
DIGITAL SWITCHING SYSTEMS

**DMS-100 FAMILY
INTEGRATED BUSINESS
NETWORK SERVICE
MERIDIAN M5112
HANDSFREE (12 BUTTON)
BUSINESS SET
DESCRIPTION,
INSTALLATION,
OPERATION AND
MAINTENANCE**

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

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1. INTRODUCTION

1.01 The Business Set is designed for direct connection, through a non-loaded subscriber loop pair, to the Northern Telecom DMS-250, DMS-100, or Meridian SL-100 Digital Switching Systems.

1.02 The M5112 12-button Handsfree Business Set will work with a maximum loop length of 4,572 m (15,000 ft) of 26 AWG standard twisted pair telephone wires, subject to Line Engineering rules (297-2011-180). The Set requires a 16 Vac external plug-in type power supply to be fully operational. If the external power supply fails, the M5112 Set reverts to basic business set service, i.e. key/indicator pairs 1 to 10 will function normally, while the key/indicator pairs 11 to 12 together with the Headset, Handsfree and Muting features cease to function. Handset operation is supported without the volume control capability. Ringer loudness and on-hook dialing voice quality will suffer some degradation during local power failures. The plug-in transformer is equipped with an NE-267QA Duplex Adapter which allows feeding of external power through the line cord to the telephone.

1.03 The service provided by the Business Set substitutes low-level signals passed over a half-duplex, above-voiceband signaling channel for the traditional loop signaling (dial pulse) or inband tone signaling (DTMF tones) on a conventional subscriber loop. In addition to signaling and supervision, messages on the above-voiceband signaling channel include signals for implementing the many special features available on the Business Set.

1.04 The M5112 Business Set offers a choice of selected key and system features; it has 5 fixed feature keys, two of which have associated Liquid Crystal Display (LCD) indicators, a dial pad consisting of 12 fixed keys, 10 programmable feature and/or directory number keys with LCD indicators, and is equipped with a microphone and a speaker for Handsfree operation.

PHYSICAL CHARACTERISTICS

1.05 Fig. 1-1 gives the dimensions and main components of the Meridian M5112 Business Set. The set comes in three different colors:

- (a) Chameleon-grey (NT4X31AA, NT4X31CA, NT4X31EA)
- (b) BTS light-grey (NT4X31BA, NT4X31DA, NT4X31FA)
- (c) Black (NT4X31GA, NT4X31HA, NT4X31JA)

OTHER DOCUMENTATION

1.06 Other information pertaining to Business Sets can be found in the following documents:

297-2001-100

PRACTICE 297-2011-202

Integrated Business Network (IBN) - Description

297-2011-180	DMS-100 Business Set - Line Engineering Rules
297-1001-114	Operational Measurements (OM)
297-1001-250	Testing and Acceptance for Initial Installation
297-1001-310	Table Editors User Guide
297-2101-310	Service Order and Query System Reference Manual
297-1001-518	Operational Measurements - Man-Machine Interface
P0669369	Business Set User Guide (English, Canadian edition)
P0683227	Business Set User Guide (English, U.S. edition)
P0672721	Business Set User Guide (French)

Fig. 1-1
M5112 Business Set - Features and Dimensions

2. SPECIFICATIONS

PERFORMANCE SPECIFICATIONS

2.01 The following specifications govern the performance of the M5112 Business Sets, and the environmental conditions under which this performance is achieved.

ENVIRONMENTAL AND SAFETY CONSIDERATIONS

2.02 The M5112 Business Set 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.

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2.04 *Non-Operating State.*

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 M5112 Business Set is designed to withstand normal atmospheric conditions throughout its life and during shipment and storage as defined in the International Electromechanical Commission (IEC) document 50 (salt mist, atmospheric dust, sulfur dioxide, and hydrogen sulfide exposure).

Vibration

2.07 The M5112 Business Set is designed to work to specifications after being subjected to the following vibrations in 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 Business Set, within its packaging, is designed to withstand normal handling during shipment.

2.09 *Unpackaged:* The telephone and the handset are designed to withstand accidental dropping during normal use, without sustaining damage, as follows:

- Telephone: when dropped on any face or corner from a height of 750 mm (30 in).
- Handset: when dropped from a height of 1.5 m (5 ft).

LINE ENGINEERING

2.10 The M5112 Business Set operates to its full potential through twisted pair wiring on transmission lines selected by the rules given in 297-2011-180.

**POWERING
REQUIREMENTS.**

2.11 The M5112 Business Set requires a 16 Vac external power supply (plug-in transformer) which must meet the following power consumption requirements:

Active local power consumption: Maximum current drawn, with the set active and the speaker driven to maximum volume, is less than 120 mA RMS (2.5 Watts).

Idle local power consumption: Maximum current drawn by the telephone in the idle state is less than 60 mA RMS (1.3 Watts).

3. OPERATION AND FEATURES

BASIC OPERATIONS

Making a Call and Accessing Features

3.01 The M5112 Business Set can be used to make voice calls and operate selected DMS-100 or Meridian SL-100 features. Most supported features can be accessed via the keys provided on the M5112 Business Set. For further details on software requirements, refer to 297-2011-100 and 297-1001-310. Dial pad, DN, and feature key layout is shown in Fig. 1-1.

Note: The M5112 Business Set can not be assigned as a maintenance set.

3.02 Detailed descriptions of how to dial and how to answer a call, and how to access the various features are given in the User Guide which is shipped with each telephone. Refer to the User Guide before attempting to operate the Meridian M5112 Business Set.

Peripheral Equipment

3.03 The M5112 Business Set interfaces with the business set (6X21AC) line card in the Line Concentrating Module (LCM) of the DMS100/Meridian SL-100 Central Office (CO) equipment. The 6X21AC supports one business set per line card.

Acoustics

3.04 A speaker is used for alerting tones and voice traffic. A microphone is provided for the Handsfree feature.

Power

3.05 The M5112 Business Set requires external power for operating the Liquid Crystal Display (LCD) key indicators for all feature keys beyond key 8, and for the Handsfree feature. Power is supplied from a 16 Vac plug-in transformer and is transmitted to the business set via an NE-267QA Duplex Adapter through a wire pair which is part of the line cord.

3.06 *M5112 Business Set service during local power failures.* If the external power supply fails, the headset and handsfree features will not function. Handset operation will be maintained without the volume adjustment capability. The muting function is not available during local power failures. Ringer loudness and on-hook dialing voice quality will suffer some degradation, but feature key/LCD pairs with the exception of the handsfree and mute key/LCD pairs remain operational.

FEATURES DESCRIPTION

Keys

3.07 The M5112 Business Set (Fig. 1-1) is characterized by the following:

- (a) There are 15 fixed keys with no LCD indicators, assigned as:
 - Release key (1)
 - Hold key (1),
 - Volume up/down key (1), and
 - Dial pad keys (12).
- (b) There are 2 fixed keys with associated LCD indicators, assigned as:
 - Handsfree key (1)
 - Mute key (1)
- (c) There are ten (10) assignable key/LCD indicator pairs.

3.08 LCD indicators used with DN keys support four (4) key/LCD states as follows:

FUNCTION	LCD STATE
Idle	Off
Ringing (or “Feature Pending”)	Flashing at 60 interruptions per minute (IPM)
Hold	Winking at 120 IPM
Active	On

Basic Features

3.09 Every Business Set has the following basic features:

- (a) **Automatic Prime DN selection:** allows the user to select the prime DN (i.e., the DN assigned to the first key) by going off-hook to answer a call without pressing a DN key.
- (b) **On-hook Dialing:** allows a call to be dialed by selecting a line and dialing the number without lifting the handset.
- (c) **Listen On Hold:** can be activated by pressing the hold key (associated LCD flashing), placing the handset back in its cradle, and re-selecting the line to be monitored (associated LCD ON).

Note: The on-hook dialing and listen on hold features are not equivalent to the handsfree feature. Whenever the set is on-hook and a Directory Number (DN) key is pressed, the set will be in on-hook dialing mode and dial tone is heard through the speaker. The user will be able to monitor the line, but in order to carry on a conversation the user must lift the handset (in case of the M5112, he can choose to plug in a headset or activate the handsfree feature) in order to be heard by the other party.

- (d) **Alerting Tones:** Warble tone sounds when telephone is on-hook, 500 Hz local buzzer tone sounds when telephone is off-hook.

Additional Features for M5112

3.10 In addition to the basic business set features, the M5112 Handsfree Business Set provides the following:

- (a) **Handsfree conversation:** allows the user to carry on a telephone conversation without lifting the handset (applies to both originating and answering a call)
- (b) **Microphone muting:** allows the user to listen to a call without the other party being able to hear any sound from the user.
- (c) **Headset operation:** automatically transfers speech to headset after headset is plugged in.
- (d) **Automatic Answer Back (AAB):** This is an optional feature. When equipped, it will allow an incoming call to the Prime DN of the set to be automatically answered after one ring. Conversation takes place through the integrated handsfree unit without manually controlling the unit. This option can be provided with or without a feature key permanently assigned to it.

FEATURES OPERATION

Fixed Keys

3.11 The fixed keys on the M5112 Business Set provide these permanent functions: Handsfree conversation, microphone muting, call Hold, call Release, Volume Control, and dialing.

3.12 Handsfree. This feature is used as given in Table 3-A.

**Table 3-A
OPERATION OF HANDSFREE FEATURE - M5112 BUSINESS SET**

Initial State	Action	Result	Verification
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Table Continued -----

Table 3-A Continued

OPERATION OF HANDSFREE FEATURE - M5112 BUSINESS SET

Idle or Active	Depress Handsfree key	Enable	Generates off-hook condition (Handsfree LCD indicator turns ON and speech is transferred to Handsfree speaker).
Active. Handsfree ON	Depress Rls (Release) key	Disable	Generates on-hook condition (Handsfree LCD indicator is turned OFF).
Active. Handsfree ON	Lift handset	Disable	Transfers speech to handset (Handsfree LCD indicator is turned OFF).
Idle or Active	Plug in headset	Disable	Disables Handsfree feature and transfers speech to headset.
Active. Handsfree ON	Depress Mute key	Mute	Disables microphone but speaker remains on. Microphone can be restored by operating the Mute key again. The Mute LCD indicator winks during microphone muting; winking stops if Mute key is depressed again. The Mute feature also functions in handset and headset modes.

3.13 Dialpad. Before a call is established, no tone-feedback is provided when the dialing keys are being pressed. After a call has been established, end-to-end signaling using CO generated DTMF tones is enabled.

3.14 Hold. The HOLD function has two modes of operation, manual and automatic. With the user engaged in a call, the call can be put on hold either by pressing the HOLD key or by pressing another DN key. In either case the DN LCD changes from ON to “winking” and the user is free to answer or make another call.

3.15 Release. The Rls key performs a similar function as going on-hook, i.e. when pressed, it terminates a call. The DN LCD associated with the released call changes from the ON state to the OFF state, however, the status of the Set remains “off hook” to the switch.

Volume Control

3.16 There are five volume registers which permit independent adjustments for handsfree, headset, handset, on-hook dialing, and alerting tone volumes. Volume settings are maintained as follows:

- Handset, headset, handsfree, and alerting tone volume settings are stored automatically with the activation of the Volume Up/Volume Down key. Handset, headset and handsfree volume settings revert to default values (mid-point volume) after local power failure. When the loop voltage is interrupted, the alerting tone reverts to nominal (mid-point volume) and the on-hook dialing setting reverts to minimum.
- On-hook dialing volume setting can be stored by simultaneously depressing both ends of the Volume Up/Volume Down key.
- Handset receive level is reset to nominal each time the handset is placed into its cradle.
- The previous headset receive level is automatically recalled each time the headset is plugged in.
- When the headset is used together with the handset, the headset volume setting is used for both.

Volume Adjustments..

3.17 Volume adjustments are made while the relevant path is enabled, e.g. the volume for alerting tones can only be adjusted while alerting is in progress and the Handsfree speech volume level can only be adjusted while listening through the Handsfree feature.

3.18 Handset, Handsfree and Headset Volume Adjustments. Holding down the right hand side of the volume adjustment key will increase the volume until the key is released or maximum volume is reached. Holding down the left hand side of the volume adjustment key will decrease the volume until the key is released or minimum volume is reached. Volume settings are automatically stored for further calls or until re-adjusted.

3.19 On-hook Dialing (or Call Monitoring) and Alerting Tone Volume Adjustments. Tapping the volume adjustment key at the right hand side will increase the volume, tapping it at the left hand side will decrease it. The volume changes in steps each time the key is released. The alerting tone volume setting is automatically stored for further calls or until re-adjusted. Only the on-hook dialing (or call monitoring) volume requires pushing down both ends of the volume adjustment key after the desired volume level is obtained in order to store the setting for further calls or until a re-adjustment is made.

Assignable Keys

3.20 The ten assignable feature keys can be assigned a subset of a number of features. Examples of some of the available features are given as follows:

- Automatic Answer Mode (AAM)
- Automatic Dial (AUD)

Automatic Line (AUL)
Busy Override (EBO)
Call Back Queuing (CBQ)
Call Forward (CFW)
Call Park (PRK)
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 (PRL)
Query Busy Set (QBS)
Ring Again (RAG)
Set Busy Indicator (SBI)
Speed Calling (SCS, SCL, or SCI)
3-Way Calling/Call Transfer (TWC/CXR)
6-Port Conference (CFN)

3.21 Local Tones. A locally generated buzzer (500 Hz) tone is utilized for call waiting and off-hook alerting. All other telephony tones are provided by the switching equipment from a Tone Card.

3.22 Tone Characteristics. The various tones heard on the M5112 Business Set are defined as follows:

TONE	CHARACTERISTIC
Ring	Interrupted warble tone, typically 2 seconds ON, 4 seconds OFF
Busy	Interrupted tone, 1 second ON, 1 second OFF
Call Waiting	Short burst of buzzer tone (500 Hz), 10 second intervals
Confirmation	Three short bursts of tone, not repeated (informs user that feature requested has been implemented. This tone is present only when the feature access code is dialed)
Dial	

Continuous tone (consisting of 2 frequencies)

Reorder	Interrupted tone, 1/2 second ON, 1/2 second OFF (informs user of unavailable feature, all trunks busy, illegal code etc.)
Ring Again	Short burst of buzzer tone (500 Hz), once only (informs user that previously busy station or trunk line is now free)
Special Dial	Three short bursts of dial tone, followed by continuous dial tone (informs user that dialed feature, e.g. call forwarding, has been activated and further digits [e.g. station directory number to which calls are to be forwarded] can be dialed).

Auto Answerback

3.23 The Auto Answerback (AAB) feature can be provided on the M5112 Business Set either as an assigned feature or as a key-accessible feature. As an assigned feature it is always operational. As a key-accessible feature the assigned feature key allows the user to activate or deactivate the AAB feature at will. If AAB is activated, an incoming call to the Prime DN of the set is automatically answered after a 2-second burst of alerting tone. Conversation can start in Handsfree mode via speaker and microphone. When the user lifts the handset or uses a headset, speech is shifted to the device in use, as is the case during normal Handsfree mode operation without AAB. Microphone muting is also possible in AAB mode. The call is automatically disconnected when the calling party hangs up.

Headset

3.24 The TELADAPT* connector for the headset is located on the underside of the telephone beside the line cord Teladapt connector (Fig. 4-2). A Vantage 48* style (electret) headset must be used with the M5112 Business Set.

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*TELADAPT and Vantage are trademarks of Northern Telecom
 Plugging the headset in creates an automatic off-hook condition. At this point, either a call can be dialed or the line can be released by operating the “Rls” key. If a call is received while the headset is plugged in, a 500Hz tone is heard through the speaker.

Note: Handset and headset may be used simultaneously

4. INSTALLATION PROCEDURES

Unpacking or Packing

4.01 Use proper care while unpacking the M5112 Business Set. Check for damaged containers so that appropriate claims can be made to the transport company for items damaged in transit.

4.02 If a Business Set 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. cords, handset and power supply) in the shipment.

Preparations

4.03 Installation requires plugging the connecting cords into the Teladapt jacks that are accessible at the base of the Business Set. Cord restraining tabs are provided for security (See Fig. 4-2). Make the necessary connections to the Teladapt connecting block (Tip [+] green lead and Ring [-] red lead). Plug the local power supply transformer into a receptacle close to the teladapt connecting block, then plug the NE-267QA Duplex Adapter (hard wired to the transformer) into the connecting block teladapt jack. Continue with steps as given in Chart 4-1 to complete the M5112 Business Set installation.

Note: The M5112 Handsfree Business Set cannot be wallmounted.

Chart 4-1

M5112 BUSINESS SET INSTALLATION

STEP	PROCEDURE
1	Place telephone in work area (close to line cord connecting block) upside down on a number of sheets of soft, clean paper on solid, level work surface to prevent damage to movable keys and telephone face.
2	Connect handset cord 4-conductor Teladapt connectors to handset and to the telephone. The Teladapt connectors have 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.
3	After connecting handset cord to connector in base of set, route the cord through channel and past restraining tabs in base of telephone (Fig. 4-2).
4	Connect line cord to connector in base and push under restraining tabs in line cord channel of telephone base (Fig. 4-2).
5	Turn telephone right side up and place in final workstation position.
6	Print directory number on designation card, remove number lens by inserting a paper clip end in the hole at the side and levering upwards, insert designation card, and snap lens with card back into place.

Chart Continued -----

Chart 4-1 Continued
M5112 BUSINESS SET INSTALLATION

STEP PROCEDURE

- 7** Designate button labels for key designations.

 - 8** Fold labels, insert inside plastic button cover, and snap button cover over movable key, pressing down on key, as required. Repeat for all keys.

 - 9** Insert line cord Teladapt connector into any one of the two NE-267QA Duplex Adapter Teladapt jacks at the connecting block and ascertain that it has securely snapped into place.

 - 10** Wait a minimum of 20 seconds to allow for proper power-up before using the Business Set. This completes the installation.
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Fig. 4-1
Unpacking or Packing the M5112 Business Set

Fig. 4-2
View of Jacks and Tabs at Base of Telephone

5. VERIFICATION PROCEDURES AND MAINTENANCE

VERIFICATION TEST ROUTINES

5.01 These are acceptance tests. If the criteria outlined in the Line Engineering Rules (297-2011-180) are observed, impulse noise, background noise and crosstalk compatibility problems are unlikely. The loop check should be performed, the telephone installed, and the Tip/Ring polarity should be checked before attempting to establish a communication path to another telephone and going through the different call routines (enabled features) while observing and verifying the responses at the set. Key/LCD indicators pairs can be tested with the "Station Ringer Test" (SRT) in accordance with Chart 5-1.

MAINTENANCE

5.02 Maintenance of the Business Set is restricted to replacement of the set and other field replaceable items as tabulated in Part 6 (Ordering Information).

LOOP CHECK

5.03 Loop and linecard tests must be performed at the switching equipment (ref. 297-2011-180). It is assumed that loops and linecards have been checked out prior to the installation of any Business Sets.

5.04 Verify that the loop resistance is ≤ 1230 Ohm, and that the loop loss is ≤ 24 dB at 8 kHz.

POLARITY CHECK

5.05 The M5112 Business Set is polarity sensitive. If problems arise when the set is to be put into service, proceed as follows:

- (a) If the set does not respond (no dial tone) after 20 seconds, check polarity of the tip and ring leads (tip + , ring -).
- (b) If tip and ring lead reversal does not solve the problem, restore tip and ring to original polarity and change the set.

STATION RINGER TEST

5.06 The Station Ringer Test tests the hardware of the M5112 Business Set and can be performed by the installer or repairman at the site with no involvement of the Central Office personnel.

Test Set-Up

5.07 With the handset on hook and all LCD indicators off, press the prime directory number (prime DN) key and dial the 3 to 14 digit access code. The access code consists of a one to seven digit number which is assigned by the telephone company according to local preferences, followed by the last two to seven digits of the prime DN assigned to the telephone to be tested. In North America, the access code usually consists of the number 57, followed by the last five digits of the prime DN. If the required digits are dialed incorrectly, a reorder tone will sound which makes it necessary to press the RIs key and start again. If all digits are correct, all LCD indicators at the set, except the LCD associated with keys 11 and 12 (Handsfree and Mute key indicators) will light up. The test can now proceed in accordance with Chart 5-1.

Note: The system will not attempt to restore any LCD to its pre-test state. The LCDs will be OFF at the end of the test, with features in the same state as before the test. A background audit restores all feature indicators at its next occurrence (audit intervals are switch and load related). Any newly activated features after termination of the test procedure will be indicated normally. No incoming calls can be received for the duration of a Station Ringer Test. In order to prevent prolonged line blockages, this test is limited to a 7 minute interval after which the line will automatically be restored to normal and the test terminated.

Chart 5-1
STATION RINGER TEST - KEY SEQUENCES

- Perform operations in the order as given in this Chart.
- Operate key or switch as given in the “Key or Switch Operated” column. The response must be as given in the “Response Observed” column. LCD and key numbering are given in Fig. 5-1.
- The column headed “Messages Used” indicates the messages generated to produce the correct response.

Note: The two topmost Keys are affected differently by the station ringer test. Key 12 is permanently associated with the handsfree function and key 11 is permanently associated with the microphone muting function. Where “All LCDs ...” is given in this Chart, both LCD indicators associated with keys 11 and 12 are excluded and remain OFF.

KEY OR SWITCH			
STEP	OPERATED	RESPONSE OBSERVED	MESSAGES USED
1	Handset OFF-HOOK	All LCDs FLASH	LCD indicator FLASH
2	Handset ON-HOOK	All LCDs WINK	LCD indicator WINK
3	Handset OFF-HOOK	All LCDs ON	LCD indicator ON
4	Handset ON-HOOK	All LCDs OFF	LCD indicator OFF
5	Dial Pad key 1	LCD 1 ON	Soft Reset, LCD ON
6	Dial Pad key 2	LCD 2 ON	Soft Reset, LCD ON
7	Dial Pad key 3	LCD 3 ON	Soft Reset, LCD ON
8	Dial Pad key 4	LCD 4 ON	Soft Reset, LCD ON
9	Dial Pad key 5	LCD 5 ON	Soft Reset, LCD ON
10	Dial Pad key 6	LCD 6 ON	Soft Reset, LCD ON
11	Dial Pad key 7	LCD 7 ON	Soft Reset, LCD ON
12	Dial Pad key 8	LCD 8 ON	Soft Reset, LCD ON
13	Dial Pad key 9	LCD 1 & 8 ON	Soft Reset, LCD ON
14	Dial Pad key 0	LCD 2 & 8 ON	Soft Reset, LCD ON
15	Dial Pad key *	All LCDs ON	Soft Reset, LCD ON Save Indicator Status

Chart Continued -----

Chart 5-1 Continued
STATION RINGER TEST - KEY SEQUENCES

16	Dial Pad key #	All LCDs OFF	Soft Reset
17	Feature key 1	LCD 1 ON	Soft Reset, LCD ON
18	Feature key 2	LCD 2 ON	Soft Reset, LCD ON
19	Feature key 3	LCD 3 ON	Soft Reset, LCD ON
20	Feature key 4	LCD 4 ON	Soft Reset, LCD ON
21	Feature key 5	LCD 5 ON	Soft Reset, LCD ON
22	Feature key 6	LCD 6 ON	Soft Reset, LCD ON
23	Feature key 7	LCD 7 ON	Soft Reset, LCD ON
24	Feature key 8	LCD 8 ON	Soft Reset, LCD ON
25	Feature key 9	LCD 9 ON	Soft Reset, LCD ON
26	Feature key 10	LCD 10 ON	Soft Reset, LCD ON
27	RELEASE key	LCDs 2 & 8 ON	Soft Reset, LCD ON
28	HOLD key	Dial Tone. LCD 1 through 5 ON	Soft Reset, Turn on Tip/Ring to Speaker, LCD ON
29	Vol. UP	Volume Up	None (Test Voice Volume Control)
30	Vol. DOWN	Volume Down	None (Test Voice Volume Control)
31	Handset OFF-HOOK	Dial Tone from Handset. All LCD flash	Turn off Tip/Ring to Speaker, Turn on Handset, LCD Indicators Flash
32	Handset ON-HOOK	Dial tone switches to Handsfree speaker. LCD 12 ON. LCD 1 through 10 wink.	Turn on Tip/Ring to Speaker, Turn off Handset, LCD Indicators Wink
33	HOLD key	1 second of BUZZ (Alert B), and LCD 6 through 10 ON, all other LCD indicators OFF.	Turn On/Off Alert B, LCD ON.
34	HOLD key	RINGING	None (Ring tone from CO)
35	Vol. UP	Volume UP	None (Test Ring Volume Control)
36	Vol. DOWN	Volume DOWN	None (Test Ring Volume Control)
37	HOLD key	-	Hard Reset (test completed)

Fig. 5-1
Key and LCD Identification for Tests - M5112 Handsfree Business Set

6. ORDERING INFORMATION**REPLACEMENT PARTS**

6.01 The M5112 Business Set has few field replaceable parts. The handset, handset cord, line cord equipped with Teladapt connectors, key lenses and labels can be changed.

6.02 If a Business Set fails to function properly, or if mechanical breakage occurs, do not attempt to repair in the field. Return the unit to the manufacturer. For proper packing procedures, refer to Part 4, Installation Procedures.

Table 6-A**M5112 BUSINESS SET STOCKLIST OF FIELD REPLACEABLE PARTS**

DESCRIPTION	ORDERING CODE	ENGINEERING CODE
Meridian M5112 Handsfree Business Set, Chameleon-grey, made in Canada for Canadian sales	B0223416	NT4X31AA
Meridian M5112 Handsfree Business Set, BTS light-grey, made in Canada for Canadian sales	B0223417	NT4X31BA
Meridian M5112 Handsfree Business Set, Black, made in Canada for Canadian sales	B0226814	NT4X31GA
Meridian M5112 Handsfree Business Set, Chameleon-grey, made in Canada for U.S. sales	B0225251	NT4X31CA
Meridian M5112 Handsfree Business Set, BTS light-grey, made in Canada for U.S. sales	B0225252	NT4X31DA
Meridian M5112 Handsfree Business Set, Black, made in Canada for U.S. sales	B0226815	NT4X31HA
Meridian M5112 Handsfree Business Set, Chameleon-grey, made in USA for U.S. sales	B0225253	NT4X31EA
Meridian M5112 Handsfree Business Set, BTS light-grey, made in USA for U.S. sales	B0225254	NT4X31FA
Meridian M5112 Handsfree Business Set, Black, made in USA for U.S. sales	B0226816	NT4X31JA
Card, Key Button Labels, English	P0660224	P0660224
Card, Key Button Labels, French	P0672722	P0672722

Table Continued -----

Table 6-A Continued

M5112 BUSINESS SET STOCKLIST OF FIELD REPLACEABLE PARTS

Card, Station Number, English	P0665352	P0665352
Card, Station Number, French	P0672731	P0672731
Handset Assembly, Chameleon-grey Color	A0324416	NT1F04BA-35
Handset Assembly, BTS light-grey Color	A0324417	NT1F04BA-93
Handset Assembly, Black Color	A0330895	NT1F04BA-03
Handset Cord, Chameleon-grey Color, 2.8 m (9 ft) long	A0327131	NE-H4DUQC-35
Handset Cord, BTS light-grey Color, 2.8 m (9 ft) long	A0327132	NE-H4DUQC-93
Handset Cord, Black Color, 2.8 m (9 ft) long	A0327133	NE-H4DUQC-03
Label, Button	P0637673	P0637673
Label, Button Cover, Clear	P0637674	P0637674
Label, Button Cover, Green	P0657710	P0657710
Lens, Station Identification	P0652720	P0652720
Line Cord, silver-grey, 2.3 m (7.5 ft) long	A0274382	NE-D6QT-87
Window, Information	P0652721	P0652721
User Guide, English (Canadian edition)	P0669369	
User Guide, English (US edition)	P0683227	P0683227
User Guide, French	P0672721	P0672721
Power Supply	A0329941	NPS50220-08L4