

# technical

## Technical Bulletin

### Nortel Networks Business Communications Manager

#### Technical Specifications

##### Base unit

Physical dimensions	BCM400	BCM200
Depth	18.3 in.; 46.5 cm	18.3 in.; 46.5 cm
Width	17.5 in.; 44.5 cm	17.5 in.; 44.5 cm
Height	7.1 in.; 18.0 cm	3.5 in.; 9.0 cm
Weight	Std. 28.4 lbs; 35.9 Kg Redundant 37.1 lbs; 44.6Kg	Std. 19.75 lbs; 26.4 Kg

Components	BCM400	BCM200
Media Bay Module Bays	Four	Two
CPU Processor	Intel Celeron 1.2 GHz	Intel Celeron 1.2 GHz
Memory (RAM)	256 MB SDRAM	256 MB SDRAM
Hard Drive	20 GB EIDE	20 GB EIDE

##### System Status LEDs

Power status, Hard drive activity, System status, PCI device monitoring (MSC, WAN, NIC 1, NIC 2), Chassis/CPU temperature, Fan activity reset button.

The System Status Monitor Card controls and monitors fans, power supply, chassis temperature and OS status.

##### Mounting options

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

##### Power supply specifications

Standard power supply	Redundant power supply (BCM400 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	32° to 104°F; 0° to 40°C
Operating humidity	10% to 90% relative humidity, non-condensing
Storage temperature	-67° to 158°F; -55° to 70°C
Storage humidity	Up to 95% relative humidity

##### Mechanical requirements

NEBS (GR-63-CORE) compliant for Transportation and Operational Vibration and Package Drop Shock resistance per IEC 68-2-27, Transportation Bounce to IEC 68-2-55 and Unpackaged Drop to ISTA Project 1A.

##### Regulatory compliance

###### Electromagnetic emissions

Radiated Air	Australia AS3548 Class A North America CISPR22 Class A United Kingdom EN55022 Class A
Conducted Power Leads	Australia AS3548 Class A North America CISPR22 Class A United Kingdom EN55022 Class A

###### Immunity (Narrow band RF interference)

Radiated	North America Customer driven (based on EN 61000-4-3) United Kingdom/International EN55024 : 1998
Conducted	North Customer driven (Based on EN 61000-4-6) United Kingdom/International EN55024 : 1998

###### Immunity to electrostatic discharge

Indirect	No Functional Impairment up to +/- 15 kV No damage up to +/- 20 kV
Direct	Un-mated I/O ports and Connectors, No damage up to +/- 5 kV Mated Connector and Cords, No functional impairment up to +/- 15 kV, No damage up to +/- 15 kV

###### Network protection

Australia TSO38/31/03/04/01  
 EU CTR12/13/3/4/21  
 North America/CALA FCC Part 68, CS 03 Issue 8

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### Safety and surge/transient

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Australia TSO38/31/03/04/01, ACA TSO01, AS/NZS 3260

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CALA/APAC except Australia EN 60950 (with national deviations), CSA 22.2 No.950/UL 60950

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North America UL1950 Ed.3, CSA C22.2 No.950-95, UL 60950

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EU CTR12/13/3/4/21, EN 60950 (with national deviations)

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United Kingdom EN60950

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### Telephony components

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#### Media Services Card (BCM-MSC)

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One 8-pin modular jack (RJ-45) connection for Expansion Chassis (Only on BCM400 not BCM200)

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Four 3.5 mm (1/8 inch) standard miniature stereo (3-conductor) Safety Extra Low

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Voltage (SELV) jacks for auxiliary ringer, page relay, page output, and music on hold

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Auxiliary ringer switch capacity of 50mA (non-inductive) at 40 V (maximum)

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Page Relay switch capacity of 50mA (non-inductive) at 40 V (maximum)

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Page Output 600 ohms impedance

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Music on hold mono input

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Media Services Processor Expansion Card slots  
BCM400—four slots, two equipped  
BCM200—two slots, one equipped

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Supports maximum of 8 DS-30s. Allows 2/6 and 3/5 IP/TDM Splits.

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#### Media Bay Modules features

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##### 16 Stn Digital Station Media Bay Module+ (DSM 16+)

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- 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 ½ DS-30 (with DIP switch set appropriately)
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##### 32 Stn Digital Station Media Bay Module+ (DSM 32+)

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- 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)
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##### 8 Stn Analog Station Media Bay Module+ (ASM 8+)

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- One Amphenol (male) connector (25 pair)
  - Maximum modem connection speed: 28.8 Kbps
  - 8 analog phone ports
  - Approved for OPX use in US, CA, and UK
  - Loop length 26G 2600 ft, 24G 4000ft; 22G 6500 ft
  - Disconnect supervision—850 Ms. Momentary Disconnect
  - Message Waiting Indication—NA 120V. 600 ms On and 1000 ms Off. UK 90V constant On
  - Calling Line Identification (CLID) Name and Number per Bell 202 standard, NA only
  - Two LEDs: Power, Status
  - Utilizes ½ DS-30 (with DIP switch set appropriately)
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##### Digital Trunk Media Bay Module (DTM)

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- 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
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##### Digital Drop and Insert MUX Media Bay Module (DDIM)

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- 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)
  - LEDs: Power, Status, In-service, Loop-back Test, Receive Alarm, Receive Error, Transmit Alarm, Transmit Error
  - LEDs: Transmit, Receive, RTS, CTS, DCD, DSR, TM
  - V.35-DB26 miniature connector
  - Cables: V.35, BCM WAN, Nortel Networks Routers, DB-60 cable
  - Utilizes two DS-30s
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##### Basic Rate Interface Media Bay Module (BRIM S/T)

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- Four modular RJ-45 jacks
  - Supports four S/T interfaces (8 B-channels)
  - T-interface to connect to a NT1 device or a S-interface to connect ISDN terminals.
  - Supports ETSI and National ISDN BRI
  - Two LEDs: Power, Status
  - Utilizes ½ DS-30
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##### Global Analog Trunk Module (GATM 4)

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- One Amphenol (male) connector for analog North American, UK, and Australia Standard
  - 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 ¼ DS-30
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##### Global Analog Trunk Module (GATM 8)

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- One Amphenol (male) connector for analog North American, UK and Australia Standard
  - 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 ½ DS-30
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##### 4x16 Combo Module (4 Caller ID trunks + 16 Station sets, CMB4x16)

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- Modular RJ-11 jacks 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 interfaces are currently limited to 80mA
  - Two LEDs: Power, Status
  - Utilizes 1 ¼ DS-30s
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##### Fiber Expansion Media Bay Module (FEM)

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- 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)
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##### DECT Mobility Media Bay Module (DECT8, A-Law & Mu-Law—Europe & Taiwan only)

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- Four BRI ISDN-S loops
  - Supports up to 8 radio base stations through eight RJ-45 connectors
  - Each BCM system can support one DECT module with a maximum of 32 DECT handsets
  - Each DECT radio base station supports up to 4 simultaneous calls
  - A maximum of 8 simultaneous calls can be established between DECT handsets and the BCM core
  - Available in either A-Law or Mu-Law companding law version of firmware
  - Two LEDs: Power, Status
  - Utilizes 1 DS-30
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## Data networking components

### Embedded v.92 Modem (North America only)

- North America and UK only for Dial Backup or Remote Admin
- V.92 56 Kbps ITU standard
- V.34 33.6 Kbps ITU standard
- RJ-11 connector
- V.42/MNP 2-4 error control
- V.42/MNP 5 data compression
- Capable of receiving data at 56 Kbps and sending data at 31.2 Kbps

### 10/100 Ethernet LAN interface

- 10/100BASE-T Ethernet ports (on board the mainboard)
- Supports IEEE 802.3 Ethernet frame format
- Uses Carrier Sense Multiple Access with Collision Detection (CSMA/CD)
- 100BASE-TX with RJ-45 connector
- 10/100 Auto-sensing
- Full-duplex support
- Fast LAN to LAN routing
- LAN traffic smoothing
- IPX support
- PPPoE (enabled using keycode)

## WAN interface

### Two port PCI card (field installable)

- Each port can be independently configured to Frame Relay or PPP
- STAC compression is available
- One serial sync port (V.35) and one T1 port with integrated CSU and DSU connectivity – N.A. only
- Two serial ports (V.35) – N.A. only
- Two serial ports (V.35 and X.21) – EMEA only

### ISDN via MBMs

- Up to 16 ISDN B-channels• (PRI or BRI) (optional)
- Dial on demand, Persistent, or WAN Backup
- MLPPP

## Expansion Cabinet (BCM400 and BCM1000 only)

### 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)

### 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	32° to 104°F; 0° to 40°C
Operating humidity	10% to 90% relative humidity, non-condensing
Storage temperature	-67° to 158°F; -55° to 70°C
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

North America	Dimensions-in.	Loop Length (26G)	With SAPS sets
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.

### IP Stations

- Nortel Networks IP Phone 2004
- Nortel Networks IP Phone 2002
- Nortel Networks IP Phone 2001
- Nortel Networks IP Softphone 2050 (PC or Laptop)

### 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

### Mobility—Symbol VoIP Wireless 802.11B

NetVision Phone (Wireless VoIP)

DataVision Phone (Wireless VoIP with Integrated Bar Code Scanner)

### Mobility—Cordless

T7406: 3 handsets per basestation, 2 basestations per system

### 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 Networks  
35 Davis Drive, Research Triangle Park, NC 27709

**In Canada:**

Nortel Networks  
8200 Dixie Road, Suite 100, Brampton, Ontario L6T 5P6

**In Caribbean and Latin America:**

Nortel Networks  
1500 Concorde Terrace, Sunrise, FL 33323 USA

**In Europe:**

Nortel Networks  
Maidenhead Office Park, Westacott Way, Maidenhead Berkshire SL6 3QH UK

**In Asia:**

Nortel Networks  
Level 5, 495 Victoria Avenue, Chatswood, NSW 2067, Australia

*Nortel Networks is an industry leader and innovator focused on transforming how the world communicates and exchanges information. The company is supplying its service provider and enterprise customers with communications technology and infrastructure to enable value-added IP data, voice and multimedia services spanning Wireless Networks, Wireline Networks, Enterprise Networks, and Optical Networks. As a global company, Nortel Networks does business in more than 150 countries. More information about Nortel Networks can be found on the web at:*

**[www.nortelnetworks.com](http://www.nortelnetworks.com)**

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