

**Lucent Technologies**  
Bell Labs Innovations



**DEFINITY<sup>®</sup> Wireless Business  
System**

Installation and Test

555-232-102  
Comcode 108133372  
Issue 3  
October 1997

Copyright © 1997 Lucent Technologies  
All Rights Reserved  
Printed in USA

#### Notice

While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, Lucent Technologies can assume no responsibility for any errors. Changes and corrections to the information contained in this document may be incorporated into future reissues.

#### Your Responsibility for Your System's Security

You are responsible for the security of your system. 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. Product administration to prevent unauthorized use is your responsibility and your system administrator should read all documents provided with this product to fully understand the features available that may reduce your risk of incurring charges.

#### Federal Communications Commission Statements

##### Part 15D: Unlicensed Personal Communications.

This equipment has been certified to comply with the regulations governing unlicensed Personal Communication devices pursuant to Subpart D of Part 15 of the FCC rules. This subpart set out the regulations for devices operating in the 1920-1930 MHz frequency band.

**Part 68: Network Registration Number.** This equipment is registered with the FCC in accordance with Part 68 of the FCC Rules. It is identified by FCC registration number AS593M-13283-MF-E.

**Part 68: Answer-Supervision Signaling.** Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user
- This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:
  - A call is unanswered
  - A busy tone is received
  - A reorder tone is received

#### Trademarks

DEFINITY Enterprise Communications Server is a registered trademark of Lucent Technologies in the US and throughout the world.

DEFINITY Communications System is a registered trademark of Lucent Technologies in the US and throughout the world.

#### Ordering Information

The ordering number for this document is 555-232-102. To order this document, call the BCS Publications Center at 1 800 457-1235 (International callers use 1 317 322-6411). For more information about Lucent Technologies documents, refer to the *Business Communications Systems Publications Catalog* (555-000-010).

You can be placed on a Standing Order list for this and other BCS documents you may need. Standing Order will enable you to automatically receive updated versions of individual documents or document sets, billed to account information that you provide. For more information on Standing Orders, or to be put on a list to receive future issues of this document, please contact the Lucent Technologies BCS Publications Center.

#### Lucent Technologies Fraud Intervention

If you suspect you are being victimized by toll fraud and you need technical support or assistance, call the BCS Technical Service Center Toll Fraud Intervention Hotline at 1 800 643-2353.

#### Comments

To comment on this document, return the comment card at the back of the document.

#### Acknowledgment

This document was prepared by the BCS Product Documentation Development group, Lucent Technologies, Middletown, NJ 07748-9972

---

# Contents

---

<b>About This Book</b>	ix
■ Introduction	ix
■ Audience	ix
■ Important Safety Guidelines for Users	ix
Exposure to Radio Frequency Energy	x
Cardiac Pacemakers	x
Hearing Aid Compatibility	x
■ Typographic Conventions	xi
■ Organization	xi
■ Related Information	xii

---

<b>1</b>	<b>Switch Administration</b>	1-1
	■ Introduction	1-1
	■ Mobility Manager	1-1
	■ Procedure: Software Installation	1-1

---

<b>2</b>	<b>Hardware Installation</b>	2-1
	■ Introduction	2-1
	■ Safety Information	2-1
	Safety Instructions	2-1
	Additional Safety Instructions for Installation	2-4
	DWBS Components	2-4
	■ Radio Controller (RC)	2-6
	Procedure: Installing the Radio Controller	2-8
	■ Wireless Fixed Base (WFB)	2-9
	Procedure: Installing the Wireless Fixed Base	2-10
	■ Cell Antenna Unit (CAU)	2-15
	Procedure: Installing the CAU	2-15

---

# Contents

■ 9601 Pocket Phone	2-16
Procedure: Installing the 9601 Pocket Phone	2-17
Procedure: Pocket Phone Key Sequence to Obtain the IPEI	2-18
■ Power and Interface Cabling	2-18
I2 Interface	2-19
I3 Interface	2-21

---

<b>3</b>	<b>DWBS Testing</b>	3-1
■	Introduction	3-1
■	Procedure: Wireless Test Calls	3-1
■	Procedure: Verifying Operative Cell IDs	3-2

---

<b>4</b>	<b>Commands</b>	4-1
■	Introduction	4-1
■	Command Structure	4-1
■	Command List	4-1

---

<b>GL</b>	<b>Glossary</b>	GL-1
-----------	-----------------	------

---

<b>IN</b>	<b>Index</b>	IN-1
-----------	--------------	------

---

## About This Book

---

### Introduction

---

The *DEFINITY® Wireless Business System Installation and Test* provides both hardware and software background information and procedures for the installation and testing of the DEFINITY Wireless Business System (DWBS).

**⇒ NOTE:**

Before using this book, all planning and site preparation steps must be completed. The technician's function is to install the hardware and load the software to bring up the system. For additional planning and site information, see the documents listed under the "Related Information" heading further along in this section.

### Audience

---

The primary audience for this book is the installation technician.

### Important Safety Guidelines for Users

---

Observe these guidelines for safe and efficient operation of your DWBS 9601 Pocket Phone (wireless telephone).

Your wireless telephone is a radio transmitter and receiver. When the battery is installed, the phone is on and it receives and sends out radio frequency (RF) energy. The phone operates in the frequency range of 1920-1930 MHz. Your hand-held wireless telephone uses the digital TDMA mode. 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 Institute of Electrical and Electronic Engineers (IEEE) and the American Standards Institute (ANSI) safety levels 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 hand held wireless phone and a pacemaker to avoid potential interference with a pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research.

- *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 have any reason to 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.

## 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:

## Organization

---

This book is organized as follows:

- **Chapter 1, "Switch Administration"** — This chapter deals with the administration of the DEFINITY Enterprise Communications Server and the Mobility Manager for system operation.
- **Chapter 2, "Hardware Installation"** — This chapter provides the technician with background and procedural information to install the hardware.
- **Chapter 3, "DWBS Testing"** — This chapter provides the installer with background and procedural information to ensure that the system is operational.
- **Chapter 4, "Commands"** — This chapter provides a list of DEFINITY Enterprise Communications Server Release 5 and Mobility Manager commands associated with the installation of the system.
- **"Glossary"** — This section provides a listing of terminology and acronyms for the DWBS.
- **"Index"**

## **Related Information**

---

This book serves as a user's guide for the installation and test of the DWBS.  
Additional books in the series are:

- *DWBS Site Planning*, 555-232-101
- *DWBS Maintenance*, 555-232-103
- *DWBS Quick Reference*, 555-232-104
- *DWBS 9601 Pocket Phone User Guide*, 555-232-105
- *DWBS Estimator*, 555-232-106
- *DWBS Predictor*, 555-232-107

## Introduction

This chapter provides the steps necessary to administer the DEFINITY® Enterprise Communications Server (ECS) Release 6.1 Generic 3 for system operation.

## Mobility Manager

Administration of the DEFINITY ECS is accomplished through Generic 3 switch commands in addition to the Mobility Manager administration software. The Mobility Manager software comprises fields and commands specific to the system operation.

## Procedure: Software Installation

The following procedure covers the steps necessary to install the DWBS software. Additional commands are available to change and/or delete information.

**⇒ NOTE:**

See Chapter 4 for a list of DEFINITY ECS and Mobility Manager commands associated with the installation of the DWBS.

1. This step can be completed only with the permission of the regional Customer Service Associate (CSA) either remotely or on-site. From the DEFINITY management terminal, log on as **init** and execute the

**change system-parameters customer-options** command to verify that the *G3 Version* field contains **V6** or greater. The system will not operate on an earlier version. Go to page 2 of the form (next figure).

```
change system-parameters customer-options                               Page 2 of 4

                                OPTIONAL FEATURES
                                ISDN-PRI? n          Restrict Call Forward Off Net? y
                                ISDN-PRI over PACCON? n      Secondary Data Module? y
                                Malicious Call Trace? n      Station and Trunk MSP? n
                                Multifrequency Signaling? n  Tenant Partitioning? n
                                Personal Station Access (PSA)? n Terminal Trans. Init. (TTI)? n
                                                                Time of Day Routing? n
                                                                Uniform Dialing Plan? n
                                Processor and System MSP? n  Usage Allocation Enhancements? n
                                Private Networking? n        Wideband Switching? n
                                                                Wireless? n

(NOTE: You must logoff & login to effect the permission changes.)
```

**Figure 1-1. System Parameters**

2. Change the *Wireless* field from **n** to **y**.
3. Submit the form.
4. Log off and then log on again to the DEFINITY Management terminal as **init**.
5. Execute the **change system-parameters wireless** command to generate the following screen.

```
change system-parameters wireless

WIRELESS-RELATED SYSTEM PARAMETERS
System Identification: 0100015-2176

Maximum Radio Controllers: 0
Maximum Wireless Terminals: 0

Master Port Network:
Radio Transmission: y

Allowable Carrier Frequencies (MHz)
1: 1920.625 n      5. 1925.625 n
2: 1921.875 n      6. 1926.875 n
3: 1923.125 n      7. 1928.125 n
4: 1924.375 n      8. 1929.375 n

Port Networks With Radio Controllers
1: n    6: n    11: n   16: n   21: n   26: n   31: n   36: n   41: n
2: n    7: n    12: n   17: n   22: n   27: n   32: n   37: n   42: n
3: n    8: n    13: n   18: n   23: n   28: n   33: n   38: n   43: n
4: n    9: n    14: n   19: n   24: n   29: n   34: n   39: n   44: n
5: n   10: n   15: n   20: n   25: n   30: n   35: n   40: n
```

---

**Figure 1-2. Wireless System Parameters (MIPS)**

```
change system-parameters wireless

                                WIRELESS-RELATED SYSTEM PARAMETERS
                                System Identification: 0100015-2176

Maximum Radio Controllers: 0      Master Port Network:
Maximum Wireless Terminals: 0    Radio Transmission: y

Allowable Carrier Frequencies (MHz)
1: 1920.625 n                    5. 1925.625 n
2: 1921.875 n                    6. 1926.875 n
3: 1923.125 n                    7. 1928.125 n
4: 1924.375 n                    8. 1929.375 n

Port Networks With Radio Controllers
1: n
2: n
3: n
```

**Figure 1-3. Wireless System Parameters (Raptor)**

6. Allow the administrable part of the *System Identification* field to remain at the default value of **2176**.

**⇒ NOTE:**

This field provides the system with an identifier that is broadcast regularly in its beacon or traffic-bearing channels. The system ID is made up of two parts (system-generated digits and administrable digits). The system-generated part is displayed as a read-only prefix to the administrable part.

7. Enter the maximum number of Radio Controllers that may be administered on the system. Valid values are from **0** to **30** inclusive.

**⇒ NOTE:**

The field determines the number of Radio Controllers that are added to the system using the add radio-controller command. The field does not limit the number of Radio Controller circuit packs that may be physically inserted into and recognized by the system.

8. Enter the maximum number of wireless terminals (pocket phones) that are on this system. Valid values are from **0** to **260** inclusive.

**⇒ NOTE:**

The number of administered wireless terminals is included in the system wide count of station and trunk ports administered in the *Maximum Ports* field on the Customer-Options form. The value in the *Maximum Wireless Terminals* field must always be less than or equal to the value in the *Maximum Ports* field.

9. The *Master Port Network* field is a future use field and is inactive; therefore, it does not require input. The default value is a blank field.

**⇒ NOTE:**

This field is displayed only for DEFINITY ECS G3i and DEFINITY ECS G3r configurations.

10. Enable all frequencies by updating the specific field value to **y** unless otherwise directed by the Sales and Design Support Center in the Allowable Carrier Frequencies list.

**⇒ NOTE:**

The eight-field option supports the administration of the superset of carrier frequencies that are allowed for a system as determined by UTAM. (UTAM has been designated by the FCC as a frequency coordinator for the unlicensed band.) The allowable carrier frequencies administered in this field define the frequencies that can be administered on the Carrier-Frequencies form.

11. Enable all port networks that will contain Radio Controller circuit packs by updating the specific field value to **y**.
12. Submit the completed form.
13. Execute the **change carrier-frequencies** command to administer the carrier-frequencies.

**⇒ NOTE:**

All frequencies that are administered as **y** on the System-Parameters Wireless form are also defaulted to **y** on the Carrier-Frequencies form. This form needs to be changed only if the customer is not going to use a frequency that has been approved for use by the Federal Communications Commission (FCC).

```
change carrier-frequencies Page 1 of 1

WIRELESS CARRIER FREQUENCIES

Customer Carrier Frequencies (MHz)

1: 1920.625 n
2: 1921.875 n
3: 1923.125 n
4: 1924.375 n
5: 1925.625 y
6: 1926.875 n
7: 1928.125 n
8: 1929.375 n
```

---

**Figure 1-4. Carrier Frequency Form**



**NOTE:**

This form enables the user to limit the radio transmission to a subset of those carrier frequencies allowable for the DWBS. The form allows the user to limit radio transmissions without infringing upon any UTAM restrictions.

14. Submit the form.
15. If the hardware is present, install the radio controllers. (See Chapter 2, "Hardware Installation", for specific information before returning to this step.) If the hardware is not present, execute **change circuit-packs** command for the port network where the Radio Controller circuit pack will reside.

```

change circuit -packs                                     Page 1 of 5

                                CIRCUIT PACKS

      Cabinet: 1                                         Carrier: A
                                                         Carrier Type: processor

Slot Code   Sfx   Name                                     Slot Code   Sfx   Name
01: _____ -                                         11: _____ -
02: _____ -                                         12: _____ -
03: TN789   -     RADIO CONTROLLER                       13: _____ -
04: TN747   -     CO TRUNK                               14: _____ -
05: TN725   -     SPEECH SYNTH.                          15: _____ -
06: TN750   -     ANNOUNCEMENT                           16: _____ -
07: TN771   C     MAINTENANCE/TEST
08: TN763   B     AUXILIARY TRUNK
09: TN748   C     TONE DETECTOR
10: _____ -

`#' indicates circuit pack conflict.

```

**Figure 1-5. Change Circuit-Packs**

16. Enter **TN789** in the appropriate fields and submit the form.

**⇒ NOTE:**

Designating circuit pack TN789 in lieu of actually installing the hardware is known as “logically” administering the circuit pack. This enables the installation to continue without the hardware since the system checks that these fields are populated. When the hardware arrives, it is simply a matter of inserting them into their previously designated slots.

17. Execute the **list configuration all** command to generate the following screen.

list configuration all				Page 1
SYSTEM CONFIGURATION				
Board Number	Board Type	Code	Vintage	Assigned Ports u=unassigned t=tti
01A01	RADIO CONTROLLER		no board	
01A04	CO TRUNK	TN747	000008	01 02 u u u u u u
01A05	SPEECH SYNTH.	TN725	000005	01 02 03 04
01A06	ANNOUNCEMENT	TN750	000004	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
01A07	MAINTENANCE/TEST	TN771C	000003	u 02 03 04
01A08	AUXILIARY TRUNK	TN763B	000004	u u u u
01A09	TONE DETECTOR	TN748C	000005	01 02 03 05 06 07
01B04	DATA LINE	TN726	000011	u u u u u u u u
01B05	DID TRUNK	TN753	000008	u u u u u u u u
01B06	DS1 INTERFACE	TN767	000011	01 02 03 04 05 06 07 08 09 10 11 12 u u u u u u u u u u u 24

**Figure 1-6. List Configuration**

18. Verify that **Radio Controller** in the *Board Type* field is associated with the proper slots. If this is not the case, repeat Step 15.
19. For each of the Radio Controller circuit packs, logically or physically inserted, execute the **add radio-controller PPCSS** command to generate the following screen.



**NOTE:**

**PPCSS** indicates the port network, carrier, and slot address where the circuit pack is located; for example, **1B09** comprises port network 1, carrier B, slot 9. See Table 1-1 "Radio Controller Circuit Pack Fields", for additional information.

```
change radio-controller 1b12 Page 1 of 1
                                RADIO CONTROLLER CIRCUIT PACK    RC Location: 01B12
WFB A PARAMETERS
Internal Antenna? n
  WFB Location: mtmm3 1b-505_____
  CAU Conn? CAU Location
    1      y  mtmm3 1b-505_____
    2      n  _____
    3      n  _____
    4      n  _____

WFB B PARAMETERS
Internal Antenna? n
  WFB Location: _____
  CAU Conn? CAU Location
    1      n  _____
    2      n  _____
    3      n  _____
    4      n  _____
```

---

**Figure 1-7. Radio Controller Circuit Pack Screen**

**Table 1-1. Radio Controller Circuit Pack Fields**

<b>Field Name</b>	<b>Explanation</b>
<i>RC Location</i>	This field displays the cabinet, carrier, and slot of the TN789 circuit pack. No input is required.
<i>WFB A Parameters</i>	
<i>Location</i>	Enter the physical location of Wireless Fixed Base (WFB) A. This field must be administered if the internal antenna or at least one CAU on the WFB is administered as <b>y</b> .
<i>Internal Antenna</i>	Enter <b>n</b> .
<i>CAU Conn</i>	Enter <b>y</b> to designate that a particular CAU is connected to the WFB. The default is <b>n</b> .
<i>Location</i>	Enter the physical location of the connected CAU. This field must be administered if the associated <i>CAU Conn</i> field is set to <b>y</b> .
<i>WFB B Parameters</i>	<b>Note:</b> Repeat the previous process for WFB B, if applicable.

20. Add all wireless stations to the system by executing the **add station** **<object>** command to generate the following screens.

```

add station 30001                                     Page 1 of 3
                                                    STATION
Extension: 30001                                     Lock Messages? n_
Type: 9601A                                          Security Code: _____ TN: 1
Port: WT                                             Coverage Path 1: _____ COR: 1
Name: _____                                    Coverage Path 2: _____ COS: 1
                                                    Hunt-to Station:
STATION OPTIONS
Display Module? y                                     Message Lamp Ext: 30001
Display Language: english
IPEI: 001151622
Access Code: 00000
Home? y
    
```

**Figure 1-8. Add Station (1 of 3)**

**Table 1-2. Station Fields**

Field Name	Explanation
<i>Extension</i>	The extension number is part of the input command used to access this form and is a display-only field.
<i>Lock Messages?</i>	Enter <b>y</b> to restrict other users from reading or canceling the DWBS handset messages or retrieving messages via Voice Message Retrieval; otherwise, enter <b>n</b> (default).
<i>Type</i>	Enter the string <b>9601</b> to designate the wireless ( <b>Pocket Phone</b> ) station type.
<i>Security Code</i>	Enter the 4-digit security code required by users to retrieve messages via the Demand Print or Voice Messages Retrieval feature.
<i>TN</i>	Enter the <b>Tenant</b> number for those customers using the Tenant Partitioning feature. The default is <b>1</b> .
<i>Port</i>	This is a display-only field when the set type is designated as <b>9601</b> . No customer input is required.

**Table 1-2. Station Fields — Continued**

<b>Field Name</b>	<b>Explanation</b>
<i>Coverage Path 1</i>	Enter a coverage path number ( <b>1</b> through <b>75000</b> ) from a previously administered Call Coverage Path form.
<i>COR</i>	Enter the desired class of restriction (COR) number from <b>0</b> through <b>95</b> that reflects the desired restriction. Default is <b>1</b> .
<i>Name</i>	Enter the name of the person associated with this Handset. Up to 15 characters can be used. Names are case and space insensitive.
<i>Coverage Path 2</i>	Enter a coverage path number ( <b>1</b> through <b>75000</b> ) from a previously administered Call Coverage Path form.
<i>COS</i>	Enter the desired class of service (COS) number from <b>0</b> through <b>15</b> to designate allowed features. Default is <b>1</b> .
<i>Display Module</i>	Enter <b>y</b> to designate that the 9601 has a display module. The default is <b>y</b> because the 9601 has a build in display.
<i>Message Lamp Ext.</i>	The default is the current station's extension. Enter the assigned extension number to receive Message Waiting Lamp updates for the particular extension.
<i>Display Language</i>	Enter the language that the user wants the 9601 to display. The options are <b>English, French, Italian, Spanish, and user defined</b> . The default is <b>English</b> .
<i>IPEI</i>	Enter the 9-digit string obtained from the 9601 handset. The International Portable Equipment Identity (IPEI) is a unique number used to identify a 9601 handset for administration and through the air communication. Each 9601 handset has a unique IPEI, assigned at the factory, that can be obtained via a soft key button sequence. See the "Procedure: Pocket Phone Key Sequence to Obtain the IPEI", in Chapter 2 of this document. The IPEI that is entered on this station (9601) form must match the IPEI that was assigned to the handset at the factory.
<i>Access Code</i>	Enter the 5-digit decimal security code assigned to the 9601 Pocket Phone. The access code is assigned by the administrator and must be entered on the station form and the pocket phone via a soft key button sequence. This is a customer defined number and does not have to be unique among all handsets. The administrator could conceivably use a single access code for all handsets.
<i>Home</i>	Enter <b>y</b> if this is the primary location where this Pocket Phone is to be used. Enter <b>n</b> if this is the secondary location for this Pocket Phone use. The default is <b>y</b> .

```

add station 30001                                     Page 2 of 3
                                                    STATION

FEATURE OPTIONS
    LWC Reception: msa-spe      Auto Select Any Idle Appearance? n
    LWC Activation? y           Coverage Msg Retrieval? y
    CDR Privacy? n
    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? n

    H.320 Conversion? n

    Display Client Redirection? n
    Select Last Used Appearance? n
    
```

**Figure 1-9. Add Station (2 of 3)**

**Table 1-3. Station Feature Options**

Field Name	Explanation
<i>Leave Word Calling (LWC) Reception</i>	Enter <b>msa-spe</b> (default) if LWC messages are stored in the system or on the Messaging Server Adjunct, Switch Processor or enter <b>audix</b> if the messages are stored on the Audio Information Exchange System; otherwise, enter <b>none</b> .
<i>Auto Select Any Idle Appearance?</i>	Enter <b>n</b> (default) to prevent users from having this feature enabled. This field must be <b>y</b> when the pocket phone has two brdg-appr buttons.
<i>LWC Activation?</i>	Enter <b>y</b> (default) to allow users to leave short LWC messages for this pocket phone. If the system has the hospitality features, enter <b>y</b> for pocket phone in the guest rooms if the Wireless Business System pocket phone designated to receive failed wake-up messages is to receive LWC messages indicating incomplete wake-up calls. Enter <b>y</b> if audix was entered for LWC Reception.

**Table 1-3. Station Feature Options — Continued**

<b>Field Name</b>	<b>Explanation</b>
<i>Coverage Msg Retrieval?</i>	Applies when the Wireless Business System Handset is marked for LWC Reception. Enter <b>y</b> (default) to allow a user in the Wireless Business System Handset's Coverage Path to retrieve LWC messages for this Handset.
<i>CDR Privacy?</i>	An administrable option that allows digits in the called number field of an outgoing call to be blocked on a per-station basis. The number of blocked digits is administered system wide in the Privacy-Digits to Hide field on the Feature-Related System Parameters form. Enter <b>y</b> to enable the call privacy feature for each station. Default is <b>n</b> .
<i>Redirect Notification?</i>	Enter <b>y</b> (default) to give a half ring at this Handset when calls to this Handset are redirected (via Call Forwarding or Call Coverage). Enter <b>y</b> if audix was entered for LWC Reception.
<i>Data Restriction?</i>	Enter <b>y</b> to prevent tones, such as Call Waiting Tones, from interrupting this user's calls. Default is <b>n</b> . Data restriction provides permanent protection and cannot be changed by the Wireless Business System user. This should not be assigned if Auto Answer is <b>y</b> .
<i>Idle Appearance Preference?</i>	Enter <b>n</b> (default) to indicate which call appearance is selected when the user lifts the handset and there is an incoming call.
<i>Per Button Ring Control?</i>	Enter <b>n</b> (default) to prevent users from having Per Button Ring Control.
<i>Bridged Call Alerting?</i>	Enter <b>y</b> to allow incoming calls on bridged appearances of another handset's primary extension number, TEG calls, or PCOL calls. The default is <b>n</b> .
<i>Active Station Ringing?</i>	The default <b>single</b> is the needed field value for this Handset.
<i>Restrict Last Appearance?</i>	Enter <b>y</b> to restrict the last idle call appearance for incoming priority calls and outgoing call originations. The default is <b>n</b> .
<i>Display Client Redirection?</i>	Enter <b>y</b> to display the client redirection. The default is <b>n</b> .
<i>Select Last Used Appearance?</i>	Enter <b>n</b> (default) to prevent the station from automatically selecting the last used appearance.

```

add station 30001                                     Page 3 of 3
                                                    STATION

SITE DATA
  Room: _____
  Info1: _____
  Info2: _____
  Floor: _____
  Building: _____                               Set Color: _____

ABBREVIATED DIALING
  List1: _____      List2: _____      List3: _____

BUTTON ASSIGNMENTS
  1: brdg-appr  Btn:   Ext:
  2: brdg-appr  Btn:   Ext:
    
```

**Figure 1-10. Add Station (3 of 3)**

**Table 1-4. Station Fields Site Data**

Field Name	Explanation
<i>Site Data</i>	
- Room	Enter up to 10 characters to identify where the pocket phone's charging base is located or where the pocket phone user's room is located.
- Info1	Enter up to five characters that will be useful for identification purposes.
- Info2	Enter up to five characters that will be useful for identification purposes.
-Floor	Enter up to 10 characters to identify the location of the owner of the particular 9601 handset.
-Building	Enter up to 10 characters to identify the location of the owner of the particular 9601 handset.
-Set Color	Enter <b>black</b> for the DWBS handset.

**Table 1-4. Station Fields Site Data — Continued**

Field Name	Explanation
<i>Abbreviated Dialing</i>	
- List 1 - List 2 - List 3	Enter <b>p</b> for personal, <b>s</b> for system, <b>g</b> for group, or <b>e</b> for enhanced. Up to three Abbreviated Dialing Lists can be accessed by the DWBS handset. If <b>p</b> or <b>g</b> is entered, a personal list number or a group number, respectively, is also required.
<i>Button Assignments</i>	
1. <i>call-appr</i> 2. <i>call-appr</i>	The listings in the left column are the only administrable types for buttons 1 and 2, supported by the pocket phone. The default is <i>call-appr</i> for buttons 1 and 2.
1. <i>brdg-appr</i> 2. <i>brdg-appr</i>	The principal extension must be the same for both buttons. <i>Auto Select Any Idle Appearance</i> field must be set to <b>y</b> .
1. <i>call-appr</i> 2. <i>abrdg-appr</i>	Any administered analog extension.

21. Submit the form.

**NOTE:**

Information regarding firmware download can be found in *DEFINITY Wireless Business System Maintenance*.



## Introduction

This chapter provides the technician with background and procedural information to install the DWBS hardware.

## Safety Information

Before installing the hardware components, the technician should understand the safety instructions in the DEFINITY ECS Release 6 Installation document.



**WARNING:**

*Indicates the presence of a hazard that may cause severe or fatal personal injury if the hazard is not avoided.*



**CAUTION:**

*Indicates the presence of a hazard that may cause minor personal injury or property damage if not avoided.*

## Safety Instructions

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



**WARNING:**

***Risk of Electric Shock.*** *Failure to ground this product properly will result in a risk of electrical shock, which can cause serious personal injury. Some*

*components of this product use 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 will not accept the plug, the outlet must be replaced by an electrician.*

 **WARNING:**

*The rechargeable battery contains nickel and cadmium. 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 it in household garbage. For information about recycling or proper disposal, consult your local solid waste (garbage) collection or disposal organization.*

 **WARNING:**

*This product is NOT rated for installation in air handling spaces as defined by the National Electric Code. This product is for in-building applications only. In-range-out-of-building (IROB) conditions are not supported. Disconnect the telephone line cord before servicing the unit.*

 **CAUTION:**

*This equipment is for installation on the Lucent Technologies DEFINITY ECS System only. FCC Part 15 rules require that this equipment be installed and serviced only by specially trained Lucent Technologies personnel. Installation of this equipment is subject to notification and coordination with UTAM, Inc. Relocation of this equipment to another building or site must be coordinated through Lucent Technologies.*

- Read and understand all instructions in this section before using this product.
- Observe all warnings and instructions marked on the product.
- Unplug this product from wall outlets and telephone jacks before cleaning. Clean exposed parts with a soft, damp cloth. Do not use liquid or aerosol cleaners.
- Do not use the product near water or when you are wet. If the product comes in contact with any liquids, unplug the power cord and telephone line cords immediately. Do not plug the product back in until it has dried thoroughly.
- 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 ignite a heavy concentration of gas. This product is not approved for use in

areas identified by the Occupational Safety and Health Administration (OSHA) as “explosive environments.” Only “Explosive Atmosphere Telephones” may be used in such hazardous environments.

- Install this product securely on a stable surface. Damage may result if the product falls.
- Use only the correct power source. If you are not sure of the power supply to your location, consult your local power company.
- Use only the Model #DV-9500 power supply shipped with this product for the charging cradle.
- The Cell Antenna Unit must be installed with the coaxial cable provided (comcode 847565132). DO NOT cut or modify the cable. Loop any excess cable in the ceiling.
- Do not kink or crush the coaxial cable.
- 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.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord will be damaged by persons walking on it. Do not overload wall outlets as this can result in fire or electric shock. Do not staple or otherwise attach the power cord to building surfaces.
- Slots and openings in the Wireless Fixed Base and Cell Antenna Unit are provided for ventilation. To protect the housing from overheating, these openings must not be blocked or covered. Also, do not place this product in an enclosed area unless proper ventilation is provided.
- Never push objects of any kind into this product through housing slots since 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 telephone.
- Never place this product near or over a radiator or heat register.
- Use only the type of battery pack shipped with this product.
- Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - When the power cord or plug is damaged or frayed.
  - If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  - If the product has been dropped and the housing has been damaged.
- Painting either the Cell Antenna Unit or the Wireless Fixed Base may interfere with the transmission of the radio signal and will void the warranty.

### **Additional Safety Instructions for Installation**

Additional safety instructions for installation include the following:

- Install the product to meet all environment and electrical requirements listed in this document.
- Do not install telephone wiring during a lightning storm.
- All wiring that connects to this equipment and becomes part of the building wiring must be a minimum of CLASS 2 or U.L. Listed Communications cable.

### **DWBS Components**

The DWBS includes the following:

- Radio Controllers
- Wireless Fixed Bases
- Cell Antenna Units
- Wireless Handsets
- Power and Cable connections

Prior to installation, the technician will receive an Installation Map of the site showing the location of all Wireless Fixed Bases and Cell Antenna Units. This plan must be followed as closely as possible to ensure proper radio coverage. Any deviations from the map must be reported to the Sales and Design Support Center (SDSC) and such changes will alter coverage.

Figure 2-1 provides the basic installation layout and the relationship between the DEFINITY server, Wireless Fixed Bases, Cell Antenna Units, and the wireless handsets.

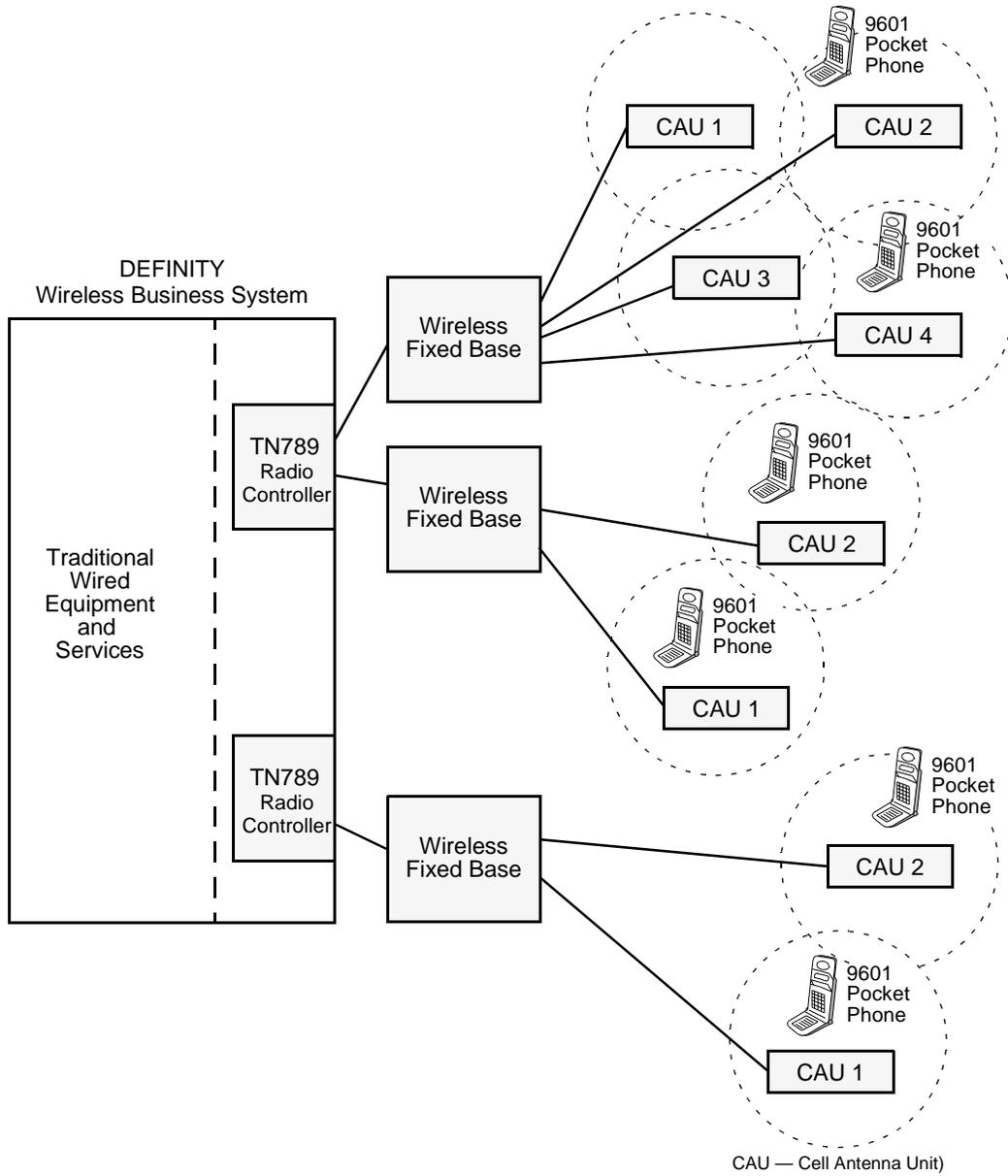


Figure 2-1. DWBS Installation Layout

## Radio Controller (RC)

RCs are circuit packs that fit into DEFINITY cabinet slots. Each RC connects and controls up to two Wireless Fixed Bases. RCs provide the interface between the DEFINITY Server and the network of Wireless Fixed Bases. RCs are connected to the Wireless Fixed Bases via an I2 Lucent Technologies proprietary interface. The RC is connected to the Wireless Fixed Base via standard 4-twisted pair wire.

See Table 2-1 for the TN789 Radio Controller pin configuration.

**Table 2-1. RC Circuit Pack TN789 Pin Configuration**

<b>Color</b>	<b>PIN</b>	<b>Lead Name</b>	<b>Function</b>
W-BL	26		
BL-W	1		
W-O	27	URTIPA	WFB-A
O-W	2	URRNGA	WFB-A
W-G	28	UTTIPA	WFB-A
G-W	3	UTRNGA	WFB-A
W-BR	29		
BR-W	4		
W-S	30	URTIPB	WFB-B
S-W	5	URRNGB	WFB-B
R-BL	31	UTTIPB	WFB-B
BL-R	6	UTRNGB	WFB-B
R-O	32		
O-R	7		
R-G	33		
G-R	8		
R-BR	34		
BR-R	9		
R-S	35		
S-R	10		
BK-BL	36		
BL-BK	11		
BK-O	37		
O-BK	12		
BK-G	38		
G-BK	13		
BK-BR	39	STXT.0 <i>Future Use</i>	SYNC 0 OUTPUT
BR-BK	14	STXR.0 <i>Future Use</i>	SYNC 0 OUTPUT
BK-S	40	SPXT.0 <i>Future Use</i>	SYNC 0 INPUT
S-BK	15	SPXR.0 <i>Future Use</i>	SYNC 0 INPUT
Y-BL	41		

**Table 2-1. RC Circuit Pack TN789 Pin Configuration — Continued**

BL-Y	16		
Y-O	42	SPXT.1 <i>Future Use</i>	SYNC 1 INPUT
O-Y	17	SPXR.1 <i>Future Use</i>	SYNC 1 INPUT
Y-G	43	SPXT.1 <i>Future Use</i>	SYNC 1 OUTPUT
G-Y	18	STXR.1 <i>Future Use</i>	SYNC 1 OUTPUT
Y-BR	44		
BR-Y	19		
Y-S	45		
S-Y	20		
V-BL	46		
BL-V	21		
V-O	47	PORT 1 RECEIVE DATA INPUT	WT PROGRAM CABLE
O-V	22	GROUND	WT PROGRAM CABLE
V-G	48	NO CONNECT	WT PROGRAM CABLE
G-V	23	PORT 1 DATA SET READY INPUT	WT PROGRAM CABLE
V-BR	49	PORT 1 DATA TERMINAL READY	WT PROGRAM CABLE
BR-V	24	PORT 1 SEND DATA OUTPUT	WT PROGRAM CABLE
V-S	50		
S-V	25		

### **Procedure: Installing the Radio Controller**

This procedure provides the technician with the necessary steps to install the RC circuit pack(s).

1. Unwrap the circuit board from its packing and insert it into the designated slot.



**NOTE:**

The RC is a standard port circuit pack that can be located in any available universal port slot (excluding a DS1-remote EPN) of a MIPS or RISC-based DEFINITY ECS. All RCs, however, must be located in the same port network to ensure a seamless handoff of active calls. For background information, please refer to the DEFINITY ECS Installation document.

2. Connect the 25-pair cable to the corresponding plug on the backplane. See the "Power and Interface Cabling" section further along in this chapter for details regarding cable and power configurations.

## **Wireless Fixed Base (WFB)**

---

The WFB is a radio base station. WFB provides the radio functions necessary to:

- Transform incoming calls from the DEFINITY Server into radio signals for transmission through the air to the appropriate handsets
- Transform incoming radio signals from the pocket phone into signals for transmission to the DEFINITY Server

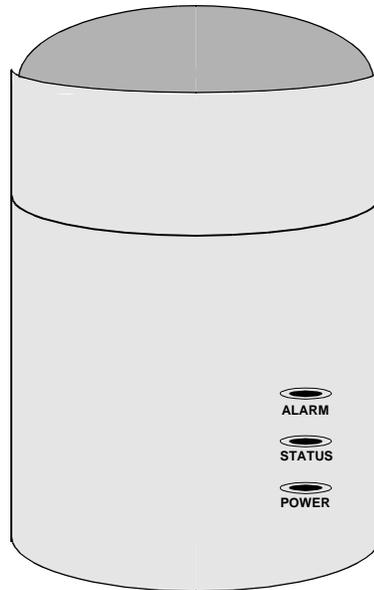
Each WFB can support:

- Maximum of 12 simultaneous conversations
- **Either** the single internal (local) antenna **or** up to a maximum of four (remote) attached Cell Antenna Units

Each WFB is connected to:

- Radio Controller via an I2-twisted pair Lucent Technologies proprietary interface
- One to four Cell Antenna Units via an I3-coaxial cable, Lucent Technologies proprietary interface. The I3-coaxial cable (100 feet) is provided and installed by Lucent Technologies only.

WFBs must be located throughout the interior of a premise in a manner that ensures appropriate radio coverage. Placement of each WFB and Cell Antenna Unit (CAU), as with all other components, is based on the information provided by the Installation Map. Figure 2-2 provides an illustration of the WFB.



---

**Figure 2-2. Wireless Fixed Base**

### **Procedure: Installing the Wireless Fixed Base**

The following procedure provides the steps necessary to install the WFB.

**⇒ NOTE:**

Please read the entire procedure before undertaking this task. In some configurations, it may be advisable to change the order of the steps based on the particular building. Refer to Figure 2-9 for an illustration of representative wiring of the I2 Interface.

**⚠ WARNING:**

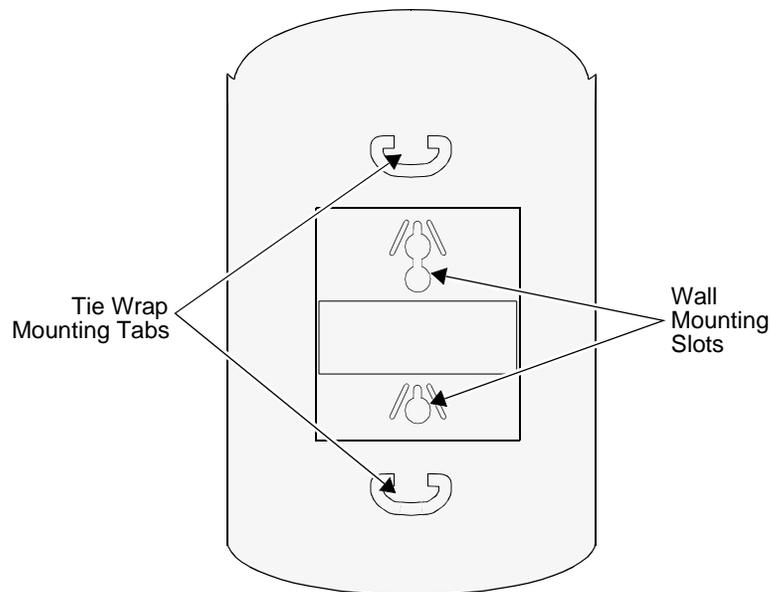
*WFBs cannot be installed in a return air plenum. Twisted pair and coaxial cables can only be installed in a return air plenum if they are rated as CL2P or better (as described in Article 725 of the National Electrical Code).*

1. The connection at the TN789 Radio Controller is into a standard 356A connector.

There are two methods for mounting WFBs. Use the following table to find the specific steps based on the particular configuration.

If.....	Then.....
the WFB is to be mounted using tie wraps	go to Step 2
the WFB is to be installed using the mounting plate	go to Step 6

2. Unpack the WFB.
3. Obtain tie wraps.
4. Loop the wraps around the tabs on the underside of the WFB (see the following illustration).



---

**Figure 2-3. Mounting points of the WFB**

5. Wrap the tie wraps around the tabs and the object to which it will be affixed, and tighten; then go to Step 10.
6. Unpack the WFB.
7. The WFB can be mounted on a wall or similar structure using a standard telephone mounting plate. The mounting plate and screws must be obtained separately as they are not part of the WFB installation package.

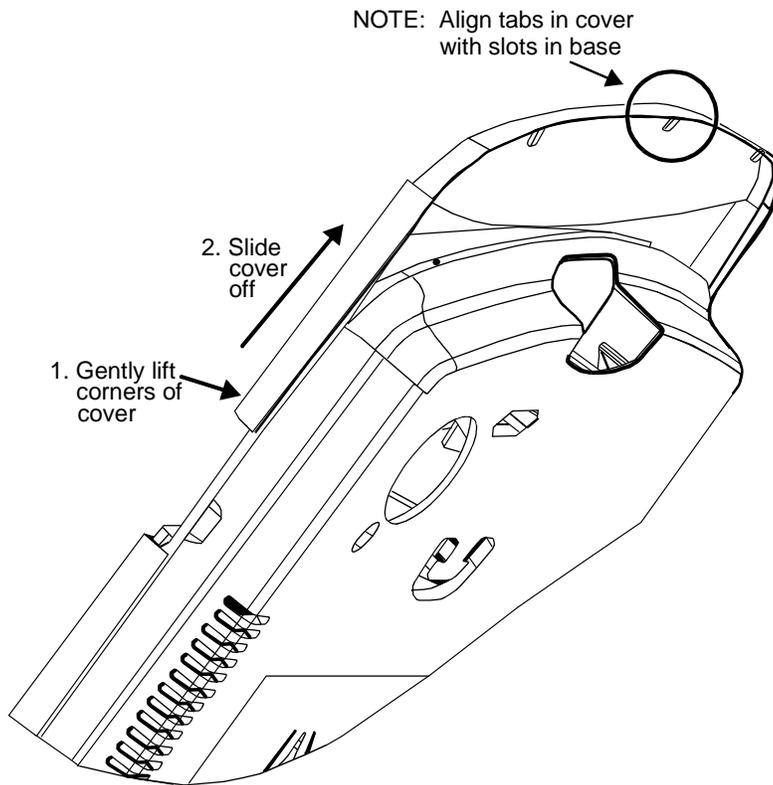
- Using a screwdriver, attach the mounting plate at the location designated in the Installation Map (shown in the previous figure).



**NOTE:**

WFB units must not be mounted within one meter of each other.

- Slide the WFB onto the mounting plate.
- Remove the cover of the WFB. The cover is located above the logo on the upper portion of the WFB, and it is held in place by tabs on the sides of the unit. By lifting both corner tabs, you can slide off the cover. See the next illustration.



---

**Figure 2-4. Removing the Cover of the WFB**

**⇒ NOTE:**

If the WFB is mounted vertically on a wall or column, ensure that the Lucent Technologies logo is facing upright.

11. Connect the communication and power (I2) cable to the RJ45 connector in the WFB as shown in the following figure.

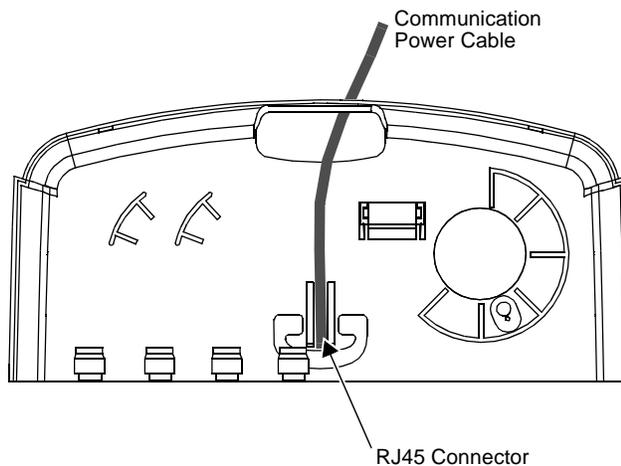
**⚠ WARNING:**

*Handle the cable with care in order to minimize the possibility of damage to the cable's interior components or the connecting contacts.*

**⇒ NOTE:**

The RJ45 is a modular connector similar to a telephone connector.

---



---

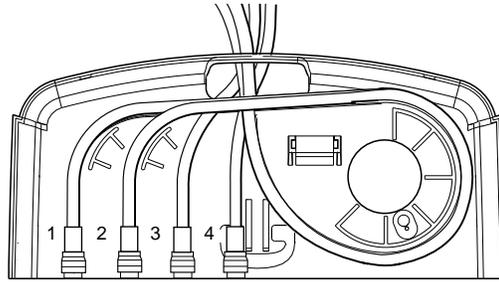
**Figure 2-5. Communication and Power (I2) WFB Connection**

12. If the WFB does not support an external CAU, return the cover to the WFB to complete the installation. If the WFB supports any external CAUs, proceed to the next step.
13. Connect (twist) the communication and power (I3) coaxial cables to the WFB as illustrated in the next figure, and slide the cover back on.

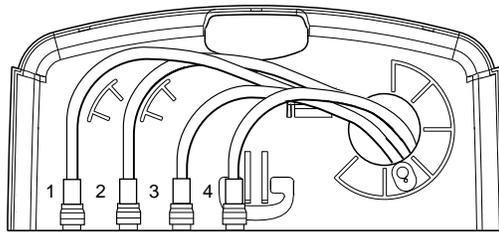
**⚠ WARNING:**

*These cables must be threaded through a small area . It is important to handle the cables with as much care as possible to avoid damage.*

---



surfaceroutedcables



cablesroutedthroughholeinmountingsurface

---

**Figure 2-6. Internal I3 Coaxial Connections from a WFB to CAUs**

## **Cell Antenna Unit (CAU)**

---

The CAU is an optional remote antenna that connects to a WFB to expand the coverage area. A maximum of four CAUs can be connected to a single WFB. Each CAU can be located as far as the 100 cable feet from its associated WFB. Each CAU is connected to and powered by a WFB via a Lucent Technologies proprietary interface. Placement of the CAUs is based on the information provided by the Installation Map.

### **Procedure: Installing the CAU**

---

The following procedure provides the steps necessary to install a CAU.

There are two methods for mounting CAU(s). Use the following table to find the specific steps based on the particular configuration.

**⇒ NOTE:**

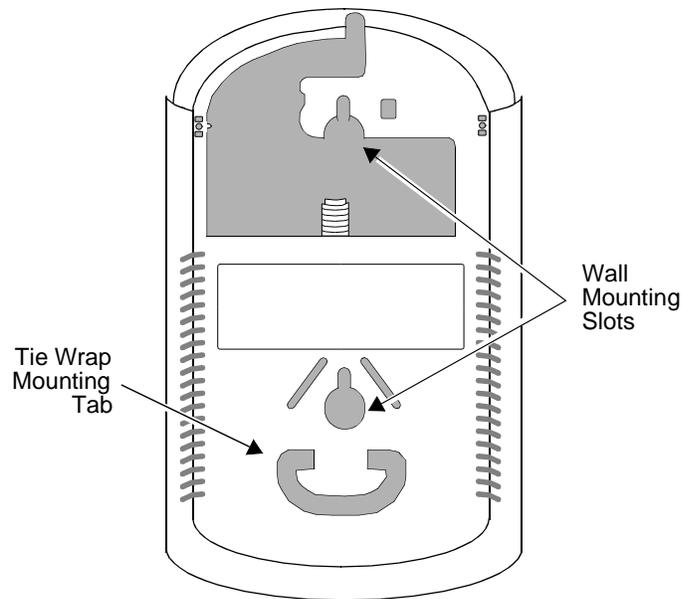
CAUs must not be mounted within one meter of one another in order to conform to the FCC Part 15 Rules requirement.

**▲ WARNING:**

*CAUs cannot be installed in a return air plenum. The coaxial cable provided (comcode 847565132) is rated for installation in air handling spaces.*

<b>If.....</b>	<b>Then.....</b>
the CAU is to be mounted using tie wraps	go to Step 1
the CAU is to be installed using the mounting plate	go to Step 4

1. Unpack the CAU and obtain tie wrap.
2. Loop the wrap around the tabs on the underside of the CAU (see the next illustration).



---

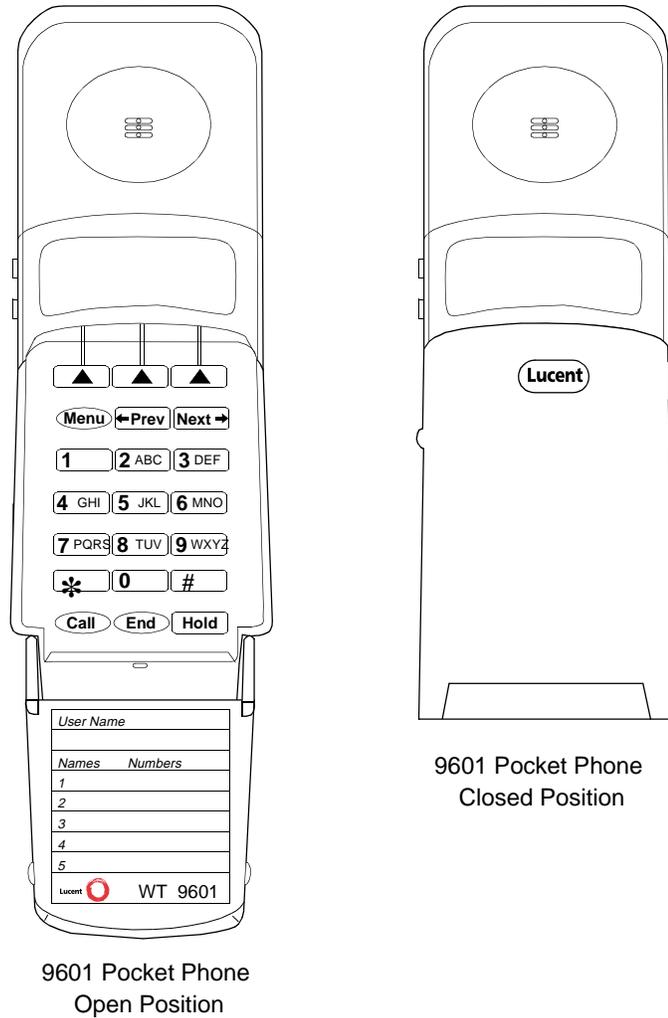
**Figure 2-7. Mounting Tabs and Slots on the CAU**

3. Wrap the tie wrap around the tabs and the object to which it will be affixed, and tighten. Then go to Step 7.
4. Unpack the CAU and obtain a standard telephone mounting plate and screws.
5. Using a screwdriver, attach the mounting plate at the location designated in the Installation Map.
6. Slide the CAU onto the mounting plate as illustrated in the previous figure.
7. Connect (twist) the communication and power (I3) coaxial cable originating from the appropriate WFB.

## **9601 Pocket Phone**

---

The handset (next illustration) is a pocket-size portable phone that provides two call appearances, an LCD that supports business communication needs, an array of soft and hard keys designed to enable access to the many features of the DEFINITY Server, and a 12-button dial pad. To provide freedom of mobility, the handset is not physically connected by a cord to the DEFINITY Server or any other DWBS component. Instead, the handset is wireless and communicates by way of a radio link to a WFB network, which in turn connects to the DEFINITY Server.



---

**Figure 2-8. Wireless Business System 9601 Pocket Phone**

**Procedure: Installing the 9601 Pocket Phone**

---

The following procedure provides the steps to install a 9601 Pocket Phone.

1. Unwrap the phone, charger, and AC adapter. The component packages consist of the following:
  - Pocket Phone
  - Battery Charger
  - Battery Pack

- AC Adapter
- 2. Remove the (lower) back cover (using a flat blade screwdriver) of the battery charger and plug in the AC adapter.
- 3. Replace the cover.
- 4. Place the battery charger in the desired location.
- 5. Insert the handset with its battery pack in the battery charger cradle.
- 6. Plug the AC adapter from the battery charger into a wall outlet.
- 7. Ensure that the initial charging lasts for four hours before using the handset.

### **Procedure: Pocket Phone Key Sequence to Obtain the IPEI**

---

This procedure provides the steps to display the IPEI of the pocket phone.

1. With the pocket phone powered up, press the **Menu** button.
2. At the next display, press the **Next** button.
3. At the following display, press the **info** soft key; the IPEI is displayed.

## **Power and Interface Cabling**

---

The discussion of providing power to various DWBS components is straightforward for the wireless handset and CAU. The wireless handset is battery powered. The CAU obtains its power through the coaxial cable coming from a WFB.

The Radio Controller supplies phantom power to the WFB (over the transmit/receive pairs) if no CAUs are used by the WFB and if the maximum I2 cable length does not exceed 1500 feet for 24-American Wire Gauge, or 1000 feet for 26-American Wire Gauge (AWG).

The WFB requires an auxiliary power supply if the phantom power requirements are exceeded.

#### **NOTE:**

A bulk power supply can also be used.

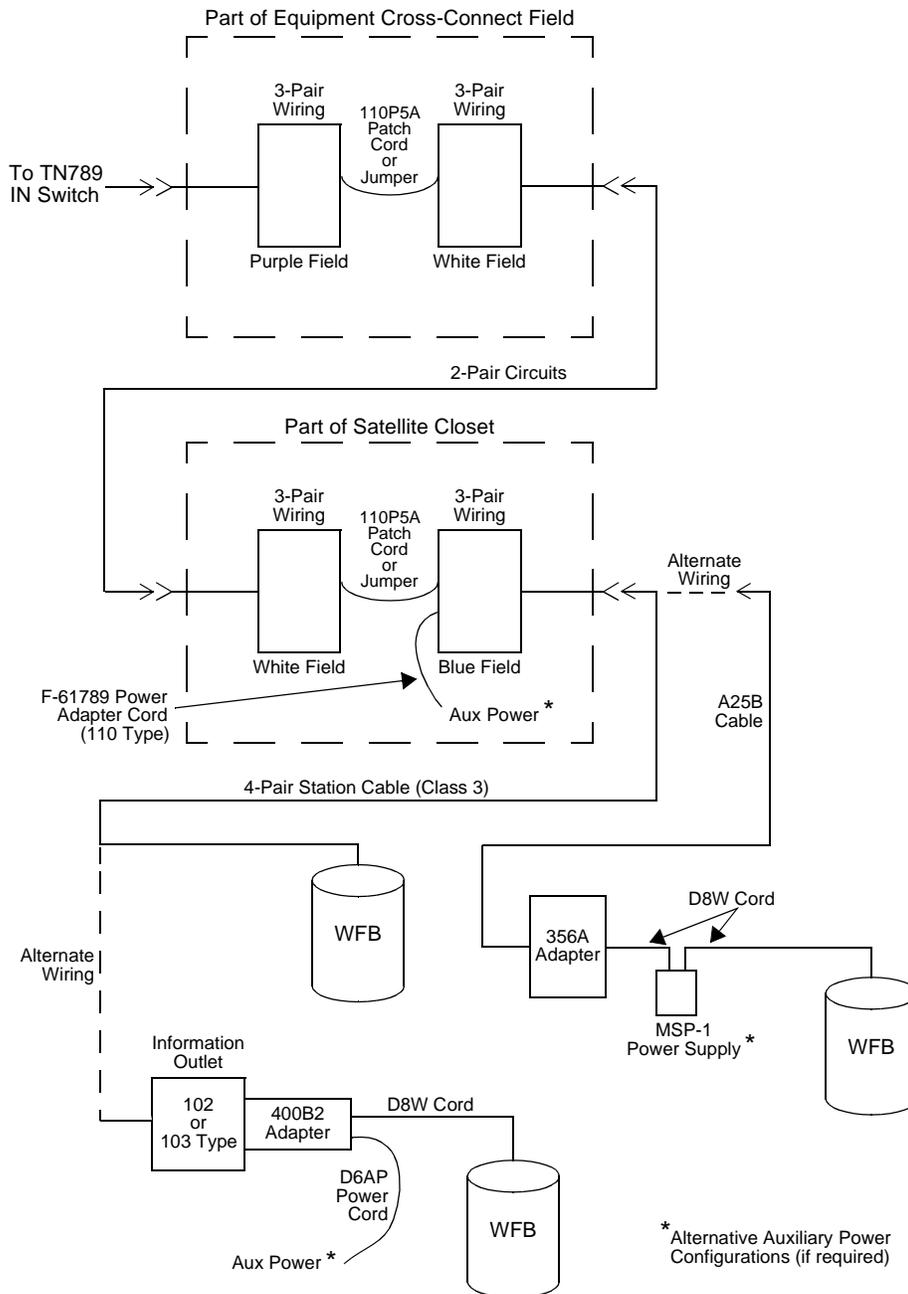
The auxiliary power supply to the WFB should use unshielded twisted pair cable. The cable length should not exceed 328 feet for 24 AWG or 222 feet for 26 AWG. See Figure 2-9.

Power and cabling are consistent with current DEFINITY ECS wiring. See Chapter 10 of the DEFINITY ECS Installation and Test document for specific information describing typical adjunct powering configurations.

## **I2 Interface**

---

The I2 interface connecting the Radio Controller with the WFB is wired identically to the DEFINITY ECS digital telephones. This interface follows standard 2-pair distribution practices and is typically wired from the distribution closet with 4-pair category 3 cable. Cable pairs 2 and 3 are used for transmit and receive, respectively. Pair 4 is used for auxiliary power. Figure 2-9 provides representative building wiring. See the DEFINITY ECS Installation and Test document for additional information.



**Figure 2-9. Representative Wiring of the I2 Interface**

**NOTE:**

The I2 interface cable CANNOT be used outside of the building.

### **I3 Interface**

---

This interface is physically implemented with a 100 foot long, custom coaxial cable assembly (comcode 847565132) that interconnects the WFB and Cell Antenna Unit. This interface provides both RF signaling and DC power to and from the CAU.

I3 coaxial cable is plenum-rated and can therefore be placed inside the plenum above the ceiling.



**CAUTION:**

***DO NOT** cut or modify this cable to length. Any excess cable should be spooled up in the ceiling or where convenient.*

### Introduction

This section provides you with the background and procedural information to ensure that the installed **DWBS** is operational.

The tests in this section are in the nature of acceptance tests. The assumption is that the system will perform as expected after the installation. If problems occur, or if more extensive tests are required, please refer to the DWBS Maintenance document.

### Procedure: Wireless Test Calls

The purpose of this procedure is to verify that calls of good voice quality can be originated and received throughout the coverage area(s).

**⇒ NOTE:**

See the *DEFINITY Wireless Business System 9601 Pocket Phone User's Guide* if you need more detail regarding the phone's operation.

1. Using the Installation Map as your guide, enter the coverage area(s), and place a call to another pocket phone.
  - a. To make the call, press **[Call]**, wait for dial tone, and dial the number.
  - b. When your call is connected, begin your "test" conversation.
  - c. Start walking through the entire coverage area(s) and listen for significant degradation in voice quality, such as static or interference, that is strong enough to disrupt the call. If there are problems, note the following:

- Location where the problem(s) begins
  - Precise description of the problem
  - Approximate boundaries of the problem(s), if applicable.
  - Signal strength reading where the disruption is greatest (see the following step for the key sequence).
2. On the pocket phone, move into the area of greatest interference and obtain a signal strength reading, as follows:
    - a. Press the **Menu** hard key.
    - b. Press the **Next** hard key.
    - c. Press the **Info**  soft key.
    - d. Press the **Next** hard key to display the signal strength.

 **NOTE:**

The signal strength reading from the pocket phone is not dynamic. You must repeat the previous key sequence in every area to obtain a signal strength reading. Remember to take precise notes of the signal strength and any other problems that you may encounter.

3. Upon completing your walkthrough, if you have encountered any problems, refer to the DWBS Maintenance document for further investigation.

## **Procedure: Verifying Operative Cell IDs**

---

The purpose of this procedure is to verify that all the cells in the wireless configuration are “up” and providing coverage.

1. Using the Installation Map as a guide, step into the first cell to be checked, and situate yourself in close proximity to the CAU (or to the WFB, if no CAUs are present) for the particular cell. Obtain the cell ID by executing the following key sequence on the pocket phone:
  - a. Press the **Menu** hard key.
  - b. Press the **Next** hard key.
  - c. Press the **Info**  soft key.
  - d. Press the **Next** hard key to display the Cell ID.
2. Confirm that the cell ID is displayed. If the cell ID is displayed, repeat Step 1 for all the cells in the configuration. If there is no cell ID displayed, use the following table:

<b>If.....</b>	<b>Then.....</b>
Unit is a CAU	Go to Step 3
Unit is a WFB	Go to Step 4

---

3. Confirm that the CAU's green power indicator is illuminated.

<b>If.....</b>	<b>Then.....</b>
Power indicator is illuminated	Refer to the DEFINITY ECS Wireless Maintenance document for alarm and error resolution.
Power indicator is not illuminated	Check the cable connection between the WFB and the CAU. If the connection is good but the problem still persists, check the power (green) indicator on this CAU's connected WFB. If the WFB shows no power, check the power supply to the WFB (see Chapter 2 of this document for power and cabling details). Restoring power to the WFB will more than likely solve the problem. If the problem persists, the CAU may need to be replaced. If the indicator is illuminated, repeat Step 1 of this procedure to obtain the cell ID.

---

4. Confirm that the WFB's green power indicator is illuminated.

If.....	Then.....
Power indicator is illuminated	Refer to the DWBS Maintenance document for alarm and error resolution. You should refer to the Maintenance document regardless of whether or not the alarm (red) indicator is illuminated on the WFB.
Power indicator is not illuminated	Check the connection between the power supply and the WFB. (See Chapter 2 of this document for power and cabling details.) If the problem persists, the WFB may need to be replaced. Refer to the DWBS Maintenance document for additional information. Repeat Step 1 of this procedure to obtain the cell ID only after the problem has been resolved.

---

Once the preceding procedures are completed, the DWBS is considered up and running.

## Introduction

This chapter provides supplemental Mobility Manager and DEFINITY ECS command information that may be helpful to the installer.

## Command Structure

An administrative command is made up of multiple words that instruct the system to perform a specific task. The command is made up of *Action*, *Object*, and, depending on the command type, *Qualifier* words.

The Action word is the first word entered on the command line and specifies the operation to be performed (for example, “add,” “change,” and “remove”). The Object word is the second phrase entered on the command line and specifies the particular object on which to perform the operation. Lastly, the Qualifier can be one or more key words or digits used to identify further or complete the object.

## Command List

Table 4-1 provides a summary of the administration commands used for the installation of the DWBS.

**Table 4-1. DWBS Administration Commands**

<b>Action</b>	<b>Object</b>	<b>Qualifier</b>	<b>Purpose</b>
list	bridged-extension	principal extension	List all stations where the principal appears as a bridged call-appearance.
change display	carrier-frequencies		Access or display customer administrable carrier frequencies.
change display add	circuit-packs	cabinet number	Access or display the existing circuit pack's data or add a new circuit pack.
change remove add	radio-controller	PPCSS	Access or remove an existing Radio Controller circuit pack (TN789) or add a new Radio Controller circuit pack.
change display	radio-sync		Access or display the inter-port network radio synchronization plan.
add change display remove	station	extension	Add, access, display, or remove a station on the system.
list	station	extension port <wt> type <9601>	List all stations that conform to the port or type search criteria.
change display	system-parameters	customer-options	Access or view optional feature administration.
change display	system-parameters	features	Administer or view the radio card download servers.
change display	system-parameters	wireless	Access or view system wide wireless data.

---

# 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 calling party to reconnect to a called party if the latter walks out of the coverage area and then back into the coverage area within 60 seconds.

---

## B

### **Bridging**

Feature that allows both the pocket phone and the wired phone to ring at the same time.

---

## C

**CAU.** See **Cell Antenna Unit (CAU)**.

### **cell**

Radio coverage area of a CAU or WFB with an internal antenna cluster. Also, cells supported by all the WFBs connected to one RC.

### **Cell Antenna Unit (CAU)**

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

---

## D

### **Deep Sleep Mode**

Mode assumed by the pocket phone whenever the phone repeatedly tries to access the system and fails to do so due to out-of-range conditions. This mode allows the pocket phone to conserve battery power.

### **DEFINITY Management Terminal**

Data terminal used for the administration and maintenance of the DEFINITY system.

---

## 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 (1910-1930 MHz) primarily for data.

### **Estimator**

Tool within the WiSE Expert Design System that is used to gather information about the customer site. This tool is used to provide an initial price quote and to configure the DWBS.

---

## F

**FCC.** See **Federal Communication Commission (FCC)**

**FDMA.** See **Frequency Division Multiple Access (FDMA)**

### **Federal Communication 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.

### **fixed part**

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

### **Frequency Division Multiple Access (FDMA)**

Radio access method for which each call uses a different carrier frequency. FDMA allows one conversation per radio.

---

## 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 (for example, the directory).

**local tones**

Tones produced locally in the pocket phone. Includes the following tones: ringer, warning, error, error beep, confirmation, 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**

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.

**RC.** See **Radio Controller (RC)**

**RPMT.** See **Radio Propagation Measurement Tool (RPMT)**

---

**S**

**soft keys**

Buttons whose labels appear on an associated display and whose labels and functions can change dynamically as the user performs functions and makes selections.

---

**T**

**TDMA.** See **Time Division Multiple Access (TDMA)**

**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 (TPUI)**

---

**U**

**UTAM**

Group charged by the Federal Communications Commission to coordinate the relocation of microwave incumbents out of the unlicensed spectrum (1910 to 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.

---

# Index

---

## Numerics

9601 Pocket Phone, 2-16

---

## A

administration, 1-1  
American Wire Gauge, 2-18  
auxiliary power, 2-18

---

## B

battery  
  nickel and cadmium, 2-2  
  precautions, 2-2  
  rechargeable, 2-2  
  recycling and disposal, 2-2

---

## C

cabling, power and interface, 2-18  
CAU. See Cell Antenna Unit  
Cell Antenna Unit (CAU), 2-15  
commands  
  add  
    radio-controller, 1-8  
    station, 1-10  
  bridged-extension, 4-2  
  carrier-frequencies, 4-2  
  change  
    carrier-frequencies, 1-5  
    circuit-packs, 1-6  
    system-parameters customer-options, 1-1  
    system-parameters wireless, 1-2  
  circuit-packs, 4-2  
  list configuration all, 1-7  
  radio-controller, 4-2  
  radio-sync, 4-2  
  station, 4-2  
  system-parameters, 4-2  
components  
  Cell Antenna Unit, 2-15  
  Radio Controller (RC), 2-6  
  Wireless Business System, 2-4  
  Wireless Fixed Base (WFB), 2-9

---

## E

electric shock risk, 2-2  
equipment, relocation, 2-2  
explosive environments, 2-3

---

## F

FCC Part 15 rules, 2-2  
figures  
  CAU mounting tabs and slots, 2-16  
  communication and power (I2) WFB connection, 2-13  
  DWBS installation layout, 2-5  
  I2 interface representative wiring, 2-20  
  internal I3 coaxial connections from a WFB to CAUs,  
    2-14  
  Wireless Fixed Base (WFB), 2-10  
    mounting points, 2-11  
    removing cover, 2-12

---

## I

I2 Interface, 2-19  
I3 Interface, 2-21  
interface  
  I2, 2-19  
  I3, 2-21

---

## M

Mobility Manager, 1-1

---

## O

Occupational Safety and Health Administration (OSHA),  
  2-3  
OSHA. See Occupational Safety and Health Administration

---

## P

phantom power, 2-18  
power  
  auxiliary, 2-18  
  phantom, 2-18  
power and interface cabling, 2-18

procedures

- installing pocket phone 9601, 2-17
  - CAU, 2-15
  - Radio Controller, 2-8
  - Wireless Fixed Base, 2-10
- soft key sequence to obtain the IPEI, 2-18
- software installation, 1-1
- verifying, cell ids are operative, 3-2
- wireless test calls, 3-1

- WBS administration commands, 4-2
- Wireless Business Systems Components, 2-4
- Wireless Fixed Base (WFB), 2-9

---

**R**

- Radio Controller, 2-6
- 

**S**

safety

- additional instructions for installation, 2-4
- hardware information, 2-1
- instructions, 2-1

safety guidelines

- cardiac pacemakers, x
- exposure to radio frequency energy, x
- hearing aid compatibility, x
- pocket phone, ix
- users, ix

screens

- add station, 1-10
- add station next, 1-13, 1-15
- carrier frequency form, 1-6
- change circuit-packs, 1-7
- list configuration, 1-8
- radio controller circuit pack, 1-9
- system parameters, 1-2
- wireless system parameters
  - MIPS, 1-3
  - Raptor, 1-4

shock, electric, 2-1

soft key sequence, 2-18

software mobility manager, 1-1

station, feature options, 1-13

---

**U**

- UTAM, 1-5, 2-2
- 

**W**

- warning, electric shock risk, 2-1