



Product Bulletin

Nortel Digital Mobility Solution

Technical Specifications

Physical specifications

Depth	12.75 in., 324 mm
Width	8.625 in., 219 mm
Height	2.625 in., 67 mm
Weight	DMC080 2 lb. 2.4 oz., 975 grams DMC320 2 lb. 10.0 oz., 1191 grams
System status LEDs	Status and Power
Mounting options	Desk top, wall mount or rack mount
Power supply specifications	AC input: 100-240V, 2A, 50-60 Hz DC output: 19V, 6.32A
Operating temperature*	0°C to 40°C
Operating humidity*	90-95% RH at 40°C
Storage temperature*	-55°C to 70°C
Storage humidity*	90-95% RH at 40°C

Mechanical requirements

Packaged

- Transportation vibration as per Telcordia GR-63 (Section 5.4.3, Figure 4-3, Curve 2)
- Transportation bounce as per IEC 68-2-55 (Method A)
- Drop as per ISTA Procedure 1A

Unpackaged

- Office vibration as per Telcordia GR-63 (Section 5.4.2, Electronic Subassemblies)
- Mechanical shock as per IEC 68-2-27 (Test Ea)
- Drop as per IEC 68-2-32 (Test Ed)

* Also apply to base stations, repeaters and handsets.

Electromagnetic emissions

Digital Mobility equipment meets all FCC Part 15, Class A radiated and conducted emissions requirements. Does not exceed the Class A limits for radiated and conducted emissions from digital apparatus as set out in the Radio Interference Regulations of Industry Canada.

Electromagnetic compliance

The Digital Mobility Controller fully complies with the following standards and specifications:

Canada	ICES-003 Class A using: – CISPR 22 (1997) Class A – ANSI C63.4 (2001) method
United States	FCC Part 15 Subpart B Class A using: – CISPR 22 (1997) Class A – ANSI C63.4 (2001) method
European Union	– EN55024 (1998 w/A1:01 & A2:03)/CISPR 24 (1997) excluding Annex A – EN55022 (1998) Class A – EN61000-3-2 (2001) – EN61000-3-3 (1995 w/A1:98)
Australia/New Zealand	AS/NZS CISPR 22 (2002) Class A using: – EN55022 (1998) Class A
Japan	VCCI (April 2000) Class A using: – CISPR 22 (1997) – ANSI C63.4 (2001) method
Taiwan	CNS 13438 Class A

Safety

- CSA 22.2 No. 60950
- UL 60950
- IEC 60950 (including all national and group deviations)

For all radio components (Basestation, Repeaters, Handsets)

Radio specifications

- › **Frequency of operation:** 2401.280 - 2481.152 MHz (79 channels)
- › **Type of modulation:** GFSK
- › **Maximum transmit power:** 250mW

Nortel Digital Mobility Basestation 10

The Digital Mobility Basestation controls the traffic channels in the air and works as a link between the Digital Mobility Handset and the Digital Mobility Controller (DMC). The DMC operates the Basestations through a wired standard twisted pair of cables. Only one pair is required per Basestation and the cable length may be up to 1,500 meters (4,921 feet). Nortel recommends using CAT5 wiring.

Each Basestation covers a circular area of radius up to 450 meters (1,476 feet). In a typical office environment, the radius is 50-150 meters (164-492 feet) depending on the environment. It is not possible to define a more exact size of a Basestation coverage area, as it depends on location specifics such as building materials, etc. Before a Digital Mobility solution is installed, careful deployment is performed in order to define how many Basestations are needed to provide the necessary coverage at each individual location.

Features of the Digital Mobility Basestation:

- › 4 simultaneous voice channels
- › Antenna diversity
- › Frame synchronizing via the Digital Mobility Controller
- › Fast and easy installation — one wired twisted pair of cables connected to the Digital Mobility Controller

- › No external power required — powered from the Digital Mobility Controller directly
- › Weight: 0,172 kg. (6.1 oz.)
- › Dimensions (L x H x D): 100 x 100 x 36 mm (3.937 x 3.937 x 1.417 inches)

Nortel Digital Mobility Repeater 20/40

The Digital Mobility Repeater is a building block to be used to extend the coverage area in a Digital Mobility solution. The Repeater does not increase the number of traffic channels, but provides a larger physical spreading of the traffic channels and thereby increases the coverage area established with the Digital Mobility Basestations. The Repeater extends the coverage of the Digital Mobility Basestation by 50 percent. Repeaters are mainly used in areas with limited traffic.

The Digital Mobility Repeater is available with either two or four voice channels.

The Digital Mobility Repeater is wireless and does not need physical connection to the Digital Mobility Controller, making it very easy to install. The Repeater just requires local power.

Repeater Jumps

The Digital Mobility Repeaters can be installed like “pearls on a string” to provide coverage in a large area using only Digital Mobility Repeaters. A maximum of three Repeaters 20 can be placed on the string, providing the possibility to assure coverage of a large area without physical cabling. Repeater jumps should only be used to expand coverage in areas with limited traffic as the total area will have to share two traffic channels.



Digital Mobility Repeater 20/40

Features of the Digital Mobility Repeaters:

- › 2 or 4 simultaneous voice channels
- › Antenna diversity
- › Fast and easy installation — wireless connection with the Basestation
- › External AC power required
- › Weight: 0,172 kg. (6.1 oz.)
- › Dimensions (L x H x D): 100 x 100 x 36 mm (3.937 x 3.937 x 1.417 inches)

Nortel Digital Mobility External Antenna 50

The Digital Mobility Repeater with two voice channels can be supplied with an external directional antenna, which makes it possible to create radio coverage in a remote area without cabling to the rest of the installation. The use of an external directional antenna makes it possible for businesses encompassing more than one building to still maintain coverage in all areas. This could be the case in a motel, where the reception area is placed in one building and the rooms are in another.

Features of the Digital Mobility External Antenna 50:

- › Fast and easy installation — mounts up to four feet from the Repeater
- › May be mounted outside
- › No external power required — powered from the Digital Mobility Repeater directly

- > Weight: 56 grams, 2 oz.
- > Dimensions (L x H x D): 102 x 95 x 32 mm (4.016 x 3.740 x 1.260 in.)

Nortel Digital Mobility Handset 7420

The Digital Mobility Handset 7420 is designed to combine unique voice quality with ease of use and elegant design. It is characterized by being small and lightweight. The Digital Mobility Handset 7420 provides a long list of features and the elegance of the classic design, the user-friendly keys and the well-lit display make using the Digital Mobility Handset 7420 a real pleasure.

The classic Digital Mobility Handset 7420 is designed for retail, office and hotel segments.

Digital Mobility Handset 7420 features

- > Large 3 x 16 alphanumeric display with back light
- > Full Nortel Business Communications Manager (BCM)/Nortel Norstar integration
- > Three soft keys that allow you to invoke the same set of features as on a BST set
- > CLID presentation
- > Volume control
- > Message Waiting Indication (MWI) light and single key for message retrieval
- > Telephone book with room for 80 numbers
- > Vibration alert
- > Auto login — roaming between 10 different systems
- > Silent mode (mute all sounds)
- > Redial function (the last 10 numbers)
- > Key lock
- > Auto key lock
- > Nine different ringer tones and adjustable ringer volume
- > Microphone mute
- > Headset jack
- > Automatic Off-Hook (B-answer)
- > Three menu languages (English, French, Spanish)
- > Speech/stand-by time > 10/90 hours



Handset 7420[†]



**Handset 7430[†]
Handset 7434, 4135, 4136^{††}**



**Handset 7440[†]
Handset 7444, 4145, 4146^{††}**

- > Temperature compensated charging
- > Weight including battery: 121g = 4.3 oz.
- > Size (L x W x H): 143 x 48 x 26mm = 5.630 x 1.890 x 1.024 inches

Nortel Digital Mobility Handset 7430 (Equivalent handsets 7434, 4145, 4146)

The Digital Mobility Handset 7430 is a robust, well-designed and price-competitive handset. It meets demands for free mobility and is built for long-term dependability in harsh environments. The Digital Mobility Handset 7430 is custom-designed for retail, warehouse and industry segments. Segments with a strong need for reliable, robust and user-friendly wireless communication units.

Digital Mobility Handset 7430 features

- > Graphic display
- > Full BCM/Norstar integration
- > Three soft keys that allow you to invoke the same set of features as on a BST set
- > CLID presentation

[†] Check with your account prime for availability information.

^{††} Refer to table at the back for where each version is supported.

- > Volume control
- > Message Waiting Indication (MWI) light and single key for message retrieval
- > Telephone book with room for 80 numbers
- > Auto login — roaming between 10 different systems
- > Silent mode (mute all sounds)
- > Redial function (the last 10 numbers)
- > Key lock
- > Auto key lock
- > Nine different ringer tones and adjustable ringer volume
- > Microphone mute
- > Automatic Off-Hook (B-answer)
- > 11 menu languages (EN, FR, ES, IT, NL, DE, PO, TU, DA, SW, NO)
- > Speech/stand-by time > 10/90 hours
- > Temperature compensated charging
- > Weight including battery: 130 grams, 4.6 oz.
- > Size (L x W x H): 148 x 50 x 28mm, 5.827 x 1.969 x 1.102 inches

Nortel Digital Mobility Handset 7440 (Equivalent handsets 7444, 4145, 4146)

The Digital Mobility Handset 7440 is a robust, well-designed and full-featured handset that meets demands for free mobility and is built for long-term dependability in harsh environments. In order to meet special requirements for hygiene, the handset is IP 54 classified, meaning that it is dust-protected and protected against splashing water.

The Digital Mobility Handset 7440 is designed for office, personal security and hospital segments. Segments requiring a full-featured communication unit designed for use in harsh environments and providing the possibility for alarm applications.



Digital Mobility Controller (DMC080)

Digital Mobility Handset 7440 features

- > Graphic display
- > Full BCM/Norstar integration
- > Three soft keys that allow you to invoke the same set of features as on a BST set
- > CLID presentation
- > Volume control
- > Message Waiting Indication (MWI) light and single key for message retrieval
- > Telephone book with room for 80 numbers
- > Auto login — roaming between 10 different systems
- > Silent mode (mute all sounds)
- > Redial function (the last 10 numbers)
- > Key lock
- > Auto key lock
- > Nine different ringer tones and adjustable ringer volume
- > Microphone mute
- > Headset jack
- > Handsfree
- > Vibration alert
- > Automatic Off-Hook (B-answer)
- > 11 menu languages (EN, FR, ES, IT, NL, DE, PO, TU, DA, SW, NO)

- > IP 54 classification: dust protected/splashing water
- > Speech/stand-by time > 10/90 hours
- > Temperature compensated charging
- > Weight including battery: 130 grams, 4.6 oz.
- > Size (L x W x H): 148 x 50 x 28mm, 5.827 x 1.969 x 1.102 inches

Nortel Digital Mobility Controller (DMC)

Features of the Digital Mobility Controller 08x (DMC080 and DMC081)

- > Supports up to 8 Digital Mobility Handsets
- > Supports up to 2 Digital Mobility Basestations

Features of the Digital Mobility Controller 32x (DMC320 and DMC321)

- > Supports up to 32 Handsets
- > Supports up to 8 Digital Mobility Basestations
 - DMC080 and DMC320 include Controller, Power Supply and a North American power cord.

- DMC081 and DMC321 include Controller, Power Supply and a power cord adapter. AC power cord must be purchased separately to meet each specific country requirements.
- Every active handset requires one digital station port to be provisioned on the BCM or Norstar system.
- Any two Controllers may be connected together to increase capacity to a maximum of 64 Handsets and 16 Basestations.
- Supported on BCM200/400/1000 with software release 3.7 or later. Supported on Norstar CICS and MICS with software release 7.0 or later.

Supported Handsets

- > Digital Mobility Handset 7420
- > Digital Mobility Handset 7430
- > Digital Mobility Handset 7440

At Nortel, we have a passion for quality

Quality in terms of voice quality — no noise, no jitter, no delays to disturb conversations. And quality in terms of the physical handset: one of the lowest return rates in the industry speaks for itself.

The high quality is constantly tested. During development phase, the handsets are tested numerous times. The functionalities, the software as well as the finished handsets are tested at our own testing facilities and at field tests. Furthermore, the handsets are subject to third-party laboratory tests, including drop tests and stress tests.

With carefully developed migration plans built into our communication solutions, Digital Mobility handsets are designed to adapt with the changing interface technologies in the systems, lending to a return on your technology investment.

Digital Mobility handset tests

All Digital Mobility handsets have undergone and passed the following tests:

- > Cyclic humidity (IEC 60068-2-30)
- > Lifetime (heat) (IEC 60068-2-2)
- > Lifetime (cold) (IEC 60068-2-1)
- > Lifetime (heat/cold) (IEC 60068-2-14 Na)
- > Salt fog (Mil-std 810E 509.3.I)
- > Vibration (IEC 60068-2-6)
- > Lifetime (ringer) (IEC 60068-2-2)
- > ESD (static electricity)
- > Lifetime (keyboard)
- > User test (software)
- > Drop test: (150 cm = 4 ft 11 inch)
- > Bump test: IEC 60068-2-29

Additional Digital Mobility Handset 7440 tests

- > Enclosure protection (dripping): IEC 60529 (2001-02), Ed. 2.1, IPx2
- > Enclosure protection (splashing): IEC 60529 (2001-02), Ed. 2.1, IPx4
- > Enclosure protection (dust-protected): IEC 60529 (2001-02), Ed. 2.1, IP5x

Handset accessories

- > Head set
- > Belt clip
- > Safety line
- > Leather protective cover for office environment
- > Rugged protective cover for industrial environments where the handset is exposed to harsh handling

Nortel Digital Mobility Service Tool

The Digital Mobility Software Service Tool allows the following aspects of the Digital Mobility solution to be managed:

- > Repeater programming
- > Handset firmware upgrading

The Service Tool software package is available on the CICS/MICS Documentation and Client Software CDROM. Use of this tool requires a programming cable and service tool handset cradle, available as a separately orderable item.

For BCM200/400, the Tool is available under the client download software portion of the hard drive.

Nortel Digital Mobility DMC OA&M Tool

The OA&M software package allows the following aspects of the Digital Mobility solution to be managed:

- > Digital Mobility Controller administration
- > Handset registration and subscription
- > Basestation registration
- > System backup and restore programming information
- > Statistical package for debug
- > Broadcasting test messaging
- > Updating Controller firmware
- > Updating Basestation firmware
- > Remote system administration using a modem and RS232 connection

The OA&M software package is available on the CICS/MICS Documentation and Client Software CDROM. Direct connection is done through a null modem cable (not supplied) connected to the RS232 port on the DMC and the serial port on the PC.

For BCM200/400, the Tool is available under the client download software portion of the hard drive.

Digital Mobility Deployment Tool

The Digital Mobility Deployment Tool serves two purposes. The first purpose is to provide the site surveyor with the ability to take real-world measurements of a prospective deployment site. These measurements help determine the proper number and location of Basestations and/or Repeaters a site might require. The Digital Mobility Deployment Tool should be used for challenging deployments. The typical mobility deployment can be supported with basic Basestation layout methodology and a normal handset by utilizing Meter Mode.

The second purpose for the Deployment Tool is to allow a perspective customer to experience the high-quality voice standards that they can expect from Nortel's Digital Mobility.

Deployment Kit Features

> *Handset to Handset Calling* — Extension 1 and call extension 2 with the call being switched internally.

Countries	Frequency	Supported products	Notes
Canada, U.S.	N/A	DMC080 DMC320	
Global	N/A	DMC081 DMC321	Does not include power cord
Canada, U.S., China, Argentina	2401.280-2481.152 MHz (79 Channels)	Basestation 10 Repeater 20 Repeater 40 External Antenna 50 Handset 74x0	
EMEA, Hong Kong, Australia, New Zealand, Taiwan	1880-1900 MHz	Basestation 15 (excluding Taiwan) Repeater 25 Repeater 45 External Antenna 51 Handset 41x5 Handset 41x6 (Australia, New Zealand)	
South America	1900-1930 MHz	Basestation 14 Repeater 24 Repeater 44 External Antenna 51 Handset 74x4	
Taiwan	1880-1885 MHz	Basestation 13	

> *External Audio Input Port* — Allows an audio source to be connected to the Basestation so the audio can be heard when the handsets are taken off-hook. This is very helpful when trying to judge audio quality.

> *On-board Basestation* — The Central control unit has a built-in Basestation function so additional equipment is not required.

> *Radio Signal Strength Metering (built into handsets)* — Any handset can be placed into Meter Mode, from which radio signal strength can be read.

Nortel is a recognized leader in delivering communications capabilities that enhance the human experience, ignite and power global commerce, and secure and protect the world's most critical information. Serving both service provider and enterprise customers, Nortel delivers innovative technology solutions encompassing end-to-end broadband, Voice over IP, multimedia services and applications, and wireless broadband designed to help people solve the world's greatest challenges. Nortel does business in more than 150 countries. For more information, visit Nortel on the Web at www.nortel.com.

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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