

DIGITAL SWITCHING SYSTEMS

**DMS-100 FAMILY
INTEGRATED BUSINESS
NETWORK SERVICE
MERIDIAN M536
36 BUTTON ADD-O
DESCRIPTION,
INSTALLATION
OPERATION AND
MAINTENANCE**

***DMS-100 AND MERIDIAN ARE TRADEMARKS
OF NORTHERN TELECOM**

CONTENTS	PAGE
1.FUNCTIONS	1-1
INTERFACE	1-1
PHYSICAL CHARACTERISTICS	1-1
RELATED DOCUMENTATION	1-1
2.SPECIFICATIONS	2-1
PERFORMANCE SPECIFICATIONS.....	2-1
ENVIRONMENT AND SAFETY	2-1
3.FEATURES.....	3-1
KEYS AND LCD.....	3-1
SIGNALING.....	3-1

Contents continued

CONTENTS (Continued)	PAGE
4.INSTALLATION PROCEDURES	4-1
UNPACKING OR PACKING.....	4-1
5.VERIFICATION PROCEDURES AND MAINTENANCE.....	5-1
VERIFICATION TEST ROUTINES.....	5-1
MAINTENANCE.....	5-1
6.ORDERING INFORMATION.....	6-1
REPLACEMENT PARTS	6-1

1. FUNCTIONS

INTERFACE

1.01 The Meridian M536 36-Button Add-on unit is designed for functioning in parallel with any one of the Meridian business sets (M5009 and M5112) which, in turn, are connected to the Meridian Business Services networks served by Northern Telecom DMS-250, DMS-100, or Meridian SL-100 Digital Switching systems. The switch interface must contain a 6X21AC type line card with W78F9LSI.

Powering

1.02 The M536 36-Button Add-on unit cannot be powered from the loop. An auxiliary power supply is provided with the M536, consisting of a 16 Vac, 375 mA wall plug-in transformer (A0329941) equipped with a Duplex Adapter (NE-267QA) which accommodates both the add-on and the business set line cords.

Note: To allow the operation of essential or frequently used features to remain accessible during local commercial power failures, it is recommended to assign such features to the first eight feature key/indicator pairs on the business set associated with the add-on unit. Feature key/indicator pairs 1 to 8 on the business set (basic M5009 service) are loop powered and continue to function during local power failures, whereas the 36-Button add-on unit is dependent on local power.

Hardware Configuration

1.03 The first key of the M536 add-on unit is key number 30, located as shown in Fig. 1-1. The keys are not designated by number on the actual keyboard, but the numbers are required for datafilling. Each function key has an associated Liquid Crystal Display (LCD) window, located to the left of the key.

PHYSICAL CHARACTERISTICS

1.04 Fig. 1-1 gives the dimensions of the M536 unit and the physical layout and numbering of all programmable feature keys. The unit comes in three different colors:

- (a) Chameleon-grey (NT4X34AA, NT4X34CA, NT4X34EA)
- (b) BTS light-grey (NT4X34BA, NT4X34DA, NT4X34FA)
- (c) Black (NT4X34GA, NT4X34HA, NT4X34JA)

RELATED DOCUMENTATION

1.05 Other information pertaining to the Business Sets, networks, subscriber loops, and Meridian business sets with which the 36-Button Add-on functions is given in the following documents:

297-2001-100

Integrated Business Network (IBN) -
Description

PRACTICE 297-2011-205

297-1001-114	Operational Measurements (OM)
297-1001-250	Testing and Acceptance for Initial Installation
297-1001-518	Operational Measurements - Man-Machine Interface
297-2011-100	DMS-100 Business Set - Feature Description and Operation
297-2011-180	DMS-100 Business Set - Line Engineering Rules
297-2011-201	Meridian M5009 Basic (9-Button) Business Set
297-2011-202	Meridian M5112 Handsfree (12-Button) Business Set
P0669369	Business Set User Guide (English)
P0672721	Business Set User Guide (French)
P0678451	36-Button Add-on Unit Instruction Card (English)

Fig. 1-1
M536 36-Button Add-On Unit - Dimensions, Physical Layout and Key Numbering
Plan

2. SPECIFICATIONS

PERFORMANCE SPECIFICATIONS

2.01 The Add-on unit operates to its full potential through twisted pair wiring on transmission lines selected by the line engineering rules given in 297-2011-180. The following specifications govern the performance of the M536 36-Button Add-on, and the environmental conditions under which this performance is achieved.

ENVIRONMENT AND SAFETY

2.02 The M536 Add-on unit meets the Canadian and U.S. mandatory interconnect requirements for Telephone Equipment.

Temperature and Humidity

2.03 *Operating State.*

Temperature range:	5° to 50° C (41° to 122° F)
Relative humidity:	20% to 95% (non-condensing). At temperatures above 34° C (93° F), relative humidity is limited to 52 mbar of water vapor pressure.

2.04 *Storage.*

Temperature range:	-50° to 70° C (-58° to 158° F)
Relative humidity:	20% to 95% (non-condensing). At temperatures above 34° C (93° F), relative humidity is limited to 52 mbar of water vapor pressure.

Electromagnetic Interference

2.05 The radiated and conducted electromagnetic interference meets the requirements of Subpart J of Part 15 of the FCC rules for class A computing devices.

Atmospheric Pollution

2.06 The M536 36-Button Add-on is designed to withstand normal atmospheric conditions throughout its life and during shipment and storage as defined in the International Electrotechnical Commission (IEC) document 50 (salt mist, atmospheric dust, sulfur dioxide, and hydrogen sulfide exposure).

Vibration

2.07 The Add-on is designed to work to specifications after being subjected to the following vibrations in each of three orthogonal directions for 90 minutes:

- Vibration frequency range of 5 to 500 Hz.
- Maximum half displacement 0.35 mm (.014 in).
- Maximum acceleration 15/m/s/s.

Shock

2.08 *Packaged:* The Add-on within its packaging is designed to withstand normal handling during shipment.

2.09 *Unpackaged:* The M536 Add-on is designed to withstand accidental dropping during normal use, without sustaining damage when dropped on any face or corner from a height of 750 mm (30 in).

3. FEATURES

KEYS AND LCD

3.01 The M536 36-Button add-on has 36 assignable keys with associated LCD status indicators (Fig. 1-1). The status indicators support four key/LCD states as follows:

FUNCTION	LCD STATE
idle or feature inactive	LCD off
active or feature active	LCD on
incoming call or feature pending	LCD flashing (60 IPM)
call on hold	LCD winking (120 IPM)

3.02 The feature keys can be assigned a subset of the following features:

- Automatic Dial (AUD)
- Automatic Line (AUL)
- Busy Override (EBO)
- Call Forward (CF)
- Call Park (PARK)
- Call Pickup (CPU)
- Call Waiting (CWT)
- Directed Call Park (DCP)
- Directory Numbers (DN)
- Group Intercom (GIC)
- Individual Business Line
- Intercom (ICM)
- Make Set Busy (MSB)
- Malicious Call Hold (MCH)
- Message Waiting (MWT)
- Multiple Appearance Directory Numbers (MADN)
- Privacy Release
- Ring Again (RAG)
- Set Busy Indication (SBI)
- Speed Calling (SCS, SCL, or SCI)
- 3-Way Calling/Call Transfer (TWC/CXR)
- 6-Port Conference

SIGNALING

3.03 The M536 add-on unit operates in parallel with any Meridian M5000-type business set and is limited by the signaling range of the set. Messages are encoded by Amplitude Shift Keying (ASK) of an 8 KHz carrier.

4. INSTALLATION PROCEDURES

UNPACKING OR PACKING

4.01 Use proper care while unpacking the M536 add-on unit. Check for damaged containers so that appropriate claims can be made to the transport company for items damaged in transit.

4.02 If a telephone has to be returned to the factory, ascertain that it is packed in the appropriate container as shown in Fig. 4-1 to avoid damage during transit. Remember to include all loose parts (e.g. line cord and transformer) in the shipment.

Preparations

4.03 Because the line cord is provided with TELADAPT* connectors at both ends, no special tools are required for installation work. Install the M536 add-on unit in steps, as given in Chart 4-1.

DUMMY REGION ADDED FOR ,ftn. TAG.

* TELADAPT is a trademark of Northern Telecom

Chart 4-1

M536 ADD-ON UNIT INSTALLATION

STEP	PROCEDURE
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- | | |
|---|---|
| 1 | Check that all wiring and cross-connections have been completed for the associated Meridian business set. Refer to the appropriate Practice (refer to Part 1, "Related Documentation."). |
| 2 | Place add-on unit beside business set with which it is to be associated, upside down, on a number of sheets of soft, clean paper to prevent damage to movable keys and key covers. |
| 3 | Connect line cord Teladapt connector to receptacle in base of add-on unit. The Teladapt connector has a latch-tab which ensures correct alignment and prevents the cord from being pulled out inadvertently during service. Ascertain that this latch tab is firmly snapped into place. |
| 4 | Route line cord through the line cord channel and push under restraining tabs in base of add-on unit. (Fig. 4-2). |
| 5 | Turn add-on unit right side up and place in final workstation position. |
| 6 | Designate button labels for key designations. |
| 7 | Fold labels, insert inside plastic lens, and snap lens over movable key, pressing down on key, as required. Repeat for all keys. |
| 8 | |

Note: It may be necessary to delay steps 6 and 7 as the functions for all the keys may not have been assigned at this stage.

Chart Continued -----

Chart 4-1 Continued
M536 ADD-ON UNIT INSTALLATION

STEP PROCEDURE

- 9** Plug auxiliary power supply transformer into a wall outlet near the telephone connecting block.

 - 10** If a business set is already plugged into the telephone connecting block, disconnect the Teladapt line cord connector from the block, then plug NE-267QA duplex adapter at end of plug-in transformer cord into telephone connecting block (Fig. 4-3). Make sure that it is firmly snapped into place (listen for click).

 - 11** Insert the line cord Teladapt connector from the Meridian business set into the NE-267QA duplex adapter first, then insert the line cord from the M536 Add-on. Make sure both connectors have firmly snapped into place. This completes installation of the M536 add-on unit.
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Fig. 4-1
M536 Add-on Unit - Packaging

Fig. 4-2
M536 Add-on Unit - View of Teladapt Connector and Line Cord Channel

Fig. 4-3
M536 Add-on Unit - Connecting to Duplex Adapter at Connecting Block

5. VERIFICATION PROCEDURES AND MAINTENANCE

**VERIFICATION TEST
ROUTINES**

5.01 No separate tests are required for the M536 add-on unit. Because the add-on is paralleled with a Meridian M5000-type business set, the proper functioning of this unit depends on the correct installation (e.g. polarity of Tip and Ring leads, loop check, and linecard tests) of the business set. The Station Ringer Test, which checks the proper functioning of all LCD windows, must be started at the business set (refer to relevant Practice in accordance with list of associated documentation given in Part 1). The Feature Key Test is extended to cover all additional feature keys on the add-on unit (i.e. as each key is depressed, one at a time, the associated LCD window lights up until the next key is pressed down). Key features are assigned via the Table Editor or Servord according to the physical to logical key mapping as given in Fig. 1-1. The valid keys for a Business Set with 36 Button Add-on unit are the valid keys on that set plus key # 30 to key # 65.

MAINTENANCE

5.02 Maintenance of the M536 Add-on is restricted to replacement of the unit, labels, key covers, and the transformer assembly as indicated in Part 6.

6. ORDERING INFORMATION

REPLACEMENT PARTS **6.01** The M536 add-on unit has few field replaceable parts. The line cord equipped with Teladapt connectors, the transformer equipped with a duplex adapter, and key lenses and labels can be changed.

6.02 If an add-on unit fails to function properly, or if mechanical breakage occurs, do not attempt repairs in the field. Return unit to the manufacturer. For proper packing procedures, refer to Part 4, Fig. 4-1.

Table 6-A
MERIDIAN M536 ADD-ON UNIT - STOCKLIST OF FIELD REPLACEABLE PARTS

DESCRIPTION	ORDERING CODE	ENGINEERING CODE
Meridian M536 Add-on, Chameleon-grey, made in Canada for Canadian sales	B0226674	NT4X34AA
Meridian M536 Add-on, BTS light-grey, made in Canada for Canadian sales	B0226675	NT4X34BA
Meridian M536 Add-on, Black, made in Canada for Canadian sales	B0226820	NT4X34GA
Meridian M536 Add-on, Chameleon-grey, made in Canada for U.S. sales	B0224480	NT4X34CA
Meridian M536 Add-on, BTS light-grey, made in Canada for U.S. sales	B0226676	NT4X34DA
Meridian M536 Add-on, Black, made in Canada for U.S. sales	B0226821	NT4X34HA
Meridian M536 Add-on, Chameleon-grey, made in USA for U.S. sales	B0225765	NT4X34EA
Meridian M536 Add-on, BTS light-grey, made in USA for U.S. sales	B0226677	NT4X34FA
Meridian M536 Add-on, Black, made in USA for U.S. sales	B0226822	NT4X34JA
Card, Key Button Labels	P0660224	P0660224
Label, Button	P0637673	P0637673
Label, Button Cover, Clear	P0637674	P0637674
Line Cord, silver-grey, 2.3 m (7.5 ft) long	A0274382	NE-D6QT-87
Transformer, 16Vac, 375mA	A0329941	NPS50220-08,L4