Meridian 1
Succession 1000
Succession 1000M
Succession 3.0 Software

Equipment Identification

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Revision history

October 2003

Standard 19.00. This document is up-issued to support Succession 3.0 Software. This document is up-issued to include equipment listings for Succession 1000 systems, Meridian 1 Small Systems, and Succession 1000M Small Systems.

January 2002

Standard 18.00. This document is up-issued to support Meridian 1 Release 25.40 systems. This document is up-issued to include Call Processor Pentium (CP PII) and Fibre Network Fabric (FNF) for Option 81C.

April 2000

Standard 17.00. This is a global document and is up-issued for X11 Release 25.0x. Document changes include removal of: redundant content; references to equipment types except Options 11C, 51C, 61C, and 81C; and references to previous software releases.

June 1999

Standard, release 16.00. This document is reissued to include information on the NT5D03 Call Processor Card. Changes to technical content are noted by revision bars in the margins.

October 1997

Standard, release 15.00. This document is reissued to include information on the NT5D10 Call Processor Card, the NT5D61 Input/Output Disk Unit with CD-ROM (IODU/C), the NTAG36 Meridian Integrated RAN Card (MIRAN), the NT5D51 Meridian Integrated Conference Bridge (MICB) card, the NT8D41BA Quad Serial Data Interface Paddle Board, and the NT5D60AA XCMC Card. Changes are noted by revision bars in the margins.

August 1996

Standard, release 14.00. This document is reissued to include new and updated information. Changes to technical content are noted by revision bars in the margins.

August 1996

Standard, release 13.00. This document is reissued for X11 Release 22 to include new and updated information on equipment. Changes to technical content are noted by revision bars in the margins.

December 1995

Standard, release 12.00. This document is reissued to include information on the NT9D19 Call Processor Card, copy edits, and updated index that includes international items.

July 1995

Standard, release 11.00. This document is reissued to include information on Meridian 1 Option 81C and international text. Changes to technical content are noted by revision bars in the margins.

An updated index was not available at the time of publication and therefore, the index included herein does not contain references to international items. This deficiency will be corrected in the next standard edition of this document.

December 1994

Standard release 10.00. This document is reissued for technical content changes.

December 1994

Standard, release 9.00. This document is reissued to include information on the Small Systems Multi Drive Unit (SMDU), Meridian 1 Option 51C, and edits. Changes to technical content are noted by revision bars in the margins.

April 1994

Standard, release 8.00. This document is reissued to include information on Option 61C. Changes to technical content are noted by revision bars in the margins.

August 1993

Standard, release 7.00. Changes to technical content are noted by revision bars in the margins.

April 1993

Standard, release 6.00. Changes to technical content are noted by revision bars in the margins.

December 1992

Standard, release 5.00. This document is reissued to include information on system Option 81, equipment required for compatibility with X11 release 18, and Product Bulletins 91062 (November 1991), 92027 (July 1992), and 92039 (October 1992). Due to the extent of the changes, revision bars are omitted.

December 1991

Standard, release 4.00. This document is reissued to include technical content updates. Due to the extent of the changes, revision bars are omitted.

December 1990

This document is reissued to include updates for X11 release 16. Changes are indicated by revision marks in the margins.

Contents

About this document

This document is a global document. Contact your system supplier or your Nortel Networks representative to verify that the hardware and software described is supported in your area.

Subject

This document identifies equipment that can be used with Meridian 1, Succession 1000 and Succession 1000M systems.

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Succession 3.0 Software. For more information on legacy products and releases, click the **Technical Documentation** link under **Support** on the Nortel Networks home page:

http://www.nortelnetworks.com/

Applicable systems

This document applies to the following systems:

- Meridian 1 Option 11C Chassis

- Meridian 1 Option 11C Cabinet

- Meridian 1 Option 51C

- Meridian 1 Option 61

- Meridian 1 Option 61C

- Meridian 1 Option 61C CP PII

- Meridian 1 Option 81

- Meridian 1 Option 81C

- Meridian 1 Option 81C CP PII

- Succession 1000

- Succession 1000M Cabinet

- Succession 1000M Chassis

- Succession 1000M Half Group

- Succession 1000M Single Group

- Succession 1000M Multi Group

Note that memory upgrades may be required to run Succession 3.0 Software on CP3 or CP4 systems (Options 51C, 61, 61C, 81, 81C).

System migration

When particular Meridian 1 systems are upgraded to run Succession 3.0 Software and configured to include a Succession Signaling Server, they become Succession 1000M systems. Table 1 lists each Meridian 1 system that supports an upgrade path to a Succession 1000M system.

Table 1
Meridian 1 systems to Succession 1000M systems (Part 1 of 2)

This Meridian 1 system...	Maps to this Succession 1000M system
Meridian 1 Option 11C Chassis	Succession 1000M Chassis
Meridian 1 Option 11C Cabinet	Succession 1000M Cabinet
Meridian 1 Option 51C	Succession 1000M Half Group
Meridian 1 Option 61	Succession 1000M Single Group
Meridian 1 Option 61C	Succession 1000M Single Group
Meridian 1 Option 61C CP PII	Succession 1000M Single Group
Meridian 1 Option 81	Succession 1000M Multi Group

Table 1
Meridian 1 systems to Succession 1000M systems (Part 2 of 2)

This Meridian 1 system...	Maps to this Succession 1000M system
Meridian 1 Option 81C	Succession 1000M Multi Group
Meridian 1 Option 81C CP PII	Succession 1000M Multi Group

Note the following:

- When an Option 11C system is upgraded to run Succession 3.0 Software, that system becomes a Meridian 1 Option 11C Cabinet.

- When an Option 11C Mini system is upgraded to run Succession 3.0 Software, that system becomes a Meridian 1 Option 11C Chassis.

For more information, see one or more of the following NTPs:

- *Small System: Upgrade Procedures* (553-3011-258)

- *Large System: Upgrade Procedures* (553-3021-258)

- *Succession 1000 System: Upgrade Procedures* (553-3031-258)

Intended audience

This document is intended for individuals responsible for identifying equipment.

Conventions

Terminology

In this document, the following systems are referred to generically as "system":

- Meridian 1

- Succession 1000

- Succession 1000M

The following systems are referred to generically as "Small System":

- Succession 1000M Chassis

- Succession 1000M Cabinet

- Meridian 1 Option 11C Chassis

- Meridian 1 Option 11C Cabinet

The following systems are referred to generically as "Large System":

- Meridian 1 Option 51C

- Meridian 1 Option 61

- Meridian 1 Option 61C

- Meridian 1 Option 61C CP PII

- Meridian 1 Option 81

- Meridian 1 Option 81C

- Meridian 1 Option 81C CP PII

- Succession 1000M Half Group

- Succession 1000M Single Group

- Succession 1000M Multi Group

The call processor in Succession 1000 and Succession 1000M systems is referred to as the "Succession Call Server".

The following systems are referred to generically as "Cabinet systems":

- Meridian 1 Option 11C Cabinet

- Succession 1000M Cabinet

The following systems are referred to generically as "Chassis systems":

- Meridian 1 Option 11C Chassis

- Succession 1000M Chassis

Related information

This section lists information sources that relate to this document.

NTPs

The following NTPs are referenced in this document:

*   *MPP600 Modular Power Plant: Description, installation, operation and maintenance manual* (167-9021-105)

*   *Meridian 1 Integrated Telephony Gateway Trunk 1.0/Basic Per-Trunk Signaling: Description, Installation, and Operation* (553-3001-116)

*   *Circuit Card: Description and Installation* (553-3001-211)

*   *Succession Branch Office* (553-3001-214)

*   *Features and Services* (553-3001-306)

*   *Software Input/Output: Administration* (553-3001-311)

*   *Call Detail Recording: Description and Formats* (553-3001-350)

*   *Meridian Integrated Conference Bridge: Service Implementation Guide* (553-3001-358)

*   *Meridian Integrated RAN: Description, Installation, and Operation* (553-3001-360)

*   *802.11 Wireless IP Gateway* (553-3001-366)

*   *Telephones and Consoles: Description* (553-3001-367)

*   *Internet Terminals: Description* (553-3001-368)

*   *DECT: Description, Planning, Installation, and Operation* (553-3001-370)

*   *ISDN Basic Rate Interface: Features* (553-3001-380)

*   *Small System: Planning and Engineering* (553-3011-120)

*   *Small System: Upgrade Procedures* (553-3011-258)

*   *Large System: Planning and Engineering* (553-3021-120)

*   *Large System: Installation and Configuration* (553-3021-210)

*   *Large System: Upgrade Procedures* (553-3021-258)

- *Succession 1000 System: Planning and Engineering* (553-3031-120)

- *Succession 1000 System: Upgrade Procedures* (553-3031-258)

Online

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Technical Documentation link under **Support** on the Nortel Networks
home page:

http://www.nortelnetworks.com/

CD-ROM

To obtain Nortel Networks documentation on CD-ROM, contact your
Nortel Networks customer representative.

General information

Contents

This section contains information on the following topics:

Feature description

This document identifies equipment of the Succession 1000 Integrated Services Network that are currently supported. The items are described in system requirements (hardware type), purpose, and quantity required, as appropriate.

Equipment requirements

The system option that best meets individual requirements is determined by the following factors:

- number and type of terminal devices required

- number and type of trunks required

- traffic requirements for lines, trunks, and consoles

- special features required

- growth forecast in terms of ports and features

Refer to *Succession 1000 System: Planning and Engineering* (553-3031-120), *Large System: Planning and Engineering* (553-3021-120), and *Small System: Planning and Engineering* (553-3011-120) for guidelines on system requirements. Consult your Nortel Networks representative and use a configuration tool, such as Autoquote or Meridian Configurator, to fully engineer a system.

Application module equipment

For information on application module equipment, see the specific documentation for the application.

Conversion and expansion packages

Software conversion packages and hardware upgrade packages are available to expand system capabilities. For information on these packages and procedures for performing conversions and upgrades, see *Succession 1000 System: Upgrade Procedures* (553-3031-258), *Large System: Upgrade Procedures* (553-3021-258), and *Small System: Upgrade Procedures* (553-3011-258).

Systems

Various systems are equipped according to the customer's requirements and equipment compatibility. Item descriptions in this document include "System requirements" headings to indicate compatible systems.

System versions are ordered by a four-digit code, where the first two digits designate the system hardware. The last two digits of "11" designate the system software as applicable to Large Systems. Table 2 lists all supported system versions.

Table 2
System version/system hardware cross-reference

System Version	System Hardware
2411	Meridian 1 Option 51C or Succession 1000M Half Group with NT5D14 Call Processor
2811	Meridian 1 Option 51C or Succession 1000M Half Group with NT5D03 Call Processor
2511	Meridian 1 Option 61C or Succession 1000M Single Group with NT5D10 Call Processor
2911	Meridian 1 Option 61C or Succession 1000M Single Group with NT5D03 Call Processor
3211	Meridian 1 Option 61C or Succession 1000M Single Group with CP PII Call Processor
2611	Meridian 1 Option 81C or Succession 1000M Multi Group with CP3 Call Processor
3011	Meridian 1 Option 81C or Succession 1000M Multi Group with CP4 Call Processor
xx11	Meridian 1 Option 81C or Succession 1000M Multi Group with A0810496 Call Processor
xx11	Meridian 1 Option 81C or Succession 1000M Multi Group with NT4N64 Call Processor
3311	Meridian 1 Option 81C or Succession 1000M Multi Group with CP PII Call Processor

Equipment availability

The equipment listed in this document is available through Nortel Networks and Nortel Networks distributors. Equipment may be discontinued at any time. Contact a Nortel Networks representative for information on equipment availability.

Special features

Special features are purchased as options to a basic system. These features may consist of software, hardware, or both. Special features that include hardware (such as Call Detail Recording and Remote Peripheral Equipment)

are described in separate Nortel Networks technical publications (NTPs). Those documents include equipment requirements.

Station equipment

Station equipment, such as telephones and consoles, are not described in this document. Refer to *802.11 Wireless IP Gateway* (553-3001-366), *Telephones and Consoles: Description* (553-3001-367), *Internet Terminals: Description* (553-3001-368) and *DECT: Description, Planning, Installation, and Operation* (553-3001-370).

Electromagnetic interference

All cabinets are available with or without suppression of electromagnetic interference (EMI).

Software packages

A variety of software packages provide basic and advanced system features. For information on software packages and features, see *Features and Services* (553-3001-306).

Succession 1000 system equipment

Contents

This section contains information on the following topics:

Introduction

This chapter identifies the equipment supported for use in a Succession 1000 system, as defined in "Conventions" on .

For information on station equipment, refer to:

- *802.11 Wireless IP Gateway* (553-3001-366)

- *Telephones and Consoles: Description* (553-3001-367)

- *Internet Terminals: Description* (553-3001-368)

- *DECT: Description, Planning, Installation, and Operation* (553-3001-370)

System modules

Succession 1000 modules are installed in a customer-supplied 19-inch rack. Some modules are self-contained, while others must be equipped with circuit cards to operate.

The cards that can be used in each module are listed in this document.

NTDU06 Succession Call Server

System requirements—Succession 1000 system.

Purpose—Contains an NTDK20FA or later Succession System Controller card that provides all of the call processing logic for the Succession 1000 system. The power supplies are factory installed and are not customer replaceable. DC power is not supported.

Quantity—One for each Succession 1000 system.

NTDU14 Succession Media Gateway Chassis

System requirements—Succession 1000 system.

Purpose—Houses a Succession System Controller card and four slots for flexible configuration of line, trunk and application cards. It supports one NTDU15 Succession Media Gateway Expansion chassis for additional capacity.

This chassis has five slots. Slot 0 is dedicated to the NTDK20FA or later Succession System Controller (SSC) card. Slots 1 to 4 support any combination of the following cards:

- digital trunk cards

- analog trunk cards

- analog line cards

- digital line cards

- Voice Gateway Media Cards (VGMCs)

- applications such as Meridian Integrated RAN (MIRAN) and CallPilot Mini

Each Succession Media Gateway with a digital trunk must have one clock controller.

In a Succession Branch Office, the Succession Media Gateway is referred to as an H.323 WAN Gateway. Refer to *Succession Branch Office* (553-3001-214) for details.

NTDU15 Succession Media Gateway Extension Chassis

System requirements—Succession 1000 system.

Purpose—Provides four additional universal card slots for the NTDU14 Succession Media Gateway chassis for additional capacity.

The four slots support the following cards:

- analog trunk cards

- analog line cards

- digital line cards

- Voice Gateway Media Cards (VGMCs)

- applications such as Meridian Integrated RAN (MIRAN) and CallPilot Mini

The NTDU15 does not support digital trunk cards.

In a Succession Branch Office, the Succession Media Gateway Extension Chassis is referred to as an H.323 WAN Gateway Expansion. Refer to *Succession Branch Office* (553-3001-214) for details.

NTDU27 Succession Signaling Server

System requirements—Succession 1000 system.

Purpose—Provides signaling interfaces to the IP network using software components that run on a real-time operating system (vxWorks). It handles H.323 signaling and Internet Telephone signaling, and provides Gatekeeper software. A second NTDU27 can be installed in a system if a load-sharing redundant configuration is required.

The NTDU27 contains no user-serviceable parts, including the power supply. Rack-mounting hardware is included.

The NTDU27 measures approximately 4.3 cm high by 42.5 cm by 55.9 cm (1.70 in. by 16.75 in. by 22 in.). When fully configured, it weighs approximately 10.5 kg (23 lb).

Quantity—Minimum of one for each Succession 1000 system; two for each Succession 1000 system if load sharing redundancy if desired.

NTTK09AA Rack-mount installation kit

System requirements—Succession 1000 system.

Purpose—Used to install the NTDU06 Succession Call Server, NTDU14 Succession Media Gateway chassis, and NTDU015 Succession Media Gateway Expansion chassis in a user-supplied 19-inch rack.

The NTTK09AA contains the follow pieces:

•	1 Left rack-mount bracket	P0904844
•	1 Right rack-mount bracket	P0904845
•	1 Left shelf mounting bracket U/O NTTK09AA	P0906672
•	8 Screw, 0.216-24 X 0.500 STL 289A	P097F813
•	4 Sems, ext tooth washer pan head, CR type 1A, 0.164-32 X	P0719943
•	1 Right shelf mounting bracket U/O NTTK09AA	P0906671
•	4 Sems, ext tooth washer pan head, CR type 1A, 0.138-3	P0719587

Power and cooling equipment

NTBK80 Grounding Block

System requirements—Succession 1000 system.

QUA6 Power Failure Transfer Unit (PFTU)

System requirements—Succession 1000 system.

Purpose—Transfers trunk lines during a power or system failure.

Common equipment cards

NTDK20 Succession System Controller (SSC) Card

System requirements—Succession 1000 system.

Purpose—Contains a Central Processor Unit (CPU) that handles call processing, an Ethernet controller, and system memory.

An NTDK20 SSC is housed in each Succession Call Server and each Succession Media Gateway. The following daughterboards and security devices are supported:

- NTM400 Software Daughterboard – mandatory on each SSC card

- NTDK99 Single-port 100BaseT IP Daughterboard – mandatory on each SSC card in the Succession Media Gateways

- NTDK83 Dual-port 100BaseT IP Daughterboard - supports two Succession Media Gateways

- NTDU19 Succession Call Server Gateway Expansion kit - contains an additional NTDK83 for added capacity

- One security device for each SSC card:

    — NTDK57AA (NT_STD on the dongle) for the SSC on the
      Succession Call Server

    — NTDK57DA (NT_REM on the dongle) for the SSCs on the
      Succession Media Gateways

NTDU19A minimum vintage of FA is required.

NTDU80CA Succession Signaling Server Memory Upgrade Kit

System requirements—Succession 1000 system.

Purpose—Contains 512MB DIMM boards with which to upgrade the
memory on the Succession Signaling Server.

Quantity—One for each Succession Signaling Server.

NTM400 Software Daughterboard

System requirements—Succession 1000 system.

Purpose—Required for the NTDK20 SSC card to function.

Quantity—One for each NTDK20 SSC card on the Succession Call Server
and Succession Media Gateways.

Peripheral equipment cards

NT1R20BA Off-premises Station (OPS) Analog Line Card

System requirements—Succession 1000 system.

Purpose—The Off-premises Station Analog Line card provides eight
full-duplex interfaces used to connect off-premises terminals to the
Succession 1000 system. Each interface provides lightning protectors for
external line connection to the station.

The NT1R20BA OPS Analog Line Card provides:

- line supervision

- hookflash

- battery reversal

Quantity—Up to 15 per IPE module.

NTDK83 Dual-port 100BaseT IP Daughterboard

System requirements—Succession 1000 system.

Purpose—Provides IP connectivity. It is mounted on the NTDK20 SSC in the Succession Call Server.

The Succession Call Server ships with an NTDK83, which supports two Succession Media Gateways. To expand beyond two Succession Media Gateways, use the NTDU19 Succession Call Server Gateway Expansion Kit.

Quantity—One per Succession Call Server.

NTDK99 Single-port 100BaseT IP Daughterboard

System requirements—Succession 1000 system

Purpose—Provides IP connectivity. It is mounted on the NTDK20 SSC in the Succession Call Server.

Quantity—One per Succession Call Server.

NTDU19 Succession Media Gateway Expansion Kit

System requirements—Succession 1000 system.

Purpose—Provides support for two additional Succession Media Gateways. The kit contains an addition NTDK82 Dual-port IP Daughterboard and two NTDU0606 Cat-5 Ethernet cables.

Quantity—One kit for each Succession Media Gateway and Succession Media Gateway Expansion, up to a maximum of four Succession Media Gateways and Succession Media Gateway Expansions.

NTVQ01BA Succession Media Card (SMC)

System requirements—Succession 1000 system.

Purpose—Connects an IP and circuit-switched device using Digital Signal Processors (DSP) for either line or trunk applications. It also provides echo cancellation and compression/decompression of voice streams.

The NTVQ01BA has 32 ports. It comes packaged with the NTM403BA IP Line 3.1 CompactFlash, which carries the IP Line 3.1 application. IP Line 3.1 must be installed on the NTVQ01BA SMC before it is installed it on a Succession 1000 system.

Quantity—Maximum of four in each Succession Media Gateway chassis or Expansion chassis.

Cables

Intramodule and Intermodule Cables

There are two types of cables in a Succession 1000 system:

- Intramodule cables connect circuit cards within a module or to I/O panels at the rear of the module. Intramodule cables are not shielded. Bail locks or screws are generally used on the connectors to prevent accidental removal.

- Intermodule cables are routed between modules. These cables are used primarily for interconnecting the following subsystems:

    — CPU to CPU

    — CPU to network

    — network to network

    — network to peripheral equipment

A0378652 F-F DCE to DTE Convertor Cable

Purpose—Connects SDI ports to equipment such as administration/
maintenance terminals (TTYs) and modems.

A0381016 F-M DCE to DTE Convertor Cable

Purpose—Connects SDI ports to equipment such as TTYs and modems.

NT8D7205 DTI/PRI Carrier Cable

Purpose— DTI/PRI carrier cable.

NTAK1104 AUX Cable

Purpose— Connects a PFTU to a Succession Media Gateway.

NTAK1108 9-25 pin RS-232 Convertor Cable

Purpose— Connects SDI ports and terminals.

NTAK1118 9-25 pin RS-232 Convertor Cable

Purpose— Connects SDI ports and terminals.

NTAK19EC Cable

Purpose—A two-port SDI cable used with the NTAK03 circuit card.

NTAK19FA/FB Cable

Purpose—A four-port SDI cable used with the NTAK02 circuit card.

NTBK48 3-port SDI Cable

Purpose—Used to connect the Succession Call Server 9-pin SDI port to
TTYs and modems.

NTDK95 25-pair Cable

Purpose—Connects the Succession Media Gateway DS 30X and CE-MUX to the Succession Media Gateway Expansion DS 30X and CE-MUX.

NTDU0606 Cables

Purpose—Used to connect the Succession Call Server NTDK83 Dual-port IP daughterboard to the Succession Call Server bulkhead connectors.

Length—25 cm (10 in.)

NTTK34AA UTP Cat-5 RJ45 Cross-over Cable

Purpose—Connects the Succession Call Server to the Succession Media Gateways in a point-to-point mode.

Length—2 m

Miscellaneous equipment

A0601397 Nullmodem

System requirements—Succession 1000 system.

Purpose—Compact DB-25F/DB-25F nullmodem adapter.

NTAK92 Off-premises Protection Module

System requirements—Succession 1000 system.

Purpose—Connects up to four off-premises analog telephones.

NTDK57 Security Device

System requirements—Succession 1000 system.

Purpose—Required for system security on all NTDK20 SSCs.

Two versions of the NTDK57 are required:

- NTDK57AA (NT_STD on the dongle) is used on Succession Call Server SSCs

- NTDK57DA (NT_REM on the dongle) is used on Succession Media Gateway SSCs

Quantity—One on each NTDK20 SSC card.

NTM403BA IP Line 3.1 CompactFlash

System requirements—Succession 1000 system.

Purpose—Carries the IP Line 3.1 application required for the NTVQ01BA Succession Media Card (SMC). It is packaged with the NTVQ01BA, and must be installed on the SMC before the SMC is installed on a Succession 1000 system.

Quantity—One per Succession Media Card.

Small System equipment

Contents

This section contains information on the following topics:

Introduction

This chapter identifies the equipment supported for use in a Small System, as defined in "Conventions" on .

For information on station equipment, refer to:

- *802.11 Wireless IP Gateway* (553-3001-366)

- *Telephones and Consoles: Description* (553-3001-367)

- *Internet Terminals: Description* (553-3001-368)

- *DECT: Description, Planning, Installation, and Operation* (553-3001-370)

System modules

Cabinets and chassis for Small Systems are mounted on the wall or in a rack assembly. In Succession 1000M Small Systems, the Succession Signaling Server must be mounted in a rack.

The cards that can be used in each module are listed in this chapter.

NTAK11 Cabinet

System requirements—All Cabinet systems.

Purpose—Houses the NTDK20 Small System Controller card that handles call processing.

A maximum of five cabinets can be connected for additional capacity. In a multi-cabinet configuration, one cabinet acts as the main cabinet and the other cabinets act as expansion cabinets.

For IP connectivity, the following daughterboards are required:

- NTDK83 dual port 100BaseT

- NTTK02 dual port 100BaseF

- NTDK99 single port 100BaseT

- NTTK01 single port 100BaseT

For non-IP connectivity, the main cabinet must contain a Fiber Expansion Daughterboard, either the dual port NTDK84 or the single port NTDK22. Each expansion cabinet must contain the NTDK23 Fiber Receiver card. Fiber connectivity is only supported when the expansion cabinets are located within 10m (33 ft) of the main cabinet.

Quantity—A minimum of one cabinet per Small System, with a maximum of four optional expansion cabinets.

NTDK91 Chassis

System requirements—All Chassis systems.

Purpose—Houses the NTDK20 Small System Controller card to perform call processing.

The chassis has five slots. The NTK91 chassis supports the following:

- NTDK20 Small System Controller card - mandatory; in slot 0

- any IPE or CE cards – in slots 1, 2, and 3

- NTDK16 Digital Line Card - dedicated; in slot 4

The NTDK91 Chassis can be connected to the NTDK92 Chassis Expander to increase line capacity.

The NTDK91 Chassis can be installed in the following positions:

- on a wall

  — vertically – NTTK08AA Chassis Installation Kit

  — horizontally – NTTK11AA Chassis Installation Kit

- in a rack or equipment cabinet – NTTK09AA Chassis Installation Kit

Quantity—One cabinet per Small System.

NTDK92 Chassis Expander

System requirements—All Chassis systems.

Purpose—Connects to the NTDK91 Chassis to provide additional line capacity.

The NTK92 Chassis Expander supports the following:

- Meridian Mail - in slot 10 only

- any IPE card – in slots 7, 8, and 9

The NTDK91 Chassis can be installed in the following positions:

- on a wall

  — vertically – NTTK08AA Chassis Installation Kit

— horizontally – NTTK11AA Chassis Installation Kit

• in a rack or equipment cabinet – NTTK09AA Chassis Installation Kit

Quantity—Maximum of four per Small System.

NTDU27 Succession Signaling Server

System requirements—All Succession 1000M Small Systems.

Purpose—Provides signaling interfaces to the IP network using software components that run on a real-time operating system (vxWorks). It handles H.323 signaling and Internet Telephone signaling, and provides Gatekeeper software. A second NTDU27 can be installed in a Small System if a load-sharing redundant configuration is required.

The NTDU27 contains no user-serviceable parts, including the power supply. Rack-mounting hardware is included.

The NTDU27 measures approximately 4.3 cm high by 42.5 cm by 55.9 cm (1.70 in. by 16.75 in. by 22 in.). When fully configured, it weighs approximately 10.5 kg (23 lb).

Quantity—Minimum of one for each Succession 1000M Small System; two for each Small System if load-sharing redundancy is desired.

Power and cooling equipment

NTAK28 Junction Box

System requirements—All Cabinet systems.

Purpose—Connects customer-supplied battery backup units to an NTAK11 Cabinet using the NTAK0410 Carrier Remote DC Power Cable.

Quantity—One per NTAK11 Cabinet, or as desired for backup power.

NTAK75 Battery Box

System requirements—All Cabinet systems.

Purpose—Provides a minimum of two hours of reserve DC power for NTAK11 Cabinets.

Quantity—One per NTAK11 Cabinet, or as desired for backup power.

NTAK76 Battery Box

System requirements—All Cabinet systems.

Purpose—Provides a minimum of 15 minutes of reserve DC power for NTAK11 Cabinets.

Quantity—One per NTAK11 Cabinet, or as desired for backup power.

NTBK80 Grounding Block

System requirements—All Small Systems.

NTDK70 AC/DC Power Supply

System requirements—All Cabinet systems.

Purpose—Provides power for NTAK11 Cabinets.

Quantity—One per NTAK11 Cabinet.

NTDK72 DC Power Supply

System requirements—All Cabinet systems.

Purpose—Provides power for NTAK11 Cabinets when the cabinet is powered by a -52 V DC source.

Quantity—One per NTAK11 Cabinet.

NTDK78 AC/DC Power Supply

System requirements—All Cabinet systems.

Purpose—Provides power for NTAK11 Cabinets.

Quantity—One per NTAK11 Cabinet.

NTTK41AA EMC Grounding Clip

System requirements—All Cabinet systems.

Purpose—Main cabinets and classes connected with 100BaseT connectivity must reroute the cables through the EMC grounding clip. This ensures electrical contact between the ground rail and 100BaseT cable for EMC containment.

The NTDK41AA is used on the expansion NTAK11 Cabinet.

Quantity—One per expansion NTAK11 Cabinet.

NTTK43AA EMC Grounding Clip

System requirements—All Chassis systems.

Purpose—Main cabinets and chassis connected with 100BaseT connectivity must route the cables through the EMC grounding clip. This ensures electrical contact between the ground rail and 100BaseT cable for EMC containment.

The NTDK43AA is used on the NTDK91 Chassis and NTDK92 Chassis Expander.

Quantity—One per NTDK91 Chassis and NTDK92 Chassis Expander.

QUA6 Power Failure Transfer Unit (PFTU)

System requirements—All Small Systems.

Purpose—Transfers trunk lines during a power or system failure.

Common equipment cards

NTAK02 SDI/SDH Card

System requirements—All Cabinet systems.

Purpose—Provides four SDI ports for various applications over and above those provided on the NTDK20 SSC card.

Quantity—One per NTDK20 SSC card.

NTAK03 TDS/DTR Card

System requirements—All Small Systems.

Purpose—Provides additional tone receiver and transmission resources over and above those provided on the NTDK20 SSC card.

Quantity—One per NTDK20 SSC card.

NTAK09 1.5Mb DTI/PRI Card

System requirements—All Cabinet systems.

Purpose—Provides 1.5 Mb ISDN PRI and DTI capability.

It supports the following daughterboards:

- NTAK20 Clock Controller
- NTAK93 D-Channel Handler Interface
- NTBK51 Downloadable D-Channel Handler Card

NTAK10 2.0 Mb DTI Card

System requirements—All Cabinet systems.

Purpose—Provides an IPE-compatible 2.0 Mb DTI interface.

NTAK20 Clock Controller Daughterboard

System requirements—All Cabinet systems.

Purpose—Used to synchronize the network to an external source clock, and to generate and distribute clocking functionality to the Cabinet system.

It mounts directly on the following cards:

- NTAK09 1.5 Mb DTI/PRI card

- NTBK22 MISP card

- NTBK50 2.0 Mb PRI card

- NTRB21 DTI/PRI/DCH TMDI card

NTAK79 2.0 Mb PRI Card

System requirements—All Cabinet systems.

Purpose—Provides a 2.0 Mb PRI interface and an onboard C-channel handler (DCH). It also has on-board circuitry equivalent to the NTAK20 Clock Controller. It is mounted in the main and expansion NTAK11 Cabinets.

Quantity—One per NTAK11 Cabinet.

NTAK93 D-Channel Handler Interface (DCHI) Daughterboard

System requirements—All Cabinet systems

Purpose—Provides D-channel handler interfaces required by the ISDN PRI trunk. It performs D-channel layer 2 message processing and layer 3 preprocessing.

It mounts on the following cards:

- NTAK09 1.5 Mb DTI/PRI card

- NTBK50 2.0 Mb PRI card

NTBK22 MISP Card

System requirements—All Cabinet systems.

Purpose—The Multi-purpose ISDN Signaling Processor (MISP) performs Data Link (Layer 2) and Network (Layer 3) processing associated with ISDN BRI and the OSI protocol. It is mounted in the main NTAK11 Cabinet.

It supports the NTAK20 Clock Controller daughterboard.

Quantity—One per main NTAK11 Cabinet.

NTBK50 2.0 Mb PRI Card

System requirements—All Cabinet systems.

Purpose—Provides 2.0 Mb ISDN PRI and DTI capability. It is mounted in the main and expansion NTAK11 Cabinets.

It supports the following daughterboards:

- NTAK20 Clock Controller
- NTAK93 D-Channel Handler Interface
- NTBK51 Downloadable D-Channel Handler Card

Quantity—One per NTAK11 Cabinet.

NTBK51 Downloadable D-Channel Handler (DDCH) Card

System requirements—All Cabinet systems.

Purpose—Provides downloadable D-channel handler interfaces based on the Multipurpose Serial Data Link. The DDCH card provides a single purpose full-duplex serial port capable of downloading the D-channel application and base software into the card.

It mounts on the following cards:

- NTAK09 1.5 Mb DTI/PRI card

• NTBK50 2.0 Mb PRI card

NTDK20 Small System Controller (SSC) Card

System requirements—All Small Systems.

Purpose—Contains a Central Processor Unit (CPU) that handles call processing, an Ethernet controller, and system memory. It has a PC card interface for software upgrades or creating external backups.

The NTDK20 SSC is housed in main and expansion NTAK11 Cabinets, and in the NTDK91 Chassis.

The NTDK20 SSC card supports the following cards and devices:

• NTTK25 Software Daughterboard - mandatory

• NTTK13 Flash daughterboard

• for IP connectivity:

— NTDK83 dual port 100BaseT

— NTTK02 dual port 100BaseF

— NTDK99 single port 100BaseT

— NTTK01 single port 100BaseT

• for non-IP connectivity:

— in the main NTAK11 Cabinet or NTDK91 Chassis:

– NTDK84 Dual Port Fiber Expansion

– NTDK22 Single Port Fiber Expansion

— in each expansion NTAK11 Cabinet:

– NTDK23 Fiber Receiver

• NTAK02 SDI/DCH card

• NTAK03 TDS/DTR card

• NT5K20 and NT5K48 Tone Detector cards

• security devices:

— NTDK57AA (NT_STD on the dongle) in the main NTAK11 Cabinet

— NTDK57DA (NT_REM on the dongle) in each expansion NTAK11 Cabinet

Minimum vintages required:

• main NTAK11 Cabinet and NTDK91 Chassis – EA

• expansion NTAK11 Cabinets – CA

Quantity—One per NTAK11 Cabinet or NTDK91 Chassis.

NTDK97 Mini System Controller (MSC) Card

System requirements—Meridian 1 Option 11C Chassis.

Purpose—Controls call processing and stores system and customer data. It is housed in the NTDK91 Chassis, when one (only) NTDK92 Chassis Expander is connected to the Chassis.

It does not require a separate daughterboard. It does support the NTDK57AA/DA security devices.

Quantity—One per NTDK91 Chassis.

NTDU80CA Succession Signaling Server Memory Upgrade Kit

System requirements—All Succession 1000M Small Systems.

Purpose—Contains512MB DIMM boards with which to upgrade the memory on the Succession Signaling Server.

Quantity—One for each Succession Signaling Server.

NTRB21 1.5 Mb DTI/PRI/DCH TMDI Card

System requirements—All Cabinet systems.

Purpose—Required to implement PRI on Cabinet systems. It provides 1.5 Mbits Digital Trunk Interface or Primary Rate Interface functionality. It is mounted in the main and expansion NTAK11 Cabinets.

It replaces the NTAK09 1.5 Mb DTI/PRI Card.

It supports the NTAK20 Clock Controller daughterboard.

Quantity—One per NTAK11 Cabinet.

NTTK13 Flash Daughterboard

System requirements—Meridian 1 Small System.

Purpose—Performs the significant portion of system software storage and data processing. It is a 48 Mbytes daughterboard comprised of Flash ROM and Primary Flash drive.

Quantity—One per NTDK20 SSC.

NTTK25 Software Daughterboard

System requirements—All Small Systems.

Purpose—Required for NTDK20 to function. The NTTK25 provides 48 Mbytes of storage for system and customer data. It can be ordered preprogrammed with system software and customer data.

Quantity—One per NTDK20 SSC.

Peripheral equipment cards

NT1R20BA Off-premises Station (OPS) Analog Line Card

System requirements—All Cabinet systems.

Purpose—The Off-premises Station Analog Line card provides eight full-duplex interfaces used to connect off-premises terminals to the Cabinet

system. Each interface provides lightning protectors for external line connection to the station.

The NT1R20BA OPS Analog Line Card provides:

- line supervision

- hookflash

- battery reversal

NT5D14AA Line-side T1 Line Card

System requirements—All Cabinet systems with an IPE slot.

Purpose—Interfaces one T-1 line, carrying 24 channels to the Cabinet system. It emulates an analog line card to the Cabinet system. It occupies two card slots in the main or expansion NTAK11 Cabinets.

NT5K02 Flexible Analog Line Card

System requirements—All Cabinet systems with an IPE slot.

Purpose—Provides interface to up to 16 analog telephone sets (500/2500-type) equipped with either ground button recall switches, high-voltage Message Waiting lamps, or low-voltage Message Waiting LEDs. It performs several functions, some of which are:

- flexible transmission

- ground button operation

- low-voltage Message Waiting option

- card self-ID for auto-configuration

Applications:

- NT5K02AA — high-voltage Message Waiting, analog line card typically used in Australia

- NT5K02DA — ground button, low-voltage Message Waiting, analog line card typically used in France (see following description)

- NT5K02EA — ground button, low-voltage Message Waiting, analog line card typically used in Germany

- NT5K02FA — ground button, low-voltage Message Waiting, analog line card with 600¾ termination (A/D –4 dB, D/A –1 dB)

- NT5K02GA — same as NT5K02FA with a different loss plan (A/D –4 dB, D/A –3 dB)

- NT5K02HA — ground button, low-voltage Message Waiting, analog line card typically used in Belgium

- NT5K02JA — low-voltage Message Waiting, analog line card typically used in Denmark (see following description)

- NT5K02KA — ground button, low-voltage Message Waiting, analog line card typically used in Netherlands (see following description)

- NT5K02LA & NT5K02LB — analog line card typically used in New Zealand (see following description)

- NT5K02MA — ground button, low-voltage Message Waiting, analog line card typically used in Norway (see following description)

- NT5K02NA — ground button, low-voltage message Waiting, analog line card typically used in Sweden

- NT5K02PA — ground button, low-voltage Message Waiting, analog line card typically used in Switzerland

- NT5K02QA — ground button, low-voltage Message Waiting, analog line card typically used in United Kingdom

NT5K02AB Flexible Analog Line Card (Australia)

System requirements—All Cabinet systems with an IPE slot.

Purpose—The flexible analog line card with Message Waiting provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- direct reporting of digits dialed (500 sets) by collecting 10 and 20 pps dial pulses

- telephone on-hook and off-hook detection

- relay for connecting an AC ringer

- automatic disconnection when the telephone set goes off-hook

- flashing high-voltage 1 Hz Message Waiting signal

Application—The NT5K02AB is used in Australia. It can be installed in any PE slot that supports Intelligent peripheral equipment (IPE).

NT5K02DA Flexible Analog Line Card (France)

System requirements—All Cabinet systems with an IPE slot.

Purpose—The flexible analog line card provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- Message Waiting

- support of Digipulse or Digitone telephones

- telephone on-hook and off-hook detection based on loop current

- ground button detection

- relay for connecting an AC ringing signal

- collection of dial pulses (10 and 20 pps) from 500-type telephones

- analog to digital and digital to analog conversion for 16 analog telephone lines

- terminating impedance of French Complex Impedance

- software-selectable A-Law or μ-Law companding

- provision of limited line current to telephone sets on short loops and under fault conditions; otherwise, loop current varies to allow automatic gain compensation according to loop length

Application—The NT5K02DA is used in France. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

NT5K02JA Flexible Analog Line Card (Denmark)

System requirements—All Cabinet systems with an IPE slot.

Purpose—The flexible analog line card provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- hookswitch flash detection

- ground button detection

- variable loop current to allow automatic gain compensation according to loop length

- a flashing low-voltage 1 Hz Message Waiting signal

Application—The NT5K02JA is used in Denmark. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

NT5K02KA Flexible Analog Line Card (Holland)

System requirements—All Cabinet systems with an IPE slot.

Purpose—The flexible analog line card with Message Waiting provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- Message Waiting indicator flashing at a rate of 1 Hz at the telephone set

- support of Digipulse or Digitone telephones

- telephone on-hook and off-hook detection based on loop current

- ground button detection

- relay for connecting an AC ringing signal

- collection of dial pulses (10 and 20 pps) from 500-type telephones

- analog-to-digital and digital-to-analog conversion for 16 analog telephone lines

- terminating impedance of 600 ohms

- software-selectable A-Law or μ-Law companding

- provision of limited line current to telephone sets on short loops and under fault conditions; otherwise, loop current varies to allow automatic gain compensation according to loop length

Application—The NT5K02KA is used in Holland. It can be installed in any PE slot that supports Intelligent Peripheral Equipment (IPE).

NT5K02LB Flexible Analog Line Card (New Zealand)

System requirements—All Cabinet systems with an IPE slot.

Purpose—The NT5K02LB Flexible Analog Line Card with Message Waiting provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- telephone on-hook and off-hook detection

- ground button detection

- relay for connecting an AC ringer

- variable loop current to allow automatic gain compensation according to loop length

- flashing high-voltage 1 Hz Message Waiting signal

Application—The NT5K02LB is used in New Zealand. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

NT5K02MA Flexible Analog Line Card (Norway)

System requirements—All Cabinet systems with an IPE slot.

Purpose—The flexible analog line card provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following:

- hookswitch flash detection

- ground button detection

- variable loop current to allow automatic gain compensation according to loop length

- a flashing low-voltage 1 Hz Message Waiting signal

Application—The NT5K02MA is used in Norway. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

NT5K02NB Flexible Analog Line Card (Sweden)

System requirements—All Cabinet systems with an IPE slot.

Purpose—The Flexible Analog Line card provides an interface for up to 16 analog (500/2500-type) telephone lines.

There are two types of flexible analog line cards available for use in Sweden:

- the NT5K02NB line card with Message Waiting

- the NT5K96NB line card without Message Waiting

Both flexible analog line cards provide the following features:

- support of Digipulse or Digitone telephones

- telephone on-hook and off-hook detection based on loop current

- ground button detection

- relay for connecting an AC ringing signal

- collection of dial pulses (10 and 20 pps) from 500-type telephones

- analog-to-digital and digital-to-analog conversion for 16 analog telephone lines

- terminating impedance of 600 ohms

- software-selectable A-Law or µ-Law companding

- provision of limited line current to telephone sets on short loops and under fault conditions; otherwise, loop current varies to allow automatic gain compensation according to loop length

Application—The NT5K02NB is designed for use in Sweden. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

NT5K02SA Flexible Analog Line Card (Spain)

System requirements—All Cabinet systems with an IPE slot.

Purpose—The flexible analog line card provides an interface for up to 16 analog (500/2500-type) telephones lines. It provides the following features:

- analog-to-digital and digital-to-analog conversion for 16 analog telephone lines

- software-selectable A-Law or µ-Law companding

- card-identification for auto-configuration

- software-downloadable loss plan

- on-hook and off-hook detection

- connection for an AC ringing signal

- automatic disconnection when the telephone set goes off-hook

- ground button detection

- direct reporting of digits dialed (500 sets) by collecting dial pulses (10 and 20 pulses per second)

- provision of limited line current to telephone sets on short loops and under fault conditions; otherwise, loop current varies to allow automatic gain compensation according to loop length

- flashing low-voltage 1 Hz Message Waiting signal

Application—The NT5K02SA is designed for use in Spain. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

NT5K17 Direct Dial Inward (DDI) Trunk Card (UK)

System requirements—All Cabinet systems.

Purpose—Provides interface connecting the trunk facility to the NT8D37 IPE Module. It is equipped with an Intel 8052-type microprocessor that performs several functions, some of which are card identification, self-test, status reporting to the controller, and maintenance diagnostics.

The DDI provides eight analog trunks, each of which can be individually configured to operate as Direct Dial Inward units.

NT5K17BA Direct Dial Inward (DDI) Trunk Card (New Zealand)

System requirements—All Cabinet systems.

Purpose—The NT5K17BA Direct Dial Inward (DDI) Trunk Card provides the interface between the Cabinet system and up to eight analog DDI trunk lines. The NT5K17BA DDI card supports the following:

- pulse detection up to 22 pps
- dialing in the form of DTMF signaling or loop disconnect signaling
- New Zealand inverted dialing

Each NT5K17BA DDI Trunk Card:

- allows trunk signaling type to be configured on a per unit basis
- allows individual units or the entire board to be disabled by software
- provides indication of card status on the faceplate LED
- converts transmission signals from analog to digital and from digital to analog for up to eight audio paths
- supports the New Zealand loss plan
- provides termination impedance to match the New Zealand three-component complex network
- provides trans-hybrid balance matching against the New Zealand complex impedance
- provides analog-to-digital and digital- to-analog call path losses for DDI trunk units, values downloadable in the initial configuration stage

Application—The NT5K17BA is designed for use in New Zealand. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

NT5K18 Flexible Central Office Trunk Card (UK)

System requirements—All Cabinet systems.

Purpose—Provides interface connecting the trunk facility to the NT8D37 IPE Module. It is equipped with an Intel 8052-type microprocessor that performs several functions, some of which are:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The card interfaces eight central office trunks with the Cabinet system and can be configured in software for either A-Law or μ-Law operation. Each interface provides the appropriate complex impedance to the line in compliance with UK regulatory specifications.

Each of these ports can be individually configured to operate as follows:

- Ground Start CO trunk

- Loop Disconnect Clear

- Loop Guarded Release

Each of the above signaling schemes is designed in compliance with the relevant UK specifications.

NT5K18BA Central Office Trunk Card (New Zealand)

System requirements—All Cabinet systems.

Purpose—The NT5K18BA Central Office Trunk Card has eight identical units that provide the interface between the Cabinet system and up to eight analog Central Office (CO) trunks. The trunk type of each unit is configured independently in the trunk data block (LD 14) as one of the following:

- central office, ground start

- central office, loop start

The NT5K18BA Central Office Trunk card supports Direct Inward System Access (DISA), battery supervision, and inverted dialing.

The NT5K18BA Central Office Trunk card:

- allows the trunk type to be configured on a per unit basis

- provides disabling of individual units or the entire card through software

- indicates self-test status during an automatic or manual self-test

- converts transmission signals from analog to digital and from digital to analog

- provides complex terminating impedance in compliance with regulatory New Zealand standards

- provides complex balance impedance in compliance with regulatory New Zealand standards

Application—The NT5K18BA is used in New Zealand. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

NT5K19 Flexible E&M Trunk Card (UK)

System requirements—All Cabinet systems.

Purpose—Provides interface connecting the trunk facility to the NT8D37 IPE Module. It is equipped with an Intel 8052-type microprocessor that performs several functions, some of which are:

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The NT5K19 provides four analog trunks, each of which can be individually configured to operate as follows:

- 4-wire E&M Type 1 tie trunk (DC5)

- 2-wire E&M TYPE 1 tie trunk (DC5)

- 2280 Hz tie trunk (AC15)

- Music trunk

- Paging trunk

- Emergency Recorder trunk

NT5K19BA E&M Tie Trunk Card (New Zealand)

System requirements—All Cabinet systems.

Purpose—The NT5K19BA E&M Tie Trunk card provides the interface between the Cabinet system and up to four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Type 1 tie trunk (DC5)

- Recorded Announcement trunk (RAN)

- Music trunk (MUS)

- Paging trunk (PAG)

The NT5K19BA E&M Tie Trunk card supports New Zealand inverted dialing.

The NT5K19BA E&M Tie Trunk card supports the following types of announcement machines:

- start mode announcement machines

- continuous mode announcement machines

Recorded announcers supported include the Cook Digital 4-channel announcer and the Audichron HQI-112.

The NT5K19BA E&M Tie Trunk Card:

- converts transmission signals from analog to digital and from digital to analog

- provides software-selectable A-Law or μ-Law operation

- enables and disables individual units or the entire card under software control

- provides outpulsing on the card; make-break ratios are defined in software and downloaded during power-up and by software commands

- provides indication of card status on the faceplate LED

- allows the trunk type to be configured on a per unit basis in software

- provides termination against 600 ohms for 4-wire E&M DC5 trunk circuits

- provides flexible transmission for various loss plans

- provides Paging (PAG), Recorded Announcement (RAN), and Music (MUS) interfaces

Application—The NT5K19BA is used in New Zealand. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

NT5K20 Extended Tone Detector (UK)

System requirements—All Cabinet systems with an IPE slot.

Purpose—Provides eight channels of dual tone multifrequency (DTMF) and dial tone detection configurable on a per call basis. In addition, the type of dial tone to be detected is downloaded to the card upon initialization. Dial tone is either 330 Hz plus 440 Hz or 50 Hz. The channels are assigned on the DS30X loop. There is one 8 Kbps signaling channel provided for maintenance messaging and tone reporting.

Application—This tone detector has been replaced by the NT5K48 tone detector.

NT5K21AA Extended Multifrequency Compelled Sender/Receiver

System requirements—All Cabinet systems with an IPE slot.

Purpose—Provides signaling across a trunk interface according to CCITT R2 signaling standard (XMFC). This card also provides signaling across a trunk interface according to French Socotel standards (XMFE), and operates in either A-Law or μ-Law companding.

Application—The NT5K21AA has four units, each capable of handling one call.

Quantity—See *Small System: Planning and Engineering* (553-3011-120) for engineering details

NT5K36AA DID/DOD Trunk Card (Germany)

System requirements—All Cabinet systems.

Purpose—The NT5K36AA Direct Inward Dial/Direct Outward Dial Trunk card provides the interface between the Cabinet system and up to four analog trunks.

The NT5K36AA DID/DOD card supports three central office types: IKZ1, IKZ2, and IKZ3.

Each unit on the NT5K36AA DID/DOD card operates as a DID/DOD trunk and supports 16 kHz pulse detection. There are three modes of operation for the NT5K36AA circuit card:

• outgoing calls

• short distance incoming calls from the central office

• long distance incoming calls from the central office

Application—The NT5K36AA is used in Germany. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

NT5K36AB DID/DOD Trunk Card (Austria/Germany)

System requirements—All Cabinet systems.

Purpose—The NT5K36AB Direct Inward Dial/Direct Outward Dial Trunk Card provides the interface between the Cabinet system and up to four analog trunks.

Each NT5K36AB DID/DOD Trunk Card:

- indicates self-test status during an automatic or manual self-test (self-test pass is indicated on the faceplate LED)

- converts transmission signals from analog to digital and from digital to analog for up to four audio paths

- disables individual circuits or the entire board under software control

- provides internal 16 kHz pulse detection

- provides transmission performance according to German specifications

- provides the correct signaling impedances and voltages to operate with the German central office

Application—The NT5K36AB is used in Austria/Germany. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

NT5K48 Tone Detector Card (Global)

System requirements—All Cabinet systems.

Purpose—The NT5K48 Global Tone Detector circuit card provides tone detection for dual tone multifrequency (DTMF) or dial tone detection (DTD).

The NT5K48 Global Tone Detector circuit card:

- provides eight channels of DTMF or dial tone detection

- provides both first stage dial tone detection and second stage DTD on a call-by-call basis

   Note: The NT5K48 Tone Detector remains dedicated to the call while the connecting process is progressing. Once the call is connected, the tone detector is released. It does not detect dial tone after the call is established.

- supports both A-Law and µ-Law companding

- provides card-identification for auto-configuration and for determining the serial number and firmware level of the card

- provides for hardware self-test

- allows country-specific DTMF and dial tone characteristics to be downloaded from software

Application—The Global Tone Detector circuit card replaces the NT5K20 tone detector and operates in the following countries:

- Australia

- Denmark

- France

- Germany

- Holland

- Italy

- New Zealand

- Norway

- Spain

- Sweden

- Switzerland

- United Kingdom

   Note: The NT5K48 is configured in software. There are no switch settings on the card.

NT5K48BA Tone Detector Card (Denmark)

System requirements—All Cabinet systems.

Purpose—The NT5K48BA Tone Detector circuit card provides tone detection for either dual tone multifrequency (DTMF) or dial tone detection (DTD). It does the following:

- provides eight channels of tone detection configurable on a call connection basis

- DTD configurable on a call connection basis

Note: The NT5K48 Tone Detector operates during call setup only. When a connection is established, it drops out of the call.

• allows country-specific DTMF and dial tone characteristics to be downloaded from software (using overlay 97)

Application—The NT5K48BA tone detector is designed for use in Denmark.

NT5K48DA Tone Detector Card (Norway)

System requirements—All Cabinet systems.

Purpose—The NT5K48 Tone Detector circuit card provides tone detection for either dual tone multifrequency (DTMF) or dial tone detection (DTD). It does the following:

• provides eight channels of tone detection configurable on a call connection basis

• provides both first stage dial tone detection and second stage DTD configurable on a call connection basis

Note: The NT5K48 Tone Detector operates during call setup only. When a connection is established, it drops out of the call.

• allows country-specific DTMF and dial tone characteristics to be downloaded from software (using LD 97)

Application—The NT5K48DA is designed for use in Norway.

NT6D70 S/T Interface Line Card (SILC)

System requirements—All Cabinet systems.

Purpose—Provides eight S/T four-wire full duplex interfaces that are used to connect ISDN BRI compatible terminals over Digital Subscriber Lines (DSL) to the Cabinet system. Each S/T interface provides two B-channels and one D-channel and supports a maximum of eight physical connections that can link up to 20 logical terminals on one DSL. The length of the DSL should not exceed 1 km (3,280 ft.).

The main functions are to:

- provide eight ISDN S/T interfaces conforming to ANSI, ETSI, INS-NET, and ITU standards

- support point-to-point and multipoint DSL terminal connections

- execute instructions received from the CPU to configure and control the S/T interfaces

- provide channel mapping between ISDN BRI format 2B+D and IPE bus format

- multiplex four D-channels onto one timeslot

- perform activation and deactivation of DSLs

- provide loopback control of DSLs

- provide a reference clock to the clock controller

The SILC is housed in the IPE slot.

The SILC is available in two versions:

- North America   -48V   NT6D70AA

- International   -40V   NT6D70BA

NT6D71 U Interface Line Card (UILC)

System requirements—All Cabinet systems.

Purpose—Provides eight two-wire full-duplex U interfaces that are used to connect ISDN BRI-compatible terminals over DSLs to the Cabinet system. Each U interface provides two B-channels and one D-channel and supports one physical termination. The length of a DSL should not exceed 5.5 km (3.3 mi.).

The main functions are to:

- provide eight ISDN U interfaces conforming to ANSI standards

- support point-to-point DSL terminal connections

- provide channel mapping between ISDN BRI and IPE bus formats

- multiplex four D-channels onto one 64 kbps timeslot

- perform activation and deactivation of DSLs

- provide loopback control of DSLs

The UILC is housed in the IPE slot.

NT7D16 Data Access Card

System requirements—All Cabinet systems.

Purpose—Provides interface to up to six data units, or ports, with each port operating in either RS-232-C or RS-422 mode. Used in the Cabinet system to provide connections for data terminal equipment (DTE) or data communications equipment (DCE) such as terminals, personal computers, modems, and mainframe host computers.

NT8D02 Digital Line Card

System requirements—All Cabinet systems.

Purpose—Provides interface to up to 16 digital integrated voice and data sets for a total of 32 ports. It is equipped with an 8051-family microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

NT8D03 Analog Line Card

System requirements—All Cabinet systems.

Purpose—Replaced by NT8D03 Analog Message Waiting Line Card as of January 1992.

Provides interface to up to 16 analog telephones (500/2500). It is equipped with an 8051-family microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

NT8D09 Analog Message Waiting Line Card

System requirements—All Cabinet systems.

Purpose—Provides interface to up to 16 analog telephones (500/2500) with Message Waiting lamp feature. It is equipped with an 8051-family microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The NT8D09 replaced the by NT8D03 Analog Line Card as of January 1992.

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

NT8D14 Universal Trunk Card

System requirements—All Cabinet systems.

Purpose—Provides interface to up to eight trunk facilities in A-Law or μ-Law applications. Each trunk unit is independently configured to operate as a:

- Central Office (CO), Foreign Exchange (FX), or Wide Area Telephone Service (WATS) trunk

- direct inward dialing (DID) trunk

- two-way tie trunk

- Recorded Announcement (RAN) trunk

- Paging trunk

Each unit also provides the following signaling operation:

- ground start (CO/FX/WATS trunks)

- loop start (CO/FX/WATS trunks) (minimum vintage BA)

- loop dial repeating (DR) (DID and two-way tie trunks)

- loop outgoing automatic, incoming dial (OAID) (two-way tie trunks)

- continuous operation, pulse start, or level start (RAN trunks)

Trunk unit termination and balance impedance is selectable to 600 or 900 ohms, and balance or complex: 3COM1 or 3COM2 (minimum vintage BA for 3COM2).

The universal trunk card also supports Music, Automatic Wake Up, and Direct Inward System Access (DISA) features.

The card is equipped with a microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The card complies with CSA Standard C82.2 No. 0.7-M1985 and EIA Standard 464A.

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

NT8D15 E&M Trunk Card

System requirements—All Cabinet systems.

Purpose—Provides interface to up to four analog trunk facilities in A-Law and μ-Law applications. Provides interface connecting the trunk facility to the NT8D37 IPE Module. Each trunk unit is individually configured to operate as:

- two-wire E&M Type I signaling trunk

- four-wire E&M trunk

   — Type I or Type II signaling

   — Duplex (DX) signaling

- paging trunk

The card is equipped with a microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The card complies with CSA Standard C82.2 No. 0.7-M1985 and EIA Standard 464A.

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Application:

- NT8D15AA μ-Law only

- NT8D15AF μ-Law/A-Law software-selectable

NT8D16 Digitone Receiver Card

System requirements—All Cabinet systems.

Purpose—Provides eight channels of dual tone multifrequency (DTMF) detection. These channels are assigned on the DS30X loop. There is one 8 Kbps signaling channel provided for maintenance messaging and tone reporting.

The NT8D16 Digitone Receiver Card allows access to the filters for parameter alterations to service different environments (for example, international applications).

Quantity—See *Small System: Planning and Engineering* (553-3011-120)

NTAG26 Enhanced Multifrequency Receiver

System requirements—All Cabinet systems.

Purpose—The NTAG26 Enhanced Multifrequency Receiver (XMFR) receives MF digit information from the Central Office. This MF feature allows the Cabinet system to receive 911 and feature group D applications. The XMFR has four ports, and operates only in Cabinet systems using *u*-low compounding.

NTAG36 Meridian Integrated RAN (MIRAN)

System requirements—All Cabinet systems with an IPE shelf.

Purpose—The MIRAN card provides up to eight internal, one-to-one ports and two external, multi-cross-connect ports to support Recorded Announcement (RAN) and Music On Hold (MOH) applications. Each multi-cross-connect port can connect to a maximum of 16 external Enhanced Universal Trunk (EXUT)/XFEM ports to provide the same announcement on

a number of channels. For Small Systems with the RAN Broadcast feature, each of the internal ports with built-in trunk emulation can support up to 30 callers hearing the same RAN message.

The MIRAN card emulates the NT8D14 Enhanced Universal Trunk (EXUT) circuit card (NT8D14BA vintage or greater). The MIRAN emulates any DS-30X signaling protocol, including TCM signaling, to be compatible with existing and future terminals and consoles. In addition, MIRAN provides access to any one of the 32 voice channels on a DS-30X loop for both voice and data applications.

The original MIRAN card (NTAG36AA), upgraded to MIRAN Release 2.0 software, provides the following RAN/Music functionality:

- easily expandable, industry-standard architecture (small, medium, and large configuration controlled by keycode)

- simplicity of the basic system (no external devices or cables required)

- a set of both standard and proprietary interfaces

- embedded real-time operating system

- support for CE-MUX and Card-LAN interfaces

- up to eight channels of RAN or Music directly

- up to 40 channels of RAN or Music using the two cross-connect ports connected to external EXUT or XFEM ports

- 366-day calendar allowing the assigning of different messages to a particular channel based on the time of day, day of the week, and day of the year

- password-protected RAN recording and channel assignment from any DTMF telephone using a simple voice menu interface

- passwords for individual channels

- professional recordings of RAN and MOH that are supplied on PCMCIA Flash cards and can be instantly installed

- swapping of recordings between "in-service" and "in-reserve" using any telephone set

- full flexibility in length of recordings up to storage limits

- a minimum of eight minutes of recording capacity on the base card

- additional recording capacity available through PCMCIA ATA Flash cards

- two external analog inputs to allow access to and uploading of additional recordings

- message backup and restore capability

- an emergency signal using software to replace existing message(s)

- six minutes of pre-recorded copyright free music for turn key MOH

The new MIRAN card (NTAG36AB) contains an Ethernet port and provides the following *additional* functionality:

- embedded web server for point-and-click access to MIRAN features and multiple MIRAN cards

- FTP download of voice and music.WAV files

- automatic time and date synchronization with the Cabinet system

- access to on-line Nortel Networks technical publications

For more information on the NTAG36 Meridian 1 Integrated RAN card, see *Meridian Integrated RAN: Description, Installation, and Operation* (553-3001-360) for more details.

NTDK16 48-port Digital Line Card

System requirements—All Chassis systems.

Purpose—Provides an interface to a maximum of 48 digital integrated voice and 48 data ports. It is functionally equivalent to three NT8D02 Digital Line Cards.

Quantity—One per NTDK91 chassis.

NTDK22 Single-port Fiber Expansion Daughterboard

System requirements—All Small Systems.

Purpose—Provides non-IP connectivity between main and expansion NTAK11 Cabinets, or between the NTDK91 Chassis and NTDK92 Chassis Expanders. The NTDK22 mounts on the NTDK20 SSC in the main NTAK11 Cabinet or NTDK91 Chassis.

The NTDK22 is used in the main NTAK11 Cabinet or NTDK91 chassis with a corresponding NTDK23 Fiber Receiver Card in each expansion NTAK11 Cabinet or NTDK92 Chassis Expander.

Quantity—One per main NTAK11 Cabinet or NTDK91 Chassis.

NTDK23 Fiber Receiver Card

System requirements—All Small Systems.

Purpose—Provides non-IP connectivity between main and expansion NTAK11 Cabinets, or between the NTDK91 Chassis and NTDK92 Chassis Expanders. The NTDK23 mounts in the expansion NTAK11 Cabinet or NTDK92 Chassis Expander.

The NTDK23 must be used in the expansion NTAK11 Cabinet or NTDK92 Chassis Expander with a corresponding Fiber Expansion Daughterboard (NTDK22 or NTDK84) in the main cabinet or chassis.

Quantity—One per expansion NTAK11 Cabinet or NTDK92 Chassis Expander.

NTDK24 Expansion Daughterboard

System requirements—All Cabinet systems.

Purpose—Allows the connection of main NTAK11 Cabinets to expansion NTAK11 Cabinets. The NTDK24 is used when the expansion cabinet is within 10m (33 ft) of the main cabinet. It connects with A0618443 plastic fiber-optic cables.

The NTDK24 mounts on the NTDK20 SSC in the expansion NTAK11 Cabinet.

Quantity—One per expansion NTAK11 Cabinet.

NTDK25 Fiber Receiver Card

System requirements—All Small Systems.

Purpose—Provides fiber connectivity between main and expansion NTAK11 Cabinets, or between the NTDK91 Chassis and NTDK92 Chassis Expanders. The NTDK23 mounts in the expansion NTAK11 cabinet or NTDK92 Chassis Expander.

The NTDK25 is used when the expansion NTAK11 Cabinet or NTDK92 Chassis Expander is between 10 m (33 ft.) and 3 km (1.8 mi.) of the main NTAK11 Cabinet or NTDK91 Chassis. It connects to one glass multi-mode fiber-optic cable.

Quantity—One per expansion NTAK11 Cabinet or NTDK92 Chassis Expander.

NTDK79 Expansion Daughterboard

System requirements—All Cabinet systems.

Purpose—Same features as the NTDK24 except that it connects to Single Mode glass fiber-optic cable.

The NTDK85 mounts on the NTDK20 SSC in the expansion NTAK11 Cabinet.

Quantity—One per expansion NTAK11 Cabinet.

NTDK80 Fiber Receiver Card

System requirements—All Small Systems.

Purpose—Same as the NTDK25 Fiber Receiver Card, except that it is used for connections over 3 km (1.8 mi.), and it connects to Single Mode fiber-optic cable.

Quantity—One per expansion NTAK11 Cabinet or NTDK92 Chassis Expander.

NTDK83 Dual-port 100BaseT IP Daughterboard

System requirements—All Small Systems.

Purpose—Provides IP connectivity. It is mounted on the NTDK20 SSC in each NTAK11 Cabinet or NTDK91 Chassis.

Quantity—One per NTDK20 SSC card.

NTDK84 Dual-port Fiber Expansion Daughterboard

System requirements—All Small Systems.

Purpose—Provides non-IP connectivity between main and expansion NTAK11 Cabinets, or between NTDK91 Chassis and NTDK92 Chassis Expanders. The NTDK84 mounts on the NTDK20 SSC in the main NTAK11 Cabinet or NTDK91 Chassis.

The NTDK84 must be used in the main cabinet or NTDK91 chassis with a corresponding NTDK23 Fiber Receiver Card in each expansion NTAK11 Cabinet or NTDK92 Chassis Expander.

Quantity—One per main NTAK11 Cabinet or NTDK91 Chassis.

NTDK85 Expansion Daughterboard

System requirements—All Cabinet systems.

Purpose—Same features as the NTDK24 except that it can interface with two expansion cabinets.

The NTDK85 mounts on the NTDK20 SSC in the expansion NTAK11 Cabinet.

Quantity—One per expansion NTAK11 Cabinet.

NTDK99 Single-port 100BaseT IP Daughterboard

System requirements—All Small Systems.

Purpose—Provides IP connectivity. It is mounted on the NTDK20 SSC in each NTAK11 Cabinet or NTDK91 Chassis.

Quantity—One per NTDK20 SSC card.

NTTK01 Single-port 100BaseF Daughterboard

System requirements—All Cabinet systems

Purpose—Provides IP connectivity; mounts on the NTDK20 SSC.

Quantity—One per NTAK11 Cabinet.

NTTK02 Dual-port 100BaseT Daughterboard

System requirements—All Cabinet systems.

Purpose—Provides IP connectivity; mounts on the NTDK20 SSC.

Quantity—One per NTAK11 Cabinet.

Cables

Intramodule and Intermodule Cables

There are two types of cables available for a Small System:

- Intramodule cables connect circuit cards within a module, or they connect to the I/O panels at the rear of the module. Intramodule cables are not shielded. Bail locks or screws are generally used on the connectors to prevent accidental removal.

- Intermodule cables are routed between modules. These cables are used primarily for interconnecting the following subsystems:

  — CPU to CPU

  — CPU to network

  — network to network

  — network to peripheral equipment

A0317094 AC Power Cord

Purpose—Connects NTAK11 Cabinet to a commercial 110 V AC power source.

Length— 3 m (9 ft. 10 in.)

A0346816 ST Fiber Coupler

Purpose—Allows two A0817052 100BaseF MT-RJ to ST Cables to connect to one another in a point-to-point configuration.

A037683 Ferrite Filter

Purpose—Connects SDI ports to equipment such as administration/ maintenance terminals (TTYs) and modems.

A0378652 F-F DCE to DTE Convertor Cable

Purpose—Connects SDI ports to equipment such as administration/ maintenance terminals (TTYs) and modems.

A0379411 AC Power Cord (International)

Purpose—Connects NTDK91 Chassis and NTDK92 Chassis Expander to a commercial 220 V AC power source.

Length— 2492 mm (8 ft.)

A0379412 AC Power Cord (North America)

Purpose—Connects NTDK91 Chassis and NTDK92 Chassis Expander to a commercial 220 V AC power source.

Length— 3 m (9 ft. 10in.)

A0381016 F-M DCE to DTE Convertor Cable

Purpose—Connects SDI ports to equipment such as TTYs and modems.

A0381306 AC Power Cord (UK/Ireland)

Purpose—Connects NTDK91 Chassis and NTDK92 Chassis Expander to a commercial 220 V AC power source.

Length— 2438 mm (8 ft.)

A0381307 AC Power Cord (Europe)

Purpose—Connects NTDK91 Chassis and NTDK92 Chassis Expander to a commercial 220 V AC power source.

Length— 2438 mm (8 ft.)

A0386022 AC Power Cord (Denmark)

Purpose—Connects NTDK91 Chassis and NTDK92 Chassis Expander to a commercial 220 V AC power source.

Length— 2438 mm (8 ft.)

A0386023 AC Power Cord (Australia/New Zealand)

Purpose—Connects NTDK91 Chassis and NTDK92 Chassis Expander to a commercial 220 V AC power source.

Length— 2438 mm (8 ft.)

A0386024 AC Power Cord (Switzerland)

Purpose—Connects NTDK91 Chassis and NTDK92 Chassis Expander to a commercial 220 V AC power source.

Length— 2492 mm (8 ft. 2 in.)

A0391685 AC Power Cord

Purpose—Connects NTAK11 Cabinet to a commercial 220 V AC power source.

Length— 3 m (9 ft. 10 in.)

A0512637 AC Power Cord (North America)

Purpose—Connects NTDK91 Chassis and NTDK92 Chassis Expander to a commercial 110 V AC power source.

Length— 3099 mm (10 ft. 2 in.)

A0601396 F-M DCE to DTE Convertor Cable

Purpose—Connects SDI ports to equipment such as TTYs and modems.

A0601397 F-F DCE to DTE Convertor Cable

Purpose—Connects SDI ports to equipment such as TTYs and modems.

A0618443 Fiber-optic Plastic Cable

Purpose—Connects main and expansion NTAK11 Cabinets, when the expansion NTAK11 Cabinet is within 10 m (33 ft.) of the main NTAK11 Cabinet.

A0632902 Fiber-optic (Multi-mode) Cable

Purpose—Used with the NTDK22 Single-port Fiber Expansion Daughterboard and the NTDK84 Dual-port Fiber Expansion Daughterboard.

A0817052 MT-RJ to ST Cable

Purpose—Connects the main and expansion NTAK11 Cabinets using 100BaseF IP daughterboards.

Length—5 m (16 ft. 6 in.)

A0817055 MT-RJ to MT-RJ Cable

Purpose—Connects the main and expansion NTAK11 Cabinets using 100BaseF IP daughterboards.

Length—10 m (33 ft.)

NE-A25B 25-pair Cable

Purpose—Connects PE cards to the cross-connect terminal.

NT8D7205 DTI/PRI Carrier Cable

Purpose— DTI/PRI carrier cable.

NTAK0420 Power Cable

Purpose—Connects an NTAK11 Cabinet to a reserve battery power supply, or to a DC power source with an NTAK28 Junction Box.

NTAK10 2.0 Mbit DTI Cable

Purpose—Carries Tx and Rx pairs to a standard 5-pin connector. Not supported under EMC specification VL43.140P.

NTAK19EC Cable

Purpose—A two-port SDI cable used with the NTAK03 circuit card.

NTAK19FA/FB Cable

Purpose—A four-port SDI cable used with the NTAK02 circuit card.

NTAK50 2.0Mbit PRI Cable

Purpose—Carries Tx and Rx pairs to a standard 5-pin connector. Not supported under EMC specification VL43.140P.

NTAK79 2.0Mbit PRI Cable

Purpose—Carries Tx and Rx pairs to a standard 5-pin connector. Not supported under EMC specification VL43.140P.

NTAK1104 AUX Cable

Purpose— Connects a PFTU to an NTAK11 Cabinet, NTDK91 Chassis, or NTDK92 Chassis Expander.

NTAK1108 9-25 pin RS-232 Convertor Cable

Purpose— Connects SDI ports and terminals.

NTAK1118 9-25 pin RS2.32 Convertor Cable

Purpose— Connects SDI ports and terminals.

NTBK04CA 1.5 Mbit DTI/PRI Carrier Cable

Purpose—Connects the NTAK09 1.5 Mbit DTI/PRI card to the Channel Server Unit (CSU). The NTBK04 carries Tx and Rx pairs to a standard 5-pin connector.

Length—6.1 m (20 ft.)

NTBK05AA 2.0 Mbit DTI/PRI Carrier Cable

Purpose—Carries Tx and Rx pairs to a standard 120-Ohm D-connector.

NTBK05CA Twisted Pair Cable

Purpose—Carries Tx and Rx pairs to a standard 5-pin connector. Not supported under EMC specification VL43.140P.

NTBK05DA 2.0 Mbit DTI/PRI Carrier Cable

Purpose—Carries Tx and Rx pairs to a standard 120-Ohm D-connector. Not supported under EMC specification VL43.140P.

NTBK48 3-port SDI Cable

Purpose—Used to connect equipment such as TTYs and modems to Chassis and Cabinet systems.

NTBK95 CE-MUX/DS-30X Bus Cable

Purpose—Used to connect the NTDK91 Chassis to the NTDK92 Chassis Expander. Two cables are required for each connection.

Length—610 mm (2ft.)

NTDK27 Ethernet Adapter Kit

Purpose—Provides a 15-pin AUI Ethernet interface.

NTDK89 Chassis Expander Cable Kit

Purpose—Used to connect NTDK91 Chassis and NTDK92 Chassis Expander.

NTDK8305 Cable

Purpose—Provides 100BaseT connection between the main and IP expansion NTAK11 Cabinets in a point-to-point or LAN configuration.

NTTK34AA UTP Cat-5 RJ45 Cross-over Cable

Purpose—Provides 100BaseT connection between the main and expansion NTAK11 Cabinets in a point-to-point configuration.

Length—2 m

Miscellaneous equipment

A0601397 Nullmodem

System requirements—All Small Systems.

Purpose—Compact DB-25F/DB-25F nullmodem adapter.

A0873105 Anti-static Wrist Strap

System requirements—All Small Systems.

Purpose—Used when handling equipment to safely discharge static electricity.

NTAK92 Off-premises Protection Module

System requirements—All Small Systems.

Purpose—Connects up to four off-premises analog telephones.

NTDK57 Security Device

System requirements—All Small Systems.

Purpose—Required for system security on all NTDK20 SSCs.

Two versions of the NTDK57 are required:

- NTDK57AA (NT_STD on the dongle) is used on the SSC in the main NTAK11 Cabinet or NTDK91 Chassis

- NTDK57DA (NT_REM on the dongle) is used on the SSC in expansion NTAK11 Cabinets

Quantity—One on each NTDK20 SSC card.

NTM403BA IP Line 3.1 CompactFlash

System requirements—All Succession 1000M Small Systems.

Purpose—Carries the IP Line 3.1 application required for NTVQ01BA Succession Media Card. It is packaged with the NTVQ01BA, and must be installed on the SMC before the SMC is installed on a Small System.

Quantity—One per Succession Media Card.

Large System equipment

Contents

This section contains information on the following topics:

Introduction

This chapter identifies the equipment supported for use in a Large System, as defined in "Conventions" on page 11.

For information on station equipment, refer to:

- *802.11 Wireless IP Gateway* (553-3001-366)

- *Telephones and Consoles: Description* (553-3001-367)

- *Internet Terminals: Description* (553-3001-368)

- *DECT: Description, Planning, Installation, and Operation* (553-3001-370)

System modules – Universal Equipment Modules (UEM)

A Universal Equipment Module (UEM) is a self-contained unit that, when equipped, houses a card cage and backplane, power and ground cabling, power units, input/output (I/O) panels, circuit cards, and cables. When the card cage is installed, the function of the UEM is established (for example, it becomes a CPU/Network Module) and the module is no longer "universal."

Without covers, each module is approximately 81.3 cm wide by 52.1 cm deep by 43.2 cm high (32 in. by 20.5 in. by 17 in.). With the front and rear covers in place, the UEM is 55.9 cm (22 in.) deep. A module weighs approximately 21.8 kg (48 lb) before circuit cards are installed.

The cards that can be used in each module are listed in this document. For specific card slot assignments, see *Circuit Card: Description and Installation* (553-3001-211) for listings by card or *Large System: Planning and Engineering* (553-3021-120) for listings by module.

NT4N41 cPCI® Core/Network Module

System requirements—All Large Systems.

Purpose—Houses an NT4N41AA card cage that contains both the main processor cards in a Core shelf, and the first Network group in a Network shelf. The Call Processor Pentium II® (CP PII) Core/Net card cage contains two distinct backplanes:

- The **Core** side of the CP PII card cage uses a cPCI backplane. This backplane is a high speed industry standard that allows expansion and replacement with "off the shelf" components.

- The **Network** side of the CP PII Core/Net card cage is a standard backplane.

The common equipment cards are listed below.

Power requirements:

- ac systems: NT5D21AA Module; NT8D29 CE Power Supply

- dc systems: NT5D21AC Module; NT6D41 CE Power Supply

The Core shelf contains a 3-Port Extender (3PE) Termination Panel on the back of each CP PII Core/Net card cage that provides connections for the cPCI Core to Network Interface (cCNI) to 3PE cables. The shelf also contains 17 card slots that support:

- cPCI Multi-Media Disk Unit (MMDU)

- Call Processor Pentium II (CP PII)

- System Utility (Sys Util)

- cPCI Core to Network Interface (cCNI)

The first Network group contains 12 card slots that support:

- 3-Port Extender (3PE) card

- Fiber Junctor Interface (FIJI) card (Meridian 1 Option 81C CP PII, and Succession 1000M Multi Group only)

- Conference/TDS card

- D-Channel Interface (DCHI) card

- Multipurpose ISDN Signaling Processor (MISP) card

- Multipurpose Serial Data Link (MSDL) card

- Peripheral Signaling card

- Network and/or Superloop Network card

- Primary Rate Interface (PRI) and/or Digital Trunk Interface (DTI) card

Quantity—One for each Succession 1000M Half Group or Meridian 1 Option 51C system; two for each other Large System

NT5D21 Core/Network Module

System requirements—

- Succession 1000M Half Group

- Succession 1000M Single Group

- Meridian 1 Option 51

- Meridian 1 Option 61

Purpose—Houses common control and network cards, the disk drive unit, and the other common equipment cards listed below.

Power requirements:

- ac systems: NT5D21AA Module; NT8D29 CE Power Supply
- dc systems: NT5D21AC Module; NT6D41 CE Power Supply

This module contains 18 card slots that support:

- 3-Port Extender (3PE) card
- Call Processor (CP) card
- Hybrid Bus Terminators
- Input/Output Disk Unit with CD-ROM (IODU/C)
- Core to Network Interface 3 card (CNI-3)
- Conference/TDS card
- D-Channel Interface (DCHI) card
- Multipurpose ISDN Signaling Processor (MISP) card
- Multipurpose Serial Data Link (MSDL) card
- Peripheral Signaling card
- Network and/or Superloop Network card
- Primary Rate Interface (PRI) and/or Digital Trunk Interface (DTI) card

    Note: Hybrid Bus Terminators are installed between slots 0 and 1, slots 1 and 2, and slots 11 and 12.

Quantity—

- Two for each Succession 1000M Half Group or Meridian 1 Option 51C system.
- One for each Succession 1000M Single Group or Meridian 1 Option 61C system.

NT8D35 Network Module

System requirements—All Large Systems.

Purpose—Houses network cards in Succession 1000M Option 81C, Succession 1000M Multi Group, Meridian 1 Option 81C, or Meridian 1 Option 81C CP PII system. Can also be used as a PRI and/or DTI expansion module with all Large System options.

Power requirements:

- ac systems: NT8D35AA or NT8D35BA Module; NT8D29 CE Power Supply

- dc systems: NT8D35DC or NT8D35EA Module; NT6D41 CE Power Supply

This module contains 15 card slots that support:

- 3-Port Extender (3PE) card

- Conference/TDS card

- Fiber Network Interface (FIJI) (Succession 1000M Option 81C, Succession 1000M Multi Group, Meridian 1 Option 81C, or Meridian 1 Option 81C CP PII system only)

- Multipurpose ISDN Signaling Processor (MISP) card

- Multipurpose Serial Data Link (MSDL) card

- Network and/or Superloop Network card

- Peripheral Signaling card

- Primary Rate Interface (PRI) and/or Digital Trunk Interface (DTI) card

- Clock Controller card for Succession 1000M Option 81C, Succession 1000M Multi Group, Meridian 1 Option 81C, or Meridian 1 Option 81C CP PII system only (must be installed in slot 13)

- Serial Data Interface (SDI) card

Note: Bus Terminating Units (BTU) are installed between slots 11 and 12, and slots 12 and 13 in NT8D35AA and NT8D35DC Network Modules. NT8D35BA and NT8D35EA Network Modules do not use BTUs.

Quantity—As required; see *Large System: Planning and Engineering* (553-3021-120).

NT8D37 Intelligent Peripheral Equipment Module

System requirements—All Large Systems.

Purpose—Houses one Controller card (NT8D01BC Controller-4 or NT8D01AD Controller-2) and up to 16 Intelligent Peripheral Equipment (IPE) cards.

Note: In vintages BA and EC, all of the IPE card slots are fully cabled for 24 pairs. In vintages AA and DC, only slots 0, 4, 8, and 12 are cabled for 24 pairs.

Power requirements:

- ac systems: NT8D37AA or BA; NT8D06 PE Power Supply

- dc systems: NT8D37DC or EC; NT6D40 PE Power Supply

Note: When 500/2500 telephones are equipped, a ringing generator (NT8D21 for ac systems or NT6D42 for dc systems) is required.

This module contains 16 IPE card slots (in addition to the slot for the Controller card) that support the following cards:

- Analog Line card

- Analog Message Waiting Line card

- Data Access card (DAC)

- Digital Line card

- Digitone Receiver (DTR) card

- E&M Trunk card

- S/T Interface Line card (SILC)

- Universal Interface Line card (UILC)

- Universal Trunk card

Quantity—As required; see *Large System: Planning and Engineering* (553-3021-120).

NT8D49 Column Spacer Kit

System requirements—All Large Systems.

Purpose—Bolts modules together for side-by-side expansion and maintains shielding against electromagnetic interference (EMI) and radio-frequency interference (RFI). The spacer kit includes:

- eight bushings

- expansion spacer

- RF gasketing

Quantity—One kit between each column in the Large System.

NTDU27 Succession Signaling Server

System requirements—Succession 1000M Large System.

Purpose—Provides signaling interfaces to the IP network using software components that run on a real-time operating system (vxWorks). It handles H.323 signaling and Internet Telephone signaling, and provides Gatekeeper software.

The NTDU27 contains no user-serviceable parts, including the power supply. Rack-mounting hardware is included.

The NTDU27 measures approximately 4.3 cm high by 42.5 cm by 55.9 cm (1.70 in. by 16.75 in. by 22 in.). When fully configured, it weighs approximately 10.5 kg (23 lb).

Quantity—Minimum of one for each system; two for each system if load sharing redundancy is desired.

Card Cage Assemblies

System requirements—All Large Systems.

Purpose—Consists of a sheet metal case and an associated backplane. Provides the physical framework that houses the circuit cards and power supplies within the UEM. Card cage assemblies and their corresponding modules are listed in Table 3.

Table 3
Card cage assemblies

Card cage assembly	Corresponding module
NT4N46AA	NT4N41 cPCI Core/Network Module
NT5D2101	NT5D21 Core/Network Module
NT5D2103	NT5D21 Core/Network Module
NT8D3503	NT8D35 Network Module
NT8D3507	NT8D35 Network Module
NT8D3703	NT8D37 IPE Module

Quantity—One for each Core/Network, Network, and IPE Module.

Pedestal and components

System requirements—All Large Systems.

Purpose—The base for each column. Approximately 81.3 cm wide by 66 cm deep by 25.4 cm high (32 in. by 26 in. by 10 in.) and 13.6 kg (30 lb) empty. Leveling feet are provided for up to four tiers; a caster option is available for up to two tiers.

There are two versions of the pedestal:

- NT8D27BB for ac power
- NT7D09CA for dc power

The NT8D27BB and NT7D09CA pedestals house the following field-replaceable assemblies:

- air filter   P0699798
- air grill   P0699797
- blower unit   NT8D52AB for ac power

  NT8D52DD for dc power
- leveling foot   A0318207
- Power   NT8D53CA for ac power

  Distribution   NT7D67CB for dc power

  Unit (PDU)
- system monitor   NT8D22

  Note: Conduit is not required with the NT7D67CB PDU.

Quantity—One for each column.

Top cap

System requirements—All Large Systems.

Purpose—Mounts on the highest module of each column. Approximately 81.3 cm wide by 55.9 cm deep by 10.2 cm high (32 in. by 22 in. by 4 in.) and 3.6 kg (8 lb). Consists of front and rear air exhaust grills and thermal sensors.

If ceiling-hung racks are used, the rear top cap grill must be replaced with a P0699851 Top Cap Cable Egress Panel.

There are two versions of the top cap:

- NT7D00AA for ac power
- NT7D00BA for dc power

Quantity—One for each column.

Power and cooling equipment

A0355200 Power Failure Transfer Unit

System requirements—All Large Systems.

Purpose—Provides an interface between Central Office (CO) lines, the Large System, and 500/2500 telephones (rotary dial and push-button). Allows eight telephones to be connected directly to the CO lines in the event of a power failure or malfunction. The Power Failure Transfer Unit (PFTU) is invisible during normal operations.

Approximately 12.1 cm wide by 34.3 cm long by 4.1 cm high (4.75 in. by 13.5 in. by 3.5 in.). The wall-mount unit connects to the main distribution frame with two 25-pair cables.

Requires approximately 200 mA of –48 V dc power. In dc-powered systems, the PFTU is powered from a spare output on the power distribution panel in the power system. In ac-powered systems, the PFTU is powered by an AO367916 power supply.

Quantity—One for every eight bypass/transfer lines required in the Large System.

A0367916 Power Supply –48V

System requirements—All Large Systems (ac-powered).

Purpose—A wall-mount unit that powers the PFTU in ac-powered systems. Converts 120 V ac (nominal) to –48 V dc (nominal) with a 1.25-amp output. Can also be used to power other auxiliary devices that require –48 V power.

Quantity—One in every six PFTUs.

MFA150 Modular Power System

System requirements—All Large Systems (dc-powered).

Purpose—Replaces the rectifier/rack assembly that includes the NT6D52 Rectifier and QBL15 Power Distribution Unit.

The MFA150 is a modular, front-access power system with a positive ground and –48 V dc output capacity of 150 amps, provided in 25-amp increments using plug-in NT5C06 rectifier modules. The MFA150 is suitable for any Large System with power requirements of less than 150 amps.

The complete power plant is available in two configurations, described in detail in *Large System: Planning and Engineering* (553-3021-120). Each is a complete power bay with an NT6C14GB Control and Distribution Panel mounted on an NT6C40DC Seismic Rack. The two configurations are:

• NT5C90EF - single MPS75 shelf, with a capacity of 75 amps

• NT5C90EG - dual-shelf configuration, with a capacity of 150 amps

The MFA150 power system requires one 50-amp power feed per shelf.

Quantity—One MFA150 is required per dc-powered Large System (configured with one to six NT5C06 rectifiers, as required by system power consumption), installed in one or two MPS75 shelves.

MPP600 Modular Power Plant

System requirements—All Large Systems (dc-powered).

Purpose—Replaces the NT6D82 Power System and QCA13 Power Cabinet.

The MPP600 is a modular power distribution and control system. It is contained in a cabinet that provides front and rear access. The power plant provides –48 V dc output at a maximum capacity of 600 amps, provided in 50-amp increments by up to 12 plug-in rectifier modules.

The NT5C07 Modular Power Rectifiers (see *Large System: Planning and Engineering* (553-3021-120)) are contained in one or two cabinets, providing 300 amps per cabinet. Each rectifier requires one 20-amp feed of single-phase 60 Hz, 208 V or 240 V ac input.

For information on the MPP600 Modular Power Plant, see the following documents:

- *MPP600 Modular Power Plant: Description, installation, operation and maintenance manual* (167-9021-105)

- *Large System: Planning and Engineering* (553-3021-120)

Quantity—One MPP600 is required per dc-powered large system, configured with one or two cabinets housing as many rectifiers as required to meet system power needs.

NT4N49AA Four Feed Power Distribution Unit

System requirements—All Large Systems.

Purpose—Provides independent power feeds to each of four modules in a stack if required.

Quantity—One for each pedestal/column.

NT6D40 PE Power Supply DC

System requirements—All Large Systems (dc-powered).

Purpose—Converts –48 V dc to +5 V, +8.5 V, ±10 V, ±15 V, and –48 V dc voltages used to power peripheral equipment circuit cards and to supply talk battery to lines and trunks. Located in the far left-hand card slot labeled "PE Pwr Sup."

Quantity—One in each NT8D37DC or NT8D37EC IPE Module.

NT6D41 CE Power Supply DC

System requirements—All Large Systems (dc-powered).

Purpose—Converts –48 V dc to +5 V and ±12 V dc to provide required voltages for CPU, network, and Meridian Mail equipment. Located in the far left-hand card slot labeled "CE Pwr Sup."

Quantity—One in each NT5D21DC Core/Network Module and NT8D35DC Network Module.

NT6D42 Ringing Generator DC

System requirements—All Large Systems (dc-powered).

Purpose—Replaces the NT7D03 Ringing Generator DC.

A 16-ringer ringing generator. Operates from a nominal –52 V dc input and provides selectable ac ringing voltage outputs superimposed on –52 V dc. Frequency and voltage options are 20/25/50 Hz and 70/75/80/86 V ac. Supplies –120 (–100 with vintage NT6D42CC) or –150 V dc Message Waiting lamp voltages for 500/2500 telephones. Located to the right of the NT6D40 PE Power Supply.

Quantity—One in each NT8D37DC or NT8D37EC IPE Module that supports 500/2500 telephones.

NT6D53 Junction Box

System requirements—All Large Systems.

Purpose—Provides an interim connection between the rectifier and the field wiring terminal block in the pedestal. It is used if the rectifier is positioned at a distance from the Large System.

Quantity—One for each column in the system.

NT7D10 Power Distribution Unit DC

System requirements—All Large Systems (dc-powered).

Purpose—Replaced by the NT7D67CB PDU (see *Large System: Planning and Engineering* (553-3021-120)). However, NT7D67 and NT7D10 PDUs can be mixed in a Large System.

Distributes power to the entire column. Located in the rear of the pedestal. Houses the system monitor and five circuit breakers (one for each module and one for the blower unit).

Quantity—One for each pedestal/column.

NT7D67CB Power Distribution Unit DC

System requirements—All Large Systems (dc-powered).

Purpose—Replaces the NT7D10 PDU (see *Large System: Planning and Engineering* (553-3021-120)). However, NT7D67 and NT7D10 PDUs can be mixed in a Large System.

Distributes power to the entire column. Located in the rear of the pedestal. Houses the system monitor and five circuit breakers (one for each module and one for the blower unit).

Quantity—One for each pedestal/column.

NT8D06 PE Power Supply AC

System requirements—All Large Systems (ac-powered).

Purpose—Converts 208/240 V ac to +5 V, +8.5 V, ±10 V, ±15 V, and –48 V dc voltages used to power peripheral equipment logic cards and to supply talk battery to lines and trunks. Located in the far left-hand card slot labeled "PE Pwr Sup."

Quantity—One in each NT8D37AA or NT8D37BA IPE Module.

NT8D21 Ringing Generator AC

System requirements—All Large Systems (ac-powered).

Purpose—Operates from a nominal 208/240 V ac input and provides selectable ac ringing voltage outputs superimposed on –48 V dc. Frequency and voltage options are 20/25/50 Hz and 70/80/86 V ac. Supplies –150 V dc

Message Waiting lamp voltages for 500/2500 telephones. Located to the right of the NT8D06 PE Power Supply.

Quantity—One in each NT8D37AA or NT8D37BA IPE Module that supports 500/2500 telephones.

NT8D22 System Monitor

System requirements—All Large Systems.

Purpose—Monitors the status of all internal power and cooling-related components, as well as external dc rectifiers, batteries, and uninterruptible power supplies (UPS). Mounted in the rear of the pedestal.

The system monitor that handles the communication with the Large System CPU (via SDI port) is the master; all others function as slaves. There is a serial communication link between the master and the slaves.

In addition to CPU status reporting, the system monitor controls all external visual status indications.

Quantity—One master and up to 63 slaves for each Large System; one required for each column.

NT8D29 CE Power Supply AC

System requirements—All Large Systems (ac-powered).

Purpose—Converts 208/240 V ac to +5 V and ±12 V dc to provide required voltages for CPU, network, and Meridian Mail equipment. Located in the far left-hand card slot labeled "CE Pwr Sup."

Quantity—One in each NT5D21AA Core/Network Module and NT8D35AA Network Module.

NT8D46AC Thermostat Harness

System requirements—All Large Systems.

Purpose—Part of the temperature sensor assembly. Contains two thermal sensors and a fault LED. At 70 $^{\circ}$C C (158 $^{\circ}$F), the thermal sensors open and notify the system monitor, which shuts down the Large System. Harness plugs into the backplane of the top module.

Quantity—One for each column.

NT8D46AM Air Probe Harness AC

System requirements—All Large Systems (ac-powered).

Purpose—Part of the temperature sensor assembly. Senses exit air temperature and relates the information to the blower unit.

Quantity—One for each top cap.

NT8D46DC Air Probe Harness DC

System requirements—All Large Systems (dc-powered).

Purpose—Part of the temperature sensor assembly. Senses exit air temperature and relates the information to the blower unit.

Quantity—One for each top cap.

NT8D52AB Pedestal Blower Unit AC

System requirements—All Large Systems (ac-powered).

Purpose—Housed in the front of the pedestal. Provides forced-convection cooling. Contains two backward-curved cylindrically shaped impellers (rotor blades) that are approximately 22.8 cm (9 in.) in diameter and 6.9 cm (2.75 in.) thick. Each unit weighs about 1.5 kg (3.5 lb).

Communicates with the power distribution system through a connector on the rear of the PDU. A circuit breaker on the front of the blower chassis turns the unit on and off.

Quantity—One for each pedestal.

NT8D52DD Pedestal Blower Unit DC

System requirements—All Large Systems (dc-powered).

Purpose—Housed in the front of the pedestal. Provides forced-convection cooling. Contains two backward-curved cylindrically shaped impellers (rotor blades) that are approximately 22.8 cm (9 in.) in diameter and 6.9 cm (2.75 in.) thick. Each unit weighs about 1.5 kg (3.5 lb).

Communicates with the power distribution system through a connector on the rear of the PDU. A switch on the front of the blower chassis turns the unit on and off. There is also a dedicated circuit breaker on the PDU.

Quantity—One for each pedestal.

NT8D53AD Power Distribution Unit

System requirements—All Large Systems (ac-powered).

Purpose—A panel located in the pedestal that distributes power to the module and top cap. Contains a circuit breaker and power distribution components optimized for single-module operation.

Quantity—One for each Large System.

NT8D53CA Power Distribution Unit AC

System requirements—All Large Systems (ac-powered).

Purpose—Located in the rear of the pedestal. Distributes power to the entire column. Houses the main circuit breaker for the Large System.

Quantity—One for each pedestal/column.

NT8D56AA CE Module Power Distribution Unit

System requirements—All Large Systems (ac-powered).

Purpose—The CE Module Power Distribution Unit (MPDU) MPDU protects the power supply and distributes power within a module. Houses a single breaker used in conjunction with the NT8D29 CE Power Supply AC.

Quantity—One in each NT5D21AA Core/Network Module and NT8D35AA Network Module.

NT8D56AC CE/PE Module Power Distribution Unit

System requirements—All Large Systems (ac-powered).

Purpose—The CE/PE MPDU protects the power supply and distributes power within a module. Houses a single breaker.

Quantity—One in each NT8D37AA or NT8D37BA IPE Module.

NT8D57AA PE Module Power Distribution Unit

System requirements—All Large Systems (ac-powered).

Purpose—The PE MPDU protects the power supply and distributes power within a module. Houses a dual breaker and is used in conjunction with the NT8D06 PE Power Supply AC and the NT8D21 Ringing Generator AC.

Quantity—One for each NT8D37AA or NT8D37BA IPE Module.

QBL12 Battery Distribution Box

System requirements—All Large Systems (dc-powered).

Purpose—Connects customer-provided external power sources to the Large System. Allows connection of up to 12 columns to the external power source.

Quantity—One for each Large System when customer supplies power source.

QBL15 Power Distribution Box

System requirements—All Large Systems (ac-powered).

Purpose—Replaced by the MFA150 Modular Power System.

Allows the parallel connection of up to three NT6D52 Rectifiers, for connection to the Large System and to reserve batteries. Includes main fuses, diode blocking, test points, QPC188 Battery Monitor Card, and sense lead fusing on connections from each rectifier.

Quantity—One for every three NT6D52 Rectifiers, to a maximum of two QBL15s per Large System.

QUA6 Power Failure Transfer Unit (PFTU)

System requirements—Succession 1000M Large System.

Purpose—Transfers trunk lines during a power or system failure.

Common equipment cards

A0810496 Call Processor Pentium II® (CP PII)

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C CP PII

Purpose—The CP PII card contains a Pentium II processor to process calls, manage the 128 Mbyte memory, and monitor the Large System. It also provides serial and Ethernet interfaces to manage the Large System.

Quantity—One CP PII card for each Core/Net module (NT4N41)

NT1P61 Fiber Superloop Network Card

System requirements—All Large Systems (ac-powered).

Purpose—Provides 120-timeslot (one superloop) interface between network and intelligent peripheral equipment. Utilizes the equivalent of four network loops. Can be connected to one NT1P62 Fiber Peripheral Controller card.

The superloop network card is equipped with a Motorola 68000-type microprocessor that performs network diagnostics and signaling control, and communicates with the intelligent peripheral controller over a fiber-optic span.

Quantity—As required. See *Large System: Planning and Engineering* (553-3021-120) for engineering details.

NT1P63 Fiber Electro-optical Interface Packlet

System requirements—All Large Systems (ac-powered).

Purpose—Provides a synchronous 155.52 MBps, point-to-point transmission facility between the Fiber Superloop Network card microprocessor unit (MPU) and the Fiber Peripheral Controller card MPU.

Quantity—Up to two on each Fiber Superloop Network card (NT1P61). The second packlet provides a redundant fiber-optic link.

NT4N43 cPCI® Multi-Media Disk Unit (MMDU)

System requirements—

• Succession 1000M Multi Group

• Meridian 1 Option 81C CP PII

Purpose—The MMDU card contains the drives that store system software and databases. The MMDU card includes:

• a **hard disk** to store the system database and software.

• a **floppy disk** to install software or back up databases

• a **CD-ROM** to install system software

Quantity—One for each Core/Net module (NT4N41).

NT4N48AA System Utility (Sys Util)

System requirements—All Large Systems.

Purpose—The System Utility card incorporates the functionality of the System Utility Transition card, LCD display, and the security device holder.

Quantity—One System Utility card for each Core/Net module (NT4N41).

NT4N64 Call Processor Pentium II® (CP PII)

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C CP PII

Purpose—The CP PII card contains a Pentium II processor to process calls, manage the 256 Mbyte memory, and monitor the Large System. It also provides serial and Ethernet interfaces to manage the Large System. It is recommended for systems with six or more network groups.

Quantity—One CP PII card for each Core/Net module (NT4N41).

NT4N65 cPCI® Core to Network Interface (cCNI)

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C CP PII

Purpose—The cCNI cards connect the Core module cards to the 3PE cards in the Network modules.

Since each cCNI card can connect to two Network groups, each Core connects to a minimum of two groups and a maximum of eight groups. The number of cCNI cards in a Large System depends on the number of Network groups in that Large System.

The first cCNI card that connects to Network group 0 and group 1 is installed in slot c9 of each Core/Net module. Each additional cCNI card is installed in ascending order from slots c10 to c12.

Quantity—Up to four cCNI cards for each Core/Net module (NT4N41).

NT4N66 cPCI® Core to Network Interface Transition (cCNI Trans)

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C CP PII

Purpose—The cCNI Transition cards provide the cable connections to the 3PE Termination Panel in the rear of the module.

A cCNI Transition card is mounted directly behind each cCNI card (on the back side of the Core backplane). Four cCNI Transition cards are installed in the factory regardless of how many cCNI main cards are configured for the Large System.

Quantity—Four cCNI Transition cards for each Core/Net module (NT4N41).

NT4N67 System Utility (Sys Util)

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C

- Meridian 1 Option 81C CP PII

Purpose—The System Utility card supports card-identification (Card-ID). The card provides an interface between the security device and the computer, and an interface between the Extended System Monitor (XSM) and display panel for each cPCI Core/Net card cage. This card also includes a switch on the faceplate to enable or disable the Core cards.

Quantity—One System Utility card for each Core/Net module (NT4N41).

NT4N68 System Utility Transition (Sys Util Trans)

System requirements—

• Succession 1000M Multi Group

• Meridian 1 Option 81C

• Meridian 1 Option 81C CP PII

Purpose—The System Utility Transition card provides connections for the security device, the system monitor, and the status panel. This Transition card is mounted on the rear of the backplane (back side) directly behind the System Utility card.

One System Utility Transition card is installed in each Core/Net module.

Quantity—One System Utility Transition card for each Core/Net module (NT4N41).

NT5D03 Call Processor Card

System requirements—

• Succession 1000M Half Group

• Succession 1000M Single Group

• Meridian 1 Option 51C

• Meridian 1 Option 61C

Purpose—The Call Processor (CP) card, the main processor in the Large System, is a 32-bit Motorola 68LC060, 66 MHz microprocessor. The NT5D03 CP card delivers a real-time capability improvement to the NT5D10 CP card. The NT5D03 card performs the following main functions:

• Executes all call processing software at a higher clock rate than the NT5D10 CP card.

- Interfaces with the interprocessor bus (IPB) over the backplane for communication with other cards on the IPB, using the Bus Interface Circuit (BIC) for communication with the IPB.

- Provides on-board main memory and cache memory.

- Provides a system time-of-day clock/calendar.

- Provides a pair of serial data ports for maintenance and administration.

    Note: Cabling the Call Processor cards together allows memory shadowing and dual-CPU operation.

The CP card is available in the following memory configurations:

- NT5D03AA – 48 MB memory

- NT5D03BA – 64 MB memory

- NT5D03CA – 80 MB memory

- NT5D03EA – 112 MB memory

- NT5D03FA – 128 MB memory

Quantity—One CP card per NT5D21 Core/Network Module. Each card occupies two card slots.

NT5D10 68060 Call Processor Card

System requirements—

- Succession 1000M Half Group

- Succession 1000M Single Group

- Meridian 1 Option 51C

- Meridian 1 Option 61C

Purpose—The Call Processor card, the main processor in these systems, is a 32-bit Motorola 68LC060, 66 MHz microprocessor. The Call Processor card performs the following functions:

- Executes all call processing software

- Interfaces with the interprocessor bus over the backplane for communication with other cards on the IPB, using the Bus Interface Circuit (BIC) for communication with the IPB

- Provides on-board main memory and cache memory

- Provides a system time-of-day clock/calendar

- Provides a pair of serial data ports for maintenance and administration

  Note: Cabling the Call Processor cards together allows memory shadowing and dual-CPU operation.

The CP card is available in the following memory configurations:

- NT5D10AA – 24 MB memory

- NT5D10CA – 64 MB memory

- NT5D10EA – 80 MB memory

- NT5D10JA – 112 MB memory

Quantity—One per NT5D21 Core/Network Module. Each card occupies two card slots.

NT5D12AA Dual DTI/PRI (DDP) Card

System requirements—All Large Systems

Purpose—Provides two DTI/PRI network connections, an optional connection to an external D-Channel Handler (QPC757 DCHI or NT6D80 MSDL), and an optional plug-on D-Channel Daughterboard (DDCH, NTBK51AA). The card integrates the functionality of two QPC472 DTI/ QPC720 PRI cards and one QPC414 Network card into a single card.

The NT5D12AA occupies a single Network shelf slot. The DDP card supports all features (except the echo canceller and protocol conversion) of the QPC720. It provides an interface to the 1.5 Mbps external digital line, either directly or through an office repeater, Line Terminating Unit (LTU), or Channel Service Unit (CSU).

Quantity—As required.

NT5D61 Input/Output Disk Unit with CD-ROM (IODU/C)

System requirements—

- Succession 1000M Half Group

- Succession 1000M Single Group

- Meridian 1 Option 51C

- Meridian 1 Option 61C

- Meridian 1 Option 61C CP PII

Purpose—Used to load programs and office data into the system memory. IODU/C uses an industry-standard 2 MB floppy drive instead of a 4 MB floppy drive. Additionally, the NT5D61AA IODU/C has a CD-ROM drive accessed on the faceplate, to facilitate loading system software from a CD-ROM.

A Security Device attached to the IODU/C and an electronic Keycode file are used to perform validation of the customers' specific features and software release. The Security Device is a removable component to allow the replacement of an IODU/C without the need to order a new Security Device.

The IODU/C also contains:

- I/O processor circuitry

- one 2 MB 3.5-inch high-density floppy drive with a formatted capacity of 1.44 MB

- one CD-ROM drive (in NT5D61AA vintage only)

- one 3.5-inch hard disk drive with a minimum capacity of 120 MB

The IODU/C occupies slots 17, 18, and 19 in the NT5D21 Core/Network Module, and requires 5 V and 12 V from the module.

The IODU/C is available in two vintages:

- NT5D61AA – includes hard drive, 2 MB floppy drive and CD-ROM drive

- NT5D61BA – includes hard drive and 2 MB floppy drive

Note: NT5D61AA is mandatory on Succession 1000M Half Group and Meridian 1 Option 51C systems. Succession 1000M Single Group, Meridian 1 Option 61C, and Meridian 1 Option 61C CP PII systems must have at least one NT5D61AA IODU/C to allow software installation from CD-ROM.

The IODU/C supports Card-ID, which includes the card type, NT code, serial number, and any other relevant data for the IODU/C.

NT6D65 Core to Network Interface Card (CNI)

System requirements—

- Succession 1000M Half Group

- Succession 1000M Single Group

- Meridian 1 Option 51C

- Meridian 1 Option 61C

Purpose—The CNI card provides the interface between the interprocessor bus and the network shelves, and between the Call Processor card and QPC441 3PE Cards in the network shelf. Each CNI card provides two ports (you are not required to use both ports).

CNI cards are used in the NT5D21 Core/Network Module, as shown in Table 4.

Quantity—See Table 4.

Table 4
Usage of NT6D65 cards

System type	Network Groups	CNI cards required	Module	Slots used
Succession 1000M Half Group Meridian 1 Option 51C	1/2	1	NT5D21 Core/ Network Module	12
Succession 1000M Single Group Meridian 1 Option 61C	1	1	NT5D21 Core/ Network Module	12

NT6D73 Multipurpose ISDN Signaling Processor (MISP)

System requirements—

- Succession 1000M Half Group

- Succession 1000M Single Group

- Meridian 1 Option 51C

- Meridian 1 Option 61C

- Meridian 1 Option 61C CP PII

Purpose—The MISP card is a microprocessor-controlled signaling processor that provides a communication interface between the CPU and peripheral devices. The MISP card interfaces with S/T Interface Line Cards (SILC) and U Interface Line Cards (UILC).

The main functions of the MISP are to:

- Communicate with the CPU to report ISDN BRI status and receive downloaded application software and configuration parameters.

- Manage data link layer and network layer signaling that controls call connection and terminal identification.

- Control terminal initialization and addressing.

- Assign B-channels for switched voice and data transmission by communicating with the BRI terminal over the D-channel and allocating to it an idle B-channel with appropriate bearer capabilities.

- Separate D-channel data from signaling information and route the data to the packet handler.

- Send call control messages to ISDN BRI terminals over the D-channel.

The MISP occupies one slot in the Network module. It uses one of the network loops to interface with SILCs and UILCs and to provide 32 timeslots for D-channel signaling and packet data transmission. The other loop address is used to communicate with the CPU.

Quantity—See *ISDN Basic Rate Interface: Features* (553-3001-380) for capacity requirements.

NT6D80 Multipurpose Serial Data Link Card (MSDL)

System requirements—All Large Systems.

Purpose—The MSDL card provides the signaling interface for primary rate interface (PRI) D-channels or application module link (AML) applications. It utilizes four full-duplex serial I/O ports that are independently configured. The MSDL card can coexist with other cards that support the same functions (such as QPC513 ESDI Cards).

A Large System can support 16 MSDL cards. Since each card has four ports, a maximum of 64 ports are supported.

> *Note:* This card currently does not support asynchronous mode. Therefore, the realistic maximum number of MSDL cards is 14. This leaves two SDI port addresses for communication with the Large System via a terminal.

Quantity—Up to 16 per Large System

NT7R51 Local Carrier Interface Card

System requirements—All Large Systems.

Purpose—Provides 120-timeslot (one superloop) interface between network and intelligent peripheral equipment. Utilizes the equivalent of four network loops. Can be connected to one NT1R52 Remote Carrier Interface Card.

The Superloop Network card is equipped with a Motorola 68000-type microprocessor that performs network diagnostics and signaling control, and communicates with the Intelligent Peripheral Controller over a T1 or E1 carrier span.

Quantity—As required; see *Large System: Planning and Engineering* (553-3021-120).

NT8D04 Superloop Network Card

System requirements—All Large Systems.

Purpose—Provides 120-timeslot (one superloop) interface between network and intelligent peripheral equipment. Utilizes the equivalent of four network loops. Can be connected to one or two NT8D01 Controller Cards.

The Superloop Network card is equipped with a Motorola 68000-type microprocessor that performs network diagnostics and signaling control, and communicates with the Intelligent Peripheral Controller.

Quantity—As required; see *Large System: Planning and Engineering* (553-3021-120) for engineering details.

NT8D17 Conference/TDS Card

System requirements—All Large Systems.

Purpose—Provides both conference, and tone and digit switch (TDS) functions. Accesses two network loops, one for each function.

The conference circuitry has a warning tone option and supports broadcast mode. Up to 15 simultaneous conferences can be controlled with the restriction that the total number of conferees in all conferences is not greater than 30. The TDS circuitry provides tones for different countries (up to 256 tones and cadences).

Multifrequency signaling (MFS) provides Automatic Number Identification (ANI) digits over Centralized Automatic Message Accounting (CAMA) trunks to a toll switching CAMA, Traffic Operator Positioning System (TOPS), or Traffic Service Positioning System (TSPS) office.

Quantity—As required; see *Large System: Planning and Engineering* (553-3021-120).

NT8D41BA Quad Density Serial Data Interface

System requirements—All Large Systems.

Purpose—Replaces the QPC841 Quad Density Serial Data Interface, NT8D14AA Extended Dual Density Serial Data Interface, and QPC139 Dual Density Serial Data Interface cards. For dual density cards, it is a one-for-two

replacement. Provides four serial ports between the processor and an external device. Each port supports:

- RS-232-C interface

- 8-bit ASCII data, no parity and 1 stop bit

- asynchronous, start-stop operation

- data rates of 150, 300, 600, 1200, 2400, 4800, 9600, and 19200 baud

- DTE mode

- DCE mode

Quantity—One per Core/Network Module.

NT8D72 Primary Rate Interface 2 Mbps

System requirements—All Large Systems.

Purpose—The Primary Rate Interface (PRI) card allows thirty 64 Kbps clear channel operation with a single 64 Kbps common signaling channel. The PRI circuit card provides the physical carrier interface.

The NT8D72BA vintage card provides a fully compliant card for the introduction of Euro ISDN. It complies with the following:

- CCITT G.703 specification for both Private and CO connectivity

- Euro ISDN requirements including ETSI specifications and country application requirements

- PTT 850.614

- ETS 300 001

Quantity—One per Primary Rate Access (PRA) link.

NT9D19 68040 Call Processor (CP) Card

System requirements—

- Succession 1000M Half Group equipped with NT5D61 IODU/C card

- Succession 1000M Single Group equipped with NT5D61 IODU/C card

- Meridian 1 Option 51C equipped with NT5D61 IODU/C card

- Meridian 1 Option 61C equipped with NT5D61 IODU/C card

- Meridian 1 Option 61C CP PII equipped with NT5D61 IODU/C card

Purpose—The Call Processor card, the main processor in these systems, is a 32-bit Motorola 68LC040, 66 MHz microprocessor. The Call Processor card performs the following main functions:

- Executes all call processing software.

- Interfaces with the interprocessor bus over the backplane for communication with other cards on the IPB, using the Bus Interface Circuit (BIC) for communication with the IPB.

- Provides on-board main memory and cache memory.

- Provides a system time-of-day clock/calendar.

- Provides a pair of serial data ports for maintenance and administration.

    Note: Cabling the Call Processor cards together allows memory shadowing and dual-CPU operation.

Quantity—One per NT5D21 Core/Network Module. Each card occupies two card slots.

NTBK51AA Downloadable D-Channel Handler (DDCH) Card

Purpose—Provides downloadable D-channel handler interfaces based on the Multipurpose Serial Data Link. The DDCH card provides a single purpose full-duplex serial port capable of downloading the D-channel application and base software into the card.

It mounts on the following cards:

- NTAK09 1.5 Mb DTI/PRI card

- NTBK50 2.0 Mb PRI card

NTDU80CA Succession Signaling Server Memory Upgrade Kit

System requirements—All Succession 1000M Large Systems.

Purpose—Contains 512MB DIMM boards with which to upgrade the memory on the Succession Signaling Server.

Quantity—One for each Succession Signaling Server.

NTRB33 Fiber Junctor Interface (FIJI) Card

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C CP PII

Purpose—The Fiber Network feature introduces the FIJI card for Succession 1000M Multi Group and Meridian 1 Option 81C CP PII systems. FIJI cards are installed in Network modules and connect with fiber-optic cables to form a Dual Ring Fiber Network. This network replaces the Intergroup Module and consists of two separate rings – one ring connects all of the Network Shelf 0's while the second ring connects all of the Network Shelf 1's. This network communicates on a subset of the Sonet OC-12c protocol (22 Mb bandwidth on each ring).

The Dual Ring fiber-optic cable configuration provides complete non-blocking communication between the network groups; this eliminates the occurrence of busy signals for calls switched between groups. Each FIJI card can handle 32 pulse code modulation (PCM) links. A system of eight Network groups provides 7680 timeslots for 3840 simultaneous conversations.

Quantity—One FIJI card per Network module.

NTRB34 Core to Network Interface 3 Card (CNI-3)

System requirements—

- Succession 1000M Half Group

- Succession 1000M Single Group

- Meridian 1 Option 51C

- Meridian 1 Option 61C

Purpose—The CNI-3 card provides the interface between the interprocessor bus and the network shelves, and between the Call Processor card and QPC441 3PE Cards in the network shelf. Each CNI-3 card provides two ports (you are not required to use both ports).

CNI-3 cards are used in the NT5D21 Core/Network Module.

Quantity—See Table 5.

Table 5
Usage of NTRB34 cards

System type	Network Groups	CNI-3 cards required	Module	Slots used
Succession 1000M Half Group Meridian 1 Option 51C	1/2	1	NT5D21 Core/ Network Module	12
Succession 1000M Single Group Meridian 1 Option 61C	1	1	NT5D21 Core/ Network Module	12

NTRE39 Optical Cable Management Card (OCMC)

System requirements—

• Succession 1000M Multi Group

• Meridian 1 Option 81C CP PII

Purpose—The OCMC is installed in Network modules to store and protect excess cable length. The OCMC ensures that the fiber cable is not bent beyond a 30 mm bend radius.

The OCMC contains no electronic components and is not powered by the backplane. This card is used primarily in Fiber Network upgrades where the intergroup cable distances vary greatly.

OCMC is a single width card installed between the Power Supply and slot 1 of a Network module.

Quantity—One OCMC per Network module, as required.

QPC43 Peripheral Signaling Card

System requirements—All Large Systems.

Purpose—Provides a signaling interface between the CPU and PE through the network cards. Provides basic bit rate 2.048 MHz clock and timing signals for real-time functions.

Quantity—One per NT8D35 Network Module.

QPC414 Network Card

System requirements—All Large Systems.

Purpose—Provides 30 traffic timeslots for every network loop. Provides speech path switching, signaling, and control circuits for two network loops. Interfaces between network and Meridian Mail modules, and PRI and DTI cards.

Quantity—As required; see *Large System: Planning and Engineering* (553-3021-120).

QPC441 3-Port Extender (3PE) Card

System requirements—All Large Systems.

Note: Replace QPC441 vintages with Release 18 and higher software as follows:

- A or B with B1
- C with D
- E (series A) with E (series B)
- E1 (series A) with E1 (series B)
- otherwise, with F

Purpose—The 3PE card extends CPU data, address, and control signals to network loops:

- In Meridian 1 Option 51C and Meridian 1 Option 61C (Release 25.40 or earlier) systems, 3PE cards interface with NT6D65 Core to Network Interface Cards.

- In Succession 1000M Single Group, Succession 1000M Multi Group, Meridian 1 Option 61C CP PII, Meridian 1 Option 81C, and Meridian 1 Option 81C CP PII systems, 3PE cards interface with NT4N65AB cCNI Cards through the 3PE Termination Panel.

- For Succession 1000M Multi Group, Meridian 1 Option 81C, and Meridian 1 Option 81C CP PII systems, vintage F or later is required in all Core/Network and Network modules.

  Note: Port 0 on the 3PE card in each Core/Network Module extends the interprocessor bus to the interface section on the backplane, not to a network loop.

Quantity—One per Core/Network Module.

QPC471 Clock Controller Card

System requirements—All Large Systems.

Purpose—Used in Succession 1000M Multi Group, Meridian 1 Option 81C, and Meridian 1 Option 81C CP PII systems to synchronize the network to an external source clock, and to generate and distribute clock to the Large System. Also used with PRI and DTI in all Large Systems. In Succession 1000M Half Group and Meridian 1 Option 51C systems, used only when equipped with PRI or DTI.

Minimum vintage H is required.

Quantity—

- One for Succession 1000M Half Group and Meridian 1 Option 51C systems.

- Two for Succession 1000M Single Group, Succession 1000M Multi Group, Meridian 1 Option 61C, and Meridian 1 Option 81C systems.

QPC477 Bus Terminating Unit (BTU)

System requirements—All Large Systems.

Purpose—Used in NT8D35 Network Modules.

QPC720 Primary Rate Interface Card

System requirements—All Large Systems.

Purpose—The ISDN PRI card allows 64 Kbps clear 23-channel operation with a single 64 Kbps common signaling channel. It is used in conjunction with the QPC757 DCHI Card to provide Primary Rate Access (PRA). The PRI circuit card provides the physical DS-1 interface and is also used for DTI applications.

Quantity—One per PRA or DTI link.

QPC775 Clock Controller Card

Purpose—The Clock Controller (CC) is used with the Digital Trunk Interface feature to synchronize the network to an external source clock and to generate and distribute clock to the Large System. Works in both 1.5 and 2.0 MB applications, meets ITU specifications, and replaces QPC471.

The QPC775 can also be used to replace the QPC411 (System Clock Generator); but it cannot be used in conjunction with either the QPC471 or the QPC411. All cards in the Large System must be of the same type.

The QPC775E vintage Clock Controller circuit card permits basic rate trunk connections from the Large System to the European Public Network to maintain a more consistent clock.

QPC841 Four-Port Serial Data Interface Card

System requirements—All Large Systems.

Purpose—Provides four serial ports between the system processor and an external device. Each port supports:

- RS-232-C interface

- 8-bit ASCII data with parity and stop bit

- asynchronous, start-stop operation

- data rates of 300, 600, 1200, 2400, 4800, and 9600 baud

- DTE mode

- DCE mode

Quantity—Up to four per Large System.

Peripheral equipment cards

NT1P62 Fiber Peripheral Controller Card

System requirements—Fiber Remote IPE floor-standing module.

Purpose—Provides a primary interface and control function between the NT1P61 Fiber Superloop Network Card in the Large System and the IPE module at the Fiber Remote IPE site. Each controller card serves up to 16 IPE cards. The controller card is equipped with a Motorola 68000-type microprocessor that performs some local call processing and maintenance diagnostics.

Quantity—One per NT8D37 IPE Module.

NT1R20BA Off-premises Station (OPS) Analog Line Card

System requirements—All Large Systems.

Purpose—The Off-premises Station Analog Line card provides eight full-duplex interfaces used to connect off-premises terminals to the Large System. Each interface provides lightning protectors for external line connection to the station.

The NT1R20BA OPS Analog Line Card provides:

- line supervision
- hookflash
- battery reversal

Quantity—Up to 15 per IPE module.

NT5D11AA Line-side T1 Line Card

System requirements—All Large Systems.

Purpose—An intelligent IPE line card that provides an all-digital connection between T1-compatible terminal equipment. Supports supervisory features and has access to 2500-type functionality. Use only on terminal equipment that has a T1 interface and line side feature capability.

Quantity—Up to 15 per IPE module.

NT5D14AA Line-side T1 Line Card

System requirements—Small Remote Fiber IPE cabinets.

Purpose—An intelligent IPE line card that provides an all-digital connection between T1-compatible terminal equipment. Supports supervisory features and has access to 2500-type functionality. Use only on terminal equipment that has a T1 interface and line side feature capability.

Quantity—Up to ten in the small Remote IPE main cabinet; up to six additional in small Remote IPE expansion cabinet.

NT5D51 Meridian Integrated Conference Bridge (MICB) Card

System requirements—All Large Systems.

Purpose—The NT5D51 Meridian Integrated Conference Bridge (MICB) card provides up to 32 ports supporting bridge and conference scheduling for up to ten simultaneous conferences. For a single MICB card with 32 ports, there can be one conference with a maximum of 32 participants; a maximum of ten simultaneous conferences with three or four participants in each conference; or any combination in between. A customer can purchase a single MICB card with either a 12-port, 16-port, 24-port, or 32-port package.

> *Note 1:* Large Systems with software Release 22 or higher support 32 ports per MICB card

> *Note 2:* Large Systems with software Release 19 to 21 support only 16 ports per MICB card.

Each MICB port is configured as a M2616 digital telephone set. The system Automatic Call Delivery (ACD) function routes the incoming calls to an MICB card, where each MICB port is treated as an ACD agent. All ports on an MICB card belong to the same ACD queue and are treated as a pool of ports with equal status.

The MICB supports one chairperson per conference. The chairperson can execute commands on their telephone set to control conference activities such as:

• dialing out to a new party outside of the conference

• dropping all participants

• locking or unlocking the conference to prevent or allow new participants in the conference

The original MICB card (NT5D51AA) provides a command line interface (CLI) for scheduling and managing conferences as well as performing certain administrative and maintenance functions. The user accesses the CLI through a VT-100 terminal that is connected directly to the card, or through a terminal-emulating PC that is connected to the customer's LAN.

The MICB Release 2.0 card (NT5D51AB) provides both a browser user interface (BUI) and a telephone user interface (TUI) for scheduling and managing conferences; the CLI is still used for certain administrative and maintenance functions. The user accesses the BUI via a web browser and the LAN. The user access the TUI through any dual-tone multifrequency (DTMF) telephone.

Two MICB Release 2.0 cards (NT5D51AB) can be linked in a dual-card configuration to allow up to 62 participants in a single conference. In the dual-card configuration, one card acts as the primary card and the other acts as the secondary card. Two ports from the primary MICB card are used to transfer calls and open a talk path to the secondary card and are thus unavailable to host conference participants. The dual-card configuration can come in a 42-port, 50-port, or 62-port package.

For more information on the NT5D51 Meridian Integrated Conference Bridge card, see *Meridian Integrated Conference Bridge: Service Implementation Guide* (553-3001-358).

NT5D60AA CLASS Modem Card (XCMC)

System requirements—All Large Systems with an IPE shelf.

Purpose—The NT5D60AA CLASS Modem card supports the Custom Local Area Signaling Services (CLASS) feature. The CLASS Modem card receives Calling Number and Calling Name Delivery (CND) data and time/date data from an NT8D01 Controller card and transmits it to a line port, such as a port on an Analog Line card. The line port delivers the CND data to a CLASS telephone set when presenting the set with a new call.

The CLASS Modem card is designed to plug into any one of the peripheral card slots of the IPE module. It supports up to 32 transmit-only modem resources using a DS30X interface. Up to 255 modems may be configured per Large System.

For information about the CLASS: Calling Number and Name Delivery feature, see *Features and Services* (553-3001-306). For administration and maintenance commands, see *Software Input/Output: Administration* (553-3001-311).

Uses +5 V power supplied by the power converter in the IPE shelf.

Quantity—One per IPE shelf.

NT5G11 Meridian Integrated Call Assistant (MICA) Card

System requirements—All Large Systems.

Purpose—Provides Intelligent Peripheral Equipment (IPE) that automatically answers incoming calls. Based on caller input and other information, the MICA card routes callers to their desired destination. MICA can be configured in several ways, from basic, menu-driven call handling to complex Automatic Caller Distribution (ACD) applications.

Large Systems support 32 MICA ports.

Quantity—One to eight Meridian Integrated Call Assistant Cards (MICA) per IPE module.

NT5K02 Flexible Analog Line Card

System requirements—All Large Systems with an IPE shelf.

Purpose—Provides interface to up to 16 analog telephone sets (500/2500-type) equipped with either ground button recall switches, high-voltage Message Waiting lamps, or low-voltage Message Waiting LEDs. It performs several functions, some of which are:

- flexible transmission
- ground button operation
- low-voltage Message Waiting option
- card self-ID for auto-configuration

Applications:

- NT5K02AA — high-voltage Message Waiting, analog line card typically used in Australia
- NT5K02DA — ground button, low-voltage Message Waiting, analog line card typically used in France (see following description)

- NT5K02EA — ground button, low-voltage Message Waiting, analog line card typically used in Germany

- NT5K02FA — ground button, low-voltage Message Waiting, analog line card with 600¾ termination (A/D –4 dB, D/A –1 dB)

- NT5K02GA — same as NT5K02FA with a different loss plan (A/D –4 dB, D/A –3 dB)

- NT5K02HA — ground button, low-voltage Message Waiting, analog line card typically used in Belgium

- NT5K02JA — low-voltage Message Waiting, analog line card typically used in Denmark (see following description)

- NT5K02KA — ground button, low-voltage Message Waiting, analog line card typically used in Netherlands (see following description)

- NT5K02LA & NT5K02LB — analog line card typically used in New Zealand (see following description)

- NT5K02MA — ground button, low-voltage Message Waiting, analog line card typically used in Norway (see following description)

- NT5K02NA — ground button, low-voltage message Waiting, analog line card typically used in Sweden

- NT5K02PA — ground button, low-voltage Message Waiting, analog line card typically used in Switzerland

- NT5K02QA — ground button, low-voltage Message Waiting, analog line card typically used in United Kingdom

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K02AB Flexible Analog Line Card (Australia)

System requirements—All Large Systems with an IPE shelf.

Purpose—The flexible analog line card with Message Waiting provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- direct reporting of digits dialed (500 sets) by collecting 10 and 20 pps dial pulses

- telephone on-hook and off-hook detection

- relay for connecting an ac ringer

- automatic disconnection when the telephone set goes off-hook

- flashing high-voltage 1 Hz Message Waiting signal

Application—The NT5K02AB is used in Australia. It can be installed in any PE slot that supports Intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K02DA Flexible Analog Line Card (France)

System requirements—All Large Systems with an IPE shelf.

Purpose—The flexible analog line card provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- Message Waiting

- support of Digipulse or Digitone telephones

- telephone on-hook and off-hook detection based on loop current

- ground button detection

- relay for connecting an ac ringing signal

- collection of dial pulses (10 and 20 pps) from 500-type telephones

- analog to digital and digital to analog conversion for 16 analog telephone lines

- terminating impedance of French Complex Impedance

- software-selectable A-Law or μ-Law companding

- provision of limited line current to telephone sets on short loops and under fault conditions; otherwise, loop current varies to allow automatic gain compensation according to loop length

Application—The NT5K02DA is used in France. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K02JA Flexible Analog Line Card (Denmark)

System requirements—All Large Systems with an IPE shelf.

Purpose—The flexible analog line card provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- hookswitch flash detection

- ground button detection

- variable loop current to allow automatic gain compensation according to loop length

- a flashing low-voltage 1 Hz Message Waiting signal

Application—The NT5K02JA is used in Denmark. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K02KA Flexible Analog Line Card (Holland)

System requirements—All Large Systems with an IPE shelf.

Purpose—The flexible analog line card with Message Waiting provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- Message Waiting indicator flashing at a rate of 1 Hz at the telephone set

- support of Digipulse or Digitone telephones

- telephone on-hook and off-hook detection based on loop current

- ground button detection

- relay for connecting an ac ringing signal

- collection of dial pulses (10 and 20 pps) from 500-type telephones

- analog-to-digital and digital-to-analog conversion for 16 analog telephone lines

- terminating impedance of 600 ohms

- software-selectable A-Law or μ-Law companding

- provision of limited line current to telephone sets on short loops and under fault conditions; otherwise, loop current varies to allow automatic gain compensation according to loop length

Application—The NT5K02KA is used in Holland. It can be installed in any PE slot that supports Intelligent Peripheral Equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K02LB Flexible Analog Line Card (New Zealand)

System requirements—All Large Systems with an IPE shelf.

Purpose—The NT5K02LB Flexible Analog Line Card with Message Waiting provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following features:

- telephone on-hook and off-hook detection

- ground button detection

- relay for connecting an ac ringer

- variable loop current to allow automatic gain compensation according to loop length

- flashing high-voltage 1 Hz Message Waiting signal

Application—The NT5K02LB is used in New Zealand. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K02MA Flexible Analog Line Card (Norway)

System requirements—All Large Systems with an IPE shelf.

Purpose—The flexible analog line card provides an interface for up to 16 analog (500/2500-type) telephone lines. It provides the following:

- hookswitch flash detection

- ground button detection

- variable loop current to allow automatic gain compensation according to loop length

- a flashing low-voltage 1 Hz Message Waiting signal

Application—The NT5K02MA is used in Norway. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K02NB Flexible Analog Line Card (Sweden)

System requirements—All Large Systems.

Purpose—The Flexible Analog Line card provides an interface for up to 16 analog (500/2500-type) telephone lines.

There are two types of flexible analog line cards available for use in Sweden:

- the NT5K02NB line card with Message Waiting

- the NT5K96NB line card without Message Waiting

Both flexible analog line cards provide the following features:

- support of Digipulse or Digitone telephones

- telephone on-hook and off-hook detection based on loop current

- ground button detection

- relay for connecting an ac ringing signal

- collection of dial pulses (10 and 20 pps) from 500-type telephones

- analog-to-digital and digital-to-analog conversion for 16 analog telephone lines

- terminating impedance of 600 ohms

- software-selectable A-Law or μ-Law companding

- provision of limited line current to telephone sets on short loops and under fault conditions; otherwise, loop current varies to allow automatic gain compensation according to loop length

Application—The NT5K02NB is designed for use in Sweden. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K02SA Flexible Analog Line Card (Spain)

System requirements—All Large Systems.

Purpose—The flexible analog line card provides an interface for up to 16 analog (500/2500-type) telephones lines. It provides the following features:

- analog-to-digital and digital-to-analog conversion for 16 analog telephone lines

- software-selectable A-Law or μ-Law companding

- card-identification for auto-configuration

- software-downloadable loss plan

- on-hook and off-hook detection

- connection for an ac ringing signal

- automatic disconnection when the telephone set goes off-hook

- ground button detection

- direct reporting of digits dialed (500 sets) by collecting dial pulses (10 and 20 pulses per second)

- provision of limited line current to telephone sets on short loops and under fault conditions; otherwise, loop current varies to allow automatic gain compensation according to loop length

- flashing low-voltage 1 Hz Message Waiting signal

Application—The NT5K02SA is designed for use in Spain. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K07 Universal Trunk Card (Hong Kong)

System requirements—All Large Systems.

Purpose—The NT5K07 Universal Trunk Card provides the interface between a trunk facility and an NT8D37 Intelligent Peripheral Equipment (IPE) Module.

The Hong Kong universal trunk card has eight units that can be configured as:

- Central Office (CO), Foreign Exchange (FX), and Wide Area Telephone Service (WATS)

- Direct Inward Dial (DID) and Direct Outward Dial (DOD)

- tie two-way dial repeating (2DR) and two-way outgoing automatic incoming dial (OAID)

- Paging (PAG)

    Note: All-call zone paging is not supported.

- Recorded Announcement (RAN)

The universal trunk card also supports Music, Automatic Wake Up, and Direct Inward System Access (DISA). It does not support Message Registration or periodic pulse metering (PPM).

Table 6 is a matrix of the trunk types and signaling supported by the universal trunk card.

Table 6
Supported trunk type and signaling matrix

	CO/FX/ WATS	DID/ DOD	Tie	PAG	RAN
Loop start	yes	no (see Note)	no	no	no
Ground start	yes	no	no	no	no
Loop dial repeating	no	yes	yes	no	no
Loop OAID	no	no	yes	no	no
Note: DID trunks are loop dial repeating (loop start); however, programming trunks as loop start is not supported.					

Application—The NT5K07 is designed for use in Hong Kong. It can be installed in any PE slot that supports intelligent peripheral equipment.

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K17 Direct Dial Inward (DDI) Trunk Card (UK)

System requirements—All Large Systems.

Purpose—Provides interface connecting the trunk facility to the NT8D37 IPE Module. It is equipped with an Intel 8052-type microprocessor that performs several functions, some of which are card identification, self-test, status reporting to the controller, and maintenance diagnostics.

The DDI provides eight analog trunks, each of which can be individually configured to operate as Direct Dial Inward units.

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K17BA Direct Dial Inward (DDI) Trunk Card (New Zealand)

System requirements—All Large Systems.

Purpose—The NT5K17BA Direct Dial Inward (DDI) Trunk Card provides the interface between the Large System and up to eight analog DDI trunk lines. The NT5K17BA DDI card supports the following:

- pulse detection up to 22 pps

- dialing in the form of DTMF signaling or loop disconnect signaling

- New Zealand inverted dialing

Each NT5K17BA DDI Trunk Card:

- allows trunk signaling type to be configured on a per unit basis

- allows individual units or the entire board to be disabled by software

- provides indication of card status on the faceplate LED

- converts transmission signals from analog to digital and from digital to analog for up to eight audio paths

- supports the New Zealand loss plan

- provides termination impedance to match the New Zealand three-component complex network

- provides trans-hybrid balance matching against the New Zealand complex impedance

- provides analog-to-digital and digital- to-analog call path losses for DDI trunk units, values downloadable in the initial configuration stage

Application—The NT5K17BA is designed for use in New Zealand. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K18 Flexible Central Office Trunk Card (UK)

System requirements—All Large Systems.

Purpose—Provides interface connecting the trunk facility to the NT8D37 IPE Module. It is equipped with an Intel 8052-type microprocessor that performs several functions, some of which are:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The card interfaces eight central office trunks with the Large System and can be configured in software for either A-Law or μ-Law operation. Each interface provides the appropriate complex impedance to the line in compliance with UK regulatory specifications.

Each of these ports can be individually configured to operate as follows:

- Ground Start CO trunk

- Loop Disconnect Clear

- Loop Guarded Release

Each of the above signaling schemes is designed in compliance with the relevant UK specifications.

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K18BA Central Office Trunk Card (New Zealand)

System requirements—All Large Systems.

Purpose—The NT5K18BA Central Office Trunk Card has eight identical units that provide the interface between the Large System and up to eight

analog Central Office (CO) trunks. The trunk type of each unit is configured independently in the trunk data block (LD 14) as one of the following:

- central office, ground start

- central office, loop start

The NT5K18BA Central Office Trunk card supports Direct Inward System Access (DISA), battery supervision, and inverted dialing.

The NT5K18BA Central Office Trunk card:

- allows the trunk type to be configured on a per unit basis

- provides disabling of individual units or the entire card through software

- indicates self-test status during an automatic or manual self-test

- converts transmission signals from analog to digital and from digital to analog

- provides complex terminating impedance in compliance with regulatory New Zealand standards

- provides complex balance impedance in compliance with regulatory New Zealand standards

Application—The NT5K18BA is used in New Zealand. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K19 Flexible E&M Trunk Card (UK)

System requirements—All Large Systems.

Purpose—Provides interface connecting the trunk facility to the NT8D37 IPE Module. It is equipped with an Intel 8052-type microprocessor that performs several functions, some of which are:

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The NT5K19 provides four analog trunks, each of which can be individually configured to operate as follows:

- 4-wire E&M Type 1 tie trunk (DC5)

- 2-wire E&M TYPE 1 tie trunk (DC5)

- 2280 Hz tie trunk (AC15)

- Music trunk

- Paging trunk

- Emergency Recorder trunk

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K19BA E&M Tie Trunk Card (New Zealand)

System requirements—All Large Systems.

Purpose—The NT5K19BA E&M Tie Trunk card provides the interface between the Large System and up to four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Type 1 tie trunk (DC5)

- Recorded Announcement trunk (RAN)

- Music trunk (MUS)

- Paging trunk (PAG)

The NT5K19BA E&M Tie Trunk card supports New Zealand inverted dialing.

The NT5K19BA E&M Tie Trunk card supports the following types of announcement machines:

- start mode announcement machines

- continuous mode announcement machines

Recorded announcers supported include the Cook Digital 4-channel announcer and the Audichron HQI-112.

The NT5K19BA E&M Tie Trunk Card:

- converts transmission signals from analog to digital and from digital to analog

- provides software-selectable A-Law or μ-Law operation

- enables and disables individual units or the entire card under software control

- provides outpulsing on the card; make-break ratios are defined in software and downloaded during power-up and by software commands

- provides indication of card status on the faceplate LED

- allows the trunk type to be configured on a per unit basis in software

- provides termination against 600 ohms for 4-wire E&M DC5 trunk circuits

- provides flexible transmission for various loss plans

- provides Paging (PAG), Recorded Announcement (RAN), and Music (MUS) interfaces

Application—The NT5K19BA is used in New Zealand. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K20 Extended Tone Detector (UK)

System requirements—All Large Systems with an IPE shelf.

Purpose—Provides eight channels of dual tone multifrequency (DTMF) and dial tone detection configurable on a per call basis. In addition, the type of dial tone to be detected is downloaded to the card upon initialization. Dial tone is either 330 Hz plus 440 Hz or 50 Hz. The channels are assigned on the DS30X loop. There is one 8 Kbps signaling channel provided for maintenance messaging and tone reporting.

Application—This tone detector has been replaced by the NT5K48 tone detector.

Quantity—Up to 16 cards per NT8D37 IPE module.

NT5K21AA Extended Multifrequency Compelled Sender/Receiver

System requirements—All Large Systems with an IPE shelf.

Purpose—Provides signaling across a trunk interface according to CCITT R2 signaling standard (XMFC). This card also provides signaling across a trunk interface according to French Socotel standards (XMFE), and operates in either A-Law or μ-Law companding.

Application—The NT5K21AA has four units, each capable of handling one call.

Quantity—See *Large System: Planning and Engineering* (553-3021-120) for engineering details.

NT5K36AA DID/DOD Trunk Card (Germany)

System requirements—All Large Systems.

Purpose—The NT5K36AA Direct Inward Dial/Direct Outward Dial Trunk card provides the interface between the Large System and up to four analog trunks.

The NT5K36AA DID/DOD card supports three central office types: IKZ1, IKZ2, and IKZ3.

Each unit on the NT5K36AA DID/DOD card operates as a DID/DOD trunk and supports 16 kHz pulse detection. There are three modes of operation for the NT5K36AA circuit card:

- outgoing calls
- short distance incoming calls from the central office
- long distance incoming calls from the central office

Application—The NT5K36AA is used in Germany. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K36AB DID/DOD Trunk Card (Austria/Germany)

System requirements—All Large Systems.

Purpose—The NT5K36AB Direct Inward Dial/Direct Outward Dial Trunk Card provides the interface between the Large System and up to four analog trunks.

Each NT5K36AB DID/DOD Trunk Card:

- indicates self-test status during an automatic or manual self-test (self-test pass is indicated on the faceplate LED)

- converts transmission signals from analog to digital and from digital to analog for up to four audio paths

- disables individual circuits or the entire board under software control

- provides internal 16 kHz pulse detection

- provides transmission performance according to German specifications

- provides the correct signaling impedances and voltages to operate with the German central office

Application—The NT5K36AB is used in Austria/Germany. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module

NT5K48 Tone Detector Card (Global)

System requirements—All Large Systems.

Purpose—The NT5K48 Global Tone Detector circuit card provides tone detection for dual tone multifrequency (DTMF) or dial tone detection (DTD).

The NT5K48 Global Tone Detector circuit card:

- provides eight channels of DTMF or dial tone detection

- provides both first stage dial tone detection and second stage DTD on a call-by-call basis

    Note: The NT5K48 Tone Detector remains dedicated to the call while the connecting process is progressing. Once the call is connected, the tone detector is released. It does not detect dial tone after the call is established.

- supports both A-Law and μ-Law companding

- provides card-identification for auto-configuration and for determining the serial number and firmware level of the card

- provides for hardware self-test

- allows country-specific DTMF and dial tone characteristics to be downloaded from software

Application—The Global Tone Detector circuit card replaces the NT5K20 tone detector and operates in the following countries:

- Australia

- Denmark

- France

- Germany

- Holland

- Italy

- New Zealand

- Norway

- Spain

- Sweden

- Switzerland

- United Kingdom

Note: The NT5K48 is configured in software. There are no switch settings on the card.

Quantity—Up to 16 cards per NT8D37 IPE module.

NT5K48BA Tone Detector Card (Denmark)

System requirements—All Large Systems

Purpose—The NT5K48BA Tone Detector circuit card provides tone detection for either dual tone multifrequency (DTMF) or dial tone detection (DTD). It does the following:

- provides eight channels of tone detection configurable on a call connection basis

- DTD configurable on a call connection basis

  Note: The NT5K48 Tone Detector operates during call setup only. When a connection is established, it drops out of the call.

- allows country-specific DTMF and dial tone characteristics to be downloaded from software (using LD 97)

Application—The NT5K48BA tone detector is designed for use in Denmark.

Quantity—Up to 16 cards per NT8D37 IPE module.

NT5K48DA Tone Detector Card (Norway)

System requirements—All Large Systems.

Purpose—The NT5K48 Tone Detector circuit card provides tone detection for either dual tone multifrequency (DTMF) or dial tone detection (DTD). It does the following:

- provides eight channels of tone detection configurable on a call connection basis

- provides both first stage dial tone detection and second stage DTD configurable on a call connection basis

    Note: The NT5K48 Tone Detector operates during call setup only. When a connection is established, it drops out of the call.

- allows country-specific DTMF and dial tone characteristics to be downloaded from software (using LD 97)

Application—The NT5K48DA is designed for use in Norway.

Quantity—Up to 16 cards per NT8D37 IPE module.

NT5K50AA E&M Tie Trunk Card (France)

System requirements—All Large Systems.

Purpose—The NT5K50AA E&M Tie Trunk card provides the interface between the Large System and up to four analog trunks.

The NT5K50AA E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Battery Pulse Option (BPO) (Type V)
- 4-wire E&M Type II
- Recorded Announcement (RAN) trunk
- Paging (PAG) trunk
- Music (MUS) trunk

The NT5K50AA E&M Tie Trunk card:

- has four switch settings (one per unit) used to select BPO (Type V) E&M signaling.

    Note: Large Systems can select BPO signaling in LD 14.

- supports wink, immediate start, or delay dial signaling
- converts transmission signals from analog to digital and from digital to analog

- provides software-selectable A-Law or μ-Law operation

- enables and disables individual units or the entire card under software control

- provides indication of card status on the faceplate LED

- allows the trunk type to be configured on a per unit basis in software

- provides termination against 600 ohms for 4-wire trunk circuits

- provides flexible transmission for various loss plans

- provides Paging (PAG), Recorded Announcement (RAN), and Music (MUS) interfaces

Application—The NT5K50AA is designed for use in France. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K70AA Central Office Trunk Card (Finland/Germany)

System requirements—All Large Systems.

Purpose—The NT5K70AA Central Office Trunk card supports eight analog central office (CO) trunks. It provides the following:

- loop start operation

- 16 kHz periodic pulse metering (PPM)

Application—The NT5K70AA is designed for use in Germany. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K70AB Central Office Trunk Card (Austria/Finland/Germany)

System requirements—All Large Systems.

Purpose—The NT5K70AB Central Office Trunk card provides the interface between the Large System and up to eight analog central office (CO) trunks.

The NT5K70AB Central Office Trunk card:

- supports internal 16 kHz periodic pulse metering (PPM)

- allows individual units or the entire board to be disabled by software

- provides software-selectable A-Law companding

- indicates self-test status during an automatic or manual self-test

- converts transmission signals from analog to digital and from digital to analog

- provides 2 dB transmission pads for long/short line operation

- provides termination and transhybrid balance impedance to match the German complex impedance network

- provides busy tone detection on a per unit basis, when configured to do so in software

- provides 100 ms flashhook for feature access

- provides direct reporting of periodic pulse metering (PPM) pulses to software in either buffered or unbuffered format

Application—The NT5K70AB is designed for use in Austria. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K71AA Central Office Trunk Card (Germany)

System requirements—All Large Systems.

Purpose—The NT5K71AA Central Office Trunk card is based on the NT5K70AA Trunk Card, but it supports four analog central office (CO) trunks instead of eight. The NT5K71AA provides the following:

- loop start operation

- 16 kHz periodic pulse metering (PPM)

Application—The NT5K71AA is designed for use in Germany. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K71AB Central Office Trunk Card (Austria/Germany)

System requirements—All Large Systems.

Purpose—The NT5K71AB Central Office Trunk card is the same as the NT5K70AB Trunk Card, but it connects up to four analog trunks instead of eight.

The NT5K71AB Central Office Trunk card:

- supports internal 16 kHz periodic pulse metering (PPM)

- allows individual units or the entire board to be disabled by software

- provides software-selectable A-Law companding

- indicates self-test status during an automatic or manual self-test

- converts transmission signals from analog to digital and from digital to analog

- provides 2 dB transmission pads for long/short line operation

- provides termination and transhybrid balance impedance to match the German complex impedance network

- provides busy tone detection on a per unit basis, when configured to do so in software

- provides 100 ms Flashhook for feature access

- provides direct reporting of periodic pulse metering (PPM) pulses to software in either buffered or unbuffered format

Application—The NT5K71AB is designed for use in Austria and Germany. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K72AA E&M Tie Trunk Card (Austria/Finland/Germany)

System requirements—All Large Systems.

Purpose—The NT5K72 E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Type 1 and 2 trunk

- Recorded Announcement (RAN) trunk

- Music on Hold (MUS) trunk

- Paging (PAG) trunk

Recorded announcers supported include the Cook Digital 4-channel announcer, the Audichron HQI-112, and the Kreutler-Announcer.

Application—The NT5K72AA is designed for use in Germany. On Large Systems, it can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K82AA Central Office Trunk Card (Switzerland)

System requirements—All Large Systems.

Purpose—The NT5K82AA Central Office Trunk card supports eight analog central office (CO) trunks. It provides the following:

- loop start operation

- 12 kHz periodic pulse metering (PPM)

- a choice between the old Swiss loss plan and the new Swiss loss plan, depending on the hardware configuration of the Large System

- trunk type to be configured on a per unit basis

- individual units or the entire board to be disabled by software

- software-selectable A-Law or μ-Law companding

- self-test status during an automatic or manual self-test

- card-identification for auto-configuration and for determining the serial number and firmware level of the card

- transmission signals from analog to digital and from digital to analog

- adjustable transmission pads for long or short line operation

- termination and transhybrid balance impedance to match the Swiss complex impedance network

- direct reporting of periodic pulse metering (PPM) pulses to software in either buffered or unbuffered format

- loop break detection and supervision on a per unit basis

- barring detection and supervision on a per unit basis

- busy tone detection and supervision on a per unit basis

Application—The NT5K82AA is designed for use in Switzerland. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K82BA/CA Central Office Trunk Card (Australia)

System requirements—All Large Systems.

Purpose—The central office trunk card for Australia comes in two versions: NT5K82BA and NT5K82CA. The NT5K82CA card has an on-board 12 kHz PPM pulse detector, while the NT5K82BA card does not. The NT5K82BA card counts 50 Hz pulses that are detected using external filters.

The central office trunk card has eight units and:

- supports loop start signaling

- allows the trunk type to be configured on a per unit basis

- allows individual units or the entire board to be disabled by software

- provides software-selectable A-Law or μ-Law companding

- indicates self-test status during an automatic or manual self-test

- provides card-identification for auto-configuration and for determining the serial number and firmware level of the card

- converts transmission signals from analog to digital and from digital to analog

- downloads transmit and receive losses to the B34 Codec for operation over long and short lines

- provides termination and transhybrid balance impedance to match the Australian complex impedance network

- provides direct reporting of periodic pulse metering (PPM) pulses to software in either buffered or unbuffered format

- provides Autoguard fault detection to prevent a faulty trunk from being seized on an outgoing call

- provides Fastguard (battery reversal) detection on incoming calls prior to ringing

- supports dynamic loss switching on a call by call basis

- provides busy tone detection to support far end release

Application—The NT5K82 is designed for use in Australia. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K82HA Central Office Trunk Card (Belgium)

System requirements—All Large Systems.

Purpose—The NT5K82HA Central Office Trunk card provides the interface between the Large System and up to eight analog central office (CO) trunks.

The NT5K82HA card has an on-board 12 kHz PPM pulse detector that counts 50 z pulses using external filters.

The NT5K82HA Central Office Trunk card:

- provides conversion for eight audio paths

- provides software-selectable A-Law and µ-Law operations

- provides indication of board status with faceplate-mounted LED

- provides for disabling of individual units or the entire board under software or Extended Peripheral Equipment Controller (XPEC) control

- provides loopback of pulse code modulation (PCM) signals to DS30X for testing and diagnostic purposes

- indicates self-test status with faceplate LED

- provides termination impedance to match Belgian complex impedance Z1

- provides transhybrid balance matching against Belgian complex impedance Z1

- provides for loss pads (analog- to-digital and digital-to-analog) as per the Belgian loss plan and call path set-up

- meets the Belgian loss plan and provides a base for future loss plan change by use of the B34 Codec with software-selectable loss pads

- corrects signaling impedances to operate with the Belgian central office

- supports multifrequency compelled (MFC) signaling when used with the NT5K21 XMFC Sender/Receiver card

Application—The NT5K82HA is designed for use in Belgium. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K83AA E&M Tie Trunk Card (Spain/Switzerland)

System requirements—All Large Systems.

Purpose—The NT5K83AA E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Type 1 and 2 trunk

- Recorded Announcement (RAN) trunk

- Music on Hold (MUS) trunk

- Paging (PAG) trunk

Announcement machines supported include the Cook Digital 4-channel announcer and the Audichron HQI-112.

The NT5K83AA E&M Tie Trunk Card:

- is equipped with four trunk units

- converts transmission signals from analog to digital and from digital to analog

- provides software-selectable A-Law or μ-Law operation

- enables and disables individual units or the entire card under software control

- provides outpulsing on the card (make-break ratios are defined in software and downloaded during power up and by software commands)

- provides indication of card status from self-test diagnostics on the LED

- allows the trunk type to be configured on a per unit basis in software

- provides termination against 600 ohms for 4-wire E&M trunk circuits

- provides flexible transmission for various loss plans

- provides Paging (PAG), Recorded Announcement (RAN), and Music (MUS) interfaces

Application—The NT5K83AA is designed for use in Switzerland. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K83BA E&M Tie Trunk Card (Denmark)

System requirements—All Large Systems.

Purpose—The NT5K83BA E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Type 1 and 2 trunk

- Recorded Announcement (RAN) trunk

- Music on Hold (MUS) trunk

- Paging (PAG) trunk

The NT5K83BA E&M Tie Trunk card provides the choice between the old Danish loss plan and the new Danish loss plan. The old plan is chosen when existing peripheral equipment (EPE) or enhanced existing peripheral equipment (EEPE) is used on the Large System. The new loss plan is chosen when only intelligent peripheral equipment (IPE) or intelligent enhanced peripheral equipment (IEPE) is used.

Application—The NT5K83BA is designed for use in Denmark. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K83CA E&M Tie Trunk Card (Norway)

System requirements—All Large Systems.

Purpose—The NT5K83CA E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Type 1 and 2 trunk

- Recorded Announcement (RAN) trunk

- Music on Hold (MUS) trunk

- Paging (PAG) trunk

The NT5K83CA E&M Tie Trunk card provides the choice between the old Norwegian loss plan and the new Norwegian loss plan. The old plan is chosen when existing peripheral equipment (EPE) or enhanced existing peripheral equipment (EEPE) is used on the Large System. The new loss plan is chosen when only intelligent peripheral equipment (IPE) or intelligent enhanced peripheral equipment (IEPE) is used.

The NT5K83CA E&M Tie Trunk card:

- is equipped with four trunk units

- converts transmission signals from analog to digital and from digital to analog

- enables and disables individual units or the entire card under software control

- provides outpulsing on the card (make break ratios are defined in software and downloaded during power up and by software commands)

- provides indication of card status from self-test diagnostics on the LED

- allows the trunk type to be configured on a per unit basis in software

- provides termination against 600 ohms for 4-wire E&M trunk circuits

- provides Paging (PAG), Recorded Announcement (RAN), and Music interfaces

Application—The NT5K83CA is designed for use in Norway. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K83DA E&M Tie Trunk Card (Holland)

System requirements—All Large Systems.

Purpose—The NT5K83DA E&M Tie Trunk card provides the interface between the Large System and up to four analog trunks. Each trunk circuit can be individually configured as:

- 2-wire E&M BPO (Type V)

- 4-wire E&M Type I, Type II, BPO (Type V)

- Cept L1 2280 Hz tie trunk (AC15 signaling in the UK)

- Recorded Announcement (RAN) trunk

- Paging (PAG) trunk

- Music (MUS) trunk

The NT5K83DA E&M Tie Trunk card:

- has four switch settings (one per unit) used to select BPO (Type V) E&M signaling

    Note: Signaling is service-changeable through LD 14, eliminating the need to set the hardware switches.

- supports wink, immediate start, or delayed dialing signaling

The NT5K83DA E&M Tie Trunk Card supports the following types of announcement machines:

- start mode announcement machines
- continuous mode announcement machines

Recorded announcement machines supported include the Cook Digital 4-channel announcer and the Audichron HQI-112.

The NT5K83DA E&M Tie Trunk Card:

- supports wink, immediate start, or delay dial signaling
- converts transmission signals from analog to digital and from digital to analog
- provides software-selectable A-Law or μ-Law operation
- enables and disables individual units or the entire card under software control
- provides indication of card status on the faceplate LED
- allows the trunk type to be configured on a per unit basis in software
- provides termination and transhybrid balance matching against 600 ohms for 2-wire E&M trunk circuits
- provides termination against 600 ohms for 4-wire and CEPT L1 E&M trunk circuits
- provides flexible transmission for various loss plans
- provides Paging (PAG), Recorded Announcement (RAN), and Music (MUS) interfaces

Application—The NT5K83DA is designed for use in Holland. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K83EA E&M Tie Trunk Card (Australia)

System requirements—All Large Systems.

Purpose—The NT5K83EA E&M Tie Trunk card provides the interface between the Large System and up to four analog trunks.

The NT5K83EA E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Type C2 Earth-off idle (configured as Type 1 in software)

- Recorded Announcement trunk (RAN)

- Music trunk (MUS)

- Paging trunk (PAG)

The NT5K83EA E&M Tie Trunk card:

- downloads transmit and receive losses to the B34 Codec

- supports dynamic loss switching on a call-by-call basis

- converts transmission signals from analog to digital and from digital to analog

- enables and disables individual units or the entire card under software control

- provides outpulsing on the card (make break ratios are defined in software and downloaded during power up and by software commands)

- provides indication of card status from self-test diagnostics on the LED

- allows the trunk type to be configured on a per unit basis in software

- provides termination against 600 ohms for 4-wire E&M trunk circuits

- provides Paging (PAG), Recorded Announcement (RAN), and Music interfaces

Application—The NT5K83EA is designed for use in Australia. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K83FA E&M Tie Trunk Card (Sweden)

System requirements—All Large Systems.

Purpose—The NT5K83FA E&M Tie Trunk card provides the interface between the Large System and up to four analog trunks.

The NT5K83FA E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 2-wire E&M BPO (Type V)

- 4-wire E&M Type II

- Recorded Announcement (RAN) trunk

- Paging (PAG) trunk

- Music (MUS) trunk

The NT5K83FA E&M Tie Trunk card:

- has four switch settings (one per unit) used to select BPO (Type V) E&M signaling.

  Note: Large Systems can select BPO signaling in LD 14.

- supports wink, immediate start, or delay dial signaling

- converts transmission signals from analog to digital and from digital to analog

- provides software-selectable A-Law or μ-Law operation

- enables and disables individual units or the entire card under software control

- provides indication of card status on the faceplate LED

- allows the trunk type to be configured on a per unit basis in software

- provides termination and trans-hybrid balance matching against Sweden Complex impedance for 2-wire E&M trunk circuits

- provides termination against 600 ohms for 4-wire trunk circuits

- provides flexible transmission for various loss plans

- provides Paging (PAG), Recorded Announcement (RAN), and Music (MUS) interfaces

Application—The NT5K83FQ is designed for use in Sweden. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K83GA E&M Tie Trunk Card (Italy)

System requirements—All Large Systems.

Purpose—The NT5K83GA E&M Tie Trunk card provides the interface between the Large System and up to four analog trunks.

The NT5K83GA E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 4-wire E&M Type 1 and 2

- 2-wire E&M Types 1, 2, and 5 (BPO)

- Recorded Announcement (RAN) trunk

- Music trunk (MUS)

- Paging trunk (PAG)

The NT5K83GA E&M Tie Trunk card:

- is equipped with four trunk units

- converts transmission signals from analog to digital and from digital to analog

- provides software-selectable A-Law or µ-Law operation

- enables and disables individual units or the entire card under software control

- provides outpulsing on the card (make break ratios are defined in software and downloaded during power up and by software commands)

- provides indication of card status from self-test diagnostics on the LED

- allows the trunk type to be configured on a per unit basis in software

- provides 600 ohm termination for 2- and 4-wire E&M trunk circuits

- provides flexible transmission for various loss plans

- provides Paging (PAG), Recorded Announcement (RAN), and Music (MUS) interfaces

Application—The NT5K83GA is designed for use in Italy. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K83HA E&M Tie Trunk Card (Belgium)

System requirements—All Large Systems.

Purpose—The NT5K83HA E&M Tie Trunk card provides the interface between the Large System and up to four analog trunks.

The NT5K83HA E&M Tie Trunk card supports four analog trunks. Each trunk circuit can be individually configured as:

- 2- and 4-wire E&M Transmission

- Type I, Type II and Type V E&M signaling

- Recorded Announcement (RAN) trunk

- Voice Paging Trunk features

The card supports these features on a per unit basis.

The NT5K83HA E&M Tie Trunk card:

- provides analog-to-digital and digital-to-analog conversion for four audio paths

- allows the trunk type to be configured on a per channel basis

- provides software-selectable A-Law and μ-Law operation

- indicates self-test status with faceplate LED

- provides for disabling of individual units or the entire board under software or XPEC control

- provides outpulsing on the card; the make break ratios are software downloadable in the initial configuration stage

- provides loopback of pulse code modulation (PCM) signals to DS30X for testing and diagnostic purposes

- provides termination against 600 ohms for 4-wire E&M trunk circuits

- provides termination and transhybrid balance matching against 600 ohms for 2-wire E&M trunk circuits

- provides a PAG (Voice Paging) interface

- provides a RAN (Recorded Announcement/Music) interface

- provides a Radio Paging interface

- provides flexible transmission for various loss plans

- interfaces each of the four PCM digital signals to one DS30X channel in A10 format

- sends transmit and receive SSD signaling messages over a DS30X signaling channel in A10 format

Application—The NT5K83HA is designed for use in Belgium. It can be installed in any PE slot that supports Intelligent Peripheral Equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K84AA Direct Inward Dial (DID) Trunk Card (Switzerland)

System requirements—All Large Systems.

Purpose—The NT5K84AA Direct Inward Dial (DID) Trunk card supports eight analog trunks. Each trunk circuit operates as a DID trunk.

The NT5K84AA DID Trunk card provides a choice between the old Swiss loss plan and the new loss plan. The old plan is used when existing peripheral equipment (EPE) or enhanced existing peripheral equipment (EEPE) is present on the Large System. The new loss plan is used when only intelligent peripheral equipment (IPE) or enhanced intelligent enhanced peripheral equipment (IEPE) is present.

Each NT5K84AA DID Trunk card:

- converts transmission signals from analog to digital and from digital to analog for up to eight audio paths

- supports the new Swiss loss plan

- provides adjustable transmission pads for long line or short line operation

- provides termination and trans-hybrid balance impedance to match the Swiss complex impedance network

- provides the correct signaling impedances and voltages to operate with the Swiss central office

- supports multifrequency compelled (MFC) signaling when used with the XMFC Sender/Receiver card (NT5K21)

Application—The NT5K84AA is designed for use in Switzerland. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K84BA Direct Dial Inward (DDI) Trunk Card (Australia)

System requirements—All Large Systems.

Purpose—The NT5K84BA Direct Dial Inward (DDI) Trunk card provides the interface between the Large System and up to eight analog DDI trunk lines.

Each NT5K84BA DDI Trunk card:

- allows the trunk signaling type to be configured on a per unit basis

- indicates self-test status during an automatic or manual self-test (self-test pass is indicated on the faceplate LED

- converts transmission signals from analog to digital and from digital to analog for up to eight audio paths

- supports dynamic loss switching on a call by call basis

- provides termination impedance to match the Australian three-component complex network

- provides trans-hybrid balance matching against the Australian complex impedance

- provides analog-to-digital and digital-to-analog call path losses for DDI trunk units, values downloadable in the initial configuration stage

Application—The NT5K84BA is designed for use in Australia. It can be installed in any slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K84HA Direct Inward Dial (DID) Trunk Card (Belgium)

System requirements—All Large Systems.

Purpose—The NT5K84HA Direct Inward Dial (DID) Trunk card provides the interface between the Large System and up to eight analog DID trunk lines.

The NT5K84HA supports the Belgian Direct Inward Dialing Signaling protocol.

Each NT5K84HA DID Trunk card:

- provides analog-to-digital and digital-to-analog conversion for eight audio paths

- uses software-selectable A-Law and μ-Law operation

- indicates self-test status with faceplate LED

- provides for disabling of individual units or the entire board under software or XPEC control

- provides loopback of pulse code modulation (PCM) signals to DS30X for testing and diagnostic purposes

- provides termination impedance to match Belgian complex impedance Z1

- provides transhybrid balance matching against Belgian complex impedance Z1

- provides for loss pads (analog-to-digital and digital-to-analog) as per the Belgian loss plan and call path setup

- meets the Belgian loss plan and provides a base for future loss plan change by use of the B34 Codec with software-selectable loss pads

- corrects signaling impedances to operate with the Belgian central office

- supports multifrequency compelled (MFC) signaling when used with the NT5K21 XMFC Sender/Receiver card

Application—The NT5K84HA is designed for use in Belgium. It can be installed in any slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K90AA Central Office Trunk Card (Denmark)

System requirements—All Large Systems.

Purpose—The NT5K90AA Central Office Trunk card supports eight analog central office (CO) trunks. It provides:

- loop start operation

- supervised loop start signaling using CO polarity reversals (ARF signaling)

- Direct Inward System Access (DISA), but only when configured in the supervised loop start signaling mode

- a choice between the old Danish loss plan and the new Danish loss plan, depending on the hardware configuration of the Large System

- busy tone detection (detection of far end release)

- 12 kHz periodic pulse metering (PPM), also referred to as subscriber pulse metering (SPM)

Application—The NT5K90AA is designed for use in Denmark. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K90BA Central Office Trunk Card (Denmark)

System requirements—All Large Systems.

Purpose—The NT5K90BA Central Office Trunk card is the same as the NT5K90AA Trunk card, but does not support periodic pulse metering (PPM) or busy tone detection.

Application—The NT5K90BA is designed for use in Denmark. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K92AA Direct Inward Dial Auto Answer Circuit (DID Tester) (Austria/France/Germany/Switzerland)

System requirements—All Large Systems.

Purpose—The NT5K92AA Direct Inward Dial (DID) Auto Answer Circuit is used to test the condition of the DID lines on a Large System. It does the following:

- answers an incoming DID call

- holds the call for a predetermined length of time

- sends tones or remains silent

- disconnects the call

NT5K93AA Central Office Trunk Card (Norway)

System requirements—All Large Systems.

Purpose—The NT5K93 Central Office Trunk card provides the interface between the Large System and up to eight analog Central Office (CO) trunks.

The NT5K93AA Central Office Trunk card:

- provides loop start operation

- is equipped with eight trunk units

- allows the trunk type to be configured on a per unit basis

- provides software-selectable A-Law or μ-Law companding

- indicates self-test status during an automatic or manual self-test

- provides card-identification for auto-configuration and for determining the serial number and firmware level of the card

- converts transmission signals from analog to digital and from digital to analog

- provides a choice between old or new Norwegian loss plans

- provides adjustable transmission pads for long/short line operation

- provides direct reporting of periodic pulse metering (PPM) pulses to software in either buffered or unbuffered format

Application—The NT5K93AA is designed for use in Norway. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K93BA Central Office Trunk Card (Norway)

System requirements—All Large Systems.

Purpose—The NT5K93BA Central Office Trunk card is the same as the NT5K93AA Central Office Trunk card, but does not support the periodic pulse metering (PPM) feature.

The NT5K93BA Central Office Trunk card:

- provides loop start operation

- is equipped with eight trunk units

- allows the trunk type to be configured on a per unit basis

- provides software-selectable A-Law or μ-Law companding

- indicates self-test status during an automatic or manual self-test

- provides card-identification for auto-configuration and for determining the serial number and firmware level of the card

- converts transmission signals from analog to digital and from digital to analog

- provides a choice between old or new Norwegian loss plans

- provides adjustable transmission pads for long/short line operation

Application—The NT5K93BA is designed for use in Norway. It can be installed in any peripheral equipment (PE) slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K96JA Flexible Analog Line Card (Denmark)

System requirements—All Large Systems with an IPE shelf.

Purpose—The NT5K96JA Flexible Analog Line card is the same as the NT5K02JA line card, but does not have the Message Waiting feature.

Application—The NT5K96JA is designed for use in Denmark.

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K96KA Flexible Analog Line Card (Holland)

System requirements—All Large Systems with an IPE shelf.

Purpose—The NT5K96KA line card is exactly the same as the NT5K02KA Analog line card, but does not support a Message Waiting indicator.

Application—The NT5K96KA is designed for use in Holland.

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K96MA Flexible Analog Line Card (Norway)

System requirements—All Large Systems with an IPE shelf.

Purpose—The NT5K96MA Flexible Analog Line card is the same as the NT5K02MA line card, but it does not have the Message Waiting feature.

Application—The NT5K96MA is designed for use in Norway.

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K96NB Flexible Analog Line Card (Sweden)

System requirements—All Large Systems with an IPE shelf.

Purpose—The NT5K96NB Flexible Analog Line card is the same as the NT5K02NB line card, but it does not have the Message Waiting feature.

Application—The NT5K96NB is designed for use in Sweden.

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K96SA Flexible Analog Line Card (Spain)

System requirements—All Large Systems with an IPE shelf.

Purpose—The NT5K96SA Flexible Analog Line card is the same as the NT5K02SA line card, but it does not have the Message Waiting feature.

Application—The NT5K96SA is designed for use in Spain.

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT5K99AA/BA Central Office Trunk Card (Spain)

System requirements—All Large Systems.

Purpose—The NT5K99AA and NT5K99BA Central Office Trunk cards provide the interface between the Large System and up to eight analog central office (CO) trunks. The NT5K99AA card supports internal 12 kHz periodic pulse metering (PPM); the NT5K99BA card does not support the PPM feature.

The NT5K99AA and NT5K99BA Central Office Trunk Cards:

- provide loop start operation
- provide battery reversal detection
- are equipped with eight trunk units
- allow the trunk type to be configured on a per unit basis
- allow individual units or the entire board to be disabled by software
- provide software-selectable A-Law companding
- indicate self-test status during an automatic or manual self-test
- provide card-identification for auto-configuration and for determining the serial number and firmware level of the card
- convert transmission signals from analog to digital and from digital to analog
- provide 2 dB transmission pads for operation over long or short lines
- provide termination and transhybrid balance impedance to match the Spanish complex impedance network
- provide direct reporting of periodic pulse metering (PPM) pulses to software in either buffered or unbuffered format
- provide detection and reporting of battery reversals from the central office

Application—The NT5K99AA and NT5K99BA are designed for use in Spain. They can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards per NT8D37 IPE Module.

NT6D70BA S/T Interface Line Card (SILC)

System requirements—All Large Systems.

Purpose—Provides eight S/T four-wire full duplex interfaces that are used to connect ISDN BRI compatible terminals over Digital Subscriber Lines (DSL) to the Large System. Each S/T interface provides two B-channels and one D-channel and supports a maximum of eight physical connections that can link up to 20 logical terminals on one DSL.

The main functions are to:

- provide eight ISDN S/T interfaces conforming to ANSI, ETSI, INS-NET, and ITU standards

- support point-to-point and multipoint DSL terminal connections

- execute instructions received from the CPU to configure and control the S/T interfaces

- provide channel mapping between ISDN BRI format 2B+D and IPE bus format

- multiplex four D-channels onto one 64 kbps network timeslot

- provide 2 watts of power to terminals on a DSL

- support S/Q Layer 1 maintenance channels between a terminal and a network terminator

- perform activation and deactivation of DSLs

- provide loopback control of DSLs

The SILC is housed in the IPE module and communicates with the MISP through the peripheral controller card.

Quantity—Up to 15 per module; see *ISDN Basic Rate Interface: Features* (553-3001-380) for capacity requirements.

NT6D71 U Interface Line Card (UILC)

System requirements—All Large Systems.

Purpose—Provides eight two-wire full-duplex U interfaces that are used to connect ISDN BRI-compatible terminals over DSLs to the Large System. Each U interface provides two B-channels and one D-channel and supports one physical termination. The length of a DSL should not exceed 5.5 km (3.3 mi.).

The main functions are to:

- provide eight ISDN U interfaces conforming to ANSI standards

- support point-to-point DSL terminal connections

- provide channel mapping between ISDN BRI and IPE bus formats

- support M-channel functions as specified by ANSI standards

- multiplex four D-channels onto one 64 kbps timeslot

- support maintenance information messages

- perform activation and deactivation of DSLs

- provide loopback control of DSLs

The UILC is housed in the IPE module and communicates with the MISP over the peripheral controller card, which is also housed in the IPE Module.

Quantity—Up to eight per module; see *ISDN Basic Rate Interface: Features* (553-3001-380) for capacity requirements.

NT6D72 Basic Rate Concentrator Signaling Card (BRSC)

System requirements—All Large Systems.

Purpose—The BRSC processes signaling messages from ISDN BRI line cards and transmits the resulting messages to the MISP. It also separates D-channel Packet Switched Data (PSD) from signaling information and routes it to the packet handler.

Quantity—One for each IPE module with BRI line cards; see *ISDN Basic Rate Interface: Features* (553-3001-380) for capacity requirements.

NT7D16 Data Access Card

System requirements—All Large Systems.

Purpose—Provides interface to up to six data units, or ports, with each port operating in either RS-232-C or RS-422 mode. Used in the Large System to provide connections for data terminal equipment (DTE) or data communications equipment (DCE) such as terminals, personal computers, modems, and mainframe host computers.

Quantity—Up to 16 cards for each NT8D37 IPE Module.

NT7R52 Remote Carrier Interface Card

System requirements—Carrier Remote IPE floor-standing module.

Purpose—Provides a primary interface and control function between the NT1R51 Local Carrier Interface Card and the Carrier Remote IPE site. Each controller card serves up to 16 IPE cards. The controller card is equipped with a Motorola 68000-type microprocessor that performs some local call processing and maintenance diagnostics.

Quantity—One for each NT8D37 IPE Module at the Carrier Remote IPE site.

NT8D01 Controller Card

System requirements—All Large Systems.

Purpose—Provides a primary interface and control function between the NT8D04 Superloop Network Card and the IPE Module. Each controller card serves up to 16 IPE cards. The controller card is equipped with a Motorola 68000-type microprocessor that performs some local call processing and maintenance diagnostics.

The NT8D01BC Controller-4 Card (formerly NT8D01BA) interfaces with up to four superloop network cards.

The NT8D01BD Controller-2 Card (formerly NT8D01BB) interfaces with up to two superloop network cards.

Quantity—One for each NT8D37 IPE Module.

NT8D01AC Controller-4 Card

System requirements—All Large Systems.

Purpose—Provides a primary interface and control function between the superloop network card and the IPE module across up to four 1.024 Mbps superloops. Each Controller-4 card serves up to 16 IPE cards.

The Controller-4 card interfaces with up to four NT8D04AA Superloop Network Cards. It is equipped with a Motorola 68000-type microprocessor that performs some local call processing and maintenance diagnostics, thus off-loading the CPU.

Quantity—One for each NT8D37 IPE Module.

NT8D01AD Controller-2 Card

System requirements—All Large Systems.

Purpose—Provides a primary interface and control function between the superloop network card and the IPE module across up to two 10.24 Mbps superloops. Each Controller-2 card serves up to 16 IPE cards.

The Controller-2 card interfaces with up to two NT8D04AA Superloop Network Cards. It is equipped with a Motorola 68000-type microprocessor that performs some local call processing and maintenance diagnostics, thus off-loading the CPU.

Quantity—One for each NT8D37 IPE Module.

NT8D02 Digital Line Card

System requirements—All Large Systems.

Purpose—Provides interface to up to 16 digital integrated voice and data sets for a total of 32 ports. It is equipped with an 8051-family microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Quantity—Up to 16 cards for each NT8D37 IPE Module.

NT8D03 Analog Line Card

System requirements—All Large Systems.

Purpose—Replaced by NT8D09 Analog Message Waiting Line Card as of January 1992.

Provides interface to up to 16 analog telephones (500/2500). It is equipped with an 8051-family microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

Quantity—Up to 16 cards for each NT8D37 IPE Module.

NT8D09 Analog Message Waiting Line Card

System requirements—All Large Systems.

Purpose—Replaces the NT8D03.

Provides interface to up to 16 analog telephones (500/2500) with Message Waiting lamp feature. It is equipped with an 8051-family microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Quantity—Up to 16 cards for each NT8D37 IPE Module.

NT8D14 Universal Trunk Card

System requirements—All Large Systems.

Purpose—Provides interface to up to eight trunk facilities in A-Law or µ-Law applications. Each trunk unit is independently configured to operate as a:

- Central Office (CO), Foreign Exchange (FX), or Wide Area Telephone Service (WATS) trunk

- Direct Inward Dialing (DID) trunk

- two-way tie trunk

- Recorded Announcement (RAN) trunk

- Paging trunk

Each unit also provides the following signaling operation:

- ground start (CO/FX/WATS trunks)

- loop start (CO/FX/WATS trunks) (minimum vintage BA)

- loop dial repeating (DR) (DID and two-way tie trunks)

- loop outgoing automatic, incoming dial (OAID) (two-way tie trunks)

- continuous operation, pulse start, or level start (RAN trunks)

Trunk unit termination and balance impedance is selectable to 600 or 900 ohms, and balance or complex: 3COM1 or 3COM2 (minimum vintage BA for 3COM2).

The universal trunk card also supports Music, Automatic Wake Up, and Direct Inward System Access (DISA) features.

The card is equipped with a microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The card complies with CSA Standard C82.2 No. 0.7-M1985 and EIA Standard 464A.

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Quantity—One for each eight trunks; up to 16 cards for each NT8D37 IPE Module.

NT8D15 E&M Trunk Card

System requirements—All Large Systems.

Purpose—Provides interface to up to four analog trunk facilities in A-Law and μ-Law applications. Provides interface connecting the trunk facility to the NT8D37 IPE Module. Each trunk unit is individually configured to operate as:

- two-wire E&M Type I signaling trunk

- four-wire E&M trunk

    — Type I or Type II signaling

    — Duplex (DX) signaling

- paging trunk

The card is equipped with a microprocessor that performs functions including:

- control of card operation

- card identification

- self-test

- status reporting to the controller

- maintenance diagnostics

The card complies with CSA Standard C82.2 No. 0.7-M1985 and EIA Standard 464A.

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Application:

- NT8D15AA μ-Law only

- NT8D15AF μ-Law/A-Law software-selectable

Quantity—One for each set of four trunks up to a maximum of 16 cards for each NT8D37 IPE Module.

NT8D16 Digitone Receiver Card

System requirements—All Large Systems.

Purpose—Provides eight channels of dual tone multifrequency (DTMF) detection. These channels are assigned on the DS30X loop. There is one 8 Kbps signaling channel provided for maintenance messaging and tone reporting.

The NT8D16 Digitone Receiver Card allows access to the filters for parameter alterations to service different environments (for example, international applications).

Quantity—See *Large System: Planning and Engineering* (553-3021-120) for engineering details.

NT9C14AA CO/FX/WATS Trunk Card

System requirements—All Large Systems.

Purpose—Same as QPC527 but the output Pad Assembler/Dissembler (PAD) value has been altered for the China market.

NTAG03AA Central Office Trunk Card (Holland)

System requirements—All Large Systems.

Purpose—Provides the interface between the Large System and up to eight analog central office (CO) trunks.

The NTAG03AA Central Office Trunk Card:

- supports A-type signaling and 50 Hz periodic pulse metering (PPM) detection

- receives tone detection information from the tone detector card

- provides busy tone detection (far end release)

- allows the trunk type to be configured on a per unit basis

- provides disabling of individual units or the entire card through software

- indicates self-test status during an automatic or manual self-test

- converts transmission signals from analog to digital and from digital to analog

- provides 600 ohm terminating impedance in compliance with regulatory Holland standards

- provides complex balance impedance in compliance with regulatory Holland standards

Application—The NTAG03AA is designed for use in Holland. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards for each NT8D37 IPE Module.

NTAG04AA Central Office/DID Trunk Card (Holland)

System requirements—All Large Systems.

Purpose—Provides the interface between the Large System and up to eight analog trunks. The NTAG04AA CO/DID Trunk Card has eight units, each of which can be individually configured as:

- central office incoming/outgoing trunk

- direct inward dial/direct outward dial trunk

The NTAG04AA CO/DID Trunk Card:

- supports ALS B1 and B2 signaling and 50 Hz periodic pulse metering (PPM) detection

- detects the polarity of the central office line

- detects incoming digipulses and sends a message to the central processing unit (CPU) for each digit

- allows the trunk type to be configured on a per unit basis

- provides disabling of individual units or the entire card through software

- indicates self-test status during an automatic or manual self-test

- converts transmission signals from analog to digital and from digital to analog

- provides 600 ohm terminating impedance in compliance with regulatory Holland standards

- provides complex balance impedance in compliance with regulatory Holland standards

Application—The NTAG04AA is designed for use in Holland. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

Quantity—Up to 16 cards for each NT8D37 IPE Module.

NTAG26 Enhanced Multifrequency Receiver

System requirements—All Large Systems.

Purpose—The NTAG26 Enhanced Multifrequency Receiver (XMFR) receives MF digit information from the Central Office. This MF feature allows the Large System to receive 911 and feature group D applications. The XMFR has four ports, and operates only in Large Systems using *u*-low compounding.

Quantity—One for each IPE module.

NTAG36 Meridian Integrated RAN (MIRAN)

System requirements—All Large Systems with an IPE shelf.

Purpose—The MIRAN card provides up to eight internal, one-to-one ports and two external, multi-cross-connect ports to support Recorded Announcement (RAN) and Music On Hold (MOH) applications. Each multi-cross-connect port can connect to a maximum of 16 external Enhanced Universal Trunk (EXUT)/XFEM ports to provide the same announcement on a number of channels. For Large Systems with the RAN Broadcast feature, each of the internal ports with built-in trunk emulation can support up to 30 callers hearing the same RAN message.

The MIRAN card emulates the NT8D14 Enhanced Universal Trunk (EXUT) circuit card (NT8D14BA vintage or greater). The MIRAN emulates any DS-30X signaling protocol, including TCM signaling, to be compatible with existing and future terminals and consoles. In addition, MIRAN provides

access to any one of the 32 voice channels on a DS-30X loop for both voice and data applications.

The original MIRAN card (NTAG36AA), upgraded to MIRAN Release 2.0 software, provides the following RAN/Music functionality:

- easily expandable, industry-standard architecture (small, medium, and large configuration controlled by keycode)

- simplicity of the basic system (no external devices or cables required)

- a set of both standard and proprietary interfaces

- embedded real-time operating system

- support for CE-MUX and Card-LAN interfaces

- up to eight channels of RAN or Music directly

- up to 40 channels of RAN or Music using the two cross-connect ports connected to external EXUT or XFEM ports

- 366-day calendar allowing the assigning of different messages to a particular channel based on the time of day, day of the week, and day of the year

- password-protected RAN recording and channel assignment from any DTMF telephone using a simple voice menu interface

- passwords for individual channels

- professional recordings of RAN and MOH that are supplied on PCMCIA Flash cards and can be instantly installed

- swapping of recordings between "in-service" and "in-reserve" using any telephone set

- full flexibility in length of recordings up to storage limits

- a minimum of eight minutes of recording capacity on the base card

- additional recording capacity available through PCMCIA ATA Flash cards

- two external analog inputs to allow access to and uploading of additional recordings

- message backup and restore capability

- an emergency signal using software to replace existing message(s)

- six minutes of pre-recorded copyright free music for turn key MOH

The new MIRAN card (NTAG36AB) contains an Ethernet port and provides the following *additional* functionality:

- embedded web server for point-and-click access to MIRAN features and multiple MIRAN cards

- FTP download of voice and music.WAV files

- automatic time and date synchronization with the Large System

- access to on-line Nortel Networks technical publications

For more information on the NTAG36 Meridian Integrated RAN card, see *Meridian Integrated RAN: Description, Installation, and Operation* (553-3001-360) for more details.

NTBX80AA ISDN Network Termination Unit (NT1)

System requirements—All Large Systems.

Purpose—The NT1 is the link between the central office equipment and the customer premises equipment in the ISDN. The NT1 is located at the customer premises, and supports ISDN Basic Rate Interface (BRI) service by providing two ANSI-standard interfaces:

- the subscriber loop (U loop), which connects the NT1 to the network

- the customer interface bus (S/T bus), which connects the NT1 to the customer's terminal equipment

The NTBX80AA contains one stand-alone NT1 unit and is typically wall- or desk-mounted at the user's workstation. The stand-alone version has an optional companion power supply that converts ac power to the –48 V dc used by the NT1 unit.

NTBX84AA/BA Rack mount NT1 Card—Basic/Enhanced

System requirements—All Large Systems.

Purpose—The NT1 is the link between the central office equipment and the customer premises equipment in the ISDN. The NT1 is located at the customer premises, and supports ISDN Basic Rate Interface (BRI) service by providing two ANSI-standard interfaces:

- the subscriber loop (U loop), which connects the NT1 to the network

- the customer interface bus (S/T bus), which connects the NT1 to the customer's terminal equipment

The NTBX84AA/BA NT1 Basic card provides card status indication to the NT1 module as follows:

- test status of NT1

- status of frame synchronization on U interface

- status of frame synchronization on S/T interface

- S/T loop power overload

The NTBX84AA/BA NT1 Enhanced card provides optional star bus configuration on the S/T interface. Two independent outputs provide mixed bus configurations and/or maximum loop reach to two user locations via one U loop.

NTCK16 Generic Central Office Trunk Card

System requirements—All Large Systems.

Purpose—The Generic central Office Trunk card comes in two versions: A*x* and B*x*

The NTCK16A*x* and NTCK16B*x* Generic Central Office Trunk cards support up to eight analog central office trunks. The NTCK16A*x* card supports internal 12/16 kHz PPM; the NTCK16B*x* card does not.

The NTCK16 Generic Central Office Trunk card has eight units and does the following:

- supports the North American loss plan

- supports loop start signaling

- supports busy tone detection and supervision on a per unit basis.

- supports battery reversal detection

- provides 4 dB dynamic attenuation pads on a per call basis

- allows individual units or the entire board to be disabled by software

- provides software-selectable A-Law or μ-Law companding

- indicates self-test status during an automatic or manual self-test

- provides card identification for auto-configuration and for determining the serial number and firmware level of the card

- converts transmission signals from analog to digital and from digital to analog

- provides termination and transhybrid balance impedance to match 600 ohms

Application—The generic central office trunk card can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

The NTCK16AA, BA, AX, and BX Generic Central Office Trunk cards operate in the following countries:

- Brazil

- Ireland

- Mexico

- Singapore

- Tortola

The NTCK16AD and BD Generic Central Office Trunk cards operate in the following countries:

- Argentina

- Bahrain

- Chile

- Egypt

- Indonesia

- Korea

- Kuwait

- Lebanon

- Taiwan

- Thailand

- Turkey

- Venezuela

NTCK18AA Central Office Trunk Card (Italy)

System requirements—All Large Systems.

Purpose—The NTCK18AA Central Office Trunk card provides the interface between the Large System and up to eight analog central office (CO) trunks.

The NTCK18AA Central Office Trunk card:

- is equipped with eight trunk units

- supports internal 12 kHz periodic pulse metering (PPM)

- allows the trunk type to be configured on a per unit basis

- allows individual units or the entire board to be disabled by software

- provides software-selectable A-Law or μ-Law companding

- indicates self-test status during an automatic or manual self-test

- provides card identification for auto-configuration and for determining the serial number and firmware level of the card

- converts transmission signals from analog to digital and from digital to analog

- supports the old and new Italy loss plans by providing a software-selectable loss plan

- provides adjustable transmission pads for long or short line operation

- provides termination and transhybrid balance impedance to match the Italian complex impedance network

- provides direct reporting of periodic pulse metering (PPM) pulses to software in either buffered or unbuffered format.

- supports loop start signaling

- supports busy tone detection and supervision on a per unit basis

Application—The NTCK18AA is designed for use in Italy. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

NTCK22AA Direct Inward Dial Trunk Card (Italy)

System requirements—All Large Systems.

Purpose—The NTCK22AA Direct Inward Dial (DID)/Tie Trunk card provides the interface between the Large System and up to eight analog DID/ Tie trunk lines.

Each NTCK22AA Trunk card:

- converts transmission signals from analog to digital and from digital to analog for up to eight audio paths

- supports the old and new Italian loss plans

- supports 2-wire loop dial repeating for tie trunk application

- provides software-selectable A-Law and μ-Law companding

- provides faceplate LED for board status and self-test pass

- provides disabling of individual units or the entire board

- provides switch-selectable transhybrid balance impedance to match 600 ohm Italian complex impedance

- provides the correct signaling impedance and voltages to operate with the Italian central office

- offers full transmission compliance to current Italian technical requirements

Application—The NTCK22AA is designed for use in Italy. It can be installed in any PE slot that supports intelligent peripheral equipment (IPE).

NTCK90 802.11 Wireless Controller Card

System requirements—All Large Systems.

Purpose—Provides control functions and a primary interface between the Large System and the 802.11 Wireless (formerly known as Companion) Radio and 802.11 Wireless Line cards. It also provides ports to base stations.

The 802.11 Wireless Controller card (CMCC) must be in the left-most position in the module with respect to the expansion CMRC and CMLC cards. All 802.11 Wireless cards must be installed contiguously in the module.

Each CMCC requires an NTCK94 ROM card that is installed onto the CMCC card.

Quantity—One for each IPE module.

NTCK91 802.11 Wireless Radio Card

System requirements—All Large Systems.

Purpose—Provides interfaces for 16 802.11 Wireless base stations and 16 users. Up to 15 cards can be supported.

Quantity—1 to 15 for each IPE module.

NTCK93 802.11 Wireless Line Card

System requirements—All Large Systems.

Purpose—Provides interfaces for 16 802.11 Wireless base stations and 16 users. Up to 15 cards can be supported.

Quantity—1 to 15 for each IPE Module.

NTCW00AB DECT Mobility Card (DMC8)

System requirements—All Large Systems.

Purpose—The NTCW00AB DECT Mobility card (DMC8) provides an interface between the Large System and the base stations. A DMC8 supports up to eight base stations.

Quantity—1 to 15 DECT Mobility cards (DMC8) for each IPE Module.

NTCW01AB DECT Mobility Card-Expander (DMC8-E)

System requirements—All Large Systems.

Purpose—The NTCW01AB DMC8-E DECT Mobility Card-Expander (DMC8-E) provides the same functions as a DMC8. The DMC8-E has additional circuitry required to regenerate faceplate cable signals when a Large System contains more than eight DMC8s. The DMC8-E also connects two IPE shelves or cabinets in a DECT system.

Quantity—One DECT Mobility Card-Expander (DMC8-E) for each IPE Module.

NTCW80 Integrated IP Telephony Gateway (ITG) Card

System requirements—All Large Systems.

Purpose— The Integrated IP Telephony Gateway (ITG) card compresses Pulse Code Modulation (PCM) voice, demodulates Group 3 fax, and routes the packetized data over a private internet (intranet) to provide non-ISDN tie trunks between Large System Electronic Switched Network (ESN) nodes.

The ITG card supports standard H.323 call processing and ITU standard Digital Signal Processor (DSP) voice coding and compression algorithms (codecs) such as G.711, G.723, G.729AB, and G.729B. It supports real-time Group 3 fax support, Call Detail Recording (CDR), and Least Cost Routing.

A key feature of ITG is the ability to monitor the data network and automatically re-route calls to circuit-switched voice facilities if the quality of service over the data network declines. This *Fallback to Conventional Circuit-Switched Voice Facilities* feature allows the Large System and craftsperson to determine what is the acceptable quality of service over the data network. The customer can configure quality of service parameters as required. If the quality falls below the expected level of quality of service, the

circuit-switched route is selected until the quality of service is back to the acceptable level.

The NTCW80 ITG card supports eight voice channels (trunk ports) per card and emulates an NT8D14 Universal Trunk (EXUT) card. The amount of ports supported on a card is controlled by a keycode.

For more information, see *Meridian 1 Integrated Telephony Gateway Trunk 1.0/Basic Per-Trunk Signaling: Description, Installation, and Operation* (553-3001-116).

Quantity—One or more for each IPE module; each ITG card uses two card slots.

QPC71 E&M/DX/Paging Trunk Card

System requirements—All Large Systems.

Purpose—Used in μ-Law applications in one of the following ways to interface with appropriate types of trunk facilities:

- E&M signaling, 2-way dial repeating trunk

- 2-wire DX signaling, 2-way dial repeating trunk

- 4-wire DX signaling, 2-way dial repeating trunk (a 24 V 4 repeater, externally mounted, converts the trunk from 2- to 4-wire)

- paging trunk or externally mounted loudspeaker

Each card contains two separate, identical trunk circuits. Trunk usage option is selected by switches on the circuit card.

Minimum vintage F is required.

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Quantity—One for each two trunk circuits.

QPC250 Release Link Trunk Card

System requirements—All Large Systems.

Purpose—Used to interface a remote system, configured with the Centralized Attendant Service (CAS), with the main system where the CAS attendant is located. The card contains two separate, identical trunk circuits, with balanced terminating impedance of 900 ohms.

Vintage C and later complies with CSA standard C22.2 No 0.7-M1985.

Minimum vintage B is required.

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Quantity—One per pair of release line trunks.

QPC297 Attendant Console Monitor Card

System requirements—All Large Systems.

Purpose—Interfaces attendant consoles (including add-on modules) when the supervisory console feature is used. Allows the supervisory attendant to monitor calls being handled by attendants within the customer group.

Quantity—One for each Attendant console in Large Systems using the Supervisory Console feature.

QPC311 Data Line Card

System requirements—All Large Systems.

Purpose—This line card is required to interface the Large System with add-on data modules and other data equipment used in µ-Law applications.

QPC327 MFC Sender/Receiver Card

System requirements—All Large Systems.

Purpose—This card is used to provide the exchange of information between the Large System and other exchanges using multifrequency compelled (MFC) signaling protocol. The QPC327 may be used with either A-Law or µ-Law applications.

QPC341 Data Line Card

System requirements—All Large Systems.

Purpose—Same as QPC311 but for A-Law applications.

QPC343 Ground Button Recall Line Card

System requirements—All Large Systems.

Purpose—Replaced by QPC532.

Allows 500/2500-type sets equipped with a ground button to access special features in A-Law Applications.

QPC353 Modem Pool Line Card

System requirements—All Large Systems.

Purpose—Interfaces to outbound asynchronous modems used in asynchronous modem pool configurations.

QPC354 Modem Pool Line Card

System requirements—All Large Systems.

Purpose—Same as QPC353 for Large Systems using A-Law.

QPC390 Pulsed E&M Trunk Card

System requirements—All Large Systems.

Purpose—This trunk card provides the appropriate interface between the Large System and public exchanges that use timed pulses for trunk signaling in A-Law applications.

QPC391 Pulsed E&M Trunk Card

System requirements—All Large Systems.

Purpose—Same as QPC390 for µ.-law applications.

QPC397 MCDS Asynchronous Card

System requirements—All Large Systems.

Purpose—Equivalent to four QMT8 Add-on Data Modules (ADM).

QPC422 Tone Detector Card

System requirements—All Large Systems.

Purpose—Identifies tones and reports to CPU appropriately. Each card contains two tone detector circuits controlled by two microprocessors.

Quantity—One per Large System.

QPC430 Asynchronous Interface Line Card

System requirements—All Large Systems.

Purpose—Provides four asynchronous line ports. Used in the SL-1 Data Feature to interface to data equipment conforming to the EIA RS-422 standard.

Certain vintages are required for different applications, as follows:

- Vintage C or greater is required for the Computer PBX Interface (CPI) application.

- Vintage E is required for Host Mode operation.

- Vintage F or later is required for system options.

Quantity—One for each four data lines.

QPC432 4-Port Data Line Card

System requirements—All Large Systems.

Purpose—Provides four data-only ports for the SL-1 Data Feature.

Minimum vintage C is required.

Quantity—One for each four data ports.

QPC449 Loop Signaling Trunk Card

System requirements—All Large Systems.

Purpose—Interfaces the following 600- or 900-ohm trunks in µ-Law applications:

- direct inward dialing (DID)
- 2-way tie, dial repeating (2DR)
- 2-way tie, outgoing automatic incoming dial (OAID)
- outgoing automatic number identification (OANI)

The card contains four separate identical trunk circuits. The trunk usage option is selected by switches on the circuit card. See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Vintage B and later complies with CSA standard C22.2 No 0.7-M1985.

Quantity—One for each set of four loop signaling trunks.

QPC450 CO/FX/WATS Trunk Card

System requirements—All Large Systems.

Purpose—Replaces the QPC217/218/219/272.

Interfaces four 600- or 900-ohm CO, FX, or WATS trunks with the Large System in µ-Law applications. The card can also detect ringing on either the tip or ring leads and has a provision to extend the normal loop range from 1200 to 2600 ohms using balanced battery boost from the central office.

The card contains four separate identical trunk circuits. The trunk usage option is selected by switches on the circuit card. See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Vintages D, and F and later comply with CSA standard C22.2 No .7-M1985. A minimum vintage of E is required.

Quantity—One for each set of four CO/FX/WATS trunks.

QPC451 SL-1 Set Line Card

System requirements—All Large Systems.

Purpose—Interfaces SL-1 telephone sets and attendant consoles, including expansion modules, with the Large Systems for µ-Law applications.

Eight separate, identical line circuits on each card can be assigned to different customers. Two line circuits are used for each attendant console. Two additional line circuits can be used for console power.

Vintage B is required for consoles.

If the Supervisory Attendant feature is equipped, a QPC297 card is used in place of the QPC451 to interface with attendant consoles.

QPC494 500/2500 Line Card (Message Waiting)

System requirements—All Large Systems.

Purpose—Replaces the QPC267.

Used in NT8D37 IPE Modules to interface analog telephone lines with the Large System in µ-Law applications. The card is also used to interface with other standard 500-type telephone apparatus such as NE-1A2 key telephone

equipment, telephone answering sets, and modems. Includes circuitry for the Message Waiting feature.

The card contains eight identical units for interfacing with eight line facilities. Each unit provides the following features:

- interface to 500-type (rotary dial) or 2500-type (Digitone dial) telephones, or to key telephone equipment

- 600-ohm balanced terminating impedance on the loop tip and ring leads

- –48 V through a battery feed resistance and ground

- on-hook and off-hook status detection

- ringing current to the loop

See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Quantity—Maximum of ten cards for each NT8D13 PE Module.

QPC512 Personal Computer Interface Card

System requirements—All Large Systems.

Purpose—Used in the Data Feature to interface the Large System to an IBM Personal Computer or IBM Personal Computer XT.

QPC520 SL-1 Line Card

System requirements—All Large Systems.

Purpose—Replaces the QPC519.

Interfaces SL-1 telephone sets and attendant consoles to Large Systems, including expansion modules, for A-Law applications. Eight separate, identical line circuits on each card can be assigned to different customers.

If the Supervisory Attendant feature is equipped, a QPC342 card is used in place of the QPC520 to interface with attendant consoles.

QPC521 500/2500 Line Card

System requirements—All Large Systems.

Purpose—Interfaces on- or off-premises manual, rotary, or Digitone dial 2-wire telephone sets (NE-500 or -2500 sets) with the Large System in A-Law applications. The card is also used to interface with other standard 500-type telephone apparatus such as NE-1A2 key telephone equipment, telephone answering sets, and modems. Refer to *Circuit Card: Description and Installation* (553-3001-211).

Eight identical line circuits can be assigned to one or different customers. The loop range from the PE shelf to the set is a maximum 1000 ¾ trunks (excluding the set).

QPC525 CO/FX/WATS Trunk Card with PPM

System requirements—All Large Systems.

Purpose—Same as QPC450 but includes a daughterboard for periodic pulse metering (PPM) applications.

QPC526 CO/FX/WATS Trunk Card with PPM

System requirements—All Large Systems.

Purpose—Same as QPC525 but for A-Law applications.

QPC527 CO/FX/WATS Trunk Card

System requirements—All Large Systems.

Purpose—Same as QPC450 but for A-Law applications.

QPC528 CO/FX/WATS Trunk Card

System requirements—All Large Systems.

Purpose—Same as QPC450 but all circuits meet EIA standards.

QPC532 Ground Button Recall Line Card

System requirements—All Large Systems.

Purpose—Replaces the QPC302 and QPC343.

Allows 500/2500-type sets equipped with a ground button to use this button to access special features in A-Law or µ-Law applications. Refer to *Circuit Card: Description and Installation* (553-3001-211) for more details.

QPC540 Dial Tone Detector

System requirements—All Large Systems.

Purpose—Provides identification of dial tones and the rejection of busy tone. Each card contains two separate tone detector circuits.

Application—The QPC540 was designed for use in Switzerland.

QPC550 DID Trunk Card

System requirements—All Large Systems.

Purpose—This card interfaces with 600 or 900 ¾ trunks. Each card contains four separate trunk circuits.

Application—The QPC550 was designed for use in Switzerland.

QPC551 Radio Paging Trunk Card

System requirements—All Large Systems.

Purpose—This trunk circuit card provides an interface between the Large System and the Hasler DS-2000 Radio Paging system. Each card contains two separate trunk circuits.

QPC558 Message Waiting Line Card

System requirements—All Large Systems.

Purpose—Same as QPC494 for Large Systems using A-Law.

QPC559 Loop Signaling Trunk Card

System requirements—All Large Systems.

Purpose—Same as QPC449 for Large Systems using A-Law.

QPC560 Loop Signaling Trunk Card

System requirements—All Large Systems.

Purpose—Same as QPC449 with all circuitry conforming to EIA standards.

QPC574 Digitone Receiver

System requirements—All Large Systems.

Purpose—Replaces the QPC79.

In μ-Law applications, converts multifrequency dialing signals from a Digitone station to dc pulses suitable for processing in the system control. Differentiates between valid DIGITONE signals and speech or noise without using out-of-band signals.

Two receivers are available on each card. Only one port can be accessed when this card is installed in a single density shelf.

Quantity—See *Large System: Planning and Engineering* (553-3021-120) for calculation of quantity required.

QPC577 Digitone Receiver Daughterboard (μ-Law)

System requirements—All Large Systems.

Purpose—The QPC577 Digitone Receiver Daughterboard is a double-sided printed circuit board that must be mounted on a QPC659 Dual Loop Peripheral Buffer. It performs the same functions as the stand alone QPC595 DTR.

The QPC577 reroutes dial tone to and receives Digitones from up to two Digitone telephones simultaneously. It converts the received Digitones into digital outputs suitable for the Large System.

Quantity—One for each QPC659 Dual Loop Peripheral Buffer.

QPC578 Integrated Services Digital Line Card

System requirements—All Large Systems.

Purpose—Interfaces the digital telephones and the associated ASCII terminals on time compression multiplexing (TCM) loops to the Large System. Each card contains 16 separate line circuits, eight data circuits, and eight voice circuits. See *Circuit Card: Description and Installation* (553-3001-211) for more details.

Minimum vintage B is required for RPE.

Quantity—One for each eight digital telephones.

QPC594 500/2500 Line Card

System requirements—All Large Systems.

Purpose—Allows for 16 circuits per card (quad density) using μ-Law.

Quantity—One for each 16 500/2500 lines.

QPC595 Digitone Receiver

System requirements—All Large Systems.

Purpose—Replaces the QPC79

In A-Law applications, converts multifrequency dialing signals from a Digitone station to dc pulses suitable for processing in the system control. Differentiates between valid Digitone signals and speech or noise without using out-of-band signals. Two receivers are available on each card.

Quantity—See *Large System: Planning and Engineering* (553-3021-120) for calculation of quantity required.

QPC596 Digitone Receiver Daughterboard (A-Law)

System requirements—All Large Systems.

Purpose—The QPC596 Digitone Receiver Daughterboard is a double-sided printed circuit board that must be mounted on a QPC659 Dual Loop Peripheral Buffer. It performs the same functions as the stand-alone QPC595 DTR.

The QPC596 reroutes dial tone to and receives Digitones from up to two Digitone telephones simultaneously. It converts the received Digitones into digital outputs suitable for the Large System.

Quantity—One for each QPC659 Dual Loop Peripheral Buffer.

QPC650 Music Trunk Card (μ-Law)

System requirements—All Large Systems.

Purpose—Consists of analog-to-digital converters to provide music and recorded announcements in addition to the tones and cadences available from the ATDS. Provides up to eight channels of digital data to ATDS when installed in a dual-density PE shelf and up to four channels when installed in a single-density PE shelf. Works with QPC606 ATDS.

Quantity—One for each ATDS.

QPC651 Music Trunk card (A-Law)

System requirements—All Large Systems.

Purpose—Consists of analog-to-digital converters to provide music and recorded announcements in addition to the tones and cadences available from the ATDS. Provides up to eight channels of digital data to ATDS when installed in a dual-density PE shelf and up to four channels when installed in a single-density PE shelf. Works with QPC605, QPC607, or QPC608 ATDS.

Quantity—One for each ATDS.

QPC659 Dual Loop Peripheral Buffer Card

System requirements—All Large Systems.

Purpose—Interfaces one or two network loops. In addition, a Digitone daughterboard can be installed on the peripheral buffer, which is used to convert multifrequency dialing signals from a Digitone station to dc pulses suitable for processing in the system control.

Quantity—Up to ten for each NT8D13 PE Module, or one for each dual loop shelf.

Cables

Intramodule and Intermodule Cables

Within Large Systems, two types of cables are available:

- Intramodule cables connect circuit cards within a module, or they connect to the I/O panels at the rear of the module. Intramodule cables are not shielded. Bail locks or screws are generally used on the connectors to prevent accidental removal.

- Intermodule cables are routed between modules. These cables are used primarily for interconnecting the following subsystems:

  — CPU to CPU

  — CPU to network

  — network to network

  — network to peripheral equipment

A0378652 F-F DCE to DTE Convertor Cable

Purpose—Connects SDI ports to equipment such as administration/ maintenance terminals (TTYs) and modems.

A0381016 F-M DCE to DTE Convertor Cable

Purpose—Connects SDI ports to equipment such as TTYs and modems.

A0601464 Nullmodem Maintenance Cable

Purpose—This cable has a DB-9 female and a DB-25 male connector and connects the terminal to the NT5D51 Meridian Integrated Conference Bridge (MICB) card using the Ethernet Adapter card DB-9 male connector. No additional null modem is required.

A0632902 Fiber-optic (Multi-mode) Cable

Purpose—Used with the NTDK22 Single-port Fiber Expansion Daughterboard and the NTDK84 Dual-port Fiber Expansion Daughterboard.

A0634495 Local Fiber Remote Multi-IPE Cable

Purpose—Joins the NT8D92AB backplane cable at the I/O panel to a Fiber Remote Superloop Network card using its 24-pin Centronics connector. The cable connects to a Fiber Remote unit within 30 feet of a Large System local site via its 37-pin D Shell connector. One cable is required for each Fiber Remote Superloop card.

Length—9.1 m (30 feet (ft.))

A0634496 Remote Fiber Remote Multi-IPE Cable

Purpose—Joins the NT8D92AB backplane cable at the I/O panel to a Fiber Remote Superloop Network card using its 24-pin Centronics connector. The cable connects to a Fiber Remote unit within 30 feet of a remote IPE cabinet via its 37-pin D Shell connector. One cable is required for each Fiber Remote Superloop card.

Length—9.1 m (30 ft.)

A0634497 Fiber Remote Multi-IPE Maintenance Cable

Purpose—Daisy-chains the SDI connection on the I/O panel of one Fiber Remote unit (using the end with the DB-9 male connector) to the MAINT connection on the I/O panel on the next Fiber Remote unit (using the end with the DB-9 female connector). The first cable in the chain is connected to the SDI port on the Large System, and the last cable is connected to a maintenance TTY. One cable is required for each Fiber Remote module.

Length—0.6 m (2 ft.)

A0660711 25 DB Adapter Cable

Purpose—Housing that enables a male-female gender change to facilitate connecting cables to equipment.

Length—5 cm (2 inches (in.))

NE-A25 Connector Cable

Purpose—25-pair, 26 AWG standard distribution cable connectorized at one end. Used to extend PE termination from PE shelves and transfer unit terminations to the cross-connecting terminal or Main Distribution Frame (MDF). See *Large System: Installation and Configuration* (553-3021-210) to determine the quantity required.

Lengths—Available in lengths of 7.6 to 61.0 m (25 to 200 ft.) in increments of 7.6 m (25 ft.)

NE-A25Q Connector Cable

Purpose—25-pair, 26 AWG tight-twisted cable connectorized at both ends. Used to extend the CE bus from the CPU to all other CE shelves. See *Large System: Installation and Configuration* (553-3021-210) to determine the quantity required.

Lengths—

- 0.45 m (1.5 ft.)
- 1.20 m (4 ft.)

- 1.80 m (6 ft.)

- 6.10 m (20 ft.)

- 7.60 m (25 ft.)

NPS50843-7L01 Interboard Faceplate Cable Harness

Purpose—Used with 802.11 Wireless radio and line cards in Large Systems with IPE modules. Connects two adjacent cards over the faceplate connectors. A cable is always shipped with an NTCK91 802.11 Wireless Meridian Radio Card (CMRC) and an NTCK93 802.11 Wireless Meridian Line Card (CMLC).

Length—5 cm (2 in.)

NPS50843-7L02 Bypass Faceplate Cable Harness

Purpose—Used with 802.11 Wireless radio and line cards in Large Systems with IPE modules. Used to bypass a faulty CMRC or CMLC and to facilitate removal of the faulty card without disrupting traffic on other 802.11 Wireless cards in the module.

Length—30 cm (1 ft.)

NPS90781-20L01 CMRC Maintenance Cable

Purpose—Used to connect two Companion Meridian Radio Card (CMRC) faceplate connectors for maintenance purposes. The cable has designated left and right connectors and care must be taken to plug the right connector into the right-hand CMRC and the left connector into the left-hand CMRC.

Length—60 cm (2 ft.)

NPS90781-20L02 CMLC Maintenance Cable

Purpose—Used to connect two COMPANION Meridian Line Card (CMLC) faceplate connectors for maintenance purposes. The cable has designated left and right connectors and care must be taken to plug the right connector into the right-hand CMLC and the left connector into the left-hand CMLC.

Length—60 cm (2 ft.)

NT1P64AA Fiber-optic Patchcord

Purpose—Used to connect the NT1P61 Fiber Superloop Network card
Fiber-optic Packlet to the I/O panel fiber-optic connector. The cable provides
connections to the fiber-optic span.

Length—1.2 m (4 ft.)

NT1P75AA Fiber-optic Patchcord

Purpose—Used to connect the NT1P62 Fiber Peripheral Controller card
Fiber-optic Packlet to the I/O panel fiber-optic connector. The cable provides
connections to the fiber-optic span.

Length—1.2 m (4 ft.)

NT1P76AA Fiber Superloop Network Card to I/O Panel Cable

Purpose—Used to connect the NT1P61 Fiber Superloop Network Card
faceplate connector to the I/O panel. The cable provides a connector to an SDI
port and to system monitoring functions.

Length—1.2 m (4 ft.)

NT1P78AA Fiber Peripheral Controller Card to I/O Panel Cable

Purpose—Used to connect the backplane connector behind the NT1P62
Fiber Peripheral Controller card faceplate connector to the I/O panel. The
cable provides a connector to a TTY port and to the system monitor.

Length—1.2 m (4 ft.)

NT1P85AA External Alarm Cable

Purpose—Connects external alarms to the CB-15HD female Alarm
connector on the NT7R60AA Carrier/Alarm Panel.

NT1R03AA Shielded 4-port with Ethernet Cable

Length—79 cm (31 in.)

NT1R03BA Shielded 4-port Cable

Length—76 cm (30 in.)

NT1R03CA Shielded LAM Extension Cable

Length—61 cm (2 ft.)

NT1R03Dx 25 DB M/M Extension Cable

Lengths—

- NT1R03DB   0.6 m (2 ft.)
- NT1R03DC   1.2 m (4 ft.)
- NT1R03DF   2.1 m (10 ft.)
- NT1R03DP   7.6 m (25 ft.)
- NT1R03DV   13.7 m (45 ft.)

NT1R03Ex 25 DB M/F Extension Cable

Lengths—

- NT1R03EB   0.6 m (2 ft.)
- NT1R03EC   1.2 m (4 ft.)
- NT1R03EF   2.1 m (10 ft.)
- NT1R03EP   7.6 m (25 ft.)
- NT1R03EV   13.7 m (45 ft.)

NT1R03HF Max to IPE Modem Cable

Length—2.1 m (10 ft.)

NT1R04 Clock Controller to I/O Panel Cable

Purpose—Used with Core module upgrades to Succession 1000M
Multi Group and Meridian 1 Option 81; and with the Core/Network module
in Succession 1000M Multi Group, Meridian 1 Option 81C, and Meridian 1
Option 81C CP PII. Connects the clock controller card to the inside of the
I/O panel in the Core module or to the Network module I/O panel for
Option 81C. Also used from the clock controller junctor connector to the
connector housing.

Length—1.2 m (4 ft.)

NT1R05 Intercabinet Module Cable

Purpose—Used with Core module upgrades to Succession 1000M
Multi Group and Meridian 1 Option 81; and with the Core/Network module
in Succession 1000M Multi Group, Meridian 1 Option 81C, and Meridian 1
Option 81C CP PII for primary and secondary clock reference. Connects the
I/O panel on the module to the connector housing.

Length—4.9 m (16 ft.)

NT2K2AA Nullmodem Cable

Purpose—Used with a 802.11 Wireless diagnostic PC terminal that connects
to the Large System. The null modem cable is used when the PC is connected
to the Large System using an external modem over the Remote Access
Device (RAD).

Lengths—

- A0398761   3.0 m (10 ft.)
- A0398762   7.6 m (25 ft.)

NT2K91AA RS-232 Cable

Purpose—Used with 802.11 Wireless diagnostic PC terminal that connects
to the Large System. This cable is used when the PC is connected to Meridian
1 using an internal modem located in the Remote Access Device (RAD).

Lengths—

- A0399143   3.0 m (10 ft.)

- A0399144   7.6 m (25 ft.)

NT4N73AA Cable Kit

Purpose— Used for upgrading an NT4N43AA MMDU to an NT4N43BA MMDU. The kit contains the following cables:

- NT4N92BA MMDU CD-ROM and Hard Disk Drive Data Cable

- NT4N93BA MMDU Floppy Disk Drive Data Cable

- NT4N95A MMDU CD-ROM, FDD, and HDD Power Cable

NT4N88AA COM 1 Cable

Purpose— Used to extend CP PII card COM 1 port to I/O panel J25 for DTE (terminal) access.

Length—1.2 m (4 ft.)

NT4N88BA COM 2 Cable

Purpose—Used to extend CP PII card COM 1 port to I/O panel J21 for DCE (modem) access.

Length—1.2 m (4 ft.)

NT4N90AA Ethernet Cable

Purpose—Used to extend CP PII card LAN 1 port to I/O panel J31 for LAN access.

Length—1.2 m (4 ft.)

NT4N92BA MMDU CD-ROM and Hard Disk Drive Data Cable

Purpose— Part of NT4N73AA (A0862631) cable kit for upgrading an NT4N43AA MMDU to an NT4N43BA MMDU. The cable is used to extend

the CD-ROM and hard disk drive of the cPCI Multi-Media Disk Unit
(MMDU) to the Core/Network module backplane.

Length—varies

NT4N93BA MMDU Floppy Disk Drive Data Cable

Purpose—Part of NT4N73AA (A0862631) cable kit for upgrading an
NT4N43AA MMDU to an NT4N43BA MMDU. The cable is used to extend
the floppy disk drive of the cPCI Multi-Media Disk Unit to the Core/Network
module backplane.

Length—varies

NT4N95A MMDU CD-ROM, FDD, and HDD Power Cable

Purpose—Part of NT4N73AA (A0862631) cable kit for upgrading an
NT4N43AA MMDU to an NT4N43BA MMDU. The cable is used to extend
power from the Core/Network module backplane to the CD-ROM, floppy
disk drive, and hard disk drive of the cPCI Multi-Media Disk Unit.

Length—varies

NT4R20 RSM Adapter Cable

Length—7.6 m (25 ft.)

NT5D16AA Trunk Tip/Ring Cable

Purpose—A 100¾ cable for equipped with an I/O filter panel. Used to
connect the 9-pin D-type TRK port on the NT5D12AA Dual DTI/PRI (DDP)
card faceplate to the I/O filter.

Length—2.5 m (8 ft.)

NT5D19AA Maintenance Cable

Purpose—Used to connect the terminal to the 50-pin tip/ring connector on the IPE module I/O panel. This cable requires a null modem for proper connection to the MMI terminal.

Length—0.9 m (3 ft.)

NT5D50AA DBX Ribbon Cable

Purpose—A ribbon cable with a female connector and a male SCSI connector. Used to transfer the database when upgrading Omega systems to the NT5D61 IODU/C card.

This cable is connects the NT5D54AA SCSI ribbon cable on the IODU/C card CD-ROM drive to the floppy drive A connector on the MDU/SMDU. When connected, the red edge of the NT5D50AA DBX Ribbon Cable should face towards the bottom of the IODU/C card (toward the edge of the card).

Length—0.9 m (3 ft.)

NT5K53AA Cable Assembly (UK)

Purpose—This cable connects the Large System to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector on one end and three Krone Strips (237A) on the other. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK.

Length—15.2 m (50 ft.)

NT5K54AA Cable Assembly (UK)

Purpose—This cable connects the Large System to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector on one end and three Krone Strips

(237A) on the other. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK.

Length—7.6 m (25 ft.)

NT5K63AA Cable Assembly (UK)

Purpose—This cable connects the Large System to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector on one end and three Krone Strips (237A) on the other. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK.

Length—29.5 m (96 ft.)

NT5K64AA Cable Assembly (UK)

Purpose—This cable connects the Large System to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector on one end and three Krone Strips (237A) on the other. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK. They are low smoke and fume, non-halogenated (LSF, non-hal) cables.

Length—7.6 m (25 ft.)

NT5K65AA Cable Assembly (UK)

Purpose—This cable connects the Large System to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector on one end and three Krone Strips (237A) on the other. These cables utilize a custom compounded jacketing that

meets the requirements for specific PBX contracts in the UK. They are low smoke and fume, non-halogenated (LSF, non-hal) cables.

Length—15.2 m (50 ft.)

NT5K66AA Cable Assembly (UK)

Purpose—This cable connects the Large System to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector on one end and three Krone Strips (237A) on the other. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK. They are low smoke and fume, non-halogenated (LSF, non-hal) cables.

Length—29.5 m (96 ft.)

NT5K79AA Cable Assembly (UK)

Purpose—This cable connects the console to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector with two locking screws at one end and free-ended at the other end. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK. They are low smoke and fume, non-halogenated (LSF, non-hal) cables.

Length—15.2 m (50 ft.)

NT5K80AA Cable Assembly (UK)

Purpose—This cable connects the console to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector with two locking screws at one end and free-ended at the other end. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK. They are low smoke and fume, non-halogenated (LSF, non-hal) cables.

Length—30.5 m (100 ft.)

NT5K81AA Cable Assembly (UK)

Purpose—This cable connects the console to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector with two locking screws at one end and free-ended at the other end. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK. They are low smoke and fume, non-halogenated (LSF, non-hal) cables.

Length—91.4 m (300 ft.)

NT5K1110 Intracabinet Network Cable

Purpose—This cable connects the NT5K10AA Enhanced Dual Loop Buffer to the MDF panel.

Length—50 cm (20 in.)

NT6D4405 CRT Cable

Length—84 cm (33 in.)

NT6D4406 RSM Cable

Length—81 cm (32 in.)

NT6D4407 GSP Cable

NT6D4408 NVP Cable

Length—84 cm (33 in.)

NT6D4410 CSL Cable

Length—84 cm (33 in.)

NT6D4411 DVS Bus Node-to-node Cable

Length—84 cm (33 in.)

NT6D4412 DVS Bus Internal Cable

Length—20 cm (8 in.)

NT6D4413 DVS Bus ESBC Terminator

Length—23 cm (9 in.)

NT6D4414 DVS Bus Node 1-to-2 Cable

Length—1.5 m (5 ft.)

NT6D4415 DVS Bus HABC Terminator

Length—23.3 m (76 ft.)

NT6D4416 DVS Bus Node 2-to-3 Cable

Length—1.8 m (6 ft.)

NT6D54 Field Wiring Kit

Purpose—Used in conjunction with the cable between the NT8D22 System
Monitor and a QBL15 Power Distribution Box. The kit provides the
necessary hardware to connect four NT6D52 rectifiers to the system monitor.

NT6P0110 4-port Cable

Length—38 cm (15 in.)

NT7D11 Module to Module Power Harness

Purpose—Used in dc-powered modules to conduct the input dc power and
control signals vertically through the column. It is constructed in a modular
form and can be disconnected for the removal and/or replacement of modules.

The dc power harness is larger than that of the ac system because it requires more input wires to handle lower voltage and the associated higher current.

NT7D61Ex SDI I/O Cable

Lengths—

- NT7D61EB   0.6 m (2 ft.)
- NT7D61ED   1.8 m (6 ft.)
- NT7D61EF   2.1 m (10 ft.)
- NT7D61EL   7.6 m (25 ft.)
- NT7D61ET   9.1 m (30 ft.)
- NT7D61EV   13.7 m (45 ft.)

NT7D67DA Local External Maintenance Cable Assembly

Purpose—Connects the TTY or the terminal and the SDI card to the I/O panel.

Length—1.2 m (4 ft.)

NT7D68AA Remote Carrier/Alarm Cable Assembly

Purpose—Used with Remote Carrier IPE floor-standing module configuration. Connects the NT7R52 Remote Carrier Interface card through the backplane connector to the I/O panel to provide T1 carrier span connection.

Length—1.2 m (4 ft.)

NT7D68BA Remote Maintenance Cable Assembly

Purpose—Used with Remote Carrier IPE floor-standing module configuration. Connects the NT7R52 Remote Carrier Interface card through the backplane connector to the I/O panel to provide TTY and system monitor connections.

Length—1.2 m (4 ft.)

NT7D68CA Remote Carrier/Alarm Cable Assembly to Small Cabinet

Purpose—Used with Remote Carrier IPE wall-mounted small cabinet configuration. Connects the NT7R52 Remote Carrier Interface card through the backplane P3 connector to the I/O panel to provide T1 carrier span connection.

Length—1.2 m (4 ft.)

NT7D68DA Remote Maintenance Cable Assembly to Small Cabinet

Purpose—Used with Remote Carrier IPE wall-mounted small cabinet configuration. Connects the NT7R52 Remote Carrier Interface card through the backplane P2 connector to the I/O panel to provide the TTY connection.

Length—1.2 m (4 ft.)

NT7D68EA Coaxial Interface Adapter Cable

Purpose—Used with Remote Carrier IPE configuration. Connects the RJ-48 connectors on the I/O panel assembly to the BNC E1 carrier span connectors.

Length—60 cm (2 ft.)

NT7D89 RS-232 to I/O Panel Cable

Purpose—Used with all Large Systems. Through connectors on the rear of the backplane, it connects the maintenance port on the NT6D66 CP card to the I/O panel in the Core and Core/Network modules. This Y-connected cable provides both RS-232 DTE and DCE connections at the I/O panel. Two required per Large System.

Lengths—

- NT7D89AA   61 cm (2 ft.)
- NT7D89BA   33 cm (13 in.)

NT7D90 Ethernet to I/O Panel Cable

Purpose—Used with all Large Systems. Connects the Ethernet port on the NT6D66 CP card to the I/O panel in the Core and Core/Network modules.

Lengths—

- NT7D90AA   61 cm (2 ft.)
- NT7D90BA   30 cm (12 in.)

NT7D95 VME Transition Cable

Length—3.0 m (10 ft.)

NT7R67AA Local Maintenance Cable Assembly

Purpose—Used with all Large Systems. Connects the NT7R51 Local Carrier Interface card to the I/O panel.

Length—1.2 m (4 ft.)

NT7R67BA Local Carrier/Monitor Cable Assembly

Purpose—Used with all Large Systems. Connects the NT7R51 Local Carrier Interface Card to the I/O panel and to the T1 carrier span.

Length—1.2 m (4 ft.)

NT7R67CA Local Maintenance/Clock Cable Assembly

Purpose—Used with all Large Systems. Connects the NT7R51 Local Carrier Interface Card to the I/O panel and to the clock controller card.

Length—120-cm (4-ft.) and 60-cm (2-ft.) branches

NT7R67EA Coaxial Interface Adapter Cable

Purpose—Used with all Large Systems. Connects the RJ-48 connectors on the I/O panel assembly to the BNC connectors of the E1 carrier span.

Length—60 cm (2 ft.)

NT8D40AA AC Power Cord

Purpose—Connects to an IG-L6-30 30-amp receptacle and conducts ac power into the pedestal for ac-powered Large System.

Length—2.7 m (9 ft.)

NT8D40AM Module to Module Power Harness

Purpose—Used in ac modules to conduct the input ac power and control signals vertically through the column. It is constructed in a modular form and can be disconnected when necessary to allow for the removal and/or replacement of modules.

NT8D46AA System Monitor Stack Cable

Purpose—Connects NT8D22 System Monitor signals vertically through the column.

Length—81 cm (32 in.)

NT8D46AB System Monitor Jumper Cable

Length—29 cm (11.25 in.)

NT8D46AD System Monitor Quad Serial Data Interface Cable

Purpose—Connects an SDI card to the NT8D22 System Monitor. Replaces the NT8D46AA cable when the SDI card is in the same column as the system monitor.

Length—86/152 cm (34/60 in.)

NT8D46AF System Monitor Remote SDI Cable

Length—10 m (33 ft.)

NT8D46AG System Monitor to Extended SDI Cable

Purpose—Connects the NT8D22 System Monitor to the NT8D41 SDI Paddleboard (use instead of the NT8D46AA cable).

Length—86 cm (34 in.)

NT8D46AH System Monitor to MDF Cable

Purpose—Replaced by the NT8D46BH cable.

Connects the system monitor to the MDF when a PFTU is used.

Length—9.7 m (32 ft.)

NT8D46AJ UPS Alarm Cable (AC)

Purpose—Connects the NT8D22 System Monitor to a Best uninterruptible power supply (UPS). Used for UPS monitoring.

Length—13.8 m (45 ft.)

NT8D46AK UPS Alarm Cable (AC)

Length—13.8 m (45 ft.)

NT8D46AL System Monitor Serial Link Cable

Purpose—Connects the NT8D22 System Monitor from one column to another.

Length—2.1 m (7 ft.)

NT8D46AN XDF to PFT Cable

Length—2.1 m (7 ft.)

NT8D46AP System Monitor Serial Link Cable

Purpose—Connects the NT8D22 System Monitor from one column to another.

Length—7.6 m (25 ft.)

NT8D46AQ UPS Alarm Cable (AC)

Purpose—Connects the NT8D22 System Monitor to an Exide uninterruptible power supply (UPS). Used for UPS monitoring.

Length—13.8 m (45 ft.)

NT8D46AS System Monitor Inter-CPU Cable

Purpose—Used with Succession 1000M Single Group, Succession 1000M Multi Group, Meridian 1 Option 61C, Meridian 1 Option 61C CP PII, Meridian 1 Option 81C and Meridian 1 Option 81C CP PII systems. Connects the dual CPUs together for NT8D22 System Monitor functions. Replaces the NT8D46AA cable in both CPU modules.

Length—2.7 m (9 ft.)

NT8D46AT System Monitor to QBL15 Cable (DC)

Purpose—Connects the NT8D22 System Monitor to the QBL15 Power Distribution Box. Used to monitor the dc power plant.

Length—9.7 m (32 ft.)

NT8D46AU UPS Alarm Cable (AC)

Purpose—Connects the NT8D22 System Monitor to an Alpha uninterruptible power supply (UPS). Used for UPS monitoring.

Length—13.8 m (45 ft.)

NT8D46AV System Monitor to QCA13 Cable (DC)

Purpose—Connects the NT8D22 System Monitor to the MFA150 Power System, MPP600 Power Plant, or QCA13 Power Cabinet. Used to monitor the dc power plant.

Length—9.7 m (32 ft.)

NT8D46AW System Monitor to QBL12 Cable (DC)

Purpose—Connects the NT8D22 System Monitor to the QBL12 Battery Distribution Box. Used to monitor the dc power plant.

Length—9.7 m (32 ft.)

NT8D46AX System Monitor CE/PE ST Upgrade Cable

Length—13.7 m (45 ft.)

NT8D46AY System Monitor XPE ST Upgrade Cable

Length—13.7 m (45 ft.)

NT8D46BC ST Upgrade QCA137 External Cable

Length—1.8 m (6 ft.)

NT8D46BD ST Upgrade QCA136 External Adapter Cable

Length—30 cm (12 in.)

NT8D46BE ST Upgrade QCA136 External Cable

Length—3 m (10 ft.)

NT8D46BF ST/RT Upgrade System Monitor External Adapter Cable

Length—30 cm (12 in.)

NT8D46BH System Monitor to MDF Cable

Purpose—Replaces the NT8D46AH cable.

Connects the system monitor to the MDF when a power failure transfer unit (PFTU) is used.

Length—13.7 m (45 ft.)

NT8D46BK RT Upgrade QCA137 External Cable with Expansion

Length—30 cm (12 in.)

NT8D46BL RT Upgrade QCA147 with Expansion External Adapter Cable

Length—30 cm (12 in.)

NT8D46BM ST Upgrade QCA136 with Expansion External Adapter Cable

Length—30 cm (12 in.)

NT8D46BV System Monitor to Power Cabinet Cable

Purpose—Connects the NT8D22 System Monitor to the MFA150 Power System, MPP600 Power Plant, or QCA13 Power Cabinet. Used to monitor the dc power plant.

Length—19.5 m (64 ft.)

NT8D46CC System Monitor to Power Supply PCB Cable

Purpose—Connects the NT8D22 System Monitor to the power supply printed circuit board (PCB) in the NT7D67CB PDU.

NT8D46CH RT Upgrade QCA147 External Cable

Length—3.7 m (12 ft.)

NT8D46CV System Monitor to Power Cabinet Cable

Purpose—Connects the NT8D22 System Monitor to the MFA150 Power System, MPP600 Power Plant, or QCA13 Power Cabinet. Used to monitor the dc power plant.

Length—30.5 m (100 ft.)

NT8D46DH/EH System Monitor to MDF Cable

Purpose—Connects the System Monitor to the Main Distribution Frame (MDF).

Lengths

- NT8D46DH   45.7 m (150 ft.)
- NT8D46EH   30.5 m (100 ft.)

NT8D73 Network I/O to Network I/O Intercabinet Cable

Purpose—Interconnects QPC414 Network Cards:

- from Network module to PE module or local site RPE module through the I/O panels
- from QCA55 cabinet to PE module

Lengths—

- NT8D73AD   1.8 m (6 ft.)
- NT8D73AF   3.6 m (12 ft.)

- NT8D73AL   6.1 m (20 ft.)
- NT8D73AS   9.1 m (30 ft.)

NT8D74 Clock Controller to Junctor Cable

Purpose—Connects clock controller to the junctor.

Lengths—

- NT8D74CC   1.2 m (4 ft.)
- NT8D74BD   1.8 m 6 ft.)
- NT8D74BE   2.4 m (8 ft.)
- NT8D74BF   3.0 m (10 ft.)
- NT8D74BJ   4.9 m (16 ft.)

NT8D75 Clock Controller to Clock Controller Cable

Purpose—Interconnects clock controller cards.

Lengths—

- NT8D75BC   1.2 m (4 ft.)
- NT8D75BD   1.8 m (6 ft.)

NT8D76 Intergroup Switch to Junctor Cable

Purpose—Connects the intergroup switch to the junctor.

Lengths—

- NT8D76BC   1.2 m (4 ft.)
- NT8D76BD   1.5 m (5 ft.)
- NT8D76BE   1.8 m 6 ft.)
- NT8D76BF   2.4 m (8 ft.)
- NT8D76BG   3.0 m (10 ft.)

- • NT8D76BJ   3.7 m (12 ft.)
- • NT8D76BL   4.3 m (14 ft.)
- • NT8D76BP   4.9 m (16 ft.)
- • NT8D76BR   7.6 m (25 ft.)
- • NT8D76BS   15.2 m (50 ft.)

NT8D77 Floppy Disk Interface to Floppy Drive Unit Cable

Lengths—

- • NT8D77BA   0.9 m (3 ft.)
- • NT8D77BB   0.6 m (2 ft.)
- • NT8D77BC   1.2 m (4 ft.)
- • NT8D77BD   1.8 m (6 ft.)

NT8D78 CPU Cable

Length—50 mm (2 in.)

NT8D79 DTI to Clock Controller Cable

Purpose—Connects the DTI cards designated as primary and secondary clock references to the clock controller cards.

Lengths—

- • NT8D79AB   0.6 m (2 ft.)
- • NT8D79AC   1.2 m (4 ft.)
- • NT8D79AD   1.8 m (6 ft.)
- • NT8D79AE   2.4 m (8 ft.)
- • NT8D79AF   3.0 m (10 ft.)

NT8D80 CPU Interface Cable

Purpose—Used with Succession 1000M Single Group, Succession 1000M Multi Group, Meridian 1 Option 61C, Meridian 1 Option 61C CP PII, Meridian 1 Option 81C, and Meridian 1 Option 81C CP PII systems. Connects the QPC441F 3PE card in the Core/Network Module 0 to the QPC441F 3PE card in the Core/Network Module 1.

Lengths—

- NT8D80AB, NT8D80BB   0.6 m (2 ft.)
- NT8D80AC, NT8D80BC   1.2 m (4 ft.)
- NT8D80AD, NT8D80BD   1.8 m (6 ft.)
- NT8D80AE, NT8D80BE   2.4 m (8 ft.)
- NT8D80AF, NT8D80BF   3.0 m (10 ft.)
- NT8D80AG, NT8D80BG   3.6 m (12 ft.)
- NT8D80AJ, NT8D80BJ   4.8 m (16 ft.)
- NT8D80AL, NT8D80BL   6.1 m (20 ft.)
- NT8D80AP, NT8D80BP   7.6 m (25 ft.)
- NT8D80AZ, NT8D80BZ   1.5 m (5 ft.)

NT8D81 B/P Tip and Ring to I/O Cable

Purpose—Connects a line card to the I/O panel. The ribbon cable is attached to the EMI filter.

Length—50 cm (20 in.)

NT8D82 SDI to I/O Cable

Purpose— This cable assembly also includes the EMI filter. Connects the following cards to the I/O panel:

- QPC757 DCHI Card
- QPC513 ESDI Card

- QPC841 4-Port SDI Card

- QPC687 CPU Card

Lengths—

- NT8D82AC   1.2 m (4 ft.)

- NT8D82AD   1.8 m (6 ft.)

NT8D83 DTI to I/O Cable

Purpose— This cable assembly also includes the EMI filter. Connects the T1 port on a DTI card to the I/O panel.

Lengths—

- NT8D83AC   1.2 m (4 ft.)

- NT8D83AD   1.8 m (6 ft.)

NT8D84AA XSDI to I/O Cable

Purpose— This cable assembly also includes the EMI filter. Connects the NT8D41 SDI Paddleboard to the I/O panel.

Length—46 cm (18 in.)

NT8D84BA System Monitor to I/O Cable

Purpose— This cable assembly also includes the EMI filter. Connects the NT7D15 System Monitor to the I/O panel.

Length—46 cm (18 in.)

NT8D85 Network to PE Cable

Purpose—Connects the following:

- Changeover and Memory Arbitrator (CMA) card on CPU 0 to the CMA card on CPU 1 (Succession 1000M Single Group, Meridian 1Option 61, and Meridian 1 Option 61C CP PII)

- QPC414 Network Card to PRI or DTI card

- QPC414 Network Card to QPC659 DLB Card (for internal cabling only)

- QPC414 Network Card to E and F connectors on the NT8D47 RPE module (for internal cabinet connections only)

- QPC659 DLB Card to QPC659 DLB Card when connecting two NT8D13 PE Modules together

Lengths—

- NT8D85BB   0.6 m (2 ft.)

- NT8D85BC   1.2 m (4 ft.)

- NT8D85BZ   1.5 m (5 ft.)

- NT8D85BD   1.8 m (6 ft.)

- NT8D85BE   2.4 m (8 ft.)

- NT8D85BF   3.0 m (10 ft.)

- NT8D85BJ   4.8 m (16 ft.)

- NT8D85BL   6.1 m (20 ft.)

- NT8D85BP   7.6 m (25 ft.)

- NT8D85BV   13.7 m (45 ft.)

NT8D86 Network to I/O Cable

Purpose— This cable assembly also includes the EMI filter. Connects the following to the I/O panel:

- QPC414 Network Card

- PRI or DTI card

- QPC659 DLB Card

- NT8D47 RPE Module

Length—

- NT8D86AC   1.5 m (5 ft.)
- NT8D86BD   1.8 m (6 ft.)

NT8D87 Conference/TDS to Music Trunk Cable

Purpose—This cable connects the NT8D17AA Conference/TDS card to the music trunk or I/O connector panel.

Length—This cable is available in the following lengths:

- NT8D87AC   1.2 m (4 ft.)
- NT8D87AD   1.8 m (6 ft.)

NT8D88 Superloop Network Card to I/O Cable

Purpose— This cable assembly also includes the EMI filter. Connects the NT8D04 Superloop Network Card to the I/O panel.

Lengths—

- NT8D88AC   1.5 m (5 ft.)
- NT8D88AD   1.8 m (6 ft.)

NT8D90AF SDI Multiple Port Extension Cable

Purpose—An internal multiple-port extension cable for the QPC841 4-Port SDI Card. Connects the I/O panel to the NT8D96AB cable.

Length—3 m (10 ft.)

NT8D91 Superloop Network to Peripheral Controller Cable

Purpose—Used for internal cabling to connect the NT8D04 Superloop Network Card to the NT8D01 Controller Card.

Lengths—

- NT8D91AC   1.2 m (4 ft.)

- NT8D91AD   1.8 m (6 ft.)

- NT8D91AE   2.4 m (8 ft.)

- NT8D91AF   3.0 m (10 ft.)

- NT8D91AG   3.6 m (12 ft.)

- NT8D91AJ   4.9 m (16 ft.)

- NT8D91AP   7.6 m (25 ft.)

- NT8D91AT   10.6 m (35 ft.)

- NT8D91AV   13.8 m (45 ft.)

NT8D92AB I/O to Peripheral Controller Cable

Purpose—Connects the NT8D01 Controller Card to the I/O panel. Used only when the network loop is cabled externally.

Length—50 cm (20 in.)

NT8D93 XSDI I/O to DTE/DCE Cable

Purpose—Connects the NT8D41 SDI Paddleboard to DTE or DCE through the I/O panel.

Lengths—

- NT8D93AJ   4.9 m (16 ft.)

- NT8D93AW   14.6 m (48 ft.)

NT8D95 SDI I/O Panel to DTE/DCE Cable

Purpose—Connects ports on the following cards to DTE or DCE through the I/O panel:

- QPC513 ESDI Card

- QPC841 4-Port SDI Card

- QPC687 CPU Card

Lengths—

- NT8D95AJ (male-to-male)   4.9 m (16 ft.)
- NT8D95BJ (male-to-female)   4.9 m (16 ft.)
- NT8D95AT (male-to-male)   10.3 m (34 ft.)
- NT8D95BT (male-to-female)   10.3 m (34 ft.)
- NT8D95AW (male-to-male)   14.6 m (48 ft.)
- NT8D95BW (male-to-female)   14.6 m (48 ft.)

NT8D96AB SDI Multiport Cable

Purpose—Three-way cable used with the QPC841 Quad Serial Data Interface Card. Connects external terminal equipment to the I/O panel. Connects the PRI or DTI card to the MDF through the I/O panel.

Length—0.6 m (2 ft.)

NT8D97AX PRI/DTI I/O to MDF Cable

Purpose—This cable connects the PRI/DTI card to the MDF via the I/O connector panel.

Length—15.2 m (50 ft.)

NT8D98 Intercabinet Network Cable

Purpose—Interconnects NT8D04 Superloop Network Cards:

- from Network module to IPE module through the I/O panel
- from QCA55 cabinet to IPE module (used for Large System upgrades)

    Note: NT8D98AT not for QCA55 cabinet application

Lengths—

- NT8D98AD   1.8 m (6 ft.)
- NT8D98AF   3.6 m (12 ft.)

- NT8D98AL   6.1 m (20 ft.)
- NT8D98AS   9.1 m (30 ft.)
- NT8D98AT   11.5 m (38 ft.)

NT8D99 CPU to Network Cable

Purpose—Interconnects NT8D35 Network Modules in a full group configuration. Connects to backplane connector A, B, C, D, or E (therefore, it is also known as the ABCDE cable).

Lengths—

- NT8D99BB   0.7 m (26 in.)
- NT8D99AC   1.2 m (48 in.)
- NT8D99BD   1.7 m (66 in.)

NT9D89 CNI-3 to 3PE Cable

Lengths—

- NT9D89CA   2.4 m (8 ft.)
- NT9D89DA   3.0 m (10 ft.)
- NT9D89EA   3.7 m (12 ft.)
- NT9D89FA   7.6 m (25 ft.)
- NT9D89GA   15.2 m (50 ft.)

NT9J93AD DTI Echo Canceler to I/O Cable

Purpose—Connects the PRI or DTI echo canceler port to the I/O panel.

Length—1.8 m (6 ft.)

NT9J94AB RPE to I/O Cable

Purpose—This cable connects the NT8D47 RPE to the I/O connector panel.

Length—0.6 m (2 ft.)

NT9J96 Intracabinet Network Cable

Purpose—Used for Large System upgrades. Connects the QPC414 Network Card to the I/O panel within a QCA55 cabinet.

Lengths—

- NT9J96AC   1.0 m (40 in.)
- NT9J96AD   1.8 m (70 in.)
- NT9J96AE   2.2 m (85 in.)
- NT9J96AG   3.6 m (12 ft.)
- NT9J96AH   4.2 m (14 ft.)
- NT9J96AJ   4.9 m (16 ft.)

NT9J97 Intracabinet Network Cable

Purpose—Used for Large System upgrades. Connects the NT8D04 Superloop Network Card to the I/O panel in a QCA55 cabinet.

Lengths—

- NT9J97AC   1.0 m (40 in.)
- NT9J97AD   1.8 m (70 in.)
- NT9J97AE   2.2 m (85 in.)
- NT9J97AG   3.6 m (12 ft.)
- NT9J97AH   4.2 m (14 ft.)
- NT9J97AJ   4.9 m (16 ft.)

NT9J98 Intracabinet Network Cable

Purpose—Used for Large System upgrades. Connects the QPC414 Network Card to the I/O panel of the QCA108 or QCA136 cabinet.

Lengths—

- NT9J98AC   1.0 m (40 in.)

- NT9J98AD   1.8 m (70 in.)

- NT9J98AE   2.2 m (85 in.)

NT9J99 Intracabinet Network Cable

Purpose—Used for Large System upgrades. Connects the NT8D04 Superloop Network Card to the I/O panel of the QCA108 or QCA136 cabinet.

Lengths—

- NT9J99AC   1.0 m (40in)

- NT9J99AD   1.8 m (70in)

- NT9J99AE   2.2 m (85in)

NTAG01AA Cable Assembly (UK)

Purpose—This cable connects the console to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector with two locking screws at one end and free-ended at the other end. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK.

Length—0.5 m (20 in.)

NTAG02AA Cable Assembly (UK)

Purpose—This cable connects the console to the cross-connect terminal.

This cable consists of 25-pair, 24 AWG tinned copper conductors. The cable has a 90 degree, 25-pair D-type connector with two locking screws at one end and free-ended at the other end. These cables utilize a custom compounded jacketing that meets the requirements for specific PBX contracts in the UK.

Length—91.4 m (300 ft.)

NTAG81AA Audio Cable

Purpose—Connects external analog music source or a recording device to the 3.5 mm Audio Jack on the NTAG36 Meridian Integrated RAN card faceplate. This is a splitter cable that provides the audio input signal on one connector and the audio output signal on the other connector.

NTAG81BA Maintenance Extender Cable

Purpose—Extends the NTAG81CA PC Maintenance cable or the NTAG81DA VLAN Maintenance cable when connecting a terminal to the NTAG36 Meridian Integrated RAN card. It is terminated with one 9-pin D-sub male and one 9-pin D-Sub female connector.

Length—5 m (16.4 ft.)

NTAG81CA PC Maintenance Cable

Purpose—Connects the terminal to the NTAG36 Meridian Integrated RAN card maintenance port on the faceplate. It is terminated with an 8-pin Mini-DIN male connector and a 9-pin D-Sub female connector.

Length—3 m (10 ft.)

NTAG81DA VLAN Maintenance Cable

Purpose—Connects the Mini-DIN maintenance connector on the NTAG36 Meridian Integrated RAN (MIRAN) faceplate to a terminal or to an adjacent MIRAN to form a LAN daisy chain. It is terminated with an 8-pin Mini-DIN connector on the common side and two 9-pin D-Sub connectors, one male and one female, on the split side.

Length—3 m (10 ft.)

NTAK0410 Carrier Remote DC Power Cable

Purpose—Used to connect the cabinet to a reserve battery power supply or to a dc power source through the NTAK28 Junction Box.

Length—178 cm (70 in.)

NTAK1108 9-25 pin RS-232 Convertor Cable

Purpose— Connects SDI ports and terminals.

NTAK1118 9-25 pin RS-232 Convertor Cable

Purpose— Connects SDI ports and terminals.

NTAK1204 Carrier Remote Inter-cabinet Cable

Purpose—Used to connect the main cabinet to the expansion unit in the small Carrier Remote IPE cabinet.

Length—216 cm (85 in.)

NTAK19EC Cable

Purpose—A two-port SDI cable used with the NTAK03 circuit card.

NTAK19FA/FB Cable

Purpose—A four-port SDI cable used with the NTAK02 circuit card.

NTBK04AA 1.5 MB DTI/PRI T1 Cable

Length—6.1 m (20 ft.)

NTBK04AB 1.5 MB Carrier/Clock Cable

Length—6.1 m (20 ft.)

NTBK04BA 1.5 MB DTI/PRI Carrier Cable

Length—1.8 m (6 ft.)

NTBK04CA 1.5 MB DTI/PRI Carrier Cable

Length—6.1 m (20 ft.)

NTBK05AA SDT12 120-Ohm E1 Cable

Length—6.1 m (20 ft.)

NTBK05CA 2.0 MB DTI/PRI Coaxial Carrier Cable

Length—6.1 m (20 ft.)

NTCG03 Reference Clock Cable

Purpose—Used to connect each of the CLK0 or CLK1 ports on the NT5D12AA Dual DTI/PRI (DDP) card to the primary or secondary source ports on the Clock Controller card 0 or 1.

Lengths—

- NTCG03AA   4.20 m (14 ft.)
- NTCG03AB   0.84 m (2.8 ft.)
- NTCG03AC   1.20 m (4 ft.)
- NTCG03AD   2.10 m (7 ft.)

NTCK46 External DCHI Cable

Purpose—Used to connect the NT5D12AA Dual DTI/PRI (DDP) card to the QPC757 DCHI D-Channel Handler card.

Lengths—

- NTCK46AA   1.8 m (6 ft.)
- NTCK46AB   5.4 m (18 ft.)
- NTCK46AC   10.6 m (35 ft.)
- NTCK46AD   15.2 m (50 ft.)

NTCK80 External MSDL Cable

Purpose—Used to connect the NT5D12AA Dual DTI-PRI (DDP) card to the NT6D80 MSDL card.

Lengths—

- NTCK80AA   1.8 m (6 ft.)
- NTCK80AB   5.4 m (18 ft.)
- NTCK80AC   10.6 m (35 ft.)
- NTCK80AD   15.2 m (50 ft.)

NTCW10 DECT Base Station Cable

Purpose—Used with a UTP Cat 5 cable to connect a DECT base station to the MDF.

NTCW11AA DECT DMC8 to DMC8 Faceplate Cable

Purpose—Used to interconnect DECT DMC8 cards faceplates.

NTCW11BA DECT DMC8 to DMC8-E Faceplate Cable

Purpose—Used to interconnect DECT DMC8 cards.

NTCW11EA DECT DMC8-E to DMC8-E Faceplate Cable

Purpose—Used to interconnect DECT IPE shelves.

NTCW12DA DECT Ethernet Cable

Purpose—Used to connect the DECT IPE shelf to the Optivity Telephony Manager LAN.

NTND11 CP-to-CP Cable

Purpose—Used with Succession 1000M Single Group, Meridian 1 Option 61, and Meridian 1 Option 61C CP PII systems only. Through connectors on the rear of the backplane, connects the NT6D66 CP Card in Core/Network Module 0 to the NT6D66 CP Card in Core/Network Module 1. For Core/Network modules stacked in one column, NTND11AA is used. Two required per Large System.

Lengths—

- NTND11AA   0.6 m (2 ft.)
- NTND11BA   1.8 m (6 ft.)

NTND13 IOP to IOP SCSI Cable

Purpose—Used with Succession 1000M Single Group, Meridian 1 Option 61, and Meridian 1 Option 61C CP PII systems only. Through connectors on the rear of the backplane, connects the card slot for the NT6D63 IOP Card in Core/Network Module 0 to the NT6D63 IOP Card in the Core/Network Module 1. One required per Large System.

Lengths

- NTND13AA   0.3 m (1 ft.)
- NTND13AB   1.1 m (3.5 ft.)
- NTND13AC   1.8 m (6 ft.)

NTND14 CNI to 3PE Cable

Purpose—Connect CPU Core to Network Shelf.

Lengths—

- NTND14AA   1.5 m (5 ft.)
- NTND14AB   3.0 m (10 ft.)
- NTND14AC   3.7 m (12 ft.)
- NTND14AD   4.9 m (16 ft.
- NTND14AE   7.6 m (25 ft.)
- NTND14AF   9.1 m (30 ft.)
- NTND14AG   10.6 m (35 ft.)
- NTND14AX   15.2 m (50 ft.)
- NTND14AW   0.6 m (2 ft.)

NTND26 MSDL to DCHI Cable

Purpose—Connects a multipurpose serial data link (MSDL) port to the ISDN PRI trunk connector for DCH.

Lengths—

- NTND26AA   1.8 m (6 ft.)
- NTND26AB   5.4 m (18 ft.)
- NTND26AC   10.6 m (35 ft.)
- NTND26AD   15.2 m (50 ft.)

NTND27AA MSDL to IO Panel Cable

Purpose—Connects an MSDL port to the I/O panel

Length—1.2 m (4 ft.)

NTND27AB MSDL SDI/AM2 Cable

Length—1.8 m (6 ft.)

NTND28 Network Expansion Cable

Purpose—Used for upgrades to Succession 1000M Multi Group, Meridian 1 Option 81, Meridian 1 Option 81C and Meridian 1 Option 81C CP PII systems. Connects NT6D60 Core Modules to an EMI-filter connector housing on QCA55 or QCA108 Cabinets for Succession 1000M Multi Group (Option 81-based only) and Meridian 1 Option 81 systems. Connects NT5D21 Core/Network Modules to an EMI-filter connector housing on QCA55 or QCA108 Cabinets for Succession 1000M Multi Group (Option 81C-based only), Meridian 1 Option 81C and Meridian 1 Option 81C CP PII systems. Quantity required is determined by the Large System configuration.

Included in the NTND33 Core Module Upgrade Kits.

Lengths—

- NTND28BA   4 m (13 ft)

- NTND28BB   4.8 m (16 ft)

- NTND28BC   6.7 m (22 ft)

NTND29 Network Expansion CPU Interface Cable

Length—1.8 m (6 ft.)

NTND30 Network Expansion Junctor to I/O Housing Cable

Length—1.8 m (6 ft.)

NTND33 Core Module Upgrade Kit

Purpose—Sets of cables and a connector housing used with Core module upgrades to Succession 1000M Multi Group and Meridian 1 Option 81. The kit is available in the following versions:

- NTND33CB Clock/Group 0 Kit—provides cables for the clock controller card and a single network group (Group 0). The NTND33CB Clock/Group 0 Kit replaces the NTND33BB Group 0 Kit.

- NTND33CC Two-Group Kit—provides the cables for network groups other than Group 0. One kit is required for each of groups 1/2 and groups 3/4. The NTND33CC kit replaces the NTND33BC Group 1–2 and NTND33BD Group 3–4 Kits. The NTND33CC kit is used with the NTND33CB kit, and can also be used when upgrading to Succession 1000M Multi Group, Meridian 1 Option 81C, or Meridian 1 Option 81C CP PII.

NTND33CA Network Expansion Kit

Purpose—Set of cables and connector housings used to add additional network groups.

Length—4 m (13 ft.)

NTND33FA Cable Kit for CP3 and CP4 Systems (backplane connection)

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C

Purpose—Provides the hardware to connect a Core using CP3 and CP4 processors (system versions 2611 and 3011 respectively) to one Network group, when the connection is made to the rear of the CNI cards. All backplane connections for the CNI3 (NTRB34) will use this kit.

The NTND33FA kit contains the following:

- four NTND94DA CNI to I/O panel cables

- four NTND95AA I/O panel to 3PE cables (network shelf)

- four NTND28BE 35-ft. intercabinet screened cables

- four A0360683 adaptor connectors

- four P0745713 I/O panels

- eight P0738866 cable labels

- hardware

- cable ties

This kit will replace four NTND14 cables that connect the CPU Core to a network shelf, if the network were located in the same row as the Core.

NTND33GA Cable Kit for CP3 and CP4 Systems (CNI3 faceplate connection)

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C

Purpose—Provides the hardware to connect a Core using CP3 and CP4 processors (system versions 2611 and 3011 respectively) to one Network group, when the connection is made to the faceplate of the CNI3 cards. Only faceplate connections from the CNI3 (NTRB34) will use this kit.

The NTND33GA kit contains the following:

- four NTND94EA CNI3 faceplate to I/O panel cables

- four NT8D76BD 5-ft I/O panel to 3PE cables (network shelf)

- four NTND28BE 35-ft. intercabinet screened cables

- four A0360683 adaptor connectors

- four P0745713 I/O panels

- eight P0738866 cable labels

- hardware

- cable ties

This kit will replace four NT9D89 cables that connect the CPU Core to a network shelf, if the network were located in the same row as the Core.

NTND33HA Cable Kit for CP PII Systems

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C CP PII

Purpose—Provides the hardware to connect a Core using CP PII processors to one Network group.

NTND37 Dual SDI Cable

Length—2.4 m (8 ft.)

NTND71 BRA Clock Reference to Clock Controller Cable

Length—

- NTND71AA   2.0 m (6.5 ft.)
- NTND71AB   3.7 m (12 ft.)
- NTND71AC   7.6 m (25 ft.)
- NTND71AD   12.8 m (42 ft.)

NTND72 Clock Reference to Clock Controller Cable

Length—2.0 m (6.5 ft.)

NTND82 Printer to LIU Cable

Lengths—

- NTND82AA   3.0 m (10 ft.)
- NTND82AB   7.6 m (25 ft.)

NTND91Ax CSL Cable

Lengths—

- NTND91AA   3.0 m (10 ft.)
- NTND91AB   7.6 m (25 ft.)

NTND91Bx Extension-25DB Cable

Lengths—

- NTND91BA   3.0 m (10 ft.)
- NTND91BB   7.6 m (25 ft.)

NTND94 CNI to I/O Panel Cable

Purpose—Used for upgrades to Succession 1000M Multi Group, Meridian 1 Option 81, Meridian 1 Option 81C, and Meridian 1 Option 81C CP PII

systems. Through connectors on the rear of the backplane, connects the two ports on the NT6D65 CNI Card to the I/O panel in the Core or Core/Network module. Two required per half group.

Included in the NTND33 Core Module Upgrade Kits.

Lengths—

- NTND94AA   1.8 m (6 ft.)
- NTND94BA   0.4 m (17.5 in.)
- NTND94CA   0.3 m (13 in.)
- NTND94DA   0.5 m (20 in.)

NTND95 3PE to Connector Housing Cable

Purpose—Used for upgrades to Succession 1000M Multi Group, Meridian 1 Option 81, Meridian 1 Option 81C, and Meridian 1 Option 81C CP PII systems. Connects QPC441 3PE Cards in Network modules to an EMI-filter connector housing. Two required per half group.

Included in the NTND33 Core Module Upgrade Kit.

Length—2.4 m (8 ft.)

NTRC17AA Cross-over Ethernet cable

Purpose—Used to connect CP PII card LAN 2 port of Core/Net 0 to CP PII card LAN 2 port of Core/Net 1. If a LAN hub is not available, used to connect CP PII card LAN 1 port of Core/Net 0 to CP PII card LAN 1 port of Core/Net 1.

NTRC46 Clock to FIJI Cable

Purpose—Used to connect the Clock Controller cards and the FIJI cards in Group 0. Two required per Large System.

Lengths— (* indicates the lengths of the two Y-terminations)

- NTRC46AB   1.2 m to 4.1* m (4 ft. to13.5* ft.)

- • NTRC46BB   17.1 m to 2.4* m (5.5 ft. to 8* ft.)
- • NTRC46CB   6.7 m to 6.7* m (22 ft. to 22* ft.)

NTRC47 FIJI to FIJI Sync Cable

Purpose—Used to connect the FIJI cards in shelf 0 and shelf 1 (except Group 0). One FIJI to FIJI Sync cable is required per network group.

Length—1.5 m (5 ft.)

NTRC48 Fiber Ring Cable

Purpose—Used in Succession 1000M Multi Group and Meridian 1 Option 81C CP PII systems. Connects FIJI cards in a Fiber Network-based Large System. One ring cables the FIJI cards in all Network shelf 0, and a second ring cables the FIJI cards in Network shelf 1. One fiber ring cable is required per FIJI card.

Lengths—

- • NTRC48AA   1.8 m (6 ft.)
- • NTRC48BA   3.0 m (10 ft.)
- • NTRC48CA   3.6 m (12 ft.)
- • NTRC48DA   4.2 m (14 ft.)
- • NTRC48EA   5.8 m (19 ft.)
- • NTRC48FA   7.0 m (26 ft.)
- • NTRC48GA   9.8 m (32 ft.)
- • NTRC48HA   15.2 m (50 ft.)

NTRC49 Clock to Clock Cable

Purpose—Used in Succession 1000M Multi Group and Meridian 1 Option 81C CP PII systems. Connects Clock 0 to Clock 1 in a Fiber Network-based Large System. This cable also provides the connections to the NTRC46 cables that connect between the Clock Controllers and the FIJI cards in Group 0. One Clock to Clock cable is required per Large System.

Lengths—

- NTRC49AA   1.8 m (6 ft.)

- NTRC49BA   6.1 m (20 ft.)

P0704007 Superloop Adapter Plate

Purpose—Reduces the QPC414 network loop cutout to accept a superloop connection.

P0715058 Universal I/O Panel

Purpose—Provides increased I/O panel capacity for connectivity provided by this panel, including QPC414 network loops that must extend outside the module.

QCA328AD Connector Cable

Purpose—A 25-pair cable with a 25-pin D-type male connector at one end and a 15-pin D-type male connector at the other end. Used to connect the PRI card to the D-channel interface card, the QPC757 DCHI.

Lengths—

- QCAD328A   1.8 m (6 ft.)

- QCAD328B   5.4 m (18 ft.)

QCAD36A and QCAD37A Terminal Connector Cables

Purpose—Used to connect a serial data interface (SDI) circuit card to a local data terminal or data communications equipment.

The QCAD36A connector is used when the data terminal is located within 16 cable ft. (4.9 m) of the SDI card. For greater distances (up to 50 cable ft.), use the QCAD37A connector.

The cable is 25-wire, 24 AWG standard EIA interface cable. Connectorized at both ends (90 degree. hoods). One cable is required for each terminal

Lengths—

- 4.9 m (16 ft.)

- 15.2 m (50 ft.)

QCAD38A Connector Cable

Purpose—To interconnect two changeover and memory arbitrator cards in a dual-CPU configuration. This cable is 25-pair cable; 2.5 ft. (762 mm) in length.

Length—762 mm (2.5 ft.)

QCAD42 Connector Cable

Purpose—Used to connect an SDI port to the input/output panel. 25-wire flat ribbon cable, 28 AWG.

Length—240 cm (95 in.)

QCAD115 Connector Cable

Purpose—Used to connect PE shelf to Input/Output panel. 25-pair ribbon cable, 26 AWG. Two 50-pin connections.

Length—51 cm (20 in.)

QCAD116 Connector Cable

Purpose—Used to connect a PE shelf to the input/output panel. 25-pair flat ribbon cable, 26 AWG. Two 50-pin connectors.

Length—102 cm (40 in.)

QCAD117 Connector Cable

Purpose—Used to connect a PE shelf to the input/output panel. 25-pair flat ribbon cable, 26 AWG. Two 50-pin connectors.

Length—152 cm (60 in.)

QCAD118 Connector Cable

Purpose—Used to connect a PE shelf to the input/output panel. 25-pair flat ribbon cable, 26 AWG. Two 50-pin connectors.

Length—203 cm (80 in.)

QCAD119 Connector Cable

Purpose—Used to connect an SDI port to the input/output panel. 25-wire flat ribbon cable, 28 AWG.

Length—165 cm (65 in.)

QCAD120 Connector Cable

Purpose—Used to connect an SDI port to the input/output panel. 25-wire flat ribbon cable, 28 AWG.

Length—191 cm (75 in.)

QCAD121 Connector Cable

Purpose—Used to connect an SDI port to the input/output panel. 25-wire flat ribbon cable, 28 AWG.

Length—114 cm (45 in.)

QCAD124 Connector Cable

Purpose—Used to:

- connect each network circuit card to a group of PE shelves
- interconnect network extender circuit cards
- interconnect PE shelves in the same network loop
- interconnect tone and digit switch circuit cards

- connect multigroup switch cards to multigroup extender cards
- interconnect multigroup extender cards

This cable is 18-pair, 26 AWG tight-twisted cable, connectorized at both ends (90 degree connectors). Use NE-A18Q for 180 degree connectors.

Lengths—

- 0.9 m (3 ft.)
- 1.2 m (4 ft.)
- 1.8 m (6 ft.)
- 3.0 m (10 ft.)
- 4.5 m (15 ft.)
- 6.1 m (20 ft.)
- 7.6 m (25 ft.)
- 10.6 m (35 ft.)
- 13.8 m (45 ft.)
- 15.2 m (50 ft.)

QCAD125 Connector Cable

Purpose—Connects clock controller 0 to clock controller 1. This is a 25-pair cable with a 50-pin, 90 degree connector on each end.

Length—3 m (10 ft.)

QCAD128 Connector Cable

Purpose—Connects the QPC472 DTI Carrier Interface connector (J5) to the cabinet filter panel. A 15-conductor flat ribbon cable with a 15-pin D-type female connector at one end and a 15-pin D-type male connector at the other.

Length—2.1 m (7 ft.)

QCAD129 Connector Cable

Purpose—Connects QPC472 DTI Echo Canceler connector (J4) to the cabinet filter panel in a shielded cabinet or directly to the Echo Canceller via a standard RS-232-C cable. This cable is a 10-conductor twisted pair cable with a 15-pin D-type male connector at one end and a 25-pin D-type female connector at the other.

QCAD130 Connector Cable

Purpose—Connects QPC472 DTI Reference Clock connector (J1 or J2) to the QPC471 Clock Controller. This cable is a 9-conductor flat ribbon cable terminated at both ends with a 9-pin D-type connector.

QCAD133 PRI/DTI I/O to MDF Cable

Purpose—Provides shielded cable pairs to connect the PRI or DTI card to the MDF through the I/O panel. Also, connects the 15-pin I/O filter connector to the 15-pin Network Channel Terminating Equipment (NCTE) connector.

Length—15.2 m (50 ft.)

QCAD274A AC Power Cord

Purpose—Connects to an IG-L6-30 30-amp receptacle and conducts ac power to the NT6D52 rectifier.

Length—2.7 m (9 ft.)

QCAD281 Connector Cable

Purpose—Used to connect a digital trunk or I/O panel to a cross-connect terminal.

QCAD282 Connector Cable

Purpose—Used to connect a digital trunk to an I/O panel (EMI systems only).

QCAD328 PRI to DCHI Cable

Purpose—Connects the DCHI port (J5) on the QPC720 PRI Card to the odd port (J2) on the QPC757 DCHI Card.

Lengths—

- QCAD328A   1.8 m (6 ft.)
- QCAD328B   5.4 m (18 ft.)
- QCAD328C   10.6 m (35 ft.)
- QCAD328D   15.2 m (50 ft.)

QCAD332/333 3-Port SDI Cables

Purpose—Used to cable three SDI ports.

- QCAD332, 3 male to 1 female (internal ST cabinet use)
- QCAD333, 1 male to 3 female (external cabinet use)

QCB12/13 Connector Cable

Purpose—To connect the QPC130 CDR tape control to the magnetic tape unit. Refer to *Call Detail Recording: Description and Formats* (553-3001-350).

Miscellaneous equipment

A0345353 A/B-Switch

System requirements—All Large Systems.

Purpose—Connects a remote PC, used as an 802.11 Wireless diagnostic terminal, to a Large System. If also used for other applications, disconnects it from the Large System.

A0377992 Black Box ABCDE-Switch

System requirements—All Large Systems.

Purpose—Connects multiple SDI and CPSI ports to one terminal or one modem.

A0601396 Nullmodem

System requirements—All Large Systems.

Purpose—Compact DB-25F/DB-25M nullmodem adapter.

A0601397 Nullmodem

System requirements—All Large Systems.

Purpose—Compact DB-25F/DB-25F nullmodem adapter.

A0633651 40MB PCMCIA Flash Card

System requirements—All Large Systems with an NTAG36 Meridian Integrated RAN (MIRAN) card.

Purpose—This PCMCIA Flash card provides additional memory storage when loaded on to an NTAG36 Meridian Integrated RAN (MIRAN) card. 1 MB of Flash memory provides up to two minutes of additional storage. This card provides over one hour of additional memory storage to MIRAN.

A0634492, A0634493, A0773054, A0773055, A0773056, A0773059 Fiber Remote Multi-IPE

System requirements—All Large Systems.

Purpose—Provides Large System functionality to a Remote IPE through a fiber-optic span. There are six types:

- A0634492—Fiber Remote Multi-IPE - Single-mode, redundant option
- A0634493—Fiber Remote Multi-IPE - Multi-mode, redundant option
- A0773054—Fiber Remote Multi-IPE - Multi-mode (1-4 superloops)
- A0773055—Fiber Remote Multi-IPE - Multi-mode (1-2 superloops)

- A0773056—Fiber Remote Multi-IPE - Single-mode (1-4 superloops)

- A0773059—Fiber Remote Multi-IPE - Single-mode (1-2 superloops)

    Note: "1-2 superloop" and "1-4 superloop" refer to the number of superloops transmitted over a single fiber span.

Quantity—One mandatory for each Large System, and up to one for each remote IPE.

A0634494 Fiber Remote Multi-IPE Rack Mount Shelf Option

System requirements—All Large Systems.

Purpose—Provides equipment to rack-mount the Fiber Remote Multi-IPE

Quantity—One for each Fiber Remote Multi-IPE where rack mounting is desired.

A0638930 UDS FastTalk v.32/42b

System requirements—

- Succession 1000M Multi Group

- Meridian 1 Option 81C

- Meridian 1 Option 81C CP PII

Purpose—Verified for operation with Succession 1000M Multi Group, Meridian 1 Option 81C, and Meridian 1 Option 81C CP PII systems. Provides 9600 baud transmission. Equipped with a 6-ft power cord for a standard 110 V ac wall socket, a cable that connects to an RJ-11C jack, and an internal telephone jack for voice capability.

A0660403 3MB PCMCIA Flash Card

System requirements—All Large Systems with an NTAG36 Meridian Integrated RAN (MIRAN) card.

Purpose—This PCMCIA Flash card allows software enhancements or maintenance upgrades to be loaded on to the card and installed onto the NTAG36 MIRAN card.

NT5D52AA Ethernet Adapter Card

System requirements—All Large Systems.

Purpose—This adapter card is installed on the IPE module I/O panel only when the NT5D51 Meridian Integrated Conference Bridge (MICB) card is to be connected to the Ethernet.

NT5D62 PCMCIA Hard Drive Card

System requirements—All Large Systems.

Purpose—This PCMCIA card contains the software and configuration for the NT5D51 Meridian Integrated Conference Bridge (MICB) card. It must be installed into the lower PCMCIA drive for the MICB card to operate.

NT7D05 Blank Faceplate

System requirements—All Large Systems.

Purpose—An NT7D05 filler panel is required in a slot reserved for the ringing generator when a ringing generator is not used.

Quantity—One blank faceplate for each slot to be covered.

NT7D0902 Rear Mount Conduit Kit

System requirements—All Large Systems (dc-powered).

Purpose—Allows conduit to enter the NT7D67CB PDU from the rear (above the floor).

NT7R94AA Bracket for Small Cabinet I/O Panel Assembly

System requirements—All Large Systems.

Purpose—Modifies the Fiber Remote Carrier IPE cabinet so that the I/O panel assembly can connect to the Small Carrier Remote IPE cabinet.

Quantity—One for each Small Carrier Remote IPE cabinet.

NT8D31 Blank faceplate

System requirements—All Large Systems.

Purpose—Although not required, NT8D31 blank faceplates can be used to cover other unoccupied slots, depending on the width of the slot:

- NT8D31AA   2.2 cm (0.875 in.)
- NT8D31AB   2.5 cm (1 in.)
- NT8D31AD   5 cm (2 in.)

Quantity—One blank faceplate for each slot to be covered.

NT8D63 Overhead Cable Tray Kit

System requirements—All Large Systems.

Purpose—Holds I/O cables that go from the Large System to the MDF. Provides support for overhead cabling tray. Mounts to the highest module in each column. Though this kit does NOT include the cable tray, it does contain:

- support brackets
- front and rear top cap air grills with cutouts

NT8D64 Earthquake bracing kit

System requirements—All Large Systems.

Purpose—Holds all the parts of a column in place during a major physical disruption such as an earthquake. Used only for non-raised floor. Each kit contains:

- four threaded rods

- two tie bars

- miscellaneous hardware (such as nuts and washers)

Three earthquake bracing kits are available:

- NT8D64AA for two module columns

- NT8D64AB for three module columns

- NT8D64AC for four module columns

Quantity—One kit for each column in the Large System.

NT8D1107 Superloop Adapter Plate

System requirements—All Large Systems.

Purpose—Reduces the QPC414 network loop cutout to accept a superloop connection.

NTAK92 Off-premises Protection Module

Purpose—Connects up to four off-premises analog telephones.

This kit will replace four NTND14 cables that connect the CPU Core to a network shelf, if the network were located in the same row as the Core.

- hardware

- cable ties

This kit will replace four NT9D89 cables that connect the CPU Core to a network shelf, if the network were located in the same row as the Core.

P0699851 Top Cap Cable Egress Panel

System requirements—All Large Systems.

Purpose—Replaces the rear top cap grill on each column when ceiling-hung racks are used. Provides cutouts for cable routing.

Quantity—One for each column.

P0745716 Universal I/O Panel

System requirements—All Large Systems.

Purpose—Provides increased I/O panel capacity for connectivity provided by this panel, including QPC414 network loops that must extend outside the Large System module.

P0741489 Backplane Cable Extraction Tool

System requirements—

- Meridian 1 Option 51

- Meridian 1 Option 61

- Succession 1000M Half Group

- Succession 1000M Single Group

Purpose—Used to disconnect cable connectors attached to the rear of the backplane in the NT5D21 Core/Network Module.

Quantity—Not applicable.

P0906308 cPCI® Card Slot Filler Panel

System requirements—

- Succession 1000M Single Group

- Succession 1000M Multi Group

- Meridian 1 Option 61C CP PII

- Meridian 1 Option 81C CP PII

Purpose—Used to cover empty slots in the cardcage of the cPCI Core/Network module. The specific slots to be covered are:

- Succession 1000M Single Group – slots c13–c17

- Succession 1000M Multi Group – slots c16–c17

- Meridian 1 Option 61C CP PII – slots c13–c17

- Meridian 1 Option 81C CP PII – slots c16–c17

Quantity—One panel for each slot to be covered.

List of terms

Table 7 lists the mnemonics used in this document and their definitions.

Table 7
Glossary (Part 1 of 9)

Mnemonic	Description
2DR	Two-Way, Dial Repeating
3PE	Three-Port Extender
ACD	Automatic Call Distribution
ADM	Add-On Data Module
AEM	Application Equipment Module
AIM	Asynchronous Interface Module
AIOD	Automatically Identified Outward Dialing
ALU	Arithmetic Logic Unit
ANI	Automatic Number Identification
ANSI	American National Standards Institute
AOP	Attendant Overflow Position
ASIM	Asynchronous/Synchronous Interface Module
ATX	Autodial Tandem Transfer
BKI	Break-In
BLF	Busy Lamp Field

Table 7
Glossary (Part 2 of 9)

Mnemonic	Description
BPO	Battery Pulse Option
bps	Bits Per Second
BRA	Basic Rate Access
BRI	Basic Rate Interface
BRIT	Basic Rate Interface Trunk
BTU	Bus Terminating Unit
CALL ID	Call ID
CAMA	Centralized Automatic Message Accounting
CAS	Centralized Attendant Service
CASM	Centralized Attendant Service—Main
CASR	Centralized Attendant Service—Remote
CBT	Core Bus Terminator
CC	Clock Controller
CDR	Call Detail Recording
CDRX	Call Detail Recording Enhancement
CE	Common Equipment
CGM	Console Graphics Module
CIM	Control, Interface, and Memory
CMA	Changeover and Memory Arbitrator
CMDU	Core Multi Drive Unit
CNI	Core Network Interface
CO	Central Office

Table 7
Glossary (Part 3 of 9)

Mnemonic	Description
CP	Call Processor
CPI	Computer Private Branch Exchange (PBX) Interface
CPND	Call Party Name Display
CPU	Central Processing Unit
CRT	Cathode Ray Tube
CSL	Command Status Link
CT	Control and Timing
DASS2	Digital Access Signaling System 2
DCE	Data Communication Equipment
DCHI	D-Channel Handler Interface
DCK	Recorded Telephone Dictation Trunk feature
DECT	Digital Enhanced Cordless Telecommunications
DID	Direct Inward Dialing
DLB	Dual Loop Peripheral Buffer
DOD	Direct Outward Dialing
DPNSS1	Digital Private Network Signaling System 1
DTE	Data Terminal Equipment
DTI	Digital Trunk Interface
DTMF	Dual Tone Multifrequency
DTR	Digitone Receiver
EAR	Enhanced ACD Routing
ECT	Enhanced Call Treatment

Table 7
Glossary (Part 4 of 9)

Mnemonic	Description
EDRG	Executive Distinctive Ringing
EIA	Electronic Industry Association
EMI	Electromagnetic Interference
EQA	FCC Equal Access
ESN	Electronic Switched Network
ETSI	European Telecommunications Standards Institute
EURO	Euro ISDN
F-F	Female-to-Female
F-M	Female-to-Male
FCDR	Format of Call Detail Recording
FDD	Floppy Disk Drive
FDI	Floppy Disk Interface
FDM	Floppy Disk Module
FDU	Floppy Disk Unit
FIJI	Fiber Junctor Interface
FM	Fully Modular
FN	Function
FRTA	French Type Approval
FX	Foreign Exchange
GRPI	1.5/2.0 Mbps ISDN Gateway
HDD	Hard Disk Drive
HOSP	Hospital Management

Table 7
Glossary (Part 5 of 9)

Mnemonic	Description
HSDC	High Speed Data Card
ICM	Integrated CPU/Memory
IDA	Integrated Digital Access
IGS	InterGroup Switch
INDB	International nB+D
I/O	Input/Output
IODU/C	Input/Output Disk Unit with CD-ROM
IOP	I/O Processor
IOP/CMDU	I/O Processor/Core Multi Drive Unit
IPB	InterProcessor Bus
IPE	Intelligent Peripheral Equipment
ISDLC	Integrated Services Digital Line Card
ISDN	Integrated Services Digital Network
ITU	International Telecommunications Union
IVR	Hold in Queue for Interactive Voice Response
KD3	Spanish Signaling Protocol
LCD	Liquid Crystal Display
LRE	Logic Return Equalizer
MCA	Meridian Communications Adapter
MCDR	Mini Call Detail Recording
MCDS	Multi-Channel Data System
MDF	Main Distribution Frame

Table 7
Glossary (Part 6 of 9)

Mnemonic	Description
MDU	Multi Disk Unit
MFC	Multifrequency Compelled Signaling
MFS	Multifrequency Signaling
MGC	Multigroup Control
MGE	Multigroup Extender
MGS	Multigroup Switch
MISP	Multipurpose ISDN Signaling Processor
MLIO	Multi-Language I/O
MLM	Meridian Link Module
MMDU	Multi-Media Disk Unit
MPDU	Module Power Distribution Unit
MSDL	Multipurpose Serial Data Link
MSI	Mass Storage Interface
MSPS	Misc/SDI/Peripheral Signaling
MSU	Mass Storage Unit
NT1	Network Termination Unit
OAID	Outgoing Automatic Incoming Dial
OANI	Outgoing Automatic Number Identification
OPAO	Outpulsing of Asterisk and Octothorpe
OPX	Off-Premises Extension
ORC	Originator Ringing Control
OVLP	Overlap Signaling

Table 7
Glossary (Part 7 of 9)

Mnemonic	Description
PAD	Packet Assembler/Disassembler
PBX	Private Branch Exchange
PCM	Pulse Code Modulation
PDU	Power Distribution Unit
PE	Peripheral Equipment
PFTU	Power Failure Transfer Unit
PHNT	Phantom Terminal Number Operation
PPM	Periodic Pulse Metering
PRA	Primary Rate Access
PRI	Primary Rate Interface
PROM	Programmable Read-Only Memory
PTE	Packet Transport Equipment
QM	Quarter Modular
QSDI	Quad Serial Data Interface
RAM	Random Access Memory
RAN	Recorded Announcement
RFI	Radio-Frequency Interference
ROM	Read-Only Memory
RPE	Remote Peripheral Equipment
RTC	Real-Time Clock
SAMM	Stand-Alone Meridian Mail
SBE	Segmented Bus Extender

Table 7
Glossary (Part 8 of 9)

Mnemonic	Description
SCG	System Clock Generator
SCSI	Small Computer System Interface
SDI	Serial Data Interface
SEQ	Sequencer
SILC	S/T Interface Line Card
SML	System Message Lookup
SSC	Succession System Controller (in Succession 1000 systems) Small System Controller (in Succession 1000M Small Systems)
TCM	Time Compression Multiplexing
TDS	Tone and Digit Switch
THF	Trunk Hook Flash
TOPS	Traffic Operator Position System
TSPS	Traffic Service Position System
TTY	Teletype Machine
UEM	Universal Equipment Module
UK	United Kingdom
UILC	Universal Interface Line Card
UPS	Uninterruptible Power Supply
VLAN	Virtual Local Area Network (VLAN)
VNS	Virtual Network Services
WATS	Wide Area Telephone Service
XMFC	Extended Multifrequency Compelled Signaling
XMFE	Extended Multifrequency Signaling For Socotel

Table 7
Glossary (Part 9 of 9)

Mnemonic	Description
XPE	Extended Peripheral Equipment
XPEC	Extended Peripheral Equipment Controller
XSDI	Extended Serial Data Interface
XSM	Extended System Monitor

Index

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Meridian 1, Succession 1000,
Succession 1000M
Equipment Identification

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