



## Technical Bulletin

# Nortel Business Communications Manager 200 and Business Communications Manager 400

### 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;<br>35.9 Kg<br>Redundant 37.1 lbs;<br>44.6Kg | Std. 19.75 lbs;<br>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 per IEC 68-2-27, Package Drop Shock resistance per ISTA 1A Transportation Bounce to IEC 68-2-55 and Unpackaged Drop to ISTA Project 1A

#### Regulatory compliance

##### Electromagnetic emissions

|                       |   |
|-----------------------|---|
| Radiated Air          | Australia AS3548 Class A<br>North America CISPR22 Class A<br>United Kingdom EN55022 Class A |
| Conducted Power Leads | Australia AS3548 Class A<br>North America CISPR22 Class A<br>United Kingdom EN55022 Class A |

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

|           |  |
|-----------|--|
| Radiated  | North America customer driven (based on EN 61000-4-3)<br>United Kingdom/International EN55024 : 1998 |
| Conducted | North America customer driven (Based on EN 61000-4-6)<br>United Kingdom/International EN55024 : 1998 |

##### Immunity to electrostatic discharge

|          |  |
|----------|--|
| Indirect | No functional impairment up to +/- 8 kV  |
| Direct   | Mated I/O ports and connectors,<br>No damage up to +/- 4 kV<br>Mated connector and cords,<br>No functional impairment up to +/- 8 kV,<br>No damage up to +/- 15 kV |

## 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
- EU CTR12/13/3/4/21, EN 60950 (with national deviations)
- United Kingdom EN60950

## Telephony components

### Media Services Card (BCM-MSC)

- One 8-pin modular jack (RJ-45) connection for Expansion Chassis (Only on BCM400 not BCM200)
- 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
- Media Services Processor Expansion Card slots
  - BCM400—four slots, two equipped
  - BCM200—two slots, one equipped
- Supports maximum of 8 DS-30s. Allows 2/6 and 3/5 IP/TDM Splits.

### Media Bay Modules features

#### 16 Stn 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 Stn 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 Stn 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)
- Message Waiting Indication – NA 120V. 600 ms On and 1000 ms Off. UK reverse polarity
- Analog connectivity support for Poland and Australia
- Calling Line Identification (CLID) Name and Number – NA per Bell 202 standard. UK per SIN 227/224.
- Two LEDs: Power, Status
- Utilizes 1/4 DS-30 (with DIP switch set appropriately)

#### 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

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

- 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 Routers, DB-60 cable
- Utilizes two DS-30s

#### 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 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 1/4 DS-30

#### Global Analog Trunk Module (GATM 8)

- 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 1/2 DS-30

#### 4x16 Combo Module (4 Caller ID trunks + 16 Station sets, CMB4x16)

- 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 1/4 DS-30s

#### 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)

#### G4x16 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

## Data networking components

### Embedded v.92 Modem

- 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
- 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 support
- One serial sync port (V.35) and one T1 port with integrated CSU and DSU connectivity – N.A. only
- Two serial ports (V.35)
- Two serial ports (V.35 and X.21) – EMEA only
- Frame Relay or PPP Fragmentation
- RTP Header Compression

### 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 (Inches) | 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 IP Phone 1120E
- Nortel IP Phone 1140E
- Nortel IP Phone 2007
- Nortel IP Phone 2004
- Nortel IP Phone 2002
- Nortel IP Phone 2001
- Nortel IP Phone 2033
- Nortel 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

### WLAN

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

### Digital Mobility

- Digital Mobility Controller
- Digital Mobility Basestation
- Digital Mobility Repeater
- Digital Mobility Handsets 7420, 743x, 744x, 413x, 414x

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

**In Canada:**

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

**In Caribbean and Latin America:**

Nortel  
1500 Concorde Terrace  
Sunrise, FL 33323 USA

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