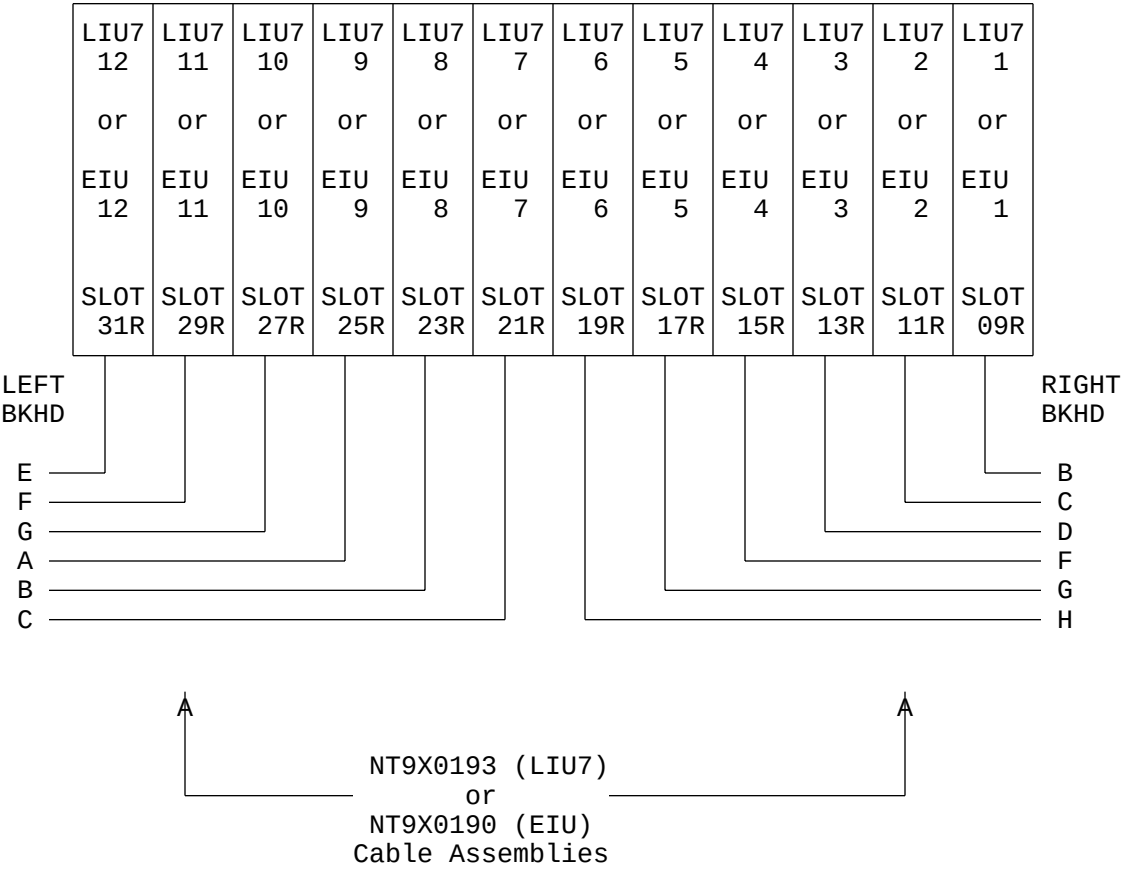
		L M S											
		FRIU											
		#1	#3	#5	#7	#9	#12						
LIS 01	SH POS 26	1	7	13	19	25	31	34	28	22	16	10	4
LIS 02		5	11	17	23	29	35	32	26	20	14	8	2
LIS 03		3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)		0	1	1	1	1	2	2	2	2	2	3	
		8	0	2	4	6	8	0	2	4	6	8	0

ASSIGNMENT SEQUENCE OF FRIU

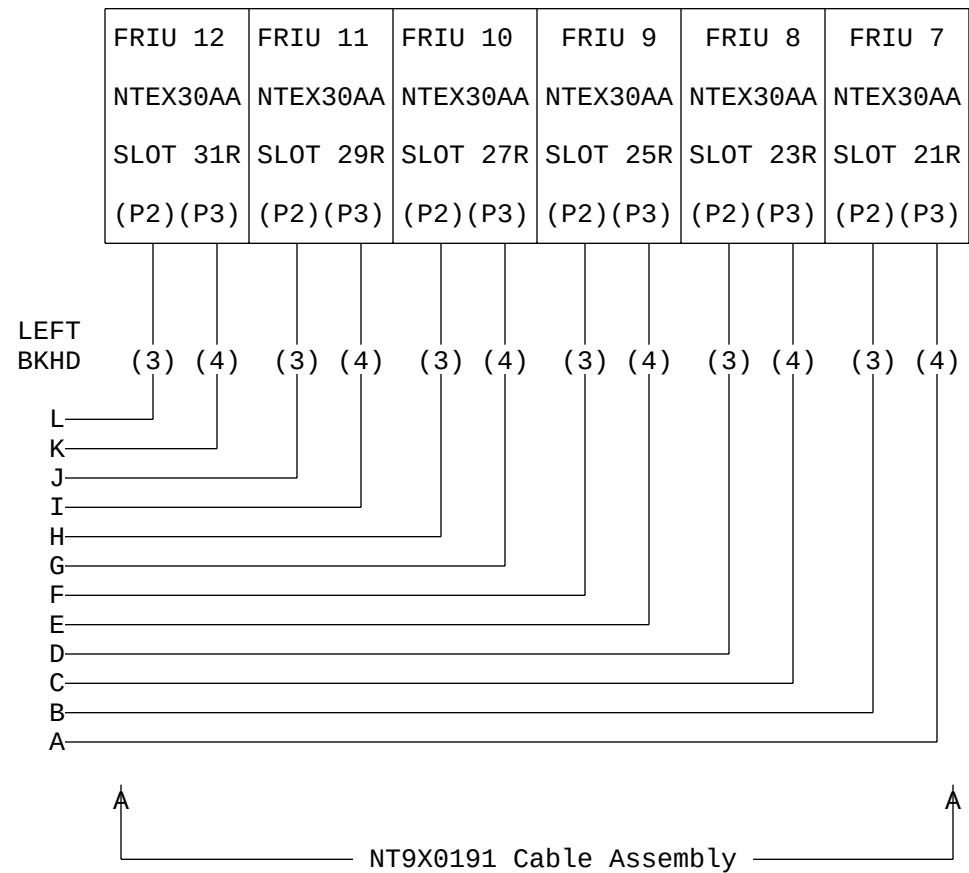
In an office, the FRIU can be number from FRIU 0 to FRIU 407.

The FRIU are to be numbered sequentially in a LIM cabinet starting with LIS 01 (shelf position 26) (FRIU #1 through to FRIU #12), followed by LIS 02 (shelf position 13) (FRIU #1 through to FRIU #12), followed by LIS 03 (shelf position 00) (FRIU #1 through to FRIU #12).

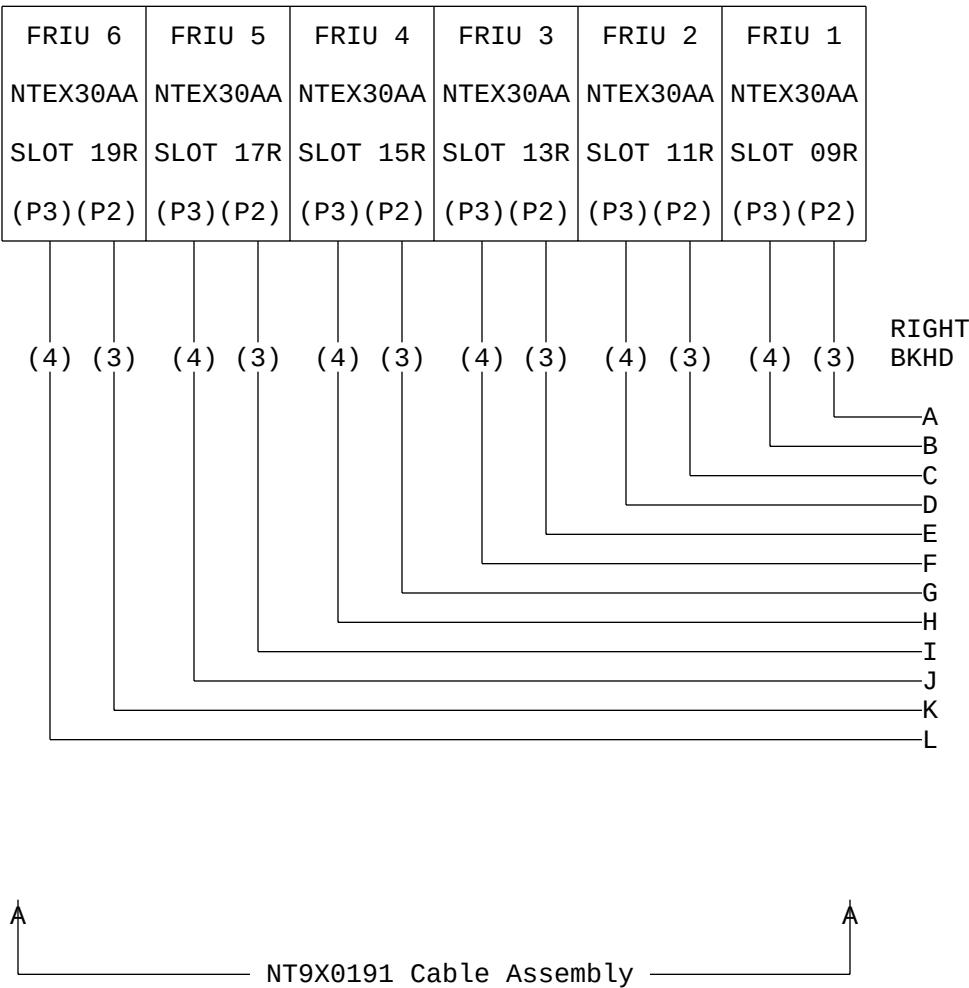
- 5) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:



6) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only).

RULES:

- AP 1) When PEC NTZZ30AB is ordered, these items are provided.
- 2) The NT9X95AA contains the NT9X9501 Cabinet Framework.
- The NT9X9501 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- AP-01 1) This PEC is always provided on the NT9X70BB and is shown herein for completeness.
- AP-02 1) This PEC is always provided on the NT9X71AB and is shown herein for completeness.
- AP-03 4) This PEC is always provided on the NT9X72BA and is shown herein for completeness.
- RUL1 1) Provide one NTZZ30BA for each required DS0A SS7 link not requiring enhanced maintenance.
- RUL2 1) Provide one NTZZ30CA for each required E-DS0A SS7 link requiring enhanced maintenance.
- RUL3 1) Provide one NTZZ30DA for each required V.35 SS7 link.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required.
- RUL5 1) Provide one NTZZ30FA for each Frame Relay Service T1 interface required.
- RUL6 1) Provide one NTZZ30GA for each set of CP and PB positions not assigned to an LIU7, EIU, or FRIU.
- RUL7 1) Provide one sheet of LIU cable routing labels per shelf when LIUs or EIUs are provisioned on that shelf.
- RUL8 1) Provide one sheet of FRIU cable routing labels per half shelf as shown below when FRIU a provided on that half shelf.

Shelf	Slots	Label
26	31R-21R	P0714414
26	19R-09R	P0714415
13	31R-21R	P0714416

13	19R-09R	P0714417
00	31R-21R	P0714418
00	19R-09R	P0714419

- RUL9 1) Provide one (1) NTZZ30JA, Miscellaneous Hardware (Grey), per grey LIM cabinet NT9X70BB. Use only with other grey exterior parts.
- 2) Provide one (1) NTZZ30KA, Miscellaneous Hardware (Brown), per brown LIM cabinet NT9X70BB. Use only with other brown exterior parts.
- RUL10 1) Provide one (1) NT9X9532, Cabling Stand-Alone Power Cabling Kit, and one (1) P0732513, Filter Capacitor Designation Label Sheet, when powering the LIM cabinet in a stand alone lineup (filtered power). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.
- 2) Provide one (1) NTZZ30QA, Cabinetized Power Cable Kit, when powering the LIM cabinet in a DMS-100 Cabinetized lineup (non-filtered power). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL11 1) The following labels are to be ordered when the DMS-SCP LIM cabinets have been provided:

DESCRIPTION	PEC	PROVISIONING RULES
Exterior Cabinet Label (Grey)	P0709852	Provide one per office.
Exterior Cabinet Label (Brown)	P0696930	Provide one per office. Contains the LIM 00 to LIM 11 labels.
Exterior Cabinet Label (Brown)	P0702398	Provide one per office. Contains the LIM 12 to LIM 16 labels.
DMS-STP Cabinet Label (Grey)	P0710446	Provide one per STP/LIM frame.
DMS-STP Cabinet Label (Brown)	P0710445	Provide one per STP/LIM frame.

	Interior Cabinet P0709837	Provide one per two LIM frames (NT9X70AA/NT9X70BA/NT9X70BB).
	FSP Label	
	FSP LIS ID Label P0702397	Provide one per office. Contains the LIS 01/LIS 02/LIS 03 labels.
	FSP LMS ID Label P0713190	Provide one per office. Contains the LIM 00 to LIM 16 labels.
	FSP LIM ID Label P0713188	Provide one per office. Contains the LIM 00 to LIM 16 labels.
	PDC LMS ID Label P0701886	Provide one per office. Contains the LIS 01/LIS 02/LIS 03 labels and the LMS 0/LMS 1 labels.
	PDC LIM ID Label P0713182	Provide one per office. Contains the LIM B1-ABS labels
- RUL12 1) Provide one (1) NT0X24BH, Cable Trough Assembly (Brown), per LIM cabinet when overhead cabling is required. Use only with other brown exterior parts.
- 2) Provide one (1) NT0X25AX, Cable Trough Assembly (Grey), per LIM cabinet when overhead cabling is required. Use only with other grey exterior parts.
- RUL13 1) Provide one (1) NTRX2523, Leveling Foot Kit, per LIM cabinet for non-earthquake offices. If anchoring is required, only one anchor can be used per cabinet. If four anchors are required, leveling feet cannot be used.
- 2) Provide one (1) P0729947, Cabinet Base Isolator Pad, per cabinet when leveling feet are not provided.
- RUL14 1) Always provision three (3) NT9X72BA, Common Circuit Packfill, to equip the LIS shelves (one per NT9X7204 shelf). Note: All three LIS shelves must be equipped with common circuit packs.
- RUL15 1) Provide one (1) NTEX5025, Bulkhead Connector Cover Plate, for each unused connector on the NT9X6534 bulkhead. A maximum of 16 cover plates can be provided per bulkhead.
- RUL16 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.

LIM ENHANCED CABINET

NTZZ30SC

RATING: MD. Replaced by NTZZ30SD

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module cabinet houses 36 interface units. These units can be DS0A Link Interface Units, DS0A Enhanced Link Interface Units, or V.35 Link Interface Units for interface of CCS7 links as a functional block of Signaling Terminal Point (STP) or Signaling Service Point (SSP). The links can also be Ethernet Interface Units (EIU) or Frame Relay Services interface units (FRIU).

REFERENCE DOCUMENTATION: SLZZ30SC 00 01
NTZZ30SC REL 01

The NTZZ30SC. is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
Enhanced Cabinet Assembly	NT9X95AA	FW	1			AP-01
Bulkhead Assembly (LF)	NT9X6509		1	39		AP-01
Bulkhead Assembly (RT)	NT9X6536		1	39		AP-01
Local Msg Switch Shf Assy	NT9X7101		1	39		AP-01
Local Msg Switch Shf Com CP	NT9X71AB	LMS	1	39		AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP-02
Memory 6M CP	NT9X14BB		2	39	16F, 23F	AP-02
Mapper CP	NT9X15AA		2	39	15F, 24F	AP-02
MS 4-Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP-02
MS P-Bus Terminator	NT9X49CA		2	39	7F, 32F	AP-02
MS Clock CP	NT9X53AA		2	39	18F, 21F	AP-02
Rem Term Intf	NT9X26AA		2	39	17R, 22R	AP-02
DS-30 4-Port CPNTA (STP)	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP-02
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP-02
+5 Volts Power Conv CP	NT9X30AA		2	39	4F, 36F	AP-02
Filler CP	NT9X19AA		8	39	11F-14F 25F-28F	AP-02
STP Power Filler CP	NT9X19EA		2	39	1F, 33F	AP-02
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP-02
LMS F-BUS Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
CPU 16 MHz CP	NT9X13DB		2	39	17F, 22F	AP
Designation Label NT9X13DB	P0696239		2	39	17F, 22F	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171			39		RUL16
LMS DS-30 X-Link Cable Assy	NT9X7025			39		RUL16

Release 07.02

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy	NT9X7204	LIS	1	26		AP-01
LIU7/DCP Shelf Comm CP	NT9X72BA			26		RUL14
Bulkhead Assembly	NT9X6534		2	26		AP-01
Bulkhead Conn Cover Plate	NTEX5025			26		RUL15
F-Bus Extender PB	NT9X79AA		2	26	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		2	26	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	26	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	26	1F, 33F	AP-03
Filler PB	NT9X19BA		10	26	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	26	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	26	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	26	8R	AP-03
LIU7 DS0A	NTZZ30BA			26	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			26	8-31	RUL2
LIU7 V.35	NTZZ30DA			26	8-31	RUL3
EIU	NTZZ30EA			26	8-31	RUL4
FRIU	NTZZ30FA			26	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			26	8-31	RUL6
LIU Cable Routing Label	P0714420			26		RUL7
FRU Cable Routing Label	P0714414			26		RUL8
FRU Cable Routing Label	P0714415			26		RUL8
Link I/F Unit Shelf Assy	NT9X7204	LIS	1	13		AP-01
LIU7/DCP Shelf Comm CP	NT9X72BA			13		RUL14
Bulkhead Assembly	NT9X6534		2	13		AP-01
Bulkhead Conn Cover Plate	NTEX5025			13		RUL15
F-Bus Extender PB	NT9X79AA		2	13	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		2	13	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	13	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	13	1F, 33F	AP-03
Filler PB	NT9X19BA		10	13	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	13	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	13	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	13	8R	AP-03
LIU7 DS0A	NTZZ30BA			13	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			13	8-31	RUL2
LIU7 V.35	NTZZ30DA			13	8-31	RUL3

Retired Equipment
LIM Enhanced Cabinet

NTZZ30SC
EMC2-16-002
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EIU	NTZZ30EA			13	8-31	RUL4
FRIU	NTZZ30FA			13	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			13	8-31	RUL6
LIU Cable Routing Label	P0714421			13		RUL7
FRU Cable Routing Label	P0714416			13		RUL8
FRU Cable Routing Label	P0714417			13		RUL8
Link I/F Unit Shelf Assy	NT9X7204		1	00		AP-01
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS		00		RUL14
Bulkhead Assembly	NT9X6534		2	00		AP-01
Bulkhead Conn Cover Plate	NTEX5025			00		RUL15
F-Bus Extender PB	NT9X79BA		2	00	7R, 32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	00	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	00	1F, 33F	AP-03
Filler PB	NT9X19BA		10	00	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	00	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	00	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	00	8R	AP-03
LIU7 DS0A	NTZZ30BA			00	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			00	8-31	RUL2
LIU7 V.35	NTZZ30DA			00	8-31	RUL3
EIU	NTZZ30EA			00	8-31	RUL4
FRIU	NTZZ30FA			00	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			00	8-31	RUL6
LIU Cable Routing Label	P0714422			00		RUL7
FRU Cable Routing Label	P0714418			00		RUL8
FRU Cable Routing Label	P0714419			00		RUL8
Cooling Unit	A0377580					AP
Filter	A0377837					AP-01
Miscellaneous H/W, Grey	NTZZ30JA					RUL9
Miscellaneous H/W, Brown	NTZZ30KA					RUL9
Cable Trough Assy (Brown)	NT0X24BH					RUL12
Cable Trough Assy (Grey)	NT0X25AX					RUL12
Stand-Alone Pwr Cabling Kit	NT9X9532					RUL10
Filter Capacitor Desig Sheet	P0732513					RUL10
Cabinetized Power Cable Kit	NTZZ30QA					RUL10
Leveling Feet	NTRX2523					RUL13
Base Isolation Pad	P0729947					RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Exterior Cabinet Label-Grey	P0709852					RUL11
Exterior Cabinet Label-Brown	P0696930					RUL11
Exterior Cabinet Label-Brown	P0702398					RUL11
DMS-STP Cabinet Label-Brown	P0710445					RUL11
DMS-STP Cabinet Label-Grey	P0710446					RUL11
Interior Cabinet FSP Label	P0709837					RUL11
FSP LIS ID Labels	P0702397					RUL11
FSP LMS ID Labels	P0713190					RUL11
FSP LIM ID Labels	P0713189					RUL11
PDC LIS/LMS ID Labels	P0701886					RUL11
PDC LIM ID Labels	P0713182					RUL11
FCC 15/CSA C108.8 Label	P0679484		1			AP
Shelf I.D. Label	P0714754		1			AP

NOTES:

- 1) LIU7, EIU and FRIU may be mixed on the LIM in BCS33 and beyond subject to engineering rules to be specified. The physical assignment of such a mixture shall be accomplished by first assigning the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

- 2) The cards which make up an LIU7 are assigned to the following CP positions on the LIS:

LIS CP POS			
LIU7 LIU7 POSITION NUMBER/SHELF	-----		
	NTZZ30BA,	NTZZ30CA,	or NTZZ30DA
			NT9X77AA
			NT9X78AA
	NTEX22AA	NT9X76AA	NT9X78BA
-----	-----	-----	-----
LIU7 #1	8	9	9R
LIU7 #2	10	11	11R
LIU7 #3	12	13	13R
LIU7 #4	14	15	15R
LIU7 #5	16	17	17R
LIU7 #6	18	19	19R
LIU7 #7	20	21	21R
LIU7 #8	22	23	23R
LIU7 #9	24	25	25R
LIU7 #10	26	27	27R
LIU7 #11	28	29	29R
LIU7 #12	30	31	31R

For reliability the LIU7s must be assigned to shelf positions 00, 13, and 26 in the following order:

L M S													
LIU7													
#1		#3		#5		#7		#9		#12			
LIS 01	1	7	13	19	25	31	34	28	22	16	10	4	
LIS 02	5	11	17	23	29	35	32	26	20	14	8	2	
LIS 03	3	9	15	21	27	33	36	30	24	18	12	6	
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

ASSIGNMENT SEQUENCE OF LIU7s

In an office, the LIU7s can be number from LIU 0 to LIU 750.

The LIU7s are to be numbered sequentially in a LIM cabinet starting with LIS 01 (shelf position 26) (LIU #1 through to LIU #12), followed by LIS 02 (shelf position 13) (LIU #1 through to LIU #12), followed by LIS 03 (shelf position 00) (LIU #1 through to LIU #12). The LIU7 positions will be numbered consecutively regardless of whether the LIU7 is equipped or not.

- 3) The cards which make up an EIU are assigned to the following CP positions on the LIS:

EIU POSITION NUMBER/SHELF	LIS CP POS		
	NTEX22AA	NTZZ30EA NT9X84AA	NT9X85AA
EIU #1	8	9	9R
EIU #2	10	11	11R
EIU #3	12	13	13R
EIU #4	14	15	15R
EIU #5	16	17	17R
EIU #6	18	19	19R
EIU #7	20	21	21R
EIU #8	22	23	23R
EIU #9	24	25	25R
EIU #10	26	27	27R
EIU #11	28	29	29R
EIU #12	30	31	31R

For reliability the EIUs must be assigned to shelf positions 00, 13, and 26 in the following order:

L M S													
EIU													
#1		#3		#5		#7		#9		#12			
LIS 01	1	7	13	19	25	31	4	28	22	16	10	4	
LIS 02	5	11	17	23	29	35	32	26	20	14	8	2	
LIS 03	3	9	15	21	27	33	36	30	24	18	12	6	
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

ASSIGNMENT SEQUENCE OF EIUS

In an office, the EIUs can be number from EIU 0 to EIU 750.

The EIUs are to be numbered sequentially in a LIM cabinet starting with LIS 01 (shelf position 26) (EIU #1 through to EIU #12), followed by LIS 02 (shelf position 13) (EIU #1 through to EIU #12), followed by LIS 03 (shelf position 00) (EIU #1 through to EIU #12). The EIU positions will be numbered consecutively regardless of whether the EIU is equipped or not.

- 4) The cards which make up an FRIU are assigned to the following CP positions on the LIS:

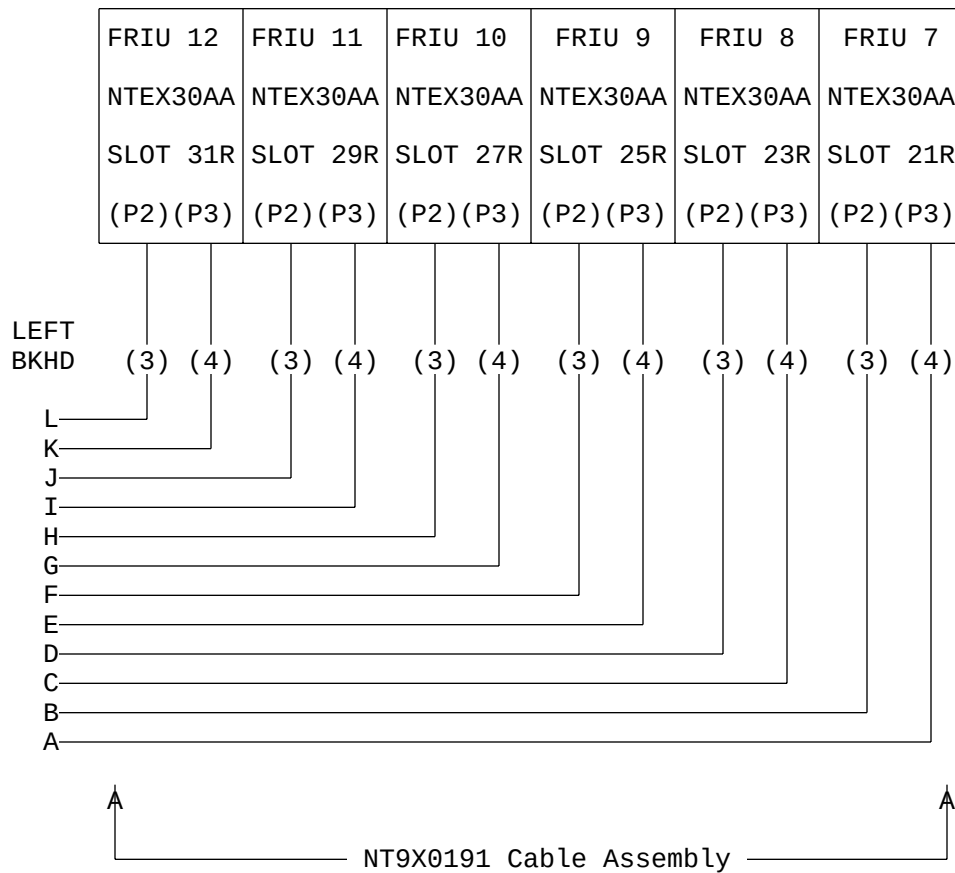
FRIU POSITION NUMBER/SHELF	LIS CP POS		
	NTZZ30FA	NTZZ30FA	NTZZ30FA
	NTEX22AA	NTEX31AA	NTEX30AA
FRIU #1	8	9	9R
FRIU #2	10	11	11R
FRIU #3	12	13	13R
FRIU #4	14	15	15R
FRIU #5	16	17	17R
FRIU #6	18	19	19R
FRIU #7	20	21	21R
FRIU #8	22	23	23R
FRIU #9	24	25	25R
FRIU #10	26	27	27R
FRIU #11	28	29	29R
FRIU #12	30	31	31R

For reliability the FRIU must be assigned to shelf positions 00, 13, and 26 in the following order:

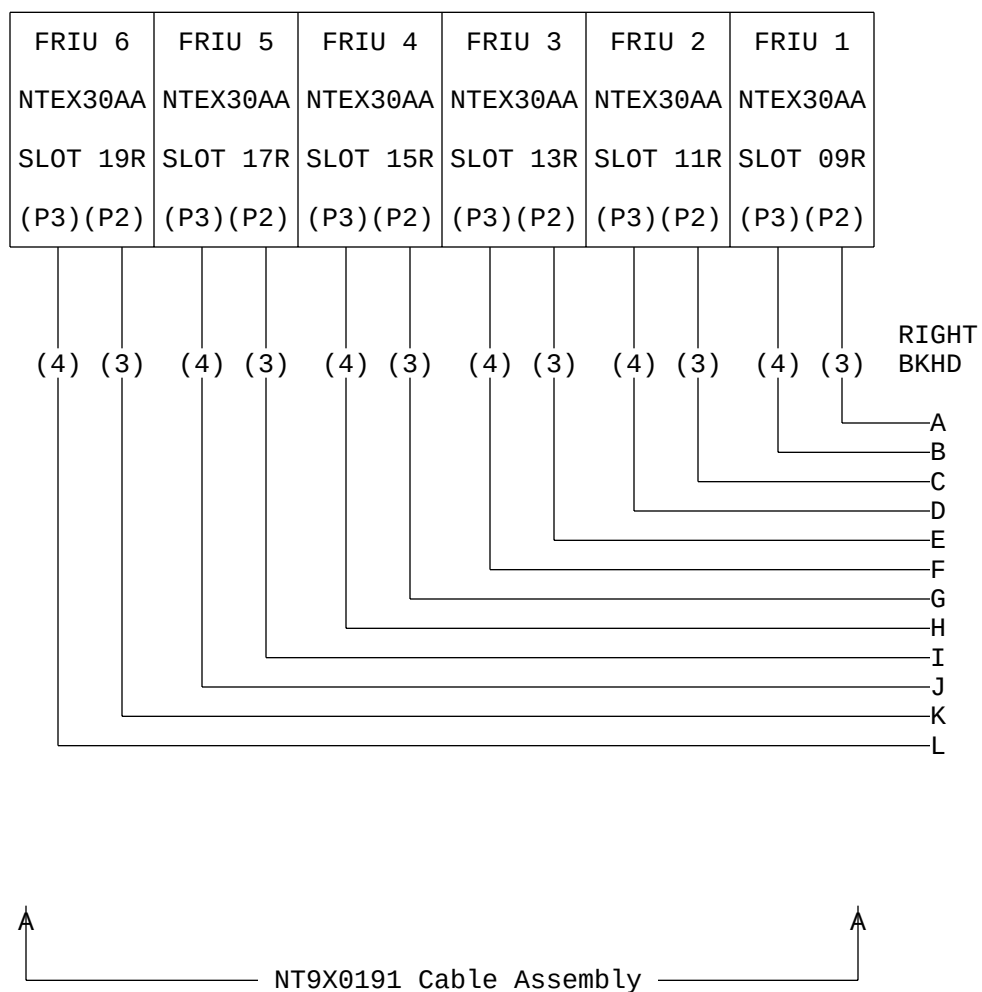
L M S												
FRIU												
#1		#3		#5		#7		#9		#12		
LIS 01	1	7	13	19	25	31	34	28	22	16	10	4
SH POS 26												
LIS 02	5	11	17	23	29	35	32	26	20	14	8	2
LIS 03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

ASSIGNMENT SEQUENCE OF FRIU

6) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only).

RULES:

- AP 1) When PEC NTZZ30SC is ordered, these items are provided.
- 2) The NT9X95AA contains the NT9X9501 Cabinet Framework.
- The NT9X9501 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- AP-01 1) This PEC is always provided on the NT9X70BB and is shown herein for completeness.
- AP-02 1) This PEC is always provided on the NT9X71AB and is shown herein for completeness.
- AP-03 4) This PEC is always provided on the NT9X72BA and is shown herein for completeness.
- RUL1 1) Provide one NTZZ30BA for each required DS0A SS7 link not requiring enhanced maintenance.
- RUL2 1) Provide one NTZZ30CA for each required E-DS0A SS7 link requiring enhanced maintenance.
- RUL3 1) Provide one NTZZ30DA for each required V.35 SS7 link.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required.
- RUL5 1) Provide one NTZZ30FA for each Frame Relay Service T1 interface required.
- RUL6 1) Provide one NTZZ30GA for each set of CP and PB positions not assigned to an LIU7, EIU, or FRIU.

RUL7 1) Provide one sheet of LIU cable routing labels per shelf when LIUs or EIUs are provisioned on that shelf.

RUL8 1) Provide one sheet of FRIU cable routing labels per half shelf as shown below when FRIU a provided on that half shelf.

Shelf	Slots	Label
26	31R-21R	P0714414
26	19R-09R	P0714415
13	31R-21R	P0714416
13	19R-09R	P0714417
00	31R-21R	P0714418
00	19R-09R	P0714419

RUL9 1) Provide one (1) NTZZ30JA, Miscellaneous Hardware (Grey), per grey LIM cabinet NT9X70BB. Use only with other grey exterior parts.

2) Provide one (1) NTZZ30KA, Miscellaneous Hardware (Brown), per brown LIM cabinet NT9X70BB. Use only with other brown exterior parts.

RUL10 1) Provide one (1) NT9X9532, Cabling Stand-Alone Power Cabling Kit, and one (1) P0732513, Filter Capacitor Designation Label Sheet, when powering the LIM cabinet in a stand alone lineup (filtered power). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.

2) Provide one (1) NTZZ30QA, Cabinetized Power Cable Kit, when powering the LIM cabinet in a DMS-100 Cabinetized lineup (non-filtered power). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

- RUL11 1) The following labels are to be ordered when the DMS-SCP LIM cabinets have been provided:

DESCRIPTION	PEC	PROVISIONING RULES
Exterior Cabinet Label (Grey)	P0709852	Provide one per office.
Exterior Cabinet Label (Brown)	P0696930	Provide one per office. Contains the LIM 00 to LIM 11 labels.
Exterior Cabinet Label (Brown)	P0702398	Provide one per office. Contains the LIM 12 to LIM 16 labels.
DMS-STP Cabinet Label (Grey)	P0710446	Provide one per STP/LIM frame.
DMS-STP Cabinet Label (Brown)	P0710445	Provide one per STP/LIM frame.
Interior Cabinet FSP Label	P0709837	Provide one per two LIM frames (NT9X70AA/NT9X70BA/NT9X70BB).
FSP LIS ID Label	P0702397	Provide one per office. Contains the LIS 01/LIS 02/LIS 03 labels.
FSP LMS ID Label	P0713190	Provide one per office. Contains the LIM 00 to LIM 16 labels.
FSP LIM ID Label	P0713188	Provide one per office. Contains the LIM 00 to LIM 16 labels.
PDC LMS ID Label	P0701886	Provide one per office. Contains the LIS 01/LIS 02/LIS 03 labels and the LMS 0/LMS 1 labels.
PDC LIM ID Label	P0713182	Provide one per office. Contains the LIM B1-ABS labels

- RUL12 1) Provide one (1) NT0X24BH, Cable Trough Assembly (Brown), per LIM cabinet when overhead cabling is required. Use only with other brown exterior parts.
- 2) Provide one (1) NT0X25AX, Cable Trough Assembly (Grey), per LIM cabinet when overhead cabling is required. Use only with other grey exterior parts.

- RUL13 1) Provide one (1) NTRX2523, Leveling Foot Kit, per LIM cabinet for non-earthquake offices. If anchoring is required, only one anchor can be used per cabinet. If four anchors are required, leveling feet cannot be used.
- 2) Provide one (1) P0729947, Cabinet Base Isolator Pad, per cabinet when leveling feet are not provided.
- RUL14 1) Always provision three (3) NT9X72BA, Common Circuit Packfill, to equip the LIS shelves (one per NT9X7204 shelf). Note: All three LIS shelves must be equipped with common circuit packs.
- RUL15 1) Provide one (1) NTEX5025, Bulkhead Connector Cover Plate, for each unused connector on the NT9X6534 bulkhead. A maximum of 16 cover plates can be provided per bulkhead.
- RUL16 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.

| LINK INTERFACE MODULE CABINET (36 LINK)

NTZZ30AC

RATING: MD. Replaced by NTZZ30SD

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) houses 36 interface units. These units can be DS0A Link Interface Units, DS0A Enhanced Link Interface Units, or V.35 Link Interface Units for interface of CCS7 links as a functional block of Signaling Terminal Point (STP) or Signaling Service Point (SSP). The links can also be Ethernet Interface Units (EIU) or Frame Relay Services interface units (FRIU).

REFERENCE DOCUMENTATION: SLZZ30AC 00 03
NTZZ30AC REL 03

The Link Interface Module Cabinet (36 Link) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BA	LIM	1			AP
Common Cabinet Equipment	NT9X0101	FW	1			AP-01
Bulkhead Assembly (LF)	NT9X6509		1	39		AP-01
Bulkhead Assembly (RT)	NT9X6536		1	39		AP-01
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
LMS Common CP Fill	NTZZ30YA		1	39		RUL1
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	RUL11
Memory 6M CP	NT9X14BB		2	39	16F, 23F	RUL11
Mapper CP	NT9X15AA		2	39	15F, 24F	RUL11
MS 4-Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	RUL11
MS P-Bus Terminator	NT9X49CA		2	39	7F, 32F	RUL11
MS Clock CP	NT9X53AA		2	39	18F, 21F	RUL11
Rem Term Intf	NT9X26AA		2	39	17R, 22R	RUL12
Rem Term Intf	NT9X26AB		2	39	17R, 22R	RUL12
DS-30 4-Port CPNTA (STP)	NT9X23BA		4	39	9R, 10R, 29R, 30R	RUL11
LMS F-BUS Rate Adapter CP	NT9X73BA		2	39	8F, 31F	RUL11
CPU 16 MHz CP	NT9X13DB		2	39	17F, 22F	RUL11
Designation Label NT9X13DB	P0696239		2	39	17F, 22F	RUL11
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	RUL11
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	RUL12
LMS Front Desig Strip	P0689616		1	39		RUL11
LMS Rear Desig Strip	P0689618		1	39		RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Shelf Assembly	NT9X7204	LIS	3	00,13, 26		AP
Bulkhead Assembly	NT9X6534		6	00,13, 26		AP
Link I/F Shelf	NTZZ30ZA			X		RUL1
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	RUL16
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	RUL16
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	RUL16
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	RUL16
FBus Repeater CP	NT9X74CA		2	X	7F,32F	RUL14
FBus Repeater CP	NT9X74DA		2	X	7F,32F	RUL14
LIU7 DS0A	NTZZ30BA			X	8-31	RUL2
LIU7 E-DS0A	NTZZ30CA			X	8-31	RUL2
LIU7 V.35	NTZZ30DA			X	8-31	RUL3
EIU	NTZZ30EA			X	8-31	RUL4
FRIU	NTZZ30FA			X	8-31	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	8-31	RUL5
FRIU	NTZZ30LA			X	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			X	8-31	RUL6
LIU Cable Routing Label	P0714420			X		RUL7
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
Des Label NT9X74DA	P0733871			X		RUL14
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
NT9X6534 Bulkhead Label	P0735163			X		RUL20
LIS Shelf Front Desg. Strip	P0715483			X		RUL20
LIS Shelf Rear Desg. Strip	P0709179			X		RUL20
Kick Plate Assembly (Brown)	NT0X2430					RUL17
Kick Plate Assembly (Gray)	NT0X2516					RUL17
Frame Fail Lamp (Brown)	NT0X24BT					RUL17
Frame Fail Lamp (Gray)	NT0X24CN					RUL17
Warning Label English	P0675711					RUL18
Warning Label English	P0675712					RUL18
Warning Label English	P0675710					RUL18
Warning Label English/French	P0689137					RUL18
Warning Label English/French	P0689138					RUL18
Overhead Power Blk. Kit	NTEX5001					RUL19
Power Conn. Boot Kit	NT9X0322					RUL19

NOTES:

- 1) Shelf mounting positions X = 26, 13, 00.
- 2) LIU7, EIU and FRIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to engineering rules to be specified. The physical assignment of such a mixture shall be accomplished by first assigning the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.
- 3) The cards which make up an LIU7 are assigned to the following CP positions on the LIS:

LIS CP POS			
LIU7 LIU7 POSITION NUMBER/SHELF	----- NTZZ30BA, NTZZ30CA, or NTZZ30DA		
	NT9X77AA NT9X78AA NT9X78BA		
-----	-----	-----	-----
LIU7 #1	8	9	9R
LIU7 #2	10	11	11R
LIU7 #3	12	13	13R
LIU7 #4	14	15	15R
LIU7 #5	16	17	17R
LIU7 #6	18	19	19R
LIU7 #7	20	21	21R
LIU7 #8	22	23	23R
LIU7 #9	24	25	25R
LIU7 #10	26	27	27R
LIU7 #11	28	29	29R
LIU7 #12	30	31	31R

For reliability that the LIU7s be assigned to shelf positions 00, 13, and 26 in the following order:

L M S												
LIU7												
#1 #3 #5 #7 #9 #12												
LIS 01	1	7	13	19	25	31	4	10	16	22	28	34
LIS 02	5	11	17	23	29	35	2	8	14	20	26	32
LIS 03	3	9	15	21	27	33	6	12	18	24	30	36
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

ASSIGNMENT SEQUENCE OF LIU7s
TO LINK INTERFACE MODULE (NT9X70BA)

In an office, the LIU7s can be number from LIU 0 to LIU 611.

The LIU7s are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26) (LIU #1 through to LIU #12), followed by LIS 02 (shelf position 13) (LIU #1 through to LIU #12), followed by LIS 03 (shelf position 00) (LIU #1 through to LIU #12). The LIU7 positions will be numbered consecutively regardless of whether the LIU7 is equipped or not.

- 4) The cards which make up an EIU are assigned to the following CP positions on the LIS:

EIU POSITION NUMBER/SHELF	LIS CP POS		
	NTZZ30EA	NT9X84AA	NT9X85AA
EIU #1	8	9	9R
EIU #2	10	11	11R
EIU #3	12	13	13R
EIU #4	14	15	15R
EIU #5	16	17	17R
EIU #6	18	19	19R
EIU #7	20	21	21R
EIU #8	22	23	23R
EIU #9	24	25	25R
EIU #10	26	27	27R
EIU #11	28	29	29R
EIU #12	30	31	31R

It is recommended for reliability that the EIUs be assigned to shelf positions 00, 13, and 26 in the following order:

L M S													
EIU													
#1		#3		#5		#7		#9		#12			
LIS 01	1	7	13	19	25	31	4	10	16	22	28	34	
LIS 02	5	11	17	23	29	35	2	8	14	20	26	32	
LIS 03	3	9	15	21	27	33	6	12	18	24	30	36	
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

ASSIGNMENT SEQUENCE OF EIUS
TO LINK INTERFACE MODULE (NT9X70BA)

In an office, the EIUs can be number from EIU 0 to EIU 750.

The EIUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26) (EIU #1 through to EIU #12), followed by LIS 02 (shelf position 13) (EIU #1 through to EIU #12), followed by LIS 03 (shelf position 00) (EIU #1 through to EIU #12). The EIU positions will be numbered consecutively regardless of whether the EIU is equipped or not.

- 5) The cards which make up an FRIU are assigned to the following CP positions on the LIS:

LIS CP POS			

		NTZZ30FA	
	NTEX22AA	NTEX31AA	NTEX30AA
		OR	
FRIU POSITION		NTZZ30LA	
NUMBER/SHELF	NTEX22BB	NTEX31BA	NTEX30AA
-----	-----	-----	-----
FRIU #1	8	9	9R
FRIU #2	10	11	11R
FRIU #3	12	13	13R
FRIU #4	14	15	15R
FRIU #5	16	17	17R
FRIU #6	18	19	19R
FRIU #7	20	21	21R
FRIU #8	22	23	23R
FRIU #9	24	25	25R
FRIU #10	26	27	27R
FRIU #11	28	29	29R
FRIU #12	30	31	31R

It is recommended for reliability that the FRIU be assigned to shelf positions 00, 13, and 26 in the following order:

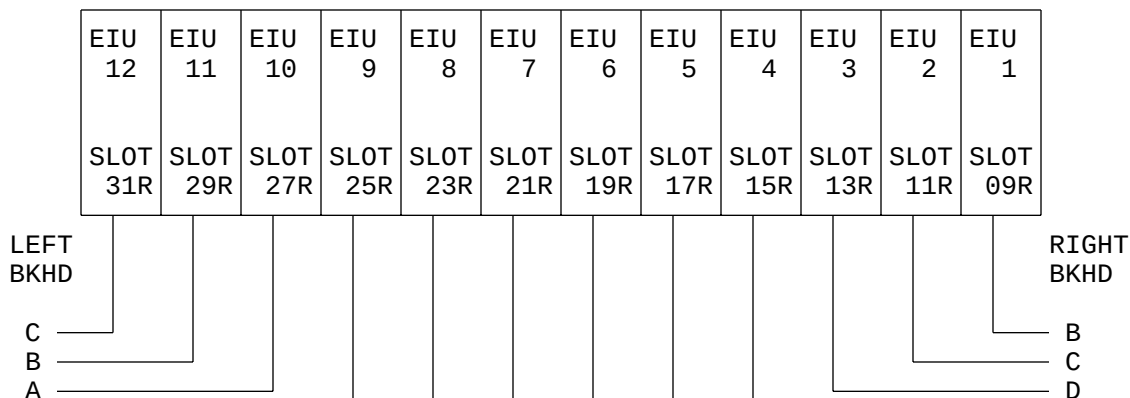
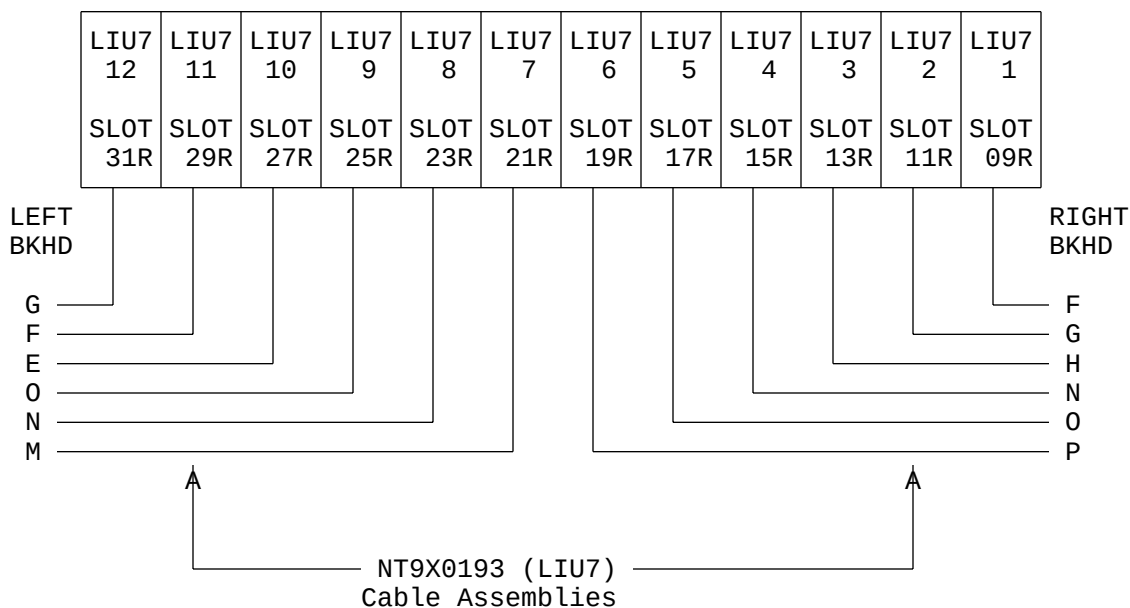
L M S													
FRIU													
#1		#3		#5		#7		#9		#12			
LIS 01	1	7	13	19	25	31	4	10	16	22	28	34	
SH POS 26													
LIS 02	5	11	17	23	29	35	2	8	14	20	26	32	
LIS 03	3	9	15	21	27	33	6	12	18	24	30	36	
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

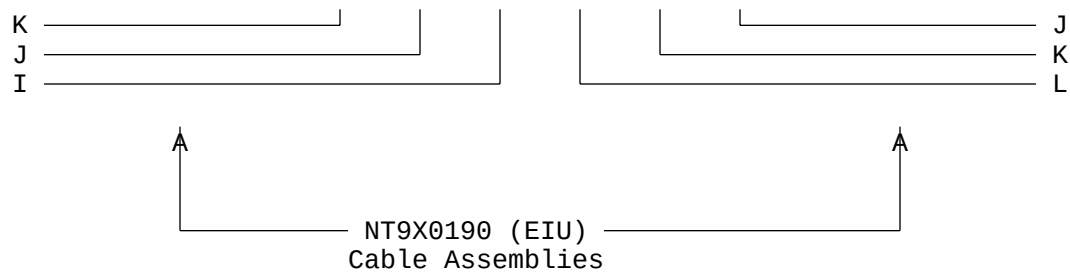
ASSIGNMENT SEQUENCE OF FRIU
TO LINK INTERFACE MODULE (NT9X70BA)

In an office, the FRIU can be number from FRIU 0 to FRIU 407.

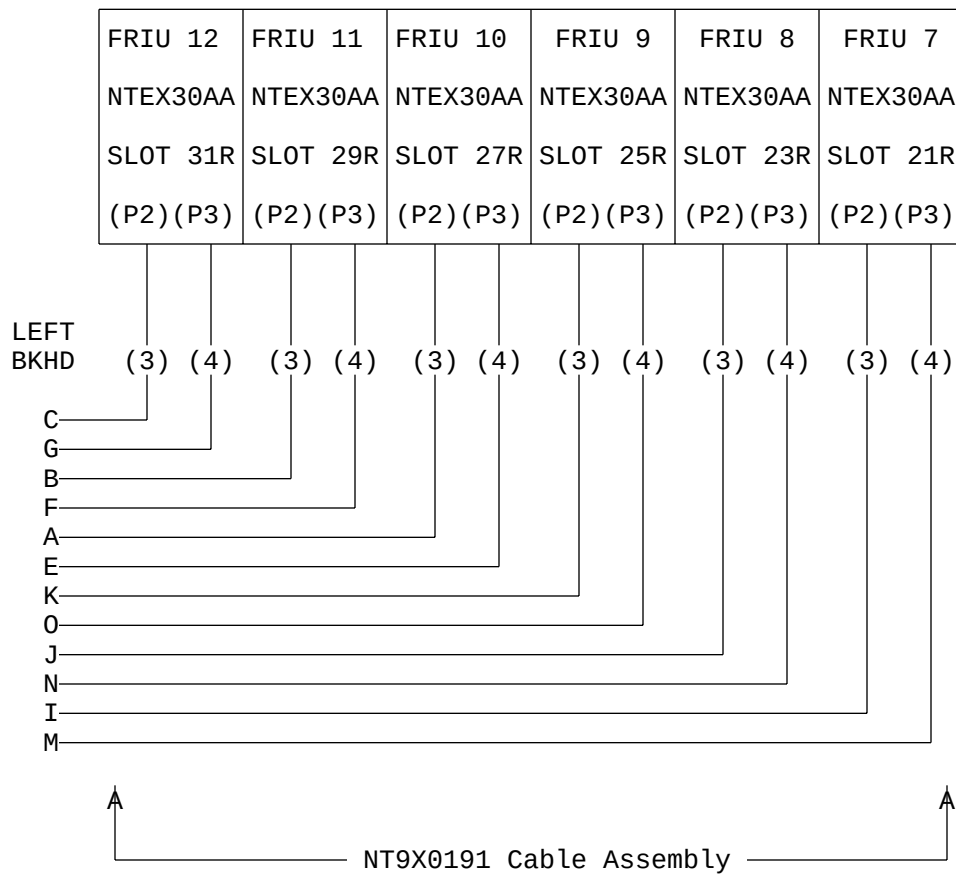
The FRIU are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26) (FRIU #1 through to FRIU #12), followed by LIS 02 (shelf position 13) (FRIU #1 through to FRIU #12), followed by LIS 03 (shelf position 00) (FRIU #1 through to FRIU #12).

- 6) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

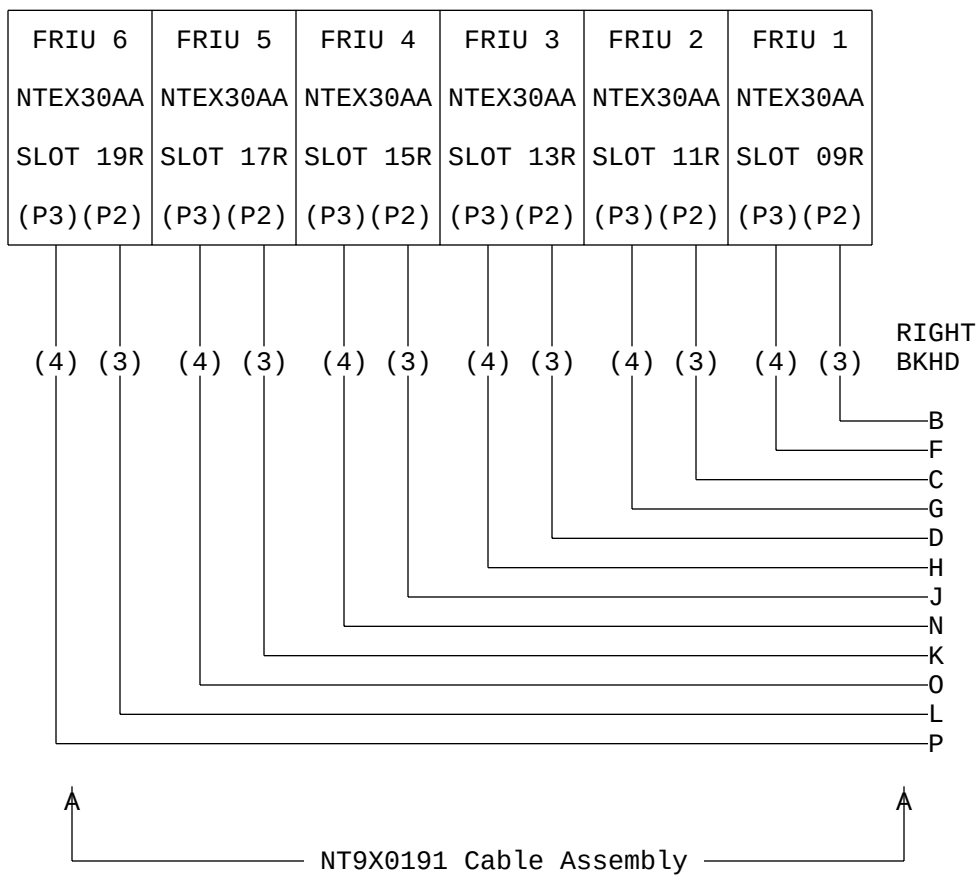




Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



P2 and P3 are connector designations while (4) and (6) are the actual markings on the paddleboard. (Shown here for reference only).

RULES:

AP 1) When PEC NTZZ30AC is ordered, these items are provided.

2) The NT9X0101 is comprised of the following:

NT0X24AA	Cabinet Framework
NT9X03AA	Frame Supervisory Panel
A0345301	Core Cooling Unit
	Cabinet Common Cabling & FSP Cabling

The NT0X24AA framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide. The NT9X03AA FSP is mounted at position 52. The A0345301 Cooling Unit is located immediately below position 0.

- 3) AP-01: These PEC are always provided on the NT9X70BA and are shown herein for completeness.
- RUL1 1) Provide one NTZZ30ZA for each required Link Interface Shelf. always provide 3 Link Interface Shelves per LPP.
- 2) Provide one NTZZ30YA for each required Local Message Switch Shelf.
- RUL2 1) Provide one NTZZ30BA for each required DS0A SS7 link not requiring enhanced maintenance.
- 2) Provide one NTZZ30CA for each required E-DS0A SS7 link requiring enhanced maintenance.
- RUL3 1) Provide one NTZZ30DA for each required V.35 SS7 link.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required.
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.
- RUL6 1) Provide one NTZZ30GA for each set of CP and PB positions not assigned to an LIU7, EIU, or FRIU.

RUL7 1) Provide one sheet of LIU cable routing labels per shelf when LIUs or EIUs are provisioned on that shelf.

RUL8 1) Provide one sheet of FRIU cable routing labels per half shelf as shown below when FRIU is provided on that half shelf.

Shelf	Slots	Label
26	31R-21R	P0714414
26	19R-09R	P0714415
13	31R-21R	P0714416
13	19R-09R	P0714417
00	31R-21R	P0714418
00	19R-09R	P0714419

RUL9 1) Reserved

RUL10 1) Reserved

RUL11 1) These items are provisionable but always required on the LMS shelf. Provide the quantities shown in the QTY column for each cabinet.

RUL12 1) Provide Two (2) NT9X26AB RTIF Paddle Boards and two P0705003 Designation Labels per LMS.

2) The NT9X26AA was always provided on the NT9X71AB LMS shelf and is shown here for completeness. Do not provide the NT9X26AA on new jobs.

RUL13 1) Reserved

RUL14 1) Provide two NT9X74DA F-Bus Repeater CP for each LIS that requires Channelized Access and/or Frame Relay applications. Provide two NT9X74CA F-Bus Repeater CP for each LIS that is not going to support Channelized Access and/or Frame Relay applications.

2) Provide two P0733871 F-Bus Repeater CP label when NT9X74DA is provisioned.

- 3) When an office is at BCS 34 or greater the NT9X74DA F-Bus Repeater CP is required for LIS shelves that are going to support Channelized Access and/or Frame Relay applications.

RUL15 1) Reserved

RUL16 1) Provide two NT9X79BA F-Bus Extender Paddleboard With Termination for the bottom most LIS on the frame (Position 00). Provide two NT9X79AA F-Bus Extender Paddleboards for each of the other two Link Interface Shelves.

RUL17 1) Provide one (1) NT0X2430 Kick Plate Assembly (Brown) and one (1) NT0X24CE Power Access Panel (Brown) per brown LIM cabinet NT9X70BA. Use only with other brown exterior parts.

- 2) Provide one (1) NT0X2516 Kick Plate Assembly (Grey) per grey LIM cabinet NT9X70BA. Use only with other grey exterior parts.

- 3) Provide one (1) NT0X24BT, Frame Fail Lamp (Brown), per brown LIM cabinet NT9X70BA. Use only with other brown exterior parts.

- 4) Provide one (1) NT0X24CN, Frame Fail Lamp (Grey), per grey LIM cabinet NT9X70BA. Use only with other grey exterior parts.

RUL18 1) Provide one P0675711, Warning Label English "High Voltage", per cabinet for English only applications.

- 2) Provide four P0675712, Warning Label English "High Voltage", per cabinet for English only applications.

- 3) Provide one P0689137, Warning Label Eng/French "High Voltage/Haute Tension", per cabinet for English/French applications.

- 4) Provide four P0689138, Warning Label Eng/French "High Voltage/Haute Tension", per cabinet for English/French applications.

- 5) Provide one P0675710 label per cabinet.

RUL19 1) Provide one NTEX5001, Overhead (Frame) Power Block Kit, for overhead cabling of LPP frame.

- 2) Provide one NT9X0322, Power Connection Boot Kit, per LIM when not provisioned with the NTEX5001 Kit.

- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of connector positions on the bulkhead is 16. Subtract the number of connector positions assigned per bulkhead per the cable assembly diagrams in RUL4 from 16 to calculate the number of Bulkhead Connector Cover Plates required per bulkhead.
- 2) Provide two Bulkhead Configuration labels per LIS shelf. The labels are mounted on the inside of the rear cabinet doors adjacent to the shelf bulkheads. The labels provide a surface that allows the customer to record cabling configuration information for each bulkhead.
- 3) Provide one LIS shelf Front Des Strip and one LIS rear Des. Strip Per LIS. The LIS shelf front Des Strip includes labels for all NT9X19AA, NT9X19EA, NT9X30AA and NT9X74CA CP. All other CP's will require a label to be provisioned. The LIS shelf rear Des Strip includes labels for all NT9X19BA, NTEX20AA and NTEX20BA Paddle Boards. All other Paddle Boards will require a label to be provisioned.

| LINK INTERFACE MODULE CABINET (36 LINK) GRAY NTZZ30XA

RATING: MD. Replaced NTZZ30SD

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) houses 36 interface units. These units can be DS0A Link Interface Units, DS0A Enhanced Link Interface Units, or V.35 Link Interface Units for interface of CCS7 links as a functional block of Signaling Terminal Point (STP) or Signaling Service Point (SSP). The links can also be Ethernet Interface Units (EIU) or Frame Relay Services interface units (FRIU). The parts provided are to be used with a gray exterior.

REFERENCE DOCUMENTATION: SLZZ30XA 00 01

NTZZ30XA REL 01

The Link Interface Module Cabinet (36 Link) Gray is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BA	LIM	1			AP
Overhead Power Block Kit	NTEX5001					RUL13
Power Connection Boot Kit	NT9X0322					RUL13
Common Cabinet Equipment	NT9X0101	FW	1			AP-01
Bulkhead Assembly (LF)	NT9X6509		1	39		AP-01
Bulkhead Assembly (RT)	NT9X6536		1	39		AP-01
Local Msg Switch Shf Assy	NT9X7101		1	39		AP-01
Local Msg Switch Shf Com CP	NT9X71AB	LMS	1	39		AP
LMS DS-30 X-Link Cable Assy	NT9X0171			39		RUL9
LMS DS-30 X-Link Cable Assy	NT9X7025			39		RUL9
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP-02
Memory 6M CP	NT9X14BB		2	39	16F, 23F	AP-02
Mapper CP	NT9X15AA		2	39	15F, 24F	AP-02
MS 4-Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP-02
MS P-Bus Terminator	NT9X49CA		2	39	7F, 32F	AP-02
MS Clock CP	NT9X53AA		2	39	18F, 21F	AP-02
Rem Term Intf	NT9X26AA		2	39	17R, 22R	AP-02
DS-30 4-Port CPNTA (STP)	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP-02
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP-02
+5 Volts Power Conv CP	NT9X30AA		2	39	4F, 36F	AP-02
Filler CP	NT9X19AA		8	39	11F-14F 25F-28F	AP-02
STP Power Filler CP	NT9X19EA		2	39	1F, 33F	AP-02
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP-02
LMS F-BUS Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
CPU 16 MHz CP	NT9X13DB		2	39	17F, 22F	AP
Designation Label NT9X13DB	P0696239		2	39	17F, 22F	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Link I/F Unit Shelf Assy	NT9X7204		1	26		AP
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS	1	26		AP
Bulkhead Assembly	NT9X6534		2	26		AP
Bulkhead Conn Cover Plate	NTEX5025			26		RUL10
F-Bus Extender PB	NT9X79AA		2	26	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		2	26	7R, 32R	AP

Release 07.02

92 07 06

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
+5 Volts Power Converter CP	NT9X30AA		2	26	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	26	1F, 33F	AP-03
Filler PB	NT9X19BA		10	26	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	26	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	26	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	26	8R	AP-03
LIU7 DS0A	NTZZ30BA			26	8-31	RUL1
CCS7 8Meg LIU (DS0A)	NTZZ30TA					
LIU7 E-DS0A	NTZZ30CA			26	8-31	RUL2
CCS7 8Meg LIU (E-DS0A)	NTZZ30UA			26	8-31	RUL2
CCS7 8Meg LIU (E/HC-DS0A)	NTZZ30VA			26	8-31	RUL2
LIU7 V.35	NTZZ30DA			26	8-31	RUL3
CCS7 8Meg LIU (V.35)	NTZZ30WA			26	8-31	RUL3
EIU	NTZZ30EA			26	8-31	RUL4
FRIU	NTZZ30FA			26	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			26	8-31	RUL6
LIU Cable Routing Label	P0714420			26		RUL7
FRU Cable Routing Label	P0714414			26		RUL8
FRU Cable Routing Label	P0714415			26		RUL8
Link I/F Unit Shelf Assy	NT9X7204		1	13		AP
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS	1	13		AP
Bulkhead Assembly	NT9X6534		2	13		AP
Bulkhead Conn Cover Plate	NTEX5025			13		RUL10
F-Bus Extender PB	NT9X79AA		2	13	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		2	13	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	13	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	13	1F, 33F	AP-03
Filler PB	NT9X19BA		10	13	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	13	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	13	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	13	8R	AP-03
LIU7 DS0A	NTZZ30BA			13	8-31	RUL1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CCS7 8Meg LIU (DS0A)	NTZZ30TA			13	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			13	8-31	RUL2
CCS7 8Meg LIU (E-DS0A)	NTZZ30UA			13	8-31	RUL2
CCS7 8Meg LIU (E/HC-DS0A)	NTZZ30VA			13	8-31	RUL2
LIU7 V.35	NTZZ30DA			13	8-31	RUL3
CCS7 8Meg LIU (V.35)	NTZZ30WA			13	8-31	RUL3
EIU	NTZZ30EA			13	8-31	RUL4
FRIU	NTZZ30FA			13	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			13	8-31	RUL6
LIU Cable Routing Label	P0714421			13		RUL7
FRU Cable Routing Label	P0714416			13		RUL8
FRU Cable Routing Label	P0714417			13		RUL8
Link I/F Unit Shelf Assy	NT9X7204		1	00		AP
LIU7/DCP Shelf Comm CP	NT9X72BA	LIS	1	00		AP
Bulkhead Assembly	NT9X6534		2	00		AP
Bulkhead Conn Cover Plate	NTEX5025			00		RUL10
F-Bus Extender PB	NT9X79BA		2	00	7R, 32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R, 32R	AP
+5 Volts Power Converter CP	NT9X30AA		2	00	4F, 36F	AP-03
STP Power Filler CP	NT9X19EA		2	00	1F, 33F	AP-03
Filler PB	NT9X19BA		10	00	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP-03
FBus Repeater CP	NT9X74CA		2	00	7F, 32F	AP-03
Intra FBus A Term CPTNA	NTEX20AA		1	00	30R	AP-03
Intra FBus B Term CPNTA	NTEX20BA		1	00	8R	AP-03
LIU7 DS0A	NTZZ30BA			00	8-31	RUL1
CCS7 8Meg LIU (DS0A)	NTZZ30TA			00	8-31	RUL1
LIU7 E-DS0A	NTZZ30CA			00	8-31	RUL2
CCS7 8Meg LIU (E-DS0A)	NTZZ30UA			00	8-31	RUL2
CCS7 8Meg LIU (E/HC-DS0A)	NTZZ30VA			00	8-31	RUL2
LIU7 V.35	NTZZ30DA			00	8-31	RUL3
CCS7 8Meg LIY (V.35)	NTZZ30WA			00	8-31	RUL3
EIU	NTZZ30EA			00	8-31	RUL4
FRIU	NTZZ30FA			00	8-31	RUL5
Filler Face Plates (2 Slot)	NTZZ30GA			00	8-31	RUL6
LIU Cable Routing Label	P0714422			00		RUL7
FRU Cable Routing Label	P0714418			00		RUL8
FRU Cable Routing Label	P0714419			00		RUL8

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Kick Plate Assembly (Gray)	NT0X2516		1			AP
Frame Fail Lamp (Gray)	NT0X24CN		1			AP
EXTERIOR CABINET LABEL-GRAY	P0709852					RUL12
DMS-STP Cabinet Label-Gray	P0710446					RUL12
Interior Cabinet FSP Label	P0709837					RUL12
FSP LIS ID Labels	P0702397					RUL12
FSP LIS ID Labels	P0713189					RUL12
FSP LIS ID Labels	P0713190					RUL12
PDC LIS/LMS ID Labels	P0701886					RUL12
PDC LIM IS Labels	P0713182					RUL12
High Voltage Label English	P0675711					RUL11
High Voltage Label English	P0675712					RUL11
High Voltage Lbl Eng/French	P0689137					RUL11
High Voltage Lbl Eng/French	P0689138					RUL11

NOTES:

- 1) LIU7, EIU and FRIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to engineering rules to be specified. The physical assignment of such a mixture shall be accomplished by first assigning the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.
- 2) The cards which make up an LIU7 are assigned to the following CP positions on the LIS:

LIS CP POS			
LIU7 POSITION NUMBER/SHELF	-----		
	NTZZ30BA, NTZZ30CA, or NTZZ30DA		
			NT9X77AA
			NT9X78AA
	NTEX22AA	NT9X76AA	NT9X78BA
-----	-----	-----	-----
LIU7 #1	8	9	9R
LIU7 #2	10	11	11R
LIU7 #3	12	13	13R
LIU7 #4	14	15	15R
LIU7 #5	16	17	17R
LIU7 #6	18	19	19R
LIU7 #7	20	21	21R
LIU7 #8	22	23	23R
LIU7 #9	24	25	25R
LIU7 #10	26	27	27R
LIU7 #11	28	29	29R
LIU7 #12	30	31	31R

- 3) The cards which make up an EIU are assigned to the following CP positions on the LIS:

EIU POSITION NUMBER/SHELF	LIS CP POS		
	NTZX22AA	NTZZ30EA NT9X84AA	NT9X85AA
EIU #1	8	9	9R
EIU #2	10	11	11R
EIU #3	12	13	13R
EIU #4	14	15	15R
EIU #5	16	17	17R
EIU #6	18	19	19R
EIU #7	20	21	21R
EIU #8	22	23	23R
EIU #9	24	25	25R
EIU #10	26	27	27R
EIU #11	28	29	29R
EIU #12	30	31	31R

- 4) The cards which make up an FRIU are assigned to the following CP positions on the LIS:

FRIU POSITION NUMBER/SHELF	LIS CP POS		
	NTZX22AA	NTZZ30FA NTZX31AA	NTZX30AA
FRIU #1	8	9	9R
FRIU #2	10	11	11R
FRIU #3	12	13	13R
FRIU #4	14	15	15R
FRIU #5	16	17	17R
FRIU #6	18	19	19R
FRIU #7	20	21	21R
FRIU #8	22	23	23R
FRIU #9	24	25	25R
FRIU #10	26	27	27R
FRIU #11	28	29	29R
FRIU #12	30	31	31R

- 5) It is recommended for reliability that LIU7/EIU/FRIUs be assigned to shelf positions 00, 13, and 26 in the following order:

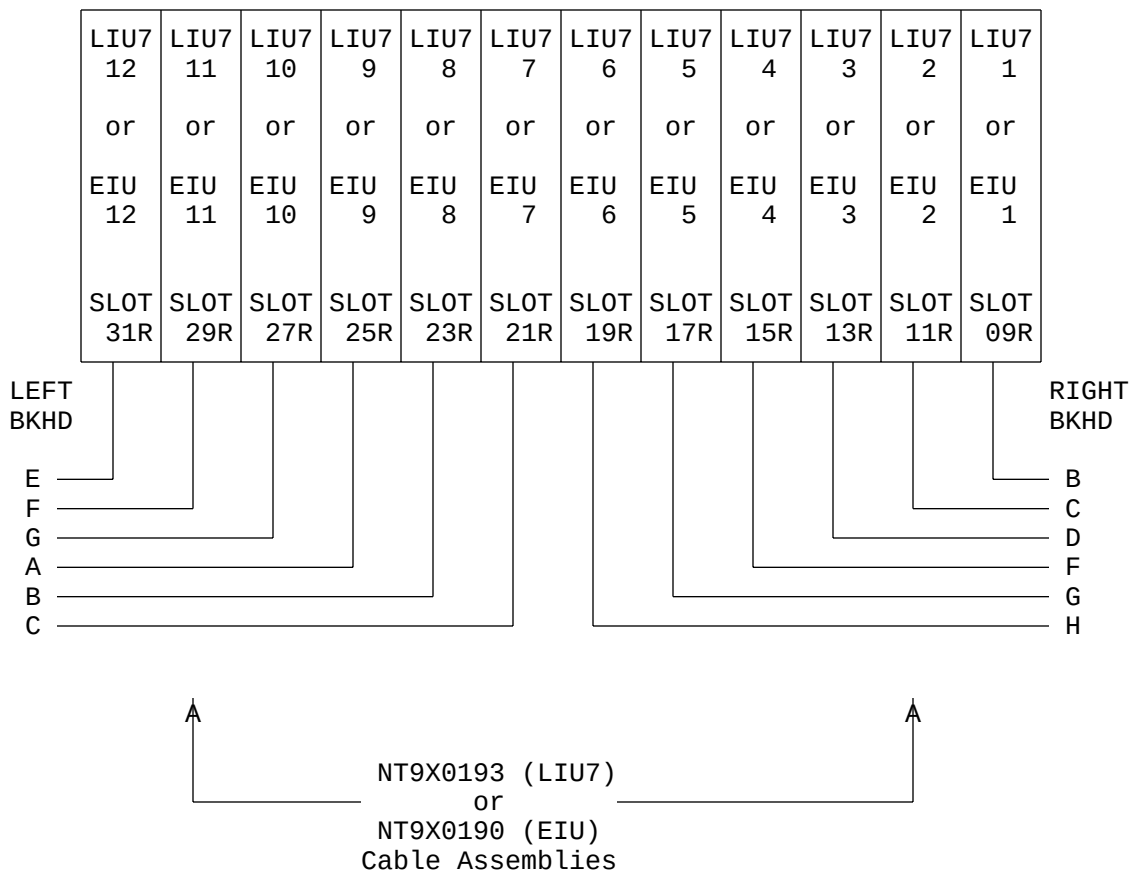
	L M S											
	LIU7/EIU/FRIU											
	#1	#3	#5	#7	#9	#12						
LIS 01	1	7	13	19	25	31	34	28	22	16	10	4
LIS 02	5	11	17	23	29	35	32	26	20	14	8	2
LIS 03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

ASSIGNMENT SEQUENCE OF LIU7/EIU/FRIU
TO LINK INTERFACE MODULE (NT9X70BA)

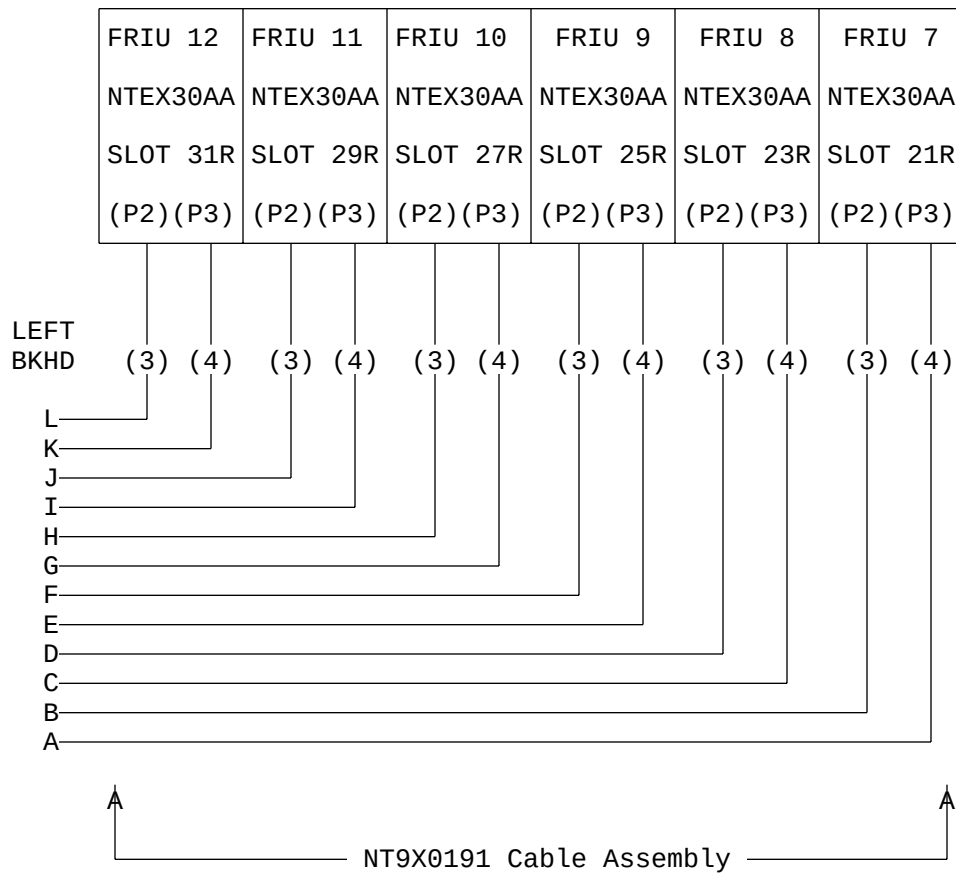
In an office, the LIU7s can be number from LIU 0 to LIU 750. The FRIU can be number from FRIU 0 to FRIU 407.

The LIU7/EIU/FRIU are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26) (#1 through #12), followed by LIS 02 (shelf position 13) (#1 through #12), followed by LIS 03 (shelf position 00) (#1 through #12). The LIU7/EIU/FRIU positions will be numbered consecutively whether the LIU7 is equipped or not.

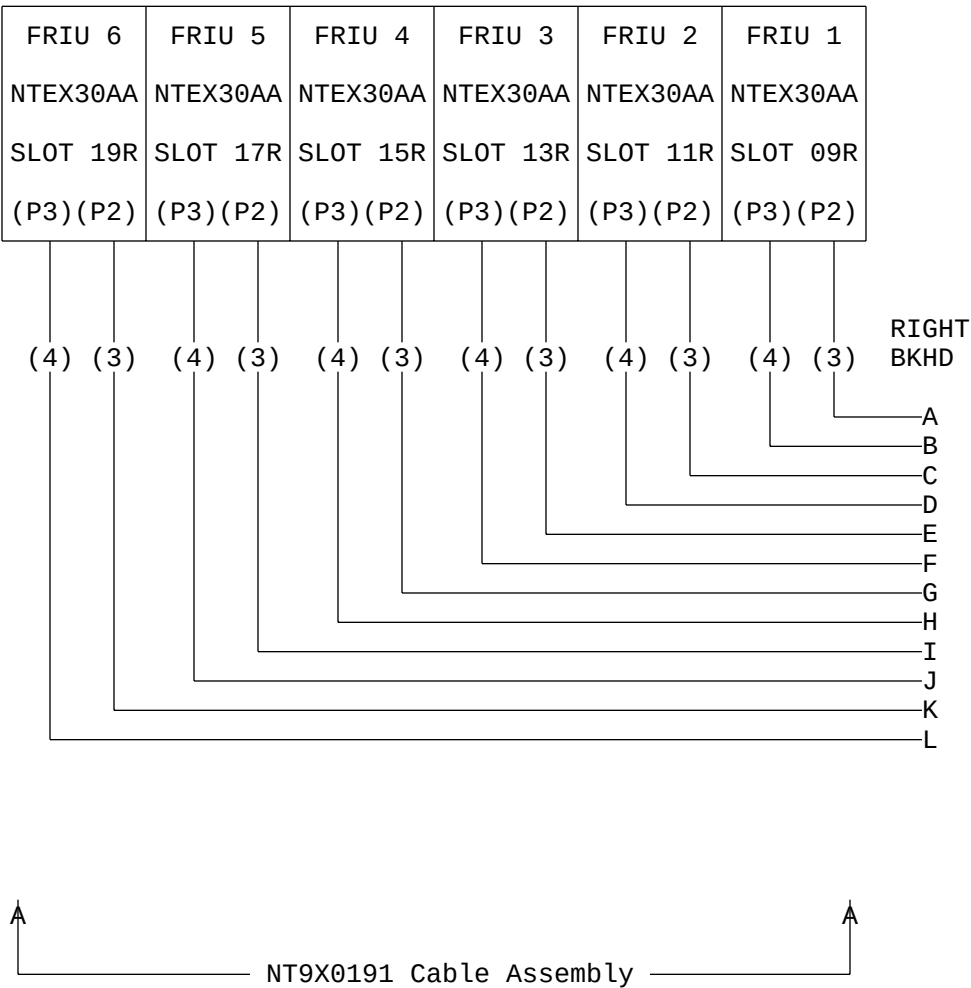
- 6) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:



7) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only).

RULES:

- AP 1) When PEC NTZZ30XA is ordered, these items are provided.
- 2) The NT9X0101 is comprised of the following:
- NT0X24AA Cabinet Framework
NT9X03AA Frame Supervisory Panel
A0345301 Core Cooling Unit
Cabinet Common Cabling & FSP Cabling
- The NT0X24AA framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide. The NT9X03AA FSP is mounted at position 52. The A0345301 Cooling Unit is located immediately below position 0.
- 3) AP-02: These PEC are always provided on the NT9X71AB and are shown herein for completeness.
- 4) AP-03: These PEC are always provided on the NT9X72BA and are shown herein for completeness.
- RUL1 1) Provide one NTZZ30BA for each required DS0A SS7 link not requiring enhanced maintenance.
- 2) Provide one NTZZ30TA for each DS0A SS7 link requiring 8Meg of memory.
- RUL2 1) Provide one NTZZ30CA for each required E-DS0A SS7 link requiring enhanced maintenance.
- 2) Provide one NTZZ30UA for each E-DS0A SS7 link requiring enhanced maintenance and 8Meg of memory.
- 3) Provide one NTZZ30VA for each E/HC--DS0A SS7 link requiring enhanced maintenance with high capacity (56/64KB) and 8Meg of memory.
- RUL3 1) Provide one NTZZ30DA for each required V.35 SS7 link.
- 2) Provide one NTZZ30WA for each V.35 SS7 link requiring 8Meg of memory.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required.

- RUL5 1) Provide one NTZZ30FA for each Frame Relay Service T1 interface required.
- RUL6 1) Provide one NTZZ30GA for each set of CP and PB positions not assigned to an LIU7, EIU, or FRIU.
- RUL7 1) Provide one sheet of LIU cable routing labels per shelf when LIUs or EIUs are provisioned on that shelf.
- RUL8 1) Provide one sheet of FRIU cable routing labels per half shelf as shown below when FRIU is provided on that half shelf.

Shelf	Slots	Label
26	31R-21R	P0714414
26	19R-09R	P0714415
13	31R-21R	P0714416
13	19R-09R	P0714417
00	31R-21R	P0714418
00	19R-09R	P0714419

- RUL9 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor office applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor office applications.
- RUL10 1) Provide one NTEX5025, Bulkhead Connector Cover Plate, for each unused connector on the NT9X6534 bulkhead. A maximum of 16 cover plates can be provided per bulkhead.
- RUL11 1) Provide one P0675711, Warning Label English "High Voltage", per cabinet for English only applications.
- 2) Provide four P0675712, Warning Label English "High Voltage", per cabinet for English only applications.

- 3) Provide one P0689137, Warning Label Eng/French "High Voltage/Haute Tension", per cabinet for English/French applications.
- 4) Provide four P0689138, Warning Label Eng/French "High Voltage/Haute Tension", per cabinet for English/French applications.

RUL12 1) The following labels are to be ordered when the DMS-SCP LIM cabinets have been provided:

DESCRIPTION	PEC	PROVISIONING RULES
Exterior Cabinet Label (Gray)	P0709852	Provide one per office.
DMS-STP Cabinet Label (Gray)	P0710446	Provide one per STP/LPP frame.
Interior Cabinet FSP Label	P0709837	Provide one per two LIM frames (NT9X70AA and/or NT9X70BA).
FSP LIS ID Label	P0702397	Provide one per office. Contains the LIS 01/LIS 02/LIS 03 labels.
FSP LIM ID Label	P0713189	Provide one per office. Contains the LIM 00 to LIM 16 labels.
FSP LMS ID Label	P0713190	Provide one per office. Contains the LMS 00 to LMS 16 labels.
PDC LIS ID Label	P0701886	Provide one per office. Contains the LIS 01/LIS 02/LIS 03 labels and the LMS 0/LMS 1 labels.
PDC LIM ID Label	P0713182	Provide one per office. Contains the LIM B1-ABS labels.

- RUL13 1) Provide one NTEX5001, Overhead (Frame) Power Block Kit, when overhead cabling is required.
- 2) Provide one NT9X0322, Power Connection Boot Kit, per LPP not provisioned with the NTEX5001 Kit.

| LINK INTERFACE MODULE CABINET (36 LINK)

NTZZ30SD

| RATING: MD. Replaced by NTZZ30SE

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) houses 36 interface units. These units can be DS0A Link Interface Units, DS0A Enhanced Link Interface Units, or V.35 Link Interface Units for interface of CCS7 links as a functional block of Signaling Terminal Point (STP) or Signaling Service Point (SSP). The links can also be Ethernet Interface Units (EIU) or Frame Relay Services interface units (FRIU).

REFERENCE DOCUMENTATION: SLZZ30SD 00 01
NTZZ30SD REL 01

The Link Interface Module Cabinet (36 Link) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Supervisory Panel(-48)	NT9X03AA	FSP	1	52		AP
Common Cabinet Equipment	NT9X95AA	FW	1			AP-01
Bulkhead Assembly (LF)	NT9X6509		1	39		AP-01
Bulkhead Assembly (RT)	NT9X6536		1	39		AP-01
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
LMS Common CP Fill	NTZZ30YB		1	39		RUL1
Rem Term Intf	NT9X26AA		2	39	17R, 22R	RUL12
Rem Term Intf	NT9X26AB		2	39	17R, 22R	RUL12
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	RUL11
Designation Label NT9X13DB	P0696239		2	39	17F, 22F	RUL11
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	RUL12
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
Link I/F Shelf	NTZZ30ZB		1			RUL1
FBus Repeater CP	NT9X74CA		2	X	7F, 32F	RUL14
FBus Repeater CP	NT9X74DA		2	X	7F, 32F	RUL14
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
LIU7 DS0A	NTZZ30VA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Des Label NT9X74DA	P0733871			X		RUL14
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit	A0377580	CU	1	BOT		RUL18
Filter	A0377837					AP-01
Cabinet Leveling Feet	NTRX2523					RUL17
Miscellaneous H/W Grey	NTZZ30JA					RUL9
Miscellaneous H/W Brown	NTZZ30KA					RUL9
Stand-alone Pwr Cabling Kit	NT9X9532					RUL10
Horizontal Pwr Cabling Kit	NT9X9531					RUL10

Retired Equipment
Link Interface Module Cabinet (36 Link)

NTZZ30SD
EMC2-16-005
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Terminal Block Desig Strips	P0732510					RUL10
Filter Capacitor Desig Sheet	P0732513					RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392					RUL7
Label, FCC Part 15/CSA	P0679484		1			AP

NOTES:

- 1) Shelf mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIUs, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

L M S												
LIU/EIU/FRIU												
ASU Numbering Sequence	1	3	5	7	9	12						
ASU assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4
ASU Numbering Sequence	13	15	17	19	21	24						
ASU assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2
ASU Numbering Sequence	25	27	29	30	31	36						
ASU assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

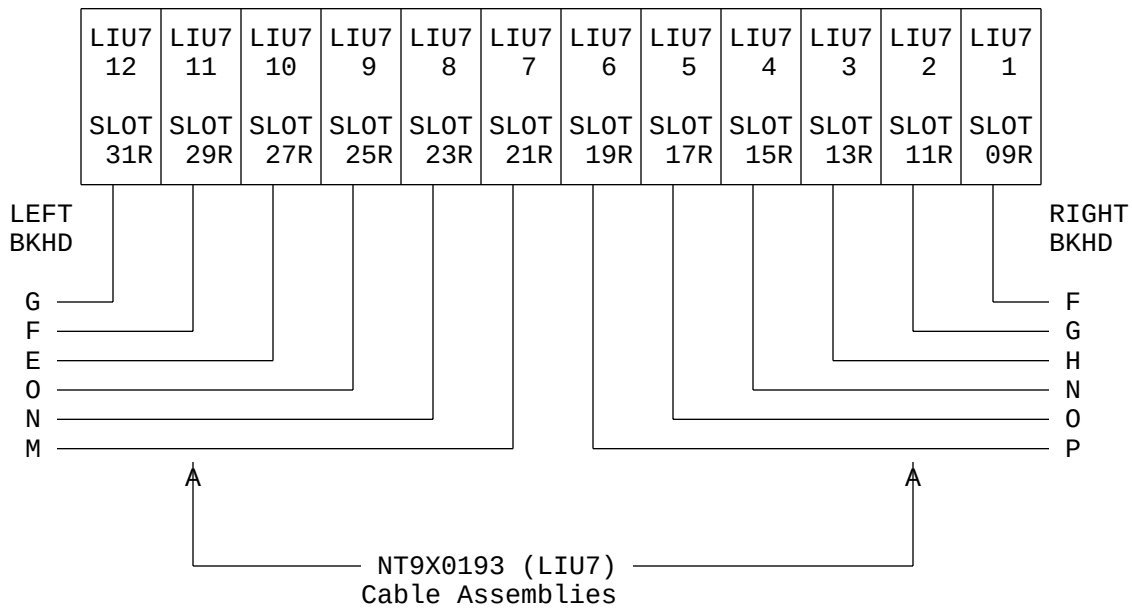
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

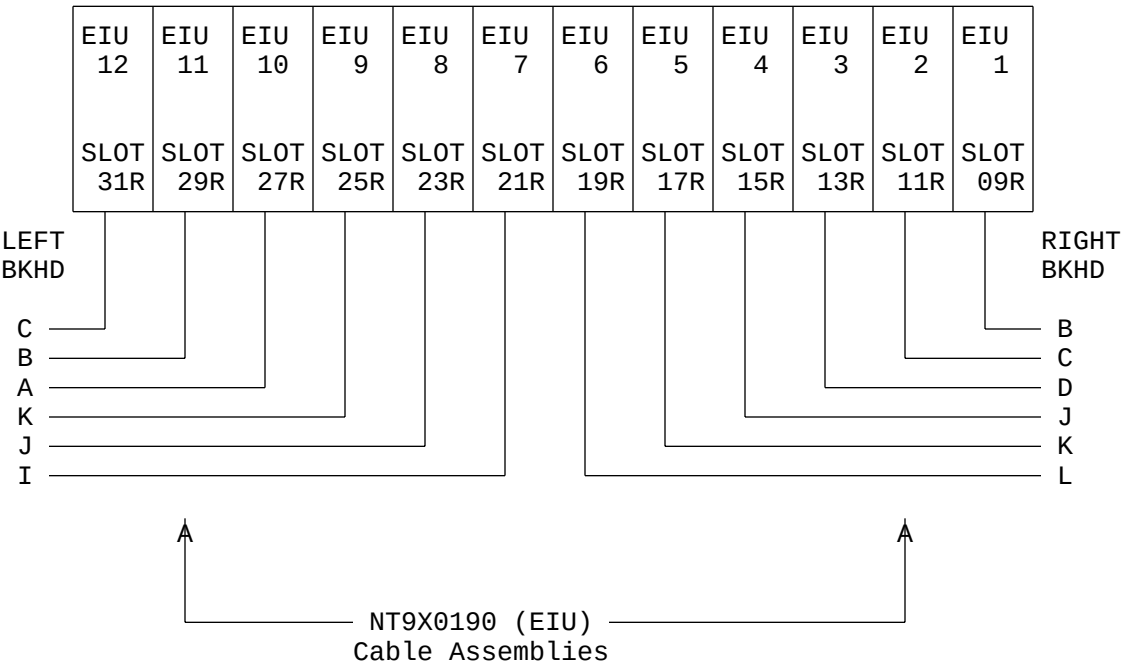
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	1	3	5	7	9	11	13	15	17	19	21	23
ASU assignment Sequence for LIS:01	1	3	5	7	9	NIU:0	NIU:1	10	8	6	4	2
ASU Numbering Sequence	13	15	17	19	21	23	25	27	29	31	33	35
ASU assignment Sequence for LIS:02	1	3	5	7	9	NIU:0	NIU:1	10	8	6	4	2
ASU Numbering Sequence	25	27	29	31	33	35	37	39	41	43	45	47
ASU assignment Sequence for LIS:03	1	3	5	7	9	NIU:0	NIU:1	10	8	6	4	2
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

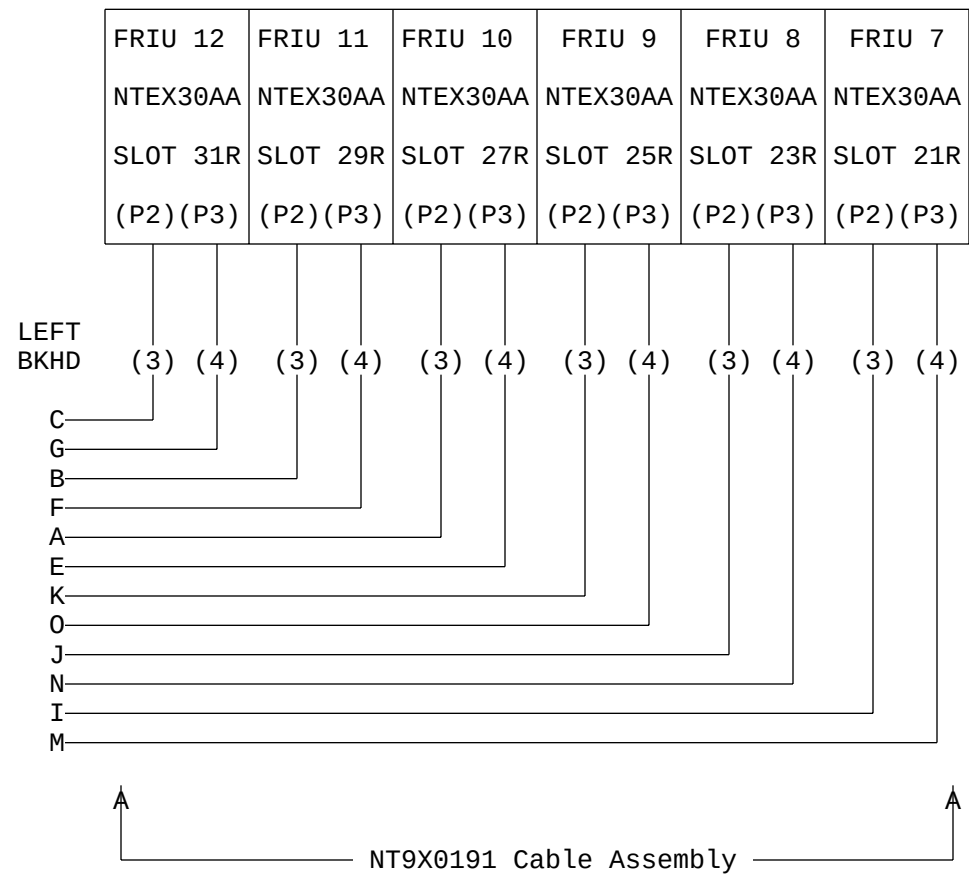
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

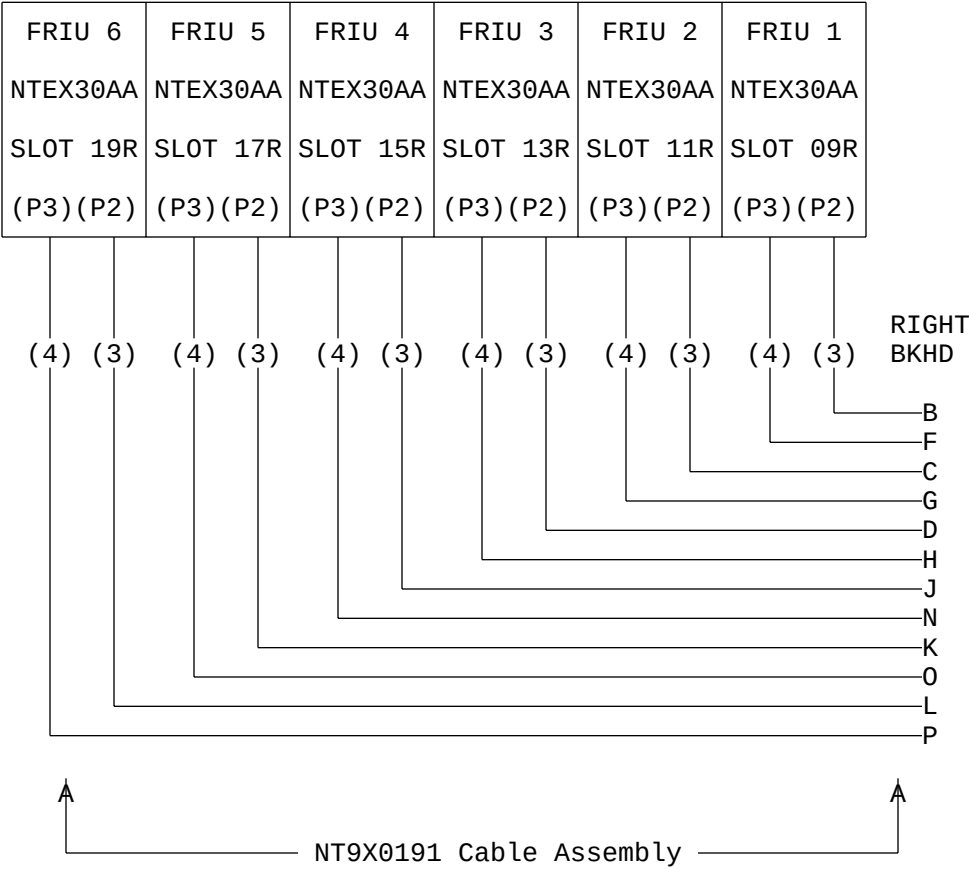




Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:

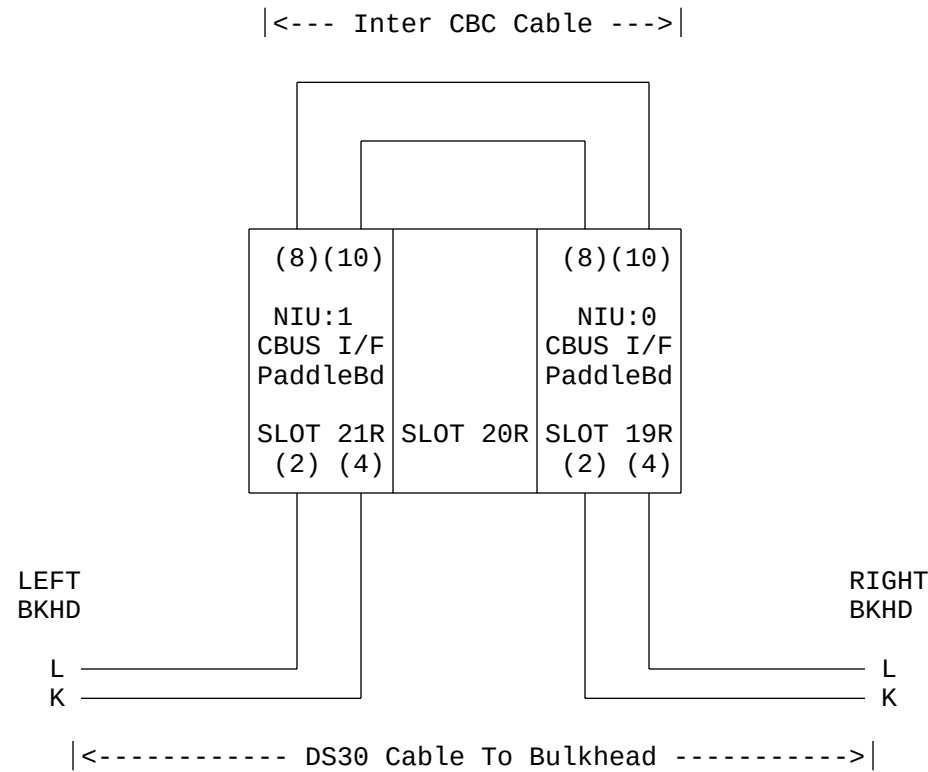


P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



P2 and P3 are connector designations while (4) and (6) are the actual markings on the paddleboard. (Shown here for reference only).

Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



RULES:

- AP 1) When PEC NTZZ30SD is ordered, these items are provided.
- 2) The NT9X95AA contains the NT9X9501 Cabinet Framework.
- The NT9X9501 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Provide one NTZZ30YB for each LIM provided.
- 2) Provide one NTZZ30ZB for each LIM provided.
- RUL2 1) Provide one NTZZ30BA for each DS0A SS7 link requiring enhanced maintenance. For all new applications order NTZZ30VA.
- 2) Provide one NTZZ30CA for each E-DS0A SS7 link requiring enhanced maintenance. For all new applications order NTZZ30UA.
- RUL3 1) Provide one NTZZ30DA for each V.35 SS7 link. For all new application order the NTZZ30WA.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required.
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA. Refer to RUL14 for NT9X74DA upgrade information.
- RUL6 1) Provide one Filler Face Plate Kit for each positions not assigned to an LIU7, EIU, or FRIU. The kit provides two Filler Face Plate and one Paddle Board.
- RUL7 1) Provide one for all British Telecom Offices.
- RUL8 1) Provide FRIU, EIU, LIU cable routing labels per the half shelf and NIU labels per the full shelf as shown below:

Shelf	Slots	LIU/EIU Label	FRIU Label	NIU Label
26	31R-21R	P0735397	P0714414	P0735393
26	19R-09R	P0714420	P0714415	
13	31R-21R	P0735398	P0714416	P0735391
13	19R-09R	P0714421	P0714417	
00	31R-21R	P0735399	P0714418	P0735392
00	19R-09R	P0714422	P0714419	

- RUL9 1) Provide one Miscellaneous Hardware Gray when a gray cabinet is required. Use only with other gray exterior parts.
- 2) Provide one Miscellaneous Hardware Brown when a brown cabinet is required. Use only with other brown exterior parts.
- RUL10 1) Provide one (1) NT9X9532, Cabling Stand-Alone Power Cabling Kit, and one (1) P0732513, Filter Capacitor Designation Label Sheet, when powering the LIM cabinet is not powered from a Cabinetized PDC (Filtered power). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.
- 2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0732510 Terminal Block Designation Sheet when powering the LIM from a Cabinetized PDC (Streamline Applications). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL11 1) These items are provisionable but always required on the LMS shelf. Provide the quantities shown in the QTY column for each cabinet.
- RUL12 1) Provide Two (2) NT9X26AB RTIF Paddle Boards and two P0705003 Designation Labels per LMS.
- 2) The NT9X26AA was always provided on the NT9X71AB LMS shelf and is shown here for completeness. Do not provide the NT9X26AA on new jobs.
- RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.

- RUL14 1) Provide two NT9X74DA F-Bus Repeater CP for each LIS that requires Channelized Access and/or Frame Relay applications. Provide two NT9X74CA F-Bus Repeater CP for each LIS that is not going to support Channelized Access and/or Frame Relay applications. The label for the NT9X74CA is part of the LIS shelf Designation Strip.
- 2) Provide two P0733871 F-Bus Repeater CP label when NT9X74DA is provisioned.
- 3) When an office is at BCS 34 or greater the NT9X74DA F-Bus Repeater CP is required for LIS shelves that are going to support Channelized Access and/or Frame Relay applications.
- RUL15 1) When 6 or 8 guage wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) Provide one Cable trough per cabinet for non-raised floor applications. Provide NT0X24BH for Brown Cabinets or NT0X25AX for Gray Cabinets
- 2) Provide one levelling kit per Cabinet for non-earthquake offices.
- RUL18 1) Reserved
- RUL19 1) Reserved
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:
- $$32 - ((\#FRIUs \text{ on LIS shelf} * 2) + \#LIUs \text{ on LIS shelf} + \#EIUs \text{ on LIS shelf})$$
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required.

LINK INTERFACE MODULE CABINET (24 LINK) GRAY

PEC CODE: NTZZ11AG

CPC CODE: B0236173

| RATING: MD

REPLACES:

REPLACED BY: NTZZ44CP

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module forms a functional block of the CCS7 Signalling Transfer Point. The Link Interface Module interfaces the CCS7 message links. Each LIM cabinet houses up to twenty-four (24) individual Link Interface Units each of which can accommodate one DS-0 message link. The parts provided are to be used with a Gray exterior.

REFERENCE DOCUMENTATION: SLZZ11AG 00 01
NTZZ11AG REL 01

MARKETS: Applicable markets:

Canada

ISSUE AUTHOR: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: Ken Clisso Dept. 3471 (PPK)

NTZZ11AG EMC2-16-006 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 03 14	----- ECM 620 25	Previous history not available MD BB per EC#18-43913.

The Link Interface Module Cabinet (24 Link) Gray is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Mod. Cabinet	NT9X70AA	LIM	1			AP
Local Msg Switch Shf Assy	NT9X7101		1	39		AP-01
Local Msg Switch Shf Com CP	NT9X71AB	LMS	1	39		AP
Kick Plate Assy (GRAY)	NT0X2516		1			AP
Frame Fail Light (GRAY)	NT0X24CN		1			AP
Overhead Power Block Kit	NTEX5001					RUL2
Power Boot Kit	NT9X0322					RUL3
+5V Power Converter	NT9X30AA		1	39	36F	AP-02
MS P-Bus Terminator CP	NT9X49CA		1	39	32F	AP-02
LMS F-Bus Rate Adapter CP	NT9X73AA		1	39	31F	AP
MS 4-Port CP	NT9X17AA		2	39	29F, 30F	AP-02
Mapper CP	NT9X15AA		1	39	24F	AP-02
Memory 6M CP	NT9X14BB		1	39	23F	AP-02
CPU 16 MHz CP	NT9X13DB		1	39	22F	AP
MS Clock CP	NT9X53AA		1	39	21F	AP-02
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP-02
MS Clock CP	NT9X53AA		1	39	18F	AP-02
CPU 16 MHz CP	NT9X13DB		1	39	17F	AP
Memory 6M CP	NT9X14BB		1	39	16F	AP-02
Mapper CP	NT9X15AA		1	39	15F	AP-02
MS 4-Port CP	NT9X17AA		2	39	09F, 10F	AP-02
LMS F-Bus Rate Adapter CP	NT9X73AA		1	39	08F	AP
MS P-Bus Terminator CP	NT9X49CA		1	39	07F	AP-02
+5V Power Converter	NT9X30AA		1	39	04F	AP-02
F-Bus Extension PB e/w Term	NT9X79BA		2	39	31R, 08R	AP-02
DS-30 4-Port CPNTA (STP)	NT9X23BA		4	39	29R, 30R, 09R, 10R	AP-02
Remote Term I/F Add	NT9X26AA		2	39	22R, 17R	AP-02
Filler Face Plate	NT9X19AA		8	39	25F-28F, 11F-14F	AP-02
Filler Face Plate	NT9X19EA		2	39	33F, 01F	AP-02
PB Filler Face Plate	NT9X19BA		18	39	32R, 23R-28R, 18R-21R, 11R-16R, 07R	AP-02
Shelf Pack Fill Rear Label	P0689618		1	39		AP-02
Shelf Pack Fill Front Label	P0689616		1	39		AP-02

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cable Bulkhead	NT9X6502		1	39		AP-01
Cable Bulkhead	NT9X6509		1	39		AP-01
Link I/F Unit Shelf Assy	NT9X7201		1	26		AP-01
Link I/F Unit Shelf Comm CP	NT9X72AC	LIS	1	26		AP
Filler Face Plate	NT9X19EA		2	26	1F, 33F	AP-03
+5V Power Converter	NT9X30AA		1	26	04F, 36F	AP-03
F-Bus Repeater CP	NT9X74BA		2	26	7F, 32F	AP
CCS7 DS0A LIU	NTZZ11BA			26	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
CCS7 E-DS0A LIU	NTZZ11CA			26	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
CCS7 V.35 LIU	NTZZ11DA			26	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
STP Filler Face Plate	NTZZ11EA			26	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
PB Filler Face Plate	NT9X19BA		14	26	08R, 11R, 13R, 14R, 16R, 17R, 19R, 20R, 22R, 23R, 25R, 26R, 28R, 29R	AP-03
Shelf Pack Fill Rear Label	P0689613		1	26		AP-03
Shelf Pack Fill Front Label	P0689615		1	26		AP-03
Cable Bulkhead	NT9X6502		1	26		AP-01
Cable Bulkhead	NT9X6509		1	26		AP-01
F-Bus Extender Paddleboard	NT9X79AA		2	26	7R, 32R	AP
Intra FBUS B Termination PB	NTEX20BA		1	26	10R	AP
Intra FBUS A Termination PB	NTEX20AA		1	26	31R	AP
Desig. Label NT9X74BA	P0707873		2	26	7F, 32F	AP
Desig. Label NT9X79AA	P0689621		2	26	7R, 32R	AP
Desig. Label NTEX20BA	P0704361		1	26	10R	AP
Desig. Label NTEX20AA	P0704360		1	26	31R	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy	NT9X7201		1	13		AP-01
Link I/F Unit Shelf Comm CP	NT9X72AC	LIS	1	13		AP
Filler Face Plate	NT9X19EA		2	13	1F, 33F	AP-03
+5V Power Converter	NT9X30AA		1	13	04F, 36F	AP-03
F-Bus Repeater CP	NT9X74BA		2	13	7F, 32F	AP
CCS7 DS0A LIU	NTZZ11BA			13	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
CCS7 E-DS0A LIU	NTZZ11CA			13	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
CCS7 V.35 LIU	NTZZ11DA			13	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
STP Filler Face Plate	NTZZ11EA			13	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
PB Filler Face Plate	NT9X19BA		14	13	08R, 11R, 13R, 14R, 16R, 17R, 19R, 20R, 22R, 23R, 25R, 26R, 28R, 29R	AP-03
Shelf Pack Fill Rear Label	P0689613		1	13		AP-03
Shelf Pack Fill Front Label	P0689615		1	13		AP-03
Cable Bulkhead	NT9X6502		1	13		AP-01
Cable Bulkhead	NT9X6509		1	13		AP-01
F-Bus Extender Paddleboard	NT9X79AA		2	13	7R, 32R	AP
Intra FBUS B Termination PB	NTEX20BA		1	13	10R	AP
Intra FBUS A Termination PB	NTEX20AA		1	13	31R	AP
Desig. Label NT9X74BA	P0707873		2	13	7F, 32F	AP
Desig. Label NT9X79AA	P0689621		2	13	7R, 32R	AP
Desig. Label NTEX20BA	P0704361		1	13	10R	AP
Desig. Label NTEX20AA	P0704360		1	13	31R	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy	NT9X7201		1	00		AP-01
Link I/F Unit Shelf Comm CP	NT9X72AC	LIS	1	00		AP
Filler Face Plate	NT9X19EA		2	00	1F, 33F	AP-03
+5V Power Converter	NT9X30AA		1	00	04F, 36F	AP-03
F-Bus Repeater CP	NT9X74BA		2	00	7F, 32F	AP
CCS7 DS0A LIU	NTZZ11BA			00	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
CCS7 E-DS0A LIU	NTZZ11CA			00	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
CCS7 V.35 LIU	NTZZ11DA			00	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
STP Filler Face Plate	NTZZ11EA			00	8F, 11F, 14F, 17F, 20F, 23F 26F, 29F	RUL1
PB Filler Face Plate	NT9X19BA		14	00	08R, 11R, 13R, 14R, 16R, 17R, 19R, 20R, 22R, 23R, 25R, 26R, 28R, 29R	AP-03
Shelf Pack Fill Rear Label	P0689613		1	00		AP-03
Shelf Pack Fill Front Label	P0689615		1	00		AP-03
Cable Bulkhead	NT9X6502		1	00		AP-01
Cable Bulkhead	NT9X6509		1	00		AP-01
F-Bus Extender Paddleboard	NT9X79BA		2	00	7R, 32R	AP
Intra FBUS B Termination PB	NTEX20BA		1	00	10R	AP
Intra FBUS A Termination PB	NTEX20AA		1	00	31R	AP
Desig. Label NT9X74BA	P0707873		2	00	7F, 32F	AP
Desig. Label NT9X79BA	P0689622		2	00	7R, 32R	AP
Desig. Label NTEX20BA	P0704361		1	00	10R	AP
Desig. Label NTEX20AA	P0704360		1	00	31R	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 NTZZ11AG is ordered, these items are provided.
- AP-01 1) Items marked AP01 are supplied as part of the NT9X70AA Link Interface Module Cabinet and are listed for sparing purposes.
- AP-02 1) Items marked AP02 are supplied as part of the NT9X71AA Local Message Switch Shelf and are listed for sparing purposes.
- AP-03 1) Items marked AP03 are supplied as part of the NT9X72AC Link Interface Shelf and are listed for sparing purposes.
- RUL1 1) Each LIS will support up to eight (8) Link Interface Units (LIU) up to a maximum of 24 LIU per LIM cabinet. The individual LIUs are provisioned as follows:
- Provide EITHER one (1) NTZZ11DA, CCS7 V.35 LIU, when interfacing a V.35 signalling link, OR
- Provide one (1) NTZZ11BA, CCS7 DS0A LIU, when a Composite Clock interface to each DS0A PB link is required, OR
- Provide one (1) NTZZ11CA, CCS7 E-DS0A LIU, when enhanced maintenance features to each DS0A PB link is required.

- 2) Provide one (1) NTZZ11EA, ST Filler Face Plate, when NTZZ11BA, NTZZ11CA or NTZZ11DA is not provisioned to maintain forced air cooling requirements on each of the three (3) Link Interface Shelves.
- RUL2 1) Provide one NTEX5001, Overhead (Frame) Power Block Kit, when overhead cabling is required.
- RUL3 1) Provide one NT9X0322 Power Boot Kit for each Cabinet.

LINK INTERFACE MODULE CABINET (36 LINK)

PEC CODE: NTZZ30SE

CPC CODE: B0236704

| RATING: MD

REPLACES:

REPLACED BY: NTZZ44CP

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) houses 36 interface units. These units can be DS0A Link Interface Units, DS0A Enhanced Link Interface Units, or V.35 Link Interface Units for interface of CCS7 links as a functional block of Signaling Terminal Point (STP) or Signaling Service Point (SSP). The links can also be Ethernet Interface Units (EIU), Frame Relay Services interface units (FRIU) and Channelized LIU7s with use of the Network Interface Unit (NIU).

REFERENCE DOCUMENTATION: SLZZ30SE 00 01
NTZZ30SE REL 01
MS9X70BB 01 09
MS9X95 00 07
MSRX73 00 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: Jerry Palmer Dept. 3471 (PPK)

NTZZ30SE EMC2-16-007 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 08 03	ECM 620 05	Add NIU and -60V information
92 10 02	ECM 620 06	Add CBI Building Block, NTZZ44DA. Add CBI with JAPAN ISUP BB, NTZZ44EA. Add correct -60V FSP, NT9X03BA.
92 11 11	ECM 620 07	Add point of application for NTZZ30ZC. Add restriction for maximum of 11 XLIU per DMS Switch. Also bumped up release of engman from 01.00 to 01.03 to match change history.
92 12 08	ECM 620 08	Add building Blocks for non streamline and streamline bulkheads. Change the numbering the ASUs to match the LIUINV table. Replace NTZZ30FA with NTZZ30LA
93 01 21	ECM 620 09	EC 024-84215 replace the Cooling Units
93 03 12	ECM 620 10	Remove AP-01 bulkheads from NTZZ30SE NTZZ30CA, NTZZ30DA are A&M
93 04 06	ECM 620 11	Reference to allowable ASU combinations EC 02489028 - Provide sparing info. the -48 and -60 volt Cooling units. Reference NTZZ30EC for applications BCS34 and above.
93 06 04	ECM 620 12	Replaced by the NTZZ44CM or NTZZ44KM or NTZZ44FM or NTZZ44GM.
94 03 10	ECM 620 15	Replaced Nt9X95AA with NT9X95BA
95 03 14	ECM 620 25	Retire Doc.-Corrected Document ID#.

The Link Interface Module Cabinet (36 Link) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Supv. Panel (-48V)	NT9X03AA	FSP	1	52		RUL18
Frame Supv. Panel (-60V)	NT9X03BA	FSP	1	52		RUL18
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
Cabinetized DMS Cosmetic	NTRX73					RUL9
Endguards and EMI Sidepanels						
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
LMS Common CP Fill	NTZZ30YB		1	39		RUL1
Rem Term Intf	NT9X26AA		2	39	17R, 22R	RUL12
Rem Term Intf	NT9X26AB		2	39	17R, 22R	RUL12
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	RUL11
Designation Label NT9X13DB	P0696239		2	39	17F, 22F	RUL11
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	RUL12
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13
Bulkehaed and Cable Assembly	NTZZ44HA		1	39		RUL23
Cabinetized Bulkhd & Cabl	NTZZ44JA		1	39		RUL23

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
Link I/F Shelf	NTZZ30ZC		1	00		RUL1
FBus Repeater CP	NT9X74CA		2	X	7F, 32F	RUL14
FBus Repeater CP	NT9X74DA		2	X	7F, 32F	RUL14
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
@ LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
LIU7 DS0A	NTZZ30TA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (JAPAN ISUP with CBI)	NTZZ44EA			X	Y	RUL21
@ LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871			X		RUL14
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
\$ Cooling Unit (-48V)	A0377580	CU	1	BOT		RUL18
Cooling Unit (-48V)	NT9X95CU	CU	1	BOT		RUL18

Retired Equipment
Link Interface Module Cabinet (36 Link)

NTZZ30SE
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
% Cooling Unit (-60V)	A0382102	CU	1	BOT		RUL18
Cooling Unit (-60V)	NT9X95GU	CU	1	BOT		RUL18
-48V Blower Assembly	A0383325					RUL19
-60V Blower Assembly	A0382103					RUL19
-60V Elec. Module	A0383326					RUL19
Filter	A0377837					AP-01
Frame Fail Lamp (Brown)	NT0X24BT					RUL17
Rear Frame Fail Light	P0674502					RUL17
Frame Fail Lamp (Grey)	NT0X24CN					RUL17
Rear Frame Fail Light	P0699441					RUL17
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
A0377580	A&M	NT9X95CU
A0382102	A&M	NT9X95GU
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	

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they are already in use in that office.

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

NOTES:

- 1) Shelf mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. Each DMS Switch can have a MAXIMUM of eleven (11) XLIUs, X.25/X.75 Link Interface Unit. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIU, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	LIU/EIU/FRIU											
ASU Numbering Sequence	0 2 4 6 8 11											
ASU assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4
ASU Numbering Sequence	12 14 16 18 20 23											
ASU assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2
ASU Numbering Sequence	24 26 28 30 32 35											
ASU assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

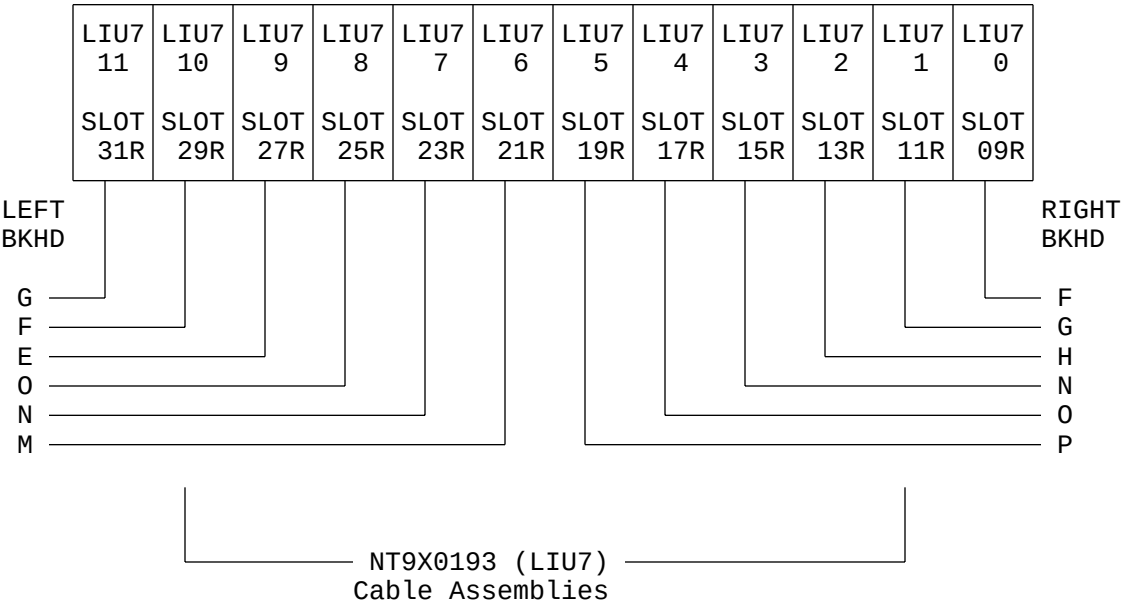
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

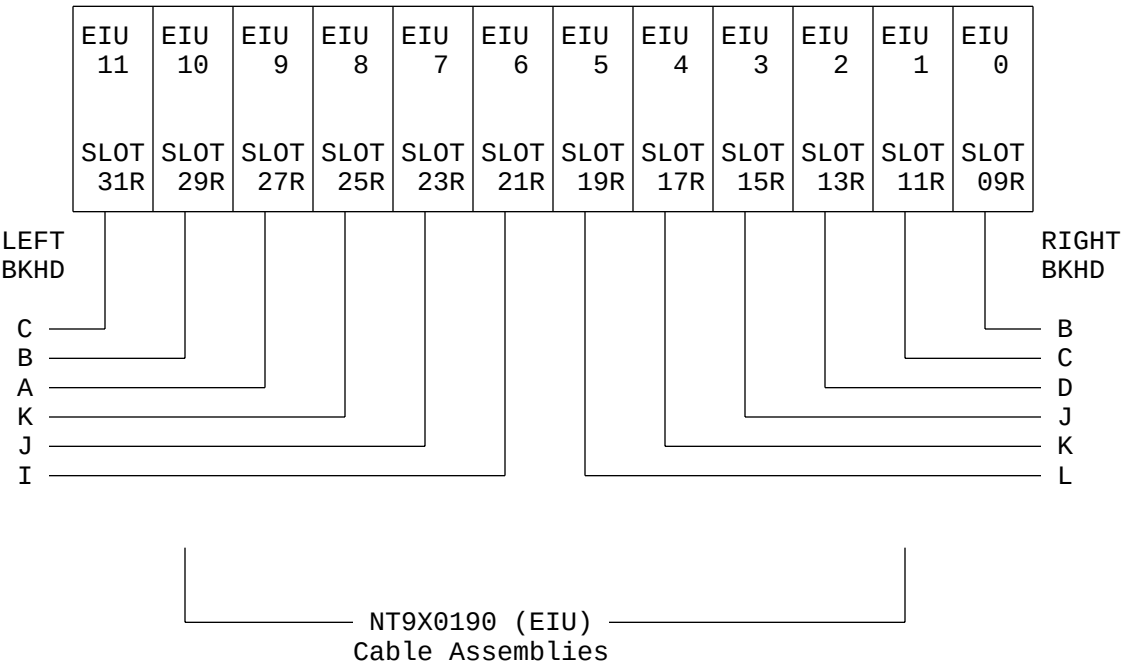
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	0	2	4	6	8	11						
ASU assignment Sequence for LIS:01	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
ASU Numbering Sequence	12	14	16	18	20	23						
ASU assignment Sequence for LIS:02	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
ASU Numbering Sequence	24	26	28	30	32	35						
ASU assignment Sequence for LIS:03	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

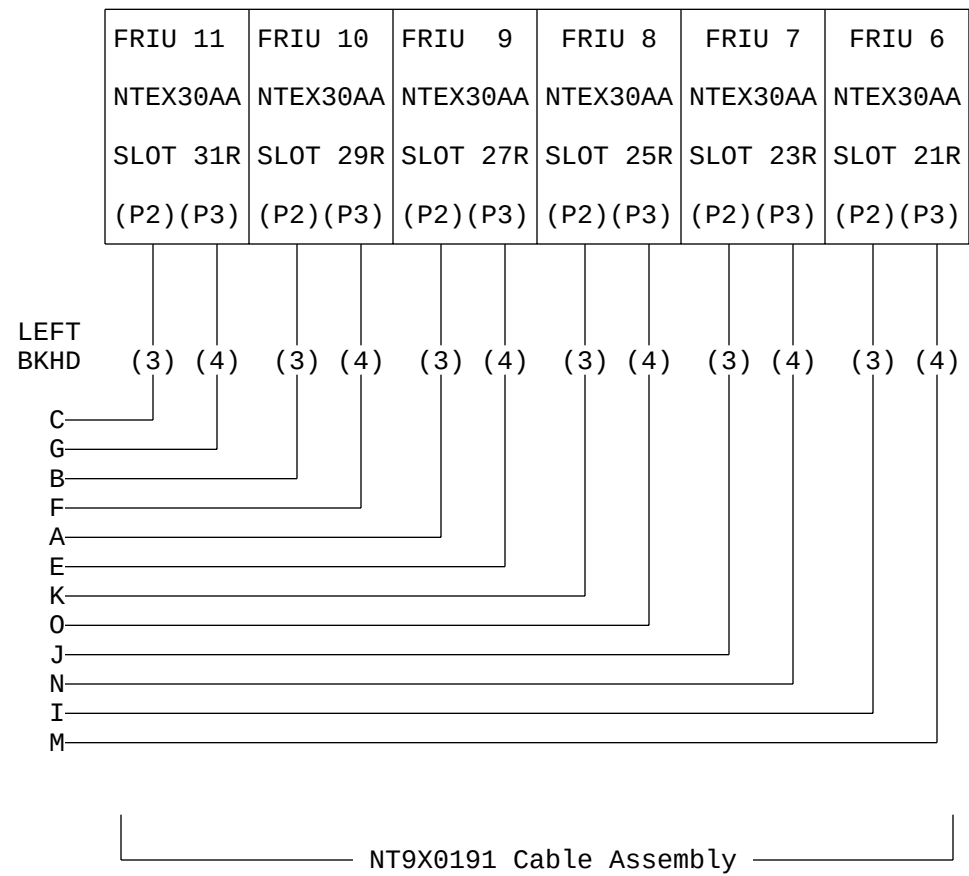
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

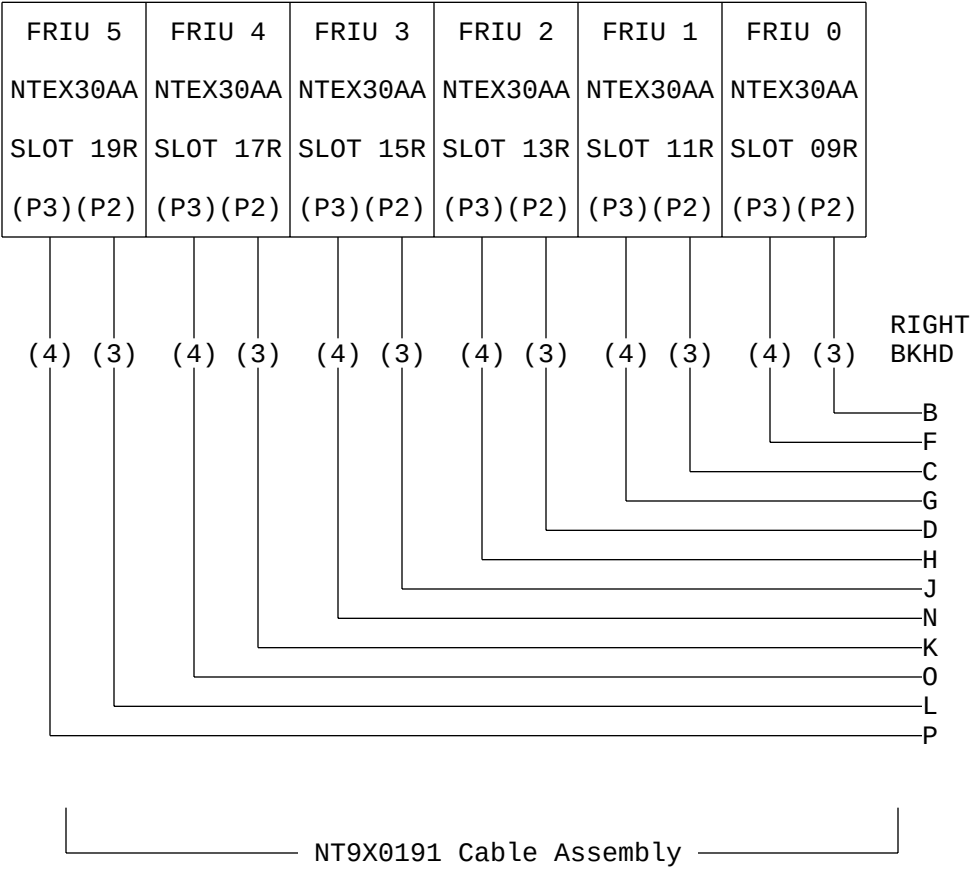




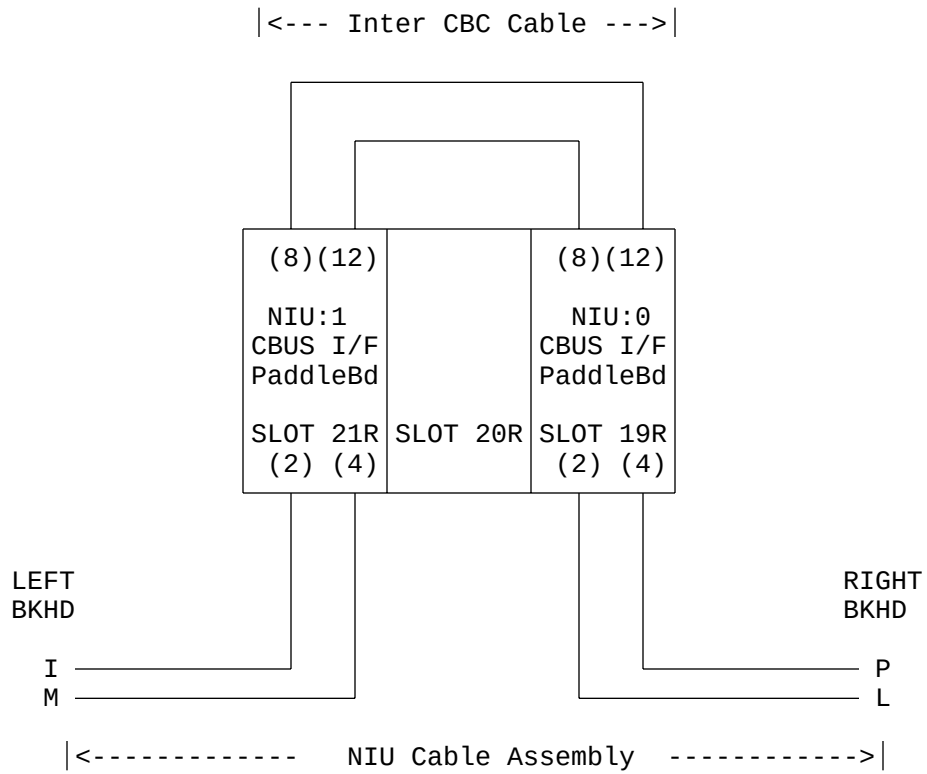
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



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

RULES:

- AP 1) When PEC NTZZ30SE 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 for the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Always provide one NTZZ30YB for each LPP cabinet. the Local Message Switch (LMS).
- 2) Always provide one NTZZ30ZC for each LPP cabinet. The NTZZ30ZC contains all the common circuit packs for the F-BUS for the three LIS shelves in positions 00, 13, 26.
- RUL2 1) Provide one NTZZ30BA for each DS0A SS7 link requiring enhanced maintenance. For all new applications order NTZZ30TA.
- 2) Provide one NTZZ30CA for each E-DS0A SS7 link requiring enhanced maintenance. For all new applications order NTZZ30UA.
- 3) Provide one NTZZ30VA for each E/HC-DS0A SS7 link requiring enhanced maintenance and high capacity. NTZZ30VA is applicable at BCS-33 and above.
- RUL3 1) Provide one NTZZ30DA for each V.35 SS7 link. For all new application order the NTZZ30WA.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.
- 2) Provide one NTZZ30EC for applications involving BCS 34 and Above.

- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 2) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA. Refer to RUL14 for NT9X74DA upgrade information.
- RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.
- RUL7 1) Provide one for all British Offices.
- RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below. The NIU labels are provided when the NIU is assigned in slot 18F of a shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

- RUL9 1) Reference insert NTRX73 for information on providing Cabinetized DMS Cosmetic Endguards and EMI Sidepanels.
- RUL10 1) Provide one (1) NT9X9532, Stand-Alone Power Cabling Kit, and one (1) P0736059, Filter Capacitor Designation Label Sheet, when the LIM cabinet is powered from a 7ft. PDC (Non-Streamline). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.
- 2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0736058 Terminal Block Designation Strip when powering the LIM from a Cabinetized PDC (Streamline Applications).

The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

- RUL11 1) These items are provisionable but always required on the LMS shelf. Provide the quantities shown in the QTY column for each cabinet.
- RUL12 1) Provide Two (2) NT9X26AB RTIF Paddle Boards and two P0705003 Designation Labels per LMS.
- 2) The NT9X26AA was always provided on the NT9X71AB LMS shelf and is shown here for completeness. Do not provide the NT9X26AA on new jobs.
- RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.
- RUL14 1) Provide two NT9X74DA F-Bus Repeater CP and two P0733871 labels for each LIS that requires either Channelized Access, Frame Relay, or DMS-PH applications. Otherwise, Provide two NT9X74CA F-Bus Repeater CP for each LIS not supporting any of the above applications. The label for the NT9X74CA is part of the shelf label.
- 2) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.
- 3) When an office is at BCS 34 or greater the NT9X74DA F-Bus Repeater CP is required for LIS shelves that are going to support Channelized Access, Frame Relay, or DMS-PH applications.
- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) For each brown NT9X70BB LIM cabinet, provide:
- one (1) NT0X24BT Frame Fail Lamp (Brown), and
 - one (1) P0674502 Rear Frame Fail Light.

2) For each grey NT9X70BB LIM cabinet, provide:

- one (1) NT0X24CN Frame Fail Lamp (Grey), and
- one (1) P0699441 Rear Frame Fail Light.

RUL18 1) RESERVED

RUL19 1) If the customer requests spares for the cooling unit provide the blower assy. for -48V application or provide the blower assy. and the electronic module for the -60V applications.

- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:

$$32 - (\begin{array}{l} \text{\#FRIUs on LIS shelf} * 2 \\ + \text{\#NIUs on LIS shelf} * 4 \\ + \text{\#LIUs on LIS shelf} \\ + \text{\#EIUs on LIS shelf} \end{array})$$

- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).

- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required.

The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.

- 2) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required.

The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 JAPAN ISUP with CBI to function.

- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a MAXIMUM of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.

- RUL23 1) Provide one Bulkhead and Cable Assembly for LPPs that are to located in a non Cabinetized DMS office.

- 2) Provide one Cabinetized Bulkhead and Cable Assembly for LPPs that are to located in a Cabinetized DMS office.

FIBERIZED LIS CABINET

PEC CODE: NTZZ30PA

CPC CODE: B0235053

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ30PM

ABBREVIATION NAME: EMC

ENGINEERING DESCRIPTION: The Enhanced Multi-Purpose Cabinet houses up to two (2) Link Interface Shelves (LIS). The first shelf, referred to as LIS 1, is mounted in shelf position 26. The second shelf, if equipped, is referred to as LIS 2 and is mounted in shelf position 13.

REFERENCE DOCUMENTATION: SLZZ30PA 00 01
NTZZ30PA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTC: Ganesh Ram Dept. 3471 (RTP)

MAIN CONTACT: NTC: Ganesh Ram Dept. 3471 (RTP)

NTZZ30PA EMC2-16-009 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 02 01	ECM 612 04	Set status to A&M(correction). Change
93 06 08	ECM 612 06	Rul9 to reflect bulkhead change.
94 02 16	ECM 612 08	Introduction of DMS Packet Handler and
95 08 28	ECM 612 16	Channelized Access in SSLPP.
		Solving ET 112970: Modification to
		RUL1 to cover NIU ad XLIU.
		Retire this section.

The Fiberized LIS is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced Multi-Pur.Cabinet	NTEX01AA	EMC	1			AP
Common Cabinet Equip	NT9X0101	FW	1			AP-01
Blank Shelf Assembly	NT0X24BD		2	00,39		AP
Fiberized LIU Shelf Assembly	NTZZ30HA		1	26,13		RUL1
Blank Shelf Assembly	NT0X24BD		1	13		RUL1
\$ LIU7 E-DS0A	NTZZ30CA			26,13	8F-30F	RUL2
\$ LIU7 V.35	NTZZ30DA			26,13	8F-30F	RUL3
LIU7 E-DS0A	NTZZ30UA			26,13	8F-30F	RUL2
LIU7 V.35	NTZZ30WA			26,13	8F-30F	RUL3
NIU	NTZZ30MA			X	18F	RUL3
XLIU	NTZZ30NA			X	Y	RUL3
Filler Face Plate	NT9X19AA					RUL5
PB Filler Face Plate	NT9X19BA					RUL5
Warning Label English only	P0675712					RUL6
"HIGH VOLTAGE"						
Warning Label Eng/French	P0689138					RUL6
"HIGH VOLTAGE"						
Warning Label English only	P0675711					RUL6
"HIGH VOLTAGE"						
Warning Label Eng/French	P0689137					RUL6
"HIGH VOLTAGE"						
Designation Label	P0714420					RUL6
Designation Label	P0714421					RUL6
Overhead power block kit	NTEX5001					RUL7
Screws & Washers	P097F813					RUL7
	P0284154					RUL7
	P0183220					RUL7
Kick Plate Assembly (Brown)	NT0X2430					RUL8
Kick Plate Assembly (Grey)	NT0X2516					RUL9
Frame fail light kit (Brown)	NT0X24BT					RUL8
Frame fail light kit(Grey)	NT0X24CN					RUL9
Bulkhead Cover Plate Assy.	NTEX5025			26,13		RUL10
LIU Cable Routing Labels	P0714420			26		RUL11
	P0714421			13		RUL11
Ext. Cab.Label (EMC 00-05)	P0733690					RUL12
Ext. Cab.Label (EMC 06-11)	P0733691					
Ext. Cab.Label (EMC 12-16)	P0733692					
PDC Designation Label	P0733693					RUL13
FSP Designation Label	P0733694					RUL13
Interior Cabinet label	P0733695					RUL13

Retired Equipment
Fiberized LIS Cabinet

NTZZ30PA
EMC2-16-009
Page 3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30CA NTZZ30DA	A&M A&M	NTZZ30UA NTZZ30WA

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.

RULES:

- AP 1) When PEC NTZZ30PA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NTEX01AA and is shown herein for completeness.

The NT9X0101 is comprised of the following:

- NT0X24AA Cabinet Framework
- NT9X03AA Frame Supervisory Panel
- A0345301 Cooling Unit
- Cabinet Common Cabling & FSP Cabling

The NT0X24AA framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide. The NT9X03AA FSP is mounted at position 52. The A0345301 Cooling Unit is located immediately below position 0.

- RUL1 1) Provision one (1) NTZZ30HA Fiberized LIU Shelf Assembly in shelf position 26.
- 2) Provision one (1) NTZZ30HA Fiberized LIU Shelf Assembly in shelf position 13 if more than twelve (12) LIUs are required.

(OR)

- 3) Provision one (1) NTZZ30HA Fiberized LIU Shelf Assembly in shelf position 13 if the quantity of LIUs plus XLIUs exceeds ten (10). Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration, and NIUs cannot be split over two shelves.
- 4) Otherwise, provision one (1) NT0X24BD Blank Shelf Assembly.

- 5) Provision four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 locker washer when a link interface shelf assembly NTZZ30HA is required in shelf position 13.

RUL2 1) Provide one (1) NTZZ30CA for each required E-DS0A SS7 link.

- RUL3 1) Provide one (1) NTZZ30DA for each required V.35 SS7 link.
- 2) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of eight XLIUs).
 - 3) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required.
 - 4) One LIS will support up to eight (8) DMS Packet Handler plus two (2) LIU7s per application. The SSLPP cabinet can support up to a maximum of eight (8) DMS packet handler and two LIU7s.

Each DMS Packet Handler is composed of two circuit packs and one paddleboard. Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration, and NIUs cannot be split over two shelves.

RUL5 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for the unoccupied slots.

RUL6 1) Provision four (4) Labels P0675712 (HIGH VOLTAGE) per EMC cabinet for jobs requiring english language only.

Provision four (4) Labels P0689138 (HIGH VOLTAGE) per EMC cabinet for jobs requiring bilingual documentation.

Provision one (1) Label P0675711 (HIGH VOLTAGE) per EMC cabinet for jobs requiring english language only.

Provision one (1) Labels P0689137 (HIGH VOLTAGE) per EMC cabinet for jobs requiring bilingual documentation.

Provision one (1) P0714420 Designation Label when equipping LIS on shelf position 26.

Provision one (1) P0714421 Designation Label when equipping LIS on shelf position 13.

- RUL7 1) Provision one (1) NTEX5001 Overhead power block kit for use in non-raised floor application.
- 2) Provision four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 locker washer when a link interface shlef assembly NT9X7204 is required in shelf position 13.
- RUL8 1) Provision for a Brown EMC cabinet. Use only with Brown exterior parts.
- RUL9 1) Provision for a Grey EMC cabinet. Use only with Grey exterior parts.
- RUL10 1) Provision one (1) NTEX5025 Bulkhead cover plate assembly for each unequipped position in the NT9X6534 or NT9X6580 bulkheads.
- RUL11 1) Provision one (1) sheet of LIU cable routing labels per shelf when LIUs are provisioned in that shelf.
- RUL12 1) Provision P0733690 for EMC cabinets numbered from 00-05.
- 2) Provision P0733691 for EMC cabinets numbered from 06-11.
- 3) Provision P0733692 for EMC cabinets numbered from 12-16.
- RUL13 1) Provision one (1) P0733693 PDC label per office as required.
- 2) Provision one (1) P0733694 FSP label per office as required.
- 3) Provision P0733695 Interior Cabinet label as required.

36 LINK LPP -48V BCS33 & BELOW

PEC CODE: NTZZ44CB

CPC CODE: B0240939

| RATING: MD

REPLACES: NTZZ44CM & NTZZ44FM

| REPLACED BY: NTZZ44CC

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -48 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel within a brn/gry exterior cabinet. The NTZZ44CB has the capability of housing up to 36 Interface units, such as DS0A, Enhanced DS0A, V.35, and EIU. For applications in the US and International Markets, this NTZZ44CB can be deployed with Cabinetized(Streamline) DMS lineups.

REFERENCE DOCUMENTATION: SLZZ44CB 00 01
NTZZ44CB REL 01

MARKETS: Applicable markets:

CANADA
US
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Ken Clisso Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ken Clisso Dept. 3471 (ppk)

NTZZ44CB EMC2-17-LPP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 04 04 94 06 03	ECM 620 16 ECM 620 17	Removed Doors from stocklist MD'd NTZZ44CB and replaced with NTZZ44CC.

The 36 Link LPP -48V BCS33 & BELOW is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-48V)	NT9X03AA	FSP	1	52		AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
LMS DS-30 Cable Assembly	NT9X0100		4	39		AP
LMS DS-30 Cable Assembly	NT9X0107		2	39		AP
NonFiltered DS-30 Blkhd(LT)	NT9X6569		1	39		AP
NonFiltered DS-30 Blkhd(RT)	NT9X6570		1	39		AP
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CA		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
Desig. Label(NT9X19AA)	P0709515		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Memory 6 Meg	NT9X14BB		2	39	16F, 23F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
LMS Desig. Strip Front	P0689616		1	39		AP
LMS Desig. Strip Rear	P0689618		1	39		AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	AP
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	AP
Desig. Label(NT9X13DB)	P0696239		2	39	17F, 22F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
LIS Shelf Desg. Front	P0715483		3	00,13, 26		AP
LIS Shelf Desg. Rear	P0709179		3	00,13, 26		AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23

Retired Equipment
36 Link LPP -48V BCS33 4 BELOW

NTZZ44CB
EMC2-17-LPP-1
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		6	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit (-48V) Filter	NT9X95CU A0377837	CU	1	BOT		AP AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6
Frame Fail Lamp (Brown)	NT0X24BT					RUL17
Rear Frame Fail Light	P0674502					RUL17
Frame Fail Lamp (GREY)	NT0X24CN					RUL17
Rear Frame Fail Light	P0699441					RUL17

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	

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

A&M - ADDITIONS & 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) Shelf mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIUs, and FRIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S LIU/EIU/FRIU												
ASU Numbering Sequence	0		2		4		6		8		11		
ASU Assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4	
ASU Numbering Sequence	12		14		16		18		20		23		
ASU Assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2	
ASU Numbering Sequence	24		26		28		30		32		35		
ASU Assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6	
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

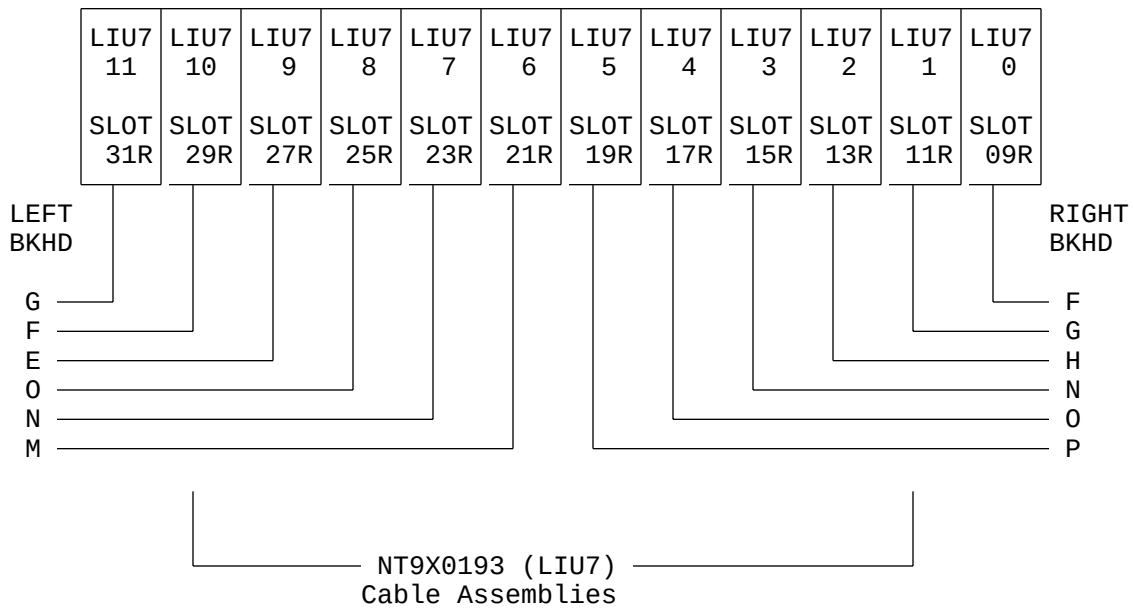
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

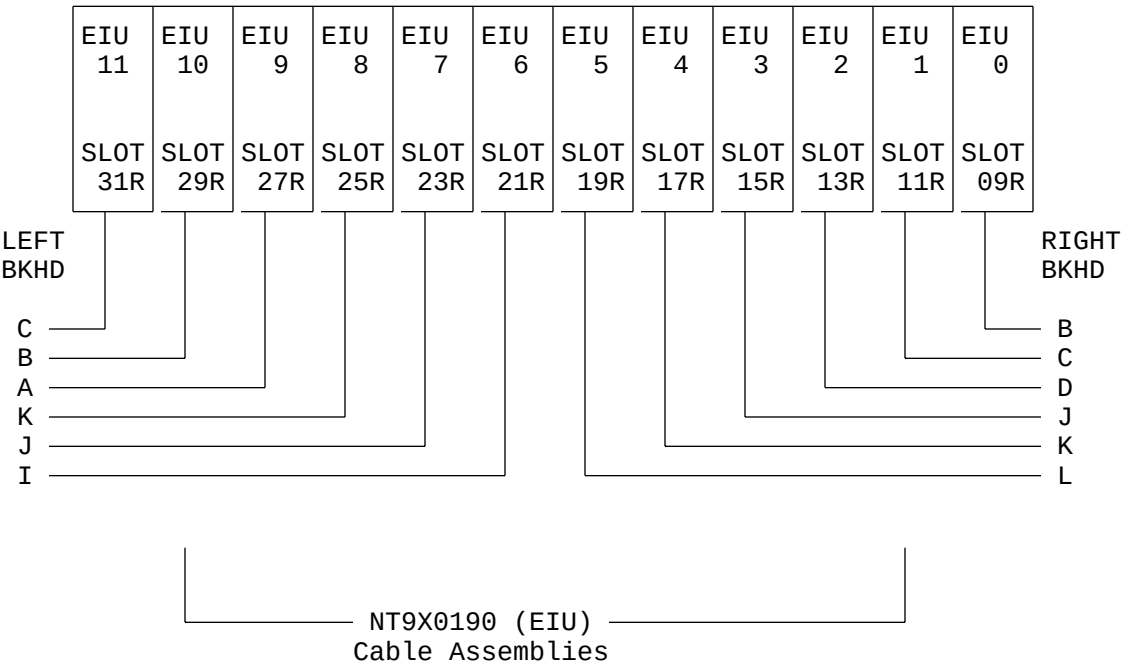
For reliability, the NIUs and XLIUs are to be assigned to shelf positions 00, 13, and 26 in the following order:

	L M S											
	NIU/XLIU											
ASU Numbering Sequence	0	2	4		6	8		11				
ASU Assignment Sequence for LIS:01	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	12	14	16		18	20		23				
ASU Assignment Sequence for LIS:02	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
ASU Numbering Sequence	24	26	28		30	32		35				
ASU Assignment Sequence for LIS:03	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

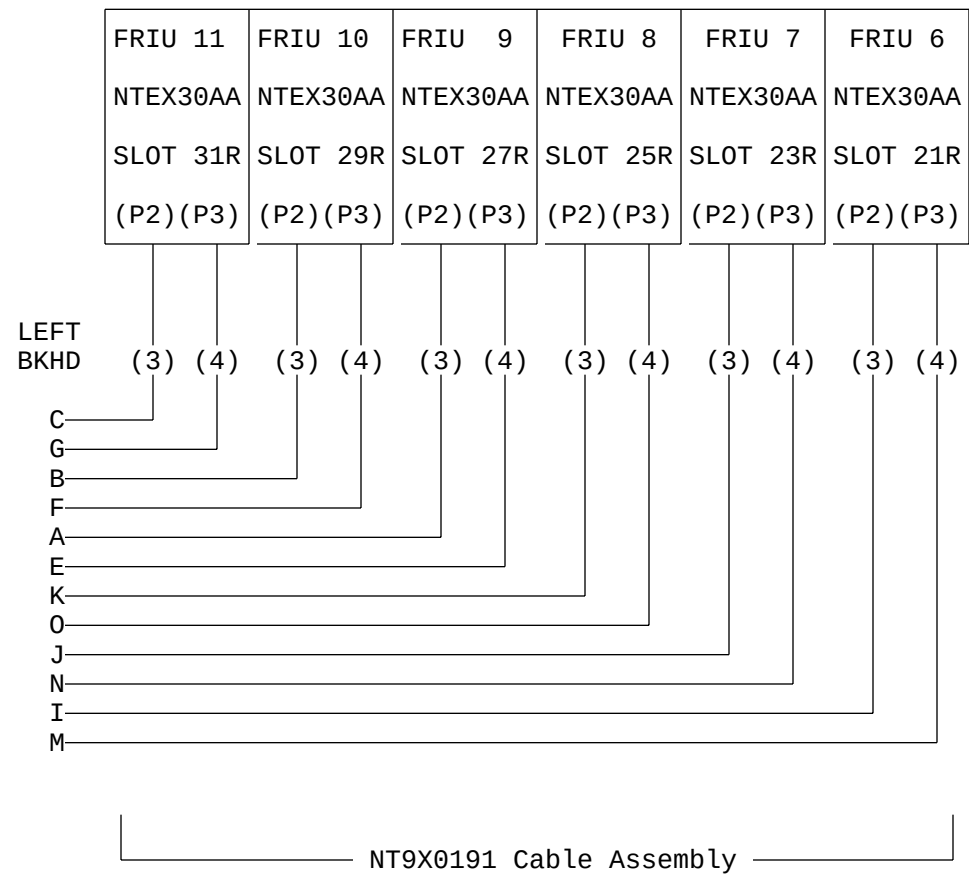
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

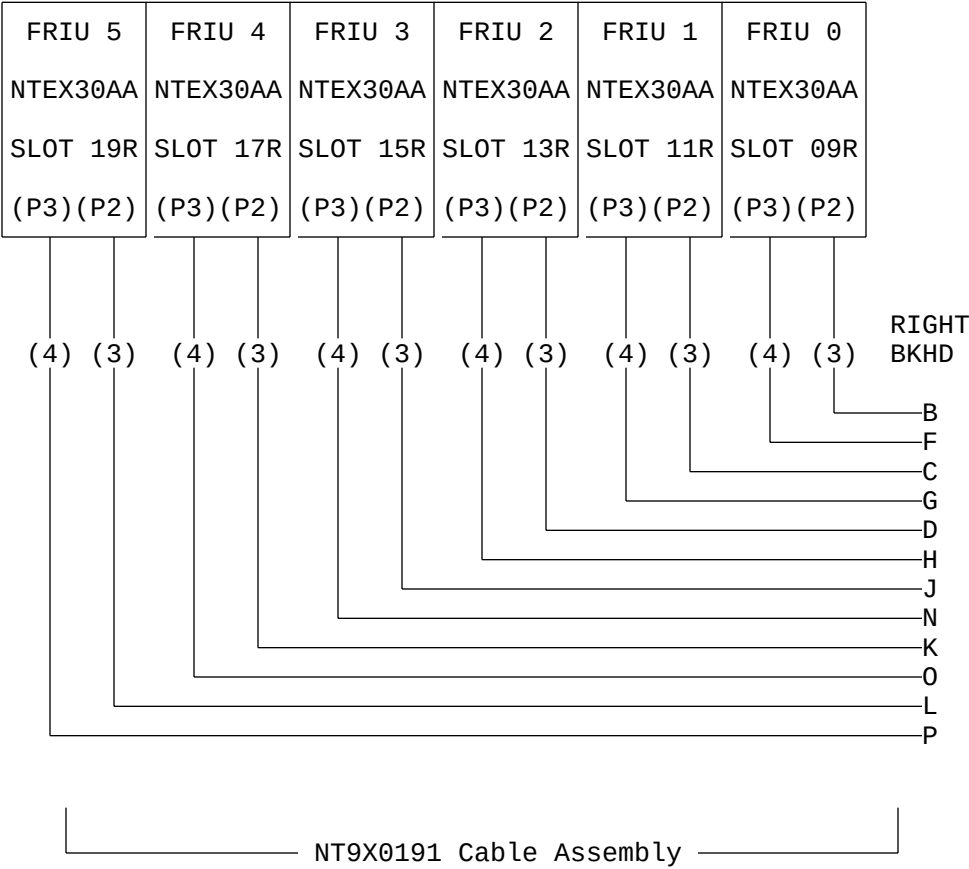




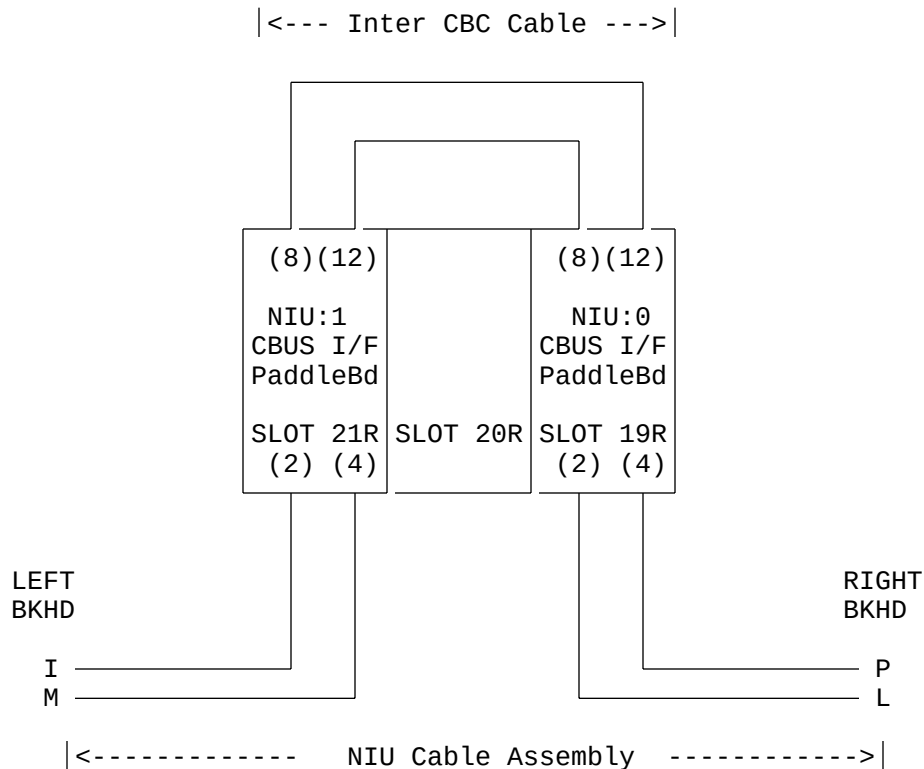
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per. LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :03	ORDER	LIS:01	ASU :02	NO :03
**		10	22				
**		04	16				
1		01	13	1	00	12	24
2		08	20	2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		03	15	4	09	21	33

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

First ADAS LPP with Two ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
or	12	14	16	18	20	23
LIS:02	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						E I U *
						**
						**
LIS:02	12	14	16	18	20	23
or	24	26	28	30	32	35
LIS:03	V P U	A P U	V P U	A P U	V P U	N I U : : 0 **
						N I U : : 1 **
						V P U
						A P U
						V P U
						A P U *
						A P U *
						**
						**
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8
	2 0	2 2	2 4	2 6	2 8	3 0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		10	22				
**			23 35				
1		01	13	1	00		12
2			20 32	2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		08	20	4		12	24
4			13 25	5	02		14
				6		21	33
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		03	15	7	09		21
6			22 34	8		14	26
				9	04		16
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7			15 27	10		16	28

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

First ADAS LPP with Three ADAS LISASU Numbering
Sequence

LIS:01	00		02		04		06		08		11	
	V	A	V	A	V	N	N	V	A	V	A	E
	P	P	P	P	P	I	I	P	P	P	P	I
	U	U	U	U	U	U	U	U	U	U	U	U
						:	:				*	
						0	1					
						**	**				**	**
LIS:02	12		14		16		18		20		23	
	V	A	V	A	V	N	N	V	A	V	A	A
	P	P	P	P	P	I	I	P	P	P	P	P
	U	U	U	U	U	U	U	U	U	U	U	U
						:	:				*	
						0	1					
						**	**				**	**
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0
LIS:03	24		26		28		30		32		35	
	V	A	V	A	V	N	N	V	A	V	A	V
	P	P	P	P	P	I	I	P	P	P	P	P
	U	U	U	U	U	U	U	U	U	U	U	U
						:	:					
						0	1					
						**	**					
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU			VPU		
ORDER	ASU NO LIS:01 :02 :03		ORDER	ASU NO LIS:01 :02 :03	
**	10				
**		23			
1	01		1	00	
2		20	2	19	
			3		24
- - -	- - - - -	- - -	- - -	- - - - -	- - -
3		25	4	07	
4	08		5		12
			6		31
- - -	- - - - -	- - -	- - -	- - - - -	- - -
5		13	7	02	
6		32	8		21
			9		26
- - -	- - - - -	- - -	- - -	- - - - -	- - -
7	03		10	09	
8		15	11		33
			12		28
- - -	- - - - -	- - -	- - -	- - - - -	- - -
9		22	13	04	
10		27	14		14
			15		35
- - -	- - - - -	- - -	- - -	- - - - -	- - -
11		34	16		16

** = Always Provisioned

1 + N ADAS LPP with Single ADAS LISASU Numbering
Sequence

LIS:01	00	02	04	06	08	11
LIS:02	12	14	16	18	20	23
LIS:03	24	26	28	30	32	35
	V	A	V	A	V	N
	P	P	P	P	P	I
	U	U	U	U	U	U
			*			:
			**			0
						**
(CP POS)	0	1	1	1	1	2
	8	0	2	4	6	8

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	ASU NO			ORDER	ASU NO		
	LIS:01	:02	:03		LIS:01	:02	:03
**	10	22	34				
**	03	15	27				
				1	00	12	24
				2	07	19	31
				3	02	14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1	08	20	32	4	04	16	28
2	01	13	25	5	09	21	33
				6	11	23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the LIS to be used for ADAS.

1 + N ADAS LPP with Two ADAS LIS

ASU Numbering

Sequence

LIS:01

or

LIS:02

00	02	04	06	08	11
12	14	16	18	20	23
V P U	A P U	V P U	A P U *	V P U	N I U : 0 **
					N I U : 1 **

ASU assignment

Sequence for:

LIS:02

and for:

LIS:03

12	14	16	18	20	23
24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 **
					N I U : 1 **

(CP POS)

0	1	1	1	1	1	2	2	2	2	2	3
8	0	2	4	6	8	0	2	4	6	8	0

* = VPP APUS

** = Always Provisioned

ORDER OF ASSIGNMENT

APU				VPU			
ORDER	LIS:01	ASU :02	NO :02 :03	ORDER	LIS:01	ASU :02	NO :02 :03
**		03	15				
**		10	22				
				1		12	24
				2		19	31
				3	07		19
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1		13	25	4	00		12
2		20	32	5	09		21
				6		14	26
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
3		01	13	7		21	33
4		08	20	8		16	28
				9	02		14
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5		22	34	10	11		23
6		15	27	11	04		16
				12		23	35

** = Always Provisioned

Use the ASU numbers in the column corresponding to the pair of LIS to be used for ADAS.

1 + N ADAS LPP with Three ADAS LIS

ASU Numbering

Sequence

LIS:01

00	02	04	06	08	11
V P U	A P U	V P U	A P U *	V P U	N I U : 0 1 **

LIS:02

12	14	16	18	20	23
V P U	A P U	V P U	A P U	V P U	N I U : 0 1 **
0	1	1	1	1	1
8	0	2	4	6	8

(CP POS)

LIS:03

24	26	28	30	32	35
V P U	A P U	V P U	A P U	V P U	N I U : 0 1 **
0	1	1	1	1	1
8	0	2	4	6	8

(CP POS)

* = VPP APUs

** = Always Provisioned

ORDER OF ASSIGNMENT

APU		VPU	
ORDER	ASU NO LIS:01 :02 :03	ORDER	ASU NO LIS:01 :02 :03
**	03		
**	10		
		1	00
		2	07
		3	02
- - -	- - - - -	- - -	- - - - -
1	13	4	31
2	20	5	24
		6	14
- - -	- - - - -	- - -	- - - - -
5	32	7	19
6	25	8	12
		9	33
- - -	- - - - -	- - -	- - - - -
7	02	10	21
8	27	11	09
		12	16
- - -	- - - - -	- - -	- - - - -
9	34	13	04
10	22	14	26
		15	11
- - -	- - - - -	- - -	- - - - -
11	15	16	35
12	08	17	23
		18	16

** = Always Provisioned

- 6) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet. pa

RULES:

- AP 1) When PEC NTZZ44CB 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 (EMA-07-001) for additional mechanical hardware requirements for the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Reserved for future use.
- RUL2 1) Provide one (4) meg NTZZ30BA for each DS0A SS7 link required.
- 2) For US applications requiring E-DS0A SS7 Link provide (1) NTZZ30UA. For Canada, Asia/Pacific, Europe, CALA applications requiring E-DS0A SS7 Link provide one (1) NTZZ30VA. The NTZZ30CA is A&M status.
- 3) The NTZZ30UA is functional beyond BCS33 on a 56Kb/s basis. NOT on 64 Kb/s basis. On the other hand NTZZ30VA is functional on both 56 and 64 Kb/s basis. For example if the office requires 56 Kb/s then NTZZ30UA or NTZZ30VA can be used. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.
- RUL3 1) Provide one (1) NTZZ30WA for each V.35 SS7 link. The NTZZ30DA is in A&M status.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.
- 2) For BCS 34 and above provide one NTZZ30EC for each Ethernet interface required.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA, and replace with NTZZ30LA for all applications.
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.

- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.

RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.

RUL7 1) Provide one for all British Offices.

RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below. The NIU labels are provided when the NIU is assigned in slot 18F of a shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

RUL9 1) Reserved for Future Use.

RUL10 1) Provide one (1) NT9X9532, Stand-Alone Power Cabling Kit, and one (1) P0736059, Filter Capacitor Designation Label Sheet, when the LIM cabinet is powered from a 7ft. PDC (Non-Streamline). The cabling kit includes power cables, filters, and miscellaneous mounting hardware. The Designation Label Sheet contains enough labels to fully designate the filter capacitors for one cabinet.

- 2) Provide one (1) NT9X9531 Non-Filtered Power Cable Kit, and one P0736058 Terminal Block Designation Strip when powering the LIM from a Cabinetized PDC (Streamline Applications). The cable kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL11 1) Reserved for future use.

RUL12 1) Reserved for future use.

RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.

- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.
- RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.
- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 of more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) For each brown NT9X70BB LIM cabinet, provide:
- one (1) NT0X24BT Frame Fail Lamp (Brown), and
 - one (1) P0674502 Rear Frame Fail Light.
- 2) For each grey NT9X70BB LIM cabinet, provide:
- one (1) NT0X24CN Frame Fail Lamp (Grey), and
 - one (1) P0699441 Rear Frame Fail Light.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:
- NT9X95BA - Mechanical Hardware for S/DMS Cabinet
- RUL19 1) Reserved for future Use.
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:
- 32 - (#FRIUs on LIS shelf * 2
+ #NIUs on LIS shelf * 4
+ #LIUs on LIS shelf
+ #EIUs on LIS shelf)
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must

be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.

- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.
 - 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.
- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.
- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.
- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.
- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

36 LINK LPP -48V, NON-CABINETIZED, BCS33 AND BELOW

PEC CODE: NTZZ44KN

CPC CODE: B0240942

| RATING: MD

REPLACES:

REPLACED BY:

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -48 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel within a brown exterior cabinet. The NTZZ44KN has the capability of housing up to 36 Interface units, such as DS0A, Enhanced DS0A, V.35, and EIU. This BB NTZZ44KN can be deployed into Canada, US and International Markets, in non-cabinetized application.

REFERENCE DOCUMENTATION: SLZZ44KN 00 03
NTZZ44KN REL 02

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ken Clisso Dept. 3471 (PPK)

NTZZ44KN EMC2-17-LPP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 04 04	ECM 620 16	Removed Doors from stocklist
94 06 03	ECM 620 17	Add text to RULE 13.
94 06 30	ECM 620 18	ECD 018-43057, ET19079, and ET52573
94 08 29	ECM 620 20	ET19569 and ET19619.
94 10 11	ECM 620 21	ET19749.
94 11 16	ECM 620 22	EC 018-43987 - Replace NT9X49CA with NT9X49CC.
95 02 10	ECM 620 23	ET60593. Added ASU numbering Dwgs. Added MAU for EIU. ET63763 Revised notes to exclude the req't for CBI LIU cable rtg.labels.
95 03 14	ECM 620 25	ET20759/EC 018-43880 - Intro NTZZ30TB. MD per MFG. cost reduction. Bulkheads now AP in NT9X70BB.

The 36 Link LPP -48V, Non-Cabinetized, BCS33 and BELOW is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-48V)	NT9X03AA	FSP	1	52		AP
Frame Fail Light	NT0X24BT		1			AP
Rear Frame Fail Light	P0674502		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
LMS DS-30 Cable Assembly	NT9X0145		4	39		AP
Filtered DS-30 Bulkhead(LT)	NT9X6509		1	39		AP
Filtered DS-30 Bulkhead(RT)	NT9X6536		1	39		AP
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CC		2	39	7F, 32F	AP
Designation Label (NT9X49CC)	P0735103		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
Memory 6 Meg	NT9X14BB		2	39	16F, 23F	AP
Desig. Label(NT9X19AA)	P0709515		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	AP
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	AP
Desig. Label(NT9X13DB)	P0696239		2	39	17F, 22F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
Media Access Unit (MAU)	A0383333					RUL25
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
Des Label NT9X74DA	P0733871		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
CCS7 8MEG LIU (FAULT-SEC.)	NTZZ30TB			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6

NTZZ44KN

Retired Equipment

EMC2-17-LPP-2

36 Link LPP -48V, Non-Cabinetized, BCS33 and BELOW

Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit (-48V) Filter	NT9X95CU A0377837	CU	1	BOT		AP AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
ESP Ground Terminal Assy	NT9X0324		1			RUL12
Cabinet Mechanical Hardware						RUL18
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X49CA	A&M	NT9X49CC

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

A&M - ADDITIONS & 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) Shelf mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not. It may be clearer to think of the ASU number as the circuit number, ie: LIU7#0.

ASU Assignment sequence is the link assignment within a linkset, and is the representation of the card spread that accomplishes link diversity by distributing CPs across shelves and Power Supplies. Refer to the 'Data Schema' for instructions and examples.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIU7s, and FRIU7s are to be assigned to shelf positions 00, 13, and 26 as shown below. The ASU number is the circuit number assigned to the ASU (ie:LIU7 #0). The ASU Assignment Sequence is representative of the link assignment within the linkset, and is spread across all relevant shelves, and 'A' and 'B' Power distribution (left/right halves of the shelf). Refer to the 'Data Schema' document for data fill instructions and examples.

	L M S											
	LIU/EIU/FRIU											
ASU Numbering	0	2	4	6	8	11						
ASU assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4
ASU Numbering	12	14	16	18	20	23						
ASU assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2
ASU Numbering	24	26	28	30	32	35						
ASU assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

Because channelized access (with NIU) and non-channelized access equipped shelves are mounted in the LIM frame, the following shows the Numbering/Assignment sequences for 3 different configurations.

FOR FRAMES WITH 3 SHELVES EQUIPPED WITH NIUS, USE THE NUMBERING BELOW:

	L M S											
	NIU/XLIU											
ASU Numbering	0	2	4	6	8	11						
ASU Assignment Sequence for LIS:01	1	7	13	19	25	NIU : 0	NIU : 1	28	22	16	10	4
	XLIUs <----											
ASU Numbering	12	14	16	18	20	23						
ASU assignment Sequence for LIS:02	5	11	17	23	29	NIU : 0	NIU : 1	26	20	14	8	2
	XLIUs <----											
ASU Numbering	24	26	28	30	32	35						
ASU assignment Sequence for LIS:03	3	9	15	21	27	NIU : 0	NIU : 1	30	24	18	12	6
	XLIUs <----											
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
3 SHELVES WITH NIUS

Refer to NOTE 1 for mixing of LIU7 and EIU with FRIU on the LIM.

FOR FRAMES WITH 2 SHELVES EQUIPPED WITH NIUS AND 1 SHELF WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
ASU Numbering	0 2 4 6 8 11											
ASU Assignment Sequence for LIS:01	1	5	9	13	17	N I U : 0	N I U : 1	20	16	12	8	4
ASU Numbering	12 14 16 18 20 23											
ASU Assignment Sequence for LIS:02	3	7	11	15	19	N I U : 0	N I U : 1	18	14	10	6	2
ASU Numbering	24 26 28 30 32 35											
ASU Assignment Sequence for LIS:03	1	3	5	7	9	11	12	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

XLIUs
<-----

XLIUs
<-----

LIUs
<-----

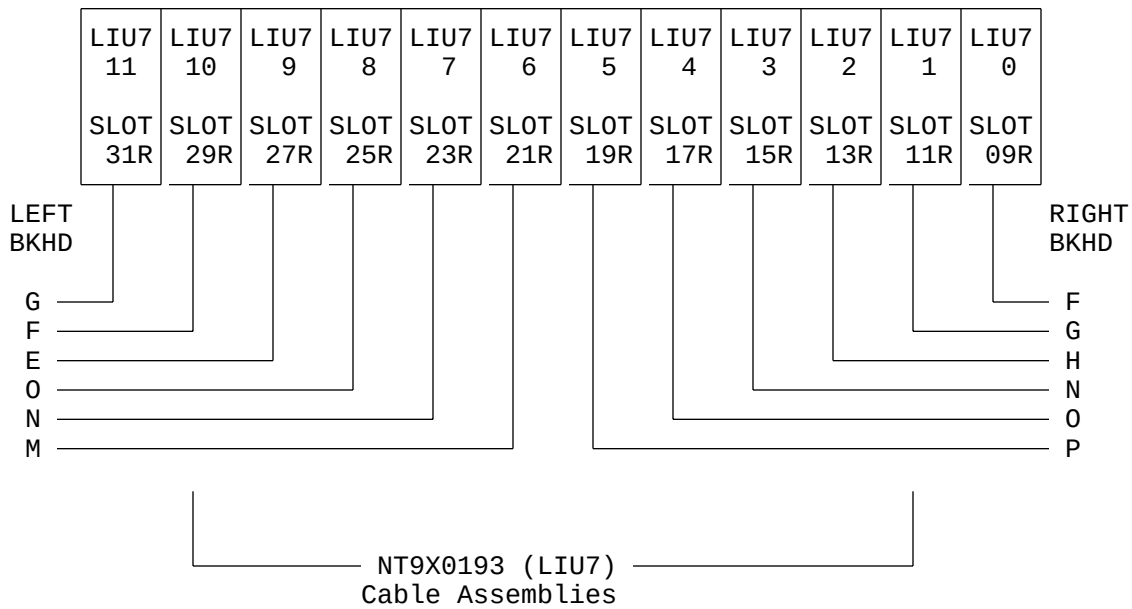
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
2 SHELVES WITH NIUS AND 1 SHELF WITHOUT NIUS

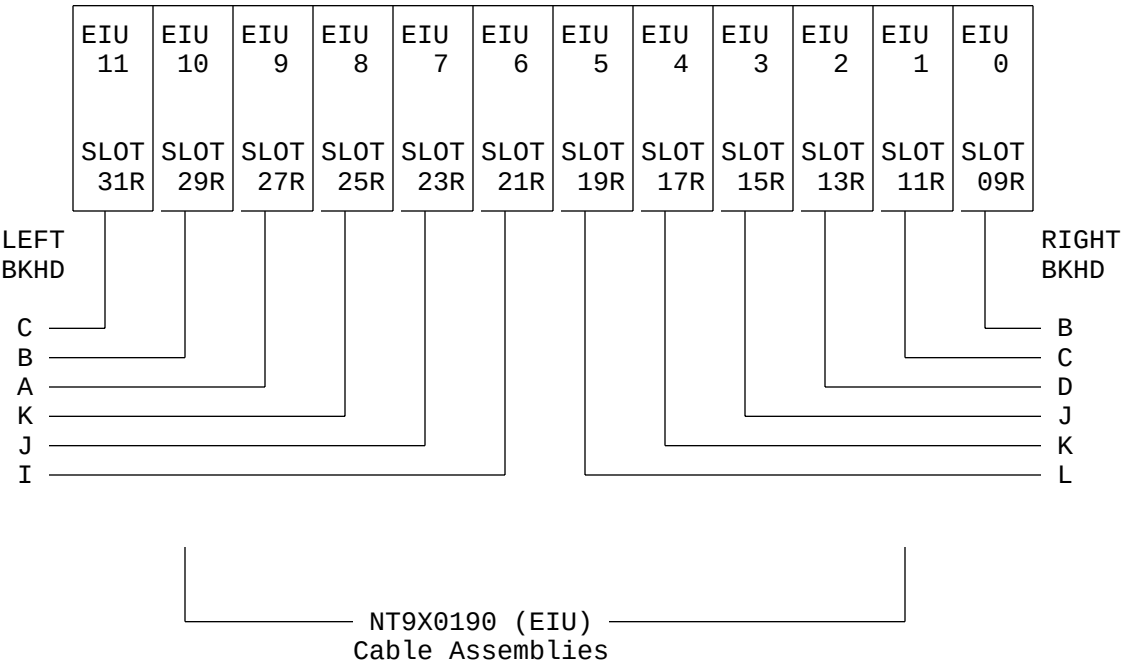
FOR FRAMES WITH 1 SHELF EQUIPPED WITH NIUS AND 2 SHELVES WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
	NIU/XLIU											
ASU Numbering	0		2		4		6		8		11	
ASU Assignment Sequence for LIS:01	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
	XLIUs <-----											
ASU Numbering	12		14		16		18		20		23	
ASU Assignment Sequence for LIS:02	1	5	9	13	17	21	24	20	16	12	8	4
	LIUs <-----											
ASU Numbering	24		26		28		30		32		35	
ASU Assignment Sequence for LIS:03	3	7	11	15	19	23	22	18	14	10	6	2
	LIUs <-----											
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

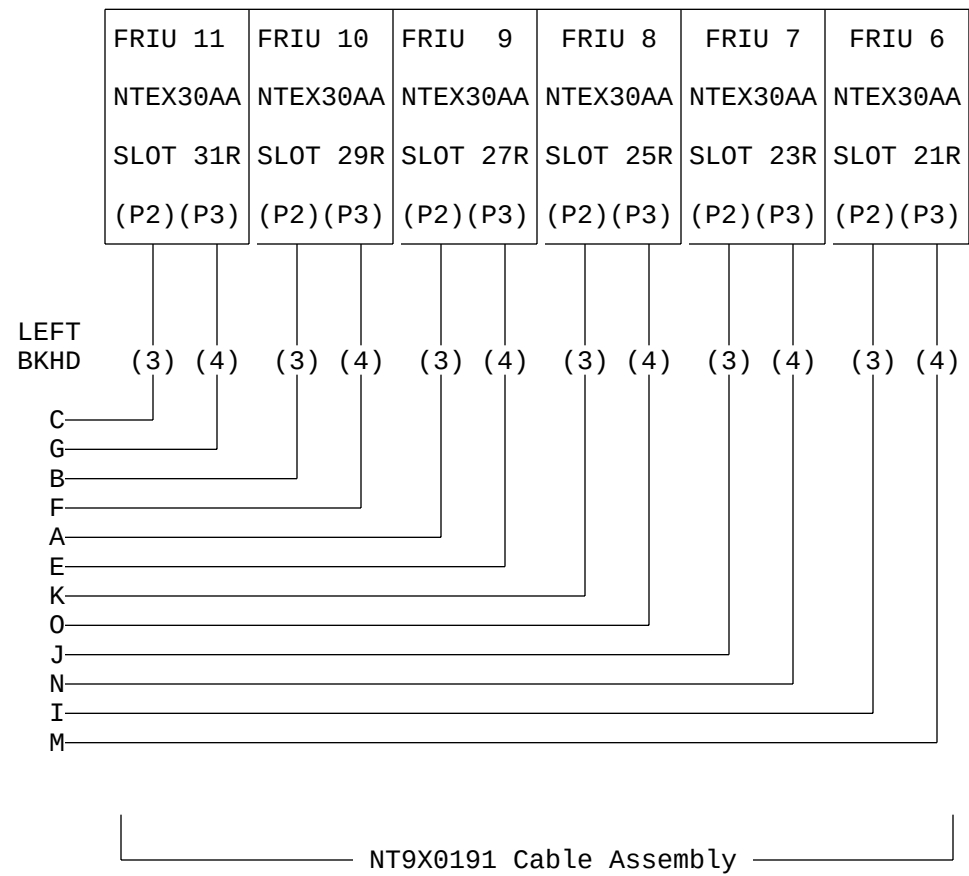
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
1 SHELF WITH NIUS AND 2 SHELVES WITHOUT NIUS

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

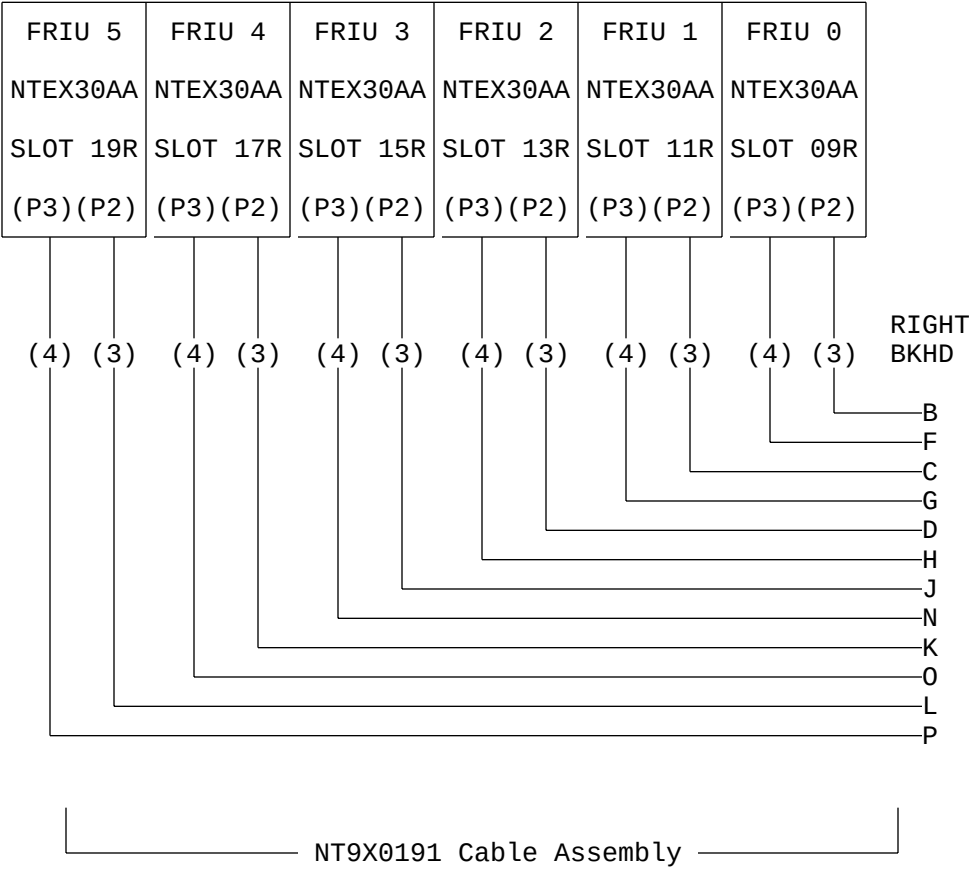




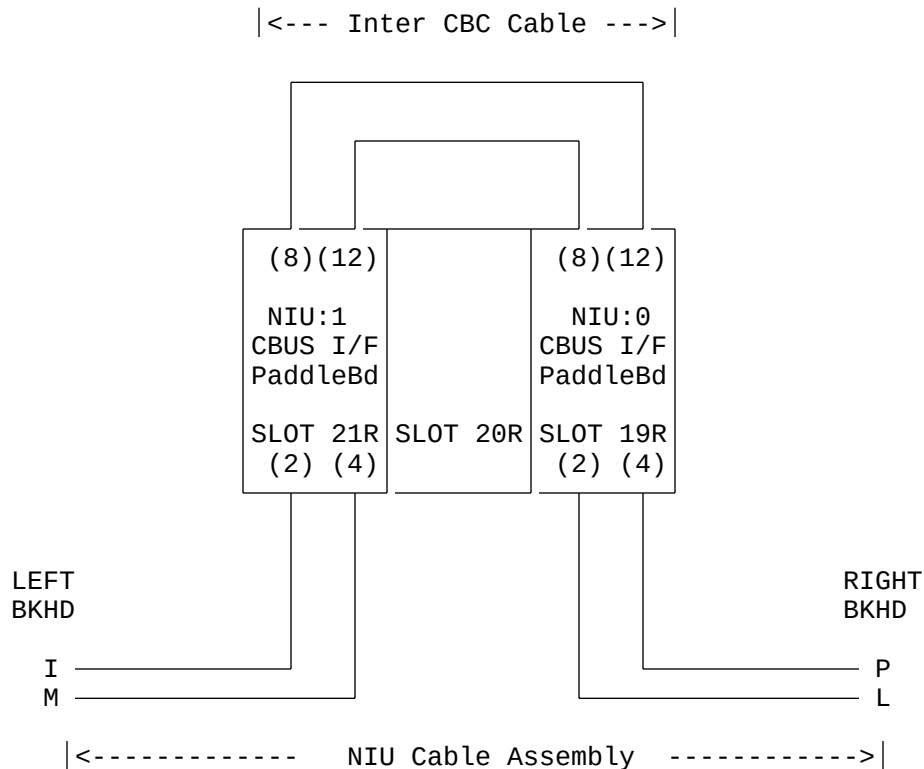
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per. LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

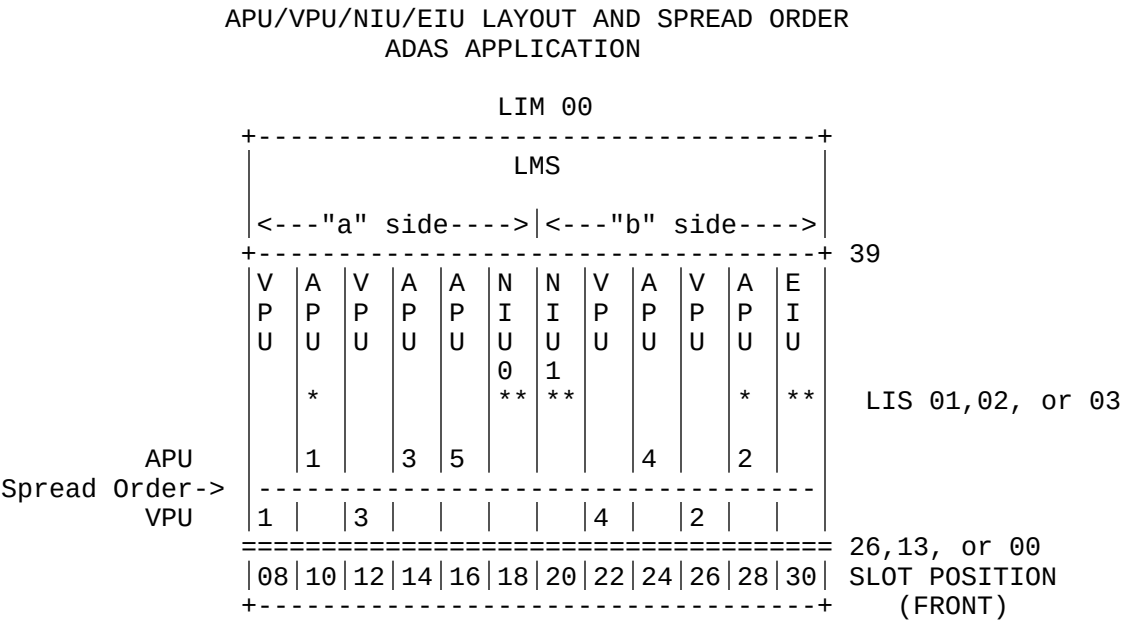
The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU

insertion differs from the general rule given in Note 3, above.

LIS's used for ADAS cannot be shared with other applications.

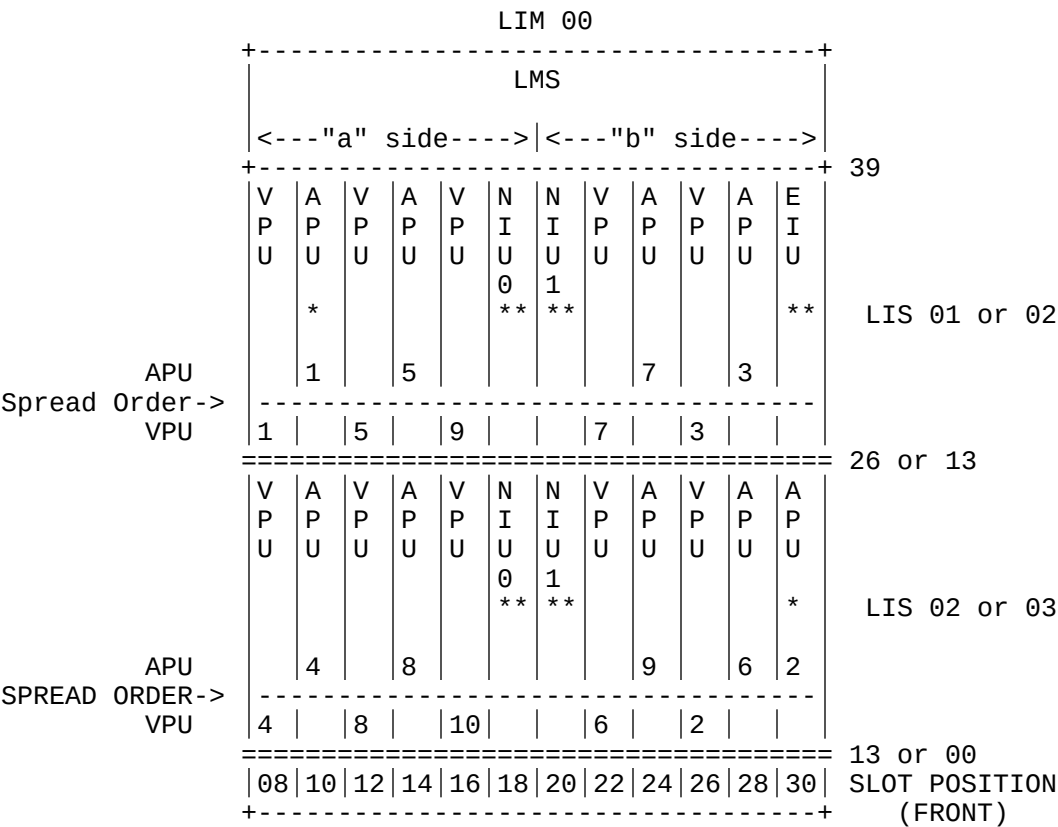
ADAS LIS(s) can share the same LPP (not the same LIS shelf) with other applications with the exception of PACKET HANDLER using XLIU's.

HARDWARE LAYOUT ADAS



HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
ADAS APPLICATION



- 1 LIM and 2 LIS for ADAS
- 2 LIS mount in sh pos 26 and 13 OR sh 13 and 00
 - * Always provision APU 1 and 2 for VPP-APU
 - ** Always provision NIU on each ADAS LIS
 - ** Always provision 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
ADAS APPLICATION

LIM 00												
LMS												
<---"a" side--->						<---"b" side--->						
V	A	V	A	A	N	N	V	A	V	A	E	
P	P	P	P	P	I	I	P	P	P	P	I	
U	U	U	U	U	U	U	U	U	U	U	U	
	*				0	1					**	
	1		7	13	**	**		10		4		LIS 01
APU Spread Order->												
VPU	1		7					10		4		
26												
V	A	V	A	V	N	N	V	A	V	A	V	
P	P	P	P	P	I	I	P	P	P	P	P	
U	U	U	U	U	U	U	U	U	U	U	U	
					0	1					*	
	5		11		**	**		8		2		LIS 02
APU SPREAD ORDER->												
VPU	5		11		13			15		8		2
13												
V	A	V	A	V	N	N	V	A	V	A	V	
P	P	P	P	P	I	I	P	P	P	P	P	
U	U	U	U	U	U	U	U	U	U	U	U	
					0	1						
	3		9		**	**		12		6		LIS 03
APU Spread Order->												
VPU	3		9		16			14		12		6
00												
SLOT POSITION (FRONT)												
08 10 12 14 16 18 20 22 24 26 28 30												

1 LIM and 3 LIS for ADAS

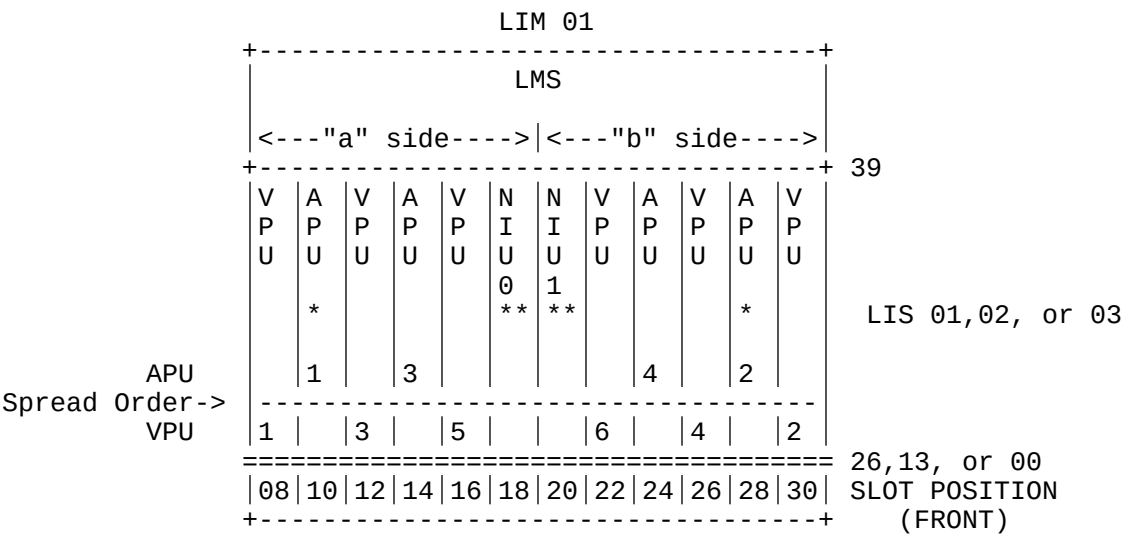
* Always provision APU 1 and 2 for VPP-APU

** Always provision NIU on each ADAS LIS

** Always provision 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

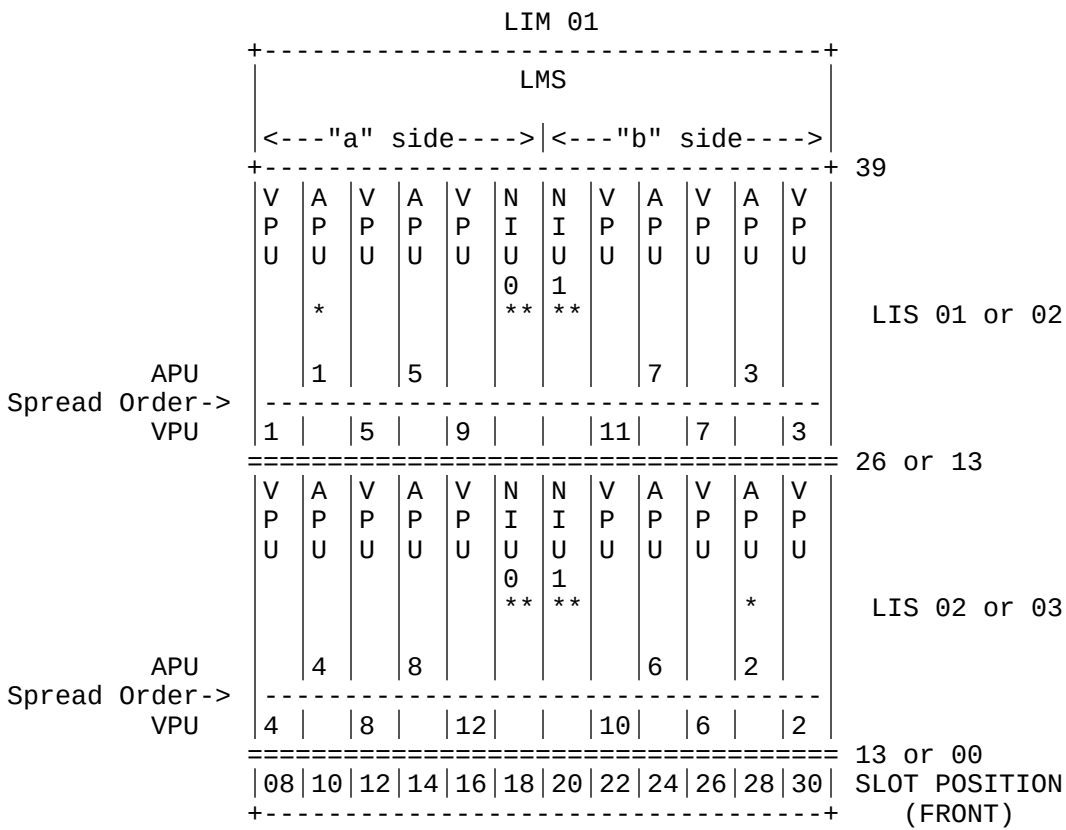


2nd LIM (1+N) with 1 LIS for ADAS

- * Always provision APU 1 and 2 for LPP-APU
- ** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION



2nd LIM (1+N) with 2 LIS for ADAS
2 LIS mount in sh pos 26 and 13 OR sh 13 and 00
* Always provision APU 1 and 2 for LPP-APU
** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

LIM 01													
LMS													
<---"a" side--->						<---"b" side--->							
V	A	V	A	V	N	N	V	A	V	A	V		39
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
	*				0	1							
	1		7		**	**		10		4			LIS 01
APU Spread Order->													
VPU	1		7		13		16		10		4		
													26
V	A	V	A	V	N	N	V	A	V	A	V		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1							
	5		11		**	**		8		2	*		LIS 02
APU Spread Order->													
VPU	5		11		17		14		8		2		
													13
V	A	V	A	V	N	N	V	A	V	A	V		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1							
	3		9		**	**		12		6			LIS 03
APU Spread Order->													
VPU	3		9		15		18		12		6		
													00
													SLOT POSITION
													(FRONT)

2nd LIM (N+1) with 3 LIS for ADAS

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

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

RULES:

- AP 1) When PEC NTZZ44KN 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 the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Reserved for future use.
- RUL2 1) Provide one (4) meg NTZZ30BA for each DS0A SS7 link required.
- 2) For US applications requiring E-DS0A SS7 Link provide (1) NTZZ30UA. For Canada, Asia/Pacific, Europe, CALA applications requiring E-DS0A SS7 Link provide one (1) NTZZ30VA. The NTZZ30CA is A&M status.
- 3) The NTZZ30UA is functional beyond BCS33 on a 56Kb/s basis. NOT on 64 Kb/s basis. On the other hand NTZZ30VA is functional on both 56 and 64 Kb/s basis. For example if the office requires 56 Kb/s then NTZZ30UA or NTZZ30VA can be used. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.
- 4) For applications requiring E-DS0A SS7 Links utilizing the Link Fault Sectionalization feature in STP02 (AR0518), provide NTZZ30TB.
- RUL3 1) Provide one (1) NTZZ30WA for each V.35 SS7 link. The NTZZ30DA is in A&M status.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.

- 2) For BCS 34 and above provide one NTZZ30EC for each Ethernet interface required.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications.
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.
- RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.
- RUL7 1) Provide one for all British Offices.
- RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below (except LIUs with CBI, which do not require cables). The NIU labels are provided when the NIU is assigned as shown below:

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

Shelf	Slots	NIU Label
26	19R, 21R	P0735393
13	19R, 21R	P0735391
00	19R, 21R	P0735392

- RUL9 1) Deleted.

- RUL10 1) Provide one (1) NT9X9532 Stand-Alone Cabling interface kit and one (1) P0736059, Filter Capacitor Designation Label Sheet, when powering the NT9X70BB 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 NT9X70BB. This kit includes power cables, terminal blocks and miscellaneous mounting hardware.(The Designation Label sheet contains enough labels to fully designate the filter capacitors for one cabinet).
- 2) Provide one (1) NT9X9531 Horizontal power cabling interface kit and one P0736058 Terminal Block Designation Strip when powering the NT9X70BB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X70BB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL11 1) Reserved for future use.
- RUL12 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone offices. apar
- RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Asseblly, per cabinet for NON-RAISED floor applications.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Asseblly, per cabinet for RAISED floor applications.
- 3) Always required when the LPP is not used in DMS Cabinetized offices.
- RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.
- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) Deleted.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet

RUL19 1) Reserved for future Use.

RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:

$$32 - (\begin{array}{l} \text{\#FRIUs on LIS shelf} * 2 \\ + \text{\#NIUs on LIS shelf} * 4 \\ + \text{\#LIUs on LIS shelf} \\ + \text{\#EIUs on LIS shelf} \end{array})$$

RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).

2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.

3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.

4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.

RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.

RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.

2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.

RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

NTZZ44KN

Retired Equipment

EMC2-17-LPP-2

36 Link LPP -48V, Non-Cabinetized, BCS33 and BELOW Page 27

RUL25 1) For EIU applications, provide one Media Access Unit (MAU)
HP28685B (CPC A0383333) for each EIU interface.

36 LINK LPP -60V GRAY, BCS33 AND BELOW

PEC CODE: NTZZ44GB

CPC CODE: B0240941

| RATING: MD

REPLACES:

REPLACED BY: NTZZ44GP

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -60 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel within a gray exterior cabinet. The NTZZ44GB has the capability of housing up to 36 Interface units, such as DS0A, Enhanced DS0A, V.35, and EIU. This BB can be deployed only in International Markets, in Cabinetized(Streamline) DMS lineups.

REFERENCE DOCUMENTATION: SLZZ44GB 00 03
NTZZ44GB REL 02

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ken Clisso Dept. 3471 (PPK)

NTZZ44GB EMC2-17-LPP-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 04 04	ECM 620 16	Removed Doors from stocklist
94 06 03	ECM 620 17	Remove cable assemblies and RULE 13.
94 06 30	ECM 620 18	ECD 018-43057, ET19079, and ET52573
94 08 29	ECM 620 20	ET19569 and ET19619.
94 10 11	ECM 620 21	ET19749.
94 11 16	ECM 620 22	EC 018-43987 - Replace NT9X49CA with NT9X49CC.
95 02 10	ECM 620 23	ET60593. Added ASU numbering Dwgs. Added MAU for EIU. ET63763 Revised notes to exclude the req't for CBI LIU cable rtg.labels.
95 03 14	ECM 620 25	ET20759/EC 018-43880 - Intro NTZZ30TB. MD this BB - bulkheads AP in NT9X70BB per MFG. cost reduction.

The 36 Link LPP -60V Gray, BCS33 and BELOW is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-60V)	NT9X03BA	FSP	1	52		AP
Frame Fail Light	NT0X24CN		1			AP
Rear Frame Fail Light	P0699441		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
LMS DS-30 Cable Assembly	NT9X0100		4	39		AP
LMS DS-30 Cable Assembly	NT9X0107		2	39		AP
NonFiltered DS-30 Blkhd(LT)	NT9X6569		1	39		AP
NonFiltered DS-30 Blkhd(RT)	NT9X6570		1	39		AP
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AB		2	39	4F, 36F	AP
Desig. Label(NT9X30AB)	P0738496		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CC		2	39	7F, 32F	AP
Designation Label (NT9X49CC)	P0735103		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
Memory 6 Meg	NT9X14BB		2	39	16F, 23F	AP
Desig. Label(NT9X19AA)	P0709515		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	AP
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	AP
Desig. Label(NT9X13DB)	P0696239		2	39	17F, 22F	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AB		6	00,13, 26	4F,36F	AP
Desig. Label(NT9X30AB)	P0738496		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
Desig.Label(NT9X74DA)	P0733871		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
CCS7 8MEG LIU (FAULT-SEC.)	NTZZ30TB			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23

Retired Equipment
36 Link LPP -60V Gray, BCS33 and BELOW

NTZZ44GB
EMC2-17-LPP-3
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		2	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit (-60V) Filter	NT9X95GU A0377837	CU	1	BOT		AP AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
ESP Ground Terminal Assy	NT9X0324		1			RUL12
Cabinet Mechanical Hardware						RUL18
Media Access Unit (MAU)	A0383333					RUL25
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X49CA	A&M	NT9X49CC

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIU, and FRIUs are to be assigned to shelf positions 00, 13, and 26 as shown below. The ASU number is the circuit number assigned to the ASU (ie:LIU7 #0).

The ASU Assignment Sequence is representative of the link assignment within the linkset, and is spread across all relevant shelves, and 'A' and 'B' Power distribution (left/right halves of the shelf). Refer to the 'Data Schema' document for data fill instructions and examples.

	L M S											
	LIU/EIU/FRIU											
ASU Numbering	0	2	4	6	8	11						
ASU assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4
ASU Numbering	12	14	16	18	20	23						
ASU assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2
ASU Numbering	24	26	28	30	32	35						
ASU assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

Because channelized access (with NIU) and non-channelized access equipped shelves are mounted in the LIM frame, the following shows the Numbering/Assignment sequences for 3 different configurations.

FOR FRAMES WITH 3 SHELVES EQUIPPED WITH NIUS, USE THE NUMBERING BELOW:

	L M S												
	NIU/XLIU												
ASU Numbering	0		2		4		6		8		11		
ASU Assignment Sequence for LIS:01	1	7	13	19	25	NIU : 0	NIU : 1	28	22	16	10	4	XLIUS <-----
ASU Numbering	12		14		16		18		20		23		
ASU assignment Sequence for LIS:02	5	11	17	23	29	NIU : 0	NIU : 1	26	20	14	8	2	XLIUS <-----
ASU Numbering	24		26		28		30		32		35		
ASU assignment Sequence for LIS:03	3	9	15	21	27	NIU : 0	NIU : 1	30	24	18	12	6	XLIUS <-----
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
3 SHELVES WITH NIUS

Refer to NOTE 1 for mixing of LIU7 and EIU with FRIU on the LIM.

FOR FRAMES WITH 2 SHELVES EQUIPPED WITH NIUS AND 1 SHELF WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
ASU Numbering	0 2 4 6 8 11											
ASU Assignment Sequence for LIS:01	1	5	9	13	17	N I U : 0	N I U : 1	20	16	12	8	4
ASU Numbering	12 14 16 18 20 23											
ASU Assignment Sequence for LIS:02	3	7	11	15	19	N I U : 0	N I U : 1	18	14	10	6	2
ASU Numbering	24 26 28 30 32 35											
ASU Assignment Sequence for LIS:03	1	3	5	7	9	11	12	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

XLIUs
<----

XLIUs
<----

LIUs
<----

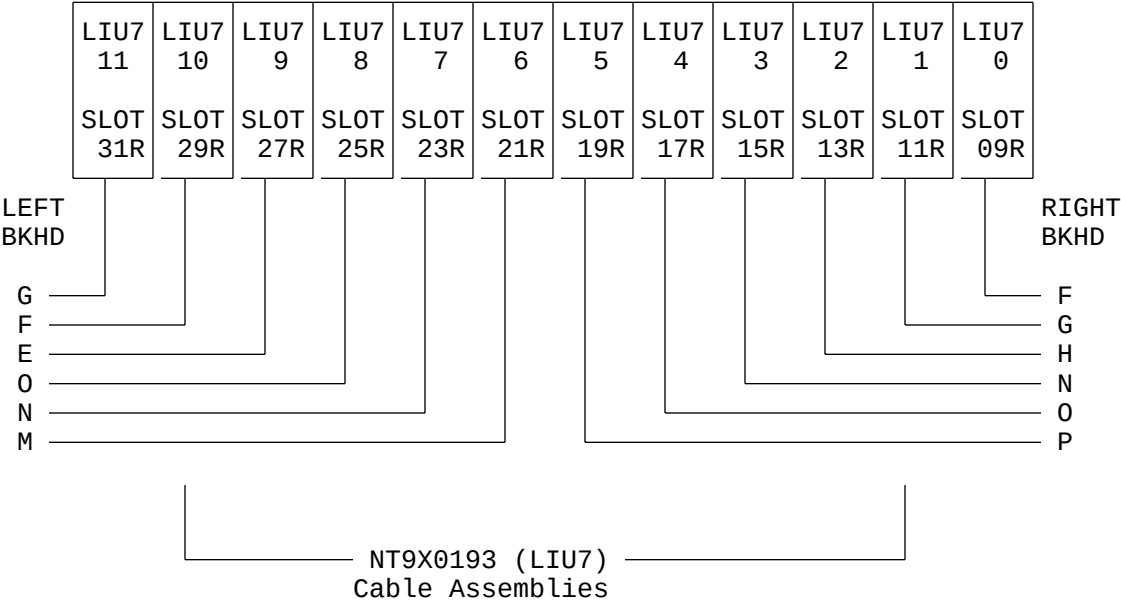
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
2 SHELVES WITH NIUS AND 1 SHELF WITHOUT NIUS

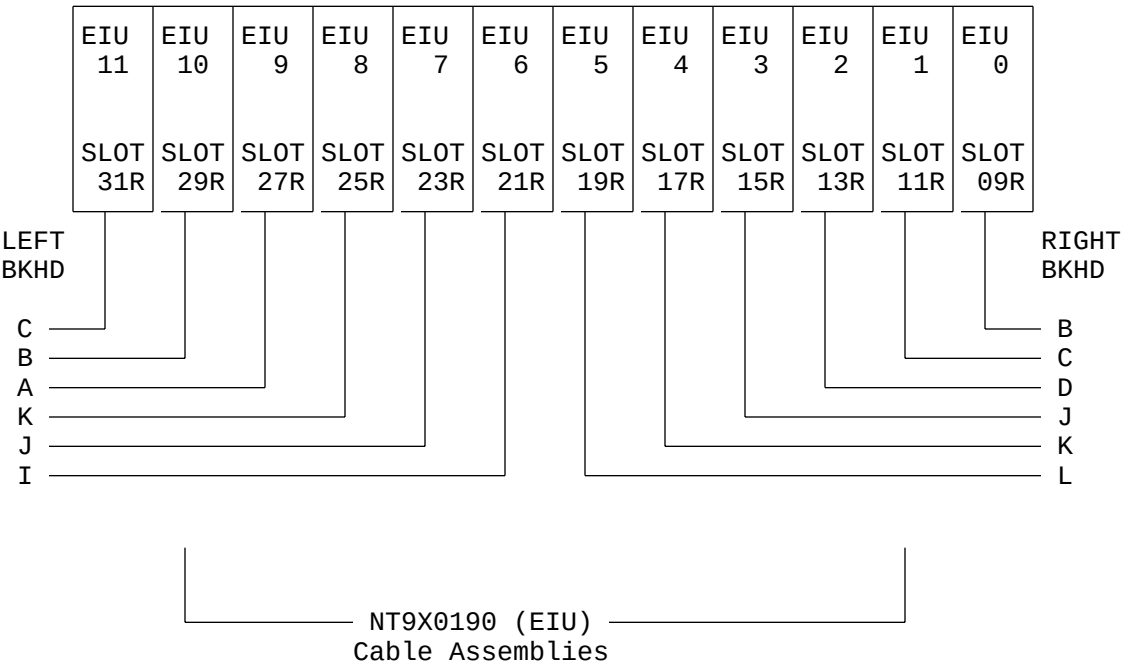
FOR FRAMES WITH 1 SHELF EQUIPPED WITH NIUS AND 2 SHELVES WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
	NIU/XLIU											
ASU Numbering	0		2		4		6		8		11	
ASU Assignment Sequence for LIS:01	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
	XLIUs <-----											
ASU Numbering	12		14		16		18		20		23	
ASU Assignment Sequence for LIS:02	1	5	9	13	17	21	24	20	16	12	8	4
	LIUs <-----											
ASU Numbering	24		26		28		30		32		35	
ASU Assignment Sequence for LIS:03	3	7	11	15	19	23	22	18	14	10	6	2
	LIUs <-----											
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

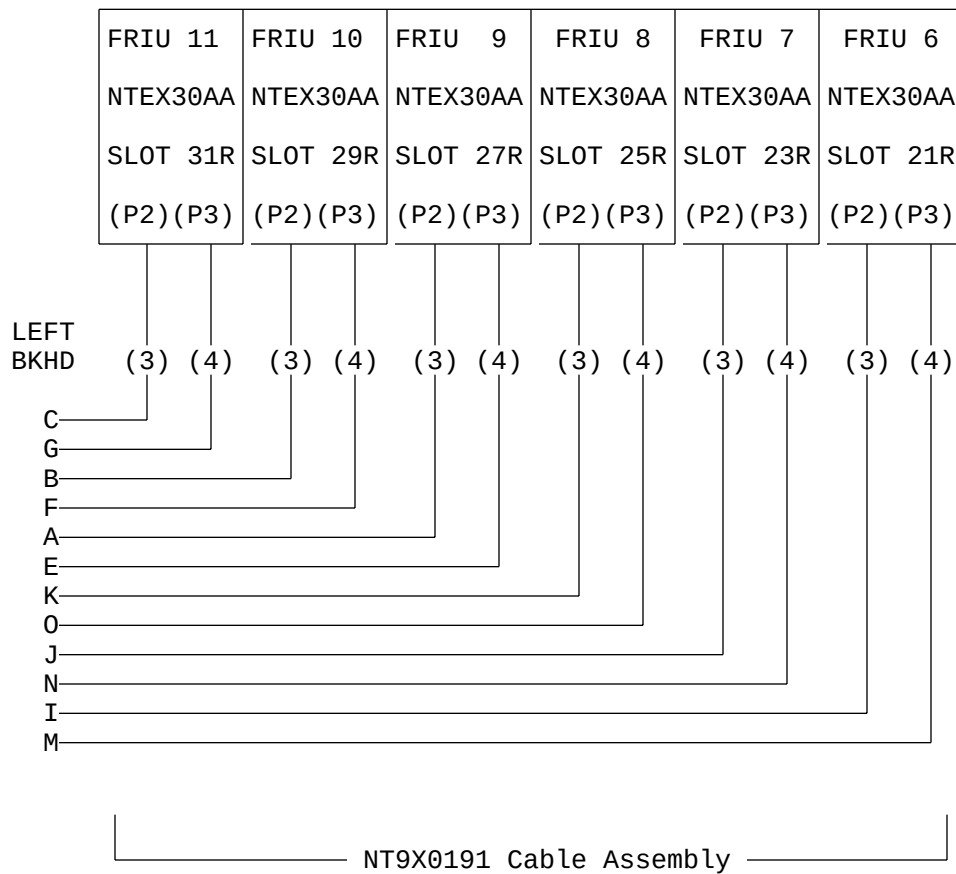
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
1 SHELF WITH NIUS AND 2 SHELVES WITHOUT NIUS

4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

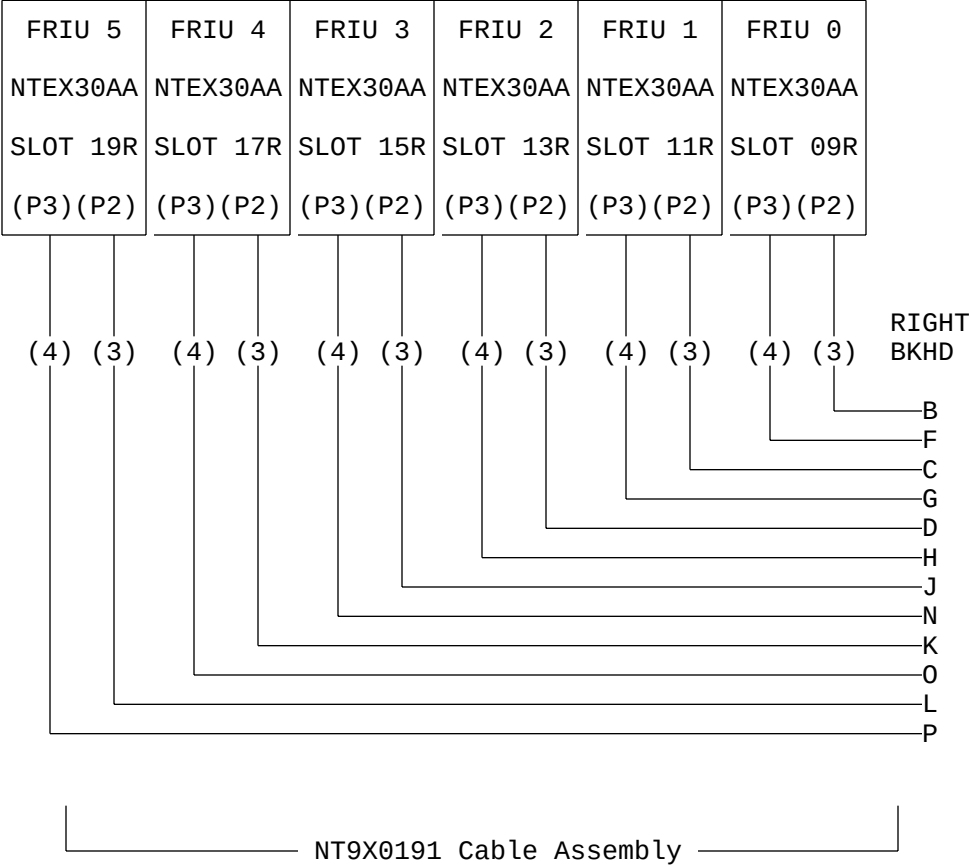




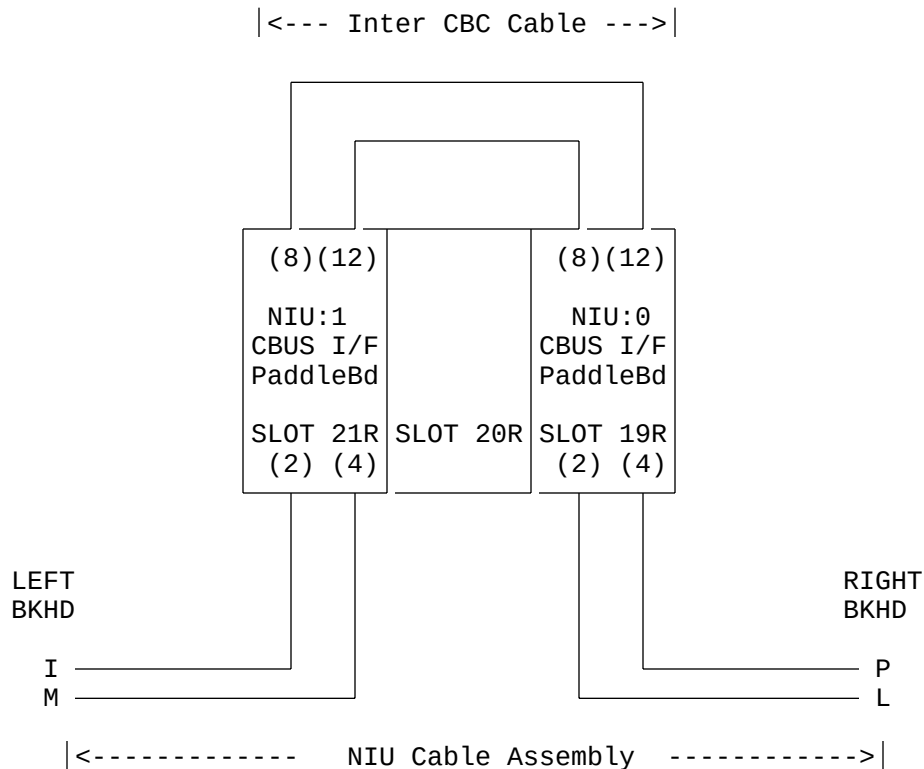
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

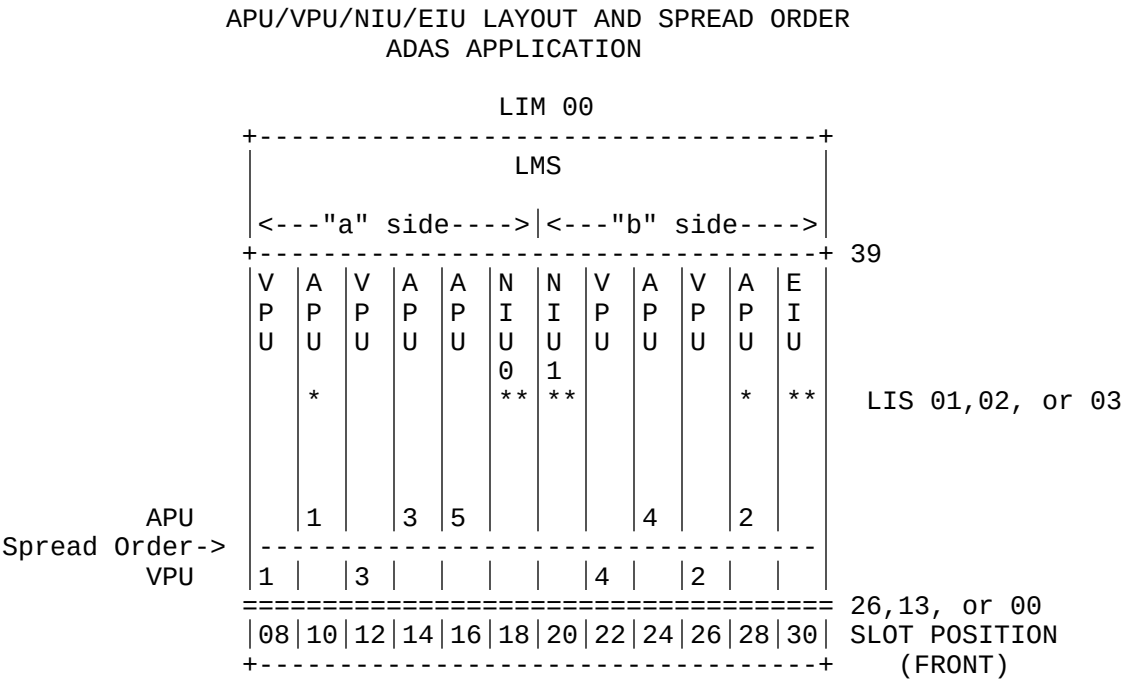
The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU

insertion differs from the general rule given in Note 3, above.

LIS's used for ADAS cannot be shared with other applications.

ADAS LIS(s) can share the same LPP (not the same LIS shelf) with other applications with the exception of PACKET HANDLER using XLIU's.

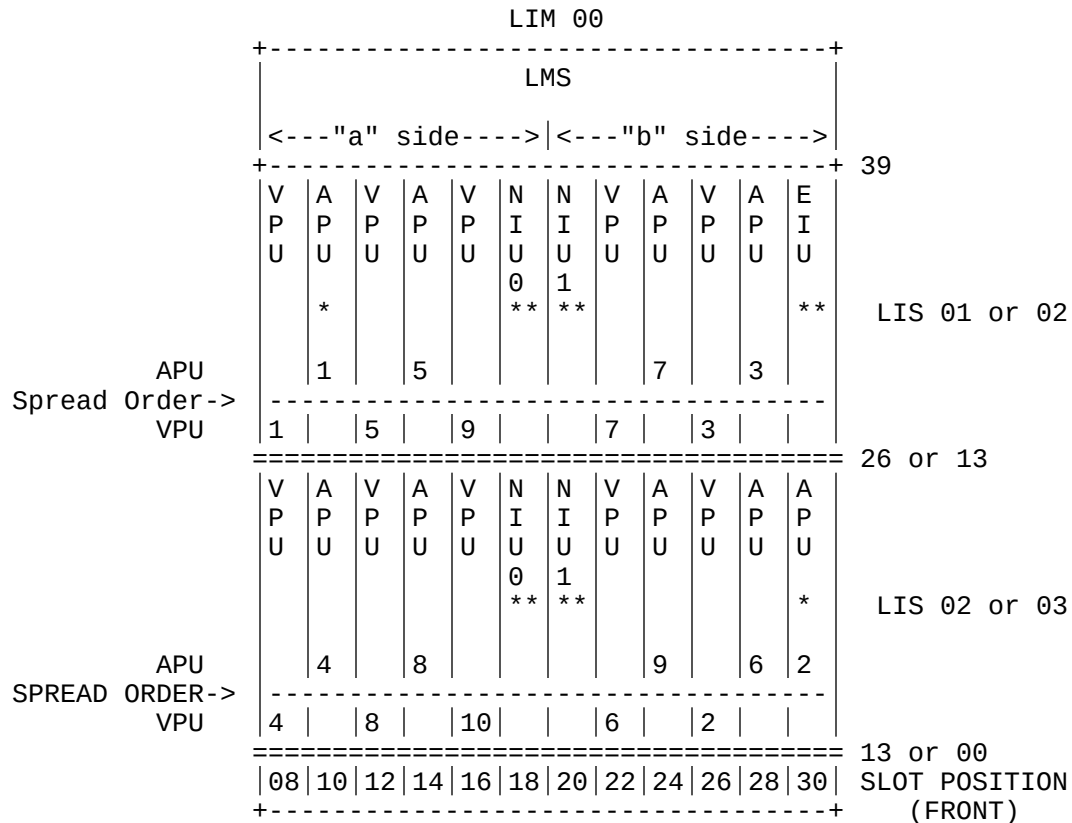
HARDWARE LAYOUT ADAS



1 LIM and 1 LIS for ADAS

- * Always provision APU 1 and 2 for VPP-APU
- ** Always provision NIU on each ADAS LIS
- ** Always provision 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
ADAS APPLICATION

1 LIM and 2 LIS for ADAS

2 LIS mount in sh pos 26 and 13 OR sh 13 and 00

* Always provision APU 1 and 2 for VPP-APU

** Always provision NIU on each ADAS LIS

** Always provision 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
ADAS APPLICATION

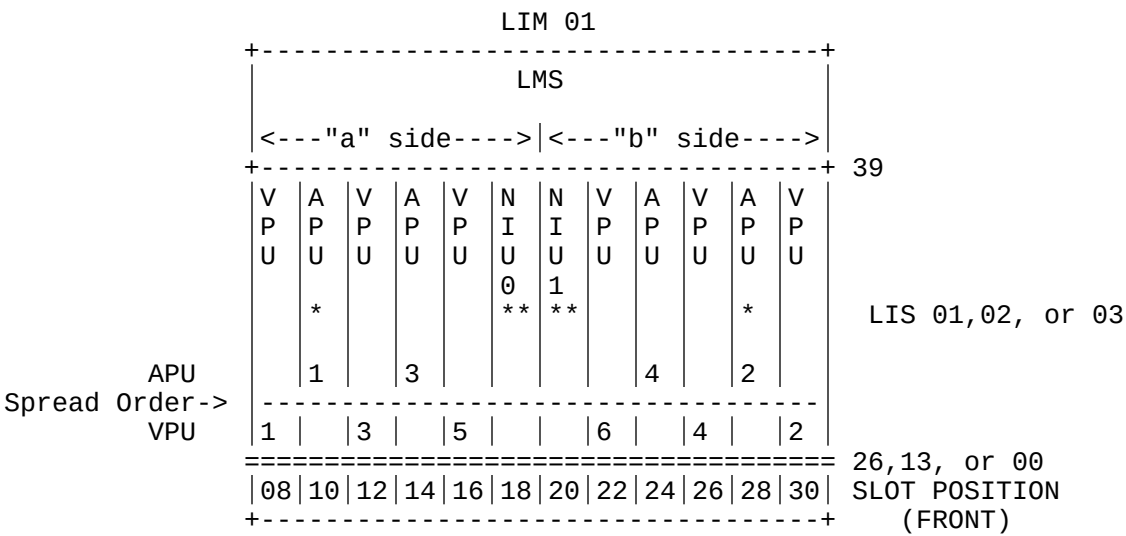
LIM 00													
LMS													
<---"a" side--->						<---"b" side--->							
V	A	V	A	A	N	N	V	A	V	A	E		39
P	P	P	P	P	I	I	P	P	P	P	I		
U	U	U	U	U	U	U	U	U	U	U	U		
	*				0	1					**		LIS 01
	1		7	13	**	**		10		4			
APU Spread Order->													
VPU	1		7					10		4			
													26
V	A	V	A	V	N	N	V	A	V	A	V		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1					*		LIS 02
	5		11		**	**		8		2			
APU SPREAD ORDER->													
VPU	5		11		13			15		8		2	
													13
V	A	V	A	V	N	N	V	A	V	A	V		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1							LIS 03
	3		9		**	**		12		6			
APU Spread Order->													
VPU	3		9		16			14		12		6	
													00
													SLOT POSITION (FRONT)

1 LIM and 3 LIS for ADAS

- * Always provision APU 1 and 2 for VPP-APU
- ** Always provision NIU on each ADAS LIS
- ** Always provision 1 EIU on 1st ADAS LIS

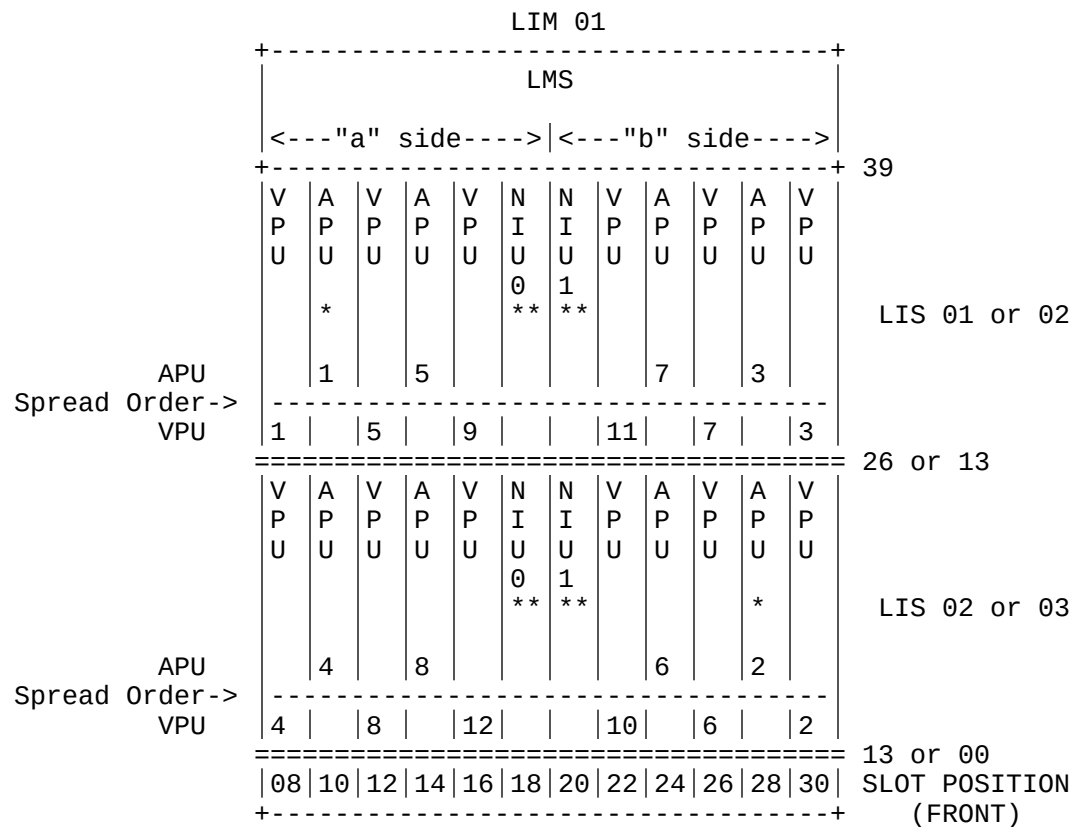
HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION



- 2nd LIM (1+N) with 1 LIS for ADAS
- * Always provision APU 1 and 2 for LPP-APU
 - ** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

2nd LIM (1+N) with 2 LIS for ADAS

2 LIS mount in sh pos 26 and 13 OR sh 13 and 00

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

LIM 01													
LMS													
<---"a" side--->						<---"b" side--->							
V	A	V	A	V	N	N	V	A	V	A	V		39
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
	*				0	1							LIS 01
	1		7		**	**		10		4			
APU Spread Order->													
VPU	1		7		13		16		10		4		
													26
V	A	V	A	V	N	N	V	A	V	A	V		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1					*		LIS 02
	5		11		**	**		8		2			
APU Spread Order->													
VPU	5		11		17		14		8		2		
													13
V	A	V	A	V	N	N	V	A	V	A	V		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1							LIS 03
	3		9		**	**		12		6			
APU Spread Order->													
VPU	3		9		15		18		12		6		
													00
													SLOT POSITION (FRONT)

2nd LIM (N+1) with 3 LIS for ADAS

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

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

RULES:

- AP 1) When PEC NTZZ44GB 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 the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Reserved for future use.
- RUL2 1) Provide one (4) meg NTZZ30BA for each DS0A SS7 link required.
- 2) For Europe applications requiring E-DS0A SS7 Link provide one (1) NTZZ30VA. The NTZZ30CA is A&M status.
- 3) The NTZZ30VA is functional on both 56 and 64 Kb/s basis. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.
- 4) For applications requiring E-DS0A SS7 Links utilizing the Link Fault Sectionalization feature in STP02 (AR0518), provide NTZZ30TB.
- RUL3 1) Provide one (1) NTZZ30WA for each V.35 SS7 link. The NTZZ30DA is in A&M status.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications.

- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.

RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.

RUL7 1) Provide one for all British Offices.

RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below (except LIUs with CBI, which do not require cables). The NIU labels are provided when the NIU is assigned as shown below:

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

Shelf	Slots	NIU Label
26	19R, 21R	P0735393
13	19R, 21R	P0735391
00	19R, 21R	P0735392

RUL9 1) Deleted.

RUL10 1) Provide one (1) NT9X9532 Stand-Alone Cabling interface kit and one (1) P0736059, Filter Capacitor Designation Label Sheet, when powering the NT9X70BB 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 NT9X70BB. This kit includes power cables, terminal blocks and miscellaneous mounting hardware. (The Designation Label sheet

contains enough labels to fully designate the filter capacitors for one cabinet).

- 2) Provide one (1) NT9X9531 Horizontal power cabling interface kit and one P0736058 Terminal Block Designation strip when powering the NT9X70BB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X70BB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

RUL11 1) Reserved for future use.

RUL12 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone offices.

RUL13 1) Reserved For Future Use.

RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.

RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.

RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.

RUL17 1) Deleted.

RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet

RUL19 1) Reserved for future Use.

RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:

32 - (#FRIUs on LIS shelf * 2
+ #NIUs on LIS shelf * 4
+ #LIUs on LIS shelf
+ #EIUs on LIS shelf)

- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- 2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.
- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.
- 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.
- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.
- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.
- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.
- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.
- RUL25 1) For EIU applications, provide one Media Access Unit (MAU) HP28685B (CPC A0383333) for each EIU interface.

36 LINK LPP -48V BCS33 AND BELOW

PEC CODE: NTZZ44CC

CPC CODE: B0224845

| RATING: MD

REPLACES:

REPLACED BY: NTZZ44CP

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -48 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel within a brn/gry exterior cabinet. The NTZZ44CC has the capability of housing up to 36 Interface units, such as DS0A, Enhanced DS0A, V.35, and EIU. For applications in the US and International Markets, this NTZZ44CC can be deployed with Cabinetized(Streamline) DMS lineups.

REFERENCE DOCUMENTATION: SLZZ44CC 00 01
NTZZ44CC REL 02

MARKETS: Applicable markets:

CANADA
US
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Robert Leydig Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ken Clisso Dept. 3471 (ppk)

NTZZ44CC EMC2-17-LPP-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 04 04	ECM 620 16	Removed Doors from stocklist
94 06 03	ECM 620 17	Made (4) NT9X0100 and (2) NT9X0107 cable assemblies provisional.
94 06 30	ECM 620 18	ECD 018-43057, ET19079, and ET52573
94 08 29	ECM 620 20	ET19569 and ET19619.
94 10 11	ECM 620 21	ET19749.
94 11 16	ECM 620 22	ECD 018-43987 - Replace NT9X49CA with NT9X49CC.
95 02 10	ECM 620 23	ET60593. Added ASU numbering Dwgs. Added MAU for EIU.
		ET63763 Revised notes to exclude the req't for CBI LIU cable rtg.labels.
95 03 14	ECM 620 25	ET20759/EC 018-43880 - Intro NTZZ30TB. MD this BB - bulkheads AP in NT9X70BB per MFG. cost reduction.

The 36 Link LPP -48V BCS33 and BELOW is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-48V)	NT9X03AA	FSP	1	52		AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
NonFiltered DS-30 Blkhd(LT)	NT9X6569		1	39		AP
NonFiltered DS-30 Blkhd(RT)	NT9X6570		1	39		AP
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CC		2	39	7F, 32F	AP
Designation Label (NT9X49CC)	P0735103		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AA		4	39	9F, 10F,	AP
					29F, 30F	
Filler Face Plate	NT9X19AA		8	39	11F-14F,	AP
					25F-28F	
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
Desig. Label(NT9X19AA)	P0709515		2	39	16F, 23F	AP
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Memory 6 Meg	NT9X14BB		2	39	16F, 23F	AP
Filler PB	NT9X19BA		18	39	7R,	AP
					11R-16R,	
					18R-21R,	
					23R-28R,	
					32R	
DS-30 4 Port	NT9X23BA		4	39	9R, 10R,	AP
					29R, 30R	
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label NT9X26AB	P0705003		2	39	17R, 22R	AP
CPU 16 MHZ CP	NT9X13DB		2	39	17F, 22F	AP
Desig. Label(NT9X13DB)	P0696239		2	39	17F, 22F	AP
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13
LMS DS-30 Cable Assembly	NT9X0100		4	39		RUL12
LMS DS-30 Cable Assembly	NT9X0107		2	39		RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
+5 Volts Power Converter CP	NT9X30AA		6	00,13, 26	4F,36F	AP
STP Power Filler CP	NT9X19EA		6	00,13, 26	1F,33F	AP
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00,13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00,13, 26	8R	AP
Filler PB	NT9X19BA		30	00,13, 26	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
LIU	NTZZ30MA			X	18F	RUL21
LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
CCS7 8MEG LIU (FAULT-SEC.)	NTZZ30TB			X	Y	RUL2
LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DA			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EA			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
LIU7 V.35	NTZZ30WA			X	Y	RUL3
EIU	NTZZ30EA			X	Y	RUL4
EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23
VPU	NTZZ44BA			X	Y	RUL24
VPU	NTZZ44BA			X	Y	RUL24
Media Access Unit (MAU)	A0383333			X		RUL25

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		6	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Cooling Unit (-48V) Filter	NT9X95CU A0377837	CU	1	B0T		AP AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
Insulation Boot	P0730273		23			RUL15
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
ESP Ground Terminal Assy	NT9X0324		1			RUL11
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6
Frame Fail Lamp (Brown)	NT0X24BT					RUL17
Rear Frame Fail Light	P0674502					RUL17
Frame Fail Lamp (GREY)	NT0X24CN					RUL17
Rear Frame Fail Light	P0699441					RUL17

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X49CA	A&M	NT9X49CC

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIU7s, and FRIU7s are to be assigned to shelf positions 00, 13, and 26 as shown below. The ASU number is the circuit number assigned to the ASU (ie:LIU7 #0). The ASU Assignment Sequence is representative of the link assignment within the linkset, and is spread across all relevant shelves, and 'A' and 'B' Power distribution (left/right halves of the shelf). Refer to the 'Data Schema' document for data fill instructions and examples.

	L M S											
	LIU/EIU/FRIU											
ASU Numbering	0	2	4	6	8	11						
ASU assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4
ASU Numbering	12	14	16	18	20	23						
ASU assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2
ASU Numbering	24	26	28	30	32	35						
ASU assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

Because channelized access (with NIU) and non-channelized access equipped shelves are mounted in the LIM frame, the following shows the Numbering/Assignment sequences for 3 different configurations.

FOR FRAMES WITH 3 SHELVES EQUIPPED WITH NIUS, USE THE NUMBERING BELOW:

	L M S												
	NIU/XLIU												
ASU Numbering	0		2		4		6		8		11		
ASU Assignment Sequence for LIS:01	1	7	13	19	25	NIU : 0	NIU : 1	28	22	16	10	4	XLIUS <-----
ASU Numbering	12		14		16		18		20		23		
ASU assignment Sequence for LIS:02	5	11	17	23	29	NIU : 0	NIU : 1	26	20	14	8	2	XLIUS <-----
ASU Numbering	24		26		28		30		32		35		
ASU assignment Sequence for LIS:03	3	9	15	21	27	NIU : 0	NIU : 1	30	24	18	12	6	XLIUS <-----
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
3 SHELVES WITH NIUS

Refer to NOTE 1 for mixing of LIU7 and EIU with FRIU on the LIM.

FOR FRAMES WITH 2 SHELVES EQUIPPED WITH NIUS AND 1 SHELF WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
ASU Numbering	0 2 4 6 8 11											
ASU Assignment Sequence for LIS:01	1	5	9	13	17	N I U : 0	N I U : 1	20	16	12	8	4
ASU Numbering	12 14 16 18 20 23											
ASU Assignment Sequence for LIS:02	3	7	11	15	19	N I U : 0	N I U : 1	18	14	10	6	2
ASU Numbering	24 26 28 30 32 35											
ASU Assignment Sequence for LIS:03	1	3	5	7	9	11	12	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

XLIUs
<-----

XLIUs
<-----

LIUs
<-----

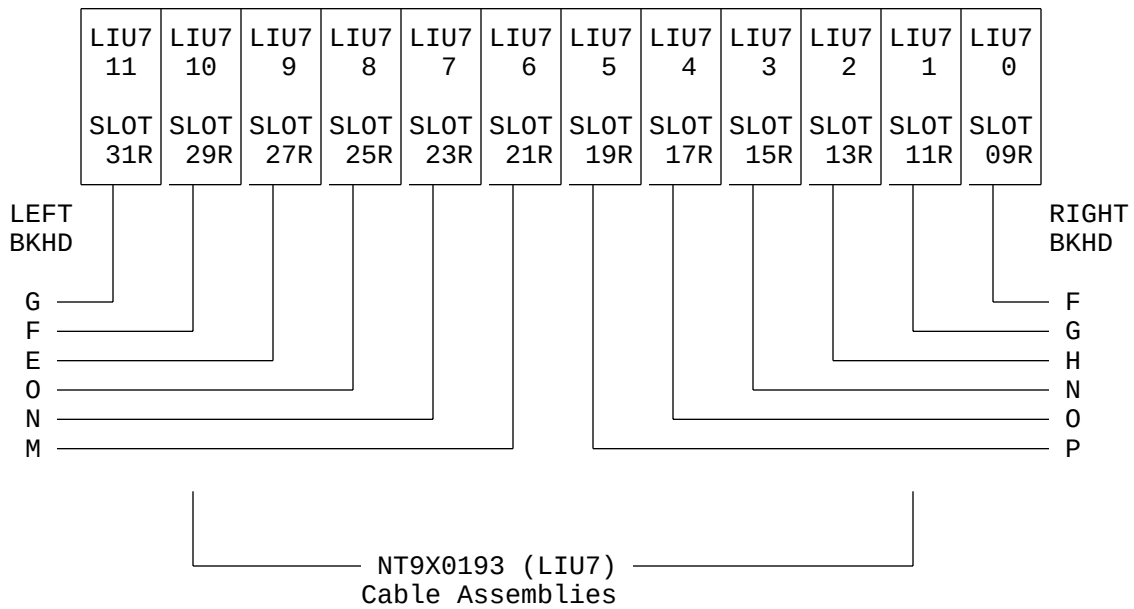
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
2 SHELVES WITH NIUS AND 1 SHELF WITHOUT NIUS

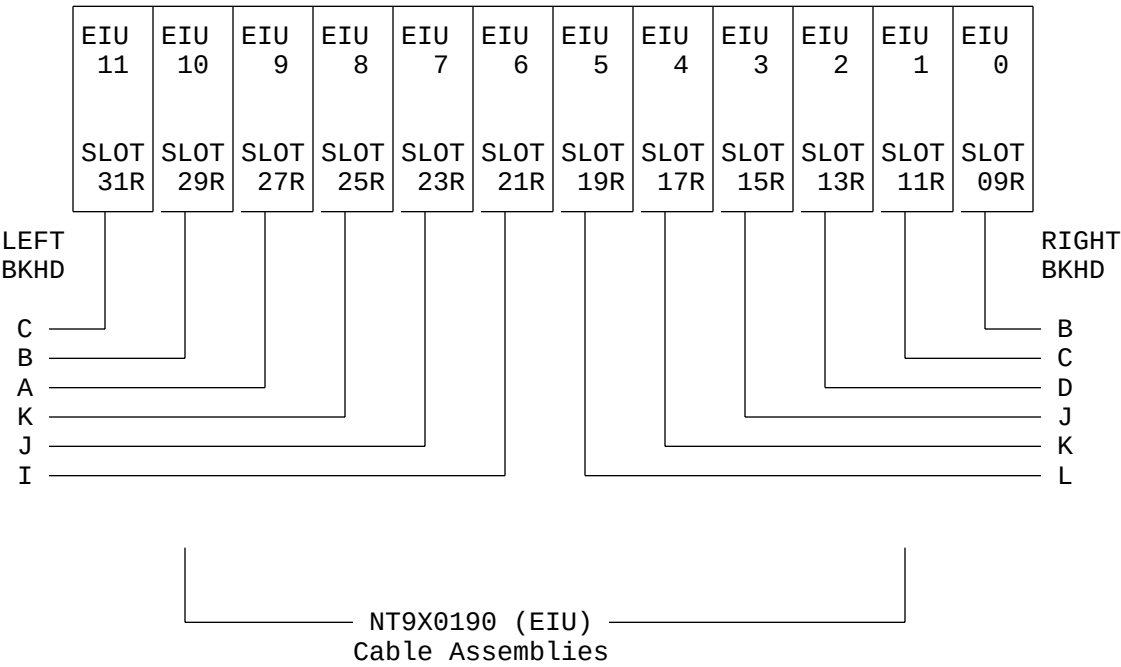
FOR FRAMES WITH 1 SHELF EQUIPPED WITH NIUS AND 2 SHELVES WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
	NIU/XLIU											
ASU Numbering	0	2	4	6	8	11						
ASU Assignment Sequence for LIS:01	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
	XLIUs <-----											
ASU Numbering	12	14	16	18	20	23						
ASU Assignment Sequence for LIS:02	1	5	9	13	17	21	24	20	16	12	8	4
	LIUs <-----											
ASU Numbering	24	26	28	30	32	35						
ASU Assignment Sequence for LIS:03	3	7	11	15	19	23	22	18	14	10	6	2
	LIUs <-----											
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

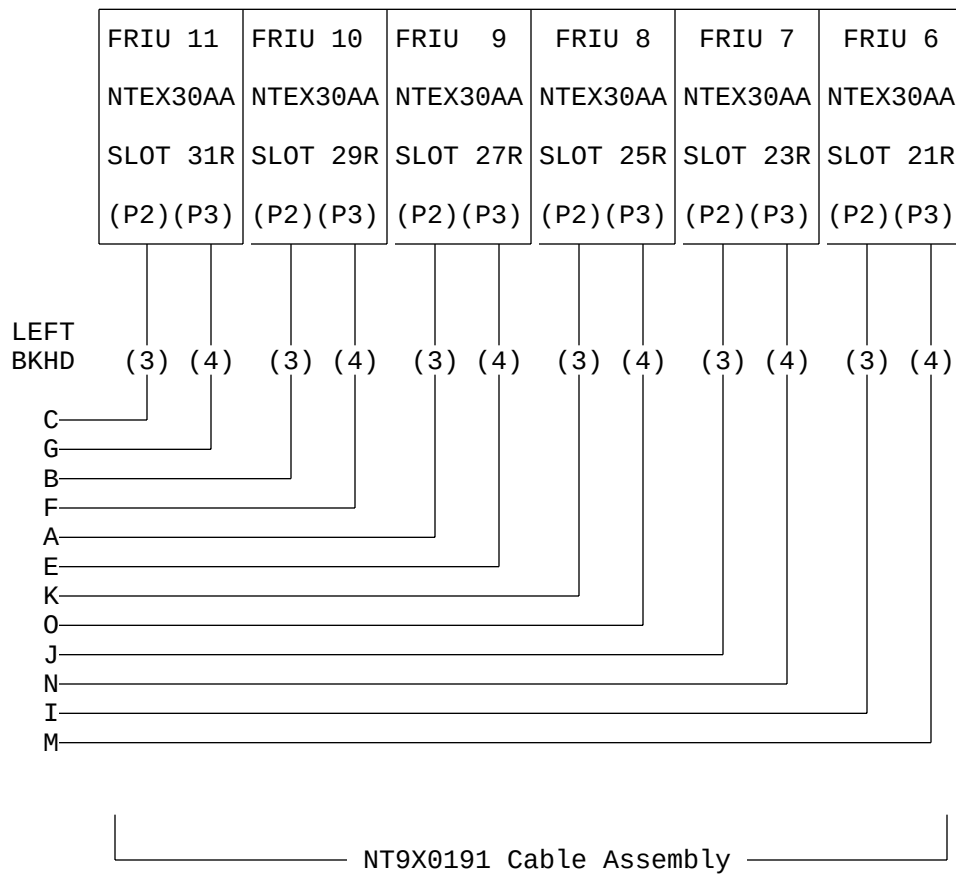
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
1 SHELF WITH NIUS AND 2 SHELVES WITHOUT NIUS

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

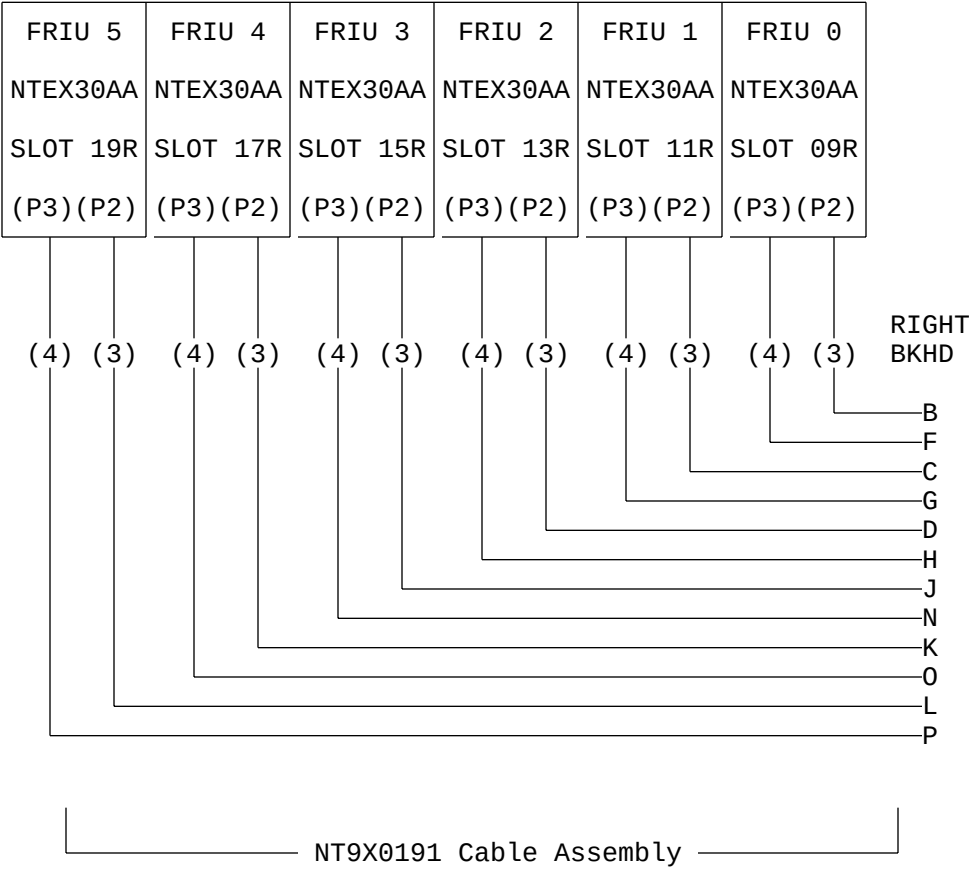




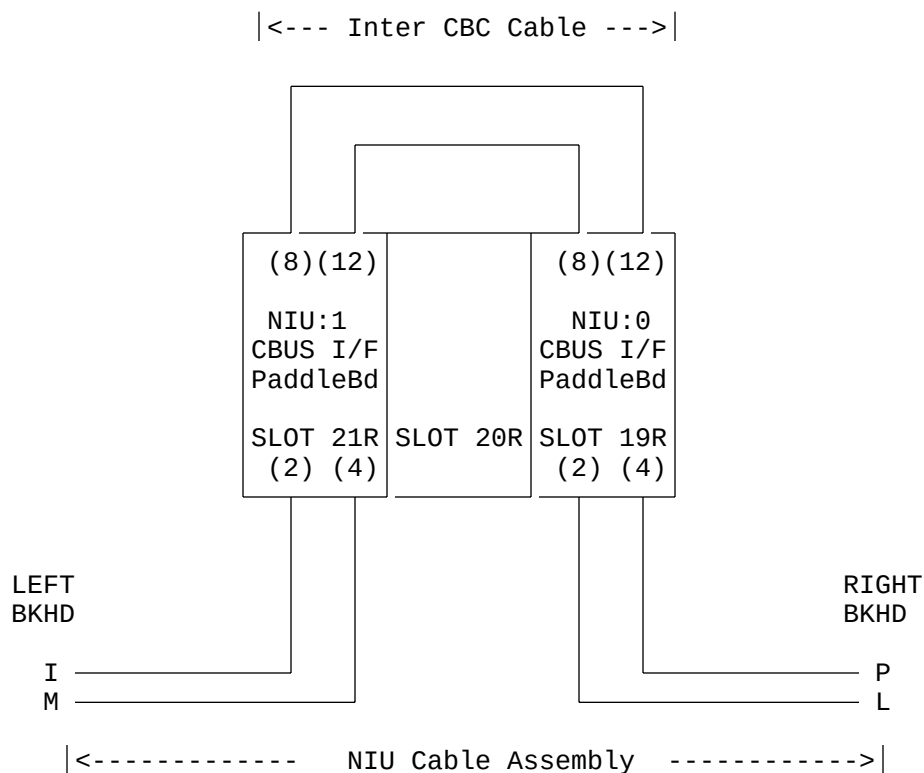
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

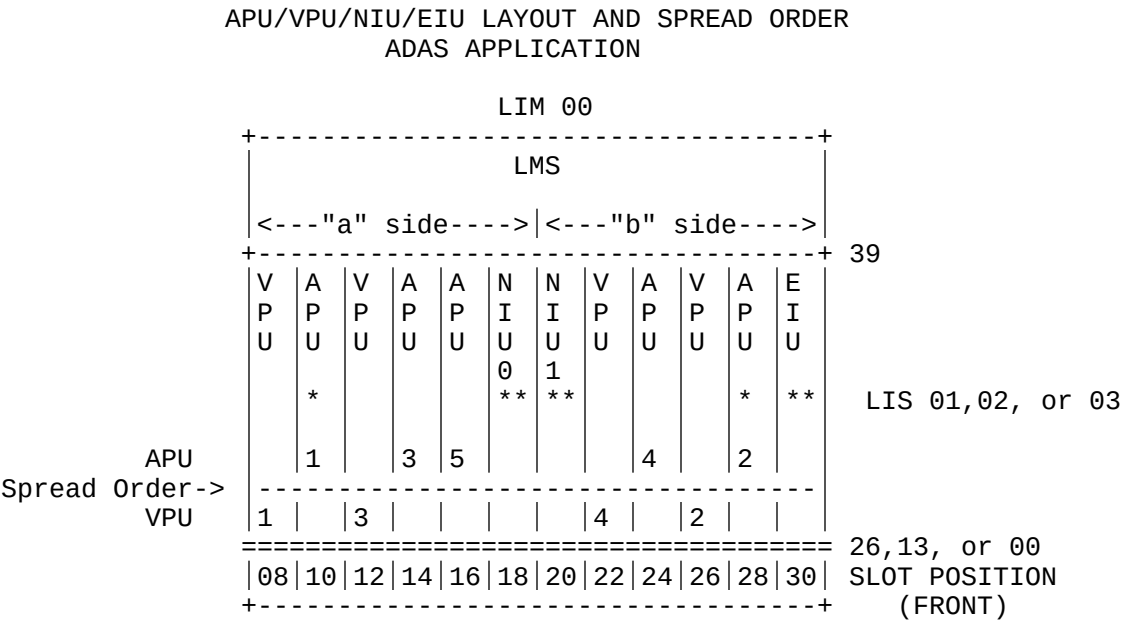
The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU

insertion differs from the general rule given in Note 3, above.

LIS's used for ADAS cannot be shared with other applications.

ADAS LIS(s) can share the same LPP (not the same LIS shelf) with other applications with the exception of PACKET HANDLER using XLIU's.

HARDWARE LAYOUT ADAS

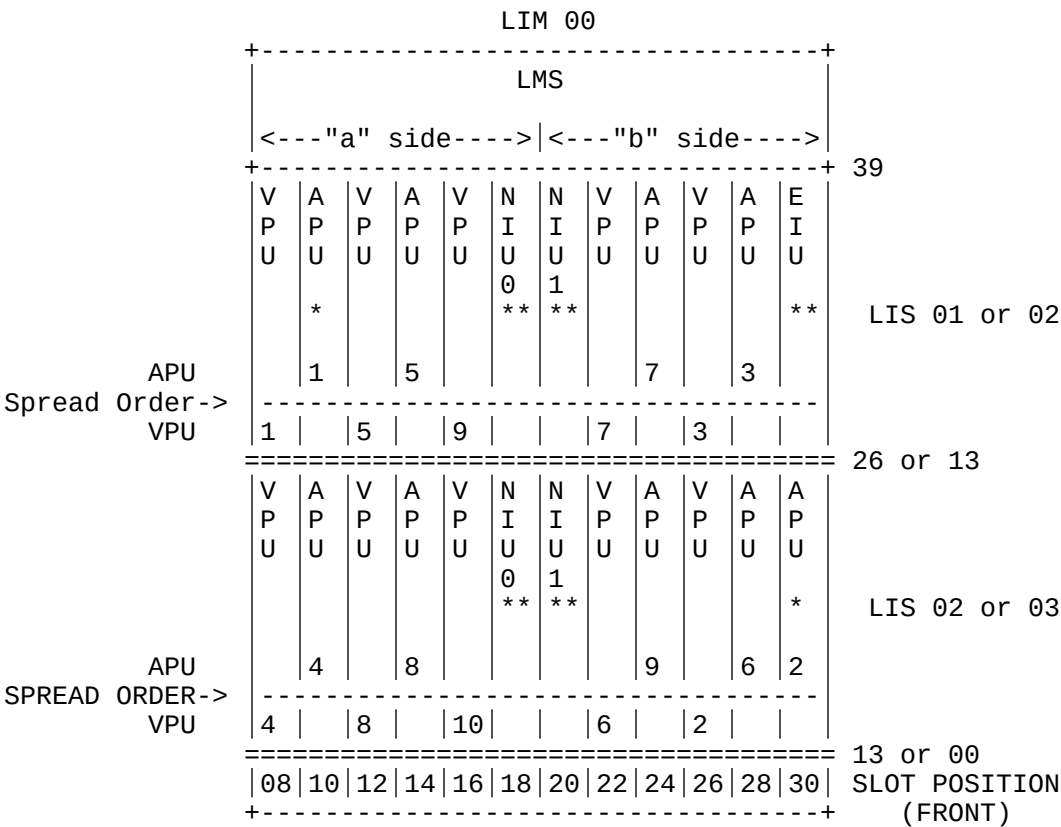


1 LIM and 1 LIS for ADAS

- * Always provision APU 1 and 2 for VPP-APU
- ** Always provision NIU on each ADAS LIS
- ** Always provision 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
ADAS APPLICATION



- 1 LIM and 2 LIS for ADAS
- 2 LIS mount in sh pos 26 and 13 OR sh 13 and 00
 - * Always provision APU 1 and 2 for VPP-APU
 - ** Always provision NIU on each ADAS LIS
 - ** Always provision 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
ADAS APPLICATION

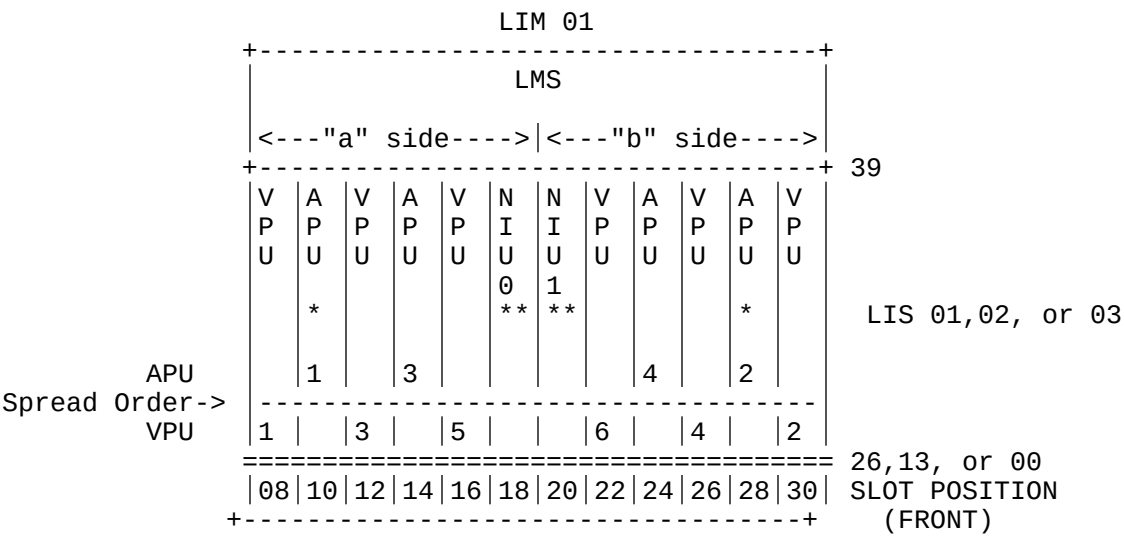
LIM 00													
LMS													
<---"a" side--->						<---"b" side--->							
V	A	V	A	A	N	N	V	A	V	A	E		39
P	P	P	P	P	I	I	P	P	P	P	I		
U	U	U	U	U	U	U	U	U	U	U	U		
	*				0	1					**		LIS 01
	1		7	13	**	**		10		4			
APU Spread Order->													
VPU	1		7					10		4			
													26
V	A	V	A	V	N	N	V	A	V	A	V		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1					*		LIS 02
	5		11		**	**		8		2			
APU SPREAD ORDER->													
VPU	5		11		13			15		8		2	
													13
V	A	V	A	V	N	N	V	A	V	A	V		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1							LIS 03
	3		9		**	**		12		6			
APU Spread Order->													
VPU	3		9		16			14		12		6	
													00
													SLOT POSITION
													(FRONT)

1 LIM and 3 LIS for ADAS

- * Always provision APU 1 and 2 for VPP-APU
- ** Always provision NIU on each ADAS LIS
- ** Always provision 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS

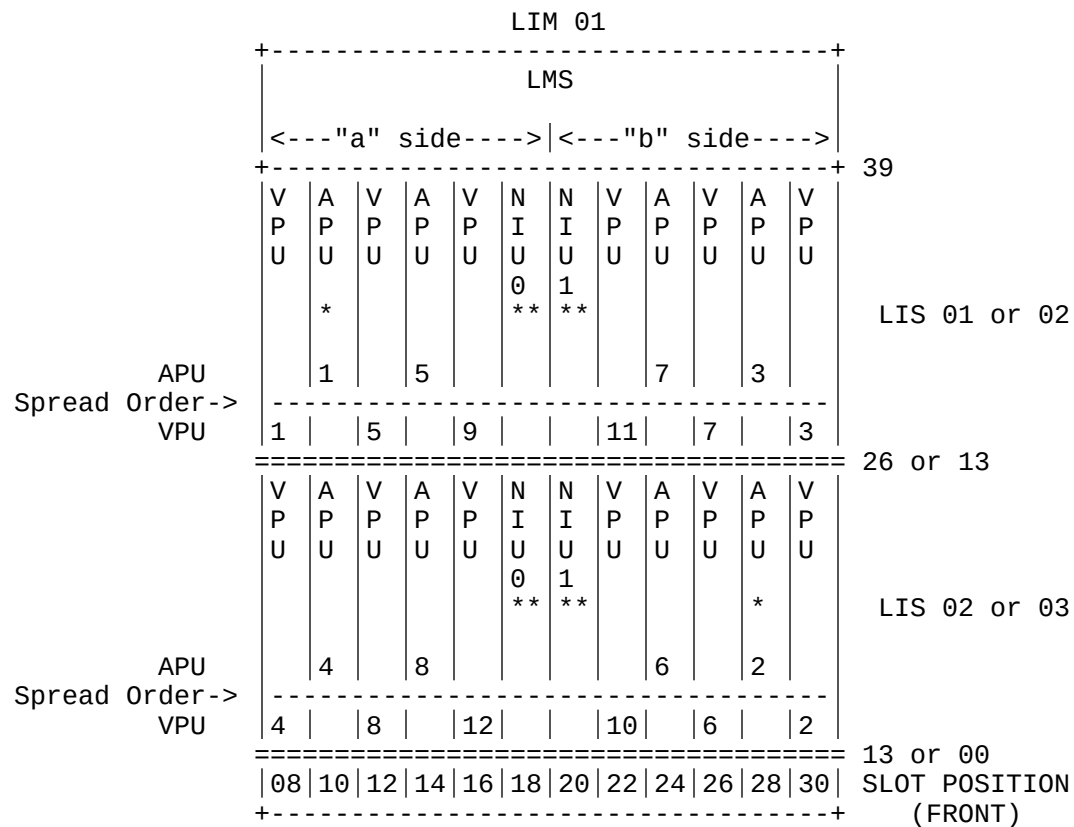
APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION



2nd LIM (1+N) with 1 LIS for ADAS

- * Always provision APU 1 and 2 for LPP-APU
- ** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

2nd LIM (1+N) with 2 LIS for ADAS

2 LIS mount in sh pos 26 and 13 OR sh 13 and 00

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER

LIM 01														
LMS														
<---"a" side--->						<---"b" side--->								
Spread Order->	APU	V	A	V	A	V	N	N	V	A	V	A	V	39
	P	P	P	P	P	I	I	P	P	P	P	P		
	U	U	U	U	U	U	U	U	U	U	U	U		
		*				0	1							
		1			7		**	**		10		4	LIS 01	
	1		7		13				16		10		4	
=====													26	
Spread Order->	APU	V	A	V	A	V	N	N	V	A	V	A	V	
	P	P	P	P	P	I	I	P	P	P	P	P		
	U	U	U	U	U	U	U	U	U	U	U	U		
			5		11		0	1				*		
						**	**		8		2		LIS 02	
	5		11		17				14		8		2	
=====													13	
Spread Order->	APU	V	A	V	A	V	N	N	V	A	V	A	V	
	P	P	P	P	P	I	I	P	P	P	P	P		
	U	U	U	U	U	U	U	U	U	U	U	U		
			3		9		0	1						
						**	**		12		6		LIS 03	
	3		9		15				18		12		6	
=====													00	
	08	10	12	14	16	18	20	22	24	26	28	30	SLOT POSITION (FRONT)	

2nd LIM (N+1) with 3 LIS for ADAS

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

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

RULES:

- AP 1) When PEC NTZZ44CC 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 (EMA-07-001) for additional mechanical hardware requirements for the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.
- RUL1 1) Reserved for future use.
- RUL2 1) Provide one (4) meg NTZZ30BA for each DS0A SS7 link required.
- 2) For US applications requiring E-DS0A SS7 Link provide (1) NTZZ30UA. For Canada, Asia/Pacific, Europe, CALA applications requiring E-DS0A SS7 Link provide one (1) NTZZ30VA. The NTZZ30CA is A&M status.
- 3) The NTZZ30UA is functional beyond BCS33 on a 56Kb/s basis. NOT on 64 Kb/s basis. On the other hand NTZZ30VA is functional on both 56 and 64 Kb/s basis. For example if the office requires 56 Kb/s then NTZZ30UA or NTZZ30VA can be used. If the office requires 64 KB/s then only NTZZ30VA can be used. Note that, BCS 33 is the minimum requirement for NTZZ30VA.
- 4) For applications requiring E-DS0A SS7 Links utilizing the Link Fault Sectionalization feature in STP02 (AR0518), provide NTZZ30TB.
- RUL3 1) Provide one (1) NTZZ30WA for each V.35 SS7 link. The NTZZ30DA is in A&M status.
- RUL4 1) Provide one NTZZ30EA for each Ethernet interface required. For all new applications order NTZZ30EB.

- 2) For BCS 34 and above provide one NTZZ30EC for each Ethernet interface required.
- RUL5 1) For BCS 33 and earlier provide one NTZZ30FA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA, and replace with NTZZ30LA for all applications.
- 2) For BCS 34 and later provide one NTZZ30LA for each Frame Relay Service T1 interface required.
- 3) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.
- RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.
- RUL7 1) Provide one for all British Offices.
- RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below (except LIUs with CBI, which do not require cables). The NIU labels are provided when the NIU is assigned as shown below:

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

Shelf	Slots	NIU Label
26	19R, 21R	P0735393
13	19R, 21R	P0735391
00	19R, 21R	P0735392

- RUL9 1) Reserved for Future Use.

- RUL10 1) Provide one (1) NT9X9532 Stand-Alone Cabling interface kit and one (1) P0736059, Filter Capacitor Designation Label Sheet, when powering the NT9X70BB 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 NT9X70BB. This kit includes power cables, terminal blocks and miscellaneous mounting hardware.(The Designation Label sheet contains enough labels to fully designate the filter capacitors for one cabinet).
- 2) Provide one (1) NT9X9531 Horizontal power cabling interface kit and one P0736058 Terminal Block Designation Strip when powering the NT9X70BB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X70BB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL11 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone offices.
- RUL12 1) For each NT9X70BB LIM cabinet located in a cabinetized DMS office, provide:
- four (4) NT9X0100 LMS DS-30 Cable Assembly,
 - two (2) NT9X0107 LMS DS-30 Cable Assembly,
- RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications. Always required when the LPP is not used in DMS Cabinetized offices.
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications. Always required when the LPP is not used in DMS Cabinetized offices.
- RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.
- RUL15 1) When 6 or 8 gauge wire is being used to bring power to the LPP in a stand alone situation provide 23 Insulating Boots. The Boots are to be shipped loose to the site.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) For each brown NT9X70BB LIM cabinet, provide:

- one (1) NT0X24BT Frame Fail Lamp (Brown), and
- one (1) P0674502 Rear Frame Fail Light.

2) For each grey NT9X70BB LIM cabinet, provide:

- one (1) NT0X24CN Frame Fail Lamp (Grey), and
- one (1) P0699441 Rear Frame Fail Light.

RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet

RUL19 1) Reserved for future Use.

RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:

$$32 - (\begin{array}{l} \text{\#FRIUs on LIS shelf} * 2 \\ + \text{\#NIUs on LIS shelf} * 4 \\ + \text{\#LIUs on LIS shelf} \\ + \text{\#EIUs on LIS shelf} \end{array})$$

RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).

2) Provide one NTZZ44DA when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DA LIU7 CBI to function.

3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.

4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.

RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.

- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.
- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.
- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.
- RUL25 1) For EIU applications, provide one Media Access Unit (MAU) HP28685B (CPC A0383333) for each EIU interface.

36 LINK LPP -48V, BCS34 AND ABOVE

PEC CODE: NTZZ44CP

CPC CODE: B0241293

RATING: MD

REPLACES: NTZZ44CN

REPLACED BY: NTZZ44LP

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -48 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel. The NTZZ44CP has the capability of housing up to 36 Application Specific Units (ASUs) such as DS0A, Enhanced DS0A, V.35 and EIU. This NTZZ44CP can only be used for -48V applications, and it has Processor, Memory, NTZZ44JA(Cabinetized Bulkheads and cable assembly), and NTZZ44HA (Non-Cabinetized Bulkheads and cable assembly). Use them as required in each application.

REFERENCE DOCUMENTATION: SLZZ44CP 00 02
NTZZ44CP REL 01
MS9X70BB 01 19

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ44CP EMC2-17-LPP-48 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 09 17	ECM 620 13	Introduction of NTZZ44CN for -48V application.
93 10 04	ECM 682 01	Include ADAS ASU provisioning rules
94 02 15	ECM 620 14	Introduce NTEX22BB for CCS7 LIU7. Introduce NT9X13DD.
94 03 10	ECM 620 15	Change NT9X95AA to NT9X95BA.
94 06 03	ECM 620 17	Add text to RULE 13.
94 06 30	ECM 620 18	ECD 018-43057, ET19079, and ET52573
94 08 03	ECM 620 19	ECD 006-19337. MD'd NTZZ44CN and introduced NTZZ44CP.
94 08 29	ECM 620 20	ET19619 and ET19569.
94 10 11	ECM 620 21	ET19749.
94 11 23	ECM 682 02	Provisioning Ratio APU/VPU for ADAS changed from 2/3 to 1/2
		Also EC 018-43987, ET20289, and ET 19759
94 11 30	ECM 682 03	Editorial changes. Change bars retained from previous issue
95 02 10	ECM 620 23	ET60593. Added ASU numbering Dwgs. Also updated ADAS APU/VPU spread order numbering. Added MAU for EIU.
		ET63763 Revised notes to exclude the req't for CBI LIU cable rtg.labels.
95 03 14	ECM 620 25	ET20759/EC 018-43880 - Intro NTZZ30TB. Remove NON-filtered bulkhead offering as Mfg. cost reduction. Standardize on Filtered bulkhead for LIM cabinets. Correct clerical errors and correct rule 1, NT9X13DD/DA Mem. requirements. Clarify provisioning rules for NT9X9532 and NT9X9531 per ET65803.
95 04 04	ECM 620 26	Revive Filtered and NON-filtered bulkhead offering.
95 04 24	ECM 682 05	ET 22139 Revise ASU config sequence
95 06 29	ECM 620 28	Solve ETs 72023, 68743
95 10 23	ECM 620 29	Updated per ECD 018-45801.
		Included rules pertaining to NTZZ30CN.
95 12 06	ECM 620 30	Updated per ECD 018-45348 to MD 9X14BB
		Removal of P0730273 Insulating Boots and the applicable rules from this Section.
96 03 22	ECM 620 31	Retire this section.

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 11 15	ECM 620 33	Solve SR RR61697 to include NTZZ30MA in RUL8 part2 for more clarification. Solve SR RR6A105 to state the maximum number of XLIUs in the LPP cabinet. XLIU Configuration from inside out is a valid configuration.

The 36 Link LPP -48V, BCS34 and ABOVE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-48V)	NT9X03AA	FSP	1	52		AP
Cooling Unit (-48V)	NT9X95CU	CU	1	00		AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AA		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CC		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AD		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
CPU 16 MHz CP	NT9X13DB			39	17F, 22F	RUL1
CPU 16 MHz CP	NT9X13DD			39	17F, 22F	RUL1
# 6Meg Memory CP	NT9X14BB			39	16F, 23F	RUL1
24Meg Memory CP	NT9X14DB			39	16F, 23F	RUL1
Filler Faceplate	NT9X19AA			39	16F, 23F	RUL1
Designation Label NT9X13DB	P0696239			39	17F, 22F	RUL1
Designation Label NT9X13DD	P0743628			39	17F, 22F	RUL1
Designation Label NT9X14DB	P0700802			39	16F, 23F	RUL1
Designation Label NT9X19AA	P0709515			39	16F, 23F	RUL1
Designation Label NT9X19BA	P0709516			39	16R, 23R	RUL1
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
PB Filler Faceplate	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label (NT9X26AB)	P0705003		2	39	17R, 22R	AP
Bulkhead and Cable Assembly	NTZZ44HA		1	39		RUL13
Bulkhead and Cable Assembly (for Cabinetized appl.)	NTZZ44JA		1	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
Power Converter (48V)	NTZZ44NA		1	X		RUL9
Power Converter (48V/60V)	NTZZ44LA		1	X		RUL9
Power Interface Kit	NT9X7214		6	00, 13, 26		RUL11
F-Bus Extender PB	NT9X79AA		4	13, 26	7R, 32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R, 32R	AP
Desig. Label NT9X79AA	P0689621		4	13, 26	7R, 32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R, 32R	AP
Intra FBus A Term. PB	NTEX20AA		3	00, 13, 26	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	00, 13, 26	8R	AP
PB Filler Faceplate	NT9X19BA		30	00, 13, 26	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R	AP
FBus Repeater CP	NT9X74DA		6	X	7F, 32F	AP
Des Label NT9X74DA	P0733871		6	X	7F, 32F	AP
NIU	NTZZ30MA			X	18F	RUL21
# LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
CCS7 8MEG LIU (FAULT-SEC.)	NTZZ30TB			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30AM			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30BM			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DB			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EB			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
# LIU7 V.35	NTZZ30WA			X	Y	RUL3
LIU7 V.35	NTZZ30CM			X	Y	RUL3
LIU7 V.35 - ISG	NTZZ30CN			X	Y	RUL3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# EIU	NTZZ30EA			X	Y	RUL4
# EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23
VPU	NTZZ44BA			X	Y	RUL24
Media Access Unit (MAU)	A0383333					RUL25
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
External Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
ESP Ground Terminal Assy	NT9X0324		1			RUL12
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X14BB	MD	NT9X14DB
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	
NTZZ44JA	STD	
NTZZ44HA	STD	
NTZZ30BA	MD	NTZZ30AM
NTZZ30UA	MD	NTZZ30AM
NTZZ30VA	MD	NTZZ30BM
NTZZ30WA	MD	NTZZ30CM
NTZZ30EA	MD	NTZZ30EC
NTZZ30EB	MD	NTZZ30EC

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises. For reliability, the LIU7s, EIUs, and FRIUs are to be spread across shelf positions 00, 13, and 26 as shown below. The ASU number is the circuit number assigned to the ASU (ie, LIU7 #0). The ASU Assignment Sequence is an example of the link assignment within the linkset, and is spread across all relevant shelves, and 'A' and 'B' Power distribution (left/right halves of the shelf). Refer to the 'Data Schema' document for data fill instructions and examples.

	<table><tr><td colspan="12">L M S</td></tr><tr><td colspan="12">LIU/EIU/FRIU</td></tr><tr><td>ASU Numbering</td><td colspan="2">0</td><td colspan="2">2</td><td colspan="2">4</td><td colspan="2">6</td><td colspan="2">8</td><td colspan="2">11</td></tr><tr><td>ASU assignment Sequence for LIS:01</td><td>1</td><td>7</td><td>13</td><td>19</td><td>25</td><td>31</td><td>34</td><td>28</td><td>22</td><td>16</td><td>10</td><td>4</td></tr><tr><td>ASU Numbering</td><td colspan="2">12</td><td colspan="2">14</td><td colspan="2">16</td><td colspan="2">18</td><td colspan="2">20</td><td colspan="2">23</td></tr><tr><td>ASU assignment Sequence for LIS:02</td><td>5</td><td>11</td><td>17</td><td>23</td><td>29</td><td>35</td><td>32</td><td>26</td><td>20</td><td>14</td><td>8</td><td>2</td></tr><tr><td>ASU Numbering</td><td colspan="2">24</td><td colspan="2">26</td><td colspan="2">28</td><td colspan="2">30</td><td colspan="2">32</td><td colspan="2">35</td></tr><tr><td>ASU assignment Sequence for LIS:03</td><td>3</td><td>9</td><td>15</td><td>21</td><td>27</td><td>33</td><td>36</td><td>30</td><td>24</td><td>18</td><td>12</td><td>6</td></tr><tr><td>(CP POS)</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>3</td></tr><tr><td></td><td>8</td><td>0</td><td>2</td><td>4</td><td>6</td><td>8</td><td>0</td><td>2</td><td>4</td><td>6</td><td>8</td><td>0</td></tr></table>												L M S												LIU/EIU/FRIU												ASU Numbering	0		2		4		6		8		11		ASU assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4	ASU Numbering	12		14		16		18		20		23		ASU assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2	ASU Numbering	24		26		28		30		32		35		ASU assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6	(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3		8	0	2	4	6	8	0	2	4	6	8	0
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	8	0	2	4	6	8	0	2	4	6	8	0																																																																																																																																

ASSIGNMENT SEQUENCE OF ASUs TO LINK INTERFACE MODULE

Because channelized access (with NIU) and non-channelized access equipped shelves are mounted in the LIM frame, the following shows the Numbering/Assignment sequences for 3 different configurations. The configurations can be done in two methods: Outside in or Inside Out. Either method provides the desired redundancy, however, the two methods should not be mixed.

FOR FRAMES WITH 3 SHELVES EQUIPPED WITH NIUS, USE THE NUMBERING BELOW:

	L M S											
	NIU/XLIU											
ASU Numbering	0	2	4	6	8	11						
ASU Assignment Sequence for LIS:01	1	7	13	19	25	NIU : 0	NIU : 1	28	22	16	10	4
	25	19	13	7	1	0	1	4	10	16	22	28
ASU Numbering	12	14	16	18	20	23						
ASU assignment Sequence for LIS:02	5	11	17	23	29	NIU : 0	NIU : 1	26	20	14	8	2
	29	23	17	11	5	0	1	2	8	14	20	26
ASU Numbering	24	26	28	30	32	35						
ASU assignment Sequence for LIS:03	3	9	15	21	27	NIU : 0	NIU : 1	30	24	18	12	6
	27	21	15	9	3	0	1	6	12	18	24	30
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

from outside in
<-----
XLIUs
<-----
from inside out

XLIUs
<-----

XLIUs
<-----

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
3 SHELVES WITH NIUS

Refer to NOTE 1 for mixing of LIU7 and EIU with FRIU on the LIM.

FOR FRAMES WITH 2 SHELVES EQUIPPED WITH NIUS AND 1 SHELF WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
ASU Numbering	0		2		4		6		8		11	
ASU Assignment Sequence for LIS:01	1	5	9	13	17	N I U : 0	N I U : 1	20	16	12	8	4
	17	13	9	5	1	0	1	3	7	11	15	19
ASU Numbering	12		14		16		18		20		23	
ASU Assignment Sequence for LIS:02	3	7	11	15	19	N I U : 0	N I U : 1	18	14	10	6	2
	20	16	12	8	4	0	1	2	6	10	14	18
ASU Numbering	24		26		28		30		32		35	
ASU Assignment Sequence for LIS:03	1	3	5	7	9	11	12	10	8	6	4	2
	0	1	1	1	1	1	2	2	2	2	2	3
(CP POS)	8	0	2	4	6	8	0	2	4	6	8	0

From outside in
<-----
XLIUs
<-----
From Inside out

XLIUs
<-----

LIUs
<-----

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
2 SHELVES WITH NIUS AND 1 SHELF WITHOUT NIUS

FOR FRAMES WITH 1 SHELF EQUIPPED WITH NIUS AND 2 SHELVES WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
	NIU/XLIU											
ASU Numbering	0	2	4	6	8	11						
ASU Assignment Sequence for LIS:01	1	3	5	7	9	N I U : 0	N I U : 1	10	8	6	4	2
	9	7	5	3	1			2	4	6	8	10
ASU Numbering	12	14	16	18	20	23						
ASU Assignment Sequence for LIS:02	1	5	9	13	17	21	24	20	16	12	8	4
ASU Numbering	24	26	28	30	32	35						
ASU Assignment Sequence for LIS:03	3	7	11	15	19	23	22	18	14	10	6	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

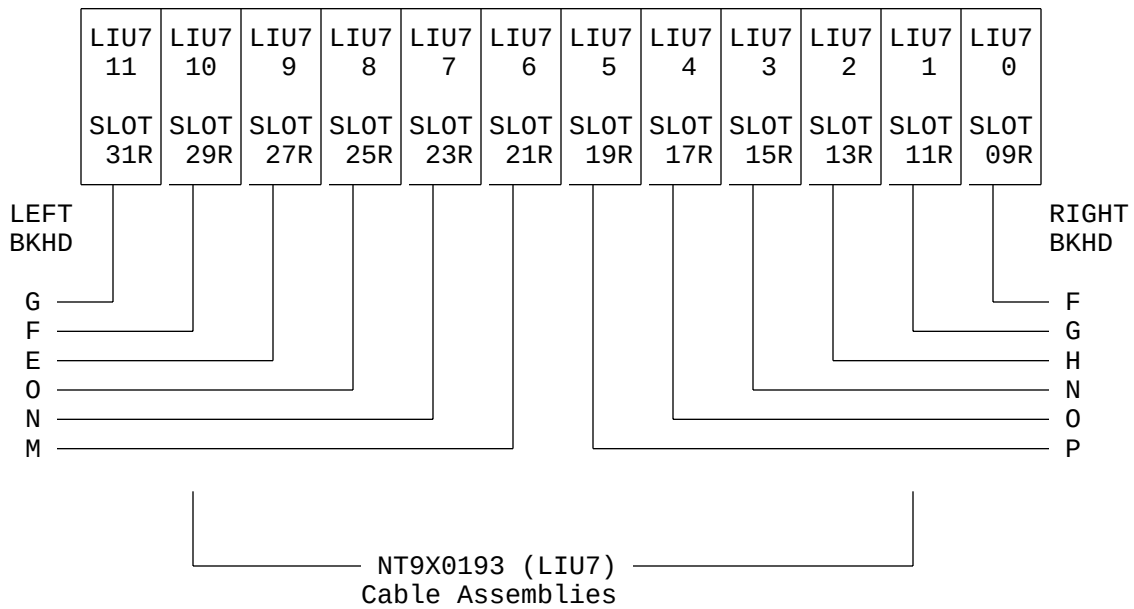
From outside in
<-----
XLIUs
<-----
From inside out

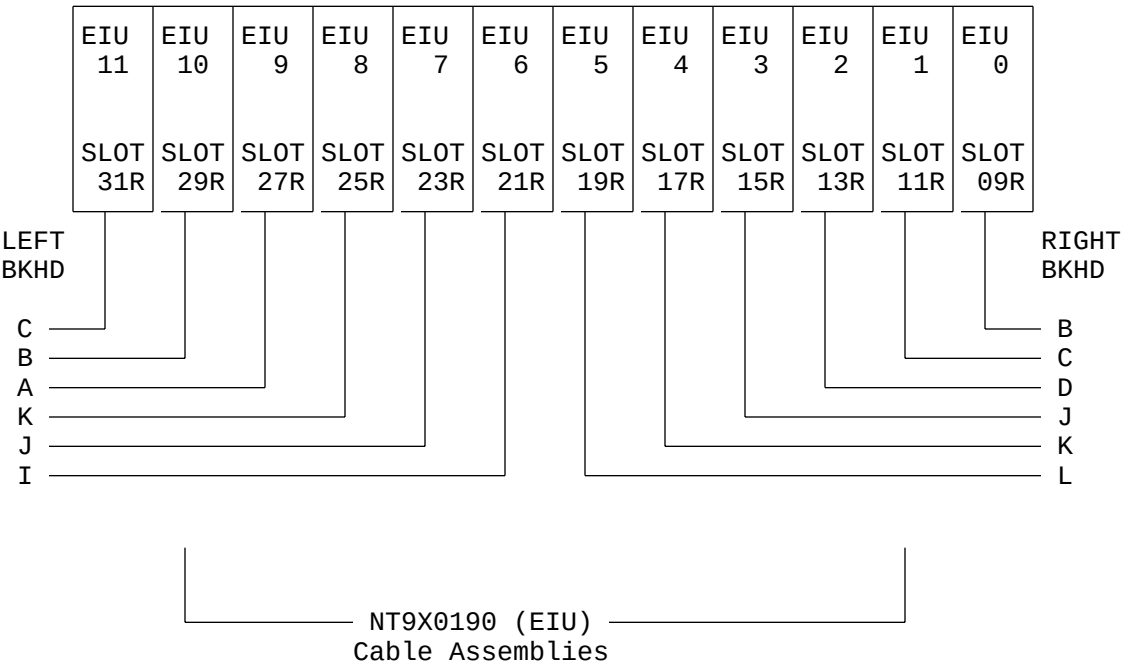
LIUs
<-----

LIUs
<-----

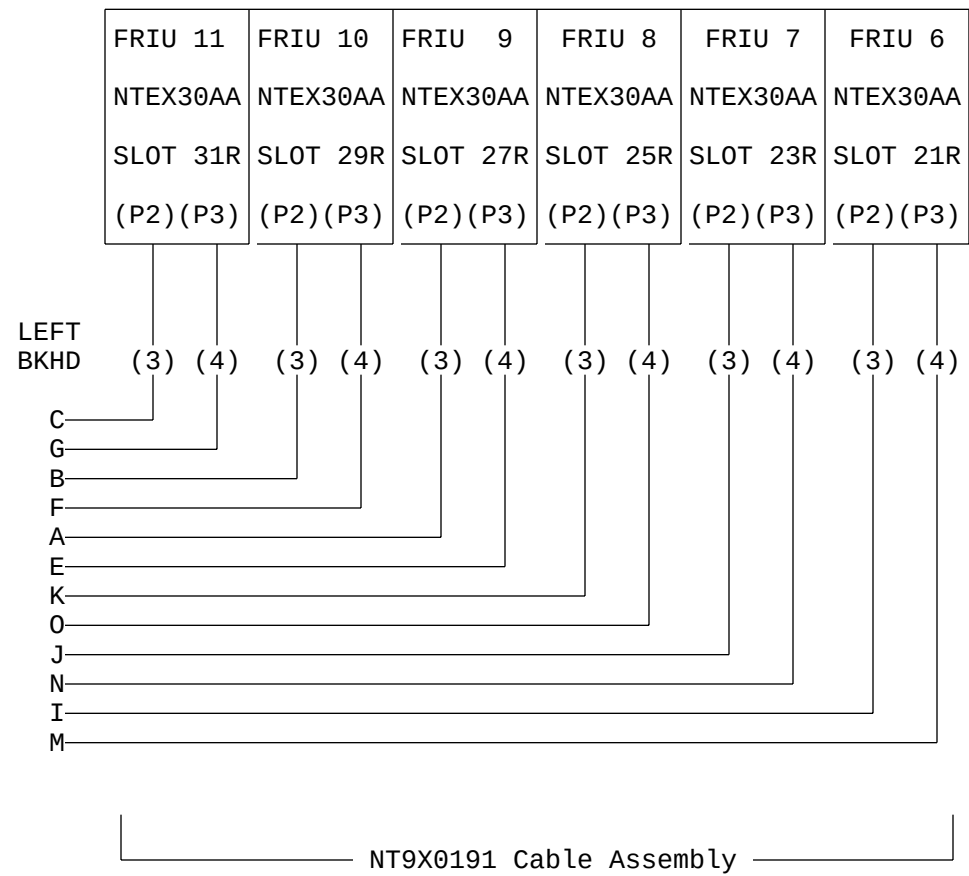
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
1 SHELF WITH NIUS AND 2 SHELVES WITHOUT NIUS

- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:

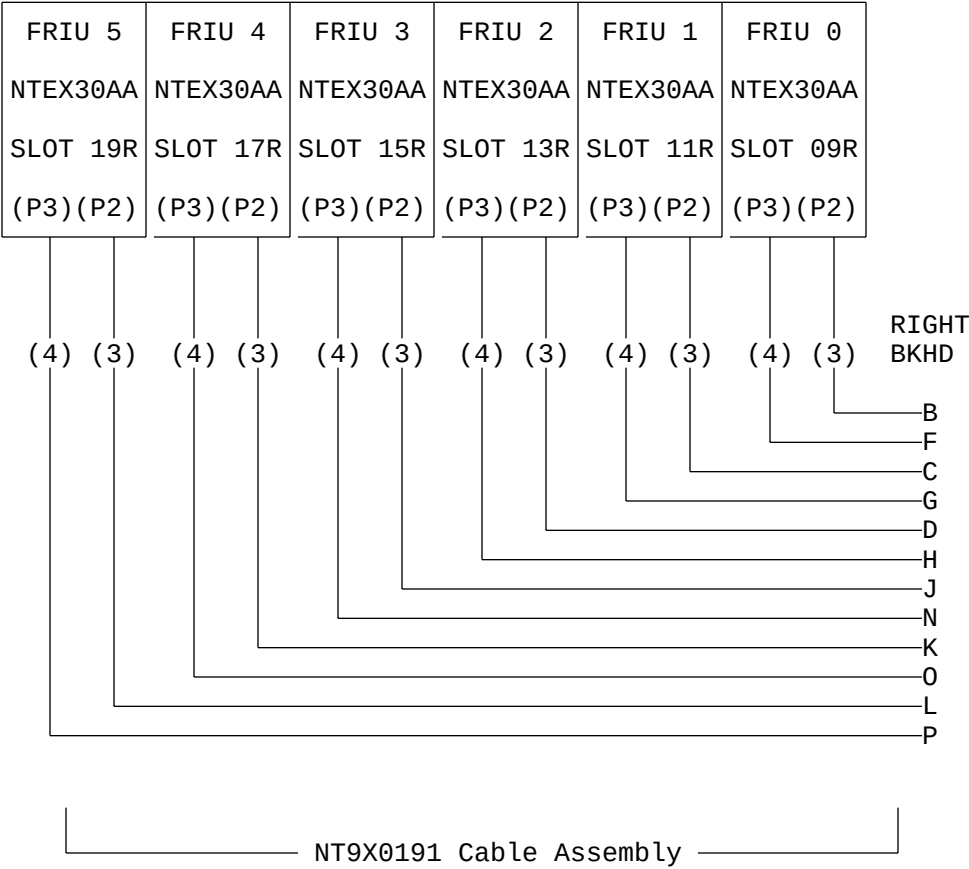




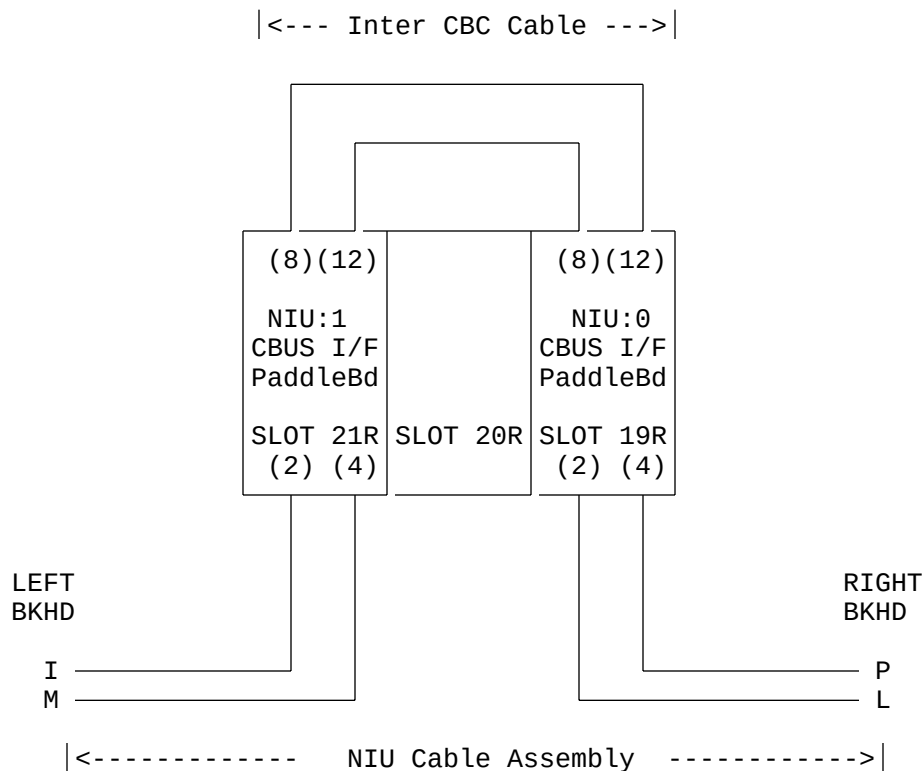
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:



P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per. LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU insertion differs from the general rule given in Note 3, above.

The diagrams show the position and order of provisioning of the four types of ASU used by ADAS, i.e. LIU, EIU, APU and VPU. The sequence for each is given separately.

LIUs

In an ADAS LIS, two (2) LIUs are always provided in an ADAS LIS in slot positions 18 and 20.

EIU

An EIU is always provisioned in the first ADAS LIM Cabinet in the topmost ADAS LIS in slot position 30.

APU

The order of APU provisioning is indicated by the prefix 'A', e.g., the fourth APU is indicated by 'A4'.

In general, APU order of provisioning follows the standard configuration sequence, i.e. starts at the topmost shelf at the outermost available slots at the left hand end of the LIS. The next APU is located at the outermost available slots at the right hand end of the LIS below. The third APU is located at the outermost available slots at the left hand end of the lowest LIS, in a LIM with three ADAS LIS. The fourth APU is placed in the topmost LIS in the outermost available slots at the right hand end of the LIS, and so on.

VPU

The order of VPU provisioning is indicated by the prefix 'V', e.g. the fourth VPU is indicated by 'V4'.

In general, VPU order of provisioning follows a non-standard configuration sequence, i.e. the sequence starts at the topmost shelf at the innermost available slots to the left of the NIU(s). The next VPU is located at the innermost available slots to the right of the NIUs below. The third VPU is located at the innermost available slots to the left of the lowest NIUs, in a LIM with three ADAS LIS. The fourth VPU is placed in the topmost LIS in the innermost available slots to the right of the LIUs, and so on.

NOTE:

The method of provisioning, detailed above, and in the following illustrative diagrams differs from configuration rules issued prior to 4/21/95. This means that for extensions to ADAS

systems which were configured to the previously issued rules, the configurations given here may not conform. This can be overcome in one of two ways:

- * Reconfigure existing packs to conform to patterns given in the following diagrams.
- * Configure extension packs to conform as closely as possible to achieve an even spread of APU and VPU among the half LIS (shelves) used for the extension.

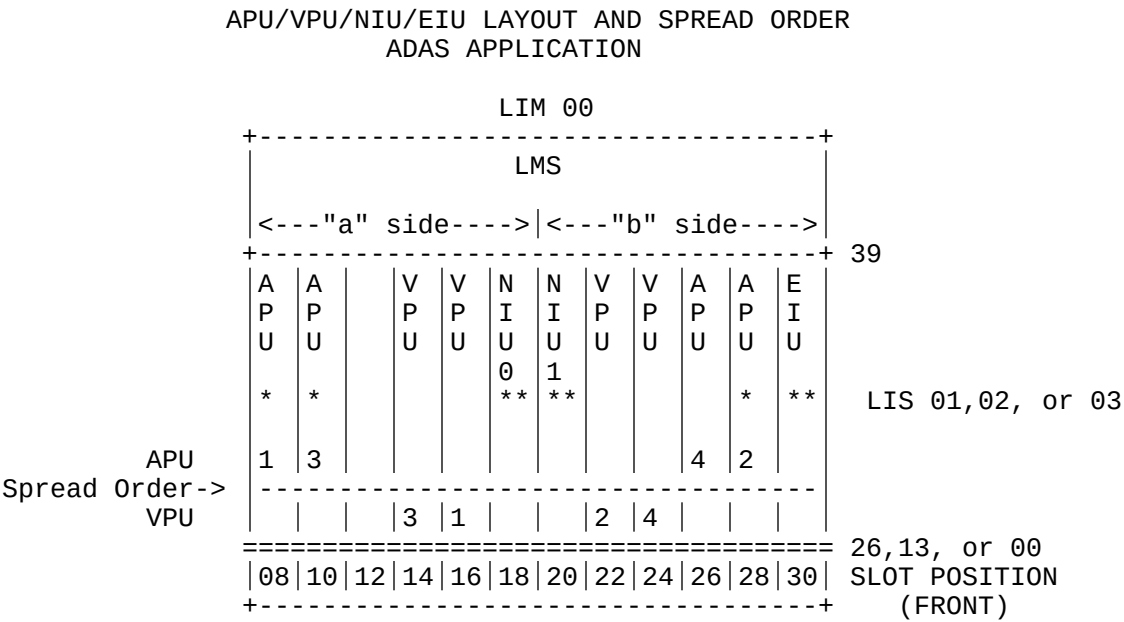
The aim the defined configuration patterns is to provide optimum protection for ADAS services in the event of a failure of common services like power supplies.

Extensions to ADAS systems initially configured according to the patterns defined in the following diagrams can be made in accordance with those patterns.

LIS's used for ADAS cannot be shared with other applications.

ADAS LIS(s) can share the same LPP (not the same LIS shelf) with other applications with the exception of PACKET HANDLER using XLIU's.

HARDWARE LAYOUT ADAS - First LIM with One ADAS LIS



1 LIM and 1 LIS for ADAS

* VPP-APU

** Always provision NIU 0 and 1 on each ADAS LIS
and 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS - First LIM with Three ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
ADAS APPLICATION

LIM 00													
LMS													
<---"a" side--->						<---"b" side--->							
A	A	V	V	V	N	N	V	V	V	A	A	E	
P	P	P	P	P	I	I	P	P	P	P	P	I	
U	U	U	U	U	U	U	U	U	U	U	U	U	
*					0	1						**	LIS 01
1	7				**	**				10	4		
APU Spread Order->													
VPU													
			13	7	1			4	10				
=====													26
A	A	V	V	V	N	N	V	V	V	A	A		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1						*	LIS 02
5	11				**	**					8	2	
APU SPREAD ORDER->													
VPU													
			16	11	5			2	8	14			
=====													13
A	A	V	V	V	N	N	V	V	V		A		
P	P	P	P	P	I	I	P	P	P		P		
U	U	U	U	U	U	U	U	U	U		U		
					0	1							LIS 03
3	9				**	**						6	
APU Spread Order->													
VPU													
			15	9	3			6	12	17		6	
=====													00
08	10	12	14	16	18	20	22	24	26	28	30		SLOT POSITION (FRONT)

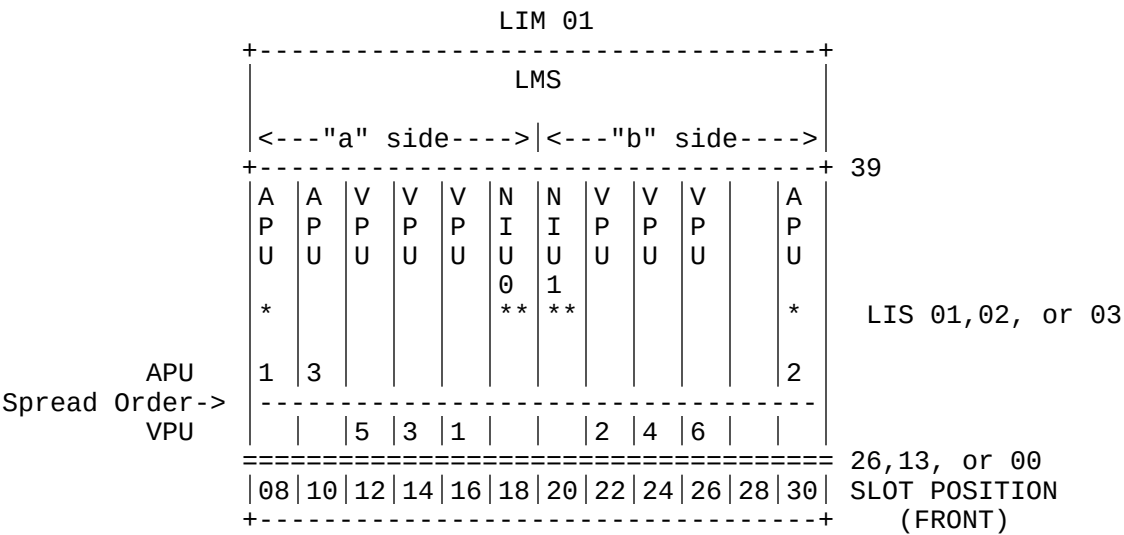
1 LIM and 3 LIS for ADAS

* Always provision APU 1 and 2 for VPP-APU

** Always provision NIU on each ADAS LIS
and 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS - 1+N LIM with One ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

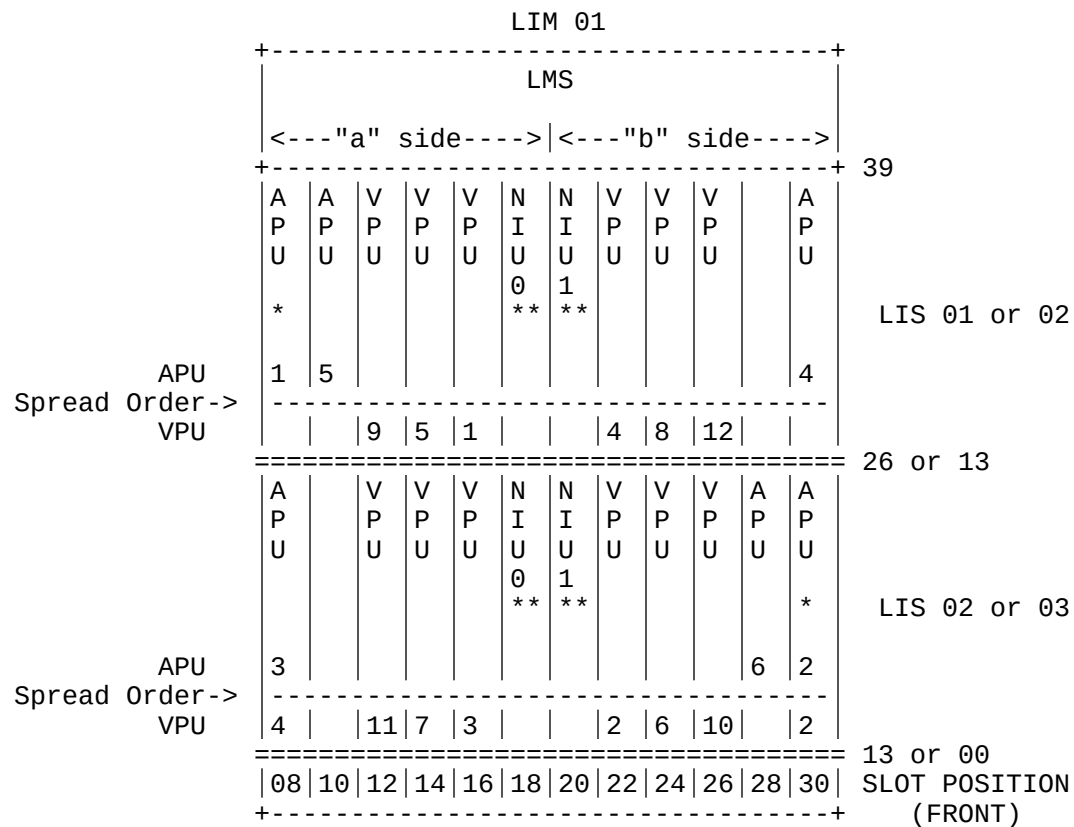


LIM (1+N) (N = 1 or 2) with 1 LIS for ADAS

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS - N+1 LIM with Two ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

LIM (1+N) (N = 1 or 2) with 2 LIS for ADAS

2 LIS mount in sh pos 26 and 13 OR sh 13 and 00

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS - 1+N LIM with Three ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER

LIM 01													
LMS													
<---"a" side--->						<---"b" side--->							
APU Spread Order-> VPU	A	A	V	V	V	N	N	V	V	V		A	39
	P	P	P	P	P	I	I	P	P	P		P	
	U	U	U	U	U	U	U	U	U	U		U	
	*					0	1						LIS 01
	1	7				**	**					4	

		1	13	7	1			4	10	16			
=====													26
APU Spread Order-> VPU	A		V	V	V	N	N	V	V	V	A	A	
	P		P	P	P	I	I	P	P	P	P	P	
	U		U	U	U	U	U	U	U	U	U	U	
	5					0	1				8	*	LIS 02
						**	**					2	

	5		17	11	5			2	8	14		2	
=====													13
APU Spread Order-> VPU	A	A	V	V	V	N	N	V	V	V		A	
	P	P	P	P	P	I	I	P	P	P		P	
	U	U	U	U	U	U	U	U	U	U		U	
	3	9				0	1					6	LIS 03
						**	**						

			15	9	3			6	12	18		6	
=====													00
08 10 12 14 16 18 20 22 24 26 28 30													SLOT POSITION (FRONT)

LIM (1+N) (N = 1 or 2) with 3 LIS for ADAS
 * Always provision APU 1 and 2 for LPP-APU
 ** Always provision NIU on each ADAS LIS
 (Only EIU is on 1st ADAS LIS)

- 6) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.
- 7) The Provisionable Frame fail lights NT0X24BT and P0674502 (in Brown) or NT0X24CN and P0699441 (in Grey) have been removed from this document. The new NT9X0105 Black LAMP Bezel will always be provided with the cabinet.

RULES:

- AP 1) When PEC NTZZ44CP 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.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.

- RUL1 1) For the LMS shelf, provide:

- two (2) NT9X13DB CPU 16 MHZ CPs,
- two (2) P0696239 Designation Labels (NT9X13DB), and
- two (2) NT9X14BB 6Meg Memory CPs.

The NT9X14DB will be retrofitted for the NT9X14BB in existing offices equipped with the NT9X14BB, if the BCS36 (or higher) software load is too large for the 6Meg NT9X14BB (except with the NT9X13DA). Offices with the NT9X13DA should preferably be updated with the "standalone" NT9X13DD instead of the (1+24) Meg combination described below. Note that the NT9X14BB is MD'd and it is replaced by the NT9X14DB.

- 2) FOR BCS36 THROUGH CSP02, PROVIDE:

- two (2) NT9X13DD CPU 16 MHZ CPs, and
- two (2) P0743628 Designation Labels (NT9X13DD).

The NT9X13DD includes 16MB of DRAM which is adequate for all applications.

3) FOR CSP03 AND ABOVE:

* 16 Meg memory is MANDATORY on all LMS loads.

This is achievable using the:

- a) NT9X13DD standalone CP, or
- b) NT9X13DB + NT9X14DB (1+24) Meg combination.

If the (1+24) Meg is required using the NT9X13DB combination, provide:

- two (2) NT9X14DB 24Meg Memory CPs, and
- two (2) P0700802 Designation Labels NT9X14DB.

The (1+24) Meg combination is not supported with the NT9X13DA. STP offices to be provisioned with fiberized links (large STPs requiring enhanced reliability under worst-case traffic and DOUBLE FAULT conditions) have, as Gating H/W, the NT9X13DD. These STPs should migrate immediately to the NT9X13DD to avoid future churn.

NOTE: The NT9X13DD cannot be used with the NT9X14BB (6 Meg) Memory CPs, nor with the NT9X14DB (24 Meg).

4) For each LMS shelf, provide when no NT9X14XX CP is provisioned (in other words, when NT9X13DD is provided):

- two (2) NT9X19AA Filler Faceplates,
- two (2) P0709515 Designation Labels NT9X19AA,
- two (2) NT9X19BA Filler Faceplates, and
- two (2) P0709516 Designation Labels NT9X19BA.

RUL2 1) Provide one (8) meg NTZZ30AM for each DS0A SS7 link required.

For all new applications, provide:

- For BCS34 and above,
- one (1) NTZZ30BM CCS7 8MEG LIU (E/HC-DS0A)

2) For European applications requiring E-DS0A SS7 Link, provide:

- For BCS34 and above,
- one (1) NTZZ30BM CCS7 8MEG LIU (E/HC-DS0A)

The NTZZ30CA is A&M status.

3) The NTZZ30BM is functional on both 56 and 64 Kb/s basis. If the office requires 64 KB/s then only NTZZ30BM can be used. Note that, BCS 34 is the minimum requirement for NTZZ30BM.

- 4) For applications requiring E-DS0A SS7 Links utilizing the Link Fault Sectionalization feature in STP02 (AR0518), provide NTZZ30TB.

- RUL3 1) When interfacing a V.35 signalling link, provide for each V.35 SS7 link:
- For BCS34 and above,
 - one (1) NTZZ30CM CCS7 8MEG LIU (V.35)
 - For offices requiring ISG compliance
 - one (1) NTZZ30CN CCS7 8MEG LIU (V.35) - ISG

The NTZZ30DA is in A&M status.

- RUL4 1) Provide one NTZZ30EC for each Ethernet interface required.

- RUL5 1) For BCS 34 and later, provide one NTZZ30LA for each Frame Relay Service T1 interface required. Rate change pending for the NTZZ30FA replace with NTZZ30LA for all applications.

- 2) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.

- RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.

- RUL7 1) Provide one for all British Offices.

- RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below (except LIUs with CBI, which do not require cables).

- 2) Provide one (1) sheet of NIU cable routing labels per shelf when NIU's(NTZZ30MA) are provisioned in that shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

- RUL9 1) Provide one NTZZ44NA Power Converter when the LPP Link Interface Shelves are powered for (-48V) and Dual Power Redundancy is not required.

(OR)

- 2) Provide one NTZZ44LA Power Converter when the LPP Link Interface Shelves are powered for (-48V/-60V) and Dual Power Redundancy is required.

- RUL10 1) Provide one (1) NT9X9532 External Power Cabling Interface Kit and one (1) P0736059, Filter Capacitor Designation Label Sheet, when powering the NT9X70BB 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 NT9X70BB. This kit includes power cables, terminal blocks and miscellaneous mounting hardware. (The Designation Label sheet contains enough labels to fully designate the filter capacitors for one cabinet). A maximum of three (3) Model B Cabinets, including LIM, with external power arrangements may be configured in a single lineup of Model A Cabinets (i.e. in Model B extensions to Model A offices).

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit and one P0736058 Terminal Block Designation Strip when powering the NT9X70BB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X70BB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware. A horizontal power arrangement is used in Cabinetization Model A lineups. The NT9X9531 Horizontal Power Kit may be used when LIM Cabinets are included in a Model A lineup (i.e. Model B extensions to Model A offices).

- RUL11 1) For BCS 36 and above provide two (2) NT9X7214 Power Interface Kits for field upgrades per Link Interface Shelf when Dual Power Redundancy is required.

- RUL12 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone offices.

- RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.
(OR)

- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.

- 3) Provide one NTZZ44HA Bulkhead and Cable Assembly for LPPs that are to be located in a non-Cabinetized DMS office.
(OR)
 - 3) Provide one NTZZ44JA Bulkhead and Cable Assembly for LPPs that are to be located in a Cabinetized(Streamline) DMS office.
- RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.
- RUL15 1) Deleted.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) Deleted.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet
- RUL19 1) Reserved for future Use.
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:

$$32 - (\# \text{FRIUs on LIS shelf} * 2 \\ + \# \text{NIUs on LIS shelf} * 4 \\ + \# \text{LIUs on LIS shelf} \\ + \# \text{EIUs on LIS shelf})$$
- 2) Note that when using XLIU, APU and VPU, they do not require cables and therefore will require coverplates.
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- 2) Provide one NTZZ44DB when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DB LIU7 CBI to function. Note that NTZZ44DA has been MD'd and replaced by NTZZ44DB.

- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.

- 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.

RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of thirty (30) XLIUs, X.25/X.75 Link Interface Unit. However, the configuration of only twenty four (24) XLIUs with 6 NIUs have been verified in the LPP cabinet. (Refer to SEB 92-02-001) For example with 6 NIUs, each shelf in a three shelf LPP, in which all the shelves contain XLIUs, should have exactly 8 XLIUs.

RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.

- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.

RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.

RUL25 1) For EIU applications, provide one Media Access Unit (MAU) HP28685B (CPC A0383333) for each EIU interface.

36 LINK LPP -60V, BCS34 AND ABOVE

PEC CODE: NTZZ44GP

CPC CODE: B0241363

| RATING: MD

REPLACES: NTZZ44GN

| REPLACED BY: NTZZ44LP

ABBREVIATION NAME: LIM

ENGINEERING DESCRIPTION: The Link Interface Module (36 Link) comes equipped with a complete Local Message Switch, -60 Volt Power Converters equipped on each of the four shelves, Cooling units and the Frame Supervisory Panel. The NTZZ44GP has the capability of housing up to 36 Application Specific Units (ASUs) such as DS0A, Enhanced DS0A, V.35 and EIU. This NTZZ44GP can only be used for -60V applications, and it has processor, Memory, NTZZ44JA(Cabinetized Bulkheads and cable assembly). and NTZZ44HA (Non-Cabinetized Bulkheads and cable assembly). Use them as required in each application.

REFERENCE DOCUMENTATION: SLZZ44GP 00 02
NTZZ44GP REL 01
MS9X70BB 01 18

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Ganesh Ram Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ganesh Ram Dept. 3471 (PPK)

NTZZ44GP EMC2-17-LPP-60V CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 09 17	ECM 620 13	Introduction of new NTZZ44GN BB for markets requiring -60V application.
93 10 04	ECM 682 01	Include ADAS ASU provisioning rules
94 02 15	ECM 620 14	Introduce NTEX22BB for CCS7 LIU7. Introduce NT9X13DD.
94 03 10	ECM 620 15	Change NT9X95AA to NT9X95BA.
94 06 03	ECM 620 17	Add text to RULE 13.
94 06 30	ECM 620 18	ECD 018-43057, ET19079, and ET52573
94 08 03	ECM 620 19	ECD 006-19337. MD'd NTZZ44GN and introduced NTZZ44GP.
94 08 29	ECM 620 20	ET19619 and ET19569.
94 10 11	ECM 620 21	ET19749.
94 11 23	ECM 682 02	Provisioning Ratio APU/VPU for ADAS changed from 2/3 to 1/2
		Also EC 018-43987, ET 20289, and ET 19759
94 11 30	ECM 682 03	Editorial changes. Change bars retained from previous issue
95 02 10	ECM 620 23	ET60593. Added ASU numbering Dwgs. Also updated ADAS APU/VPU spread order numbering. Added MAU for EIU.
		ET63763 Revised notes to exclude the req't for CBI LIU cable rtg.labels.
95 03 14	ECM 620 25	ET20759/EC 018-43880 - Intro NTZZ30TB. Remove NON-filtered bulkhead offering as Mfg. cost reduction. Filtered bulkhead AP in NT9X70BB cabinets. Clarify rule 1, NT9X13DD/DA LMS memory rules.
95 04 04	ECM 620 26	Revive the filtered and non-filtered bulkhead offering removed last issue and corrected NTZZ44GP CPC code.
95 04 24	ECM 682 05	ET 22139 Revised ADAS ASU config. sequence
95 06 29	ECM 620 28	Solve ETs 72023, 68743
95 10 23	ECM 620 29	Updated per ECD 018-45801.
		Included rules pertaining to NTZZ30CN.
95 12 06	ECM 620 30	Updated per ECD 018-45348 to MD 9X14BB
		Removal of P0730273 Insulating Boots and the applicable rules from this Section.

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
96 03 22	ECM 620 31	Retire this section. Solve SR RR61697 to include NTZZ30MA in RUL8 part2 for more clarification.

The 36 Link LPP -60V, BCS34 and ABOVE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Module Cab	NT9X70BB	LIM	1			AP
Frame Super. Panel (-60V)	NT9X03BA	FSP	1	52		AP
Cooling Unit (-60V)	NT9X95GU	CU	1	00		AP
C42 Cabinet Mechanical Assy	NT9X95BA	FW	1			AP-01
Local Msg Switch Shf Assy	NT9X7101	LMS	1	39		AP-01
Filler Face Plate	NT9X19EA		2	39	1F, 33F	AP
+5 Volt Power Conv CP	NT9X30AB		2	39	4F, 36F	AP
Desig. Label(NT9X30AB)	P0738496		2	39	4F, 36F	AP
Message Switch P-Bus Term.	NT9X49CC		2	39	7F, 32F	AP
LMS F-Bus Rate Adapter CP	NT9X73BA		2	39	8F, 31F	AP
Message Switch 4 Port CP	NT9X17AD		4	39	9F, 10F, 29F, 30F	AP
Filler Face Plate	NT9X19AA		8	39	11F-14F, 25F-28F	AP
Mapper CP	NT9X15AA		2	39	15F, 24F	AP
CPU 16 MHZ CP	NT9X13DB			39	17F, 22F	RUL1
CPU 16 MHZ CP	NT9X13DD			39	17F, 22F	RUL1
# 6Meg Memory CP	NT9X14BB			39	16F, 23F	RUL1
24Meg Memory CP	NT9X14DB			39	16F, 23F	RUL1
Filler Faceplate	NT9X19AA			39	16F, 23F	RUL1
PB Filler Faceplate	NT9X19BA			39	16R, 23R	RUL1
Designation Label NT9X13DB	P0696239			39	17F, 22F	RUL1
Designation Label NT9X13DD	P0743628			39	17F, 22F	RUL1
Designation Label NT9X14DB	P0700802			39	16F, 23F	RUL1
Designation Label NT9X19AA	P0709515			39	16F, 23F	RUL1
Designation Label NT9X19BA	P0709516			39	16R, 23R	RUL1
Message Switch Clock	NT9X53AA		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
Filler PB	NT9X19BA		18	39	7R, 11R-16R, 18R-21R, 23R-28R, 32R	AP
DS-30 4 Port	NT9X23BA		4	39	9R, 10R, 29R, 30R	AP
F-Bus Ext CP W/Term	NT9X79BA		2	39	8R, 31R	AP
Designation Label NT9X73BA	P0709458		2	39	8F, 31F	AP
Rem Term Intf	NT9X26AB		2	39	17R, 22R	AP
Designation Label (NT9X26AB)	P0705003		2	39	17R, 22R	AP
Bulkhead and Cable Assembly	NTZZ44HA		1	39		RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(for non-Cabinetized appl.) Bulkhead and Cable Assembly	NTZZ44JA		1	39		RUL13
(for Cabinetized appl.) LMS DS-30 X-Link Cable Assy	NT9X0171		2	39		RUL13
LMS DS-30 X-Link Cable Assy	NT9X7025		2	39		RUL13
Link I/F Unit Shelf Assy.	NT9X7204	LIS	3	X		AP-01
NT9X6534 Bulkhead Label	P0735163		6	X		AP-01
Bulkhead Assembly	NT9X6534		6	X		AP-01
Power Converter (60V)	NTZZ44MA		1	X		RUL9
Power Converter (48V/60V)	NTZZ44LA		1	X		RUL9
Power Interface Kit	NT9X7214		6	00,13, 26		RUL11
F-Bus Extender PB	NT9X79AA		4	13,26	7R,32R	AP
F-Bus Extender PB	NT9X79BA		2	00	7R,32R	AP
Desig. Label NT9X79AA	P0689621		4	13,26	7R,32R	AP
Desig. Label NT9X79BA	P0689622		2	00	7R,32R	AP
Intra FBus A Term. PB	NTEX20AA		3	X	30R	AP
Intra FBus B Term. PB	NTEX20BA		3	X	8R	AP
Filler PB	NT9X19BA		30	X	10R,12R, 14R,16R, 18R,20R, 22R,24R, 26R,28R	AP
FBus Repeater CP	NT9X74DA		6	X	7F,32F	AP
Desig.Label(NT9X74DA)	P0733871		6	X	7F,32F	AP
NIU	NTZZ30MA			X	18F	RUL21
# LIU7 DS0A	NTZZ30BA			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30CA			X	Y	RUL2
# LIU7 DS0A	NTZZ30TA			X	Y	RUL2
CCS7 8MEG LIU (FAULT-SEC.)	NTZZ30TB			X	Y	RUL2
# LIU7 E-DS0A	NTZZ30UA			X	Y	RUL2
LIU7 E-DS0A	NTZZ30AM			X	Y	RUL2
# LIU7 E/HC-DS0A	NTZZ30VA			X	Y	RUL2
LIU7 E/HC-DS0A	NTZZ30BM			X	Y	RUL2
LIU7 w Channel Bus I/F (CBI)	NTZZ44DB			X	Y	RUL21
LIU7 (Japan ISUP with CBI)	NTZZ44EB			X	Y	RUL21
# LIU7 V.35	NTZZ30DA			X	Y	RUL3
# LIU7 V.35	NTZZ30WA			X	Y	RUL3
LIU7 V.35	NTZZ30CM			X	Y	RUL3
LIU7 V.35 - ISG	NTZZ30CN			X	Y	RUL3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# EIU	NTZZ30EA			X	Y	RUL4
# EIU	NTZZ30EB			X	Y	RUL4
EIU (BCS34 and Above)	NTZZ30EC			X	Y	RUL4
# FRIU	NTZZ30FA			X	Y	RUL5
FRIU Upgrade Kit	NTZZ99AK			X	Y	RUL5
FRIU	NTZZ30LA			X	Y	RUL5
XLIU	NTZZ30NA			X	Y	RUL22
APU	NTZZ44AA			X	Y	RUL23
VPU	NTZZ44BA			X	Y	RUL24
Filler Face Plates (2 Slot)	NTZZ30GA			X	Y	RUL6
Media Access Unit (MAU)	A0383333					RUL25
LIU Cable Routing Label	P0714420			26		RUL8
LIU Cable Routing Label	P0735397			26		RUL8
LIU Cable Routing Label	P0714421			13		RUL8
LIU Cable Routing Label	P0735398			13		RUL8
LIU Cable Routing Label	P0714422			00		RUL8
LIU Cable Routing Label	P0735399			00		RUL8
FRIU Cable Routing Label	P0714414			26		RUL8
FRIU Cable Routing Label	P0714415			26		RUL8
FRIU Cable Routing Label	P0714416			13		RUL8
FRIU Cable Routing Label	P0714417			13		RUL8
FRIU Cable Routing Label	P0714418			00		RUL8
FRIU Cable Routing Label	P0714419			00		RUL8
NIU Cable Routing Label	P0735393			26		RUL8
NIU Cable Routing Label	P0735391			13		RUL8
NIU Cable Routing Label	P0735392			00		RUL8
Combined Label(9X76AA/EX22BB)	P0738554					RUL14
Des Label NT9X74DA	P0733871		2	X		AP
Bulkhead Conn Cover Plate	NTEX5025			X		RUL20
Stand-alone Pwr Cabling Kit	NT9X9532		1			RUL10
Horizontal Pwr Cabling Kit	NT9X9531		1			RUL10
Terminal Block Desig Strips	P0736058		1			RUL10
Filter Capacitor Desig Sheet	P0736059		1			RUL10
End Guard Labels(000-011)	P0737499		1			RUL16
End Guard Labels(012-023)	P0737500		1			RUL16
FSP Term Block Cover Ass.	A0368392		1			RUL7
Label, FCC Part 15/CSA	P0679484		1			AP
Cabinet Mechanical Hardware						RUL18
ESP Ground Terminal Assy	NT9X0324		1			RUL12
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X14BB	MD	NT9X14DB
NTZZ30FA	A&M	NTZZ30LA
NTZZ30CA	A&M	NTZZ30UA
NTZZ30DA	A&M	NTZZ30WA
NTZZ30TA	MD	
NTZZ44JA	STD	Restored to STD
NTZZ44HA	STD	Restored to STD
NTZZ30BA	MD	NTZZ30AM
NTZZ30UA	MD	NTZZ30AM
NTZZ30VA	MD	NTZZ30BM
NTZZ30WA	MD	NTZZ30CM
NTZZ30EA	MD	NTZZ30EC
NTZZ30EB	MD	NTZZ30EC

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 mounting positions X = 26, 13, 00.
- 2) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 3) NIU, LIU7, EIU, FRIU and XLIU may be mixed on the LIM(LPP) in BCS33 and beyond subject to when they are available. The physical assignment of such a mixture shall be accomplished by first assigning the NIU, then the XLIU, then the LIU7, then the EIU, then the FRIU in a continuation of the assignment pattern shown in that rule.

In an office, the Application Specific Units(ASUs) can be number from 1 to 612

The ASUs are to be numbered sequentially in a LIM frame starting with LIS 01 (shelf position 26), followed by LIS 02 (shelf position 13), followed by LIS 03 (shelf position 00). The ASUs positions will be numbered consecutively regardless of whether the ASU is equipped or not.

To keep FRIU traffic off the DMS-Bus in the absence of T1 or T3 trunking, all FRIUs must be in the same LPP.

To keep Packet Handler traffic off the DMS-Bus, all the XLIUs must be located in the same LIM cabinet. The NIU must be assigned to location shown below. Other applications (LIU7, EIU, FRIU, etc) shall be relocated if the need arises.

For reliability, the LIU7s, EIU7s, and FRIU7s are to be assigned to shelf positions 00, 13, and 26 as shown below. The ASU number is the circuit number assigned to the ASU (ie, LIU7 #0). The ASU Assignment Sequence is representative of the link assignment within the linkset, and is spread across all relevant shelves, and 'A' and 'B' Power distribution (left/right halves of the shelf). Refer to the 'Data Schema' document for data fill instructions and examples.

L M S												
LIU/EIU/FRIU												
ASU Numbering	0	2	4	6	8	11						
ASU assignment Sequence for LIS:01	1	7	13	19	25	31	34	28	22	16	10	4
ASU Numbering	12	14	16	18	20	23						
ASU assignment Sequence for LIS:02	5	11	17	23	29	35	32	26	20	14	8	2
ASU Numbering	24	26	28	30	32	35						
ASU assignment Sequence for LIS:03	3	9	15	21	27	33	36	30	24	18	12	6
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3
	8	0	2	4	6	8	0	2	4	6	8	0

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE

Because channelized access (with NIU) and non-channelized access equipped shelves are mounted in the LIM frame, the following shows the Numbering/Assignment sequences for 3 different configurations.

FOR FRAMES WITH 3 SHELVES EQUIPPED WITH NIUS, USE THE NUMBERING BELOW:

	L M S												
	NIU/XLIU												
ASU Numbering	0		2		4		6		8		11		
ASU Assignment Sequence for LIS:01	1	7	13	19	25	NIU : 0	NIU : 1	28	22	16	10	4	XLIUS <-----
ASU Numbering	12		14		16		18		20		23		
ASU assignment Sequence for LIS:02	5	11	17	23	29	NIU : 0	NIU : 1	26	20	14	8	2	XLIUS <-----
ASU Numbering	24		26		28		30		32		35		
ASU assignment Sequence for LIS:03	3	9	15	21	27	NIU : 0	NIU : 1	30	24	18	12	6	XLIUS <-----
(CP POS)	0	1	1	1	1	1	2	2	2	2	2	3	
	8	0	2	4	6	8	0	2	4	6	8	0	

ASSIGNMENT SEQUENCE OF ASUS
TO LINK INTERFACE MODULE
3 SHELVES WITH NIUS

Refer to NOTE 1 for mixing of LIU7 and EIU with FRIU on the LIM.

FOR FRAMES WITH 2 SHELVES EQUIPPED WITH NIUS AND 1 SHELF WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
ASU Numbering	0 2 4 6 8 11											
ASU Assignment Sequence for LIS:01	1	5	9	13	17	N I U : 0	N I U : 1	20	16	12	8	4
ASU Numbering	12 14 16 18 20 23											
ASU Assignment Sequence for LIS:02	3	7	11	15	19	N I U : 0	N I U : 1	18	14	10	6	2
ASU Numbering	24 26 28 30 32 35											
ASU Assignment Sequence for LIS:03	1	3	5	7	9	11	12	10	8	6	4	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

XLIUs
<-----

XLIUs
<-----

LIUs
<-----

ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
2 SHELVES WITH NIUS AND 1 SHELF WITHOUT NIUS

FOR FRAMES WITH 1 SHELF EQUIPPED WITH NIUS AND 2 SHELVES WITHOUT NIUS,
USE THE FOLLOWING NUMBERING SEQUENCE:

	L M S											
	NIU/XLIU											
ASU Numbering	0	2	4	6	8	11						
ASU Assignment Sequence for LIS:01	1	3	5	7	9	NIU : 0	NIU : 1	10	8	6	4	2
ASU Numbering	12	14	16	18	20	23						
ASU Assignment Sequence for LIS:02	1	5	9	13	17	21	24	20	16	12	8	4
ASU Numbering	24	26	28	30	32	35						
ASU Assignment Sequence for LIS:03	3	7	11	15	19	23	22	18	14	10	6	2
(CP POS)	0 8	1 0	1 2	1 4	1 6	1 8	2 0	2 2	2 4	2 6	2 8	3 0

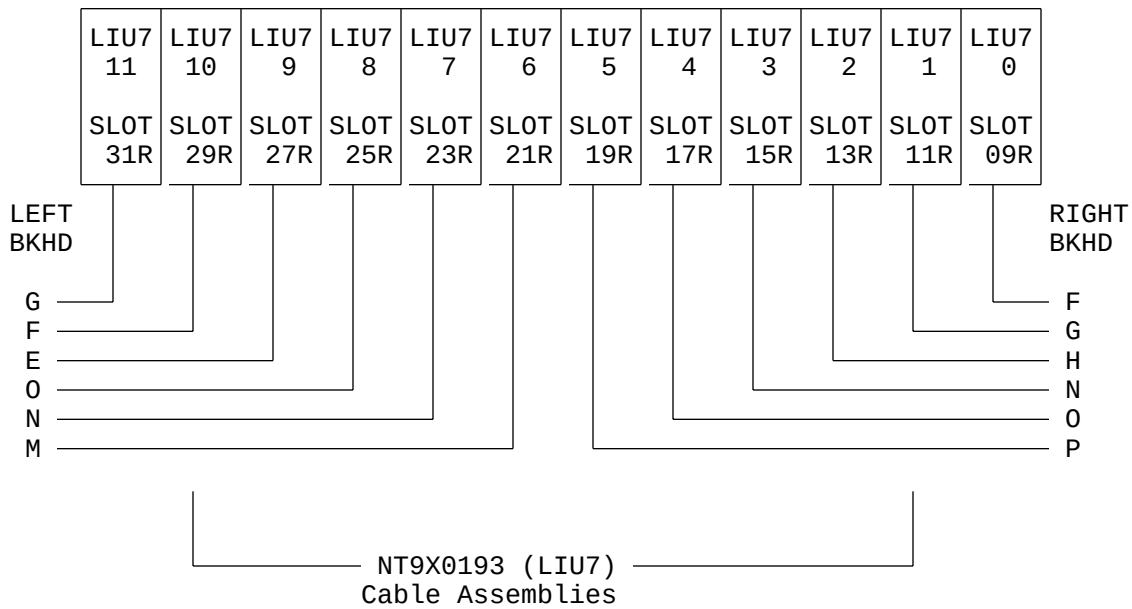
XLIUs
<-----

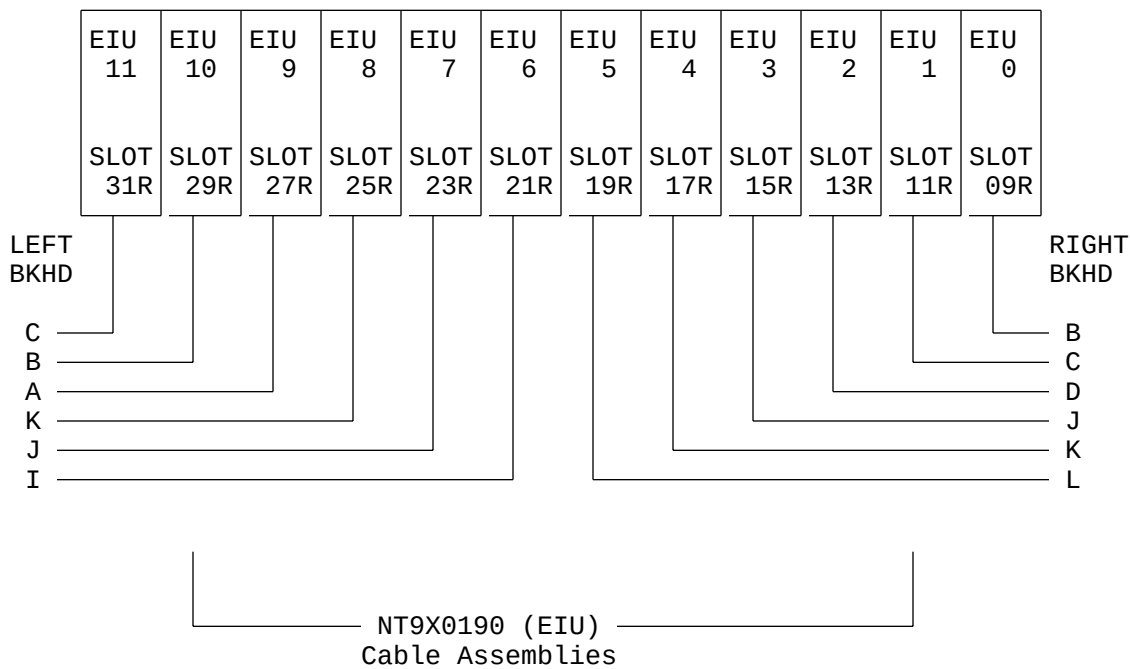
LIUs
<-----

LIUs
<-----

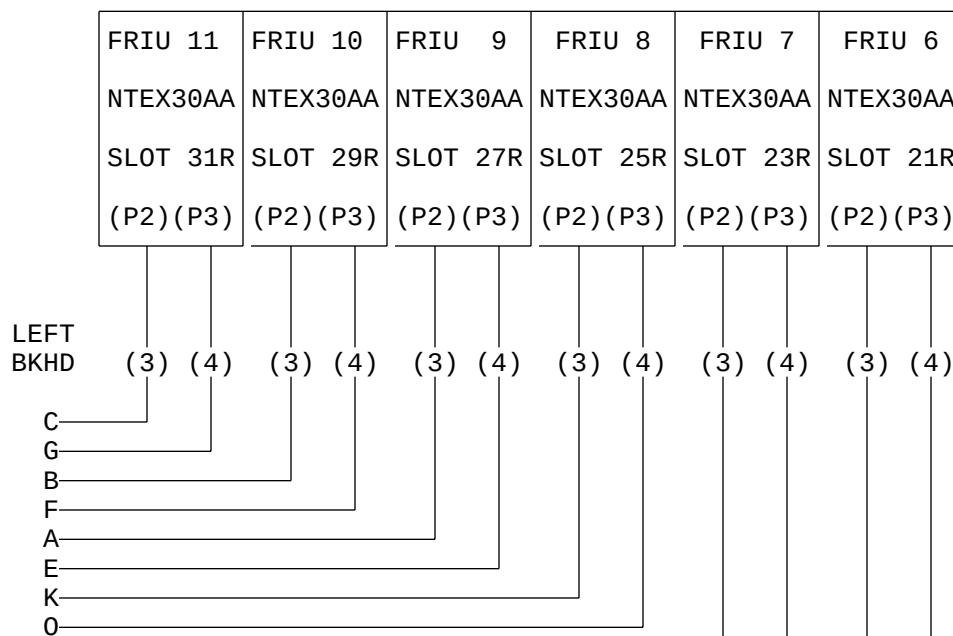
ASSIGNMENT SEQUENCE OF ASUs
TO LINK INTERFACE MODULE
1 SHELF WITH NIUS AND 2 SHELVES WITHOUT NIUS

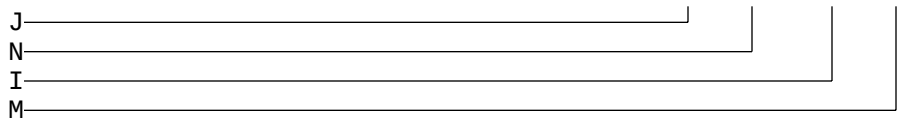
- 4) Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning:





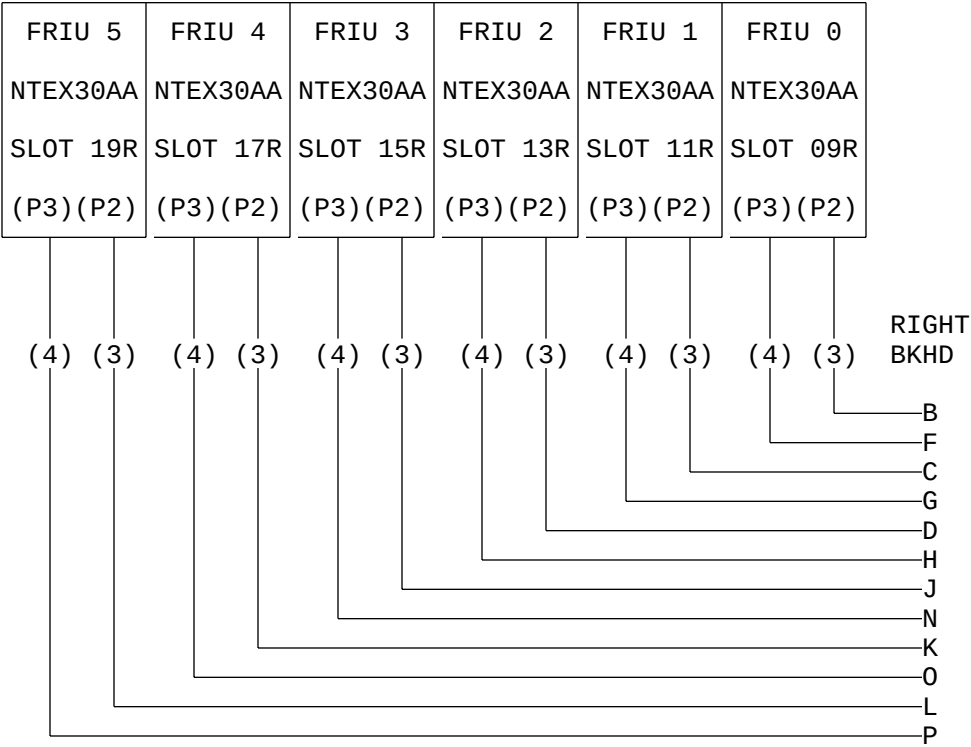
Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable (NT9X0191) provisioning:





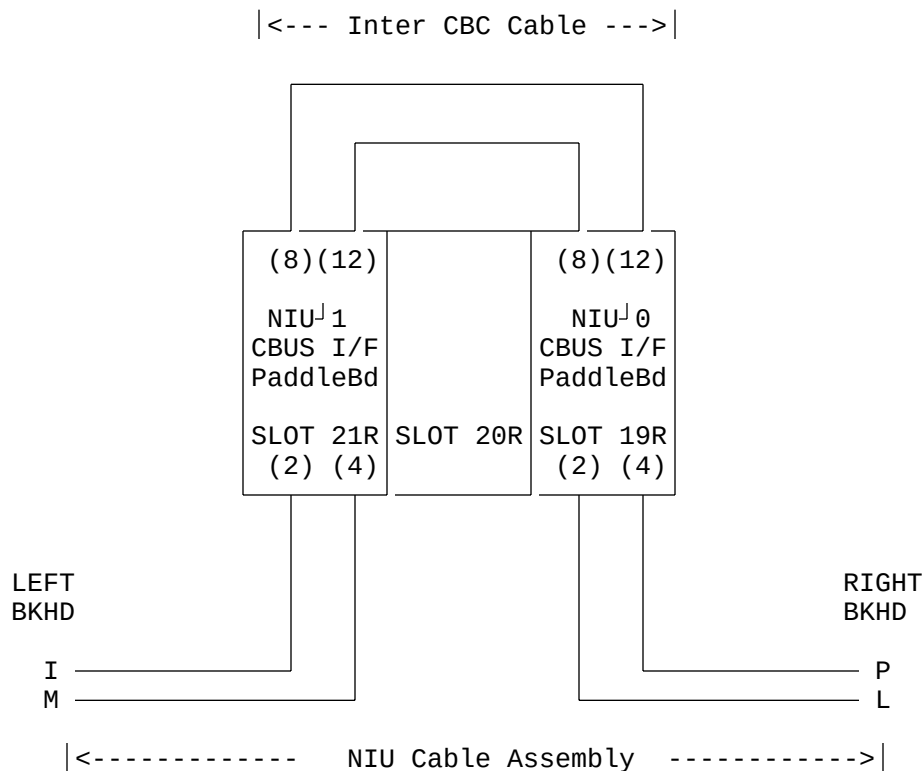
NT9X0191 Cable Assembly

P2 and P3 are connector designations while (3) and (4) are the actual markings on the paddleboard. (Shown here for reference only)



NT9X0191 Cable Assembly

Following is the rear view of LIS 01, LIS 02, LIS 03 arrangement and cable provisioning for NIU:



- 5) For ADAS applications, the following diagrams show ASU mounting positions for standard ADAS configurations. In addition to the ADAS application APUs the quantities of which are provisioned according to expected call traffic, an ADAS system always requires 2 APUs which perform Voice Processing Platform (VPP) overhead functions. These two VPP APUs are always located in the first LPP used for ADAS.

In multi LPP ADAS systems, in the second and subsequent LPPs, in addition to the application APUs which are provisioned according to expected call traffic, 2 APUs, per. LPP are always required for OA&M functions. In the ADAS context, these APUs are referred to as LPP APUs.

The following diagrams illustrate the standard LIS, and ASU configurations used for ADAS. Note that the order of ASU insertion differs from the general rule given in Note 3, above.

The diagrams show the position and order of provisioning of the four types of ASU used by ADAS, i.e. LIU, EIU, APU and VPU. The sequence for each is given separately.

LIUs

In an ADAS LIS, two (2) LIUs are always provided in an ADAS LIS in slot positions 18 and 20.

EIU

The EIU is always provisioned in the first ADAS LIM Cabinet in the topmost ADAS LIS in slot position 30.

APU

The order of APU provisioning is indicated by the prefix 'A', e.g. the fourth APU is indicated by 'A4'.

In general, APU order of provisioning follows the standard configuration sequence, i.e. starts at the topmost shelf at the outermost available slots at the left hand end of the LIS. The next APU is located at the outermost available slots at the right hand end of the LIS below. The third APU is located at the outermost available slots at the left hand end of the lowest LIS, in a LIM with three ADAS LIS. The fourth APU is placed in the topmost LIS in the outermost available slots at the right hand end of the LIS, and so on.

VPU

The order of VPU provisioning is indicated by the prefix 'V', e.g. the fourth VPU is indicated by 'V4'.

In general, VPU order of provisioning follows a non-standard configuration sequence, i.e. the sequence starts at the topmost shelf at the innermost available slots to the left of the NIU(s). The next VPU is located at the innermost available slots to the right of the NIUs below. The third VPU is located at the innermost available slots to the left of the lowest NIUs, in a LIM with three ADAS LIS. The fourth VPU is placed in the topmost LIS in the innermost available slots to the right of the LIUs, and so on.

NOTE:

The method of provisioning, detailed above, and in the following illustrative diagrams, differ from ADAS configuration rules issued prior to 4/21/95. This means that for extensions to ADAS

systems which were configured to the previously issued rules, the configurations given here may not conform. This can be overcome in one of two ways:

- * Reconfigure existing packs to conform to patterns given in the following diagrams.
- * Configure extension packs to conform as closely as possible to achieve an even spread of APU and VPU among the half LIS (shelves) used for the extension.

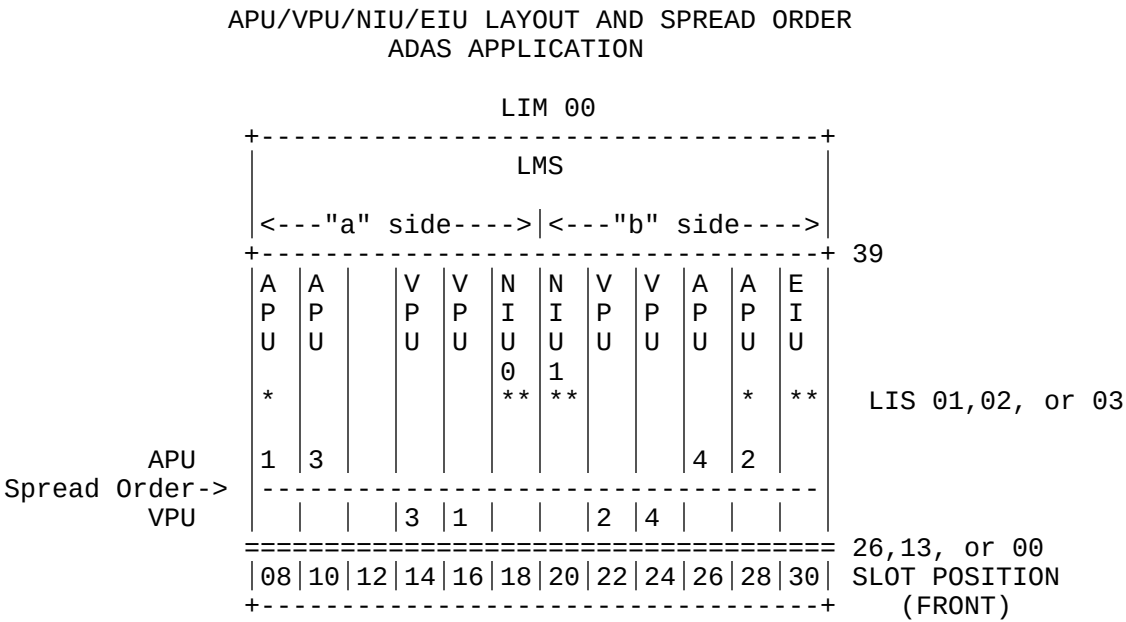
The aim the defined configuration patterns is to provide optimum protection for ADAS services in the event of a failure of common services like power supplies.

Extensions to ADAS systems initially configured according to the patterns defined in the following diagrams can be made in accordance with those patterns.

LIS's used for ADAS cannot be shared with other applications.

ADAS LIS(s) can share the same LPP (not the same LIS shelf) with other applications with the exception of PACKET HANDLER using XLIU's.

HARDWARE LAYOUT ADAS - First LIM with One ADAS LIS



1 LIM and 1 LIS for ADAS

* VPP-APU

** Always provision NIU 0 and 1 on each ADAS LIS
and 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS - First LIM with Two ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER ADAS APPLICATION LIM 00												
LMS												
<---"a" side--->						<---"b" side--->						
A	A	V	V	V	N	N	V	V	V	A	A	E
P	P	P	P	P	I	I	P	P	P	P	P	I
U	U	U	U	U	U	U	U	U	U	U	U	U
*					0	1						**
					**	**						
1	5									8	4	
APU Spread Order->												
VPU			9	5	1			4	8	12		
26 or 13												
A	A	V	V	V	N	N	V	V	V	V	A	A
P	P	P	P	P	I	I	P	P	P	P	P	P
U	U	U	U	U	U	U	U	U	U	U	U	U
					0	1						*
					**	**						
3	7										6	2
APU SPREAD ORDER->												
VPU			11	7	3			2	6	10		
13 or 00												
SLOT POSITION (FRONT)												
08	10	12	14	16	18	20	22	24	26	28	30	

1 LIM and 2 LIS for ADAS

2 LIS mount in sh pos 26 and 13 OR sh 13 and 00

* Always provision APU 1 and 2 for VPP-APU

** Always provision NIU on each ADAS LIS
and 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS - First LIM with Three ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
ADAS APPLICATION

LIM 00													
LMS													
<---"a" side--->						<---"b" side--->							
A	A	V	V	V	N	N	V	V	A	A	E		39
P	P	P	P	P	I	I	P	P	P	P	I		
U	U	U	U	U	U	U	U	U	U	U	U		
*					0	1					**		LIS 01
1	7				**	**			10	4			
APU Spread Order->													
VPU													
			13	7	1			4	10				26
A	A	V	V	V	N	N	V	V	V	A	A		
P	P	P	P	P	I	I	P	P	P	P	P		
U	U	U	U	U	U	U	U	U	U	U	U		
					0	1					*		LIS 02
5	11				**	**				8	2		
APU SPREAD ORDER->													
VPU													
			16	11	5			2	8	14			13
A	A	V	V	V	N	N	V	V	V		A		
P	P	P	P	P	I	I	P	P	P		P		
U	U	U	U	U	U	U	U	U	U		U		
					0	1							LIS 03
3	9				**	**					6		
APU Spread Order->													
VPU													
			15	9	3			6	12	17		6	00
08	10	12	14	16	18	20	22	24	26	28	30		SLOT POSITION (FRONT)

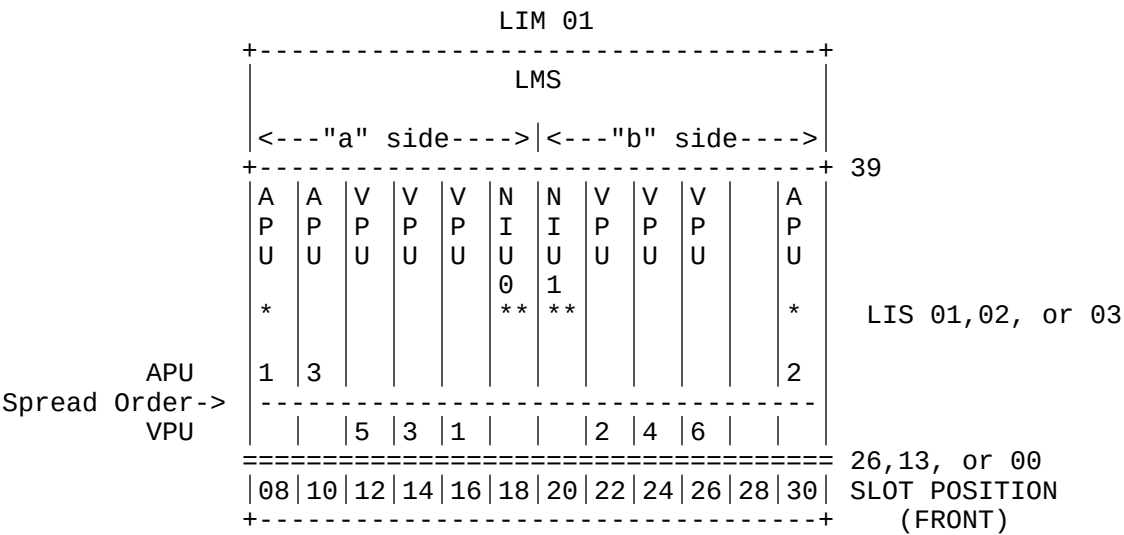
1 LIM and 3 LIS for ADAS

* Always provision APU 1 and 2 for VPP-APU

** Always provision NIU on each ADAS LIS
and 1 EIU on 1st ADAS LIS

HARDWARE LAYOUT ADAS - 1+N LIM with One ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

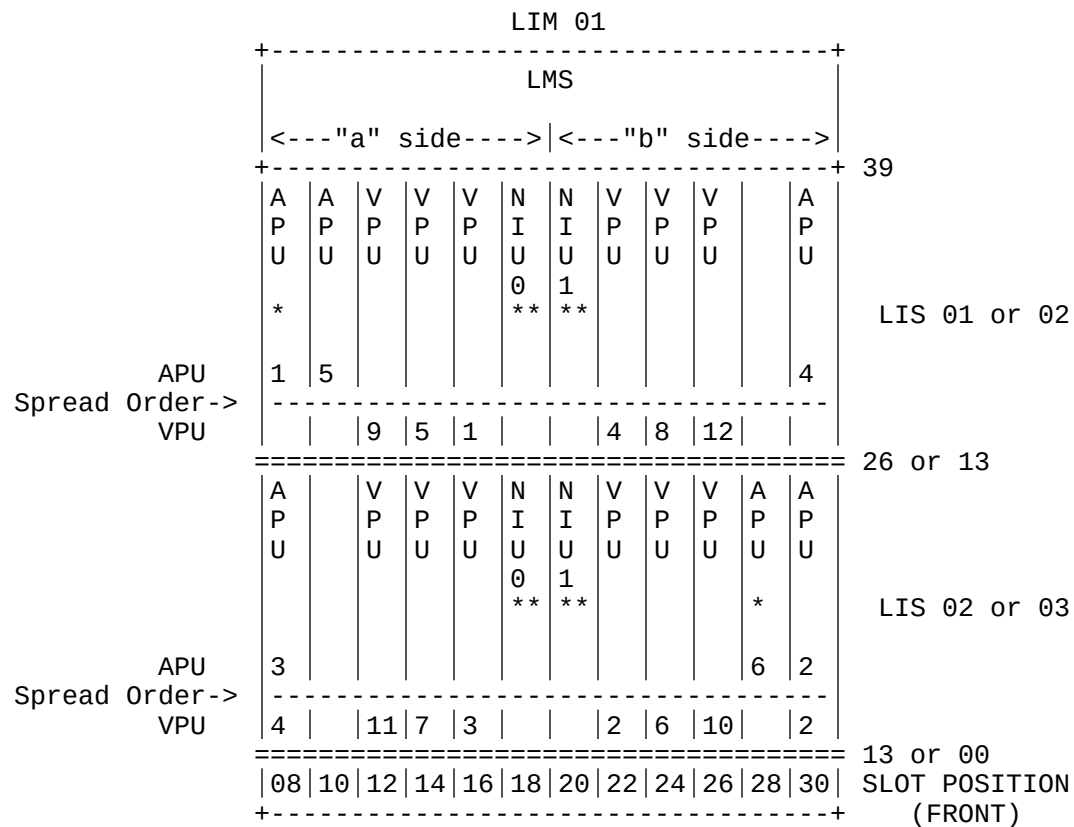


LIM (1+N) (N = 1 or 2) with 1 LIS for ADAS

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS - N+1 LIM with Two ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

LIM (1+N) (N = 1 or 2) with 2 LIS for ADAS

2 LIS mount in sh pos 26 and 13 OR sh 13 and 00

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

HARDWARE LAYOUT ADAS - 1+N LIM with Three ADAS LIS

APU/VPU/NIU/EIU LAYOUT AND SPREAD ORDER
1+N ADAS APPLICATION

LIM 01												
LMS												
<---"a" side--->						<---"b" side--->						
A	A	V	V	V	N	N	V	V	V		A	
P	P	P	P	P	I	I	P	P	P		P	
U	U	U	U	U	U	U	U	U	U		U	
*					0	1						
					**	**						
1	7										4	
APU Spread Order->												
VPU												
		1	13	7	1			4	10	16		
LIS 01												
39												
A		V	V	V	N	N	V	V	V	A	A	
P		P	P	P	I	I	P	P	P	P	P	
U		U	U	U	U	U	U	U	U	U	U	
					0	1					*	
					**	**						
5										8	2	
APU Spread Order->												
VPU												
		5		17	11	5			2	8	14	2
LIS 02												
26												
A	A	V	V	V	N	N	V	V	V		A	
P	P	P	P	P	I	I	P	P	P		P	
U	U	U	U	U	U	U	U	U	U		U	
					0	1						
					**	**						
3	9										6	
APU Spread Order->												
VPU												
			15	9	3			6	12	18		6
LIS 03												
13												
00												
SLOT POSITION (FRONT)												
08	10	12	14	16	18	20	22	24	26	28	30	

LIM (1+N) (N = 1 or 2) with 3 LIS for ADAS

* Always provision APU 1 and 2 for LPP-APU

** Always provision NIU on each ADAS LIS
(Only EIU is on 1st ADAS LIS)

- 6) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.
- 7) The Provisionable Frame fail lights NT0X24BT and P0674502 (in Brown) or NT0X24CN and P0699441 (in Grey) have been removed from this document. The new NT9X0105 Black LAMP Bezel will always be provided with the cabinet.

RULES:

- AP 1) When PEC NTZZ44GP 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 for the C42 (S/DMS) Cabinet.
- 3) AP-01: These PEC are always provided on the NT9X70BB and are shown herein for completeness.

- RUL1 1) For the LMS shelf, provide:

- two (2) NT9X13DB CPU 16 MHZ CPs,
- two (2) P0696239 Designation Labels (NT9X13DB), and
- two (2) NT9X14BB 6Meg Memory CPs.

The NT9X14DB will be retrofitted for the NT9X14BB in existing offices equipped with the NT9X14BB, if the BCS36 (or higher) software load is too large for the 6Meg NT9X14BB (except with the NT9X13DA). Offices with the NT9X13DA should preferably be updated with the "standalone" NT9X13DD instead of the (1+24) Meg combination described below. Note that the NT9X14BB is MD'd and it is replaced by the NT9X14DB.

- 2) FOR BCS36 THROUGH CSP02, PROVIDE:

- two (2) NT9X13DD CPU 16 MHZ CPs, and
- two (2) P0743628 Designation Labels (NT9X13DD).

The NT9X13DD includes 16MB of DRAM which is adequate for all applications.

3) FOR CSP03 AND ABOVE:

* 16 Meg memory is MANDATORY on all LMS loads.

This is achievable using the:

- a) NT9X13DD standalone CP, or
- b) NT9X13DB + NT9X14DB (1+24) Meg combination.

If the (1+24) Meg is required using the NT9X13DB combination, provide:

- two (2) NT9X14DB 24Meg Memory CPs, and
- two (2) P0700802 Designation Labels NT9X14DB.

The (1+24) Meg combination is not supported with the NT9X13DA. STP offices to be provisioned with fiberized links (large STPs requiring enhanced reliability under worst-case traffic and DOUBLE FAULT conditions) have, as Gating H/W, the NT9X13DD. These STPs should migrate immediately to the NT9X13DD to avoid future churn.

NOTE: The NT9X13DD cannot be used with the NT9X14BB (6 Meg) Memory CPs, nor with the NT9X14DB (24 Meg).

4) For each LMS shelf, provide when no NT9X14XX CP is provisioned (in other words, when NT9X13DD is provided):

- two (2) NT9X19AA Filler Faceplates,
- two (2) P0709515 Designation Labels NT9X19AA,
- two (2) NT9X19BA Filler Faceplates, and
- two (2) P0709516 Designation Labels NT9X19BA.

RUL2 1) Provide one (8) meg NTZZ30AM for each DS0A SS7 link required.

For all new applications, provide:

- For BCS34 and above,
- one (1) NTZZ30BM CCS7 8MEG LIU (E/HC-DS0A)

2) For European applications requiring E-DS0A SS7 Link, provide:

- For BCS34 and above,
- one (1) NTZZ30BM CCS7 8MEG LIU (E/HC-DS0A)

The NTZZ30CA is A&M status.

3) The NTZZ30BM is functional on both 56 and 64 Kb/s basis. If the office requires 64 KB/s then only NTZZ30BM can be used. Note that, BCS 34 is the minimum requirement for NTZZ30BM.

- 4) For applications requiring E-DS0A SS7 Links utilizing the Link Fault Sectionalization feature in STP02 (AR0518), provide NTZZ30TB.

- RUL3 1) When interfacing a V.35 signalling link, provide for each V.35 SS7 link:
- For BCS34 and above,
 - one (1) NTZZ30CM CCS7 8MEG LIU (V.35)
 - For offices requiring ISG compliance
 - one (1) NTZZ30CN CCS7 8MEG LIU (V.35) - ISG

The NTZZ30DA is in A&M status.

- RUL4 1) Provide one NTZZ30EC for each Ethernet interface required.

- RUL5 1) For BCS 34 and later, provide one NTZZ30LA for each Frame Relay Service T1 interface required. 2) When an existing office reaches BCS 34 and greater the NTZZ30FA must be upgraded to NTZZ30LA. The NTZZ99AK will be used to upgrade the NTZZ30FA to NTZZ30LA.

- RUL6 1) Provide one Filler Face Plate Kit for each ASU position not assigned to an application. The kit provides two Filler Face Plate and one Paddle Board.

- RUL7 1) Provide one for all British Offices.

- RUL8 1) Provide one FRIU, EIU, LIU cable routing label per the half when the FRIU, EIU, LIU is mounted in the half shelf as shown below (except LIUs with CBI, which do not require cables).

- 2) Provide one (1) sheet of NIU cable routing labels per shelf when NIU's(NTZZ30MA) are provisioned in that shelf.

Shelf	Slots	LIU/EIU Label	FRIU Label
26	31R-21R	P0735397	P0714414
26	19R-09R	P0714420	P0714415
13	31R-21R	P0735398	P0714416
13	19R-09R	P0714421	P0714417
00	31R-21R	P0735399	P0714418
00	19R-09R	P0714422	P0714419

- RUL9 1) Provide one NTZZ44MA Power Converter when the LPP Link Interface Shelves are powered for (-60V) and Dual Power Redundancy is not required.

(OR)

- 2) Provide one NTZZ44LA Power Converter when the LPP Link Interface Shelves are powered for (-48V/-60V) and Dual Power Redundancy is required.
- RUL10 1) Provide one (1) NT9X9532 Stand-Alone Cabling interface kit and one (1) P0736059, Filter Capacitor Designation Label Sheet, when powering the NT9X70BB 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 NT9X70BB. This kit includes power cables, terminal blocks and miscellaneous mounting hardware.(The Designation Label sheet contains enough labels to fully designate the filter capacitors for one cabinet).
- 2) Provide one (1) NT9X9531 Horizontal power cabling interface kit and one P0736058 Terminal Block Designation strip when powering the NT9X70BB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X70BB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL11 1) For BCS 36 and above provide two (2) NT9X7214 Power Interface Kits for field upgrades per Link Interface Shelf when Dual Power Redundancy is required.
- RUL12 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone offices.
- RUL13 1) Provide two (2) NT9X0171, LMS DS-30 X-Link Cable Assembly, per cabinet for NON-RAISED floor applications.
(OR)
- 2) Provide two (2) NT9X7025, LMS DS-30 X-Link Cable Assembly, per cabinet for RAISED floor applications.
- 3) Provide one NTZZ44HA Bulkhead and Cable Assembly for LPPs that are to be located in a non-Cabinetized DMS office.
(OR)
- 4) Provide one NTZZ44JA Bulkhead and Cable Assembly for LPPs that are to be located in a Cabinetized(Streamline) DMS office.
- RUL14 1) Provide one P0738554 Combined Label (9X76AA/EX22BB) when the NT9X76AA Signaling Terminal and the NTEX22BB Integrated Processor combination is provided for an LIU7.

- RUL15 1) Deleted.
- RUL16 1) Provide one End Guard Label 000-011 when NT9X70BB Cabinet is ordered. When the office is equipped with 13 or more NT9X70BB Cabinets provide one End Guard Label 012-023.
- RUL17 1) Deleted.
- RUL18 1) Provide mechanical hardware for the S/DMS Cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual Insert:
- NT9X95BA - Mechanical Hardware for S/DMS Cabinet
- RUL19 1) Reserved for future Use.
- RUL20 1) Provide one Bulkhead Connector Cover Plate for each unused connector position on the LIS shelf bulkheads. The number of cover plates required per LIS shelf is equal to:
- 32 - (#FRIUs on LIS shelf * 2
+ #NIUs on LIS shelf * 4
+ #LIUs on LIS shelf
+ #EIUs on LIS shelf)
- 2) Note that when using XLIU, APU and VPU, they do not require cables and therefore will require cover plates.
- RUL21 1) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of ten XLIUs).
- 2) Provide one NTZZ44DB when an LIU7 with Channel Bus Interface (CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44DB LIU7 CBI to function. Note that NTZZ44DA has been MD'd and replaced by NTZZ44DB.
- 3) Provide one NTZZ44EA when an LIU7 with Integrated Services User Part 48Kb/sec access with Channel Bus Interface (JAPAN ISUP with CBI) capability is required. The NTZZ30MA (NIU) must be provided on a LIS shelf for the NTZZ44EA LIU7 Japan ISUP with CBI to function.
- 4) Provide one NTZZ30MA for each LIS containing ADAS ASUs.
- RUL22 1) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required. Each DMS Switch can have a maximum of eleven (11) XLIUs, X.25/X.75 Link Interface Unit.

- RUL23 1) For ADAS applications, provide a minimum of two ADAS system APUs, NTZZ44AA, for each LPP used for mounting ADAS. Refer to Note (5) for configuration rules.
- 2) For ADAS applications in addition to the ADAS system APUs, NTZZ44AA, provided according to RUL23 (1), provide two (2) APUs per three (3) VPUs provided. Refer to RUL24 for VPU provisioning rules. Refer to Note (5) for configuration rules.
- RUL24 1) For ADAS applications, provide VPUs, NTZZ44BA, as required for expected ADAS call traffic. Refer to ECM 682 for method of VPU provisioning calculation. Refer to Note (5) for configuration rules.
- RUL25 1) For each EIU Interface, provide one Media Access Unit (MAU), HP28685B (CPC A0383333).

ISDN COMMON PERIPHERAL CONTROL MODULE

NTZZ17GA

RATING: Cancelled (Replaced by NTZZ17GB)

ABBREVIATION NAME: CPCI

ENGINEERING DESCRIPTION: The ISDN Common Peripheral Control Module contains the circuit packs and labels required to equip one module.

REFERENCE DOCUMENTATION: SLZZ17GA 00 03
NTZZ17GA REL 02

The ISDN Common Peripheral Control Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Strip for NT6X01AB	P0700420		2	X+14, X	1	AP-01
Common Peripheral Controller	NT6X02NA	CPCI	1	X		AP
XPM Processor CP	NT6X45BA		4	X+14, X	8,12	AP
Master Proc Memory Plus CP	NT6X47AB		4	X+14, X	9,10	AP
Signal Proc Memory Plus CP	NT6X46BA		2	X+14, X	11	AP
Filler Face Plate 0.875	NT0X50AA		10	X+14, X	13,17, 19,23, 24	AP-01
Time Switch CP	NT6X44AA		2	X+14, X	14	AP
Desig. Label for NT6X44AA	P0698316		2	X+14, X	14	AP
ISDN Pre-Processor CP	NTBX01AA		2	X+14, X	16	AP
CPP Msg Protocol & Tone CP	NT6X69AB		2	X+14, X	18	AP
Channel Supervision Mgs CP	NT6X42AA		2	X+14, X	20	AP-01
Speech Bus Formatter	NT6X41AA		2	X+14, X	21	AP-01
DS30 Network Interface CP	NT6X40AC		2	X+14, X	22	AP
Power Conv +/-5V & 12V CP	NT2X70AE		2	X+14, X	25	AP

RULES:

- AP 1) When PEC NTZZ17GA is ordered, these items are provided.
- AP-01 1) Items marked AP-01 are supplied with NT6X02NA and are listed for sparing purposes.

ISDN COMMON PERIPH CNTRL, XPM PLUS AND ADSI/SCWID

PEC CODE: NTZZ17GH

CPC CODE: B0241241

RATING: MD

REPLACES: None

REPLACED BY: NTZZ17GJ

ABBREVIATION NAME: CPCI

ENGINEERING DESCRIPTION: The NTZZ17GH contains the necessary circuit packfills for one ISDN XPM PLUS Line Trunk Controller or Line Group Controller module equipped to support the Analog Display Services Interface (ADSI) and Spontaneous Call Waiting ID (SCWID) features of BCS-36+.

REFERENCE DOCUMENTATION: SLZZ17GH 00 01

MARKETS: Applicable markets:

US
CALA

ISSUE AUTHOR: Darrell Deeds Dept. 3471 (PPK)

MAIN CONTACT: Darrell Deeds Dept. 3471 (PPK)

NTZZ17GH EMC2-18-CPC-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 07 31	ECM 373 28	Introduce the NTZZ17GH Building Block.
94 10 28	ECM 373 33	MD the NTZZ17GH Building Block.

The ISDN COMMON PERIPH CNTRL, XPM PLUS AND ADSI/SCWID is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPCE Common CP	NT6X02NA		1			AP
Filler Face Plate 0.875	NT0X50AA		4	X+14	8,9, 10,11	AP
Unified Processor CP	NTMX77AA		1	X+14	12	AP
Class Modem Resource CP	NT6X78AB		1	X+14	13	AP
Time Switch CP	NT6X44AA		1	X+14	14	AP
Universal Tone Receiver	NT6X92BB		1	X+14	15	AP
ISDN Pre-Processor	NTBX01AB		1	X+14	16	AP
CPP Msg Protocol & Tone CP	NT6X69AD		1	X+14	18	AP
XPM Plus Terminator PB	NTMX71AA		1	X+14	19R	AP
Insertion Guide	P0749586		1	X+14	19R	AP
Channel Supervision Mgs CP	NT6X42AA		1	X+14	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X+14	21	AP-01
Filler Face Plate 0.875	NT0X50AA		4	X+14	17,19, 23,24	AP-01
Power Conv +/-5 & 12V CP	NT2X70AE		1	X+14	25	AP
Filler Face Plate 0.875	NT0X50AA		4	X	8,9, 10,11	AP
Unified Processor CP	NTMX77AA		1	X	12	AP
Class Modem Resource CP	NT6X78AB		1	X	13	AP
Time Switch CP	NT6X44AA		1	X	14	AP
Universal Tone Receiver	NT6X92BB		1	X	15	AP
ISDN Pre-Processor	NTBX01AB		1	X	16	AP
CPP Msg Protocol & Tone CP	NT6X69AD		1	X	18	AP
XPM Plus Terminator PB	NTMX71AA		1	X	19R	AP
Insertion Guide	P0749586		1	X	19R	AP
Channel Supervision Mgs CP	NT6X42AA		1	X	20	AP-01
Speech Bus Formatter	NT6X41AA		1	X	21	AP-01
Filler Face Plate 0.875	NT0X50AA		4	X	17,19, 23,24	AP-01
Power Conv +/-5 & 12V CP	NT2X70AE		1	X	25	AP
Desig. Strip for NT6X02NA	P0700420		1	X+14		AP-01
Desig. Label for NTMX77AA	P0735417		1	X+14	12	AP
Desig. Label for NT6X78AB	P0731980		1	X+14	13	AP
Desig. Label For NT6X44AA	P0698316		1	X+14	14	AP
Desig. Label for NT6X92BB	P0690565		1	X+14	15	AP
Desig. Label for NTBX01AB	P0735418		1	X+14	16	AP
Desig. Label For NT6X69AD	P0800014		1	X+14	18	AP
Desig. Label For NT2X70AE	P0698943		1	X+14	25	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Strip for NT6X02NA	P0700420		1	X		AP-01
Desig. Label for NTMX77AA	P0735417		1	X	12	AP
Desig. Label for NT6X78AB	P0731980		1	X	13	AP
Desig. Label For NT6X44AA	P0698316		1	X	14	AP
Desig. Label for NT6X92BB	P0690565		1	X	15	AP
Desig. Label for NTBX01AB	P0735418		1	X	16	AP
Desig. Label For NT6X69AD	P0800014		1	X	18	AP
Desig. Label For NT2X70AE	P0698943		1	X	25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured 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.

RULES:

- AP 1) When PEC NTZZ17GH is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT6X02NA CPCI Common CP,
and is shown here for completeness.

ISDN COMM PERIPH CONTR EQUIP FRAME

PEC CODE: NTZZ17AA

CPC CODE: B0232019

| RATING: Manufacture Discontinued (MD). NT6X01AB
Rated A&M.

REPLACES: Not Applicable

REPLACED BY: NTZZ17LA

ABBREVIATION NAME: CPEI

ENGINEERING DESCRIPTION: The ISDN Common Peripheral Controller Equip-
ment Frame is a standard DMS frame which
houses two dual shelf Peripheral Controller
modules. Each module is housed in two adja-
cent shelves (ie. a pair of shelves on posi-
tions 65/51 and a pair of shelves on
position 32/18REFERENCE DOCUMENTATION: MS6X01AB 00 19
SLZZ17AA 00 04
NTZZ17AA REL 04

MARKETS: Applicable markets:

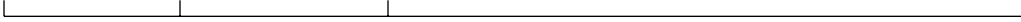
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Merdia Drummer Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Terwey Dept. 3471 (PPK)

NTZZ17AA EMC2-18-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 08 26	ECM 616 07	Re-release changes made via ECM 616 05
92 10 15	ECM 616 08	SMUI correction - changes maximum DS-1 Int. packs from 8 to 10 per SMUI
		EC 024-83370 - As a result of this EC, NTZZ02GB was introduced.
		ET 14009 - Clarify rules for application of NTZZ99AB PC Kit.
		ET 14779 - Remove rules regarding application of CMR on LGCI, LTCI.
		TMS correction - changes provisioning of DS-1 CPs
92 12 18	ECM 616 09	Release EMS For The PEC NTZZ17AA Which Was Previously Omitted From ECM-616 And The Engr. Manual.
		ECD 018-39307 The framework NT0X25AV is rated A&M and it is replaced by framework NT0X25AH.
93 02 25	ECM 673 01	Introduces the NTZZ17DA ISDN Common Peripheral Control Module to support Dialable Wideband Services.
93 04 15	ECM 616 10	EC01118087 - add NTZZ02FB Universal Tone Recv. - Add Enhanced D-Channel Hnadler (NTZZ17BB)
93 07 12	ECM 616 12	Add change kit for XPM+ for DTCI Incorporates the following: - ET 30783 Replace NTZZ02GB w/NTZZ02GA and NTZZ02HB w/NTZZ02HM. - EC 024-88946 incorporated the Univ. FXPM Brkt NT6X02UF and A&M the NT6X02BU bracket. This will result in NTZZ17KK being introduced. - MD NTZZ17AA to remove redundancy between NTZZ17AA and NTZZ17LA created when NT0X25AH replaced NT0X25AV. - Update RUL11 to require XPM Plus hardware and Software when BCS-34 is installed.
93 11 10	ECM 616 16	EC 011-17426 Change NT6X01AB Status to A&M



The ISDN Comm Periph Contr Equip Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN CPC Equipment Frame	NT6X01AB		1			AP
# Earthquake Framework	NT0X25AV		1			AP
Earthquake Framework	NT0X25AH		1			AP
# ISDN Comm Periph Cntrl Modul	NTZZ17GA	LGCI LTCT TMS DTCI		18,51		RUL1
ISDN Comm Periph Cntrl Modul	NTZZ17GB	LGCI LTCT TMS DTCI		18,51		RUL1
DTCI for DWS	NTZZ17DA	DTCI		18,51		RUL1
Digital Trunk Contr (DWS)	NTZZ04BB	DTC		18,51		RUL1
ISDN Cntrl Modul for DMS-1U	NTZZ03MA	SMUI		18,51		RUL1
CPC Filler Plate Kit	NT6X02AB			51		RUL1
ISDN Control'r Arry Shf Assy	NT6X0223	CPAI1	1	32,65		AP-02
ISDN Control'r Arry Shf Assy	NT6X0223	CPAI0	1	18,51		AP-02
# D-Channel Handler	NTZZ17BA			18,32, 51,65	1-5	RUL2
Enhanced D-Channel Handler	NTZZ17BB			18,32, 51,65	1-5	RUL2
DS-1 P-Side EFF Interface	NTZZ02DA			18,32 51,65	1-5	RUL3
DS30A LCM Interface	NTZZ02JA			18,51	6	RUL4
DS30A LCM Interface	NTZZ02KA			18,51	6,7	RUL4
Filler Face Plate 0.875	NT0X50AA			18,32, 51,65	1-7, 15	RUL5
CLASS Modem Resource	NTZZ02EA			18,51	13	RUL9
Universal Tone Receiver	NTZZ02FA			18,51	15	RUL6
Universal Tone Receiver	NTZZ02FB			18,51	15	RUL6
DS30 Network Interface CP	NTZZ02GA			18,51	22	RUL10
# DS30 NIF and Bracket	NTZZ02GB			18,51	22	RUL10
# DS512 Network Interface CP	NTZZ02HA			18,51	22	RUL10
# DS512 Network Interface CP	NTZZ02HB			18,51	22	RUL10
DS512 Network Interface CP	NTZZ02HM			18,51	22	RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Universal Connector Bracket	NTZZ17KK			18		RUL13
DTC Wiring Option	NT6X01WC			18,51		RUL12
Frame Supervisory Panel	NT0X28EB	FSP	1	45		AP-02
Cooling Inverter Unit	NT3X90AA	CU	1	04		AP-01
Cooling Inverter Unit	NT3X90AB	CU	1	04		AP-01
DC Cooling Inverter Unit	NT3X90AC	CU	1	04		AP
Logic Return Cable Assy	NT0X0009					RUL7
17GA to 17GB Change Kit	NTZZ99AB					RUL8
DWS Product Change Kit	NTZZ99AM					RUL8
XPM Plus ISDN Change Kit	NTZZ99AH					RUL11

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X25AV	MD	NT0X25AH
NTZZ17GA	MD	NTZZ17GB
NTZZ17BA	MD	NTZZ17BB
NTZZ02GB	MD	NTZZ17GA
NTZZ02HA	MD	NTZZ02HB
NTZZ02HB	MD	NTZZ02HM

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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) NTZZ17AA is a single bay frame which can be equipped with up to two (2) independent ISDN Common Peripheral Control (CPCI) modules.

- 2) One CPCI module is composed of two (2) shelves. Each CPCI can have up to two CPCIs. One CPCI module can be assigned to shelf mounting positions 65 and 51 (X=51) and the other to shelf mounting positions 32 and 18 (X=18). The two (2) bare shelf assemblies do not become a CPCI till they are equipped with one (1) CPCI Common CP. The shelf assembly becomes an ISDN Common Peripheral Array Shelf (CPAI) that can house up to twenty five (25) circuit packs. Within each CPCI, the lower CPAI is CPAI 0 and the upper CPAI is CPAI 1.
- 3) One of five functional names can be associated with a CPCI module: LGCI, LTCI, TMS, DTCI or SMUI. The function of the CPCI module is determined by the ISDN access modes (BRA, PRI) and types of existing services (non-ISDN LCM, trunks) to be supported by the module. The supported access modes, the resulting name given to the CPCI module, and the BCS availability of each function are as follows:

Access Modes Supported By CPCI Module**	Resulting Module Name	Abbrev.	BCS Availability
ISDN BRA, Non-ISDN LCM, DPN Access	ISDN Line Group Controller	LGCI	BCS-27
ISDN BRA, Non-ISDN LCM, DPN Access, Non-ISDN trunks	ISDN Line Trunk Controller	LTCI	BCS-28
ISDN PRI, Non-ISDN trunks	ISDN Digital Trunk Controller	DTCI	BCS-29
ISDN BRA, MBS Services	ISDN Subscr Module for DMS-1 Urban	SMUI	BCS-34

** - Non-ISDN Trunks employ A/B bit signalling.

- 4) CPCI modules of various types may be combined on frames where required. The frame name will be derived from the bottom module within the frame:

Bottom Module	Resulting Frame Name	Abbreviation
LGCI	ISDN Line Group Equipment	LGEI
LTCI	ISDN Line Trunk Equipment	LTEI
TMS	TOPS Message Switch	TMS
DTCI	ISDN Digital Trunk Equipment	DTEI
SMUI	ISDN Subscriber Module Equipment	SMEI

Job engineering shall specify stamping requirements for the frame as follows:

LGEI XX
LTEI XX
DTEI XX

SMEI XX

where XX represents frame discrimination number.

- 5) When a module is designated LGCI, LTCI, DTCI or SMUI the two shelves making up the module become LGAI, LTAI, DTAI or SMAI respectively.
- 6) The total current consumption of any shelf on the NTZZ17X1 frame is not to exceed 50 amps.

RULES:

- AP 1) When PEC NTZZ17AA is ordered, these items are provided.
- AP-01 1) The NT3X90AA/AB Cooling Units have been replaced by the NT3X90AC Cooling Unit.
- AP-02 1) Items marked AP-02 are supplied with NT6X01AB ISDN Common Peripheral Controller Equipment and are listed for sparing purposes.
- RUL1 1) Provide minimum one (1), maximum two (2) NTZZ04BB DTC Common Peripheral Control Modules per CPEI frame as required to support DWS applications; Provide minimum one (1), maximum two (2) NTZZ17DA ISDN Common Peripheral Control Modules per CPEI frame as required to support DWS applications; provide minimum one (1), maximum two (2) NTZZ17GB ISDN Common Peripheral Control Modules per CPEI frame as required to support non-DWS applications.
- 2) NTZZ99AB upgrades one NTZZ17GA to NTZZ17GB. Existing NTZZ17GA do not need to be replaced if no LCMEs are subtending the CPCI. IF there is a subtending LCME, NTZZ17GB is required.
- 3) Provide minimum one (1), maximum two (2) NTZZ03MA SMUI modules per CPEI frame as required.

Note: There may be some firmware changes required in the DMS-1U itself to support the host SMUI module. Check with the TRANSMISSIONS Customer Engineering when provision an SMUI interface for the DMS-1U.

- 4) If the second module is not equipped on the last CPEI frame, provide one (1) Common Peripheral Controller Module Filler Face Plate, NT6X02AB.

- RUL2 1) Provide maximum nine (9) D-Channel Handler CP either the NTZZ17BA/BB D-Channel Handler (DCH) CP or NTB02BA Enhanced D-Channel Handler CP, per CPCI module in accordance with customer requirements and the following conditions:

DCH TO EDCH Upgrade Strategy is as follows:

- * The Upgrade Strategy may consist of freezing the DCH load for 3 BCS before it is Manufacture Discontinued (forward compatibility) or of making the EDCH BCS gating meaning that no freeze load is required. We should use similar strategies which will be adopted by XPMPLUS project.
- * If one element of the switch is upgraded to a new BCS, all elements must be upgraded. The telco can only upgrade in no more than a 3 BCS jump.
- * During the BCS application, elements are upgraded from the pside elements to the CC. Thus, the upgrade is done in the following sequence: DCH, LCME, XPM, MS, CM. DCH must be backward compatible with up to 3 previous XPM and CC loads.
- * EDCH hardware can either run the DCH or the EDCH load starting in BCS35. This means that pre-BCS35 loads will not run on EDCH platform.
- * EDCH load can only return to service if the XPM is upgraded to UP-EISP.
- * Loading a NTZZ17BA/BB circuit pack with an EDCH load may fail. RTSing this DCH will fail.
- * Sparing from a NTB02BA circuit pack with an EDCH load to a NTZZ17BA/BB circuit pack is not permitted.
- * Sparing from a NTB02BA circuit pack with a DCH load to a NTZZ17BA/BB circuit pack is permitted.

- * Sparing from a DCH to an EDCH circuit pack is permitted.
- * Sparing from an EDCH to an EDCH circuit pack with the same load types is permitted.
- * Sparing from an EDCH to an EDCH circuit pack with the different load types is only permitted; if performing a spare from a DCH load to a EDCH load.
- * Sparing from a DCH to a DCH circuit pack is permitted.

Truth table showing different configurations:

Possible XPM Configurations				
MP/SP=0 UP = 1	ISP=0 EISP=1	BX02AA=0 BX02BA=1	DCH load=0 EDCH load=1	Not permitted = 0 Permitted = 1
0	0	0	0	1
0	0	0	1	0
0	0	1	0	1
0	0	1	1	0
0	1	0	0	1
0	1	0	1	0
0	1	1	0	1
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	0
1	1	1	0	1
1	1	1	1	1

NOTE: For the cases where the EDCH circuit pack can be loaded with the DCH load ... this will only apply to DCH loads created in BCS35 and on.

- A COLD SWACT of the XPM will be required if the active unit contains a UP/EISP/EDCH configuration, with an EDCH load in some the EDCHs, and the inactive unit has been configured with an MP/ISP or EISP processors. No code will prevent a warmswact between UP to the MP configuration. The CAP must reflect that EDCH load
- 2) Each NTZZ17BA/BB supports up to 124 BRI D-Channels. The spare DCH CP should not be counted when determining the

number of NTZZ17BA/BB required to support D-channel traffic.

- 3) Each NTZZ17BA/BB DCH, including the spare, requires one peripheral port on the CPCI module. Assign NTZZ17BA/BB cards to shelf and slot positions in the following order. The spare DCH should be assigned last:

			Shlf	CP	Assign
			Pos	Pos	To Logical Port Number
			-----	---	-----
1st	DCH/EDCH CP Provisioned:	X+14		1	19
2nd	DCH/EDCH CP Provisioned:	X		1	17
3rd	DCH/EDCH CP Provisioned:	X+14		2	15
4th	DCH/EDCH CP Provisioned:	X		2	13
5th	DCH/EDCH CP Provisioned:	X+14		3	11
6th	DCH/EDCH CP Provisioned:	X		3	09
7th	DCH/EDCH CP Provisioned:	X+14		4	07
8th	DCH/EDCH CP Provisioned:	X		4	05
9th	DCH/EDCH CP Provisioned:	X+14		5	03
10th	DCH/EDCH CP Provisioned:	X		5	01

For the lower module in the frame, X=18 (ie. shelf positions 18 and 32), and for the upper module in the frame X=51 (ie. shelf positions 51 and 65).

- 4) DCH/EDCH CP are not required for DTCI (PRI) applications, nor where the CPCI supports only non-ISDN LCMs.
- 5) For TOPS Message Switch applications, provide four (4) DCH/EDCH CP in card slots 1 & 2 of shelf X & shelf X+14.

- RUL3 1) Provide maximum ten (10) NTZZ02DA, DS-1 P-Side Extended Frame Format Interface, per LGCI, LTCI, DTCI, and DTC module as per customer requirements.
- 2) Provide maximum ten (10) NTZZ02DA, DS-1 P-Side Extended Frame Format Interface, per SMUI module as per customer requirements.
- 3) Each NTZZ02DA provides interfaces for up to two (2) T-1 spans used for links to RSC/RLCM/OPM/Convertible RLCM, DMS-1 Urban, links to packet handler, non-ISDN trunks and PRI trunks (depending on module type). The following table is a listing of DS-1 ports per NTZZ02DA circuit pack location:

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

For the lower module in the frame, X=18 (ie. shelf positions 18 and 32), and for the upper module in the frame X=51 (ie. shelf positions 51 and 65).

The DS1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS1 port number equals the circuit number. For PRI applications, spreading of PRI trunk members over several peripherals is not allowed. All members must be on the same DTCI.

- 4) Assign the NTZZ02DA blocks in the shelves such that the DS-1 ports (circuits) start from port 0 and increase in a sequential order (i.e. 0, 1; 2, 3; 4, 5; 6, 7; 8, 9; 10, 11; 12, 13; 14, 15; 16, 17; 18 and 19). Note that each NTZZ17BA assigned to a shelf position in RUL2 physically makes two (2) DS-1 ports unavailable as per the above table. These ports cannot be assigned to NTZZ02DA.
- 5) Non-ISDN trunks can co-exist with PRI trunks on the same physical DS-1.
- 6) For TOPS Message Switch applications, assign NTZZ02DA as follows,
 - Up to 64 operator positions, provide NTZZ02DA in slot 5 of shelf X and shelf X+14.
 - Up to 96 operator positions, provide NTZZ02DA in slots 4 & 5 of shelf X and slot 5 of shelf X+14.
 - For Database access (CCI DA, CGI ORDB, IBM DA without MPX) provide NTZZ02DA in slot 3 of shelf X and slot 4 of shelf X+14.
 - If ORDB is used AND more than 64 operators, provide an additional NTZZ02DA in slot 3 of shelf X+14.

- RUL4 1) For LGCI/LTCI applications, provide one (1) NTZZ02JA (U.S. offices only) or two (2) NTZZ02KA (Canadian offices only) DS30A LCM Interface to interface links from LCMI and/or LCM. For DTCI applications provide four (4) NT0X50AA

Filler Face Plates. The NTZZ03MA building block for SMUI already contains four NT0X50AA filler face plates.

- 2) The NTZZ02JA (or pair of NTZZ02KAs) provides interfaces for up to twenty (20) DS30A ports (links) from LCMIs and/or LCMS. The following is a listing of DS30A ports per DS30A LCM Interface CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 3) The ports for DS30A must be selected from the those ports that remain after assignment of port circuits to DCH in RUL2 and to DS-1 circuits in RUL3.
- 4) Assign ports to DS30A in the following sequence: 19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, 1, 2 and 0 (if unused by DCH or DS-1). In an extension job, when adding new DCH ports (RUL2), the DS30A ports may have to be reconfigured in accordance with this rule.

RUL5 1) Provide one (1) Filler Face Plate 0.875 for each card position that is unequipped.

RUL6 1) Provision one NTZZ02FA/FB Universal Tone Receiver for applications in BCS-28 or later when analog (POTS) lines are to be supported on the CPCI (LGCI, LTCI), and whenever non-ISDN trunks (A/B bit signalling) are interfaced to the DTCI (BCS-29). At BCS 35 and above one pair of UTRs will be support on SMUI modules.

Check availibilty of the NTZZ02FB before ordering.

RUL7 1) Provide one (1) NT0X0009 Logic Return Cable Assembly per frame when extending existing offices not equipped with enhanced grounding per IS0X00.

- 2) For U.S. offices, this frame does not require the provisionable cable assembly when extending a non-ISG office with current grounding methods. Instead a provisionable switchboard cable is run from the NT0X9504 bus bar assembly in each frame to the PDC battery return plate. (Refer to CA drawings for details.)
- RUL8 1) NTZZ99AB upgrades one NTZZ17GA to NTZZ17GB. Existing NTZZ17GA do not need to be replaced if no LCMEs are subtending the CPCI. IF there is a subtending LCME, NTZZ17GB is required.
- 2) NTZZ99AM upgrades one NTZZ17GB to NTZZ17DA. The NTZZ99AM removes the NT6X44AA Time Switch CP and replaces the packs with the NTAX78AA Enhanced Time Switch CP as well as replacing the designation labels.
- RUL9 1) Provide one (1) NTZZ02EA to support Calling Number Delivery on an SMUI module only. The CLASS Modem Resource (CMR) CPs mount in slot 13 of each shelf.
- RUL10 1) Provide one (1) NTZZ02GA, DS30 Network Interface, for each CPCI module (LGCI, LTCI, DTCI, DTC, SMUI) requiring DS-30 interface to the Network.
- 2) Provide one (1) NTZZ02HM (DS512 Network Interface) for each LGCI, LTCI, DTCI, DTC and SMUI module requiring DS-512 interface to the Enhanced Network (ENET).
- 3) When assigning ports at the network it is recommended that CPCI ports be spread separately from other peripheral controller ports (eg. LGC, LTC, DTC, IAC).
- RUL11 1) Provide one NTZZ99AH XPM Plus ISDN Change Kit for each NTZZ17GA or NTZZ17GB ISDN Common Peripheral Controller module to be changed to an XPM Plus ISDN Common Peripheral Controller module. This kit is required on the LGCI/LTCI/DTCI or DMS-250 DTCI at BCS 34 and later equipped offices.
- RUL12 1) Provide one (1) NT6X01WC Wiring Option Kit for each NT6X01AB when upgrading the NT6X01AB for DWS applications. This option enables a wire strap to be added to the backpanel slots XX-12 between pins 7A and 8A to allow for modules used for non-ISDN applications. The kit includes a jumper wire which is installed on the backpanel and is required to support Dialable Wideband Services.

- RUL13 1) The Universal Connector Bracket is always required on all new jobs and extensions where a module must be added to an extension. This connector bracket is required for either copper or fiber connections to the ENET/JNET.

ISDN CPCE FRAME (US NON EARTHQUAKE)

PEC CODE: NTZZ17KA

CPC CODE: B0232884

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ17AT

ABBREVIATION NAME: CPEI

ENGINEERING DESCRIPTION: The ISDN Common Peripheral Controller Equipment Frame is a standard DMS frame which houses two dual shelf Peripheral Controller modules. Each module is housed in two adjacent shelves (ie. a pair of shelves on positions 65 and 51 and a pair of shelves on position 32 and 18). This Building Block contains the NT0X25AA common framework and is for applications in the United States.

REFERENCE DOCUMENTATION: MS6X01AB 00 21
SLZZ17KA 00 01
NTZZ17KA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: David Terwey Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Terwey Dept. 3471 (PPK)

NTZZ17KA EMC2-18-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 08 26	ECM 616 07	Re-release changes made via ECM 616 05
92 10 15	ECM 616 08	SMUI correction - changes maximum DS-1 Int. packs from 8 to 10 per SMUI
		EC 024-83370 - As a result of this EC, NTZZ02GB was introduced.
		ET 14009 - Clarify rules for application of NTZZ99AB PC Kit.
		ET 14779 - Remove rules regarding application of CMR on LGCI, LTCI.
		TMS correction - changes provisioning of DS-1 CPs
93 02 25	ECM 673 01	Introduction of the NTZZ17DA ISDN Common Peripheral Control Module to support Dialable Wideband Services.
93 04 15	ECM 616 10	EC01118087 - add NTZZ02FB Universal Tone Recv.
		- Add Enhanced D-Channel Handler (NTZZ17BB)
93 07 12	ECM 616 12	Incorporates the following: - ET 30783 Replace NTZZ02GB w/NTZZ02GA and NTZZ02HB w/NTZZ02HM via RUL10. - EC 024-88946 incorporated the Univ. FXPM Brkt NT6X02UF and A&M the NT6X02BU bracket. This will result in NTZZ17KK being introduced. - Update RUL11 to require XPM Plus hardware and Software when BCS-34 is installed.
93 09 27	ECM 616 15	EC 011-17725 Add SMUI to list of field upgradeabl modules for XPM Plus.
93 10 15	ECM 687 01	Introduce the NTZZ99AQ DTC XPM Plus Upgrade Kit for DTC on the NT6X01AB.
93 11 10	ECM 616 16	EC 011-17426 Change Rating of NT6X01AB from STD to A&M.
93 12 06	ECM 616 17	Update NT0X50AA provisinoing to add slot 13
		MD NTZZ99AH and replace it with NT6X02XA and NTBX01AB
94 04 14	ECM 616 20	MD this BB code.

The ISDN CPCE Frame (US Non Earthquake) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN CPC Equipment Frame	NT6X01AB		1			AP
Common Framework	NT0X25AA		1			AP
# ISDN Comm Periph Cntrl Modul	NTZZ17GA	LGCI LTCI TMS DTCI		18,51		RUL1
ISDN Comm Periph Cntrl Modul	NTZZ17GB	LGCI LTCI TMS DTCI		18,51		RUL1
DTCI for DWS	NTZZ17DA	DTCI		18,51		RUL1
Digital Trunk Cntrl (DWS)	NTZZ04BB	DTC		18,51		RUL1
ISDN Cntrl Modul for DMS-1U	NTZZ03MA	SMUI		18,51		RUL1
CPC Filler Plate Kit	NT6X02AB			51		RUL1
ISDN Control'r Arry Shf Assy	NT6X0223	CPAI1	1	32,65		AP-02
ISDN Control'r Arry Shf Assy	NT6X0223	CPAI0	1	18,51		AP-02
D-Channel Handler	NTZZ17BA			18,32, 51,65	1-5	RUL2
Enhanced D-Channel Handler	NTZZ17BB			18,32, 51,65	1-5	RUL2
DS-1 P-Side EFF Interface	NTZZ02DA			18,32, 51,65	1-5	RUL3
# DS30A LCM Interface	NTZZ02JA			18,51	6	RUL4
DS30A LCM Interface	NTZZ02KA			18,51	6,7	RUL4
Filler Face Plate 0.875	NT0X50AA			18,32, 51,65	1-7, 15,13	RUL5
CLASS Modem Resource	NTZZ97AA			18,51	13	RUL9
Universal Tone Receiver	NTZZ02FA			18,51	15	RUL6
Universal Tone Receiver	NTZZ02FB			18,51	15	RUL6

Retired Equipment
ISDN CPCE Frame (US Non Earthquake)

NTZZ17KA
EMC2-18-001
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Network Interface CP	NTZZ02GA			18,51	22	RUL10
# DS30 NIF and Bracket	NTZZ02GB			18,51	22	RUL10
# DS512 Network Interface CP	NTZZ02HA			18,51	22	RUL10
# DS512 Network Interface CP	NTZZ02HB			18,51	22	RUL10
DS512 Network Interface CP	NTZZ02HM			18,51	22	RUL10
Universal Connector Kit	NTZZ17KK			18		RUL13
DTC Wiring Option	NT6X01WC			18,51	22	RUL12
Frame Supervisory Panel	NT0X28EB	FSP	1	45		AP-02
# Cooling Inverter Unit	NT3X90AA	CU	1	04		AP-01
# Cooling Inverter Unit	NT3X90AB	CU	1	04		AP-01
DC Cooling Inverter Unit	NT3X90AC	CU	1	04		AP
Logic Return Cable Assy	NT0X0009					RUL7
17GA to 17GB Change Kit	NTZZ99AB					RUL8
# XPM Plus ISDN Change Kit	NTZZ99AH					RUL11
# Enh. ISDN Pre-Proc. CP	NTBX01AB					RUL11
XPM Plus ISDN Change Kit	NT6X02XA					RUL11
DWS Product Change Kit	NTZZ99AM					RUL8
XPM Plus DTC Change Kit	NTZZ99AQ					RUL14

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT3X90AA	MD	NT3X90AB
NT3X90AB	MD	NT3X90AC
NTZZ17GA	MD	NTZZ17GB
NTZZ02GB	MD	NTZZ02GA
NTZZ02HA	MD	NTZZ02HB
NTZZ02HB	MD	NTZZ02HM
NTZZ99AH	MD	NT6X02XA
NTZZ02JA	MD	NTZZ02KA

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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) NTZZ17KA is a single bay frame which can be equipped with up to two (2) independent ISDN Common Peripheral Control (CPCI) modules.
- 2) One CPCI module is composed of two (2) shelves. Each CPEI can have up to two CPCIs. One CPCI module can be assigned to shelf mounting positions 65 and 51 (X=51) and the other to shelf mounting positions 32 and 18 (X=18). The two (2) bare shelf assemblies do not become a CPCI till they are equipped with one (1) CPCI Common CP. The shelf assembly becomes an ISDN Common Peripheral Array Shelf (CPAI) that can house up to twenty five (25) circuit packs. Within each CPCI, the lower CPAI is CPAI 0 and the upper CPAI is CPAI 1.
- 3) One of five functional names can be associated with a CPCI module: LGCI, LTCI, TMS, DTCI or SMUI. The function of the CPCI module is determined by the ISDN access modes (BRA, PRI) and types of existing services (non-ISDN LCM, trunks) to be supported by the module. The supported access modes, the resulting name given to the CPCI module, and the BCS availability of each function are as follows:

Access Modes Supported By CPCI Module**	Resulting Module Name	Abbrev.	BCS Availability
ISDN BRA, Non-ISDN LCM, DPN Access	ISDN Line Group Controller	LGCI	BCS-27
ISDN BRA, Non-ISDN LCM, DPN Access, Non-ISDN trunks	ISDN Line Trunk Controller	LTCI	BCS-28
ISDN PRI, Non-ISDN trunks	ISDN Digital Trunk Controller	DTCI	BCS-29
ISDN BRA, MBS Services	ISDN Subscr Module for DMS-1 Urban	SMUI	BCS-34

** - Non-ISDN Trunks employ A/B bit signalling.

- 4) CPCI modules of various types may be combined on frames where required. The frame name will be derived from the bottom module within the frame:

Bottom Module	Resulting Frame Name	Abbreviation
LGCI	ISDN Line Group Equipment	LGEI
LTCI	ISDN Line Trunk Equipment	LTEI
TMS	TOPS Message Switch	TMS
DTCI	ISDN Digital Trunk Equipment	DTEI
SMUI	ISDN Subscriber Module Equipment	SMEI

Job engineering shall specify stamping requirements for the frame as follows:

LGEI XX
LTEI XX
DTEI XX
SMEI XX

where XX represents frame discrimination number.

- 5) When a module is designated LGCI, LTCI, DTCI or SMUI the two shelves making up the module become LGAI, LTAI, DTAI or SMAI respectively.
- 6) The total current consumption of any shelf on the NTZZ17X2 frame is not to exceed 50 amps.

RULES:

- AP 1) When PEC NTZZ17KA is ordered, these items are provided.
- AP-01 1) The NT3X90AA/AB Cooling Units have been replaced by the NT3X90AC Cooling Unit.
- AP-02 1) Items marked AP-02 are supplied with NT6X01AB ISDN Common Peripheral Controller Equipment and are listed for sparing purposes.
- RUL1 1) Provide minimum one (1), maximum two (2) NTZZ04BB DTC Common Peripheral Control Modules per CPEI frame as required to support DWS applications; Provide minimum one (1), maximum two (2) NTZZ17DA ISDN Common Peripheral Control Modules per CPEI frame as required to support DWS applications; provide minimum one (1), maximum two (2) NTZZ17GB ISDN Common Peripheral Control Modules per CPEI frame as required to support non-DWS applications.
- 2) NTZZ99AB upgrades one NTZZ17GA to NTZZ17GB. Existing NTZZ17GA do not need to be replaced if no LCMEs are subtending the CPCI. IF there is a subtending LCME, NTZZ17GB is required. The NTZZ99AM upgrades one NTZZ17GB to NTZZ17DA.
- 3) Provide minimum one (1), maximum two (2) NTZZ03MA SMUI modules per CPEI frame as required.

Note: There may be some firmware changes required in the DMS-1U itself to support the host SMUI module. Check with the TRANSMISSIONS Customer Engineering when provision an SMUI interface for the DMS-1U.

- 4) If the second module is not equipped on the last CPEI frame, provide one (1) Common Peripheral Controller Module Filler Face Plate, NT6X02AB.

RUL2 1) Provide maximum nine (9) D-Channel Handler CP either the NTZZ17BA/BB D-Channel Handler (DCH) CP or NTB02BA Enhanced D-Channel Handler CP, per CPCI module in accordance with customer requirements and the following conditions:

- * EDCH hardware requires BCS 35
- * EDCH load requires the Unified Processor (XPM+) and the Enhanced ISDN Signaling Preprocessor (EISP).
- * A DCH may be spared with an EDCH circuit pack at BCS35 and above.

- 2) Each NTZZ17BA/BB supports up to 124 BRI D-Channels. The spare DCH CP should not be counted when determining the number of NTZZ17BA/BB required to support D-channel traffic.

- 3) Each NTZZ17BA/BB DCH, including the spare, requires one peripheral port on the CPCI module. Assign NTZZ17BA/BB cards to shelf and slot positions in the following order. The spare DCH should be assigned last:

		Shlf	CP	Assign
		Pos	Pos	To Logical Port Number
		-----	---	-----
1st	DCH/EDCH CP Provisioned:	X+14	1	19
2nd	DCH/EDCH CP Provisioned:	X	1	17
3rd	DCH/EDCH CP Provisioned:	X+14	2	15
4th	DCH/EDCH CP Provisioned:	X	2	13
5th	DCH/EDCH CP Provisioned:	X+14	3	11
6th	DCH/EDCH CP Provisioned:	X	3	09
7th	DCH/EDCH CP Provisioned:	X+14	4	07
8th	DCH/EDCH CP Provisioned:	X	4	05
9th	DCH/EDCH CP Provisioned:	X+14	5	03
10th	DCH/EDCH CP Provisioned:	X	5	01

Note: One vacant slot may be left between DCH/EDCH CPs and DS-1 CPs to facilitate extensions.

For the lower module in the frame, X=18 (ie. shelf positions 18 and 32), and for the upper module in the frame X=51 (ie. shelf positions 51 and 65).

- 4) DCH/EDCH CP are not required for DTCI (PRI) applications, nor where the CPCI supports only non-ISDN LCMs.
 - 5) For TOPS Message Switch applications, provide four (4) DCH CP in card slots 1 & 2 of shelf X & shelf X+14.
- RUL3
- 1) Provide maximum ten (10) NTZZ02DA, DS-1 P-Side Extended Frame Format Interface, per LGCI, LTCI, DTCI and DTC module as per customer requirements.
 - 2) Provide maximum ten (10) NTZZ02DA, DS-1 P-Side Extended Frame Format Interface, per SMUI module as per customer requirements.
 - 3) Each NTZZ02DA provides interfaces for up to two (2) T-1 spans used for links to RSC/RLCM/OPM/Convertible RLCM, DMS-1 Urban, links to packet handler, non-ISDN trunks and PRI trunks (depending on module type). The following table is a listing of DS-1 ports per NTZZ02DA circuit pack location:

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

For the lower module in the frame, X=18 (ie. shelf positions 18 and 32), and for the upper module in the frame X=51 (ie. shelf positions 51 and 65).

The DS1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS1 port number equals the circuit number. For PRI applications, spreading of PRI trunk members over several peripherals is not allowed. All members must be on the same DTCI.

- 4) Assign the NTZZ02DA blocks in the shelves such that the DS-1 ports (circuits) start from port 0 and increase in a sequential order (i.e. 0, 1; 2, 3; 4, 5; 6, 7; 8, 9; 10, 11; 12, 13; 14, 15; 16, 17; 18 and 19). Note that each NTZZ17BA assigned to a shelf position in RUL2 physically makes two (2) DS-1 ports unavailable as per the above table. These ports cannot be assigned to NTZZ02DA.
 - 5) Non-ISDN trunks can co-exist with PRI trunks on the same physical DS-1.
 - 6) For TOPS Message Switch applications, assign NTZZ02DA as follows,
 - Up to 64 operator positions, provide NTZZ02DA in slot 5 of shelf X and shelf X+14.
 - Up to 96 operator positions, provide NTZZ02DA in slots 4 & 5 of shelf X and slot 5 of shelf X+14.
 - For Database access (CCI DA, CGI ORDB, IBM DA without MPX) provide NTZZ02DA in slot 3 of shelf X and slot 4 of shelf X+14.
 - If ORDB is used AND more than 64 operators, provide an additional NTZZ02DA in slot 3 of shelf X+14.
- RUL4
- 1) For LGCI/LTCI applications, provide one (1) NTZZ02KA to support up to ten DS-30A ports or two NTZZ02KA to support between eleven and twenty DS-30A ports to interface links from LCME/LCE. For DTCI applications provide four (4) NT0X50AA Filler Face Plates. The NTZZ03MA building block for SMUI already contains four NT0X50AA filler face plates.
 - 2) The following is a listing of DS30A ports per DS30A LCM Interface CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 3) The ports for DS30A must be selected from those ports that remain after assignment of port circuits to DCH in RUL2 and to DS-1 circuits in RUL3.
- 4) Assign ports to DS30A in the following sequence: 19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, 1, 2 and 0 (if unused by DCH or DS-1). In an extension job, when adding new DCH ports (RUL2), the DS30A ports may have to be reconfigured in accordance with this rule.

RUL5 1) Provide one (1) Filler Face Plate 0.875 for each card position that is unequipped.

RUL6 1) Provision one NTZZ02FA/FB Universal Tone Receiver for applications in BCS-28 or later when analog (POTS) lines are to be supported on the CPCI (LGCI, LTCI), and whenever non-ISDN trunks (A/B bit signalling) are interfaced to the DTCI (BCS-29). At BCS 35 and above one pair of UTRs will be support on SMUI modules.

Check availibilty of the NTZZ02FB before ordering.

RUL7 1) Provide one (1) NT0X0009 Logic Return Cable Assembly per frame when extending existing offices not equipped with enhanced grounding per IS0X00.

- 2) For U.S. offices, this frame does not require the provisionable cable assembly when extending a non-ISG office with current grounding methods. Instead a provisionable switchboard cable is run from the NT0X9504 bus bar assembly in each frame to the PDC battery return plate. (Refer to CA drawings for details.)
- RUL8) 1) NTZZ99AB upgrades one NTZZ17GA to NTZZ17GB. Existing NTZZ17GA do not need to be replaced if no LCMEs are subtending the CPCI. IF there is a subtending LCME, NTZZ17GB is required.
- 2) NTZZ99AM upgrades one NTZZ17GB to NTZZ17DA. The NTZZ99AM removes the NT6X44AA Time Switch CP and replaces the packs with the NTAX78AA Enhanced Time Switch CP as well as replacing the designation labels.
- RUL9 1) Provide one (1) NTZZ97AA to support Calling Number Delivery on an SMUI module only. The CLASS Modem Resource (CMR) CPs mount in slot 13 of each shelf.
- RUL10 1) Provide one (1) NTZZ02GA, DS30 Network Interface, for each CPCI module (LGCI, LTCI, DTCI, DTC, SMUI) requiring DS-30 interface to the Network.
- 2) Provide one (1) NTZZ02HM, DS512 Network Interface, for each LGCI, LTCI, DTCI, DTC and SMUI module requiring DS-512 interface to the Enhanced Network (E-NET). Check availability dates prior to provisioning the NTZZ02HM version. NTZZ02HM replaces NTZZ02HB.
- 3) When assigning ports at the network it is recommended that CPCI ports be spread separately from other peripheral controller ports (eg. LGC, LTC, DTC, IAC).
- RUL11 1) Provide one NT6X02XA XPM Plus ISDN Change Kit for each NTZZ17GA or NTZZ17GB ISDN Common Peripheral Controller module to be changed to an XPM Plus ISDN Common Peripheral Controller module. The kit can be applied to office at BCS 34 and later for LGCI, LTCI or DMS250 DTCI's. The kit can be applied to DTCI's at BCS35 and later. When applying the NT6X02XA kit to LGCI/LTCI/DTCI's the NTB01AA's must be changed to NTB01AB's
- 2) The SMUI may be upgraded to XPM Plus at BCS36 with the application of the NT6X02XA upgrade kit.
- RUL12 1) Provide one (1) NT6X01WC Wiring Option Kit for each NT6X01AB when upgrading the NT6X01AB for DWS applications.

This option enables a wire strap to be added to the back-panel slots XX-12 between pins 7A and 8A to allow for modules used for non-ISDN applications. The kit includes a jumper wire which is installed on the backpanel and is required to support Dialable Wideband Services.

- RUL13 1) The Universal Connector Bracket is always required on all new jobs and extensions where a module must be added to an extension. This connector bracket is required for either copper or fiber connections to the ENET/JNET.
- RUL14 1) Provide one NTZZ99AQ XPM Plus DTC Change Kit for each NTZZ04BB Common Peripheral Controller Module to be changed to an XPM Plus Common Peripheral Controller Module.

ISDN COMM PERIPH CONTR EQUIP FRAME
U.S. EARTHQUAKE AND CANADIAN OFFICES

PEC CODE: NTZZ17LA

CPC CODE: B0234169

RATING: A&M

REPLACES: NTZZ17AA

REPLACED BY: NTZZ17AT

ABBREVIATION NAME: CPEI

ENGINEERING DESCRIPTION: The ISDN Common Peripheral Controller Equipment Frame is a standard DMS frame which houses two dual shelf Peripheral Controller modules. Each module is housed in two adjacent shelves (ie. a pair of shelves on positions 65 and 51 and a pair of shelves on position 32 and 18). This Building Block contains the NT0X25AH earthquake framework and is for applications in the United States.

| REFERENCE DOCUMENTATION: MS6X01AB 00 28
SLZZ17LA 00 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: Darrell Deeds Dept. 3471 (PPK)

MAIN CONTACT: Steve Martin Dept. 3471 (PPK)

NTZZ17LA EMC2-18-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 08 26	ECM 616 07	Re-release changes made via ECM 616 05
92 10 15	ECM 616 08	SMUI correction - changes maximum DS-1 Int. packs from 8 to 10 per SMUI EC 024-83370 - As a result of this EC, NTZZ02GB was introduced. ET 14779 - Remove rules regarding application of CMR on LGCI, LTCI. TMS correction - changes provisioning of DS-1 CPs
93 02 25	ECM 673 01	Introduction of the NTZZ17DA ISDN Common Peripheral Control Module to support Dialable Wideband Services.
93 04 15	ECM 616 10	EC01118087 - add NTZZ02FB Universal Tone Recv. - Add Enhanced D-Channel Hnadler (NTZZ17BB) Add change kit for XPM+ for DTCI
93 07 12	ECM 616 12	-ET30783 Replace NTZZ02GB w/ NTZZ02GA and NTZZ02HB w/NTZZ02HM. -EC024-88946 incorporated the Universal FXPM bracket NT6X02UF and A&M the NT6X02BU bracket. This will result in NTZZ17KK being introduced.
93 09 27	ECM 616 15	EC 011-17725 Add SMUI to list of field upgradeabl modules for XPM PLUS.
93 10 15	ECM 687 01	Introduce the NTZZ99AQ DTC XPM PLUS Upgrade Kit for DTC on the NT6X01AB.
93 11 10	ECM 616 16	EC 011-17426 Change Rating Of NT6X01AB From STD to A&M
93 12 06	ECM 616 17	Update NT0X50AA provisioning to add slot 13

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
		MD NTZZ99AH and replace it with NT6X02XA and NTB01AB
94 04 14	ECM 616 20	Show the replaced by NTZZ17AT
94 04 21	ECM 520 01	EC 011-20115 Add NT6X50EC for integrated echo cancellation.
94 05 02	ECM 616 21	- Allow XPM+ modules to mount on NT6X01AB. - Retire NTZZ17LA
95 03 02	ECM 616 30	Add information about NT6X02XG per EC 011-21135. MD NTZZ99AQ & NTZZ99AU. Update rule for NTZZ17BB (NTB02BA).
95 03 16	ECM 616 31	EC 024-93747 adds NT7X05AA (NTZZ02UA). and NTB01BA. EC 11-19964 adds NT6X78AB to LGCI, LTCI, and DTCI; and adds NTB02BA to SMUI. Show NTZZ03MA replaced by NTZZ03MB.

The ISDN Comm Periph Contr Equip Frame U.S. Earthquake and Canadian Offices is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN CPC Equipment Frame	NT6X01AB		1			AP
Earthquake framework	NT0X25AH		1			AP
ISDN Comm Periph Cntrl Modul	NTZZ17GB	LGCI LT TMS DTCI		18,51		RUL1
ISDN CPCI Module XPM+	NTZZ17GC	LGCI LT TMS DTCI		18,51		RUL1
Line Trunk Controller XPM+	NTZZ17QM	LT		18,51		RUL1
Line Group Controller XPM+	NTZZ17RM	LGCI		18,51		RUL1
Digital Trunk Cont. XPM+	NTZZ17SM	DTCI		18,51		RUL1
Dig. Trk. Cont. XPM+ w/DWS	NTZZ17TM	DTCI		18,51		RUL1
Dig Trunk Contr DTC (DWS)	NTZZ04BB	DTC		18,51		RUL1
Dig Trunk Contr XPM+ (DWS)	NTZZ04KA	DTC		18,51		RUL1
ISDN DTCI (DWS)	NTZZ17DA	DTCI		18,51		RUL1
# ISDN Cntrl Modul for DMS-1U	NTZZ03MA	SMUI		18,51		RUL1
ISDN Cntrl Modul for DMS-1U	NTZZ03MB	SMUI		18,51		RUL1
CPC Filler Plate Kit	NT6X02AB			51		RUL1
ISDN Control'r Arry Shf Assy	NT6X0223	CPAI1	1	32,65		AP-01
ISDN Control'r Arry Shf Assy	NT6X0223	CPAI0	1	18,51		AP-01
D-Channel Handler	NTZZ17BA			18,32, 51,65	1-5	RUL2
Enhanced D-Channel Handler	NTZZ17BB			18,32, 51,65	1-5	RUL2
DS-1 P-Side EFF Interface	NTZZ02DA			18,32	1-5	RUL3
DS-1 P-Side Echo Cancel.	NT6X50EC			65,51	1-5	RUL14
Designation Label	NT6X50EC	P0731675		65,51 51,65	1-5	RUL14
# DS30A LCM Interface	NTZZ02JA			18,51	6	RUL4
DS30A LCM Interface	NTZZ02KA			18,51	6,7	RUL4

Retired Equipment
ISDN Comm Periph Contr Equip Frame
U.S. Earthquake and Canadian Offices

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate 0.875	NT0X50AA			18,32, 51,65	1-7, 15,13	RUL5
CLASS Modem Resource	NTZZ97AA			18,51	13	RUL8
Universal Tone Receiver	NTZZ02FA			18,51	15	RUL6
Universal Tone Receiver	NTZZ02FB			18,51	15	RUL6
Periph Recovery Loader CP	NTZZ02UA			18,51	17	RUL15
DS30 Network Interface CP	NTZZ02GA			18,51	22	RUL9
# DS30 NIF and Bracket	NTZZ02GB			18,51	22	RUL9
# DS512 Network Interface CP	NTZZ02HA			18,51	22	RUL9
# DS512 Network Interface CP	NTZZ02HB			18,51	22	RUL9
DS512 Network Interface CP	NTZZ02HM			18,51	22	RUL9
Universal Connector Bracket	NTZZ17KK			18		RUL12
DTC Wiring Option	NT6X01WC			18,51		RUL11
Frame Supervisory Panel	NT0X28EB	FSP	1	45		AP-01
# DC Cooling Inverter Unit	NT3X90AA	CU	1	04		AP-01
# DC Cooling Inverter Unit	NT3X90AB	CU	1	04		AP-01
DC Cooling Inverter Unit	NT3X90AC	CU	1	04		AP
Logic Return Cable Assy	NT0X0009					RUL7
# XPM PLUS ISDN Change Kit	NTZZ99AH					RUL10
Enh ISDN Pre-Proc. CP	NTBX01AB					RUL10
Desig. Label (NTBX01AB)	P0735418					RUL10
Enh ISDN Pre-Proc. CP	NTBX01BA					RUL10
Desig. Label (NTBX01BA)	P0713794					RUL10
# XPM PLUS ISDN Change Kit	NT6X02XA					RUL10
# XPM PLUS Change Kit	NT6X02XF					RUL10
# XPM PLUS Paddlecard Kit	NTMX70AA					RUL10
XPM PLUS Upgrade Kit	NT6X02XG					RUL10
XPM PLUS Paddlecard Kit	NTMX70AB					RUL10
DWS Product Change Kit	NTZZ99AM					RUL10
# XPM PLUS DTC Change Kit	NTZZ99AQ					RUL13

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ17GA	MD	NTZZ17GB
NTZZ17BA	MD	NTZZ17BB
NTZZ02GB	MD	NTZZ02GA
NTZZ02HA	MD	NTZZ02HB
NTZZ02HB	MD	NTZZ02HM
NTZZ03MA	MD	NTZZ03MB
NT6X01AB	A&M	NT6X01AD
NTZZ99AH	MD	NT6X02XA
NTZZ02JA	MD	NTZZ02KA
NT6X02XA	MD	NT6X02XF
NT6X02XF	A&M	NT6X02XG
NTBX01AA	A&M	NTBX01AB
NTBX01AB	A&M	NTBX01BA
NTMX70AA	A&M	NTMX70AB
NTZZ99AQ	MD	NTZZ99AU
NTZZ99AU	A&M	NT6X02XG

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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) NTZZ17LA is a single bay frame which can be equipped with up to two (2) independent ISDN Common Peripheral Control (CPCI) modules.
- 2) One CPCI module is composed of two (2) shelves. Each CPEI can have up to two CPCIs. One CPCI module can be assigned to shelf mounting positions 65 and 51 (X=51) and the other to shelf mounting positions 32 and 18 (X=18). The two (2) bare shelf assemblies do not become a CPCI till they are equipped with one (1) CPCI Common CP. The shelf assembly becomes an ISDN Common Peripheral Array Shelf (CPAI) that can house up to twenty five (25) circuit packs.

Within each CPCI, the lower CPAI is CPAI 0 and the upper CPAI is CPAI 1.

- 3) One of five functional names can be associated with a CPCI module: LGCI, LTCI, TMS, DTCI or SMUI. The function of the CPCI module is determined by the ISDN access modes (BRA, PRI) and types of existing services (non-ISDN LCM, trunks) to be supported by the module. The supported access modes, the resulting name given to the CPCI module, and the BCS availability of each function are as follows:

Access Modes Supported By CPCI Module**	Resulting Module Name	Abbrev.	BCS Availability
ISDN BRA, Non-ISDN LCM, DPN Access	ISDN Line Group Controller	LGCI	BCS-27
ISDN BRA, Non-ISDN LCM, DPN Access, Non-ISDN trunks	ISDN Line Trunk Controller	LTCI	BCS-28
ISDN PRI, Non-ISDN trunks	ISDN Digital Trunk Controller	DTCI	BCS-29
ISDN BRA, MBS Services	ISDN Subscr Module for DMS-1 Urban	SMUI	BCS-34

** - Non-ISDN Trunks employ A/B bit signalling.

- 4) CPCI modules of various types may be combined on frames where required. The frame name will be derived from the bottom module within the frame:

Bottom Module	Resulting Frame Name	Abbreviation
LGCI	ISDN Line Group Equipment	LGEI
LTCI	ISDN Line Trunk Equipment	LTEI
DTCI	ISDN Digital Trunk Equipment	DTEI
SMUI	ISDN Subscriber Module Equipment	SMEI

Job engineering shall specify stamping requirements for the frame as follows:

LGEI XX

LTEI XX
DTEI XX
SMEI XX

where XX represents frame discrimination number.

- 5) When a module is designated LGCI, LTCI, DTCI or SMUI the two shelves making up the module become LGAI, LTAI, DTAI or SMAI respectively.
- 6) The total current consumption of any shelf on the NTZZ17LA frame is not to exceed 50 amps.

RULES:

- AP 1) When PEC NTZZ17LA is ordered, these items are provided.
- AP-01 1) These items are always provided with the NT6X01AB Peripheral Controller Equipment Frame and are listed for sparing purposes.
- RUL1 1) XPM PLUS modules may be provisioned on existing NT6X01AB frames in the field under the condition that the NT6X01AB has a blank module available. Provide one (1) NTMX70AB XPM+ Paddlecard Upgrade Kit per RUL10 when ordering a new XPM+ module to be mounted in an existing NT6X01AB.

This rule applies to the following modules ONLY:

- o NTZZ17GC CPCI+
- o NTZZ17QM LTCI+
- o NTZZ17RM LGCI+
- o NTZZ17SM DGCI+
- o NTZZ17TM DGCI+ (DWS)
- o NTZZ04KA DTC+ (DWS)

- 2) Provide minimum one (1), maximum two (2) NTZZ04BB DTC Common Peripheral Control Modules per CPEI frame as required to support DWS applications; Provide minimum one (1), maximum two (2) NTZZ17DA DTCI IWS applications; provide minimum one (1), maximum two (2) NTZZ17GB ISDN Common Peripheral Control Modules per CPEI frame as required to support non-DWS applications. This rule applies to non-XPM+ compatible modules ONLY.
- 3) Provide minimum one (1), maximum two (2) NTZZ03MB SMUI modules per CPEI frame as required. Note: There may be some firmware changes required in the DMS-1U itself to support

the host SMUI module. Check with the TRANSMISSIONS Engineering when provision an SMUI interface for the DMS-1U.

- 4) If the second module is not equipped on the last CPEI frame provide one (1) Common Peripheral Controller Module Filler Face Plate, NT6X02AB.

RUL2 1) Provide maximum nine (9) D-Channel Handler CP per LGCI or LTCI module, and maximum four (4) per SMUI module. Provide either the NTZZ17BA D-Channel Handler (DCH) CP or NTZZ17BB Enhanced D-Channel Handler (EDCH) CP in accordance with customer requirements and the following conditions:

* EDCH hardware requires BCS-35, except for TMS, which requires BCS-36. Always order NTZZ17BB for all new jobs at these BCS levels and above.

* EDCH load requires the Unified Processor (XPM+) and the Enhanced ISDN Signaling Preprocessor (EISP). TMS does not use the DCH or the EDCH load; therefore TMS with BCS-36 can use EDCH without XPM+ or EISP.

* The EDCH CP may be combined with DCH CPs in a module, but in that case the DCH software load is required (rather than EDCH load) and the EDCH CP operates as if it is a DCH; i.e., the enhanced capacity of the EDCH CP is not utilized.

* A DCH may be spared with an EDCH circuit pack at BCS-35 and above (BCS-36 for TMS).

NOTE:

The NTB02AA DCH CP, included in NTZZ17BA, has been changed to A&M status and replaced by the NTB02BA, which is included in NTZZ17BB.

- 2) Each NTZZ17BA/BB supports up to 124 BRI D-Channels. The spare D CH CP should not be counted when determining the number of NTZZ17BA/BB required to support D-channel traffic.
- 3) Each NTZZ17BA/BB DCH, including the spare, requires one peripheral port on the CPCI module. Assign NTZZ17BA/BB cards to shelf and slot positions in the following order. The spare DCH should be assigned last:

		Shlf Pos	CP Pos	Assign To Logical Port Number
		-----	---	-----
1st	DCH/EDCH CP Provisioned:	X+14	1	19
2nd	DCH/EDCH CP Provisioned:	X	1	17
3rd	DCH/EDCH CP Provisioned:	X+14	2	15
4th	DCH/EDCH CP Provisioned:	X	2	13
5th	DCH/EDCH CP Provisioned:	X+14	3	11
6th	DCH/EDCH CP Provisioned:	X	3	09
7th	DCH/EDCH CP Provisioned:	X+14	4	07
8th	DCH/EDCH CP Provisioned:	X	4	05
9th	DCH/EDCH CP Provisioned:	X+14	5	03
10th	DCH/EDCH CP Provisioned:	X	5	01

rcp;Note:
One vacant slot may be left between DCH/EDCH CPs and DS-1 CPs to facilitate extensions.

For the lower module in the frame, X=18 (i.e., shelf positions 18 and 32), and for the upper module in the frame X=51 (i.e., shelf positions 51 and 65).

- 4) DCH/EDCH CP are not required for DTCI (PRI) applications, nor where the CPCI supports only non-ISDN LCMs.
5) For TOPS Message Switch applications, provide four (4) DCH CP in card slots 1 & 2 of shelf X & shelf X+14.

- 5) For TOPS Message Switch applications, provide four NTZZ17BA in card slots 1 & 2 of shelf X & shelf X+14.

RUL3 1) Provide maximum ten (10) NTZZ02DA, DS-1 P-Side Extended Frame Format Interface, per LGCI/LTCI/DTCI/DTC module as per customer requirements.

- 2) Provide maximum ten (10) NTZZ02DA, DS-1 P-Side Extended Frame Format Interface, per SMUI module as per customer requirements.

- 3) Each NTZZ02DA provides interfaces for up to two (2) T-1 spans used for links to RSC/RLCM/OPM/Convertible RLCM, DMS-1 Urban, links to packet handler, non-ISDN trunks and PRI trunks (depending on module type). The following table is a listing of DS-1 ports per NTZZ02DA circuit pack location:

CP POS	5	4	3	2	1
SHF POS	PORTS	PORTS	PORTS	PORTS	PORTS

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

For the lower module in the frame, X=18 (ie. shelf positions 18 and 32), and for the upper module in the frame X=51 (i.e., shelf positions 51 and 65).

The DS1 ports in the Trunk Member Table of the DMS switch are referred to as circuits. The DS1 port number equals the circuit number. For PRI applications, spreading of PRI trunk members over several peripherals is not allowed. All members must be on the same DTCl.

- 4) Assign the NTZZ02DA blocks in the shelves such that the DS-1 ports (circuits) start from port 0 and increase in a sequential order (i.e. 0, 1; 2, 3; 4, 5; 6, 7; 8, 9; 10, 11; 12, 13; 14, 15; 16, 17; 18 and 19). Note that each NTZZ17BA assigned to a shelf position in RUL2 physically makes two (2) DS-1 ports unavailable as per the above table. These ports cannot be assigned to NTZZ02DA.
- 5) Non-ISDN trunks can co-exist with PRI trunks on the same physical DS-1.
- 6) For TOPS Message Switch applications, assign NTZZ02DA as follows,
 - Up to 64 operator positions, provide NTZZ02DA in slot 5 of shelf X and shelf X+14.
 - Up to 96 operator positions, provide NTZZ02DA in slots 4 & 5 of shelf X and slot 5 of shelf X+14.
 - For Database access (CCI DA, CGI ORDB, IBM DA without MP X) provide NTZZ02DA in slot 3 of shelf X and slot 4 of shelf X+14.
 - If ORDB is used AND more than 64 operators, provide an additional NTZZ02DA in slot 3 of shelf X+14.

- RUL4 1) For LGCI/LTCI applications, provide one (1) NTZZ02KA to support up to ten DS-30A ports or two NTZZ02KA to support between eleven and twenty DS-30A ports to interface links from LCME/LCE. For DTCl applications provide four (4) NT0X50AA Filler Face Plates. The NTZZ03MB building block for SMUI already contains four NT0X50AA filler face plates.

- 2) The following is a listing of DS30A ports per DS30A LCM Interface CP location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16
PORT	19	17

- 3) The ports for DS30A must be selected from the those ports that remain after assignment of port circuits to DCH in RUL2 and to DS-1 circuits in RUL3.
- 4) Assign ports to DS30A in the following sequence: 19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, 1, 2 and 0 (if unused by DCH or DS-1). In an extension job, when adding new DCH ports (RUL2), the DS30A ports may have to be reconfigured in accordance with this rule.

RUL5 1) Provide one (1) Filler Face Plate 0.875 for each card position that is unequipped.

RUL6 1) Provision one NTZZ02FA/FB Universal Tone Receiver for applications in BCS-28 or later when analog (POTS) lines are to be supported on the CPCI (LGCI, LTCI), and whenever non-ISDN trunks (A/B bit signalling) are interfaced to the DTCI (BCS-29). At BCS 35 and above one pair of UTRs will be support on SMUI modules.

Check availibilty of the NTZZ02FB before ordering.

- RUL7 1) Provide one (1) NT0X0009 Logic Return Cable Assembly per frame when extending existing offices not equipped with enhanced grounding per IS0X00.
- 2) For U.S. offices, this frame does not require the provisionable cable assembly when extending a non-ISG office with current grounding methods. Instead a provisionable switchboard cable is run from the NT0X9504 bus bar assembly in each frame to the PDC battery return plate. (Refer to CA drawings for details.)

- RUL8 1) Provide one (1) NTZZ97AA CLASS Modem Resource (CMR) to support Calling Number Delivery or the ADSI or SCWID feature on an LGCI/LTCI/DTCI/SMUI module. The circuit packs mount in slot 13 of each shelf.

- RUL9 1) Provide one (1) NTZZ02GB, DS30 Network Interface, for each module (LGCI/LTCI/DTCI/SMUI/DTC) requiring DS-30 interface to the Network.

- 2) Provide one (1) NTZZ02HA or NTZZ02HB, DS512 Network Interface, for each LGCI/LTCI/DTCI/SMUI/DTC module requiring DS-512 interface to the Enhanced Network (E-NET).

NOTE:

NTZZ02HA is to be replaced by NTZZ02HB. Check availability dates prior to provisioning either version.

- 3) When assigning ports at the network it is recommended that CPCI ports be spread separately from other peripheral controller ports (e.g., LGC, LTC, DTC, IAC).

- RUL10 1) Provide one NT6X02XG XPM PLUS Upgrade Kit for each NTZZ17GA or NTZZ17GB ISDN Common Peripheral Controller module to be changed to an XPM PLUS ISDN Common Peripheral Controller module. The kit can be applied to office at BCS-34 and later for LGCI, LTCI or DMS250 DTCI's. The kit can be applied to DTCI's at BCS-35 and later.

- 2) NTZZ99AM upgrades one NTZZ17GB to NTZZ17DA. The NTZZ99AM removes the NT6X44AA Time Switch CPs and replaces the packs with the NTAX78AA Enhanced Time Switch CPs as well as replacing the designation labels.

- 3) The SMUI may be upgraded to XPM PLUS at BCS-36 with the application of the NT6X02XG Upgrade Kit.

- 4) Provide one (1) NTMX70AB XPM PLUS Paddlecard Upgrade Kit per module when ordering a new XPM+ module to be mounted in an existing NT6X01AB frame in the field. The NTMX70AB contains paddlecards and cable assemblies which will modify the NT6X01AB module to XPM+ capability.

The XPM+ module ordered should be at the following level:

- o NTZZ17GC CPCI+
- o NTZZ17QM LTCI+
- o NTZZ17RM LGCI+
- o NTZZ17SM DTCI+
- o NTZZ17TM DTCI+ (DWS)

- 5) If an existing module to be upgraded to XPM PLUS contains NTBX01AA ISDN Signal Pre-Processor CPs, they must be replaced with NTBX01AB or NTBX01BA Enhanced ISDN Signal Pre-processor (EISP) CPs. Provide one P0735418 Label with each NTBX01AB CP. Provide one P0713794 Label with each NTBX01BA CP.

The NTBX01BA EISP CP will replace the NTBX01AB per manufacturing phase-in plan. Provide the NTBX01BA EISP for XPM+ upgrades when it becomes available. NTBX01BA is physically and functionally interchangeable with the NTBX01AB ONLY when used in an XPM+ equipped module. The NTBX01BA MUST ONLY be used in an XPM+ equipped module; therefore, the NTBX01BA CANNOT be used to replace the NTBX01AA except as part of an upgrade to XPM+.

Note: EISP/XPM+ in TMS requires TOPS03.

- RUL11 1) Provide one (1) NT6X01WC Wiring Option Kit for each NT6X01AB when upgrading the NT6X01AB for DWS applications. This option enables a wire strap to be added to the back-panel slots XX-12 between pins 7A and 8A to allow for modules used for non-ISDN applications. The kit includes a jumper wire which is installed on the backpanel and is required to support Dialable Wideband Services.
- RUL12 1) The Universal Connector Bracket is always required on all new jobs and extensions where a module must be added to an extension. This connector bracket is required for either copper or fiber connections to the ENET/JNET.
- RUL13 1) No longer applicable. Use NT6X02XG for XPM PLUS upgrades.

- RUL14 1) Provide up to ten (10) NT6X50EC DS-1 Interface CP's for DMS250 offices when Echo Cancellation is a requirement. Minimum BCS is 32.
- RUL15 1) Provide one (1) NTZZ02UA Peripheral Recovery Loader CP when support for the Peripheral Recovery Loader Option is required. A module to be equipped with NTZZ02UA must also be equipped with NTMX77AA Unified Processor CPs (XPM+).

UNIVERSAL CONNECTOR BRACKET

PEC CODE: NTZZ17KK

CPC CODE: B0239057

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: None

ABBREVIATION NAME: CPEI

ENGINEERING DESCRIPTION: The Universal Connector Bracket is always required on all new jobs and extensions where a module must be added to an existion frame. This connector bracket is required for either copper or fiber connections to the ENET/JNET.

REFERENCE DOCUMENTATION: MS6X01AB 00 19
SLZZ17KK 00 01
NTZZ17KK REL 01

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe
Carrier
Wireless

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

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

NTZZ17KK EMC2-18-006 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 07 12	ECM 616 12	Incorporates the following: - EC 024-88946 incorporated the Univ. FXPM Brkt NT6X02UF and
96 04 26	ECM 616 43	MD this BB for the Functional Block and replace it with its detail parts.

The Universal Connector Bracket is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Universal Ground Point	NT6X0250	UGP	1	56		AP
Universal Connector Kit	NT6X02UF		2	18,51	22R	AP

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) The Universal Connector Bracket is always required on all new jobs and extensions where a module must be added to an extension. This connector bracket is required for either copper or fiber connections to the ENET/JNET.

RULES:

- AP 1) When PEC NTZZ17KK is ordered, these items are provided.

ISDN 2B1Q LINE CONCENTRATING MODULE

PEC CODE: NTZZ17HA

CPC CODE: B0232319

| RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ17HB

ABBREVIATION NAME: LCME

ENGINEERING DESCRIPTION: The ISDN 2B1Q Line Concentrating Module houses eight line drawers, each of which supports up to sixty line cards. This module supports the 2B1Q 'U', and POTS(non-ISDN) Line Cards.

REFERENCE DOCUMENTATION: SLZZ17HA 00 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: Ron Hogan Dept. 3471 (PPK)

NTZZ17HA EMC2-19-LCME-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 08 10	----- ECM 685 03	Previous history not available Show NTB34BA as MD and replaced by NTB34BC ISDN Enhanced LCM Processor CP.
94 08 28	ECM 685 04	Remove NTB34BA from Equipment List. Add NTB34BC to Equipment List. Change Des. Label for LCME in Equipment List to P0744678.
96 02 09	ECM 685 10	NTB31BA Enhanced ISDN LCM Common CP is MD'd replaced by the NTB31BB. Change rating to A&M per BB Rat and GMF recommendations, and EC 011-21510. Replaced by NTZZ17HB.
97 03 07	ECM 685 12	Change rating to MD per EC 024-97180. Replaced by NTZZ17HB (existing).

The ISDN 2B1Q Line Concentrating Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanced ISDN LCM Common CP	NTBX31BB	LCME	1	X		AP
LCMI Digroup Control CP	NTBX35AA		2	X+14,X	19	AP-01
LCMI Digroup Control CP	NTBX35AA		2	X+14,X	20	AP-01
LCME Processor CP	NTBX34BC		2	X+14,X	21	AP-01
LCME Power Converter	NT6X53CA		2	X+14,X	22	AP-01
LCME Battery & Ring. Router	NTBX72AA		2	X+14,X	25	AP-01
Designation Label (LCME)	P0744678		2			AP-01
ISDN Enhanced Line Drawer	NTBX32BA		8	X+14, X	1,5 9,13	AP
Line Drawer Labels (2B1Q)	P0709652		1			AP
ISDN Enh. Line Drawer Assy	NTBX3204		8	X+14, X	1,5 9,13	AP-02
ISDN Enh. LCME BIC	NTBX36BA		8	X+14, X	1,5 9,13	AP-02
ISDN Enh. Line Drawer PUPS	NTBX71AA		8	X+14, X	1,5 9,13	AP-02
Line Circuits	AR			X+14,	Note1	RUL1
Line Drawer Cutoff Strap	A0285591				Note1	RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTBX31BA	MD	NTBX31BB
NTBX34BA	MD	NTBX34BC
NTBX34BC	MD	NTBX34CB

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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) Each line drawer is divided into two (2) line sub groups. LSG N has 32 slots while LSG N+1 has 28 slots as shown below:

1	3	5	7	9	11	13	15	17	19	21	23	25	27	PUPS	<LSG N+1	
0	2	4	6	8	10	12	14	16	18	20	22	24	26			
1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	<LSG N
0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	

For reliability purposes, it is recommended that line cards be distributed over physical drawers. Within a physical drawer, it is recommended that line cards be populated horizontally before being distributed vertically. This is similar to the present LCM provisioning guidelines. (Refer to TABLE C - Line Drawer Provisioning, section EMA14-03-000, for more information).

RULES:

- AP 1) When PEC NTZZ17HA is ordered, these items are provided.
- AP-01 1) Items marked AP-01 are supplied with NTB31BB Enhanced ISDN Common CP and are listed for sparing purposes.
- AP-02 1) Items marked AP-02 are supplied with NTB32BA ISDN Enhanced Line Drawer and are listed for sparing purposes.
- RUL1 1) The following line cards may be assigned to the ISDN Enhanced Line Drawer:

DESCRIPTION	PEC	# OF CARD SLOTS	MAX # PER LINE DRAWER
ISDN 2B1Q 'U' I/F Line Card	NTBX27AA	1	480
ISDN 'S/T' I/F Line Card	NTBX26AA	2	240
Data Line Card	NT6X71AA/AB	2	240
Asynchronous I/F Line Card	NT6X76AA	2	208
Business Set Line Card	NT6X21AC	1	480
POTS Message Waiting	NT6X19AA	1	472 *
Message Waiting Converter LC	NT6X20AA	2	1 *
POTS Line Card	NT6X17AA/AB/AC	1	480

Multiparty Line Card	NT6X18AA/AB	1	480
IBERT	NT6X99AA	2	1 per LCME

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

The Multiparty line card cannot be used for coin or ANI.

LCMEs with BCS-31 will support the ISDN lines only. LCMEs with BCS-32 and higher will support all those lines mentioned above.

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

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

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

- RUL2
- 1) Provide one (1) Cutoff Strap for each line drawer whose line cards are to be held simultaneously cutoff by this method.
 - 2) Since straps can be re-used, the quantity to be provided is determined based on the maximum number of line drawers which are to be held simultaneously in this state.

ISDN AMI LINE CONCENTRATING MODULE

PEC CODE: NTZZ17FA

CPC CODE: B0232048

RATING: Manufacture Discontinued (MD).

REPLACES: Not Applicable

REPLACED BY: No Direct Replacement.(See NTZZ17HB for ISDN
2B1Q LCME).

ABBREVIATION NAME: LCMI

ENGINEERING DESCRIPTION: The ISDN AMI Line Concentrating Module Block
houses eight line drawers each of which sup-
ports up to forty-eight line cards. This
module supports the AMI 'U' interface.REFERENCE DOCUMENTATION: SLBX31AC 00 02
SLZZ17FA XX XX
NTZZ17FA REL

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ17FA EMC2-19-LCMI-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 07 12	----- ECM 616 12	Previous history not available Incorporate the following changes: - EC018-40820 - Add the NT6X30CA North American ring generator to the NTRX30BA CLMI and reflect NTB32AA, NTBX31AA, AC, and NTB31AD as MD
96 02 09	ECM 685 10	MD per BB Rat and GMF recommendations.

The ISDN AMI Line Concentrating Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
LCMI Common CP	NTBX31AC	LCMI	1	X		AP
LCMI Digroup Control CP	NTBX35AA		2	X+14,X	19	AP-02
LCMI Digroup Control CP	NTBX35AA		2	X+14,X	20	AP-02
LCMI Processor CP	NTBX34AB		2	X+14,X	21	AP-02
Power Converter	NT6X53EA		2	X+14,X	22	AP-02
Power Converter	NT6X53BA		2	X+14,X	25	AP-02
Designation Label	P0697031		2	X+14,X		AP-02
Slot Label	P0690637		2	X+14,X		AP-02
ISDN Line Drawer	NTBX32AA		8	X+14, X	1,5, 9,13	AP
ISDN Line Drawer Assy	NTBX3201		8	X+14, X	1,5, 9,13	AP-01
ISDN Line Drawer BIC	NTBX36AA		8		Note2	AP-01
Line Drawer ID Label	P0690495		1			AP
Line Circuits	AR				Note2	RUL1
Line Drawer Cutoff Strap	A0285591					RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

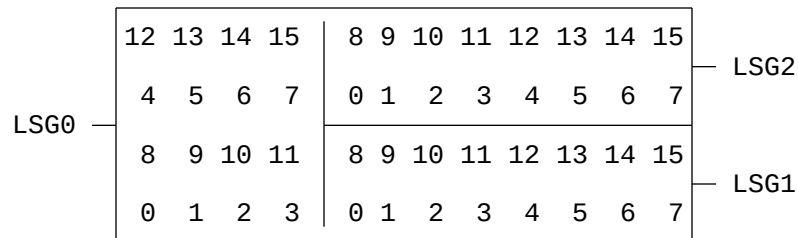
MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Each NTBX32AA Line Drawer accommodates up to forty-eight (48) line cards in three logical drawers called Line Sub

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

- 2) The ISDN Line Drawer BIC is equipped in line drawer slot 16. The line drawers are divided into three line sub groups having sixteen Line Circuit slots each as shown below:



RULES:

- AP 1) When PEC NTZZ17FA is ordered, these items are provided.
- AP-01 1) Items marked AP-01 are supplied with NTB32AA Line Drawer and are listed for sparing purposes.
- AP-01 1) Items marked AP-02 are supplied with NTB31AC LCMI Common CP and are listed for sparing purposes.
- RUL1 1) The following line cards may be assigned to the ISDN Line Drawer:

DESCRIPTION	PEC	# SLOTS
ISDN 'U' Interface Line Card	NTBX25AB	2
ISDN 'S/T' Interface Line Card	NTBX26AA	2
Data Line Card	NT6X71AA	2
Data Line Card	NT6X71AB	2
Business Set Line Card	NT6X21AC	1
Standard Line Card Type A	NT6X17AA	1
Standard Line Card Type A	NT6X17AB	1
OPT Line Card Type A	NT6X17AC	1
Std Line Card Type B W/O +48V	NT6X18AA	1
Standard Line Card Type E	NT6X19AA	1
Message Waiting Power Convert.	NT6X20AA	2
Standard Line Card Type C	NT6X21AB	1
Asynchronous I/F Line Card	NT6X76AA	2

Enhanced Async I/F Line Card	NT6X76AC	2
IBERT Line Card	NT6X99AA	2

Refer to Engineering Manual section EMA14-03-000 for descriptive information for non-ISDN line cards.

- 2) ISDN Line Cards may not be mixed with any other line cards within a Line Sub Group.
- 3) Provision IBERT for data path/ISDN loop testing. Provision only one per LCMI. The IBERT line card may not be equipped in a Line Sub Group with ISDN line cards.
- 4) A maximum of twenty (20) ISDN 'U' Line Cards NTB25AB may be provisioned per line drawer.
- 5) A maximum of twenty-four (24) ISDN 'S/T' Line Cards NTB26AA may be provisioned per line drawer.
- 6) A maximum of one (1) NT6X20AA Message Waiting Power Converter may be provisioned per line drawer. Any drawer containing NT6X19AA Type E Line Cards requires one (1) Message Waiting Power Converter. In BCS-28, Message Waiting Power Converters are restricted to LSG1 in each physical drawer (ie. logical drawers 1,4,7,10,13,16,19, and 22). In BCS-29, this restriction is removed; the Converter is permitted in any logical drawer. Type E Line cards and Message Waiting Power Converter are not permitted in a Line Sub Group containing ISDN line cards.
- 7) In BCS-25, for LCMI datafilled with 58 ISDN line cards (maximum allowable), line cards will be supported in the following line subgroups:

Line Subgroup 6, slots 0-7}
Line Subgroup 7, slot 0 }
Line Subgroup 9, slot 0-7} unit 0
Line Subgroup 10, slots 0-7}
Line Subgroup 11, slots 0-3}

Line Subgroup 18, slots 0-7}
Line Subgroup 19, slot 0 }
Line Subgroup 21, slot 0-7} unit 1
Line Subgroup 22, slot 0-7}
Line Subgroup 23, slots 0-3}
- 8) For the LCMI datafilled with less than 58 ISDN lines in BCS-25, the requirement for a minimum of 2 c-side ports from the LCMI (one for each unit) requires one to start

filling from the logical drawers which map to port 0 of each unit. Due to this requirement and for the sake of balancing the real time LCMI load, the line cards should be assigned alternately to unit 0 and then unit 1 as follows. Port 0 of unit 0 and unit 1 must be assigned.

Port 0

Line Subgroup 9, slots 0-7
Line Subgroup 10, slot

Port 0

Line Subgroup 21, slots 0-7
Line Subgroup 22, slot 0

Port 1

Line Subgroup 10, slots 1-7
Line Subgroup 11, slots 0-2

Port 1

Line Subgroup 22, slots 1-7
Line Subgroup 23, slots 0-2

Port 2

Line Subgroup 11, slot 3
Line Subgroup 6, slot 0-7
Line Subgroup 7, slot 0

Port 2

Line Subgroup 23, slot 3
Line Subgroup 18, slots 0-7
Line Subgroup 19, slot 0

- 9) In BCS-26, line subgroups are grouped into Block of Logical Drawers (BLD) as follows:

BLD LINE SUB GROUPS

BLD	LINE SUB GROUPS	TOTAL 'U' LINE CARDS	TOTAL 'S/T' LINE CARDS
1	0, 1, 6, 7	32	32
2	2, 3, 8, 9	16	32
3	4, 5, 10, 11	32	32
4	12, 13, 18, 19	32	32
5	14, 15, 20, 21	16	32
6	16, 17, 22, 23	32	32

The order of filling the two LCMI units will be BLD1, BLD4, BLD3, BLD6, BLD2 and BLD5. When using ISDN 'U' line cards, BLD2 and BLD5 are only half filled (slots 0-3 only so as to limit the number of ISDN 'U' line cards per physical drawer to a maximum of 20).

Assign the ISDN line cards as follows:

Equip in groups of four, occupying parallel slots in a BLD.

Assign the 2 slot ISDN line cards starting from slots 0-7 of LSG 0,1, 6,7 (BLD1).

Assign the cards next starting from slots 0-7 of LSG 12,13,18,19 (BLD4).

Continue as above for:

- (a) LSG 4,5,10,11 (BLD3)
- (b) LSG 16,17,22,23 (BLD6)
- (c) LSG 2,3,8,9 (BLD2)*
- (d) LSG 14,15,20,21 (BLD5)*

* - only half filled with 'U' line cards

- 10) In BCS-27, mixed ISDN, Business Set and Data line types are supported within the physical line drawer. Non-ISDN and ISDN line types cannot be mixed within the same line sub-group. Assign the Business Set and Data line cards as follows:

When all of the ISDN line Cards have been spread, the unused line sub groups (if there are any) may be used for Business Set line cards and Data line cards. Business Set line cards are limited by power dissipation when mixed within a physical drawer with ISDN line cards.

if Business Set and Data line cards are to be mixed in a Line Drawer with ISDN line cards then the maximum number of slots that may be equipped is given under "maximum # of slots in mixed drawer". This limit is based on the most efficient multiplexing of D channels.

ISDN 'U' Loops in Drawer	Max. Business Set Line Cards in Drawer	Maximum Data Line Cards in Drawer	Maximum # of Slots in Mixed Drawer
20	0	0	0
16	8	8	8
8	30	16	30
0	48	24	48

- 11) If IBERT line card is to be equipped, assign it to slot 0 of first line sub group which is to be used for Business Set and/or Data Line Cards. If the LCMI is full with other line card types, the IBERT line card may be located in another line module in the same office.

- 12) Equip the single slot Business Set line cards starting at slot 0, 8, 1, 9, 2, 10, 3, 11, 4, 12 etc.
 - 13) Equip the 2-slot Data line cards after all of the Business Set line cards have been spread starting at slot 7, 6, 5, 4, etc.
 - 14) Continue until all of the remaining D line cards have been assigned.
 - 15) In BCS-28, S/T line cards can be assigned to the ISDN line drawer. Any combination of U and S/T line cards is permitted within a drawer as long as the respective limits of 20 U loops and/or 24 S/T loops is not exceeded.
 - 16) Prior to BCS-28, software limitations require that slot 0 of LSG 00 (Drawer 0) be unequipped. In BCS-28 or higher, if the LCMI is datafilled for POTS capability, a POTS (Type A) line card may be assigned in this slot.
- RUL2
- 1) Provide one (1) Line Drawer Cutoff Strap for each line drawer whose cards are to be held simultaneously cutoff per Telco requirements.
 - 2) Since straps can be re-used, the quantity to be provided is determined based on the maximum number of Line Drawers which are to be held simultaneously in this state.

ISDN LINE CONCENTRATING EQUIPMENT E/W RING GEN.

PEC CODE: NTZZ17EA

| CPC CODE: B0232047

| RATING: Manufacture Discontinued (MD).

| REPLACES: Not Applicable

| REPLACED BY: NTZZ17EB

ABBREVIATION NAME: LCEI

ENGINEERING DESCRIPTION: The ISDN Line Concentrating Equipment is a standard DMS frame which houses two dual shelf LCMI modules. Each module houses eight line drawers each of which can support forty-eight line cards. The primary function of the LCEI is to support ISDN line cards.

REFERENCE DOCUMENTATION: MSBX30AB 00 07
MSBX30AB 00 03
SLZZ17EA 00 03
NTZZ17EA REL 03

MARKETS: Applicable markets:

Canada

| ISSUE AUTHOR: NTI: Merdia Drummer Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Merdia Drummer Dept. 3471 (PPK)

NTZZ17EA EMC2-19-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 18	----- ECM 616 09	Previous history not available ECD 018-38694 Add NTEX60AA Prov. Rules ECD 018-39307 The framework NT0X25AV is rated A&M and it is replaced by framework NT0X25AH.
93 07 12	ECM 616 12	Incorporate the following changes: - EC018-40820 - Add the NT6X30CA North American ring generator to the NTRX30BA CLMI and reflect NTB32AA, NTBX31AA, AC, and NTB31AD as MD

The ISDN Line Concentrating Equipment E/W Ring Gen. is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	ISDN Line Conc Equip Frame	NTBX30AB		1			AP
#	Common Framework	NT0X25AV		1			AP
	Common Framework	NT0X25AH		1			AP
	LCEI Frame Supervisory Pnl	NTBX37AB	FSP	1	72		AP-01
#	Ringing Generator	NT6X30AA		2	72		AP
	Ringing Gen Filler Plate	NT6X3005			72		RUL2
	Baffle Assembly	NT6X1402		1	67		AP-01
	ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	54		AP-01
	ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	40		AP-01
#	ISDN Line Concentr Module	NTZZ17FA	LCMI		40		RUL1
	ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		40		RUL1
	LCMI Filler Face Plate Fill	NTBX31AB			40		RUL1
	D.C. Fan Unit	NTBX63AA		1	33		AP-01
	ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	19		AP-01
	ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	05		AP-01
	ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		05		RUL1
#	ISDN Line Concentr Module	NTZZ17FA	LCMI		05		RUL1
	LCMI Filler Face Plate Fill	NTBX31AB			05		RUL1
	Filler Grille Assy	NTBX3010		1	01		AP-01
	Dwr Identification Labels	P0690495		1			AP
	Warning Label (French)	P0689450					RUL2
	Shelf Pos ID Label	P0707612					RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X25AV NTZZ17FA NT6X30AA	MD CAN MD	NT0X25AH NTZZ17HA NT6X30CA

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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) NTZZ17EA is a single bay frame which can be equipped with up to two (2) independent ISDN Line Concentrating Modules.
- 2) One LCMI module is composed of two (2) shelves. Each LCMI can have up to two LCAIs. One LCMI occupies shelf positions 05 and 19 while the other is at positions 40 and 54. The two (2) bare shelf assemblies do not become an LCMI till they are equipped with an ISDN Line Concentrating Module. The shelf assembly becomes an ISDN Line Concentrating Array Shelf (LCAI) that houses four (4) Line Drawers. Within each LCMI, the lower LCAI is LCAI 0 and the upper LCAI is LCAI 1.
- 3) The Line Drawers within the LCMI are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
05 or 40	0	00,01,02
05 or 40	1	03,04,05
05 or 40	2	06,07,08
05 or 40	3	09,10,11
19 or 54	4	12,13,14
19 or 54	5	15,16,17
19 or 54	6	18,19,20

19 or 54 7 21,22,23

- 4) The Frame Supervisory Panel, NTB37AB always contains two FSP Alarm CP NT6X36AA.
- 5) Refer to ECM-125 and NT0X32 for Frame Doors, Trim Panels, EMI requirement and other miscellaneous hardware.

RULES:

- AP 1) When PEC NTZZ17EA is ordered, these items are provided.
- AP-01 1) Items marked AP-01 are supplied with NTB30AB and are listed for sparing purposes.
- RUL1 1) NTZZ17FA is Manufacture Discontinued. Information per this rule shall be removed on the next issue and the rule # reserved for future use
- Provide one (1) NTZZ17FA ISDN Line Concentrating Module for every eight (8) Line Drawers required with AMI 'U' interface compatibility. Provide one (1) NTZZ17HA ISDN 2B1Q Line Concentrating Module for every eight (8) Line Drawers required with 2B1Q 'U' interface compatibility.
- RUL2 1) Provide one (1) P0689450 French Warning Label when required by Canadian customers. This label is to be affixed to the frame FSP.
- RUL3 1) Provide one (1) Shelf Position Identification Label for the Trim Panel, P0707612, for every six (6) LCEI Frames.

RINGING GENERATOR FOR POTS ON ISDN LCE

PEC CODE: NTZZ17NA

CPC CODE: B0234474

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NT6X30CA

ABBREVIATION NAME: RGIL

ENGINEERING DESCRIPTION: Ringing Generator for POTS on ISDN LCE

REFERENCE DOCUMENTATION: MSBX30AB 00 07
SLZZ17NA 00 02
NTZZ17NA REL 02

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ17NA EMC2-19-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 07 12	ECM 616 12	Incorporate the following changes: - EC018-40820 - Add the NT6X30CA North American ring generator to the NTRX30BA CLMI.
96 02 09	ECM 685 10	MD per BB Rat and GMF recommendations.

The Ringing Generators For POTS on ISDN LCE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Ringing Generators	NT6X30AA		2	72		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 NTZZ17NA is ordered, these items are provided.

ISDN LINE CONCENTRATING EQUIPMENT (US UNIVERSAL FRAME)

PEC CODE: NTZZ17PA

CPC CODE: B0234828

| RATING: Cancelled

REPLACES: Not Applicable

| REPLACED BY: NTZZ17PB

ABBREVIATION NAME: LCEI

ENGINEERING DESCRIPTION: The ISDN Line Concentrating Equipment is a standard DMS frame which houses two dual shelf LCMI modules. Each module houses eight line drawers each of which can support forty-eight line cards. The primary function of the LCEI is to support ISDN line cards. This Building Block contains the NT0X25AH Universal framework and is for applications in the United States.

REFERENCE DOCUMENTATION: MSBX30AB 00 07
SLZZ17PA 00 01
NTZZ17PA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: James Marsden Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ17PA EMC2-19-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 12 18	ECM 616 09	ECD 018-38694 Add NTEX60AA Prov. Rules
93 07 12	ECM 616 12	Incorporate the following changes: - EC018-40820 - Add the NT6X30CA North American ring generator to the NTRX30BA CLMI and reflect NTB32AA, NTB31AA, AC, and NTB31AD as MD
93 11 09	ECM 685 01	Add NT6X30CA to Stocklist.
94 03 04	ECM 685 02	ET 18449

The ISDN Line Concentrating Equipment (US Universal Frame) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN Line Conc Equip Frame	NTBX30AB		1			AP
Universal Framework	NT0X25AH		1			AP
LCEI Frame Supervisory Pnl	NTBX37AB	FSP	1	72		AP-01
# Ringing Generator	NT6X30AA		2	72		AP
Ringing Generator	NT6X30CA		2	72	CD3-4	AP
Baffle Assembly	NT6X1402		1	67		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	54		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	40		AP-01
# ISDN Line Concentr Module	NTZZ17FA	LCMI		40		RUL1
ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		40		RUL1
LCMI Filler Face Plate Fill	NTBX31AB			40		RUL1
D.C. Fan Unit	NTBX63AA		1	33		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	19		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	05		AP-01
ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		05		RUL1
# ISDN Line Concentr Module	NTZZ17FA	LCMI		05		RUL1
LCMI Filler Face Plate Fill	NTBX31AB			05		RUL1
Filler Grille Assy	NTBX3010		1	01		AP-01
Warning Label (French)	P0689450					RUL2
Shelf Pos ID Label	P0707612					RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ17FA NT6X30AA	CANCELED CANCELED	NTZZ17HA NT6X30CA

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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) NTZZ17PA is a single bay frame which can be equipped with up to two (2) independent ISDN Line Concentrating Modules.
- 2) One LCMI module is composed of two (2) shelves. Each LCMI can have up to two LCMIs. One LCMI occupies shelf positions 05 and 19 while the other is at positions 40 and 54. The two (2) bare shelf assemblies do not become an LCMI till they are equipped with an ISDN Line Concentrating Module. The shelf assembly becomes an ISDN Line Concentrating Array Shelf (LCAI) that houses four (4) Line Drawers. Within each LCMI, the lower LCAI is LCAI 0 and the upper LCAI is LCAI 1.
- 3) The Line Drawers within the LCMI are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
05 or 40	0	00,01,02
05 or 40	1	03,04,05
05 or 40	2	06,07,08
05 or 40	3	09,10,11
19 or 54	4	12,13,14
19 or 54	5	15,16,17
19 or 54	6	18,19,20
19 or 54	7	21,22,23

- 4) The Frame Supervisory Panel, NTB37AB always contains two FSP Alarm CP NT6X36AA.
- 5) Refer to ECM-125 and NT0X32 for Frame Doors, Trim Panels, EMI requirement and other miscellaneous hardware.

RULES:

- AP 1) When PEC NTZZ17PA is ordered, these items are provided.
- AP-01 1) Items marked AP-01 are supplied with NTB30AB and are listed for sparing purposes.
- RUL1 1) Provide one (1) NTZZ17FA ISDN Line Concentrating Module for every eight (8) Line Drawers required with AMI 'U' interface compatibility. Provide one (1) NTZZ17HA ISDN 2B1Q Line Concentrating Module for every eight (8) Line Drawers required with 2B1Q 'U' interface compatibility.
- RUL2 1) Provide one (1) P0689450 French Warning Label when required by Canadian customers. This label is to be affixed to the frame FSP.
- RUL3 1) Provide one (1) Shelf Position Identification Label for the Trim Panel, P0707612, for every six (6) LCEI Frames.

ISDN LINE CONCENTRATING EQUIPMENT

PEC CODE: NTZZ17JA

CPC CODE: B0232885

| RATING: Cancelled

REPLACES: Not Applicable

| REPLACED BY: NTZZ17PB

ABBREVIATION NAME: LCEI

ENGINEERING DESCRIPTION: The ISDN Line Concentrating Equipment is a standard DMS frame which houses two dual shelf LCMI modules. Each module houses eight line drawers each of which can support forty-eight line cards. The primary function of the LCEI is to support ISDN line cards.

REFERENCE DOCUMENTATION: MSBX30AB 00 07
SLZZ17JA 00 01
NTZZ17JA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: James Marsden Dept. 3471 (PPK)

MAIN CONTACT: NTI: James Marsden Dept. 3471 (PPK)

NTZZ17JA EMC2-19-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 12 18	ECM 616 09	ECD 018-38694 Add NTEX60AA Prov. Rules
93 07 12	ECM 616 12	Incorporate the following changes: - EC018-40820 - Add the NT6X30CA North American ring generator to the NTRX30BA CLMI and reflect NTB32AA, NTB31AA, AC, and NTB31AD as MD
94 03 04	ECM 685 02	Cancelled

The ISDN Line Concentrating Equipment is comprised of the following:

	EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
	ISDN Line Conc Equip Frame	NTBX30AB		1			AP
	Common Framework	NT0X25AA		1			AP
	LCEI Frame Supervisory Pnl	NTBX37AB	FSP	1	72		AP-01
#	Ringing Generator	NT6X30AA		2	72		AP
	Ringing Generator	NT6X30CA		2	72		AP
	Baffle Assembly	NT6X1402		1	67		AP-01
	ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	54		AP-01
	ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	40		AP-01
#	ISDN Line Concentr Module	NTZZ17FA	LCMI		40		RUL1
	ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		40		RUL1
	LCMI Filler Face Plate Fill	NTBX31AB			40		RUL1
	D.C. Fan Unit	NTBX63AA		1	33		AP-01
	ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	19		AP-01
	ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	05		AP-01
	ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		05		RUL1
#	ISDN Line Concentr Module	NTZZ17FA	LCMI		05		RUL1
	LCMI Filler Face Plate Fill	NTBX31AB			05		RUL1
	Filler Grille Assy	NTBX3010		1	01		AP-01
	Warning Label (French)	P0689450					RUL2
	Shelf Pos ID Label	P0707612					RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X25AV	MD	NT0X25AH
NTZZ17FA	MD	NTZZ17HA
NT6X30AA	A&M	NT6X30CA

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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) NTZZ17JA is a single bay frame which can be equipped with up to two (2) independent ISDN Line Concentrating Modules.
- 2) One LCMI module is composed of two (2) shelves. Each LCMI can have up to two LCMIs. One LCMI occupies shelf positions 05 and 19 while the other is at positions 40 and 54. The two (2) bare shelf assemblies do not become an LCMI till they are equipped with an ISDN Line Concentrating Module. The shelf assembly becomes an ISDN Line Concentrating Array Shelf (LCAI) that houses four (4) Line Drawers. Within each LCMI, the lower LCAI is LCAI 0 and the upper LCAI is LCAI 1.
- 3) The Line Drawers within the LCMI are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
05 or 40	0	00,01,02
05 or 40	1	03,04,05
05 or 40	2	06,07,08
05 or 40	3	09,10,11
19 or 54	4	12,13,14
19 or 54	5	15,16,17
19 or 54	6	18,19,20

19 or 54 7 21,22,23

- 4) The Frame Supervisory Panel, NTB37AB always contains two FSP Alarm CP NT6X36AA.
- 5) Refer to ECM-125 and NT0X32 for Frame Doors, Trim Panels, EMI requirement and other miscellaneous hardware.

RULES:

- AP 1) When PEC NTZZ17JA is ordered, these items are provided.
- AP-01 1) Items marked AP-01 are supplied with NTB30AB and are listed for sparing purposes.
- RUL1 1) NTZZ17FA is Manufacture Discontinued. Information per this rule shall be removed on the next issue and the rule # reserved for future use

Provide one (1) NTZZ17FA ISDN Line Concentrating Module for every eight (8) Line Drawers required with AMI 'U' interface compatibility. Provide one (1) NTZZ17HA ISDN 2B1Q Line Concentrating Module for every eight (8) Line Drawers required with 2B1Q 'U' interface compatibility.

- RUL2 1) Provide one (1) P0689450 French Warning Label when required by Canadian customers. This label is to be affixed to the frame FSP.
- RUL3 1) Provide one (1) Shelf Position Identification Label for the Trim Panel, P0707612, for every six (6) LCEI Frames.

ISDN LINE CONCENTRATING EQUIPMENT (NON EARTHQUAKE)

PEC CODE: NTZZ17JB

CPC CODE: Pending

| RATING: Cancelled

REPLACES: Not Applicable

| REPLACED BY: NTZZ17EB

ABBREVIATION NAME: LCEI

ENGINEERING DESCRIPTION: The ISDN Line Concentrating Equipment is a standard DMS frame which houses two dual shelf LCMI modules. Each module houses eight line drawers each of which can support forty-eight line cards. The primary function of the LCEI is to support ISDN line cards.

REFERENCE DOCUMENTATION: MSBX30AB 00 07
SLZZ17JA 00 01
NTZZ17JA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTI: James Marsden Dept. 3471 (PPK)

MAIN CONTACT: NTI: Merdia Drummer Dept. 3471 (PPK)

NTZZ17JB EMC2-19-004 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 12 18	ECM 616 09	ECD 018-38694 Add NTEX60AA Prov. Rules
93 07 12	ECM 616 12	Incorporate the following changes:
		- EC018-40820 - Add the NT6X30CA North American ring generator to the NTBX30AB CLME.
94 03 04	ECM 685 02	Cancelled

The ISDN Line Concentrating Equipment (Non Earthquake) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN Line Conc Equip Frame	NTBX30AB		1			AP
Common Framework	NT0X25AA		1			AP
LCEI Frame Supervisory Pnl	NTBX37AB	FSP	1	72		AP-01
# Ringing Generator	NT6X30AA			72		RUL4
Ringing Generator	NT6X30CA			72		RUL4
Ringing Generator Filler Faceplate	NT6X3005			72		RUL4
Baffle Assembly	NT6X1402		1	67		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	54		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	40		AP-01
ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		40		RUL1
LCMI Filler Face Plate Fill	NTBX31AB			40		RUL1
D.C. Fan Unit	NTBX63AA		1	33		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	19		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	05		AP-01
ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		05		RUL1
LCMI Filler Face Plate Fill	NTBX31AB			05		RUL1
Filler Grille Assy	NTBX3010		1	01		AP-01
Warning Label (French)	P0689450					RUL2
Shelf Pos ID Label	P0707612					RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT6X30AA	MD	NT6X30CA

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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) NTZZ17JB is a single bay frame which can be equipped with up to two (2) independent ISDN Line Concentrating Modules.
- 2) One LCMI module is composed of two (2) shelves. Each LCMI can have up to two LCMIs. One LCMI occupies shelf positions 05 and 19 while the other is at positions 40 and 54. The two (2) bare shelf assemblies do not become an LCMI till they are equipped with an ISDN Line Concentrating Module. The shelf assembly becomes an ISDN Line Concentrating Array Shelf (LCAI) that houses four (4) Line Drawers. Within each LCMI, the lower LCAI is LCAI 0 and the upper LCAI is LCAI 1.
- 3) The Line Drawers within the LCMI are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
05 or 40	0	00,01,02
05 or 40	1	03,04,05
05 or 40	2	06,07,08
05 or 40	3	09,10,11
19 or 54	4	12,13,14
19 or 54	5	15,16,17
19 or 54	6	18,19,20
19 or 54	7	21,22,23

- 4) The Frame Supervisory Panel, NTB37AB always contains two FSP Alarm CP NT6X36AA.
- 5) Refer to ECM-125 and NT0X32 for Frame Doors, Trim Panels, EMI requirement and other miscellaneous hardware.

RULES:

- AP 1) When PEC NTZZ17JB is ordered, these items are provided.
- AP-01 1) Items marked AP-01 are supplied with NTB30AB and are listed for sparing purposes.
- RUL1 1) Provide one (1) NTZZ17HA ISDN 2B1Q Line Concentrating Module for every eight (8) Line Drawers required with 2B1Q 'U' interface compatibility.
- RUL2 1) Provide one (1) P0689450 French Warning Label when required by Canadian customers. This label is to be affixed to the frame FSP.
- RUL3 1) Provide one (1) Shelf Position Identification Label for the Trim Panel, P0707612, for every six (6) LCEI Frames.
- RUL4 1) For POTS on ISDN LCE Frame provide two (2) NT6X30CA CPs. If POTS is not required provide two (2) NT6X3005 (Ringing Generator Filler).

ISDN LCE (UNIVERSAL FRAME)

PEC CODE: NTZZ17PB

CPC CODE: B0239068

| RATING: MD

REPLACES: NTZZ17PA, NTZZ17EA and NTZZ17JA

| REPLACED BY: NTZZ17EB

ABBREVIATION NAME: LCEI

ENGINEERING DESCRIPTION: The ISDN Line Concentrating Equipment is a standard DMS frame which houses two dual shelf LCME modules. Each module houses eight line drawers each of which can support sixty line cards. The primary function of the LCEI is to support ISDN line cards. This Building Block contains the NT0X25AH universal framework and is provided with Ring-ing Generators.

REFERENCE DOCUMENTATION: MSBX30AB 00 07
SLZZ17PB 00 01
NTZZ17PB REL 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI: Ron Hogan Dept. 3471 (PPK)

NTZZ17PB EMC2-19-005 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 07 12	ECM 616 12	Incorporate the following changes: - EC018-40820 - Add the NT6X30CA North American ring generator.
93 11 09	ECM 685 01	Add Canadian Market tag, change all references to LCMI to LCME in NOTES 1 thru 3.
94 03 04	ECM 685 02	ET 18449
96 02 09	ECM 685 10	MD per BB Rat and GMF recommendations. Replaced by NTZZ17EB.

The ISDN LCE (Universal Frame) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ISDN Line Conc Equip Frame	NTBX30AB		1			AP
Universal Framework	NT0X25AH		1			AP
LCEI Frame Supervisory Pnl	NTBX37AB	FSP	1	72		AP-01
Ringing Generator	NT6X30CA		2	72	CD3-4	AP
Baffle Assembly	NT6X1402		1	67		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	54		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	40		AP-01
LCMI Filler Face Plate Fill	NTBX31AB			40		RUL1
D.C. Fan Unit	NTBX63AA		1	33		AP-01
ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		40		RUL1
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	19		AP-01
ISDN Line Conc Arr Shf Assy	NTBX3104	LCAI	1	05		AP-01
ISDN 2B1Q Line Conc Module	NTZZ17HA	LCME		05		RUL1
LCMI Filler Face Plate Fill	NTBX31AB			05		RUL1
Filler Grille Assy	NTBX3010		1	01		AP-01
Warning Label (French)	P0689450					RUL2
Shelf Pos ID Label	P0707612					RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
Not Applicable		

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

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

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

NOTES:

- 1) NTZZ17PB is a single bay frame which can be equipped with up to two (2) independent ISDN Line Concentrating Modules.
- 2) One LCME module is composed of two (2) shelves. Each LCEI can have up to two LCMEs. One LCME occupies shelf positions 05 and 19 while the other is at positions 40 and 54. The two (2) bare shelf assemblies do not become an LCME until they are equipped with an ISDN Line Concentrating Module. The shelf assembly becomes an ISDN Line Concentrating Array Shelf (LCAI) that houses four (4) Line Drawers. Within each LCME, the lower LCAI is LCAI 0 and the upper LCAI is LCAI 1.
- 3) The Line Drawers within the LCME are numbered from left to right as seen from the front. The Line Sub Groups are numbered as follows:

Frame Shelf Pos.	Line Drawer	Line Sub Group (LSG)
05 or 40	0	00,01,02
05 or 40	1	03,04,05
05 or 40	2	06,07,08
05 or 40	3	09,10,11
19 or 54	4	12,13,14
19 or 54	5	15,16,17
19 or 54	6	18,19,20
19 or 54	7	21,22,23

- 4) The Frame Supervisory Panel, NTB37AB always contains two FSP Alarm CP NT6X36AA.
- 5) Refer to ECM-125 and NT0X32 for Frame Doors, Trim Panels, EMI requirement and other miscellaneous hardware.

RULES:

- AP 1) When PEC NTZZ17PB is ordered, these items are provided.
- AP-01 1) Items marked AP-01 are supplied with NTB30AB and are listed for sparing purposes.

- RUL1 1) Provide one (1) NTZZ17HA ISDN 2B1Q Line Concentrating Module for every eight (8) Line Drawers required with 2B1Q 'U' interface compatibility.
- RUL2 1) Provide one (1) P0689450 French Warning Label when required by Canadian customers. This label is to be affixed to the frame FSP.
- RUL3 1) Provide one (1) Shelf Position Identification Label for the Trim Panel, P0707612, for every six (6) LCEI Frames.

INTERNATIONAL CTME AXU/OAU PACKAGE

PEC CODE: NTZZ37RB

CPC CODE: B0242548

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ37RB is the International office alarm cross-connect shelf (AXU), primary alarm IMTM (OAU), associated hardware and cabling package in the Cabinetized Trunk Module Equipment (CTME).

The AXU and OAU are functional pair and must be mounted together on the same frame.

REFERENCE DOCUMENTATION: MSRX32AA 01 14
SLZZ37RB 00 01
NTZZ37RB REL 01

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI Ron Hogan Dept. 3471 (PPK)

MAIN CONTACT: NTI James Marsden Dept. 3471 (PPK)

NTZZ37RB EMC2-20-AXU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 21	----- ECM 636 08	Previous history not available ET 34793 - Update bulkhead cabling and filter adaptors in the stocklist. ET 16689 - Add Safety Boots to the stocklist and remove RUL2. ECD 018-39685 - Change power strapping
94 04 23	ECM 636 10	ET 38293 - Update cable changes.
95 03 13	ECM 600 14	Replace safety boots for MTM & TM8 MD NT3X89AA,BA and replace with NT3X89CA per EC 18-43305
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
95 06 22	ECM 601 22	MD Building Block per ET23819 and Design information.

The International CTME AXU/OAU Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
# Alarm X-Conn Shelf	NT3X89AA	AXU	1	47		AP
Alarm X-Conn Shelf	NT3X89CA	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
AXU Bulkhead Cabling	NTRX3223		2	47		AP
AXU Bulkhead Cabling	NTRX3224		10	47		AP
AXU Bulkhead Cabling	NTRX3225		10	47		AP
AXU Bulkhead Cabling	NTRX3226		1	47		AP
AXU Bulkhead Cabling	NTRX3227		1	47		AP
AXU Bulkhead Cabling	NTRX3228		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		4	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
IMTM Shelf	NT2X58BC	OAU	1	33		AP
IMTM Common CP	NT2X58AY			33		RUL1
IMTM Common CP	NT2X58BB			33		RUL1
IMTM Common CP	NT2X58CL			33		RUL1
IMTM Common CP	NT2X58DB			33		RUL1
Provisionable Cards	AR			33		RUL1
Filler Faceplate	NT0X50AC			33		RUL1
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Personality Plate (AXU/OAU)	P0733890		1	33		AP
OAU Bulkhead Cabling	NTRX3220		3	33	C14-16	AP
37 Pin Filter Adapter	A0316598		8	33		AP
9 Pin Filter Adapter	A0344127		6	33		AP
Mounting Hardware	A0317136		56	33		AP
Washer	P0148330		56	33		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Safety Boots	P0743593		6	33		AP
Boot Cover	P0732389		6	33		AP
Cable Braid Assembly	NT0X9537		1	33		AP
Power Cable Assembly	NTNX1601		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT3X89AA	MD	NT3X89CA

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

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

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

NOTES:

- 1) Provide a maximum of one (1) Alarm Cross-connect (AXU)/Primary Alarm Unit (OAU), per office. The AXU and the primary alarm MTM (OAU) comprise a functional pair and must be mounted together on the same frame. To limit cable congestion and reduce drop lengths the AXU and the OAU are located in positions 47 and 33 respectively. The secondary alarm MTM shall be restricted to position 47 in another cabinet (on a different power feed from the Primary).

The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there.

See Table D in Section EMA14-04-000 for cards mounted on the above modules.

Do not fuse shelf position 47 when AXU shelf NT3X89CA is provided.

- 2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3223 for each of the following:
 - AXU connector C00 to bulkhead connector 33C00,
 - AXU connector C01 to bulkhead connector 33C01,
 - One NTRX3224 for each of the following:
 - AXU connector C05 to bulkhead connector 47C05,
 - AXU connector C06 to bulkhead connector 47C06,
 - AXU connector C09 to bulkhead connector 47C09,
 - AXU connector C10 to bulkhead connector 47C10,
 - AXU connector C13 to bulkhead connector 47C13,
 - AXU connector C14 to bulkhead connector 47C14,
 - AXU connector C17 to bulkhead connector 47C17,
 - AXU connector C18 to bulkhead connector 47C18,
 - AXU connector C21 to bulkhead connector 47C21,
 - AXU connector C22 to bulkhead connector 47C22,

- One NTRX3225 for each of the following:
 - AXU connector C03 to bulkhead connector 47C03,
 - AXU connector C04 to bulkhead connector 47C04,
 - AXU connector C07 to bulkhead connector 47C07,
 - AXU connector C08 to bulkhead connector 47C08,
 - AXU connector C11 to bulkhead connector 47C11,
 - AXU connector C12 to bulkhead connector 47C12,
 - AXU connector C15 to bulkhead connector 47C15,
 - AXU connector C16 to bulkhead connector 47C16,
 - AXU connector C19 to bulkhead connector 47C19,
 - AXU connector C20 to bulkhead connector 47C20.
- One NTRX3226 to connect:
 - AXU connector F00 to bulkhead connector 33F00,33F00A;
- One NTRX3227 to connect:
 - AXU connector F01 to bulkhead connector 33F01;
- One NTRX3228 to connect:
 - AXU connector G00 to bulkhead connector 33G00;
- One NTRX32EB(replaces NTRX3229) to connect:
 - AXU connector C43 to bulkhead connector 33C43;
- One NTRX32EC(replaces NTRX3234) to connect:
 - AXU connector C44 to bulkhead connector 33C44;
- One NTRX32ED(replaces NTRX3235) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T01;
- One NTRX32EE(replaces NTRX3236) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T03;
- One NTRX32EF(replaces NTRX3237) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T04;
- One NTRX32EG(replaces NTRX3238) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T05;
- One NTRX32EH(replaces NTRX3239) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T06;
- One NTRX32EJ(replaces NTRX3240) to connect:
 - AXU connector TB TB1 to bulkhead connector 33T02;

- One NTRX3242 for each of the following:
 - AXU shelf 47 connector A00
 - to MTM/OAU at shelf 33 slot 09,
 - AXU shelf 47 connector A04
 - to MTM/OAU at shelf 33 slot 07,
 - AXU shelf 47 connector A05
 - to MTM/OAU at shelf 33 slot 05,
 - One NTRX3243 for each of the following:
 - AXU shelf 47 connector A06
 - to MTM/OAU at shelf 33 slot 08
 - when provisioned with a NT3X83AA,
 - or
 - AXU shelf 47 connector A07
 - to MTM/OAU at shelf 33 slot 08
 - when provisioned with a NT3X84AA;
 -
 - AXU shelf 47 connector A01
 - to MTM/OAU at shelf 33 slot 10,
 - AXU shelf 47 connector A08
 - to MTM/OAU at shelf 33 slot 11,
 - AXU shelf 47 connector A02
 - to MTM/OAU at shelf 33 slot 12;
 - One NTRX3244 for each of the following:
 - AXU shelf 47 connector A03
 - to MTM/OAU at shelf 33 slot 13;
 - One NTRX3220 for each of the following:
 - OAU connector 14 to bulkhead connector 33C09,
 - OAU connector 15 to bulkhead connector 33C10,
 - OAU connector 16 to bulkhead connector 33C11.
- 3) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions F00, F00A, F01, C09, C10, C11, C43 and C44.
- One A0344127 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions T01, T02, T03, T04, T05 and T06.

- 4) The NTN1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58BC in shelf position 33. This modification replaces the strapping of SP-48V power to FLT-48V and to be applied to existing offices on a "next time in" basis.
- 5) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ37RB is ordered, these items are provided.
- RUL1 1) For each IMTM provide an IMTM common circuit pack as follows:
- For Turkey, provide:
 - one (1) NT2X58AY IMTM Common CP,
 - For Scopedia in the UK and Spain, provide:
 - one (1) NT2X58BB IMTM Common CP,
 - For the Caribbean Expansion Plan (CEP), provide:
 - one (1) NT2X58CL IMTM Common CP, and
 - For Mercury DMS-250, provide:
 - one (1) NT2X58DB IMTM Common CP.
- 2) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an OAU.
- 3) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot:
- one (1) NT0X50AC Filler Faceplate.

INTERNATIONAL CTME AXU/OAU PACKAGE

PEC CODE: NTZZ37RA

CPC CODE: B0235575

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: AXU/OAU

ENGINEERING DESCRIPTION: NTZZ37RA is the International office alarm cross-connect shelf (AXU), primary alarm IMTM (OAU), associated hardware and cabling package in the Cabinetized Trunk Module Equipment (CTME).

The AXU and OAU are functional pair and must be mounted together on the same frame.

REFERENCE DOCUMENTATION: MSRX32AA 01 14
SLZZ37RA 00 02
NTZZ37RA REL 02

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

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

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

NTZZ37RA EMC2-20-AXU-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 21	----- ECM 636 08	Previous history not available ET 34793 - Update bulkhead cabling and filter adaptors in the stocklist. ET 16689 - Add Safety Boots to the stocklist and remove RUL2. ECD 018-39685 - Change power strapping ET 38293 - Update cable changes.
94 04 23	ECM 636 10	Replace safety boots for MTM & TM8
95 03 13	ECM 600 14	MD building Block
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
95 06 22	ECM 601 22	Reinstate Building Block per ET23819 and Design information.
95 11 02	ECM 601 23	MD and Retire EMS.

The International CTME AXU/OAU Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
AXU Ground Cable	NT0X95BW		1	60		AP
Alarm X-Conn Shelf	NT3X89AA	AXU	1	47		AP
Personality Plate (AXU)	P0715586		1	47		AP
AXU Bulkhead Cabling	NTRX3223		2	47		AP
AXU Bulkhead Cabling	NTRX3224		10	47		AP
AXU Bulkhead Cabling	NTRX3225		10	47		AP
AXU Bulkhead Cabling	NTRX3226		1	47		AP
AXU Bulkhead Cabling	NTRX3227		1	47		AP
AXU Bulkhead Cabling	NTRX3228		1	47		AP
AXU Bulkhead Cabling	NTRX32EB		1	47		AP
AXU Bulkhead Cabling	NTRX32EC		1	47		AP
AXU Bulkhead Cabling	NTRX32ED		1	47		AP
AXU Bulkhead Cabling	NTRX32EE		1	47		AP
AXU Bulkhead Cabling	NTRX32EF		1	47		AP
AXU Bulkhead Cabling	NTRX32EG		1	47		AP
AXU Bulkhead Cabling	NTRX32EH		1	47		AP
AXU Bulkhead Cabling	NTRX32EJ		1	47		AP
AXU-OAU Cabling	NTRX3242		3	47		AP
AXU-OAU Cabling	NTRX3243		4	47		AP
AXU-OAU Cabling	NTRX3244		1	47		AP
IMTM Shelf	NT2X58BC	OAU	1	33		AP
IMTM Common CP	NT2X58AY			33		RUL1
IMTM Common CP	NT2X58BB			33		RUL1
IMTM Common CP	NT2X58CL			33		RUL1
IMTM Common CP	NT2X58DB			33		RUL1
Provisionable Cards	AR			33		RUL1
Filler Faceplate	NT0X50AC			33		RUL1
Power Converter	NT2X70AF		1	33	20	AP
Desig Label (NT2X70AF)	P0809960		1	33	20	AP
Personality Plate (AXU/OAU)	P0733890		1	33		AP
OAU Bulkhead Cabling	NTRX3220		3	33	C14-16	AP
37 Pin Filter Adapter	A0316598		8	33		AP
9 Pin Filter Adapter	A0344127		6	33		AP
Mounting Hardware	A0317136		56	33		AP
Washer	P0148330		56	33		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Safety Boots	P0743593		6	33		AP
Boot Cover	P0732389		6	33		AP
Cable Braid Assembly	NT0X9537		1	33		AP
Power Cable Assembly	NTNX1601		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

A&M - ADDITIONS & 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) Provide a maximum of one (1) Alarm Cross-connect (AXU)/Primary Alarm Unit (OAU), per office. The AXU and the primary alarm MTM (OAU) comprise a functional pair and must be mounted together on the same frame. To limit cable congestion and reduce drop lengths the AXU and the OAU are located in positions 47 and 33 respectively. The secondary alarm MTM shall be restricted to position 47 in another cabinet (on a different power feed from the Primary).

The AXU functions purely as a cross-connect facility for the Office Alarm System and is not itself a TM. It therefore requires no speech links to the Network and is not assigned a port there.

See Table D in Section EMA14-04-000 for cards mounted on the above modules.

Do not fuse shelf position 47 when AXU shelf NT3X89AA is provided.

- 2) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3223 for each of the following:
 - AXU connector C00 to bulkhead connector 33C00,
 - AXU connector C01 to bulkhead connector 33C01,
 - One NTRX3224 for each of the following:
 - AXU connector C05 to bulkhead connector 47C05,
 - AXU connector C06 to bulkhead connector 47C06,
 - AXU connector C09 to bulkhead connector 47C09,
 - AXU connector C10 to bulkhead connector 47C10,
 - AXU connector C13 to bulkhead connector 47C13,
 - AXU connector C14 to bulkhead connector 47C14,
 - AXU connector C17 to bulkhead connector 47C17,
 - AXU connector C18 to bulkhead connector 47C18,
 - AXU connector C21 to bulkhead connector 47C21,
 - AXU connector C22 to bulkhead connector 47C22,

- One NTRX3225 for each of the following:
AXU connector C03 to bulkhead connector 47C03,
AXU connector C04 to bulkhead connector 47C04,
AXU connector C07 to bulkhead connector 47C07,
AXU connector C08 to bulkhead connector 47C08,
AXU connector C11 to bulkhead connector 47C11,
AXU connector C12 to bulkhead connector 47C12,
AXU connector C15 to bulkhead connector 47C15,
AXU connector C16 to bulkhead connector 47C16,
AXU connector C19 to bulkhead connector 47C19,
AXU connector C20 to bulkhead connector 47C20.
- One NTRX3226 to connect:
AXU connector F00 to bulkhead connector 33F00,33F00A;
- One NTRX3227 to connect:
AXU connector F01 to bulkhead connector 33F01;
- One NTRX3228 to connect:
AXU connector G00 to bulkhead connector 33G00;
- One NTRX32EB(replaces NTRX3229) to connect:
AXU connector C43 to bulkhead connector 33C43;
- One NTRX32EC(replaces NTRX3234) to connect:
AXU connector C44 to bulkhead connector 33C44;
- One NTRX32ED(replaces NTRX3235) to connect:
AXU connector TB TB1 to bulkhead connector 33T01;
- One NTRX32EE(replaces NTRX3236) to connect:
AXU connector TB TB1 to bulkhead connector 33T03;
- One NTRX32EF(replaces NTRX3237) to connect:
AXU connector TB TB1 to bulkhead connector 33T04;
- One NTRX32EG(replaces NTRX3238) to connect:
AXU connector TB TB1 to bulkhead connector 33T05;
- One NTRX32EH(replaces NTRX3239) to connect:
AXU connector TB TB1 to bulkhead connector 33T06;
- One NTRX32EJ(replaces NTRX3240) to connect:
AXU connector TB TB1 to bulkhead connector 33T02;

- One NTRX3242 for each of the following:
 - AXU shelf 47 connector A00
 - to MTM/OAU at shelf 33 slot 09,
 - AXU shelf 47 connector A04
 - to MTM/OAU at shelf 33 slot 07,
 - AXU shelf 47 connector A05
 - to MTM/OAU at shelf 33 slot 05,
 - One NTRX3243 for each of the following:
 - AXU shelf 47 connector A06
 - to MTM/OAU at shelf 33 slot 08
 - when provisioned with a NT3X83AA,
 - or
 - AXU shelf 47 connector A07
 - to MTM/OAU at shelf 33 slot 08
 - when provisioned with a NT3X84AA;
 -
 - AXU shelf 47 connector A01
 - to MTM/OAU at shelf 33 slot 10,
 - AXU shelf 47 connector A08
 - to MTM/OAU at shelf 33 slot 11,
 - AXU shelf 47 connector A02
 - to MTM/OAU at shelf 33 slot 12;
 - One NTRX3244 for each of the following:
 - AXU shelf 47 connector A03
 - to MTM/OAU at shelf 33 slot 13;
 - One NTRX3220 for each of the following:
 - OAU connector 14 to bulkhead connector 33C09,
 - OAU connector 15 to bulkhead connector 33C10,
 - OAU connector 16 to bulkhead connector 33C11.
- 3) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions F00, F00A, F01, C09, C10, C11, C43 and C44.
- One A0344127 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on personality plate P0733890, shelf position 33, in each of the following personality plate positions T01, T02, T03, T04, T05 and T06.

- 4) The NTN1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58BC in shelf position 33. This modification replaces the strapping of SP-48V power to FLT-48V and to be applied to existing offices on a "next time in" basis.
- 5) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ37RA is ordered, these items are provided.
- RUL1 1) For each IMTM provide an IMTM common circuit pack as follows:
- For Turkey, provide:
 - one (1) NT2X58AY IMTM Common CP,
 - For Scopedia in the UK and Spain, provide:
 - one (1) NT2X58BB IMTM Common CP,
 - For the Caribbean Expansion Plan (CEP), provide:
 - one (1) NT2X58CL IMTM Common CP, and
 - For Mercury DMS-250, provide:
 - one (1) NT2X58DB IMTM Common CP.
- 2) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an OAU.
- 3) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot:
- one (1) NT0X50AC Filler Faceplate.

INTERNATIONAL CIOE DDU PACKAGE

PEC CODE: NTZZ37EM

CPC CODE: B0235720

| RATING: MD

REPLACES: None

REPLACED BY: None

ABBREVIATION NAME: DDU

ENGINEERING DESCRIPTION: The NTZZ37EM package for International CIOE contains the NT4X00AF Disk Drive Unit (DDU) Shelf and associated hardware for mounting in Cabinetized Input/Output Equipment (CIOE), Model A cabinets.

The DDU functions as the office primary mass storage system.

One or two NT4X00AG 5.25", 228MB Disk Drives may be mounted on the shelf.

REFERENCE DOCUMENTATION: SLZZ37EM 00 03

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

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

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

NTZZ37EM EMC2-20-DDU CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 07 08	ECM 636 11	Correct AP items per ET 53313. Delete optional P0706920, replaced by AP item.
96 03 19	ECM 613 32	MD section. NT4X00AF is MD per ECD 018-45271.

The International CIOE DDU Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Disk Drive Unit Shelf	NT4X00AF	DDU	1	05		AP
Disk Drive Unit Assembly	NT4X0023		1	05		AP-01
5.25" DDU (228.7 MB)	NT4X00AG		1	05	10,18	RUL1
Mercury Disk Hardware Kit	NT4X0038		1	05	10,18	RUL1
Pwr Conv. (+-5V,+12V,+24V)	NT1X78AA		2	05	02,26	AP
Desig. Label (NT1X78AA)	P0668410		2	05	02,26	AP
Personality Plate (DDU)	P0726351		1	05		AP
DDU Cable Braid Assembly	NT0X9501		1	05		AP
DDU Cable Braid Assembly	NT0X9537		1	05		AP
Cable (DDU/Stratum to FSP)	NT6X0325		2	05		AP
Cable (DDU to FSP)	NT6X0329		2	05		AP
Boot	P0743593		8	05		AP
Bolt Cover	P0732389		8	05		AP
Lug	A0292996		3	05		AP
Cap Screw	P0069242		2	05		AP
Nut	P0065747		2	05		AP
External Tooth Lock Washer	P097Y579		4	05		AP
Flat Washer	P0160739		2	05		AP
Helical Washer	P0183028		2	05		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 always provided NT4X00AF shelf is to be mounted in CIOE shelf position 05 only.
- 2) The 1st NT4X00AG DDU shall be located on the left side (slot 10) of the NT4X00AF Disk Drive shelf. If a 2nd DDU is required on the same shelf, it shall be located on the right side (slot 18).
- 3) The NT1X55DA disk drive controller must be provisioned with the NT4X00AF (two controllers per shelf). If there are two DDUs, one controller (NT1X55) shall mount on IOC 0 and the other on IOC 1.
- 4) Connect always provided cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NT6X0325	2	DDU	05	SCR	FSP (60)	TB1
NT6X0329	2			SCR		TB1

RULES:

- AP 1) When PEC NTZZ37EM is ordered, these items are provided.
- AP-01 1) This item is always provided with NT4X00AF and is shown here for completeness.
- RUL1 1) For each NTZZ37EM, provide per customer requirements:
- one (1) or two (2) NT4X00AG 5.25" DDU (228.7 MB).
- For each NT4X00AG, provide:
- one (1) NT4X0038 Mercury Disk Hardware Kit.

DISK DRIVE UNIT SHELF PACKAGE
FOR MODEL B CIOE

PEC CODE: NTZZ32FM

CPC CODE: B0238382

| RATING: MD.

REPLACES: Not applicable

REPLACED BY: Not applicable

ABBREVIATION NAME: DDU

ENGINEERING DESCRIPTION: The NTZZ32FM package contains the Disk Drive Unit Shelf and associated hardware to mount on the CIOE Model B. The DDU functions as the office primary mass storage system.

REFERENCE DOCUMENTATION: SLZZ32FM 00 03
NTZZ32FM REL 03

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

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

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

NTZZ32FM EMC2-20-DDU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 21	API 435 01	To introduce the DDU BB for CIOE Model B.
93 11 16	ECM 683 01	EC 018-41434 Remove Breaker Des labels and change boots and lug. Also, correct 228MB DDU to show NTZZ09UA instead of NTZZ32GA.
94 11 21	ECM 613 25	EC 024-93121 Replace NT0X9501 with NT0X9538.
96 03 19	ECM 613 32	EC 018-45271 MDed NT4X00AG disk drive, NT4X00AF shelf and as a result, requires the retiring of this BB.

The Disk Drive Unit Shelf Package for Model B CIOE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Disk Drive Unit Shelf	NT4X00AF	DDU	1	05		AP
Disk Drive Unit Assembly	NT4X0023		1	05		AP-01
# 228 MB Disk Drive	NTZZ09UA		2	05	10,18	RUL1
Pwr Conv. (+-5V,+12V,+24V)	NT1X78AA		2	05	02,26	AP
Desig. Label (NT1X78AA)	P0668410		2	05	02,26	AP
Personality Plate (DDU)	P0726351		1	05		AP
DDU Cable Braid Assembly	NT0X9538		1	05		AP
Bolt	P098A109		2	05		AP
Spring Washer Helical	P0183028		4	05		AP
Flat Washer	P0160739		4	05		AP
Hex Nut	P0065747		8	05		AP
External Tooth Lock	P097Y579		8	05		AP
Filter Line EMI Feedthru	A0326932		1	05		AP
Bolt Cover	P0732389		8	05		AP
Terminal Lug	A0292996		3	05		AP
Boot	P0743593		8	05		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ09UA	MD	No Replacement

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

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

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

NOTES:

- 1) The NT4X00AF shelf is to be mounted in CIOE shelf position 05 only.
- 2) Mount the first NTZZ09UA DDU on the left side (slot 10) of the NT4X00AF Disk Drive shelf. If a second NTZZ09UA is required on the same shelf, mount it on the right side (slot 18).
- 3) The NT1X55DA disk drive controller must be provisioned with the NT4X00AF (two controllers per shelf). If there are two DDUs, one controller (NT1X55) mounts on IOC 0 and the other on IOC 1.
- 4) See CIOE Model B insert for cable connections.

RULES:

- AP 1) When PEC NTZZ32FM is ordered, these items are provided.
- AP-01 1) This item is always provided with NT4X00AF and is shown here for completeness.
- RUL1 1) Provide a minimum one (1) maximum two (2) NTZZ09UA 228MB Disk Drive per NTZZ32FM as per customer requirements.

760 MBYTE DPP ASSEMBLY
WITH 56K/COMPRESSION POLLING

PEC CODE: NTZZ32DM

CPC CODE: B0238376

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ32DM assembly contains a distributed processing peripheral, two 760 MByte disk drives, and 56K/Compression polling.

REFERENCE DOCUMENTATION: SLZZ32DM 00 01
NTZZ32DM REL 01

MARKETS: Applicable markets:

US
CALA

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

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

NTZZ32DM EMC2-20-DPP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 11 16	----- ECM 683 01	Previous history not available To introduce the 760 MB DPP with 56K/Compression polling. MD Section. NT8X48AD is rated A&M.
96 03 25	ECM 306 24	

The 760 MByte DPP Assembly with 56K/Compression Polling is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dist. Processor Peripheral	NT8X48AD	DPP	1	33		AP
EPR0M (BCS29) CP	NT6M63CJ		2	A,B	2	AP
56K/Compression I/F CP	NT6M94BA		2	A,B	7	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A,B	11	AP
SCSI Disk X-Over CP	NT6M93AA		2	A,B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
760 MByte Disk Drive	NT6M72EA		2	A,B	21	AP
56K Connector CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
Keyed Status Panel Assy	NT6M59AA			A	19	RUL1
Keyless Status Panel Assy	NT6M59AB			A	19	RUL1
Filler Panel Assy	NT8M59BB			B	19	RUL2
Filler Panel Assy, rover	NT6M59BB			B	19	RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The DPP will always mount in position 33 in the CIOE Model B.

RULES:

- AP 1) When PEC NTZZ32DM is ordered, these items are provided.
- RUL1 1) A status panel is needed to provide a display of DPP processor status and a 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.
- RUL2 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 terminals, 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.

140 MBYTE DPP ASSEMBLY

PEC CODE: NTZZ32NA

CPC CODE: B0238857

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ32NA assembly contains a distributed processing peripheral and two 140 MByte disk drives.

REFERENCE DOCUMENTATION: SLZZ32NA 00 01
NTZZ32NA REL 01

MARKETS: Applicable markets:

US
CALA

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

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

NTZZ32NA EMC2-20-DPP-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	To introduce the 140 MB DPP Building block.
96 03 25	ECM 306 24	MD Section. NT8X48AD is rated A&M.

The 140 MByte DPP Assembly is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dist. Processor Peripheral	NT8X48AD	DPP	1	33		AP
EPROM (BCS21-29) CP	NT6M63CL		2	A,B	2	AP
Disk Drive I/F CP	NT6M66AL		2	A,B	11	AP
Disk X-Over CP	NT6M72AE		2	A,B	15	AP
140 MByte Disk Drive	NT6M72BA		2	A,B	21	AP
Keyed Status Panel Assy	NT6M59AA			A	19	RUL1
Keyless Status Panel Assy	NT6M59AB			A	19	RUL1
Filler Panel Assy	NT8M59BB			B	19	RUL2
Filler Panel Assy, rover	NT6M59BB			B	19	RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The DPP will always mount in position 33 in the CIOE Model B.

RULES:

- AP 1) When PEC NTZZ32NA is ordered, these items are provided.

- RUL1 1) A status panel is needed to provide a display of DPP processor status and a 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.
- RUL2 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 terminals, 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.

140 MBYTE DPP ASSEMBLY
WITH 56K/COMPRESSION POLLING

PEC CODE: NTZZ32NM

CPC CODE: B0238856

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPP

| ENGINEERING DESCRIPTION: The NTZZ32NM assembly contains a distributed processing peripheral, two 140 MByte disk drives, and 56K/Compression polling.

REFERENCE DOCUMENTATION: SLZZ32NM 00 01
NTZZ32NM REL 01

MARKETS: Applicable markets:

US
CALA

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

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

NTZZ32NM EMC2-20-DPP-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	To introduce the 140 MB DPP with 56K/Compression polling. MD Section. NT8X48AD is rated A&M.
96 03 25	ECM 306 24	

The 140 MByte DPP Assembly with 56K/Compression Polling is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dist. Processor Peripheral	NT8X48AD	DPP	1	33		AP
EPROM (BCS29) CP	NT6M63CJ		2	A,B	2	AP
56K/Compression I/F CP	NT6M94BA		2	A,B	7	AP
SCSI Disk Drive 140 I/F CP	NT6M66BC		2	A,B	11	AP
SCSI Disk X-Over CP	NT6M93AA		2	A,B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
140 MByte Disk Drive	NT6M72DE		2	A,B	21	AP
56K Connector CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
Keyed Status Panel Assy	NT6M59AA			A	19	RUL1
Keyless Status Panel Assy	NT6M59AB			A	19	RUL1
Filler Panel Assy	NT8M59BB			B	19	RUL2
Filler Panel Assy, rover	NT6M59BB			B	19	RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The DPP will always mount in position 33 in the CIOE Model B.

RULES:

- AP 1) When PEC NTZZ32NM is ordered, these items are provided.
- RUL1 1) A status panel is needed to provide a display of DPP processor status and a 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.
- RUL2 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 terminals, 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.

380 MBYTE DPP ASSEMBLY

PEC CODE: NTZZ32PM

CPC CODE: B0238854

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ32PM assembly contains a distributed processing peripheral and two 380 MByte disk drives.

REFERENCE DOCUMENTATION: SLZZ32PM 00 01
NTZZ32PM REL 01

MARKETS: Applicable markets:

US
CALA

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

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

NTZZ32PM EMC2-20-DPP-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	To introduce the 380 MB DPP Building block.
96 03 25	ECM 306 24	MD Section. NT8X48AD is rated A&M.

The 380 MByte DPP Assembly is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dist. Processor Peripheral	NT8X48AD	DPP	1	33		AP
EPROM (BCS21-29) CP	NT6M63CL		2	A,B	2	AP
Disk Drive I/F CP	NT6M66AH		2	A,B	11	AP
Disk X-Over CP	NT6M72AE		2	A,B	15	AP
380 MByte Disk Drive	NT6M72DA		2	A,B	21	AP
Keyed Status Panel Assy	NT6M59AA			A	19	RUL1
Keyless Status Panel Assy	NT6M59AB			A	19	RUL1
Filler Panel Assy	NT8M59BB			B	19	RUL2
Filler Panel Assy, rover	NT6M59BB			B	19	RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The DPP will always mount in position 33 in the CIOE Model B.

RULES:

- AP 1) When PEC NTZZ32PM is ordered, these items are provided.

- RUL1 1) A status panel is needed to provide a display of DPP processor status and a 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.
- RUL2 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 terminals, 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.

380 MBYTE DPP ASSEMBLY
WITH 56K/COMPRESSION POLLING

PEC CODE: NTZZ32PA

CPC CODE: B0238855

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ32PA assembly contains a distributed processing peripheral, two 380 MByte disk drives, and 56K/Compression polling.

REFERENCE DOCUMENTATION: SLZZ32PA 00 01
NTZZ32PA REL 01

MARKETS: Applicable markets:

US
CALA

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

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

NTZZ32PA EMC2-20-DPP-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 11 16	ECM 683 01	To introduce the 380 MB DPP with 56K/Compression polling. MD Section. NT8X48AD is rated A&M.
96 03 25	ECM 306 24	

The 380 MByte DPP Assembly with 56K/Compression Polling is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dist. Processor Peripheral	NT8X48AD	DPP	1	33		AP
EPROM (BCS29) CP	NT6M63CJ		2	A,B	2	AP
56K/Compression I/F CP	NT6M94BA		2	A,B	7	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A,B	11	AP
SCSI Disk X-Over CP	NT6M93AA		2	A,B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
380 MByte Disk Drive	NT6M72DD		2	A,B	21	AP
56K Connector CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
Keyed Status Panel Assy	NT6M59AA			A	19	RUL1
Keyless Status Panel Assy	NT6M59AB			A	19	RUL1
Filler Panel Assy	NT8M59BB			B	19	RUL2
Filler Panel Assy, rover	NT6M59BB			B	19	RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The DPP will always mount in position 33 in the CIOE Model B.

RULES:

- AP 1) When PEC NTZZ32PA is ordered, these items are provided.
- RUL1 1) A status panel is needed to provide a display of DPP processor status and a 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.
- RUL2 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 terminals, 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.

INTERNATIONAL CIOE DPP PACKAGE

PEC CODE: NTZZ37DM

| CPC CODE: B0235719

| RATING: MD

| REPLACES: N/A

| REPLACED BY: N/A

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ37DM assembly contains two 380 MByte disk drives or two 760 MByte disk drives, and the hardware required to mount them on a CIOE.

REFERENCE DOCUMENTATION: SLZZ37DM 00 01
NTZZ37DM REL 01

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Richard Mathias Dept. 3471 (PPK)

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

NTZZ37DM EMC2-20-DPP-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 25	----- ECM 306 24	Previous history not available MD Section. NT8X48AD is rated A&M.

The International CIOE DPP Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dist. Processor Peripheral	NT8X48AD	DPP	1	33		AP
EPROM (BCS29) CP	NT6M63CJ		2	A,B	2	AP
56 Kbps Compression I/F CP	NT6M94BA		2	A,B	7	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A,B	11	AP
SCSI Disk X-Over CP	NT6M93AA		2	A,B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
380 MByte Disk Drive	NT6M72DD			A,B	21	RUL1
760 MByte Disk Drive	NT6M72EA			A,B	21	RUL1
56K Conn CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K I/F Conn Cable Assy	NT6M85CA		1			AP
Personality Plate (DPP)	P0729518		1	33		AP
25 Pin Filter Adapter	A0316594		7	33		AP
Mounting Hardware	A0317136		28	33		AP
Mounting Hardware	P0148330		14	33		AP
DPP/Bulkhead Cable	NTRX3330		1	33		AP
DPP/Bulkhead Cable	NTRX3331		1	33		AP
DPP/Bulkhead Cable	NTRX3332		2	33		AP
DPP/Bulkhead Cable	NTRX3333		2	33		AP
Cable Assembly 35"	NTNX69AB		1	33		AP
Connector	A0361663		1	33		AP
Hood	A0323869		1	33		AP
Cable Assembly	NTNX69AC		1	33		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) One A0316594 25 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are always provided for each connector position on the DPP personality plate (P0729518) indicated in the table below:

Personality Plate	Shelf	Personality Plate Connector Position
Filter Adapter		
P0729518	DPP	A J1, A J4, B J11-B J14, A J16
A0316594		

- 2) The always provided cables shall be connected as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3330	1	DPP	33	J1	47	A J1
NTRX3331	1	CH/A		J4		A J4
NTRX3332	2			J11		B J11
				J12		B J12
NTRX3333	2			J13		B J13
				J14		B J14
NTNX69AB	1			J16		A J16
NTNX69AC	1	CH/B		J16	FSP (60)	P&ALM 1 P&ALM 3

RULES:

AP 1) When PEC NTZZ37DM is ordered, these items are provided.

RUL1 1) Provide per office requirements:

- two (2) NT6M72DD 380 MByte Disk Drives, or
- two (2) NT6M72EA 760 MByte Disk Drives.

2) The Distributed Processor Peripheral (DPP) will allow remote polling of Automatic Message Accounting (AMA) in the DMS-100F per NTX243AA software package.

3) The 380 MByte AMATPS call record capacity is 3,341,520 AMA records. The 760 MByte DPP AMATPS call record capacity is 6,336,200 records.

Note - These figures represent actual storage values. DPP warning alarms will occur as these figures are reached.

4) Each of the two DPP chassis require one tape controller card (NT1X68) and one port on a terminal controller (NT1X67). These ports should be on different IOCs.

5) Each of the two DPP chassis requires -48VDC from the CPDC via the FSP and also FSP alarms. Power for chassis A should be from CPDC feed 'A' and power for chassis B should be from CPDC feed 'B'.

6) A DPP mounted in position 33 occupies mounting position 47 also.

INTERNATIONAL CTME DRA PACKAGE

PEC CODE: NTZZ37SA

CPC CODE: B0235576

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: IDRA

ENGINEERING DESCRIPTION: NTZZ37SA is the International Maintenance Trunk Module for Digital Recorded Announcement (IDRA), associated hardware and cabling package in the Cabinetized Trunk Module Equipment (CTME).

REFERENCE DOCUMENTATION: SLZZ37SA 00 02
NTZZ37SA REL 02

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

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

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

NTZZ37SA EMC2-20-DRA-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 21	----- ECM 636 08	Previous history not available ET 16689 - Design change of safety boots and power cables.
94 04 23	ECM 636 10	Replace safety boots for MTM & TM8
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
96 02 09	ECM 601 28	MD and Retire this EMS.

The International CTME DRA Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IMTM for IDRA Shelf	NT2X58BD	IDRA	1	XX		AP
IMTM Common CP	NT2X58AY			XX		RUL1
IMTM Common CP	NT2X58BB			XX		RUL1
IMTM Common CP	NT2X58CL			XX		RUL1
IMTM Common CP	NT2X58DB			XX		RUL1
Provisionable Cards	AR			XX		RUL1
Filler Faceplate	NT0X50AC			XX		RUL1
Power Converter	NT2X70AF		1	XX	20	AP
Desig Label (NT2X70AF)	P0809960		1	XX	20	AP
Personality Plate (DRA)	P0730034		1	XX		AP
Bulkhead Cabling	NTRX3221		4	XX		AP
Bulkhead Cabling	NTRX3220		4	XX		AP
37 Pin Filter Adapter	A0316598		8	XX		AP
Mounting Hardware	A0317136		32	XX		AP
Washer	P0148330		32	XX		AP
Safety Boots	P0743593		6	XX		AP
Boot Cover	P0732389		6	XX		AP
Cable Braid Assembly	NT0X9537		1	XX		AP
Power Cable Assembly	NTNX1601		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) "XX" in SHF POS can be one of 47,33,19,05.
- 2) Modules are assigned to positions on the frame in the shelf position order 05, 19, 33, 47.
- 3) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3221 for each of the following:
MTM connector 09 to bulkhead connector xxC04,
MTM connector 10 to bulkhead connector xxC05,
MTM connector 11 to bulkhead connector xxC06,
MTM connector 12 to bulkhead connector xxC07,
 - One NTRX3220 for each of the following:
MTM connector 13 to bulkhead connector xxC08,
MTM connector 14 to bulkhead connector xxC09,
MTM connector 15 to bulkhead connector xxC10,
MTM connector 16 to bulkhead connector xxC11,
(xx denotes shelf position).
- 4) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on shelf DRA personality plate P0730034 in personality plate positions C04 to C11.
- 5) The NTNX1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58BD. This modification replaces the strapping of SP-48V power to FLT-48V and to be applied to existing offices on a "next time in" basis.
- 6) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ37SA is ordered, these items are provided.

- RUL1 1) For each IMTM for DRA provide an IMTM common circuit pack as follows:
- For Turkey, provide:
 - one (1) NT2X58AY IMTM Common CP,
 - For Scopedial in the UK and Spain, provide:
 - one (1) NT2X58BB IMTM Common CP,
 - For the Caribbean Expansion Plan (CEP), provide:
 - one (1) NT2X58CL IMTM Common CP, and
 - For Mercury DMS-250, provide:
 - one (1) NT2X58DB IMTM Common CP.
- 2) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an MTM for DRA.
- 3) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot:
- one (1) NT0X50AC Filler Faceplate.

INTERNATIONAL CIPE DS30 NETWORK INTERFACE

PEC CODE: NTZZ37CA

CPC CODE: B0235223

| RATING: Manufacture Discontinued

REPLACES: None

REPLACED BY: NTZZ37CN and NTZZ37CP

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ37CA contains the circuit packs and cables required for DS30 interface to the Network in an equipped LGC or DTC module of the NTZZ37AA Cabinetized International Peripheral Equipment.

REFERENCE DOCUMENTATION: SLZZ37CA 00 02

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Darrell Deeds Dept. 3471 (PPK)

MAIN CONTACT: Darrell Deeds Dept. 3471 (PPK)

NTZZ37CA EMC2-20-IF-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 17	ECM 659 01	ECDs 011-16135, 011-16761, 011-16850.
93 10 12	ECM 659 05	Update description.
94 02 01	ECM 659 06	Manufacture Discontinue.
94 08 19	ECM 659 10	Retire this Manual Section.

The International CIPE DS30 Network Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Network Interface CP	NT6X40AC		2	X+14,X	22	AP
DS30 Interface Cable Assy	NTRX4610		2	X+14,X	22	AP
Desig. Label For NT6X40AC	P0695397		2	X+14,X	22	AP
Connector Key Bracket	P0638263		2	X+14,X	22R	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 Cabinetized DMS, the NTZZ37CA can be assigned to shelf mounting positions 05 and 33 (i.e. for one module X=05 and for the other module X=33).

RULES:

- AP 1) When PEC NTZZ37CA is ordered, these items are provided.

INTERNATIONAL DS512 NETWORK INTERFACE

PEC CODE: NTZZ37DA

CPC CODE: B0235224

| RATING: Manufacture Discontinued

REPLACES: Not applicable

| REPLACED BY: NTZZ37CQ

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ37DA contains the circuit packs required for DS512 interface to the Network in an equipped LGC or DTC module of the NTZZ37AA Cabinetized International Peripheral Equipment.

REFERENCE DOCUMENTATION: SLZZ37DA 00 05
NTZZ37DA REL 04

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: George Boutnikoff Dept. S646 (BRW)

MAIN CONTACT: George Boutnikoff Dept. S646 (BRW)

NTZZ37DA EMC2-20-IF-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 17	ECM 659 01	ECDs 011-16135, 011-16761, 011-16850.
93 10 12	ECM 659 05	Update description.
94 02 01	ECM 659 06	Manufacture Discontinued.

The International DS512 Network Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS-512 XPM Interface CP	NT6X40FA		2	X+14,X	22	AP
DS-512 XPM Paddle Board	NT6X40GA		2	X+14,X	22R	AP
Snap Bushing	P0682727		1	X		AP
Fiber I/F H/W Assembly	NT6X02BU		1	X	22R	AP
Optical Fiber Danger Label	P0736273		1	X		AP
Desig. Label (NT6X40FA)	P0729895		2	X+14,X	22	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) For International DMS Cabinets, the NTZZ37DA can be assigned to shelf mounting positions 05 and 33 (i.e. for one module X=05 and for the other module X=33).

RULES:

- AP 1) When PEC NTZZ37DA is ordered, these items are provided.

INTERNATIONAL CIDC DS30 NETWORK INTERFACE

PEC CODE: NTZZ37FA

CPC CODE: B0235226

| RATING: Manufacture Discontinued

REPLACES: None

REPLACED BY: NTZZ37CN/CP

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ37FA contains the circuit packs and cables required for DS30 interface to the Network in the NTZZ37EA CIDC.

REFERENCE DOCUMENTATION: SLZZ37FA 00 02
NTZZ37FA REL 02

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Darrell Deeds Dept. 3471 (PPK)

MAIN CONTACT: Darrell Deeds Dept. 3471 (PPK)

NTZZ37FA EMC2-20-IF-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 14	ECM 660 01	Transfer from ECM-636.
94 02 11	ECM 660 03	Manufacture Discontinued.
94 07 21	ECM 660 04	Retire this manual section.

The International CIDC DS30 Network Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Network Interface CP	NT6X40AC		2	X+14,X	23	AP
DS30 Interface Cable Assy	NTRX4610		2	X+14,X	23	AP
Connector Key Bracket	P0638263		2	X+14,X	23R	AP
Desig. Label For NT6X40AC	P0695397		2	X+14,X	23	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) For Cabinetized DMS, the NTZZ37FA can be assigned to shelf mounting positions 05 and 33 (i.e. for one module X=05 and for the other module X=33).

RULES:

- AP 1) When PEC NTZZ37FA is ordered, these items are provided.

INTERNATIONAL CIDC DS512 NETWORK INTERFACE

PEC CODE: NTZZ37GA

CPC CODE: B0235227

| RATING: Manufacture Discontinued

REPLACES: None

REPLACED BY: NTZZ37CQ

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ37GA contains the circuit packs required for DS512 interface to the Network in the NTZZ37EA CIDC.

REFERENCE DOCUMENTATION: SLZZ37GA 00 05
NTZZ37GA REL 05

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Darrell Deeds Dept. 3471 (PPK)

MAIN CONTACT: Darrell Deeds Dept. 3471 (PPK)

NTZZ37GA EMC2-20-IF-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 12 14	ECM 660 01	Transfer from ECM-636 and update per ECD 011-17311.
94 02 11	ECM 660 03	Manufacture Discontinued.
94 07 21	ECM 660 04	Retire this manual section.

The International CIDC DS512 Network Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS-512 XPM Interface CP	NT6X40FA		2	X+14,X	23	AP
DS-512 XPM Paddle Board	NT6X40GA		2	X+14,X	23R	AP
Fiber I/F H/W Assembly	NT6X02BU		1	X	23R	AP
Snap Bushing	P0682727		1	X		AP
Optical Fiber Danger Label	P0736273		1	X		AP
Desig. Label For NT6X40FA	P0729895		2	X+14,X	23	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) For International Cabinetized DMS, the NTZZ37GA can be assigned to shelf mounting positions 05 and 33 (i.e. for one module X=05 and for the other module X=33).

RULES:

- AP 1) When PEC NTZZ37GA is ordered, these items are provided.

I/O CONTROLLER MODULE PACKAGE
FOR MODEL B CIOE

PEC CODE: NTZZ32EM

CPC CODE: B0238381

| RATING: MD.

REPLACES: Not applicable

| REPLACED BY: NTZZ32EN

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The NTZZ32EM package contains the Input/Output Controller Module and associated hardware to mount on the CIOE. The IOC houses device controller cards each of which has its own subsidiary MAP position.

REFERENCE DOCUMENTATION: SLZZ32EM 00 03
NTZZ32EM REL 03

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

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

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

NTZZ32EM EMC2-20-IOC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 21	API 445 01	To introduce the IOC BB for Model B CIOE.
93 11 16	ECM 683 01	EC 018-41434 Remove Des label and substitute new boot and lug.
94 03 11	ECM 683 03	EC 018-36231 Replace NT1X62CA and label with NT1X62CB and label.
94 04 18	ECM 613 19	EC 018-41413 NT1X61AG replaces NT1X61AD in CIOE Mod B. Therefore this BB is MD'd.

The I/O Controller Module Package for Model B CIOE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Controller Module	NT1X61AD	IOC	1	19		AP
I/O Shelf Assembly	NT1X6112		1	19		AP-01
I/O Message Controller CP	NT1X62CB		1	19	02	AP
Desig. Label for NT1X62CB	P0745105		1	19	02	AP
Filler Face Plate 0.875	NT0X50AA		10	19	1, 5, 7, 9, 11, 13, 15, 17, 19, 21	AP
I/O Device Controller CP	As Req'd			19	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL1
Filler Face Plate 0.875	NT0X50AA			19	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL2
I/O Control Terminator	NT0X67AA		1	19	22	AP
Filler Face Plate 1.72	NT0X50AF		1	19	23	AP
Power Converter	NT2X70AE		1	19	25	AP
Desig. Label (NT2X70AE)	P0698943		1	19	25	AP
Personality Plate (IOC)	P0726316		1	33		AP
Personality Plate (IOC)	P0726317		1	19		AP
37 Pin Filter Adapter	A0316599		36	19		AP
Mounting Hardware	A0317136		144	19		AP
Mounting Hardware	P0148330		72	19		AP
Power & Control Cassy	NTRX33MB		1	19		AP
# IOC/Bulkhead Cable	NTRX33EG		2	19		AP
# IOC/Bulkhead Cable	NTRX33EH		24	19		AP
# IOC/Bulkhead Cable	NTRX33EJ		2	19		AP
# IOC/Bulkhead Cable	NTRX33EK		2	19		AP
Bolt Cover	P0732389		8	19		AP
Lug	A0292996		3	19		AP
Boot	P0743593		8	19		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTRX33EG	MD	NTRX33FG-
NTRX33EH	MD	NTRX33FH- IN
NTRX33EJ	MD	NTRX33FJ- NTZZ32EN
NTRX33EK	MD	NTRX33FK-

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

A&M - ADDITIONS & MAINTENANCE. These products can only 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 NTZZ32EM is ordered, these items are provided.
- 2) One A0316599 37 Pin Filter Adapter, four A0317136, and two P0148330 (mounting hardware) are provided herein for each connector position on the IOC personality plates (P0726316/P0726317) indicated in the table below:

Personality Plate ----- Filter Adapter	Shelf	Personality Plate Connector Position
P0726316 ----- A0316599	IOC	C20 - C39
P0726317 ----- A0316599		C04 - C19

3) Connect cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX33MB	1	IOC AND/OR MTD	19	SCR	MSP (61)	J1/61-10
			MSP (61)	J1/61-10		P0737547 R11
NTRX33EG	2	IOC	19	C00, C01	19	C00, C01
NTRX33EH	4 or 8			C04-C11		C04-C11
NTRX33EH	24			C12-C19		C12-C19
				C20-C31 C34, C35 C38, C39	33	C20-C31 C34, C35 C38, C39
NTRX33EJ	2			C32, C33		C32, C33
NTRX33EK	2			C36, C37		C36, C37

AP-01 1) This item is always provided with NT1X61AD and is shown here for completeness.

RUL1 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) are required per system.

2) Each shelf accommodates up to nine I/O device controller cards. Refer to EMA14-02-000 for provisioning of the IOC.

3) 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). Also, any IOC pairs controlling DPP, DDU, or AMA devices must have different power feeds and be power interlocked by interchanging connections between ILOKOUT and ILOKIN on the terminal block (Pos. 61-02R) on the MSP. These IOC pairs reside in mating CIOE pairs. IOC's which are not controlling DPP or AMA devices may have any feeds as required. However, for reliability, spread devices across IOC's with different power feeds.

- RUL2 1) When customer requirements specify that filler face plates are to be ordered, provide one (1) NT0X50AA for each location which is not to be equipped with an I/O device control card.

INTERNATIONAL CIOE IOC PACKAGE

PEC CODE: NTZZ37CM

CPC CODE: B0235718

| RATING: MD

REPLACES: None

| REPLACED BY: NTZZ37CR

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The NTZZ37CM Package contains one Input/Output Controller (IOC) Module and associated hardware for mounting in Cabinetized Input/Output Equipment (CIOE), Model A cabinets.

The IOC houses device controller cards each of which has its own subsidiary MAP position.

REFERENCE DOCUMENTATION: SLZZ37CM 00 04

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Ken Clisso Dept. 3471 (RTP)

MAIN CONTACT: Ken Clisso Dept. 3471 (RTP)

NTZZ37CM EMC2-20-IOC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 12 20	ECM 636 09	EC 018-36231 - Replace NT1X62CA with NT1X62CB.
94 07 08	ECM 636 11	Correct AP items per ET 53313. Delete optional P0706920, replaced by AP item.
95 04 26	ECM 636 15	Changes per ECD 018-43363. NTZZ37CM is MD'd and replaced with NTZZ37CR.

The International CIOE IOC Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Controller Module	NT1X61AD	IOC	1	19		AP
I/O Common CP Fill	NT1X61AE		1	19		AP
I/O Shelf Assembly	NT1X6112		1	19		AP-01
I/O Message Controller CP	NT1X62CB		1	19	02	AP
Desig. Label for NT1X62CB	P0745105		1	19	02	AP
Filler Face Plate 0.875	NT0X50AA		10	19	1, 5, 7, 9, 11, 13, 15, 17, 19, 21	AP-02
I/O Device Controller CP	As Req'd			19	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL1
Filler Face Plate 0.875	NT0X50AA			19	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL2
I/O Control Terminator	NT0X67AA		1	19	22	AP-02
Filler Face Plate 1.72	NT0X50AF		1	19	23	AP-02
Power Converter	NT2X70AE		1	19	25	AP
Desig. Label (NT2X70AE)	P0698943		1	19	25	AP
Personality Plate (IOC)	P0726316		1	33		AP
Personality Plate (IOC)	P0726317		1	19		AP
37 Pin Filter Adapter	A0316599		36	19		AP
Mounting Hardware	A0317136		144	19		AP
Mounting Hardware	P0148330		72	19		AP
IOC/Bulkhead Cable	NTRX3334		2	19		AP
IOC/Bulkhead Cable	NTRX3335			19		RUL3
IOC/Bulkhead Cable	NTRX3335		24	19		AP
IOC/Bulkhead Cable	NTRX3336		2	19		AP
IOC/Bulkhead Cable	NTRX3337		2	19		AP
IOC/FSP Cable	NTNX1620		1	19		AP
IOC/FSP Cable	NTNX1621		1	19		AP
Boot	P0743593		8	19		AP
Bolt Cover	P0732389		8	19		AP
Lug	A0292996		3	19		AP
Wiring Option	NTRX33WA			19		RUL4
Wiring Option	NTRX33WB			19		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:

- 2) A minimum of two I/O Controller Modules (IOC:00, IOC:01) are required per system.
- 3) 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).
- 4) One A0316599 37 Pin Filter Adapter, four A0317136, and two P0148330 (mounting hardware) are always provided for each connector position on the IOC personality plates (P0726316/P0726317) as indicated in the table below:

Personality Plate	Shelf	Personality Plate Connector Position
Filter Adapter		
P0726316	IOC	C20 - C39
A0316599		
P0726317		C04 - C19
A0316599		

5) Connect cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3334	2	IOC	19	C00, C01	19	C00, C01
NTRX3335 (RUL3)	8			C04-C11		C04-C11
NTRX3335	24			C12-C19		C12-C19
				C20-C31 C34, C35 C38, C39	33	C20-C31 C34, C35 C38, C39
NTRX3336	2			C32, C33		C32, C33
NTRX3337	2			C36, C37		C36, C37
NTNX1620	1			SCR	FSP (60)	TB1
NTNX1621	1			SCR		TB1

RULES:

- AP 1) When PEC NTZZ37CM is ordered, these items are provided.
- AP-01 1) This item is always provided with NT1X61AD and is shown here for completeness.
- AP-02 1) This item is always provided with NT1X61AE and is shown here for completeness.
- RUL1 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) are required per system.
- 2) Each shelf accommodates up to nine I/O device controller cards. Refer to EMA14-02-000 for provisioning of the IOC.

- 3) 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).

RUL2 1) When customer requirements specify that filler face plates are to be ordered, provide for each location which is not to be equipped with an I/O device control card:

- one (1) NT0X50AA

RUL3 1) For each IOC provide:

- eight (8) NTRX3335 IOC/Bulkhead Cables.

Do NOT provide these cables if DPP/MTD or DDU control cards are in slots 4 and/or slot 6 (C04-C07 Slot 4; C08-C11 Slot 6).

RUL4 1) For each NTZZ37CM, provide:

- one (1) NTRX33WA Wiring Option per EVEN numbered CIOE (these leads are required if IOC is "A" feed mounted in position 19 and uses fuse F02 wiring option <WA>) and
- one (1) NTRX33WB Wiring Option per ODD numbered CIOE (these leads are required if IOC is "B" feed mounted in position 19 and uses fuse F04 wiring option <WB>).

INTERNATIONAL CTME MTM PACKAGE

PEC CODE: NTZZ37TA

CPC CODE: B0235577

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTFX4101

ABBREVIATION NAME: IMTM

ENGINEERING DESCRIPTION: NTZZ37TA is the International Maintenance Trunk Module (IMTM), associated hardware and cabling package, housed in the Cabinetized Trunk Module Equipment (CTME).

REFERENCE DOCUMENTATION: SLZZ37TA 00 02
NTZZ37TA REL 02

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

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

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

NTZZ37TA EMC2-20-MTM CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 09 21	ECM 636 08	ECD018-39687 - Design change of safety boots and power cables.
94 04 23	ECM 636 10	Replace safety boots for MTM & TM8
95 04 05	ECM 601 20	Convert NT2X70AE Power Converter and P0698943 Desig Label to NT2X70AF Power Converter and P0809960 Desig Label per EC 024-93972.
95 04 21	ECM 600 15	Clarify provisioning note per ET22109.
96 09 12	ECM 601 34	MD per EC018-48743

The International CTME MTM Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IMTM Shelf	NT2X58BC	IMTM	1	XX		AP
IMTM Common CP	NT2X58AY			XX		RUL1
IMTM Common CP	NT2X58BB			XX		RUL1
IMTM Common CP	NT2X58CL			XX		RUL1
IMTM Common CP	NT2X58DB			XX		RUL1
Provisionable Cards	AR			XX		RUL1
Filler Faceplate	NT0X50AC			XX		RUL1
Power Converter	NT2X70AF		1	XX	20	AP
Desig Label (NT2X70AF)	P0809960		1	XX	20	AP
Personality Plate (MTM)	P0730033			XX		RUL2
Personality Plate (MTM)	P0736562			XX		RUL2
Bulkhead Cabling	NTRX3222		4	XX		AP
Bulkhead Cabling	NTRX3221		4	XX		AP
Bulkhead Cabling	NTRX3220		4	XX		AP
37 Pin Filter Adapter	A0316598		12			AP
Mounting Hardware	A0317136		48			AP
Washer	P0148330		48			AP
Safety Boots	P0743593		6	XX		AP
Boot Cover	P0732389		6	XX		AP
Cable Braid Assembly	NT0X9537		1	XX		AP
Power Cable Assembly	NTNX1601		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) "XX" in SHF POS can be one of 05,19,33,47.
- 2) Modules are assigned to positions on the frame in the shelf position order 05, 19, 33, 47.
- 3) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3222 for each of the following:
MTM connector 05 to bulkhead connector xxC00,
MTM connector 06 to bulkhead connector xxC01,
MTM connector 07 to bulkhead connector xxC02,
MTM connector 08 to bulkhead connector xxC03,
 - One NTRX3221 for each of the following:
MTM connector 09 to bulkhead connector xxC04,
MTM connector 10 to bulkhead connector xxC05,
MTM connector 11 to bulkhead connector xxC06,
MTM connector 12 to bulkhead connector xxC07,
 - One NTRX3220 for each of the following:
MTM connector 13 to bulkhead connector xxC08,
MTM connector 14 to bulkhead connector xxC09,
MTM connector 15 to bulkhead connector xxC10,
MTM connector 16 to bulkhead connector xxC11
(xx denotes shelf position).
- 4) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on shelf MTM personality plate P0730033 in personality plate positions C00 to C11.
- 5) The NTN1601 Power Cable Assembly is provided for strapping of SP-48V power to the PC-48V power for the NT2X58BC. This modification replaces the strapping of SP-48V power to FLT-48V and to be applied to existing offices on a "next time in" basis.
- 6) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ37TA is ordered, these items are provided.

- RUL1 1) For each IMTM provide an IMTM common circuit pack as follows:
- For Turkey, provide:
 - one (1) NT2X58AY IMTM Common CP,
 - For the UK and Spain, provide:
 - one (1) NT2X58BB IMTM Common CP,
 - For the Caribbean Expansion Plan (CEP), provide:
 - one (1) NT2X58CL IMTM Common CP, and
 - For Mercury DMS-250, provide:
 - one (1) NT2X58DB IMTM Common CP.
- 2) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on an MTM.
- 3) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot: - one (1) NT0X50AC Filler Faceplate.
- RUL2 1) For each IMTM provide personality plates as follows:
- If the IMTM contains EDRAM or CTM cards provide:
 - one (1) P0736562 personality plate
 - Otherwise, provide:
 - one (1) P0730033 personality plate

INTERNATIONAL CIOE STRATUM 2.5 ROS PACKAGE

PEC CODE: NTZZ37FM

CPC CODE: B0235721

| RATING: MD

REPLACES: None

| REPLACED BY: NTZZ32HN

ABBREVIATION NAME: ROS

ENGINEERING DESCRIPTION: The NTZZ37FM contains one Stratum 2.5 Remote Oscillator Shelf (ROS) and associated hardware for mounting in Cabinetized Input/Output Equipment (CIOE), Model A cabinets.

The Remote Oscillator Shelf has two separate backplanes each with its own power converter. Backplane 'A' is located at slot positions 1 through 14 and backplane 'B' is located at slot positions 15 through 27.

The Remote Oscillator Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.

This hardware provides a clock source that is not Stratum rated; however, in terms of accuracy, it falls in between Stratum II and Stratum III.

This CIOE must be located within 200 feet of the DMS-Core Message Switch Shelf.

REFERENCE DOCUMENTATION: SLZZ37FM 00 03

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NT Richard Mathias Dept. 3471 (PPK)

| MAIN CONTACT: NT Richard Mathias Dept. 3471 (PPK)

NTZZ37FM EMC2-20-ROS-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 07 08	ECM 636 11	Correct AP items per ET 53313. Delete optional P0706920, replaced by AP item.
96 04 02	ECM 636 20	MD NTZZ37FM replaced by NTZZ32HN.

The International CIOE Stratum 2.5 ROS Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stratum 2.5 Rmt Osc. Shelf (DMS-Core, ISG)	NT3X95BB	ROS	1	05		AP
Remote Osc. Shelf Assy	NT3X9507		1	05		AP-01
Osc. (DMS-Core) & I/F CP	NT3X16BB		2	05	01, 15	AP-01
Osc. (DMS-Core) & I/F CP	NTZZ09QA			05	09	RUL1
Pwr Conv. (+-5V, +12V, +24V)	NT1X78AA		2	05	06, 20	AP-01
Filler Face Plate 2.62	NT0X50BE		3	05	09, 12, 23	AP-01
Filler Face Plate 1.72	NT0X50BF		3	05	04, 18, 26	AP-01
Desig. Strip (NT3X95BB)	P0699936		1	05		AP-01
Personality Plate (Stratum)	P0726321		1	05		AP
37 Pin Filter Adapter	A0316599		2	05		AP
Mounting Hardware	A0317136		8	05		AP
Mounting Hardware	P0148330		4	05		AP
Stratum/Bulkhead Cable	NTRX3325		1	05		AP
Stratum/Bulkhead Cable	NTRX3326		1	05		AP
Stratum/Bulkhead Cable	NT0X9551		6	05		AP
Cable (DDU/Stratum to FSP)	NT6X0325		2	05		AP
Stratum/FSP Cable	NTNX1697		2	05		AP
Boot	P0743593		6	05		AP
Boot	P0744811		2	05		AP
Bolt Cover	P0732389		8	05		AP
Insulator Cover	P0706920			05		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) One A0316599 37 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are always provided for each connector position on the Stratum personality plate (P0726321) as indicated in the table below:

Personality Plate	Shelf	Personality Plate Connector Position
Filter Adapter		
P0726321	STRATUM	C00, C01
A0316599		

- 2) Connect the always provided cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3325	1	STRATUM 2/2.5	05	C001	05	C01
NTRX3326	1			C000		C00
NT0X9551	6			1A, 2A SPARE		1A, 2A 1A SPARE
				1B, 2B SPARE		1B, 2B 2A SPARE
NT6X0325	2			SCR	FSP (60)	TB1
NTNX1697	2			SCR		TB1

RULES:

- AP 1) When PEC NTZZ37FM is ordered, these items are provided.

AP-01 1) This item is provided on NT3X95AB and is shown here for completeness.

RUL1 1) If 'hot' spares are requested by the customer, provide:
- one (1) NTZZ09QA Hot Spare Stratum 2.5 Osc. & I/F.

If they are equipped, the filler face plates always provided in those positions must be discarded.

INTERNATIONAL CIOE STRATUM II ROS PACKAGE

PEC CODE: NTZZ37GM

| CPC CODE: B0235722

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: NTZZ32HA

ABBREVIATION NAME: ROS

ENGINEERING DESCRIPTION: The NTZZ37GM Stratum II Remote Oscillator Shelf (ROS) in International CIOE contains the Stratum II Remote Oscillator (ROS) Shelf, and associated hardware, to mount in Cabinetized Input/Output Equipment (CIOE), required for Stratum II synchronization of the DMS.

The Remote Oscillator Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.

The CIOE cabinet must be adjacent to the SuperNode cabinet.

The ROS shelf must be powered from the same CPDC as the SuperNode cabinet.

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 position 6 for backplane "A" and at slot position 20 for backplane "B".

REFERENCE DOCUMENTATION: SLZZ37GM 00 02
NTZZ37GM REL 02

MARKETS:

Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: George Boutnikoff Dept. S646 (BRW)

NTZZ37GM EMC2-20-ROS-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 08 30	----- ECM 613 15	Previous history not available ET 112600 - MD NTZZ37GM which is a duplicate of NTZZ32HA and add mkt. and rules info to NTZZ32HA for International.

The International CIOE Stratum II ROS Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stratum II Rmt Osc. Shelf (DMS-Core, ISG)	NT3X95AB	ROS	1	05		AP
Remote Osc. Shelf Assy	NT3X9507		1	05		AP-01
Osc. (DMS-Core) & I/F CP	NT3X16AB		2	05	01,15	AP-01
Hot Spare Stratum II Osc&I/F	NTZZ09PA			05	09	RUL1
Pwr Conv. (+-5V,+12V,+24V)	NT1X78AA		2	05	06,20	AP-01
Filler Face Plate 2.62	NT0X50BE		3	05	09,12,23	AP-01
Filler Face Plate 1.72	NT0X50BF		3	05	04,18,26	AP-01
Filler Face Plate 0.875	NT0X50BA		1	05	14	AP-01
Desig. Strip (NT3X95AB)	P0699935		1	05		AP-01
Personality Plate (Stratum)	P0726321		1	05		AP
37 Pin Filter Adapter	A0316599		2	05		AP
Mounting Hardware	A0317136		8	05		AP
Mounting Hardware	P0148330		4	05		AP
Stratum/Bulkhead Cable	NTRX3325		1	05		AP
Stratum/Bulkhead Cable	NTRX3326		1	05		AP
Stratum/Bulkhead Cable	NT0X9551		6	05		AP
Cable (DDU/Stratum to FSP)	NT6X0325		2	05		AP
Stratum/FSP Cable	NTNX1697		2	05		AP
Insulator Cover	P0706920			05		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) One A0316599 37 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are always provided for each connector position on the Stratum personality plate (P0726321) as indicated in the table below:

Personality Plate	Shelf	Personality Plate Connector Position
Filter Adapter		
P0726321	STRATUM	C00, C01
A0316599		

- 2) Connect the always provided cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3325	1	STRATUM 2/2.5	05	C001	05	C01
NTRX3326	1			C000		C00
NT0X9551	6			1A, 2A SPARE		1A, 2A 1A SPARE
				1B, 2B SPARE		1B, 2B 2A SPARE
NT6X0325	2			SCR	FSP (60)	TB1
NTNX1697	2			SCR		TB1

RULES:

- AP 1) When PEC NTZZ37GM is ordered, these items are provided.
- AP-01 1) This item is provided on NT3X95AB and is shown here for completeness.

RUL1 1) If 'hot' spares are requested by the customer, provide:

- one (1) NTZZ09PA Hot Spare Stratum II Osc. & I/F.

If they are equipped, the filler face plates always provided in those positions must be discarded.

RUL2 1) For each CIOE Stratum II ROS Package provide per customer requirements:

- Four (4) P0706920 -48V Stud Covers.

The -48V Stud Covers must be provisioned for UK markets and may be provisioned on customer request in other markets.

STRATUM II RMT OSC. SHELF (-48V)
FOR MODEL B CIOE

PEC CODE: NTZZ32HM

CPC CODE: B0238379

| RATING: MD

REPLACES: Not applicable

| REPLACED BY: NTZZ32JN

ABBREVIATION NAME: ROS

ENGINEERING DESCRIPTION: The NTZZ32HM contains the Stratum II
Oscillator Shelf and hardware to mount the
Stratum in Model B CIOE. This clock pro-
vides Stratum II synchronization of the DMS.REFERENCE DOCUMENTATION: SLZZ32HM 00 02
NTZZ32HM REL 02

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

| ISSUE AUTHOR: NTI: Richard Mathias Dept. 3471 (PPK)

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

NTZZ32HM EMC2-20-ROS-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 21	API 445 01	To introduce the Stratum II clock BB for the CIOE Model B.
93 11 16	ECM 683 01	EC 018-41434 Remove Des. labels and change boots.
96 04 02	ECM 683 22	MD NTZZ32HM and replace with NTZZ32JN.

The Stratum II RMT Osc. Shelf (-48V) for Model B CIOE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stratum II Rmt Osc. Shelf (DMS-Core, ISG)	NT3X95AB	ROS	1	05		AP
Remote Osc. Shelf Assy	NT3X9507		1	05		AP-01
Osc. (DMS-Core) & I/F CP	NT3X16AB		2	05	01, 15	AP-01
Osc. (DMS-Core) & I/F CP	NTZZ09PA		1	05		RUL1
Pwr Conv. (+-5V, +12V, +24V)	NT1X78AA		2	05	06, 20	AP-01
Filler Face Plate 2.62	NT0X50BE		2	05	09, 23	AP-01
Filler Face Plate 1.72	NT0X50BF		2	05	12, 26	AP-01
Filler Face Plate 1.72	NT0X50BA		1	05	14	AP-01
Desig. Strip (NT3X95BB)	P0699936		1	05		AP-01
Personality Plate (Stratum)	P0726321		1	05		AP
37 Pin Filter Adapter	A0316599		2	05		AP
Mounting Hardware	A0317136		8	05		AP
Mounting Hardware	P0148330		4	05		AP
Stratum/Bulkhead Cable	NTRX33EA		1	05		AP
Stratum/Bulkhead Cable	NTRX33EB		1	05		AP
Stratum/Bulkhead Cable	NT0X9551		6	05		AP
Stratum Interlock Cassy	NTRX3365		1	05		AP
Bolt	P098A109		2	05		AP
Spring Washer Helical	P0183028		4	05		AP
Flat Washer	P0160739		4	05		AP
Hex Nut	P0065747		8	05		AP
External Tooth Lock	P097Y579		8	05		AP
Filter Line EMI Feedthru	A0326932		1	05		AP
Bolt Cover	P0732389		8	05		AP
Boot	P0743593		6	05		AP
Boot	P0744811		2	05		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 NTZZ32HM is ordered, these items are provided.
- 2) One A0316599 37 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are provided for each connector position on the Stratum personality plate (P0726321) as indicated in the table below:

Personality Plate	Shelf	Personality Plate
Filter Adapter		Connector Position
P0726321	STRATUM	C00, C01
A0316599		

3) Connect cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX33EA	1	STRATUM 2/2.5	05	C001	05	C01
NTRX33EB	1			C000		C00
NT0X9551	6			1A, 2A SPARE		1A, 2A 1A SPARE
				1B, 2B SPARE		1B, 2B 2A SPARE

AP-01 1) These items are provided on NT3X95BB and are shown here for completeness.

RUL1 1) If 'hot' spares are requested by the customer provide one (1) NTZZ09QA. If they are equipped, the filler face plates always provided in those positions must be discarded.

STRATUM 2.5 RMT OSC. SHELF
FOR MODEL B CIOE

PEC CODE: NTZZ32JM

CPC CODE: B0238378

| RATING: MD

REPLACES: Not applicable

REPLACED BY: NTZZ32HN

ABBREVIATION NAME: ROS

ENGINEERING DESCRIPTION: The NTZZ32JM contains the Stratum 2.5 Oscillator Shelf and hardware to mount the Stratum in Model B CIOE. This clock provides a capability that is not Stratum rated; however, in terms of accuracy it falls in between Stratum II and Stratum III.

REFERENCE DOCUMENTATION: SLZZ32JM 00 02
NTZZ32JM REL 02

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

| ISSUE AUTHOR: NTI: Richard Mathias Dept. 3471 (PPK)

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

NTZZ32JM EMC2-20-ROS-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 21	API 445 01	To introduce the Stratum 2.5 clock BB for the CIOE Model B.
93 11 16	ECM 683 01	EC 018-41434 Remove Des. labels and change boots.
96 04 02	ECM 683 22	MD NTZZ32JM replace with NTZZ32HN.

The Stratum 2.5 RMT Osc. Shelf for Model B CIOE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stratum 2.5 Rmt Osc. Shelf (DMS-Core, ISG)	NT3X95BB	ROS	1	05		AP
Remote Osc. Shelf Assy	NT3X9507		1	05		AP-01
Osc. (DMS-Core) & I/F CP	NT3X16BB		2	05	01, 15	AP-01
Osc. (DMS-Core) & I/F CP	NTZZ09QA		1	05		RUL1
Pwr Conv. (+-5V, +12V, +24V)	NT1X78AA		2	05	06, 20	AP-01
Filler Face Plate 2.62	NT0X50BE		2	05	09, 23	RUL1
Filler Face Plate 2.62	NT0X50BE		1	05	12	AP-01
Filler Face Plate 1.72	NT0X50BF		3	05	04, 18, 26	AP-01
Desig. Strip (NT3X95BB)	P0699936		1	05		AP-01
Personality Plate (Stratum)	P0726321		1	05		AP
37 Pin Filter Adapter	A0316599		2	05		AP
Mounting Hardware	A0317136		8	05		AP
Mounting Hardware	P0148330		4	05		AP
Stratum/Bulkhead Cable	NTRX33EA		1	05		AP
Stratum/Bulkhead Cable	NTRX33EB		1	05		AP
Stratum/Bulkhead Cable	NT0X9551		6	05		AP
Stratum Interlock Cassy	NTRX3365		1	05		AP
Bolt	P098A109		2	05		AP
Spring Washer Helical	P0183028		4	05		AP
Flat Washer	P0160739		4	05		AP
Hex Nut	P0065747		8	05		AP
External Tooth Lock	P097Y579		8	05		AP
Filter Line EMI Feedthru	A0326932		1	05		AP
Bolt Cover	P0732389		8	05		AP
Boot	P0743593		6	05		AP
Boot	P0744811		2	05		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 NTZZ32JM is ordered, these items are provided.
- 2) One A0316599 37 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are provided for each connector position on the Stratum personality plate (P0726321) as indicated in the table below:

Personality Plate	Shelf	Personality Plate
Filter Adapter		Connector Position
P0726321	STRATUM	C00, C01
A0316599		

3) Connect cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX33EA	1	STRATUM 2/2.5	05	C001	05	C01
NTRX33EB	1			C000		C00
NT0X9551	6			1A, 2A SPARE		1A, 2A 1A SPARE
				1B, 2B SPARE		1B, 2B 2A SPARE

AP-01 1) These items are provided on NT3X95BB and are shown here for completeness.

RUL1 1) If 'hot' spares are requested by the customer provide one (1) NTZZ09QA, which provides two (2) Osc. and I/F CPs in slot positions 9 and 23.

2) If 'hot' spares are not requested, provide 2 NT0X50BE, one (1) in slot position 9 and the other in slot position 23.

INTERNATIONAL CTME TM8 PACKAGE

PEC CODE: NTZZ37WA

CPC CODE: B0235579

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTFX4101

ABBREVIATION NAME: ITM8

ENGINEERING DESCRIPTION: The NTZZ37WA is the International Trunk Module 8 Wire (ITM8), associated hardware and cabling package, housed in the Cabinetized Trunk Module Equipment (CTME).

REFERENCE DOCUMENTATION: SLZZ37WA 00 01
NTZZ37WA REL 01

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

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

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

NTZZ37WA EMC2-20-TM8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 21	----- ECM 636 08	Previous history not available ET 16689 - Design change of safety boots and power cables.
94 04 23	ECM 636 10	Replace safety boots for MTM & TM8
96 09 12	ECM 601 34	MD per EC018-48743

The International CTME TM8 Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
International TM8 Shelf	NT2X5232	ITM8	1	XX		AP
ITM8 Common Circuit Pack	NT2X52CA		1	XX		AP
Trunk Cards	AR			XX		RUL1
Filler Faceplate	NT0X50AC			XX		RUL1
Personality Plate (TM8)	P0730035		1	XX		AP
TM8 Bulkhead Cable Assembly	NTRX3232		1			AP
37 Pin Filter Adapter	A0316598		8	XX		AP
Mounting Hardware	A0317136		32	XX		AP
Washer	P0148330		32	XX		AP
Safety Boots	P0743593		6	XX		AP
Boot Cover	P0732389		6	XX		AP
Cable Braid Assembly	NT0X9537		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) "XX" in SHF POS can be one of 47,33,19,05.
- 2) Modules are assigned to positions on the frame in the shelf position order 05, 19, 33, 47.

- 3) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on shelf TM8 personality plate P0730035 in bulkhead positions A00, A01, B00, B01, C00, C01, D00, and D01.
- 4) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ37WA is ordered, these items are provided.
- RUL1 1) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on a ITM8.
- 2) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot: - one (1) NT0X50AC Filler Faceplate.

INTERNATIONAL CTME T8A PACKAGE

PEC CODE: NTZZ37VA

CPC CODE: B0235578

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTFX4101

ABBREVIATION NAME: IT8A

ENGINEERING DESCRIPTION: The NTZZ37VA is the International Trunk 8 Wire module, associated hardware and cabling package, housed in the Cabinetized Trunk Module Equipment (CTME).

REFERENCE DOCUMENTATION: SLZZ37VA 00 01
NTZZ37VA REL 01

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

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

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

NTZZ37VA EMC2-20-T8A CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 09 21	----- ECM 636 08	Previous history not available ET 16689 - Design change of safety boots and power cables.
94 04 23	ECM 636 10	Replace safety boots for MTM & TM8
96 09 12	ECM 601 34	MD per EC018-48743

The International CTME T8A Package is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
International T8A Shelf	NT2X5231	IT8A	1	XX		AP
IT8A Common Circuit Pack	NT2X52CB		1	XX		AP
Provisionable Cards	AR			XX		RUL1
Filler Faceplate	NT0X50AC			XX		RUL1
Personality Plate (TM8)	P0730035		1	XX		AP
TM8 Bulkhead Cable Assembly	NTRX3232		1			AP
37 Pin Filter Adapter	A0316598		8	XX		AP
Mounting Hardware	A0317136		32	XX		AP
Washer	P0148330		32	XX		AP
Safety Boots	P0743593		6	XX		AP
Boot Cover	P0732389		6	XX		AP
Cable Braid Assembly	NT0X9537		1	XX		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) "XX" in SHF POS can be one of 47,33,19,05.
- 2) Modules are assigned to positions on the frame in the shelf position order 05, 19, 33, 47.

- 3) The following cable is provided in this building block to connect shelves to the cabinet bulkhead:
 - One NTRX3232 from slot positions 05-19 to bulkhead connectors A00, A01, B00, B01, C00, C01, D00 and D01.
- 4) One A0316598 Filter Adapter, four A0317136 mounting hardware, and four P0148330 washers shall be mounted on shelf T8A personality plate P0730035 in bulkhead connector positions A00,A01,B00,B01,C00,C01,D00, and D01.
- 5) One NT0X9537 Braided Cable is used to replace the braided cable on NT2X52__ or NT2X58__ between packpanel GND and FLT GND.

RULES:

- AP 1) When PEC NTZZ37VA is ordered, these items are provided.
- RUL1 1) Refer to table A of Engineering Manual section EMB14-01-000 for the circuit packs which may be provisioned on a T8A.
- 2) When customer requirements specify that Filler Faceplates are to be ordered, provide for each unequipped circuit pack slot: - one (1) NT0X50AC Filler Faceplate.

DS512 NETWORK INTERFACE (ENGLISH LABEL) KIT

PEC CODE: NTZZ37CH

CPC CODE: B0239310

RATING: Manufacture Discontinued

REPLACES: None

REPLACED BY: NTZZ02HM

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ37CH contains a circuit pack, a paddle board, a FXPM bracket assembly kit, and an optical fiber danger Label in english required for DS512 interface to the Network in Common Control Peripheral modules.

REFERENCE DOCUMENTATION: SLZZ37CH 00 02
NTZZ37CH REL 02

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: Darrell Deeds Dept. 3471 (PPK)

| MAIN CONTACT: Darrell Deeds Dept. 3471 (PPK)

NTZZ37CH EMC2-20-ZZ37CH CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 10	ECM 644 06	Create this building block.
93 08 20	ECM 643 04	Update for NTZZ41DA (NT6X01AC).
94 02 01	ECM 644 11	Manufacture Discontinued.
94 07 22	ECM 643 08	Retire this document.

The DS512 Network Interface (English Label) Kit is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS512 XPM Interface CP	NT6X40FA		2	X+14,X	YF	AP
DS512 XPM Paddle Board	NT6X40GA		2	X+14,X	YR	AP
Fiber I/F H/W Assembly	NT6X02BU		1	X	YR	AP
Optical Fiber Danger Label	P0736273		2	X+14,X		AP
Desig. Label (NT6X40FA)	P0729895		2	X+14,X	YF	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

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

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

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

NOTES:

- 1) The shelf position assignments for a NTZZ37CH DS512 Network Interface (English Label) Kit in a dual shelf common control peripheral module are as follows:
 - In cabinets:
 - Upper module
 - in shelf positions 47 and 33 (X = 33) and,
 - Lower module
 - in shelf positions 19 and 05 (X = 05), or
 - In Frames such as NTZZ41AA (NT6X01BA) or NTZZ41DA (NT6X01AC):
 - Upper module
 - in shelf positions 65 and 51 (X = 51) and,
 - Lower module
 - in shelf positions 32 and 18 (X = 18).
- 2) The circuit pack (CP) slot assignments for a NTZZ37CH DS512 Network Interface (English Label) Kit in a dual shelf common control peripheral module are as follows:
 - Frames or Cabinets with ISDN, such as NTZZ41DA (NT6X01AC):
 - CP slot YF=22F and
CP slot YR=22R.
 - Frames or Cabinets without ISDN, such as NTZZ41AA (NT6X01BA):
 - CP slot YF=23F and
CP slot YR=23R.

RULES:

- AP 1) When PEC NTZZ37CH is ordered, these items are provided.

CIPE FIBER ISDN (CLGO/CDTO)

PEC CODE: NTZZ37AA

CPC CODE: B0235221

RATING: MD

REPLACES: None

REPLACED BY: NTZZ37AC

ABBREVIATION NAME: CLGO (CABINETIZED LGCO EQUIPMENT)
CDTO (CABINETIZED DTCO EQUIPMENT)
TMS (TOPS Message Switch)ENGINEERING DESCRIPTION: The NTZZ37AA Cabinetized DMS International
Peripheral Equipment Fiber ISDN (CIPE)
houses one or two dual shelf XPM modules
each configured as:

- LGCO Line Group Controller Offshore,
- DTCO Digital Trunk Controller Offshore, or
- TMS (TOPS Message Switch).

CIPE connects to the network through either
DS-30 trunks (twisted pairs) or DS-512
trunks (fiberoptic cables).

REFERENCE DOCUMENTATION: MSRX46AA 01 13

MARKETS: Applicable markets:

CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Deniece Land Dept. 3471 (PPK)

MAIN CONTACT: Deniece Land Dept. 3471 (PPK)

NTZZ37AA EMC2-20-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 17	ECM 659 01	ECDs 011-16135, 011-16761, 011-16850.
92 11 20	ECM 659 02	Clarify NTBX01AA and NT6X70AA may not be provisioned in the same DTC.
92 12 07	ECM 659 03	Clarify NT6X28AA provisioning per ET-110670.
93 08 31	ECM 659 04	Clarify provisioning of DS30A port cables per ET112300.
93 10 12	ECM 659 05	Add that a minimum of 4 NT6X27 is required per equipped module.
94 02 01	ECM 659 06	Add Building Blocks NTZZ37BA, NTZZ37BB, NTZZ37CB and NTZZ37CC.
94 03 31	ECM 659 07	NT6X02BU, P0638263, NTZZ37CA, NTZZ37DA are MD, replaced by NT6X02UF, NT6X0251, NTZZ37CN, NTZZ37CP, or NTZZ37CQ.
94 04 15	ECM 659 08	ET44643 RUL4 correct slots 1-4 to 2-5.
94 04 29	ECM 659 09	ET44543 RUL5 correct misleading descr.
94 08 19	ECM 659 10	Modify NTZZ37CB and NTZZ37CC per ET 47173. Fix wiring list.
94 09 02	ECM 659 11	Correct NT6X02UF provisioning
94 11 10	ECM 659 12	Update NTZZ37AA stocklist per ET18899
95 03 10	ECM 468 07	Add NTZZ41CA. Delete P0745307, which was introduced prematurely. Correct shelf PEC. NT6X27AC is MD. NTN336D is replaced by NTZZ37BA and NTZZ37BB for this application. NTZZ37CB and NTZZ37CC are MD and replaced by NTZZ37CJ and NTZZ37CK.
95 04 06	ECM 659 14	Change point of application of NTZZ37CB, CC, CJ, CK, per ET 19679.
95 05 15	ECM 659 16	Add NTCX50AB and NT6X28AC and Echo Cancellor and XPM+ Upgrade Kits.
95 07 27	ECM 659 17	NT6X02UF moved to stocklist of NTRX46AA CIPE.
95 09 08	ECM 659 18	Correct PCM-30 provisioning for TMS. Correct DCH assignment for TMS. Other miscellaneous changes.
		NTRX46AA and NTZZ37AA are A&M status.
		Corrections per ET 22979.
		Changes per ECD 024-94287.
		Changes per ECD 024-94268. Show common packfills NTRX46AC, NTN336GH, and NTRX46CE to replace building blocks

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 26	ECM 659 20	NTZZ37BA/BB. Remove NT6X01XG from the NT6X01AC. Introduction of GTR, NT6X92EA. Implementation of ECD: 024-95240 to introduce Enhanced D Cha. Handler ADD the NT6X40FB (NTZZ02HN), NT6X40AD (NTZZ02GC and NT6X78AB (NTZZ97AA) Correct cabinet and module abbrev. Show NT6X02UF used in Non-fiber and fiber applications. Consolidation of ECM 659 issue 21. Per 024-96344 MD NTZZ97AA add NTZZ02EA Per 024-96494 MD NT6X05CA add NTMX90AB reference only. 024-95726 MD NTB01AA and NTB02AA. replaced by NTB01AC/BA and NTB02BA. 024-96589 MD NTB01AB replaced by NTB01AC/BA and MD NTB01AC replaced NTB01BA. Clarify Rules.
96 07 28	ECM 659 21	
97 03 14	ECM 704 02	

The CIPE Fiber ISDN (CLG0/CDT0) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CIPE	NTRX46AA		1			AP
Frame Supervisory Panel	NTNX26NA	FSP	1	60		AP
Universal XPM Net I/F Kit	NT6X02UF		2	05, 33	22R	AP-01
Offshore CPC Shelf Assy	NT6X0223		4	47, 33 19, 05		AP-01
# LGC/DTC Fiber Common CP	NTNX33GD			05, 33		RUL1
# Int. XPM ISDN 48V Common CP	NTZZ37BA	DTC0, LGC0,		05, 33		RUL1
# Int. XPM+ ISDN 48V Common CP	NTZZ37BB	DTC0, LGC0,		05, 33		RUL1
LGC/DTC Fiber Common CP	NTNX33GH			05, 33		RUL1
CIDC LGC/DTC Fiber Com CP	NTRX46AC			05, 33		RUL1
Common Fiber Packfill	NTRX46CE			05, 33		RUL1
Blank Cover Plate	P0715616			05, 33		RUL1
CPC Filler Faceplate	NT6X02AB			X+14, X		RUL1
# ISDN D-channel Handler CP	NTBX02AA			X+14, X 1-5		RUL3
Enhanced ISDN DCH CP	NTBX02BA			X+14, X 1-5		RUL3
Filler Faceplate	NT0X50AA			X+14, X 1-7		RUL2
# PCM-30 Trunk Interface CP	NT6X27AC			X+14, X 2-5		RUL4
PCM-30 Trunk Interface CP	NT6X27BB			X+14, X 2-5		RUL4
# CIPE PCM-30 Enh I/F Kit Upp	NTZZ37CB			47		RUL4
# CIPE PCM-30 Enh I/F Kit Upp	NTZZ37CJ			47		RUL4
CIPE PCM-30 Enh I/F Kit Upp	NTZZ37CS			47		RUL4
PCM-30 2x8 PCB Wiring List	NTRX46WA		1	33		AP-06
PCM-30 (Send) Cable Assy	NTRX4614		2	47, 33		AP-06
PCM-30 (Receive) Cable Assy	NTRX4615		2	47, 33		AP-06
CIPE PCM30 Coaxial PCB Assy	NTRX4619		1	47		AP-06
CIPE PCM30 Coaxial PCB Assy	NTRX4618		1	33		AP-06
37 Pin Cover Plate	P0715774		12	47, 33		AP-06
25 Pin Cover Plate	P0715775		9	47, 33		AP-06
Thread Forming Screw	P0670923		42	47, 33		AP-06
PCM-30 Twist Pair I/F Assy	NTNX3370			X+14, X		RUL4
PCM-30 Twist Pair I/F Assy	NTNX3371			X+14, X		RUL4
Personality Plate	P0734655			47		RUL4
Personality Plate	P0734654			33		RUL4
Personality Plate	P0734653			19		RUL4
Personality Plate	P0734652			05		RUL4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# CIPE PCM-30 Enh I/F Kit Low	NTZZ37CC			19		RUL4
# CIPE PCM-30 Enh I/F Kit Low	NTZZ37CK			19		RUL4
CIPE PCM-30 Enh I/F Kit Low	NTZZ37CT			19		RUL4
PCM-30 2x8 PCB Wiring List	NTRX46WA		1	05		AP-07
CIPE PCM30 Coaxial PCB Assy	NTRX4617		1	19		AP-07
CIPE PCM30 Coaxial PCB Assy	NTRX4616		1	05		AP-07
PCM-30 (Send) Cable Assy	NTRX4614		2	19,05		AP-07
PCM-30 (Receive) Cable Assy	NTRX4615		2	19,05		AP-07
37 Pin Cover Plate	P0715774		10	19,05		AP-07
25 Pin Cover Plate	P0715775		9	19,05		AP-07
Thread Forming Screw	P0670923		38	19,05		AP-07
PCB Filler Plate	P0734805			X+14,X		RUL4
Pan HD Mach Screw	P0124483					RUL4
Nut, Hex Mach Screw	P0125952					RUL4
Lock Washer, Ext Tooth	P0423632					RUL4
Designation Labels Sheet	P0711579					RUL4
37 Pin Cover Plate	P0715774					RUL4
25 Pin Cover Plate	P0715775					RUL4
Thread Forming Screw	P0670923					RUL4
DS30A LCM Interface CP	NT6X48AA			X+14,X	6,7	RUL5
Filler Faceplate	NT0X50AA			X+14,X	6,7	RUL5
Connector Key Bracket	P0638261			X+14,X	6R,7R	RUL5
DS-30A Interfce 6-Port Cable	NTNX3305					RUL5
DS-30A Interfce 6-Port Cable	NTNX3307					RUL5
DS-30A Interfce 6-Port Cable	NTNX3313					RUL5
DS-30A Interfce 6-Port Cable	NTNX3314					RUL5
DS-30A Interfce 6-Port Cable	NTNX3315					RUL5
DS-30A Interfce 6-Port Cable	NTNX3319					RUL5
DS-30A Interfce 6-Port Cable	NTNX3320					RUL5
DS-30A Interfce 6-Port Cable	NTNX3321					RUL5
DS-30A Interfce 4-Port Cable	NTNX3306					RUL5
DS-30A Interfce 4-Port Cable	NTNX3308					RUL5
DS-30A Interfce 4-Port Cable	NTNX3316					AP-01
DS-30A Interfce 4-Port Cable	NTNX3317					AP-01
DS-30A Interfce 4-Port Cable	NTNX3318					RUL5
DS-30A Interfce 4-Port Cable	NTNX3322					RUL5
DS-30A Interfce 4-Port Cable	NTNX3323					RUL5
DS-30A Interfce 4-Port Cable	NTNX3324					RUL5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate	NT0X50AA			X+14,X	08	RUL9
Filler Faceplate	NT0X50AA		2	X+14,X	08	AP-03
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	08	AP-02
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	08	AP-13
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	08	RUL21
Filler Faceplate	NT0X50AA			X+14,X	09	RUL9
4 MB MP Memory CP	NT6X47AC		2	X+14,X	09	AP-02
4 MB MP Memory CP	NT6X47AC		2	X+14,X	09	AP-13
4 MB MP Memory CP	NT6X47AC		2	X+14,X	09	RUL21
Filler Faceplate	NT0X50AA		2	X+14,X	09	AP-03
Filler Faceplate	NT0X50AA		2	X+14,X	10	AP-02
Filler Faceplate	NT0X50AA		2	X+14,X	10	AP-03
Filler Faceplate	NT0X50AA		2	X+14,X	10	AP-12
Filler Faceplate	NT0X50AA			X+14,X	11	RUL9
SP Memory Plus CP	NT6X46BB		2	X+14,X	11	AP-02
SP Memory Plus CP	NT6X46BB		2	X+14,X	11	AP-13
SP Memory Plus CP	NT6X46BB		2	X+14,X	11	RUL21
Filler Faceplate	NT0X50AA		2	X+14,X	11	AP-03
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	12	AP-13
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	12	RUL21
LGC/DTC Processor CP	NT6X45BA		2	X+14,X	12	AP-02
XPM Plus Processor CP	NTMX77AA		2	X+14,X	12	AP-03
XPM Plus Processor CP	NTMX77AA		2	X+14,X	12	RUL22
Continuity Tone Detector CP	NT6X70AA			X+14,X	13	RUL6
# CLASS Modem Resource CP	NT6X78AA			X+14,X	13	RUL7
# CLASS Modem Resource	NTZZ97AA			X+14,X	13	RUL7
CLASS Modem Resource	NTZZ02EA			X+14,X	13	RUL7
CLASS Modem Resource CP	NT6X78AB			X+14,X	13	AP-17
Design. label (NT6X78AB)	P0731980			X+14,X	13	AP-17
Filler Faceplate	NT0X50AA			X+14,X	13	RUL2
Universal Time Switch CP	NT6X44EA		2	X+14,X	14	AP-02
Universal Time Switch CP	NT6X44EA		2	X+14,X	14	AP-03
Universal Time Switch CP	NT6X44EA		2	X+14,X	14	AP-11
# Universal Tone Receiver CP	NT6X92CA			X+14,X	15	RUL8
Global Tone Receiver CP	NT6X92EA			X+14,X	15	RUL8
Universal Tone Receiver CP	NT6X92CA			X+14,X	15	AP-13
Filler Faceplate	NT0X50AA			X+14,X	15	RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# ISDN Signalling Pre-proc CP	NTBX01AA			X+14,X	16	RUL9
# ISDN Signalling Pre-proc CP	NTBX01AB			X+14,X	16	RUL9
# ISDN Signalling Pre-proc CP	NTBX01AC			X+14,X	16	RUL9
ISDN Signalling Pre-proc CP	NTBX01BA			X+14,X	16	RUL9
Filler Faceplate	NT0X50AA			X+14,X	16	RUL9
# Universal Tone Receiver CP	NT6X92CA			X+14,X	17	RUL8
Global Tone Receiver CP	NT6X92EA			X+14,X	17	RUL8
Universal Tone Receiver CP	NT6X92CA			X+14,X	17	AP-13
NT7X05AA Product Change Kit	NT6X02WF			X+14,X	17	RUL24
# 30 Universal Tone Rcvr Ccts	NTZZ41CA			X+14,X	15,17	RUL18
30 Global Tone Rcvr Ccts	NTZZ02FC			X+14,X	15,17	RUL18
Filler Faceplate	NT0X50AA			X+14,X	17	RUL2
Msg Prot & Download Tones CP	NT6X69LB		2	X+14,X	18	AP-02
Msg Prot & Download Tones CP	NT6X69LB		2	X+14,X	18	AP-03
Msg Prot & Download Tones CP	NT6X69LB		2	X+14,X	18	AP-11
PCM-30 Signalling CP	NT6X28AA			X+14,X	19	RUL17
PCM-30 Signalling CP	NT6X28AC			X+14,X	19	RUL17
XPM+ Terminator Paddleboard	NTMX71AA		2	X+14,X	20R	AP-03
XPM+ Terminator Paddleboard	NTMX71AA		2	X+14,X	20R	RUL22
Echo Cncl Cntrl Paddlecard	NTCX50AB			X+14,X	19R	RUL19
Cable Assembly	NTNX36AD			X+14,X		RUL19
Channel Supervision Msgs CP	NT6X42AA		2	X+14,X	20	AP-02
Channel Supervision Msgs CP	NT6X42AA		2	X+14,X	20	AP-03
Channel Supervision Msgs CP	NT6X42AA		2	X+14,X	20	AP-11
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	21	AP-02
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	21	AP-03
Speech Bus Formatter CP	NT6X41AB		2	X+14,X	21	AP-11
# CIPE DS30 Network Interface	NTZZ37CA			X	22	RUL10
# Connector Key Bracket	P0638263		2	X+14,X	22R	AP-04
# DS30 Interface Cable Assy	NTRX4610		2	X+14,X	22	AP-04
DS30 Network I/F Upper Mod.	NTZZ37CN			X	22	RUL10
DS30 Network Interface CP	NT6X40AC		2	X+14,X	YF	AP-08
DS30 Interface Cable Assy	NTRX4667		1	X		AP-08
DS30 Interface Cable Assy	NTRX4668		1	X+14		AP-08
Desig. Label For NT6X40AC	P0695397		2	X+14,X	YF	AP-08
Bracket Kit	NT6X02UF		1	X		RUL10

Retired Equipment
CIPE Fiber ISDN (CLG0/CDT0)

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Network Interface	NTZZ02GC		2	X+14,X	YF	RUL10
DS30 Network Interface CP	NT6X40AD		2	X+14,X	YF	AP-15
Desig. Label For NT6X40AD	P0834806		2	X+14,X	YF	AP-15
DS30 Interface Cable Assy	NTRX4665		2	X		RUL10
DS30 Interface Cable Assy	NTRX4666		2	X+14		RUL10
DS30 Interface Cable Assy	NTRX4667		1	X		RUL10
DS30 Interface Cable Assy	NTRX4668		1	X+14		RUL10
Bracket Kit	NT6X02UF		1	X		RUL10
DS30 Network I/F Lower Mod.	NTZZ37CP			X	22	RUL10
DS30 Network Interface CP	NT6X40AC		2	X+14,X	YF	AP-09
DS30 Interface Cable Assy	NTRX4665		2	X		AP-09
DS30 Interface Cable Assy	NTRX4666		2	X+14		AP-09
Desig. Label For NT6X40AC	P0695397		2	X+14,X	YF	AP-09
Bracket Kit	NT6X02UF		1	X		RUL10
# CIPE DS512 Network Interface	NTZZ37DA		1	X	22	RUL10
# Fiber I/F H/W Assembly	NT6X02BU		1	X	22R	AP-05
# Optical Fiber Danger Label	P0736273		1	X		AP-05
# Snap Bushing	P0682727		1	X		AP-10
# Snap Bushing	P0682727		1	X		RUL10
Snap Bushing	P0689010		1	X		AP-10
Snap Bushing	P0689010		1	X		RUL10
DS512 Network Interface	NTZZ37CQ		1	X	22	RUL10
DS-512 XPM Interface CP	NT6X40FA		2	X+14,X	22	AP-10
Desig. Label (NT6X40FA)	P0729895		2	X+14,X	22	AP-10
DS-512 XPM Paddle Board	NT6X40GA		2	X+14,X	22R	AP-10
Fiber Cable Kit	NT6X0251		1	X	22R	AP-10
Bracket Kit	NT6X02UF		1	X		RUL10
DS512 Network Interface	NTZZ02HN		1	X	22	RUL10
DS-512 XPM Interface CP	NT6X40FB		2	X+14,X	22	AP-16
Desig. Label (NT6X40FB)	P0834807		2	X+14,X	22	AP-16
DS-512 XPM Paddle Board	NT6X40GA		2	X+14,X	22R	AP-16
Fiber Cable Kit	NT6X0251		1	X	22R	AP-16
Bracket Kit	NT6X02UF		1	X		RUL10
Snap Bushing	P0689010		1	X		RUL10
Filler Faceplate	NT0X50AA		4	X+14,X	23,24	AP-02
Filler Faceplate	NT0X50AA		4	X+14,X	23,24	AP-03
Filler Faceplate	NT0X50AA		4	X+14,X	23,24	AP-12
Power Converter +-5V 50A CP	NT2X70AE		2	X+14,X	25	AP-02
Power Converter +-5V 50A CP	NT2X70AE		2	X+14,X	25	AP-03
Power Converter +-5V 50A CP	NT2X70AF		2	X+14,X	25	AP-14

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter +-5V 50A CP	NT2X70AF		2	X+14,X	25	RUL23
NT2X70AF Upgrade Kit	NT2X70AY		1	X+14,X	25	RUL23
Wiring List XPM Plus	NTRX46WB			X+14,X		RUL1
# XPM Plus Upgrade Kit	NT6X02XA			X+14,X		RUL9
# XPM Plus ISDN Upgrade Kit	NT6X02XB			X+14,X		RUL9
XPM Plus Upgrade Kit	NT6X02XG			X+14,X		RUL9
XPM Plus Paddlecard Kit	NTMX70AB			X+14,X		RUL9
2 Proc XPM+ Echo Canc'l Kit	NT6X01XG			X+14,X		RUL20
Cooling Unit	NTNX27CA	CU	1	00		AP
EMI Kit Single Bulkhead	NTRX2516					RUL11
EMI Ready Door Kit	NTRX2513					RUL11
Cable Trough Assembly	NTNX5511					RUL12
Leveling Foot Kit	NTRX2523					RUL13
Cover Plate	P0707193					RUL16
Cover Plate	A0368391					RUL16
Latch	P0707195					RUL16
Designation Strip	P0741862		2	X+14,X		AP-02
Designation Strip	P0741862		2	X+14,X		AP-03
Desig. Label (NT0X50AA)	P0578498		4	X+14,X	08,09	AP-03
Desig. Label (NT0X50AA)	P0578498		2	X+14,X	11	AP-03
Desig. Label (NTMX77AA)	P0735417		2	X+14,X	12	AP-03
# Desig. Label (NTBX02AA)	P0697919			X+14,X	2-5	RUL14
Desig. Label (NTBX02BA)	P0737724			X+14,X	2-5	RUL14
Desig. Label (NT6X27AC)	P0706381			X+14,X	2-5	RUL14
Desig. Label (NT6X27BB)	P0739157			X,X+14	2-5	RUL14
Desig. Label (NT6X48AA)	P0626877			X+14,X	6,7	RUL14
Desig. Label (NT6X70AA)	P0628358			X+14,X	13	RUL14
# Desig. Label (NT6X78AA)	P0699568			X+14,X	13	RUL14
Desig. Label (NT6X78AB)	P0731980			X+14,X	13	AP-17
Desig. Label (NT6X92CA)	P0677831			X+14,X	15,17	RUL14
Desig. Label (NT6X92EA)	P0835224			X+14,X	15,17	RUL14
# Desig. Label (NTBX01AA)	P0697918			X+14,X	16	RUL14
# Desig. Label (NTBX01AB)	P0735418			X,X+14	16	RUL14
# Desig. Label (NTBX01AC)	P0803505			X+14,X	16	RUL14
Desig. Label (NTBX01BA)	P0713794			X+14,X	16	RUL14
Desig. Label (NT6X28AA)	P0653635			X+14,X	19	RUL14
Desig. Label (NT6X28AC)	P0725257			X+14,X	19	RUL14

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label (NT2X70AF)	P0809964			X+14, X	25	RUL14
Desig. Label (NTMX77AA)	P0735417			X+14, X	12	RUL14
Desig. Label (NT6X45BA)	P0665152			X+14, X	8, 12	RUL14
Desig. Label (NT6X46BB)	P0711664			X+14, X	11	RUL14
Desig. Label (NT6X47AC)	P0711821			X+14, X	09	RUL14
Desig. Label (NT6X41AB)	P0683208			X+14, X	21	RUL14
CLGO Label (NTRX46AA)	P0734499					RUL15
CDTO Label (NTRX46AA)	P0734500					RUL15

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTRX4606	A&M	NTRX4616
NTRX4607	A&M	NTRX4617
NTRX4608	A&M	NTRX4618
NTRX4609	A&M	NTRX4619
P0730334	A&M	P0734652
P0730335	A&M	P0734653
P0730336	A&M	P0734654
P0730337	A&M	P0734655
NT6X27AC	MD	NT6X27BB
NTZZ37CA	MD	NTZZ37CN/CP and NT6X02UF
P0638263	MD	NT6X02UF
NTRX4610	MD	NTRX4665, NTRX4666, NTRX4667, NTRX4668
NTZZ37DA	MD	NTZZ37CQ and NT6X02UF
NT6X02BU	MD	NT6X02UF and NT6X0251
NTZZ37CB	MD	NTZZ37CJ
NTZZ37CC	MD	NTZZ37CK
NTNX33GD	A&M	NTZZ37BA, NTZZ37BB
NT6X02XA	MD	NT6X02XG
NT6X02XB	MD	NT6X02XG
NTZZ37CJ	MD	NTZZ37CS
NTZZ37CK	MD	NTZZ37CT
NTZZ37BA		Replaced by NTRX46CE and provisionable CPs

PEC	RATING	REPLACED BY PEC
NTZZ37BB		Replaced by NTRX46CE and provisionable CPs P0689010
P0682727		
NT6X92CA	STD *	NT6X92EA
NTZZ41CA	STD *	NTZZ02FC
NT6X78AA	MD	NT6X78AB
NT6X40CA	MD	NT6X40FA/FB
NT6X40DA	MD	NT6X40GA
NTBX01AA	MD	NTBX01AC/BA
NTBX01AB	MD	NTBX01AC/BA
NTBX01AC	MD	NTBX01BA
NTBX02AA	MD	NTBX02BA
NTZZ97AA	MD	NTZZ02EA

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

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

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

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

NOTES:

- 1) For the lower module in the frame, X=05 (ie. shelf positions 05 and 19), and for the upper module in the frame X=33 (ie. shelf positions 33 and 47).
- 2) The International LGC (Line Group Controller) supports lines and PCM-30 remote links, while the international DTC (Digital Trunk Controller) supports PCM-30 trunking.

Modules of different types may be mixed in the frame if required.

RULES:

- AP 1) When PEC NTZZ37AA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NTRX46AA cabinet, and is shown here for completeness.
- AP-02 1) This PEC is always provided in the NTZZ37BA International XPM ISDN 48VDC Common CP provisionable per RUL1 and is shown here for completeness.
- AP-03 1) This PEC is always provided in the NTZZ37BB International XPM Plus ISDN 48VDC Common CP provisionable per RUL1 and is shown here for completeness.
- AP-04 1) This PEC was always provided in the Manufacture Discontinued NTZZ37CA CIPE DS30 Network Interface.
- AP-05 1) This PEC was always provided in the Manufacture Discontinued NTZZ37DA CIPE DS512 Network Interface.
- AP-06 1) This PEC is always provided in the NTZZ37CS PCM-30 Enhanced I/F H/W Kit, Upper Module. provisionable per RUL4 and is shown here for completeness.
- AP-07 1) This PEC is always provided in the NTZZ37CT PCM-30 Enhanced I/F H/W Kit, Lower Module. provisionable per RUL4 and is shown here for completeness.
- AP-08 1) This PEC is always provided in the NTZZ37CN DS30 Network Interface Upper Module (A/B Cabinet) provisionable per RUL10 and is shown here for completeness.
- AP-09 1) This PEC is always provided in the NTZZ37CP DS30 Network Interface Lower Module (A/B Cabinet) provisionable per RUL10 and is shown here for completeness.
- AP-10 1) This PEC is always provided in the NTZZ37CQ DS512 Network Interface (A/B Cabinet) provisionable per RUL10 and is shown here for completeness.
- AP-11 1) This PEC is always provided in the NTRX46AC,NTNX33GH, and NTRX46CE packfills and is shown here for completeness.
- AP-12 1) This PEC is always provided in the NTRX46AC, and NTRX46CE packfills and is shown here for completeness.
- AP-13 1) This PEC is always provided in the NTRX46AC Packfill and is shown here for completeness.

- AP-14 1) This PEC is always provided in the NTRX46AC, and NTNX33GH packfills and is shown here for completeness.
- AP-15 1) This PEC is always provided in the NTZZ02GC and is shown here for completeness.
- AP-16 1) This PEC is always provided in the NTZZ02HN and is shown here for completeness.
- AP-17 1) This PEC is always provided in the NTZZ02EA and is shown here for completeness
- RUL1 1) For each equipped module, provide:
- for offices with the XPM(MP/SP) feature provide:
 - one (1) NTZZ37BA Int. XPM ISDN 48VDC Common CP, or
 - for offices with the XPM Plus (UP) feature provide:
 - one (1) NTZZ37BB Int. XPM Plus ISDN 48VDC Common CP, and
 - one (1) NTRX46WB Wiring List XPM Plus.

The NTZZ37BA/BB building blocks have been replaced with the NTRX46CE preferred packfill and provisionable CPs depending upon Non-XPM+ or XPM+ option.

- 2) The NTRX46AC may be provisioned for Non-XPM+ applications. This packfill includes the NT6X45, NT6X46, and NT6X47 processors. (The NTRX46AC replaces the NTRX46AB packfill making the NT2X70AF always provided in position 25.)

Note that the NTRX46AC packfill cannot be used for applications requiring the Global Tone Receiver NT6X92EA. In such situations, individual CPs must be provisioned from the NTRX46AC except the NT6X92CA. Refer to section EMA2-20-LGCI-2.

- 3) The NTNX33GH may be provided for XPM or XPM+ applications. When XPM+ is provisioned (NTMX77) the ECHO CANCELLER (NTCX50AB) and the FLASH LOADER (NT7X05) may be provisioned. (The NTNX33GH replaces the NTNX33GD packfill making the NT2X70AF always provided in position 25.)
- 4) The NTRX46CE is the preferred packfill. Provide (1) per module two (2) per cabinet.

5) When the personality plates are not required, The P0715616 (blank cover plate) may be provisioned , two (2) per module.

6) If the second module is not equipped on the last CIPE, provide:

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

RUL2 1) For each equipped module, for each slot 1-7, 10, 13, and/or 15-17 which is unequipped with a circuit pack, provide:

- one (1) NT0X50AA Filler Faceplate.

RUL3 1) When ISDN BRA functions are required (ISDN functions on subscriber lines) for each equipped module, provide in addition to NTB01AA/AB/AC/BAs provided per RUL9:

- up to eight (8) NTB02AA/BA D Channel Handler CPs.
(OR)
- up to eight (8) NTB02AA/BA Enhanced D Channel Handler CPs.

Note that the NTB02BA is preferred with its label P0737724 for any new requirements.

One (1) of the DCH CP may be designated as a hot spare.

Note that NTB01 and NTB02 ISDN CPs may NOT be provisioned on a DTC which is provisioned with NT6X70AAs per RUL6 to handle CCIS/CCS7 voice trunking.

Each slot 2-5 assigned to NT6X27BB per RUL4 makes the slot unavailable for NTB02AA/BA

DCH CP are not required for PCM-30 DTC (PRI) applications, nor where the module supports only non-ISDN LCMs.

For TMS (TOPS Message Switch) applications, provide:

- four (4) NTB02AA/BA D Channel Handler CPs. These DCH CPs occupy slot 2 and 3 of both shelves. Slot 1 should contain fillers.

2) Each NTB02AA/BA supports up to 124 BRA D-Channels. The spare DCH CP should not be counted when determining the number of NTB02AA/BA required to support D-channel traffic. 3) Each NTB02AA/BA DCH, including the spare, requires one (1) peripheral port on the module. Assign NTB02AA/BA cards to shelf and slot positions in the following order. The spare DCH should be assigned last:

DCH Pack Provisioned	Shelf Position	CP Slot	Assign to Logical Port Number
1st	X+14	1	19
2nd	X	1	17
3rd	X+14	2	15
4th	X	2	13
5th	X+14	3	11
6th	X	3	09
7th	X+14	4	07
8th	X	4	05
9th	X+14	5	03
10th	X	5	01

For lower module X is shelf position 05 and
X+14 is shelf position 19.

For upper module X is shelf position 33 and
X+14 is shelf position 47.

RUL4 1) For each equipped DTC0 or LGC0 module, provide per customer requirement:

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

Each slot 2-5 assigned to NT6X02AA per RUL3 makes the slot unavailable for NT6X27BB.

For each TMS module,

- For TPC (TOPS Position Controller) interface,
 - for up to 72 operators, provide:
 - two (2) NT6X27BB PCM-30 Interface CPs
in CP slots 5 of both shelves, and
 - for more than 72 operators and up to 96 operators,
provide an additional:
 - one (1) NT6X27BB PCM-30 Interface CP
in CP slot 4 of shelf 0,
- For data base access:
 - utilize spare channels
in CP slot 5 of shelf 1 and
in CP slot 4 of shelf 0.

- For inter DCH ORDB, provide:
 - one (1) NT6X27BB PCM-30 Interface CP in CP slot 4 of shelf 1.

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	5	4	3	2
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 lower module X is shelf position 05 and X+14 is shelf position 19.

For upper module X is shelf position 33 and X+14 is shelf position 47.

Assign NT6X27BB to module starting at port 0 and continue in sequential order to port 15.

- 2) The formerly provided NT6X27AC has been changed to MD status and replaced with the NT6X27BB.
- 3) PCM-30 termination may be provided in the following versions:
 - a) Enhanced for EMI PCM-30 Interfacing,
 - b) Basic PCM-30 Interfacing, and
 - c) PCM-30 Interfacing Not Required.

as detailed below:

a) Enhanced for EMI PCM-30 Interfacing:

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

- For an equipped module in shelf positions 47 and 33
 - One (1) NTZZ37CS PCM-30 Enhanced I/F H/W Kit for Upper Module
- For an equipped module in shelf positions 05 and 19
 - One (1) NTZZ37CT PCM-30 Enhanced I/F H/W Kit for Lower Module

The formerly provided NTZZ37CB and NTZZ37CC PCM-30 Enhanced I/F H/W Kits have been changed to MD status and replaced by the NTZZ37CJ and NTZZ37CK, respectively.

The formerly provided NTZZ37CJ and NTZZ37CK PCM-30 Enhanced I/F H/W Kits have been changed to MD status and replaced by the NTZZ37CS and NTZZ37CT, respectively.

b) Basic PCM-30 Interfacing:

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

- For each module equipped in shelf positions 05 and 19
 - two (2) NTN3370 PCM-30 Twisted Pair Interface Assemblies,
 - two (2) NTN3371 PCM-30 Twisted Pair Interface Assemblies,
 - one (1) P0711579 Designation Labels sheet (One sheet contains sufficient cable connector designation labels for both modules in the frame),
 - one (1) P0734652 Personality Plate in shelf position 05,
 - one (1) P0734653 Personality Plate in shelf position 19,
 - two (2) P0734805 PCB Filler Plate,
 - eight (8) P0124483 Pan HD Mach Screws,
 - eight (8) P0125952 Nut, Hex Mach Screws, and
 - eight (8) P0423632 Lock Washers, Ext Tooth, and
- For each module equipped in shelf positions 33 and 47
 - two (2) NTN3370 PCM-30 Twisted Pair Interface Assemblies,
 - two (2) NTN3371 PCM-30 Twisted Pair Interface Assemblies,

- one (1) P0711579 Designation Labels sheet
(One sheet contains sufficient cable connector designation labels for both modules in the frame),
- one (1) P0734654 Personality Plate
in shelf position 33,
- one (1) P0734655 Personality Plate
in shelf position 47,
- two (2) P0734805 PCB Filler Plate,
- eight (8) P0124483 Pan HD Mach Screws,
- eight (8) P0125952 Nut, Hex Mach Screws, and
- eight (8) P0423632 Lock Washers, Ext Tooth.

c) PCM-30 Interfacing Not Required.

When PCM-30 interfacing is not required, provide:

- For each module equipped in shelf positions 05 and 19
 - one (1) P0734652 Personality Plate
in shelf position 05,
 - one (1) P0734653 Personality Plate
in shelf position 19,
 - two (2) P0734805 PCB Filler Plate,
 - eight (8) P0124483 Pan HD Mach Screws,
 - eight (8) P0125952 Nut, Hex Mach Screws, and
 - eight (8) P0423632 Lock Washers, Ext Tooth, and
 - For each module equipped in shelf positions 33 and 47
 - one (1) P0734654 Personality Plate
in shelf position 33,
 - one (1) P0734655 Personality Plate
in shelf position 47,
 - two (2) P0734805 PCB Filler Plate,
 - eight (8) P0124483 Pan HD Mach Screws,
 - eight (8) P0125952 Nut, Hex Mach Screws, and
 - eight (8) P0423632 Lock Washers, Ext Tooth.
- 4) To seal off the personality plates from radiating EMI, whether these personality plates are provisioned or always provided in the provisioned Coaxial Cable I/F Assemblies, provide:
- For each unused 37-pin connector,
 - one (1) P0715774 37 Pin Cover Plate and
 - two (2) P0670923 Thread Forming Screws, and

- For each unused 25-pin connector,
 - one (1) P0715775 25 Pin Cover Plate and
 - two (2) P0670923 Thread Forming Screws.

RUL5 1) For each equipped module:

- For PCM-30 LGC applications, provide:
 - four (4) NT6X48AA 30A LCM Interface CPs to interface links from LCMI, LCME, and/or LCM, and
 - four (4) P0638261 Connector Key Brackets.
- For PCM-30 DTC applications provide per RUL2:
 - four (4) NT0X50AA Filler Faceplates.

2) The NT6X48AA CP are assigned in pairs for reliability. One member of the pair interfaces the same DS30A ports as the other member. Each member of the pair occupies the same CP position, with one CP assigned to LGAI/LTAI 0 (lower shelf of the module) and the other assigned to LGAI/LTAI 1 (upper shelf of the module).

3) The two pairs of NT6X48AA provide interfaces for up to twenty (20) DS30A ports (links) from LCMIs, LCMEs and/or LCMs. The following is a listing of DS30A ports per DS30A LCM Interface CP, NT6X48AA location.

	CP POS 6	CP POS 7
PORT	2	0
PORT	3	1
PORT	6	4
PORT	7	5
PORT	10	8
PORT	11	9
PORT	14	12
PORT	15	13
PORT	18	16

PORT	19	17

- 4) Assign ports to DS30A in the following sequence: 19, 17, 18, 16, 15, 13, 14, 12, 11, 9, 10, 8, 7, 5, 6, 4, 3, 1, 2 and 0 (if unused by DCH or PCM-30). In an extension job, when adding new DCH ports (RUL3), the DS30A ports may have to be reconfigured in accordance with this rule.

The ports for DS30A must be selected from the those ports that remain after assignment of port circuits to DCH in RUL3 and to PCM-30 circuits in RUL4.

- 5) For each LCM linked to the LGC module, provide:

- For the lower LGC module (shelves 05 and 19),
 - One (1) NTNX3305 DS30A 6-Port Cable,
 - One (1) NTNX3313 DS30A 6-Port Cable,
 - One (1) NTNX3314 DS30A 6-Port Cable,
 - One (1) NTNX3315 DS30A 6-Port Cable,
 - One (1) NTNX3306 DS30A 4-Port Cable,
 - One (1) NTNX3318 DS30A 4-Port Cable, or
- For the upper LGC module (shelves 33 and 47),
 - One (1) NTNX3307 DS30A 6-Port Cable,
 - One (1) NTNX3319 DS30A 6-Port Cable,
 - One (1) NTNX3320 DS30A 6-Port Cable,
 - One (1) NTNX3321 DS30A 6-Port Cable,
 - One (1) NTNX3308 DS30A 4-Port Cable,
 - One (1) NTNX3322 DS30A 4-Port Cable,
 - One (1) NTNX3323 DS30A 4-Port Cable, or
 - One (1) NTNX3324 DS30A 4-Port Cable.

These cables connect DS30A signals from the backplane of the CIPE using 2X4 connectors (1 port per connector), to the CIPE bulkhead. Cables are equipped with six 2X4 connectors (6-Port cables) or four 2X4 connectors (4-Port cables) and shall be provisioned based on port requirements.

The maximum number of LCMs which may be linked to an LGC module is thus eight (8) (four (4) 6-port cables + four (4) 4-port cables).

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

The DS30A port cable bulkhead connector designations for each of the two LGC modules in the cabinet are listed in the following tables.

DS30A PORT CABLES FOR LGC MODULE ON SHELVES 05 AND 19		
CABLE PEC	6-PORT OR 4-PORT CABLE	BULKHEAD CONNECTOR DESIGNATION
NTNX3305	6-PORT	0P0
NTNX3313	6-PORT	0P1
NTNX3314	6-PORT	0P2
NTNX3315	6-PORT	0P3
NTNX3306	4-PORT	0P4
NTNX3316	4-PORT	0P5
NTNX3317	4-PORT	0P6
NTNX3318	4-PORT	0P7

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

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

- two (2) NT6X70AA Continuity Tone Detector CPs.

Note that NT6X70AAs for CCIS/CCS7 voice trunking, may not be provisioned on a DTC which is provisioned with NTB01 ISDN CPs provisioned per RUL9.

This CP supports a Continuity Test (COT), and is recommended whenever analog facilities are employed in part or all of the transmission path.

When the facility is end-to-end digital, this CP is not required since digital facilities employ other means of fault detection.

An LGC may not be provisioned with NT6X70AA CPs.

- RUL7 1) When the Calling Number Delivery/Calling Number Display (CND) feature is ordered, provide for each equipped module:

- one (1) NTZZ02EA Containing (2) NT6X78AB CPs and (2) Labels

RUL8 1) When analog (POTS) lines are to be supported, or when non-ISDN trunks (A/B bit signalling) are interfaced to a PCM-30 DTC module, provide for each PCM-30 LGC module:

- minimum two (2) NT6X92CA/EA Tone Receiver CPs or
- maximum four (4) NT6X92CA/EA Tone receiver CPs.

One pair of Tone Receiver CP's contains the equivalent of thirty receivers.

2) 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)

RUL9 1) For offices with the XPM (MP/SP) feature, provide:

- for each equipped LGC/DTC module:
 - when ISDN functions are required
 - two (2) NTB01AA/AB/AC ISDN Sig. Preproc. CPs or
 - when ISDN services are not required,
 - two (2) NT0X50AA Filler Faceplates.

The NTB01AA/AB/AC CP's are MD'ed and replaced with the NTB01BA. The NTB01BA may only be used with NTMX77 and NTAX74 (XPM+) CP's.

Note that NTB01 ISDN CPs may not be provisioned on a DTC which is provisioned with NT6X70AAs per RUL6 to handle CCIS/CCS7 voice trunking.

2) In offices with the XPM Plus (UP) feature, provide:

- for each equipped DTC/LGC module:
 - when ISDN functions are required
 - two (2) NTB01AB/AC/BA ISDN Sig. Preproc. CPs, or
 - when ISDN services are not required,
 - two (2) NT0X50AA Filler Faceplates.

The NTB01BA should be used for all new production. The NTB01AB/AC are MD'ed and replaced with the NTB01BA. The NTB01BA must be used with NTMX77 and NTAX74 (XPM+). NTB01AB can not be used with NTAX74.

Note that NTBX01 ISDN CPs may not be provisioned on a DTC which is provisioned with NT6X70AAs per RUL6 to handle CCIS/CCS7 voice trunking.

- 3) For an existing module being converted from XPM (MP/SP) to XPM Plus (UP), provide:

- when no parts are already stocked on site,
 - one (1) NT6X02XG XPM Plus Upgrade Kit.
- when the office already has the NTMX77AA CPs and the NTMX71AA Paddlecards stocked on site,
 - one (1) NTMX70AB XPM Plus Paddlecard Kit.

The NTMX70AB does not contain NTMX77AA, NTMX71AA, nor P0735417 Designation Labels for NTMX77AA.

When either the NT6X02XG or the NTMX70AB Kit is installed, remove all the NT6X45, NT6X46, and NT6X47 CPs in the module and provide NT0X50AA Filler Face Plates as required to occupy the vacant CP positions.

When NTBX01AA ISDN Signalling Pre-processor CPs are present in a module being upgraded to XPM PLUS, provide two (2) NTBX01AB/AC/BA CP's and (2) Designation Labels, and use them to replace the NTBX01AA CPs. The NTBX01AB/AC are MD'ed. Use NTBX01BA for new production.

- 4) The formerly provided NT6X02XA and NT6X02XB XPM Plus Upgrade Kits have been changed to MD status and replaced by the NT6X02XG.

- RUL10 1) When DS30 copper network interface is required in a non-ENET office, provide for each equipped module:

One (1) NTZZ37CH providing: two (2) NT6X40AC CP's
two (2) P0695397 NT6X40AC Labels
one (1) NTRX4667 cable
one (1) NTRX4668 cable

And

- one (1) NT6X02UF Bracket Kit if not provided on frame.

One (1) NTZZ37CP providing: two (2) NT6X40AC CP's
two (2) P0695397 NT6X40AC Labels
one (1) NTRX4665 cable
one (1) NTRX4666 cable

And

- one (1) NT6X02UF Bracket Kit if not provided on frame.

----- OR-----

- On Either module (Upper/Lower)
 - one (1) NTZZ02HN DS30 Network
providing: two (2) NT6X40AD CP's
two (2) P0834806 NT6X40AD Labels

And

- one (1) NT6X02UF Bracket (per module) if not provided with fra
- one (1) NTRX4665 Lower module cable
- one (1) NTRX4666 Lower module cable
- one (1) NTRX4667 Lower module cable
- one (1) NTRX4668 Lower module cable

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

The NT6X02UF Bracket Kit must be provisioned with the NTZZ37CH and NTZZ37CP (One per module) to provide cable support.

- 2) Otherwise, when Fiber Network Interface (ENET) is required, provide for each equipped module:

- On Each module (Upper/Lower)
 - one (1) NTZZ37CQ DS512 Network Interface
providing: two (2) NT6X40FA CP's
two (2) P0729895 NT6X40FA Labels
two (2) NT6X40GA CP's
one (1) NT6X0251 Fiber Adp. Kit
one (1) P0689010 Bushing

and

one (1) NT6X02UF Bracket (per module)

OR

- one (1) NTZZ02HN DS512 Network Interface
providing: two (2) NT6X40FB CP's
two (2) P0729895 NT6X40FB Labels
two (2) NT6X40GA CP's
one (1) NT6X0251 Fiber Adp. Kit

and

one (1) NT6X02UF Bracket (per module)

one (1) P0689010 Bushing

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

RUL11 1) For EMI compliant applications, provide for each CIPE:

- one (1) NTRX2516 EMI Kit, Single Bulkhead (NTRX2516 includes NTRX2522 EMI Door Kit).

2) Alternatively, provide for each CIPE:

- one (1) NTRX2513 EMI Ready Door Kit.

RUL12 1) When overhead cabling is required, provide for each CIPE:

- one (1) NTN5511 Cable Trough Assembly.

RUL13 1) When cabinets are in a non-earthquake zone, provide for each CIPE:

- one (1) NTRX2523 Leveling Foot Kit.

RUL14 1) Provide the appropriate designation label for each CP provided.

RUL15 1) Provide for each CIPE:

- one (1) P0734499 CLGO Label (NTRX46AA), or
- one (1) P0734500 CDT0 Label (NTRX46AA).

The cabinet name is derived from the bottom module (i.e. the first one assigned) as tabulated below, even when the top module is not the same as the bottom module:

BOTTOM MODULE NAME	RESULTING CABINET NAME	CABINET ABBREVIATED NAME
LGCO	International ISDN Line Group Equipment	CLGO
DTCO	International ISDN Trunk Group Equipment	CDT0

RUL16 1) For each CIPE provide per customer requirements:

- one (1) P0707193 Cover Plate,
- one (1) A0368391 Cover Plate, and
- four (4) P0707195 Latch.

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

- RUL17 1) For each equipped LGC/DTC which supports PCM30 links, or for each equipped LGC module which supports links to an LCM (NT6X48 DS30A LCM Interface CPs provided per RUL5) and the LCM is equipped with a PCM30 line drawer such as the NT6X05CA, provide:
- when the NTCX50AB is provided for Echo Canceller interface per R
 - two (2) NT6X28AC PCM-30 Signaling Interface CPs;
 - when the NTCX50AB is not provided,
 - two (2) NT6X28AA PCM-30 Signaling Interface CPs.

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

- RUL18 1) Customized Blocks for Tone Receivers.

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

- two (2) NT6X92CA Universal Tone Receiver CPs provisionable per RUL8, and two (2) P0677831 Designation Labels (NT6X92CA).

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

- two (2) NT6X92EA Universal Tone Receiver CPs provisionable per RUL8, and two (2) P0835224 Designation Labels (NT6X92EA).

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

- RUL19 1) When interface to an external Echo Canceller is required, provide:
- two (2) NTCX50AB Echo Canceller Control Paddlecards,
 - two (2) P0749586 Paddleboard Insertion Guides, and
 - one (1) NTN3390 Ribbon Cable.

NOTE: The Unified Processor (XPM+) is required in a module which will support the Echo Cancellor interface feature. In addition, the NTMX71AA XPM+ Terminator Paddleboards must be mounted at slot location 20R rather than slot location 19R when the NTCX50AB is pr

The recommended cable NTRX36AD to connect the XPM Cabinets to the ECHO CANCELLER shouldn't exceed 50 feet.

Cable NTRX26CW is recommended for the connection between the CIPE and the external Echo Cancellor. The cable length should not exceed 50 feet.

- RUL20 1) When an existing module is being converted to provide interface to an external Echo Cancellor, provide:

- one (1) NT6X01XG XPM Plus Echo Cancellor Upgrade Kit.

NOTE: The NTMX71AA XPM+ Terminator Paddleboards must be moved from location 19R to slot location 20R when the NTCX50AB Echo Cancellor Control Paddlecard is installed.

- RUL21 1) Provide four (4) NT6X45BA packs per module (LGCI,LTICI or DTCI). The NT6X45/NT6X46/NT6X47 packs may be replaced by the NTMX77AA/NTMX71AA unified processor.

- 2) Provide two (2) NT6X47AC packs per module (LGCI,LTICI or DTCI). The NT6X45/NT6X46/NT6X47 packs may be replaced by the NTMX77AA/NTMX71AA unified processor.

- 3) Provide two (2) NT6X46BB packs per module (LGCI,LTICI or DTCI). The NT6X45/NT6X46/NT6X47 packs may be replaced by the NTMX77AA/NTMX71AA unified processor.

- RUL22 1) Provide two (2) of each of NTMX77AA packs, P0735417 designation labels, NTMX71AA paddleboards, and one (1) wiring list when the unified processor (with its associated wiring), is required. The NT6X45/NT6X46/ NT6X47 packs may be replaced by the NTMX77AA/NTMX71AA unified processor.

- RUL23 1) The NT2X70AF should be used for all new production and all DTC+ field applications. The NT2X70AE may be used in all other field applications.

- 2) The NT2X70AY Upgrade Kit may be provisioned, (1) one per module, where the NT2X70AE is always provided, NTRX46AB/AC and NTN333GD/GH.

- RUL24 1) The NT6X02WF Product Change Kit is required if the peripheral recovery loader option is required. This kit contains (2) NT7X05AA cp's and (2) P0808071 designation labels.
- 2) The NT7X05 can only be used with the NTMX77 unified processor, If the NT7X05 is provisioned, the number of NT6X92 CP's will be limited to (2) two per module, in slot 15. The PC6X02WF product change kit makes slot 17 provisionable in packfills where NT6X92 is always provided.

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