SL-1
System options 21, 61, 71
Shelf upgrades to Meridian 1

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About this document

This document describes how to upgrade existing SL-1 and Meridian SL-1 systems to operate with features provided by X11 Release 16 and later versions of software. The upgrading method explained is the shelf upgrade method.

Throughout this document the upgraded systems are designated as Option 21, 61 and 71. They are so designated because they are capable of supporting Superloops and Intelligent Peripheral Equipment (IPE).

Detailed information about connecting IPE and Universal Equipment Modules (UEM) used to house IPE is contained in Northern Telecom Publication (NTP) 553-3001-250.

Contents

Compatibility and software conversion methods

Compatibility

Compatibility problems can occur when certain TDS, FTDS and XCT circuit cards are used in the system. The following mix of circuit cards cannot be used in the system.

QPC197 TDS and QPC609 FTDS

A QPC197 Tone and Digit Switch (TDS) cannot be used with a QPC609 Fast Tone and Digit Switch (FTDS).

QPC197 TDS and NT8D17 XCT

A QPC197 Tone and Digit Switch (TDS) cannot be used with an NT8D17 Conference Tone and Digit Switch (XCT).

> *N* An NT8D17 XCT and a QPC609 FTDS can be used in the
> *o* same system
> *t*
> *e*
> *:*

QPC609 FTDS

Software package 87 (FTDS) must be equipped when the QPC609 FTDS is used in the system.

> *N* The QPC197 TDS circuit card will not operate when software
> *o* package 87 (FTDS) is equipped.
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Conference tone on the NT8D17 XCT

The NT8D17 XCT circuit card produces a conference tone when the DIP option switch 4 is set to OFF. Refer to *Option settings* in 553-3001-211 for more information about option switch settings.

For a complete list of minimum vintages refer to Meridian 1 Product Compatibility Information MSL-1-B-223 dated April 1991.

Software conversion

Floppy disks containing the new software must be available before starting to upgrade an existing system. The existing customer data must also be recorded.

Software conversion methods

One of the following methods should be used to convert the existing software to the new version.

Floppy disks prepared ahead of time

This method consists of preparing floppy disks containing the new release of software. The disks include the customer data of the existing system. These disks are prepared before starting to upgrade the system.

Converting existing software

This method consists of converting the software as part of the system upgrade. This method requires that all intermediate software and hardware be available.

> *N*
> *o*
> *t*
> *e*
> *:* Intermediate software or hardware is not provided by Northern Telecom in the upgrade package.

Reentering customer data

This method consists using floppy disks containing the new software and reentering the customer data through service change overlay programs.

Complete information about software conversion is contained in NTP 553-2001-320

Upgrading LE, A, M, MS to Option 21

Upgrading method

This chapter describes how to upgrade an existing SL-1 LE, A, M and Meridian SL-1 MS to a Meridian 1 Option 21.

The upgrading method consists of replacing the entire Common Equipment (CE) with new common equipment used in the Meridian 1 Option 21 system.

Essentially only the existing peripheral and power equipment remains in place in this upgrade.

It is important that all steps are carried out in order and that none are left out. All preliminary steps must be done prior to the specific procedure for each shelf upgrade.

Equipment required

Table 2-1 lists the items that are required to upgrade an SL-1 LE, A, M and Meridian SL-1 MS system.

Table 2-1
Equipment required

Qua ntity	Co de	De scription
1	*NT8D17AA Rlse 09	CT circuit card
1	*NT8D19AA Rlse 10	MM PS circuit card
1	*NT8D68AA Rlse 04	FD U
1	NT8D77AC	Flop py disk drive interface cable
1	QKM300	QSD 81 shelf mounting kit (SL-1 M and Meridian SL-1 MS)
6		Softw are diskettes 3.5"
1	QMM42	Da ta Cartridge
2	QPC414	EN ET circuit card
1	QPC687	CP U/R OM/SDI circuit card
1	*QPC742D	FD I circuit card
1	QPC940	ROM dau ghter board
1	QSD81	CE shelf
1	QCAD109	CE shelf power adapter cable (SL-1 LE)
1	QCAD349	CE alarm cab le (SL-1 LE)
1	QCAD141	CE pow er adapter cable (SL-1 A)
1	PO677761	Shield
1	PO625843	Shorting clip

* De notes m inimum vintage

Preliminary Steps

1   Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2   Using overlay program 43, perform a data dump to the existing tape or disk.

3   Remove the covers or doors from the front of the CE cabinet and any peripheral equipment cabinets in the system.

4   Designate (but do not disconnect) all the cables connected to the circuit packs in the CE cabinet.

5   Set the ENB/DIS switch on all the QPC84 circuit packs to DIS.

SL-1 LE (QCA23 CE cabinet) to Meridian 1 Option 21

Be sure the preliminary steps have been carried out before starting this procedure.

1   Load overlay program 35 and STAT CPU to check which CPU is active. If necessary switch CPU's (SCPU) to ensure that system is operating in CPU 1.

•   Set the MAINT/NORM switch on the QPC42 circuit pack on QSD12 CPU/Memory shelf 1 to MAINT (shelf position 3 Figure 2-1).

2   Disable faceplate switch on the QPC84 power monitor circuit pack in the QCA23 CE cabinet.

3   Set circuit breaker CPU 0 located on the QBL10 power distribution box in the QCA23 cabinet to OFF.

•   Disconnect and remove cables connected to faceplate connectors on circuit packs located in the QSD12 CPU/Memory shelf 0 located in shelf position 5 (Figure 2-1).

•   Disconnect the power connector (P5), the power monitor connector and the inter shelf cables from the end of the QSD12 CPU/Memory shelf 0.

- Remove and temporarily store all circuit packs from the QSD12 CPU/Memory shelf 0.

- Place a sheet of paper or cardboard in the bottom of the shelf to ensure that the screws are not dropped in equipment below the shelf.

- Remove the four mounting screws securing the QSD12 shelf 0 to the cabinet frame and remove the shelf from the cabinet.

4   With the four mounting screws install the QSD81 CE shelf in the space vacated by the QSD12 CPU/Memory shelf 0 (shelf position 5 Figure 2-1).

5   Connect a QCAD109 power adapter cable from connector P5 of the cabinet power distribution harness to connector G on the QSD81 shelf (Figure 2-2).

6   Ensure that the option switches and plugs on the circuit packs are properly set. Refer to 553-3001-211.

7   Install the QPC940 ROM daughter board on the component side of the QPC687 circuit pack.

- Ensure that the correct QMM42 Data Cartridge is installed on the connector located on the component side of the QPC742 Floppy Disk Interface (FDI) circuit pack and that switches 1 and 5 are set to on.

N   The software version and ID number indicated on the data *c*artridge must match the software version and ID number indicated on *t*he floppy disks.
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8   Install the NT8D68AA Floppy Disk Unit in its assigned position in the CE shelf (Figure 2-3). The NT8D68AA FDU may be installed in an alternate location such as the old network shelf in position 6 or any available PE slots, provided the NT8D77AC floppy disk interface cable will reach from the front of the NT8D68AA FDU to the front of the QPC742 circuit card.

N   If the Floppy Drive is to be located within two slot spaces of *o*he QPC355 Converter the shield (PO677761) must be installed *b*etween them (Figure 2-3).
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9 Insert the circuit packs in their assigned slots in the QSD81 CE shelf (Figure 2-3) and connect the maintenance terminal to the faceplate jack of the CPU circuit card.

10 Set all ENB/DIS switches on the faceplates of circuit packs on the QSD81 CE shelf to ENB.

11 Set the MAINT/NORM switch on the front of the QPC687 circuit pack to NORM.

12 Connect a NT8D77AC floppy disk interface cable from the connector on the faceplate of the QPC742 circuit pack to the connector on the front of the NT8D68AA FDU.

   • In the QBL10 Power Distribution box set CPU 0 breaker to on. Insert the floppy disks into disk drives. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

   • After Sysload (SYS) and Initialization (INI) is completed, invoke manual INI to abort midnight routine. Load overlay program 22 and print issue package and configuration. Verify customer data.

   N   The following steps will cause the system service to be
   *o*interrupted and emergency service (if provided) will be connected.
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13 Invoke emergency transfer by operating the line transfer switch on the QPC84 power monitor circuit pack in the QCA23 CE cabinet (and QCA8 and QCA74 cabinets if equipped) to ON or 1.

14 Set the CAB INP breaker on the QBL10 power distribution box to OFF.

   • Disconnect connector P9 (green) from the side of the QSD10 power convertor shelf.

   • Connect a QCAD349A alarm adapter cable between connector P9 of the cabinet power distribution harness and connector J9 on the QSD10 power control shelf (Figure 2-2).

- Connect connector D on the QCAD349A alarm cable to connector D on the end of the QSD81 common equipment shelf (Figure 2-2).

15 Disconnect all previously tagged cables from the connectors on the QPC45, QPC139 and QPC50 circuit packs and connect to their assigned circuit packs on the QSD81 CE shelf.

16 Disconnect the power connector (connector P2 on the cabinet power distribution harness) from the shelf containing the tape unit.

17 Set circuit breakers CPU 1, NET 0 and NET 1 on the QBL10 power distribution in the QCA23 cabinet to OFF.

18 Disconnect power connectors and any remaining cables from the end of the following shelves (Figure 2-1):

- the tape unit shelf in position 2.

- the QSD12 CPU/Memory shelf in position 3.

- the QSD13 Network shelf 1 in position 4.

- the QSD13 Network shelf 0 in position 6, if the shelf is not required for other services such as DTI.

19 Remove any remaining cables that are connected to the front of circuit packs on the shelves being removed and remove the shelves.

20 Perform this step only if the QSD13 Network shelf 0 in position 6 has been removed.

- Disconnect the power connector from the end of the QUD4 cooling unit in position 6 and remove the cooling unit. Insert a P0625843 shorting clip in terminals 1 and 2 of the power connector disconnected from the QUD4 cooling unit (Figure 2-4).

N   The P0625843 shorting clip is installed to prevent an alarm
*o*indication because of the missing cooling unit.
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- Unseat diskettes from the NT8D68AA Floppy Disk drive.

21 In the QBL10 power distribution box:

- Set CAB INP breaker to ON.

22   Insert the floppy disks into disk drives. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

23 Reestablish normal service on the system as soon as it is determined that trunk connections can be made to an attendant console or other suitable telephone. To restore normal service, set the line transfer switch on the QPC84 circuit packs to OFF or 0.

24 Set the ENB/DIS switch on all the QPC84 circuit packs to ENB.

•   Install cabinet covers and dispose of surplus equipment.

Figure 2-1
QCA23 CE Cabinet Layout

Peripheral Equipment Shelf

Position 1

Tape Unit Shelf
in the LE
This Shelf Position is
Not Used in the
Option 21
Position 2

QSD12 CPU/Memory Shelf 1
or
Peripheral Equipment Shelf
in the LE

Peripheral Equipment Shelf
in the Option 21

Position 3

QSD13 Network Shelf 1
or
Peripheral Equipment Shelf
in the LE

Peripheral Equipment Shelf
in the Option 21

Position 4

QSD12 CPU/Memory Shelf 0
in the LE

QSD 81 Common Equipment
Shelf in the Option 21

Position 5

QSD13 Network Shelf 0
in the LE

In the Option 21 this shelf can be
used
as an alternate location
for the floppy disk unit,
DTI packs or removed
Position 6

QUD6 Cooling Unit

QUD4 Cooling Unit in the LE
Not Required in the Option 21

QUX9 Power Distribution Unit

QBL10 Power Distribution Box

-48 V Rectifier

QSD10 Power Converter Shelf

Position 7

Position 8

Figure 2-2
Cable Connections

Connector D

Cabinet Power
Distribution Harness

QSD81
Common Equipment
Shelf

Connector P5

Connector G

QCAD349
Alarm Cable

QCAD109
Adapter
Cable

Connector J9

Connector P9

QSD10
Power Converter
Shelf
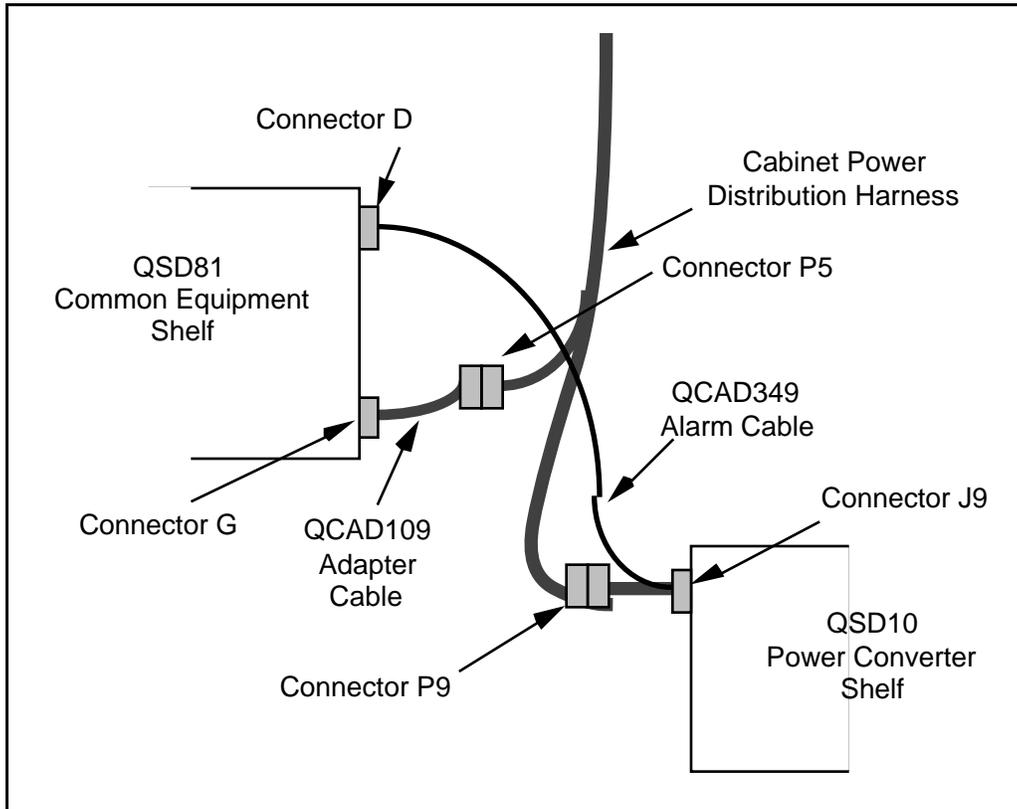
Figure 2-3
Typical QSD81 Shelf Circuit Pack Layout

Note 1: To avoid a system failure, do not install a QPC471 or QPC775 Clock Controller circuit pack in slots 13, 14 or 15. These circuit packs can be installed in any available slot 5 through 12.

Note 2: When the NT8D68AA Floppy Disk Module is installed within two slot spaces of the converter the shield must be installed between it and the Converter.
The NT8D68AA Floppy Disk Module can be located elsewhere or in another shelf when these slots are not available.

Note 3: QPC414 ENET can be installed in slots 5 through 12.
NT8D04 can be installed in slots in slots 5 through 12 (default slots are 5, 7, 9, 11).
SDI can be installed in slots 5 through 15 (recommended slots are 13, 14, 15).
NT8D17AA can be installed in slots 5 through 12 (recommended slot 12).

Figure 2-4
Shorting Clip P0625843

P0625843
Shorting Clip

1 2

3 4

5 6

Cooling unit connector on
cabinet power distribution harness

SL-1 A (QCA28 CE cabinet) to Meridian 1 Option 21

Be sure the preliminary steps have been carried out before starting this procedure.

N
o The system service will be interrupted and emergency service
t (if provided) will be connected.
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1   Invoke emergency transfer by operating the line transfer switch on the QPC84 power monitor circuit pack to ON or 1.

- Set the -48V Cabinet Input circuit breaker on the QBL3 power distribution box in the CE cabinet to OFF.

- On the CE shelf remove the cable from the QPC33 Tape Interface circuit pack to the tape unit.

- Remove the tape from the tape unit.

- Disconnect the cables from the front of all circuit packs on the QSD18 CE shelf in position 6, the QSD19 CE shelf in position 7 (if equipped) and the QSD2 CE shelf in position 8 (if equipped).

- Remove the circuit packs from the QSD18 and QSD19 or QSD2 CE shelves.

- Disconnect the remaining connectors from the QSD18 shelf, the QSD19 or QSD2 shelf and the tape unit shelf.

- Place a sheet of paper or cardboard in the bottom of the shelf to ensure that the screws are not dropped in equipment below the shelf.

- Remove the QSD18 shelf, the QSD19 or QSD2 shelf and the tape unit from the cabinet by removing the four shelf mounting screws in each shelf.

- Disconnect and remove the QUD8 Cooling Unit in position 7 or the QUD4 Cooling Unit in position 8 (whichever is equipped Figure 2-5).

2   Position the QSD81 CE shelf in the space vacated by the QSD18 CE shelf (shelf position 6 Figure 2-5). Secure the shelf to the cabinet frame with the four mounting screws previously removed.

3   Connect connector P1 of the QCAD141 Power Cable Adapter to connector P5 on the power distribution harness (Figure 2-6) of the cabinet.

4   Connect the following leads from the QCAD141 Power Cable Adapter to the backplane of the QSD81 CE shelf;

   •   the blue lead to the connection designated -48V 0 on the shelf backplane.

   •   the black lead to the connection designated -48V GND on the shelf backplane.

   •   the white lead to the connection designated GND on the shelf backplane.

   •   Connect connector P2 of the QCAD141 Power Cable Adapter to connector P13A of the cabinet power distribution harness (Figure 2-6).

   •   Connect connector J2 of the QCAD141 Power Cable Adapter to connector D on the backplane of the QSD81 shelf.

5   Ensure that the option switches and plugs on the circuit packs are properly set, refer to 553-3001-211.

6   Install the QPC940 ROM daughter board on the component side of the QPC687 circuit pack.

   •   Ensure that the correct QMM42 Data Cartridge is installed on the connector located on the component side of the QPC742 Floppy Disk Interface (FDI) circuit pack and that switches 1 and 5 are set to on.

   N   The software version and ID number indicated on the data
   *o*cartridge must match the software version and ID number indicated on
   *t*he floppy disks.
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7   Insert the circuit packs, and the NT8D68AA Floppy Disk Unit in their assigned slots in the QSD81 CE shelf (Figure 2-6). The NT8D68AA FDU may be installed in an alternate location such as the old network shelf in position 6 or any available PE slots, provided the NT8D77AC floppy disk interface cable will reach from the front of the NT8D68AA FDU to the front of the QPC742 circuit card.

N If the Floppy Drive is to be located within two slot spaces of
*o*the QPC355 Converter the shield must be installed between them
t(Figure 2-6).
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- Connect a NT8D77AC floppy disk interface cable from the
  connector on the faceplate of the QPC742 circuit pack to the
  connector on the front of the NT8D68AA FDU.

- Reconnect the tagged cables to the appropriate connectors on the
  faceplates of the circuit packs.

8   Set all ENB/DIS switches on the faceplates of circuit packs to ENB.

- Set the MAINT/NORM switch on the front of the QPC687 circuit
  to NORM.

- Set the cabinet input circuit breaker on the QBL3 power
  distribution box to ON.

9   Insert the floppy disks into disk drives. A system reload (SYSLOAD)
should occur. Wait for the SYSLOAD to be completed.

10 Reestablish normal service on the system as soon as it is determined
that trunk connections can be made to an attendant console or other
suitable telephone. To restore normal service, set the line transfer
switch on the QPC84 circuit packs to OFF or 0.

- Using the appropriate overlay programs, obtain printouts of all TN
  assignments and system features and compare with the printouts
  obtained before converting.

11 Install cabinet covers or doors and dispose of surplus equipment.

Figure 2-5
QCA28 CE Cabinet Layout

Figure 2-6
QSD81 Shelf Circuit Pack Layout

Note 1 : To avoid a system failure, do not install a QPC471 or QPC775 Clock Controller circuit pack in slots 13, 14 or 15. These circuit packs can be installed in any available slot 5 through 12.

Note 2 : When the NT8D68AA Floppy Disk Module is installed within two slots spaces of the converter the shield must be installed between it and the Converter.
The NT8D68AA Floppy Disk Module can be located elsewhere or in another shelf if these slots are not available.

Note 3 : QPC414 ENET can be installed in slots 5 through 12.
NT8D04 can be installed in slots 5 through 12 (default slots are 5,7, 9, 11).
SDI can be installed in slots 5 through 15 (recommended slots are 13, 14, 15).
NT8D17AA can be installed in slots 5 through 12 (recommended slot 12).

SL-1 M (QCA37 CE cabinet) to Meridian 1 Option 21

Be sure the preliminary steps have been carried out before starting this procedure.

N   The system service will be interrupted and emergency service
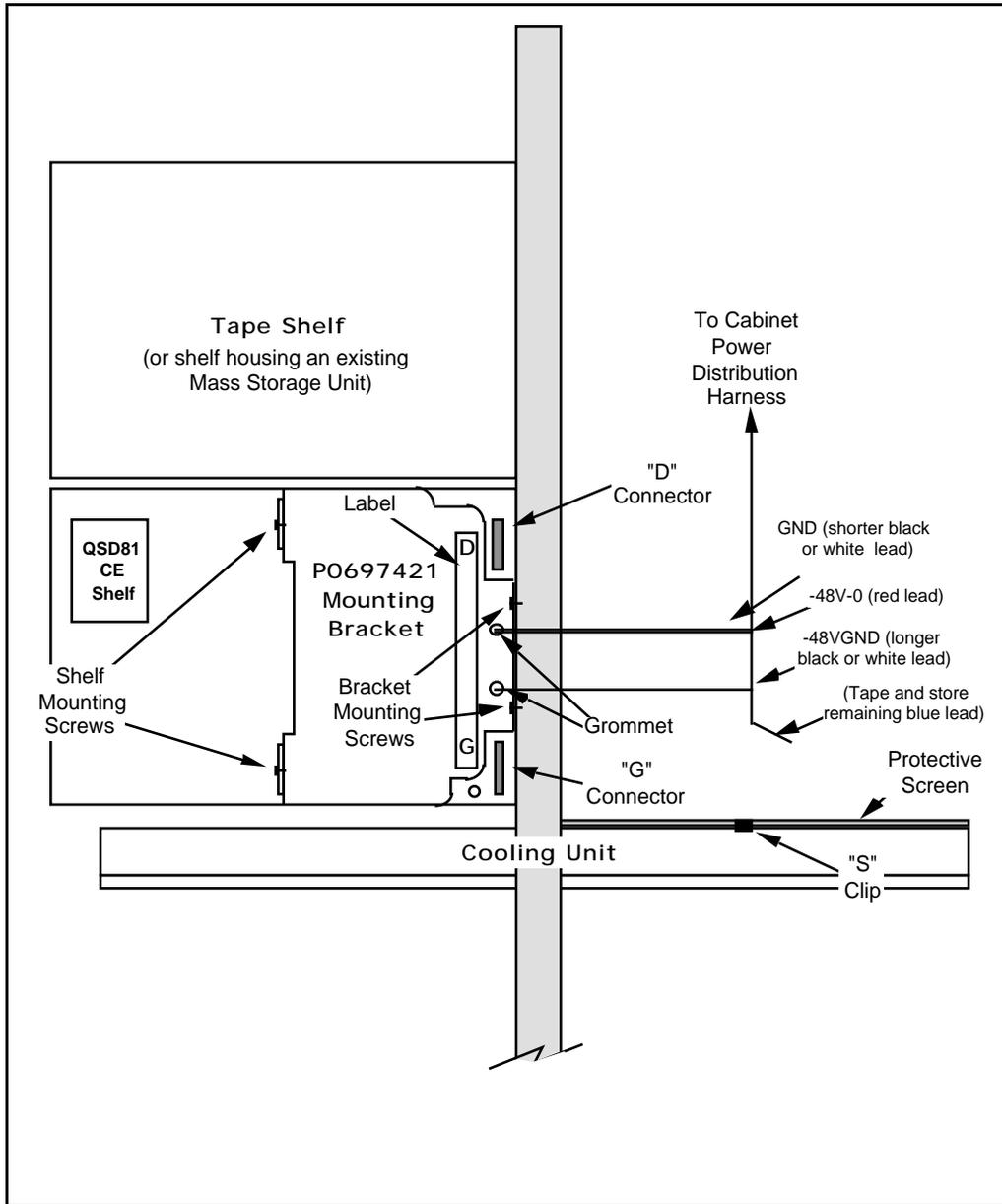*o* (if provided) will be connected.
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1   Invoke emergency transfer by operating the line transfer switch on the QPC84 power monitor circuit pack in the QCA37 CE cabinet (and other cabinets if equipped) to ON or 1.

   •   Set the CAB INP circuit breaker on the QSD23 power control shelf in the QCA37 cabinet to OFF.

   •   Set the AC input circuit breaker on the -48V rectifier in the QCA37 cabinet to OFF.

   •   Disconnect all previously tagged cables from the connectors on the QPC139 and QPC376 circuit packs.

   •   Disconnect and remove the cable between the connectors on the front of the QPC33 Tape (or QPC584 MSI, if equipped) circuit pack and the tape unit (or QMM38 Mass Storage Unit, if equipped).

   •   Disconnect the power connection and the power monitor plug P7 from the cabinet power wiring harness to the QSD26 CE shelf backplane.

   •   Disconnect the power connector from the cabinet power wiring harness to the shelf housing the tape unit (or QMM38 Mass Storage Unit if equipped).

   •   Remove all circuit packs from the front and rear of the QSD26 CE shelf.

   •   Place a sheet of paper or cardboard in the bottom of the shelf to ensure that the screws are not dropped in equipment below the shelf.

   •   Remove the QSD26 CE shelf from the front of the cabinet. Temporarily store four of the mounting screws removed from the shelf.

2   Install one P0697421 mounting bracket (supplied with the QKM300 kit) on each side of the QSD81 CE shelf. Secure the brackets to the shelf with the four screws supplied with the kit. The brackets are mounted against the shelf with the mounting edges pointing outward. Ensure that all the connectors and openings on the side of the shelf are exposed (Figure 2-7).

   •   Install the two grommets supplied with the QKM300 kit in the two holes in the P0697421 mounting bracket on the right end of the shelf (Figure 2-7).

   •   Install the label supplied with the QKM300 kit on the P0697421 mounting bracket on the right end of the shelf (Figure 2-7).

3   Position the QSD81 CE shelf in the space vacated by the QSD26 CE shelf at the front of the cabinet. Position the shelf as close as possible to the tape shelf (or mass storage unit shelf, if equipped) to ensure that the wiring from the cabinet wiring harness will reach the shelf backplane. Secure the mounting brackets and shelf to the cabinet frame with the four mounting screws previously used to mount the QSD26 CE shelf (Figure 2-7).

4   Insert the wiring from the cabinet through the two holes equipped with grommets as shown in Figure 2-7.

5   Connect the wiring and connector P7 to the shelf as shown in Figure 2-8.

6   Disconnect the power supply cord and the alarm connector from the side of the QUD9 cooling unit.

   •   Remove the four mounting screws securing the cooling unit to the cabinet frame and raise the unit until it is directly underneath the new QSD81 CE shelf. Secure the cooling unit to the cabinet frame with the four mounting screws.

7   Install the protective screen (part of the QKM300 kit) on the two exposed fans at the rear of the QUD9 cooling unit (Figure 2-7 and 2-9). Secure the screen with the four "S" clips provided.

   •   Reconnect the alarm connector to the side of the cooling unit.

   •   Reconnect the cooling unit power supply cord.

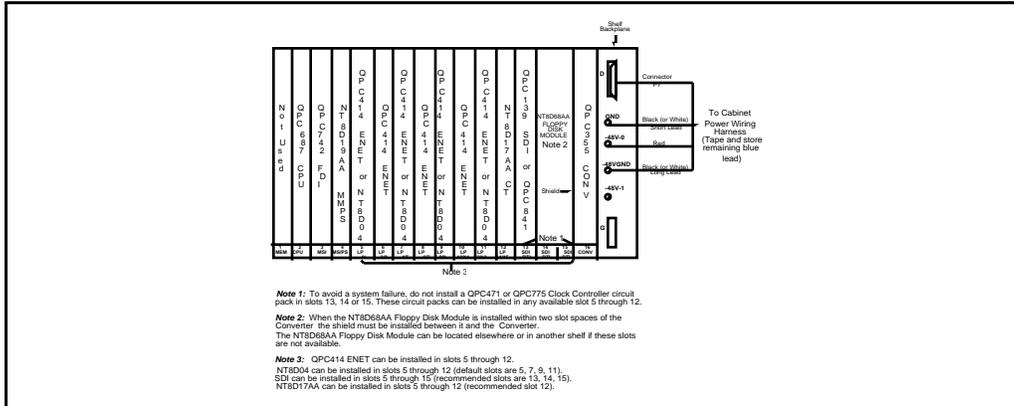   •   Ensure that the option switches and plugs on the circuit packs are properly set, refer 553-3001-211.

- Install the QPC940 ROM daughter board on the component side of the QPC687 circuit pack.

8   Ensure that the correct QMM42 Data Cartridge is installed on the connector located on the component side of the QPC742 Floppy Disk Interface (FDI) circuit pack and that switches 1 and 5 are set to on.

N   The software version and ID number indicated on the data
*o*cartridge must match the software version and ID number indicated on
*t*the floppy disks.
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9   Insert the circuit packs in their assigned slots in the QSD81 CE shelf (Figure 2-8) ensure that all ENB/DIS switches on the faceplates are set to ENB.

- Install the NT8D68AA Floppy Disk Unit in its assigned position in the CE shelf (Figure 2-8). The NT8D68AA FDU may be installed in an alternate location or any available PE slots, provided the NT8D77AC floppy disk interface cable will reach from the front of the NT8D68AA FDU to the front of the QPC742 circuit card.

N   If the Floppy Drive is to be located within two slot spaces of
*o*the QPC355 Converter the shield must be installed between them
t(Figure 2-8).
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- Connect a NT8D77AC floppy disk interface cable from the connector on the faceplate of the QPC742 circuit pack to the connector on the front of the NT8D68AA FDU.

- Set the switch on the QPC687 circuit pack to NORM.

- Set the AC INP circuit breaker on the -48 V rectifier in the QCA37 cabinet to ON.

- Set the CAB INP circuit breaker on the QSD23 power control shelf to ON.

10   Insert the floppy disks into disk drives. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

11 Reestablish normal service on the system as soon as it is determined that trunk connections can be made to an attendant console or other suitable telephone. To restore normal service, set the line transfer switch on the QPC84 circuit packs to OFF or 0.

   •   Using the appropriate overlay programs, obtain printouts of all TN assignments and system features and compare with the printouts obtained before converting.

12 Set the ENB/DIS switch on all the QPC84 circuit packs to ENB.

13 If required, remove the tape unit or the QMM38 Mass Storage Unit (if equipped) and shelf from the cabinet.

14 Install cabinet covers or doors and dispose of surplus equipment.

Figure 2-7
Mounting Bracket Connection

Figure 2-8
Typical QSD81 Shelf Circuit Pack Layout

Note 1: To avoid a system failure, do not install a QPC471 or QPC775 Clock Controller circuit pack in slots 13, 14 or 15. These circuit packs can be installed in any available slot 5 through 12.

Note 2: When the NT8D68AA Floppy Disk Module is installed within two slot spaces of the Converter the shield must be installed between it and the Converter.
The NT8D68AA Floppy Disk Module can be located elsewhere or in another shelf if these slots are not available.

Note 3: QPC414 ENET can be installed in slots 5 through 12.
NT8D04 can be installed in slots 5 through 12 (default slots are 5, 7, 9, 11).
SDI can be installed in slots 5 through 15 (recommended slots are 13, 14, 15).
NT8D17AA can be installed in slots 5 through 12 (recommended slot 12).

Figure 2-9
QUD Cooling Unit

Top View of QUD9 Cooling Unit

Front of Cabinet

Mounting Column
in Cabinet

Mounting Column
in Cabinet

Fans

"S"
Clips

"S"
Clips

Protective
Screen

Rear of Cabinet
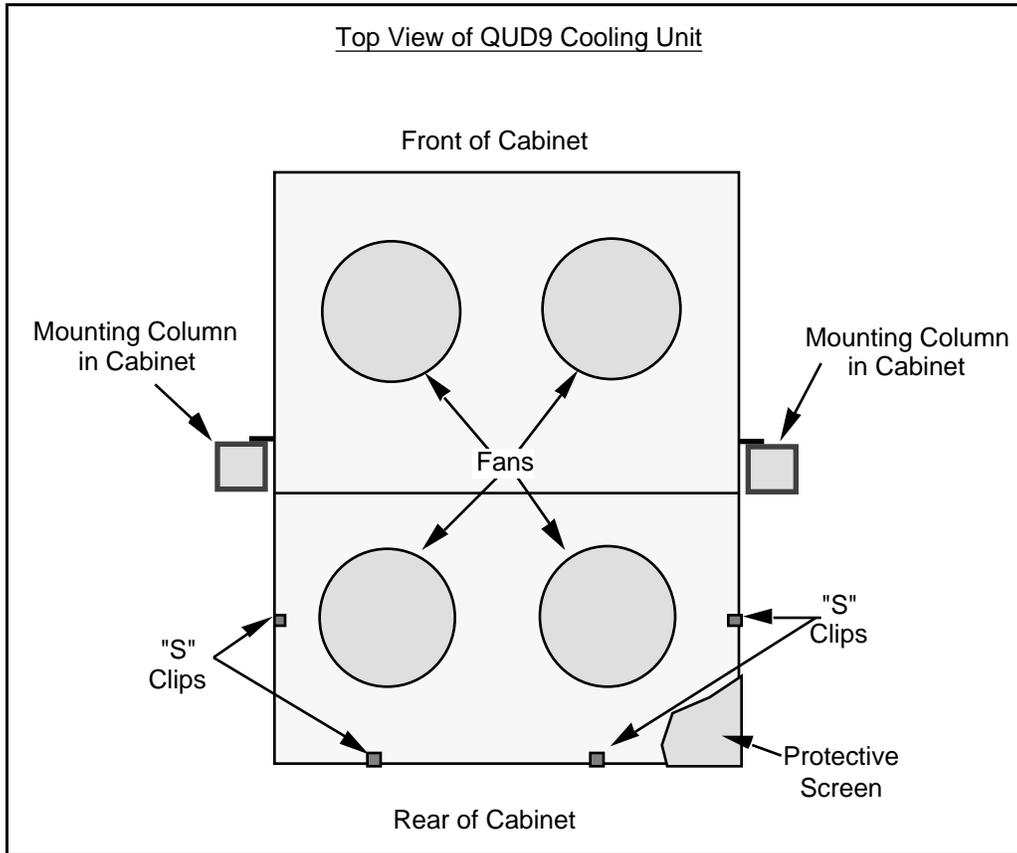
SL-1 MS (QCA37 CE cabinet) to Meridian 1 Option 21

Be sure the preliminary steps have been carried out before starting this procedure.

N   The system service will be interrupted and emergency service
o (if provided) will be connected.
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1   Invoke emergency transfer by operating the line transfer switch on the QPC84 power monitor circuit pack in the QCA37 CE cabinet (and other cabinets if equipped) to ON or 1.

   •   Set the CAB INP circuit breaker on the QSD23 power control shelf in the QCA37 cabinet to OFF.

   •   Set the AC input circuit breaker on the -48V rectifier in the QCA37 cabinet to OFF.

2   Perform this step only if the cabinet is equipped with a QSP39 CE expansion shelf at the rear of the cabinet.

   •   Disconnect and remove the cables between the QPC215 SBE circuit packs located on the QSP39 CE shelves at the front and rear of the cabinet.

3   Disconnect all previously tagged cables from the connectors on the QPC425, QPC139 and QPC376 circuit packs.

4   Disconnect and remove the cable between the connectors on the front of the QPC33 Tape circuit pack (or QPC584 MSI circuit pack, if equipped) and the tape unit (or QMM38 Mass Storage Unit, if equipped).

5   Perform this step only if the cabinet is equipped with a single QSP39 CE shelf.

   •   Disconnect the connections from the cabinet power wiring harness to the backplane of the QSP39 CE shelf.

   •   Disconnect the power monitor plug P7 from the cabinet power wiring harness to the QSP39 CE shelf backplane.

6 Perform this step only if the cabinet is equipped with two QSP39 CE shelves.

- Disconnect the connections from the cabinet power wiring harness to the backplane of the QSP39 CE shelf at the front of the cabinet.

- Disconnect the power adapter cables between the QSP39 CE shelf at the front of the cabinet and the QSP39 CE expansion shelf at the rear of the cabinet. (The adapter cables are no longer required.)

- Remove the red power extension cable connected to the blue wire of the cabinet power wiring harness.

- Disconnect the power monitor connectors J1F and J1R from the cabinet power wiring harness to the backplanes of the QSP39 CE shelves.

- Remove the power monitor adapter cable by disconnecting the J1 connector from the power monitor plug P7. (The monitor adapter cable is no longer required.)

7 Disconnect the power connector from the cabinet power wiring harness to the shelf housing the tape unit (or QMM38 Mass Storage Unit if equipped).

- Remove the remaining circuit packs from the CE shelves.

8 Perform this step only if the cabinet is equipped with two QSP39 CE shelves.

- Place a sheet of paper or cardboard in the bottom of the shelf to ensure that the screws are not dropped in equipment below the shelf.

- Remove the QSP39 CE expansion shelf located at the rear of the cabinet.

9 Remove the QSP39 CE shelf from the front of the cabinet by removing the four mounting screws.

- Install one P0697421 mounting bracket from the QKM300 kit on each side of the QSD81 CE shelf. Secure the brackets to the shelf with the four screws supplied with the kit. The brackets are mounted against the shelf with the mounting edges pointing

outward. Ensure that all the connectors and openings on the side of the shelf are exposed (Figure 2-10).

- Install the two grommets supplied with the QKM300 kit in the two holes in the P0697421 mounting bracket on the right end of the shelf (Figure 2-10).

- Install the label supplied with the QKM300 kit on the P0697421 mounting bracket on the right end of the shelf (Figure 2-10).

10 Position the QSD81 CE shelf in the space vacated by the QSP39 CE shelf at the front of the cabinet. Position the shelf as closely as possible to the tape shelf (or existing disk drive shelf) to ensure that the wiring from the cabinet wiring harness will reach the CE shelf backplane. Secure the mounting brackets and shelf to the cabinet frame with the four mounting screws previously used to mount the QSP39 CE shelf (Figure 2-10).

- Insert the wiring from the cabinet through the two holes equipped with grommets as shown in Figure 2-10.

- Connect the wiring and connector P7 to the shelf as shown in Figure 2-10.

- Disconnect the power supply cord from the QUD9 cooling unit.

- Disconnect the alarm connector from the side of the QUD9 cooling unit.

11 Remove the four mounting screws securing the cooling unit to the cabinet frame and raise the unit until it is directly underneath the new QSD81 CE shelf. Secure the cooling unit to the cabinet frame with the four mounting screws.

12 Install the protective screen (part of the QKM300 kit) on the two exposed fans at the rear of the QUD9 cooling unit (Figure 2-10). Secure the screen with the four "S" clips provided.

- Reconnect the alarm connector to the side of the cooling unit.

- Reconnect the cooling unit power supply cord.

13 Ensure that the option switches and plugs on the circuit packs are properly set, refer to 553-3001-211.

14 Install the QPC940 ROM daughter board on the component side of the QPC687 circuit pack.

15 Ensure that the correct QMM42 Data Cartridge is installed on the connector located on the component side of the QPC742 Floppy Disk Interface (FDI) circuit pack and that switches 1 and 5 are set to on.

N   The software version and ID number indicated on the data
*o*cartridge must match the software version and ID number indicated on
*t*the floppy disks.
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16 Insert the circuit packs and the NT8D68AA Floppy Disk Unit in their assigned slots in the QSD81 CE shelf (Figure 2-11). The NT8D68AA FDU may be installed in an alternate location or any available PE slots, provided the NT8D77AC floppy disk interface cable will reach from the front of the NT8D68AA FDU to the front of the QPC742 circuit card.

N   If the Floppy Drive is to be located within two slot spaces of
*o*the QPC355 Converter the shield must be installed between them
t(Figure 2-11).
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17 Connect a NT8D77AC floppy disk interface cable from the connector on the faceplate of the QPC742 circuit pack to the connector on the front of the NT8D68AA FDU.

• Set all ENB/DIS switches on the faceplates of circuit packs to ENB.

• Set the switch on the QPC687 circuit pack to NORM.

• Set the AC INP circuit breaker on the -48 V rectifier in the QCA37 cabinet to ON.

• Set the CAB INP circuit breaker on the QSD23 power control shelf to ON.

18 Insert the floppy disks into disk drives. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

19 Reestablish normal service on the system as soon as it is determined that trunk connections can be made to an attendant console or other

suitable telephone. To restore normal service, set the line transfer switch on the QPC84 circuit packs to OFF or 0.

- Using the appropriate overlay programs, obtain printouts of all TN assignments and system features and compare with the printouts obtained before converting.

20 Set the ENB/DIS switch on all the QPC84 circuit packs to ENB.

- If required, remove the tape unit or the QMD67 Mass Storage Shelf (if equipped) from the cabinet.

- Install cabinet covers or doors and dispose of surplus equipment.

Figure 2-10
Mounting Bracket Connections

Tape Shelf
(or shelf housing an existing
Mass Storage Unit)

To Cabinet
Power
Distribution
Harness

Label

"D"
Connector

D

GND (shorter black
or white lead)

QSD81
CE
Shelf

PO697421
Mounting
Bracket

-48V-0 (red lead)

-48VGND (longer
black or white lead)

Shelf
Mounting
Screws

Bracket
Mounting
Screws

(Tape and store
remaining blue lead)

Grommet

G

Protective
Screen

"G"
Connector

Cooling Unit

"S"
Clip

Figure 2-11
Typical QSD81 Shelf Circuit Pack Layout
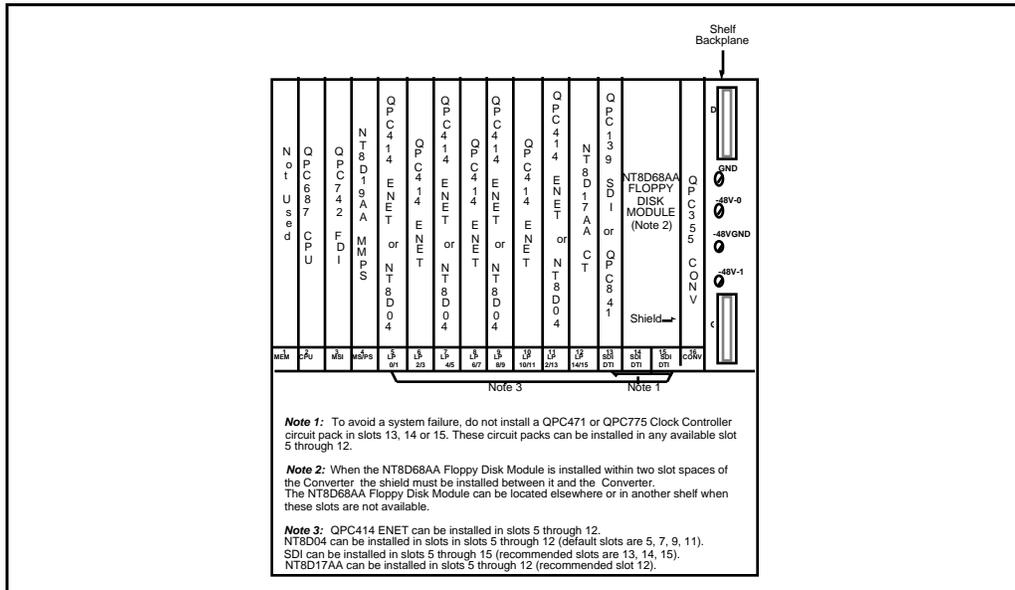
SL-1 MS (QCA109 CE cabinet) to Meridian 1 Option 21

Be sure the preliminary steps have been carried out before starting this procedure.

N   The system service will be interrupted and emergency service
o (if provided) will be connected.
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1   Invoke emergency transfer by operating the line transfer switch on the QPC84 power monitor circuit pack to ON or 1.

•   Set the CAB INP circuit breaker on the QSP43 power control shelf in the QCA109 cabinet to OFF.

•   Set the AC input circuit breaker on the -48V rectifier in the QCA109 cabinet to OFF.

- Disconnect and remove the cable from the QPC33 Tape Interface (or QPC584 MSI, if equipped) circuit pack located on the CE shelf to the tape unit or QMM38 Mass Storage Unit (if equipped).

- Remove the tape from the tape unit or disks from the QMM38 Mass Storage Unit (if equipped).

2   Disconnect the cables from the connectors on the faceplate of the following circuit packs located on the CE shelf:

- QPC425 CPU/SDI circuit pack.

- QPC376 network circuit packs.

- QPC139 SDI2 circuit packs (if equipped).

3   Remove the blank faceplate (if equipped) and the circuit pack in the last slot on the right end of the QSP39 CE shelf.

- Disconnect the power connections and power monitor connector C12 from the cabinet power distribution harness to the right end of the backplane on the QSP39 shelf.

- Disconnect the power connector from the cabinet power wiring harness to the shelf housing the tape unit (or QMM38 Mass Storage Unit if equipped).

- Remove the remaining circuit packs from the CE shelf.

- Place a sheet of paper or cardboard in the bottom of the shelf to ensure that screws are not dropped in equipment below the shelf.

- Remove and temporarily store the four mounting screws securing the QSP39 CE shelf to the cabinet frame. Remove the QSP39 CE shelf from the cabinet.

4   Install one P0697421 mounting bracket from the QKM300 kit on each side of the QSD81 CE shelf. Secure the brackets to the shelf with the four screws supplied with the QKM300 kit. The brackets are mounted against the shelf with the mounting edges pointing outward. Ensure that all the connectors and openings on the side of the shelf are exposed (Figure 2-12).

- Install the two grommets supplied with the QKM300 kit in the two holes in the P0697421 mounting bracket on the right end of the shelf (Figure 2-12).

- Install the label supplied with the QKM300 kit on the P0697421 mounting bracket on the right end of the shelf (Figure 2-12).

5   Position the QSD81 CE shelf in the space vacated by the QSP39 CE shelf at the front of the cabinet. Secure the mounting brackets and shelf to the cabinet frame with the four mounting screws previously used to mount the QSP39 CE shelf (Figure 2-12).

6   Route the GND, -48V-0 and -48VGND wires (white, red and black wires previously disconnected from the QSP39 CE shelf) through the holes equipped with the grommets as shown in Figure 2-12.

- Connect connector C12 and the white, red and black wires from the cabinet power wiring harness to the QSD81 shelf as shown in Figure 2-13.

7   Ensure that the option switches and plugs on the circuit packs are properly set, refer to 553-3001-211.

8   Install the QPC940 ROM daughter board on the component side of the QPC687 circuit pack.

9   Ensure that the correct QMM42 Data Cartridge is installed on the connector located on the component side of the QPC742 Floppy Disk Interface (FDI) circuit pack and that switches 1 and 5 are set to on.

N   The software version and ID number indicated on the data
*o*cartridge must match the software version and ID number indicated on
*t*the floppy disks.
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10   Insert circuit packs in their assigned slots in the QSD81 CE shelf (Figure 2-13) ensure that all ENB/DIS switches on the faceplates of the circuit packs are set to ENB. The NT8D68AA FDU may be installed in an alternate location or any available PE slots, provided the NT8D77AC floppy disk interface cable will reach from the front of the NT8D68AA FDU to the front of the QPC742 circuit card.

N   If the Floppy Drive is to be located within two slot spaces of
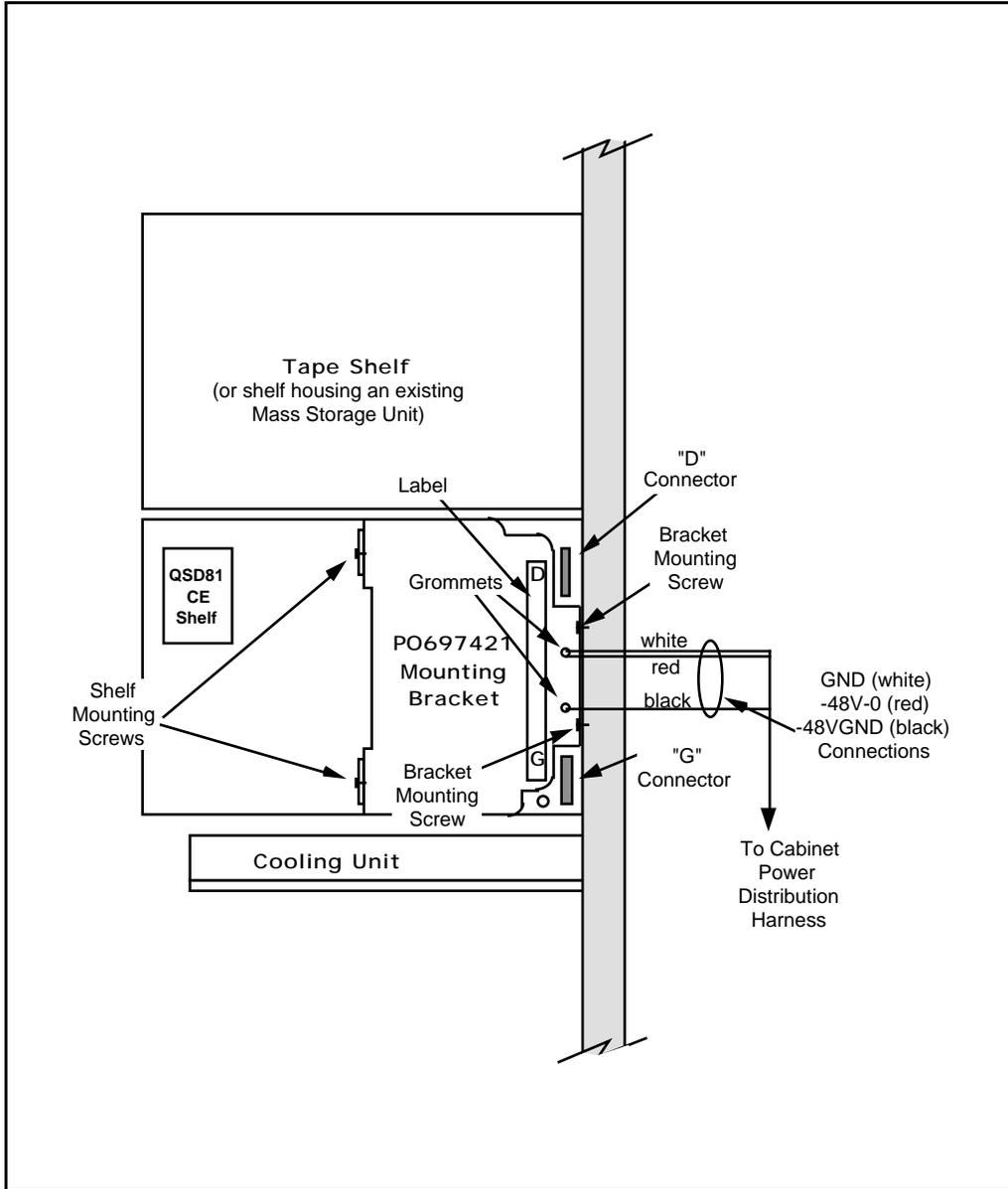*o*the QPC355 Converter the shield must be installed between them
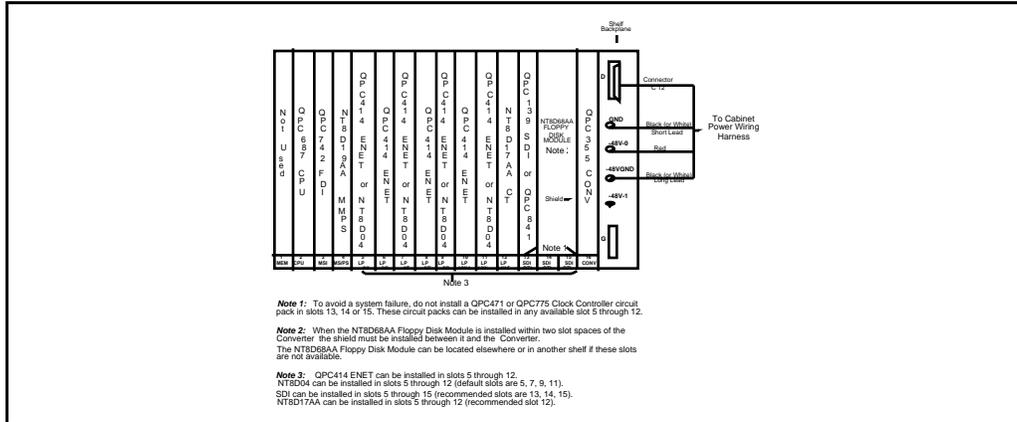*t*(Figure 2-13).
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- Connect a NT8D77AC floppy disk interface cable from the connector on the faceplate of the QPC742 circuit pack to the connector on the front of the NT8D68AA FDU.

- Set the switch on the QPC687 circuit pack to NORM.

- Set the AC INP circuit breaker on the -48 V rectifier in the QCA109 cabinet to ON.

- Set the CAB INP circuit breaker on the QSP43 power shelf to ON.

11 Insert the floppy disks into disk drives. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

12 Reestablish normal service on the system as soon as it is determined that trunk connections can be made to an attendant console or other suitable telephone. To restore normal service, set the line transfer switch on the QPC84 circuit packs to OFF or 0.

- Using the appropriate overlay programs, obtain printouts of all TN assignments and system features and compare with the printouts obtained before converting.

13 Set the ENB/DIS switch on all the QPC84 circuit packs to ENB.

14 If required, remove the tape unit or the QMM38 Mass Storage Unit (if equipped) and shelf from the cabinet.

15 Install cabinet covers or doors and dispose of surplus equipment.

Figure 2-12
Mounting Bracket Connections

Figure 2-13
QSD81 Shelf Circuit Pack Layout

Note 1: To avoid a system failure, do not install a QPC471 or QPC775 Clock Controller circuit pack in slots 13, 14 or 15. These circuit packs can be installed in any available slot 5 through 12.

Note 2: When the NT8D68AA Floppy Disk Module is installed within two slot spaces of the Converter the shield must be installed between it and the Converter.
The NT8D68AA Floppy Disk Module can be located elsewhere or in another shelf if these slots are not available.

Note 3: QPC414 ENET can be installed in slots 5 through 12.
NT8D04 can be installed in slots 5 through 12 (default slots are 5, 7, 9, 11).
SDI can be installed in slots 5 through 15 (recommended slots are 13, 14, 15).
NT8D17AA can be installed in slots 5 through 12 (recommended slot 12).

Upgrading from SL-1 S to Option 21

Upgrading method

This chapter describes how to upgrade an existing SL-1 S to a Meridian 1 Option 21.

The upgrading method consists of replacing all the Common Equipment (CE) with new common equipment used with the Meridian 1 Option 21 system.

Equipment required

Table 3-1 lists the items that are required to upgrade an SL-1 S system.

Table 3-1
Equipment required

Quantity	Code	Description
1	QPC 840	CE backplane
1	*NT8D 17AA Rlse 09	CT circuit card
1	*NT8D 19AA Rlse 10	MM PS circuit card
1	*NT8D 68AA Rlse 04	FD U
1	P0727460	FD U mounting bracket
1	P0699362	Top designation strip C E shelf
1	P0699363	Bottom designation strip C E shelf
1	NT 8D77 AC	Flop py disk drive interface cable
6		Softw are diskettes 3.5"
1	QMM 42	Data Cartridge
2	QPC 414	EN ET circuit card
1	QPC 687	CP U/R OM/SDI circuit card
1	*QPC742D	FD I circuit card
1	QPC 940	ROM dau ghter board

* De notes m inimum vintage

SL-1 S to Meridian 1 Option 21

1   Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2   Using overlay program 43, perform a data dump.

3   Remove the covers from the front and rear of the QCA60 cabinet.

4   Designate (but do not disconnect) all the network loop cables connected to the QPC376 network circuit packs and the cables connected to the QPC139 SDI circuit packs.

5   If the system is equipped with a tape drive install the NT8D68AA Floppy Disk Unit (FDU) in the cabinet.

   •   Set the ENB/DIS switch on the faceplate of the QPC33 circuit pack located on the CE shelf to DIS.

   •   Set the power switch on the faceplate of the tape unit to OFF or 0.

   •   Disconnect and remove the cable from the faceplate of the QPC33 circuit pack to the tape unit.

   •   Remove the two screws located at the top and two screws at the bottom of the tape unit faceplate securing the tape unit to the cabinet.

   •   Slide the tape unit part way out of its position in the cabinet and disconnect the connector from the cabinet power wiring harness to the back of the tape unit. Remove the tape unit from the cabinet.

   •   Remove and discard the four plastic sliders (two at the top and two at the bottom) from the position vacated by the tape unit.

   •   Insert the disk drive adapter assembly (Figure 3-1) in the position vacated by the tape unit and secure to cabinet frame with the four mounting screws removed from the tape unit.

   •   Insert the NT8D68AA Floppy Disk Unit in the disk drive adapter.

6   If the system is presently equipped with a QPC742 FDI circuit pack, disconnect the cable from the connector on the front of the pack, remove the pack from the shelf.

• Remove QMM45 Disk drive and old adapter assembly.

• Insert the disk drive adapter assembly (Figure 3-1) in the position vacated by the old adapter unit and secure to cabinet frame with the four mounting screws.

• Insert the NT8D68AA Floppy Disk Unit in the disk drive adapter.

7   Invoke emergency transfer by operating the line transfer switch on the QPC84 power monitor circuit pack to ON or 1.

8   Set the CAB INP circuit breaker at the front of the cabinet to OFF.

• Disconnect the ac power for the cabinet by disconnecting the commercial ac power line cord from its receptacle or by setting the commercial ac power supply circuit breaker at the service panel to OFF.

• Disconnect all previously tagged cables from the connectors on the QPC139 and QPC376 circuit packs.

9   Disconnect and remove any remaining cables connected to circuit packs on the CE shelf.

N   The main CE shelf is located at the bottom left shelf position in *o*the cabinet (viewed from the front). An optional expansion CE shelf *t*may be located at the top right shelf position.
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10 Tag and disconnect the wires and the connector from the power distribution harness to the backplane of the main CE shelf.

N   If the cabinet is equipped with an expansion CE shelf (a *o*second CE shelf) disconnect and remove the wiring between the +5V, *t*+12V, -12V and LGND connections on the two CE shelves.
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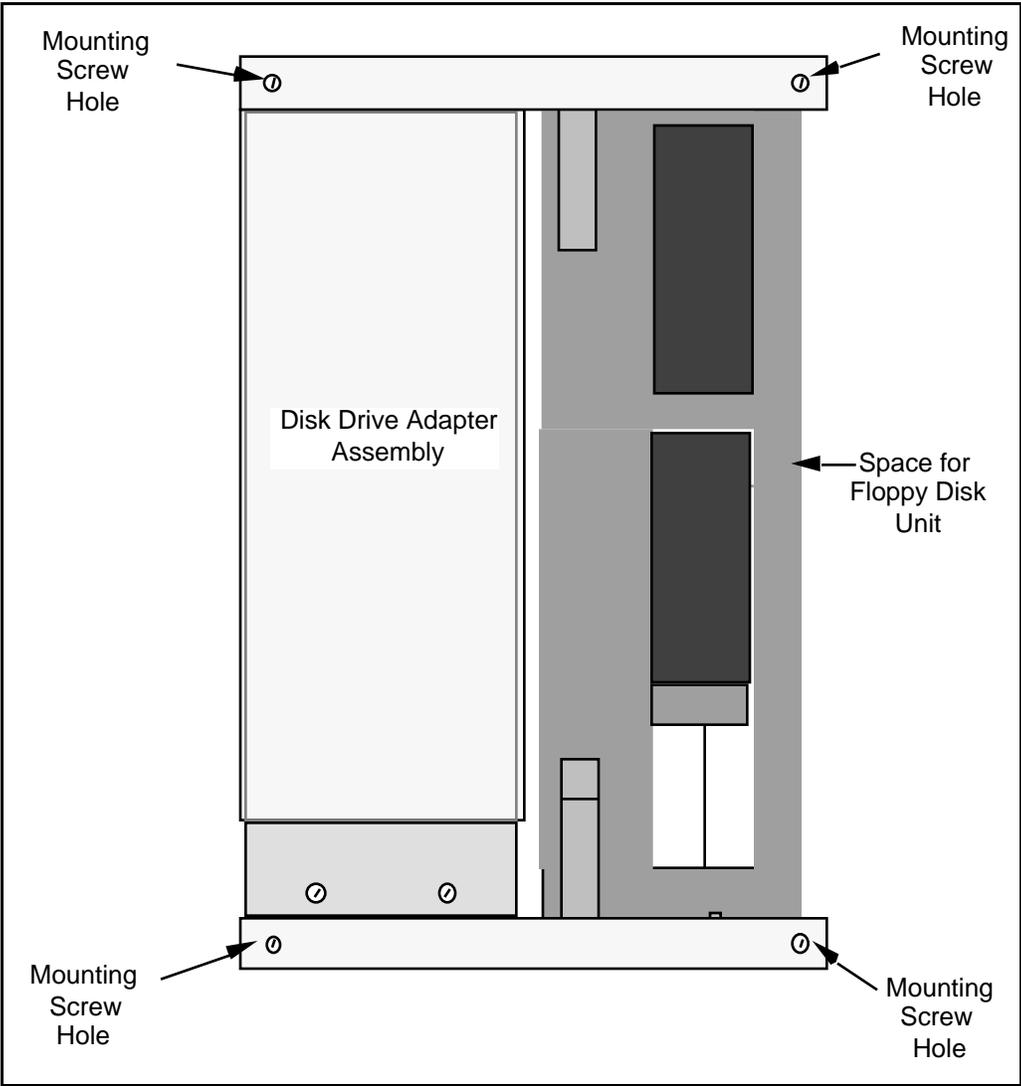11 Remove the remaining circuit packs from the main CE shelf.

12 From the rear of the cabinet, remove the nuts securing the main CE shelf backplane to the cabinet frame and remove the backplane.

13 Position the new QPC840 CE backplane in the space vacated by the main CE shelf backplane and secure with the nuts and washers removed from the old shelf. To ensure that the backplane is properly aligned with the plastic circuit pack guides, insert a circuit pack in the shelf from the front of the cabinet. Adjust the backplane if necessary.

14 Reconnect the tagged power wiring and connector from the power distribution harness to the new CE shelf backplane.

N   Do not reconnect wiring to the optional expansion CE shelf (if
*o*quipped).
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15 If the cabinet is equipped with an optional expansion CE shelf, remove the nuts securing that shelf backplane and remove it from the cabinet.

16 Ensure that the option switches and plugs on the circuit packs are properly set, refer to 553-3001-211.

17 Install the QPC940 ROM daughter board on the component side of the QPC687 circuit pack.

•   Ensure that the correct QMM42 Data Cartridge is installed on the connector located on the component side of the QPC742 Floppy Disk Interface (FDI) circuit pack and that switches 1 and 5 are set to on.

N   The software version and ID number indicated on the data
*o*artridge must match the software version and ID number indicated on
*t*he floppy disks.
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•   Connect a NT8D77AC floppy disk interface cable from the connector on the faceplate of the QPC742 circuit pack to the connector on the front of the NT8D68AA FDU.

•   Insert the circuit packs in their assigned slots in the new CE shelf (Figure 3-2) ensure that all ENB/DIS switches on the faceplates of the circuit packs are to ENB.
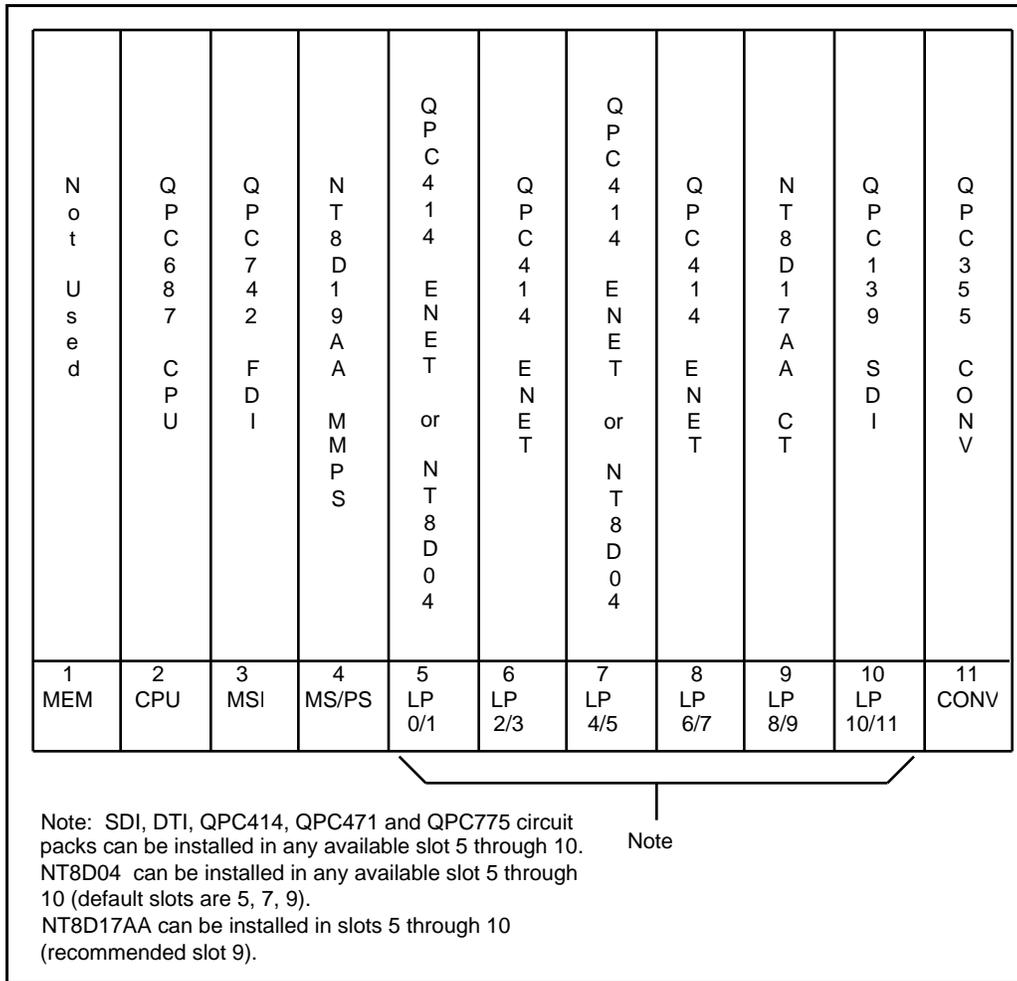
- Reconnect the tagged cables to the appropriate connectors on the faceplates of the circuit packs on the new CE shelf.

- Set the MAINT/NORM switch on the front of the QPC687 circuit to NORM.

- Connect the ac power for the cabinet by reconnecting the commercial ac power line cord to its receptacle (if previously disconnected) or by setting the commercial ac power supply circuit breaker at the service panel to ON (if previously set to OFF).

- Set the CAB INP circuit breaker at the front of the cabinet to ON.

18 Insert the floppy disks into disk drives. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

19 Reestablish normal service on the system as soon as it is determined that trunk connections can be made to an attendant console or other suitable telephone. To restore normal service, set the line transfer switch on the QPC84 circuit packs to OFF or 0.

- Using the appropriate overlay programs, obtain printouts of all TN assignments and system features and compare with the printouts obtained before converting.

20 Install cabinet covers and dispose of surplus equipment.

Figure 3-1
Disk drive adapter assembly PO727460

Mounting Screw Hole

Mounting Screw Hole

Disk Drive Adapter Assembly

Space for Floppy Disk Unit

Mounting Screw Hole

Mounting Screw Hole

Figure 3-2
Typical Circuit Pack Layout

1 MEM	2 CPU	3 MSI	4 MS/PS	5 LP 0/1	6 LP 2/3	7 LP 4/5	8 LP 6/7	9 LP 8/9	10 LP 10/11	11 CONV
Not Used	QPC687 CPU	QPC742 FDI	NT8D19AA MMPS	QPC414 ENET or NT8D04	QPC414 ENET	QPC414 ENET or NT8D04	QPC414 ENET	NT8D17AA CT	QPC139 SDI	QPC355 CONV

Note: SDI, DTI, QPC414, QPC471 and QPC775 circuit packs can be installed in any available slot 5 through 10. NT8D04 can be installed in any available slot 5 through 10 (default slots are 5, 7, 9). NT8D17AA can be installed in slots 5 through 10 (recommended slot 9).

Upgrading from SL-1 LE (QCA23 CE cabinet) to Option 61

Upgrading method

This chapter describes how to upgrade an existing SL-1 LE to a Meridian 1 Option 61.

The upgrading method consists of replacing all the Common Equipment (CE) with new common equipment used with the Meridian 1 Option 61 system.

Equipment required

Table 4-1 lists the items that are required to upgrade an SL-1 LE system.

Table 4-1
Equipment required

Quantity	Code	Description
1	*NT8D17AA Rlse 09	CT circuit card
1	*NT8D68AA Rlse 04	FDU
2	NT8D77AD	Floppy disk drive interface cable
1	QSD59	Dual CPU/Memory shelf
1	QSP31	Right-hand mount network shelf
1	QSP32	Left-hand mount network shelf
2	*QPC43R	PS circuit card
3	QPC414	ENET circuit card
2	*QPC441B Series D	3PE circuit card
2	QPC477A9	BTU
2	QPC477A10	BTU (Full Group)
2	QPC477A22	BTU
1	QPC496	CPU bus extender
2	QPC579	FN circuit card
2	QPC580	IF circuit card
2	QPC581	CMA circuit card
2	QPC583	MEM circuit card
2	*QPC742D	FDI circuit card
2	QPC939	ROM daughter board
3	NT8D80AB	CMA cable/3PE/3PE

3	NT 8D85 AC	CM A an d 3PE cable
6	NT 8D99 AD	CP U-NET cable
		— c ont inue d —

Table 4-1 (continued)
Equipment required

Qua ntity	Co de	De scription
2	NT 8D99 AB	NE T-NET cable
2	QCA D109A	Pow er adapter cable
1	QCA D138A	Pow er adapter cable
2	NT 8D78 AA (QCAD 240A)	CP U ribbon cable
1	P0677761	Shield
6		Softw are diskettes 3.5"
2	QMM 42	Da ta Cartridge

*Denotes minimu m vinta ge

SL-1 LE (QCA23 CE cabinet) to Meridian 1 Option 61

1 Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2 Using overlay program 43, perform a data dump.

3 Remove the covers from the front of the QCA23 cabinet.

Note: The system service will be interrupted and emergency service (if provided) will be connected.

4   Invoke emergency line transfer by setting the line transfer switch on all QPC84 Power Monitor circuit packs to ON or 1.

- Set the -48 V cabinet input breaker located on the power control shelf or power distribution box in the CE cabinet to OFF.

- Tag and disconnect the cables from all the faceplate connectors of circuit packs located on the QSD12 CPU/MEM shelves in the QCA23 cabinet.

- Remove all circuit packs from the CPU/MEM shelves.

- Tag and disconnect cables A, B, C and D from the end of the CPU/MEM shelves.

- Tag and disconnect the power harness connectors from the CPU/MEM shelves.

5   Remove mounting screws securing CPU/MEM shelves to cabinet frame and remove shelves from cabinet.

- Position new QSD59 CPU/MEM shelf in position 3 (Figure 4-4) in the QCA23 cabinet. Secure shelf to cabinet frame with four mounting screws.

6   Install the QCAD138 Power Harness Cable Adapter to the power harness

- J3D-P3D

- J3B-P3B

- J5D-P5D

- J5-P5

- Connect the four power and ground leads from the cable adapter to the -48V 0, -48V 1, -48V GND and L GND lugs on the end of the new CPU/MEM shelf backplane (Figure 4-1).

- Connect cables A, B, C and D to the connectors on the end of the shelf (Figure 4-1).

7   Insert the following circuit cards in the new CPU/MEM shelf (Figure 4-1):

- QPC477A22 BTU in connector located between connectors for slots 2 and 3.

- QPC477A22 BTU in connector located between connectors for slots 14 and 15.

- QPC355 (or QPC691) CONV circuit pack in slot 1.

N   If power converter card will not seat properly in shelf, remove
*o*card and check backplane connector. If necessary, move the key in
*t*the connector to the appropriate location for the converter card being
*e*used.
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- QPC496 EXT circuit pack in slot 2.

N   Ensure that the option switches and plugs on the circuit packs
*o*are properly set, refer to 553-3001-211.
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e
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- QPC742 FDI circuit pack in slot 3. Ensure that the new data cartridge is in place and that switches 1 and 5 are set to ON.

N   The software version and ID number indicated on the data
*o*cartridge must match the software version and ID number indicated on
*t*the floppy disks.
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- QPC579 FN circuit pack in slot 5.

- QPC580 IF circuit pack in slot 6.

- QPC581 CMA circuit pack in slot 7.

- QPC583 MEM circuit pack in slot 8.

- QPC583 MEM circuit pack in slot 9.

- QPC581 CMA circuit pack in slot 10.

- QPC580 IF circuit pack in slot 11.

- QPC579 FN circuit pack in slot 12.

- QPC742 FDI circuit pack in slot 14. Ensure that the new data cartridge is in place and that switches 1 and 5 are set to ON.

Note: The software version and ID number indicated on the data cartridge must match the software version and ID number indicated on the floppy disks.

- QPC355 (or QPC691) CONV circuit pack in slot 15.

Note: If power converter card will not seat properly in shelf, remove card and check backplane connector. If necessary, move the key in the connector to the appropriate location for the converter card being used.

8   Connect a NT8D78AA cable between the connector on the faceplate of the QPC579 FN circuit pack located in slot 5 of the CPU/MEM shelf and the connector on the faceplate of the QPC580 IF circuit pack in slot 6.

9   Connect a NT8D78AA cable between the connector on the faceplate of the QPC580 IF circuit pack located in slot 11 of the CPU/MEM shelf and the connector on the faceplate of the QPC579 FN circuit pack in slot 12.

10 Using an NT8D85AC cable connect J1 on the faceplate of the QPC581 CMA circuit pack located in slot 7 to J1 on the faceplate of the QPC581 CMA circuit pack located in slot 10 (Figure 4-3).

- Using an NT8D80AB cable connect J2 on the faceplate of the QPC581 CMA circuit pack located in slot 7 to J2 on the faceplate of the QPC581 CMA circuit pack located in slot 10 (Figure 4-3).

Note: The circuit card may have to be unseated in order to secure cable connector with bail lock.

11 On both network shelves disconnect and remove:

- intershelf cables from jacks A, B and C.

- faceplate cables from QPC216, 3PE packs.

- faceplate cable between the QPC158 MGE packs.

12 On both network shelves tag and disconnect:

- network loop cables from faceplate jack on all QPC50 Network packs.

- the faceplate cables from all QPC139 SDI packs.

13 Disconnect the power plugs P4B and P6 from the side of the network shelves.

14 Transfer both QPC190, 5/12V CONV and all QPC139 SDI packs to the new network shelves.

15 Remove and pack all remaining circuit packs from both network shelves.

16 Place a sheet of paper or cardboard in the bottom of the shelf to ensure that the screws are not dropped in equipment below the shelf.

- Remove the four mounting screws from each network shelf and remove the old network shelves from the cabinet.

- Position a new network shelf (QSP32) in position 5 (Figure 4-4). Secure shelf with four mounting screws.

- Position a new network shelf (QSP31) in position 6 (Figure 4-4). Secure shelf with four mounting screws.

17 Insert BTU onto shelf backplane connectors on each network shelf (Figure 4-2).

- Connect one end of the power cable adapter (QCAD109) to jack G on the backplane of each network shelf. Plug the other end into P6 and P4B, on the power wiring harness, for network shelves 0 and 1 respectively (Figure 4-2).

- Connect an NT8D99AD connector cable from jacks A, B and C on the backplane of the CPU shelf QSD59 to jacks A, B and C on the backplane of network shelf 0 (QSP32).

- Connect an NT8D99AD connector cable between jacks A, B and C on the faceplate of the QPC496 to jacks A, B and C on the backplane of network shelf 1 (QSP31).

- Connect an NT8D99AB connector cable between jacks D and E of the backplane of network shelves 0 and 1.

18 Insert circuit packs (Figure 4-2) into the network shelf positions.

19 Set the ENB/DIS switches on circuit packs in the network shelves to ENB.

20 Insert the NT8D68AA FDU in any available cabinet position provided it is at least two card slot positions away from the power converter.

Note: If the Floppy Drive is to be located within two slot spaces of the QPC355 Converter the shield (PO677761) must be installed between them.

21 Connect an NT8D77 cable from each connector on the FDU to the faceplate connector of each QPC742 FDI card (Figure 4-3).

22 Connect two NT8D80AB connector cables between faceplate jacks J3 and J4 on the QPC441 circuit packs located in network shelf 0 and 1 (Figure 4-3).

23 Reconnect faceplate cables to QPC139 SDI packs.

24 Operate all circuit pack faceplate ENB/DIS switches on the CPU/MEM shelf to ENB.

25 Set the MAINT/NORM switches on both CPUs to NORM.

- Set rectifier ac input circuit breaker, in the QCA23 cabinet, to ON.

26 If battery back-up is provided, set the -48 V dc input circuit breaker, in the QCA23 cabinet, to ON.

27 Insert disks in the disk drive. A SYSLOAD and initialization are automatically invoked and equipment data and software generic information is copied into the new memory packs.

28 After the sysload is successfully completed, restore the line transfer switches on all QPC84 power monitor circuit packs to OFF or O.
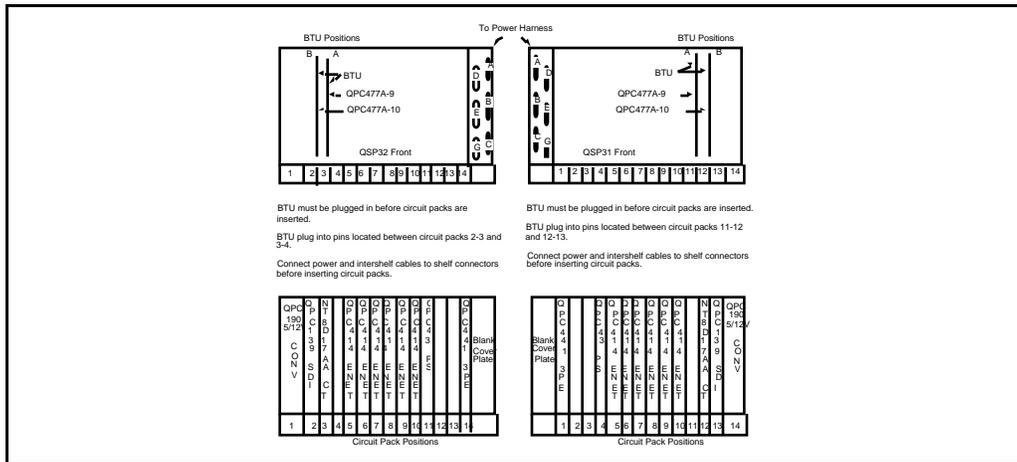
29 Refer to 553-2201-230 and perform system acceptance tests.

30 Use program 35 and ensure that all CMA, SBE and MEM circuit packs on both CPUs are enabled.

31 Use overlay program 35 to test CPU 0 and switch CPU to ensure that both CPUs are operating correctly.

32 Use program 30 to test all loops (553-2301-511).

33 Load overlay program 2 and set time and date (see 553-2301-511).

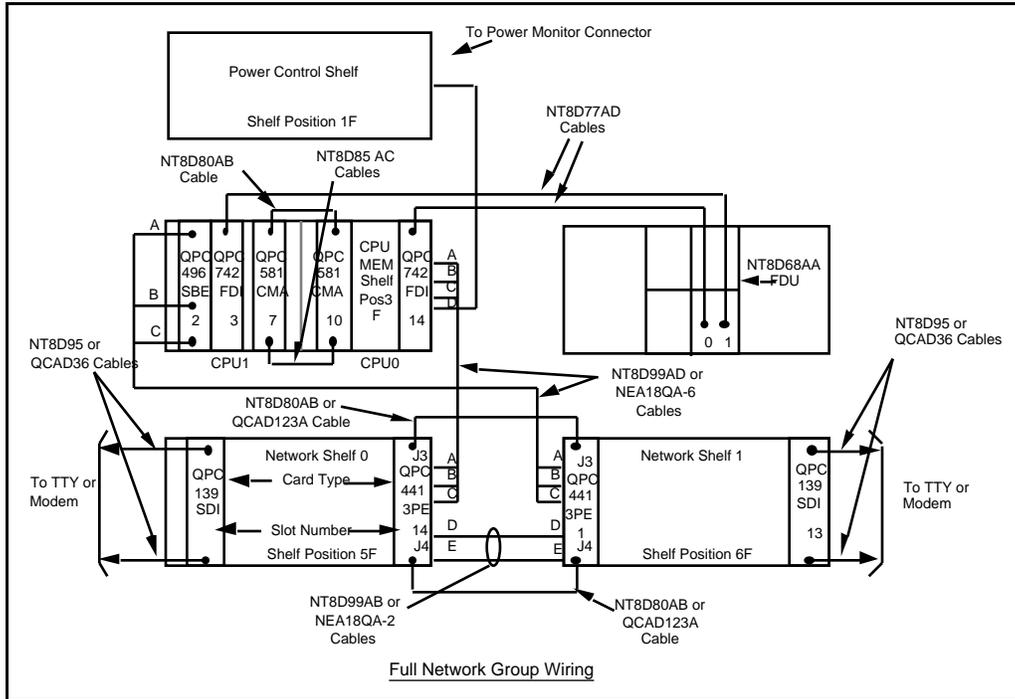**Figure 4-1**
CPU/MEM shelf - circuit card and BTU positions
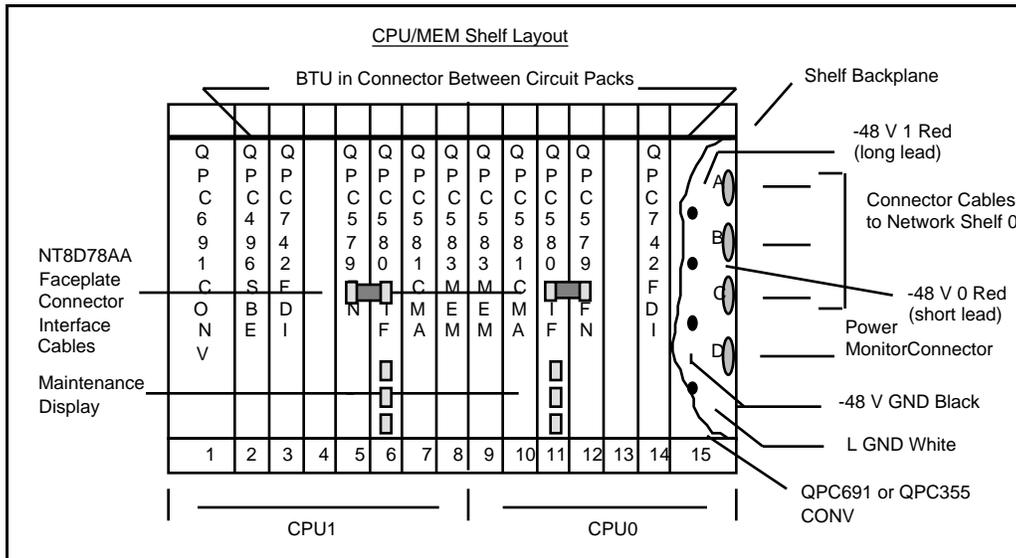
Figure 4-2
BTU and Circuit Pack Positions

Figure 4-3
Cable Connections

Full Network Group Wiring

Figure 4-4
QCA23 CE Cabinet Layout

| Peripheral Equipment Shelf

Position 1 | Tape Unit Shelf
in the LE
Peripheral Equipment
Shelf in Option 61

Position 2 |
| QSD12 CPU/Memory Shelf 1
or
Peripheral Equipment Shelf
in the LE

QSD59 Dual CPU/Memory
Shelf in the Option 61

Position 3 | QSD13 Network Shelf 1
or
Peripheral Equipment Shelf
in the LE

NT8D68AA FDU in Option 61

Position 4 |
| QSD12 CPU/Memory Shelf 0
in the LE

QSP32 Network Equipment
Shelf in the Option 61

Position 5 | QSD13 Network Shelf 0
in the LE

QSP31 Network Equipment
Shelf in the Option 61

Position 6 |
| QUD6 Cooling Unit | QUD4 Cooling Unit in the LE |
| QUX9 Power Distribution Unit | QBL10 Power Distribution Box |
| -48 V Rectifier

Position 7 | QSD10 Power Converter Shelf

Position 8 |

Upgrading from SL-1 N (QCA23 cabinet) to Option 61

Upgrading method

This chapter describes how to upgrade an existing SL-1 N to a Meridian 1 Option 61.

The upgrading method consists of replacing the CPU/MEM shelf and various circuit packs and other items with equipment used with the Meridian 1 Option 61 system.

Equipment required

Table 5-1 lists the items that are required to upgrade an SL-1 N system.

Table 5-1
Equipment required

Quantity	Code	Description
1	*NT8D17AA Rlse 09	CT circuit card
1	*NT8D68AA Rlse 04	FDU
2	NT8D77AD	Floppy disk drive interface cable
1	QSD59	Dual CPU/Memory shelf
2	QPC477A22	BTU
2	QPC579	FN circuit card
2	QPC580	IF circuit card
2	QPC581	CMA circuit card
2	QPC583	MEM circuit card
2	*QPC742D	FDI circuit card
2	QPC939	ROM daughter board
1	NT8D80AB	CMA cable (J2-J2)
1	NT8D85AC	CMA cable (J1-J1)
1	QCAD176A	Power adapter cable
2	NT8D78AA (QCAD240A)	CPU ribbon cable
1	P0677761	Shield
6		Software diskettes 3.5"
2	QMM42	Data Cartridge
	*Denotes minimum vintage	

Upgrading from SL-1 N (QCA23 CE cabinet) to Meridian 1 Option 61

1   Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2   Using overlay program 43, perform a data dump.

3   Remove the covers from the CE cabinet.

Note: The system service will be interrupted and emergency service (if provided) will be connected.

4   Invoke emergency line transfer by setting the line transfer switch on all QPC84 Power Monitor circuit packs to ON or 1.

   •   Set the -48 V cabinet input breaker located on the power control shelf or power distribution box in the CE cabinet to OFF.

   •   Tag and disconnect the cables from all the faceplate connectors of circuit packs located on the QSD37 CPU/MEM shelf.

   •   Remove all circuit packs from the CPU/MEM shelf.

   •   Tag and disconnect cables A, B, C and D from the end of the CPU/MEM shelf.

   •   Tag and disconnect the four power and ground leads connected to the lugs on the end of the shelf backplane.

5   Remove mounting screws securing CPU/MEM shelf to cabinet frame and remove shelf from cabinet.

   •   Position new QSD59 CPU/MEM shelf in the position vacated by the QSD37 CPU/MEM shelf and secure to cabinet frame with four mounting screws.

6   Connect:

- the four power and ground leads from cabinet power wiring harness to the -48V 0, -48V 1, -48V GND and L GND lugs on the end of the new CPU/MEM shelf backplane (Figure 5-1).

- cables A, B, C and D to the connectors on the end of the shelf (Figure 5-2).

7 Insert the following circuit packs in the new CPU/MEM shelf (Figure 5-1):

- QPC477-22 BTU between slots 2 and 3.

- QPC477-22 BTU slots 14 and 15.

- 5/12 V CONV circuit pack in slot 1.

N If power converter card will not seat properly in shelf, remove
*o*card and check backplane connector. If necessary, move the key in
*t*the connector to the appropriate location for the converter card being
*e*used.
:
- QPC496 EXT (Full Group) or QPC215SBE (Half Group) circuit pack in slot 2.

- QPC742 FDI circuit pack in slot 3. Ensure that the new data cartridge is in place and that switches 1 and 5 are set to ON.

N The software version and ID number indicated on the data
*o*cartridge must match the software version and ID number indicated on
*t*the floppy disks.
e
:
- QPC139 SDI circuit pack (optional) or a blank faceplate in slot 4.

- QPC579 FN circuit pack equipped with QPC939 ROM Daughter board in slot 5.

- QPC580 IF circuit pack in slot 6.

- QPC581 CMA circuit pack in slot 7.

- QPC583 MEM circuit pack in slot 8.

- QPC583 MEM circuit pack in slot 9.

- QPC581 CMA circuit pack in slot 10.

- QPC580 IF circuit pack in slot 11.

- QPC579 FN circuit pack equipped with QPC939 ROM Daughter board in slot 12.

- QPC139 SDI circuit pack (optional) or a blank faceplate in slot 13.

- QPC742 FDI circuit pack in slot 14. Ensure that the new data cartridge is in place and that switches 1 and 5 are set to ON.

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:
The software version and ID number indicated on the data cartridge must match the software version and ID number indicated on the floppy disks.

- 5/12 V CONV circuit pack in slot 15.

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:
If power converter card will not seat properly in shelf, remove card and check backplane connector. If necessary, move the key in the connector to the appropriate location for the converter card being used.

8 Insert the NT8D68AA FDU in any available cabinet position provided it is at least two card slot positions away from the power converter.

N
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:
If the Floppy Drive is to be located within two slot spaces of the QPC355 Converter the shield (PO677761) must be installed between them.

- Connect an NT8D77 cable from each connector on the FDU to the faceplate connector of each QPC742 FDI card (Figure 5-2).

- Connect an NT8D78 (QCAD240) cable between the connector on the faceplate of the QPC579 FN circuit pack located in slot 5 of the CPU/MEM shelf and the connector on the faceplate of the QPC580 IF circuit pack in slot 6 (Figure 5-1).

- Connect an NT8D78 (QCAD240) cable between the connector on the faceplate of the QPC580 IF circuit pack located in slot 11 of

the CPU/MEM shelf and the connector on the faceplate of the QPC579 FN circuit pack in slot 12.

- Connect an NT8D80AB cable between J2 on the faceplate of the QPC581 CMA circuit pack located in slot 7 of the CPU/MEM shelf to connectors J2 on the faceplate of the QPC581 CMA circuit pack located in slot 10.

- Connect an NT8D85AC cable between J1 on the faceplate of the QPC581 CMA circuit pack located in slot 7 of the CPU/MEM shelf to connectors J1 on the faceplate of the QPC581 CMA circuit pack located in slot 10.

N Pack may have to be unseated in order to secure cable
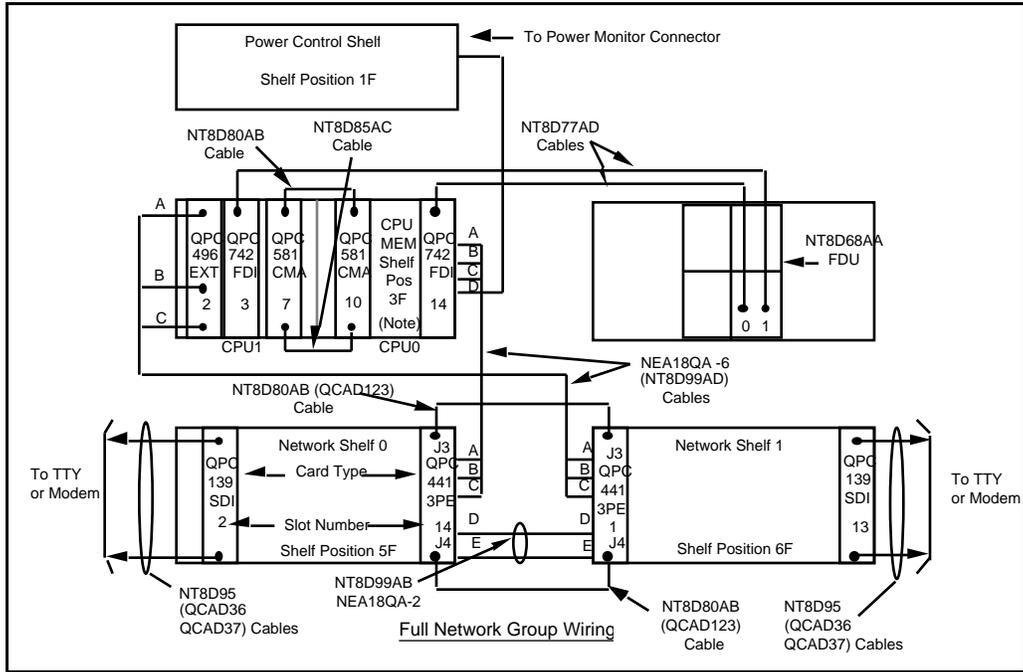*a*connector with bail lock.
t
e
:
- connect the tagged cables removed from the circuit packs in the CPU/MEM shelf (Figure 5-2):

- connect cables A, B and C on the faceplate of the QPC496 EXT pack (or to connectors J3 and J4 on the QPC215 SBE in half group systems) located in slot 2.

- connect cables to the QPC139 SDI circuit packs located in slots 4 and 13 (if equipped).

9 Set all ENB/DIS and MAINT/NORM switches on faceplates of circuit packs on the CPU/MEM shelf to ENB or NORM.

10 Ensure that all circuit packs in the cabinet are properly seated.

11 Make sure that all cable connectors in the cabinet are properly secured.

12 Set the cabinet input switch on the power control shelf to ON.

13 Insert disks in respective disk drives. The system will reload (SYSLOAD). Once the sysload is completed successfully, restore the line transfer switches on all QPC84 power monitor circuit packs to OFF or 0.

14 Test the CPU using overlay program 35 and all loops using overlay program 30 as described in 553-2301-511.

15 Load overlay program 2 and set time and date (see 553-2301-511).

Figure 5-1
CPU/MEM shelf - circuit card and BTU positions

CPU/MEM Shelf Layout

BTU in Connector Between Circuit Packs

Shelf Backplane

-48 V 1 Red (long lead)

Connector Cables to Network Shelf 0

NT8D78AA Faceplate Connector Interface Cables

-48 V 0 Red (short lead)

Power Monitor Connector

Maintenance Display

-48 V Gnd Black

L GND White

QPC691 CONV

QPC691	QPC496	QPC742	QPC139	QPC579	QPC580	QPC581	QPC583	QPC583	QPC581	QPC580	QPC579	QPC139	QPC742
CONV	EXT	FDI	SDI	FN	IFE		CMA	MEM	MEM	CMA	IFE	FN	SDI	FDI

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

CPU1

CPU0

Figure 5-2
Full Network Group Wiring

Full Network Group Wiring

Upgrading from SL-1 N (QCA58 cabinet) to Option 61

Upgrading method

This chapter describes how to upgrade an existing SL-1 N (QCA58 cabinet) to a Meridian 1 Option 61.

The upgrading method consists of replacing the CPU/MEM with new CPU/MEM equipment used with the Meridian 1 Option 61 system.

Equipment required

Table 6-1 lists the items that are required to upgrade an SL-1 N system.

Table 6-1
Equipment required

Quantity	Code	Description
1	*NT8D 17AA Rlse 09	CT circuit card
1	*NT8D 68AA Rlse 04	FDU
2	NT 8D77 AC	Floppy disk drive interface cable
1	QSD 60	Dual CPU/Memory shelf
2	QPC 477A22	BTU
2	QPC 579	FN circuit card
2	QPC 580	IF circuit card
2	QPC 581	CMA circuit card
2	QPC 583	MEM circuit card
2	*QPC742D	FDI circuit card
2	QPC 939	ROM daughter board
1	NT 8D80 AB	CMA cable (J2-J2)
1	NT 8D85 AC	CMA cable (J1-J1)
1	QCA D176A	Power adapter cable
2	NT 8D78 AA (QCAD 240A)	CPU ribbon cable
1	P0677761	Shield
6		Software diskettes 3.5"
2	QMM 42	Data Cartridge

*Denotes minimum vintage

Upgrading from SL-1 N (QCA58 CE cabinet) to Meridian 1 Option 61

1 Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2 Using overlay program 43, perform a data dump.

3 Remove the covers from the CE cabinet.

4 Invoke emergency line transfer by setting the line transfer switch on all QPC84 Power Monitor circuit packs to ON or 1.

- Set the -48 V cabinet input breaker located on the power control shelf or power distribution box in the CE cabinet to OFF.

- Tag and disconnect the cables from all the faceplate connectors of circuit packs located on the QSP41 CPU/MEM shelf.

- Remove all circuit packs from the CPU/MEM shelf.

- Tag and disconnect cables A, B, C and D from the end of the CPU/MEM shelf.

- Tag and disconnect the four power and ground leads connected to the lugs on the end of the shelf backplane.

5 Remove mounting screws securing CPU/MEM shelf to cabinet frame and remove shelf from cabinet.

- Position new QSD60 CPU/MEM shelf in the position vacated by the QSP41 CPU/MEM shelf and secure to cabinet frame with four mounting screws.

6 Connect:

- the four power and ground leads from cabinet power wiring harness to the -48V 0, -48V 1, -48V GND and L GND lugs on the end of the new CPU/MEM shelf backplane (Figure 6-1).

- cables A, B, C and D to the connectors on the end of the shelf (Figure 6-2).

7   Insert the following circuit packs in the new CPU/MEM shelf
     (Figure 6-1):

   • QPC477-22 BTU between slots 2 and 3.

   • QPC477-22 BTU between slots 14 and 15.

   • 5/12 V CONV circuit pack in slot 1.

N   If power converter card will not seat properly in shelf, remove
*a*card and check backplane connector. If necessary, move the key in
*t*he connector to the appropriate location for the converter card being
*a*used.
:

   • QPC496 EXT (Full Group) or QPC215 SBE (Half Group) circuit
     pack in slot 2.

   • QPC742 FDI circuit pack in slot 3. Ensure that the new data
     cartridge is in place and that switches 1 and 5 are set to ON.

N   The software version and ID number indicated on the data
*a*artridge must match the software version and ID number indicated on
*t*he floppy disks.
e
:

   • QPC579 FN circuit pack equipped with QPC939 ROM Daughter
     board in slot 5.

   • QPC580 IF circuit pack in slot 6.

   • QPC581 CMA circuit pack in slot 7.

   • QPC583 MEM circuit pack in slot 8.

   • QPC583 MEM circuit pack in slot 9.

   • QPC581 CMA circuit pack in slot 10.

   • QPC580 IF circuit pack in slot 11.

   • QPC579 FN circuit pack equipped with QPC939 ROM Daughter
     board in slot 12.

   • QPC742 FDI circuit pack in slot 14. Ensure that the new data
     cartridge is in place and that switches 1 and 5 are set to ON.

N   The software version and ID number indicated on the data
*o*artridge must match the software version and ID number indicated on
*t*he floppy disks.
e
:

• 5/12 V CONV circuit pack in slot 15.

N   If power converter card will not seat properly in shelf, remove
*o*ard and check backplane connector. If necessary, move the key in
*t*he connector to the appropriate location for the converter card being
*u*sed.
:

8   Insert the NT8D68AA FDU in any available cabinet position provided
     it is at least two card slot positions away from the power converter.

N   If the Floppy Drive is to be located within two slot spaces of
*t*he QPC355 Converter the shield (PO677761) must be installed
*b*etween them.
e
:

• Connect an NT8D77 cable from each connector on the FDU to the
  faceplate connector of each QPC742 FDI card (Figure 6-2).

9   Connect a NT8D78AA (QCAD240) cable between the connector on
     the faceplate of the QPC579 FN circuit pack located in slot 5 of the
     CPU/MEM shelf and the connector on the faceplate of the QPC580 IF
     circuit pack in slot 6.

• Connect a NT8D78AA (QCAD240) cable between the connector
  on the faceplate of the QPC580 IF circuit pack located in slot 11
  of the CPU/MEM shelf and the connector on the faceplate of the
  QPC579 FN circuit pack in slot 12.

10   Use one NT8D80AB and one NT8D85AC cable to connect connectors
     J1 and J2 on the faceplate of the QPC581 CMA circuit pack located in
     slot 7 of the CPU/MEM shelf to connectors J1 and J2 on the faceplate
     of the QPC581 CMA circuit pack located in slot 10 (Figure 6-2).

N   Pack may have to be unseated in order to secure cable
*o*onnector with bail lock.
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11 Reconnect the tagged cables removed from the circuit packs in the previously removed CPU/MEM shelf to (Figure 6-2):

- connectors A, B and C on the faceplate of the QPC496 EXT pack (or to connectors J3 and J4 on the QPC215 SBE in half group systems) located in slot 2.

- connectors on the faceplate of the QPC139 SDI circuit packs located in slots 4 and 13 (if equipped).

12 Set all ENB/DIS and MAINT/NORM switches on faceplates of circuit packs on the CPU/MEM shelf to ENB or NORM.

- Ensure that all circuit packs in the cabinet are properly seated.

- Make sure that all cable connectors in the cabinet are properly secured.

- Set the cabinet input switch on the power control shelf to ON.

- Insert disks in respective disk drives.

- The system will reload (SYSLOAD). Once the sysload is completed successfully, restore the line transfer switches on all QPC84 power monitor circuit packs to OFF or 0.

13 Test the CPU using overlay program 35 and all loops using overlay program 30 as described in 553-2301-511.

14 Load overlay program 2 and set time and date (see 553-2301-511).

Figure 6-1
CPU/MEM shelf - circuit card and BTU positions

CPU/MEM Shelf Layout

Figure 6-2
Full Network Group Wiring

Full Network Group Wiring
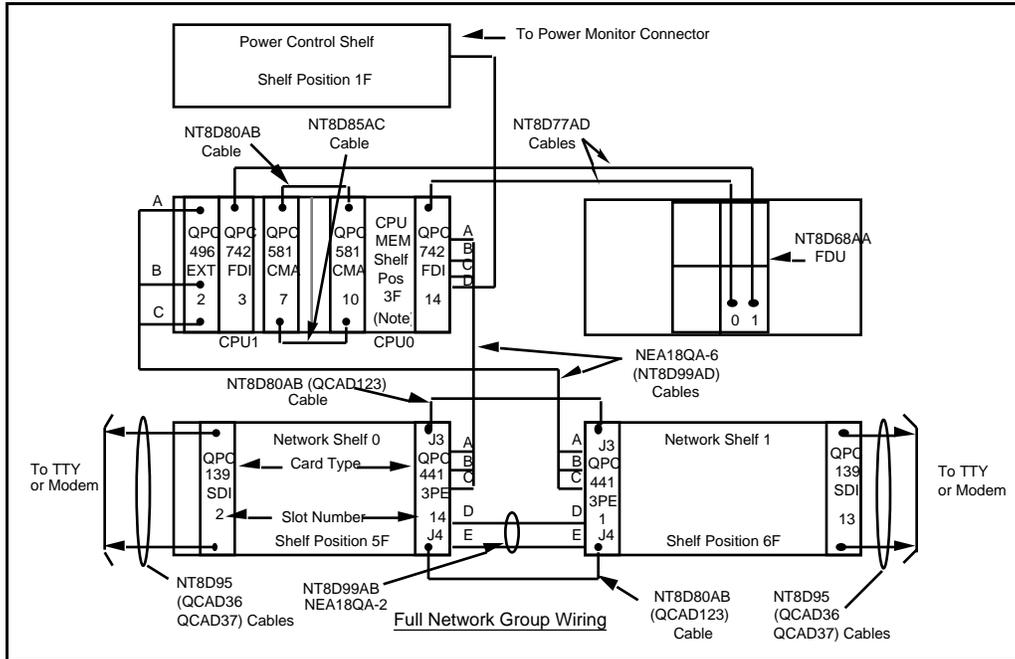
Upgrading from SL-1 VLE/XL to Option 71

Upgrading method

This chapter describes how to upgrade an existing SL-1 VLE/XL to provide the functionally of a Meridian 1 Option 71.

The upgrading method consists of replacing all the Common Equipment (CE) with new common equipment used with the Meridian 1 Option 71 system.

Equipment required

Table 7-1 lists the items that are required to upgrade an SL-1 VLE/XL.

Table 7-1
Equipment required

Quantity	Code	Description
2	QSD 61	shelf, CPU/MEM/GRP
1	QSP31	shelf, network, RH mount
1	QSP32	shelf, network, LH mount
1	*NT8D69AA Rlse 04	Mass Storage Unit (MDU)
2	*NT8D17AA Rlse 09	CT circuit card
2	*QPC43R	peripheral signaling (PS)
4	*QPC412C	intergroup switch (IGS)
7	QPC 414	enhanced dual network (NET)
1	QPC 417	junctor (JCT)
2	*QPC441B series D	three port extender (3PE)
2	QPC 477A9	BTU-A, LH/RH network
2	QPC 477A10	BTU-B, LH/RH network
1	QPC 477A20	BTU, CPU-0
1	QPC 477A21	BTU, CPU-1
2	QPC 579	CPU function (FN)
2	QPC 580	CPU interface (IF)
2	QPC 581	changeover and memory arbitrator (CMA)
2	QPC 583	768K RAM (MEM)
2	*QPC584H	mass storage interface (MSI)
2	QPC 775	clock controller (CC)

2	QPC 939	ROM dau ghter board
4	NT 8D76 AD	IGS-Junctor cable
1	NT 8D80 AC	CM A cable (J2-J2)

— c ont inue d —

Table 7-1 (continued)
Equipment required

Quantity	Code	Description
2	NT8D80 AD	cable mass storage interface (MDU-MSI)
4	NT8D80 AL	SBE-3PE cable
1	NT8D85 AC	CMA cable
5	NT8D99 AB	NET-NET cable
2	QCAD109A	Power adapter cable
2	NT8D74 AF	cable system clock generator (CC-JCT)
2	NT8D78 AA (QCAD 240A)	CPU ribbon (IF-FN)
2	QCAD254A	cable CPU shelf power adaptor
1	PO639986	extender, junctor board
16	QPF36A	Terminating plug
1	P0677761	Shield
2	QMM 42	Data Cartridge
9		Software diskettes 3.5"

*Denotes minimum vintage

Upgrading from SL-1 VLE/XL to Meridian 1 Option 71

1 Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2 Using overlay program 43, perform a data dump to the existing tape or disk.

3 Remove front panels from QCA24 and QCA25 cabinets.

4 Unpack the QPC417 junctor board and mounting bracket. Secure bracket to junctor board with screws provided.

   • Position the QPC417 junctor board at the top of the QCA25 cabinet and secure to frame with mounting screws (Figure 7-1).

   • Attach QPC36A Terminating plugs to connectors for unused network groups.

5 Set ENB/DIS switch on all power monitor cards to DIS.

6 Load overlay program 35 and STAT CPU to determine which CPU is active. If necessary switch CPU's (SCPU) to ensure that system is operating in CPU 1.

   • Disable memory associated with CPU 0 (00, 01, 02, and so on).

   • Disable CMA 0.

   • Set ENB/DIS faceplate switches on the QPC215 SBE associated with CPU 0 to DIS.

   • Load overlay program 39 and STAT SCG to determine which SCG is active. If necessary switch SCG's (SCLK) to ensure that system clock 1 is active.

7 Set the MAINT/NORM switch on CPU 1 shelf to MAINT.

   • Set CPU 0 breaker on the QBL11 power distribution box to OFF.

   • Tag and disconnect all cables connected to faceplate connectors on circuit packs located on CPU 0 shelf.

   • Disconnect remaining cables from end of CPU 0 shelf.

• Remove circuit packs from CPU shelf 0.

8   Remove screws securing CPU shelf 0 to cabinet frame and remove shelf.

9   Unpack a QSD61 CPU/MEM shelf and install in position vacated by CPU shelf 0. Secure new shelf to cabinet frame with mounting screws.

10 Connect the power connector on the cabinet power distribution harness to the power connector on the right end of the QSD61 shelf using a QCAD254 power cable adapter.

• Reconnect the power monitor connector from the cabinet to the connector on the end of the QSD61 shelf.

11 Ensure that the QSD61 CPU/MEM shelf is equipped with a QPC477A20 BTU between slots 14 and 15.

12 Install the following circuit packs in the QSD61 shelf:

• A QPC583 MEM circuit pack in slot 1 if three memory packs are provided per CPU.

• A QPC583 MEM in slot 2 if two or three memory packs are provided per CPU.

• A QPC583 MEM in slot 3 (always required).

• A QPC581 CMA in slot 4.

• A QPC580 IF in slot 5.

• A QPC579 FN in slot 6 connect the NT8D78AA (QCAD240) faceplate interface cable from the IF to the FN pack.

• A QPC584 MSI equipped with the proper QMM42 data cartridge in slot 8, ensure that switches 1 and 5 are set to on.

• Insert NT8D69AA (MDU) in slots 9, 10, and 11.

• Connect an NT8D80AD (MDU-MSI) cable from QPC584 to J0 on the NT8D69AA MDU.

• A QPC775 SCG in slot 15, refer to 553-3001-211 for switch settings.

- A QPC355 (minimum vintage B) or QPC190 or QPC691 power converter in the last slot on the right of the shelf.

N   If power converter card will not seat properly in shelf, remove
o card and check backplane connector. If necessary, move the key in
t the connector to the appropriate location for the converter card being
e used.
:

13 Connect a NT8D74AF cable from the faceplate connector on the QPC775 circuit pack on CPU 0 shelf to J11 on the QPC417 junctor board in the QCA25 cabinet.

14 Insert SDI card in slot 12 and connect to a maintenance terminal.

15 Set CPU 0 breaker switch on the QBL11 power distribution box to ON.

- Insert disks into the NT8D69AA MDU. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

- After Sysload (SYS) and Initialization (INI) are completed, invoke manual INI to abort midnight routine. Load overlay program 22 and print issue package and configuration. Verify customer data.

N   The following steps will cause system service to be interrupted
o and emergency service (if provided) will be connected.
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e
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16 Invoke emergency transfer by operating PFT switch on all the power monitor cards to ON or 1.

- Set the cabinet input breaker on the QBL11 power distribution box to OFF.

- Remove SDI card and maintenance terminal previously installed.

17 Tag and disconnect all cables connected to faceplate connectors on circuit packs located on CPU 1 shelf.

- Disconnect remaining cables from end of CPU 1 shelf.

- Remove circuit packs from CPU shelf 1.

- Remove screws securing CPU shelf 1 to cabinet frame and remove shelf.

18 Unpack a QSD61 CPU/MEM shelf and install in position vacated by CPU shelf 1. Secure new shelf to cabinet frame with mounting screws.

19 Connect the power connector on the cabinet power distribution harness to the power connector on the right end of the QSD61 shelf using a QCAD254 power cable adapter.

- Reconnect the power monitor connector from the cabinet to the connector on the end of the QSD61 shelf.

20 Ensure that the QSD61 CPU/MEM is equipped with a QPC477A21 BTU between slot 14 and 15.

21 Install the following circuit packs in the QSD61 shelf:

- A QPC583 MEM circuit pack in slot 1 if three memory packs are provided per CPU.

- A QPC583 MEM in slot 2 if two or three memory packs are provided per CPU.

- A QPC583 MEM in slot 3 (always required).

- A QPC581 CMA in slot 4. Also connect the NT8D80AC and NT8D85AC CMA cables from QPC581 in CPU 0 to the QPC581 in CPU 1.

- A QPC580 IF in slot 5.

- A QPC579 FN in slot 6 connect the NT8D78AA (QCAD240) faceplate interface cable from the IF to the FN pack.

- A QPC584 MSI equipped with the proper QMM42 data cartridge in slot 8. Set option switch 1 and 5 on the component side of the circuit pack to ON.

- A QPC215C SBE in slot 10 for network group 4.

- A QPC215C SBE in slot 11 for network group 3.

- A QPC215C SBE in slot 12 for network group 2.

- A QPC215C SBE in slot 13 for network group 1.

- A QPC215C SBE in slot 14 for network group 0.

- A QPC775 SCG in slot 15.

- A QPC691 or QPC190 or QPC355 (minimum vintage B) power converter in the last slot on the right of the shelf.

N If power converter card will not seat properly in shelf, remove *o*ard and check backplane connector. If necessary, move the key in *t*he connector to the appropriate location for the converter card being *a*sed.
:

22 If required relocate the NT8D69AA MDU to any three consecutive CE slots available in the QCA24 cabinet.

N If the Floppy Drive is to be located within two slot spaces of *o*he 5/12V Converter, the shield (PO677761) must be installed between *t*hem.
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- Connect NT8D80 cables between the MDU and both QPC584 circuit packs.

23 Insert the following circuit packs in the QSD61 shelf of CPU 0.

- A QPC215C SBE in slot 10 for network group 4.

- A QPC215C SBE in slot 11 for network group 3.

- A QPC215C SBE in slot 12 for network group 2.

- A QPC215C SBE in slot 13 for network group 1.

- A QPC215C SBE in slot 14 for network group 0.

24 Connect a NT8D74AF cable from the faceplate connector on the QPC775 circuit pack on CPU 1 shelf to J12 on the QPC417 junctor board in the QCA25 cabinet.

25 Set the -48V Cabinet Input switch on the QBL13 power distribution box in the QCA25 cabinet to OFF.

26 Tag and disconnect cables from faceplate connectors of all QPC216 three-port extender packs in the QCA25 cabinet.

27 Tag and disconnect network loop cables from faceplate connectors of each Network circuit pack.

28 Tag and disconnect cables from faceplates of SDI packs.

29 Disconnect and remove remaining cables from faceplate connectors in QCA25 cabinet.

30 Remove all circuit packs from shelves in QCA25 cabinet.

N The 5/12 V CONV packs are required for the new network *o*shelves. The SDI packs are required if they are assigned in the *t*converted system. The remaining removed packs are no longer *e*required.
:

31 Remove the mounting screws securing the QSD13 and QSD16 Network shelves to the cabinet frame and remove the shelves.

32 Position a QSP32 Network shelf (left-hand mount) in the space vacated by the QSD16 shelf directly above the left cooling unit (Figure 7-1).

33 Position a QSP31 Network shelf (right-hand mount) in the space vacated by the QSD13 shelf directly above the right cooling unit (Figure 7-1).

N To ensure proper cooling, always install shelves starting at the *o*bottom of the cabinet and building upwards.
t
e
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34 Position and mount remaining QSP32 and QSP31 Network shelves (if provided) in spaces directly above previously mounted shelves.

35 From the front of each QSP32 shelf, plug in a QPC477-9 BTU in connector located between slots 3 and 4, and a QPC477-10 BTU between slots 2 and 3 (Figure 7-3).

36 From the front of each QSP31 shelf, plug in a QPC477-9 BTU in connector located between slots 11 and 12, and a QPC477-10 BTU between slots 12 and 13 (Figure 7-3).

37 Connect a QCAD109 Cable Adapter to connector G of QSP31 shelf and a QCAD109 Cable Adapter to connector G of QSP32 shelf (Figure 7-3).

38 Connect the other end of each Cable Adapter to the shelf power connector on the power wiring harness.

39 Connect five NT8D99AB cables from connectors A, B, C, D and E on the end of each QSP32 shelf to the corresponding connectors on each companion QSP31 shelf (Figure 7-3).

40 Insert a 5/12 V CONV in slot 1 of each QSP32 shelf and in slot 14 of each QSP31 shelf (Figure 7-1).

41 Insert NT8D17AA TDS packs in assigned slot in QSP32 and QPS31 shelves.

42 Insert QPC139 SDI packs in either slot 2 of a QSP32 shelf or slot 13 of a QSP31 shelf (Figure 7-1).

43 See 553-2201-211 and set option switches and plugs on the new QPC441 3-Port Extender packs and the QPC43R (or later vintage) Peripheral Signaling packs.

N The option plug on the QPC43 packs should be set at F13
o (same as QSD39 and QSD40 shelves).
t The QPC441 packs should be set for XT systems.
e
:

44 Insert the new circuit packs in the Network shelves as follows;

• one QPC43 pack in slot 11 of each QSP32 shelf and one in slot 4 of each QSP31 shelf.

• one QPC441 pack (with switches set for shelf 0 of network group) in slot 14 of each QSP32 shelf.

• one QPC441 pack (with switches set for shelf 1 of network group) in slot 1 of each QSP31 shelf.
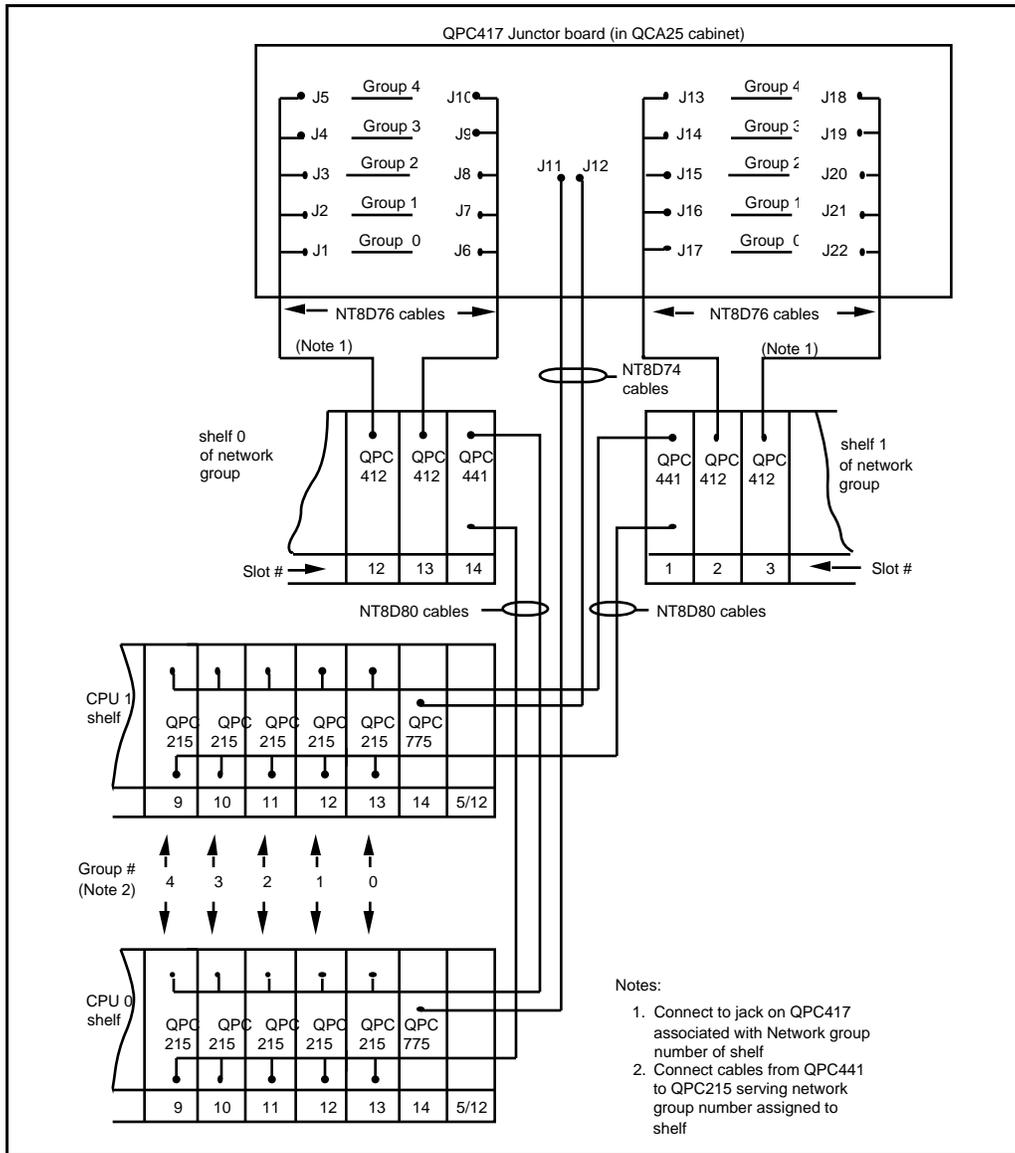
- one QPC412 pack in slot 12 and one in slot 13 of each QSP32 shelf.

- one QPC412 pack in slot 2 and one in slot 3 of each QSP31 shelf.

45 Connect cables from faceplate connector on each QPC412 pack on the network shelves to the QPC417 Junctor Board, and from faceplate connectors on each QPC441 pack to the QPC215 packs on the CPU shelves (Figure 7-2).

46 Reconnect cables to faceplate connectors on QPC139 SDI2 packs.

47 Insert QPC414 Network packs as required in network shelves (Figure 7-1).

48 Reconnect loop cables to faceplate connectors on Network packs.

49 Ensure that all ENB/DIS switches on faceplate of packs in the QCA25 cabinet are set to ENB.

- Set the MAINT/NORM switch on CPU 1 to NORM.

50 Set all switches on the QBL13 Power Distribution Box to ON.

51 Ensure that the proper disks are inserted in the disk drives.

- Set ENB/DIS switch on all power monitor cards to ENB.

52 Set MEM 0, MEM 1, MSG 0 and MSG 1 breakers on the QBL11 unit to OFF.

- Set CPU 0 and CPU 1 breakers to ON.

- Set the cabinet input breaker to ON.

53 The system Sysloads (see 553-3001-400). Wait until it is completed.

- Switch PFT to OFF.

54 Load overlay program 43.

- Set the switch on both QPC584 MSI packs to DIS.

- Remove the MSI packs and set option switches 1, 4 and 5 on both packs to ON.
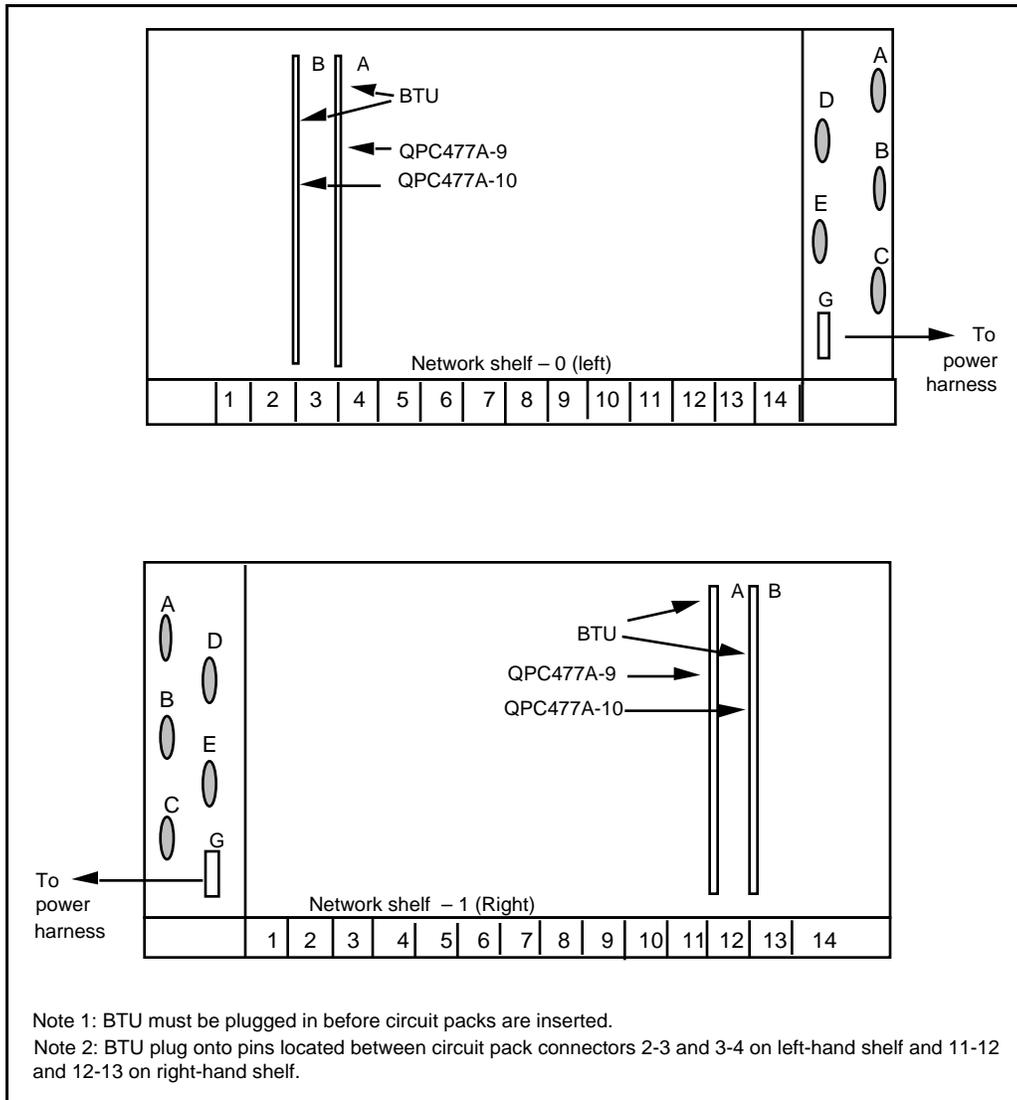
- Reinsert the packs in their assigned positions and set the ENB/DIS switches on both packs to ENB.

- Enter command RES to perform a restore to the Winchester disk.

- Load overlay program 17 and change ADAN to HDK 0.

55 Remove cables from remaining QSD16 MGS shelf, QSD13 MGS shelf and QSD14 MEM shelves. Remove shelves and associated packs from cabinet.

56 Perform acceptance tests on converted QCA24 cabinet.

57 Pack and store any surplus equipment according to local instructions.

Figure 7-1

Typical QCA25 cabinet converted to Option 71

(Ill 553-1762)

Figure 7-2
Network group upgrade

Figure 7-3
Network shelves (front view)

Note 1: BTU must be plugged in before circuit packs are inserted.

Note 2: BTU plug onto pins located between circuit pack connectors 2-3 and 3-4 on left-hand shelf and 11-12 and 12-13 on right-hand shelf.

Upgrading from SL-1 XN (QCA55 cabinet) to Option 71

Upgrading method

This chapter describes how to upgrade an existing SL-1 XN to function as a Meridian 1 Option 71.

The upgrading method consists of replacing the CPU/MEM equipment with new CPU/MEM equipment used with the Meridian 1 Option 71 system.

Equipment required

Table 8-1 lists the items that are required to upgrade an SL-1 XN system.

Table 8-1
Equipment required

Quantity	Code	Description
2	QSD 61	shelf, CPU/MEM/GRP
1	*NT8D 69AA Rlse 04	Mass Storage Unit (MSU)
1	QPC 477A20	BTU, CPU-0
1	QPC 477A21	BTU, CPU-1
2	QPC 579	CPU function (FN)
2	QPC 580	CPU interface (IF)
2	QPC 581	changeover and memory arbitrator CMA)
2	QPC 583	768K RAM (MEM)
2	*QPC584H	mass storage interface (MSI)
2	QPC 939	ROM daughter board
1	NT 8D80 AC	CMA cable
2	NT 8D80 AD	cable mass storage interface (MDU-MSI)
1	NT 8D85 AC	CMA cable
2	NT 8D78 AA (QCAD 240A)	CPU ribbon (IF-FN)
1	P0677761	Shield
2	QMM 42	Data Cartridge
9		Software diskettes 3.5"
2	QCA D254A	cable CPU shelf power adaptor
16	QPF 36A	Terminating plug

*Denotes minimum vintage

Upgrading from SL-1 XN to Meridian 1 Option 71

1   Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2   Using overlay program 43, perform a data dump.

3   Set ENB/DIS switch on all Power Monitor cards to DIS.

  •   Load overlay program 35 and STAT CPU to determine which CPU is active. If necessary switch CPU's (SCPU) to ensure that system is operating in CPU 0.

  •   Disable memory associated with CPU 1 (10, 11, 12, and so on).

  •   Disable CMA 1.

  •   Set ENB/DIS faceplate switches on the QPC215 SBE associated with CPU 1 to DIS.

  •   Load overlay program 39 and STAT SCG to determine which SCG is active. If necessary switch SCG's (SCLK) to ensure that system clock 0 is active.

  •   Set Maintenance/Normal switch on CPU 0 to Maintenance.

4   Set CPU 1 breaker on the QBL21 power distribution box to OFF.

5   Disconnect cables from connectors A, B and C on the end of the CPU 1 (QSD17 shelf).

6   Tag and disconnect the power monitor connector (connector D) and power connector from the cabinet power wiring harness to the end of the CPU 1 (QSD17 shelf).

  •   Tag and disconnect cables from connectors on faceplates of circuit packs on CPU 1 (QSD17 shelf).

  •   Remove all circuit packs from CPU 1 (QSD17 shelf).

  Note: The QPC215 SBE, QPC775 CC (or QPC471 CC) and the 5/12 CONV circuit packs are required for the new CPU/MEM shelf. The remaining packs removed should be packed and stored.

:

7   Remove mounting screws securing CPU 1 (QSD17) shelf to the cabinet frame and remove shelf from cabinet.

  •   Position the new QSD61 CPU/MEM shelf in the position vacated by CPU 1 (QSD17) shelf and secure shelf to cabinet frame with four mounting screws.

8   Connect the power monitor connector from the cabinet wiring harness to the end of the QSD61 CPU/MEM shelf (Figure 8-1).

9   Use a QCAD254 power cable adapter and connect the power connector from the cabinet power wiring harness to the QSD61 CPU/MEM shelf (Figure 8-1).

10 Insert the following circuit packs in the QSD61 CPU/MEM shelf (Figure 8-1):

  •   QPC477A21 BTU between slots 14 and 15.

  •   QPC583 MEM circuit pack in slot 1 (optional).

  •   QPC583 MEM circuit pack in slot 2 (optional).

  •   QPC583 MEM circuit pack in slot 3.

  •   QPC581 CMA circuit pack in slot 4.

  •   QPC580 IF circuit pack in slot 5.

  •   QPC579 FN circuit pack in slot 6.

  •   QPC584 MSI circuit pack equipped with data cartridge in slot 8 (option switch 1 and 5 on the component side of the pack must be set to ON).

  •   QPC215C SBE circuit pack for network group 4 (if equipped) in slot 10.

  •   QPC215C SBE circuit pack for network group 3 (if equipped) in slot 11.

  •   QPC215C SBE circuit pack for network group 2 (if equipped) in slot 12.

- QPC215C SBE circuit pack for network group 1 (if equipped) in slot 13.

- QPC215C SBE circuit pack for network group 0 (usually equipped) in slot 14.

- Insert the NT8D69AA MDU in any three consecutive slots available in this cabinet.

N If the Floppy Drive is to be located within two slot spaces of
*o*the 5/12V Converter, the shield (PO677761) must be installed between
*t*them.
e
:

- Connect an NT80AD cable between the QPC584 circuit pack and connector 1 on the MDU.

- QPC775 CC (or QPC471 CC) circuit pack in slot 15.

- 5/12 V CONV circuit pack in the 5/12 V slot (last slot on the right of the shelf).

N If power converter card will not seat properly in shelf, remove
*o*card and check backplane connector. If necessary, move the key in
*t*the connector to the appropriate location for the converter card being
*e*used.
:

11 Connect a NT8D78AA (QCAD240) cable between the connector on the faceplate of the QPC579 FN circuit pack located in slot 5 and the connector on the faceplate of the QPC580 IF circuit pack in slot 6.

12 Connect the tagged cables disconnected from the circuit packs in the removed CPU shelf to (Figure 8-2):

- connectors J3 and J4 on the faceplate of the QPC215 SBE circuit packs located in slots 10 through 14 of the QSD61 CPU/MEM shelf.

13 Ensure that the ENB/DIS switches on faceplates of SBE circuit packs on the QSD61 CPU/MEM shelf are set to DIS and ensure that the CMA circuit pack stays enabled.

- Ensure that all circuit packs on the QSD61 CPU/MEM shelf are properly seated.

- Ensure that all cable connectors on the QSD61 CPU/MEM shelf are properly secured.

N The following step provides for system monitoring during *o*eloading. Perform this Step only on systems where the SDI circuit *p*ack for the on-site TTY is not on the QSD61 shelf associated with *C*PU 1.
*:*A separate SDI port and TTY could be used to perform the parallel SYSLOAD so that the system error messages would still be monitored.

14 Move the SDI circuit pack associated with the on-site TTY to slot 7 in the QSD61 shelf as follows:

a) Set the ENB/DIS switch on the faceplate of the SDI circuit pack to DIS.

b) Remove the circuit pack from its assigned position and insert in its new position.

c) Ensure that the cable for the on-site TTY is connected to the SDI circuit pack.

d) Set the ENB/DIS switch on the faceplate of the SDI circuit pack to ENB.

15 Set the ENB/DIS switch on the QPC584 circuit pack on CPU 0 to DIS.

- Ensure that the ENB/DIS switch on the faceplate of the QPC584 MSI circuit pack on CPU 1 is set to ENB.

- Set the MAINT/NORM switch on QPC580 on the QSD61 shelf to MAINT.

- Set the CPU 1 breaker on the QBL21 power distribution box to ON.

- Insert disks into proper disk drives.

- Set ENB/DIS faceplate switches on the CMA and CPU FN circuit packs to ENB and invoke a SYSLOAD by pressing the RESET or RS button on the CMA circuit pack on the QSD61 shelf.

16 Refer to 553-3001-400 for an interpretation of codes displayed on the faceplate of the MSI circuit pack. Some of the normal codes which may appear during SYSLOAD are;

- A1 – when records are being read from disk.

- 00 – when the MSI power-up is completed.

- 10 – when the MSI is in an idle state.

17 Refer to 553-3001-400 for an interpretation of SYS and INI messages printed on the TTY (if connected) and of codes appearing on the maintenance display.

18 Wait for SYSLOAD to complete. After Sysload (SYS) and Initialization (INI) are completed, invoke manual INI to abort midnight routine. Load overlay program 22 and print issue package and configuration. Verify customer data.

Note: The following steps will cause the system service to be interrupted and emergency service (if provided) will be connected.

19 Set the ENB/DIS switches on the SCG (or CC) and SBE circuit packs on the QSD61 CPU/MEM shelf to ENB.

- Set the MAINT/NORM switch on CPU 0 to NORM and press the MANT/INI button associated with CPU 1.

Note: The system transfers to CPU 1 when performing this step. If an INI does not occur within 30 seconds, press the MAN INI button again.

20 Load overlay program 35.

- Ensure that the SBE, CMA and MEM circuit packs for CPU 1 are enabled and the system is operating.

- • Set the ENB/DIS faceplate switches of the CMA and SBE circuit packs associated with CPU 0 to DIS.

- • Set CPU 0 breaker on the QBL21 power distribution box to OFF.

21 Disconnect cables from connectors A, B and C on the end of the CPU 0 QSD17 shelf.

22 Tag and disconnect the power monitor connector (connector D) and power connector from the cabinet power wiring harness to the end of the CPU 0 QSD17 shelf.

- • Tag and disconnect cables from connectors on faceplates of circuit packs on CPU 0 QSD17 shelf.

23 Remove all circuit packs from the CPU 0 QSD17 shelf.

N The QPC215 SBE, QPC775CC (or QPC471 CC) and QPC584 *o*MSI circuit packs are required for the new CPU/MEM shelf. The *t*QPC190 PWR CONV is also re-usable. The remaining packs *e*removed should be packed and stored.
:

24 Remove mounting screws securing the CPU 0 QSD17 shelf to the cabinet frame and remove shelf from cabinet.

- • Position the second QSD61 CPU/MEM shelf in the position vacated by the CPU 0 QSD17 shelf and secure shelf to cabinet frame with four mounting screws.

- • Connect the power monitor connector from the cabinet wiring harness to the end of the QSD61 CPU/MEM shelf (Figure 8-1).

- • Use a QCAD254 power cable adapter and connect the power connector from the cabinet power wiring harness to the QSD61 CPU/MEM shelf (Figure 8-1).

25 Insert the following circuit packs in the QSD61 CPU/MEM shelf (Figure 8-1):

- • QPC583 MEM circuit pack in slot 1 (optional).

- • QPC583 MEM circuit pack in slot 2 (optional).

- • QPC583 MEM circuit pack in slot 3.

- QPC581 CMA circuit pack in slot 4.

- QPC580 IF circuit pack in slot 5.

- QPC579 FN circuit pack in slot 6.

- QPC584 MSI circuit pack equipped with data cartridge in slot 8, ensure that switches 1 and 5 are set to ON.

- QPC215C SBE circuit pack for network group 4 (if equipped) in slot 10.

- QPC215C SBE circuit pack for network group 3 (if equipped) in slot 11.

- QPC215C SBE circuit pack for network group 2 (if equipped) in slot 12.

- QPC215C SBE circuit pack for network group 1 (if equipped) in slot 13.

- QPC215C SBE circuit pack for network group 0 (usually equipped) in slot 14.

- QPC775 CC (or QPC471 CC) circuit pack in slot 15.

- QPC477A20 BTU between slots 14 and 15.

- 5/12 V CONV circuit pack in the 5/12 V slot (last slot on the right of the shelf).

N If power converter card will not seat properly in shelf, remove *o* card and check backplane connector. If necessary, move the key in *t* the connector to the appropriate location for the converter card being *e* used.
:

26 Connect a NT8D78AA (QCAD240) cable between the connector on the faceplate of the QPC579 FN circuit pack located in slot 5 and the connector on the faceplate of the QPC580 IF circuit pack in slot 6.

27 Connect the tagged cables disconnected from the circuit packs in the removed CPU shelf to (Figure 8-2):

- connectors J3 and J4 on the faceplate of the QPC215 SBE circuit packs located in slots 10 through 14 of the QSD61 CPU/MEM shelf.
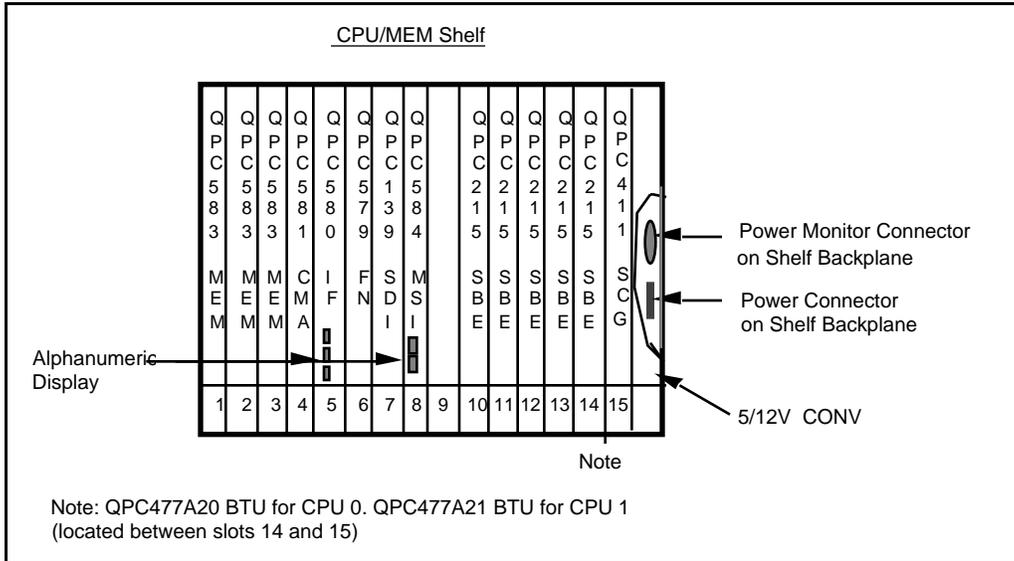
- connector on the faceplate of the QPC584 MSI circuit pack located in slot 8 of the QSD61 CPU/MEM shelf.

28 Connect a NT8D85AC (QCAD124) cable from connector J1 on the faceplate of the QPC581 CMA pack located on CPU 0 to connector J1 on the faceplate of the QPC581 CMA pack located on CPU 1.

- Connect a NT8D80AC (QCAD123) cable from connector J2 on the faceplate of the QPC581 CMA pack located on CPU 0 to connector J2 on the faceplate of the QPC581 CMA pack located on CPU 1.

29 Set the CPU 0 breaker on the QBL21 power distribution box to ON.

- Ensure that all ENB/DIS switches on the faceplates of circuit packs on shelves of both CPUs are set to ENB.

- Set the MAINT/NORM switches on both CPUs to NORM.

30 Move the SDI pack associated with the on-site TTY to its original assigned slot and enable it with the maintenance set.

31 Using overlay program 35, test CPU 0 and switch CPU to ensure that both CPUs are operating correctly.

32 Using overlay program 35, ensure that all CMA, SBE and MEM circuit packs on both CPUs are enabled.

33 Set the MEM 0 and MEM 1 switches on the QBL21 power distribution box to OFF.

- Disconnect and remove all cables from connectors on faceplates of circuit packs on the QSP40 MEM shelf.

- Remove circuit packs and dummy faceplates from the QSP40 MEM shelf.

- Disconnect and insulate the four leads from the cabinet power wiring harness to the lugs on the backplane of the QSP40 MEM shelf.

- Disconnect the power monitor connector from the cabinet power wiring harness to connector D of the QSP40 MEM shelf.
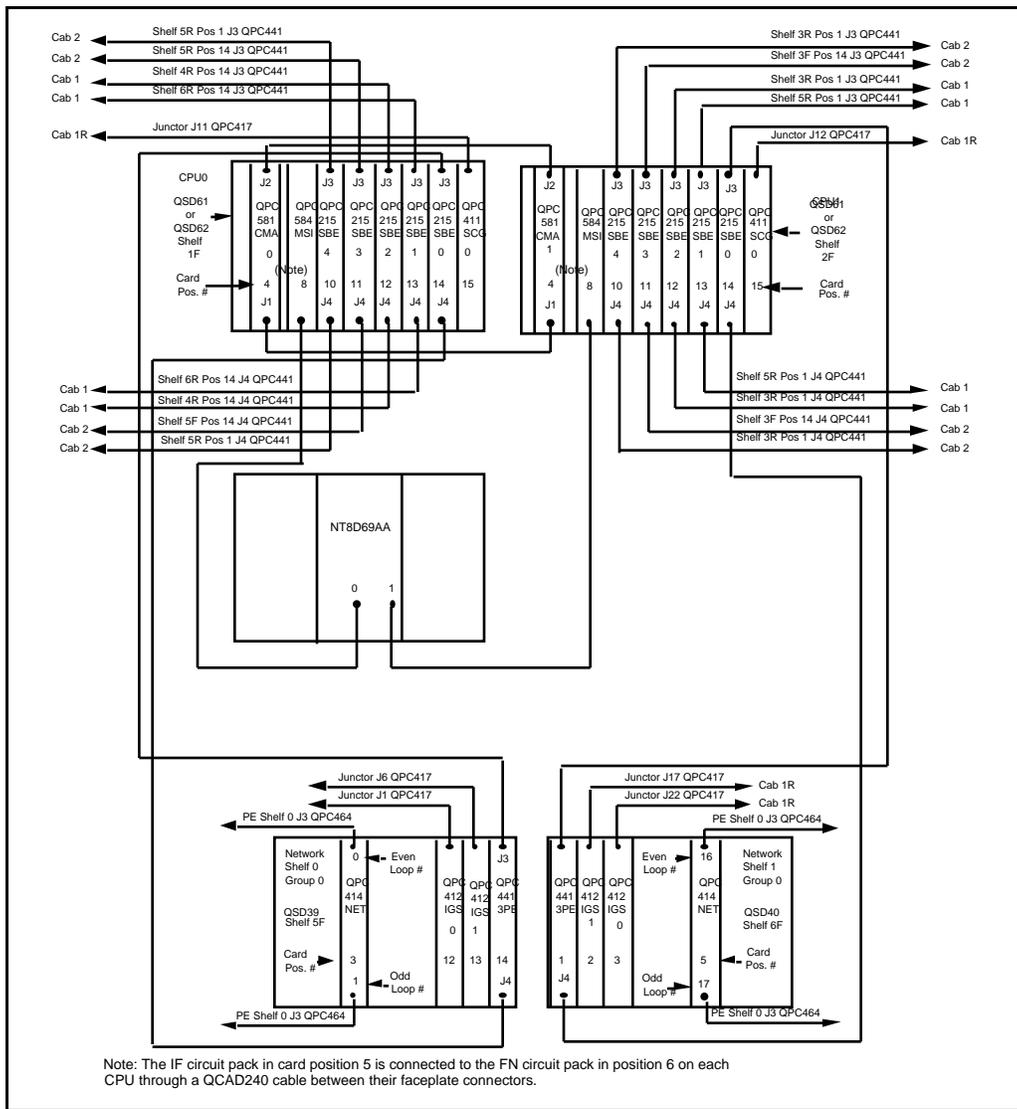
- Disconnect and remove the remaining cables from the connectors on each end of the QSP40 MEM shelf.

- Remove screws securing the QSP40 MEM shelf to the cabinet frame and remove shelf from cabinet.

- Remove and store circuit packs and store QSP40 MEM shelf.

34 Enable the QPC173 Power Monitor by operating the faceplate switch to ENB.

35 Attach QPF36 Terminating Plugs to remaining connectors on QPC417 Junctor board.

36 For systems with hard disks (Winchester):

a) load overlay program 43.

b) disable and remove both QPC584 MSI packs.

c) set switches 1,4 and 5 to ON on both MSI packs.

d) reinsert the packs in their assigned slots.

e) enable the QPC584 circuit packs.

f) enter command RES to restore the hard disk.

g) load overlay program 17 and change ADAN to HDK 0.

37 Use the command BKO in overlay 43 to backup the spare floppy disks.

38 Perform system acceptance tests.

39 Load overlay program 2 and set time and date (see 553-2301-511).

Figure 8-1
QSD61 CPU/MEM shelf power connections and layout

Note: QPC477A20 BTU for CPU 0. QPC477A21 BTU for CPU 1
(located between slots 14 and 15)

Figure 8-2
Typical cabinet cabling

Note: The IF circuit pack in card position 5 is connected to the FN circuit pack in position 6 on each CPU through a QCAD240 cable between their faceplate connectors.

Upgrading from SL-1 N (QCA96 cabinet) to Option 61

Upgrading method

This chapter describes how to upgrade an existing SL-1 N (QCA96 cabinet) to a Meridian 1 Option 61.

The upgrading method consists of replacing the CPU/MEM and Net equipment shelves with new CPU/MEM and Net equipment shelves used with the Meridian 1 Option 61 system.

Equipment required

Table 9-1 lists the items that are required to upgrade an SL-1 N system.

Table 9-1
Equipment required

Qua ntity	Co de	De scription
1	QSD 60	shelf, dual CPU /M EM
1	QSD 39	shelf, network (left hand)
1	QSD 40	shelf, network (right hand required for F ull Group)
1	*NT8D 68AA Rlse 04	flo ppy disk (F DU)
1	*NT8D 17AA Rlse 09	CT circuit card
2	QPC 43R	peripheral signaling (PS) (1 per network shelf)
2	QPC 414	enhanced dual netw ork (NET) (1 per network shelf)
2	*QPC441B series D	thre e port extender (3PE)
2	QPC 477A9	BT U-A, LH/RH netwo rk
2	QPC 477A10	BT U-B, LH/RH netwo rk F ull group or
1	QPC 477A12	BT U-LH Half group
2	QPC 477A22	BT U, CPU -0/1
2	QPC 579	CP U function (FN)
2	QPC 580	CP U interfa ce (IF)
2	QPC 581	changeover and m emory arbitrator CM A)
2	QPC 583	768K RAM (ME M)
2	*QPC742D	flo ppy disk interface (F DI)
2	QPC 939	ROM dau ghter board
2	NT 8D77 AC	cable floppy disk interface (F DI-FD U)

Shelf upgrades to Meridian 1 553-3001-253

1	NT 8D80 AB	cable (CM A)
1	NT 8D85 AC	cable (CM A)

— c ont inue d —

Table 9-1 (continued)
Equipment required

Quantity	Code	Description
2	NT8D78 AA (QCAD 240A)	CPU ribbon (IF-FN)
2	NT8D99 AB	NET-NET cable Full Group
1	PO677761	Shield
2	QMM	Data Cartridge
6		Software Diskettes 3.5"

* Denotes minimum vintage

Upgrading from SL-1 N to Meridian 1 Option 61

1   Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2   Using overlay program 43, perform a data dump.

3   Inform telephone users of impending service interruption and that emergency lines are operational during interruption.

4   Invoke emergency line transfer by setting the line transfer switch on all QPC84 Power Monitor circuit packs to ON or 1.

5   Set the -48 V cabinet input breaker located on the power control shelf or power distribution box in the CE cabinet to OFF.

6   Tag and disconnect the cables from all the faceplate connectors of circuit packs located on the QSP41 CPU/MEM shelf.

   •   Remove all circuit packs from the CPU/MEM shelf.

   •   Tag and disconnect cables A, B, C and D from the end of the CPU/MEM shelf.

- Tag and disconnect the four power and ground leads connected to the lugs on the end of the shelf backplane.

7   Remove mounting screws securing CPU/MEM shelf to cabinet frame and remove shelf from cabinet.

- Position the new QSD60 CPU/MEM shelf in the position vacated by the QSP41 CPU/MEM shelf and secure to cabinet frame with four mounting screws.

8   Connect the four power and ground leads from cabinet power wiring harness to the -48V 0, -48V 1, -48V GND and L GND lugs on the end of the new CPU/MEM shelf backplane (Figure 9-1).

- Connect cables A, B, C and D to the connectors on the end of the shelf (Figure 9-1).

9   Insert the following circuit packs in the new CPU/MEM shelf (Figure 9-1):

N Ensure that the option switches and plugs on the circuit packs
*a*re properly set, refer to 553-3001-211.
t
e
:
- QPC477-22 BTU between slots 2 and 3.

- QPC477-22 BTU between slots 14 and 15.

- 5/12 V CONV circuit pack in slot 1.

N If power converter card will not seat properly in shelf, remove
*a*ard and check backplane connector. If necessary, move the key in
*t*he connector to the appropriate location for the converter card being
*a*sed.
:
- QPC496 EXT circuit pack (system equipped with two network shelves) or QPC215 SBE circuit pack (system equipped with one network shelf) in slot 2.

- QPC742 FDI circuit pack in slot 3. Ensure that the data cartridge is in place and that switches 1 and 5 are set to ON.

N   The software version and ID number indicated on the data
*o*artridge must match the software version and ID number indicated on
*t*he floppy disks.
e
:

- QPC579 FN circuit pack (with QPC939 ROM Daughter board) in slot 5.

- QPC580 IF circuit pack in slot 6.

- QPC581 CMA circuit pack in slot 7.

- QPC583 MEM circuit pack in slot 8.

- QPC583 MEM circuit pack in slot 9.

- QPC581 CMA circuit pack in slot 10.

- QPC580 IF circuit pack in slot 11.

- QPC579 FN circuit pack (with QPC939 ROM Daughter board) in slot 12.

- QPC742 FDI circuit pack in slot 14. Ensure that the data cartridge is in place and that switches 1 and 5 are set to ON.

N   The software version and ID number indicated on the data
*o*artridge must match the software version and ID number indicated on
*t*he floppy disks.
e
:

- 5/12 V CONV circuit pack in slot 15.

N   If power converter card will not seat properly in shelf, remove
*o*ard and check backplane connector. If necessary, move the key in
*t*he connector to the appropriate location for the converter card being
*o*sed.
:

10   Connect a NT8D78AA (QCAD240) cable between the connector on the faceplate of the QPC579 FN circuit pack located in slot 5 of the CPU/MEM shelf and the connector on the faceplate of the QPC580 IF circuit pack in slot 6.

- Connect a NT8D78AC (QCAD240) cable between the connector on the faceplate of the QPC580 IF circuit pack located in slot 11 of the CPU/MEM shelf and the connector on the faceplate of the QPC579 FN circuit pack in slot 12.

11 Use one NT8D85AC (QCAD124A) and one NT8D80AC (QCAD123A) cable to connect connectors J1 and J2 on the faceplate of the QPC581 CMA circuit pack located in slot 7 of the CPU/MEM shelf to connectors J1 and J2 on the faceplate of the QPC581 CMA circuit pack located in slot 10 (Figure 9-1).

N Pack may have to be unseated in order to secure cable
*a*connector with bail lock.
t
e
:

12 Label and disconnect all cables and power from the network shelves.

13 Insert BTUs onto shelf backplane connectors on each new network shelf (Figure 9-4).

- Transfer the 5/12 V CONV and all SDI circuit packs to the new network shelves.

14 Remove the old network shelves from the cabinet by removing the four mounting screws from each shelf.

15 Position the new network shelves in the position vacated by the old network shelves and secure to the cabinet frame with four mounting screws.

16 Connect one end of the power adapter cable to jack G on the backplane of each network shelf.

- Connect the NT8D99 (NEA18QA) cable from jacks A, B and C on the backplane of CPU shelf QSD60 to jacks A, B and C on the backplane of network shelf 0 (QSD39) (Figure 9-2).

17 Do this step if the system is a full group:

- Connect the NT8D99 (NEA18QA) cable between jacks A, B and C on the faceplate of the QPC496 to jacks A, B and C on the backplane of network shelf 1 (QSD40) (Figure 9-2).

- Connect the NT8D99 (NEA18QA) cable between jacks D and E on the backplane of network shelves 0 and 1.

18 Do this step if the system is a half group:

- Connect the NT8D80 cable between faceplate jacks J3 and J4 of the QPC215 circuit pack to faceplate jacks J3 and J4 of the QPC441 circuit pack (Figure 9-3).

19 Insert circuit packs into their assigned positions in the network shelves.

20 Insert the NT8D68AA FDU in any available cabinet position provided it is at least two card slot positions away from the power converter.

Note: If the Floppy Drive is to be located within two slot spaces of the QPC355 Converter the shield (PO677761) must be installed between them.

- Connect an NT8D77 cable from each connector on the FDU to the faceplate connector of each QPC742 FDI card.

21 Set the ENB/DIS switches on all circuit packs in the network shelves to ENB.

22 Connect faceplate cables to the SDI and network loop circuit packs.

23 Set all ENB/DIS and MAINT/NORM switches on faceplates of circuit packs on the CPU/MEM shelf to ENB or NORM.

- Ensure that all circuit packs in the cabinet are properly seated.

- Ensure that all cable connectors in the cabinet are properly secured.

- Set the cabinet input switch on the power control shelf to ON.

- Insert the new floppy disks in their respective disk drives. A Sysload is automatically invoked.

24 Refer to 553-3001-400 for an interpretation of SYS codes printed by the system and codes as displayed on the QPC742 FDI pack.

25 Once the sysload is completed successfully, restore the line transfer switches on all QPC84 power monitor circuit packs to OFF or 0.

26 Test the CPU using overlay program 35 and all loops using overlay program 30 as described in 553-2301-511.

27 Load overlay program 2 and set time and date (see 553-2301-511).
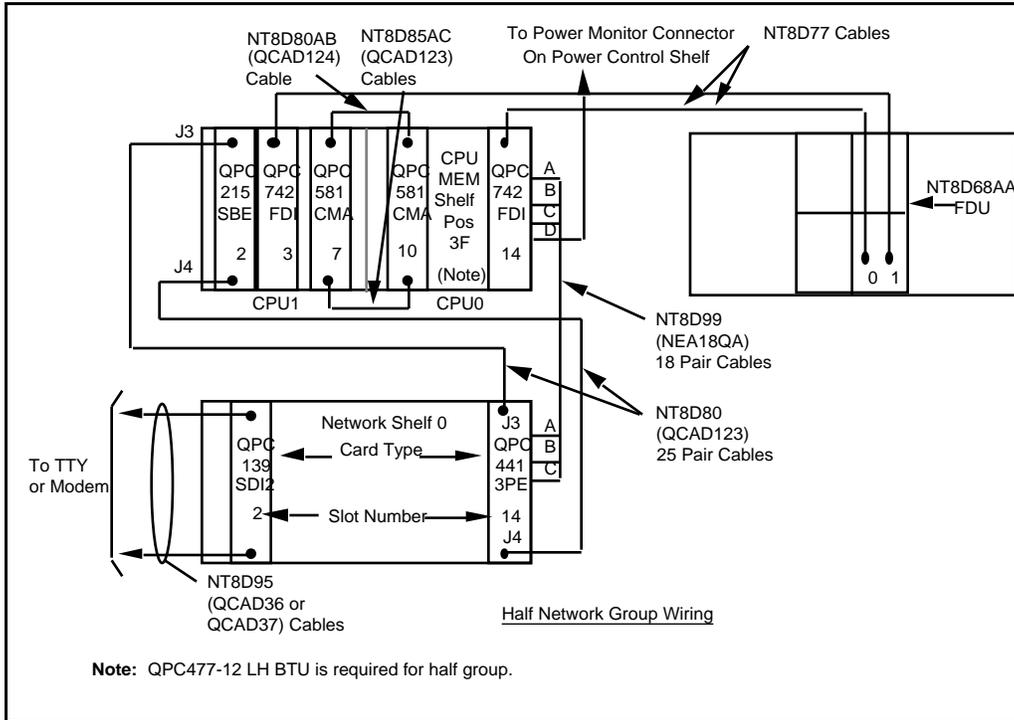
Figure 9-1
NT CPU/MEM shelf power connections and layout
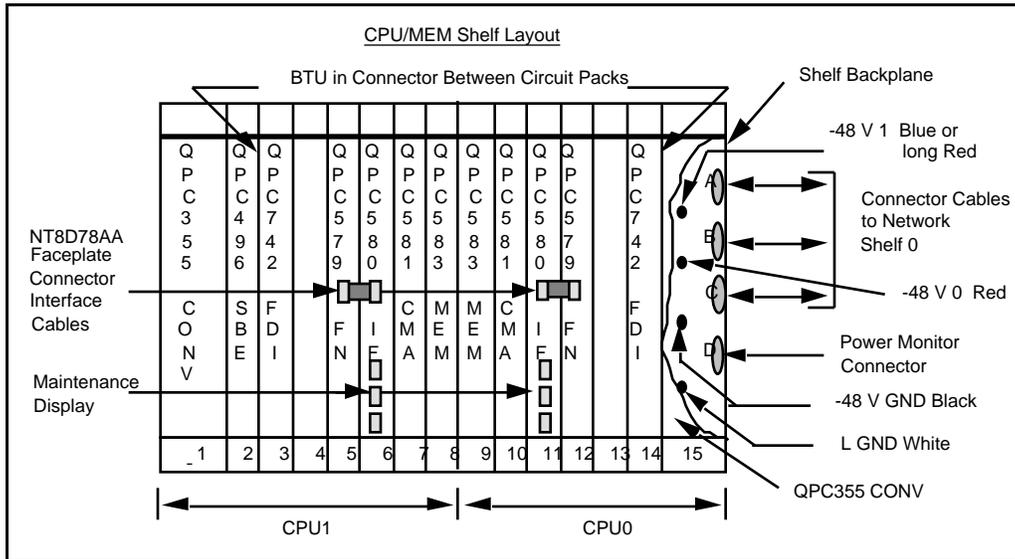
Figure 9-2
Full Network Group Wiring
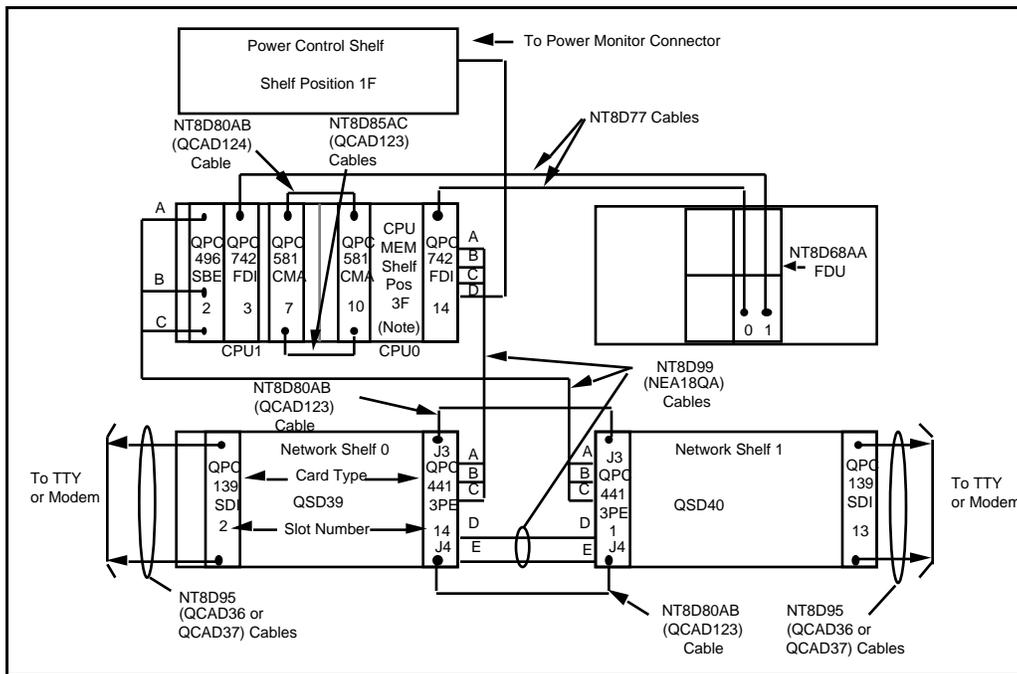
Figure 9-3
Half Network Group Wiring

Half Network Group Wiring

Note: QPC477-12 LH BTU is required for half group.

Figure 9-4
BTU Positions
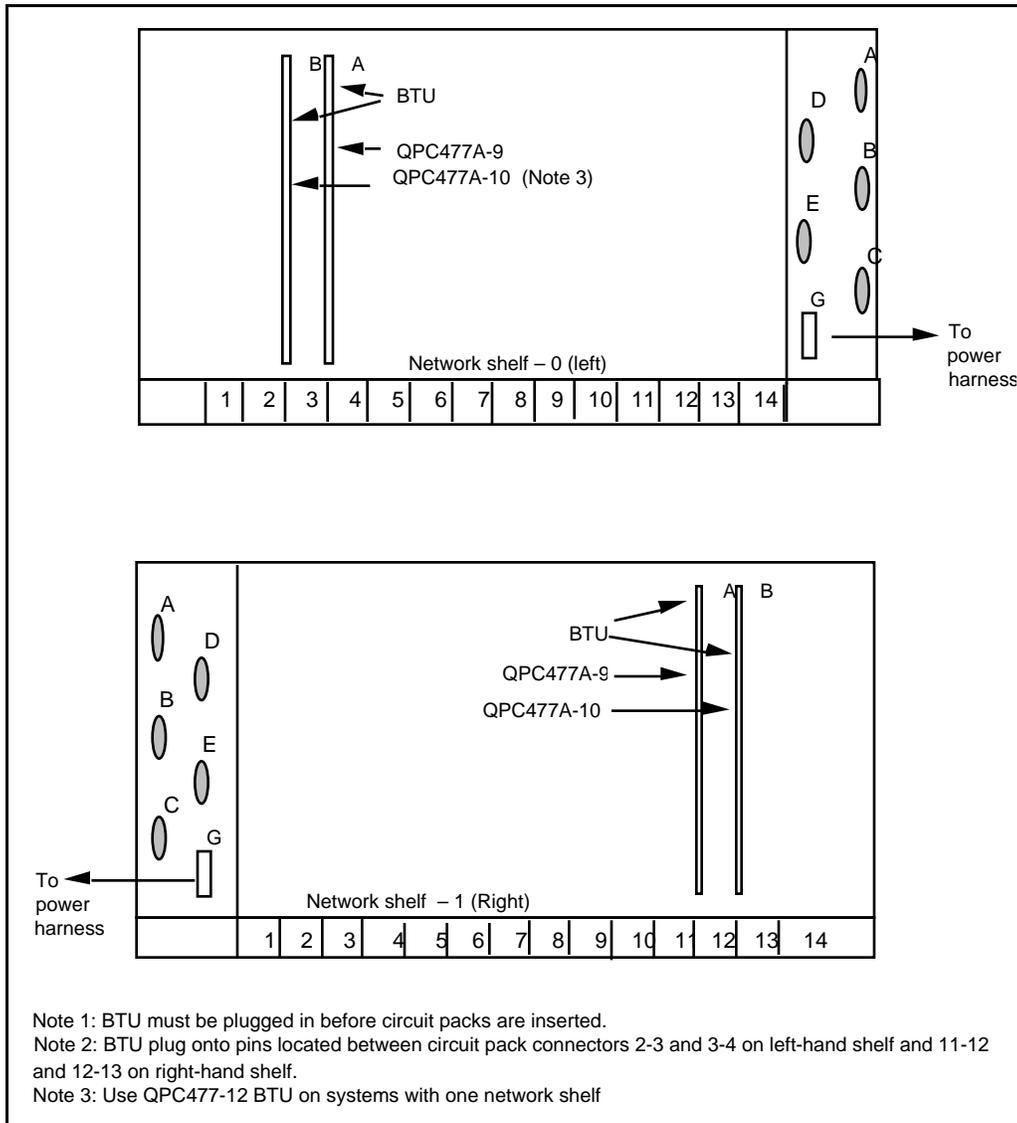
Note 1: BTU must be plugged in before circuit packs are inserted.
Note 2: BTU plug onto pins located between circuit pack connectors 2-3 and 3-4 on left-hand shelf and 11-12 and 12-13 on right-hand shelf.
Note 3: Use QPC477-12 BTU on systems with one network shelf

Upgrading from SL-1 XN (QCA97 cabinet) to Option 71

Upgrading method

This chapter describes how to upgrade an existing SL-1 XN (QCA97 cabinet) to a Meridian 1 Option 71.

The upgrading method consists of replacing the CPU/MEM and Net equipment with new CPU/MEM and Net equipment used with the Meridian 1 Option 71 system.

Equipment required

Table 10-1 lists the items that are required to upgrade an SL-1 XN system.

Table 10-1
Equipment required

Quantity	Code	Description
2	QSD 61	shelf, CPU/MEM/GRP
1	QSD 39	shelf, network, RH mount
1	QSD 40	shelf, network, LH mount
1	*NT8D 69AA Rlse 04	Mass Storage Unit (MDU)
2	*NT8D 17AA Rlse 09	CT circuit card
2	*QPC43R	peripheral signaling (PS)
4	*QPC412C	intergroup switch (IGS)
5	QPC 414	enhanced dual network (NET)
1	QPC 417	junctor (JCT)
2	*QPC441B series D	three port extender (3PE)
2	QPC 477A9	BTU-A, LH/RH network
2	QPC 477A10	BTU-B, LH/RH network
1	QPC 477A20	BTU, CPU-0
1	QPC 477A21	BTU, CPU-1
2	QPC 579	CPU function (FN)
2	QPC 580	CPU interface (IF)
2	QPC 581	changeover and memory arbitrator (CMA)
2	QPC 583	768K RAM (MEM)
2	*QPC584H	mass storage interface (MSI)
2	QPC 775	clock controller (CC)

2	QPC 939	ROM daughter board
4	NT 8D76 AD	IGS-Junctor cable
1	NT 8D80 AC	CM A cable (J2-J2)

— continued —

Table 10-1 (continued)
Equipment required

Quantity	Code	Description
6	NT 8D80 AD	cable (MDU- MSI) (SBE-3PE)
1	NT 8D85 AC	CM A cable (J1-J1)
2	NT 8D99 AB	NE T-NET cable
2	NT 8D74 AF	cable system clock generator (CC-JCT)
2	NT 8D78 AA (QCAD 240A)	CP U ribbon (IF -FN)
2	QCA D254A	cable C PU shelf pow er adaptor
1	PO639986	extender, junctor board
16	QPF 36A	Te rm inating plug
1	P0677761	Shield
2	QMM 42	Da ta Cartridge
9		Softw are diskettes 3.5"

*Denotes minimu m vinta ge

Upgrading from SL-1 XN (QCA97 cabinet) to Meridian 1 Option 71

1   Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2   Using overlay program 43, perform a data dump to the existing tape or disk.

3   Remove front panels from QCA97 cabinet.

4   Unpack the QPC417 junctor board and mounting bracket. Secure bracket to junctor board with screws provided.

   •   Position the QPC417 junctor board at the rear left of the QCA25 cabinet and secure to frame with mounting screws (Figure 10-1).

   •   Attach QPC36A Terminating plugs to connectors for unused network groups.

5   Set ENB/DIS switch on all power monitor cards to DIS.

6   Load overlay program 35 and STAT CPU to determine which CPU is active. If necessary switch CPU's (SCPU) to ensure that system is operating in CPU 1.

   •   Disable memory associated with CPU 0 (00, 01, 02, and so on).

   •   Disable CMA 0.

   •   Set ENB/DIS faceplate switches on the QPC215 SBE associated with CPU 0 to DIS.

   •   Load overlay program 39 and STAT SCG to determine which SCG is active. If necessary switch SCG's (SCLK) to ensure that system clock 1 is active.

7   Set the MAINT/NORM switch on CPU 1 shelf to MAINT.

   •   Set CPU 0 breaker on the QBL11 power distribution box to OFF.

   •   Tag and disconnect all cables connected to faceplate connectors on circuit packs located on CPU 0 shelf.

- Disconnect remaining cables from end of CPU 0 shelf.

- Remove circuit packs from CPU shelf 0.

8 Remove screws securing CPU shelf 0 to cabinet frame and remove shelf.

9 Unpack a QSD61 CPU/MEM shelf and install in position vacated by CPU shelf 0. Secure new shelf to cabinet frame with mounting screws.

10 Connect the power connector on the cabinet power distribution harness to the power connector on the right end of the QSD61 shelf using a QCAD254 power cable adapter.

- Reconnect the power monitor connector from the cabinet to the connector on the end of the QSD61 shelf.

11 Ensure that the QSD61 CPU/MEM shelf is equipped with a QPC477A20 BTU between slots 14 and 15.

12 Install the following circuit packs in the QSD61 shelf:

- A QPC583 MEM circuit pack in slot 1 if three memory packs are provided per CPU.

- A QPC583 MEM in slot 2 if two or three memory packs are provided per CPU.

- A QPC583 MEM in slot 3 (always required).

- A QPC581 CMA in slot 4.

- A QPC580 IF in slot 5.

- A QPC579 FN in slot 6 connect the NT8D78AA (QCAD240) faceplate interface cable from the IF to the FN pack.

- A QPC584 MSI equipped with the proper QMM42 data cartridge in slot 8, ensure that switches 1 and 5 are set to on.

- Insert NT8D69AA (MDU) in slots 9, 10, and 11.

- Connect an NT8D80AD (MDU-MSI) cable from QPC584 to J0 on the NT8D69AA MDU.

- A QPC775 SCG in slot 15, refer to 553-3001-211 for switch settings.

- A QPC355 (minimum vintage B) or QPC190 or QPC691 power converter in the last slot on the right of the shelf.

*N**ote**:* If power converter card will not seat properly in shelf, remove card and check backplane connector. If necessary, move the key in the connector to the appropriate location for the converter card being used.

13 Connect a NT8D74AF cable from the faceplate connector on the QPC775 circuit pack on CPU 0 shelf to J11 on the QPC417 junctor board in the QCA25 cabinet.

14 Insert SDI card in slot 12 and connect to a maintenance terminal.

15 Set CPU 0 breaker switch on the QBL11 power distribution box to ON.

- Insert disks into the NT8D69AA MDU. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

- After Sysload (SYS) and Initialization (INI) are completed, invoke manual INI to abort midnight routine. Load overlay program 22 and print issue package and configuration. Verify customer data.

*N**ote**:* The following steps will cause system service to be interrupted and emergency service (if provided) will be connected.

16 Invoke emergency transfer by operating PFT switch on all the power monitor cards to ON or 1.

- Set the cabinet input breaker on the QBL11 power distribution box to OFF.

- Remove SDI card and maintenance terminal previously installed.

17 Tag and disconnect all cables connected to faceplate connectors on circuit packs located on CPU 1 shelf.

- Disconnect remaining cables from end of CPU 1 shelf.

- Remove circuit packs from CPU shelf 1.

- Remove screws securing CPU shelf 1 to cabinet frame and remove shelf.

18 Unpack a QSD61 CPU/MEM shelf and install in position vacated by CPU shelf 1. Secure new shelf to cabinet frame with mounting screws.

19 Connect the power connector on the cabinet power distribution harness to the power connector on the right end of the QSD61 shelf using a QCAD254 power cable adapter.

- Reconnect the power monitor connector from the cabinet to the connector on the end of the QSD61 shelf.

20 Ensure that the QSD61 CPU/MEM is equipped with a QPC477A21 BTU between slot 14 and 15.

21 Install the following circuit packs in the QSD61 shelf:

- A QPC583 MEM circuit pack in slot 1 if three memory packs are provided per CPU.

- A QPC583 MEM in slot 2 if two or three memory packs are provided per CPU.

- A QPC583 MEM in slot 3 (always required).

- A QPC581 CMA in slot 4. Also connect the NT8D80AC and NT8D85AC CMA cables from QPC581 in CPU 0 to the QPC581 in CPU 1.

- A QPC580 IF in slot 5.

- A QPC579 FN in slot 6 connect the NT8D78AA (QCAD240) faceplate interface cable from the IF to the FN pack.

- A QPC584 MSI equipped with the proper QMM42 data cartridge in slot 8. Set option switch 1 and 5 on the component side of the circuit pack to ON.

- A QPC215C SBE in slot 10 for network group 4.

- A QPC215C SBE in slot 11 for network group 3.

- A QPC215C SBE in slot 12 for network group 2.

- A QPC215C SBE in slot 13 for network group 1.

- A QPC215C SBE in slot 14 for network group 0.

- A QPC775 SCG in slot 15.

- A QPC691 or QPC190 or QPC355 (minimum vintage B) power converter in the last slot on the right of the shelf.

N If power converter card will not seat properly in shelf, remove
*o*card and check backplane connector. If necessary, move the key in
*t*the connector to the appropriate location for the converter card being
*e*used.
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22 If required relocate the NT8D69AA MDU to any 3 consecutive CE slots available in the QCA97 cabinet.

N If the Floppy Drive is to be located within two slot spaces of
*o*the 5/12V Converter, the shield (PO677761) must be installed between
*t*them.
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- Connect NT8D80 cables between the MDU and both QPC584 circuit packs.

23 Insert the following circuit packs in the QSD61 shelf of CPU 0.

- A QPC215C SBE in slot 10 for network group 4.

- A QPC215C SBE in slot 11 for network group 3.

- A QPC215C SBE in slot 12 for network group 2.

- A QPC215C SBE in slot 13 for network group 1.

- A QPC215C SBE in slot 14 for network group 0.

24 Connect a NT8D74AF cable from the faceplate connector on the QPC775 circuit pack on CPU 1 shelf to J12 on the QPC417 junctor board in the QCA25 cabinet.

25 Tag and disconnect cables from faceplate connectors of all QPC441 three-port extender packs in the QCA97 cabinet.

26 Tag and disconnect network loop cables from faceplate connectors of each Network circuit pack.

27 Tag and disconnect cables from faceplates of SDI packs.

28 Disconnect and remove remaining cables from faceplate connectors in the QCA97 network shelves.

29 Remove all circuit packs from the network shelves in QCA97 cabinet.

N The 5/12 V CONV packs are required for the new network shelves. The SDI packs are required if they are assigned in the converted system. The remaining removed packs are no longer required.
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30 Remove the mounting screws securing the QSD54 and QSD55 Network shelves to the cabinet frame and remove the shelves.

31 Position a QSD39 Network shelf (left-hand mount) in the space vacated by the QSD55 shelf.

32 Position a QSD40 Network shelf (right-hand mount) in the space vacated by the QSD54 shelf.

33 Position and mount remaining QSD55 and QSD54 Network shelves (if provided) at the rear of the cabinet (Figure 10-1).

34 From the front of each QSD39 shelf, plug in a QPC477-9 BTU in connector located between slots 3 and 4, and a QPC477-10 BTU between slots 2 and 3 (Figure 10-3).

35 From the front of each QSD40 shelf, plug in a QPC477-9 BTU in connector located between slots 11 and 12, and a QPC477-10 BTU between slots 12 and 13 (Figure 10-3).

36 Connect the power cable adapter to connector G of QSD39 shelf and connector G of QSD40 shelf (Figure 10-3).

37 Connect five NT8D99AB cables from connectors A, B, C, D and E on the end of each QSD39 shelf to the corresponding connectors on each companion QSD40 shelf (Figure 10-3).

38 Insert a 5/12 V CONV in slot 1 of each QSD39 shelf and in slot 14 of each QSD40 shelf.

39 Insert NT8D17AA TDS packs in assigned slot in QSD39 and QPD40 shelves.

40 Insert QPC139 SDI packs in either slot 2 of a QSD39 shelf or slot 13 of a QSD40 shelf.

41 See 553-2201-211 and set option switches and plugs on the new QPC441 3-Port Extender packs and the QPC43R (or later vintage) Peripheral Signaling packs.

N The option plug on the QPC43 packs should be set at F13.
a The QPC441 packs should be set for XT systems.
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42 Insert the new circuit packs in the Network shelves as follows;

- one QPC43 pack in slot 11 of each QSD39 shelf and one in slot 4 of each QSD40 shelf.

- one QPC441 pack (with switches set for shelf 0 of network group) in slot 14 of each QSD39 shelf.

- one QPC441 pack (with switches set for shelf 1 of network group) in slot 1 of each QSD40 shelf.

- one QPC412 pack in slot 12 and one in slot 13 of each QSD39 shelf.

- one QPC412 pack in slot 2 and one in slot 3 of each QSD40 shelf.

43 Connect cables from faceplate connector on each QPC412 pack on the network shelves to the QPC417 Junctor Board, and from faceplate connectors on each QPC441 pack to the QPC215 packs on the CPU shelves (Figure 10-2).

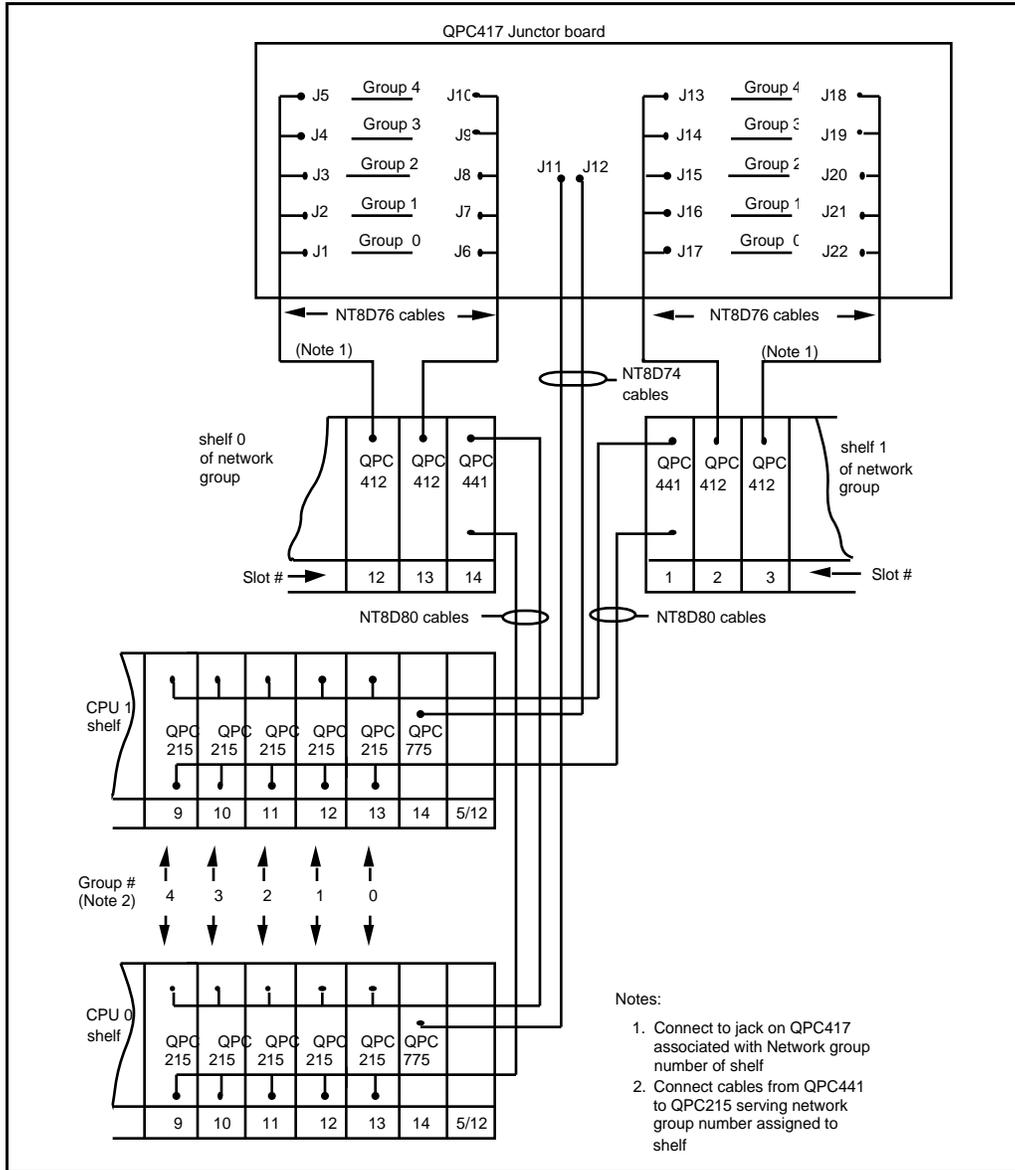44 Reconnect cables to faceplate connectors on QPC139 SDI2 packs.

45 Insert QPC414 Network packs as required in network shelves.

46 Reconnect loop cables to faceplate connectors on Network packs.

47 Ensure that all ENB/DIS switches on faceplate of packs in the QCA97 cabinet are set to ENB.

   •   Set the MAINT/NORM switch on CPU 1 to NORM.

48 Set all switches on the QBL13 Power Distribution Box to ON.

49 Ensure that the proper disks are inserted in the disk drives.

   •   Set ENB/DIS switch on all power monitor cards to ENB.

50 Set MEM 0, MEM 1, MSG 0 and MSG 1 breakers on the QBL11 unit to OFF.

   •   Set CPU 0 and CPU 1 breakers to ON.

   •   Set the cabinet input breaker to ON.

51 The system will Sysload (see 553-3001-400). Wait until Sysload is completed.

   •   Switch PFT to OFF.

52 Load overlay program 43.

   •   Set the switch on both QPC584 MSI packs to DIS.

   •   Remove the MSI packs and set option switches 1, 4 and 5 on both packs to ON.

   •   Reinsert the packs in their assigned positions and set the ENB/DIS switches on both packs to ENB.

   •   Enter command RES to perform a restore to the Winchester disk.

   •   Load overlay program 17 and change ADAN to HDK 0.

53 Remove cables from remaining QSP40 MEM shelf. Remove shelf and associated packs from cabinet.

54 Perform acceptance tests on converted QCA97 cabinet.

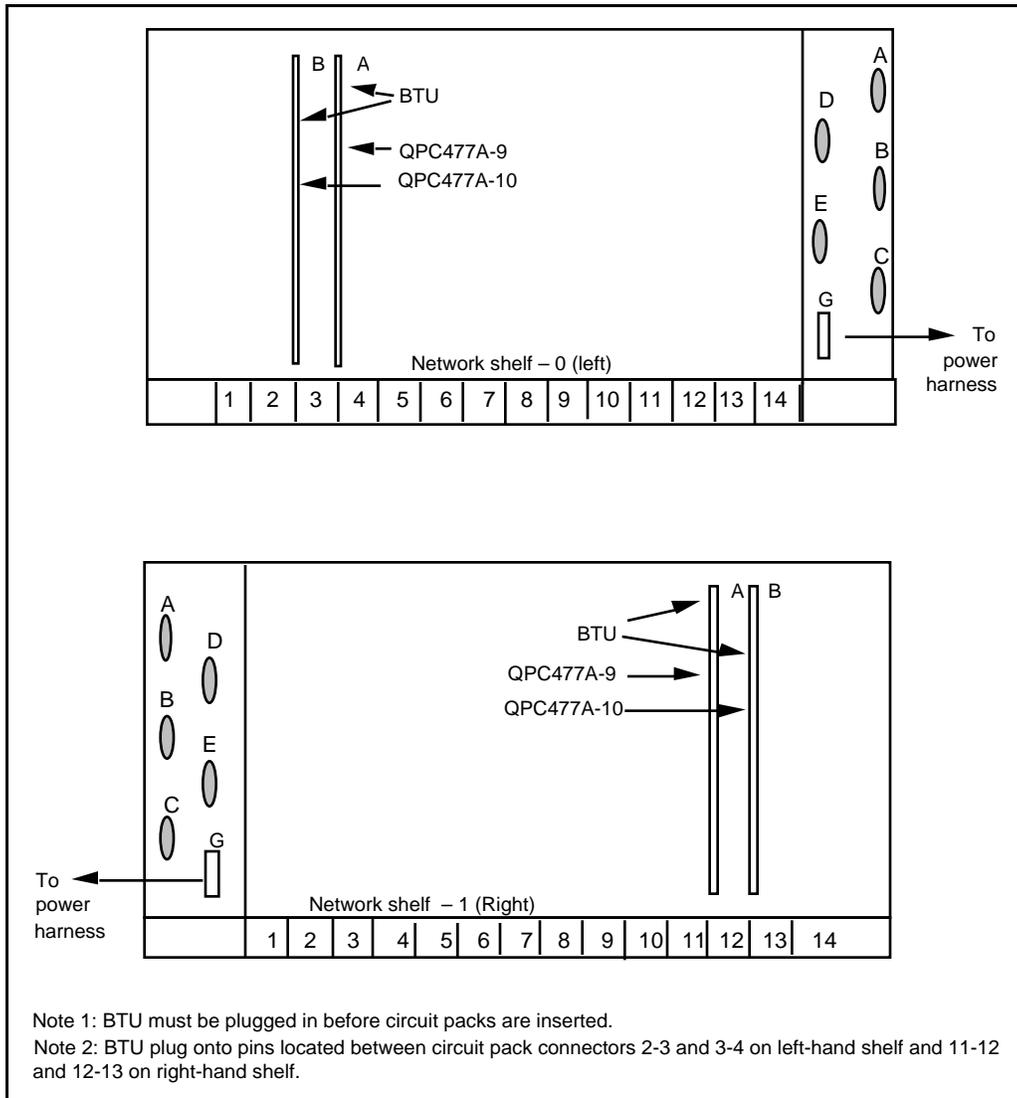55 Pack and store any surplus equipment according to local instructions.

Figure 10-1
Typical QCA97 cabinet converted to Option 71

Figure 10-2
Network group upgrade

Figure 10-3
Network shelves (front view)

Note 1: BTU must be plugged in before circuit packs are inserted.
Note 2: BTU plug onto pins located between circuit pack connectors 2-3 and 3-4 on left-hand shelf and 11-12 and 12-13 on right-hand shelf.

Upgrading from SL-1 SN to Option 21

Upgrading method

This chapter describes how to upgrade an existing SL-1 SN to a Meridian 1 Option 21.

The upgrading method consists of replacing the Common Equipment (CE) shelf backplane and various circuit packs and other items with equipment used with the Meridian 1 Option 21 system.

Equipment required

Table 11-1 lists the items that are required to upgrade an SL-1 SN system.

Table 11-1
Equipment required

Quantity	Code	Description
1	*NT8D17AA Rlse 09	CT circuit card
1	*NT8D19AA Rlse 10	MMPS circuit card
1	*NT8D68AA Rlse 04	FDU
1	NT8D77AC	Floppy disk drive interface cable
1	QPC700	CE backplane
6		Software diskettes 3.5"
1	QMM42	Data Cartridge
2	QPC414	ENET circuit card
1	QPC687	CPU/ROM/SDI circuit card
1	*QPC742D	FDI circuit card
1	QPC940	ROM daughter board
1	P0674974	CE shelf designation strip

*Denotes minimum vintage

Upgrading from SL-1 SN (QCA141 CE cabinet) to Meridian 1 Option 21

1 Obtain printouts of all the characteristics (TN, loop, telephones and all other assignments and features) of the existing system. Retain these printouts for an after conversion check.

2 Using overlay program 43, perform a data dump to the existing disks.

3 Remove the front and rear covers from the CE cabinet.

4 Designate (but do not disconnect) all the cables connected to the front of the QPC45 (if equipped), QPC139 (if equipped), QPC425 and QPC376 circuit packs.

5 Unseat both disks from the disk drives.

   N The following steps will interrupt system service and
   *e*mergency service (if provided) will be connected.
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6 Switch line transfer switch on the QUAA3 power unit to ON or 1.

   • Set the CAB INP breaker on the QUX19 unit to OFF.

7 Tag and disconnect the wires from the five lugs and connector J1 on the CE shelf backplane (Figure 11-1).

   • Disconnect the cables from front of all circuit packs on CE shelf.

   • Remove all circuit packs from the CE shelf.

   • Remove the nuts securing the CE shelf backplane to the rear of the cabinet frame and remove the backplane from the cabinet.

8 Position the new QPC700 CE backplane in the space vacated by the removed CE shelf backplane and secure with the nuts and washers removed from the old shelf. To ensure that the backplane is properly aligned with the plastic circuit pack guides, insert a circuit pack in the shelf from the front of the cabinet. Adjust the backplane if necessary.

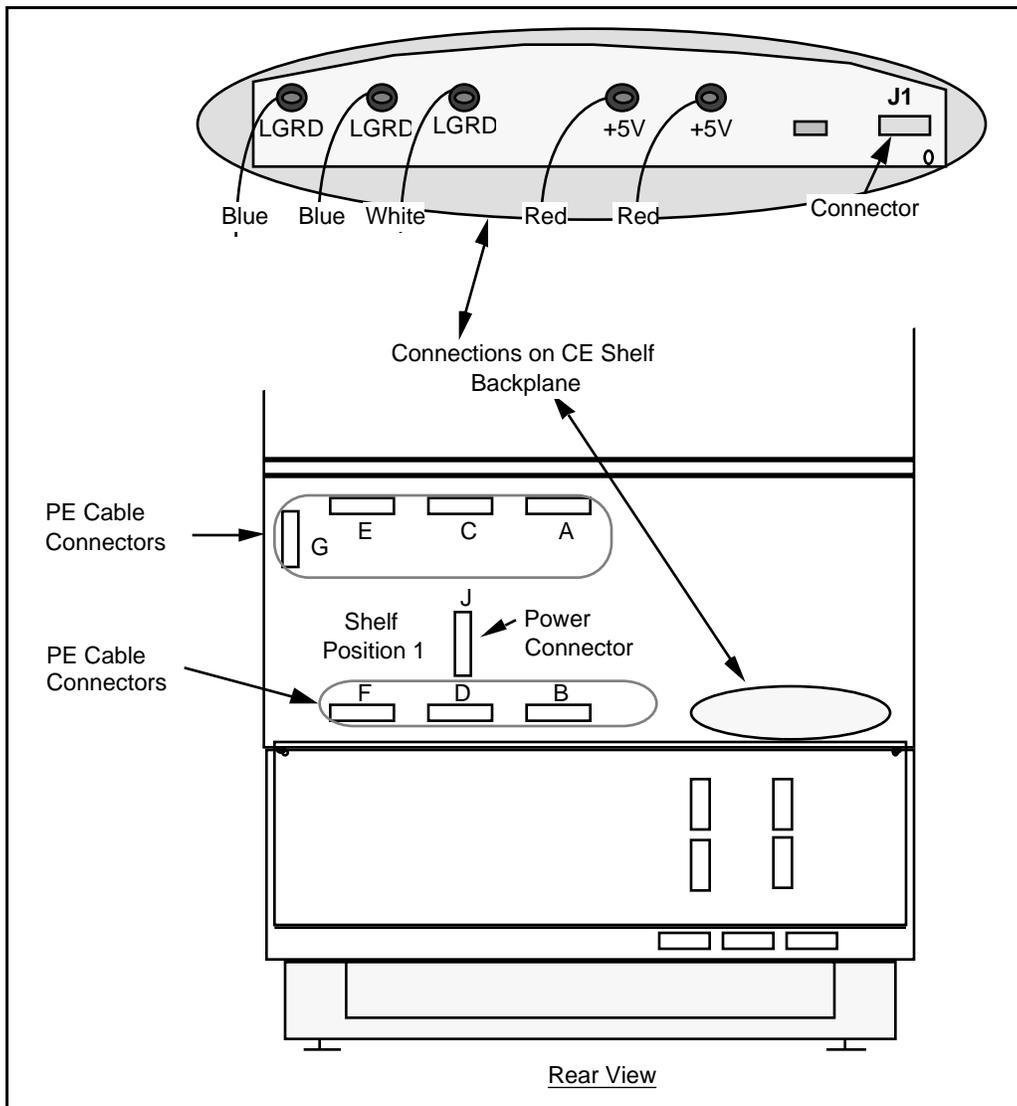9 Reconnect the power wiring and connector J1 previously disconnected from the old backplane as shown in Figure 11-1.

- Install the new CE shelf designation strip (P0674974) over the existing strip along the bottom front of the CE shelf.

- Ensure that the option switches and plugs on the circuit packs are properly set. Refer to 553-3001-211.

- Install the QPC940 ROM daughter board on the component side of the QPC687 circuit pack.

10 Make sure that the correct QMM42 Data Cartridge is installed on the connector located on the component side of the QPC742 FDI circuit pack and that switches 1 and 5 are set to on.

N The software version and ID number indicated on the data *a*artridge must match the software version and ID number indicated on *t*he floppy disks.
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11 Insert the circuit packs in their assigned slots in the new CE shelf (Figure 11-2).

12 Insert the NT8D68AA FDU in any available two consecutive slots.

13 Reconnect the tagged cables that were previously disconnected to the appropriate connectors on the faceplates of the circuit packs on the new CE shelf.

14 Set all ENB/DIS switches on the faceplates of circuit packs to ENB.

- Set the MAINT/NORM switch on the front of the QPC687 circuit to NORM.

- Set the CAB INP circuit breaker on the QUX19 unit to ON.

15 Insert the floppy disks into disk drives. A system reload (SYSLOAD) should occur. Wait for the SYSLOAD to be completed.

16 Reestablish normal service on the system as soon as it is determined that trunk connections can be made to an attendant console or other suitable telephone. To restore normal service, set the line transfer switch on the QUAA3 power unit to OFF or 0.

- Using the appropriate overlay programs, obtain printouts of all TN assignments and system features and compare with the printouts obtained before converting.

17   Install cabinet covers or doors and dispose of surplus equipment.

Figure 11-1
Power Connections

LGRD LGRD LGRD +5V +5V **J1**

Blue Blue White Red Red Connector

Connections on CE Shelf
Backplane

PE Cable
Connectors

G E C A

J

Shelf   Power
Position 1   Connector

PE Cable
Connectors

F D B

Rear View

Figure 11-2
Circuit Pack Layout

CE SHLF												
Not Used	QPC687 CPU	QPC742 FDI	NT8D19AA MMPS	QPC414 ENET	QPC414 ENET	QPC414 ENET	QPC414 ENET	QPC414 ENET	QPC414 ENET	QPC414 ENET	NT8D17AA CT	QPC139 SDI
1 MEM	2 CPU	3 MSI	4 MS/PS	5 LP0/1	6 LP2/3	7 LP4/5	8 LP6/7	9 LP8/9	10 LP10/11	11 LP12/13	12 LP14/15	13 SP

Note: To avoid a system failure, do not install a QPC471 or QPC775 Clock Controller circuit pack in slot 13. These packs can be installed in any avaiable slot 5 through 12.

SL-1
System options 21, 61, 71

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