Meridian 1
Succession 1000M
Succession 3.0 Software

Large System
Overview

Document Number: 553-3021-010
Document Release: Standard 1.00
Date: October 2003

Produced in Canada

Revision history

October 2003

Standard 1.00. This document is a new NTP for Succession 3.0. It was created to support a restructuring of the Documentation Library. This document contains information previously contained in the following legacy document, now retired: System Overview (553-3001-100)

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 are supported in your area.

Subject

This document describes the Meridian 1 and Succession 1000M Large 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 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

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 Large System that supports an upgrade path to a Succession 1000M Large System.

Table 1
Meridian 1 systems to Succession 1000M systems

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

For more information, see *Large System: Upgrade Procedures* (553-3021-258)

Intended audience

This document is intended for individuals responsible for configuring the Meridian 1 and Succession 1000M Large Systems.

Conventions

Terminology

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

- Meridian 1
- Succession 1000M

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

Related information

This section lists information sources that relate to this document.

NTPs

The following NTPs are referenced in this document:

- *Library Navigator* (553-3001-000)
- *Spares Planning* (553-3001-153)
- *Equipment Identification* (553-3001-154)
- *Circuit Card: Description and Installation* (553-3001-211)
- *FNF Reference Guide* (553-3001-259)
- *System Management* (553-3001-300)
- *Features and Services* (553-3001-306)
- *Software Input/Output: Administration* (553-3001-311)
- *Telephones and Consoles* (553-3001-367)
- *Software Input/Output: System Messages* (553-3001-411)
- *Large System: Planning and Engineering* (553-3021-120)
- *Large System: Maintenance* (553-3021-500)

Online

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http://www.nortelnetworks.com/

CD-ROM

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

Product description

Contents

This section contains information on the following topics:

Introduction

All Large Systems consist of Universal Equipment Modules (UEMs) stacked one on top of another to form a column. Each column contains a pedestal, a top cap, and up to four modules. A system can have one column or multiple columns. The Succession 1000M Large System includes a rack mounted signaling server.

Each UEM is a self-contained unit houses a card cage and backplane, power and ground cabling, power units, I/O panels, circuit cards, and cables. When the card cage is installed, the function of the UEM is established and the module is no longer “universal.” The system modules are as follows:

- NT4N41 Core/Network module for Succession 1000M Multi Group, Succession 1000M Single Group, Meridian 1 Option 81C CP PII, and Meridian 1 Option 61C CP PII
- NT5D21 Core/Network module for Succession 1000M Half Group, Succession 1000M Single Group, Succession 1000M Multi Group, Meridian 1 Option 61C CP PII, Meridian 1 Option 81C CP PII, Option 51C, 61C and 81C

- NT8D35 Network module required for Succession 1000M Multi Group and Meridian 1 Option 81C CP PII
- NT8D37 Intelligent Peripheral Equipment (IPE) module required for Large Systems
- Fiber Remote IPE module optional for Large Systems Multi Group
- Carrier Remote IPE module optional for Large Systems

  Note: In addition, modules that house equipment for specific applications, such as Meridian Mail and Meridian Link, can be included in a column.

The pedestal generally houses a blower unit, air filter, Power Distribution Unit (PDU), and System Monitor.

The top cap provides airflow exits, input/output (I/O) cable entry and exit, and overhead cable-rack mounting. Thermal sensor assemblies for the column are attached to a perforated panel on top of the highest module in the column, under the top cap.

A system can have one column or multiple columns. To comply with FCC and CSA standards for containing electromagnetic interference and radio frequency interference (EMI/RFI), spacer kits connect the columns in a multiple-column system.

System options

This document includes information on the following Large Systems:

- Succession 1000M Half Group and Meridian 1 Option 51C: enhanced common control complex, single CPU, and one half network group.
- Succession 1000M Single Group, Meridian 1 Option 61C CP PII, and Meridian 1 Option 61C: enhanced common control complex, dual CPU, and one full-network group
- Succession 1000M Multi Group, Meridian 1 Option 81C CP PII, Meridian 1 Option 81, and Meridian 1 Option 81C: enhanced common control complex, dual CPU, and multiple-network groups

These systems are available in AC- and DC-powered versions.

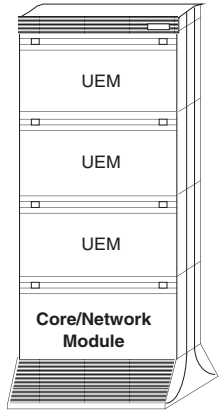
Succession 1000M Half Group and Meridian 1 Option 51C

The Succession 1000M Half Group and the Meridian 1 Option 51C are single-CPU systems with a half-network group. One Core/Network module and one IPE module are required. Additional IPE modules, PE modules, RPE modules, and application modules can be used.

Table 2 on page 14 lists the specifications for these systems. Figure 2 illustrates an Option 51C system.

With the addition of a Succession Signaling Server, Meridian 1 Option 51C becomes a Succession 1000M Half Group. Figure 2 on page 14 illustrates a Succession 1000M Half Group.

Figure 1
Meridian 1 Option 51C



Meridian 1 Option 51C

553-AAA0911

Figure 2
Succession 1000M Half Group

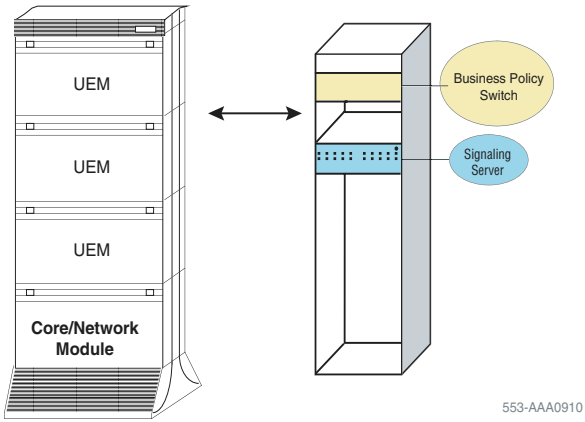


Table 2
Specifications for Succession 1000M Half Group and Meridian 1 Option 51C (Part 1 of 3)

System characteristics:		
Maximum number of ports	—	1000
Input voltage	—	208 V AC or –48 V DC
Number of CPUs	—	1
Number of network loops	—	16

Table 2
Specifications for Succession 1000M Half Group and Meridian 1 Option 51C (Part 2 of 3)

Memory options:	
Releases 19–21	— 24 or 48 MB NT6D66 CP card or the NT9D19 CP card
Release 22	— 48 MB NT6D66 CP card or any NT9D19 CP card
Release 23	— NT9D19 CP card or NT5D10 CP card
Release 24	— NT5D10 CP, or NT5D03 CP card
Release 25	— NT5D10 CP or NT5D03 CP card
Succession 3.0	— CP3 NT5D10 CP or CP4 NT5D03 card
Software generic	— 1711 (release 20-21). Use only the NT6D66 CP card to run release 22 — 2211 if using the NT9D19 CP or NT5D10 CP card (release 22 or later) — 2811 if using the NT5D03 CP card to run (release 24 or later)
Base hardware:	
Core/Network module	Required per system: — SDI-type card Required per module: — CE power supply (CEPS) — Call Processor (CP) card — Input/Output Disk Unit with CD-ROM (IODU/C) — Core to Network Interface (cCNI) card — 3-Port Extender (3PE) card — Clock Controller Card (MCLK)
IPE module	— PE power supply — IPE cards

Table 2
Specifications for Succession 1000M Half Group and Meridian 1 Option 51C (Part 3 of 3)

Pedestal (one per column)	— System Monitor
	— PDU
	— Blower unit
Top cap (one per column)	— Thermostat harness
	— Air probe harness

Succession 1000M Single Group and Meridian 1 Option 61C CP PII

Succession 1000M Single Group or Meridian 1 Option 61C CP PII is a dual-CPU system with standby processing capability, fully redundant memory, and a full-network group. Two cPCI Core/Network modules and one IPE module are required. Additional IPE modules, PE modules and application modules can be used.

Table 3 lists the specifications for Succession 1000M Single Group and Meridian 1 Option 61C CP PII. Figure 3 illustrates an Option 61C or Meridian 1 Option 61C CP PII.

With the addition of a signaling server, Option 61C or Meridian 1 Option 61C CP PII becomes Succession 1000M Single Group. Figure 4 illustrates a Succession 1000M Single Group.

Figure 3
Meridian 1 Option 61C CP PII or Meridian 1 Option 61C

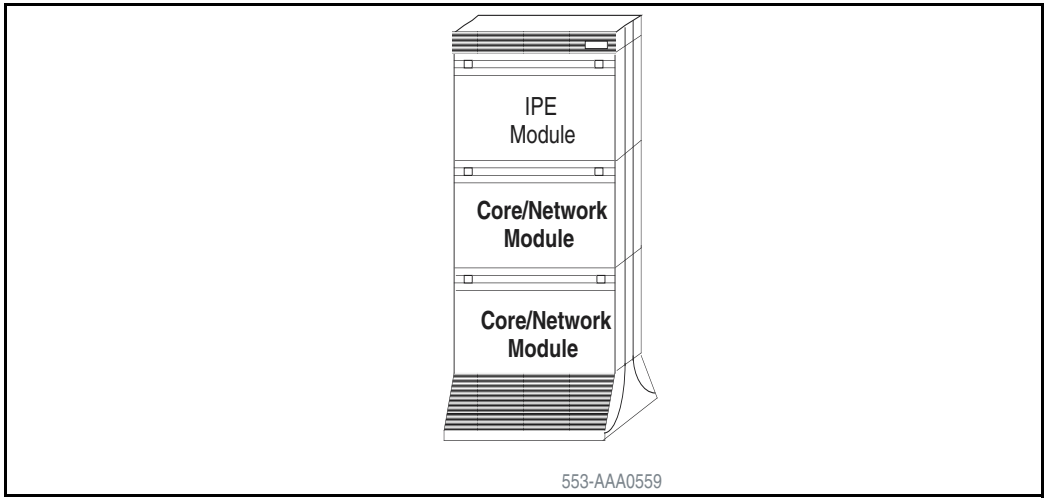


Figure 4
Succession 1000M Single Group

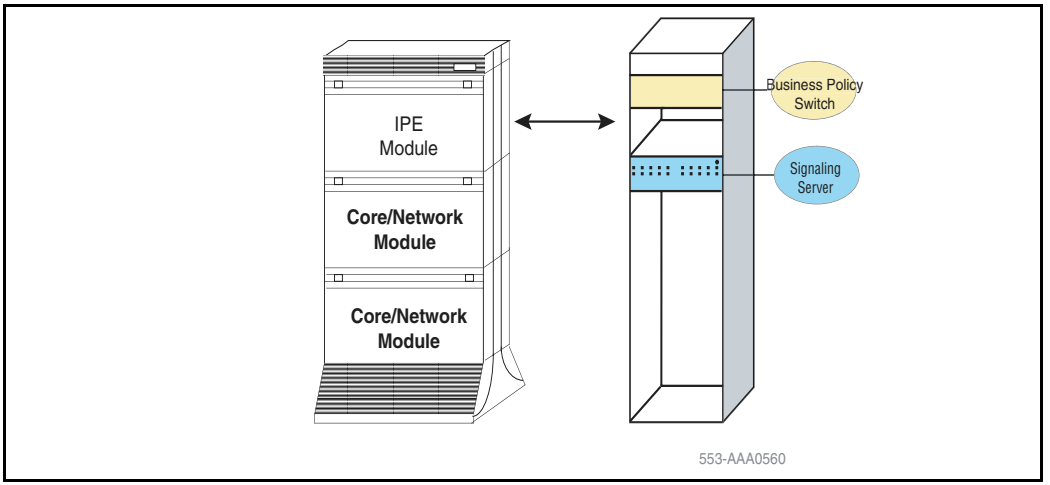


Table 3
Specifications for Succession 1000M Single Group and Meridian 1 Option 61C CP PII
(Part 1 of 4)

System characteristics:		
Maximum number of ports	—	2000
Input voltage	—	208 V AC or –48 V DC
Number of CPUs	—	2 (redundant)
Number of network loops	—	32

Table 3
Specifications for Succession 1000M Single Group and Meridian 1 Option 61C CP PII (Part 2 of 4)

Memory options:	
Releases 19–21	— 24 or 48 MB NT6D66 CP card or the NT9D19 CP card
Release 22	— 48 MB NT6D66 CP card or any NT9D19 CP card
Release 23	— NT9D19 CP card or NT5D10 CP card
Release 24	— NT5D10 CP, or NT5D03 CP card
Release 25	— NT5D10 CP or NT5D03 CP card
Succession 3.0	— CP3 NT5D10 or CP4 NT5D03 card
Software generic	— 1811 (release 19-21). Use only the NT6D66 CP card to run release 22
	— 2311 if using the NT9D19 CP or NT5D10 CP card (release 22 and 23)
	— 2911 if using the NT5D03 CP card to run (release 24 or later)

Table 3
Specifications for Succession 1000M Single Group and Meridian 1 Option 61C CP PII (Part 3 of 4)

Base hardware:	
Core/Network module (two)	Required per system: — SDI-type card Required per module: — Multi-Media Disk Unit (MMDU) — Call Processor Pentium II® (CP PII) card — System Utility (Sys Util) card — Core to Network Interface (cCNI) card — 3-Port Extender (3PE) card — Peripheral Signaling card (PS) — Network cards — Superloop Network cards — Conference/TDS card — CE power supply — Hybrid Bus Terminators Cards in the back of the module: — System Utility Transition (Sys Util Trans) card — cCNI Transition (cCNI Trans) card
IPE module	— PE power supply — IPE cards — Controller card

Table 3
Specifications for Succession 1000M Single Group and Meridian 1 Option 61C CP PII (Part 4 of 4)

Pedestal (one per column)	— System Monitor
	— PDU
	— Blower unit
Top cap (one per column)	— Thermostat harness
	— Air probe harness

Succession 1000M Multi Group and Meridian 1 Option 81C CP PII

Succession 1000M Multi Group or Meridian 1 Option 81C CP PII is a dual-CPU system with standby processing capabilities, fully redundant memory, and up to eight full network groups. The system is equipped with two redundant input/output processor and disk drive unit combination packs.

The following modules are required:

- two Core/Network modules (provides one network group)
- a minimum of two Network modules (provides one network group)
- a minimum of one IPE module

Additional Network and IPE modules are required for additional network groups. PE modules or application modules can also be used.

Table 4 lists specifications for the Meridian 1 Option 81C CP PII. Figure 5 shows a typical configuration for eight full network groups. Additional columns can be added, and there can be more than one row of columns.

With the addition of Succession Signaling Server, Meridian 1 Option 81C or Meridian 1 Option 81C CP PII becomes a Succession 1000M Multi Group. Figure 6 on page 22 illustrates the Succession 1000M Multi Group.

Figure 5
Meridian 1 Option 81C CP PII or Option 81C

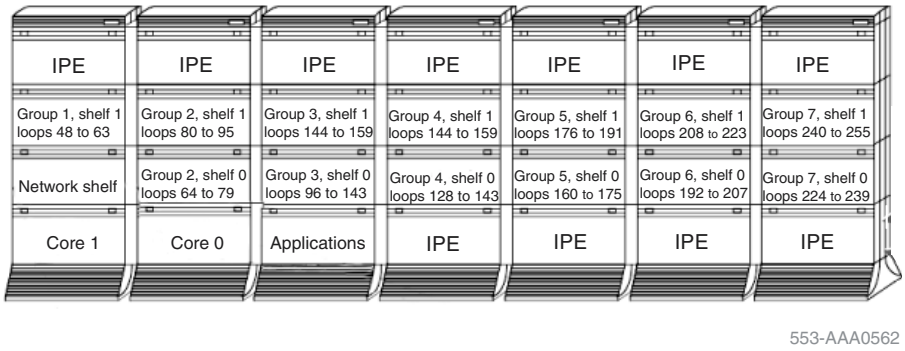


Figure 6
Succession 1000M Multi Group

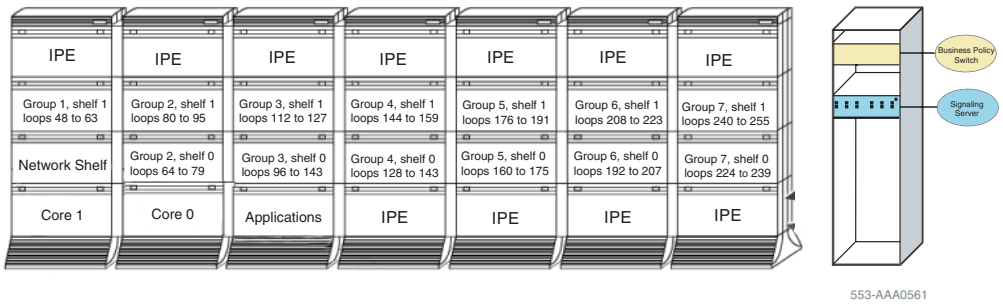


Table 4
Specifications for Succession 1000M Multi Group and Meridian 1 Option 81C CP PII (Part 1 of 4)

System characteristics:	
Maximum number of ports	— 10,000

Table 4
Specifications for Succession 1000M Multi Group and Meridian 1 Option 81C CP PII (Part 2 of 4)

Input voltage	— 208 V AC or –48 V DC
Number of CPUs	— 2 (redundant)
Number of network loops	— 256
Memory	— 128 MB
	— 256 MB
Software generic	— 3011
	— CP3 NT5D10, required for Succession 3.0
	— CP4 NT5D03, required for Succession 3.0

Table 4
Specifications for Succession 1000M Multi Group and Meridian 1 Option 81C CP PII (Part 3 of 4)

Base hardware:	
cCPI Core/Network module (two side-by-side)	Cards in the front of the module: — Multi-Media Disk Unit (MMDU) — Call Processor Pentium II® (CP PII) card — System Utility (Sys Util) card — Core to Network Interface (cCNI) cards — 3-Port Extender (3PE) card — Peripheral Signaling card (PS) — Fiber Junctor Interface (FIJI) card — Network cards — Superloop Network cards — Conference/TDS card — CE power supply — Hybrid Bus Terminators Cards in the back of the module: — System Utility Transition (Sys Util Trans) card — cCNI Transition (cCNI Trans) cards — Superloop Network card — Clock Controller card — SDI-type card — DDP2 pack — MSDL

Table 4
Specifications for Succession 1000M Multi Group and Meridian 1 Option 81C CP PII (Part 4 of 4)

IPE module	— PE power supply
	— Controller card
	— IPE cards
Pedestal (one per column)	— System monitor
	— Power Distribution Unit (PDU)
	— Blower unit
Top cap (one per column)	— Thermostat harness
	— Air probe harness

System modules

Each type of module is available in AC-powered and DC-powered versions (except the NT8D36 InterGroup module that does not require power). AC-power modules generally require a module power distribution unit (MPDU) to provide circuit breakers for the power supplies. DC-powered modules do not require an MPDU because a switch on each power supply performs the same function as the MPDU circuit breakers.

Note: In the UK, DC-powered modules must be used.

The figures in this chapter show a typical configuration for each module. DC-power is represented in these examples.

NT4N41 Core/Network module

This module provides common control and network interface functions. With the Succession 1000M Multi Group and the Meridian 1 Option 81C CP PII, two Core/Net modules are installed side-by-side. With the Succession 1000M Single Group and the Meridian 1 Option 61C CP PII, the modules are stacked or mounted side-by-side.

One section of this module houses the common control complex (CPU, memory, up to four CNI cards, and mass storage functions). The other section supports a Conference card, one Peripheral Signaling card, one 3-Port Extender card, and optional network cards.

Note: CNI card slots 13 and 14 remain empty.

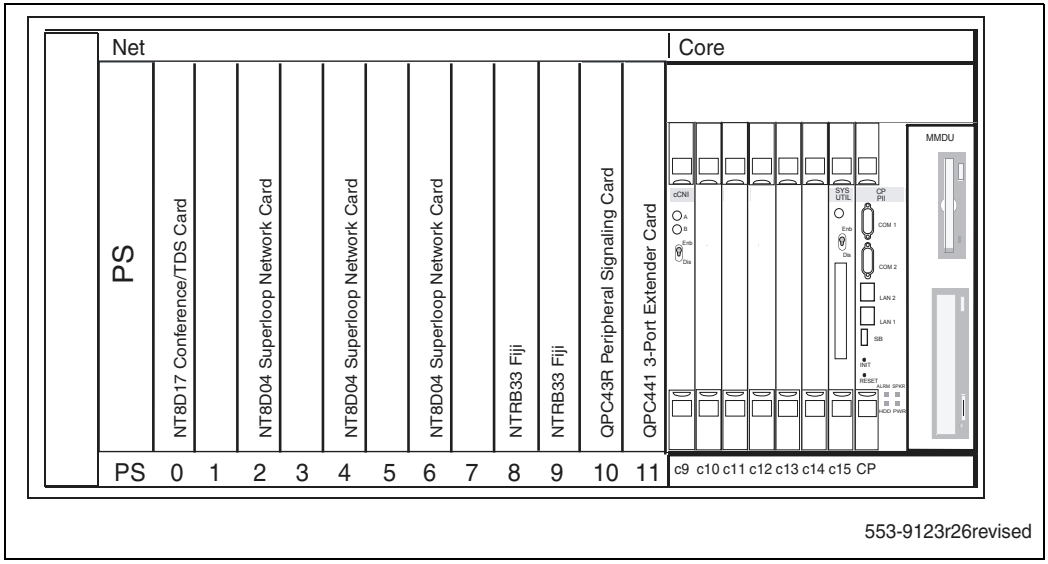
Each Core/Network module houses up to four NT8D04 Superloop Network Cards for a total of 16 network loops. Superloop Network cards are cabled to the backplane of an IPE module. In a typical configuration, one conference/ TDS card is configured in the module, leaving 14 voice/data loops available.

Core side

The Core side of the module contains the circuit cards that process calls, manage network resources, store system memory, maintain the user database, and monitor the system. These circuit cards also provide administration interfaces through a terminal, modem, or LAN.

The Core side runs in redundant mode: one Core operates the system while the other runs diagnostic checks and remains ready to take over the active Core fails. Both Cores are connected to each Network group depending on hardware configuration. If one Core fails, the second Core immediately takes over call processing. The Core shelf backplane is a compact PCI data bus.

Figure 7
NT4N41 cPCI Core/Network module



Network side

The Network side of this module contains the cards for half of the Network group 0. The other half of Network group 0 resides in the second core network module.

The Succession 1000M Multi Group and Meridian 1 Option 81C CP PII supports a Fiber Network Fabric network system with a FIJI card in slots 8 and 9 on the Net side of the Core/Net module.

NT5D21 Core/Network module

This module provides common control and network interface functions in Succession 1000M Single Group, Succession 1000M Multi Group, Succession 1000M Half Group, Meridian 1 Option 51C, Meridian 1 Option 61C, and Meridian 1 Option 81C.

Two Core/Network modules are required in the Succession 1000M Single Group, Succession 1000M Multi Group, Meridian 1 Option 81C, and

Meridian 1 Option 61C systems to provide redundant common control operation. If a failure occurs in one module, the function is transferred to the appropriate circuit cards in the other module without a loss of service. One Core/Network module is required in the Succession 1000M Half Group or Option 51C system.

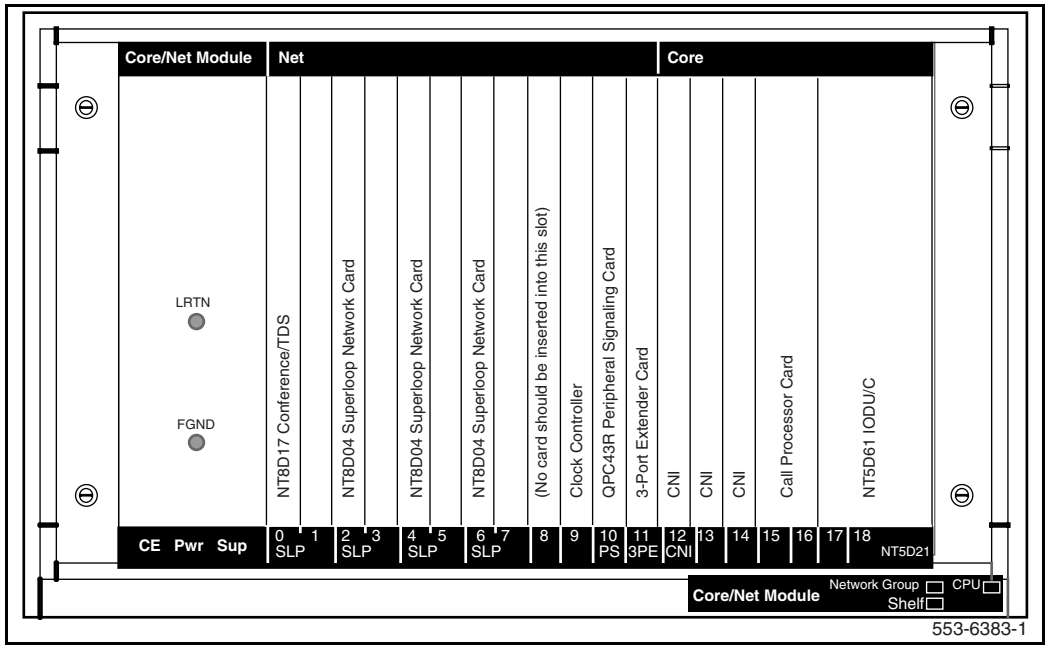
One section of this module houses the common control complex (CPU, memory, up to three CNI cards, and mass storage functions). The other section supports a Conference card, one Peripheral Signaling card, one 3-Port Extender card, and optional network cards.

Note: CNI card slots 13 and 14 remain empty.

Each Core/Network module houses up to four NT8D04 Superloop Network Cards for a total of 16 network loops. Superloop Network cards are cabled to the backplane of an IPE module. In a typical configuration, one conference/ TDS card is configured in the module, leaving 14 voice/data loops available.

Figure 8 shows the cards housed in the NT5D21 Core/Network module as configured for Meridian 1 Option 61C.

Figure 8
NT5D21 Core/Network module



NT8D35 Network module

This module provides the network switching functions in the Meridian 1 Option 81C, Meridian 1 Option 81C CP PII, and Succession 1000M Multi Group.

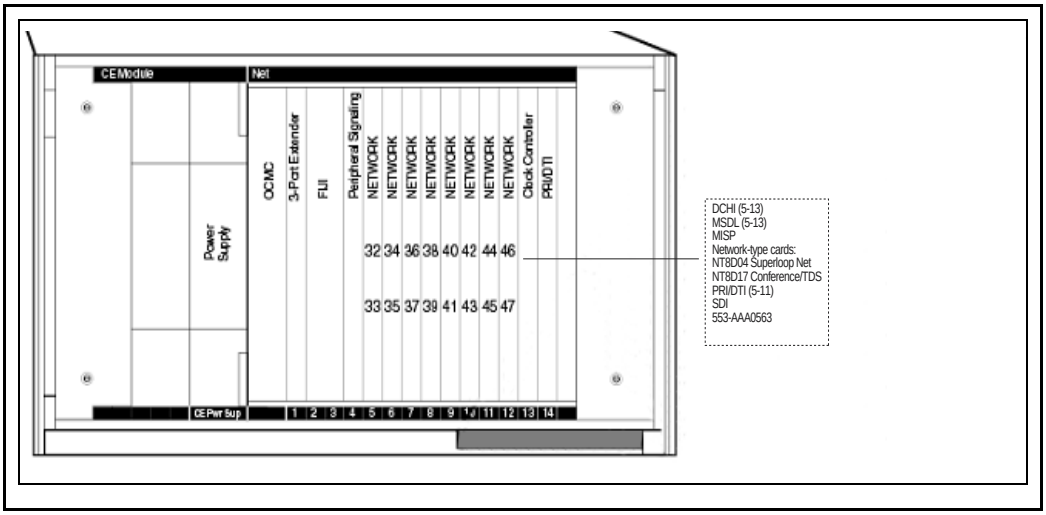
Two Network modules are required to make a full network group of 32 loops. A maximum of 16 Network modules (eight network groups) can be configured in the Meridian 1 Option 81C, Succession 1000M Multi Group, and Meridian 1 Option 81C CP PII.

The Network module houses up to four NT8D04 Superloop Network Cards, for a total of 16 network loops. Superloop network cards are cabled to the

backplane of an IPE module. In a typical configuration, one Conference/TDS card is configured in the module, leaving 14 voice/data loops available. In Succession 1000M Multi Group and Meridian 1 Option 81C CP PII, the Conference/TDS cards are located in the Core/Network module. The Clock Controller must be installed in slot 13.

Figure 9 shows the cards housed in the module.

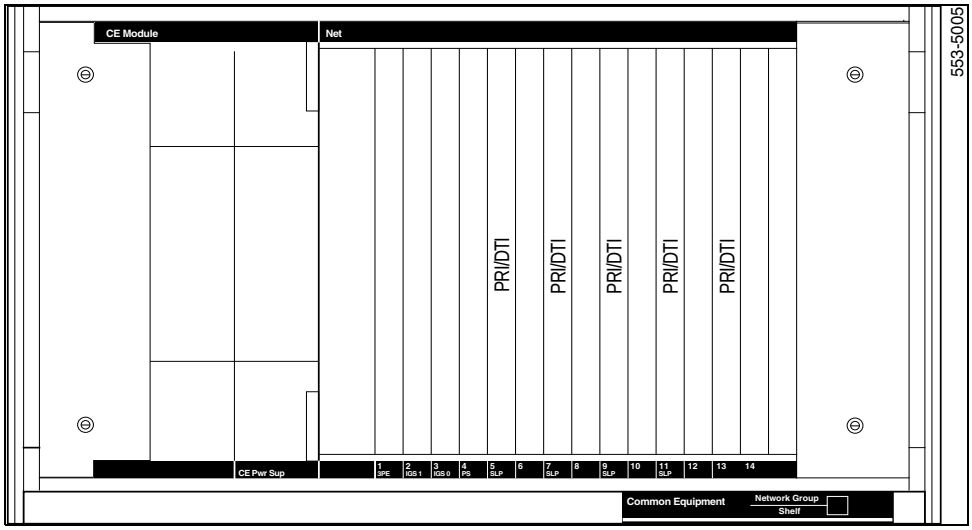
Figure 9
NT8D35 Network module



The Network module can be used as a PRI/DTI expansion module. The number of PRI/DTI expansion modules that can be used is determined by traffic considerations. Figure 10 on page 31 on shows the card slot configuration when the Network module is used for PRI/DTI expansion.

> ***Note:*** The bus terminating units (BTUs) that are equipped in the NT8D35AA and NT8D35DC Network module configuration are not required for, and will interfere with, the PRI/DTI expansion configuration. The NT8D35BA and NT8D35EA Network modules do not use or need BTUs for any application.

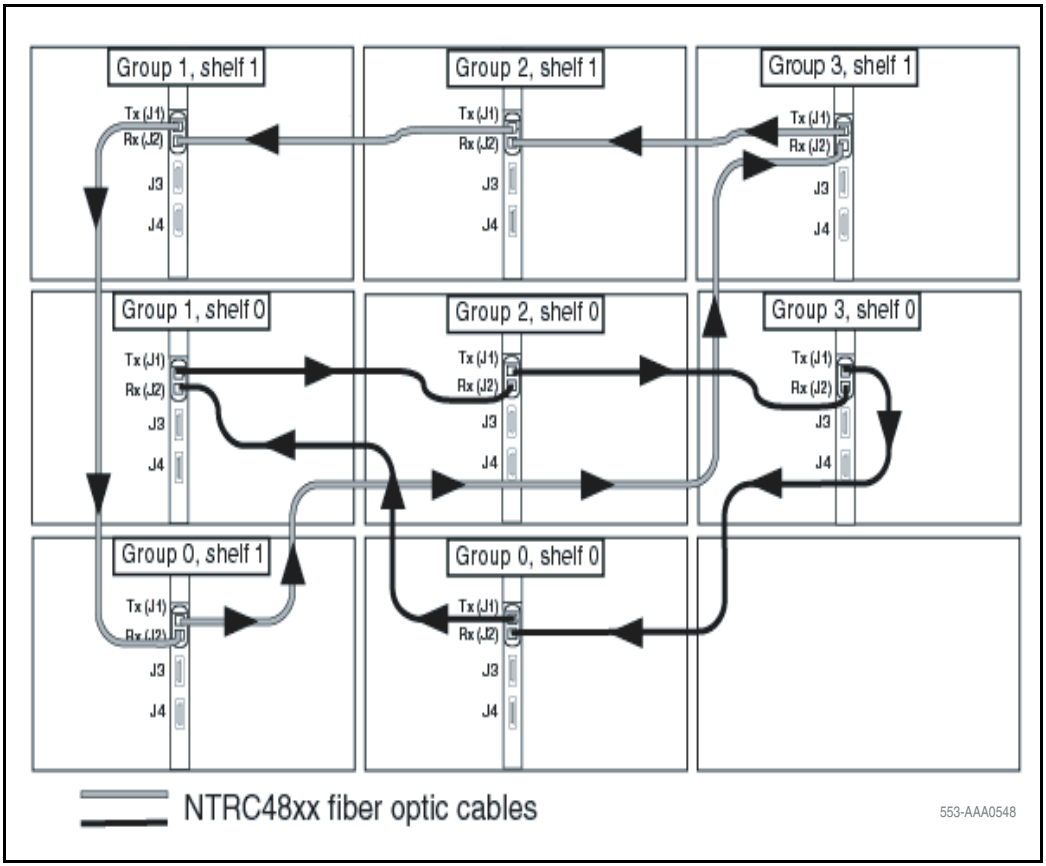
Figure 10
NT8D35 Network module configured for PRI/DTI expansion



Fiber Network Fabric

Fiber Network Fabric extends and enhances the 5-group network architecture to 8 non-blocking (inter-group) Network groups, with a resulting expansion in network capacity to 8000 timeslots available for Intergroup traffic. The Meridian 1 61C CP PII can be upgraded to a Meridian 1 81C CP PII with Fiber Network Fabric. This upgrade takes a Meridian 1 61C CP PII to a Meridian 1 81C CP PII with two groups. Figure 11 illustrates a four group configuration of Fiber Network Fabric.

Figure 11
Four group Fiber Network Fabric configuration



NT8D37 Intelligent Peripheral Equipment module

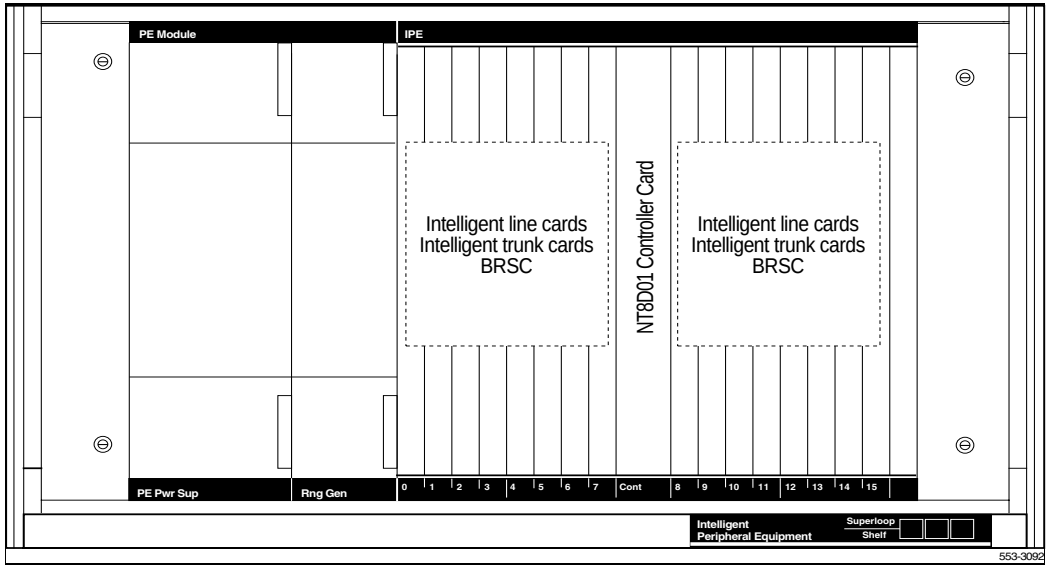
This module provides the interface between network switching and IPE cards, such as intelligent line and trunk cards, in all Large Systems.

> ***Note:*** This module supports intelligent peripheral equipment (IPE) cards. Non-intelligent peripheral (PE) cards are housed in the NT8D13 PE module.

The IPE module houses one NT8D01 Controller Card, which is the peripheral equipment controller, and up to 16 IPE cards, supporting up to 512 terminal numbers (256 voice and 256 data). The controller card is cabled to the NT8D04 Superloop Network Card.

Figure 12 shows the card slot assignments in the module.

Figure 12
NT8D37 IPE module

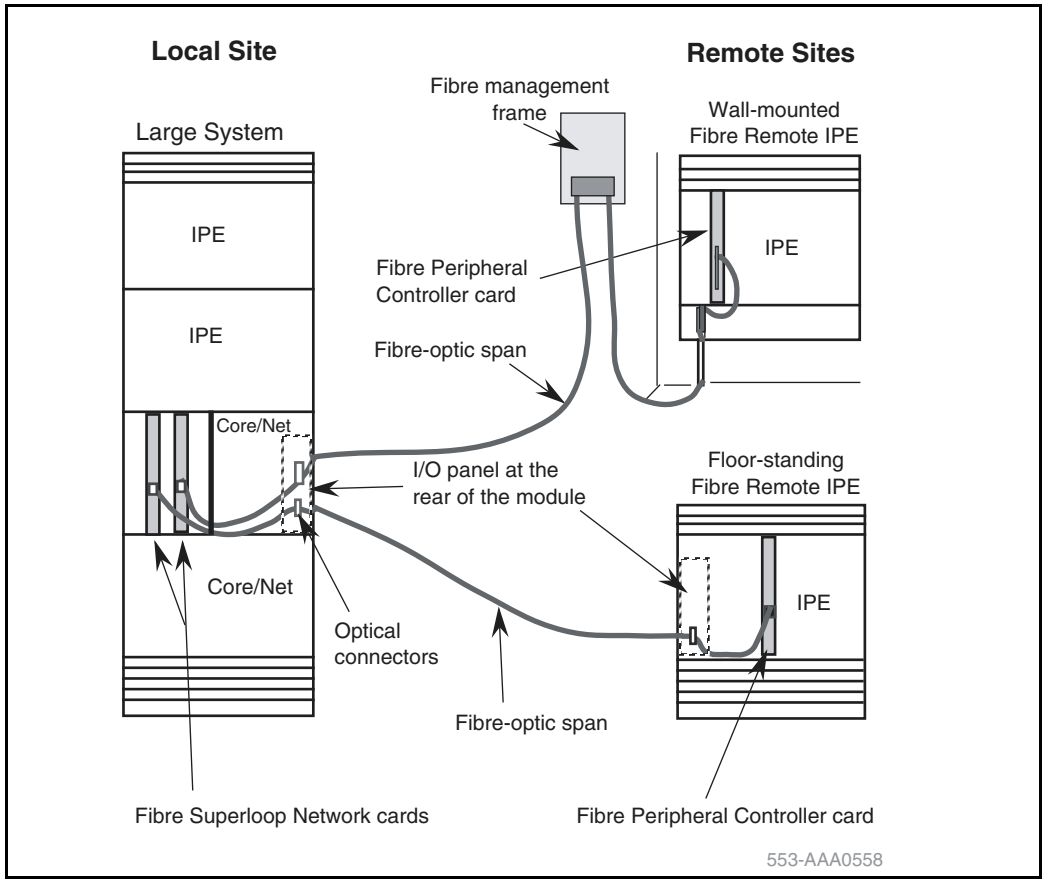


Fiber Remote IPE module

This module provides fiber-optic links between the network functions in a Large System and the peripheral controller functions in the Fiber Remote IPE. A floor-standing column or wall-mounted cabinet is installed at the remote site and is connected to the Large System using fiber-optic links.

The Fiber Remote IPE provides Large Systems functionality with the installation of only IPE modules and IPE cards at a distant site. Since the remote IPE system uses the common equipment and network equipment of the associated local Large System, it can deliver the same features and functionality as the local system. Figure 13 on page 35 illustrates the fiber-optic connection between a local system and remote system.

Figure 13
Large System to Remote IPE site



Fiber Remote Multi-IPE Interface

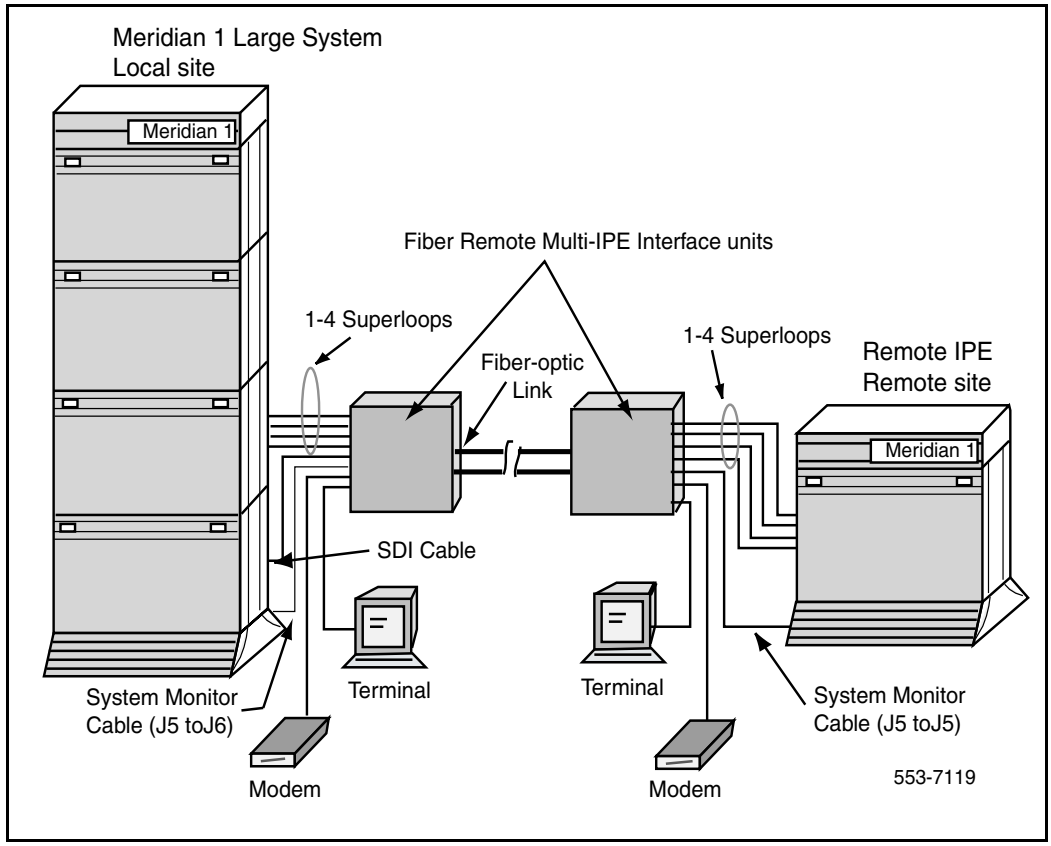
The Fiber Remote Multi-IPE Interface links a Large System with one or more Remote IPE sites to provide Meridian 1 Large System functionality. Since the remote IPE system uses the common equipment and network equipment of the associated local Large System, it can deliver the same features and functionality as the local system. Figure 14 on page 37 illustrates the fiber-optic connection between the local system and remote system.

The Fiber Remote Multi-IPE Interface links the local and remote systems using a fiber-optic link over a single-mode optical fiber.

The Fiber Remote Multi-IPE Interface is available in four options which allow the same configuration of the superloop connections at the remote site as the configuration of the IPE modules at the local site:

- Single-mode fiber supporting four superloops
- Single-mode fiber supporting two superloops
- Muli-mode fiber supporting four superloops
- Multi-mode fiber supporting two superloops

Figure 14
Meridian 1 Large System to Remote IPE connection over fiber-optic link



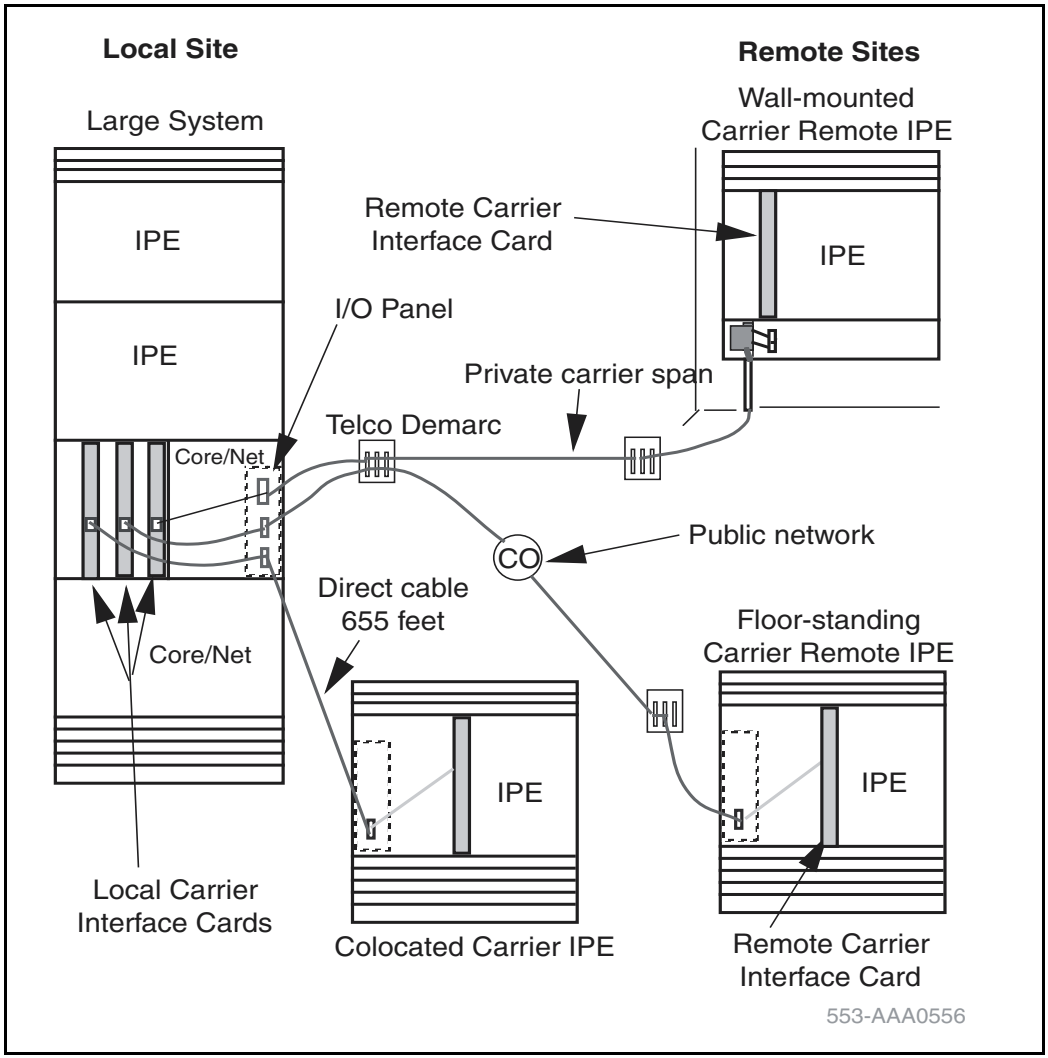
Carrier Remote IPE

The Carrier Remote IPE provides functionality by installing only IPE modules and IPE cards at a distant site. The Remote IPE shares the system common and network equipment to provide the same functions and features to remote subscribers that are available to local system subscribers.

A floor-standing column or a wall-mounted cabinet Carrier Remote IPE is installed at the remote site and is connected to the Meridian 1 Large System

using T1 or E1 connection. Figure 15 on page 38 illustrates the connection between the local system and remote system.

Figure 15
Meridian 1 Large System to Carrier Remote IPE links



System architecture

Contents

This section contains information on the following topics:

Hardware architecture

Succession 1000M and Meridian 1 are circuit-switched digital systems that provide voice and data transmission. The internal hardware is divided into the following functional areas (see Figure 16 on page 40):

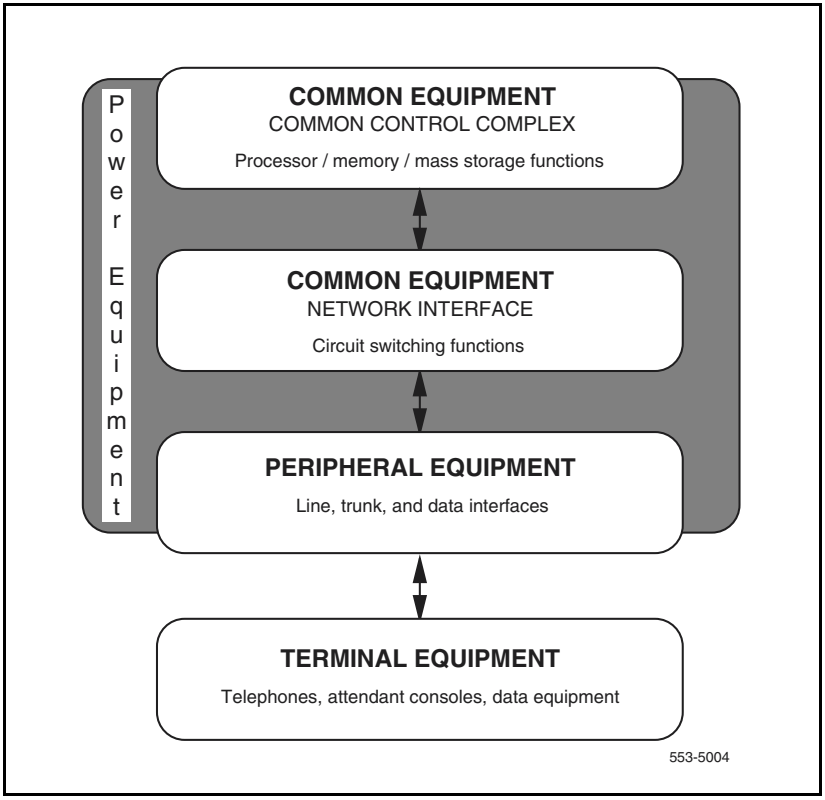
- Common control complex (Common equipment) circuit cards provide the processor control, software execution, and memory functions of the system.
- Network interface (Common equipment) circuit cards perform switching functions between the processor and peripheral equipment cards.

  Note: As shown in Figure 16, the network interface function is generally considered a subset of the common equipment functions.

- Peripheral equipment circuit cards provide the interface between the network and connected devices, including terminal equipment and trunks.

- Terminal equipment includes telephones and attendant consoles (and may include equipment such as data terminals, printers, and modems).
- Power equipment provides the electrical voltages required for system operation and cooling, and sensor equipment for system protection.

Figure 16
Large System basic architecture



Common control complex

The processor is the common control complex of the system. It provides the sequences to process voice and data connections, monitor call activity, and perform system administration and maintenance.

The processor communicates with the network interface over a common control bus that carries the flow of information.

The common control complex consists of:

- the processor card or cards that provide the computing power for system operation
- system memory that stores all operating software programs and data unique to each system
- the disk drive unit that provides mass storage for operating programs and data
- I/O interfaces that provide an information exchange between the user and the system

Succession 1000M and Meridian 1 “core” processor cards support extensive networking and provide intensive use of software features and applications, including call centers of up to 1000 agents.

The core software architecture incorporates a real-time multitasking operating system, as well as code that delivers features and call processing. This architecture guarantees feature transparency to the user upgrading the core CPU. The core architecture also provides significant operation, administration, and maintenance enhancements for the people who work closely with the system software and hardware.

All core overlays reside in Dynamic Random Access Memory (DRAM) after they are loaded from the hard disk during an initial software load (software is shipped on redundant hard disks). The Resident Overlays featured in core-based systems ensure subsecond speeds in accessing the overlays.

The capacity enhancement in the core architecture is provided by the core control complex. In Large Systems with cPCI Core/Network modules, the core control complex refers to the two Core/Network modules (Core/

Network 0 and Core/Network 1). The Core and Core/Network modules are fully redundant, with Core 1 duplicating the contents of Core 0.

The backplane in the Succession 1000M Multi Group and Meridian 1 Option 81C CP PII Core modules is a compact Peripheral Component Interconnect (PCI) data bus. PCI provides a high-speed data path between the CPU and peripheral devices. PCI runs at 33MHz, supports 32- and 64-bit data paths and bus mastering.

The backplane in the system are divided into "core" and "network" sides. The "network" side allows up to eight network cards to be installed for call processing capability.

In the Succession 1000M Half Group and Option 51C Core/Network module, the core side houses the following equipment:

- one Call Processor (CP) card
- one Input/Output Disk Unit with CD-ROM (IODU/C)
- one Core-to-Network Interface (CNI or CNI-3) card

In the Succession 1000M Single Group and Meridian 1 Option 61C CP PII the Core/Network module, the core side houses the following equipment:

- one Call Processor Pentium II® (CP PII) card
- one Multi-Media Disk Unit (MMDU)
- one System Utility (Sys Util) card
- one Core to Network Interface (cCNI) cards
- one System Utility Transition (Sys Util Trans) card
- four cCNI Transition (cCNI Trans) cards

Cabling between the CP cards allows memory shadowing and dual-CPU operation.

The CNI and CNI-3 cards provide the interface between the IPB and the network shelf, and between the CP card and three-port extender cards in the network shelf. Each CNI card provides two ports. Each CNI-3 card supports

three ports. In a typical configuration, three CNI-3 cards support eight network groups.

The NT4N43 Multi Media Dish Unit with CD-ROM (MMDU) uses an industry-standard 2MB floppy drive and CD-ROM drive to install system software from a CD-ROM.

The system uses a Security Device and an electronic Keycode to perform security authentication. The security device is located on the utility card. The Keycode file contains information about which features the system provides as well as Incremental Software Management limits.

Core/Net modules diagnose faults in field-replaceable units for all core hardware, including cables. In case of a failure, a message appears on the system terminal and on the Liquid Crystal Display (LCD) of the CP card. All messages can be stored in a file for future diagnostics.

Figure 17 provides a block diagram of the Succession 1000M Single Group and Meridian 1 Option 61C CP PII core architecture.

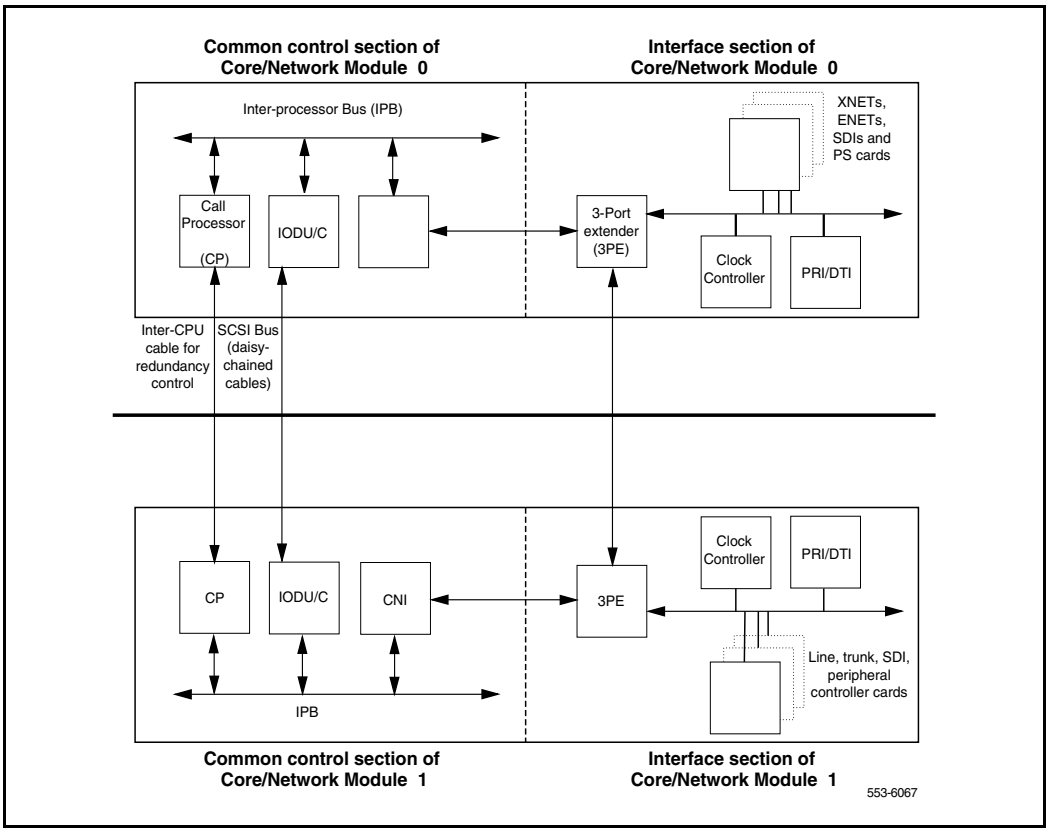
In the Succession 1000M Multi Group and Meridian 1 Option 81C CP PII cPCI Core/Network module, the core side houses the following equipment:

- one Call Processor Pentium II® (CP PII) card
- one Multi-Media Disk Unit (MMDU)
- one System Utility (Sys Util) card
- up to four Core to Network Interface (cCNI) cards
- one System Utility Transition (Sys Util Trans) card
- four cCNI Transition (cCNI Trans) cards

Core/Net modules diagnose faults in field-replaceable units for all core hardware, including cables. In case of a failure, a message appears on the system terminal and on the LCD of the faceplate of the utility card.

Core to Core Ethernet connection (LAN2 to LAN2) between the CP PII cards allows memory shadowing and dual-CPU operation.

Figure 17
Succession 1000M Single Group and Meridian 1 Option 61C CP PII core complex



The Multi-Media Disk Unit (MMDU) uses an industry-standard 2MB floppy drive, with a formatted capacity of 1.44 MB, a CD-ROM drive to install system software from a CD-ROM, and a hard disk.

The cCNI Transition cards connect the Core module cards to the 3PE cards in the Network modules. Each Core module contains between one and four cCNI cards. Since each cCNI card can connect to two Network groups, each Core is connected to a minimum of two groups and a maximum of eight groups. The number of cCNI cards in a system depends on the number of Network groups in that 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.

The System Utility card supports Card ID. The card provides an interface between the security device and the computer, and an interface between the XSM and display panel for each core/net card cage. This card also includes a switch on the faceplate to enable or disable the Core cards.

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.

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 for Core/Net module are installed in the factory regardless of how many cCNI main cards are configured for the system.

Network interface

Network switching, based on digital multiplexed loops, interconnects peripheral ports. A loop transmits voice, data, and signaling information over a bidirectional path between the network and peripheral ports.

Network cards digitally transmit voice and data signals, using space switching and time division multiplexing technology. Network switching also requires service loops (such as conference and TDS loops), which provide call progress tones and outpulsing.

Two types of cards provide network switching control:

- the NT8D04 Superloop Network Card, which provides four loops grouped together in an entity called a superloop
- the QPC414 Network Card, which provides two loops

Network organization

Network loops are organized into groups. A system is generally configured as one of the following:

- a half group system that provides up to 16 loops
- a single group system that provides up to 32 loops
- a multi-group system that provides up to 256 loops

The Fiber Junctor Interface (FIJI) cards in the Network modules are connected with fiber-optic cables to form a Dual Ring Fiber Network. This network consists of two separate rings: one ring connects all the Network shelf 0's while the second ring connects all the Network shelf 1's. This network communicates on a subset of the Sonet OC12c protocol (622 MB bandwidth on each ring).

The Dual Ring fiber-optic cable configuration provides complete non-blocking communication between the Network groups; this eliminates the incidence of busy signals for calls switched between groups. Each FIJI card can handle 32 PCM links. A system of eight Network groups provides 8000 timeslots for 4000 simultaneous conversations.

This Dual Ring network is fully redundant: each of the fiber-optic cable rings is capable of handling the traffic for an entire eight group network. If a fault in one ring is detected, the other ring automatically takes over call processing. No calls are lost during the switchover.

The Dual Ring Fiber network operated under four states:

- Normal
  - — Traffic is shared between the two rings.
  - — Each FIJI card drives 480 timeslots.
- Full
  - — Traffic is handled by a single ring.
  - — Each FIJI card drives 960 timeslots
- Survival
  - — FIJI cards in both rings are used to maintain intergroup traffic.

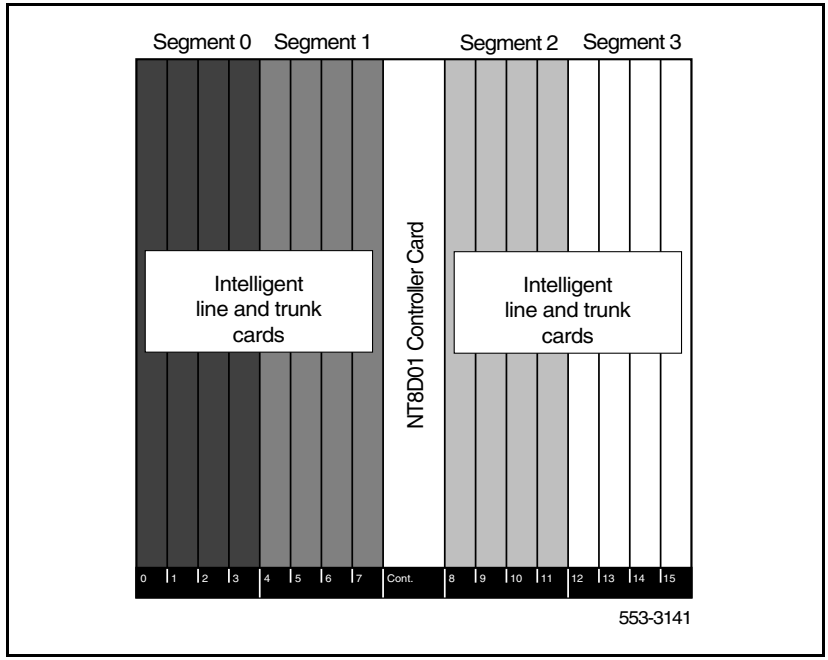
- Disabled
  - — The ring is inactive and does not support call processing.

Superloop network configurations

By combining four network loops, the superloop network card makes 120 timeslots available to IPE cards. Compared to regular network loops, the increased bandwidth and a larger pool of timeslots increases network traffic capacity for each 120-timeslot bundle by 25 percent (at a P0.1 grade of service).

The NT8D37 IPE module is divided into segments numbered 0–3 of four card slots each (see Figure 18). Segment 0 consists of slots 0–3, segment 1 consists of slots 4–7, segment 2 consists of slots 8–11, and segment 3 consists of slots 12–15.

Figure 18
Superloop segments in the IPE module



A superloop is made up of NT8D04 Superloop Network cards, NT8D01AC or NT8D01BC Controller-4 or NT8D01AD Controller-2 cards, and from one to eight IPE segments. The NT8D01BC Controller-4 replaces the NT8D01AC and NT8D01AD Controller cards for replacements and new installations.

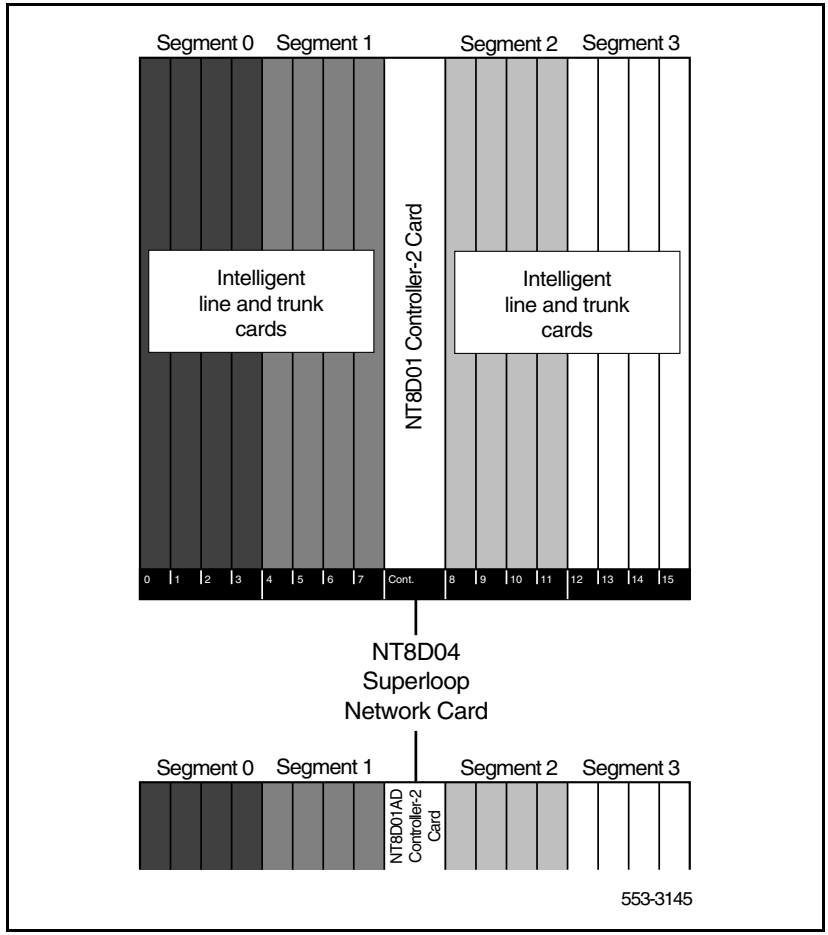
A number of superloop-to-segment configurations are possible:

- one segment per superloop requires four superloop network cards and one controller-4 card
- two segments per superloop requires two superloop network cards and one controller-2 card
- four segments per superloop requires one superloop network card and one controller-2 card
- eight segments per superloop requires one superloop network card and two controller-2 cards
- one segment per superloop/three segments per another superloop requires two superloop network cards and one controller-2 card
- two segments per superloop/six segments per another superloop requires two superloop network cards and two controller-2 cards

As an example of a superloop configuration, Figure 19 on page 49 shows eight segments per superloop. If a segment in this configuration is equipped with analog line cards and trunk cards, a high concentration environment of 120 timeslots to 128–512 terminal numbers (TNs) is provided. If half of the data TNs on digital line cards are enabled, this configuration provides a concentration of 120 timeslots to 768 TNs.

For a detailed description of superloop-to-segment configurations, see *Large System: Planning and Engineering* (553-3021-120).

Figure 19
Eight segments per superloop



Peripheral equipment

Using pulse code modulation (PCM), peripheral equipment converts analog signals to digital signals before switching is performed by the network. This conversion method samples the amplitude of the analog signal at a rate of twice the highest signal frequency, then converts the amplitude into a series of coded pulses. For telecommunications, the PCM-sampling frequency standard is 8 kHz.

Compressing-expanding (companding) PCM is a standard technique for using 8-bit words to efficiently represent the range of voice and data signals. Two standards for companding, A-Law and μ-Law, are recognized worldwide. Intelligent peripheral equipment conforms to both standards; the standard required is selected through software.

Peripheral equipment is associated with network loops. Intelligent peripheral equipment (IPE) cards are supported by NT8D04 Superloop Network Card loops. The traffic requirements of all peripheral equipment cards provisioned on a particular network loop must match the traffic capacity of that loop.

Intelligent peripheral equipment includes:

- controller cards that provide timing and control sequences and monitoring capabilities
- analog and digital line and trunk cards that provide interfaces to equipment outside the modules (such as telephones, data terminals, and trunks)

Table 5 lists the IPE cards and the number of terminations each supports.

Table 5
Intelligent peripheral equipment (Part 1 of 3)

Intelligent peripheral equipment cards	Number of terminations
Controller cards:	
NT8D01 Controller Card-4	N/A
NT8D01 Controller Card-2	N/A
Line cards:	
NT1R20 OPS Analog Line Card	8
NT5K02 Analog Line Card	16
NT5K96 Analog Line Card	16
NT8D02 Digital Line Card	16 to 32
NT8D09 Analog Message Waiting Line Card	16

Note 1: Terminal number (TN) density per segment is 16 to 128 TNs, with 64 to 512 TNs per IPE module. The maximum TN density assumes all slots are equipped with NT8D02 Digital Line Cards with 16 voice and 16 data TNs provisioned. A typical mix of line and trunk cards yields a nominal density of 64 TNs per segment, 256 TNs per IPE module.

Table 5
Intelligent peripheral equipment (Part 2 of 3)

Intelligent peripheral equipment cards	Number of terminations
Trunk cards:	
NT5K07 Universal Trunk Card	8
NT5K17 Direct Dial Inward Trunk Card	8
NT5K18 Extended CO Trunk Card	8
NT5K19 E&M/2280 Hz Trunk Card	4
NT5K36 Direct Inward/Direct Outward Dial	4
NT5K70 Extended CO Trunk Card	8
NT5K71 Extended CO Trunk Card	4
NT5K72 E&M Trunk Card	4
NT5K82 Extended CO Trunk Card	8
NT5K83 E&M Trunk Card	4
NT5K84 Direct Inward Dial Trunk Card	8
NT5K90 Extended CO Trunk Card	8
NT5K93 Extended CO Trunk Card	8
NT5K99 Extended CO Trunk Card	8
NT8D14 Universal Trunk Card	8
NT8D15 E&M Trunk Card	4
NTAG03 Extended CO Trunk Card	8
NTAG04 Extended CO/Direct Inward Dial	8
NTAG36 Meridian Integrated RAN	8
NTCK16 Generic Extended Flexible CO Card	8
Note 1: Terminal number (TN) density per segment is 16 to 128 TNs, with 64 to 512 TNs per IPE module. The maximum TN density assumes all slots are equipped with NT8D02 Digital Line Cards with 16 voice and 16 data TNs provisioned. A typical mix of line and trunk cards yields a nominal density of 64 TNs per segment, 256 TNs per IPE module.	

Table 5
Intelligent peripheral equipment (Part 3 of 3)

Intelligent peripheral equipment cards	Number of terminations
Special:	
NT5K20 Extended Tone Detector Card	8
NT5K48 Global Extended Tone Detector	8
NT5K92 Direct Inward Dial Tester	1
Note 1: Terminal number (TN) density per segment is 16 to 128 TNs, with 64 to 512 TNs per IPE module. The maximum TN density assumes all slots are equipped with NT8D02 Digital Line Cards with 16 voice and 16 data TNs provisioned. A typical mix of line and trunk cards yields a nominal density of 64 TNs per segment, 256 TNs per IPE module.	

Peripheral equipment remote location

In a local operating environment, peripheral equipment can be housed up to 15.2 m (50 ft) from the common equipment. Peripheral equipment installed in a remote location extends this range, allowing approximately 112.6 km (70 miles) between local and remote facilities.

This extension is achieved by converting multiplexed loop signals to a form compatible with the commonly used T-1 type digital transmission system. Refer to Table 5 for a list of peripheral equipment cards that can be used at the remote site.

Any medium that conforms to the DS-1 format (1.544 Mbps) can be used to link local and remote sites, including digital microwave radio and fiber-optic transmission systems.

Terminal equipment

Succession 1000M Large System and Meridian 1 Large System supports a wide range of telephones, including multiple-line and single-line telephones, as well as digital telephones with key and display functions and data transmission capabilities. A range of options for attendant call processing and

message center applications is also available. In addition, a number of add-on devices are available to extend and enhance the features of telephones and consoles. Add-on devices include key/lamp modules, lamp field arrays, handsets, and handsfree units. Refer to *Telephones and Consoles* (553-3001-367) for more information.

Digital telephones

Analog-to-digital conversion takes place in the digital telephone itself, rather than in the associated peripheral line card. This eliminates attenuation, distortion, and noise generated over telephone lines. Signaling and control functions are also handled digitally. Time Compression Multiplexing (TCM) is used to integrate the voice, data, and signaling information over a single pair of telephone wires.

For applications where data communications are required, Meridian 1 digital telephones offer an integrated data option that provides simultaneous voice and data communications over single pair wiring to a port on a digital line card. Refer to *Telephones and Consoles* (553-3001-367) for more information.

Succession 1000M Large System and Meridian 1 Large System support the following digital telephones:

- i2004 Internet telephone
- M3901 Entry single-line telephone
- M3902 Basic single-line telephone
- M3903 Enhanced telephone
- M3904 Professional telephone
- M3905 Call Center telephone
- M3820 Digital telephone
- M3310 Digital telephone
- M3110 Digital telephone
- M2006 Single-line telephone
- M2008 Standard Business telephone

- M2016S Secure telephone
- M2216 Automatic Call Distribution (ACD) telephone
- M2317 Intelligent telephone
- M2616 performance-plus telephone
- M2616CT Cordless telephone

Attendant consoles

Meridian 1 attendant consoles provide high-volume call processing. Indicators and a 4 x 40 liquid crystal display provide information required for processing calls and personalizing call answering. Loop keys and Incoming Call Indicator (ICI) keys allow the attendant to handle calls in sequence or to prioritize answering for specific trunk groups. An optional busy lamp field provides the attendant with user status.

Meridian attendant consoles support attendant message center options. The attendant console can be connected to an IBM PC or IBM-compatible personal computer to provide electronic directory, dial-by-name, and text messaging functions. All call processing features can be accessed using the computer keyboard.

Power equipment

Large Systems provide a modular power distribution architecture.

Each column includes:

- a system monitor that provides:
  - — power, cooling, and general system monitoring capabilities
  - — error and status reporting down to the specific column and module
- circuit breaker protection
- a cooling system with forced air impellers that automatically adjusts velocity to meet the cooling requirements of the system
- backup capabilities

Each module includes:

- an individual power supply unit with shut-off (switch or breaker) protection
- a universal quick-connect power wiring harness that distributes input voltages and monitor signals to the power supply

All options are available in both AC-power and DC-power versions. The selection of an AC- or DC-powered system is determined primarily by reserve power requirements and existing power equipment at the installation site.

Although AC-powered and DC-powered systems have different internal power components, the internal architecture is virtually identical. AC- and DC-powered systems differ primarily in the external power components.

AC power

AC-powered systems require no external power components and can plug directly into commercial AC (utility) power. AC-powered systems are especially suitable for applications that do not require reserve power. They are also recommended systems that require reserve power with backup times ranging from 15 minutes to 8 hours.

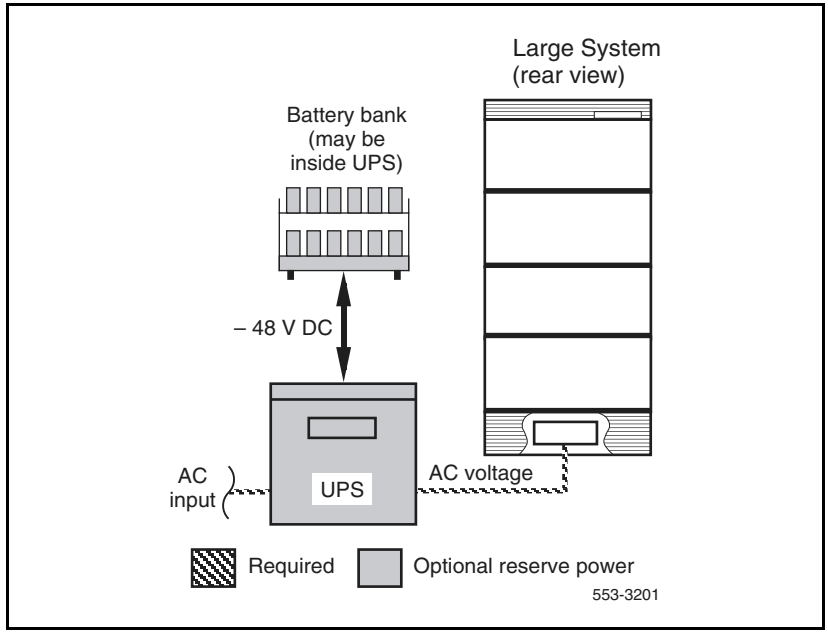
If reserve power is required with an AC-powered system, an Uninterruptible Power Supply (UPS), along with its associated batteries (either internal or external to the unit), is installed in series with the AC power source (see Figure 20 on page 57). An AC-powered system that does not require long-term backup can benefit from a UPS with short-term backup because the UPS typically provides power conditioning during normal operation, as well as reserve power during short outages or blowouts.

DC power

DC-powered systems are available as complete systems, with external power equipment provided by Nortel Networks; these systems can also be equipped for customer-provided external power.

DC-powered systems always require external rectifiers to convert commercial AC power into the standard –48 V DC required within the system (see Figure 21). Batteries are generally used with DC-powered systems, as

Figure 20
External AC-power architecture with reserve power



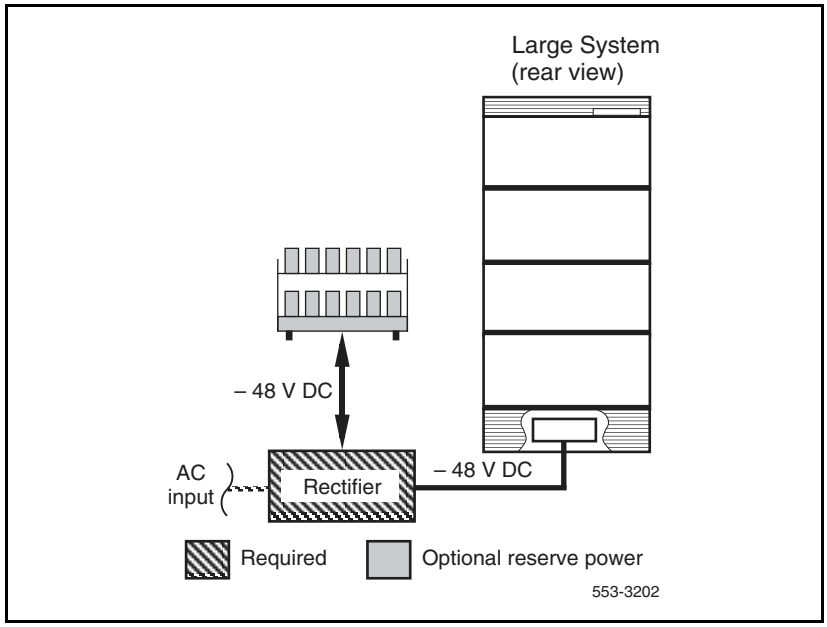
the traditional telecommunications powering method is for the rectifiers to continuously charge a bank of batteries, while the system power "floats" in parallel on the battery voltage. However, batteries are only required if reserve power is needed.

Software architecture

The superloop network card and IPE cards contain microprocessors that allow software changes and upgrades from the disk drive unit to be downloaded. These downloads can occur automatically, after a system reload, or manually through software program commands.

Call processing, maintenance, and administration are controlled by software programs stored either as firmware programs, as software programs resident in system memory, or as nonresident programs on disk. The information that

Figure 21
External DC-power architecture with reserve power



describes system configuration and associated peripheral equipment is called office data. This data resides in the system memory and on disk.

Firmware

Firmware provides fundamental programs consisting of hard-wired logic instructions stored in programmable read-only memory (PROM). Firmware programs manipulate data in the central processor and control input/output operations, error diagnostics, and recovery routines.

Software

Software programs consist of instruction sequences that control call processing, peripheral equipment, administration, and maintenance functions. Several generic software programs with optional feature packages are available.

Office data

Office data describes the characteristics of the system in terms of configuration and call-dependent information, such as features and services. Office data is arranged in blocks defining peripheral equipment, system configuration, and transient data.

Resident programs

Resident programs are always available in memory during system operation. Some resident programs are permanently programmed into the ROM portion of system memory. Other resident programs are automatically loaded into system memory at system power-up.

Resident programs include:

- Error Monitor, which continuously monitors call processing
- Initialize Program, which locates faults, rebuilds data, and releases reserve memory areas
- Overlay Loader, which locates, checks, and loads programs into the overlay area
- Overload Monitor, which monitors the volume of system messages and determines where overloads occur
- Resident Trunk Diagnostic, which monitors all trunk calls
- System Loader, which loads resident programs from the disk drive unit into system memory at power-up
- Traffic Monitor, which examines the system schedule, transfers traffic data from accumulating to holding registers, and produces reports

All software programs, including the nonresident programs listed in the following section are resident in, and accessible from, the memory on the cards listed above.

Nonresident programs

Nonresident programs are stored on data disks and loaded into the overlay area of system memory to perform specific tasks. They are removed from the

overlay area when no longer required. Nonresident programs can be loaded automatically, under program control, or manually, through software commands.

Nonresident programs are manually loaded into memory through the system terminal (or maintenance telephone). A terminal can be configured as an input-only, output-only, or input and output device.

Software programs provide the system interface for maintenance, service change, and traffic measurement. Each program is independent and has its own specific set of commands and formats. These programs run concurrently with normal call processing without interfering with system traffic.

There are five main categories of nonresident programs:

- service change and print routines
- maintenance diagnostics
- traffic
- equipment data dump
- software audit

Service change and print routines

Service changes do not usually require hardware changes. Instead, the service administration programs are used to create or modify all aspects of the system from individual feature key assignments to complete system configurations. There are also programs and print routines for retrieving data from the system to check the status of office data assignments.

Maintenance diagnostics

These programs are the primary instrument for clearing system faults. Individual programs are used for automatically or manually testing the common equipment and peripheral equipment. The programs can be loaded into the overlay area at the request of maintenance personnel, or as part of a daily maintenance routine automatically initiated by the system at a specified time. In addition, background and signaling diagnostic routines can occupy the overlay area when it is not in use.

Traffic

All systems are equipped with traffic data accumulation programs. There is also a resident traffic print program that examines the schedules, transfers data from accumulating to holding registers in accordance with schedules, and prints the traffic data. In addition, there is a traffic program used to query and modify schedules, options, and thresholds.

Equipment data dump

After making service changes, the changes must be saved to disk in order to save them. When the equipment data dump program is run, all the office data in the read/write memory is written to the system disk. The program can be run automatically during the midnight routine or on a conditional basis (for example, a data dump would only occur if a software service change has been made). It can also be run manually through the system terminal.

The data dump program is also used to install a new generic version or issue and capture protected data store information (such as speed call lists) that may be changed by a user.

Software audit

This program monitors system operation and gives an indication of the general state of the system operation. The program is concerned mainly with the system software. When a software problem is encountered, the program attempts to clear the problem automatically.

List of terms

AC

Alternating current

analog

A process that models information in the form of a continuously varying parameter such as current, voltage, or phase

analog signal

A signal that varies in a continuous manner such as voice or music. An analog signal can be contrasted with a digital signal, which represents only discrete states. The signal emitted by a data set has both analog and discrete characteristics.

architecture

The interrelationship between the parts of a system; the framework of a system

backplane

A printed circuit board that extends across the width of the card cage and connects to the circuit card connectors

battery backup

System power furnished by standby batteries that are charged by a charger. If commercial power fails, the batteries maintain service for a limited period of time, determined by the size of the batteries and the traffic on the system.

capacity

The information-carrying ability of a telecommunications facility, group, network, or system measured in bits per second (bps).

card cage

A frame for holding circuit cards in a module; also called a card chassis

CBT

Core Bus Terminator

CE

Common Equipment

central office (CO)

The site where a telephone company terminates customer lines and houses the switching equipment that interconnects those lines

central processing unit (CPU)

The main portion of a computer that contains the primary storage, arithmetic and logic units, and the control unit (may also mean a mainframe computer)

circuit cards

Circuit cards carry the electronics for particular functions (such as memory and switching functions). Most cards are housed in the card cage in a module and connect to the backplane. Some cards must be installed in dedicated slots in a card cage. (Also called circuit packs or boards.)

CNI

Core to Network Interface

CO

Central office

common equipment (CE)

A hardware subsystem that houses one or more central processing units (CPUs), memory cards, disk drive units, and service cards

configuration

A group of machines (hardware) that are interconnected and are programmed to operate as a system

CP

Call Processor

cPCI®

Peripheral Component Interconnect. PCI provides a high-speed data path between the CPU and peripheral devices (video, disk, network, etc.).

cPCI Transition card

Connect the Core module cards to the 3PE cards in the Network modules

CP PII®

The successor to the Pentium Pro from Intel. Pentium II refers to the Pentium II CPU chip. Code named "Klamath," the Pentium II is a Pentium Pro with MMX instructions. Introduced in 1997 at clock rates of 233MHz and 266MHz, it uses a 66MHz system bus and houses the chip in a cartridge, called the "Single Edge Connector" (SEC). It holds the CPU and separate L2 cache. The chip also requires variable power voltages. In January 1998, Intel introduced a new model of the Pentium II (code named Deschutes) that is built with.25 micron technology (rather than .35), thereby reducing the chip size from 202 to 131 square millimeters. The first model ran at 333MHz and used a 66MHz bus with many variations coming

CPU

Central Processing Unit

DC

Direct current

diagnostic programs

Software routines used to test equipment and identify faulty components

digital signal

A signal made up of discrete, noncontinuous pulses whose information is contained in the duration, periods, and/or amplitude

DTR

Digitone Receiver

electromagnetic interference (EMI)

Unwanted electromagnetic coupling, such as a ham radio heard on a television, or static

firmware

A set of instruction sequences stored permanently in hardware (ROM)

input/output (I/O)

Exchange between a machine and end user equipment

IODU/C

Input/Output Disk Unit with CD-ROM.

IPB

Inter-Processor Bus

IPE

Intelligent Peripheral Equipment

ISDN

Integrated Services Digital Network

line

A communications channel or circuit; an electrical path

loop

A bidirectional path between network equipment and peripheral equipment

module power supplies

Individual power units that generate the different DC voltages required by the cards installed in each module

cPCI Multi-Media Disk Unit (MMDU)

A unit containing an industry-standard 2MB floppy drive (the floppy is a flexible circle of magnetic material similar to magnetic tape, except that both surfaces are used for recording. The drive grabs the floppy's center and spins it inside its housing. The read/write head contacts the surface through an opening in the plastic shell or envelope.), CD-ROM drive (a device that holds

and reads CD-ROM discs) to install system software from a CD-ROM, and a hard disk (the primary computer storage medium, which is made of one or more aluminum or glass platters, coated with a ferromagnetic material.)

network equipment

A hardware subsystem that provides digital multiplexed switching for voice, data, and signaling paths

office data

Office data represents system configuration data, peripheral equipment data, and transient data (temporary) used for call processing

PCM

Pulse code modulation

PE

Peripheral Equipment

pedestal

The bottom element in a column. Each pedestal houses a blower unit, an air filter, the PDU (which contains the column circuit breakers), and the system monitor.

peripheral equipment (PE)

A hardware subsystem that provides analog and digital line and trunk interfaces and houses a combination of line, trunk, and Digitone receiver circuit cards

power distribution unit (PDU)

Input power for Succession 1000M Large System and Meridian 1 Large System are brought into the pedestal to the PDU. The PDU distributes input power to the column.

pulse code modulation (PCM)

A modulation technique where the signal is converted from an analog to a digital format by sampling the signal at periodic intervals and digitizing the amplitude into a finite number of discrete levels

random-access memory (RAM)

A storage system or computer memory accessible by the user for either storing or retrieving information. RAM is volatile memory.

read-only memory (ROM)

Storage system or computer memory that is “burned into” the microprocessor chip and can be read, but not written to or modified. ROM is nonvolatile memory.

redundancy

The duplication of software, or hardware, or both (such as redundant CPUs) used as a standby in case one fails

SDI

Serial Data Interface. A family of cards equipped with SDI ports provide the I/O interface for the Succession 1000M Large System and Meridian 1 Large System.

software

A set of programmed instruction sequences stored either as resident programs in system memory or as nonresident programs stored on disk and loaded into memory when needed

software generic

A term used to identify the system software. Each software generic has a series of releases, such as Release 25.

system monitor

A microprocessor-based circuit card that controls and monitors the status of cooling equipment and power-related hardware and functions

system utility card

Provides an interface between the security device and the computer

TDS

Tone and Digit Switch

time compression multiplexing (TCM)

The combination of two or more information channels into a single transmission channel by assigning each information channel an exclusive periodic transmission time interval

TN

Terminal Number

top cap

The top cap is mounted on the top module of each column. It provides airflow exits, EMI/RFI shielding, I/O cable entry and exit, and overhead cable-rack mounting. The top cap covers thermal sensor assemblies for the column.

trunk

A single circuit between two points, both of which are switching centers or individual distribution points

universal equipment module (UEM)

A modular, self-contained hardware cabinet that houses a card cage, power supply, backplane, circuit cards, and other basic equipment. When equipped, the UEM becomes a specific type of module, such as a CPU module or Network module.

UPS

Universal Power Supply

V DC

Voltage alternating current

V DC

Voltage direct current

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Overview

Information is subject to change without notice. Nortel Networks reserves the right to make changes in design or components as progress in engineering and manufacturing may warrant. This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules, and the radio interference regulations of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.
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Publication number: 553-3021-010
Document release: Standard 1.00
Date: October 2003
Produced in Canada

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