

Lucent Technologies
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DEFINITY® Wireless Business System
9631A Pocket Phone User's Guide

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About This Book

Introduction

The **DEFINITY® Wireless Business System 9631A Pocket Phone User's Guide** explains how to use, maintain, and troubleshoot your DEFINITY Wireless Business System (DWBS) 9631A Pocket Phone.

Audience

This guide is intended for anyone using the DWBS 9631A Pocket Phone.

Electromagnetic Compatability Warning

Important Safety Guidelines for Users

For safe and efficient operation of your DWBS 9631A Pocket Phone (wireless telephone), observe these guidelines.

Your wireless telephone is a radio transmitter and receiver. When the battery is installed, the phone is on and it receives and also sends out radio frequency (RF) energy. The phone operates in the frequency range of 1920-1930 MHz. Your handheld wireless telephone uses the digital Time Division Multiple Access (TDMA) mode; the power is transmitted in bursts at a 100 Hz-pulsed repetition rate. The peak envelope transmit power is 100 mW or less.

Exposure to Radio Frequency Energy

The design of your wireless telephone complies with the latest safety levels from the Institute of Electrical and Electronic Engineers (IEEE) and the American National Standards Institute (ANSI) with respect to human exposure to RF energy. Of course, if you would like to limit RF exposure even further, you may choose to control the duration of your calls.

Cardiac Pacemakers

The Health Industry Manufacturers Association recommends that a minimum separation distance of six inches be maintained between a handheld wireless telephone and a pacemaker to avoid potential interference with the pacemaker. Also, the following guidelines are recommended.

- Always keep the pocket phone more than six inches from the pacemaker whenever the battery is in the pocket phone.
- Do not carry the pocket phone in a breast pocket.
- Use the ear opposite the pacemaker to minimize the potential for interference.

If you suspect that interference is taking place, take the battery out of your phone immediately.

Hearing Aid Compatibility

Most electronic equipment, such as equipment in hospitals, is shielded from RF energy. However, RF energy from wireless telephones may affect some electronic equipment.

Although the DWBS pocket telephone is compatible with inductively coupled hearing aids, you should consult your physician or hearing aid manufacturer to determine if your hearing aid is adequately shielded from external RF energy. The operation of inadequately shielded medical devices may be adversely affected when a portable wireless telephone is operating in close proximity.

Organization

This rest of the document is organized as follows:

- **Chapter 1, "Overview,"** provides an overview of the DWBS, the 9631A Pocket Phone, and the battery charger.
- **Chapter 2, "Battery Charger,"** provides battery charger and general care instructions to ensure dependable and uninterrupted service.
- **Chapter 3, "Features and Operations,"** provides information and diagrams needed to make full use of the DWBS 9631A Pocket Phone.
- **Chapter 4, "Audible Information Tones and Error Messages,"** identifies and describes the DWBS 9631A Pocket Phone incoming call ring patterns, error beeps, error tone, confirmation tone, and warning tones. The chapter also identifies and describes in-line errors and user-lever error messages for the pocket phone.
- **Appendix A, "Safety Instructions,"** discusses the appropriate safety instructions for the 9631A Pocket Phone and the charger.
- **Appendix B, "Specifications,"** provides various specifications for the DWBS.

A glossary and index are also included.

Related Information

Other books in the DWBS series are as follows:

- *DEFINITY ECS Interface for the DEFINITY Wireless Business System Guide, 555-232-108*
- *DEFINITY Wireless Business System Installation and Test, 555-232-102*
- *DEFINITY Wireless Business System Maintenance, 555-232-103*
- *DEFINITY Wireless Business System Site Planning, 555-232-601*
- *DEFINITY Wireless Business System 9631A Pocket Phone Quick Reference Card, XXX-XXX-XXX*

Typographic Conventions

The following typographic conventions are used in this book to convey information consistently and quickly.

- *This typeface* is used for references to titles of other information and for emphasis within other typefaces.
- **This typeface** emphasizes key words to help clarify meaning in a sentence or to call attention to a distinction.
- The following note icon identifies additional information pertinent to the text preceding it.

 **NOTE:**

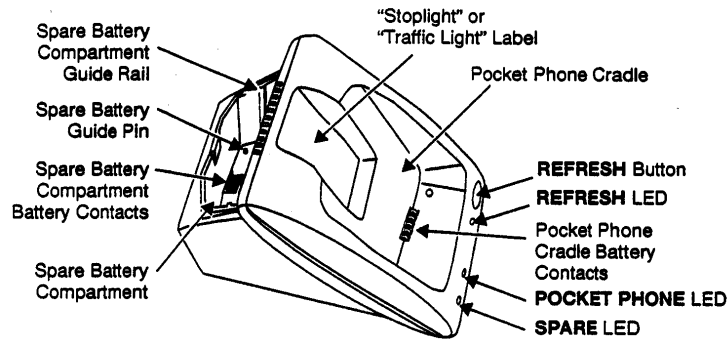


Figure 2-1. Battery Charger for the 9631A Pocket Phone

Battery Charger Features

The battery charger offers these features:

- Spare battery compartment refreshes the battery pack automatically by fully discharging the pack before recharging it. This process reduces or eliminates the potential "memory" effect. Memory effect reduces a battery's capacity, and it occurs over time when you repeatedly recharge a battery before it is fully discharged.
- Pocket phone cradle charges a battery pack in the pocket phone.
- REFRESH button, when pressed, refreshes the pocket phone battery pack in the pocket phone cradle by fully discharging the battery pack before recharging it.

NOTE:

The REFRESH button is disabled if the pocket phone has already undergone a charge cycle. This prevents accidentally discharging a charged battery pack.

- REFRESH LED and the pocket phone LED light up when the REFRESH button is pressed, and they stay lit until the battery pack finishes discharging.
- Pocket phone LED, when lit, indicates that the pocket phone battery pack is installed in the pocket phone and that the pocket phone is in the pocket phone cradle.

following: message waiting, signal strength, lock, vibrator, battery, silent, mute, and next.

The 9631A contains the following hard keys (buttons) on the keypad: On/Off, Redial, Menu, Next, Silent, Conf, Trans, and Hold; it also contains a Mute button on the side. In addition, the phone contains a dial pad and four soft key buttons.

The 9631A Pocket Phone is not physically connected by a cord to the DEFINITY ECS or any other DWBS component. Instead, the phone is wireless and communicates via a radio link to a network of Wireless Fixed Bases (WFBs), which in turn connect the phone to the DEFINITY ECS. The 9631A is designed to be compatible with existing and future releases of the DWBS.

⇒ NOTE:

The following figure shows the 9631A Pocket Phone. Chapter 3 of this guide describes the 9631A Pocket Phone in detail and contains instructions on how to use the phone.

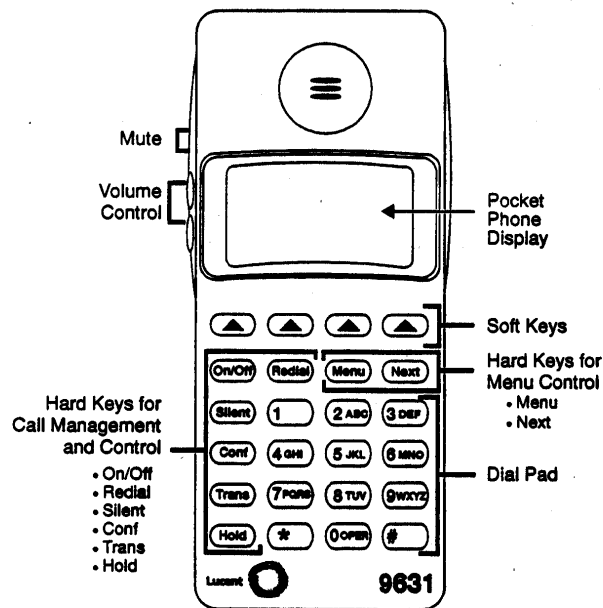


Figure 1-1. 9631A Pocket Phone

Features and Benefits

The DWBS 9631A Pocket Phone provides features and benefits that take the following into account:

- Noisy and relatively inhospitable environments
- Durability and reliability

Table 1-1. 9631A Pocket Phone Features and Benefits

Features	Benefits/Descriptions
Ease of use (in particular, fixed buttons for the transfer, redial, conference, and mute features)	Less reliance on soft keys.
Greater ringer volume	Alerter is more audible in noisy environments.
Louder receiver	Improves audio quality. This receiver is approximately 6 dB louder than that for other pocket phones.
Vibrator	Alerts the user to incoming calls. Intended for quiet environments and for environments where even a "louder" alerter is not loud enough to overcome background noise.
Increased impact resistance	Significant improvement over other pocket phones.
Built in attachments for belt clips and lanyards	The 9631A allows you to connect a belt clip directly to the back of the battery pack and a lanyard to an upper corner of the phone.
Improved battery accommodating increased talk time and standby time	The Nickel Metal Hydride (NiMH) battery in the 9631A provides eight hours of talk time and from 60 to 80 hours of standby time.
Rugged connector for the headset	The 9631A uses a rugged three-pin audio jack for the headset. Also, an ON/OFF button is included on the headset cable.
Noise-canceling microphone	Minimizes background noise.
Data port	The bottom of the 9631A has a connector that you can use for the headset or as a serial port for firmware download.
Label	The back of the 9631A has a designation label onto which users can write information (for example, names, telephone numbers, etc.).

Table 1-1. 9631A Pocket Phone Features and Benefits *(continued)*

Features	Benefits/Descriptions
Carrying case	The carrying case for the 9631A facilitates carrying the pocket phone. Also, the case provides a clear plastic covering over the keypad to keep the keypad clean. The case is available in black.
Backlit display	The display of the 9631A is backlit. The user may turn backlighting on and off.
Dust resistant	Improved resistance to dust and dirt getting inside the phone is provided.

Supplementary Phone Equipment

A DWBS battery charger, a battery, and a spare battery pack are available with each pocket phone.

The DWBS battery charger is a desktop charger; however, the charger can be mounted on either a wall or desktop. The charger charges a fully discharged battery in less than one and one-half hours.

Your 9631A Pocket Phone must be charged before you use it for the first time. All instructions and a diagram for this process are provided in Chapter 2, "Battery Charger."

DWBS Capacity and Coverage

The DWBS 9631A Pocket Phone is designed to provide the highest quality of mobility service that wireless technology permits. Your system is designed for full functionality and excellent voice quality throughout the areas where service is provided as defined by your company's communications director.

Since this system uses RF signals for the communications channel to your pocket phone, there are situations when you may notice a difference in service from your wired voice terminal. These situations may exist because it is difficult, if not economically unreasonable, to provide flawless coverage in all areas (for example, behind large metal storage or file cabinets, in a vault, or in a cold storage locker). In many of these cases, your company decided, at the time your system was designed, that perfect service in areas such as these is not warranted.

While the DWBS features the highest capacity possible within the Federal Communications Commission (FCC) regulations and Personal Wireless Telecommunications (PWT) standards, the number of radio channels available is limited and dependent on the amount of radio equipment installed. To put this in perspective by relating it to your private branch exchange (PBX), a central office (CO) trunk (dial 9) is not provided for every user; in fact, a ratio of one CO trunk per 10 users is common. Likewise, with DWBS, a radio channel is not available for each user throughout your defined coverage area. Therefore, if a large number of users attempts to use the system by either making or receiving calls at the same time and in the same area, a radio channel may not be available; this results in a "No Channel Available" condition. An example of this would be if a large number of users were to attend a training course on the DWBS and, after the pocket phones were distributed at the end of the class, more users attempted to call each other than is allowed by the number of radio channels available in the area.

As you move about your premises, the system may not be able to find an idle radio channel to allow you to continue an active call because the area you are entering is very busy. This may result in a degraded connection, even when you are in an area that usually provides good coverage. Most likely, the difficulty is

capacity-related; however, an intermittent system malfunction could occur. If the problem is transient, it is a capacity issue and does not require any action on your part. If the area usually has good coverage and the problem persists, a portion of your system may not be functioning correctly. **In either case, we recommend reporting the problem to your telecommunications group or system administrator.**

Your understanding and consideration of this information will help us and your telecommunications group satisfy your mobility communications requirements.

Introduction

The battery charger charges battery packs in the spare battery compartment and in the pocket phone when 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 pocket phone is fully charged.

The battery for the 9631A generally provides eight hours of talk time and from 60 to 80 hours of standby time. To extend phone usage beyond this capability, you can purchase an extra battery pack and store it in the charger so that you always have a charged battery pack to switch to, if necessary.

This chapter describes the battery charger and explains how to use battery packs properly.

Overview

1

Introduction

This chapter provides an overview of the following:

- DEFINITY Wireless Business System (DWBS)
- 9631A Pocket Phone, including its features and benefits
- Battery charger for the pocket phone
- DWBS capacity and coverage

DEFINITY Wireless Business System

The DWBS is a wireless telecommunications system that offers mobility around the workplace. It integrates wireless capabilities into the DEFINITY Enterprise Communications Server® (ECS). The DWBS radio components operate in the unlicensed part of the Emerging Technologies band (1920 MHz-1930 MHz); this negates the need to obtain a license to use the DWBS.

9631A Pocket Phone

The 9631A Pocket Phone is a pocket-size, portable phone that provides wireless mobility as well as access to full business features and many DEFINITY ECS features. The functionality of the phone is similar to that of the DWBS 9601 Pocket Phone.

The 9631A provides either two or three call appearances and a four-line by 16-character liquid crystal display (LCD) plus a row of icons indicating the

- Spare compartment recognizes a charged battery pack and, therefore, it does not discharge a spare pack if power is interrupted.
- SPARE LED, when lit, indicates that a battery pack is in the spare battery compartment.
- Color of the battery charger's LEDs indicates the state of the corresponding battery pack, as shown in the following table:



NOTE:

Before you use the 9631A Pocket Phone for the first time, the battery pack must be charged.

Table 2-1. LED Indicators

Battery charger LED shows...	If, for the SPARE LED, the battery pack in the spare battery compartment...	If, for the pocket phone LED, the battery pack in the pocket phone...	If, for the REFRESH LED, the Refresh button was pressed, and the pocket phone battery pack...
Steady orange	Is charging	Is charging	N/A
Steady green	has completed a fast charge	has completed a fast charge	N/A
Flashing green	temperature is out of range, or voltage is too low in battery pack	temperature is out of range, or voltage is too low in battery pack	N/A
Flashing red (See Note.)	Has one of the following problems: — Is not seated properly in the charger — Has dirty contacts — Is defective	Has one of the following problems: — Is not seated properly in the charger — Has dirty contacts — Is defective	N/A
Steady red	Is discharging	Is discharging	Is discharging

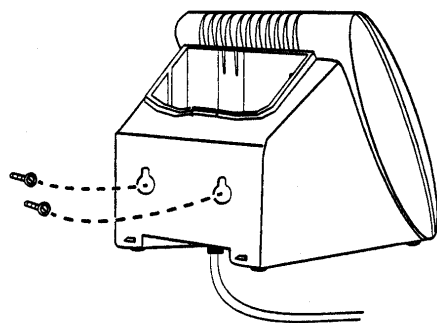


Figure 2-3. Sliding Battery Charger into Place

- If you have two battery packs, exchange the packs between the pocket phone 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 pocket phone battery never flashes the Battery icon in the pocket phone display to indicate a low battery condition.)
- The average life for the battery pack is approximately one year; this assumes 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 for the battery pack, it is sometimes necessary to refresh the battery pack two or three times, as follows.

Insert the battery pack into the spare battery compartment of the battery charger and leave it there until the SPARE LED is steady green. Thereafter, remove the battery pack from the charger; then, reinsert it and leave it until the SPARE LED is steady green for a second time.

Or, with the battery pack in the pocket phone, insert the pocket phone into the pocket phone cradle, press REFRESH, and leave it there until the pocket phone LED is steady green. Remove the pocket phone from the pocket phone cradle; then, reinsert it, press REFRESH again, and leave it until the pocket phone LED is steady green a second time.

Battery Charger Operations

This section explains how to choose a location for the battery charger, how to install it, and how to insert and remove a battery pack.

Positioning the Battery Charger

You can place the battery charger on a desk or you can mount it on a wall. Before you install the battery charger, do the following:

- Locate the battery charger within 5 ft (1.6 m) of a properly grounded 3-prong 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 would 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. Like other batteries of this type, if it is burned or punctured, it could release toxic material that could cause injury. Do not dispose of the pack in household garbage. For information about recycling or proper disposal, consult your local solid waste (garbage) collection or disposal organization.

Installing the Battery Charger



NOTE:

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.

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 (presented later in this chapter) 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. If the charger is not level, the battery pack may not make proper contact with the charger.
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; 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. See the following figure. If you are desk-mounting the battery charger, skip to Step 7.

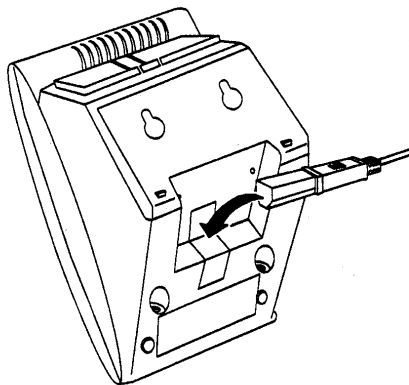


Figure 2-2. Inserting Power Cord/AC Adapter into Battery Charger

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 to lock it into place. See the following figure.

Extending Battery Life

The battery charger charges a battery pack in the pocket phone if you simply insert the pocket phone into the battery charger's pocket phone cradle; however, the refresh process fully discharges the battery pack before recharging it, thereby ensuring the best possible charge and the longest talk time.

"Memory effect" reduces a battery's capacity. This condition can occur if you repeatedly recharge a battery pack before it is fully discharged. Nickel metal hydride batteries also experience "memory;" therefore, it is recommended that you refresh your battery pack at least once a week.

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

Table 2-2. Battery Pack Refresh Cycle

Battery Pack Charge State	Discharge Time	Recharge Time	Total Time
Low charge (Battery icon is lit)	0.5 hours	1.5 hours	2 hours
Full charge	2.5 hours	1.5 hours	4 hours

Note that your pocket phone consumes power both during talk time (when the pocket phone is turned on) and during standby time (when the pocket phone is turned off but out of the battery charger). At full charge, the pocket phone battery provides approximately 8 hours to talk time and from 60 to 80 hours of standby time. As a guideline, you can expect a one hour reduction in talk time for every eight hours of standby time. Similarly, you can expect an eight hour reduction in standby time for every hour of talk time.

It is highly recommended that you purchase a second battery pack to use as a spare. With the spare battery pack in the spare battery compartment of the battery charger, you are assured of always having a fresh, usable battery pack.

Follow these steps to ensure an uninterrupted supply of power to your 9631A Pocket Phone:

- If you have only one battery pack, be sure to refresh it at least once a week. You can refresh the pack by doing the following:
 - Placing it into the spare battery compartment of the battery charger.
 - Leaving it in the pocket phone, placing the pocket phone into the pocket phone cradle of the battery charger, and pressing the REFRESH button.

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. See the following figure.

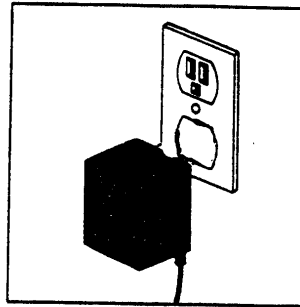


Figure 2-4. Plugging in Power Cord/AC Adapter

Inserting a Battery Pack Into the Spare Battery Compartment

Slide the battery pack into the spare battery compartment until it is firmly seated with the back of the battery pack against the back of the spare battery compartment. Do not force the battery pack down. The battery pack should slide easily into the slot.

Correct positioning of the battery pack in the charger is important to ensure proper charging. The bottom end of the battery pack has two small round holes that align with two guide pins on the bottom of the spare battery compartment. Whenever a battery pack is positioned correctly in the spare battery compartment, the SPARE LED on the front of the battery charger lights.

The spare battery compartment has a vertical ridge on each side that serves as a "guide rail" for positioning the standard battery pack.

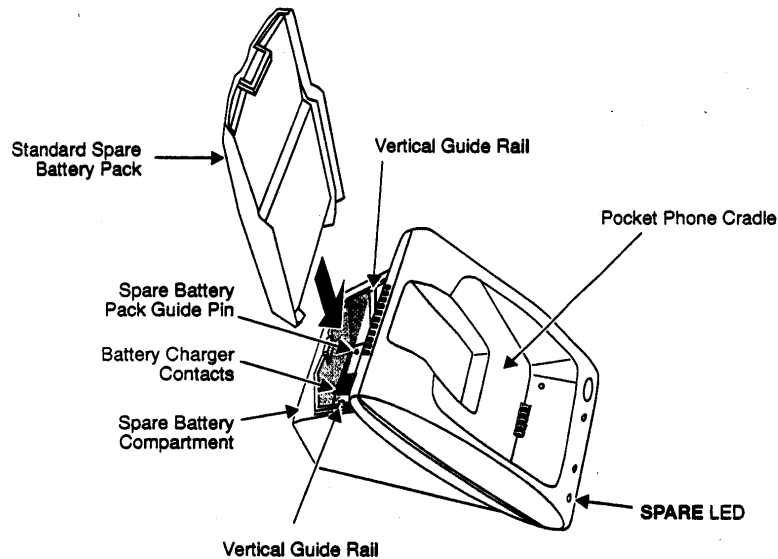


Figure 2-5. Inserting Battery Pack Into Spare Battery Compartment

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.

Inserting the Pocket Phone into the Battery Charger's Pocket Phone Cradle

Correct positioning of the pocket phone in the charger is important to ensure proper charging.

1. Position the pocket phone (with either battery pack attached) so that the two small round holes in the bottom of the pocket phone fit over the two guide pins on the bottom of the pocket phone cradle.
2. Rock the pocket phone back into the cradle until it is firmly seated with the back of the pocket phone battery pack against the back of the pocket phone cradle.

Whenever the pocket phone has been inserted correctly, the following will occur:

- Pocket phone LED lights.
 - After 15 seconds, the pocket phone enters the energy-saving "sleep" mode.
-

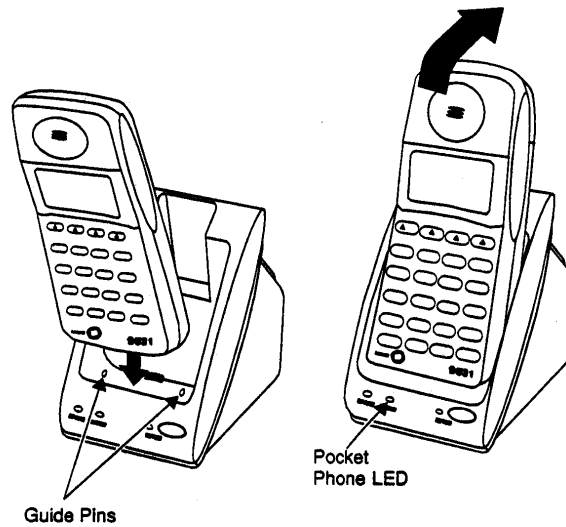


Figure 2-6. Inserting Pocket Phone Into the Cradle

Removing the Pocket Phone From the Pocket Phone Cradle

To remove the pocket phone from the pocket phone cradle, lift it out.

Troubleshooting the Battery Charger

The following table identifies possible battery charger problems and proposed solutions.

Table 2-3. Battery Charger Problems and Possible Solutions

Symptom	Possible Causes	Possible Solutions
No LEDs on the 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.
Pocket phone LED on the battery charger does not light when pocket phone is placed in battery charger.	Pocket phone is not seated properly in the battery charger's pocket phone cradle.	Reseat the pocket phone in the battery charger's pocket phone cradle.
	Contacts in the pocket phone cradle or on the battery pack are dirty.	1. Verify that there are no obstructions on the pocket phone or battery charger contacts. 2. Unplug the charger and clean the contacts with a soft eraser. 3. Clean the pocket phone contacts with a soft eraser.
	The battery pack is defective.	If you have a fully charged spare battery pack, use it to replace the battery pack in the pocket phone. 1. Place the questionable battery pack into the battery charger's spare battery compartment. 2. Wait one minute. If the SPARE LED flashes red, order a new battery pack, or replace it through maintenance.

Table 2-3. Battery Charger Problems and Possible Solutions

Symptom	Possible Causes	Possible Solutions
Pocket phone LED flashes red.	Battery pack is defective.	1. Place the battery pack into the battery charger's spare battery compartment. 2. Wait one minute. If the SPARE LED flashes red, order a new battery pack, or replace it through maintenance.
	The contacts in the pocket phone cradle or on the battery pack are dirty.	1. Verify that there are no obstructions on the pocket phone or battery charger contacts. 2. Unplug the charger and clean the contacts with a soft eraser. 3. Clean the battery pack contacts with a soft eraser.
	Pocket phone is not seated properly in the battery charger's pocket phone cradle.	Reseat the pocket phone in the battery charger's pocket phone cradle.
SPARE LED on battery charger does not light when the battery pack is placed into 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.
	The 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. 2. Unplug the charger and clean the contacts with a soft eraser. 3. Clean the battery pack contacts with a soft eraser.
	Battery pack is defective.	1. Insert the questionable battery pack into the pocket phone and place the pocket phone into the pocket phone cradle. 2. Wait one minute. If the pocket phone LED flashes red, order a new battery pack.

⇒ **NOTE:**

Whenever the 9631A Pocket Phone is in soft key mode, DEFINITY ECS messages associated with an incoming alerting call override the current display state of the pocket phone. If the incoming call is ignored, the original soft key display state returns.

Muting and Unmuting the Pocket Phone

You can turn off (or mute) a pocket phone's microphone. To mute a pocket phone, press **Mute** on the side of the phone.

You must be on a call to mute or unmute a pocket phone. Whenever a pocket phone is muted, the mute icon appears in the display.

To unmute a pocket phone (that is, turn on the phone's microphone), first ensure that the mute icon is displayed. Then press **Mute**.

Mute is deactivated automatically whenever a call is ended.

Volume Control Buttons

The pocket phone has two volume control buttons. These buttons are located on the left side of the pocket phone, and they are labeled with up- and down-arrows. Each button is used for adjusting the receiver volume in the pocket phone earpiece as well as the volume of the alerter and local tones. The buttons control the earpiece volume in the off-hook active state; they control the alerter volume (including key clicks and warning and notification tones) in the on-hook and ringing states.

To adjust the volume level up or down in a "smooth" fashion, press and continue to hold the appropriate button until you get the desired volume.

Battery Charging Contacts

The pocket phone includes a removable and rechargeable battery pack. Battery charging contacts, which are located on the removable battery pack, enable the phone to charge when contact is made with the DWBS charger.

Display

The pocket phone display is a five-line by 16-character alphanumeric display that enables you to view various pocket phone screens. These screens display the following:

- DEFINITY ECS display messages (including Automatic Number Identification [ANI] numbers, if provided from the network)
- Message waiting indicator

Battery Charger Wall-Mounting Template

4. Position a wall spacer on each of the two wood screws provided, and insert the screws into the wall as far as they will go at the places you marked.



NOTE:

If you cannot locate a wall stud for one of the screws, use toggle bolts or another type of hollow-wall fastener. Be sure to place the wall spacers on the screws before inserting them permanently.

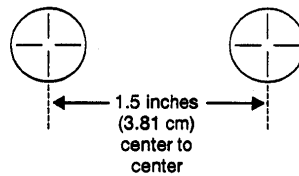


Figure 2-7. Battery Charger Wall-Mounting Template

Features and Operations

3

Introduction

This chapter provides information needed to make full use of your 9631A Pocket Phone. The first portion of this chapter provides a detailed description and diagram of the pocket phone. The second section is presented in a "how to" format and focuses on feature identification and access.

9631A Pocket Phone Features

The DEFINITY ECS 9631A Pocket Phone is a portable multiple call appearance wireless voice terminal with a display. It is a small (6 in x 2.25 in x 1.0 in), lightweight (approximately 0.55 lbs with the battery) pocket phone that requires no external antenna. As shown on the next page in Figure 3-1, the 9631A Pocket Phone has a four-line by 16-character display plus one row of icons, four soft keys for menu item interface, two hard keys for display control, and six hard keys for call management. Each of these features is explained in the following pages.

Among its many benefits, the 9631A Pocket Phone includes the following essential business features normally found only on a wired desk phone. The "Operating the 9631A Pocket Phone" section in this chapter gives specific instructions for these features.

- **Conference** — allows you to add additional people to your telephone call.
- **Transfer** — allows you to transfer a call to another phone number.
- **Drop** — allows you to disconnect the last person added to a conference call.
- **Hold** — allows you to place a call on hold.
- **Redial** — allows you to dial the previous number dialed from the key pad

- **Silent** — allows you to turn off audible ringing signals and tones
- **Mute** — allows you to turn off a phone's microphone

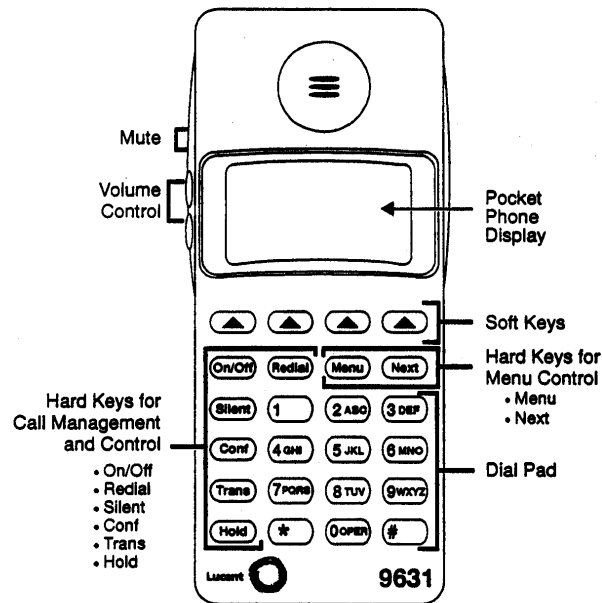


Figure 3-1. 9631A Pocket Phone

In general, the 9631A Pocket Phone has the following features:

- Hard key interface
- Soft key interface
- Ringer/volume control buttons
- Display
- Dial pad
- Low battery indicator
- Vibrator
- Headset connector
- Mute

Hard Key Interface

The 9631A Pocket Phone has several hard keys. Hard keys are buttons with labels and functions that do not change. The pocket phone has the following hard keys.

Hard Keys for Menu Control

The hard keys for menu control include the following:

- **Menu** — to access local control functions and soft key mode (see the “Soft Key Interface” section).
- **Next** — to access soft key features and calling screens

Menu and **Next** provide access to the following features: Backlight, Lock, Personalized Ringing, Service Information, and Vibrator.

Hard Keys for Call Management

The hard keys for call management include the following:

- **On/Off** — to start and end calls
- **Redial** — to dial the previous number dialed from the key pad
- **Hold** — to place calls on hold
- **Silent** — to turn off audible ringing signals and tones
- **Conf** (Conference) — to create a conference call
- **Trans** (Transfer) — to transfer a call to another extension

Soft Key Interface

The 9631A Pocket Phone has a row of four soft keys located immediately below the display. Soft keys are buttons with preprogrammed labels and functions that can change dynamically as you perform functions and make selections. Soft keys provide access to calling and local functions, and they are intended to provide a user-friendly interface to additional functionality. Available calling functions include the display, Backlight, Lock, Personalized Ringing, Service Information, and Vibrator.

The soft keys are marked as follows:



Because each soft key can have multiple functions, the bottom row on the display is used for displaying associated soft key function labels. You can access several features by pressing **Menu** and **Next**. See the previous figure and also the “Operating the 9631A Pocket Phone” section in this chapter.)

Table 2-3. Battery Charger Problems and Possible Solutions

Symptom	Possible Causes	Possible Solutions
SPARE LED on the battery charger flashes red.	Battery pack is defective.	1. Insert the battery pack into pocket phone and place the pocket phone into the battery charger's pocket phone cradle. 2. Wait one minute. If the pocket phone 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. 2. Unplug the charger and clean the contacts with a soft eraser. 3. Clean the battery pack contacts with a soft eraser.
	Battery pack is not seated properly in spare battery compartment.	Reseat the battery pack in the battery charger's Spare battery compartment.
Pocket phone is in the battery charger cradle and the pocket phone LED does not light.	Pocket phone is not seated properly in the battery charger cradle.	Reseat the pocket phone in the battery charger cradle.
	Battery power supply is not plugged in.	Check that the charger power cord is plugged into the charger and into an electrical outlet that is not controlled by a wall switch.

Battery Charger Wall-Mounting Template

Use the following template to position the screws for mounting your 9631A Pocket Phone battery charger:

1. Cut out the template.
2. Using tape, lightly affix the template to the wall where you want to attach the battery charger. If possible, choose a location that positions at least one of the screw holes over a wall stud.
3. Mark the wall.

- Menu-driven feature operations
- Low battery message
- Extension number of the pocket phone
- Unique serial number and firmware and hardware version numbers
- Radio link/connection status information
- Dialed digits
- Visual dial tone indicator
- Service messages (described in Chapter 4)
- Icons (discussed in the next section)

Icons

The top line of the pocket phone display is used to show icons. The icons provide information about the status of the pocket phone and the DWBS. The following figure identifies the icons.

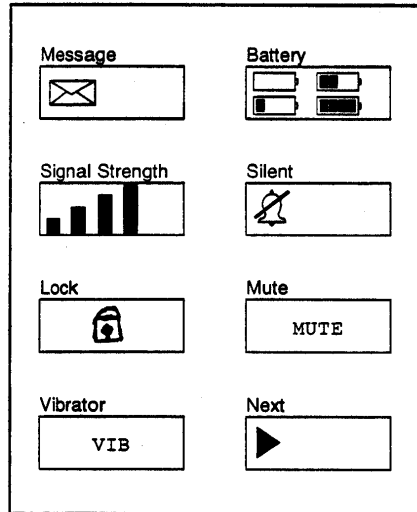


Figure 3-2. Icons for the 9631A Pocket Phone

The icons on the top line of the display are in a fixed location and in the following order from left to right: message (envelope), signal strength (four bars), lock (padlock), vibrator, battery, silent (slashed bell), mute, and next (arrow).

The following list discusses the icons.

- **Message.** The envelope icon is on whenever the message waiting indicator administered for the pocket phone is lit. The envelope icon is off whenever the pocket phone is not linked to a DWBS or there is no message.
- **Signal strength.** Signal strength is indicated by turning on and off the bars that make up the icon. The bars indicate the signal level in the area where the pocket phone is located. All four bars are off whenever the pocket phone is not within the coverage area of a system.
- **Lock.** The padlock icon is on whenever the pocket phone is locked. This is true whether or not the pocket phone is linked to a DWBS.

- **Vibrator.** The vibrator icon is on whenever the vibrator is on. This is true whether or not the pocket phone is linked to a DWBS.
- **Battery.** The talk time and standby time that are available on the phone are indicated by the battery icon, as follows:
 - The outline of the icon is on whenever the battery has approximately 10 minutes of talk time remaining. This is true whether or not the pocket phone is linked to a DWBS. The outline of the battery flashes at a rate of 500 ms on and 500 ms off whenever there are less than 10 minutes of talk time remaining.
 - Only the leftmost fill icon is lit whenever the battery has between 10 minutes of talk time and approximately 25 percent of its total talk and standby time remaining.
 - Two or more fill icons are lit whenever more than 25% of the battery capacity is available.
- **Silent.** The slashed bell icon is on whenever Silent Mode is activated for the pocket phone. This is true whether or not the pocket phone is linked to a DWBS.
- **Mute.** The mute icon is on whenever the pocket phone's microphone is muted while on an active call. This icon is off whenever the pocket phone is not on an active call.
- **Next.** The arrow icon is on whenever there are additional features on the next screen. You can access these features by pressing **Next**.

Dial Pad

The pocket phone dial pad includes the standard 12 buttons for dialing telephone numbers and accessing the DEFINITY ECS call features.

Operating the 9631A Pocket Phone

This section provides the information you need to make full use of your 9631A Pocket Phone. The information presented focuses on feature identification and access.

⇒ NOTE:

If you are using your 9631A Pocket Phone for the first time and cannot perform the operations described in the following "how to" section, call your system administrator. A pocket phone must be administered before you can access any switch service.

The following "how to" information is arranged in a logical order. See Figure 3-1 for button and key locations.

Administering Personalized Ringing

Personalized Ringing allows you to select one of nine ringing patterns for incoming calls. (One ringing pattern sounds like a pager.) This feature is useful in environments where multiple pocket phones are in use. By assigning a specific ringing pattern to their phone, pocket phone users can distinguish their own ringing pocket phone from other ringing pocket phones in their area.

To administer Personalized Ringing, do the following:

1. From the calling screen, press **Menu**.
2. Press **Next** four times. This brings you to the Personal Ring screen. The "Personal Ring #N" message, where "N" represents a number from 1 to 9, appears on the display. This message indicates the number of the currently administered ringing pattern.
3. If necessary, press keys 1 through 9 in order or at random to hear the available ringing patterns.
4. Once you decide what ringing pattern you would like to activate, press the corresponding number key followed by the **Select** soft key. This displays a screen indicating the number of the Personalized Ring pattern that you have selected.

Adjusting the Earpiece Volume

The volume control buttons enable you to adjust the earpiece volume. To do so, you must be in the coverage area and either on a call or listening to dial tone.

To adjust the earpiece volume:

1. Press **On/Off**.
2. Press and hold either the up-volume control button or down-volume control button until the appropriate volume level for the earpiece is reached.
3. Press **On/Off** to end the call.

The receiver volume remains at the level set until you press a volume control button while you are on a call.

Adjusting Ringer and Warning/Notification Tones

The volume control buttons also enable you to adjust the ringer and warning/notification tones (higher or lower).

To adjust the ringer and warning/notification tones, press and hold either the up-volume control button or the down-volume control button until the appropriate volume level is reached.

Audible Information Tones and Error Messages

4

Introduction

The DWBS is provisioned with a single audible information tone. This tone provides several services. The pocket phone provides various error codes and messages.

Incoming Call Ring Patterns

Incoming calls are subject to the following ring patterns:

- **One ring** — call from another extension
- **Two rings** — call from outside or from the attendant
- **Three rings** — priority call from another extension or from an Automatic Callback call you placed
- **Ring-ping (half ring)** — call redirected from your telephone to another because the Call Forwarding or Send All Calls (SAC) feature is active
- **Personalized Ringing** — ringing pattern that allows users to distinguish their own ringing pocket phone from other ringing pocket phones in their area

Error Beep

An error beep is generated whenever either of the following occurs:

- Hard key or any of the soft keys on the pocket phone are pressed but are not applicable at the moment
- Error message screen appears on the pocket phone display

3. Once you receive dial tone, enter the telephone number of the party you are calling.

Using Pre-Origination Dialing

To make a call using pre-origination dialing, do the following:

1. Enter the telephone number of the party you are calling on the key pad.
2. Press a call appearance soft key or **On/Off**.

The digits you dial for pre-origination dialing are displayed.

NOTE:

If a call is active on a pocket phone, you cannot use pre-origination dialing to dial a new number from that phone. This is true because dial pad key presses are sent as tones in such a case.

Also, whenever a pocket phone has an alerting call or no idle call appearances, you cannot use pre-origination dialing to dial a new number from that phone.

Erasing Digits in Pre-Origination Dialing

Whenever a pocket phone is collecting digits that you have entered via pre-origination dialing, the **Bksp** soft key appears on the display.

To erase the most recent pre-origination dialing digit you have entered, press the **Bksp** soft key. To erase all of the pre-origination digits you have entered for the current call, press the **Bksp** soft key for two seconds.

Answering Calls

You can answer an incoming call whenever the pocket phone is not off-hook active on a call and is alerting. To answer an incoming call, simply press **On/Off** when the phone rings or when a call appearance soft key is alerting.

Activating and Deactivating the Vibrator

The pocket phone has a vibrator that provides tactile alerting for incoming calls. The vibrator is useful in quiet situations where an audible ring would disturb others or in noisy situations where the alerter might not ring loudly enough. The pocket phone vibrates for several seconds each time it is signaled to ring from the DEFINITY ECS. The vibrator is also useful with Silent Mode enabled. (See the next section.)

The vibrator is activated for all types of ringing patterns. Vibrator activation is independent of Silent Mode.

If the vibrator icon is not showing on the pocket phone display, the vibrator is off. To activate the vibrator, do the following:

1. From the calling screen, press **Menu**. The display should indicate that the vibrator is turned off.
2. Press the **On** soft key. The vibrator is now turned on, and the vibrator icon appears on the display.

If the vibrator icon is showing on the pocket phone display, the vibrator is on. To turn off the vibrator, do the following:

1. From the calling screen, press **Menu**. The display should indicate that the vibrator is turned on.
2. Press the **Off** soft key. The vibrator is now turned off, and the vibrator icon disappears from the display.

Activating and Deactivating Silent Mode

You can turn on or off most audible ringing signals, error beeps, and warning tones by pressing **Silent**. Whenever you do this, the slashed bell icon appears in the display.

Whenever you enable Silent Mode, only priority ringing, intercom ringing, or manual signaling is sounded at the pocket phone. A low battery tone is generated in Silent Mode whenever the user goes off hook and a low battery condition exists. All other tones, including key clicks, are disabled whenever Silent Mode is activated.



NOTE:

Silent Mode is independent of the vibrator setting.

The pocket phone displays a message indicating that it is being rung, and it also displays the appropriate flashing icon-like character indicating the call appearance status.

Transferring Calls

To transfer a call from one extension to another, do the following:

1. Inform the active party that you are transferring the call and to hold on.
2. Press **Trans**.
3. Dial the telephone number of the next party.
4. Press **Trans** again to transfer the call.



NOTE:

Whenever all Call Appearance indicators are in use, you cannot transfer a call or receive and make other calls.

Conferencing Calls

You can conference a maximum of six parties onto a call.

To activate a conference call:

1. Inform the active party that you are initiating a conference call and to hold on.
2. Press **Conf**.



NOTE:

The active call is automatically placed on hold, and the second call appearance indicator is activated.

3. Dial the telephone number of the next party.
4. Press **Conf** again to conference the two calls together on one call appearance. The screen displays "CONFERENCE N," where "N" is the number of another party on the conference call.



NOTE:

Whenever all Call Appearance Indicators are in use, you cannot conference additional parties or receive and make other calls.

Holding Calls

To place a call on hold:

1. Press **Hold**.



NOTE:

The call is placed on hold and the call appearance indicator flashes.

2. Press the soft key below the flashing indicator to return to the call.

Ending Calls

To end a call, press **OnOff**.

Dropping Calls

This feature enables you to drop the last person you added to the conference call.

To drop a call, press the **Drop** soft key. This drops the last caller who was added to the conference.

Locking and Unlocking the Pocket Phone

The lock function prevents the user from accessing soft key mode as well as from placing and answering calls. Whenever the pocket phone is in the "locked state," the lock icon is displayed. Also, all functions, except for the pocket phone ringing on incoming calls, are inactive. The display message associated with ringing is displayed. You *cannot* lock a pocket phone whenever the phone is off-hook on a call or has a call on either "traditional" hold or conference/transfer ("soft") hold.

The lock and unlock operations require creating (if necessary) and using a user-generated lock password. You can create, enter, change, or delete a lock password via soft key screens. Also, you can create a password while the pocket phone is on a call. However, you *cannot* change or delete a password whenever the phone is off-hook on a call or has a call on either "traditional" hold or conference/transfer ("soft") hold.

You can unlock a pocket phone during an incoming call. To unlock the pocket phone, you must enter the appropriate four-digit password or a master key. In case of an error, you can reenter or clear the password or master key by pressing the **Clear** soft key.

Creating a Password

To create a password to lock the phone initially, do the following:

1. From the calling screen, press **Menu**.
2. Press **Next**. A screen indicating that no lock password currently exists is displayed. The screen also asks you if you want to create a password.

NOTE:

If the create screen does not appear, a password already exists for the phone. See your system administrator to clear the password if you do not know it.

3. Press the **Yes** soft key to create a password. A screen that allows you to create a lock password is displayed.
4. From the dial pad, enter a four-digit lock password. Enter any combination of digits in the range of 0 through 9 (for example, 6829). For each valid digit that you enter, an asterisk (*) appears in the display. If necessary, to erase up to the first three digits you enter, press the **Clear** soft key and start again. Once you enter your fourth valid digit, a screen that asks you to verify your password is displayed.
5. To verify your lock password, reenter it in the space provided. If the password you enter matches the one you created, a password confirmation screen is displayed. If the passwords do not match, a screen indicating this is displayed, and you are taken back to the password creation screen in Step 4.

Lock Operation

⇒ NOTE:

You cannot lock a pocket phone whenever the pocket phone is active on a call or has a call on hold.

If you have previously created a password, you can lock the phone.

To lock the pocket phone, do the following:

1. From the calling screen, press **Menu**.
2. Press **Next**. If the pocket phone is not active on a call or does not have a call on hold, a screen for locking the phone is displayed.
3. Enter the lock password in the space provided. For each digit that you enter, an asterisk (*) appears in the display. If necessary, to erase up to the first three digits you enter, press the **Clear** soft key and start again.
4. If the password you enter is correct, a screen indicating that the phone is now locked and the lock icon are displayed. If the password is incorrect, a message to this effect is displayed and you are taken back to the lock password screen in Step 3.

Changing the Password

To change your lock password, do the following:

1. From the calling screen, press **Menu**.
2. Press **Next**.
3. Press the **Change** soft key to change the password. A screen that allows you to change your lock password is displayed.

Enter your old lock password in the space provided. For each digit that you enter, an asterisk (*) appears in the display. If necessary, to erase up to the first three digits you enter, press the **Clear** soft key and start again.

Let's assume that you enter the correct password. A screen that allows you to enter your new lock password appears.

4. Enter your new password in the space provided. For each digit that you enter, an asterisk (*) appears in the display. If necessary, to erase up to the first three digits you enter, press the **Clear** soft key and start again.

Once you enter the password, a screen that requires you to reenter the password for verification is displayed.

5. Reenter the password for verification. If the passwords match, a screen indicating that your new lock password is now active is displayed. If the passwords do not match, you are taken back to the lock password creation screen in Step 4.

Deleting the Password

To delete your lock password, do the following:

1. From the calling screen, press **Menu**.
2. Press **Next**.
3. Press the **Del** soft key. A screen that allows you to delete your password is displayed.
4. Enter the password to be deleted in the space provided. If you enter a valid password, a screen indicating that the password has been deleted is displayed. If you do not enter a valid password, a message to this effect is displayed, and you are taken back to the screen with the **Del** soft key in Step 3.

Unlock Operation

If a pocket phone is locked and linked to the system, a padlock icon appears in the display.

To unlock your pocket phone, do the following:

1. From the calling screen, press any key.
2. Enter your (un)lock password in the space provided. If you enter the correct password, your phone is unlocked and the lock icon disappears from the display. If you enter an incorrect password, a message to this effect is displayed, and you are taken back to the unlock screen.



NOTE:

If you cannot unlock the phone, see your system administrator to reset the password.

Redialing Calls

Press **Redial** to redial the last number dialed from the keypad. The redial number is indicated on the display. You need not press **On/Off**. The pocket phone stores up to the first 24 digits dialed. To redial a call, the pocket phone must have an idle call appearance.

Displaying Service Information

The pocket phone contains screens that allow you to view the following information about your phone:

- Extension assigned via DWBS administration
- International Portable Equipment Identity (IPEI) number
- Received Signal Strength Indication (RSSI) in dB
- Cell ID of the current cell

- Frequency and timeslot of the current channel
- Hardware vintage and firmware version

To display service information about your phone, do the following:

1. From the calling screen, press **Menu**.
2. Press **Next** five times. This brings you to the first Service Information screen. If the pocket phone is linked, this screen displays the pocket phone extension and its IPEI number.



NOTE:

If the pocket phone is unlinked, the screen displays the extension assigned to the pocket phone the last time it was linked.

3. Press the **More** soft key to display the second Service Information screen. This screen displays the RSSI, cell ID, and channel frequency and timeslot.



NOTE:

This information is updated as various events occur (for example, whenever the pocket phone changes cells).

4. Press the **More** soft key to display the third Service Information screen. This screen displays the phone's hardware vintage and firmware version.



NOTE:

The **On/Off** button is not used during this procedure. Pressing this button before performing this procedure causes an adjustment in the earpiece volume.

Activating and Deactivating the Backlight

The pocket phone has a backlight to help you see the display in poorly-lit environments. The backlight illuminates the display via light-emitting diodes (LEDs). These LEDs are lit whenever backlighting is activated and either you press any button on the phone or the phone receives an incoming call. The LEDs remain lit for 15 seconds; also, if you press another button, the LEDs remain lit for an additional 15 seconds.

To activate the backlight, do the following:

1. From the calling screen, press **Menu**.
2. Press **Next**.
3. Press **Next** again. The display should indicate that the backlight is off.
4. Press the **On** soft key.
5. Press any button on the phone. The backlight should now be turned on.

To deactivate the backlight, do the following:

1. From the calling screen, press **Menu**.
2. Press **Next**.
3. Press **Next** again. The display should indicate that the backlight is on.
4. Press the **Off** soft key. The backlight should now be turned off.

Making Calls

You can make calls with the pocket phone whenever the phone is not off-hook active on a call and has an idle call appearance. You can use post-origination dialing or pre-origination dialing to make calls. Post-origination dialing requires that you get dial tone before you dial a call, similar to a wired phone; pre-origination dialing allows you to dial digits before you receive dial tone, similar to a cellular phone.

Using Post-Origination Dialing

To make a call using post-origination dialing, do the following:

1. Press a call appearance soft key or **On/Off**.
2. Wait for the dial tone.

Warning Tone

A warning tone sounds whenever the user is off hook and is moving out of the pocket phone's range.

A warning tone sounds and the appropriate message appears on the pocket phone display whenever any of the following are true:

- User attempts to go off hook and a no channel available condition exists
- Pocket phone with an active call determines that a handover is needed but there is no channel available for a handover
- 20 minutes worth or less of talk time is available on the pocket phone

⇒ NOTE:

For this condition, the tone automatically sounds if the user attempts to go off hook

- User attempts to go off hook but no talk time remains on the pocket phone battery

User-Level Error Messages

The following table presents the user-level error messages that may appear on the pocket phone, along with corrective actions, if required.

Table 4-1. User-Level Error Messages and Corrective Actions for the Pocket Phone

User-Level Error Messages	Corrective Actions
"OUT OF RANGE"	Walk back into the system coverage area. Press On/Off to re-link the pocket phone. A call appearance indicating an idle call state or an incoming call should appear.
"PLEASE WAIT"	None required. The DWBS should automatically reset the pocket phone within 10 seconds.
"NO SERVICE"	See the system administrator, as prompted by the subsequent message "SEE SYS ADMIN."
"LOW BATTERY"	Replace the pocket phone battery.

receptacle checked by a qualified electrician before connecting this equipment.

▲ WARNING:

The rechargeable battery contains nickel metal hydride. Do not burn or puncture the battery. Like other batteries of this type, if it is burned or punctured, it could release toxic material, which 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.

- Read and understand all instructions in this booklet before using this product.
- Observe all warnings and instructions marked on the product.
- Do not use the battery charger near water or when you are wet. If the battery charger comes in contact with any liquids, unplug the power cord immediately. Do not plug the product back in until it has dried thoroughly.
- Never push objects of any kind into this product through housing slots because the objects may touch hazardous voltage points or short out parts that could result in a risk of electric shock. Never spill liquid of any kind on the pocket phone or battery charger.
- Never place this product near or over a radiator or heat register.
- Slots and openings in the housing are provided for ventilation. To protect the housing from overheating, these openings must not be blocked or covered. Therefore, do not place the product on a bed, sofa, rug, or other similar surface. Also, do not place this product in an enclosed area unless proper ventilation is provided.
- Use only the correct power source. If you are not sure of the power supply to your location, consult your local power company.
- This battery charger uses a 3-prong plug in continental US locations. Such plugs are designed for your safety. Do not attempt to defeat this purpose. If your wall outlet does not accept the plug, the outlet should be replaced by an electrician.
- Do not allow anything to rest on the power cord of the battery charger. Do not locate this product where the cord will be abused by persons walking on it. Do not overload wall outlets as this can result in the risk of fire or electric shock. Do not staple or otherwise attach the power cord to building surfaces.
- Use only the type of battery pack shipped with this product.
- If you suspect a gas leak, report it immediately, but use a telephone away from the area in question. The telephone's electrical contacts could generate a tiny spark. While unlikely, it is possible that this spark could

fixed part

The part of the DWBS radio infrastructure that is not portable. This includes the Radio Controllers, Wireless Fixed Bases, and Cell Antenna Units.

H

hard keys

Dedicated buttons on the pocket phone that are labeled for particular functions (for example, making calls).

hardware vintage

Numbering scheme for identifying the components and physical design of a DWBS part, such as a circuit pack.

I

I2

Interface between a Radio Controller and a Wireless Fixed Base.

I3

Interface between a Wireless Fixed Base and a Cell Antenna Unit.

Initialization and Administration System

Services support system for PBX administration and maintenance.

International Portable Equipment Identity

Unique number used to identify a pocket phone for administration and through-the-air communication. This number is sent by the pocket phone to the fixed part during the access rights procedure.

International Portable User Identity

Number sent by the fixed part to a pocket phone during the access rights procedure. Also, this number is sent by the pocket phone to the fixed part during the location registration procedure.

IPEI. See **International Portable Equipment Identity**

IPUI. See **International Portable User Identity**

L

local features

Features that are supported by the pocket phone.

local tones

Tones produced locally in the pocket phone. Includes the following tones: ringer, warning, tone, error beep, confirmation, and key click.

Location Registration

Through-the-air procedure used by the pocket phone to inform the fixed part that it has moved to a new cluster. If the pocket phone is active on a call, Location Registration is implied whenever there is an inter-RC or connection handover.

M

Mobility Manager (MM)

Software added to the DEFINITY system to control and track pocket phones as they change location within the DWBS coverage area. The Mobility Manager directs all control and voice information to the appropriate Radio Controller for each pocket phone. It is also responsible for the maintenance and administration of the DWBS and pocket phones.

P

pre-origination dialing

Dialing that occurs before dial tone is granted.

portable part

The part of the DWBS radio infrastructure that is portable (most notably, the pocket phones).

post-origination dialing

Dialing that occurs after dial tone is granted.

Predictor

Tool within the WISE Expert Design System that uses site information as input to determine the optimal placement of the antennas within the DWBS.

R

Radio Controller (RC)

Circuit pack that provides the interface between the DEFINITY system and the radio subsystem. It controls one or more Wireless Fixed Bases.

Radio Propagation Measurement Tool (RPMT)

Tool within the WISE Expert Design System that is used to provide basic radio measurements. The RPMT looks like a pocket phone and, once it is administered, it can also initiate and receive phone calls. The RPMT can supplement the Predictor, serve as a troubleshooting device, and be used at site surveys.

Glossary

RC. See Radio Controller

RPMT. See Radio Propagation Measurement Tool

S

soft keys

Buttons whose labels and functions can change dynamically as the user performs functions and makes selections.

T

TDMA. See Time Division Multiple Access

Terminal Portable User Identifier (TPUI)

Number returned by the fixed part to the pocket phone during the Location Registration procedure.

Time Division Multiple Access (TDMA)

Radio access method for which each call uses a different time slot. TDMA permits multiple conversations per radio.

TPUI. See Terminal Portable User Identifier

U

UTAM

Group charged by the Federal Communications Commission to coordinate the relocation of microwave incumbents out of the unlicensed spectrum (1910-1930 MHz) and to coordinate the deployment of unlicensed devices and systems in that spectrum.

W

Wireless Fixed Base (WFB)

Component that houses the fixed radio hardware. It provides the radio functions to transmit digitally to the pocket phones and to receive digital signals from the pocket phones. A WFB can support a maximum of four external Cell Antenna Units.

Safety Instructions



Introduction

This section contains instructions related to safety labels on the product.

Using the Product

Take note of all the information in this section whenever you are using the product.

 WARNING:

indicates the presence of a hazard that can cause severe or fatal personal injury if the hazard is not avoided.

 CAUTION:

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

Always follow these basic safety precautions when using this product to reduce risk of injury from fire or electric shock.

 WARNING:

Failure to ground the battery charger properly results in a risk of electrical shock, which can cause serious personal injury. This product requires a 3-prong AC power receptacle for safe operation. You should have your

Glossary

A

access rights

Air interface procedure that assigns to the pocket phone a Temporary Portable User Identifier (TPUI) and its extension number. The pocket phone initiates this procedure each time it enters a system. A successful completion of the procedure includes an implicit Location Registration.

Auto-Reconnect

Feature that enables a user to reconnect to a call if either of the following occurs: the pocket phone is taken out of the coverage area while on a call and is then taken back into the coverage area within 60 seconds; or, the pocket phone battery is removed, and a charged battery is inserted within 60 seconds.

C

CAU. See Cell Antenna Unit.

cell

Radio coverage area of a CAU.

Cell Antenna Unit (CAU)

Remote antenna that connects to a Wireless Fixed Base. It contains a transmit power amplifier, transmit/receive switch, low-noise receive amplifier, and antenna.

E

Emerging Technologies Band

20 MHz of unlicensed spectrum for Personal Communication Service (PCS) in North America. The band is isochronous (1920-1930 MHz) with eight channels of 1.25 MHz bandwidth per channel primarily for voice, and asynchronous (1910-1920 MHz) primarily for data.

Estimator

Tool within the WISE Expert Design System that is used to provide an initial price quote and to configure the DWBS.

F

FCC. See Federal Communications Commission

Federal Communications Commission (FCC)

Government agency within the US that is responsible for assigning and regulating the radio spectrum so that it can be shared by many users without unacceptable interference.

Maintaining the Pocket Phone

ignite a heavy concentration of gas. 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.

- Unplug the battery charger from wall outlets before cleaning. Clean exposed parts with a soft, slightly damp cloth. Do not use liquid or aerosol cleaners.
- Unplug the battery charger from the wall outlet, and refer servicing to qualified service personnel under the following conditions:
 - Power cord or plug on the battery charger is damaged or frayed.
 - Product has been dropped and the housing has been damaged.
- This product should be serviced by (or taken to) a qualified service center when service or repair work is required. Do not open the product; there are no user serviceable components inside. See your system administrator.

Maintaining the Pocket Phone

⇒ NOTE:

The cautions and warnings in the previous section are also applicable to this section, as are the safety instructions.

This telephone is designed to provide trouble-free performance without any special maintenance procedures. To reduce the risk of accidental damage, do the following.

- Keep the telephone in an area free of dust, smoke, and moisture.
- Do not place the telephone 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 if its power cord is damaged, if liquid is spilled into it, or if its housing becomes cracked or otherwise damaged.
- To clean the telephone, 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 the phone quickly with a soft cloth.

▲ CAUTION:

Your telephone contains sensitive electronic parts. Never submerge it in any kind of liquid, and never use 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.

Also, battery contacts should be covered to prevent their possible exposure to loose metal bits (for example, coins or chains in a pocket).

Specifications

B

Introduction

This appendix provides various specifications for the DWBS.

System Capacity and Coverage

The following support is provided.

- Maximum of:
 - 1500 pocket phones
 - 30 Radio Controllers (RCs)
 - 60 Wireless Fixed Bases (WFBs)
 - 240 Cell Antenna Units (CAUs)
- Radio capacity of 12 channels (calls) per band and eight bands of 1.25 MHz

Base Stations

The following support is provided.

- Two base station component providing maximum coverage for your business premises, including:
 - WFBs, which are the main base station components in the system antenna infrastructure
 - CAUs, which are used to extend the effective coverage area of the WFBs

Specifications

- WFBs interfacing to the integrated DEFINITY ECS RC port card |
- Maximum distance of 5,000 ft from the DEFINITY ECS to the WFB
- Maximum distance of 100 ft from the WFB to the CAU |
- Out-of-band signaling
- Personal Wireless Telecommunications (PWT) based architecture (that is, the evolving US wireless standard) |
- Time Division Multiple Access (TDMA)
- Operation within the isochronous (1920 MHz-1930 MHz) part of the emerging technology band (Unlicensed Personal Communications System [PCS])
- 32 Kbps Adaptive Pulse Code Modulation (ADPCM) encoding for voice |

Operating Temperatures

Use the pocket phone and its batteries within the 0° C to 26° C temperature range for relative humidity between 5% and 95%. Use the phone within the 26° C to 50° C temperature range for 140 grains per pound of dry air specific humidity.

For fast charging, use the battery charger within the 0° C to 26° C temperature range for humidity between 20% and 90%; or, use it within the 26° C to 45° C temperature range for 140 grains per pound of dry air specific humidity. For only a trickle charge, use the charger within the 45° C to 50° C temperature range for 140 grains per pound of dry air specific humidity. |

Storage Temperatures

Store the pocket phone within the -30° C to 26° C temperature range for relative humidity between 5% and 95%. Store the phone in the 26° C to 65° C temperature range for 140 grains per pound of dry air specific humidity.

For short-term storage, store the pocket phone batteries within the -20° C to 50° C temperature range and for humidity between 45% and 85%. For long-term storage, store the batteries within the -20° C to 30° C temperature range.

Store the battery charger within the -30° C to 26° C temperature range for relative humidity between 5% and 90%. Store the battery charger in the 26° C to 65° C temperature range for 140 grains per pound of dry air specific humidity.

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