NORTEL

Technical Specifications

Nortel Business Communications Manager 450

Base unit	
Physical dimensions	
Depth	18.3 in.; 46.5 cm
Width	17.5 in.; 44.5 cm
Height	7.1 in.; 18.0 cm
Weight	Standard power supply: 14.18 kg; 31.25 lbs Redundant power supply: 18.24 kg; 40.20 lbs

Base unitComponents	
Media Bay Modules	Up to four
CPU Processor	Freescale (1.3GHz core)
Memory (RAM)	512MB DDR2 SDRAM
Hard Drive	80GB SATA
DSP	3 TI 600MHz DSPs
Capacity Expansion Card (optional)	Expansion Daughter Card with 4 TI 600MHz DSPs

System status and LEDs
Power on self-test with LED feedback
Two System Status LEDs (Power and Status)
Three hard drive activity LEDs (HDD1, HDD2, RAID) (RAID LED not supported on BCM450 Rls. 1)
Reset button
Platform Status Monitor monitors CPU load, memory load, HDD space, temperature, fans, power, network throughput
BCM Monitor monitors overall system status, IP telephony functions, utilization of resources, operation of telephony applications and status of PRI, BRI and IP trunks

Mounting options

Rack-mount (standard 19-inch rack, pre-installed); Stand-alone (feet included); Wallmount (optional)

Power supply specifications	
Standard power supply	**Redundant power supply (field install only)**
Auto-sensing	Auto-sensing
300 Watts	350 Watts
90/264 VAC	90/264 VAC
6.0 A/3.0 A	7.0 A/3.5 A
60/50 Hz	60/50 Hz

Environmental specifications	
Operating temperature	32º to 104ºF; 0º to 40ºC
Operating humidity	10% to 90% relative humidity, non-condensing
Storage temperature	-67º to 158ºF; -55º to 70ºC
Storage humidity	Up to 95% relative humidity

Mechanical requirements

NEBS (GR-63-CORE) compliant for Transportation and Operational Vibration per IEC 68-2-27, Package Drop Shock resistance per IEC 68-2-32, Transportation Bounce to IEC 68-2-55 and Unpackaged Drop to ISTA Project 2A

Regulatory compliance	
Electromagnetic emissions	
Radiated Air	Australia / NZ CISPR22 Class A
	North America FC Part 15 & CISPR22 Class A
	EU / International EN55022 Class A
Conducted Power Leads	Australia / NZ CISPR22 Class A
	North America FC Part 15 & CISPR22 Class A
	EU / International EN55022 Class A
Immunity (ESD, RF Radiated, EFT, Surge, RF Conducted, and Dips / Short Interrupts)	
Radiated	North America customer driven
	EU / International EN55024
Conducted	North America customer driven
	EU / International EN55024
Harmonics and Flickers	EN 61000-3-2 and EN 61000-3-3

Business Communications Manager 450 Technical Specifications (continued)

Network protection
Australia TS038/31/03/04/01
EU CTR12/13/3/4/21
North America/CALA FCC Part 68, CS 03 Issue 8

Safety and surge/transient
Australia TS038/31/02/03/04, ACA TS001, AS/NZS 3260
NA/CALA/APAC IEC/EN 60950-1 (including all group and national deviations) and CSA C22.2 No. 60950-1, UL60950-1

I/O (Input/Output interfaces)
One 8-pin modular jack (RJ-45) connection for Expansion Chassis
Four 3.5 mm (1/8 inch) standard miniature stereo (3-conductor), Safety Extra Low Voltage (SELV) jacks for auxiliary ringer, page relay, page output and music on hold – Auxiliary ringer switch capacity of 50mA (non-inductive) at 40 V (maximum) – Page Relay switch capacity of 50mA (non-inductive) at 40 V (maximum) – Page Output 600 ohms impedance – Music on hold mono input
Serial Interface (DB9 RS232) for basic maintenance/configuration CLI
2 USB 2.0 ports
1 10/100 Ethernet OAM port
2 10/100 Ethernet Customer ports (switched)

Remote Access for Management Applications
Embedded Soft Modem v.34 for dial in and dial out
ISDN BRI / PRI (single B-Channel) for dial in or dial out

Media Bay Modules
16 Station Digital Station Media Bay Module+ (DSM 16+)
One Amphenol (male) connector (25 pair)
Individual interfaces are current connector (25-pair); limited to 80 mA
16 digital phone ports
Two LEDs: Power, Status
Utilizes 1/2 DS-30 (with DIP switch set appropriately)

32 Station Digital Station Media Bay Module+ (DSM 32+)
Two Amphenol (male)
Individual interfaces are current connectors (25 pair); limited to 80 mA
32 digital phone ports
Two LEDs: Power, Status
Utilizes 1 DS-30 (with DIP switch set appropriately)

8 Station Analog Station Media Bay Module (GASM 8)
One Amphenol (male) connector (25 pair)
Maximum modem connection speed: 28.8 kbps
8 analog phone ports
Loop length 26G 2600 ft, 24G 4000 ft; 22G 6500 ft
Disconnect Supervision-850 ms. Momentary Disconnect (Open Switch Interval (OSI) as per TIA/EIA 464)
Two LEDs: Power, Status
Utilizes 1/4 DS-30 (with DIP switch set appropriately)

** Note: Please refer to the engineering documentation for regional availability and signalling standards.*

Digital Trunk Media Bay Module (DTM)
One 8-pin RJ-45C modular jack
T1 trunk interface with integrated CSU
24 B channels with T1 interface (supports DSX-1 and DS1 interfaces)
23 B channels with North American PRI interface
LEDs: Power, Status, In-service, Loop-back, Test, Receive Alarm, Receive Error, Transmit Alarm, Transmit Error
30 digital channels with ETSI PRI Interface
Utilizes 1 (one) DS-30

Basic Rate Interface Media Bay Module (BRIM S/T)
Four modular RJ-45 jacks
Supports four S/T interfaces (8 B-channels)
T-interface to connect to an NT1 device or an S-interface to connect ISDN terminals
Supports ETSI and National ISDN BRI
Two LEDs: Power, Status
Utilizes 1/3 DS-30

Global Analog Trunk Module (GATM 4)
One Amphenol (male) connector (25 pair)
Four loop start CLASS/CMS lines plus one auxiliary port for V.90 modem, fax, analog telephone connection or Power Fail Transfer
Two LEDs: Power, Status
Utilizes 1/4 DS-30

** Note: Please refer to the engineering documentation for regional availability and signalling standards.*

Global Analog Trunk Module (GATM 8)
One Amphenol (male) connector (25 pair)
Eight loop start CLASS/CMS lines plus one auxiliary port for V.90 modem, fax, analog telephone connection or Power Fail Transfer
Two LEDs: Power, Status
Utilizes 1/2 DS-30

** Note: Please refer to the engineering documentation for regional availability and signalling standards.*

Fiber Expansion Media Bay Module (FEM)
Six fiber ports
Connects up to six Norstar* fiber-based trunk or station modules
Two LEDs: Power, Status
Utilizes 1 DS-30 for each Norstar fiber trunk or station module connected (up to 6)

Global 4X16 Module (4 Caller ID trunks + 16 Station sets, G4x16)
One Amphenol (male) connector (25 pair) to support four loop start CLASS/CMS lines plus one auxiliary port for V.90 modem, fax, analog telephone connection, or Power Fail Transfer
One Amphenol (male) connector (25 pair) to support 16 digital phone ports
Individual Station interfaces are current limited to 80mA
Two LEDs: Power, Status
Utilizes 1 1/4 DS-30s

** Note: Please refer to the engineering documentation for regional availability and signalling standards.*

Business Communications Manager 450 Technical Specifications (continued)

Global 8X16 Module (8 Caller ID trunks + 16 Station Sets, G8X16)
One Amphenol (male) connector (25 pair) to support eight loop start CLASS/CMS lines plus one auxiliary port for V.90 modem, fax, analog telephone connection or Power Fair Transfer
One Amphenol (male) connector (25 pair) to support 16 digital phone ports
Individual Station interfaces are current limited to 80mA
Two LEDs: Power, Status
Utilizes 1 1/2 DS-30s
* Note: Please refer to the engineering documentation for regional availability and signalling standards.*

ADID Module (Analog Direct Inward Dial 4-Port or 8-Port, ADID4 and ADID8)
One Amphenol (male) connector (25 pair) to support four or eight ADID lines
Two LEDs: Power, Status
Utilizes 1/4 DS-30 (ADID4) or 1/2 DS-30 (ADID8)
Supports North American DID standard and is only available in NA, CALA and GC (Hong Kong)

Expansion Cabinet

Connections
Six Media Bay Module slots
An 8-pin modular DS256 connector for the interface to the Business Communications Manager base unit (5 meter cable); supporting 8 DS-30 buses

Standard Expansion Cabinet	
Depth	18.3 in.; 46.5 cm
Width	17.5 in.; 44.5 cm
Height	5.4 in.; 13.6 cm
Expansion Cabinet with no Media Bay Modules 24.75 lb.; 11.25 kg	
Expansion Cabinet with six Media Bay Modules 39 lb.; 17.75 kg	

Redundant Expansion Cabinet (redundant power supply and fans)	
Depth	20 in.; 53.8 cm
Width	17.6 in.; 44.6 cm
Height	5.4 in.; 13.6 cm
Expansion Cabinet with no Media Bay Modules 31.9 lb.; 14.5 kg	
Expansion Cabinet with 6 Media Bay Modules 46.2 lb.; 21 kg	

Power requirements	
Standard Power Supply	Redundant Power Supply
Auto-sensing	Auto-sensing
300 Watts	350 Watts
90/264 VAC	90/264 VAC
6.0 A/3.0 A	7.0 A/3.5 A
60/50 Hz	60/50 Hz

Environmental ranges	
Operating temperature	32º to 104ºF; 0º to 40ºC
Operating humidity	10% to 90% relative humidity, non-condensing
Storage temperature	-67º to 158ºF; -55º to 70ºC
Storage humidity	Up to 95% relative humidity

Mounting options
Rack-mount (standard 19-inch rack); Stand-alone (feet included)
Wall-mount (optional wall-mount bracket available separately)

Telephones and Adapters

Station Sets

Business Series

	Dimensions (Inches)	Loop Length (26G)	With SAPS sets
T7000*	7.3D x 5.5Wx3.5H	1,000 ft.	2,600 ft.
T7100	8.1D x 7Wx3.5H	1,000 ft.	2,600 ft.
T7208	8.1D x 7.7Wx3.5H	1,000 ft	2,600 ft.
T7316E	8.1D x 10.3Wx3.5H	1,000 ft.	2,600 ft.
T24 KIM	7.7D x 3.6Wx3.4H	Connects to T7316E	
NACU**	12.5 x 12Wx2H	1,000 ft.	2,600 ft.

** Not available in NA*
*** Available only in NA, CALA and GC (Hong Kong)*

T24 Kim—requires T7316E
T24 EKIM (Enhanced KIM — used as CAP) — max. 12 positions per system; max 4 EKIMs per position
T24 OKIM (Ordinary KIM — used for answer/DSS/BLF) — unlimited per system; max 4 OKIMs without power supply per position; max 9 OKIMs with power supply per position

IP Stations
Nortel IP Phone 1110E
Nortel IP Phone 1120E
Nortel IP Phone 1140E
Nortel IP Phone 1210
Nortel IP Phone 1220
Nortel IP Phone 1230
Nortel IP Phone 2001
Nortel IP Phone 2002
Nortel IP Phone 2004
Nortel IP Phone 2007
Nortel IP Phone 2033
Nortel IP Softphone 2050 (PC, Laptop or Windows Mobile Client)

Expansion Modules for IP Phones
Key Expansion Module 2000 Series IP Phones
Key Expansion Module 1100 Series IP Phones - 18 Key
Key Expansion Module 1200 Series IP Phones – Display 12 Keys
Key Expansion Module 1200 Series IP Phones – Paper 18 Key

WLAN
WLAN Handset 2210
WLAN Handset 2211
WLAN Handset 2212
WLAN Handset 6120
WLAN Handset 6140
WLAN IP Telephony Manager 2245
WLAN Applications Gateway 2246
Nortel Mobile Voice Client 2050

Business Communications Manager 450 Technical Specifications (continued)

Digital Mobility
Digital Mobility Controller
Digital Mobility Base Station
Digital Mobility Repeater
Digital Mobility Handsets 7420, 743x, 744x, 413x, 414x

Mobility – Cordless
T7406E: up to 8 user per system – available in NA, Mexico and Caribbean countries (except for Jamaica and Trinidad) only

Accessories
BST Doorphone
Norstar Audio Conferencing Unit (NACU)
Station Auxiliary Power Supply (SAPS)
ATA-2 Analog Terminal Adapter (separate models for NA, Europe and Australia)

In the United States:
Nortel
35 Davis Drive
Research Triangle Park, NC 27709 USA

In Canada:
Nortel
195 The West Mall
Toronto, Ontario M9C 5K1 Canada

In Caribbean and Latin America:
Nortel
1500 Concorde Terrace
Sunrise, FL 33323 USA

In Europe:
Nortel
Maidenhead Office Park, Westacott Way
Maidenhead Berkshire SL6 3QH UK
Email: euroinfo@nortel.com

In Asia:
Nortel
United Square
101 Thomson Road
Singapore 307591
Phone: (65) 6287 2877

Nortel is a recognized leader in delivering communications capabilities that make the promise of Business Made Simple a reality for our customers. Our next-generation technologies, for both service provider and enterprise networks, support multimedia and business-critical applications. Nortel's technologies are designed to help eliminate today's barriers to efficiency, speed and performance by simplifying networks and connecting people to the information they need, when they need it. Nortel does business in more than 150 countries around the world. For more information, visit Nortel on the Web at **www.nortel.com**. For the latest Nortel news, visit **www.nortel.com/news**.

For more information, contact your Nortel representative, or call 1-800-4 NORTEL or 1-800-466-7835 from anywhere in North America.

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