**Lucent Technologies**
Bell Labs Innovations

# TransTalk®9000
# Digital Wireless System

MDW 9040 Wireless Pocket Phone
Installation, Troubleshooting, and Use

# Copyright and Legal Notices

**Copyright**

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**Notice**

Every effort has been made to ensure that the information in this book was complete and accurate at the time of printing. Information, however, is subject to change. The pictures in this book are for illustrative purposes; your actual hardware may look slightly different.

This document was prepared by the Product Publications Department of the Global Learning Solutions Division of Lucent Technologies. U.S. offices are located in Denver, CO; Columbus, OH; Holmdel, NJ; and Basking Ridge, NJ.

**Federal Communications Commission and Industry Canada (IC) Information**

For details, see Appendix B.

**Security**

Toll fraud, the unauthorized use of your telecommunications system by an unauthorized party (for example, persons other than your company's employees, agents, subcontractors, or persons working on your company's behalf), can result in substantial additional charges for your telecommunications services. You are responsible for the security of your system. There may be a risk of toll fraud associated with your telecommunications system. You are also responsible for programming and configuring your equipment to prevent unauthorized use. Your system administrator should read all documents provided with this product to fully understand the features that can introduce the risk of toll fraud and the steps that can be taken to reduce that risk. Lucent Technologies does not warrant that this product is immune from or will prevent unauthorized use of common-carrier telecommunication services or facilities accessed through or connected to it. Lucent Technologies will not be responsible for any charges that result from such unauthorized use.

**Trademarks**

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**Warranty**

Lucent Technologies provides a limited warranty for this product; see Appendix A.

**Ordering Information**

The order number for this book is 503-801-190. To order additional copies of these reference materials, call 1-800-457-1235 or 317-322-6791. To order parts and accessories, see Appendix D, "Ordering Replacement and Optional Parts."

**Customer Support**

Follow the procedure you normally use to obtain support for your communications system.

Outside the continental U.S., contact your Lucent Technologies Representative or local Authorized Dealer.

# Important Safety Instructions

This book contains instructions related to safety labels on the product:

⚠ **WARNING:**
**WARNING indicates the presence of a hazard that can cause severe or fatal personal injury If the hazard is not avoided.**

⚠ **CAUTION:**
**CAUTION indicates the presence of a hazard that will or can cause minor personal injury or property damage if not avoided.**

This phone is designed to provide trouble-free performance without any special maintenance procedures. To reduce the risk of accidental damage:

- Keep the phone in an area free of dust, smoke, and moisture; do not block the air vents by placing objects on top of the radio module.

- Do not place the phone or battery charger near a heating duct, radiator, or other heat source, and do not drop or expose it to excessive shock or vibration.

- Unplug the battery charger, radio module, or carrier if its power cord is damaged, if liquid is spilled into it, or if its housing becomes cracked or otherwise damaged.

- To clean your phone, wipe the outside housing with a soft, dust-free cloth. If absolutely necessary, you may use a cloth slightly dampened with a mild soap-and-water solution. Dry quickly with a soft cloth.

⚠ **CAUTION:**
**Your phone contains sensitive electronic parts. Never submerge it in any kind of liquid, and never use liquid or aerosol cleaners, detergents, alcohols, solvents, abrasive cleaners, or an excessive amount of water when cleaning the housing and faceplate. To do so could result in irreparable damage.**

⚠ **WARNING:**
**Installation of this equipment for In-Range Out of Building (IROB) conditions requires the use of protectors. See the documentation that came with your communications system for more information.**

⚠ **CAUTION:**
**This equipment is for installation on Lucent Technologies PARTNER, PARTNER Plus, PARTNER II, PARTNER Advanced Communications System, MERLIN, MERLIN Plus, MERLIN II, MERLIN LEGEND, MERLIN MAGIX, and DEFINITY Communications Systems only.**

For your own safety, follow these rules before or while using your phone:

- *Before using this product,* read and understand all warnings and instructions.

- Observe all warnings and instructions marked on this product.

- Do not use this phone in the vicinity of a suspected gas leak. This product is not approved for use in areas labeled by the Occupational Safety and Health Administration (OSHA) as "explosive environments." Only "Explosive Atmosphere Telephones" may be used in such hazardous environments.

- This product should be serviced by a qualified service center when service or repair work is required. Do not open the product or push objects through housing slots. There are no user-serviceable components inside.

- Use only the type of battery pack shipped with this product or sold as an optional part. (See "Ordering Replacement and Optional Parts" in Chapter 4.)

### ⚠ WARNING:
**Do not burn or puncture the battery pack. Do not dispose of the battery pack in household garbage. For information about recycling or proper disposal, consult your local solid waste (garbage) collection or disposal organization.**

**Exposure to Radio Frequency Energy**

The design of your wireless telephone complies with the latest Institute of Electrical and Electronic Engineers (IEEE) and the American National Standards Institute (ANSI) safety levels with respect to human exposure to RF energy.

### ⚠ CAUTION:

**Cardiac Pacemakers and Life-Support Equipment**

**The MDW 9040 handset is a radio transceiver device. It is recommended that the handset not be placed within 6 inches of a pacemaker.**

It is recommended that standard acceptance test procedures be followed prior to operating this equipment in proximity of life-support equipment.Until more is known, the FDA suggests that people with pacemakers may want to take some simple precautions when using or carrying digital wireless telephones. They should ensure that there is ample distance between the digital wireless telephone and the pacemaker—by not placing the phone next to the pacemaker implant (for example, in a shirt or a coat pocket directly over the pacemaker implant) when the phone is on and ready to receive a call and by holding it to the ear opposite the side of the body where the pacemaker is implanted when using the phone. They should consult their physicians or medical device manufacturers to determine if additional precautions are necessary.

**Hearing Aid Compatibility**

The operation of inadequately shielded medical devices may be adversely affected when a portable wireless telephone is operating in close proximity. Use of an optional headset would solve this problem.

**Additional Safety Instructions for Installation Personnel**

- Install the product to meet all environmental and electrical requirements listed in Appendix C.

- All wiring that connects to this equipment and becomes part of the building wiring must be a minimum of CLASS 2 or UL (Underwriters Laboratories) Listed Communications cable.

- Do not install telephone wiring during a lightning storm.

- Do not install telephone jacks in a wet location unless the jack is specifically designed for wet locations. Never touch telephone wires or terminals that are not insulated unless the telephone line has been disconnected at the network interface.

- Install this product in a protected location where no one can step on or trip over power cords and telephone line cords. Do not place objects on the cords that may cause damage or abrasion.

**IS THERE ONE? ---->**
**IF SO, COMCODE,**
**PLEASE.**

- Use only the power supply (Comcode **xxxxxxxxx**) shipped with this product for the battery charger.

- Use only the auxiliary power supply (Comcode 108212952) specified for use with this product.

# Contents

## Contents

# **1** Introduction

## About the MDW 9040 Pocket Phone

The MDW 9040 Pocket Phone has been designed to work with Lucent Technologies communications systems including PARTNER®, MERLIN®, MERLIN MAGIX™ and DEFINITY® switches).

> IMPORTANT NOTE: The MDW 9040 is NOT backward compatible with other TransTalk systems; that is, it CANNOT be added to existing TransTalk systems or used in the same coverage area as the MDW 9000, MDW 9010, MDW 9030, or MDW 9031.

The MDW 9040 is different from its predecessors in several different ways:

- The base station to which the handset is connected is called a **Dual-Radio Module (or DRM)** because each module can support two handsets simultaneously.

- The DRM and the handset work together without a carrier backplane unit. The DRM itself can be placed on a flat surface such as a shelf or table or mounted on a wall.

- In the past, one base station was shipped from the factory together with a handset with the same serial code and registration number. Beginning with the MDW 9040, the DRM and the handset are packaged separately, and the customer will need to register each handset with the DRM with which it will communicate. Again, each DRM can communicate with two handsets.

### Privacy Information

The MDW 9040 Pocket Phone is designed to protect the privacy and security of your voice conversation. The phone uses continuously changing radio frequencies and digital encoding techniques to make it impossible for eavesdropping to occur through the use of commercially available analog radio scanners.

### Where Can You Use Your Pocket Phone?

The MDW 9040 Pocket Phone can be used in most typical office buildings, warehouses, malls, and even outdoor areas such as loading docks. *The location of the DRM greatly affects the performance of the MDW 9040. Read the "Positioning the DRM" section in Chapter 2 to determine the best place to install the DRM.* Repeat the tests several times with the DRM positioned in a different location each time. To perform the tests, all you need is an electrical outlet for the DRM and a charged battery pack in the handset.

## Parts List

As noted above, the handset and the DRM are packaged separately. The following items come in the box with these two pieces of equipment.

> **Note:** If it does not, call for customer support as described in the *Copyright and Legal Notices* at the beginning of this book.

The **handset** is packaged with the following:

- The handset
- A standard battery pack
- A belt clip
- A battery charger with wall-mountng light
- An 11-foot (3.4 meter) Power cord AC adapter for the battery charger
- An 8-foot (2.4 meter) Telephone line cord
- An 8-inch (0.5 meter) lanyard
- A user quick reference guide

The **DRM** is packaged with the following:

- The DRM
- 2 wall spacers
- This installation and user's manual

### Additional Parts

The following parts *may* be necessary, depending upon your installation.

> **Note:** This Kit of Parts **is required only when a single (stand-alone) MDW 9040 Pocket Phone is installed.**

- A Radio Module 11-foot (3.4 meter) Power cord AC adapter
- 4 Rubber feet
- 2 Philips Head Wood Screws
- A Wall mounting plate

For information about ordering additional or replacement parts, see Appendix D, "Ordering Replacement and Optional Parts."

## Spare Battery Pack and Headset

One nickel metal hydride battery pack, which provides up to three hours of talk time, comes with your MDW 9040 Pocket Phone. If you require additional phone usage, you can purchase an extended battery pack. Although thicker and heavier than the standard battery pack, the extended battery pack provides 8-9 hours of talk time when fully charged. You can store the extra battery pack in the spare battery compartment of the battery charger. Then, when the battery pack in the handset is low, you can switch battery packs.

To help you answer calls, an optional Supra® 9031 headset or a Radium (over-the-ear) headset can be attached to a quick-disconnect adapter cord, which you can insert into the connector on the bottom of the handset to allow hands-free conversation. For instructions for connecting the headset, see "Using a Headset" in Chapter 3.

For ordering information, see Appendix D, "Ordering Replacement and Optional Parts."

# $\mathbf{2}$ Installing and Registering the MDW 9040 Pocket Phone

## Overview

There are **three main steps** for installing your MDW 9040:

**1   Connecting the Dual-Radio Module (DRM) to the switch**
(Refer to the information below in the section titled, "Installation Procedures for the DRM.")

**2   Registering each handset to the appropriate DRM**
(Refer to the information in the section titled, "Setting Up and Registering the Handset" on .)

**1   Checking button mapping to coincide with the communications system to which the MDW 9040 is connected**
(Refer to the information in the section titled, "Mapping the MDW 9040 to the Correct Communications System" on .)

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**IMPORTANT NOTES BEFORE YOU BEGIN INSTALLATION:**
\* **Only one handset can be registered at a time.**

\* **There are two types of DRMs. Before you begin the installation procedures, be certain that you have the correct DRM. For PARTNER and MERLIN, there is an ETR- and ATL[1]-compatible DRM (PEC[2]: 3204-DRE); for the MERLIN MAGIX and the DEFINITY 2-wire DCP port card, there is a DCP- and TDL-compatible DRM (PEC[2]: 3204-DRD). See the table on the next page for more information on the two types of DRMs.**

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[1]**The ATL-interface does NOT support the DEFINITY Hybrid port card.**
[2] **Some Lucent Technologies equipment can be ordered with a Price Element Code (PEC). For more information on ordering additional or replacement equipment, see Chapter 4.**

## Installation Procedures for the DRM

There are three types of installation according to the needs of your wireless communications system.

• Installing a **single DRM for single-zone operation**, the simplest type of configuration; for information on this type of configuration, use the procedures on .

• Installing **multiple DRMs for single-zone operation**; for information on this type of configuration, use the procedures on .

**Note:**   A maximum of 15 DRMs can be connected and successfully synchronized together.

• Installing **multiple DRMs for dual-zone operation**; for information on this type of configuration, use the procedures on .

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Before you begin installation, please read the information on the Dual-Radio Module below, and on positioning the DRM on page 6.

**NOTE: For some installers, it may be more convenient to unpack the DRM and handset in the switch room, power up the DRM, and then register the handset prior to installing the DRM. For this procedure, refer to the introductory information and figures for the DRM on the next couple pages and then follow "A Quick Reference Procedure for Handset Registration" on page 9.**

## About the Dual Radio Module

Each **DRM can communicate with up to two handsets**. However, it is important to remember that only one handset can be registered at a time with its appropriate DRM.

**There are two types of DRMs.** The table below shows which type of DRM you should use.

| DRM SELECTION TABLE | | |
|---|---|---|
| **PEC of Compatible DRM** | **Switch Type** | **Switch Port Card** |
| **3204-DRE** | PARTNER | ETR |
| | MERLIN | ETR |
| | | ATL* |
| **3204-DRD** | MERLIN MAGIX | TDL |
| | DEFINITY | DCP (2-wire) |

**\* The ATL interface does NOT support the DEFINITY Hybrid port card.**

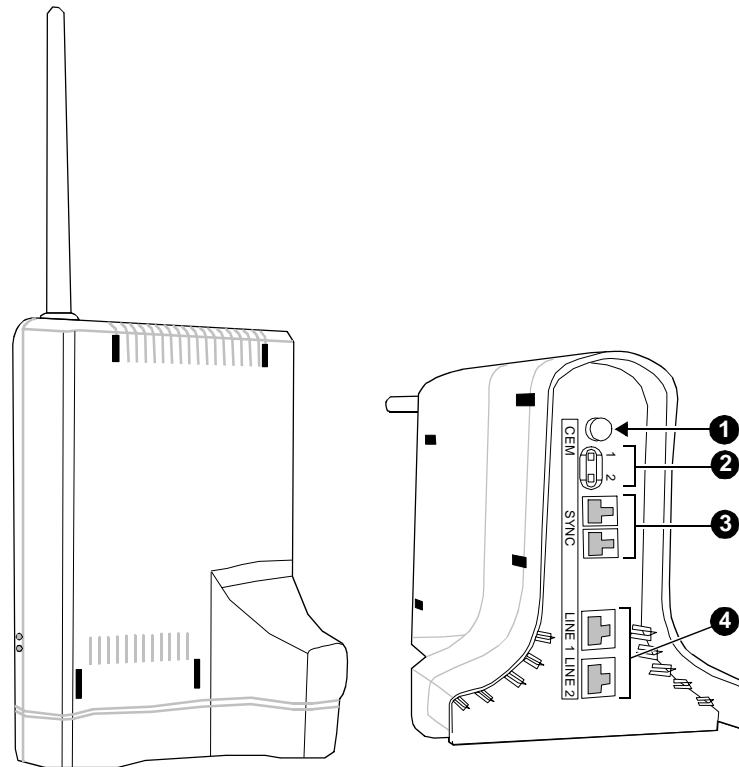The following figure shows the components of a typical DRM.



**Figure 1.    The Dual-Radio Module (DRM)**

**A Key to Figure 1, the DRM:**

The DRM can be wall-mounted using these keyholes on the back of the DRM (labeled as **1** in Figure 1). For procedures on wall-mounting the DRM, see the instructions on .

The external antenna (labeled **2**) and the internal diversity antenna (labeled **3**) are used to enhance signal strength for the MDW 9040.

The DRM has two LEDs on its side, the Power LED and the Control LED:

The green **Power LED** (labeled **4**) goes on steady to indicate that the DRM is receiving power and flashes to indicate that the handset connected to Line 1 is in Registration Mode.

The green **Control LED** (labeled **5**) goes on steady to indicate that this DRM controls other DRM(s) to which it is connected and flashes to indicate that the handset connected to Line 2 is in Registration Mode.

The circuitry of each DRM allows it to interface with two switch ports for communications, signaling, and power. It does this by using the following connections:

**6)** This jack is not used at the present time.

**7)** Before you use the MDW 9040 Pocket Phone, you must register each of the two handsets with the associated DRM. For the handset connected to LINE 1, press the

registration button labeled **1**; for the handset connected to LINE 2, press the registration button labeled **2**.

**8)** Each of these two jacks (labeled **SYNC**) connects two DRMs together forming inter-DRM synchronization.

**9)** These 8-pin RJ-45 line jacks (labeled **LINE 1** and **LINE 2**) allow connection of the DRM to the switch port interface.

**DRM Light Indications**

There are two LEDs on the bottom of the DRM: the System Power LED (labeled **Power**) and the Synchronization Controller LED (labeled **Control**). These LED indications have the following meanings:

| When this LED | is: | It indicates: |
|---|---|---|
| **The Power LED** | ON STEADY | The DRM is receiving power from the system. |
| | FLASHING | The DRM is in Registration or Wireless Test Mode *for Line 1*. |
| **The Control LED** | ON STEADY | This DRM is the synchronization controller; that is, this DRM is the "master" DRM. |
| | OFF | This DRM is not the synchronization controller; that is, it is synchronized to another DRM. |
| | FLASHING | The DRM is in Registration or Wireless Test Mode *for Line 2*. |

# Positioning a DRM

The DRMs for each zone of communication can be placed on a flat surface such as a desk or shelf OR mounted on the wall. Use the following rules for positioning a DRM in your system.

The range depends on your particular operating environment. For indoor use, walls between the handset and the radio module will reduce the phone's range. Avoid concentrations of structural metal, such as steel and aluminum, and reinforced concrete.

**General Positioning Rules**

**Failure to observe the following rules regarding location and use will result in poor performance of your MDW 9040 Pocket Phone.**

- The Synchronization cable connecting two DRMs is 20-inches long.

- However, for any other optional installation arrangements, the maximum cable length between DRMs **must not exceed 5 feet**.

**When will this D-Kit # be available? ---->**

**Note:**  For extending the intervals between DRMs beyond 40 feet, you will need **D-Kit #xxxxxxxx**. For ordering information, see Appendix D.

- When wall-mounting the DRM, place the DRM high on the wall for optimum voice quality and range. Allow 6–12 inches (15.2–30.5 cm) of space between the top of the antenna on the radio modules and the ceiling.

- DO NOT install the DRM above a drop or suspended ceiling.

- Do not locate the DRM within 3 feet (.9 m) of any large metal object, and be sure no metal objects are in the line of sight to the operating area of the handset.

- **Do not locate the DRM within 6 feet (1.8 m) – 10 feet (3 m) of equipment with microprocessors, such as answering machines, personal computers, and fax machines; control units, communications system switches, or other phones (especially speakerphones); competing radio devices such as wireless bar-code scanners; electromagnetic equipment such as electric motors; or electrical main power feeds, junction boxes, circuit-breaker panels, fuse boxes, or 220-volt power lines.**

- Be sure the DRM does not share the same power line as equipment with microprocessors such as answering machines, personal computers, and fax machines or electromagnetic equipment such as electric motors.

- Install a single DRM within 3 feet (0.9 m) of either side of, and within 6 to 8 feet (1.8 to 2.4 m) above, a properly grounded, 3-prong electrical outlet that is not controlled by an ON/OFF switch.

- You can install a single DRM in a remote location using a telephone line cord to connect the radio module to the communications system switch/control unit. **IROBs and an auxiliary power supply must be used for out-of-building installations.**

## Single-Zone and Dual-Zone Configuration

Multiple DRM units can be installed and configured for single- or dual-zone operation.

- In a single-zone configuration, all DRMs provide communication *to the same* area or zone.

- In a dual-zone configuration, two sets of DRMs share handsets that can be operated in two different areas. This type of operation requires two connections to the associated switch.

The customer, usually the system administrator, is responsible for registering the DRM with its two associated handsets. For single-zone operation, each handset must be registered to its associated DRM; each DRM can be registered with one or two handsets. For a handset being used in a dual-zone configuration, the handset must be registered to a DRM in each of the two zones.

## Auxiliary Power and Switch Wiring

The DRM connects to an associated switch through a switch port. Normally, a DRM is powered through one or both of its switch port interfaces. However, there may be occasions when an auxiliary power supply may be required.

With 24-gauge wire, the maximum loop length of a DRM connected with a PARTNER or MERLIN system is 1,000 feet. When the DRM is connected with a MERLIN MAGIX or DEFINITY system, the maximum loop length is 2,000 feet.

However, with auxiliary power, DRMs connected to these systems will have a maximum loop length of 3,000 feet.

The following auxiliary power supplies are preferred: The 1151A1 Power Supply (PEC: 2404-010A; Comcode: 108212952) or the 1151A2 Power Supply with Battery Holdover (PEC: 2404-012A; Comcode: 108212960).

**Note:** If you are using an auxiliary power supply, the MDW 9040 Pocket Phone has a built-in testing feature that you can use before final installation to help determine proper placement of the radio module. To perform the tests, all you need is an electrical outlet for the DRM and a charged battery pack in the handset (you do not need a communications system switch or control unit). The tests are described in "Wireless Test Mode" in Chapter 3.

If your installation requires customized wiring, the wiring technician should match the Pin numbers with the switch interfaces as shown in the following table.

1 2 3 4 5 6 7 8
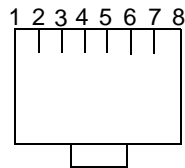
**View of Line Jack
(with DRM upside down)**

| DRM Jack Pin # | SWITCH TYPE AND DRM PEC CODE | | | |
|---|---|---|---|---|
| | **PARTNER 3204-DRE** | **MERLIN 3204-DRE** | **DEFINITY 3204-DRD** | **MERLIN MAGIX 3204-DRD** |
| **1** | – | Control Tip | – | – |
| **2** | – | Control Ring | – | – |
| **3** | Control Tip | Line Power Pos. | – | Aux. Power Neg. |
| **4** | Voice Ring | Voice Ring | Ring | Ring |
| **5** | Voice Tip | Voice Tip | Tip | Tip |
| **6** | Control Ring | Line Power Neg. | – | Aux. Power Neg. |
| **7** | Aux. Power Neg. | Aux. Power Neg. | Aux. Power Neg. | Aux. Power Neg. |
| **8** | Aux. Power Pos. | Aux. Power Pos. | Aux. Power Pos. | Aux. Power Pos. |

*Table title: DRM LINE 1 and LINE 2 JACK WIRING*

**\* The ATL interface does NOT support the DEFINITY Hybrid port card.**

**Note:** A DRM used with in an MDW 9040 Wireless Phone will NOT support a Tip/Ring interface.

## A Quick Reference Procedure for Handset Registration

**Refer to Figure 1 on page 6 (the main features on the DRM) as you complete the procedural steps listed below.**

**STEP 1:** Use the D8W cord to connect the DRM Line jack (either Line **1** or Line **2**) to the desired switch port.

**STEP 2:** Attach a fresh battery to the handset. At power-up, a new handset (never registered before) shows the following screen:

```
              REGISTRATION
         Zone 1
         Zone 2
         Reg    Unreg
```

Otherwise, use the handset Menu and the double-harrowed Select Row buttons to select the REGISTRATION screen under the CONFIG. option.

**STEP 3:** With your fingernail, press the Handset Registration activation button on the DRM (for either Line **1** or Line **2**) associated with the switch port extension on the handset. The corresponding DRM LED will flash to indicate that the DRM is ready for handset registration. (If the LED does not flash, see Chapter 4, "Troubleshooting."

**STEP 4:** Press the softkey below **Reg** on the handset display to complete the registration process. The handset display should indicate a successful completion and the DRM LED should stop flashing.

## Installing a Single DRM for Single-Zone Operation

**Installing the DRM on a Desk or Shelf**

To install a single DRM on a desk or shelf:

**1** Remove the DRM from its shipping box and place it in the location specified by the customer or use the wall-mounting template (provided on the last page of this book).

**2** For the first handset to be connected to the DRM, connect a 14-foot D8W line cable to **Line 1** on the DRM and then connect the other end of the cable to a switch port at the main system. If a second handset is to be connected to the DRM, connect another line cable to **Line 2** on the DRM and then connect the other end of that cable to another switch port.

**Note:**   If the DRM cannot be connected to an associated switch, the DRM can be temporarily connected to an auxiliary power supply that can provide electrical power.

**3** Verify that the DRM has power and that the status LED information is correct. See **DRM Light Indications**.

**4** Proceed to "Setting Up and Registering the Handset" on .

**Installing the DRM on the Wall**

To wall-mount a DRM:

**1** Place the DRM's wall-mounting template (located on the last page of this book) against the wall. Choose a location backed by a wooden stud (if unavailable, use toggle bolts instead of the supplied wood screws). Hold the template straight; use a level if needed.

**Figure 2.    DRM Wall-Mounting Template**

**2** Mark the locations for the two wall-mounting screws, and then remove the template from the wall. Lightly tap a nail into the wall to start the holes.

**3** Place the wall bracket against the wall, and align the screw holes on the wall bracket with the holes that you have marked on the wall. Start the screws, and screw them in until the wall bracket rests flush against the wall.
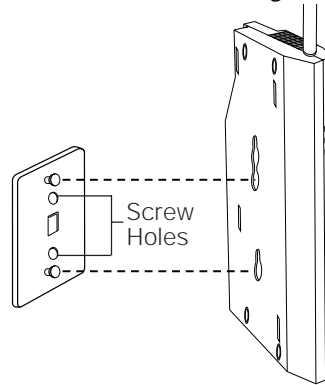
Screw
Holes

**Figure 3.    Wall-Mounting the DRM**

**4** Place the keyhole-shaped openings on the back of the DRM over the screw heads, then slide the DRM downward until it locks into place.

**5** Follow Steps 2 through 4 in **Installing the DRM on a Desk or Shelf** on the previous page.

## Installing Multiple DRMs for Single-Zone Operation

Two or more DRMs must be connected so that their transmission and reception signals will be synchronized. In this way, the signals transmitted to or received by one DRM will not interfere with another. This synchronization can be done in a single-zone or a dual-zone configuration.

**Synchronization**      When two or more DRMs are connected, one DRM shall be deemed the "Control" DRM since it is administered to control the synchronization for all of the other DRMs to which it is connected; that is, when the "Control" DRM is transmitting or receiving signals, the other DRMs connected to it transmit or receive signals at the same time.

**Note:**    When connected to a DEFINITY switch, a maximum of 15 DRMs can be connected and successfully synchronized together; within this configuration there can be a maximum of 30 handsets.
When connected to a PARTNER switch, a maximum of 9 DRMS can be connected and synchronized together; within this configuration there can be a maximum of 18 handsets.

The following is a diagram showing three DRM units operating in a single-zone configuration providing six handsets with the appropriate switch interface.

**Figure 4.    Three DRMs Connected and In Sync**

To install multiple DRMs for single-zone operation:

  **1**  Remove each DRM from its shipping box and place it in the location specified by the customer or use the wall-mounting template (provided on the last page of this book). To wall-mount the DRM, see the instructions for wall-mounting on page 10.

  **2**  For the first handset to be connected to the DRM, connect a 14-foot D8W line cable to **Line 1** on the DRM and then connect the other end of the cable to a switch port at the main system. If a second handset is to be connected to the DRM, connect another line cable to **Line 2** on the DRM and then connect the other end of that cable to another switch port.

  **Note:**    If the DRM cannot be connected to an associated switch, the DRM can be temporarily connected to an auxiliary power supply that can provide electrical power.

  **3**  Repeat Steps 1 and 2 for each DRM and handset combination in this configuration.

  **4**  To daisy chain two or more DRMs, plug a 20-inch synchronization cord from the Sync jack on one DRM to the Sync jack on the other DRM.

  > **IMPORTANT NOTE: When two or more DRMs are synchronized, only one DRM should have the CONTROL LED lit.**

  **5**  Verify that the DRM has power and that the status LED information is correct. See **DRM Light Indications**.

  **6**  Proceed to "Setting Up and Registering the Handset" on page 13.

## Installing Multiple DRMs in a Dual-Zone Configuration

To install multiple DRMs for single-zone operation:

1 Remove each DRM from its shipping box and place it in the location specified by the customer or use the wall-mounting template (provided on the last page of this book). To wall-mount the DRM, see the instructions for wall-mounting on .

2 For the first handset to be connected to the DRM, connect a 14-foot D8W line cable to **Line 1** on the DRM and then connect the other end of the cable to a switch port at the main system. If a second handset is to be connected to the DRM, connect another line cable to **Line 2** on the DRM and then connect the other end of that cable to another switch port.

**Note:** If the DRM cannot be connected to an associated switch, the DRM can be temporarily connected to an auxiliary power supply that can provide electrical power.

3 Repeat Steps 1 and 2 for each DRM and handset combination in this configuration.

4 To daisy-chain two or more DRMs, plug a 20-inch synchronization cord from the Sync jack on one DRM to the Sync jack on the other DRM.

> **IMPORTANT NOTE: When two or more DRMs are synchronized, only one DRM should have the CONTROL LED lit.**

5 Verify that the DRM has power and that the status LED information is correct. See **DRM Light Indications**.

6 Proceed to "Setting Up and Registering the Handset" below.

# Setting Up and Registering the Handset

Before you begin using your telephone, you must:

1 Insert the battery pack into the handset

2 Register the handset with the correct DRM(s).

**Note:** The handset and DRM can be registered in a single- or a dual-zone configuration.

For a detailed description of the handset and its features, see Chapter 3. There, you will find a drawing of the handset with a description of the features, and procedures for configuring and using your telephone, as well as directions for performing a Local and a Wireless Test of the handset.

## Inserting the Handset's Battery Pack

Before you register the handset with the DRM, you must insert the battery pack in the handset. The following explains how to install the handset battery pack.

**Note:** For instructions on inserting a battery pack in the spare battery compartment, refer to the procedures listed on .

**Inserting the Battery Pack**

To insert the battery pack into the handset:

**1** Insert the two small rectangular tabs located along the bottom back edge of the handset into the two rectangular holes along the bottom front edge of the battery pack.
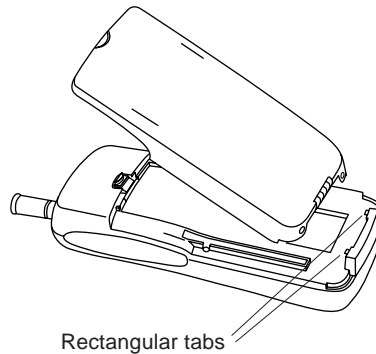


Rectangular tabs

**Figure 5.    Inserting the Battery Pack into the Handset**

**2** Press the battery pack downward until it clicks into place.

**The battery pack must be charged prior to using the handset.** See "Battery Charger" later in this chapter for instructions.

**3** To remove the battery pack, slide the spring latch upward (away from the battery pack). Then, grasp both sides of the battery pack and gently pull the battery pack upward and out.
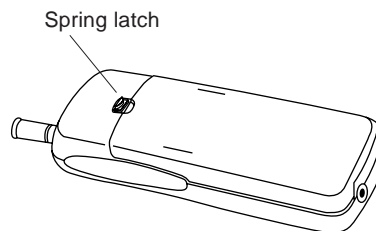
Spring latch



**Figure 6.    The Location of the Spring-Latch on the Handset**

## Performing the Registration

**The Registration Security Feature**

If one of the following registration restrictions occurs, registration between the handset and the DRM *cannot* proceed.

- The base is not in the registration mode.

- The handset and the base have an established RF link.

- The associated switch port is off-hook.

- The associated switch is sending the handset messages.

- The DRM is already registered to another handset which is in range.

**Registering a Handset and a DRM**

To register your telephone with each DRM to which it will be connected:

> **IMPORTANT NOTES: Between Step 2 (entering Registration Mode on the handset) and Step 3 (pressing the Registration button on the DRM) in the procedure described on the next page, there is a 5-minute time limit. If no further action is taken during this span of time, the DRM will time out, and you must start the registration process again.**
>
> **The DRM will NOT allow the registration process if there is anything preventing registration such as the DRM is actively communicating a previously registered handset. For more information about these restrictions, see "The Registration Security Feature" on the previous page.**

1  Signal the DRM that registration is about to start by pressing the Registration button on the DRM corresponding to the line (**1** or **2**) to which the handset will be registered.

> IMPORTANT NOTE: At power-up, a new handset (never been registered before), immediately shows the Registration screen:
>
> **REGISTRATION**
> Zone 1
> Zone 2
> Reg      UnReg
>
> Then, do one of the following:
> * If this IS a registration for a new handset and the above display screen appears on your handset display, proceed to Step 5.
>
> * If this display screen does not appear or if this registration procedure is NOT for a new handset, you must use the Menu button to enter Menu Mode. Begin with Step 2 below.

2  At the handset, press (Menu).
   *The initial Menu screen is displayed.*

3  Press (☖) to move the arrow to the right of the selected option to **Configuration** and then press the softkey below **Sel**.
   *The initial Configuration Menu screen (**Option**) is displayed.*

4  Press (☖) to move the arrow to **Registration** and then press the softkey below **Sel.**
   *The Registration screen (**Zone 1** and **Zone 2**) is displayed. The current zone setting, if any, is flashing.*

**5** Do one of the following:

~ For single-zone operation, move the arrow to whichever zone (**Zone 1** or **Zone 2**) the handset will be used and then press the softkey below **Reg**. The following occurs:

- The selected DRM makes checks regarding the handset registration request.
- If there are no unexpected conditions, the associated base module and handset communicate using special link-up signaling
- The handset displays a "Registration Complete" message to the user.

~ For dual-zone operation, move the arrow to whichever zone (**Zone 1**or **Zone 2**) it will be used with this DRM and then press the softkey below **Reg.**

In the future, you will need to register the handset with the other DRM with which it will be associated.

- The second DRM makes checks regarding the handset registration request.
- If there are no unexpected conditions, the associated base module and handset communicate using special link-up signaling
- The handset displays a "Registration Completed" message to the user.

The LEDs on the DRM have the following meaning:

| | |
|---|---|
| Flashing **Power** LED | Handset is in Registration Mode for Line 1 |
| Flashing **Control** LED | Handset is in Registration Mode for Line 2 |

**6** To exit any screen and move back to the previous screen **OR** if you do not want to make any changes at this time, press the softkey below **Exit**.

**7** Proceed to the instructions in the section titled "Mapping the MDW 9040 to the Correct Communications System."

**Removing Registration Between a Handset and a DRM**

To eliminate a registration between handset and DRM:

**1** Follow Steps 1 through 6 of the registration procedure above.

**2** At the Registration screen (**Zone 1** and **Zone 2**), press the softkey below **UnReg**.

# Mapping the MDW 9040 to the Correct Communications System

The communications system you use determines what information the MDW 9040 Pocket Phone can display and how the phone lines and programmable/intercom/drop buttons are identified. (For a detailed description of Button Mapping," see the appropriate "Button Mapping" topics in the "MDW 9040 Compatibility" section in Chapter 5.)

**Reacting to the Button Mapping Display Screens**

During the registration process between the handset and the DRM, the handset notes the type of DRM to which it is connected (either a DRM-D or a DRM-E). When your handset has been successfully registered, a message appears on the screen informing

you to which communications system your handset has been mapped. The table below lists the default switch interfaces for each DRM type.

| If your handset has been registered to this type of DRM: | and the Switch Protocol Is: | The *Default* Switch Interface Is: |
|---|---|---|
| DRM-D | DCP | DEFINITY |
| DRM-D | TDL | MERLIN MAGIX |
| DRM-E | ATL | MERLIN (other) |
| **NOTE:** If the Switch Interface should be MERLIN (410/820), see procedures on the next page. | | |
| DRM-E | ETR | PARTNER |
| **NOTE:** If the Switch Interface should be MERLIN (other), see procedures on the next page. | | |

As indicated in the table above, use the procedures on the next page if the switch interface for your handset is not correct.

**1** Press (Menu) to enter Menu Mode.

**2** Press the Select-Row ((△)) button until the arrow is to the right of **Configuration** and then press the softkey below **Sel**.

**3** At the initial Configure Mode screen, press the softkey below **More**.

**4** Press (△) until the arrow is to the right of **Button Map** and then press the softkey below **Sel**.

**5** From the Button Map screens, choose **Partner**, or **Definity**, or **Merlin (410/820)**, or **Merlin (other)**. When the arrow is to the right of the correct switch interface, press the softkey below **Sel**.

## Filling Out the Handset Label

Once you have checked to make sure that the MDW 9040 is mapped to the correct communications system, fill out the handset label on the back of the handset.

**Note:** The MDW 9040 display shows the status of up to 12 lines or programmable/intercom/drop buttons. Since the MDW 9040 is compatible with several different communications systems, diagrams of the button mappings for these systems are provided in Chapter 5.

The MDW 9040 has a label on the back of the handset near the top where you can record:

- Your extension number.

- The mapping of your MDW 9040 line buttons to those on a wired phone for your communications system.

IMPORTANT NOTE: Before filling out the handset label, read
these notes.
* Use a pencil or ballpoint pen on the label, in case you want to
  erase the information later.
* DO NOT use felt-tip or other types of non-erasable markers.

* Also, DO NOT remove the label. Leave it on the back of
  the handset.
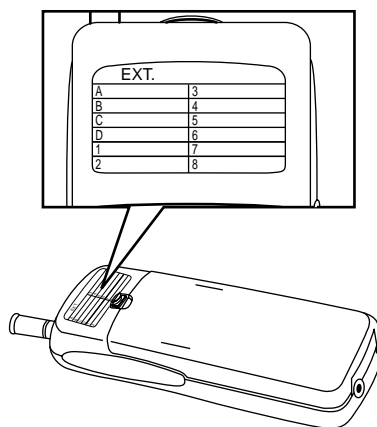


**Figure 7.    The Handset Label**

To fill out the handset label:

**1**  Write your extension number on the label.

**2**  Locate the section in Chapter 5 that describes the button mapping for your
communications system; then copy the mapping to the label for ease of reference.

# Other Handset Configuration Options

Before using your handset and its display, you may also wish to do the following:

- Choose the **Language** in which the display message will appear. For more
  information about choosing the language for all messages, see Chapter 3.

- Select the **Display Message Length** (1 or 2 lines). For more information about
  selecting message length, see Chapter 3.

# Installing and Using the Battery Charger

The battery quick charger charges battery packs in both the spare battery compartment and in the handset when the handset is placed into the handset cradle. If both are present at the same time, charging in the spare battery compartment is suspended until the battery pack in the handset is fully charged.

**Note:**    Do not touch, push, or pull any exposed battery contacts.
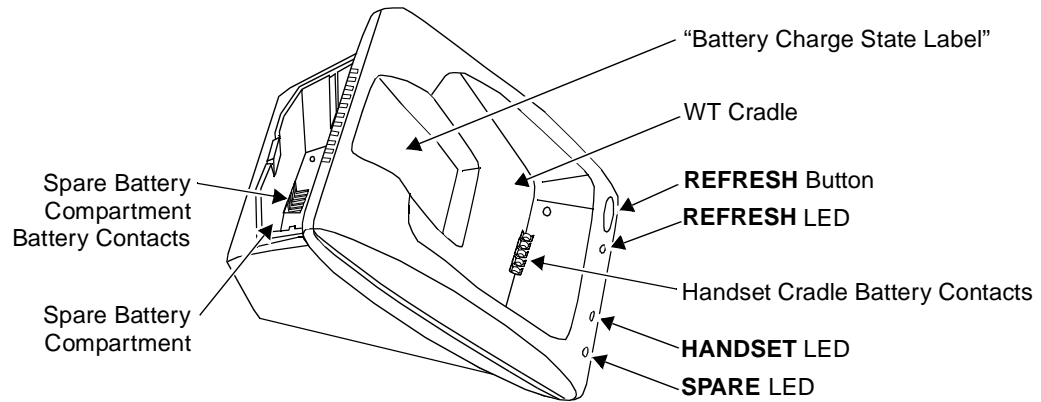


**Figure 8.**    **The Battery Charger**

## Battery Charger Features

The battery charger offers these features:

- The **Spare battery compartment** refreshes the battery pack automatically by fully *discharging* it before *recharging* it. This process reduces or eliminates the potential "memory" effect. Memory effect, which reduces a battery's capacity, occurs over time when you repeatedly recharge a battery before it is fully discharged.

- The **handset cradle** charges a battery pack in the handset.

- The **REFRESH button**, when pressed, refreshes the handset battery pack in the handset cradle by fully *discharging* the battery pack before *recharging* it.

- The **REFRESH** and the **HANDSET LEDs** go on when the **REFRESH** button is pressed and stay lit until the battery pack finishes *discharging*.

- The **HANDSET LED**, when lit, indicates that the handset battery pack is installed in the handset, and the handset is in the handset cradle.

- The **SPARE LED**, when lit, indicates that a battery pack is in the Spare battery compartment.

**Note:**    Before you use the MDW 9040 Pocket Phone handset for the first time, the battery pack must be charged.

The color of the battery charger's LEDs indicates the state of the corresponding battery pack, as shown in the following table:

| Battery Charger LED State | for the SPARE Battery Status LED | for the HANDSET Battery Status LED | for the REFRESH Status LED |
|---|---|---|---|
| Steady orange | Battery is charging | Battery is charging | N/A |
| Steady green | Battery is fully charged | Battery is fully charged | N/A |
| Flashing red See Note below. | Battery has one of the following problems: Is not seated properly in the charger Has dirty contacts Is defective | Battery has one of the following problems: Is not seated properly in the charger Has dirty contacts Is defective | N/A |
| Steady red | Battery is in the Discharge portion of the Refresh cycle. | Battery is in the Discharge portion of the Refresh cycle. | Battery is in the Discharge portion of the Refresh cycle. |
| **Note:** | If either the SPARE LED or the HANDSET LED is flashing red, both battery packs must be removed from the charger to clear the flashing-red condition. Address the possible problems for one battery pack at a time to determine whether one is bad. | | |

## Positioning the Battery Charger

Before you install the battery charger, note the following considerations:

**Note:**  The battery charger can be placed on a desk, or it can be mounted on a wall.

- Locate the battery charger within 5 feet (1.6 m) of a properly wired electrical outlet that is not controlled by an On/Off switch.

- If your communications system uses an uninterruptible power supply, such as a backup generator, you may want to connect the battery charger to that power supply.

- Do not locate the battery charger where it will be exposed to direct sunlight or water.

⚠ **WARNING:**
**The rechargeable battery pack may contain elements that are harmful to the environment (for example, nickel). Do not burn or puncture the battery. As with other batteries of this type, burning or puncturing could release toxic material that could cause injury. Do not dispose of it in household garbage. For information about recycling or proper disposal, consult your local solid waste (garbage) collection or disposal organization.**

## Installing the Battery Charger

- If you are wall-mounting the battery charger, follow Steps 1 through 7.

- If you are desk-mounting the battery charger, follow only Steps 1, 5, and 7.

To install the battery charger:

1 Check to make sure the battery charger's power cord is unplugged from the wall outlet before continuing. If you are desk-mounting, skip to Step 5.

2 To wall-mount, place the battery charger's wall-mounting template (located on the last page of this book) against the wall. Choose a location backed by a wooden stud (if unavailable, use toggle bolts instead of the supplied wood screws). Hold the template straight; use a level if needed.

3 Mark the locations for the two wall-mounting screws, and then remove the template from the wall. Lightly tap a nail into the wall to start the holes.

4 Place the screw through the wall spacers so that the screw head nests in the indentation on the spacer. Start the screws, and screw them in until the wall spacers rest against the wall.

5 Insert the battery charger's power cord/AC adapter into the battery charger. If you are desk-mounting the battery charger, skip to Step 7.

6 Place the keyhole-shaped openings in the back of the battery charger over the screw heads and wall spacers, then slide the battery charger downward into the groove in the wall spacers to lock it into place.

7 Plug the battery charger's power cord/AC adapter into a properly grounded, 3-prong wall outlet that is not controlled by an On/Off switch.

## Inserting the Handset into the Battery Charger's Handset Cradle

**Positioning and Inserting the Handset**

Correct positioning of the handset in the charger is important to ensure proper charging:

1 Position the handset (with either battery pack attached) so that the two small round holes in the bottom of the handset fit over the two guide pins on the bottom of the handset cradle.

2 Rock the handset back into the cradle until it is firmly seated with the back of the handset battery pack against the back of the handset cradle.

When the handset has been inserted correctly, the following occur:

- The **HANDSET** Battery Status LED lights.

- If the handset is placed off-hook, the **OFF-HOOK** icon in the display is no longer visible.

- Any call that was in progress is terminated.

- After 15 seconds, the handset enters the energy-saving "sleep" mode.

HANDSET LED

Guide Pins
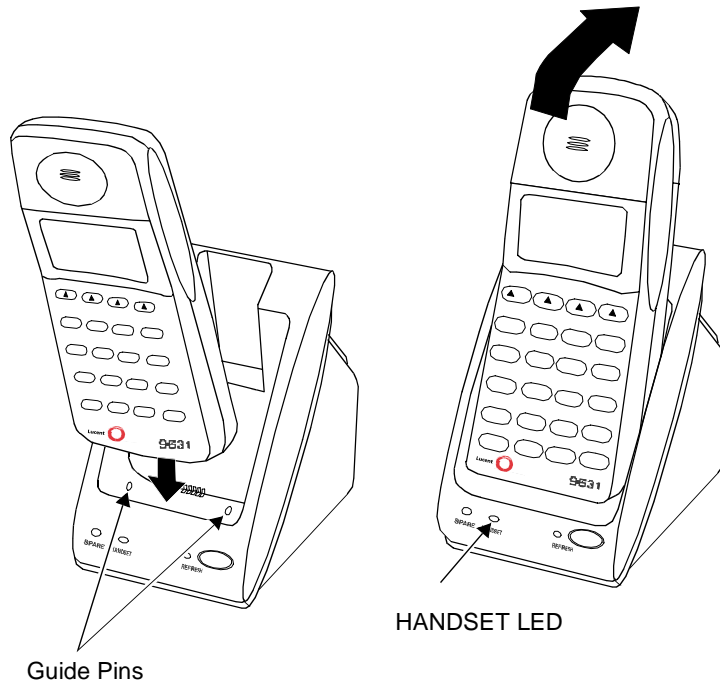
**Figure 9.    Inserting the Handset into the Battery Charger**

**Removing the Handset from the Handset Cradle**    To remove the handset from the handset cradle, lift it out.

## Extending Battery Life

The battery charger will charge a battery pack in the handset if you simply insert the handset in the battery charger's handset cradle; however, the Refresh process fully discharges the battery pack before recharging it, thereby ensuring the best possible charge and the longest talk time. For more information about the battery charger, see the next section, **Positioning and Installing the Battery Charger**.

"Memory effect" reduces a battery's capacity and can occur when you repeatedly recharge a battery pack before it is fully discharged. The nickel metal hydride battery pack shipped with your MDW 9040 is resistant to the memory effect. Even so, it is recommended that you refresh your battery pack at least once a week.

The following table shows how long refreshing takes, depending on how much charge is left in the battery pack when you insert it into the charger and press the **REFRESH** button:

| Battery Pack | Battery-Pack Charge State | Average Discharge Time | Average Recharge Time | Average Total Time |
|---|---|---|---|---|
| Standard Battery Pack | Low charge (**Battery** icon is lit) | 0.5 hours | 1.25 hour | 1.75 hours |
| | Full charge | 3 hours | 1.25 hour | 4.25 hours |
| Extended Battery Pack | Low charge (**Battery** icon is lit) | 0.5 hours | 3.25 hours | 3.75 hours |
| | Full charge | 8 hours | 3.75 hours | 11.75 hours |

Note that your handset will consume power both during talk time (when the handset is turned on) and during standby time (when the handset is turned off, but out of the battery charger). The following chart illustrates typical power usage:

| Battery Use at Full Charge | | |
|---|---|---|
| **Type** | **Approximate Talk Time** | **Approximate Standby Time** |
| Standard Battery Pack | 3 hours | 22 hours |
| Extended Battery Pack | 8 hours | 72 hours |

As a guideline, you can expect a 1-hour reduction in talk time for every 7 hours of standby time. Similarly, you can expect a 7-hour reduction in standby time for every hour of talk time.

The following steps will ensure an uninterrupted supply of power to your MDW 9040 Pocket Phone:

- If you have only one battery pack, be sure to refresh it at least once a month. You can refresh it by:

  ~ Placing it in the Spare battery compartment of the battery charger.

  ~ Leaving it in the handset, placing the handset in the handset cradle of the battery charger, and pressing the **REFRESH** button.

- If you have two battery packs, exchange the packs between the handset and the Spare battery compartment at least once a week, so that each battery pack is automatically refreshed. (Alternate the battery packs even if the handset battery never flashes the **Battery** icon in the handset display to indicate a low battery condition.)

- The average battery life for both the standard and the extended battery packs is approximately one year, assuming that the battery is discharged and charged once a day. If the battery packs are discharged and charged twice a day, the life expectancy is approximately six months.

**Note:**  Depending on the level of memory effect that the battery pack has, it is sometimes necessary to refresh the battery pack two or more times:

  ~ Insert the battery pack in the Spare battery compartment of the battery charger and leave it there until the SPARE LED is steady green. Remove the battery pack from the charger, then reinsert it, and leave it until the SPARE LED is steady green a second time.

  ~ **OR,** with the battery pack in the handset, insert the handset in the handset cradle, press REFRESH, and leave it there until the HANDSET LED is steady green. Remove the handset from the handset cradle, then reinsert it, press REFRESH again, and leave it until the HANDSET LED is steady green a second time.

# Inserting a Battery Pack into the Spare Battery Compartment

**Inserting the Battery Pack**

Slide the battery pack (or an optional extended battery pack) into the spare battery compartment until it is firmly seated, that is, with the back of the battery pack against the back of the Spare battery compartment. **Do not force the battery pack down**.

The Spare battery compartment has a vertical ridge on each side that serves as a "guide rail" for positioning the standard battery pack.
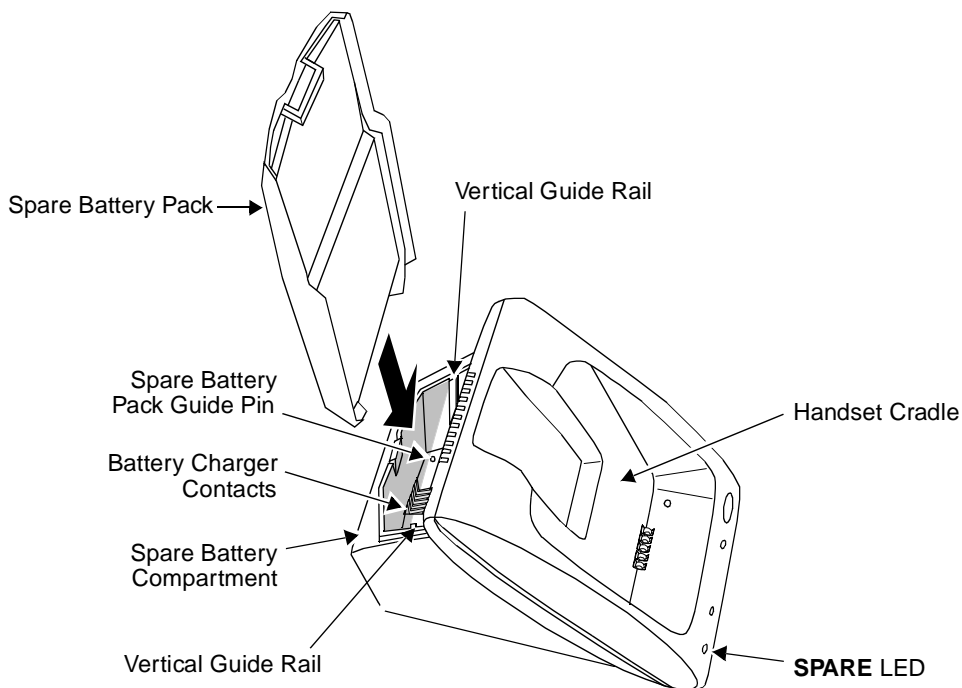
**Figure 10.  Inserting Battery Pack Into Spare Battery Compartment**

**Removing a Battery Pack from the Spare Battery Compartment**

To remove a battery pack from the Spare battery compartment of the charger, lift the battery pack up and out.

# 3 Using the MDW 9040 Pocket Phone

## Important Safety Instructions
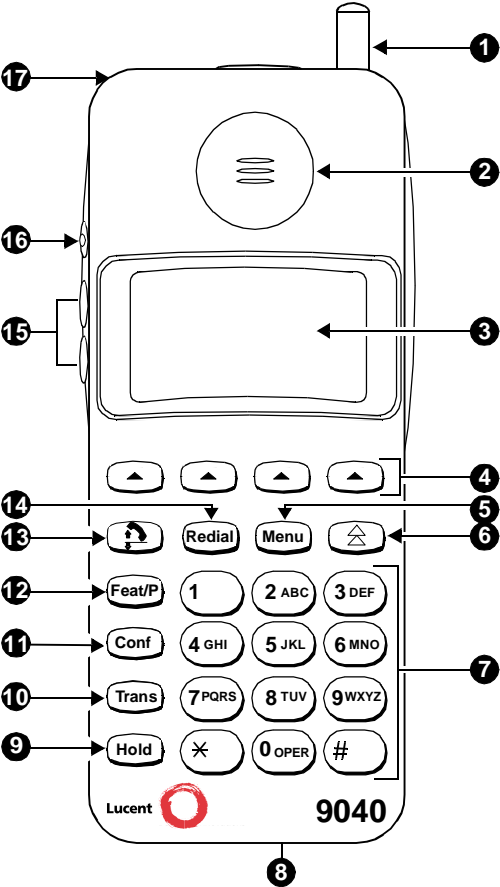
Please see "Important Safety Instructions" provided at the beginning of this manual.

## About the Handset

The MDW 9040 Pocket Phone supports normal operation of all of the features of the switch as far as is practical within the limitations of its reduced size and power and the nature of wireless operation. There are very few differences in operation between the wireless MDW 9040 Pocket Phone and a wired deskset.

This chapter describes the handset and how to use it. It also explains how to use a headset.

## Handset Features

| | |
|---|---|
| <br><br>**Figure 11. The MDW 9040 Wireless Phone** | **1 Antenna** — Extend fully or retract fully to use handset. Extend fully to maximize the handset range and voice quality. |
| | **2 Receiver** — Receives the sound of your caller's voice, unless a headset is connected. |
| | **3 Handset Display with Backlighting** — Displays status of lines and range as well as system and local programming messages. For a detailed description, see "Handset Display" on the next page. |
| | **4 Four Softkeys/Column buttons** — Use together with Select button to choose a line or programmable/intercom/drop button. |
| | **5 Menu button** — Press to enter Menu Mode. |
| | **6 Select-Row button** — Use to move the Select-Row pointer, and, together with the Column buttons, to choose a line or programmable/intercom/drop button. Also used to "wake-up" the phone. |
| | **7 Dial pad** — The usual 12-button dial pad for placing calls or accessing features. |
| | **8 Headset Connector** — Plug in the headset adapter to use the headset. |
| | **9 Hold** — Press to put a call on hold. |
| | **10 Trans** — Press to transfer a call to another extension. |
| | **11 Conf** — Press to conference in (add) another person to your call. |
| | **12 Feat/P (Feature/Program)** — Press to access switch-dependent features or to enter Programming Mode. |

| | |
|---|---|
| **13** **(On/Off)** — Press to turn the handset on. ON appears in handset display. To turn off, press again. Turn on to place or answer a call, and turn off to "hang up." |
| **14 Redial button** — Press to redial the last number manually dialed from the handset. |
| **15 Volume control** — Press "**+**" to increase or "**-**" to decrease the volume of the receiver or alerter. |
| **16 Mute button** — Press to turn the handset microphone off for privacy. |
| **17 Lanyard Loop** — Attach an (optional) lanyard for carrying the handset. |

## The Handset Display

The MDW 9040 Pocket Phone display has one line of icons and four alphanumeric-character lines (up to 16 digits and/or characters on each line) to provide you with status information and programming options. The

MDW 9040 display also provides Backlighting so that you can read your display in poorly-lit environments. You can choose to turn on the Backlighting feature or turn it off as well as select the amount of time the feature is on. The following default screen appears initially on the handset display.
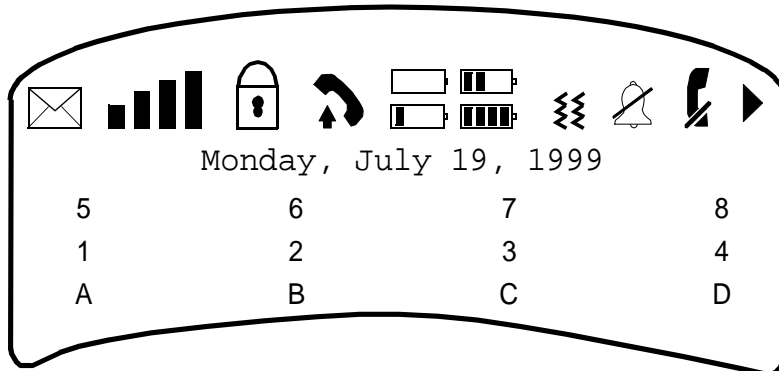


**Figure 12.  The MDW 9040 Display**

- **The top row of the display** shows status icons. The following list describes the meaning of each icon (from left to right).
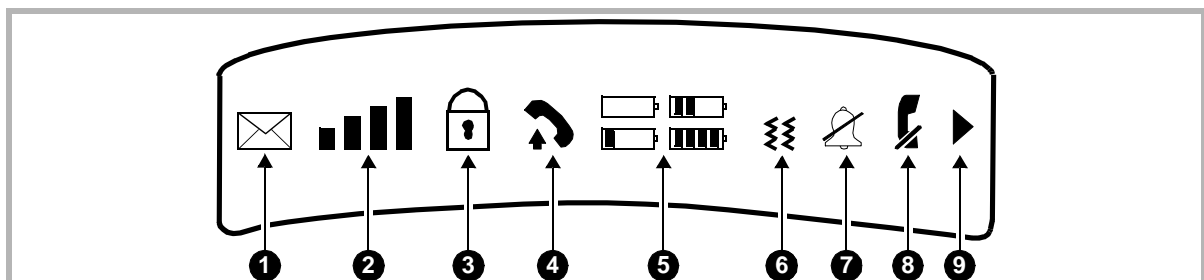


**Figure 13.  The Top Row of the Display Showing the Handset Icons**

**1** The **Message** icon ( ⊠ ) lights when you have a message.

**2** The **Radio Frequency (RF) Signal Level** icon ( ▮▮▮▮ ) is divided into four bars to show the radio frequency signal strength.

**3** The **Handset Off-Hook Status** icon ( ↰ ) lights when the handset or the headset is off-hook.

**4** The **Battery Charge Level** icon ( ▮▮▮▮ ) is divided into four sections to show the remaining battery life. For more information, see "Low Battery Indicator" later in this chapter.

**5** The **Vibrator Status** icon ( ⌇⌇ ) lights when the vibrator has been activated.

**6** The **Ringer Status** or **No Ring** icon ( ⌀ ) lights when the alerter is disabled. If the alerter is enabled, no icon is displayed.

**7** The **Speaker Mute Status** icon ( ⌿ ) lights when the handset or headset microphone has been turned off by pressing the Mute button on the side of the handset.

**8** The **More Options Available** icon ( ▶ ) lights when there are more options that are available.

- **The second and third rows of the display** shows the information you would see on the top line of a wired system phone's display. The information varies according to which communications system you are using. For example, the

display may show the current date, the number you are calling, or caller ID information (if the system supports this feature). This display line is also used for feedback when testing and programming the handset.

**Note:**   When the MDW 9040 is shipped from the factory, it is set for a 2-line display. (See the default display screen on the previous page.) However, the display message length can be changed to 1-line if so desired. If you choose 1-line of information for your display, four additional programmable buttons appear on the third line of the display.

• **The fourth and fifth rows on the display** show the line or programmable/intercom/drop buttons. Line Status indicators, such as a triangle or a square next to the line you are using or to which you will be connected once you turn on the phone are discussed in **Line Status Indicators** in the next section. For more information about button-mapping, see Chapter 6.

**Note:**   When the display is blank, the handset is either turned off or in the power-saving "sleep" mode. You can activate the display and Backlighting (if programmed) by pressing ( 🔄 ) to "wake up" the handset and go off-hook, or by pressing ( ⌃ ), **Menu**, or the volume buttons (labeled "**+**" and "**-**" on the side of the handset) to "wake it up."

**Line Status Indicators**   There are up to 12 status indicators (**1 through 8**, **A through D**). See Figure 2. Each one corresponds to a specific outside line or programmable/intercom/drop button. (The function of these status indicators varies, depending on the communications system you are using — see the Button Mapping topic for the appropriate communications system switch in Chapter 6, "MDW 9040 Pocket Phone Compatibility.") The status indicators show either a triangle (◀) or a rectangle (▮), signifying the following activity:

**Note:**   All line status indicators time out after approximately 10 seconds if the handset is on-hook. When time-out occurs, the handset goes into the energy-saving "sleep mode."

**For PARTNER Systems:**

A **triangle** (◀) showing line status is the equivalent of a green LED on a wired system phone.

A **rectangle** (▮) showing line status is the equivalent of a red LED on a wired system phone.

**For all other Systems:**

A **rectangle** (▮) showing line status is the equivalent of a green LED on a wired system phone.

A **triangle** (◀) showing line status the equivalent of a red LED on a wired system phone.

**The Select-Row Button and the Column Buttons**

The MDW 9040 Pocket Phone can display the status of up to 12 lines/intercom/programmable buttons, but the number of lines supported by compatible communications system switches varies.

**Use the Select-Row (⟨⟐⟩) button** to move the pointer (arrow on the right side of the display) up one row. The pointer moves to that row, cycling through the three rows in turn, and then returning to the bottom row.

**Located under the display are four Column buttons, labeled (⟨▲⟩)** (in Menu Mode, these four buttons are called **Softkeys**). Each Column button affects one of the four columns or programmable/intercom/drop buttons directly above it

Thus, once you have moved the Select-Row (⟨⟐⟩) button, press the Column button (⟨▲⟩) to select the line or programmable/intercom/drop button in that row.

For example, if you press the second Column button from the left (shaded in Figure 19 below), you select Line 2, as indicated by the triangle (for PARTNER) next to **2** in the figure below.
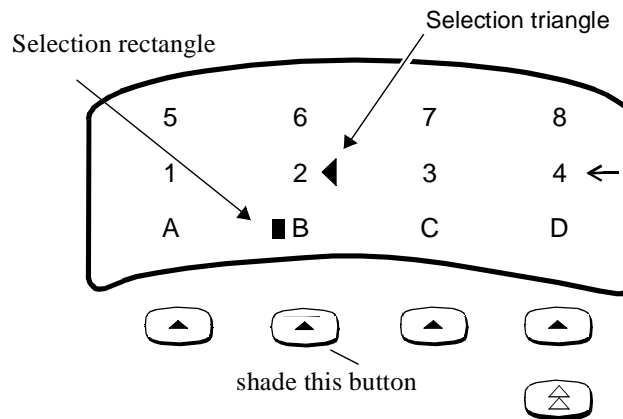


**Figure 14.  Using the Row and Column Buttons Together**

**Placing the Handset Off-Hook**

To place the handset off-hook:

**1**  Press (⟨✆⟩).

This action wakes up the handset and tells the switch that the handset is off-hook. The ✆ icon on the display screen lights.

The Home screen appears on the display. See Figure 17 for a sample display.

**Note:**   If you press (⟨✆⟩) a second time, the handset goes off.

For more information about using the display to set or change the handset settings, see "Changing the Handset Settings" later in this section.

**Signal Strength and Range Indicators**

Signal Strength is indicated by the number of bars in the **Radio Frequency (RF) Signal Level icon** (▪▮▮). Four bars indicate optimal signal level, while one bar or no bars indicate poor signal level.

**Note:**   **The antenna must be either fully retracted (for short range) or fully extended (for maximum range) to use the Pocket Phone.**

The handset provides an audible and a visual signal to alert you when the handset is near the end of the range of the radio module. Depending on how far away the handset is from the radio module, the signals function as follows:

- **OUT-OF-RANGE During a Call:** The handset emits *2 beeps and/or turns on the vibrator for a short period of time* and flashes the ▪▮▮ icon continuously. Which means: **Out of range.** You have walked into an area that is near the end of the operating range of the radio module. You can continue your conversation or initiate a call, but you are likely to experience a degradation in voice quality or possible loss of communications link. If a loss of link occurs, the call will be automatically placed on hold, before the handset will turn off. To talk with your party, move back toward the radio module, press (⌖), then proceed as you would for any call placed on Hold.

- **OUT-OF-RANGE During a Call Attempt:** When you try to make a call, the handset emits *2 beeps* and flashes the ▪▮▮ icon twice; then the *handset automatically turns off*.
  Which means: **Cannot establish communication link**. You are completely out of range of the radio module. To make the call, move back towards the radio module and try again.

  Refer to Chapter 5, "Troubleshooting," for additional information about out-of-range conditions.

**Low Battery Indicator**

The Battery Charge Level is indicated by the number of cells displayed on the **Battery Charge Level** icon ( ▮▮▮▮ ). If all four cells are filled in, the battery is fully charged. If two or less cells are displayed, it is time to recharge the battery.

The *standard battery pack* has *approximately three hours* of continuous talk time after being fully charged.
The *optional extended battery pack* has *approximately eight hours* of continuous talk time after being fully charged.

When the handset is On and the battery power is low, the handset will emit *two beeps and/or turns on the vibrator for a short period of time* and the ▮▮▮▮ icon on the handset display will flash. When this occurs, you have five minutes or less of talk time left. At this point, you can either:

- Complete your call, turn the handset off, and recharge the battery pack, **OR**

- If you have a charged spare battery pack, place your call on Hold and replace the handset battery pack with the spare battery pack. Wait 6 to 10 seconds, then turn the handset on and proceed as you would for any call placed on Hold.

**Note:**   When the battery power is low, the two beeps will sound each time you press (⌖) until either the battery is drained or you replace the battery. If you continue talking, the handset will turn off when the battery pack is drained. Your call will be placed on Hold automatically so that you can swap battery packs or pick up the call on another telephone.

**Adjusting the Volume of the Handset**

The volume control is located on the side of the handset. This control raises (the "+" button) and lowers the volume (the "-" button) of the Alerter and the Receiver. There are four incremental volume levels. If the Ringer is enabled on the user menu, the display indicates the current volume level with arrows (>>).

- To raise or lower the **Alerter** (or **Ringer**) volume: While the MDW 9040 *is awake but on-hook,* press the "**+**" or the "**-**" button. *Each time you press the "**+**" or "**-**" button, the handset makes a "chirping" sound, and the display shows the current volume level:*

```
Ringer:>>>
5        6        7        8
1        2        3        4
A        B        C        D
```
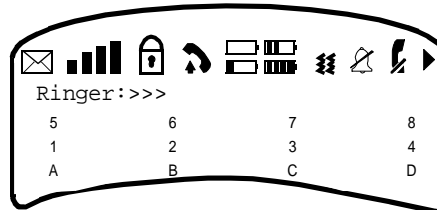
- To raise or lower the volume of the **Handset Receiver** (or the **Earpiece**): While the MDW 9040 *is off-hook,* press the press the "**+**" or the "**-**" button. *Each time you press the "**+**" or "**-**" button, the handset audio dial tone level changes, and the display shows the current volume level:*

```
Ear Level:>>>
5        6        7        8
1        2        3        4
A        B        C        D
```
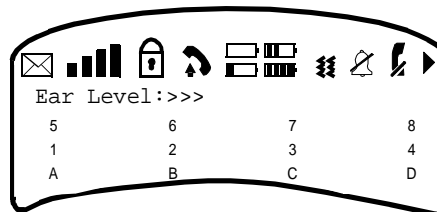
**Muting the Handset or Headset Microphone**

To turn off the microphone associated with the handset or headset while the handset is off-hook:

Press the Mute ( ) button on the side of the handset.
*The microphone is turned off. The icon lights.*

**Note:** If you press a second time, the Mute function is turned off. The Mute function is also turned off when the handset goes on-hook or if the user changes to another line.

# Setting or Changing the Handset Settings

You can set or change the handset settings by entering Menu Mode (press (Menu)) and completing the procedures for the following functions:

- From the **CONFIGURE** menu
  - ~ **Register** your handset with the appropriate DRM
  - ~ Select the **Language** in which the display message will appear
  - ~ Choose the **Length of the display Message** (1 or 2 lines)

- From the **OPTIONS** menu

  - ~ Choose the **Type of Alerter** you want to hear on your phone, either the ringer or the vibrator

  - ~ Turn on **Backlighting** for your telephone display

  - ~ Turn on the **Line Pre-Select** feature

  - ~ Hear **Key Clicks** as you press keys on the telephone dial pad

- From the **TEST MODE** menu

- Enter **Local Test Mode**, which enables you to test the alerter, vibrator, and display

- Enter **Wireless Test Mode**, which enables you to test sound clarity, signal strength, and voice quality

**Selecting a Menu Item**

The Selection control buttons are used to identify fields within three rows (the 3rd, 4th, and 5th rows) on your display.

- After pressing (Menu) to enter Menu Mode, use the Select-Row (⌂) button to move the arrow, which is placed to the right of the line currently being viewed, to the appropriate option. The cursor moves down from the second to the third row, then to the fourth row, and then cycles back to the second row again.

  This action wakes up the handset and enables all of the other handset buttons.

- The four Softkeys (▲) beneath the display allow you to select the items shown on the fifth row of the display screen.

For example, to select an option on the handset display:

**1** Press (Menu) to enter Menu Mode.
*The display shows the initial Menu screen.*
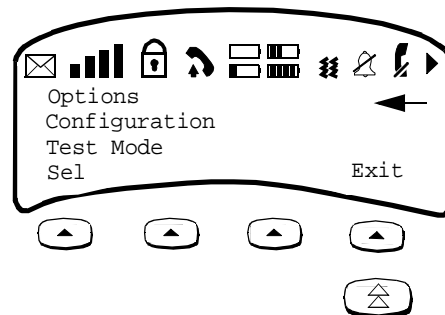


**Note:** **The currently active option, if there is one, is flashing.**

**2** Press the Select-Row (⌂) button until the arrow is placed to the right of the row on which the selected option is located. For example, press ⌂ until the arrow is placed to the right of **Options** as in the example above.

**3** Press the Softkey (▲) below **Sel** (for **Sel**ect).

**Responding to the Last Line on the Screen**    On the bottom row of the screen, you may see **SEL**, **MORE**, or **EXIT** such as in the following example:
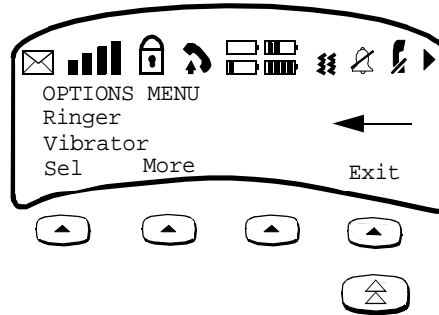


**Note:**    The currently active option, if there is one, is flashing.

These options indicate:

- **SEL**(ECT) — you can SELECT the currently highlighted option such as System or Language by pressing the softkey below **SEL**.

- **MORE** — there are more options than shown on the current screen. To see the next screen of options, press the softkey below **MORE**.

- **EXIT** — available on many screens, this option allows you to exit the current screen and go up one level to a previous screen.

## Using the Configuration and Option Menus

As you read the following information, follow "A Flowchart for the Configuration, Options, and Test Mode Display Screens" provided on .

**Configuration Menu**    Before you begin to use your MDW 9040 Pocket Phone, you must configure the telephone for these options accessed through Configuration Menu:

**Enter the Configuration Menu in the following manner:** Press (Menu) to enter Menu Mode, press the Select-Row (⬦)button to move the arrow to **Configuration**, and then press the softkey below **Sel**.)

- **REGISTERING the handset with the correct DRM(s)**

**Note:**    For detailed instructions on registering the handset with the appropriate DRM(s), see the information included in Chapter 2 on .

- **Selecting the LANGUAGE in which the display menu text will appear**

  You can choose one of four languages in which the display messages will appear on your telephone. These languages include: **English** or **French** or **Latin American Spanish** or **Brazilian Portuguese.**

- **Choosing the LENGTH of a display MESSAGE**

  When the MDW 9040 is shipped from the factory, it is set for **2 lines of text**, on the second and the third lines of the display screen. However, the display message length can be changed to **1 line of text** if so desired.

---

**Options Menu**          Once your handset is registered with the correct DRM, you can customize your MDW 9040 with these options accessed through the Options Menu:

**Enter the Options Menu in the following manner:** Press (Menu) to enter Menu Mode, press the Select-Row (⟨ 全 ⟩)button to move the arrow to **Options**, and then press the softkey below **Sel**.)

•   **Choosing the Type of ALERTER** you want to hear on your phone

    Select either the **Ringer** or the **Vibrator** option to alert you when there is an incoming call.

    ~   **The Ringer** is an audible signal to notify you of an incoming call. If a call comes in while the phone is idle, the handset rings. If you are already on a call, the handset chirps softly. You can adjust the volume of the alerter by pressing the "**+**" button or the "**-**" button on the side of the handset *when the phone is turned off.*

    ~   **The Vibrator** can be used in place of the alerter in situations where you do not want to disturb others with an audible ring.

**Note:**   The No Ring icon ( ⟨icon⟩ ) is lit on the handset when the ringer is turned off. When the Vibrator feature is active, the ( ⟨icon⟩ ) is lit.

    Both the ringer and the vibrator can be disabled at the same time. In this case the only notification you have of an incoming call is that a line status indicator (a triangle or a square, depending on your communications system) flashes in the display.

•   **Activating the BACKLIGHTING Feature** for your telephone display and if turned on, choosing the amount of time the Backlighting is active.

    Backlighting for the handset display allows you to see the display in poorly-lit environments. The display is factory set to **ON** for the MDW 9040 Pocket Phone. However, the Backlighting Feature can also be turn **OFF**.

    If you choose to turn ON the Backlighting feature for your handset display, you can also choose the amount of time the Backlighting is active. The options are **7 sec***onds,* **15 sec***onds, and* **30 sec***onds.*

•   **Turning on the LINE PRE-SELECT Feature**

    Line Preselection lets you choose the line or button you want to use before turning the handset on. For example, suppose your phone is ringing, but you want to pick up a call that is holding on another line instead of the ringing call. In normal operation, the communications system automatically connects you to the ringing line as soon as you turn on the handset. With Line Preselection enabled, you can select the line you want to connect to *before* turning on the handset.

    The Line Pre-Select Feature can be turned **ON** or turned **OFF**.

•   **Choosing to Hear KEY CLICKS** as you press keys on the telephone dial pad

    You can choose whether you want to hear key clicks as you enter numbers into the handset. The Key Clicks Feature can be turned **ON** or turned **OFF**.

    If you choose to turn ON the Key Clicks feature, you can also choose the volume of the Key Clicks. The options are **High**, **Med**, and **Low**.

## A Flowchart for the Configuration, Options, and Test Mode Display Screens

```
Tuesday, July 19, 1999
9:42 am
1      2      3      4
A      B      C      D
```
**Home Screen**

Press the **Menu Button**

```
Options
Configuration
Test Mode
Sel           Exit
```

Press the **Select-Row Button**

to select the
**Configuration Menu**

to select the
**Option Menu**

t
T

```
CONFIGURE MENU
 Registration
 Button Map
Sel  More    Exit
```

For Registration,
choose **Zone 1**
or **Zone 2**

For Button Map,
choose **Partner,**
or **Definity**,
**Merlin (410/820)**,
or **Merlin (other)**

```
OPTIONS MENU
Ringer
Vibrator
Sel  More    Exit
```

For Ringer and
Vibrator, choose
**ON** or **OFF**

```
TEST MODE
Local
Wireless Te
 Sel
```

Press the softkey below **More**

```
CONFIGURE MENU
Msg. Length
Language
Sel   More    Exit
```

For Msg. Length,
choose **1 line** or
**2 lines**

For Language,
choose **English** or
**French**, or **Spanish**
or **Portuguese**

Press the softkey below **More**

```
OPTIONS MENU
Backlighting
Pre-Select
Sel  More    Exit
```

For Backlighting
and Pre-Select,
choose **ON** or **OFF**

If you turn ON
Backlighting, choose
the amount of time
it will remain on:
**7** or **15** or **30 seconds**

Press the softkey below **More**

```
OPTIONS MENU
Key Clicks


Sel          Exit
```

For Key Clicks,
choose **ON** or **OFF**

If you turn ON
Key Clicks, choose
the volume of the key clicks:
**High** or **Med**, or **Low**

## Using Local Test Mode

You can use Local Test Mode to activate the audio warning signal, the vibrator, and all visual indicators on the handset display, enabling you to test the following:

- Does the audio warning signal work?

- Does the vibrator vibrate?

- Is the display operational?

- Does the microphone and earpiece work?

**Note:**    While in Local Test Mode, the MDW 9040 cannot make or receive calls.

To use local test mode:

1  Press (Menu).
   *The initial Menu screen is displayed.*

2  Press (△) to move the arrow to **Test Mode** and press the softkey below **Sel**.
   *The initial Test Mode Menu (**Local** and **Wireless Test**) is displayed.*

3  Press (△) to move the arrow to **Local** and then press the softkey below **Sel**.

   *The handset emits two beeps, the vibrator vibrates, and all indicators on the display appear (including the rectangles and truncated triangles), as shown below.*

   *If the beeps do not sound, the vibrator does not vibrate, or the indicators do not appear, repeat Steps 1-4. If you still have problems, call for customer support as described on the inside front cover of this book.*

4  To exit both Local Test Mode and Menu Mode, press (Menu) again.

**Note:**    You must exit Local Test Mode to reinstate proper call handling.

## Using Wireless Test Mode

You can determine sound clarity, signal strength, and voice quality using Wireless Test Mode.

You should use Wireless Test Mode to help you locate the best place to install the radio module(s) to optimize the performance of your MDW 9040 Pocket Phone. Repeat the tests several times, with the radio module positioned in a different location each time.

By performing the tests as you walk around the area in which the handset will be used, you can determine the handset's range and the voice quality throughout the area of coverage. To perform the tests, all you need is an electrical outlet for the radio module and a charged battery pack in the handset. You can perform the tests multiple times and in any order; and you can exit at any time by pressing (Menu).

**Note:**    Ignore anything that appears on the display if you press "4" while in Wireless Test Mode. This information is for Lucent Technologies technicians' use only.

While using Wireless Test Mode to walk on-site for a pre-site survey, walk with the handset antenna down to guarantee proper coverage.

To use wireless test mode:

**1** Press (**Menu**).
*The initial Menu screen is displayed.*

**2** Press (⌃) to move the arrow to **Test Mode** and then press the softkey below **Sel**.
*The Test Mode Menu is displayed.*

**3** Press (⌃) to move the arrow to **Wireless Test** and then press the softkey below **Sel**.

*The handset beeps twice and, if the vibrator is enabled, it vibrates; then you hear a simulated dial tone. This dial tone continues until you exit Wireless Test Mode.*

**Note:**    While in this mode, the MDW 9040 *cannot* make or receive calls.

**4** To verify Switch Interface Type (such as MERLIN, DEFINITY, or PARTNER switches), press the softkey below **More** at the *Test Mode Menu (***Local** *and* **Wireless Test***)*.

*One of the following switch interface codes is displayed on the third line of the screen.*

| This Switch Interface Code | Is Used For: |
|---|---|
| ATL | MERLIN switches |
| ? | Undefined interface type or not connected to live switch |
| DCP | DEFINITY switches |
| ETR | MERLIN and PARTNER switches |
| TDL | EXPRESSO switches |

**5** To identify the matching DRM for this handset, press "3."

*The display indicates to which switch the interface is connected.*

**6** To determine **voice clarity**, listen to the simulated dial tone as you walk around.

*A clear, steady tone indicates good sound clarity.*

**7** To determine **signal strength** for both the handset and the DRM, press "1."

*The display shows the signal strength (***SIG***) for both the handset (***HS***) and the base (***B***) (the radio module) at the moment that 1 was pressed, using a number from 1 to 10, as shown in the following display.*

**Note:** The higher the number, the stronger the signal, as shown in the following table. You can press "1" again to show a subsequent signal-strength reading. Each time you press "1," you get a new reading.

| Display Number | Signal Strength Is |
|---|---|
| 10 | Strong |
| 9 | Strong |
| 8 | Strong |
| 7 | Very Good |
| 6 | Very Good |
| 5 | Good |
| 4 | Good to Fair |
| 3 | Fair |
| 2 | Near end of range |
| 1 | Near end of range/loss of link |

**8** To determine **voice quality** of both the handset and the DRM, press "2."

*The display shows the voice quality (**QUAL**) for both the handset (**HS**) and the base (**B**) (the radio module) using a number from 1 to 10, as shown in the following display:*

**Note:** The higher the number, the better the voice quality, as shown in the table below. A low number may indicate potential interfering devices (such as another radio transmitter) in the area. You can press "2" again to show a subsequent voice-quality reading. Each time you press "2," you get a new reading.

| Display Number | Voice Quality Is |
|---|---|
| 10 | Very Good |
| 9 | Very Good/almost error free |
| 8 | Errors, but not noticeable in normal speech |
| 7 | Errors, but not noticeable in normal speech |
| 6 | Noticeable noise |
| 5 | Noticeable noise |
| 4 | Noisy but intelligible speech |
| 3 | Noisy but intelligible speech |
| 2 | Garbled speech |
| 1 | Unintelligible speech |

**9** To determine **power level**, press "5."

*The display shows the power level to which the handset (**HS**) and the base (**B**) (the radio module) have adjusted. The power level **adjusts from low power (1)***

*to high power (8) as the Pocket Phone is moved farther from its base.* To exit Wireless Test Mode and Local Mode, press ⟨🔄⟩.

When the signal strength, voice quality, and power level tests are complete, the following message appears on the display screen:

```
  ✉ ▂▄▆█ 🔒 ↘ ▭▭ ▭▭  ⁑ ⌀ ⚡ ▶

  SIGNAL: H=xx  B=xx
  VOICE:  H=xx  B=xx
  POWER:  H=xx  B=xx
  More    Rep           Exit
```
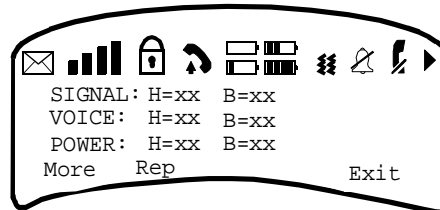
**Note:**  If you wish to view the test results another time and thus repeat the Wireless Test, press the softkey below **Rep**.

**Performance /Range Test in Wireless Test Mode**

Using the signal-strength test and the voice-quality test together, you can determine:

- if the installation has been done correctly.

- if the handsets and bases are working properly.

- the range in which your MDW 9040 Pocket Phone performs best at your site.

**Close Up Test**

**Note:**  To guarantee proper coverage during this test, walk with the handset antenna down.

At no more than 5–10 feet (1.5–3.1 m) from its radio module, use the following procedure:

 **1**  Make sure the handset is turned off.

 **2**  Press and hold down the Select button (⟨🔼⟩) for three seconds.

 **3**  While still holding ⟨🔼⟩, press ⟨🔄⟩.

*The handset beeps twice, and the display shows the handset settings, indicating you are in Wireless Test Mode. (While in Local Mode, the MDW 9040 can still receive notification of incoming calls.)*

 **4**  To enter Wireless Test Mode, press "W" (9).

**WIRELESS TEST** *appears on the message line of the handset display. The handset beeps twice and vibrates, then you hear a simulated dial tone. This dial tone continues until you exit Wireless Test Mode. While in this mode, the MDW 9040 cannot make or receive calls. For more information, see "Wireless Test Mode" in Chapter 3.*

For all sets, do the following.

 **5**  Press "1."

The display should show a **9** or **10** for signal strength (an occasional **8** is acceptable). If it does not, see Chapter 5, "Troubleshooting," for help with range problems.

 **6**  Press "2."

---

The display should show a **9** or **10** for voice quality (an occasional **8** is adaptable). If it does not, see Chapter 5, "Troubleshooting," for help with range problems and/or voice quality problems.

**Note:**   If you are seeing numbers lower than **8-10** for either signal strength or voice quality while performing the Close Up Test, please refer to the "Troubleshooting Section" in this manual. This will ensure that your installation meets all installation and environmental requirements.

**Edge of Range Test**

**Note:**   To guarantee proper coverage during this test, walk with the handset antenna down.

**1**   Periodically check the signal strength and voice quality as you walk away from the radio module. Each time you press "1" or "2," you get a new reading.

When you see a signal strength of **3** at a power level of **8**, you are at the "edge of range" for the MDW 9040 Pocket Phone. The distance will vary depending on the environment, building structure, and other factors. The range in an average office building is 500–700 feet (152.5–213.5 m). If, however, dense walls intervene, the distance could be less.

**2**   With a signal strength of **3**, press "2" to check the voice quality. When the voice quality is **7** or **8**, the voice connection should be satisfactory. This is the edge of your usable range.

# Using Handset Features

## "Waking Up" the Phone

In addition to being off-hook, the MDW 9040 has an energy-saving "sleep" or "standby" mode. The MDW 9040 "goes to sleep" 10 seconds after activity ceases (that is, after an alert stops ringing or after you hang up).

You can wake up the phone in any of the following ways:

- Press 🔊 on the handset

- Press the Select-Row button ⌂

**Note:**   You can also press ⌂ to activate the display to see whether you have a message or to check whether your alerter is enabled without actually turning the phone on (if the communications system is very busy, for instance).

- Press either of the volume control buttons ("**+**" or "**-**")

- Press **Menu**

When you "wake up" the phone, the handset display is activated and shows line and handset status.

## Placing a Call

To place a call using your MDW 9040, use the following procedure:

**1** Press ⬭ on the handset (or the headset **On/Off** button if you have the headset attached) to turn the phone on.

*The MDW 9040 seizes an available line and a triangle or a square depending on your communications system) appears beside that line in the handset display.*

*You hear a dial tone.*

**2** Dial the call as you would on a wired system phone.

**3** To end the call, press ⬭.

**Note:**   After 15 seconds, unless there is other activity on the phone, the handset goes into the energy-saving "sleep" mode.

## Answering a Call

When you receive a call on your MDW 9040 Pocket Phone, you hear a ringing tone if your alerter is enabled, or you feel a vibration in the handset if the vibrator is enabled, or both. To answer the call, use the following procedure:

**1** Press ⬭ on the handset (or the headset **On/Off** button if you have the headset attached) to turn the phone on.

*You are automatically connected to the ringing line.*

**2** Speak into the handset to converse with your caller.

**3** To end the call, press ⬭.

**Note:**   After 15 seconds, unless there is other activity on the phone, the handset goes into the energy-saving "sleep" mode.

## Manually Selecting a Line or Programmed Button

When you are placing or answering a call, the MDW 9040 automatically selects the line for you. In some situations, however, you may want to select a particular line (for example, to use an "800" line). To select a particular line or programmable/intercom/drop button, use the following procedure:

**1** Press ⬭.

The 🕽 icon displays steadily, and you are connected to an available line.

**2** If the Selection arrow does not appear to the right of the row that includes the line or button you want to use, press ⬭ one or more times until the arrow is to the right of that row. (See "Column and Select Buttons" earlier in this chapter for more information.)

**3** Press the ⬭ button that corresponds to the line or button within the Selection rectangle that you want to select.

*You are connected to the line or you have access to the button you chose.*

**4** To deselect the line or button, press ⬭.

For information about assigning features to buttons, see "Programming Features for PARTNER, MERLIN, and MERLIN LEGEND Systems" in Chapter 6.

## Preselecting a Line

You may sometimes want to select a line other than the line to which the communications system automatically connects you. To preselect a line, you must first enable Line Preselection. See "Enabling or Disabling Line Preselection" earlier in this chapter.

Once Line Preselection is enabled, use the following procedure:

**1** If the handset is "asleep," press (⌃) to wake it up and activate the display.

**2** If the Selection arrow does not appear to the right of the row that includes the line or button you want to use, press (⌃) one or more times until the arrow is to the right of that row. (See "Column and Select Buttons" earlier in this chapter for more information.)

**3** Press the Column ((▲)) button that corresponds to the line within the Selection rectangle that you want to select.

The ↘ icon flashes in the display and the handset emits double beeps.

**4** Press (📞).

The ↘ icon displays steadily, and you are connected to the line you chose.

## Accessing Certain Voice Mail Systems with a DEFINITY System

After dialing into some voice mail systems (for example, Octel 200/250, 300/350), the MDW 9040 Pocket Phone may not provide touch tones in order to access the voice mail system prompts. If you experience this problem after dialing into your voice mail system, press (Feat/P) twice. Your Pocket Phone will then generate touch tones and you will be able to navigate within your voice mail system.

When you end your call to your voice mail system, or press any non-dialpad button on your Pocket Phone (that is, Conf, Trans, Hold, Redial, Mute), your MDW 9040 will stop generating touch tones behind the voice mail system. You will need to press (Feat/P) twice whenever you dial into these voice mail systems or after you have pressed a non-dialpad button.

## Using a Headset

Lucent Technologies offers the Supra 9031 headset, which is specifically designed for use with your MDW 9040 Pocket Phone or the Radium (over-the-ear) headset. A headset assists in call answering and provides hands-free operation.

For ordering information, see Appendix D, "Ordering Replacement and Optional Parts.".

**⚠ CAUTION:**
**Plug ONLY the Supra 9031 headset cord or the Radium headset cord into the headset adapter.**
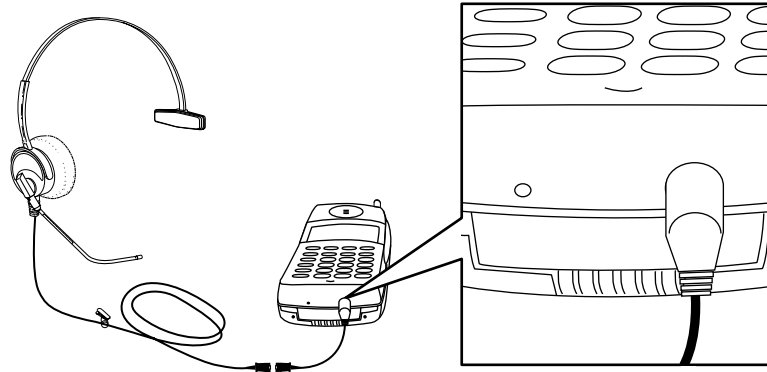
**Figure 15.  Connecting a Headset to Your MDW 9040**

**Note:**    Calls cannot be heard on the handset receiver when the headset is plugged in to the headset adapter. The handset microphone is also deactivated. The range of the handset is slightly diminished when you are using a headset. You may need to move closer to the radio module or move the radio module closer to you.

If desired, you can disconnect the headset from the handset without dropping the call, either by unplugging the headset adapter from the handset or by releasing the Quick Disconnect plug from the headset adapter cord. You can then use the handset as you normally would.

## Programming Switch-Related Features

The following procedure for programming a switch-related feature is merely an example. It may not be true for all switches. Check with your system administrator for further information.

**1** Turn on the handset by pressing ⟨🔊⟩.

**2** Enter the switch-specific Programming Mode.

**3** Press ⟨Feat/P⟩ to alert the switch that you want to activate a switch-related feature. *The switch enters Programming Mode, and the handset signals the user that he/she may continue.*

**4** Complete whatever steps necessary to give the switch any or all of the following information: the requested feature, the location of the button on which the feature will be programmed, any numbers used to activate the features, and any other information needed such as a telephone number or extension number to be called with an Abbreviated Dialing button.

**5** Exit the switch-specific Programming Mode.

## The Handset Antenna

The MDW 9040 Pocket Phone comes with a user-replaceable, flexible, retractable antenna. For maximum range and voice quality, always fully extend the antenna before placing or answering a call. You can receive a call (if you are within range of the radio module) without extending the antenna, but you may get the ▪▪▮▮ icon may light indicating that you are out-of-range or there is poor signal strength. The antenna must be fully extended for optimal performance.

**Replacing the Antenna**    If the antenna on your MDW 9040 Pocket Phone handset becomes damaged, you can order a replacement antenna (see Appendix D, "Ordering Replacement and Optional Parts"), and replace it yourself.

To replace the antenna:

   **1** Fully retract the antenna.

   **2** Grasping the base of the antenna, unscrew it by turning it counterclockwise.

   **3** Grasping the base of the new antenna, screw it into the handset in a clockwise direction.

# Carrying Your Pocket Phone

The MDW 9040 Pocket Phone has a loop in the upper corner to accommodate the included lanyard. You can attach the lanyard, as illustrated below, and slip the lanyard over your wrist to guard against dropping the phone. A leather carrying case is also available separately; see Appendix D, "Ordering Replacement and Optional Parts."



**+** and **−** Volume Control Buttons
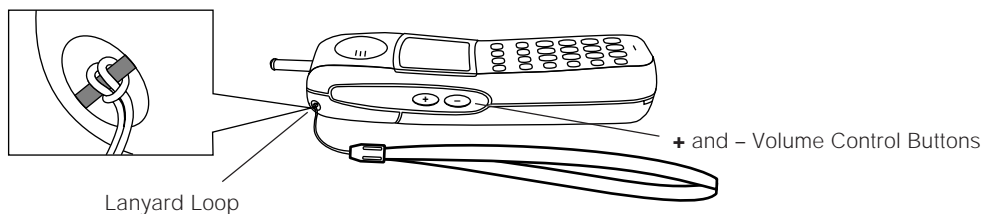
Lanyard Loop

**Figure 16.  Attaching the Lanyard Loop to the Handset**

Each battery pack (standard or extended) also comes with its own detachable clip that you can attach to the back of the battery pack, enabling you to attach the phone to your belt or purse strap. Be sure to use the clip that matches the battery pack; they are not interchangeable.

**Fastening the Belt Clip**   To fasten the belt clip to the handset (or battery pack), refer to the following figure and set of instructions.
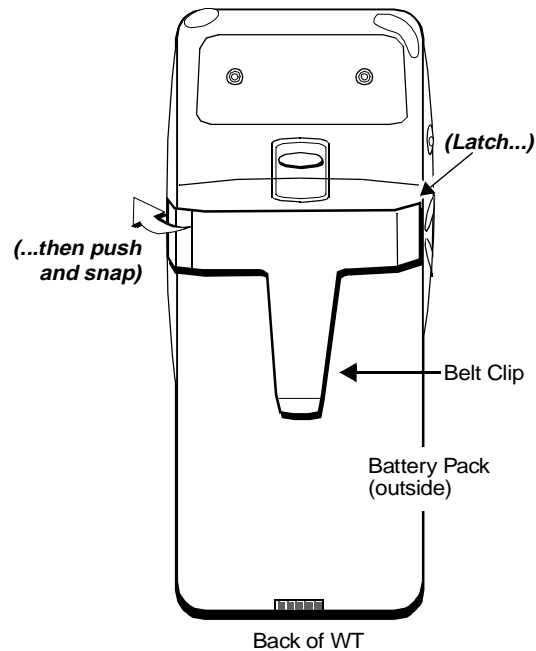


**Figure 17.  Fastening the Belt Clip**

1  Hold the handset (or battery pack) so that the back of the handset (or battery pack) is facing you.

2  Hold the belt clip so that it looks like the letter "T."

3  Latch the right edge of the belt clip into the corresponding groove on the inner side of the battery pack. (The groove is about 1/4 inch from the top of the battery pack.)

4  Push the left edge of the belt clip and snap it into the corresponding groove on the inner side of the battery pack.

**Removing the Belt Clip**   To remove the belt clip from the battery pack, refer to the following figure and set of instructions.
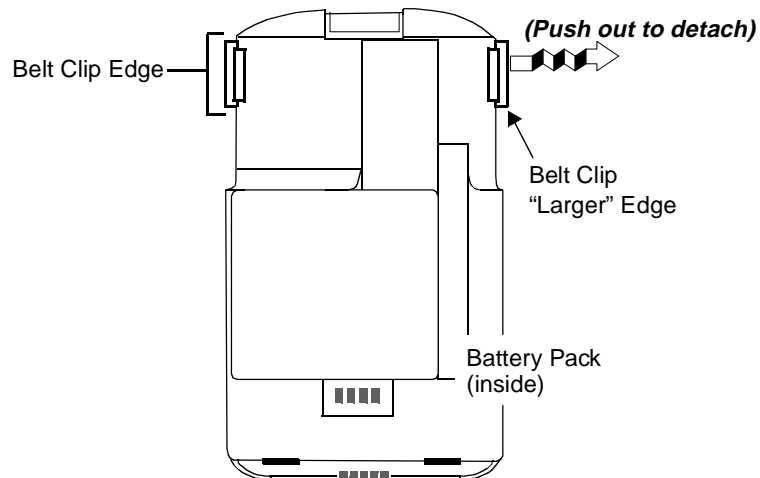
**Figure 18.  Removing the Belt Clip**

1  Remove the battery pack from the handset.

2  Hold the battery pack so that the inside of the pack is facing you.

3  Find the "larger" edge of the belt clip that is fastened to the battery pack.

4  Push the "larger" edge of the belt clip out and away from the battery pack until you free the clip from the pack.

# 4 Troubleshooting

## Overview

If you have a problem with your MDW 9040 Pocket Phone, you may be able to solve it by following the procedures included in this chapter. If you cannot resolve the problem, call for customer support as described in the *Copy and Legal Notices* at the beginning of this book.

The problems in this chapter are organized as follows:

# Installation Problems

| Symptom | Possible Causes | Possible Solutions |
|---|---|---|
| More than one DRM has the CONTROL LED lit. | The Sync cable was not connected between all DRM units. | **1** Verify that all Sync cables are daisy-chained and are fully inserted in the DRM SYNC jacks. |
| After you plug in the telephone cable into one of the Line jacks on the DRM, the DRM POWER LED does not light. | The Line cord is not connected to a live switch port.<br><br>The DRM is too far from the switch. | Verify that the Line cord is connected to a working switch port.<br><br>You will need to connected an auxiliary power supply to the DRM. |

# Handset Problems

| Symptom | Possible Causes | Possible Solutions |
|---|---|---|
| After you press ⟨☎⟩, nothing appears on the display. | There is no battery pack in the handset.<br><br>Battery pack is not inserted properly in the handset.<br><br>Battery pack is not charged.<br><br><br><br><br><br><br><br><br><br>Battery pack is defective. | Insert a battery pack in the handset.<br><br>Reinsert the battery pack in the handset.<br><br>Place the handset with its battery into the handset cradle until fully charged, or remove the handset battery pack, and place it in the battery charger's spare battery compartment until fully charged. If you have a charged battery pack, use it while the other battery pack recharges.<br><br>Call Customer Support for a replacement battery.[*] |
| After you press ⟨☎⟩, the handset beeps twice, the Radio Frequency icon (▁▃▅█) flashes on the display, and then display goes blank. | Handset is out of range of its matching DRM.<br><br><br>Handset is not registered.<br><br>Another electrical device or metal walls are causing interference.<br><br><br><br>DRM is not powered. | • Fully extend the handset antenna.<br>• Move the handset closer to the radio module.<br><br>The handset and DRM must be registered with each other.<br><br>Remove the electrical device that is causing interference, or move the handset or the radio module to another location.<br><br>Power the DRM. |

| Symptom | Possible Causes | Possible Solutions |
|---|---|---|

*See "Customer Support" on the inside front cover of this book

| Symptom | Possible Causes | Possible Solutions |
|---|---|---|
| While you are talking and walking, the handset beeps and the RF icon (▗▖▌) flashes on the handset display. You keep walking away from the handset's matching DRM, the handset double beeps five times, the display goes blank, and your call appears to be disconnected. | You are out-of -range of the radio module. **YOUR CALL HAS NOT BEEN DISCONNECTED. IT HAS BEEN PLACED ON HOLD**. | Move back toward the DRM. Press (⏻), then proceed as you would for any call placed on Hold. |
| After you press (⏻), dial tone is not heard. | Telephone line cord is not plugged into the radio module.<br><br>Communications system switch is not operating properly.<br><br>Station wiring is incorrect. | Plug the telephone line cord into the DRM.<br><br>Check the wiring for the switch and verify that the switch has power.<br><br>Check your station wiring, referred to in "Auxiliary Power and Switch Wiring" in Chapter 2 and your switch manual's station port wiring configuration. |
| You can hear the party on the other end, but they cannot hear you. The Mute icon (⚡) appears in the handset display. | (⚡) button was pressed inadvertently. | Press (⚡) again to turn off the Mute function. |
| When placed in the battery charger's handset cradle, the handset does not turn off. | Battery charger is plugged into an electrical outlet controlled by a switch, and the switch is turned off.<br><br>Battery charger's power cord is not inserted or is not inserted properly. | Plug the battery charger into an outlet not controlled by a switch.<br><br>1 Unplug the power cord/AC adapter from the electrical outlet.<br><br>2 Disconnect the power cord/AC adapter from the battery charger.<br><br>3 Carefully reconnect the power cord/AC adapter to the battery charger.<br><br>4 Plug the power cord/AC adapter back into the electrical outlet. |

| Symptom | Possible Causes | Possible Solutions |
|---|---|---|
| Handset does not ring or vibrate. | Alerter is disabled and vibrator is disabled. | Enable the alerter and/or the vibrator. |
| After you press (🔅) or (△), the display does not light. | Handset must be programmed for Backlighting. | Enable the Backlighting feature. Refer to Chapter 3. |
| After you press (🔅) or (△), the handset does not "wake up" or turn on. | Battery pack may not be charged.<br><br>Battery pack may have malfunctioned. | If you have one, try a different battery pack.<br><br>Call for Customer Support.* |

\* See "Customer Support" on the inside front cover of this book

# Battery Problems

| Symptom | Possible Causes | Possible Solutions |
|---|---|---|
| Battery icon ( ▐▌▌▌ ) appears in the handset display. | This is normal operation for the MDW 9040 Pocket Phone. | No action is required. |
| Battery icon ( ▐▌▌▌ ) flashes in the handset display and the handset beeps twice. | Battery power is low. | You have 5 minutes or less of talk time left. Either:<br>• Complete your call, turn the handset off, and recharge the battery pack.<br>• If you have a fully charged spare battery pack, place your call on Hold. Swap the battery packs, then turn the handset on and proceed as you would for any call placed on Hold. |
| Handset battery pack does not last as long as it used to under similar conditions. | Battery pack needs to be refreshed. | When the **Battery** icon ( ▐▌▌▌ ) flashes, insert the handset with its battery into the handset cradle and press the **REFRESH** button, or insert the handset battery pack into the spare battery compartment until the **SPARE** LED is steady green. |
| You get less than 3 hours of talk time when you use a standard battery pack that was refreshed. | Battery pack needs to be refreshed a second time. | Refresh the battery pack. |
| You get less than 8 hours of talk time when you use an extended battery pack that was refreshed. | Battery pack needs to be refreshed a second time. | Refresh the battery pack. |

# Voice Quality Problems

| Symptom | Possible Causes | Possible Solutions |
|---|---|---|
| Handset voice quality and range have degraded. | A competing radio device (for example, a wireless bar-code scanner) has been installed in the area. Both products are competing for the same air space and will conflict when both are being used. | Place the handset in Wireless Test Mode as described in Chapter 3. If the signal strength and voice quality readings are low, look for a newly installed radio device nearby. Remove it or move your handset's matching radio module at least 6 feet (1.8 m) away from the potential interference. |
| | DRMs are out of synchronization (that is, more than DRM CONTROL LED is lit. | Verify that all Sync cables are daisy-chained and fully inserted in the correct DRM Sync jacks. |
| | Antenna of the DRM is too close to the ceiling. | Reinstall the DRM so that its antenna is 6–12 inches (15.2–30.5 cm) from the ceiling. |
| | You have a malfunctioning DRM. | 1  Unpower all but one DRM.<br><br>2  Test each DRM individually, verifying that the **POWER** and **CONTROL** LEDs on each DRM light.<br><br>3  If the **POWER** or **CONTROL** LED does not light, the DRM is malfunctioning. Replace the DRM. |
| | Handset antenna is only partially extended. | Fully extend the handset antenna. |
| | There are environmental limitations. | Reinstall the DRM so that it is away from electrical equipment and as high as possible on the wall (but with radio module antennas 6–12 inches (15.2–30.5 cm) from the ceiling). See "General Positioning Rules" in Chapter 2 for more information. |
| Voice quality in a specific location is poor and noisy. | Handset is too close to the DRMs. | Move the handset at least 6 feet (1.8 m) away for 3 – 6 DRMs, or 10 feet (3.1 m) away for 7 or more DRMs. |

| Symptom | Possible Causes | Possible Solutions |
|---|---|---|
| Volume is too low at any setting and there is noise on the line. | Handset or DRM is not working properly. | Place the handset in Wireless Test Mode and determine the signal strength and voice quality as described in Chapter 3. Use the Close-Up Test described in "Performance/Range Test in Wireless Test Mode" in Chapter 3. |
|  | Connection between the DRM and the communications system switch/control unit is incorrect. | Check the connection between the DRM and the communications system switch/control unit as described in "Auxiliary Power and Switch Wiring" in Chapter 2. |
|  | Telephone line may be producing noise. | Report line trouble to your local phone company. |
| You are on a call and you hear radio interference when another call rings. | Communications system in key mode has all lines set to ring. An incoming call "wakes up" all of the other DRMs at the same time to ring the other phones. | Refer to Chapter 5, "MDW 9040 Pocket Phone Compatibility," to reset line ringing options. |
| Voice quality for a call in progress degrades for more than 6 seconds (PARTNER, PARTNER Plus, PARTNER II, PARTNER Advanced Communications System in key mode, MERLIN, MERLIN Plus, and MERLIN II Systems only). | Line ringing options are incorrectly set. | Refer to Chapter 5, "MDW 9040 Pocket Phone Compatibility," to reset line ringing options. |

# Range Problems

| Symptom | Possible Causes | Possible solutions |
|---|---|---|
| No ring on an incoming call. | Handset is out of range of its matching DRM.<br>• Station wiring is incorrect.<br>• Radio module station wiring is not connected to the switch.<br><br>Station port is set to NO RING | Move the handset closer to the DRM.<br>Check your station wiring, referring to the table in "Auxiliary Power and Switch Wiring" in Chapter 2, and your switch manual's station port wiring configuration.<br>Check your switch manual for the correct settings. |
| After placing a call on Hold, you walk away from the handset's matching DRM. Your handset beeps, the RF icon (▪▮▮▮) on the handset display flashes, and your call appears to be disconnected. | You are out of range of the radio module. **YOUR CALL HAS NOT BEEN DISCONNECTED. IT IS STILL ON HOLD**. | Move back toward the radio module. Press (↷), then proceed as you would for any call placed on Hold. |

# Battery Charger Problems

| Symptom | Possible Causes | Possible solutions |
|---|---|---|
| No LEDs on battery charger light. | Battery charger is plugged into an electrical outlet controlled by a switch and the switch is turned off. | Plug the battery charger into an outlet not controlled by a switch. |
| **HANDSET** LED on battery charger does not light when the handset is placed in the battery charger. | Handset is not seated properly in battery charger's handset cradle.<br><br>Contacts in the handset cradle or on the battery pack are dirty.<br><br><br><br>Battery pack is defective. | Reseat the handset in the battery charger's handset cradle, as described in "Inserting the Handset into the Battery Charger's Handset Cradle" in Chapter 2.<br>1 Verify that there are no obstructions on the handset or battery charger contacts.<br>2 Unplug the charger and clean the contacts with a soft eraser.<br>3 Clean the handset contacts with a soft eraser.<br>If you have a fully charged spare battery pack, use it to replace the battery pack in the handset.<br>1 Place the questionable battery pack in the battery charger's Spare battery compartment.<br>2 Wait one minute. If the **SPARE** LED flashes red, order a new battery pack. |

| Symptoms | Possible Causes | Possible Solutions |
|---|---|---|
| **HANDSET** LED on the battery charger flashes red. | Battery pack is defective. | If you have a battery pack in the handset and one in the spare battery compartment, remove *both* battery packs from the charger to clear the red flashing LED. Then test each battery pack separately as follows:<br><br>1  Place the battery pack in the battery charger's spare battery compartment.<br><br>2  Wait one minute. If the **SPARE** LED flashes red, order a new battery pack. |
|  | Contacts in the handset cradle or on the battery pack are dirty. | 1  Verify that there are no obstructions on the handset or battery charger contacts.<br><br>2  Unplug the charger and clean the contacts with a soft eraser.<br><br>3  Clean the handset contacts with a soft eraser. |
|  | Handset is not seated properly in the battery charger's handset cradle. | Reseat the handset in the battery charger's handset cradle, as described in "Inserting the Handset into the Battery Charger's Handset Cradle" in Chapter 2. |
| **SPARE** LED on battery charger does not light when the battery pack is placed in the spare battery compartment. | Battery pack is not seated properly in the spare battery compartment. | Reseat the battery pack in the battery charger's spare battery compartment. |
|  | Contacts on the battery pack or in the spare battery compartment are dirty. | 1  Verify that there are no obstructions on the battery pack or battery charger contacts.<br><br>2  Unplug the charger and clean the contacts with a soft eraser.<br><br>3  Clean the battery pack contacts with a soft eraser. |
|  | Battery pack is defective. | 1  Insert the questionable battery pack in the handset and place the handset in the handset cradle.<br><br>2  Wait one minute. If the **HANDSET** LED flashes red, order a new battery pack. |

| Symptoms | Possible Causes | Possible Solutions |
|---|---|---|
| **SPARE** LED on battery charger flashes red. | Battery pack is defective. | If you have a battery pack in the handset and one in the Spare battery compartment, remove *both* battery packs from the charger to clear the red flashing LED. Then test each battery pack separately as follows:<br><br>1 Insert the battery pack in the handset and place the handset in the battery charger's handset cradle.<br><br>2 Wait one minute. If the **HANDSET** LED flashes red, order a new battery pack. |
| | Contacts on the battery pack or in the battery charger's Spare battery compartment are dirty. | 1 Verify that there are no obstructions on the battery pack or battery charger contacts.<br><br>2 Unplug the charger and clean the contacts with a soft eraser.<br><br>3 Clean the battery pack contacts with a soft eraser. |
| | Battery pack is not seated properly in the spare battery compartment. | Reseat the battery pack in the battery charger's spare battery compartment, as described in "Inserting the Handset into the Battery Charger's Handset Cradle" in Chapter 2. |

# 5 MDW 9040 Pocket Phone Compatibility

## Programming and Call Handling Instructions

The MDW 9040 handset can display the status of up to 12 telephone lines, but the number of lines supported by the associated switches varies. After you have installed your MDW 9040 and understand the controls and displays, use the programming and call-handling instructions that came with your communications system. Follow the user instructions for the phone type identified in the table below:

| For this release... | Of this communications system... | used with this DRM Type | Use the instructions for a... |
|---|---|---|---|
| R1, R2, R3, R4 | PARTNER | 3204-DRE | MLS-12D or 18D phone* (Apparatus code 7311H) |
| R1, R3, R4, R4.1 | PARTNER II | | |
| R1, R2, R3, R4, R4.1 | PARTNER Plus | | |
| R1, R2, R3.1 | PARTNER Advanced Communications System | | |
| FP 1&2 | MERLIN (206, 410) | 3204-DRE | BIS-22D phone (Apparatus code 7315H) |
| FP 2 | MERLIN (820) | | **Note:** The MDW 9040 display and mail capabilities will function only if your system supports: |
| FM 1, 2, 3, 4, & 5 | MERLIN (1030, 3070) | | |
| FM 1, 2, R3 | MERLIN II | | **1** Analog/Hybrid display sets. |
| | | | **2** Hybrid pack connections with necessary tone generation for AUDIX/VOICE MAIL interaction. |
| R1, R2 | MERLIN Plus | | Consult your System Administration manuals for this compatibility. |
| R1, R1.1, R2, R2.1, R3, R4, R5, R6 | MERLIN LEGEND | | If your system does not support the items above, consult the System Administration manual for the BIS-10 phone (Apparatus Code 7303S). |
| R7 | MERLIN LEGEND | | MLS-12D phone (Apparatus code 7311H) with an ETR card |
| R2 | MERLIN MAGIX | 3204-DRD | 8- or 10-button 4400 Series phone (Apparatus code 7317H) |
| G1, G2, G3 | DEFINITY | 3204-DRD | 8410D |

**Legend:** R = Release, FP = Feature Package, FM = Feature Module, G = Generic

**Note:**   The MDW 9040 Pocket Phone is fully compatible with the PARTNER family of
communication systems. For the remaining communications systems, however, you must
carefully note the functional differences between your wireless phone and the phone type
identified in the table on the previous page. Differences are summarized on the following
pages.

Some systems do not support display features. In these cases, the display is not available; the
MDW 9040 works as a nondisplay set.

## Programming Features for PARTNER, MERLIN, and MERLIN LEGEND Systems

On all PARTNER, MERLIN, and MERLIN LEGEND systems, you can assign a feature to an available button (a
button that does not have a line or another feature assigned to it):

1   To enter programming mode, turn on the handset, press (Intercom), then press
    (Feat/P) followed by "0 0."

2   Press the Select button ((⬢)) to move the Selection arrow to the row of line
    indicators containing the available button.

3   Press the Column button ((▲)) under the button that you want.

4   Program the feature (using the procedure described in the manual for your
    PARTNER, MERLIN, or MERLIN LEGEND Communications Systems).

**Note:**   Some features provide a visual indication in the handset display that the
feature is turned on. Be aware that if you turn off the handset while using
one of these features, you may forget that the feature is on. To verify the
status of a such a feature, you can simply press the (⬢) button to "wake
up" the phone and activate the display.

5   To exit programming mode, press (Feat/P) followed by "0" or turn off the handset.

**Note:**   The above instructions do not apply to DEFINITY Systems, because in
those systems, features are assigned by the system administrator.

# Communications System Compatibility

This section describes some communications system-dependent programming to help you optimize the performance of your MDW 9040 Pocket Phone. It also describes how the buttons on a wired phone for your communications system map to the buttons on your MDW 9040. Turn to the information appropriate to your communications system:

- PARTNER

- MERLIN

- MERLIN MAGIX

- DEFINITY

## PARTNER Systems

**Button Mapping for PARTNER Systems**

On PARTNER Systems, the MDW 9040 emulates an MLS-12D telephone. The following diagram illustrates the button assignments on an MLS-12D phone and the corresponding assignments on the MDW 9040 Pocket Phone.
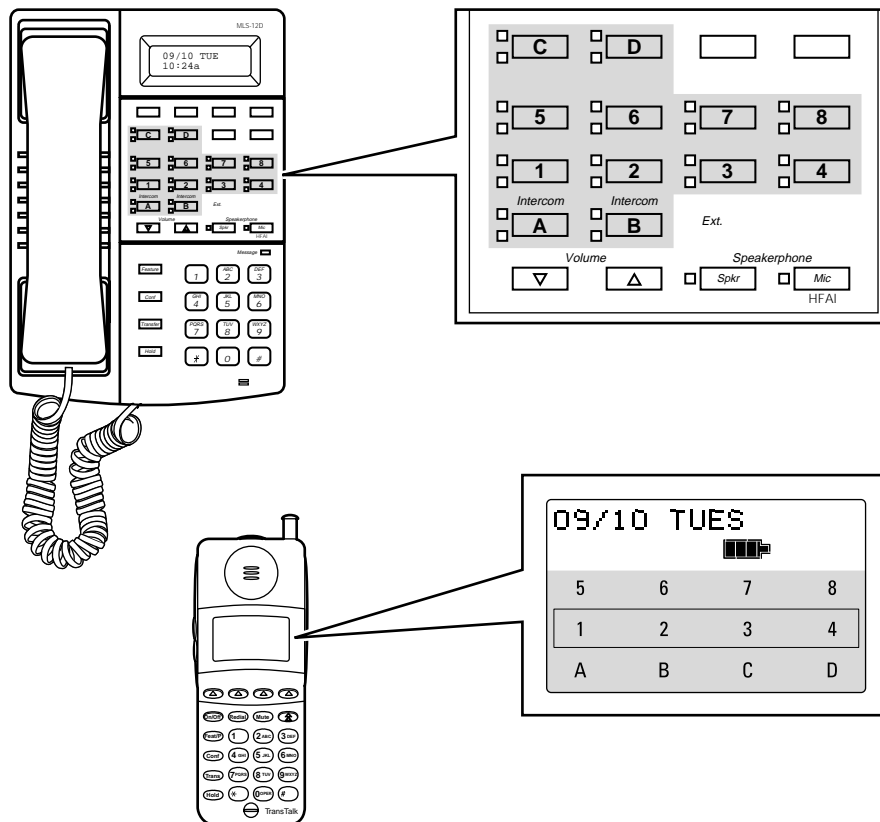


**Figure 19.   Button Mapping for an MDW 9040 Connected to the PARTNER Systems**

**Setting the Line Ringing Options for PARTNER Systems**

Use the following guidelines to ensure optimal voice quality when using MDW 9040 Pocket Phones with a PARTNER, PARTNER Plus, PARTNER II, or PARTNER Advanced Communications System in key mode:

**Note:** For PARTNER II hybrid systems that use pooled lines, set the Line Ringing options as described in the following table if more than six MDW 9040 Pocket Phone handsets have the same pooled line appearance.

| Telephone Communications System | TransTalk 9000 System with 7 – 12 Handsets | TransTalk 9000 System with 13 – 18 Handsets |
|---|---|---|
| PARTNER | **1** Set Line Ringing for the first six handsets to **Ring**.<br><br>**2** Set Line Ringing for each additional handset to **No Ring**. (Install an external audible alert for these extensions.) | Not applicable; PARTNER supports up to 12 phones. |
| PARTNER Plus<br><br>PARTNER II<br><br>PARTNER Advanced Communications System | **1** Set Line Ringing for the first six handsets to **Ring**.<br><br>**2** Set Line Ringing for each additional handset to **Delayed Ring**. | **1** Set Line Ringing for the first six handsets to **Ring**.<br><br>**2** Set Line Ringing for handsets 7 – 12 to **Delayed Ring.**<br><br>**3** Set Line Ringing for each handset beyond the first 12 (handsets 13 – 18) to **No Ring**. (Install an external audible alert for these extensions.) |

The MDW 9040 does not have a speaker; therefore, it does not support voice announce/page and call groups.

## MERLIN Systems

- On MERLIN II and MERLIN LEGEND Systems, you must connect your wireless phone to an available jack on either a 408 outside line/analog telephone module or an 008 analog telephone module.

- Since the MDW 9040 does not have a speaker function, the Voice Announce feature must be disabled. It is recommended that you use MERLIN 206/410/820 Systems installed with Feature Package 2 with your wireless phone, so that you can disable that feature.

- Since the MDW 9040 has no speaker function, it should not be assigned to a paging group.

- To program the Ringing Option feature, use the "triangle" and "rectangle" indicators in the display as the equivalent of red and green LEDs, respectively.

- For MERLIN II System users, if you program an Auto Intercom button, idle line preference must be set to intercom.

- If any of your incoming lines has the Call Waiting feature, use the Recall feature (letter "C" in the display) and press it before you pick up a waiting call. You can dial "# 5 0" before you pick up a waiting call on the following: MERLIN 206/410/820 Systems only with Feature Package 2, and all MERLIN Plus, MERLIN II, and MERLIN 1030/3070 systems. Pressing the $\boxed{\text{📞}}$ button disconnects the call.

- The $\boxed{\text{Feat/P}}$ button on the MDW 9040 allows you only to enter programming mode. It does not work when using MERLIN LEGEND System features. To use MERLIN LEGEND System feature codes with this phone, program any available button as a System Feature button. This enables you to use the wide array of MERLIN LEGEND System features by turning the set on, pressing the System Feature button, and dialing the appropriate "*" code number.

**Note:** MERLIN LEGEND does not support Caller ID and some other Display features to Analog/Hybrid terminals, such as the MDW 9040.

**Button Mapping for MERLIN Systems except MERLIN 410 and MERLIN 820**

On all MERLIN Systems, the MDW 9040 emulates a Model BIS-22D phone (Apparatus Code 7315H). The BIS-22D button assignments, however, differ depending on the MERLIN System used. The following diagram illustrates the BIS-22D button assignments and the corresponding assignments on the MDW 9040 for all MERLIN systems *except MERLIN 410 and MERLIN 820.* (See the next section for button mapping for MERLIN 410 and MERLIN 820 Systems).
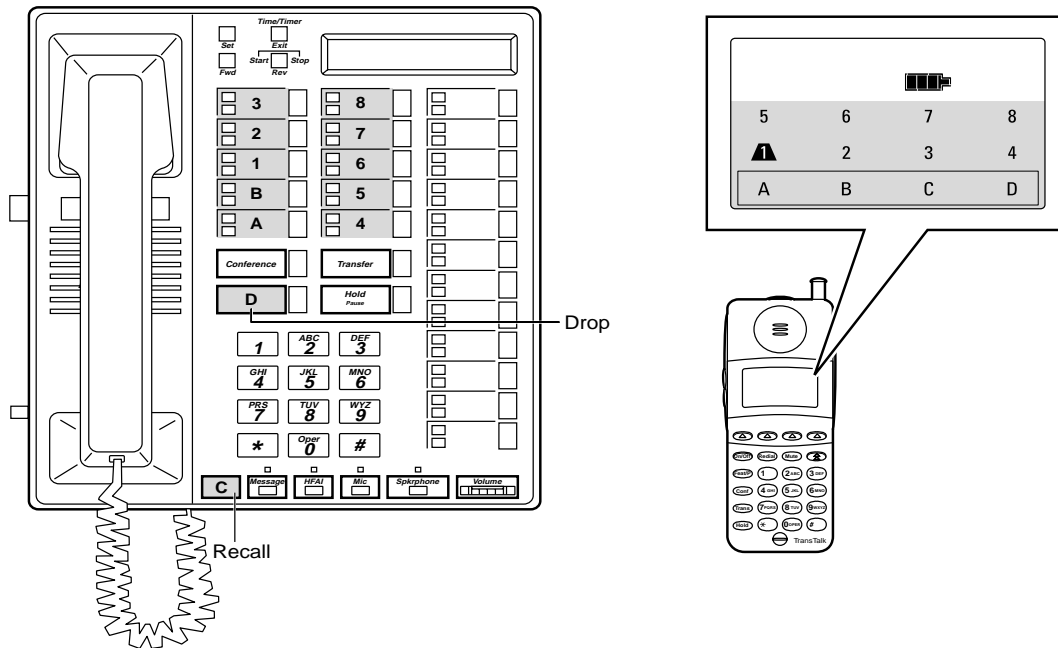
**Figure 20.  Button Mapping for an MDW 9040 Connected to All MERLIN Systems EXCEPT the MERLIN 410 and the MERLIN 820 Systems**

**Note:**    The button labeled C and the button labeled D on the MDW 9040 Pocket Phone display automatically default to the buttons labeled C (Recall) and D (Drop), respectively, on the 7315H phones.

**Button Mapping for MERLIN 410 and MERLIN 820 Systems**

The following diagram illustrates the button assignments on a BIS-22D phone used for *MERLIN410 and 820 Systems* and the corresponding assignments on the MDW 9040 Pocket Phone. (See the previous section for button mapping for all other MERLIN Systems, including MERLIN LEGEND Systems).
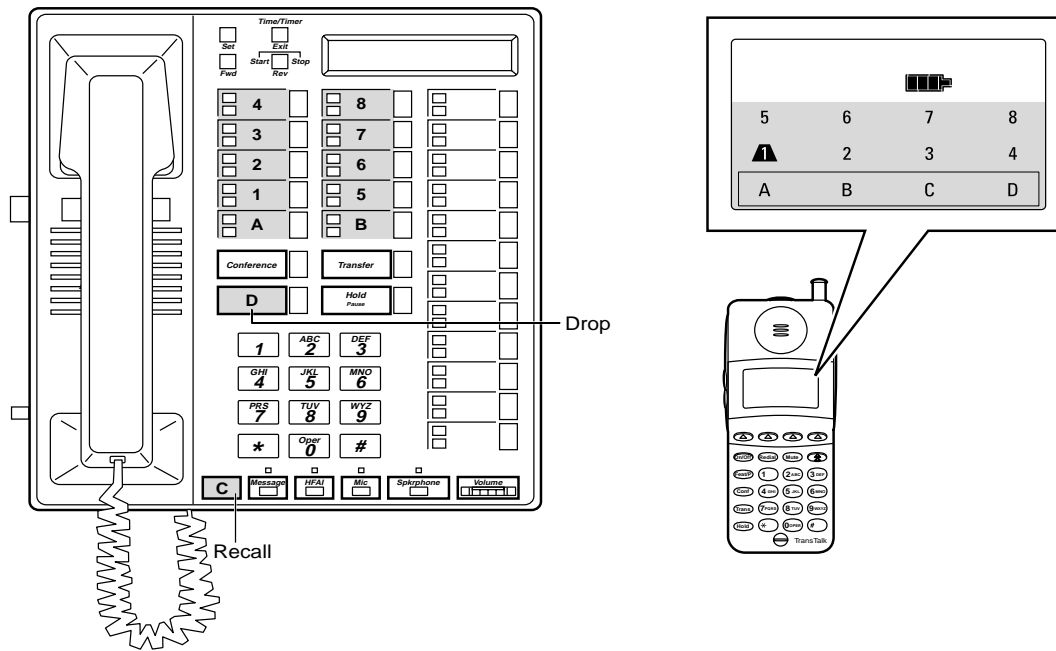


**Figure 21.  Button Mapping for an MDW 9040 Connected to a MERLIN 410 or a MERLIN 820 System**

**Note:**  The button labeled C and the button labeled D on the MDW 9040 Pocket Phone display automatically default to the buttons labeled C (Recall) and D (Drop), respectively, on the 7315H phones.

**Setting the Line Ringing Options for MERLIN Systems**

Use the following guidelines to ensure optimal voice quality when using MDW 9040 Pocket Phones with MERLIN, MERLIN Plus, and MERLIN II:

| Telephone Communications System | TransTalk 9000 System with 7 – 12 Handsets | TransTalk 9000 System with 13 – 18 Handsets |
|---|---|---|
| MERLIN<br><br>MERLIN II<br><br>MERLIN Plus | 1  Set Line Ringing for the first six handsets to **Ring**.<br><br>2  Set Line Ringing for each additional handset to **Delayed Ring**. | 1  Set Line Ringing for the first six handsets to **Ring**.<br><br>2  Set Line Ringing for handsets 7 – 12 to **Delayed Ring**.<br><br>3  Set Line Ringing for each handset beyond the first 12 (handsets 13 – 18 to **No Ring**. (Install an external audible alert for these extensions.) |

**Note:**  For MERLIN LEGEND Systems that use pooled lines, set the Line Ringing options as described in the above table, if more than six MDW 9040 Pocket Phone handsets have the same pooled line appearance. The above Line Ringing options are not necessary for MERLIN LEGEND Systems that use the TransTalk MDW 9040 Pocket Phones as PBX extensions.

## MERLIN MAGIX System

**Button Mapping for MERLIN MAGIX System**

On the MERLIN MAGIX System, the MDW 9040 emulates either an 8- or a 12-button 4400 Series telephone.

- Button mapping to a 12-button is used when there is one line of text designated for switch messages

- Button mapping to an 8-button is used when there are two lines of text designated for switch messages

The figure on the next page illustrates the button assignments on a 12-button 4400 Series set and the corresponding assignments on the MDW 9040 Pocket Phone.

**Figure 22.  Button Mapping for an MDW 9040 Connected to
a MERLIN MAGIX Systems**

**Setting the Line
Ringing Options for the
MERLIN MAGIX System**

Use the following guidelines to ensure optimal voice quality when using MDW 9040
Pocket Phones with a MERLIN MAGIX switch:

| Telephone Communications System | TransTalk 9000 System with More Than 6 Handsets |
|---|---|
| MERLIN MAGIX System | **1**  When TransTalk 9040 handsets are configured as individual PBX extensions, no Line Ringing options are necessary.<br><br>**2**  When TransTalk 9040 handsets are configured in pooled PBX or group PBX extensions (multiple 9040 handsets as members of coverage answer groups), where all incoming calls ring all handsets at the same time, refer to section "Setting the Line Ringing Options for MERLIN Systems" earlier in this chapter. |

## DEFINITY Systems

This phone must be administered as an 8410D. Consult your DEFINITY switch administration documentation for the 8410D to program features on the MDW 9040 phone.

The 8410D phones are programmed for DEFINITY Systems using four STATION Administration screens. Enter **8410D** in the Type field on the first screen to bring up the following two screens.

```
add station next                                      Page   1 of   4   SPE B
                                 STATION

Extension: 30016                         Lock Messages? n          BCC: 0
      Type: 8410D                        Security Code:             TN: 1
      Port:                           Coverage Path 1:             COR: 1
      Name:                           Coverage Path 2:             COS: 1
                                       Hunt-to Station:

STATION OPTIONS
              Data Module? n             Personalized Ringing Pattern: 1
             Speakerphone: 2-way                   Message Lamp Ext: 30016
         Display Language: english              Mute Button Enabled? y


                                          MM Complex Data Ext:
```

```
add station next                                      Page   2 of   4   SPE B
                                 STATION
FEATURE OPTIONS
           LWC Reception: spe          Auto Select Any Idle Appearance? n
          LWC Activation? y                     Coverage Msg Retrieval? y
            CDR Privacy? n                                Auto Answer: none
    Redirect Notification? y                          Data Restriction? n
  Per Button Ring Control? n          Idle Appearance Preference? n
    Bridged Call Alerting? n
   Active Station Ringing: single             Restrict Last Appearance? y

        H.320 Conversion? n
                                     Per Station CPN - Send Calling Number?
                                           Multimedia Early Answer? n
                                           Audible Message Waiting? n
                                         Display Client Redirection? n
              AUDIX Name:                Select Last Used Appearance? n
   Messaging Server Name:
```

The following illustrations show in parentheses the MDW 9040 Pocket Phone button assignments on Pages 3 and 4 of the STATION Administration screens. The button labeled **D** on the MDW 9040 Pocket Phone display automatically defaults to the button labeled **04** (Drop) on the 8410D phones.

```
add station next                                       Page   3 of   4   SPE B
                                      STATION
 SITE DATA
       Room:                                       Headset? n
       Jack:                                       Speaker? n
      Cable:                                      Mounting: d
      Floor:                                   Cord Length: 0
   Building:                                     Set Color:




 ABBREVIATED DIALING
     List1:                     List2:                       List3:

 BUTTON ASSIGNMENTS
  1: {A} call-appr                         6: {3}
  2: {B} call-appr                         7: {4}
  3: {C} call-appr                         8: {5}{Dir}
  4: {1}                                   9: {6}{Next}
  5: {2}                                  10: {7}{Call Display}


```

**Note:**     Page 3 above is the recommended button programming. The Feat/P button must be pressed twice to Exit from the Softkey menu (for example, exiting Directory mode). Button 8 on the MDW 9040 phone, when used with Line Preselection, allows for toggling between the two lines of Display information.

```
add station next                                       Page   4 of   4   SPE B
                                      STATION

 SOFTKEY BUTTON ASSIGNMENTS

  1            Note: All Softkey button assignments should be initially removed
  2:           when administering an MDW 9040 terminal. The desired Softkey
  3:           features can then be properly programmed on the DCP Pocket Phone
  4:           Programmable buttons (buttons 1-7). Button 8 is a firmware-
  5:           programmed hard Scroll button on the MDW 9040 phone.
  7:
  6:
  8:
  9:
 10:
 11:
 12:
```

**Button Mapping for DEFINITY Systems**     On DEFINITY Systems, the MDW 9040 should be aliased as an 8410D phone. The following diagram illustrates the 8410D button assignment, and the corresponding assignments on the MDW 9040 for DEFINITY systems.

Button "8" on the 9040 is the Select Row button (non-programmable)

04 = Button D "Drop"
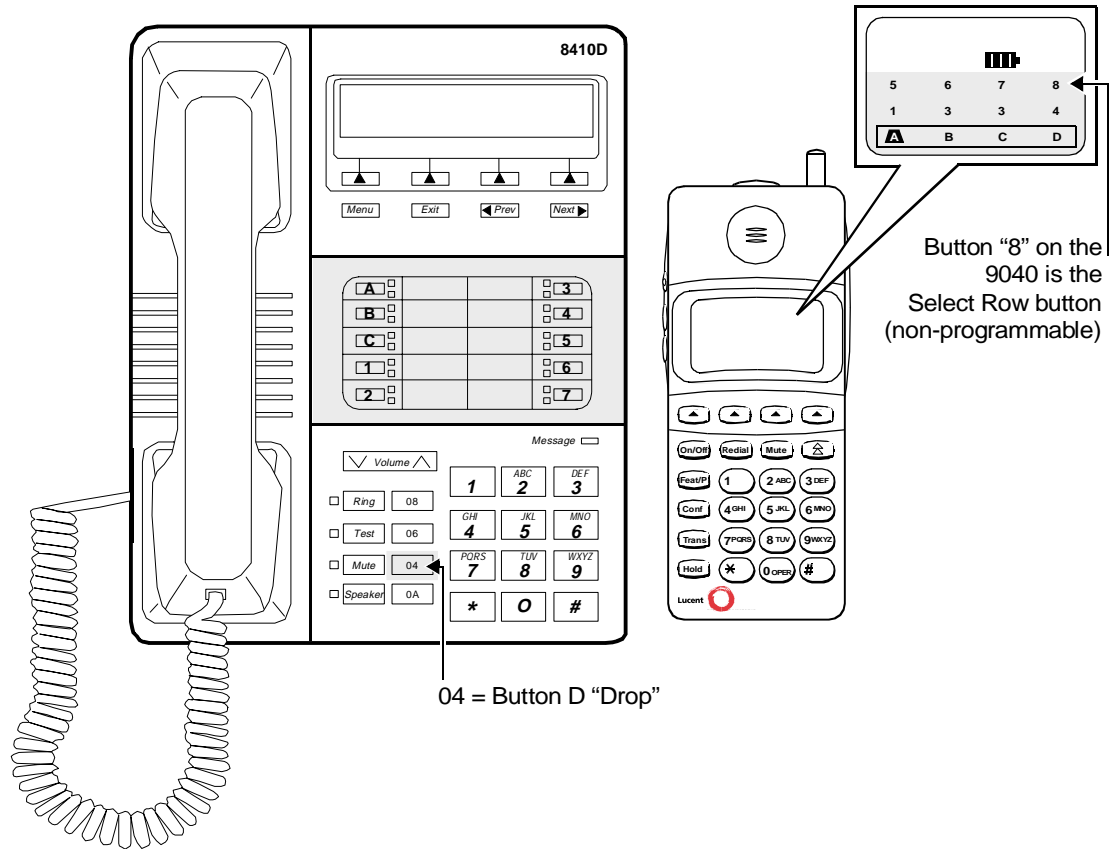
**Figure 23. Button Mapping for an MDW 9040 Connected to a DEFINITY System**

**Setting the Line Ringing Options for DEFINITY Systems**

Use the following guidelines to ensure optimal voice quality when using MDW 9040 Pocket Phones with DEFINITY Systems:

| Telephone Communications System | TransTalk 9000 System with More Than 6 Handsets |
|---|---|
| DEFINITY System | **1** When TransTalk 9040 handsets are configured as individual PBX extensions, no Line Ringing options are necessary.<br><br>**2** When TransTalk 9040 handsets are configured in pooled PBX or group PBX extensions (multiple 9040 handsets as members of coverage answer groups), where all incoming calls ring all handsets at the same time, refer to section "Setting the Line Ringing Options for PARTNER Systems" earlier in this chapter. |

**Note:** For DEFINITY Systems that use pooled lines, set the Line Ringing options as described in the above table if more than six MDW 9040 Pocket Phone handsets have the same pooled line appearance.

# A Warranty and Repair Information

## Lucent Technologies Limited Warranty and Limitation of Liability

Lucent Technologies warrants to you, the customer, that your wireless telephone system will be in good working order on the date Lucent Technologies or its Authorized Dealer delivers or installs the system, whichever is later ("Warranty Date"). If you notify Lucent Technologies or its Authorized Dealer within one year of the Warranty Date that your system is not in good working order, Lucent Technologies will, without charge to you, repair or replace, at its option, the system components that are not in good working order. Repair or replacement parts may be new or refurbished and will be provided on an exchange basis. If Lucent Technologies determines that your system cannot be repaired or replaced, Lucent Technologies will remove the system and, at your option, refund the purchase price of your system or apply the purchase price towards the purchase of another Lucent Technologies system.

If you purchased your system directly from Lucent Technologies, Lucent Technologies will perform warranty repair in accordance with the terms and conditions of the specific type of Lucent Technologies maintenance coverage you selected. A written explanation of Lucent Technologies's types of maintenance coverage may be obtained from Lucent Technologies by calling 1-800-247-7000 (in the continental U.S. only). If you purchased your system from a Lucent Technologies Authorized Dealer, contact your dealer for the details of the maintenance plan applicable to your system.

This Lucent Technologies limited warranty covers damage to the system caused by power surges. Unless otherwise expressly agreed to in a written agreement signed by Lucent Technologies, Lucent Technologies will not be responsible under this limited for damages resulting from:

- Failure to follow Lucent Technologies's installation, operation, or maintenance instructions;

- Unauthorized system modification, movement, or alteration;

- Unauthorized use of common carrier communication services accessed through the system;

- Abuse, misuse, or negligent acts or omissions of the customer and persons under the customer's control; or

- Acts of third parties and acts of God. LUCENT TECHNOLOGIES'S OBLIGATION TO REPAIR, REPLACE, OR REFUND, AS SET FORTH ABOVE, IS YOUR EXCLUSIVE REMEDY.

**EXCEPT AS SPECIFICALLY SET FORTH ABOVE, LUCENT TECHNOLOGIES, ITS AFFILIATES, SUPPLIERS, AND DEALERS MAKE NO WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIM ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

## Limitation of Liability

*Except as provided below, the liability of Lucent Technologies and its affiliates and suppliers for any claims, losses, damages, or expenses from any cause whatsoever (including acts or omissions of third parties), regardless of the form of action, whether in contract, tort, or otherwise, shall not exceed the lesser of: (1) the direct damages proven; or (2) the repair cost, replacement cost, license fee, annual rental charge, or purchase price, as the case may be, of the equipment that directly gives rise to the claim. Except as provided below, Lucent Technologies and its affiliates and suppliers shall not be liable for any incidental, special, reliance, consequential, or indirect loss or damage incurred in connection with the equipment. As used in this paragraph, consequential damages include, but are not limited to, the following: lost profits, lost revenues, and losses arising out of unauthorized use (or charges for such use) of common carrier telecommunications services or facilities accessed through or connected to the equipment. For personal injury caused by Lucent Technologies negligence, Lucent Technologies's liability shall be limited to proven damages to person. No action or proceeding against Lucent Technologies or its affiliates or suppliers may be commenced more than twenty four (24) months after the cause of action accrues. THIS PARAGRAPH SHALL SURVIVE FAILURE OF AN EXCLUSIVE REMEDY.*

# Repair Information

Outside the continental U.S., contact your Lucent Technologies Representative or local Authorized Dealer for warranty and repair information applicable to your system.

## In-Warranty Repairs

If you purchased or leased your system directly from Lucent Technologies, Lucent Technologies will repair it free of charge during the one-year warranty period. Simply call for customer support as instructed in the *Copyright and Legal Notices* at the beginning of this book.

Business-Day service is standard during the warranty period. Business-Day service is performed during normal business hours. (Around-the-Clock service is not available for phones.)

If you purchased or leased your system through a Lucent Technologies Authorized Dealer, contact your dealer for repairs.

## Post-Warranty Repairs

If you purchased the system from Lucent Technologies and you have a post-warranty service contract, Lucent Technologies service is provided under the terms of that contract.

To significantly reduce unexpected repair costs after the warranty period, you can purchase a post-warranty service contract from Lucent Technologies. If you do not have a contract, Lucent Technologies service is provided on a time-and-materials basis by calling for customer support as instructed on the inside front cover of this book. A contract provides to you, within the applicable coverage period and response times, service calls with no charge for parts and labor on covered repairs. To order a post-warranty service contract, call 1-800-247-7000 (in the continental U.S. only).

If you leased your system from Lucent Technologies, Business-Day service is included in your lease.

If you purchased or leased your system through a Lucent Technologies Authorized Dealer, contact your dealer for repairs.

# B Regulatory Information

This appendix contains information about the Federal Communications Commission and Industry Canada.

## FCC Part 15 Rules

The Lucent Technologies MDW 9040 Wireless Pocket Phone has been tested and has been found to comply with *FCC Part 15 Rules*. These specifications are designed to provide reasonable protection against harmful interference in a commercial or residential installation. This wireless telephone generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If the telephone does cause harmful interference to radio or television reception, which can be determined by turning the telephone off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Where it can be done safely, reorient the receiving television or radio antenna.

- To the extent possible, relocate the television, radio, or other receiver with respect to the telephone.

- Plug the telephone into an electrical outlet that is not on the same circuit as one used by the radio or television.

## IC RSS-210 Compliance

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

- This device may not cause interference.

- This device must accept any interference including interference that may cause undesirable operation of the device.

> The user is cautioned that modifications to this telephone, not expressly approved by Lucent Technologies, could void the user's authority to operate the equipment.

## Hearing Aid Compatibility

This wireless telephone is compatible with inductively coupled hearing aids.

# C Specifications

| GENERAL | | | |
|---|---|---|---|
| **Model:** | **MDW 9040 Wireless Pocket Phone** | | |
| **Dimensions and Weights:** | Handset | 6.0"(L) x 1.0"(D) x 2.25"(W) 15.24 x 2.54 x 5.71 cm | 0.33 lb 0.15 kg |
| | Handset w/Battery Pack | 6.0"(L) x 1.0"(D) x 2.25"(W) 15.24 x 2.54 x 5.71 cm | 0.55 lb 0.25 kg |
| | Battery Charger (BC) | 9.75"(L) x 5.13"(H) x 3.94"(W) 24.77 x 13.03 x 10.01 cm | 1.00 lb 0.45 kg |
| | Battery Charger w/ Battery Pack | 9.75"(L) x 5.13"(H) x 3.94"(W) 24.77 x 13.03 x 10.01 cm | 1.22 lb 0.55 kg |
| | Standard Battery Pack | 3.0"(L) x .75"(H) x 2.5"(W) 7.6 x 1.9 x 6.35 cm | 0.22 lb 0.10 kg |
| | Extended Battery Pack | 3.0"(L) x .95"(H) x 2.5"(W) 7.6 x 2.4 x 6.35 cm | 0.35 lb 0.16 kg |
| | Headset w/Cord (approx.) | 10.5"(L) x 1.2"(H) x 5.6"(W) 26.67 x 3.05 x 14.22 cm | 0.17 lb 0.08 kg |
| | Radio Module (RM) | 12.1"(L) x 1.5"(H) x 5.5"(W) 30.73 x 3.81 x 13.97 cm | 1.50 lb 0.68 kg |
| | Power Supply (BC) | 3.35"(L) x 2.70"(H) x 2.19"(W) 8.50 x 6.85 x 5.55 cm | 1.75 lb 0.80 kg |
| | Power Supply (RM) | 3.19"(L) x 1.94"(H) x 2.17"(W) 8.09 x 4.92 x 5.50 cm | 1.10 lb 0.50 kg |

| GENERAL–*Continued* | | |
|---|---|---|
| **Operating and Storage Temperature:** <br><br> **Mandatory Numbers are in bold;** Suggested Numbers are in regular type | Handset | Operating Temperature: <br> **-10 to 50ºC, 5 – 95% humidity** <br> (-20 to 60ºC, 0 – 95 humidity is desirable) <br> Storage Temperature: <br> **-30 to 65ºC, 0 – 95% humidity** |
| | DRM | Operating Temperature: <br> **0 to 50ºC, 5 – 95% humidity** <br> (10 to 60ºC, 0 – 95% is desirable) <br> Storage Temperature: <br> **-30 to 65ºC, 0 – 95% humidity** |
| | Batteries | Operating Temperature: <br> **5 to 40ºC in the battery charger** <br> -20 to 60ºC, 0 –95% humidity is desirable in-use <br> Storage Temperature: <br> **-20 to 50ºC for short-term storage, 45 – 85% humidity** <br> **-20 to 30ºC for long-term storage** |
| | Battery Charger | Operating Temperature: <br> **5 to 40ºC, 20 – 90% humidity** <br> Storage Temperature: <br> **-40 to 75ºC, 5 – 90% humidity** <br> **-30 to 75ºC for long-term storage** |
| **Electrical Specifications: (Power)** | Handset | 1.0 watt |
| | Battery Charger (BC) | 15 watts |
| | Radio Module (RM) | 4.0 watts |
| | Carrier (CA) w/6 RMs | 24.0 watts |
| | Power Supply (BC) | 15 watts (10V 1.5 A) |
| | Power Supply (RM) | 6.0 watts (10V 600mA) |
| | Power Supply (CA) | 30.0 watts (9V) |
| **Battery Pack Life:** | Standard Nickel Metal Hydride | 3 hours talk time/22 hours standby time |
| | Extended Nickel Metal Hydride | 8 hours talk time/72 hours standby time |
| **RF SYSTEM PARAMETERS:** | | |
| **Frequency Band:** | 902 – 928 MHz | |
| **Channel Spacing:** | 400 KHz | |
| **Total Channel Capability:** | 25 (Channels Dynamically allocated out of 110) | |
| **Duplex Method:** | Time Division Duplex (TDD) (Transmit and Receive on same frequency) | |
| **Transmitter Output Power:** | Dynamic Power Adjustment: 1mW ERP Minimum to 250mW ERP Maximum | |

| **GENERAL**–*Continued* | |
|---|---|
| **Receiver Sensitivity:** | -102 dBm at Antenna Port |
| **OTHER:** | |
| **Requirements For Out-Of-Building Extensions:** | Installation of a telephone or other standard (tip/ring) device in another building requires the following In-Range Out-of-Building (IROB) to protect the switch/control unit and telephone device from surges: <br><br> • MDW 9040 Pocket Phone: two Lucent Technologies 146D protectors (ETR); two Lucent Technologies 146E protectors (ATL) |
| **Wiring:** | • MDW 9040 Pocket Phone: Lucent Technologies SYSTIMAX® or at least 2-pair (4-wire) star ("home run" not "loop") ETR <br><br> • Lucent Technologies SYSTIMAX or at least 4-pair (8-wire) star ("homerun" not "loop") ATL <br><br> • Bridging Adapter: Lucent Technologies 267F2 (ETR) <br><br> • Bridging Adapter: Lucent Technologies 267C (ATL) <br><br> • Range: 1,000 feet (305 m) for the Radio Module (26 AWG) |

# D Ordering Replacement and Optional Parts

To order replacement parts or optional equipment in the continental U.S., call the Lucent Direct or National Parts Sales Center toll free. When ordering, please use the part numbers shown in the following table.

| Item | Lucent Direct 1-800-451-2100 | National Parts Sales Center 1-800-222-PART |
|---|---|---|
| MDW 9040 Pocket Phone (stand-alone); includes Handset, Radio Module and Kit of Parts | xxxx-xxx | 108xxxxxx (for Pocket Phones) 107586828 (for Kit of Parts) |
| MDW 9040 Pocket Phone System; includes Radio Module, but not Kit of Parts | xxxx-xxx | 108xxxxxx |
| MDW 9040 Pocket Phone System; includes Handset, Charger, Battery Pack and Carrying Clip, and Lanyard | | 108535998 |
| Retractable Flex Antenna for MDW 9031 Pocket Phone Headset | NA | 847713450 |
| Standard 7A Battery Pack; includes Carrying Clip | xxxxx | 108272485 |
| Carrying Clip (for standard battery pack) | NA | 848172847 |
| Extended Battery Pack; includes Carrying Clip | xxxxx | 108586553 |
| Carrying Clip (for extended battery pack) | NA | 848441390 |
| Lanyard | NA | 407183417 |
| MDW 9040 Pocket Phone Leather Carrying Case | xxxxx | 848350930 |
| Battery Charger; includes Power Cord/ 40B AC Adapter | xxxxx | 108386921 |
| Power Cord/AC Adapter for Battery Charger [11 foot (3.4m)] | NA | 408082204 |
| Telephone Line Cord [8 foot (2.4m)] | NA | 103786794 |

# D Ordering Replacement and Optional Parts

| Item | Lucent Direct 1-800-451-2100 | National Parts Sales Center 1-800-222-PART |
|---|---|---|
| Supra 9031 Headset with Quick Disconnect Adapter | xxxxxx | 407654490 (for Headset) 108267493 (for Adapter) |
| MDW 9031 Adapter for Supra 9030/9031 Headset | 3204-ADP | 108267493 |
| Radium (Over-the-Ear) Headset with Adapter | 3275-042/A | 407720739 (for Headset) 108267493 (for Adapter) |