

WIP 2

User's Manual

Manual Part Number 90-18800



Zultys Technologies
771 Vaqueros Avenue
Sunnyvale CA 94085-5327
USA

+1-408-328-0450
<http://www.zultys.com>

Notice

The information contained in this document is subject to change without notice.

Zultys Technologies makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Zultys Technologies shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Zultys Technologies assumes no responsibility for the use or reliability of interconnected equipment that is not furnished by Zultys Technologies.

This document contains proprietary information which is protected by copyright. The contents of this manual and the associated software are the property of Zultys Technologies, and all rights are reserved. No part of this document may be photocopied, reproduced, stored in any computer format, translated to another language, or publicly displayed without the prior written consent of Zultys Technologies.

The information contained herein has been prepared by Zultys Technologies solely for use by Zultys's employees, agents, and customers. Dissemination or use of the information or concepts contained herein to or by other parties is prohibited without prior written consent from Zultys Technologies.

Zultys, the Zultys logo, the Zultys mark, and Zultys product names are trademarks of Zultys Technologies and may be registered trademarks in certain countries. All other names may be trademarks or registered trademarks of their respective owners.

Revision History

Release	Release Date
1.0.0	12 January 2006

Contents

Chapter 1	Introduction	1
1.1	Scope	1
1.1.1	Audience	1
1.1.2	Installation and Use	1
1.1.3	What this Manual Includes	1
1.1.4	What this Manual Does Not Include	2
1.2	Phone Description	2
1.2.1	Feature Set	2
1.2.2	Display Description	4
1.2.3	Speakers	4
1.2.4	USB Port	4
1.2.5	Cradle	4
1.3	Documentation Overview	4
1.3.1	Organization	4
1.3.2	Nomenclature	5
1.3.3	Special Paragraph Styles	5
1.4	Forms of Documentation	5
1.5	Colophon	6
1.6	Documentation Feedback	6
Chapter 2	Receiving the Phone	7
2.1	Initial Inspection	7
2.2	Package Contents	7
2.2.1	Unpacking the Phone	7
2.2.2	Verify Contents	7
2.2.3	Serial Numbers	8
2.3	In Case of Damage or Malfunction	8
2.4	Returning Items for Repair or Replacement	9
2.4.1	Warranty Coverage	9
2.4.2	Describing the Problem	9
2.4.3	Accessories	9
2.4.4	Packing	9
2.4.5	Shipping	10

2.4.6 Correspondence 10

Chapter 3 Installation 11

3.1 Preparing the Phone for Use 11

3.1.1 Connecting the Cradle to Power 11

3.1.2 Inserting Battery into Phone 12

3.1.3 Power 13

3.1.4 Connecting to the Network 13

3.2 Power On 13

3.2.1 Turning the Phone on and off 13

3.2.2 Power on Sequence 14

3.2.3 Startup panels and Startup tone 14

3.2.4 Running a Quick Test 15

3.2.5 Communicating with the Network 16

3.2.6 Satisfactory Connections 18

Chapter 4 Provisioning the Phone 21

4.1 Introduction 21

4.2 Provisioning Methods 21

4.2.1 Configuration Files 21

4.2.2 Web Interface Configuration Utility 25

4.3 Boot Process 25

4.3.1 Boot Options 25

4.3.2 Boot Process Description 26

4.4 Updating Software 27

4.4.1 Performing an Update 27

4.4.2 Update Process 28

4.4.3 Summary 31

4.5 Provision Settings 31

4.5.1 Wi-Fi Parameters 31

4.5.2 IP Settings 32

4.5.3 SIP Settings 33

4.5.4 Codec Settings 34

Chapter 5 Interacting with the Phone 35

5.1	Call Appearances	35
5.2	Display	35
5.2.1	Display Organization	35
5.2.2	Display Panels	37
5.2.3	Adjusting the LCD	39
5.2.4	Event Timer	40
5.3	Keyboard	41
5.3.1	Description	41
5.3.2	Key Click Tone	42
5.3.3	Dial Timeout	43
5.3.4	Programming the Right Button	43
5.3.5	Alphanumeric Mode	43
5.4	Handset, Headset, and Speaker	45
5.4.1	Listening Devices	45
5.4.2	Device Modes	46
5.4.3	Volume Adjustment	46
5.5	Menu	47
5.5.1	Accessing the Menu	47
5.5.2	Navigating Through the Menu	47
5.5.3	Protected Mode	48
5.5.4	Exiting the Menu	48
5.5.5	Using the Menu and Receiving a Call	48
5.5.6	Saving the Data	48
5.6	Storing Phone Numbers	49
5.6.1	Phone Book	49
5.6.2	Call Log	49
5.7	Presence	50
5.8	Restoring Factory Defaults	50
5.9	Data Backup	50
Chapter 6	Using the Phone	53
6.1	Introduction	53
6.2	Dialling and Sending a Call	53
6.2.1	The Call Panel	53
6.2.2	The Phone Book	55
6.2.3	The Call Log	55
6.2.4	Dialling an Invalid Destination	56
6.2.5	Making a Call Without a SIP Proxy	56

6.3	Call Proceeding and Call Answered	57
6.3.1	Display Contents	57
6.3.2	Call Progress Tones	57
6.3.3	Call Answered	58
6.4	Receiving a Call	59
6.4.1	Call Alerts	59
6.4.2	Rejecting or Not Answering a Call	60
6.4.3	Answering the Call	61
6.5	During a Call	61
6.5.1	Keyboard Response	61
6.5.2	Displaying Call Information	62
6.5.3	Phone Status During a Call	62
6.5.4	Muting a Call	63
6.5.5	Call Handling Options	63
6.6	Ending a Call	64
6.6.1	You End the Call	64
6.6.2	Other Party Ends the Call (Call Disconnect setting)	64
6.7	Page Calls	65

Chapter 7	Calling Features	67
7.1	Suspending a Call	67
7.1.1	Hold	67
7.1.2	Park	69
7.2	Conference Calls	70
7.2.1	Creating a Conference Call	70
7.2.2	Display Contents During a Conference Call	71
7.2.3	Suspending and Resuming Conference Calls	72
7.2.4	Muting a Conference Call	72
7.2.5	Terminating a Conference Call	73
7.3	Transferring Calls	73
7.4	Forwarding Calls	74
7.4.1	Call Forwarding Options	74
7.4.2	Call Forwarding Methods	75
7.5	Encryption	75
7.5.1	Encryption Modes	76
7.5.2	Individual Calls	76
7.5.3	Encrypted Calls on Hold	78
7.5.4	Encrypted Conference Calls	78

7.6	Messages	79
7.6.1	Voice Messages (Stutter tone)	79
7.6.2	Text Messages	80
Chapter 8	Menu Operations	81
8.1	Introduction	81
8.2	Presence	82
8.3	Phone Book	82
8.3.1	Add New Contact	82
8.3.2	Search	84
8.3.3	Edit	84
8.3.4	Delete	85
8.4	Text Messages	85
8.4.1	Composing and Sending a New Text Message	86
8.4.2	View Inbox Contents	86
8.4.3	Viewing the Outbox	87
8.4.4	Replying to a Message	88
8.4.5	Resending a Message	88
8.4.6	Removing Messages from the Text Message Box	88
8.4.7	Configure	89
8.5	Information	89
8.5.1	Times	90
8.5.2	Communications	90
8.5.3	Manufacture	91
8.6	User Settings	92
8.6.1	LCD Contrast	92
8.6.2	Call Forwarding	93
8.6.3	Right Button	93
8.6.4	Greeting Message	94
8.6.5	Clear Settings	95
8.6.6	Date and Time	95
8.6.7	Audio	96
8.6.8	Timeouts	104
8.6.9	Regional Options	105
8.6.10	Factory Defaults	107
8.7	Pswd Settings	107
8.7.1	Password	108
8.7.2	WI-Fi Settings	110
8.7.3	IP Settings	113

8.7.4	SIP Settings	118
8.7.5	Names & Numbers	124
8.7.6	Audio	125
8.8	Self Test	128
8.8.1	PER	128
8.8.2	Audio	129
8.8.3	Audio Return	129

Chapter 9 Configuration Files 131

9.1	Introduction	131
9.2	Configuration File Types	131
9.2.1	Common Configuration File	131
9.2.2	Specific Configuration File	131
9.3	Configuration File Format	132
9.3.1	File Sections	132
9.3.2	Parameter Entries	132
9.4	Configuration Parameters	133
9.4.1	Network Configuration	133
9.4.2	SIP Configuration	136
9.4.3	General Information	140
9.4.4	Hardware Configuration	144
9.4.5	Audio Information	145
9.4.6	Locations	149

Chapter 10 Web Interface Configuration Utility 151

10.1	Introduction	151
10.1.1	Accessing the Configuration Utility	151
10.1.2	Interface Structure	152
10.2	Home panel	152
10.3	Phone Book	152
10.3.1	Add Entry panel	153
10.3.2	Edit panel	153
10.3.3	Delete panel	154
10.4	Information	155
10.4.1	Times Panel	155
10.4.2	Communications Panel	156

10.4.3 Manufacture Panel	157
10.4.4 Logs Panel	157
10.5 User Settings Menu	158
10.5.1 General Info panel	158
10.5.2 Date and Time	161
10.5.3 Audio	161
10.5.4 Regional Settings	163
10.5.5 Factory Defaults	163
10.6 Protected Settings	164
10.6.1 Network Setup	164
10.6.2 IP Communications	165
10.6.3 SIP Communications	166
10.6.4 Names and Numbers	168
10.6.5 Audio	169
10.6.6 Maintenance	170
 Appendix A Menu Structure	 173
 Appendix B Acronyms	 177
 Index	 179

Introduction

1.1 Scope

1.1.1 Audience

This manual is intended for networking engineers and network administrators who need to install, maintain, support, and use the WIP2 phone. The manual can also be used by engineers that want to make a phone system compatible with the phone. The manual assumes you are familiar with networking and telephony principles and practices.

If you use WIP2 phones with the MX250 or the MX30, you should read this manual in conjunction with the *MX Administrator User's Manual*.¹ That manual describes how certain features of the phone interact with the enterprise media exchange.

This manual can be used by a user who wants to understand in detail how features and functions of the phone operate. End users who do not need the depth of information contained in this manual (which is about 200 pages) should refer to the WIP2 User's Guide. One guide is shipped with each phone.

All Zultys manuals can be downloaded from the Zultys Technologies website at:

<http://www.zultys.com>

1.1.2 Installation and Use

Unpack the phone and verify the contents as described in section 2.2 on page 7. Install the product as described in Chapter 3, starting on page 11.

1.1.3 What this Manual Includes

This manual provides detailed information and instructions on the complete installation and operation of the WIP2 phone.

1. The MX250 and MX30 are Enterprise Media Exchanges. They are manufactured by Zultys and provide the communications needs of an enterprise by integrating voice, data, video, and fax.

1.1.4 What this Manual Does Not Include

This manual does not provide technology details, pricing, names of sales representatives, or names of distribution channels. Access the Zultys web site for this information:

<http://www.Zultys.com>

1.2 Phone Description

The WIP2 is a SIP based IP phone that provides two call appearances and interacts with network servers through a wireless access point. Figure 1-1 displays the front side of the phone. The handset speaker, keypad, and microphone are located on this side of the phone.



Figure 1-1 Top View of WIP2

Figure 1-2 displays the rear side of the phone while placed in the charging cradle. The external speaker is located at the top of the rear side. The rear panel can be removed to place the battery in the phone. The connector in the middle of the cradle receives power from an ac adapter

1.2.1 Feature Set

Key features of the WIP2 phone include:

- two virtual lines support two simultaneous calls



Figure 1-2 Rear view of WIP2 phone and cradle

- handset and speaker modes
- acoustic echo cancellation in speaker mode provides high quality speaker phone
- supports all commonly used PBX functions when used in conjunction with an appropriate call control system
- receives power from removable battery or ac adapter
- speech encryption ensures that your calls can be kept secure
- easy to create conferences with three people, including those who call you
- 18 buttons provide significant ease of use
- 5 line easy to read display that supports proportionally spaced font
- uses standard SIP messages to interface to a variety of call managers from various manufacturers
- dial by number or SIP address
- hot key dialling
- critical operational parameters are protected by password
- 100 memory phone book plus 64 location memory for last numbers received or dialled
- based on highly stable Linux operating system

1.2.2 Display Description

The display is a graphical LCD, 96 dots by 65 dots. It is used mostly to display five rows of characters. The display utilizes a proportional font, therefore the number of characters on each row varies. Typically, each row displays about 16 characters. Section 5.2 on page 35 describes LCD modes and methods of adjusting the display appearance.

1.2.3 Speakers

The WIP2 phone provides a handset speaker and an external speaker. The handset speaker, located at the top end of the phone's front side, is used by placing it next to your ear as you speak into the microphone at the bottom of the phone. The external speaker, located on the rear side of the phone, allows multiple people to participate in phone conversations.

1.2.4 USB Port

The USB port, located at the bottom of the phone, connects the WIP2 to either a computer for downloading software updates, or a headset that accommodates hands free mobile use.

1.2.5 Cradle

The charging cradle, shown in figure 1-3, connects to an power source through an ac adapter and provides dc power for operating the phone and recharging the battery.



Figure 1-3 WIP2 Cradle

1.3 Documentation Overview

1.3.1 Organization

This user's manual describes:

- how to install the WIP2 phone
- how to provision the phone for use within the network

- how to make and receive calls
- how to access the features of the phone
- how to customize the phone to suit your preferences
- what to do when you are convinced there is a problem

1.3.2 Nomenclature

1.3.2.1 Acronyms

This manual often uses acronyms specific to the industry of telecommunications and data communications. Because the sections (and, to a certain extent, the subsections) can be read in any sequence, acronyms are not defined in the text. For a complete list of acronyms used in this manual, see Appendix B, starting on page 177.

1.3.2.2 Jargon

This manual often uses technical terms specific to the industry of telecommunications and data communications. Very specialized terms are sparsely used, and their meanings are clearly explained where they are used.

1.3.3 Special Paragraph Styles

The following are the notices that are used to attract special attention to certain items. They set text off from the main body of the manual. These notices also appear in other languages where required by certain regulatory bodies:

Important This notice contains special information that should not be ignored.

Caution This notice calls attention to a condition or procedure which, if not observed, could result in damage to the phone or the loss of data.

Warning This notice indicates that if a specific procedure or practice is not correctly followed, permanent damage to the phone and personal injury may result.

Danger This notice warns you of imminent hazard to yourself and others if proper procedures are not followed.

1.4 Forms of Documentation

This manual is updated with each major release of the software. The manual describes the features in that release of the software.

Between major releases of software, Zultys may issue one or more minor releases of software. These minor releases may have more capabilities than the current formal release. The features in that software may or may not be described in this manual.

This manual is available only in PDF format. You can download the PDF file from the Zultys web site at:

<http://www.zultys.com>

You can obtain old versions of the manual that may describe the software that you have or the latest manual that describes all the latest features of the product. You can identify the version of the manual from the title page, opposite the table of contents (page 2 of the PDF file).

When you use the PDF file, you can click on any reference in the text. This powerful feature allows you to follow the references in the text very easily. Using Acrobat, you can then return to the page you were previously reading. This is a huge benefit to you if you want to study a small area of the product.

1.5 Colophon

This document was produced on personal computers using Adobe's FrameMaker for Windows. The headings are set in Swiss 721, Bitstream's version of the Helvetica™ typeface; the copy is set in Zapf Calligraphic, Bitstream's version of the Palatino™ typeface; notices are set in Swiss 721 or News Gothic, Bitstream's version of the Kingsley-ATF Type Corporation typeface. The drawings were produced using Adobe Photoshop, Adobe Illustrator, and Microsoft Visio.

1.6 Documentation Feedback

Zultys appreciates any constructive feedback on all our documentation. If you have comments or error reports on any Zultys documentation, please submit your feedback to:

Technical Publications Department
Zultys Technologies
771 Vaqueros Avenue
Sunnyvale, California 94085 USA
techpubs@Zultys.com

Receiving the Phone

2.1 Initial Inspection

When the your WIP2 phone shipment arrives, inspect the shipping boxes for external damages and record any discrepancies. Save the boxes and packing material in case you need to ship the phone to another facility. Always retain the packing materials if you suspect that the shipment is damaged — the carrier may need to inspect them.

Warning Do not attempt to use the WIP2 phone or its accessories if it or they appear damaged. Immediately report the damage your Zultys reseller.

2.2 Package Contents

2.2.1 Unpacking the Phone

If the phone box has not been damaged in transit, unpack it carefully. Ensure that you do not discard any accessories that may be packaged in the same box as the phone.

2.2.2 Verify Contents

Upon delivery of your phone, inspect the packing list and confirm that all items listed on that note were received. Compare the packing slip with your purchase order.

Ensure that the following accessories are present in the shipment:

- phone body
- ac adapter for your country
- charging cradle
- User's Guide

Ensure that there are no discrepancies and then install the phone as described in Chapter 3, starting on page 11.

Important If you suspect that there are discrepancies or that the equipment is not fully functional, contact Zultys or your Zultys sales representative **immediately**. Retain all packing materials and the shipping note for Zultys or its representative to inspect. **ZULTYS CANNOT BE HELD RESPONSIBLE IF YOU CLAIM THAT AN ITEM IS MISSING, AND YOU HAVE NOT INFORMED ZULTYS WITHIN THREE DAYS OF RECEIPT, OR IF YOU HAVE NOT RETAINED ALL PACKING MATERIALS FOR INSPECTION.**

2.2.3 Serial Numbers

The serial number of the phone is a twelve character alphanumeric code printed on a white barcode label located on the bed that holds the battery. To view, remove the back cover of the phone, as described in section 3.1.2 on page 12, then lift the battery off of the bed. Figure 2-1 displays the location of the serial number label.

Verify the serial number of the phone and compare it to the serial number on the packing lists.



Figure 2-1 Serial Number location

2.3 In Case of Damage or Malfunction

Notify your Zultys sales or service representative under any of the following conditions:

- the shipping container or any of the contents appear damaged
- an item is missing
- there is a discrepancy between the packing slip and the equipment received
- the equipment does not function correctly

Your supplier will arrange for repair or replacement, at Zultys's discretion. In certain cases, Zultys may require a claim settlement.

2.4 Returning Items for Repair or Replacement

2.4.1 Warranty Coverage

Zultys provides a warranty only through distribution channels. If you are an end user, consult the reseller or distributor who has sold you the phone for complete terms of the product that you have purchased. Zultys requires that its distributors provide a standard warranty that is one year in duration and that complies with the local laws and expectations of the country in which you reside.

Before returning merchandise to Zultys for repair or replacement, you must ensure that the items are under warranty. If you are unsure about the warranty of your merchandise, call your supplier or a local Zultys sales representative for clarification. Contact your supplier for a return merchandise authorization (RMA) number before returning any merchandise; this includes equipment covered under warranty.

For merchandise not under warranty, you will be charged for a repair if the item is returned to the factory. Call your supplier for pricing on an extended warranty for your merchandise.

2.4.2 Describing the Problem

If you are returning equipment for service, attach a tag or sheet of paper to the equipment giving the following details:

- your company or institution's name, address, and phone number
- the main person to contact, an alternative contact, and their phone numbers if different from the main phone number
- the return shipping address and any special shipping instructions
- the model number and serial number of the equipment being returned
- a description of the failure (If failure is intermittent, describe its frequency and special conditions that initiate the failure.)
- any additional comments

2.4.3 Accessories

Do not return any of the accessories with the equipment unless you suspect that one of them is faulty. If you return an accessory, place a tag on it that clearly identifies it as yours and briefly explain the problem.

2.4.4 Packing

Wherever possible, use the original packing materials to ship the equipment. If these are not available, containers and cushioning material similar to those originally used are available from Zultys.

If it is inconvenient to obtain supplies from Zultys, use a strong, double-walled shipping carton. Place about 70 mm (3 in) of cushioning material around all sides of the equipment.

Zultys is not responsible for any damage that occurs during shipment back to your supplier or to the factory.

Installation

3.1 Preparing the Phone for Use

To use your WIP2 phone, you must supply power to the phone and configure the phone to communicate to your wireless access points.

Important This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

3.1.1 Connecting the Cradle to Power

The charging cradle is a mobile mounting device that conducts power from the ac adapter to the phone. Placing the phone in an installed cradle recharges the battery and provides a stable base for conducting conversations through the external speaker.

To install the charging cradle, place it on a level platform. Then connect the ac adapter to the connector at the rear of the cradle. After the cradle is installed, you can place the phone in the cradle as shown in figure 3-1.

3.1.2 Inserting Battery into Phone

The WIP2 battery is accessed through a removable cover located on the rear of the phone. To open the rear cover:

1. Firmly grasp the phone with one hand such that the rear side of the phone is up, as shown in figure 3-2.
2. Press down on the nine raised dots located at the top of the battery cover.
3. While pressing down on the dots, slide the cover towards the bottom of the phone.
4. Lift the cover to access the battery, as shown in figure 3-3.

The battery socket is located on the bottom right corner of the battery compartment.

Installation

3.1 Preparing the Phone for Use

To use your WIP2 phone, you must supply power to the phone and configure the phone to communicate to your wireless access points.

Important This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

3.1.1 Connecting the Cradle to Power

The charging cradle is a mobile mounting device that conducts power from the ac adapter to the phone. Placing the phone in an installed cradle recharges the battery and provides a stable base for conducting conversations through the external speaker.

To install the charging cradle, place it on a level platform. Then connect the ac adapter to the connector at the rear of the cradle. After the cradle is installed, you can place the phone in the cradle as shown in figure 3-1.

3.1.2 Inserting Battery into Phone

The WIP2 battery is accessed through a removable cover located on the rear of the phone. To open the rear cover:

1. Firmly grasp the phone with one hand such that the rear side of the phone is up, as shown in figure 3-2.
2. Press down on the nine raised dots located at the top of the battery cover.
3. While pressing down on the dots, slide the cover towards the bottom of the phone.
4. Lift the cover to access the battery, as shown in figure 3-3.

The battery socket is located on the bottom right corner of the battery compartment.



Figure 3-1 WIP2 Phone in Charging Cradle



Figure 3-2 Grasping the WIP2 to remove the rear cover

- To insert a battery into the phone, plug the battery connector into the battery socket, then place the battery onto the bed.
- To remove the battery, pull the plug up from the socket. Avoid pulling on the wires when removing the plug from the phone.



Figure 3-3 Removing the Rear Cover from the WIP2

3.1.3 Power

3.1.3.1 Power from Battery

The WIP2 can operate independent of the charging cradle when the battery is sufficiently charged. The battery icon, located in the top right corner of the display, indicates the remaining power reserves. When fully charged, battery icon displays three bars. The battery icon blinks to warn you that existing battery reserves can provide power to the phone for less than 15 minutes. When the icon is not blinking, the battery contains sufficient reserves to power the phone, even when the icon contains no bars.

3.1.3.2 Power from an AC Adapter

The WIP2 operates from power provided by the ac adapter when the phone is placed in the charging cradle and the ac adapter is properly connected to the cradle and to an ac power source. When the battery is being charged, the bars in the battery icon flash on and off sequentially.

The ac adapter has an output rating of 7 Vdc, 850 mA and is marked LPS or (for US) NEC Class 2. The plug should be 2.0 mm or 2.1 mm with the center positive. Zultys does not warrant operation of the WIP2 with any adapter not supplied by Zultys for use specifically with the WIP2.

3.1.3.3 Applying Power to the WIP2

The WIP2 receives power from the ac adapter when it is placed in a properly installed charging cradle, regardless of the charging status of the battery. The phone receives power from the battery only when it is not receiving power from the ac adapter through the cradle.

3.1.4 Connecting to the Network

LANs provide access to wireless devices through **bridge type access points**. An *access point* is a device that connects to a wired network through an Ethernet port, connects to WiFi devices through 2.4 GHz radio signals at data rates up to 11 Mbps, and provides transparent communications between the two networks. A *bridge type* access point permits communications

between the networks in both directions. Multiple access points within a network use Layer 2 connectivity, allowing the wireless devices to seamlessly communicate with the LAN as it moves into areas serviced by different access points.

Refer to section 8.7.2.1 on page 110 for information on scanning the area for access points.

3.2 Power On

3.2.1 Turning the Phone on and off

The WIP2 phone must be powered on in order to make and receive calls, access messages, and set operation parameters. The phone can be turned on by using one of the following two methods:

- Press the green button until the first six keys are illuminated. This should take about one second.
- Place the phone in the charger cradle that is receiving dc power through an ac adapter.

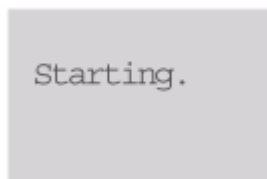
To turn off the WIP2, remove it from the charger cradle, then press the red button until the display light turns off. This requires about two seconds.

3.2.2 Power on Sequence

When you power up the phone, it performs a quick power on self test, and typically starts operation in less than 20 seconds. The exact time depends on your network. The phone tries to find a DHCP server if DHCP is enabled.¹ The DHCP server points to a TFTP server. The TFTP server contains configuration files that fully provision your phone and contains addresses for network elements used by the phone to can register with the SIP server. Chapter 4, starting on page 21 describes the exact start up sequence.

3.2.3 Startup panels and Startup tone

The WIP2 signals the start of the power on sequence by illuminated the first six keys. Within two seconds, the LCD displays the Starting panel. The display remains unlighted.



The key lights are turned off two seconds later. After displaying the starting panel for 15 seconds, the display light and all key LEDs are turned on. The phone then displays the Copyright logo:

After displaying the Copyright panel, the phone displays information panels while searching for the DHCP server and TFTP server.

1. DHCP is enabled by default. To assign a static IP address to the phone, see section 4.5.2.2 on page 32.



If your system is configured for multiple locations, the WIP2 displays a panel requesting your current location. Select a location with the arrow buttons, then press the LEFT button to enter that location and complete the startup process.

The phone then plays the startup tone, and displays the home panel, as described in section 5.2.2.1 on page 37.

To program the startup tone:

- **Menu commands:** Section 8.6.7.10 on page 101.
- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.6.5 on page 169.

3.2.4 Running a Quick Test

You can run quick hardware tests immediately after powering on the phone. The WIP2 also provides a comprehensive set of tests that you can perform whenever the phone is operating normally. Section 8.8 on page 128 describes the available tests.

To perform the quick test, press and hold the Left Soft Button (located directly above the green button) during the boot process while the phone displays the Zultys logo. The phone performs the following tests:

1. LCD alternately displays the following two fixed graphical patterns:



Observe the LCD and verify that all segments are turned on and off.

2. Press the green button to begin LED test. The phone turns on the LED that illuminates the left side of the LCD and the display shows the following panel:

**Press left SB to
confirm led is
on, press right
SB, otherwise.**

The WIP2 uses six LEDs to illuminate the display and six LEDs to illuminate the keyboard. Pressing the left soft button turns off the LED that is on and turns on a different LED. Pressing the left soft button twelve times steps through each LED through the LEDs.

3. Press the green button or the right soft button to begin the vibrator test.
4. Press the green button to begin the keypad test

This test requires that you push each button and key in sequence, starting with the button in the top left corner of the keypad and proceeding right. The LCD shows an @ symbol for each button that has been pushed:



The last key pushed in this test is the # key.

5. After you press all 18 buttons in proper order, the phone displays a completion message:

**Keypad test
successful**

If you do not press a button during a 10 second period, the phone displays a timeout message:

**Keypad test
timed out**

In either case, the phone resumes the power up sequence 10 seconds after displaying one of these messages.

3.2.5 Communicating with the Network

3.2.5.1 Connecting to a DHCP Server

If the phone is configured for dynamic IP addressing, it attempts to locate a DHCP server. The phone displays:



Depending on your network, this can take from two to 30 seconds. The phone displays a progress bar on the second row and the time it has been trying in the lower right corner of the display, in minutes, and seconds. Every 20 seconds, the phone clears the progress bar then starts adding characters again.

The phone continues to try to find the DHCP server indefinitely.

3.2.5.2 Connecting to the TFTP Server

Once the phone has its IP address, it tries to locate the TFTP server if it is programmed with the address of the TFTP server or if it obtained the address from the DHCP server.

Depending on your network, this can take from one to 75 seconds. The phone displays a progress bar on the second row and the time it has been trying in the lower right corner of the display, in seconds.

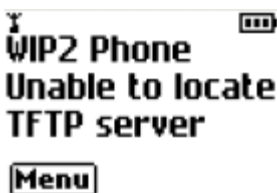
If the phone can find the TFTP server, the configuration file or files it retrieves may indicate that the phone needs to update its software. See section 4.4.3 on page 31 for details of the screen that the phone shows in this case.

If the phone can find the TFTP server but cannot find the configuration file (or it can find it, but there is an error with it), the phone displays:



The phone displays this for three seconds and then proceeds to register.

The phone continues to try to find the TFTP server for 75 seconds. If it cannot locate the TFTP server within this time, it displays



The phone displays this for three seconds and then proceeds to register.

3.2.5.3 Connecting to the SIP Registrar

If the phone has an address for the SIP registrar, it displays:



If the phone is unable to register with the primary SIP proxy, it attempts to register with the backup proxy (if the phone is configured for a backup proxy). If the backup proxy registration is successful, calls will be serviced by the backup proxy and the phone will continue attempting to register with the primary proxy in the background.

3.2.5.4 Failure When Using a Fixed IP Address

If you have configured the phone to use a fixed IP address, and to not use DHCP, the phone should boot up and connect to the TFTP server (if provisioned) and then connect to the SIP registrar. If there is a problem with this process, the phone displays:



Use the menu to configure the protected settings as described in section 8.7 on page 107, then restart the phone.

The phone will also display this message if you have configured it for DHCP but the DHCP server is incorrectly configured. This is an unusual situation, because administrators take great care to ensure that the DHCP servers are correctly configured.

3.2.5.5 Attempt to Establish Connection

The phone continually tries to re-establish connection with the network, once every four seconds.¹ If it does establish connection, you can use the phone to make calls. You do not need to cycle the power on the phone to make the phone usable.

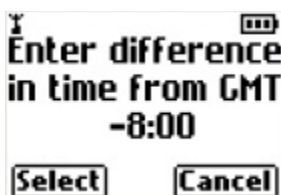
The phone retains the display until you press a key or until you make a call or the phone receives a call. You need to use the menu to access the status as described in section 8.5.2 on page 90.

1. The WIP2 sends the second request 500 ms after the first request. It sends the third request 1.0 s after that, the fourth request 2.0 s after that, and thereafter every four seconds.

3.2.6 Satisfactory Connections

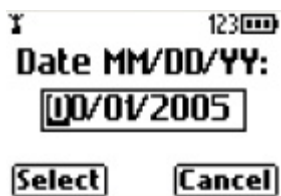
3.2.6.1 Date and Time

The WIP2 receives the time and date from a specified NTP. The time zone can be provided by the system needs to know the difference between the local time and GMT.¹ Instead of asking for a location, the phone therefore displays:



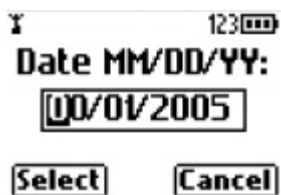
Use the **Up** and **Down** keys to select the correct time difference. The phone provides a list of existing time zones. When you have made your entry, press the LEFT (Select) button. The phone shows the idle display.

If the phone cannot find an NTP server, you must enter the date and time manually. The phone displays:



Enter the day of the month by using the keyboard on the phone.

Press the **OK** button. The phone displays:



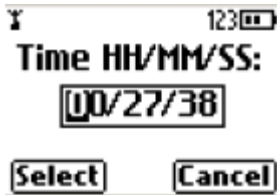
Use the **Up** and **Down** keys to scroll between the months.

Press the **OK** button. The phone displays:

Use the **Up** and **Down** keys to select the correct year. The phone defaults to 2005 scrolls to a maximum of 2099, then to 2002.

Press the **OK** button. The phone displays:

1. After the phone has booted it uses SNTP to obtain the date and time for the first time. Thereafter, it uses NTP every ten to 15 minutes to obtain the date and time.



Enter the time with the keypad using 24 hour notation.¹ Use the * key to enter the colon character that separates hours from minutes and minutes from seconds. You do not have to enter the seconds. If you do not enter the seconds, the phone sets the seconds to zero.

Press the **OK** button when you have entered the time. The phone shows the idle display, as described in section 5.2.2.1 on page 37.

You can subsequently alter the date and time using the menu as described in section 5.2.3.4 on page 40, or you can cycle power on the phone to obtain the same screen.

3.2.6.2 Subsequent Loss of Connection

If the phone has established LAN connectivity and registered with the phone system, and then it loses connectivity, or a subsequent registration request is denied, you cannot make calls. Contact your system administrator for assistance.

3.2.6.3 Viewing Startup Information

WIP2 provides menu commands and web interface panels that display when the phone was powered up, when the phone most recently registered with a SIP server, and the network status.

The WIP2 provides the following methods for view startup information and network status:

- **Menu commands:** Section 8.5 on page 89.
- **Web Interface Configuration Utility:** Section 10.4 on page 155.

1. Use 24 hour notation regardless of the format you may have chosen in which time is displayed in section 8.6.9.4 on page 106.

Provisioning the Phone

4.1 Introduction

Provisioning functions include the booting process that initializes the phone, the configuration process that customizes your phone, and the update process that allows you to run the most recent software version of the phone.

You can either dynamically assign an IP address to the phone through a DHCP server or assign a static IP address. The DHCP server can also be used to obtain the IP addresses of various network servers. The phone also supports the use of configuration files that can deliver a common set of phone parameters to various phones throughout a network.

This chapter describes the components used to configure WIP2 phones, the booting and configuration process, and the method for updating the software that operates the phones. These sections also present the underlying method for the exchanges that take place.

4.2 Provisioning Methods

4.2.1 Configuration Files

Device configuration files are ASCII text files that specify phone parameter settings. A system user can setup his or her phone to download its configuration files from the TFTP server every time the phone is booted.

Each WIP2 phone has a unique MAC address that identifies the device. A TFTP server uses this address to pass configuration data to the device. Phones can access two configuration files: a common configuration file and a specific configuration file.

Many parameters in the configuration files correspond to the parameters that you can configure through the menu of the phone or through the web interface. Configuration parameters are described in Chapter 9, starting on page 131.

4.2.1.1 Common Configuration File

The common configuration file for the WIP2 is named:

WIP2_common.cfg

The common configuration file specifies parameter settings that are common for all phones that access the TFTP server, such as server addresses, registration periods, and service phone numbers. The common configuration file is stored in the root directory of the TFTP server.

4.2.1.2 Specific Configuration File

The specific configuration file defines parameter settings that are unique to an individual phone or a set of phones. The specific configuration file is stored in the TFTP directory designated by the common configuration file.

If a parameter is defined in the common file and the specific file, the specific file setting takes precedence. The file name of a specific configuration file is constructed by using the MAC ID for the individual device:

<MAC address>.cfg

For example,

0050C2180FD8.cfg

Each phone, knowing its own MAC address, locates the file that has been uniquely created for it and obtains configuration data that is unique for the phone.

4.2.1.3 Configuration File Format

The format for common and specific configuration files is identical; an example of a configuration file is shown in figure 4-1. This is an ASCII text file, with the name of the parameter and the value of the parameter listed on the same line. Each parameter must be within the section (denoted by square brackets "[]"). The contents of the file are not case sensitive; you can enter parameter names in upper or lower case. Comment lines are denoted with a leading semi-colon (;) and have no effect on the operation of the phone.

```
[HW_CONFIG]
lcd_contrast=8
ring_volume=5
speaker_volume=5
handset_volume=5

[NET_CONFIG]
use_dhcp=yes
ip_addr=
subnet_mask=
default_gateway=
primary_dns=
secondary_dns=
;host_name is DNS lookup for this phone
host_name=
domain=zultys.com
ntp_server_addr=
tftp_server_addr=
tftp_cfg_dir=./WIP2
```

Figure 4-1 Format for Configuration File


```

[SIP_CONFIG]
phone_sip_port=5060
rtp_start_port=33000
;The Device ID is the user portion of the SIP URI
device_id=West
;The Display Name is sent in SIP messages
display_name=Zultys WIP2
register_w_proxy=yes
proxy_addr=10.1.32.224
proxy_port=5060
voice_mail_uri=258
registration_expires=3600
session_expires=3600

[AUDIO_INFO]
ext_ring_tone=0
ext_cust_ring=
int_ring_tone=0
int_cust_ring=
ring_tone2=0
cust_ring2=
key_click=0
codec=0
distinctive_ring=yes
sound_url=

[GENERAL_INFO]
software_version=1.0.0
;The message displayed on the LCD in idle mode
greeting_message=WIP2 SIP Phone
password=985897
time_fmt=%H:%M
date_fmt=%m/%-d/%Y
date_time_order=0
;This is the offset from GMT, in minutes
timezone=-480
country=USA
language=ENGLISH
clear_settings=2

```

Figure 4-1 Format for Configuration File (Continued)

4.2.1.4 Accessing the Configuration Files

Every time the phone restarts (either by command or by power on), the phone may read the configuration files. The phone extracts the data in the files and saves it to memory. This overwrites all parameters that are saved in memory except for user settings that are not configured to be cleared; these settings are retained in the phone.

For example, suppose the common configuration specifies the greeting message as:

WIP2 SIP Phone

and the specific configuration specifies the greeting message as:

Freddy Phone

Then, in the idle state, the phone will display:



The phone continues to start, using the parameters that are now saved in its memory.

4.2.1.5 Retaining User Settings

Configuration commands either specifies parameter values that the phone requires to communicate with the network servers or setup the behavior of features that define how you interact with the phone. Personal interaction features include:

- display properties, including the LCD contrast, greeting message, date format, time format, and the display timeout, and the display language.
- volume settings, including the ring, handset, and speaker volume
- phone alert tones, including ring tones, second call tone, hold reminder tone, key click sound, and stutter tone
- automatic call answer settings

Specific information about each of these settings is listed in the following chapters. Each of these settings can be altered through configuration commands, permitting the reset of feature values each time you power up the phone. Additionally, the WIP2 can be configured to specify when these user settings are reset, allowing you to retain preferred settings that differ from configuration file commands even when the phone is rebooted.

The Clear User Settings command provides three options.

- **Never:** Each time the phone powers on, it retains the user settings that were previously entered
- **On Next Power On:** The phone modifies user settings to the values listed in the configuration file the next time it is powered on. After that instance, the phone sets this parameter to never and will not take settings from the configuration file again unless you manually alter this setting.
- **On Each Power On:** The phone takes its user settings from the configuration file every time the phone powers up.

The WIP2 provides the following methods for scheduling the clearance of user settings:

- Section 8.6.5 on page 95 describes the menu commands that clear the user settings.
- Section 9.4.3 on page 140 describes the configuration commands that clear the user settings.
- Section 10.5.1 on page 158 describes the Web Interface panel that clear the user settings.

4.2.2 Web Interface Configuration Utility

The phone provides a web interface configuration utility, offering an alternative method of storing information to your phone. Through this utility, you can modify all operating parameters that are available through configuration files.

To access the web interface, enter the IP address of your phone in the address entry box of your web browser and press the key button. The login panel will appear in your browser. Section 8.7.3.2 on page 114 provides the menu command that displays your phone's IP address.

Web Interface panels provide an update button to download changes to your phone. Many changes take effect when you download them to the phone. Some changes require that you reboot the phone to become enabled. When you have made at least one change that requires a phone reboot, a *Restart Phone* option appears in the menu on the left side of the panel.

If you have specified a TFTP server, restarting the phone reloads the configuration files to the phone which files may write over the changes specified by the web interface; see section 4.3.1.2 for details on booting the phone without reloading the configuration files.

Chapter 10, starting on page 151, describes each panel of the web interface configuration utility.

4.3 Boot Process

4.3.1 Boot Options

The phone provides several boot process options, allowing you to customize the phone to your network configuration. This section describes the process options, then lists the steps that the boot up process requires.

4.3.1.1 IP Address Assignment Options

Dynamic IP and TFTP Address Assignment. This option uses DHCP to specify the IP address and subnet mask of the phone, the IP address of the default gateway, and the IP address of the various network servers that the phone will access. Figure 4-2 displays the configuration commands that specify this option.

```
[NET_CONFIG]
use_dhcp=yes
tftp_addr_fixed=no
```

Figure 4-2 Configuration File Instructions: Dynamic IP and TFTP Assignment

Dynamic IP Address and Fixed TFTP Address Assignments. This option uses DHCP to specify the IP address and subnet mask of the phone, the IP address of the default gateway, and the IP address of the various network servers that the phone will access except for the TFTP server. The IP address of the TFTP server is either provided by the configuration file or retained from the previous setting in the phone's internal memory. Figure 4-3 displays the configuration commands that specify this option.

Fixed IP Address Assignment. This option fixes the phone's IP address and subnet mask and the IP address of the default gateway and all of the various network servers that the phone will access. Figure 4-4 displays the configuration commands that specify this option.

```
[NET_CONFIG]
use_dhcp=yes
tftp_addr_fixed=yes
tftp_server_addr=10.1.32.224
```

Figure 4-3 Configuration File Instructions: Dynamic IP, Static TFTP Assignment

```
[NET_CONFIG]
use_dhcp=no
tftp_addr_fixed=yes
tftp_server_addr=10.1.32.224
```

Figure 4-4 Configuration File Instructions: Static IP and TFTP Assignment

4.3.1.2 Configuration File Usage Options

Download Configuration Files. This option downloads the common and specific configuration files from the TFTP server and stores the values specified by the commands in the files into the memory of the phone. To download configuration files, you must either enable DHCP mode and specify dynamic TFTP address assignment, or specify fixed TFTP assignment and assign a valid IP address to the TFTP address parameter.

Do Not Access Configuration Files. This option does not download any configuration files from the TFTP. The phone uses its memory contents to configure itself upon startup. To perform this option, specify fixed TFTP assignment (see section 8.7.3.8 on page 117) and assign an empty value to the TFTP address parameter (see section 8.7.3.9 on page 117).

4.3.2 Boot Process Description

The following steps provision the WIP2 phone:

1. The phone obtains its IP address and the address of the TFTP server. These addresses are obtained in one of the following ways:
 - dynamic assignment by accessing the DHCP server
 - static assignment from the configuration file
 - maintains address assignment as configured in the phone's internal memory
2. The phone accesses the TFTP server to locate the common configuration file. If the TFTP address parameter does not specify an address to the TFTP server, the phone does not access the common configuration file.
3. If the phone downloaded the common configuration file, it reads the file and accesses the specific configuration file from the directory pointed at by the common configuration file.
4. The phone reads its specific configuration file.
5. The phone stores the data retrieved from the configuration files in its internal memory.
6. The phone uses the parameter settings in its internal memory to configure itself to operate properly in the network.

4.4 Updating Software

Zultys periodical releases new versions of the software that controls the WIP2. New versions may provide additional features or enhance the performance of the phone. The following sections describe the phone software update process.

To view the software version that the phone is running, along with the date of manufacture, MAC address, boot code version, and hardware version:

- **Menu commands:** Section 8.5.3 on page 91.
- **Web Interface Configuration Utility:** Section 10.4.3 on page 157.

4.4.1 Performing an Update

The phone must be able to communicate with the LAN that has a TFTP server and a DHCP server. DHCP mode must be enabled to perform the software update.

Important You cannot update the software if you fix the IP address of the phone.

The DHCP server provides an IP address to the phone and also the address of the TFTP server. The phone accesses the TFTP server to locate and retrieve its configuration files. It reads the configuration files to identify what software version it should be using. If the files specify a different version from that on the phone, the phone retrieves the specified software version from the TFTP server.

The WIP2 provides two modes for updating software. **Forced updates** are performed automatically by the system administrator. Manual updates are performed by the user.

4.4.1.1 Forced Software Updates

Forced software updates are initiated by the system administrator and received by the WIP2 from configuration files received from the TFTP server.

Important To receive a manual update, the phone must be placed in the charger cradle and receiving power from the ac adapter.

After completing the software update, the Forced Software Update process automatically powers down the phone, then turns the power on.

4.4.1.2 Manual Software Updates

The following procedure initiates a manual software update:

1. Verify that the phone is powered off.
2. Press and hold the “1” key. While holding the “1” key, turn on the phone by pressing the green SEND button until the top six number keys are illuminated.

The phone displays the Update agent screen:

```
ssid <ys-ws1  
wep yes  
key <83280  
  
SCAN APPLY
```

3. If necessary, change the parameter values to contact the server that will provide the software update.
Press the green SEND button to move between fields. Press the Up button to backspace. You can also scan for available Access Points by pressing the Left button (Scan).
4. Press the Right button (Apply) to begin the update.
During the update, the WIP2 displays a sequence of screens that display update status and information, such as the TFTP server address and the software version number.
When the server has completed sending the update, the phone will automatically power off.
5. Power up the phone to complete the software update.

4.4.2 Update Process

4.4.2.1 Description

To update the software, one or both of the configuration files described in section 4.2.1 on page 21 must specify the software version that the phone must use. This is specified on the line shown in figure 4-1 as:

```
software_version=1.0.3
```

The phone compares the version specified to that installed on the phone. If the versions are the same, the phone continues with the startup process. If the versions are different, the phone retrieves the software from the TFTP site. The phone looks first in the root directory of the TFTP site, then in the subdirectory of the TFTP site where the specific configuration file may be stored, if one is specified.

The software name for WIP2 software is:

```
WIP2_<version>.bin
```

For example:

```
WIP2_1_0_3.bin
```

The file name uses the underscore character to separate the three parts of the software version number.

If the common configuration file and specific configuration file indicates a different software versions, the phone retrieves the software version specified by the specific configuration file.

The phone programs itself with the new software and restarts.

4.4.2.2 Binary File

The binary file for the software contains the software version. When the phone reads the file, it verifies the version that is contained in the file with the file name and will not load it if the versions do not match.

The first characters in the binary file are encoded as a null terminated ASCII string. The end of the file contains a 16 bit CRC checksum.

The size of the binary file is between 2 MB and 4 MB.

4.4.2.3 Ladder Diagram

Figure 4-5 shows the messages used in this process for the WIP2. The following steps describe the process of obtaining the TFTP address from the DHCP server. If the TFTP server address is fixed by the configuration file or web interface, the phone accesses the specified TFTP server and continues with Step 5.

1. WIP2 sends DHCP DISCOVER (broadcast)
The WIP2 boots (after power is initially applied or after receiving a SIP NOTIFY message) and sends out a DHCP DISCOVER message requesting an IP Address and other options (same as those provided in DHCP ACK).
2. DHCP Server responds with a DHCP OFFER
The DHCP Server indicates an available IP Address to the WIP2.
3. WIP2 sends DHCP REQUEST (broadcast)
The WIP2 accepts the DHCP server's offer and asks the server to provide its configuration.
4. DHCP Server sends DHCP ACK
DHCP Server responds with committed IP Address and other configuration options. The specific options needed by the WIP2 are described in section 4.5.2.1 on page 32.
5. WIP2 initiates TFTP read request for WIP2_common.cfg
WIP2 requests its common configuration file using the TFTP Server address provided by DHCP option #66.
6. WIP2 receives TFTP data (WIP2_common.cfg) from the TFTP Server
The WIP2 receives the common configuration file and reads it. It is possible that the specific configuration file for a phone is located in a directory that is not the TFTP root directory. If this is the case, the subdirectory is indicated in this common configuration file.
7. WIP2 initiates TFTP read request for MAC_address.cfg
The WIP2 requests its specific configuration file. The specific configuration file is uniquely named with the specific MAC address of the phone (for example, 0008A10FF312.cfg).
8. WIP2 receives TFTP data (MAC_address.cfg) from the TFTP Server
The WIP2 reads its specific configuration file and determines whether its software version matches that specified. If not, it retrieves the new software.
9. WIP2 initiates TFTP read request for WIP2_version bin.
The WIP2 requests the specific software version using the TFTP Server address provided by DHCP option #66 (for example, WIP2_1_2_34.bin).

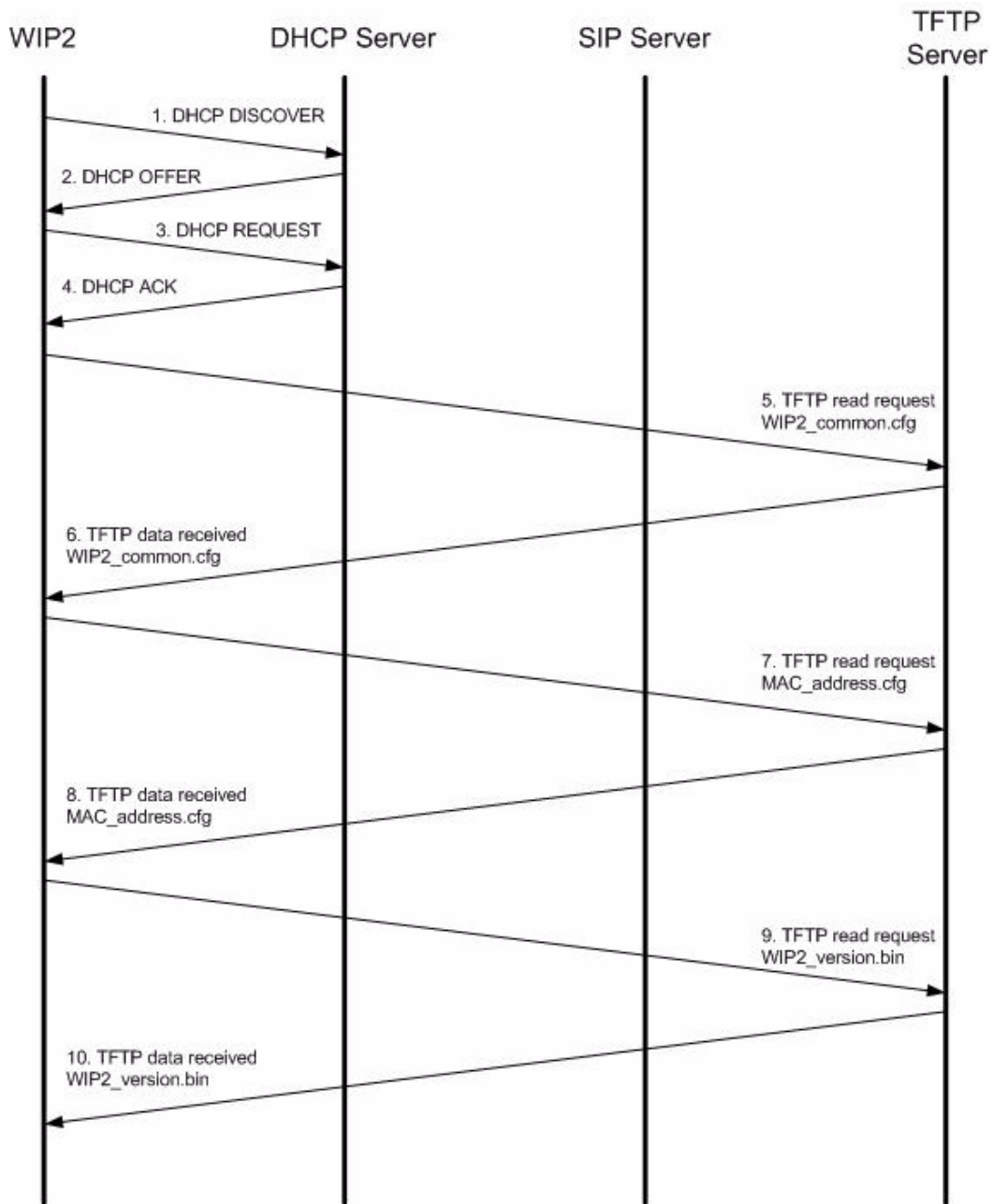


Figure 4-5 Messages for WIP2 to Obtain Configuration

10. The WIP2 receives TFTP data (WIP2_version.bin) from the TFTP Server

After downloading the software version the WIP2 reboots and repeats all of the steps (except for retrieving software). At this point, the WIP2 performs a checksum verification and compares the new software version file name with the version information stored internally to the .bin file. If the checksum fails or if the file name does not match that of the version information stored internally to the .bin file, the phone indicates an error and loads the previous software version.

4.4.3 Summary

For a user, the process of updating the software is fully automatic. The administrator of the network can initiate this process at any time. When the phone is idle, it will start the process of updating the software. Usually, the administrator would cause this to happen when no one is likely to want to use the phone. The phone displays an update message using different characters than normal.

Important Do not disturb the phone during the update process. You cannot use the phone to make or receive calls while the software is being updated. This process takes about 30 seconds.

When the phone has provisioned the software, it restarts itself, just as it does when you power it on. After about 15 seconds the phone displays the idle display and is ready to use.

If the software update process fails, the phone may display a message indicating that the Application update failed. The phone displays this message if it found the software file but the file had been corrupted. Contact the system administrator to resolve this. You will not be able to use the phone until you resolve the problem.

4.5 Provision Settings

4.5.1 Wi-Fi Parameters

Wi-Fi parameters configure the connection between your wireless networks and the WIP2 phone. Section 8.7.2 on page 110 describes the menu commands that adjust Wi-Fi parameter settings. Section 8.5.2.1 on page 90 describes the menu commands that display wireless network parameters settings.

The WIP2 defines the following Wi-Fi parameters:

- **SSID:** The Service Set Identifier (SSID) specifies the wireless network that the WIP2 is accessing. The SSID setting enables communications between the WIP2 and the access points of the specified network.
- **Network:** The Network setting specifies the communication method the phone uses to communicate with other devices. The valid network options include:
 - **Infra (Infrastructure):** In this mode, wireless devices communicate with other devices, either other wireless devices or wired devices, after going through an access point.
 - **Independent:** Also known as Ad-hoc mode. In this mode, devices communicate directly with each other without the use of access points.
- **Channel:** A channel is a division of the 2.4 GHz wireless band that supports a transmission path. The WIP2 supports 11 channels in the US, 13 channels in Europe, and 14 channels in Japan. The channel is not configured by the user.
- **WEP:** Wired Equivalent Policy (WEP) is a security protocol for wireless networks. WEP encrypts data over radio waves as it is transmitted between endpoints. When this parameter is enabled, the phone encrypts all voice transmissions.

- **WEP Keys:** A key is an integer variable that an algorithm applies to a data block to produce encrypted data. This option specifies the WEP keys available for data transmissions when WEP is enabled.
- **WEP Active Key:** This parameter selects the WEP key used by the WIP2.

4.5.2 IP Settings

IP settings configure the IP address of the WIP2 and the servers required by the phone. When operating in DHCP mode, the DHCP server provides all of the IP addresses. When DHCP is disabled, the phone is configured in static IP address mode and uses the addresses stored its memory.

4.5.2.1 DHCP Mode

You can dynamically assign the IP address of the phone and other network servers by accessing a DHCP server. When you connect the phone to a DHCP server, the DHCP server must be configured with the following options for your network to fully support the phone:

- subnet mask (option 1)
- default gateway (option 3)
- domain name server (option 6)
- IP Address (option 50)
- TFTP server name (option 66)

In addition, it is recommended that your DHCP server also provide:

- NTP Time Offset (option 2)
- domain name (option 15)
- NTP servers (option 42)

The WIP2 provides the following methods for enabling DHCP mode:

- **Menu commands:** Section 8.7.3.1 on page 114.
- **Configuration commands:** Section 9.4.1 on page 133.
- **Web Interface Configuration Utility:** Section 10.6.2 on page 165.

4.5.2.2 Fixed Address Mode

When the WIP2 boots with DHCP mode disabled, the IP address and subnet mask of the phone must be configured in memory. IP addresses of the following devices and servers must also be stored in the phone's memory:

- **Default Gateway:** The Default Gateway is the IP address of the router that the phone uses to communicate with the outside world.
- **DNS Servers:** DNS servers is a device that locates records to answer IP address queries. The WIP2 allows the configuration of primary and secondary DNS servers.
- **NTP Server:** An NTP server is a device that maintains a common clock time among hosts within a network.

- **TFTP Server Address:** TFTP servers are typically accessed by devices to receive their "boot strap" information. When DHCP is disabled, the TFTP IP address is configured as a fixed IP address.
- **DSCP Setting:** This parameter configures DiffServ (layer 3 QoS) setting. All voice packets (RTP) leaving the phone will have the ToS byte in the IP header set to this value. The default value is 0, which corresponds to *best effort*. If you use differentiated services in your network, you should set the value to 46 (101110 binary) which corresponds to the expedited forwarding per hop behavior (PHB)

The WIP2 provides the following methods for setting network IP addresses:

- **Menu commands:** Section 8.7.3 on page 113.
- **Configuration commands:** Section 9.4.1 on page 133.
- **Web Interface Configuration Utility:** Section 10.6.2 on page 165 configures the IP address and subnet mask of the phone. Section 10.6.1 on page 164 configures all other network IP addresses.

4.5.3 SIP Settings

4.5.3.1 Registration Address

When registering with a SIP proxy, each device provides an address (SIP URI) in the form `device_id@domain`, where *device_id* identifies the specific device and *domain* specifies the domain name for the enterprise. The default *device_id* is the MAC address of the phone.

The WIP2 provides the following methods for setting network IP addresses:

- **Menu commands:** Section 8.7.5.1 on page 124 (user name) and section 8.7.5.2 on page 124 (domain).
- **Configuration commands:** Section 9.4.2 on page 136.
- **Web Interface Configuration Utility:** Section 10.6.4 on page 168.

4.5.3.2 Proxy Addresses

SIP settings include the parameters required by the phone to communicate with the SIP proxy and registrar servers. The phone can be configured to either register with a registrar server or the SIP Proxy; you can also program the phone to register with neither device.

SIP proxy parameter settings include:

- **Proxy Address, Port, and Password:** These parameters specify the IP address and the TCP or UDP port of the server that handles call control for the phone. The default proxy port is 5060. You can also specify a password for servers that requires device authentication.
- **Backup proxy address and port:** These parameters specify the IP address and the TCP or UDP port for a backup proxy server. The default proxy port is 5060. You can also program the phone to register with the backup proxy at startup.
- **Registration Expires:** This parameter specifies the time period, in seconds, after which a REGISTRATION expires. This value is inserted into the Expires header field.

- **Subscription Expires:** This parameter specifies time period, in seconds, after which a SUBSCRIBE expires. This value is inserted into the Expires header field.
- **Backup Registration Expires:** This parameter specifies the time period, in seconds, after which a REGISTRATION expires for the Backup proxy. This value is inserted into the Expires header field.
- **DNS SRV Lookup:** This parameter configures the phone to resolve the SIP Proxy IP address through DNS SRV records.
- **Registrar address and port:** These parameters specifies the SIP registrar server address and port. When this value is set and registration is enabled, the phone attempts to register with this server instead of the proxy server. The default proxy port is 5060.
- **Phone SIP Port:** This phone specifies the transport port number that is uses to receive SIP messages.
- **RTP Starting Port:** The phone uses consecutively numbered RTP and RTCP port numbers (actually UDP port numbers) for communication. RTP carries media and RTCP carries control information. The default RTP start port is 1760.
- **Transport Protocol:** This parameter specifies the protocol used to transport SIP messages. Currently, the WIP2 only supports UDP transport.
- **Invite Retransmissions:** This parameter specifies the number of unsuccessful INVITE transmissions before the phone switches to the backup proxy.
- **Non-Invite Retransmissions:** This parameter specifies the number of unsuccessful retransmissions (other than INVITE) before the phone switches to the backup proxy.
- **Validate Request URI in SIP messages:** When this parameter is set to *Yes*, the phone verifies the IP address, Device ID, and port number of any SIP messages that it receives. If these parameters do not match those of the phone, the SIP message is discarded.

The WIP2 provides the following methods for setting network IP addresses:

- **Menu commands:** Section 8.7.4 on page 118.
- **Configuration commands:** Section 9.4.2 on page 136.
- **Web Interface Configuration Utility:** Section 10.6.3 on page 166.

4.5.4 Codec Settings

Codecs are algorithms that the phone uses to encode voice data. The WIP2 provides the following four codecs:

- **G.711- μ -law:** typically used in North America and Japan
- **G.711 A-law:** typically used everywhere else
- **G.729 A:** used in bandwidth restricted networks
- **G.729 AB:** used in bandwidth restricted networks

The WIP2 provides the following methods for setting network IP addresses:

- **Menu commands:** Section 8.7.6.1 on page 126.
- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.6.5 on page 169.

Interacting with the Phone

5.1 Call Appearances

The WIP2 phone has two call appearances. Each call appearance supports a separate voice call.

This type of phone is different from phones in common use for the past 100 years. On those older phones a physical pair (or two pairs) of wires carry a single voice call. A phone that can accommodate two voice calls connects to two such circuits, with each circuit being referred to as a *line*. A switch on the phone selects between the lines (and therefore with whom you are talking). A phone that has two lines has two such sets of circuits and can allow two simultaneous calls.

The WIP2 phone has a single circuit to connect to the switch. All calls take place over this same circuit, or line. Dedicated software and hardware inside the phone and the switch support two simultaneous conversations. These are referred to as *two call appearances*, not two lines.

5.2 Display

The display, located below the handset speaker and above the buttons, is a graphical LCD, 96 dots 65 dots that displays five rows of characters. The display utilizes a proportional font, therefore the number of characters on a row varies on the basis of the text being displayed. Typically, the display shows about 16 characters.

The WIP2 provides a back light that illuminates the display when you press a button or during a call. The back light automatically turns off after the phone has been inactive for 30 seconds.

5.2.1 Display Organization

The LCD comprises the following three component rows: the icon bar, the text display, and the menu bar.



5.2.1.1 Icon bar

The Icon bar is located at the top of the LCD and displays one or more icons that indicate WIP2 status. Icons displayed by the WIP2 include:

- The *Antenna icon*, located in the left corner of the Icon bar, indicates the reception level of the signal being received from the specified network. This icon displays a small antenna figure followed by 0-4 bars: zero bars indicates that the phone is not receiving a signal; four bars indicates the phone is receiving a strong signal.
- The *Handset icon* indicates that the phone is servicing a voice call in Handset Listening mode.
- The *Speaker icon* indicates that the phone is servicing a voice call in Speaker mode.
- The *Envelope icon* indicates that you have an unread voice mail or text message.
- The *Key icon* indicates the keypad is locked
- The *Padlock icon* indicates the phone is servicing an encrypted call.
- The *Alphanumeric icon* indicates the case mode for entering digits and characters. See section 5.3.5.3 on page 43.
- The *Battery icon* indicates the remaining battery reserves. The number of bars in the battery indicates the status of the battery:
 - three bars indicates a fully charged battery
 - zero bars indicates a operational battery with limited reserves
 - flashing bars indicates the battery is being charged
 - a blinking battery, with no bars, indicates the battery is almost discharged and the phone will turn off in less than three minutes.

The icon bar in the above figure displays the antenna, handset, and battery icons.

5.2.1.2 Status Bar

The Status Bar comprises three rows in the center of the LCD that displays phone status, configuration menus, date, time, a greeting message, and calling options. Status Bar contents depend on the operational status of the phone.

The status bar in the above figure displays *1. Connected* on the first line, *Bonnie Hopkins* on the second line, and the QoS icon with the time of day on the third line.

5.2.1.3 Option Bar

The Option bar, located at the bottom of the display, shows options triggered by pressing the LEFT soft button and the RIGHT soft button. The available options depend on the status of the WIP2. Option bar options displayed by the WIP2 include:

- **Answer:** Press the soft button to answer an incoming call.
- **Back:** Press the soft button to return to the previous view.
- **DND:** Press this soft button to send an incoming call directly to voice mail.
- **Exit:** Press this soft button to return the Status Panel to the greeting message view.
- **Menu:** Press this soft button to access the configuration menus.

- **Mode:** Press this soft button to change the case mode when in alphabetic mode.
- **Options:** Press this soft button to access a list of calling options.
- **Presence:** Press this soft button to change your user presence.
- **Select:** Press this soft button to select the highlighted menu option.
- **Store:** Press this soft button to store the Status Panel contents to the phone book.

The sample panel displays *Options* for the LEFT soft button and *Mode* for the Right soft button.

5.2.2 Display Panels

The WIP2 phone displays call status and configuration settings through the LCD. The following sections describe WIP2 panels displayed by the LCD.

5.2.2.1 Home panel

The WIP2 displays the Home panel when the phone is not servicing a voice call and an option list is not available.



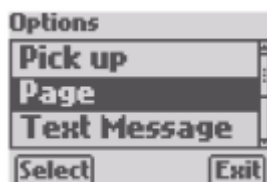
- the Icon Bar displays the Antenna icon and the Battery icon
- the Status Bar displays the greeting message (*WIP2 Phone*) on the top row, the time on the center row, and the date on the bottom row

The contents of the center and bottom rows are configured by the *Time and Date order* parameter, as described in section 5.2.3.4 on page 40.

- the Option Bar displays Menu (LEFT button) and Presence (RIGHT button) options.

5.2.2.2 List Panels

List panels display a set of available options. The WIP2 uses List Panels to navigate through configuration menus or to display available calling options as you use the phone. List panels comprise the following components:



- The Icon Bar displays the name of the List (*Options*). This name often includes the menu path.

- The Status Bar displays the available menu options (*Pick up*, *Page*, and *Text Message*). The black bar is the cursor that indicates the highlighted option (*Page*). A scroll bar on the right side of the Status Bar indicates the list contain additional options that are not displayed.

Press the UP and DOWN buttons to move the cursor through all available options.

- The Option Bar displays the actions performed by pressing the LEFT (Select) or RIGHT (Exit) soft buttons.

Pressing the Select option activates the highlighted option. The WIP2 behavior that is triggered by pressing the Select button depends on the type of option selected

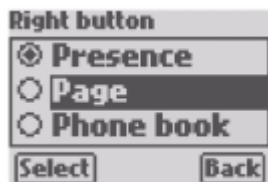
- Menu options open another List panel. The WIP2 implements a hierarchical menu structure that provides access to configuration settings through layers of List panels often referred to as menus and submenus. See section 5.5 on page 47.
- Parameter options open a Selection panel for specifying a parameter setting. See section 5.2.2.3.
- Action options display a data entry panel for specifying contact information. This information may be added to the WIP2 phone book or used to establish a voice call or send an instant message. See section 5.2.2.4.
- Information options display an Information panel that displays a parameter setting. See section 5.2.2.5.

5.2.2.3 Action Panels

WIP2 activity that affects the contents of the Status Panel includes dialling a call, sending a call, receiving a call, servicing an active call, and disconnecting a call. Chapter 6, starting on page 53, describes the display contents during all phone activities.

5.2.2.4 Selection Panel

The phone displays a Selection panel when you press the LEFT (Menu) while a Menu panel highlights an option that requires a parameter setting. The sample menu panel is displayed by selecting *Menu* | *User Settings* | *Right Button* from the Home panel.



When the phone displays a selection panel:

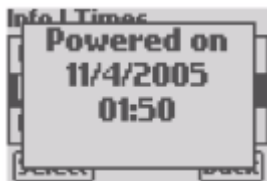
- The Icon Bar displays the name of the parameter (*Right button*) that panel is configuring.
- The Status Bar displays the parameter setting options (*Presence*, *Page*, and *Phone book*). The circles on the left side indicates the present parameter setting. A scroll bar on the right side of the Status Bar indicates the list contain additional options that are not displayed.

In the above panel, *Presence* is the current setting and *Page* will be activated if you select the LEFT (Select) button. A scroll bar on the right side indicates that additional options can be displayed by pressing the UP or DOWN buttons. The black bar is the cursor that indicates the highlighted option (*Page*).

- The Option Bar displays the Select and Back options that are activated by pressing the LEFT or RIGHT buttons. Pressing LEFT (Select) activates the highlighted option and returns to the previous panel. Pressing RIGHT (Back) returns to the previous menu panel without activating the highlighted option. Pressing the red END button returns to the Home panel without activating the highlighted option.

5.2.2.5 Information Panel

The phone displays an Information panel when you select a menu option that returns a parameter setting. The following panel is displayed by selecting *Menu | Information | Times | Powered on*.



The phone begins displaying the Information Panel when you select the specified menu option and continues displaying the panel for the period specified by the Event Timer (section 5.2.4).

WIP2 parameters cannot be modified from an Information panel. Some Information panels display parameters that can be adjusted from a Selection panel. Other Information panels display information that cannot be configured, can be changed only by power cycling the phone, or is changed automatically as the phone is being used.

5.2.3 Adjusting the LCD

5.2.3.1 Contrast

The contrast setting adjusts the display darkness to improve its readability. The display readability is affected by ambient light, room temperature, and the angle at which you view the display. To adjust the LCD contrast:

- **Menu commands:** Section 8.6.1 on page 92.
- **Configuration commands:** Section 9.4.4 on page 144.
- **Web Interface Configuration Utility:** Section 10.5.1 on page 158.

5.2.3.2 Greeting

The Greeting is the message displayed on the top line of the Status panel when the phone is idle. In the following panel, the greeting message is *Jack's Phone*.

To change the LCD greeting:



- **Menu commands:** Section 8.6.4 on page 94.
- **Configuration commands:** Section 9.4.3 on page 140.
- **Web Interface Configuration Utility:** Section 10.5.1 on page 158.

5.2.3.3 Language

The WIP2 can display LCD text in one of several languages. To change the display language:

- **Menu commands:** Section 8.6.9.2 on page 106.
- **Configuration commands:** Section 9.4.3 on page 140.
- **Web Interface Configuration Utility:** Section 10.5.4 on page 163.

5.2.3.4 Date and Time Format

The WIP2 displays the date and time of day on the bottom two rows of the Status Panel when the phone is inactive. You can adjust the format of the time and date display as follows:

- **Time and Date order:** This parameter determines the rows that display the time and date. By default, the second row displays the time and the third row displays the date.
- **Time Format:** The time can be displayed in 12 hour (1:30 pm) or 24 hour format (13:30). To adjust the time format.
- **Date Format:** The date can be displayed in four different formats

To adjust the time and date display:

- **Menu commands:**
 - section 8.6.9.3 on page 106 (date and time order)
 - section 8.6.9.4 (time format)
 - section 8.6.9.5 (date format)
- **Configuration commands:** section 9.4.3 on page 140
- **Web Interface Configuration Utility:** section 10.5.4 on page 163

5.2.4 Event Timer

The event timer determines the time period that the WIP2 displays call status or error messages before returning to the normal display. To adjust the event timer:

- **Menu commands:** section 8.6.8.1 on page 104
- **Configuration commands:** section 9.4.3 on page 140

- **Web Interface Configuration Utility:** section 10.5.1 on page 158

5.3 Keyboard

5.3.1 Description

The *keyboard* contains all of the keys and buttons on the phone. The term *buttons* refers to the switches directly below the display. The term *keys* refers to the switches that have writing on them. Figure 5-1 displays the WIP2 keyboard.

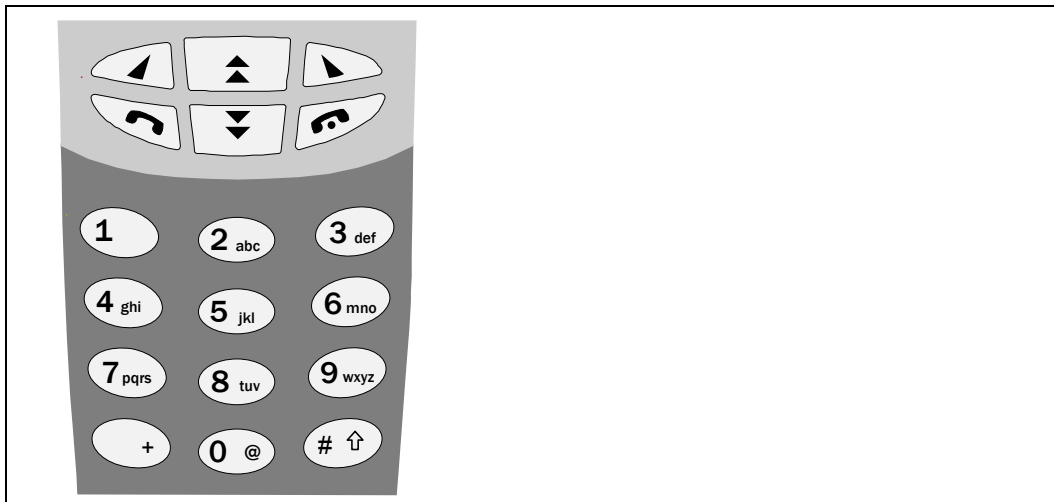


Figure 5-1 WIP2 Keypad

5.3.1.1 Description of Buttons

The six WIP2 buttons are located below the display and access features or functions of the phone or phone system. Figure 2 identifies each WIP2 button. In addition to the following list of primary button functions, specific features are also accessed through these buttons, as explained in the manual sections that describe these features.

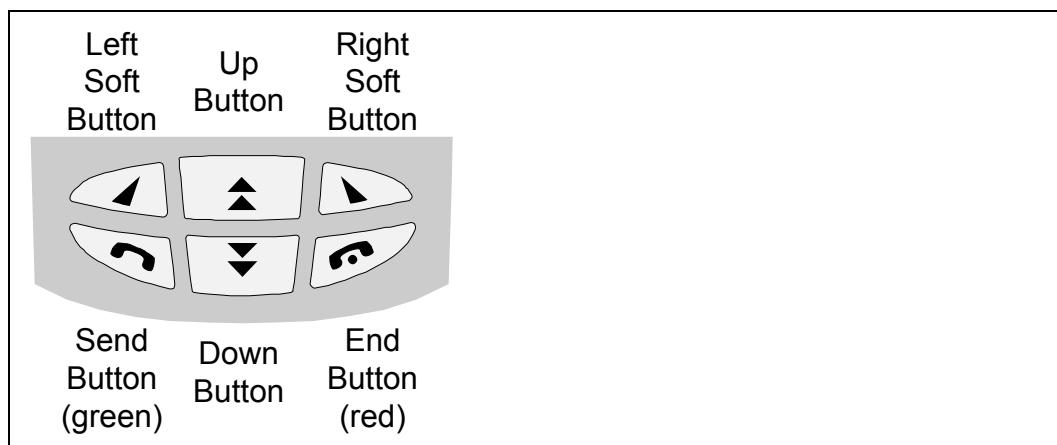


Figure 5-2 WIP2 Buttons

- **Left soft button:** This button selects the option displayed in the bottom left corner of the display.
- **Up button:** The function of this button depends on the operation mode of the phone
 - *When the phone is idle and displays the main view*, this button accesses a list of feature options, including call pickup, text messages, and the phone book.
 - *When a call is active and the phone displays the main view*, this button accesses a menu that adjusts the handset volume.
 - *When the phone displays a menu*, this button moves the cursor up one position within the list.
- **Right Soft button:** This button selects the option displayed in the bottom right corner of the display.
- **Send button:** This button is also called the green button. Press this button after entering the digits of a call to send that call. When the phone is idle, this button accesses the call log. You can also press this button to power on the phone.
- **Down button:** The function of this button depends on the operation mode of the phone
 - *When the phone is idle and displays the main view*, this button accesses a menu that adjusts the ringer volume.
 - *When a call is active and the phone displays the main view*, this button accesses a menu that adjusts the handset volume.
 - *When the phone displays a menus*, this button moves the cursor down one position within the list.
- **End button:** This button is also called the red button. Press this button to terminate a call or to disconnect the phone after the other party terminates the call. You can also press this button to power off the phone.

5.3.1.2 Keypad Description

The keypad is located below the six buttons and comprises 12 keys labelled 0 to 9, *, and #. These are used to dial a number and perform other functions.

5.3.2 Key Click Tone

The Key Click Tone parameter specifies the sound emitted by the phone when you press a button or key while you are not talking on the phone. Available key click tones include silence, clicks, beeps, or a bleep tone.

The WIP2 provides the following methods for adjusting the key click tone:

- **Menu commands:** Section 8.6.7.9 on page 101
- **Configuration commands:** Section 9.4.5 on page 145
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161

5.3.3 Dial Timeout

When dialling a number, you signal the phone that the phone number is complete and ready to send by pressing the # key. If you do not press the # key after dialling a number, the Dial Timeout determines the time that the phone waits after the last digit is dialled before sending the number to the SIP server.

The WIP2 provides the following methods for adjusting the dial timeout value:

- **Menu commands:** Section 8.6.8.2 on page 104
- **Configuration commands:** Section 9.4.3 on page 140
- **Web Interface Configuration Utility:** Section 10.5.1 on page 158

5.3.4 Programming the Right Button

The Right Soft button is programmable, allowing you to define its function when the phone is idle. Available functions including setting your presence (section 5.7 on page 50), calling a paging group (section 6.7 on page 65), or accessing your phone book (section 5.6 on page 49).

The WIP2 provides the following methods for programming the right soft button:

- **Menu commands:** Section 8.6.3 on page 93
- **Configuration commands:** Section 9.4.3 on page 140

5.3.5 Alphanumeric Mode

5.3.5.1 Purpose

The keypad can be used to enter alphabetic characters. This is useful for dialling a SIP address or entering names in the phone book. The phone provides specific menus for using alphabetic mode, including the phone book entry view (see section 5.6 on page 49) and the number dialling view (see section 6.2 on page 53).

5.3.5.2 Entering Alphanumeric mode

The phone indicates that you are in alphanumeric mode by showing an alphanumeric icon in the upper right corner of the display, next to the battery level indicator. The alphanumeric icon comprises the numbers "123", or the letters "ABC" in various cases.

5.3.5.3 Case modes

The **alphanumeric icon**, located in the upper right corner of the display next to the battery icon, indicates the case mode of the text that the phone enters as you press the numeral keys:

- **abc** indicates that only lower case text will be entered.
- **ABC** indicates that only upper case text will be entered.
- **Abc** indicates that the first letter following a space will be upper case and all other letters will be lower case
- **123** indicates that only numbers will be entered.

To change the character mode, press the RIGHT Soft Button (**Mode**) when available or the # button when **Mode** is not available.

5.3.5.4 Entering Alphanumeric Characters

The digit keys 2 to 9 enter letters of the alphabet that are displayed on those keys. When you press a key, it selects the first character. If you quickly press the key again, it selects the second letter and so on. When you repeatedly press the key, the phone selects the next character in sequence, then the number of the key, then it scrolls back to the first letter.

To scroll through the list of characters, press the key within 800 ms of the last press. If you take longer than this, the cursor position moves to the right and when you next press the key you will select the first letter in the list. If you want to select a character from the same key to be the next character you enter, you can wait or you can press the UP key.

5.3.5.5 Character Mapping on Numeric Keys

The characters mapped to the numeric keys depends on the language parameter selected (see section 5.2.3.3 on page 40). This is a list of the English characters selected by repeatedly pressing the specified keys:

- 1: ~, -, _, !, 1
- 2: a, b, c, 2; or A, B, C, 2
- 3: d, e, f, 3; or D, E, F, 3
- 4: g, h, i, 4; or G, H, I, 4
- 5: j, k, l, 5; or J, K, L, 5
- 6: m, n, o, 6; or M, N, O, 6
- 7: p, q, r, s, 7; or P, Q, R, S, 7
- 8: t, u, v, 8; or T, U, V, 8
- 9: w, x, y, z, 9; or W, X, Y, Z, 9
- 0: @, space, 0
- *: * . , : ; - _ () ' " @ & % / \ < > ~ + = ? ! \$ { } [] |

You can enter a dot (period or full stop) quickly by pressing the * key two twice.

- #: Pressing the # button can either change the alphanumeric mode (section 5.3.5.6) or execute a call (section 6.2.1.3 on page 54). To enter the # character into the data entry area, press and hold the # key.

5.3.5.6 Exiting Alphanumeric Mode

To exit alphanumeric mode, terminate the function that you are performing. When entering a SIP address, you terminate the function by either calling the address (pressing the SEND or # button) or discontinuing the call (press the END button). When entering a phone book address, press the LEFT (Store) button to add the address to memory or press the RIGHT (Back) button to discard the field contents.

5.4 Handset, Headset, and Speaker

5.4.1 Listening Devices

The WIP2 provides three devices for conducting phone conversations - handset, speaker phone, and headset.

- **Handset:** When used as a traditional handset, the speaker and microphone are located on the front of the phone. The speaker is located at the top of the phone, above the display. The microphone is located at the bottom of the phone, below the number keys. When using the handset, hold the phone next to your ear and mouth, similar to a traditional phone.

The phone shows a handset icon in the display when you use the handset.



- **Speaker phone:** When configured for use as a speaker phone, audio is played through the speaker located on the back of the phone above the battery cover. You speak through the microphone that is used for handset mode. The WIP2 can be conveniently used as a speaker phone when placed in the charger cradle.

The phone shows a speaker icon in the upper left corner of the display when being used as a speaker phone.



- **Headset mode:** An optional headset can be plugged into the USB port located on the bottom panel of the WIP2. The output speaker and the microphone are located on the headset.

To switch between Handset mode and Speaker mode during a call, press the green SEND button.

Section 6.2.1.5 on page 55 and section 6.4.3.1 on page 61 describes the method of specifying a listening device when making or answering a call.

5.4.2 Device Modes

Device modes specify the manner that listening modes are invoked. *Normal Mode* defines the default device operation. All manual procedures assume that the WIP2 is in Normal mode unless otherwise stated. *Transposed Mode* switches the method of initiating voice conversations in handset mode and speaker mode.

5.4.2.1 Normal Device Mode

In Normal Device mode:

- Press the SEND button to answer a call activates the handset
- Press the # button to answer a call activates the speaker phone
- Place a call by pressing the SEND button activates the handset
- Place a call by pressing the # button activates the speaker phone

5.4.2.2 Transposed Device Mode

In Transposed Device mode:

- Pressing the # button to answer a call activates the handset
- Press the SEND button to answer a call activates the speaker phone
- Placing a call by pressing the # button activates the handset
- Placing a call by pressing the SEND button activates the speaker phone

5.4.2.3 Toggling Device Mode.

The WIP2 provides the following methods for changing the device mode:

- **Menu commands:** Section 8.6.7.4 on page 98.
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161.

5.4.3 Volume Adjustment

You can adjust the volume for the ringer, the headset and the external speaker. In addition to the following manual adjustment methods, you can set the volume for each through configuration commands, as listed in section section 9.4.5 on page 145. Valid volume settings, as displayed by the Volume panel, range from 0 to 20. The following panel displays the Ringer Volume setting.



To adjust the Ringer volume:

1. Press the DOWN button while the phone is idle to access the Ringer Volume panel.

2. Press the UP and DOWN buttons to adjust the volume.

To adjust the Handset volume:

1. Activate the handset during a voice call.
2. Press the UP or DOWN button to access the Handset Volume panel
3. Press the UP and DOWN buttons to adjust the volume.

To adjust the Speaker phone volume:

1. Activate the speaker phone during a voice call
2. Press the UP or DOWN button to access the Speaker Volume panel
3. Press the UP and DOWN buttons to adjust the volume.

5.5 Menu

The Menu is the collection of List panels that provide access to configuration settings, the WIP2 phone book, and instant message tools. You can view or modify configuration settings and user preferences through the Menu.

This section describes how to access and exit the menu. Chapter 8, starting on page 81 summarizes the menu structure and describes all commands accessible through the menu.

5.5.1 Accessing the Menu

To access the Menu, press the LEFT button (**Menu**) while the display is in idle mode.

5.5.2 Navigating Through the Menu

Pressing the Menu button displays a list of submenus, each of which provides access to other menus or to configuration settings. Menus are displayed on List panels (section 5.2.2.2 on page 37). You access configuration parameter panel by navigating through a series of List panels. Each item in the Main Menu *List Panel* points to a List panel that is a submenu of the main menu.



The example panel displays the User Settings, Pswd Settings, and Self Test options in the Menu List panel. The scroll bar indicates that there are other menu options; press the UP and DOWN buttons to display these options.

To select an option, use the UP and DOWN buttons to highlight the desired item, then press the LEFT (Select) button. Press the RIGHT (Exit) button to return to the previous panel. Press the red END button returns the display to the Home panel.

5.5.3 Protected Mode

Selected configuration parameters are password protected to prevent unauthorized access. You may view these parameter settings at any time, but you must enter Protected mode to modify them. To place the phone in protected mode, enter the WIP2 password in the appropriate data entry panel.

After modifying protected parameters, you should exit protected mode to prevent anyone else from making authorized changes. The WIP2 automatically exits protected mode if you do not make any configuration changes for ten minutes or when you turn the power off.

The configuration file can change the password, allowing the administrator to restore a specified password each time you power on the phone.

To access the Web Interface Utility, you must enter the password.

To perform password operations, including protection mode entry and exit, and changing the password:

- **Menu commands:** Section 8.7.1 on page 108
- **Configuration commands (changing the password):** Section 9.4.3 on page 140
- **Web Interface Configuration Utility**
 - Entering Protected Mode: Section 10.1.1 on page 151
 - Leaving Protected Mode: Section 10.1.2 on page 152
 - Changing the Password: Section 10.6.6.1 on page 170

5.5.4 Exiting the Menu

To exit the menu and return to the Home panel:

- press the red END button at any time; this discards any proposed changes on the current display panel
- press the RIGHT button repeatedly until the display shows the Home panel.

If you do not press any keys or buttons for 60 seconds, the phone automatically exits the Menu mode.

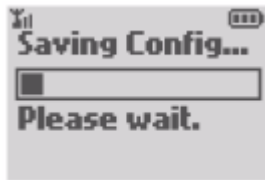
5.5.5 Using the Menu and Receiving a Call

When you receive a call while accessing the menu, the display immediately shows the incoming call panel (section 6.4 on page 59) and continues to show the call status through the duration of the call. When the call is finished, the LCD returns to the state it was in prior to the call, allowing you to continue the menu operations.

5.5.6 Saving the Data

When you exit the menu system after changing the value of a menu parameter, the phone saves the data to non volatile memory. The phone displays the message:

The process of saving the configuration takes about two seconds. Do not turn off the power while the phone displays this message.



After the phone saves the data, the phone returns to idle display mode or plays a different message if the phone is active. You can send and receive calls while this message is displayed. The phone continues saving the data and changes the display appropriately.

If you change the menu configuration and turn off the power without exiting the menu system, the phone will not save your changes and the changes that you made will be lost.

5.6 Storing Phone Numbers

The WIP2 provides a Phone Book and Call Log for storing frequently called phone numbers and addresses.

5.6.1 Phone Book

The WIP2 Phone Book stores the names and numbers of 99 contacts. You can initiate calls to contacts from the phone by pushing the SEND button. The phone book can be searched for a contact by name or you can access each contact sequentially by press the UP and DOWN buttons. To access the WIP2 phone book:

- **Menu commands:** section 8.3 on page 82
- **Web Interface Configuration Utility:** section 10.3 on page 152



5.6.2 Call Log

The WIP2 call log retains the name and contact information for the most recent 64 calls. To access the call log from the Idle state, press the SEND button:



Each line displays the following information about the voice call:

- The icon and arrow specifies the type and direction of the call, as indicated by the following icons:
- The arrow specifies the direction of the call; an X indicates a missed call.
- The number specifies the position of the call within the call log; 1 indicates the most recent call.
- Then name or number after the placement number specifies the other party of the call.

-  Parked Call
-  Outgoing Call
-  Accepted Incoming Call
-  Rejected Incoming Call
-  Missed Incoming Call

Press the UP and DOWN buttons to scroll through call log entries.

Press the SEND button to call the contact specified by the call log entry.

Press the END button or the RIGHT (Exit) button to return to the idle mode.

Press the LEFT (Select) button to display the time and date of the call. You can also store the caller information to the phone book from this panel:



5.7 Presence

Presence is a service available on the MX250, MX30, and many other systems that uses and distributes the availability status of each system user. Presence information allows you to verify the availability of system users before attempting to contact them. Presence improves overall enterprise productivity by reducing calls to unavailable parties and by providing the enhanced ability to instantly schedule meetings, events, and communications sessions based on the availability of desired participants.

The WIP2 provides a menu that changes your presence status if your system supports presence. Section 8.2 on page 82 describes the menu commands that changes your presence state.

5.8 Restoring Factory Defaults

The WIP2 provides a method of resetting all phone parameters to their original factory installed values. To adjust the LCD contrast:

- **Menu commands:** Section 8.6.10 on page 107.
- **Web Interface Configuration Utility:** Section 10.5.5 on page 163.

5.9 Data Backup

When you remove the battery from the phone, the phone saves data in non-volatile memory. This storage does not depend on a battery and the data will therefore be saved for many years.

Data stored in this non-volatile memory includes:

- everything that you enter with the menu
- call forwarding
- the list of recent calls made and received
- the list of 100 contacts in the phone book

Using the Phone

6.1 Introduction

The WIP2 phone communicates directly with a SIP server, which acts as an exchange to provide access to users and services to which it is similarly connected. When communicating with a SIP server that can access a telephony gateway, your WIP2 can conduct voice calls with other legacy telephones in addition to other device connected to the gateway.

While the WIP2 performs similarly to a convention telephone, there are subtle differences that affect the manner in which you use the IP phone. This chapter describes using the WIP2 phone to dial, send, receive, and end voice calls.

6.2 Dialling and Sending a Call

IP phones, such as the WIP2, operate differently than phones that have been in common use over the past 100 years. To specify the destination for a call, a conventional telephone transmits individual digits to the telephone exchange as you dial them. The WIP2 assembles all of the digits, then sends the complete phone number in a single message to the SIP server that handles the call. In addition to traditional phone numbers, the WIP2 supports the use of alphabetic characters in the calling message, allowing you to specify a SIP address as the destination for your call.

Dialling a Call refers to the process of assembling the alphanumeric characters that comprise the destination address (or phone number) into a message, then sending that message to the SIP server. You dial a call from any of the following three WIP2 panels:

- The **Call panel** composes a phone number or SIP address
- The **Phone Book** specifies a phone number or SIP address previously stored in the phone's memory
- The **Call Log** specifies contact information for the previous 64 calls sent or received by the phone.

6.2.1 The Call Panel

The Call Panel, as shown in figure 1, provides the data regions for entering phone numbers or SIP addresses. Call panel component contents include:

- The Icon bar contains the antenna icon, alphanumeric icon, and battery icon.
- The top row of the Status panel displays the Call Appearance number of the new call.
- The bottom two rows of the Status panel is the data entry area.

- The Menu bar displays the Menu and Mode options for the soft buttons.

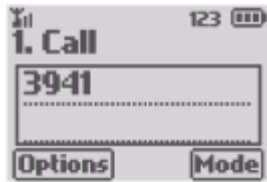


Figure 6-1 Call Panel

6.2.1.1 Accessing the Call Panel

To access the Call Panel from the Idle panel, press any number key, the * key, or the # key

To display the Call Panel and hear dial tone as you enter the phone number or SIP address:

1. access the Home panel
2. press the UP button
3. select **New Call** from the option list
4. press LEFT (Select)

To access the Call Panel from any menu panel, press the green SEND button.

To access the Call Panel during an active call, perform the following procedure:

1. Place the current call on hold by pressing RIGHT (Hold).
2. Press LEFT (Options).
3. Select **New Call** from the option list.

The top line of the Status panel indicates that the call will use the second call appearance.

6.2.1.2 Entering Characters in the Call Panel

The call panel cursor is a blinking horizontal link located in the data entry area. Pressing a numeral key enters a character at the cursor location.

Press the DOWN button to remove the character immediately left of the cursor.

Press the UP button to move the cursor one character to the right without removing that character. If the cursor is at the end of the string, pressing the UP button moves the cursor to the beginning of the string.

6.2.1.3 Using the # key in the Call Panel

Press and release the # key to send the Call Panel contents to the SIP Server. Press and hold the # key to enter a # character into the phone number.

6.2.1.4 Dialling Using a SIP Address

When you dial a SIP address, you do not need to know a person's phone number. This is a good method of making a call if the person's address was created logically.

A SIP address is normally written as:

SIP:name@domain

For example:

SIP:john.doe@zultys.com

Do not write "SIP:" when entering a SIP address; the phone automatically inserts that into the address. When calling an address in the same domain as your phone, the domain name is also not required.

To enter a SIP address, place the phone in alphanumeric mode, as described in section 5.3.5 on page 43.

6.2.1.5 Sending a Call from the Call Panel

To send a call from the Call Panel, press the SEND button to use the handset or press the # key to use the speaker phone. If the data entry region is blank, pressing the SEND button or the # key accesses the Call Log.

If you accessed the call panel by selecting New Call from the options list, the phone automatically sends the call after you enter the number even if you do not press the SEND or # key. Refer to section 5.3.3 on page 43 for information on the dial timeout period. This parameter configures the time between when you finish entering the phone number and when the phone sends the call.

6.2.2 The Phone Book

The phone book stores calling information for a maximum of 99 contacts. You can call phone book contacts directly from phone book panels. Section 5.6.1 on page 49 describes the WIP2 phone book.

To call a phone book contact:

1. Access the Menu when the phone is in Idle Mode by pressing the LEFT (Menu) button.
2. Press the DOWN button to highlight Phone Book, then press the LEFT (Select) button.
3. Select a phone book entry using one of the following methods:
 - use the UP and DOWN buttons to scroll through the contact list
 - use the number keys to move the cursor directly to a specific entry
4. Press the green SEND button to send a call to the specified contact.

6.2.3 The Call Log

The WIP2 call log retains the name and contact information for the most recent 64 calls. Section 5.6.2 on page 49 describes the WIP2 call log.

To call a call log contact:

1. Access the Call Log while the phone is in Idle Mode by pressing the green SEND button. You can also access the Call Log by pressing the SEND button from the Call Panel if the data entry area is empty.
2. Select a contact by using the UP and DOWN buttons to scroll through the Call Log entries.
3. Press the green SEND button to send a call to the specified contact.

6.2.4 Dialling an Invalid Destination

When you initiate the call, the phone performs a simple check on the number or address that you entered. If the number or address is invalid, the phone a Network Busy panel:



The phone retains this display until you disconnect the call by pressing the red SEND button.

6.2.5 Making a Call Without a SIP Proxy

The WIP2 phone is intended for use with a telephone system but it is possible to use it without one. You might do this if you have two phones either directly connected or isolated on a network. To make the call, you must know the IP address of the phone you want to call or the other device must have an FQDN that your phone can resolve with a DNS server.

To make a call directly to the other device, ensure that:

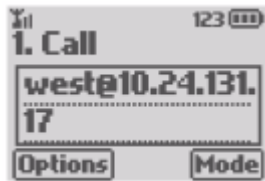
- your phone has a unique IP address
- your phone has not registered with a SIP registrar
- you know the IP address and device ID of the phone you want to contact

The following instructions contain many steps, some of which may not be applicable depending on the configuration of the phone:

1. Log into the phone using the password as described in section 8.7.1 on page 108.
2. Disable DHCP, set the static IP address, subnet mask, and default gateway, as described in section 8.7.3 on page 113.

The phones do not require a static IP address. However, phones using DHCP may receive a new IP address after its lease expires. You must find out the new IP address before making calls to that phone.

3. Remove the address of the TFTP server and the address of the SIP outbound proxy, as described in section 8.7.3 on page 113.
4. Assign a unique device ID to the phone and remove the domain name, as described in section 8.7.5 on page 124.
5. Repeat these steps for the other phone.
6. Connect the phones so that they can be accessed over the LAN.
7. Create a call from one phone to the other using the method, addressing the other phone by its device ID and IP address or FQDN. For example, if the two phones have device IDs of East and West, you might make a call from East to West by typing:
8. To make repeated calls in this manner, enter the address into a memory location. Section 5.6.1 on page 49 describes the phone book.



6.3 Call Proceeding and Call Answered

6.3.1 Display Contents

After sending a call, the display changes to indicate a proceeding call:¹



The phone plays the specified ringback tone while the call is proceeding.

6.3.2 Call Progress Tones

Call progress tones inform you of the status of a call. These tones include the dial tone, ringback tone, busy tone, and network busy (congestion) tone. Conventional phones receive these tones from a central office. The cadence used for each tone depends upon the country of origin of the tone.

The WIP2 receives call status information from the system to which it is connected. It can then play a call status tone to mimic the operation of a conventional phone. The country setting specifies the country setting for these call progress tones.

The WIP2 provides the following methods for adjusting Country Setting for Call Progress Tones:

- **Menu commands:** Section 8.6.9.1 on page 105.
- **Configuration commands:** Section 9.4.3 on page 140.
- **Web Interface Configuration Utility:** Section 10.5.4 on page 163.

6.3.2.1 Ringback

When calling another SIP phone, the ringback that you hear is generated by your phone. The tones will be those for the country that you selected.

1. The phone actually displays a “Calling” panel until it receives a RINGING SIP message from the destination phone. In normal operation, the message is received quickly enough to prevent the Calling panel from being seen.

When calling a PSTN phone using ISDN circuits, the SIP to PSTN gateway normally opens the communication path so that you hear the sound coming from the network. Therefore, if you are calling a different country you will hear the ringback tone from that country. This tone may be different from that used in your country.

When calling a PSTN phone using T1 CAS circuits, the SIP to PSTN gateway may not know the status of the connection and open the speech path even though there is no ringback. The phone behaves as if the call was established. Because the speech path is open, you may hear a valid busy tone, even though the WIP2 indicates that you are connected.

6.3.2.2 Far End Busy

If the person you are calling is busy, the phone either plays the busy tone for your country or the busy tone that is generated by the phone network at the far end. This depends on if your server is notified that the called party is busy. The LCD shows the busy panel (section 6.3.1).

The phone maintains this state until you disconnect the call by pressing the END button.

6.3.2.3 Network Busy

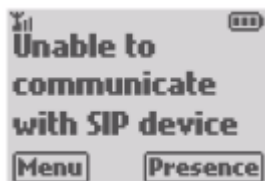
If the network is busy, the phone either plays the fast busy tone (congestion tone) for your country or the fast busy tone that is generated by the phone network at the far end. This depends whether your server can detect if the network is busy.

The phone displays the busy panel (section 6.3.1) if the address or number you are calling does not exist or is not available.

The phone maintains this state until you disconnect the call by pressing the END button.

6.3.2.4 Network Failure

If the phone sends a message to the SIP server that the SIP server does not answer, the phone displays:



The phone makes the handset and speaker quiet and displays the message until you attempt to make another call or perform another task on the phone.

You should contact the administrator of the system if you see this message.

6.3.3 Call Answered

When the called party answers, the phone displays the call status panel, as described in section 6.5.2.1.

6.4 Receiving a Call

6.4.1 Call Alerts

When you receive a call, the WIP2 displays an incoming call message and can either vibrate or play an audible tone. The call alert options that are available depends on the state of the phone when you receive a call.



6.4.1.1 When the Phone is Idle or When a Call is on Hold

You can specify the manner that the WIP2 informs you of incoming calls when it is idle or when you have a call on hold. Available options include:

Select the call alert mode. The WIP2 can be programmed to alert you of an incoming call by vibrating, playing a ring tone, or by vibrating and playing a ring tone. To set the alert mode:

- **Menu commands:** Section 8.6.7.3 on page 98.
- **Configuration commands:** Section 9.4.5 on page 145
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161.

Specifying distinctive rings for internal and external calls. The WIP2 can be programmed to play the same ring tone for all incoming calls or one tone for calls from internal sources and a different ring tone for calls from external sources. To set the distinctive ring tone parameter:

- **Menu commands:** Section 8.7.6.3 on page 127.
- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.6.5 on page 169.

Selecting ring tones for incoming calls. The WIP2 provides several standard ring tones for incoming calls. You can also program the phone to play custom ring tones in the form of wav files that are stored on your network.

To select ring tones for internal or external calls:

- **Menu commands:** Section 8.6.7.1 on page 96.
- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161.

Accessing wave files from a network location allows a system administrator to control the selection of files that can be used to announce incoming calls.

To specify the network location of wav files:

- **Menu commands:** Section 8.7.6.4 on page 127.
- **Configuration commands:** Section 9.4.5 on page 145.

- **Web Interface Configuration Utility:** Section 10.6.5 on page 169.

6.4.1.2 Receiving a Call During an Existing Call (Second Call tone)

The WIP2 plays a Second Call tone (also call a Call Waiting tone) if you receive a call while talking on the phone. If you receive an incoming call while a call is on hold, the phone plays the ring tone specified in Section 6.4.1.1 on page 59. To select the second call tone:

- **Menu commands:** Section 8.6.7.7 on page 100.
- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161.

6.4.1.3 Receiving a Call While Accessing the Menu

If the WIP2 receives a call while you are accessing the menu, the phone displays the Incoming Message panel. The phone continues to display call handling view panels until all calls are terminated. After the last call is terminated, the phone displays the menu panel that you were accessing when you received the first call.

6.4.2 Rejecting or Not Answering a Call

6.4.2.1 Rejecting Calls

To reject an incoming call, press the **RIGHT (DND)** button. If the phone is receiving multiple calls, pressing **DND** only disconnects the call indicated by the display.

The phone behavior depends on the system to which it is connected. Your system may disconnect the call or route the call to voice mail.

6.4.2.2 Not Answering Calls

If you do not answer the call, the phone behavior depends upon the system to which it is connected. Your system may route a call voice mail or it may disconnect the caller.

6.4.2.3 Missed Calls

When the phone returns to the Home panel, it shows the number of calls that you missed or rejected:



If you have configured the phone to unconditionally forward all calls, none of the calls that the phone receives is counted as being missed.

Access the call log (section 6.2.3 on page 55) to view a list of the missed calls. You can return a call to a caller if the system received an address from the caller.

The phone may reject a call because of encryption policies, as described in section 7.5.2 on page 76.

6.4.3 Answering the Call

6.4.3.1 Manually Answering a Call

To answer a call, perform one of the following:

- Press the green SEND or LEFT (**Answer**) button to answer the call in handset mode.
- Press the # button to answer the call in speaker mode.

When you answer an incoming call while talking on the phone, the WIP2 places the existing call on hold and establishes the active voice path with the new call.

6.4.3.2 Automatic Call Answering

The WIP2 phone can be programmed to automatically go off hook after one ring. To set the automatic call answering parameters:

- **Menu commands:** Section 8.6.7.2 on page 97.
- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161.

6.5 During a Call

6.5.1 Keyboard Response

If you press one of the keys 0 to 9, *, or # during an active call, the phone sends a message for that key and plays a DTMF tone through the active speaker.

Pressing the LEFT (Options) button display a menu of operations that you can perform during a call, as described in section 6.5.5.

Pressing the RIGHT (Hold) button places the current call on hold, as described in section 7.1.1.

Pressing the green SEND button switches the active listening device. If the handset is active, pressing the SEND button activates the speaker; if the speaker is active, pressing the SEND button activates the handset.

Pressing the UP and DOWN buttons adjusts the volume of the active listening device.

Pressing the red END button disconnects the call.

If the SIP Server becomes unreachable during an active call, pressing a button that requires a SIP server response (such as *Options* | *Transfer*) terminates the call.

6.5.2 Displaying Call Information

6.5.2.1 LCD Contents

The phone displays the Call Status panel when servicing an active call:



- The icon bar displays the antenna icon (indicating strength of signal), a listening device icon (handset or speaker) and the battery icon (indicating remaining power reserves)
- The top row of the status panel displays the call appearance number and the call status
- The middle row of the status panel displays contact information of the other party – usually the phone number or SIP address. If your phone book lists the phone number or SIP address of the other party, the middle row displays the name associated with the number.
- The bottom row of the status panel displays the quality of service indicator and the duration of the call. Depending on the system and the protocol used to complete the call, the phone may believe the call is connected but the called person has not yet answered the call.
- The menu bar displays the available soft key options.

6.5.2.2 Viewing Quality of Service

The Quality of Service icon displays the voice quality of your call. The number of bars that the QoS indicator displays reflects the voice packet loss in the network, which directly affects the voice quality during the call:

- **eight bars** are present: no packet loss, voice quality is normal
- **six bars** are present: you may hear some clicks
- **four bars** are present: you will hear many clicks
- **two bars** are present: voice will sound garbled
- **no bars** are present: voice is almost unrecognizable

6.5.3 Phone Status During a Call

The top status panel row displays the active call appearance number status. Status indicators that the status row can display includes:

- **Connected:** indicates that the microphone and active listening device is connected to the call serviced by the displayed call appearance.
- **Hold:** indicates that the call serviced by the displayed call appearance is on hold

The option listed for the RIGHT soft button can also provide phone activity status. The phone displays the following options, listed in order of preference, for the RIGHT button:

- **Toggle:** This option indicates that both call appearances are servicing calls. Press the RIGHT button to place the current call on hold and resume the call on the other call appearance.
- **Unmute:** This option indicates that the microphone is disabled and the other party cannot listen to you. Press the RIGHT button to enable the microphone.
- **Hold or Resume:** This option indicates the hold status of the phone. Press the RIGHT button to change the hold status to the displayed option.

If both call appearances are active, you can determine the mute status of the phone by pressing the LEFT (Options) button. The microphone is enabled if the Mute option is available; the microphone is disabled if the Unmute option is available

6.5.4 Muting a Call

Muting a calls silences the microphone; this allows you to hear the person on the other end of the call without letting that person hear you. When you mute the phone, the entire phone is muted, not just the current conversation.

When you mute the phone and press the digit keys, the phone plays the DTMF digit into the audio path you have selected and sends the digit to the switch. You might use this feature to communicate with an IVR system.

To mute the WIP2 phone during a call:

1. Press the UP button.
2. Use the UP and DOWN buttons to select Mute.
3. Press the RIGHT (Select) button.

If the phone is only servicing one call, the RIGHT button option changes to **Unmute**. When both call appearances are busy, the LCD does not display a mute indicator. To determine the mute mode, press the UP button and search for the Mute or Unmute option. The phone mode is opposite of the available option.

To turn the mute mode off:

1. Press the UP button.
2. Use the UP and DOWN buttons to select Unmute.
3. Press the RIGHT (Select) button.

6.5.5 Call Handling Options

When a call is active, pressing the LEFT (Options) button provides access to the following phone options:

- **Pick up:** Select this option to pick up a parked calls. Refer to section 7.1.2.2 on page 69.
- **Hold or Resume:** Select this option to change the Hold status of the call on the current call appearance. Refer to section 7.1.1 on page 67.
- **Mute or Unmute:** Select this option to change the microphone status of the phone. Refer to section 6.5.4.
- **Speaker on or Speaker off:** Select this option to turn on the Speaker or the Handset. Refer to section 5.4.1 on page 45.

- **Transfer:** Select this option to transfer the current call. Refer to section 7.3 on page 73.
- **Conference:** Select this option to create a conference call. Refer to section 7.2 on page 70.
- **Encrypt On or Encrypt Off:** Select this option to change the encryption status of the current call. Refer to section 7.5 on page 75.
- **Park:** Select this option to park the current call. Refer to section 7.1.2 on page 69.
- **Text Message:** Select this option to access the Text Mailbox. Refer to section 7.6.2 on page 80.
- **New Call:** Select this option to initiate another voice call. Refer to section 6.2 on page 53.
- **Phone Book:** Select this option to access the phone book. Refer to section 5.6.1 on page 49.
- **Call Log:** Select this option to access the call log. Refer to section 5.6.2 on page 49.

6.6 Ending a Call

6.6.1 You End the Call

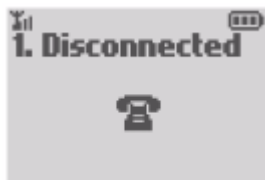
To end a call, press the red END button.

- If phone is not servicing another call, the display returns to the state immediately before the first call.
- If the phone is servicing another call, the LCD displays the state of the other call.

6.6.2 Other Party Ends the Call (Call Disconnect setting)

When the party goes on hook, the WIP2 response depends on the Call Disconnect setting.

- If **Call Disconnect** is set to *silent*, the display immediately returns to the panel that was displayed before servicing the current call.
- If **Call Disconnect** is set to *Busy tone*, the phone plays the busy signal and displays the Call Disconnect panel until you press the red END button.



- If **Call Disconnect** is set to *Busy tone time*, the phone plays the busy signal for the period specified by the Event timer or until you press the red END button. While playing the busy tone, the LCD displays the Call Disconnect panel.

You can also program the phone to play a busy signal when the other party terminates the call. The phone continues to play the busy signal and display the disconnect panel until you press the red END button.

To *Call Disconnect parameter*:

- **Menu commands:** Section 8.6.7.6 on page 99.

- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161.

6.7 Page Calls

A page call is a voice call that is sent to all devices specified by a paging profile. The WIP2 can perform page calls if the media exchange to which it is connected supports paging. The media exchange defines all paging profiles, specifies the devices that belong to each paging profile, and provides the list of paging profiles to the phone. The WIP2 specifies one paging profile as the active profile. Page calls are sent to all devices that are members of the active paging profile.

To send a page:

- program the Right Button for Paging (section 5.3.4 on page 43), then press the RIGHT (**Page**) button from the idle menu
- select *Page* from the Call option menu (section 6.5.5 on page 63).

To select a paging profile:

- **Menu commands:** Section 8.6.7.5 on page 99.

Calling Features

7.1 Suspending a Call

Hold and Park are call handling functions that temporarily suspend the conversation while maintaining the state of the call. A user that suspends a call can perform other functions from the phone while the system plays music or pre-recorded messages for the other party. These call handling functions differ as follows:

- Calls on hold must be retrieved from the same phone from which the call was placed on hold
- Parked calls can be picked up from any phone on the system.

7.1.1 Hold

The Hold function suspends the conversation while maintaining the state of a call. The other person cannot hear you and you cannot hear the other person. To resume the conversation, you must retrieve the call from the same phone used to place the call on hold.

7.1.1.1 Placing a Call on Hold (Hold Reminder tone)

To place a call on hold, perform one of the following procedures:

- Press the RIGHT (Hold) button if the Hold option is displayed on the menu bar. The RIGHT button does not offer the Hold option if both call appearances are servicing calls or if the WIP2 is muted.
- Press the LEFT (Options) button, use the UP and DOWN buttons to select Hold, then press the LEFT (Select) button.

When the active call appearance is on hold, the first line of the Status Panel indicates the Hold status of the call and the bottom line of the status panel displays the Quality of Service icon and the time period that the call has been on hold:



The phone remains silent while a call is on hold until you retrieve the call or activate the other call appearance. The other party hears music or other messages, depending on your system.

Pressing the red END button does not affect the call. To disconnect a call that is on hold, you must resume the call then end the call. If the other phone terminates the call while on hold, the phone remains silent and the display returns to the state it enjoyed before the first call.

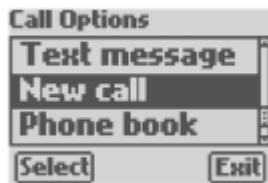
You can program the phone to play a tone once every 30 seconds to remind you that a call is on hold. To select the Hold Reminder Tone:

- **Menu commands:** Section 8.6.7.8 on page 100.
- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161.

7.1.1.2 Making a New Call After Placing a Call on Hold

To initiate a new call after placing a call on hold, perform the following:

1. Press the LEFT (Select) button to access the Call Options menu.
2. Use the UP and DOWN buttons to select **New Call** from the Call Options menu.



3. Enter the name or number in the data entry area, then press the green SEND button or the # key. Refer to Section 6.2 on page 53.

7.1.1.3 Receiving a Call During a Conversation

If you receive an incoming call while you are talking with a person on another call appearance, the phone displays the Incoming Call banner and plays Second Call tone. If you answer the incoming call, the WIP2 automatically places the other call on hold.

7.1.1.4 Resuming the Conversation

To resume a conversation with a party on hold, perform one of the following actions:

- Press the RIGHT (Resume) button if the menu bar displays the Resume option.
- Press the LEFT (Options) button, use the UP and DOWN buttons to select **Resume**, then press the LEFT (Select) button.

When both call appearances are servicing calls and the phone is not in conference mode, the call on the inactive call appearance is on hold. To activate that call, press the RIGHT (Toggle) button. The call on the current call appearance is placed on hold before the other call appearance is activated.

If both call appearances are on hold, resume the conversation on the active call appearance by pressing the LEFT (Options) button, then using the UP and DOWN buttons to select **Resume**. The call on the inactive call appearance is not affected.

7.1.2 Park

Parking a call suspends the conversation while maintaining the call on the system. Parked call differ from calls on hold in that a parked call can be resumed through any phone on the system and the call appearance is no longer servicing the call and can be used for other calls.

Using call park and call pickup dependent on the support of these functions by the phone system. The following description is based on connecting the WIP2 to a phone system (such as an MX250) that fully supports these functions.

7.1.2.1 Parking a Call

Parking a call suspends the conversation of the call on the active call appearance – you cannot park a call that is on hold. To park a call, press the LEFT (Options) button and select Park from the Call Options menu. The WIP2 transfers the call to the park server and displays a two digit Pickup number. The party that picks up the parked call must enter this number to specify this call.

The person on the parked call hears music or other messages (depending on your system) while the call is in the parked state. The call appearance is released from the call and can be used to dial and send another call.

If the park is unsuccessful, the phone displays:



The phone retains this display until you press a key, lift the handset, or replace the handset, after which it displays the screen that the phone was showing prior to you attempting to park the call. You remain connected to the other person.

You can try to park the call again, but if your attempts to park a call fail repeatedly, you should consult your system administrator.

7.1.2.2 Call Pickup

The call pickup functionality depends on the phone system. You can pickup an individual call or a conference call that has been parked.

You can pickup a call that was parked by yourself or by another person parked. You cannot pickup a call that was parked if the other party terminated the call while the call was parked.

To resume a parked conversation:

1. Access the Call Options menu by pressing the UP button when the phone is idle or the LEFT (Options) button during an active call.
2. Select Pickup.
3. Enter the two digit pickup number for the desired call, then press the SEND button, the LEFT (Pick up) button or the # key. The system provides this number to the party that parks the call at the time a call is parked.

If the phone is off hook, the phone will play the fast busy tone when you have entered an invalid number. You can enter a valid number or press the Esc button to exit the function.

If you forget the two digit number, call the operator for assistance. The operator may be able to assist you to find the number. If you pickup a parked call that you had not intended to pickup, park the call again. Call the operator and tell the operator what has happened.

7.2 Conference Calls

The WIP2 supports *Conference calls*, or simultaneous conversations with two other people. The WIP2 can perform conference calls when operating on a phone system that supports multiple call appearances to the phone. You can have only a single conference call active at a time.

You can join people into the conference call that you have called or who have called you. You can drop individuals from and add individuals to the conference at any time.

7.2.1 Creating a Conference Call

7.2.1.1 Adding a New Call to an Existing Conversation

The following procedure initiates a conference by adding a third participant to an existing call:

1. Make or answer a normal call. Verify that the call is not on hold.
2. Press the LEFT (Options) button to access the Call Options menu.
3. Select **Conference** and press the LEFT (Select) button.

The phone places the Call Panel, as described in section 6.2.1 on page 53.

4. Enter the number or address of the third conference participant, then press the green SEND button.

The phone joins both calls into a single conversation.

7.2.1.2 Joining Two Existing Calls into a Conference

The following procedure creates a conference from two existing calls.

1. Verify that both call appearances are servicing active voice calls.
One or both calls may be on hold.
2. Press the LEFT (Options) button to access the Call Options menu.
3. Select **Conference** and press the LEFT (Select) button.

The phone joins both calls into a single conversation.

7.2.2 Display Contents During a Conference Call

7.2.2.1 Display Both Calls

The status panel normally displays information about both call appearances during a conference call:

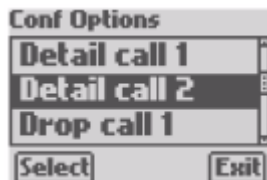


- The first row of the status panel displays the conference participant on call appearance 1.
- The second row of the status panel displays the participant on call appearance 2.
- The third row of the status panel displays the Conference status and the duration of the conference call.

7.2.2.2 Display Individual Call Information

The following procedure displays call information for an individual call appearance during a conference call:

1. Press the LEFT (Options) button to access the Call Options menu.
2. Select **Detail call 1** or **Detail call 2** and press the LEFT (Select) button.



The LCD displays the following information about the selected call appearance:

- The first row of the status panel displays the call appearance number and the conference status of the call appearance.
 - The second row of the status panel displays the participant on the selected call appearance.
 - The third row of the status panel displays the Quality of Service icon for this call appearance and the duration of the call to this participant. This time will differ from the Conference time.
3. Press the RIGHT (Back) button to return to the normal conference display.



7.2.3 Suspending and Resuming Conference Calls

7.2.3.1 Conference Calls on Hold

To place a conference on hold:

- Press the RIGHT (Hold) button if the Hold option is visible.
- Press the LEFT (Options) button and select **Hold**.

Use this select when the phone is muted.

The other people on the conference call can converse without you. The people on the conference call cannot hear you and you cannot hear the other people.

To resume a conference call:

- Press the RIGHT (Resume) button if the Resume option is visible.
- Press the LEFT (Options) button and select **Resume**.

Use this select when the phone is muted.

7.2.3.2 Parked Conference Calls

To park a conference call, press the LEFT (Options) button and select Park.

When you park a conference call, the WIP2 parks both calls that comprise the conference call. The phone system returns a two digit park number for each call in the conference call:

The phone system normally issues sequential numbers for the park numbers, but this cannot be guaranteed.

To pick up a conference call, you must pickup each of the calls that was parked, then resume the conference:

1. Pick up the first call by pressing the UP button from the Idle menu, selecting Pick up, then entering the Parked Call Number of the first call.
You are now communicating with one of the people on the conference call.
2. Pick up the second call by pressing the LEFT (Options) button, selecting Pick up, then entering the Parked Call Number of the second call.
3. Resume the conference by pressing the LEFT (Options) button and selecting **Conference**.

7.2.4 Muting a Conference Call

To disable your microphone during a conference call, press the LEFT (Options) button, then select Mute.

When a conference is muted, the other people on the conference call can continue their conversation uninterrupted. You can hear the conversation but the other people on the conference cannot hear you.

To enable the microphone during a conference call, press the LEFT (Options) button, then select Unmute.

7.2.5 Terminating a Conference Call

7.2.5.1 Ending the Entire Conference

To end a conference call, verify that the conference call is not on hold, then press the red END button. The phone terminates the calls on each call appearance.

7.2.5.2 Individuals Dropping from the Conference

When an individual leaves the conference call, the conference function is terminated and the remaining call is treated as a normal voice call. The call appearance occupied by the person that left the conference is available for new calls.

If you receive a new call while the remaining call is on line, the two calls are treated as separate conversations until you invoke the Conference function, as described in section 7.2.1.

7.2.5.3 Dropping Caller from a Conference

To drop an individual caller from a conference:

- Press the LEFT (Options) button and select **Drop call 1** or **Drop call 2**.
- Display the panel for the call to be dropped (refer to section 7.2.2.2), then press LEFT (Drop call).

7.2.5.4 Ceasing to be Part of the Conference

If you no longer want to take part in the conference but want the other participants to continue to talk to one another, place the conference on hold as described in section 7.2.3.1.

Your phone continues to mix the audio signals for the conference call and it continues to use the call appearances on your phone. As the participants in the call leave the conference, the call appearances used by the individuals will once again become free and the phone will turn off the LEDs on those call appearance buttons.

7.3 Transferring Calls

You can transfer a call you made to, or a call you answered from, another person inside or outside of the enterprise. You can choose to speak to the person to whom you are transferring the call (referred to as an “attended transfer”), or to not speak with the person (referred to as an “unattended transfer” or “blind transfer”). You cannot transfer a conference call.

To transfer a call:

1. Ensure that you have at least one free call appearance. You cannot transfer a call if you currently have two calls.
2. Ensure that the call you want to transfer not on hold.
3. Press the LEFT (Options) button and select **Transfer**.

The phone places the active call on hold and displays the call panel (refer to section 6.2.1 on page 53).

4. Call the party that will receive the transferred call. Refer to section 6.2 on page 53

The phone displays the Call Ringing panel that includes a Transfer button:



5. Perform the action required to execute the desired transfer:

Unattended Transfer: If you do not want to talk to the person to whom you are transferring the call, press the LEFT (Transfer) button before the other party answers the phone.

Attended Transfer: If you want to talk to the person to whom you are transferring the call, wait until the other party answers the call. Then press the RIGHT (Transfer) button or press the red END button to execute the transfer.

To terminate the transfer operation without transferring the call, either disconnect the call to the transfer recipient before that call is answered or wait for the transfer recipient to disconnect the call.

7.4 Forwarding Calls

When the phone is configured to forward calls, it redirects incoming calls to another destination (name or number). The destination can be another extension within the enterprise or an external number.

7.4.1 Call Forwarding Options

You can turn on and off forwarding to instruct the phone to forward calls:

- unconditionally (all calls)
- if you do not answer the phone (on no answer)
- if you have an active call (when busy)

7.4.1.1 Unconditional

If you have configured the phone to forward calls unconditionally the phone does not announce that it is receiving an incoming call. It does not change the display or any LED. The phone immediately forwards the call to the destination that you have specified.

When the phone is configured for unconditional transfers, incoming calls are not counted as missed calls.

7.4.1.2 On No Answer

If you have configured the phone to forward calls on no answer, the phone announces an incoming call in the usual manner. If you do not answer the call within ten seconds, the phone transfers the call to the destination that you have specified.

The phone counts the number of calls that it forwards on no answer as missed calls.

7.4.1.3 When Busy

If you configured the phone to forward calls when busy, the phone announces an incoming call in the usual manner if you do not have an active call.

If you have an active call, the phone forwards the call to the destination that you specified. In this case, an active call is one where you are in the middle of a conversation. If you have one call on hold and the other call appearance is available, the phone accepts and announces any incoming call.

If the phone receives more than one incoming call, the phone will indicate there are incoming calls on multiple call appearances. As soon as you answer one of the calls, the phone is now busy and it immediately forwards the other call to the specified forwarding destination.

The phone counts the number of calls that it forwards when busy as missed calls.

7.4.2 Call Forwarding Methods

To program the WIP2 to forward calls:

- **Menu commands:** Section 8.6.2 on page 93.
- **Configuration commands:** Section 9.4.2 on page 136. Forwarding calls through configuration commands requires two parameter settings: `fwd_condition` specifies the forwarding condition, `fwd_address` specifies the forwarding address.

7.5 Encryption

The speech traffic to and from an IP phone is sent over the LAN. It is possible for a person who is equipped with the appropriate equipment to monitor the LAN traffic and thus hear your conversation. If you want to keep your conversation private so that it cannot be monitored, you should enable encryption on the phone.

WIP2 encryption is based on open standards. To encrypt the conversation, each person must use a device that supports these open standards, such as another WIP2 phone, a Zultys ZIP IP phone, or a compatible phone.

The encryption is completely loss-less. That is, the quality of the voice for encrypted and unencrypted calls is the same. The encryption introduces negligible delay to the speech. When you switch between the call being encrypted or not encrypted, the phone performs this almost instantaneously, but can take as long as 200 ms if there is a lot of traffic on the network.

7.5.1 Encryption Modes

The encryption mode specifies the WIP2 default encryption behavior and the encryption options that are available during your conversations. The WIP2 defines four encryption modes: *normally on*, *normally off*, *always on*, or *never on*

- If the encryption mode is *always on*, the WIP2 can make calls only to devices that also support encryption and all calls are encrypted. The phone cannot make a call to, or receive a call from, a device that cannot encrypt the speech and encryption cannot be turned off during a call. During a call, the phone rejects all requests by the far end to disable encryption.
- If the encryption mode is *normally on*, your phone can communicate with devices regardless of their capacity for supporting encryption. When calling other devices, the phone first attempts to engage encryption; if unsuccessful, the call continues unencrypted. The call option panel provides an option for changing the encryption status of the call. During a call, the phone honors all requests change the encryption status.
- If the encryption mode is *normally off*, your phone can communicate with devices regardless of their capacity for supporting encryption. When calling other devices, the phone first attempts the call with encryption disabled; if the other device requires encryption, the continues encrypted. The call option panel provides an option for changing the encryption status of the call. During a call, the phone honors all requests change the encryption status.
- If the encryption mode is *never on*, the WIP2 can make calls only to devices that allow unencrypted calls. The phone cannot make a call to, or receive a call from, a device that requires encryption. Encryption cannot be turned on during a call. During a call, the phone rejects all requests by the far end to engage encryption.

To set the encryption mode:

- **Menu commands:** Section 8.7.6.2 on page 126.
- **Configuration commands:** Section 9.4.2 on page 136.
- **Web Interface Configuration Utility:** Section 10.6.5 on page 169.

7.5.2 Individual Calls

During an encrypted call, the first row of the status bar displays the call appearance number, the status of the call, and the encryption key used to generate the encrypted data stream. The padlock icon in the icon bar indicates that the phone is encrypting your calls.



Calls that are not completed because the encryption policies of the two devices are incompatible generate a Network Busy panel (section 6.2.4 on page 56).

Encryption functions on each call appearance independently: one call appearance can service encrypted call while the other call appearance services an unencrypted call.

7.5.2.1 Making an Encrypted Call

When the Encryption mode is *always on*, all WIP2 phone calls are encrypted. Calls to devices that do not support encryption generate a Network Busy panel.

When the Encryption mode is *normally on*:

- calls to any device that supports encryption are encrypted
- calls to a device that does not support or allow encryption are not encrypted

When the Encryption mode is *normally off*:

- calls to any device that allows unencrypted calls are unencrypted
- calls to a device that requires encryption are encrypted

When the Encryption mode is *never on*, all WIP2 phones are unencrypted. Calls to devices that require encryption generate a Network Busy panel.

7.5.2.2 Receiving an Encrypted Call

When the Encryption mode is *always on*, the WIP2 can receive calls only from devices that support or allow encryption. The status panel displays a call missed message when the WIP2 receives a call from a device that does not allow or support encryption.

When the Encryption mode is *normally on* or *normally off*, the phone can receive calls from any device. In these modes, the WIP2 enables or disables encryption on the basis of the calling device's encryption request.

When the Encryption mode is *normally off*, the WIP2 can receive calls only from devices that allow unencrypted calls. The status panel displays a call missed message when the WIP2 receives a call from a device that services only encrypted calls.

7.5.2.3 Adjusting Encryption During a Call

When the Encryption mode is *always on* or *never on*, you cannot change a calls encryption status.

When the Encryption mode is *normally on* or *normally off*, the Call Options menu provides Encrypt on or Encrypt off for changing the encryption engagement of a call. To access the Call Options menu during an active call, press the LEFT (Options) button.

If the far end phone rejects the request to enable encryption, your phone beeps three times through the audio channel you are using, and displays an information panel:



The phone holds this display for the event timeout period or until you either press a key or terminate the call.

When the other party attempts to change the encryption engagement of a call, the WIP2 immediately accepts the request if the encryption mode is *Normally on* or *Normally off*. The phone signals this change by beeping three times through the audio channel you are using. The first row of the status panel is adjusted to display the encryption key when encryption is engaged or to remove the encryption key when encryption is disabled.

7.5.3 Encrypted Calls on Hold

After placing a call on hold, the other person's device communicates with your call manager system instead of your phone. If the encryption policies of the other person's phone and your call manager are not compatible, the call will be dropped.

For example, consider the case when you are speaking with a person who puts the call on hold:

- If your phone is configured for *normally on* or *normally off*, it will adapt to the new speech path coming from the phone system by either engaging or turning off encryption.
- If your phone is configured for *always on* or *never on*, the phone system must support encryption in the former case or must be able to establish communication without encryption in the latter case. If the phone system cannot communicate with your phone, your phone rejects the call and your conversation is not placed on hold. Depending on the phone system, your call may then be dropped or the phone system may reconnect you to the other person.

7.5.3.1 Transferring Calls

After you transfer a call or forward a call, the other party of your initial call is communicating with the call recipient. If the encryption policies of the other devices are not compatible, the call will be dropped.

If encryption on each phone is set for **normally on** or **normally off**, the encryption state of the transferred call depends on your call to the person that will receive the transferred call.

After placing the active call on hold:

- if you call the person that will receive the active call with encryption on, then the transferred call will be encrypted
- if you call the person that will receive the active call with encryption off, then the transferred call will not be encrypted.

7.5.4 Encrypted Conference Calls

Both calls that comprise a conference call must have the same encryption engagement. You cannot encrypt one call and leave the other call unencrypted; this makes the entire conference subject to eavesdropping and is therefore not secure.

To establish an encrypted conference call:

1. Establish the conference call, as described in section 7.2.1 on page 70.
2. Press the LEFT (Options) button.
3. Use the UP and DOWN buttons to select *Encryption On*.

4. Press the LEFT (Select) button.

To disable encryption during a conference call:

1. Press the LEFT (Options) button.
2. Use the UP and DOWN buttons to select *Encryption Off*.
3. Press the LEFT (Select) button.

When the WIP2 is encrypting a conference call, the display shows an encryption icon in the icon bar, but does not display the encryption keys for the audio data streams.



The Call Detail panel displays the encryption key for the specific data stream on the third row of the Status Bar. Each audio stream uses a different key to encrypt the call.



The WIP2 that establishes the conference is the only device that can adjust encryption during the call. The phone will reject all requests to turn encryption on or off. You can turn off encryption if both participating devices permit unencrypted conversations.

If you try to turn off encryption and one or more devices can accept only encrypted speech, the other device will reject the request and the call will remain encrypted.

7.6 Messages

7.6.1 Voice Messages (Stutter tone)

When your voice mailbox contains unread voice mail messages, the Icon bar displays the Envelope icon. To retrieve your voice mail, press and hold the "1" key for two seconds to access your voice mail server; then follow the spoken prompts. You can also access the voice mail server by entering its extension. The operation of the voice mail system is independent of the operation of the phone.

The voice mail server number is typically stored in the phone through a configuration command. However, you can alter this setting from the menu or web interface. If this setting is incorrect, pressing the "1" key will not access the voice mail server. To set the voice mail server number in the WIP2:

- **Menu commands:** Section 8.7.5.3 on page 125.

- **Configuration commands:** Section 9.4.2 on page 136.
- **Web Interface Configuration Utility:** Section 10.6.4 on page 168.

7.6.2 Text Messages

7.6.2.1 Sending and Receiving Text Messages

You can exchange instant messages with other SIP devices connected to the same SIP server that services the WIP2. The WIP2 can send message of 1000 characters in length and receive messages of up to 3600 messages.

The WIP2 displays an incoming message panel when you receive a instant message. To immediately read your instant message, press the LEFT (Read) button. The message remains in your mail box if you press the RIGHT (Exit) button.

When your text mailbox contains unread messages, the Icon bar display the Envelope icon. To access your instant messages, access your mail box from the Idle panel pressing the UP button, then selecting Text messages. You can also access your mailbox during a call by pressing the LEFT (Options) button and selecting Text Messages.

Section 8.4 on page 85 describes the WIP2 text mailbox.

7.6.2.2 Text Message Alerts

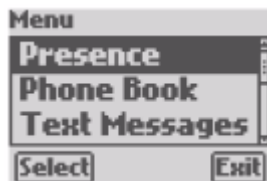
You can program the phone to inform you of incoming text messages. To program the text message alert method:

- **Menu commands:** Section 8.6.7.11 on page 102.
- **Configuration commands:** Section 9.4.5 on page 145.
- **Web Interface Configuration Utility:** Section 10.5.3 on page 161.

Menu Operations

8.1 Introduction

When you press the **Menu** button, the phone displays the first three options on the main menu options:



Each main menu option access a submenu. As you press the **Up** and **Down** keys, the display scrolls through the list of choices. Main menu options include:

- **Presence:** Edit your presence state. See section 8.2.
- **Phone Book:** Store and recall numbers that you want to dial. See section 8.3.
- **Text Messages:** Exchange instant message with other system users and manage your text mailbox. See section 8.4.
- **Information:** View data about the phone, the way it is connected, and the calls you have made. See section 8.5 on page 89.
- **User Settings:** Customize the phone to suit your needs. See section 8.6 on page 92.
- **Pswd Settings:** Adjust the communications settings so that the phone works within your network. See section 8.7 on page 107.
- **Self Test:** Test the functionality of your phone and its connections to your network. See section 8.8 on page 128.

Section 5.5 on page 47 describes the WIP2 menu and includes instruction on navigating through the Menu list panels. See Appendix A, starting on page 173, for a complete summary of the menu structure. Most commands that are accessible through the Menu are also available through configuration file commands (Chapter 9, starting on page 131) and the Web Interface Configuration Utility. See Chapter 10, starting on page 151).

8.2 Presence

Presence is a service available on the MX250, MX30, and many other systems that uses and distributes the availability status of each system user. Presence information allows you to verify the availability of system users before attempting to contact them. Refer to section 5.7 on page 50 for more information.

To modify your presence state:

1. Select *Menu | Presence*.

The Presence list comprises the following presence states: *Available, Not Available, Busy, At Lunch, In a Meeting, Be Right Back, and Appear offline*.



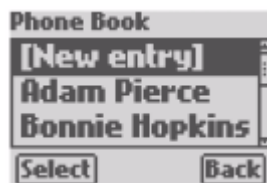
2. Use the UP and DOWN buttons to scroll through the Presence list. Select the desired state and press the LEFT (Select) button.

Press the RIGHT (Back) button to exit the Presence list without changing the presence state.

8.3 Phone Book

Menu commands add, edit, and remove contacts from your WIP2 phone book. You can also search for a specific contact or execute a voice call to a contact from phone book menu. Section 5.6 on page 49 describes the WIP2 phone book. The following section describes procedures for adding, editing, and deleting contacts and for searching the phone book for specific contacts.

When you select *Menu | Phone Book*, the first row is a New Entry option, followed by the name of the first contact in the phone book. The phone book lists your contacts in alphabetic order.



8.3.1 Add New Contact

To add a new contact to the phone book:

1. Select *Menu | Phone Book | [New entry]*

The phone displays the **Name** entry panel and places the keypad in alphanumeric mode:

2. Type the name of the contact using alphabetic mode, as described in section 5.3.5 on page 43.



The maximum length of the name is 19 characters. After you type the 19th character, the cursor remains on the last character. If you try to add more characters, the phone plays the # key DTMF digit and replaces the last character in the string with the last typed character. If the name is greater than 15 characters, the display scrolls to show just 15 characters.

3. Press the LEFT (Store) button.

The phone displays the **Address** entry panel and places the keypad in alphanumeric mode.



4. Enter the contact's phone number or SIP URI in the data entry area. Do not append a # character to the end of the phone string.

You can include punctuation marks when entering numbers. The phone stores all characters entered in this panel but only sends digits to the phone system when you dial the contact. Although preceding the address with **SIP:** is not required for calling a SIP address, it is permitted in the phone book.

While you can save a contact without an address, you cannot dial a contact from the phone book without an address.

5. After entering the address, press the LEFT (Store) button.
The display shows a list of unused memory locations and points to the lowest free location.
6. Press the UP and DOWN buttons to select a memory location
7. Press LEFT (Select) to place the contact in the phone book. The LCD displays an info panel.



8. After the event timeout, the LCD returns to the phone book, highlighting the new contact.

8.3.2 Search

To search for a contact in the phone book:

1. Select *Menu | Phone Book*
2. Enter the name of the desired contact

When you enter the first character, the phone displays a data entry area at the bottom of the phone book panel, listing the characters that you have entered. The top row of the phone book panel displays the first phone book entry that matches the characters that you have entered.

3. Continue entering characters until the desired contact is listed on the top row of the phone book panel.
 - To call this contact, press the green SEND button or the # button.
 - To modify this contact, press the LEFT (Select) button.

8.3.3 Edit

To edit a contact in the phone book contact:

1. Find the desired contact, following the procedure listed in section 8.3.2.
2. After finding the contact, press the LEFT (Select) button.

The phone displays the contact name in the icon bar and available operations in the first two rows of the status panel.



3. Use the UP or DOWN button to select **Edit**, then press the LEFT (Select) button.

The LCD displays the Name data entry panel with the contact name in the data entry area.
4. Modify the contact name.

Press the UP button to move the cursor forward one character. Press the DOWN button to remove the character left of the cursor. Enter characters by pressing keys on the keypad.
5. Press the LEFT (Store) button.

The LCD displays the Address data entry panel with the contact name in the data entry area.
6. Modify the contact address.

Press the UP button to move the cursor forward one character. Press the DOWN button to remove the character left of the cursor. Enter characters by pressing keys on the keypad.
7. Press the LEFT (Store) button.

The phone displays the memory location that contains the edited information.

8. To store the contact information in the same location, press the LEFT (Select) button. To select a new location for the contact, press the UP and DOWN buttons to highlight the desired phone number location, then press the LEFT (Select) button. Moving the contact information to a new location will write over the old information in that location.

8.3.4 Delete

To edit a contact in the phone book contact:

1. Find the desired contact, following the procedure listed in section 8.3.2.
2. After finding the contact, press the LEFT (Select) button.

The phone displays the contact name in the icon bar and available operations in the first two rows of the status panel.

3. Use the UP or DOWN button to select **Delete**, then press the LEFT (Select) button.

The phone immediately removes the contact from the phone book.

8.4 Text Messages

You can exchange instant messages with other SIP devices connected to the same SIP server that connects to your WIP2. Section 7.6.2 on page 80 describes the WIP2 capacity for sending text messages and directions for sending and receiving text messages outside of the menu structure.

Select *Menu* | *Text messages* to display the Text Message list panel:



Text Message List options include:

- **New Message:** Select this option to compose a new text message
- **Inbox < x unread >:** Select this option to view the text messages that you have received. This line indicates the number of unread messages or the total number of messages in your text mailbox.
- **Outbox < y msgs >:** Select this option to view the text messages that you have sent. This line indicates the number of messages in your outbox.
- **Erase All:** Select this option to remove all of the messages from your inbox or outbox.
- **Configure:** Select this option to program the WIP2 to receive or reject text messages.

The following sections describe WIP2 text message operations available through the menu.

8.4.1 Composing and Sending a New Text Message

To create and send a new text message:

1. Select *Menu* | *Text Message* | *New message* from the Home panel.

The phone displays the **Text message** data entry panel and places the keypad in character entry mode:



2. Enter the message in the data entry area using the character mode described in section 5.3.5 on page 43.
3. Press LEFT (Options) after entering your message.
4. Select **Send** and press the LEFT (Select) button to specify the recipient to your message. The phone displays the phone book contacts, which you can use to select the message recipient.
To delete the message and return to the data entry area, select **Erase all text** before pressing LEFT (Select).
5. Specify the recipient of your message from the phone book.

If the phone book contains the contact to receive the message, highlight the contact name by searching the phone book (section 8.3.2) or by using the UP and DOWN buttons.

If the phone book does not contain the contact, select [**New Entry**] from the Send Message to panel, then enter the phone number or address of the recipient (see step 4 in section 8.3.1).

If the phone book is empty, the WIP2 displays a Phone Number data entry panel. Enter the phone number of the recipient, then press LEFT (Select).

6. Press the LEFT (Select) button to send the message to the highlighted contact.

The phone displays a **Message sent panel**, then returns to the **Text messages panel**.

8.4.2 View Inbox Contents

Text messages received by the WIP2 are placed in the inbox. The icon bar displays the Envelope icon when the inbox contains unopened instant messages. If you have unread messages, the Inbox line displays number of unread messages in the Inbox; otherwise, this line displays the number of messages the Inbox contains.

From the Inbox, you can view the contents of the Inbox and access each text message in the box. You can also reply to your text messages or remove messages from the Inbox.

To access the instant message inbox:

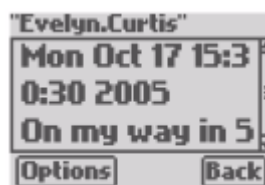
1. Select *Menu* | *Text Message* | *Inbox* from the Home panel.

The LCD displays the list of instant messages in your inbox, as shown below. If the Inbox contains more than three messages, the Inbox displays contents bar on the right side of the panel. This bar indicates the cursor position relative to the contents of the entire Inbox.



The open envelope symbol on the first line indicates that the instant message sent from the extension listed on the line was previously opened. The closed envelope symbol on the bottom two lines indicates that those messages are new and have not been opened.

2. To open a message, use the UP and DOWN buttons to highlight the desired message, then press the LEFT (Select) button:



The icon bar displays the name of the contact that sent the message. The status panel displays the time and date the message was received, followed by the message. Press the UP and DOWN buttons to scroll the message contents on the LCD.

The bottom line displays the text message response menu. Available message options include sending a reply (section 8.4.4) or deleting the message.

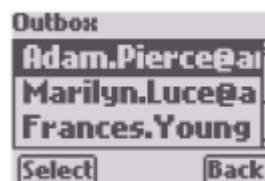
3. To send a reply to the message or to delete the message, press LEFT (Options). To return to the Inbox, press RIGHT (Back).

8.4.3 Viewing the Outbox

Instant messages that are sent from the WIP2 are placed in the outbox, where they remain until you delete them. The outbox line of the Instant Message display lists the number of messages that remain in the outbox; the Instant Message display shown in section 8.4 on page 85 indicates that the outbox contains three messages.

To access the text message outbox:

1. *Select Menu* | *Text messages* | *Outbox* from the Home panel. The LCD displays the list of instant messages that you have sent, as shown below.



2. To open a message, use the up and down buttons to highlight the desired message, then press the LEFT (Select) button.

The icon bar displays the contact information for the recipient of the message. The status bar displays the time and date the message was sent, followed by the message. Press the UP and DOWN buttons to scroll the message contents on the LCD.

3. To resend or to delete the message, press LEFT (Options). To return to the Outbox, press RIGHT (Back).

8.4.4 Replying to a Message

To reply to a message in your Inbox:

1. Select *Menu* | *Text messages* | *Inbox* from the Home panel.
2. Use the UP and DOWN buttons to select the message to which you wish to reply, then press the LEFT (Select) button.
3. Verify the text of the incoming message, then press the LEFT (Options) button.
The reply options provided by this panel include Reply, Quick Reply, and Delete.
4. To compose the reply message, select **Reply** or **Quick Reply**.

Selecting **Reply** opens a blank Text Message data entry panel; compose a message in the data entry area using the character mode described in section 5.3.5 on page 43. After entering the message, press LEFT (Options), select **Send**, and press LEFT (Select).

Selecting **Quick Reply** provides a method of sending a short common phrase. The available phrases include "Yes", "No", "I will be late", "In 5 minutes", and "On my way". Send one of these phrases by selecting it with the UP and DOWN buttons, then press the LEFT (Select) button. You can also edit each of these phrases by selecting the phrase and pressing the RIGHT (Edit) button.

8.4.5 Resending a Message

To resend a message in your Outbox:

1. Select *Menu* | *Text messages* | *Outbox* from the Home panel.
2. Use the UP and DOWN buttons to select the message that you wish to resend, then press the LEFT (Select) button.
3. Verify the text of the message, then press the LEFT (Options) button.
4. Select Resend with the UP or DOWN buttons, then press LEFT (Select).

8.4.6 Removing Messages from the Text Message Box

To remove a message from your Mailbox:

1. Select *Menu* | *Text messages* from the Home panel.
2. Select *Inbox* to remove a message from the Inbox. Select *Outbox* to remove a message from the Outbox.
3. Use the UP and DOWN buttons to select the message to be deleted, then press LEFT (Select).
4. Verify that you have selected the proper message to delete, then press LEFT (Options).
5. Use the UP and DOWN buttons to select **Delete**, then press LEFT (Select).

To remove all messages from your Inbox or Outbox:

1. Select *Menu | Text messages | Erase All* from the Home panel.
2. Use the UP and DOWN buttons to select **Inbox** or **Outbox**, then press LEFT (Select).
Inbox is a listed option only if your inbox contains at least one message. **Outbox** is a listed option only if your outbox contains at least one message.
3. Confirm the deletion by pressing the LEFT (Select) button.

To remove all messages from your text mailbox:

1. Select *Menu | Text messages | Erase All* from the Home panel.
2. Use the UP and DOWN buttons to select **Both**, then press LEFT (Select).
Both is a listed option only if your inbox and outbox each contain at least one message.
3. Confirm the deletion by pressing the LEFT (Select) button.

8.4.7 Configure

Selecting the **Configure** option displays a menu that programs the WIP2 to receive instant messages.

- To configure the WIP2 to always accept and show instant messages, select **Receive and Show**.
- To disable the WIP2 from accepting text messages, select **Reject**.
- To configure the WIP2 to accept and show instant message only it is not in the charging cradle, select **Reject if cradled**.

After selecting the desired option, press the LEFT (Select) option.

8.5 Information

Information panels display WIP2 configuration, functional, and structural data. You cannot modify configuration or function parameters from Information panels.

Select an option to display an Information panel (section 5.2.2.5). Each panel displays the parameter name followed by the parameter setting. The phone displays the panel for the Event Timeout period or until you press a button or key.

The following information panel is displayed by selecting *Menu | Information | Times | Total Talk Time* from the Home panel.



When you select *Menu | Information*, the LCD displays the following options:

- **Times:** This menu accesses panels that display the time zone offset, along with the times and dates of several initial phone configuration events. See section 8.5.1.

- **Communications:** These panels display phone connection parameters. See section 8.5.2.
- **Manufacture:** These panels display numbers that uniquely identify, along with version numbers for various phone components. See section 8.5.3.

8.5.1 Times

Times information panels display the time zone offset setting used by the WIP2 when displaying the current time, along with operational statistics.

To access Time Information panels, select *Menu | Information | Times* from the Home panel. Press the UP and DOWN panels to highlight the desired panel name, then press the LEFT (Select) button to display the panel.

Time Information panels on the WIP2 include:

- **Time Difference from GMT:** This panel displays the offset that the phone uses to display the local time. The WIP2 calculates the local time by adding the time difference to the GMT time obtained from the NTP server. This value is either entered manually, as described in section 3.2.6.1 on page 18, or obtained from the configuration file.
- **Phone Power On:** This panel displays the time and date when the phone was turned on.
- **Phone Connected:** This panel displays the time and date when the phone connected to the network.
- **Registered:** This panel displays the time and date when the phone most recently registered with the SIP server. The phone needs to register periodically, typically each hour.
- **Total Talk Time:** This panel displays the total time that the phone has been in the active call state since power on. It is the summation of time spent on calls originated from and received by the WIP2. This time is reset whenever the power is cycled on the phone. The time is shown in days, hours, minutes, and seconds.

8.5.2 Communications

Communications information panels display parameter settings the phone uses to connect to your network and access the configuration file on the TFTP server.

To access Communications information panels, select *Menu | Information | Communications* from the Home panel. Press the UP and DOWN panels to highlight the desired panel name, then press the LEFT (Select) button to display the panel.

The Communication option provides access to five wireless panels, a TFTP address panel, and a configuration file status panel.

8.5.2.1 Wireless

Wireless information panels access five panels that list wireless network status or WIP2 parameter settings used to access the LAN through the wireless network. Refer to Section 4.5.1 on page 31 for information on Wireless network parameters. To display the Wireless Information panel, select *Menu | Information | Communications | Wireless* from the home panel.

Wireless communication panels include:

- **Status:** This panel displays the WIP2 reception status of the wireless signal.

- **SSID:** This panel displays the wireless network that the WIP2 is configured to access. Refer to section 4.5.1 on page 31 for information on altering the SSID setting.
- **Channel:** This panel displays the 2.4 GHz wireless band that the WIP2 is using. This parameter cannot be configured by the user. Refer to section 4.5.1 on page 31.
- **WEP:** This panel displays the WIP2 use of the WIP security protocol. Valid parameter settings are Yes and No. Refer to section 4.5.1 on page 31 for information on altering the WEP setting.
- **Active Key:** This panel displays the WEP key used by the WIP2 to secure communications. Refer to section 4.5.1 on page 31 for information on altering the WEP key.

8.5.2.2 TFTP Address

This panel displays the IP address that the WIP2 is using to access the TFTP server. This address is either provided by the DHCP server (section 4.5.2.1 on page 32) or configured as a fixed address (section 4.5.2.2 on page 32).

If the panel displays a *Not Found* message, the phone was configured to receive the TFTP address from the DHCP server and the DHCP server did not return the TFTP address.

8.5.2.3 Configuration File

This panel displays the status of the configuration file that the WIP2 receives from the TFTP server. The WIP2 receives configuration parameter settings from the configuration file, as described in section 4.2.1 on page 21.

If the panel displays *Config File OK*, the WIP2 received a configuration file from the TFTP server located at the IP address configured in the phone.

If the panel displays a *Config File not found*, the IP address configured for the TFTP server did not point to a TFTP server or the TFTP server did not have a WIP2 configuration file.

8.5.3 Manufacture

When you select *Menu | Information | Manufacture*, the phone shows the following displays. You can only view this information. Use the **Up** and **Down** keys to scroll through the various screens. The display on your phone may differ from the screens shown below.

- **MAC Address:** Each WIP2 is assigned a 48 bit identifier, normally written as a 12 digit hexadecimal number, that uniquely identifies it from all other network devices. The MAC address is hard coded into the phone when it is manufactured and printed on a label located under the battery as a bar code with text. This panel displays the MAC address of your WIP2.
- **S/W Version:** This panel indicates the WIP2 software version that your phone is using. Section 4.4.2 on page 28 describes the process of updating software. New software versions include more features or provide better support for existing features.
- **Boot Code:** This panel displays the WIP2 boot code version that your phone is using. The boot code permanently resides on the phone and is not modified through software updates.
- **H/W Versions:** This panel displays the hardware version of your WIP2. When requesting support for your phone, provide this version number and date of manufacture.
- **Date:** This panel displays your phone's date of manufacture.

8.6 User Settings

User Setting panels display configuration panels that tailor the WIP2 operation to suit your personal preferences. When you select *Menu | User Settings*, the LCD displays the following options:

- **LCD Contrast:** Select this option to improve the display readability. See section 8.6.1.
- **Calls Forwarding:** Select this option to program the phone to forward incoming calls. See section 8.6.2.
- **Right Button:** Select this option to program the RIGHT soft button function. See section 8.6.3.
- **Greeting:** Select this option to change the Home panel display contents. See section 8.6.4.
- **Clear settings:** Replace phone parameter settings to those specified in the TFTP configuration files. See section 8.6.5 on page 95.
- **Date and Time:** Set the current date and time and the offset from GMT. See section 8.6.6 on page 95.
- **Audio:** Program the phone behavior when you receive a call or a text message. Phone parameters that you can program from this panel includes the tones played by the phone, automatic answering options, and the sounds made by the phone during startup or when you press a key. See section 8.6.7 on page 96.
- **Timeouts:** Determine the timeout periods for display messages and sending dialed digits. See section 8.6.8 on page 104.
- **Regional Optns:** Select the country and language settings and date and time display format. See section 8.6.9 on page 105.
- **Factory Default:** Restores all phone parameters to their original factory settings. See section 8.6.10 on page 107.

Important To ensure that the changes you make to the settings remain after you power up the phone, select **Never** under the menu *Clear settings*, described in section 8.6.5 on page 95.

To select a User Settings option, press the UP and DOWN buttons to highlight the desired option, then press the LEFT (Select) button.

8.6.1 LCD Contrast

This panel alters the display contrast to improve readability. Section 5.2.3.1 on page 39 describes the LCD contrast setting.

To change the LCD contrast:

1. Select *Menu | User Settings | Contrast*.

The LCD displays the LCD Contrast panel:

2. Press the UP and DOWN buttons to adjust the contrast setting.

There are 20 contrast settings, numbered 1 to 20. The display gets darker as the number increases. The bar on the bottom of the display is a graphical representation of the setting.



3. Press the LEFT (Store) to enable the new contrast setting and return to the User Settings panel. Press the RIGHT (Back) button to return to the User Settings panel without changing the Contrast setting.

8.6.2 Call Forwarding

This panel programs the phone to forward incoming calls. Section 7.4 on page 74 describes the WIP2 call forwarding function.

To configure the phone to forward calls:

1. Select *Menu | User Settings | Contrast*.

The phone displays the following options:

- **off**: select this option to turn off call forwarding
- **all calls**: select this option to forward all incoming calls
- **on no answer**: select this option to forward calls that you do not answer
- **when busy**: select this option to forward calls when you are

2. Press the UP and DOWN buttons to highlight the desired forwarding option.
3. Press the LEFT (Select) button to select the highlighted option

If you select **Off**, the menu returns to the User Settings menu

If you select any other option, the phone displays the **Forward to** menu that lists your phone book contacts.

4. To select a contact, press the UP and DOWN buttons to highlight the contact.

To specify a phone number or address instead of a phone book contact, highlight [Specify Number], press LEFT (Select), then enter the number or address of the phone that will receive your calls

5. Press the LEFT (Select) button to activate call forwarding.

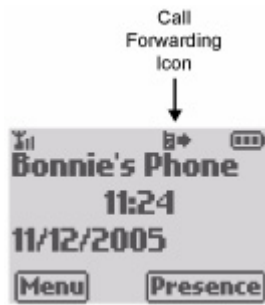
The Home panel displays a forwarding icon on the icon bar when call forwarding is active:

8.6.3 Right Button

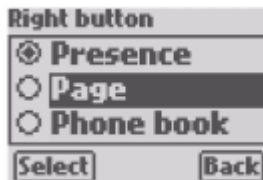
This panel determines the function that the phone performs when you press the RIGHT soft button from the Home panel. Section 5.3.4 on page 43 provides more information about RIGHT soft button options.

To program the Right Button:

1. Select *Menu | User Settings | Right Button*.



The LCD displays the three right button options:



2. Press the UP and DOWN buttons to select the desired RIGHT button option.
3. Press the LEFT (Store) to select the Right Button setting and return to the User Settings panel. Press the RIGHT (Back) button to return to the User Settings panel without changing the Right Button setting.

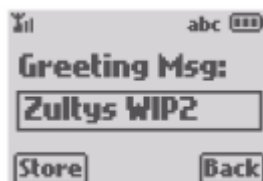
8.6.4 Greeting Message

This panel determines the message that the top row of the status panel display shows when the phone is idle (see section 5.2.3.2 on page 39). When shipped from the factory, the greeting message is set to **Zultys WIP2**.

To change the greeting message:

1. Select *Menu | User Settings | Greeting*.

The phone displays the Greeting Msg panel that displays your greeting message:



2. Modify the greeting message as required, using the text entry method described in section 5.3.5 on page 43.

The phone has already enabled alphanumeric mode for this purpose.

3. Press the LEFT (Store) to store the edited message. The phone will display the new message the next time you return to the Home panel. Press the RIGHT (Back) button to return to the User Settings panel without changing your greeting.

8.6.5 Clear Settings

This panel determines the settings that the phone uses each time it powers up, as described in section 4.2.1.5 on page 24. To modify the Clear Settings parameter:

1. Select *Menu | User Settings | Greeting*.

The phone displays the following options:

- *Never*: Each time the phone powers on, it retains the user settings that were previously entered. This parameter is typically set to **never** in most situations.
- *On next power on*: The next time that the phone powers on, it takes its user settings from the configuration file saved on the TFTP site.¹ After the phone takes its settings from the configuration file, it sets this parameter to *never*, and will not take the settings from the configuration file again.

This is useful if a telephone is being transferred to a different person or if the person is changing locations. The administrator can maintain the default setting (within the administration UI) and change this parameter on the phone to *on next power on*. The next time the phone boots up it uses the default configuration. This eliminates any undesirable settings and the user of the phone can now configure his or her own preferences.

- *On each power on*: The phone takes its user settings from the configuration file saved on the TFTP site every time that the phone powers up. This is useful if the phone is in a common area and users may change the settings from those desired by the system administrator.
2. Use the UP and DOWN button to select the desired option.
 3. Press the LEFT (Store) button to save the option.

8.6.6 Date and Time

The phone indicates that it has lost connection to the NTP server by blinking the time on the display. While in this mode, the time displayed by the phone may be inaccurate and you may not be able to perform any calls. The Date and Time command restarts the phone. Refer to section 3.2.6.1 on page 18 for more information.

To reset the phone through the Date and Time command:

1. Select *Menu | User Settings | Date and Time*.

The LCD displays the following options:

- **No, go back** returns to the User Settings menu without resetting the phone.
 - **Continue** restarts the phone, eventually returning the phone to the status view panel.
2. Use the UP and DOWN buttons to select the desired option.
 3. Press the LEFT (Select) to enable the selected option. Pressing the RIGHT (Back) button returns to the User Settings panel without resetting the phone.

1. See section 4.1 on page 21 for a description of the mechanism by which this takes place.

8.6.7 Audio

The Audio menu provides options for configuring automatic call answering and tones emitted by the phone when performing normal operations. To access the User Settings Audio panel, select *Menu* | *User Settings* | *Audio* from the Home panel. The LCD displays the following options:

- **External ring:** This setting determines the ring tone for calls received from outside your enterprise. This option is available only if the *Distinctive Rings* parameter is set to *Allow*. Refer to section 8.6.7.1.
- **Internal ring:** This setting determines the ring tone for calls received from inside your enterprise. This option is available only if the *Distinctive Rings* parameter is set to *Allow*. Refer to section 8.6.7.1.
- **Ring:** This setting determines the ring tone for all received calls. This option is available only if the *Distinctive Rings* parameter is set to *Do not allow*. Refer to section 8.6.7.1.
- **Extl call answ:** This setting determines the phone's response to calls from outside your enterprise. Refer to section 8.6.7.2.
- **Intl call answ:** This setting determines the phone's response to calls from inside your enterprise. Refer to section 8.6.7.2.
- **Ring styles:** This parameter determines the phone's method of alerting you of an incoming call. Refer to section 8.6.7.3.
- **Hook & Speaker:** This parameter transposes the listening devices activated when listening to voice calls. Refer to section 8.6.7.4.
- **Page function:** Select this option to send a page call. Refer to section 8.6.7.5.
- **Call disconnect:** This parameter specifies the tone played by the phone when the other party disconnects a call. Refer to section 8.6.7.6.
- **Second call:** This parameter specifies the tone played by the phone when it receives a call while a second call is active. Refer to section 8.6.7.7.
- **Hold reminder:** This parameter specifies the tone played by the phone when a call is on hold. Refer to section 8.6.7.8.
- **Key click:** This parameter specifies the sound emitted by the phone when you press a button or key. Refer to section 8.6.7.9.
- **Startup tone:** This parameter specifies the sounds emitted by the phone when you power up the phone. Refer to section 8.6.7.10.
- **Text msg tone:** This parameter specifies the tone emitted by the phone when you receive a text message. Refer to section 8.6.7.11.

8.6.7.1 Ring Tone Settings

Ring tone menus specify the ring tones played by the WIP2 when it receives a call. If the *Distinctive Rings* parameter is set to *Allow* (see section 8.7.6.3), the Audio panel displays options for *External Ring Tone* and *Internal Ring Tone*. If the *Distinctive Rings* parameter is set to *Do Not Allow*, the Audio panel displays an option for *Ring Tone*. The ring tone options set the following ring tones:

- **External ring tone** determines the tones played by the WIP2 when it receives a call from a phone outside your enterprise.

- **Internal ring tone** determines the tones played by the WIP2 when it receives a call from a phone inside your enterprise.
- **Ring Tone** determines the tones played by the WIP2 when it receives a call from any phone.

Refer to section 6.4.1.1 on page 59 for more information.

To set the ring tones the WIP 2 plays to alert you of an incoming call:

1. Select *Menu | User Settings | Audio*.

2. Use the UP and DOWN buttons to highlight the desired ring tone.

Available ring tone options include *External ring tone* and *Internal ring tone* if **Distinctive Rings** is set to *Allow*. *Ring tone* is the only ring tone option available when **Distinctive Rings** is set to *Do not allow*.

3. Press LEFT (Select) to modify the highlighted ring tone

The LCD displays the following tone options for the ring tone:

- ring pause
- ring ring
- short ring
- bell bell
- custom

4. Use the UP and DOWN buttons to select the desired tone.

As you scroll through the top four items of the list, the phone plays the highlighted tone. The custom option downloads a wav file that is used as a ring tone.

5. Press the LEFT (Select) button to select the highlighted tone.

If you select *Custom*, the phone displays the custom tone menu, as described in section 8.6.7.12 on page 102. If you select any other option, the phone changes the ring tone and returns to the User Settings Audio menu.

8.6.7.2 Call Answer Settings (Internal and External)

Call Answer parameters provide automatic answering options for incoming calls from devices internal and external to your enterprise. When you set the phone to automatically answer after one ring, you can also specify the voice path (handset or speaker) for the call. Refer to section 6.4.3 on page 61 for more information.

To set the call answer options for the WIP2:

1. Select *Menu | User Settings | Audio*.

2. Use the UP and DOWN buttons to highlight the desired call answer option.

Available call answer options are *Extl call answer* for setting the automatic call answering behavior for calls from devices external to the enterprise and *Intl call answer* for setting the automatic call answering behavior for calls from devices internal to the enterprise.

3. Press LEFT (Select) to modify the highlighted call answer option

The LCD displays the following call answering options:

- **Ring phone:** Select this option to turn off automatic answering for the specified calls. This is the default setting.
 - **Auto answ speaker:** Select this option to answer all specified calls after one ring and send the audio stream through the external speaker.
 - **Auto answ hook:** Select this option to answer all specified calls after one ring and send the audio stream through the handset.
4. Use the UP and DOWN buttons to select the desired option.
 5. Press the LEFT (Select) button to activate the highlighted option and return to the User Settings Audio menu.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.3 Ring Styles

The WIP2 alerts you of incoming calls by playing an audible tone or by vibrating. This option specifies the active call alert method. Refer to section 6.4.1.1 on page 59 for more information.

To set the ring style for the WIP2:

1. Select *Menu | User Settings | Audio | Ring Styles*.

The LCD displays the following ring style options:

- **Ring:** Select this option to play the specified ring tone (section 8.6.7.1) when the WIP2 receives a call.
 - **Vibe:** Select this option to vibrate the phone when the WIP2 receives a call.
 - **Vibe & Ring:** Select this option to play the specified ring tone (section 8.6.7.1) and vibrate the phone when the WIP2 receives a call.
2. Use the UP and DOWN buttons to select the desired option.
 3. Press the LEFT (Select) button to activate the highlighted option and return to the User Settings Audio menu.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.4 Hook and Speaker

This parameter configures the method of activating the handset and speaker phone. In normal mode, pressing the green SEND button to answer or send calls activates the handset while pressing the # key to answer or send calls activates the external speaker. In transposed mode, the the SEND button and # key functions are switched. Section 5.4.2 on page 46 describes normal and transposed device modes.

To set the device activation method:

1. Select *Menu | User Settings | Audio | Hook & Speaker*.

The LCD displays the following options:

- **Normal:** Select this option to specify the normal speaker activation method.
- **Transposed:** Select this option to specify the transposed speaker activation method.

2. Use the UP and DOWN buttons to select the desired option.
3. Press the LEFT (Select) button to activate the highlighted option and return to the User Settings Audio menu.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.5 Page Function

A page call is an announcement sent to multiple people that is received through the recipient's speaker without being answered. Paging functionality depends on the phone system. Typically, if you receive a page announcement during an active conversation, settings chosen by the system administrator determine if the your phone plays the announcement.

The Page function selects the paging group that receives your pages and sends a page to that group. You can also send a page from the Home panel if the RIGHT button is programmed to send a page (refer to section 6.7 on page 65).

1. Select *Menu | User Settings | Audio | Page Function*.

The LCD displays a list of paging groups. The list of paging groups and the members of each group are configured by your system administrator.

2. Use the UP and DOWN buttons to select the desired paging group.
3. Press the LEFT (Select) button to select the highlighted paging group and send a message to that group.

Press the RIGHT (Exit) button to return to the User Settings Audio menu without selecting a paging group or making a page announcement.

4. When the LCD displays the active call panel, speak your page announcement.
5. Terminate the call by pressing the red END button.

8.6.7.6 Call Disconnect

This parameter programs the phone's behavior when the other party disconnects a call. Refer to section 6.6.2 on page 64 for more information.

To configure the call disconnect behavior:

1. Select *Menu | User Settings | Audio | Call disconnect*.

The LCD displays the following options:

- **Busy tone:** The phone plays a busy tone after the other party disconnects from a phone call until you press the red END button.
 - **Busy tone time:** The phone plays a busy tone for the time period specified by the Event Timeout after the other party disconnects from a phone call. The display returns to the idle state after it quits playing the busy tone.
 - **Silent:** The phone is quiet after the other party disconnects from a phone call and the LCD immediately returns to the idle state.
2. Use the UP and DOWN buttons to highlight the desired option.

3. Press the LEFT (Select) button to activate the highlighted option and return to the User Settings Audio menu.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.7 Second Call Tone

The WIP2 plays the second call tone during a phone conversation to alert you that the phone is receiving another call. Refer to section 6.4.1.2 on page 60 for more information.

To configure the second call tone:

1. Select *Menu | User Settings | Audio | Second call*.

The LCD displays the following tone options for the second call tone:

- short high beep
- long high beep
- short low beep
- long low beep
- custom
- silent

2. Use the UP and DOWN buttons to highlight the desired tone.

As you scroll through the top four items of the list, the phone plays the highlighted tone. The custom option downloads a wav file from an external source, which is then used as the second call tone.

3. Press the LEFT (Select) button to select the highlighted tone.

If you select *Custom*, the phone displays the custom tone menu, as described in section 8.6.7.12 on page 102. If you select any other option, the phone changes the second call tone and returns to the User Settings Audio menu.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.8 Hold Reminder Tone

This parameter specifies the tone that the phone plays when a call is on hold. This tone is played once every 30 seconds. Refer to section 7.1.1.1 on page 67 for more information.

To configure the hold reminder tone:

1. Select *Menu | User Settings | Audio | Hold reminder*.

The LCD displays the following tone options for the hold reminder tone:

- off
- beep
- bleep

2. Use the UP and DOWN buttons to select the desired tone.

As you scroll through the list, the phone plays the highlighted tone.

3. Press the LEFT (Select) button to select the highlighted tone.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.9 Key Click Tone

This parameter specifies the tone that the phone emits when you press a button or key. Refer to section 5.3.2 on page 42 for more information.

To select a Key Click tone:

1. Select *Menu | User Settings | Audio | Key Click*.

The LCD displays the following key click tone options:

- off
- click
- beep
- bleep

2. Use the UP and DOWN buttons to highlight the desired tone.

As you scroll through the list, the phone plays the highlighted tone.

3. Press the LEFT (Select) button to select the highlighted tone.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.10 Startup Tone

This parameter specifies the tone that the phone emits when you power up the phone. Refer to section 3.2.3 on page 14 for more information on the startup process.

To configure the startup tone:

1. Select *Menu | User Settings | Audio | Startup Tone*.

The LCD displays the following startup tone options:

- none
- zring
- beep beep
- white noise

2. Use the UP and DOWN buttons to highlight the desired tone.

3. Press the LEFT (Select) button to select the highlighted tone.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.11 Text Message Tone

This parameter specifies the tone that the phone emits when you receive a text message. Refer to section 7.6.2 on page 80 for more information on text messages.

To configure the startup tone:

1. Select *Menu | User Settings | Audio | Text msg tone*.

The LCD displays the following text message tone options:

- none
- first
- second
- vibe

2. Use the UP and DOWN buttons to highlight the desired tone.

As you scroll through the list, the phone vibrates or plays the highlighted tone.

3. Press the LEFT (Select) button to select the highlighted tone or behavior.

Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.

8.6.7.12 Custom Audio

This section describes the method of selecting a custom tone that indicates an incoming call. You can specify a custom audio tone for each ring tone or the second call tone. The icon row of the display indicates the ring tone that you are programming.

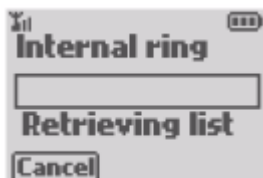
To specify custom tone:

1. Highlight the Custom option from the menu of the ring tone option that you are editing.

See section 8.6.7.1 on page 96 and section 8.6.7.7 on page 100 for instructions on accessing the custom panel for the tones that support custom selections.

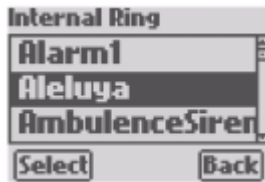
2. Select the Custom option by press the LEFT (Select) button.

the phone retrieves the custom file list from the **Custom Sounds** location as specified by the Audio URL parameter (refer to section 8.7.6.4 on page 127). The LCD displays the following panel while retrieving these files.



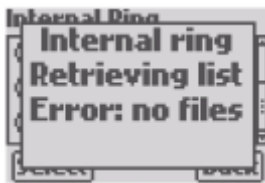
The phone shows a new bar every second and maintains the total download time below the bars. Every 10 seconds the phone clears the bars and then starts to show them one by one again. The length of time required to access the server depends on the number of sound files stored on the server and the activity on your network. This could be anywhere from a few seconds to a few minutes.

After the phone has retrieved all custom tone files, it displays a list of the available tones:



3. Use the UP and DOWN buttons to highlight the desired tone.
4. Press the LEFT (Select) button to select the highlighted tone.
Press the RIGHT (Back) button to return to the User Settings Audio menu without changing the parameter setting.
5. When you select a file, the phone retrieves it from the server and the display shows a retrieval panel similar to the panel shown in step 2. The length of time required to download the file depends on the size of the file and the activity on your network. This could be anywhere from a few seconds to a few minutes.
6. When the phone has downloaded the file, the phone plays the file and displays the tone selection panel for the specified tone.
7. Press the LEFT (Back) to activate this selection and return to the specified ring tone menu.

When the phone encounters errors while accessing the HTTP server or retrieving the file, it displays an information panel that lists the ring tone type, the operation that generated the error, and the type of error:



Custom file retrieval errors include:

- **Time-out:** The phone displays this message if the HTTP server does not exist or does not respond.
- **Unauthorized:** The phone displays this message if the HTTP server denies access.
This is HTTP error 401 (unauthorized).
- **Forbidden:** The phone displays this message if the HTTP server forbids access.
This is HTTP error 403 (forbidden).
- **Bad server:** The phone displays this message if there is an error with the HTTP server.
This is HTTP error 403 (forbidden).
- **No files:** The phone displays this message if the specified directory on the HTTP server is empty.
- **Wrong format:** The phone displays this message if the downloaded WAV file is of the wrong format.

WAV files saved on the HTTP server must be encoded as described in section 8.7.6 on page 125.

8.6.8 Timeouts

The Timeouts menu configures the timeout periods for displaying messages and sending dialed digits. To access the Timeouts panel, select *Menu | User Settings | Timeouts* from the Status View display. The LCD displays the following options:

- **Event Timer:** This setting determines period that the display shows temporary messages. Refer to section 8.6.8.1.
- **Dial timeout:** This setting determines the period that the phone waits after you enter the last digit of a phone number until it initiates a call. Refer to section 8.6.8.2.

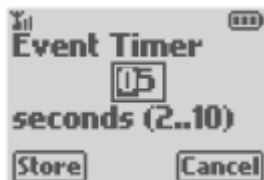
8.6.8.1 Event Timer

The phone displays messages about the status of a call or a problem. Some of these messages are displayed temporarily. This setting determines the period that the phone shows the message. Refer to section 5.2.4 on page 40 for more information.

To specify the event timer period:

1. Select *Menu | User Settings | Timeouts. | Event Timer.*

The LCD displays the Event Timer panel:



2. Use the keypad to enter a number between 2 and 10. This represents the time in seconds for which the event will be displayed. The default value is two seconds.
3. Press the LEFT (Store) button to store the entered number as the Event Timer value.
Press the RIGHT (Cancel) button to return to the Timeouts panel without changing the value of the Event Timer value.

8.6.8.2 Dial Timeout

When you select the New Call option to dial a number (section 6.2.1.1 on page 54), the phone plays a dial tone as you enter a number. You signal the phone that the phone number is ready to send by pressing the # key. If you do not press the # key after dialling a number, the Dial Timeout determines the time that the phone waits after the last digit is dialled before sending the number to the SIP server. Refer to section 6.2.1.5 on page 55 for more information.

To specify the dial timeout period:

1. Select *Menu | User Settings | Timeouts. | Dial Timeout.*

The LCD displays the Dial Timeout panel, which is similar to the Event Timer panel shown in section 8.6.8.1 on page 104.

2. Use the keypad to enter a number between 1 and 30. This represents the time in seconds that the phone waits before sending the call.
3. Press the LEFT (Store) button to store the entered number as the Event Timer value.
Press the RIGHT (Cancel) button to return to the Timeouts panel without changing the value of the Event Timer value.

8.6.9 Regional Options

Regional Options customize the WIP2 display and call progress tones. To access the Regional Options panel, select *Menu | User Settings | Regional Options* from the Status View display. The LCD displays the following options:

- **Country:** This setting specifies the call progress tones generated by the phone. Refer to section 8.6.9.1.
- **Language:** This setting specifies the language used to display settings and menus on the LCD. Refer to section 8.6.9.2.
- **Date and Time:** This setting specifies the order that the LCD displays the time and date. Refer to section 8.6.9.3.
- **Time Format:** This setting specifies the format of the LCD time display. Refer to section 8.6.9.4.
- **Date Format:** This setting specifies the format of the LCD date display. Refer to section 8.6.9.5.

8.6.9.1 Country

This parameter specifies the tones that the phone generates for call progress tones: dial tone, ringback tone, busy tone, and network busy tone (congestion). It does not determine the tone used for alert (ringing), which informs you of an incoming call. Refer to section 6.3.2 on page 57 for more information.

To specify the country setting:

1. Select *Menu | User Settings | Regional Optns | Country*.

The phone displays the country settings menu. Available country settings include Afghanistan, Algeria, Argentina, Australia, Austria, Bahrain, Belarus, Belgium, Brazil, Bulgaria, Canada, Chile, China, Columbia, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Japan, Jordan, Korea, Kuwait, Latvia, Lebanon, Libya, Lithuania, Luxembourg, Mexico, Morocco, Netherlands, New Zealand, Norway, Oman, Philippines, Poland, Qatar, Romania, Russia, Saudi Arabia, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syria, Thailand, Tunisia, Turkey, UAE, UK, USA, Ukraine, and Yemen.

2. Use the UP and DOWN buttons to highlight the desired country.
3. Press the LEFT (Select) button to select the highlighted country.

Press the RIGHT (Back) button to return to the Regional Options menu without changing the parameter setting.

8.6.9.2 Language

This parameter specifies the language that the phone uses to display phone settings and menu options on the LCD. Refer to section 5.2.3.3 on page 40 for more information.

To specify the language setting:

1. Select *Menu | User Settings | Regional Optns | Language*.

The phone displays the languages menu. Available languages include English, French, German, Greek, Italian, Polish, Portuguese, Russian, Spanish, Swedish, and Ukrainian.

2. Use the UP and DOWN buttons to highlight the desired language.
3. Press the LEFT (Select) button to select the highlighted language.

Press the RIGHT (Back) button to return to the Regional Options menu without changing the parameter setting.

8.6.9.3 Date and Time

This parameter specifies the display order of the date and time on the LCD. Refer to section 5.2.3.4 on page 40 for more information.

To specify the date and time order:

1. Select *Menu | User Settings | Regional Optns | Date and Time*.

The phone displays the following options:

- **Date Time:** The status panel displays the time in the center of the second line and the date on the left side of the third line.
- **Time Date:** The status panel displays the date in the center of the second line and the time on the left side of the third line. Select the desired format with the **Up** and **Down** keys.

2. Use the UP and DOWN buttons to highlight the desired format.
3. Press the LEFT (Select) button to select the highlighted format.

Press the RIGHT (Back) button to return to the Regional Options menu without changing the parameter setting.

8.6.9.4 Time Format

This parameter specifies the format used by the LCD to display time. Refer to section 5.2.3.4 on page 40 for more information.

To specify the time format:

1. Select *Menu | User Settings | Regional Optns | Time Format*.

The phone displays the following time format options:

- **24 hour:** This option displays the LCD time in 24 hour mode. For example, 1:00 pm is displayed as 13:00.
- **12 hour:** This option displays the LCD time in 12 hour mode and uses am and pm to differentiate the times of day. For example, 1:00 pm is displayed as 1:00 pm.

2. Use the UP and DOWN buttons to highlight the desired format.

3. Press the LEFT (Select) button to select the highlighted format.

Press the RIGHT (Back) button to return to the Regional Options menu without changing the parameter setting.

8.6.9.5 Date Format

This parameter specifies the format used by the LCD to display the date. Refer to section 5.2.3.4 on page 40 for more information.

To specify the date format:

1. Select *Menu | User Settings | Regional Optns | Date Format*.

The display shows today's date in the four available date formats:

- 10/26/2005 specifies mm/dd/yyyy
- 10-26-2005 specifies mm-dd-yyyy
- 2005/10/26 specifies yyyy/mm/dd
- 2005-10-26 specifies yyyy-mm-dd

2. Use the UP and DOWN buttons to highlight the desired format.
3. Press the LEFT (Select) button to select the highlighted format.

Press the RIGHT (Back) button to return to the Regional Options menu without changing the parameter setting.

8.6.10 Factory Defaults

This option resets the phone parameters to their original, factory installed values and restarts the phone in DHCP mode. If the DHCP points to a TFTP server that contains valid configuration files for the WIP2, phone parameters will be set to the values contained in the configuration file. Refer to section 5.8 on page 50 for more information.

To reset the phone to its factory defaults:

1. Select *Menu | User Settings | Factory default*.

The phone displays a confirmation menu.

2. Use the UP and DOWN buttons to highlight **Yes**.
3. Press the LEFT (Select) button to reset the select the highlighted format.

Press the RIGHT (Back) button to return to the Regional Options menu without restoring the factory defaults or restarting the phone. Selecting No and pressing the RIGHT (Back) button also returns you to the Regional Options menu without restarting the phone.

8.7 Pswd Settings

Password setting menus alter the communication parameters of the phone. You may need to configure these parameters if your system does not support automatic provisioning.

Each parameter in this menu is protected by a password that you need to enter to make changes to the settings. If you do not know the password, you can view but not alter the parameters. The menu name *Pswd Settings* indicates that you need a password to modify the settings.

When you select *Menu | Pswd Settings*, the LCD displays the following options:

- **Password:** Enter and change the password, and logout of password mode. See section 8.7.1.
- **Wi-Fi Settings:** Configure parameters used by the phone to access the LAN through the wireless network.
- **IP Settings:** Configure IP addresses and related parameters. See section 8.7.3.
- **SIP Settings:** Configure parameters needed by the phone to communicate with the SIP proxy and registrar servers. See section 8.7.4.
- **Names & Numbers:** Enter the names and phone numbers associated with the phone. See section 8.7.5.
- **Audio:** Configure the sounds that the phone can play. See section 8.7.6.

8.7.1 Password

The password provides edit access to all parameter settings accessed through the Pswd Settings menu. The Password panel accepts your password and enters *Protected Mode*, allowing you to change the protected settings. You can also change your password or exit *Protected Mode* from this menu. Section 5.5.3 on page 48 describes WIP2 passwords and protected mode.

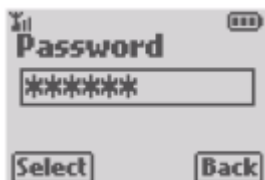
The default password is 985897. This code corresponds to the word “zultys”.

8.7.1.1 Entering Protected Mode (Logging into the Phone)

Entering protected mode allows you to edit all Pswd Setting parameters. To enter protected mode:

1. Select *Menu | Pswd Settings | Password*.

The LCD displays the password entry panel if you are not logged into the phone. The keypad is always in numerical mode when the LCD displays the password entry panel.



The LCD displays the Pswd panel shown in step 2 if you previously entered protected mode. In this case, go to step 3.

2. Enter the password, then press the LEFT (Select) button.

The LCD displays the Pswd panel if you enter the correct password. If you enter an incorrect password, the phone displays a warning message, then returns to the password entry panel.

3. Press the Back key to return to the Pswd Settings panel.

You are logged into Protected Mode and can edit all Pswd Settings menu parameters.



8.7.1.2 Exiting Protected Mode (Logging out of the Phone)

After changing the desired parameters, you should exit protected mode to prevent anyone else from modifying the phone parameters. The phone will automatically exit protected mode if you do not make any configuration changes for ten minutes or when you turn the power off.

To exit protected mode:

1. Select *Menu | Pswd Settings | Password*.

The LCD displays the Pswd panel if you are logged into the phone (see step 2 in section 8.7.1.1). If the LCD displays the password entry panel (see step 1 in section 8.7.1.1), you are not logged into the phone.

2. Use the UP and DOWN buttons to highlight **Logout**.
3. Press the LEFT (Select) button to logout of the phone.

Press the RIGHT (Back) button to return to the Pswd Settings menu without logging out.

8.7.1.3 Changing the Password

To change the password:

1. Select *Menu | Pswd Settings | Password*.

The LCD displays the Pswd panel if you are logged into the phone. If the LCD displays the password entry panel, you are not logged into the phone. You must log into the phone to change the password.

2. Use the UP and DOWN buttons to highlight **Change**.
3. Press the LEFT (Select) button.

The phone displays the New Password panel.

4. Enter the new password in the data entry area, then press the LEFT (Select) button.

The LCD displays the Repeat Password panel

5. Re-enter the password in the data entry area, then press the LEFT (Select) button.

If you correctly enter the proposed password, the phone returns to the Pswd Settings panel and the password has been changed. If you do not correctly enter the password, the LCD displays a warning message and asks you to try again.

The configuration file that is saved on the TFTP server can change the password whenever you power up the phone. This allows the Administrator to restore a specified password every time the phone powers up.

8.7.2 Wi-Fi Settings

Wi-Fi Settings configure the connection between your wireless networks and the WIP2 phone. Wi-Fi settings are password protected. To access the Wi-Fi Settings menu, select *Menu | Pswd Settings | Wi-Fi Settings* from the Status View display. The LCD displays the following options:

- **Scan:** Select this option to view the wireless network access points that the WIP2 can access. You can also select the Service Set that the phone accesses from this menu. The Scan option is only available if you are logged into the phone. Refer to section 8.7.2.1.
- **SSID:** Select this option to specify the scan set that the WIP2 accesses. Refer to section 8.7.2.2.
- **Network:** Select this option to specify the communication method the phone uses to contact other devices. Refer to section 8.7.2.3.
- **Channel:** Select this option to view the channel number that the WIP2 is using. Refer to section 8.7.2.4.
- **WEP:** Select this option to enable or disable WEP encryption. Refer to section 8.7.2.5.
- **WEP Keys:** Select this option to view all available WEP keys and to enter new WEP keys. Refer to section 8.7.2.6.
- **WEP Active Key:** Select this option to specify a WEP key as the active key. Refer to section 8.7.2.7.

8.7.2.1 Scan

This menu displays the access points from which the WIP2 is able to detect signals. By selecting an access point, you can specify the scan set that the WIP2 accesses to contact the LAN. For more information, refer to section 4.5.1 on page 31.

To display the list of access points that the WIP2 can detect:

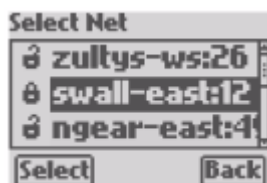
1. Verify that the phone is in protected mode.

The Scan option is not available if you have not entered your password.

2. Select *Menu | Pswd Settings | Wi-Fi Settings | Scan*.

The LCD displays each access point that the WIP2 can detect. Each line represents one access point:

- The padlock icon on the left side of the line indicates the service set WEP key requirement. If the icon is a locked padlock, devices accessing the service set to which the access point must have a valid WEP key. If the icon is an unlocked padlock, the service is not WEP protected and does not require a key for access.
- The text lists the name of the service set to which the access point belongs.
- The number at the end of the line indicates the strength of the signal that the WIP2 detects from the access point. Signal strength numbers range from 0 to 100; larger numbers indicate a stronger signal.



3. Use the UP and DOWN buttons to highlight an access point that belongs to the desired service set.
4. Press the LEFT (Select) button to select the service set.
Press the RIGHT (Back) button to return to the Wi-Fi menu without selecting a service set.

8.7.2.2 SSID

The SSID menu lists the name of the Service Set that the WIP2 is accessing. You can also view and change the SSID parameter from the Scan menu described in section 8.7.2.1. Refer to section 4.5.1 on page 31 for more information.

To view or modify the SSID:

1. Verify that the phone is in protected mode.
You can view the SSID setting without entering your password.
2. Select *Menu | Pswd Settings | Wi-Fi Settings | SSID*.
The LCD displays the Enter SSID panel, with the name of the SSID that the WIP2 is access in the data entry area. If you are logged into the phone, the menu bar displays a Store option for the LEFT button. If you are not logged into the phone, the menu bar does not display the Store option and you cannot modify the SSID setting.
3. Enter the new Service Set name in the data entry area. Refer to section 5.3.5 on page 43 for text entry instructions.
4. Press the LEFT (Select) button to select the service set.
Press the RIGHT (Back) button to return to the Wi-Fi menu without selecting a service set.

8.7.2.3 Network

The Network menu specifies the method used by the WIP2 to communicate with other devices. Refer to section 4.5.1 on page 31 for more information.

To view or modify the Network setting:

1. Verify that the phone is in protected mode.
You can view the Network setting without entering your password.
2. Select *Menu | Pswd Settings | Wi-Fi Settings | Network*.
The LCD displays the Network options with radio buttons that indicate the selected option. Valid Network parameter settings include:
 - **Infra (Infrastructure):** In this mode, wireless devices communicate with other devices, either other wireless devices or wired devices, after going through an access point.
 - **Independent:** Also known as Ad-hoc mode. In this mode, devices communicate directly with each other without the use of access points.
3. Use the UP and DOWN buttons to highlight the desired parameter value.
4. Press the LEFT (Select) button to activate the selected parameter setting.
Press the RIGHT (Back) button to return to the Wi-Fi menu without selecting a service set.

8.7.2.4 Channel

The Channel option on the Wi-Fi panel displays the number of the wireless channel that the WIP2 is using to connect to the LAN. You cannot configure this parameter. Refer to section 4.5.1 on page 31 for more information.

8.7.2.5 WEP

The WEP menu specifies the use of WEP security keys for encrypting data transmitted between the WIP2 and the access points. Refer to section 4.5.1 on page 31 for more information.

To view or modify the WEP setting:

1. Verify that the phone is in protected mode.

You can view the WEP setting panel without entering your password.

2. Select *Menu | Pswd Settings | Wi-Fi Settings | WEP*.

The LCD displays the WEP options with radio buttons that indicate the selected option. Valid WEP parameter settings include:

- **No:** When selected, the phone does not encrypt transmissions to the access point.
- **Yes:** When selected, the phone encrypts all transmissions to the access point.

3. Use the UP and DOWN buttons to highlight the desired parameter value.

4. Press the LEFT (Select) button to activate the selected parameter setting.

Press the RIGHT (Back) button to return to the Wi-Fi menu without selecting a service set.

8.7.2.6 WEP Keys

The WEP Keys menu lists the WEP keys that are stored in the phone. You can store a maximum of four keys for a single service set through this menu option. The value of the entered keys are not available if you are not logged into the phone. Refer to section 4.5.1 on page 31 for more information.

To view or modify the WEP Keys:

1. Verify that the phone is in protected mode.

You can access the WEP Keys panel without entering your password, but all key characters will appear as asterisks and you cannot edit any key.

2. Select *Menu | Pswd Settings | Wi-Fi Settings | WEP Keys*.

The LCD displays the four WEP keys. N/A key indicates that a value has not been entered for the specified key.

3. Use the UP and DOWN buttons to highlight the key that you wish to edit.

The LCD displays the Enter KEY panel.

4. Enter the value of the new hexadecimal key in the data entry area.

Default data entry mode for this data entry field is Hex, which is similar to Alphanumeric mode (section 5.2.5), except that the only alphabetic characters that you can enter are A, B, C, D, E, and F. If you place the data entry mode to an alphanumeric mode (by pressing the # key), all entered data is translated into the hexadecimal ASCII code.

For example, entering 8A in Hex mode translates to a key value of 8A. Entering 8A in alphanumeric mode translates to a key value of 3861 (8=38 ASCII, A = 41 ASCII).

You can only enter alphanumeric mode from Hex mode if the data entry area lists valid ASCII code.

5. Press the LEFT (Select) button to store the WEP key.

Press the RIGHT (Back) button to return to the Wi-Fi Settings menu without storing a key.

8.7.2.7 WEP Active Keys

The WEP menu indicates the WEP security keys that the WIP2 is using for translating data that it is sending to the access point. Refer to section 4.5.1 on page 31 for more information.

To view or modify the WEP Active Key setting:

1. Verify that the phone is in protected mode.

You can view which key is active without entering your password, but all key characters will appear as asterisks and you cannot specify a different active key.

2. Select *Menu | Pswd Settings | Wi-Fi Settings | WEP active key*.

The LCD displays the WEP Keys with radio buttons that indicate the selected key.

3. Use the UP and DOWN buttons to highlight the desired WEP key.

4. Press the LEFT (Select) button to activate the selected parameter setting.

Press the RIGHT (Back) button to return to the Wi-Fi menu without selecting a service set.

8.7.3 IP Settings

IP Settings display and configure parameters required by the phone to communicate with the network. Each parameter is password protected; you may view the parameter settings at any time, but you cannot change any parameter setting unless you previously entered your password.

To access the IP Settings menu, select *Menu | Pswd Settings | IP Settings* from the Status View display. The LCD displays the following options:

- **DHCP:** This panel displays the DHCP mode setting. Refer to section 8.7.3.1.
- **Phone Address:** This panel displays the IP address of the phone. Refer to section 8.7.3.2.
- **Subnet Mask:** This panel displays the subnet mask of the phone. Refer to section 8.7.3.3.
- **Default Gateway:** This panel displays the IP address of the router that the phone uses to communicate with the outside world. Refer to section 8.7.3.4.
- **Primary DNS:** This panel displays the IP address of the primary server the phone queries for IP addresses. Refer to section 8.7.3.5.
- **Secondary DNS:** This panel displays the IP address of the secondary server the phone queries for IP addresses. Refer to section 8.7.3.6.
- **NTP Server:** This panel displays the IP address of the server that maintains the clock time for the phone. Refer to section 8.7.3.7.

- **TFTP Server:** This panel displays the IP address source for the TFTP server that provides configuration information for the phone. Refer to section 8.7.3.8.
- **TFTP Address:** This panel displays the IP address of the TFTP server that provides configuration information for the phone. Refer to section 8.7.3.9.
- **DSCP:** This panel displays the DiffServ (layer 3 QoS) setting. Refer to section 8.7.3.10.

8.7.3.1 DHCP

The DHCP parameter determines the method that the phone receives its IP address and the address of network servers that the phone accesses. When DHCP is enabled, the phone configures network parameters using IP addresses provided by the DHCP server.

To specify the DHCP mode:

1. Verify that the phone is in protected mode.
You can view the DHCP mode without entering your password.
2. Select *Menu | Pswd Settings | IP Settings | Time Format*.
The phone displays the following DHCP mode settings:
 - **Enable DHCP:** This option enables DHCP mode. Refer to section 4.5.2.1 on page 32 for more information.¹
 - **Disable DHCP:** This option disables DHCP mode and requires the configuration of network IP addresses. Refer to section 4.5.2.2 on page 32 for more information.²
3. Use the UP and DOWN buttons to highlight the desired mode.
4. Press the LEFT (Select) button to select the highlighted mode.
Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.3.2 Phone Address

The Phone Address panel displays the IP address of the WIP2. Refer to section 4.5.2.2 on page 32 for more information.

To specify the IP address:

1. Verify that the phone is in protected mode, and that DHCP is set to Disable DHCP.
You can view the IP address without entering your password or if DHCP is set to enable DHCP.
2. Select *Menu | Pswd Settings | IP Settings | Phone address*.
The phone displays the Phone address entry panel.
3. Enter the IP address.

1. IP parameter changes take effect only after the phone is rebooted. If the phone reads data from the DHCP server during the boot up process, it overwrites parameters that you modified if the server provides those parameters. The phone will not overwrite parameters not received from the DHCP server.

2. For each of the parameters that you enter from the keypad, you can enter only an IP address and cannot enter an FQDN.

Press the * twice to enter a dot.

4. Press the LEFT (Store) button to store the IP address.

Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.3.3 Subnet Mask

The Subnet Mask panel displays the subnet mask of the WIP2. Refer to section 4.5.2.2 on page 32 for more information.

To specify the subnet mask:

1. Verify that the phone is in protected mode.

You can view the subnet mask without entering your password.

2. Select *Menu | Pswd Settings | IP Settings | Subnet mask*.

The phone displays the Subnet mask entry panel.

3. Enter the subnet mask.

Press * twice to enter a dot.

4. Press the LEFT (Store) button to store the IP address.

Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.3.4 Default Gateway

The Default Gateway panel displays the IP address of the router that the phone uses to communicate with the outside world. Refer to section 4.5.2.2 on page 32 for more information.

To configure the IP address of the default gateway:

1. Verify that the phone is in protected mode.

You can view the IP address of the default gateway without entering your password.

2. Select *Menu | Pswd Settings | IP Settings | Default gateway*.

The phone displays the Default gateway entry panel.

3. Enter the IP address of the default gateway.

Press * twice to enter a dot.

4. Press the LEFT (Store) button to store the IP address.

Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.3.5 Primary DNS

The Primary DNS panel displays the IP address of the server that the phone queries for IP addresses. Refer to section 4.5.2.2 on page 32 for more information.

To configure the IP address of the Primary DNS server:

1. Verify that the phone is in protected mode.
You can view the IP address of the primary DNS server without entering your password.
2. Select *Menu | Pswd Settings | IP Settings | Primary DNS*.
The phone displays the primary DNS server entry panel.
3. Enter the IP address of the primary DNS server.
Press * twice to enter a dot.
4. Press the LEFT (Store) button to store the IP address.
Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.3.6 Secondary DNS

The Secondary DNS panel displays the IP address of the alternative server that the phone queries for IP addresses. Refer to section 4.5.2.2 on page 32 for more information.

To configure the IP address of the Secondary DNS server:

1. Verify that the phone is in protected mode.
You can view the IP address of the secondary DNS server without entering your password.
2. Select *Menu | Pswd Settings | IP Settings | Secondary DNS*.
The phone displays the Secondary DNS server entry panel.
3. Enter the IP address of the Secondary DNS server.
Press * twice to enter a dot.
4. Press the LEFT (Store) button to store the IP address.
Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.3.7 NTP Server

The NTP Server panel displays the IP address of the server that provides date and time information for the phone. Refer to section 4.5.2.2 on page 32 for more information.

To configure the IP address of the NTP server:

1. Verify that the phone is in protected mode.
You can view the IP address of the NTP server without entering your password.
2. Select *Menu | Pswd Settings | IP Settings | NTP server*.
The phone displays the NTP server entry panel.
3. Enter the IP address of the NTP server.
Press * twice to enter a dot.
4. Press the LEFT (Store) button to store the IP address.

Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.3.8 TFTP Server

The TFTP Server panel specifies the source of the IP address for the server that provides configuration information for the phone. Refer to section 4.3.1.1 on page 25 for more information.

To configure the IP address source of the TFTP server:

1. Verify that the phone is in protected mode.

You can view the TFTP IP address source without entering your password.

2. Select *Menu | Pswd Settings | IP Settings | TFTP server*.

The phone displays the TFTP IP address source options:

- **From DHCP:** Select this option to obtain the TFTP IP address from the DHCP server. The DHCP option (section 8.7.3.1 on page 114) must also be set to Enable DHCP.
- **Fixed:** Set this option to fix the TFTP IP address to the setting configured in the TFTP Address panel (section 8.7.3.9).

When DHCP is disabled, this parameter should be set to *Fixed*.

3. Use the UP and DOWN buttons to highlight the desired option.
4. Press the LEFT (Select) button to activate the selected parameter setting.

Press the RIGHT (Back) button to return to the Wi-Fi menu without selecting a service set.

8.7.3.9 TFTP Address

The TFTP Server panel displays the IP address of the server that provides configuration information for the phone. You can enter an TFTP IP Address if the TFTP Server parameter is set to From DHCP (see section 8.7.3.8) Refer to section 4.3.1.1 on page 25 and section 4.5.2.2 on page 32 for more information.

To configure the IP address of the TFTP server:

1. Verify that the phone is in protected mode.

You can view the IP address of the TFTP server without entering your password.

2. Select *Menu | Pswd Settings | IP Settings | TFTP address*.

The phone displays the TFTP server address entry panel.

3. Enter the IP address of the TFTP server.

Press * twice to enter a dot.

4. Press the LEFT (Store) button to store the IP address.

Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.3.10 DSCP

The DSCP panel specifies the DiffServer (layer 3 QoS) setting¹. This value is placed in the ToS byte of the IP header in all voice packets (RTP) leaving the phone's microprocessor. The default value of 0 corresponds to *best effort*. If your network uses differentiated services, set the value to 46 (101110 binary), which corresponds to the expedited forwarding per hop behavior (PHB).

If you are logged into the phone, the menu bar displays a Select option for the LEFT button. Refer to section 4.5.2.2 on page 32 for more information.

To configure the DSCP setting:

1. Verify that the phone is in protected mode.
You can view the DSCP setting without entering your password.
2. Select *Menu | Pswd Settings | IP Settings | DSCP*.
The phone displays the DSCP port entry panel.
3. Enter the DSCP port value.
Valid settings range from 00 to 63.
4. Press the LEFT (Store) button to store the IP address. If you enter a number greater than 63, pressing this button will have no effect on the panel.
Press the RIGHT (Back) button to return to the IP Settings menu without changing the parameter setting.

8.7.4 SIP Settings

SIP Settings display and configure the parameters required by the phone to communicate with the SIP proxy and registrar servers.² Each parameter is password protected; you may view the parameter settings at any time, but you cannot change any parameter unless you previously entered your password.

To access the SIP Settings menu, select *Menu | Pswd Settings | SIP Settings* from the Status View display. The LCD displays the following options:

- **Outbnd proxy:** This menu accesses the IP address, port, and password settings of the outbound proxy server. Refer to section 8.7.4.1.
- **Backup proxy:** This menu accesses the IP address and port of the backup proxy server. You can also program the phone to register with the backup proxy at startup from this menu. Refer to section 8.7.4.2.
- **Registrar:** This menu accesses the IP address and port of the SIP Registrar. Refer to section 8.7.4.3.
- **RTP start port:** This menu configures the RTP and RTCP port numbers used by the call appearances. Refer to section 8.7.4.4.
- **Receive port:** This menu configures the number of the transport port used by the phone for receiving SIP messages. Refer to section 8.7.4.5.

1. RFC 2597 and RFC 2598 define the various code points and per-hop behavior (PHBs). RFC 2474 and RFC 2475 define differentiated services.

2. SIP phones sessions are conducted by exchanging a series of SIP messages with the SIP server. The WIP2 phone will not respond to any SIP message that has a damaged contact field.

- **Transport:** This parameter determines the protocol the WIP2 uses for transport SIP messages. This version of the WIP2 supports only UDP. Refer to section 8.7.4.6.
- **Invite retrans:** This parameter specifies the number of unsuccessful INVITE transmissions sends before the phone switches to the backup proxy. Refer to section 8.7.4.7.
- **Noninv retrans:** This parameter specifies the number of unsuccessful transmissions (other than INVITE) sends before the phone switches to the backup proxy. Refer to section 8.7.4.8.
- **SIP validation:** Setting the parameter programs the phone to verify the IP address, device ID, and port number of any received SIP message. Refer to section 8.7.4.9.
- **DNS server:** This parameter specifies *Use DNS Server Lookup*. Refer to section 8.7.4.10.

8.7.4.1 Outbound Proxy Server

The Outbound Proxy Server panel displays options for view or editing the IP address, port number, and password of the outbound proxy server that the WIP2 accesses. Refer to section 4.5.3 on page 33 for more information.

To configure the outbound proxy server parameters:

1. Verify that the phone is in protected mode.
You can view the outbound proxy server parameters without entering your password.
2. Select *Menu | Pswd Settings | SIP Settings | Outbnd proxy*.
The phone displays the Outbound proxy parameter options:
 - Address
 - Port
 - Password (this option is available only if the phone is in protected mode)
3. Use the UP and DOWN buttons to highlight the desired option.
4. Press the LEFT (Select) button to edit the selected parameter setting.
Press the RIGHT (Back) button to return to the SIP Settings menu.
5. Enter the parameter value in the data entry area.
Press * twice to enter a dot into the IP address. Refer to section 5.3.5 on page 43 for text entry instructions when entering the password.
6. Press the LEFT (Store) button to store the parameter setting and return to the Outbound Proxy menu.
Press the RIGHT (Cancel) button to return to the Outbound Proxy menu without changing the parameter setting.
7. Repeat step 3 through step 6 to change the other parameter settings, or press the RIGHT (Back) button to return to the SIP Settings menu.

8.7.4.2 Backup Proxy Server

The Backup Proxy Server panel displays options for view or editing the IP address and port number of the backup proxy server. You can also program the phone to register with the backup proxy at startup. Refer to section 4.5.3 on page 33 for more information.

To configure the outbound proxy server parameters:

1. Verify that the phone is in protected mode.

You can view the backup proxy server parameters without entering your password.

2. Select *Menu | Pswd Settings | SIP Settings | Backup proxy*.

The phone displays the Backup proxy parameter options:

- Address
- Port
- Registration

3. Use the UP and DOWN buttons to highlight the desired option.

4. Press the LEFT (Select) button to edit the selected parameter setting.

Press the RIGHT (Back) button to return to the SIP Settings menu.

5. For the Address parameter, enter the value in the data entry area. Press * twice to enter a dot into the IP address.

For the Port parameter, enter the value in the data entry area.

For the Registration parameter, use the UP and DOWN buttons to select the desired parameter.

6. Press the LEFT (Store) button (or LEFT (Select) button for the Registration option) to store the parameter setting and return to the Backup Proxy menu.

Press the RIGHT (Cancel) button to return to the Backup Proxy menu without changing the parameter setting.

7. Repeat step 3 through step 6 to change the other parameter settings, or press the RIGHT (Back) button to return to the SIP Settings menu.

8.7.4.3 Registrar Server

The Registrar Server panel displays options for view or editing the IP address and port number of the registrar server. When these parameters are set, the phone attempts to register with the Registrar server instead of the Proxy server. Refer to section 4.5.3 on page 33 for more information.

To configure the registrar server parameters:

1. Verify that the phone is in protected mode.

You can view the Registrar Server IP address and port of the outbound proxy server without entering your password.

2. Select *Menu | Pswd Settings | SIP Settings | Registrar*.

The phone displays the Outbound proxy parameter options:

- Address
- Port

3. Use the UP and DOWN buttons to highlight the desired option.

4. Press the LEFT (Select) button to edit the selected parameter setting.

Press the RIGHT (Back) button to return to the SIP Settings menu.

5. Enter the parameter value in the data entry area.

Press * twice to enter a dot into the IP address.

6. Press the LEFT (Store) button to store the setting and return to the Registrar menu.

Press the RIGHT (Cancel) button to return to the Registrar menu without changing the setting.

7. Repeat step 3 through step 6 to change the other parameter settings, or press the RIGHT (Back) button to return to the SIP Settings menu.

8.7.4.4 RTP Start port

The WIP2 phone uses eight consecutively numbered RTP and RTCP port numbers (actually UDP port numbers) for communication. RTP carries media and RTCP carries control information. The first two ports are used by the first call appearance to receive RTP media and RTCP control information, respectively. The last two ports are used by the second call appearance.

The RTP Start port parameter designates the number of the first port within the four port block. The RTP start port must always be an even number and should not be set to the same value as the *Receive Port* or the *Proxy Port*. The default RTP start port is 33000.

Refer to section 4.5.3 on page 33 for more information.

To configure the RTP start port:

1. Verify that the phone is in protected mode.

You can view the RTP start port without entering your password.

2. Select *Menu | Pswd Settings | SIP Settings | RTP Start Port*.

The phone displays the RTP start port entry panel.

3. Enter the parameter value in the data entry area.

4. Press the LEFT (Store) button to store the setting and return to the SIP Settings menu.

Press the RIGHT (Cancel) button to return to the SIP Settings menu without changing the setting.

8.7.4.5 Receive Port

This parameter specifies the TCP or UDP port that the phone uses to receive SIP messages. The default value of 5060 is used if this field is blank. Refer to section 4.5.3 on page 33 for more information.

To configure the Receive port:

1. Verify that the phone is in protected mode.

You can view the Receive port without entering your password.

2. Select *Menu | Pswd Settings | SIP Settings | Receive Port*.

The phone displays the RTP start port entry panel.

3. Enter the parameter value in the data entry area.

4. Press the LEFT (Store) button to store the setting and return to the SIP Settings menu.
Press the RIGHT (Cancel) button to return to the SIP Settings menu without changing the setting.

8.7.4.6 Transport Protocol

This parameter specifies transport protocol used by the phone to send and receive SIP messages. The current software version supports UDP.

8.7.4.7 Invite Retransmissions

This parameter specifies number of unsuccessful INVITE messages the phone will retransmit before switching to the backup proxy. Refer to section 4.5.3 on page 33 for more information.

To specify the Invite Retransmission number:

1. Verify that the phone is in protected mode.
You can view the Invite Retransmission setting without entering your password.
2. Select *Menu | Pswd Settings | SIP Settings | Invite retrans.*
The phone displays the Invite retrans entry panel.
3. Enter the parameter value in the data entry area.
Valid settings range from 1 to 6.
4. Press the LEFT (Store) button to store the setting and return to the SIP Settings menu.
Press the RIGHT (Cancel) button to return to the SIP Settings menu without changing the setting.

8.7.4.8 Non Invite Retransmissions

This parameter specifies number of unsuccessful SIP requests (other than INVITE messages) the phone will retransmit before switching to the backup proxy. Refer to section 4.5.3 on page 33 for more information.

To configure the Non Invite Retransmission number:

1. Verify that the phone is in protected mode.
You can view the Non Invite Retransmission setting without entering your password.
2. Select *Menu | Pswd Settings | SIP Settings | Noninve retrans.*
The phone displays the Noninv retrans entry panel.
3. Enter the parameter value in the data entry area.
Valid settings range from 1 to 10.
4. Press the LEFT (Store) button to store the setting and return to the SIP Settings menu.
Press the RIGHT (Cancel) button to return to the SIP Settings menu without changing the setting.

8.7.4.9 Message Validation

The Message Validation menu configures the WIP2 to verify the IP address, device ID, and port number of any SIP messages that it receives. The phone discards SIP messages whose parameters do not match those of the phone that sent them. Refer to section 4.5.3 on page 33 for more information.

To view or modify the Message Validation setting:

1. Verify that the phone is in protected mode.

You can view the Message Validation setting without entering your password.

2. Select *Menu | Pswd Settings | SIP Settings | SIP Validation*.

The LCD displays the WEP options with radio buttons indicating the selected option. Valid WEP parameter settings include:

- **No:** When selected, the phone does not validate SIP messages.
- **Yes:** When selected, the phone validates SIP messages.

3. Use the UP and DOWN buttons to highlight the desired parameter value.

4. Press the LEFT (Select) button to activate the selected parameter setting.

Press the RIGHT (Back) button to return to the SIP Settings menu without modifying the message validation setting.

8.7.4.10 DNS SRV Lookup

This parameter configures the phone to resolve the SIP Proxy IP address through DNS SRV records. When DNS SRV is set to Yes, the Outbound Proxy Address (section 8.7.4.1) may contain a FQDN. Refer to section 4.5.3 on page 33 for more information.

If the Outbound Proxy Address parameter specifies a valid IP address, the phone uses it to access the proxy server. Otherwise, the phone resolves the address on the basis of the DNS SRV Lookup parameter setting.

To view or modify the DNS Server setting:

1. Verify that the phone is in protected mode.

You can view the DNS Server setting without entering your password.

2. Select *Menu | Pswd Settings | SIP Settings | DNS Server*.

The LCD displays the DNS Server options with radio buttons indicating the selected option:

- **No:** When selected, the phone resolves the Outbound Proxy address through a normal DNS resolve operation.
- **Yes:** When selected, the phone resolves uses DNS SRV records to resolve the Outbound Proxy Server Address.

3. Use the UP and DOWN buttons to highlight the desired parameter value.

4. Press the LEFT (Select) button to activate the selected parameter setting.

Press the RIGHT (Back) button to return to the SIP Settings menu without modifying the DNS Server setting.

8.7.5 Names & Numbers

Names & Number panels display and configure the device ID of the phone and the voice mail name or extension. The phone uses the device ID to register with the SIP registrar. Each parameter is password protected; you may view the parameter settings at any time, but you cannot change any parameter setting unless you previously entered your password.

To access the Names & Numbers menu, select *Menu | Pswd Settings | Names & Numbers* from the Idle panel. The LCD displays the following options:

- **Device ID:** This panel displays the device_id setting of the phone. Refer to section 8.7.5.1.
- **Domain:** This panel displays the domain name used by the phone. Refer to section 8.7.5.2.
- **Voice Mail:** This panel displays the name or number of the server that stores voice mail. Refer to section 8.7.5.3.

8.7.5.1 Device ID

The Device ID specifies the name that the phone uses to register with the SIP registrar and to make calls. This parameter is the user portion of the address:

device_id @ domain

When this parameter is blank, the default value is the MAC address of the phone. To use a different name, enter it in the it in the field. To restore the device ID to be the value of the MAC address, delete the text in the field.

Refer to section 4.5.3.1 on page 33 for more information.

To view or modify the Device ID name:

1. Verify that the phone is in protected mode.
You can view the Device ID without entering your password.
2. To access this panel, select *Menu | Pswd Settings | Names & Numbers | Device ID*.
The LCD displays the Device ID entry panel
3. Enter the new Device name in the data entry area. Refer to section 5.3.5 on page 43 for text entry instructions.
4. Press the LEFT (Store) button to store the new Device ID.
Press the RIGHT (Back) button to return to the Name and Numbers menu without modifying the Device ID setting.

8.7.5.2 Domain Name

The domain name specifies the domain name component of the user address. This parameter has no default value and must be filled manually or from the DHCP server. This is always specified as an FQDN, so the phone automatically enables character entry mode when you enter this panel. Refer to section 4.5.3.1 on page 33 for more information.

To view or modify the Domain Name:

1. Verify that the phone is in protected mode.
You can view the Domain Name without entering your password.

2. To access this panel, select *Menu | Pswd Settings | Names & Numbers | Domain Name*.
3. Enter the domain name in the data entry area. Refer to section 5.3.5 on page 43 for text entry instructions.
4. Press the LEFT (Store) button to store the new Domain Name.
Press the RIGHT (Back) button to return to the Name and Numbers menu without modifying the Domain Name setting.

8.7.5.3 Voice Mail

This parameter specifies the name or number of the server that stores voice mail. You can dial it by pressing the 1 key for two seconds. When the phone needs to access the voice mail server, it sends the call to:

<voice mail number>@<SIP outbound proxy server>

For example:

5500@10.1.30.194

You can enter a name for the address of the voice mail. Therefore, any of the following is valid:

voice.mail@10.1.30.194

voice.mail@SIP.Zultys.com

5500@SIP.Zultys.com

The voice mail parameter has the default value of voice.mail. If this value is acceptable, you do not need to modify it. The phone can obtain this information from the configuration file accessed from the TFTP server. Refer to section 7.6.1 on page 79 for more information.

To view or modify the Voice Mail address:

1. Verify that the phone is in protected mode.
You can view the voice mail address without entering your password.
2. To access this panel, select *Menu | Pswd Settings | Names & Numbers | Voice Mail*.
3. Enter the new voice mail address in the data entry area. Refer to section 5.3.5 on page 43 for text entry instructions.
4. Press the LEFT (Store) button to store the new voice mail address.
Press the RIGHT (Back) button to return to the Name and Numbers menu without modifying the Voice Mail setting.

8.7.6 Audio

Audio panels display and configure the codec, encryption, and custom tone settings. Each parameter is password protected; you may view the parameter settings at any time, but you cannot change any parameter unless you previously entered your password.

To access the Pswd Settings Audio menu, select *Menu | Pswd Settings | Audio* from the Idle screen. The LCD displays the following options:

- **Codec:** This parameter specifies the algorithm the WIP2 uses to encode speech. Refer to section 8.7.6.1.

- **Encryption:** This parameter specifies the default encryption mode. Refer to section 8.7.6.2.
- **Distinctive rings:** This parameter specifies the uses of different tones to alert the user of incoming calls from internal and external sources. Refer to section 8.7.6.3.
- **Audio URL:** This parameter specifies the location of wav files used by the WIP2 for custom ring tones. Refer to section 8.7.6.4.

8.7.6.1 Codec

The Codec parameter specifies the algorithm that the phone uses to encode voice data. Refer to section 4.5.4 on page 34 for more information.

To specify the Codec:

1. Verify that the phone is in protected mode.
You can view the codec setting without entering your password.
2. Select *Menu | Pswd Settings | Audio | Codec*.
The phone displays the available codecs:
 - **G.711- μ -law:** typically used in North America and Japan
 - **G.711 A-law:** typically used everywhere else
 - **G.729 A:** used in bandwidth restricted networks
 - **G.729 AB:** used in bandwidth restricted networks
3. Use the UP and DOWN buttons to highlight the desired codec.
4. Press the LEFT (Select) button to select the highlighted codec.
Press the RIGHT (Back) button to return to the Audio menu without changing the codec setting.

8.7.6.2 Encryption

The Encryption parameter specifies the default encryption mode. Refer to section 7.5 on page 75 for more information.

To specify the default encryption mode:

1. Verify that the phone is in protected mode.
You can view the default encryption mode setting without entering your password.
2. Select *Menu | Pswd Settings | Audio | Encryption*.
The phone displays the available modes:
 - **Normally on:** When this setting is selected, the phone attempts to establish a secure connection when you make a call. However, you can override this setting during a call and the phone can establish calls with devices that do not support encryption.
 - **Normally off:** When this setting is selected, the phone attempt to establish a call with encryption disabled when you make a call. However, you can override this setting during a call and the phone can establish calls with devices that require encryption.

- *Always on* requires all calls involving the phone to be encrypted. Calls to other phones that do not support encryption can not be established. The user has no control of the encryption mode at the time of the call.
 - *Never on* requires all calls involving the phone to be unencrypted. Calls to other phones that require encryption can not be established. The user has no control of the encryption mode at the time of the call.
3. Use the UP and DOWN buttons to highlight the desired encryption setting.
 4. Press the LEFT (Select) button to select the highlighted encryption setting.
Press the RIGHT (Back) button to return to the Audio menu without changing the encryption setting.

8.7.6.3 Distinctive Ring

The Distinctive Ring parameter specifies the uses of separate ring tones to signal incoming calls from external and incoming sources. Refer to section 6.4.1.1 on page 59 for more information.

To specify the distinctive ring setting:

1. Verify that the phone is in protected mode.
You can view the Distinctive Ring setting without entering your password.
2. Select *Menu | Pswd Settings | Audio | Distinctive rings*.
The phone displays the available options:
 - *Allow*: When this setting is selected, the phone uses different ring tones for calls from external sources and calls from internal sources.
 - *Do Not Allow*: When this setting is selected, the phone uses one ring tone for all calls.
3. Use the UP and DOWN buttons to highlight the desired setting.
4. Press the LEFT (Select) button to select the highlighted distinctive ring setting.
Press the RIGHT (Back) button to return to the Audio menu without changing the setting.

8.7.6.4 Audio URL

This setting specifies the location of WAV files that are used for custom ring tones for internal and external calls and second call tones. By controlling the WAV stored in that location, you can ensure that only appropriate files are played to announce incoming calls.

When a user selects a WAV file from that location, the phone stores it in its memory. Therefore, there is no increase in network traffic with each incoming call and no delay in announcing the call to the user.

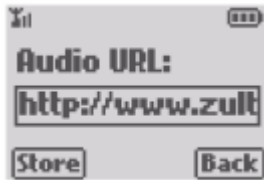
For an internal or external ring tone, the phone stores only the first 128 KB of any WAV file (approximately 16.4 s of sound). When it plays the WAV file, it repeats it until the call is either answered or terminated. For a second call tone, the phone stores only the first 8 KB of any WAV file (approximately 1 s of sound). The phone plays this only once when a call is received.

The phone allows users to access the first 256 files in the directory. Therefore, you should not store more than this. Each of the files in the directory must be encoded as 8 bit μ -law (PCM).

To prevent the use of custom ring tones, clear the contents of this parameter setting.

To change the Audio URL:

1. Verify the phone is in protected mode.
You can view the Audio URL without entering your password.
2. Select *Menu* | *Pswd Settings* | *Audio* | *Audio URL* from the Home panel.



3. Type the full path name using the method described in section 5.3.5 on page 43.
The phone automatically puts the keypad in character mode.
4. Press the LEFT (Store) button to save the file name.
Press the RIGHT (Back) button to exit the panel without saving the new file name.

8.8 Self Test

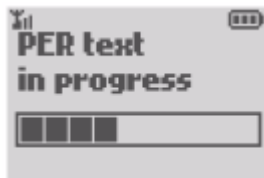
The Self Test menu provides options for testing the phone and the network to which it is connected. The phone will not allow you to make or receive calls when you are conducting any of the self tests.

8.8.1 PER

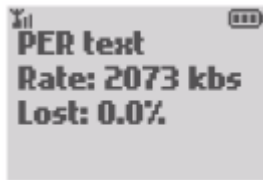
The Packet Error Rate test verifies that the WIP2 can exchange data packets with the default gateway and displays the percentage of packets lost during the test. Upon starting the test, the phone pings 1000 data packets to the default gateway IP address. At the conclusion of the test, the display shows the transmission data rate and the packet loss percentage.

To perform the PER test:

1. Select *Menu* | *Self Test* | *PER*. The LCD displays the following, adding progress blocks as the during the test.



2. At the conclusion of the test, the display shows the following statistics:



8.8.2 Audio

This option tests the speaker and microphone audio paths on the phone. The phone prompts you to speak into a microphone, then replays what you spoke. This is a subjective test, but you can perform a quantitative test by using external test equipment to generate and receive the sounds.

To perform the LEDs test:

1. Select *Menu* | *Self Test* | *Audio*.
2. After two seconds, the phone plays a double beep into the handset, then records the next 10 seconds of your speech into the handset. It shows a progress bar while recording. The phone displays the following panel after recording for seven seconds:



3. After recording for 10 seconds, the phone plays a double beep into the handset. The phone is silent for one second, then plays a tone that sweeps from 300 Hz to 3 kHz in three seconds. The phone is silent for 500 ms, then replays the recorded audio through the handset.
4. The phone plays a double beep into the speaker phone, then plays a tone that sweeps from 300 Hz to 3 kHz in three seconds through the speaker phone.
5. Press the red END button once at the end of the test to return to the Home panel. To exit the test, while it is in progress, press the red END button twice.

8.8.3 Audio Return

The Audio Return test generates audio feedback to evaluate the audio paths on the phone. This test is normally performed before the phone is shipped and should be executed by the user only as instructed by Zultys technical support.

Configuration Files

9.1 Introduction

The WIP2 phone obtains its configuration from three possible sources:

- what is saved in the phone's memory
- what is saved in a common configuration file
- what is saved in a specific configuration file

If the *Clear User Settings* menu command (as described in section 4.2.1.5 on page 24) is set to *on each power on*, the phone reads the configuration files each time it resets, either by command or by power on, and saves the contents to memory. This overwrites all user settings with the parameter values defined by the configuration files.

This appendix describes the function, composition, and implementation of configuration files.

9.2 Configuration File Types

The phone obtains its configuration from two separate files: the common configuration file and the specific configuration file.

9.2.1 Common Configuration File

The common configuration file sets parameters on all phones within an enterprise that are to have the same values. Parameters that are normally set within a common configuration file define the network configuration, SIP server interface characteristics, and other settings that are common among all phones in an enterprise.

The common configuration file for the WIP2 phone is called:

```
WIP2_common.cfg
```

This file must be stored in the root directory of the TFTP server.

9.2.2 Specific Configuration File

The specific configuration file sets parameters for an individual phone within an enterprise. Parameters normally set within a specific configuration file customize phone features for the person using the phone, such as the greeting message, audio characteristics, and LCD options.

The common configuration file identifies the location of the specific configuration files. A phone extracts configuration information from the common file first, then from its specific configuration file. Parameter settings in the specific file take precedence over settings of the same parameters in the common file.

The name of the specific configuration file is:

```
<MAC address>.cfg
```

For example,

```
000BEA801ADC.cfg
```

is the specific configuration file for a phone that has the MAC address 00:0B:EA:80:1A:DC.

9.3 Configuration File Format

Common and specific configuration files are similar in format and composition. Most configuration parameters can be set in either file. Configuration files are stored in ASCII format.

9.3.1 File Sections

Each file is separated into sections, with each section containing settings for a functional parameter group. The order of the functional sections within each configuration file has no effect upon the configuration of the phone. The first line in each section contains the name of the functional group, denoted by square brackets. Figure 9-1 displays the name of each function heading and the proper format of the headings.

```
[NET_CONFIG]

[SIP_CONFIG]

[GENERAL_INFO]

[HW_CONFIG]

[AUDIO_INFO]

[LOCATIONS]
```

Figure 9-1 Configuration File Section Headings

9.3.2 Parameter Entries

All available parameter settings are classified by function, as described in section 9.4. Each parameter within a configuration file must be contained within its defined functional section. The order of parameters within each function section does not effect the configuration of the phone. If a parameter is defined in the common file and the specific file, the specific file setting takes precedence. Figure 9-2 displays an example of parameter settings in a configuration file.

```
[HW_CONFIG]
lcd_contrast=8
ring_volume=5
speaker_volume=5

[NET_CONFIG]
use_dhcp=yes
tftp_cfg_dir=./WIP2
```

Figure 9-2 Configuration File Example

The name of the parameter and the parameter value must be on the same line. The name of the parameter is not case sensitive; it can be entered in either upper or lower case. However, parameter values are case sensitive. Refer to the parameter tables in section 9.4 for more details. Comment lines are denoted with a leading semi-colon (;) and have no effect on the configuration of the phone.

9.4 Configuration Parameters

This section provides tables that list all of the configuration parameters in each functional group. Parameters in each table are listed in alphabetic order. Many parameters correspond to an equivalent menu command; the tables refer to the section describing the menu command for each of these parameters.

9.4.1 Network Configuration

Network configuration parameters define settings required by the phone to communicate with the network. Figure 9-3 lists the network configuration parameters.

Parameter	Description	Reference
default_gateway	Parameter is IP address of default gateway that is used for manual configuration when use_dhcp is set to 'no' or DHCP does not provide the default gateway (DHCP option 3). Valid setting is 32 bit IP address in dotted decimal notation. Default value is NULL string.	section 4.5.2.2 on page 32
domain	Parameter is name of the domain in which the phone resides; used for manual configuration when use_dhcp is set to 'no' or DHCP does not return the domain (DHCP option 15). Valid settings include FQDN or IP address in dotted decimal notation. No default value.	section 4.5.3.1 on page 33
dscp_setting	Configures DiffServ (layer 3 QoS) setting. All voice packets (RTP) leaving the phone will have the ToS byte in the IP header set to this value. Valid settings range from 0 to 63. Default value is 0.	section 4.5.2.2 on page 32
ip_addr	Parameter is static address assigned to the phone. Used for manual configuration when use_dhcp is set to 'no' or DHCP does not return an address (DHCP option 50). Valid setting is 32 bit IP address in dotted decimal notation. Default value is NULL string.	section 4.5.2 on page 32

Figure 9-3 Network Configuration Parameters

Parameter	Description	Reference
primary_dns	Parameter is IP address of primary DNS Server. Used for manual configuration when use_dhcp is set to 'no' or DHCP does not return DNS Server (DHCP option 6). Valid setting is 32 bit IP address in dotted decimal notation. Default value is NULL string.	section 4.5.2.2 on page 32
secondary_dns	Parameter is IP address of secondary DNS Server that is used for manual configuration when use_dhcp is set to 'no' or DHCP does not return valid address. Valid setting is 32 bit IP address in dotted decimal notation. Default value is NULL string.	section 4.5.2.2 on page 32
sntp_server_addr	Parameter is IP address of NTP server. Used for manual configuration when use_dhcp is set to 'no' or DHCP does not return NTP server (DHCP option 42). Parameter value is 32 bit IP address in dotted decimal notation. Default value is NULL string	section 4.5.2.2 on page 32
subnet_mask	Parameter is subnet mask that is used for manual configuration for phone when if use_dhcp is set to 'no' or DHCP does not return mask (DHCP option 1). Valid setting is 32 bit mask in dotted decimal notation. Default value is NULL string.	section 4.5.2 on page 32
tftp_addr_fixed	Specifies source of TFTP IP address. Valid settings are 'yes' and 'no': 'yes' - TFTP server address is fixed to value of tftp_server_addr 'no' - TFTP server address is supplied by the DHCP server If tftp_addr_fixed='yes', DHCP cannot be used to configure TFTP server address. Default value is 'no'.	section 4.5.2.2 on page 32 and section 4.5.3.1 on page 33
tftp_cfg_dir	TFTP directory location of the specific configuration file. Parameter value is directory name that is referenced from TFTP root directory. This parameter must be set in the common configuration file. Default value is ./WIP	section 4.2.1 on page 21
tftp_server_addr	IP address of TFTP server. Parameter used only tftp_addr_fixed is set to 'yes', or if use_dhcp is set to 'no', or if DHCP does not return a TFTP server (DHCP option 66). Parameter value is 32 bit IP address in dotted decimal notation. Default value is NULL string.	section 4.5.2.2 on page 32 and section 4.5.3.1 on page 33
use_dhcp	When enabled, phone uses DHCP to configure network settings: IP address, subnet mask, domain name, default gateway, DNS servers, NTP server address, and TFTP server address. Valid settings are 'yes' and 'no': 'yes' - enables DHCP 'no' - disables DHCP Default value is 'yes'.	section 4.5.2 on page 32

Figure 9-3 Network Configuration Parameters (Continued)

9.4.1.1 Server Parameter Settings

Although the default values for the following parameters may be set properly for your network configuration, it is highly recommended that the configuration files explicitly define the settings for these variables.

use_dhcp: This command specifies the use of DHCP to configure the phones network settings. When DHCP is enabled, the DHCP server should dynamically provide an IP address and subnet mask for the phone, along with IP addresses for the DNS servers, default gateway, NTP server, and TFTP server.

If dhcp is not enabled, or if the DHCP is unable to return addresses for any of these servers, you must specify valid IP addresses for each server or the phone will not properly configure on startup.

tftp_cfg_dir: This parameter points to the TFTP server directory that stores the specific configuration file for your phone. This parameter must be set in the common configuration file in order for the phone to read and process its specific configuration file. The default value of `./WIP2` is valid only if your TFTP server contains a directory by that name and if the specific configuration file resides in that directory.

9.4.1.2 Sample Configuration File

Figure 9-4 displays the network settings section from a sample configuration file.

```
[NET_CONFIG]
use_dhcp=yes
ip_addr=
subnet_mask=
default_gateway=
primary_dns=
secondary_dns=
domain=zultys.com
sntp_server_addr=
tftp_server_addr=
tftp_cfg_dir=./WIP2
dscp_setting=0
```

Figure 9-4 Sample Configuration File – Network Settings

9.4.2 SIP Configuration

SIP parameters allow the phone to operate properly in a SIP environment. Figure 9-5 lists the SIP configuration parameters.

Parameter	Description	Reference
auth_password	The proxy password authenticates the phone to proxy servers that require authentication. Default value is zultys.	section 4.5.3 on page 33
backup_proxy_addr	Backup SIP server proxy address value. If primary proxy server fails to operate, the phone attempts to switch to backup proxy. Default is null string.	section 4.5.3 on page 33
backup_proxy_port	Backup SIP server proxy port value. Valid settings range from 1025 to 65535. Default value is 5060.	section 4.5.3 on page 33
backup_reg_expires	Specifies time period, in seconds, after which a REGISTRATION expires for the Backup proxy. This value is inserted into the Expires header field. Valid settings include all positive numbers. Recommended value is 3600. Default value is 3600.	section 4.5.3 on page 33
device_id	Specifies the user portion of the SIP URI Default value is MAC address of the phone (upper case).	section 4.5.3.1 on page 33
display_name	Specifies the string that is sent in the display name part of the SIP From: header. Default is NULL string.	None
encryption	Specifies the encryption mode. Valid settings range from 0 to 3, as follows: 0 - encryption is on by default when call is placed, but can be turned off 1 - encryption is off by default when call is placed, but can be turned on 2 - encryption is always on and cannot be turned off 3 - encryption is always off and cannot be turned on Default value is 1.	section 7.5 on page 75
fwd_address	Specifies the phone number to where forwarded numbers are redirected. This parameter is valid only if fwd_condition does not equal 0. Valid settings include all phone numbers and addresses accessible to the user. Default value is NULL string.	section 7.4 on page 74
fwd_condition	Selects the initial call forwarding mode. Valid settings range from 0 to 3, as follows: 0 - no calls are forwarded 1 - all calls are forwarded 2 - all unanswered calls are forwarded 3 - calls are forwarded when the phone is busy Default value is 0.	section 7.4 on page 74

Figure 9-5 SIP Configuration Parameters

Parameter	Description	Reference
phone_sip_port	Specifies the UDP port number that the phone uses to send and receive SIP messages. Valid settings range from 1025 to 65535. Default value is 5060.	section 4.5.3 on page 33
proxy_addr	Specifies the IP address of the SIP proxy server that the phone will use. Parameter value is 32 bit IP address in dotted decimal notation. Default value is NULL string.	section 4.5.3 on page 33
proxy_port	Port of the SIP proxy that is used by the phone. Valid settings range from 1025 to 65535. Default value is 5060.	section 4.5.3 on page 33
register_w_backup_proxy	When enabled, phone registers with backup proxy at startup. Valid settings are 'yes' and 'no': 'yes' - enables option 'no' - disables option Default value is 'no'.	section 4.5.3 on page 33
register_w_proxy	When enabled, the phone registers with the registrar server if specified; otherwise, phone registers with proxy server. Phone does not register with either server when option is disabled. register_w_proxy must be set to yes.	section 4.5.3 on page 33
registrar_addr	SIP registrar server address. When this value is set, phone attempts to register with this server instead of proxy. Default value is proxy address value.	section 4.5.3 on page 33
registrar_port	SIP Registrar server port. Valid settings range from 1025 to 65535. Default value is 5060.	section 4.5.3 on page 33
registration_expires	Specifies time period, in seconds, after which a REGISTRATION expires. This value is inserted into the Expires header field. Valid settings include all positive numbers. Recommended value is 3600. Default value is 3600.	section 4.5.3 on page 33
rtp_start_port	Specifies the starting port number for RTP/RTCP transmissions. Valid settings range from 1026 to 64528. The starting port must always be an even number. Should not be set to same value as phone_sip_port or proxy_port. Default value is 33000.	section 4.5.3 on page 33
session_expires	Specifies the timeout period, in seconds, that the phone transmits or receives a RE-INVITE that refreshes a session that is still in progress. Valid settings include all positive numbers. Recommended value is 3600. Default value is 3600.	section 4.5.3 on page 33

Figure 9-5 SIP Configuration Parameters (Continued)

Parameter	Description	Reference
sip_invite_retrans	Specifies number of unsuccessful INVITE retransmissions before phone switches to backup proxy. Valid settings range from 1 to 6. Default value is 6.	section 4.5.3 on page 33
sip_non_invite_retrans	Specifies number of unsuccessful retransmissions (other than INVITE) before phone switches to backup proxy. Valid settings range from 1 to 10. Default value is 10.	section 4.5.3 on page 33
subscription_expires	Specifies time period, in seconds, after which a SUBSCRIBE expires. This value is inserted into the Expires header field. Valid settings include all positive numbers. Recommended value is 3600. Default value is 3600.	section 4.5.3 on page 33
validate_sip_msg	When enabled, the phone verifies the IP address, device ID, and port number of any SIP messages that it receives. Valid settings are 'yes' and 'no': 'yes' - enables option 'no' - disables option Default value is 'yes'.	section 4.5.3 on page 33
voice_mail_uri	Specifies the name or extension of the voice mail server Default value is voice.mail (default uri is *86).	section 7.6.1 on page 79

Figure 9-5 SIP Configuration Parameters (Continued)

9.4.2.1 Mandatory Fields

The **proxy_addr** parameter must be set in order for the phone to send SIP address through the proxy server. The proxy server receives SIP requests from the phone and forwards them to the next intermediate device in the network. This parameter sets the address of the proxy server for the phone and provides no meaningful default if it is omitted from the configuration files.

9.4.2.2 Sample Configuration File

Figure 9-6 displays the SIP settings section from a sample configuration file.

```
[SIP_CONFIG]
phone_sip_port=5060
rtp_start_port=33000
;The Device ID is the user portion of the SIP URI
device_id=West
;The Display Name is sent in SIP messages
display_name=Zultys WIP2
;This must always be set to "yes"
register_w_proxy=yes
proxy_addr=10.1.32.224
proxy_port=5060
voice_mail_uri=258
registration_expires=3600
```

Figure 9-6 Sample Configuration File – SIP Settings

9.4.3 General Information

General information parameters configure miscellaneous phone settings. All general information parameters are optional.

Figure 9-7 lists the General Information configuration parameters.

Parameter	Description	Reference
clear_settings	Determines the frequency that settings are cleared when the phone is powered on. Valid settings are 0, 1, and 2: 0 - phone never clears the user settings. Each time the phone powers on, it retains the user settings previously entered. 1 - phone clears the user settings only on the next power on. Configuration file provides user settings the next time the phone is powered on, then sets this parameter to 0. 2- phone clears the user settings each time it powers on. Configuration file provides user settings after each clearing. Default value is 2.	section 4.2.1.5 on page 24
country	Specifies the call progress tones used by the phone, as defined by country variation. Valid settings include Afghanistan, Algeria, Argentina, Australia, Austria, Bahrain, Belarus, Belgium, Brazil, Bulgaria, Canada, Chile, China, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Japan, Jordan, Korea, Kuwait, Latvia, Lebanon, Libya, Lithuania, Luxembourg, Mexico, Morocco, Netherlands, New Zealand, Norway, Oman, Philippines, Poland, Qatar, Romania, Russia, Saudi Arabia, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syria, Thailand, Tunisia, Turkey, UAE, UK, USA, Ukraine, and Yemen. Default value is USA.	section 6.3.2 on page 57
date_fmt	Specifies the format for the LCD date display. Valid entry is a text string that uses the date format tags listed below; section 9.4.3.2 lists the valid format tag combinations. Format tags include: %c - data and time format defined for country parameter setting %d - day of month as decimal number (01-31) %m - month as decimal number (01-12) %Y - year with century, as decimal number Default %d/%d/%Y yields the following: 09/15/2005	section 5.2.3.4 on page 40
date_time_order	Specifies the display order of the date and time on the LCD. Valid settings are 0 and 1: 0 - time is displayed first 1 - date is displayed first Default value is 1.	section 5.2.3.4 on page 40

Figure 9-7 General Information Parameters

Parameter	Description	Reference
digits_timeout	Specifies the time in seconds that the phone waits after the last digit is dialed before sending the number to the SIP server if the # button is not pressed. Valid settings range from 1 to 30. Default value is 3.	section 6.2.1.5 on page 55
display_events	Specifies time in seconds that some error messages and information screens are displayed on the LCD. Valid settings range from 2 to 10. Default value is 2.	section 5.2.4 on page 40
greeting_message	Specifies the message displayed on the top row of the LCD. Message contains up to twenty alphanumeric characters. Default message is WIP2 SIP Phone .	section 5.2.3.2 on page 39
idle_rsb	Specifies the right soft button option when the LCD displays the Home panel. Valid settings are 0, 1, and 2: 0 - Presence 1 - Phone Book 2 - Page Default value is 0.	section 5.3.4 on page 43
language	Specifies the language for displaying menu items. Valid settings include: en_US.iso88591 - English de_DE.iso88591 - German es_ES.iso88591 - Spanish fr_FR.iso88591 - French el_GR.iso88597 - Greek it_IT.iso88591 - Italian pl_PL.iso88592 - Polish pt_PT.iso88591 - Portuguese ru_RU.iso88595 - Russian sv_SE.iso88591 - Swedish uk_UA.iso88595 - Ukrainian Default value is en_US.iso88591	section 5.2.3.3 on page 40
password	Specifies password required to change the protected settings. Valid passwords contain four to fifteen numeric (0-9) digits. Default password is 985897.	section 8.7.1 on page 108

Figure 9-7 General Information Parameters (Continued)

Parameter	Description	Reference
software_version	Specifies the software version that the phone must use. If the phone is running a different version, it will attempt to load the correct version from the TFTP server.	section 4.4.2 on page 28
time_fmt	Specifies the format for the LCD time display. Valid entry is a text string that uses the time format tags listed below. Section 9.4.3.1 on page 142 lists the valid format tag combinations. Format tags include: %H - hour in 24-hour format (00-23) %l - hour in 12-hour format (01-12) %M - minute as decimal number (00-59) %f - am/pm indicator for 12-hour clock Enter other characters (such as :) Example: %I:%M%f yields the following: 5:45p Default: %H:%M (sample default: 15:45).	section 5.2.3.4 on page 40
timezone	Specifies the timezone location of the phone. Parameter value is the offset from GMT in minutes; valid settings range from -720 to +720. Default value is -480.	section 3.2.6.1 on page 18

Figure 9-7 General Information Parameters (Continued)

9.4.3.1 Programming Restrictions: Time Format

Figure 9-8 lists the two time format (time_fmt) tag combinations supported by the phone. The phone will not properly update the time and date if an unsupported combination is used.

Time Format	Format String
24 hour format: display hours and minutes	%H:%M
12 hour format: display hours and minutes	%I:%M%f

Figure 9-8 Time Format Strings Supported by the WIP2

9.4.3.2 Programming Restrictions: Date Format

Figure 9-9 lists the valid date formats when you select a time format that does not display seconds. The phone will not properly update the time and date if an unsupported combination is used.

Date Format	Format String
10/6/2003	%m/%-d/%Y
10-6-2003	%m-%-d-%Y
2003/10/06	%Y/%m/%d
2003-10-06	%Y-%m-%d

Figure 9-9 Date Format Strings Supported by the WIP2

9.4.3.3 Sample Configuration File

Figure 9-10 displays the General Information settings section from a sample configuration file.

```
[GENERAL_INFO]
software_version=1.0.0
;The message displayed on the LCD in idle mode
greeting_message=WIP2 Phone
password=985897
time_fmt=%H:%M
date_fmt=%m-%d-%Y
date_time_order=0
;This is the offset from GMT, in minutes
timezone=-480
country=USA
language=en_US.iso88591
clear_settings=2
```

Figure 9-10 Sample Configuration File – General Information Settings

9.4.4 Hardware Configuration

Hardware configuration parameters adjust LCD and volume characteristics. Figure 9-11 lists the hardware configuration parameters.

Parameter	Description	Reference
handset_volume	Adjusts the handset volume. Values range from 0 (silent) to 20 (loud). Default value is 10.	section 5.4.3 on page 46
lcd_contrast	Adjusts the LCD contrast. Values range from 1 (light) to 20 (dark). Default value is 7.	section 5.2.3.1 on page 39
ring_volume	Adjusts the ringer volume. Values range from 0 (silent) to 20 (loud). Default value is 10.	section 5.4.3 on page 46
speaker_volume	Adjusts the speaker volume. Values range from 0 (silent) to 20 (loud). Default value is 10.	section 5.4.3 on page 46

Figure 9-11 Hardware Configuration Parameters

All hardware configuration parameters are optional. Figure 9-12 displays the Hardware settings section from a sample configuration file.

```
[HW_CONFIG]
lcd_contrast=8
ring_volume=5
speaker_volume=5
handset_volume=5
```

Figure 9-12 Sample Configuration File – Hardware Configuration Settings

9.4.5 Audio Information

Audio information parameters configure ring tone styles. Figure 9-13 lists the Audio Information configuration parameters.

Parameter	Description	Reference
codec	Specifies speech encoding method. Valid settings are 0, 1, 2, and 3: 0 specifies G.711 μ -law 1 specifies G.711 A-law 2 specifies G.729A 3 specifies G.729AB Default value is 0.	section 4.5.4 on page 34
cust_ring2	Specifies the file that provides the call waiting tone when ring_tone2 is set to 4 (custom). File directory is specified by sound_url. Valid setting is string that represents the file name. Default value is NULL string.	section 6.4.1.1 on page 59
distinctive_ring	Specifies the use of different ring tones for internal and external calls. Valid parameter settings are 'yes' and 'no' as follows: yes - internal and external calls use different ring tones as specified by int_ring_tone and ext_ring_tone, respectively. no - all calls use internal ring tone setting as specified by int_ring_tone. Default value is yes.	section 6.4.1.1 on page 59
ext_call_answer	Controls the auto answer feature for external calls. Valid settings range from 0 to 2: 0 - phone rings normally 1 - phone automatically answers after one ring and routes the caller's voice through the external speaker 2 - phone automatically answers after one ring and routes the caller's voice to the handset connector Default value is 0.	section 6.4.3.2 on page 61
ext_cust_ring	Specifies the file that provides external ring tone when ext_ring_tone is set to 4 (custom). File directory is specified by sound_url. Valid setting is string that represents the name of the file. Default value is NULL string.	section 6.4.1.1 on page 59
ext_ring_tone	Specifies the ring tone for calls received from phones outside of the enterprise. Valid settings range from 0 to 4 as follows: 0 - ring pause 1 - ring ring 2 - short ring 3 - bell bell 4 - sound defined by custom file (see ext_cust_ring) Default value is 0.	section 6.4.1.1 on page 59

Figure 9-13 Audio Information Configuration Parameters

Parameter	Description	Reference
hold_tone	This tone is played once every 30 seconds when you have a call that is on hold. Valid settings range from 0 to 2 as follows: 0 - off 1 - beep 2 - bleep Default value is 0.	section 7.1.1.1 on page 67
inst_msg_mode	This tone is played when the phone receives an instant message. Valid settings range from 0 to 2 as follows: 0 - off 1 - first tone 2 - second tone 3 - vibrates Default value is 0.	section 6.4.3.2 on page 61
int_call_answer	Controls the auto answer feature for internal calls. Valid settings are 0 and 1: 0 - phone rings normally 1 - phone automatically answers after one ring and routes the caller's voice through the external speaker Default value is 0.	section 6.4.3.2 on page 61
int_call_disconnect	Controls the phone behavior after the other party disconnects a phone call. Valid settings are 0, 1, and 2: 0 - phone plays the busy tone until you hang up 1 - phone plays a busy tone twice (five seconds) before disconnecting 2 - phone disconnects without playing any tone Default value is 0.	section 6.6.2 on page 64
int_cust_ring	Specifies the file that provides internal ring tone when int_ring_tone is set to 4 (custom). File directory is specified by sound_url. Valid setting is string that represents the name of the file. Default value is NULL string.	section 6.4.1.1 on page 59
int_ring_tone	Specifies the ring tone for calls received from phones inside the enterprise. Also specifies the ring tone for all calls if distinctive_ring is set to 'no'. Valid settings range from 0 to 4 as follows: 0 - ring pause 1 - ring ring 2 - short ring 3 - bell bell 4 - sound defined by custom file (see int_cust_ring) Default value is 0.	section 6.4.1.1 on page 59

Figure 9-13 Audio Information Configuration Parameters (Continued)

Parameter	Description	Reference
key_click	Specifies the tone that the phone emits when you press a button or a non numeric key. Valid settings range from 0 to 3 as follows: 0 - off 1 - click 2 - beep 3 - bleep Default value is 0.	section 5.3.2 on page 42
ring_tone2	Specifies the call waiting tone that is played when you are talking on the phone and the phone receives another call. Valid settings range from 0 to 5 as follows: 0 - short high beep 1 - long high beep 2 - short low beep 3 - long low beep 4 - sound defined by custom file (see cust_ring2) 5 - silent Default value is 0.	section 6.4.1.1 on page 59
ring_vibe_mode	Specifies the call alert mode used to signal an incoming call. Valid settings range from 0 to 2 as follows: 0 - ring tone 1 - vibration 2 - ring tone and vibration Default value is 0.	section 6.4.1.1 on page 59
sound_url	Specifies the http directory location for files that define custom ring tones. Valid setting is http://<name of directory> Default value is http://www.zultys.com/phone_sounds/	section 6.4.1.1 on page 59
startup_tone	Specifies the tone that the phone emits when you power up the phone. Valid settings range from 0 to 5 as follows: 0 - none 1 - white noise 2 - bleep bleep 3 - zring Default value is 3.	section 8.6.7.10 on page 101

Figure 9-13 Audio Information Configuration Parameters (Continued)

All audio information parameters are optional. Figure 9-14 displays the Audio Information settings section from a sample configuration file.

```
[AUDIO_INFO]
ext_ring_tone=0
ext_cust_ring=
int_ring_tone=0
int_cust_ring=
ring_tone2=0
cust_ring2=
key_click=0
codec=0
distinctive_ring=yes
sound_url=
```

Figure 9-14 Sample Configuration File – Audio Information Settings

9.4.6 Locations

Location parameters configure the deployment location for the phones that are controlled by your system. You can specify an identifier and a time zone location for each location in the configuration file.

9.4.6.1 Specifying a Location

Each location requires two settings: the identifier and the time zone.

- Lx configures the text that identifies the location. For example:

```
L1=Sunnyvale
```

specifies a location in Sunnyvale

```
L2=Franklin Road
```

may indicate a location somewhere on Franklin Road

Each location must be identified by a unique tag that is constructed with the letter L followed by an integer and an equals sign:

```
L1=Sunnyvale
```

```
L12=Chicago
```

```
L35=Manhattan
```

- Tx configures the time zone for the location. Numerical offsets from GMT or Linux time zone constants can be used to specify time zone values. For example:

```
T1=America/Los_Angeles
```

specifies the Pacific Time Zone in the USA

```
T2= +720
```

specifies a time zone that is six hours (720 minutes) later than GMT

Each time zone setting is linked to a location identifier, which is constructed with the letter T followed by the location's integer and an equals sign:

```
T1=America/Los_Angeles
```

```
T12=CST+6:00
```

```
T35=EST+5:00
```

are all valid time zone indicators.

9.4.6.2 Default Location

After specifying the available locations, you can select one as a Default Location. Setting the default location from the configuration file bypasses the location selection step when booting the phone, as described in section 3.2.3. The command to select a default location is `def_location`:

```
def_location=Sunnyvale
```

9.4.6.3 Sample Configuration File

Figure 9-15 displays the Location settings section from a sample configuration file.

```
[LOCATIONS]
L1=Sunnyvale:Vaqueros
T1=PST+8:00
L2=Moscow
T2=MST-3:00
L3=Chicago
T3=PST+8:00
def_location=Sunnyvale:Vaqueros
```

Figure 9-15 Sample Configuration File – Locations Settings

Web Interface Configuration Utility

10.1 Introduction

The Web Interface Configuration Utility provides a method to configure your phone by accessing your web browser. This configuration method is convenient for users that do not have access to configuration files through a TFTP server. All web interface parameters have equivalent commands that are accessible either through the menu (see Chapter 8, starting on page 81) or through configuration file commands (see Chapter 9, starting on page 131). This chapter describes each Web Interface Configuration Utility panel.

10.1.1 Accessing the Configuration Utility

The utility is accessible through a web browser that accesses the network where your phone resides. Enter the IP address of the phone in the address entry box of your web browser and press the enter key. The *Login* panel, shown in figure 10-1, will appear in your browser. Enter the password, then press the **Login** button, to access the *Home* panel, as shown in figure 10-2.

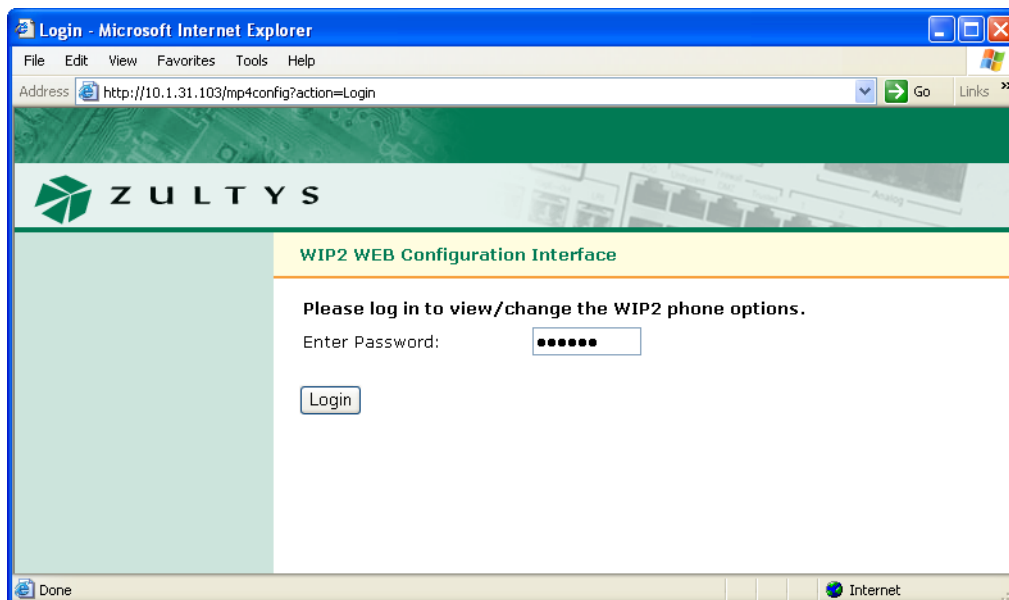


Figure 10-1 Login panel

10.1.2 Interface Structure

Each panel is accessed through a menu structure that begins on the *Home* panel. Each first level menu is listed on the left side of the Home panel; click on a menu to display the desired panel and a list of sublevel panels. Successive panels are accessed by clicking on sublevel panels.

Each web interface panel has three functional regions. The *Menu*, located on the left side of the panel, is light green and lists the web interface panels that are accessible from the current panel. The *Address bar*, located below the Zultys banner, lists the name of the current panel and the web interface path required to display this panel. The *data entry section* provides information about your phone and data entry boxes for setting parameter values.

All panels with editable parameters provide an **Update** button which must be pressed to download changes to the phone. The **Update** button becomes active only after values are assigned to all required parameters. Some changes are saved to the phone's memory immediately after you press the **Update** button while other changes are saved only after power cycling the phone or performing a reset operation. If you have not performed any operations that require power cycling, the menu section displays a *Log Out* command, as shown in figure 10-2. If you perform an operation that requires that the phone is power cycled, the *Log Out* command is replaced by a *Restart command*, as shown in figure 10-23.

10.2 Home panel

The *Home* panel, shown in figure 10-2, provides access to all web interface panel paths. To return to the *Home* panel from any web interface panel, select *Home* in the address bar.

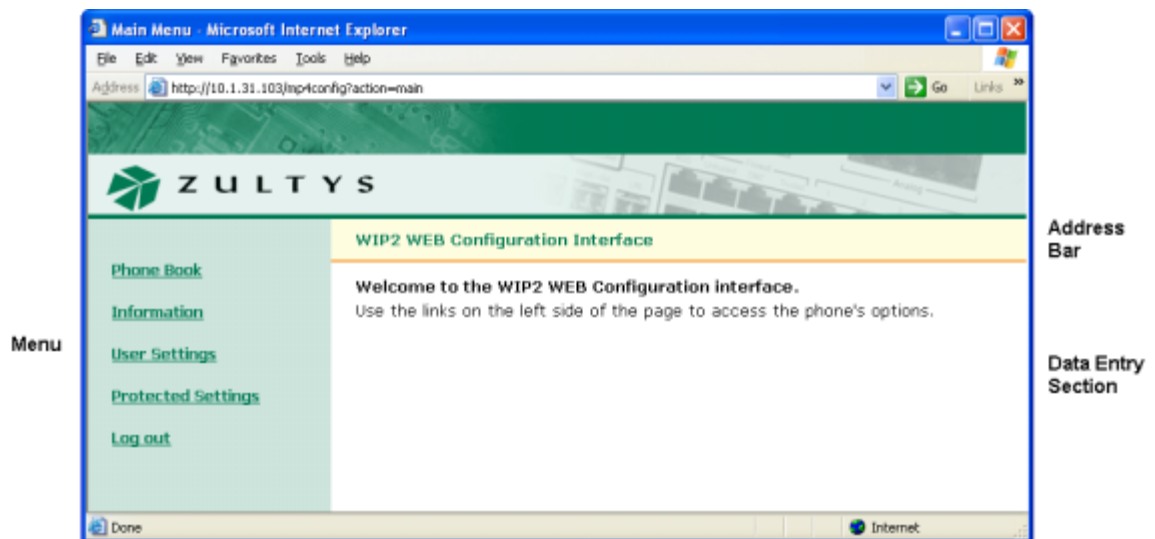


Figure 10-2 Home panel

10.3 Phone Book

You can store up to 100 contacts in the phone book at memory locations referred to as 00 to 99. Location 00 is reserved for access voice mail, as configured on the Names and Number panel (section 10.6.4 on page 168).

10.3.1 Add Entry panel

The *Add Entry* panel, shown in figure 10-3, adds contacts into empty phone book memory locations. To access the *Add Entry* panel, select *Phone Book | Add Entry* from the menu.

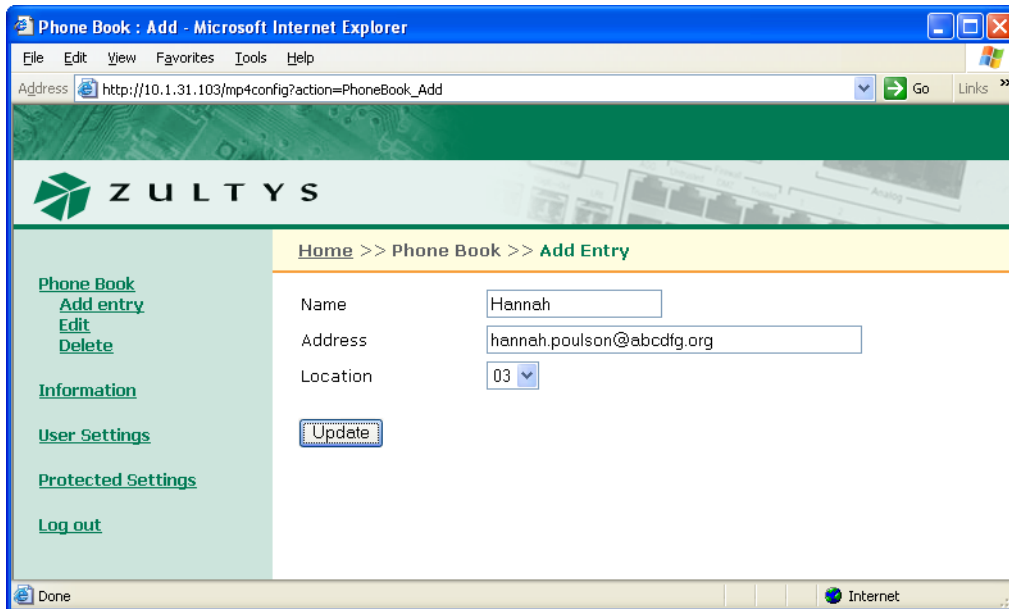


Figure 10-3 Phone Book – Add Entry Panel

To add a contact into your phone book:

1. Enter the contact's name in the **Name** data entry box.
2. Enter the contact's SIP address or phone number in the **Address** data entry box. The phone ignores punctuation characters when dialling phone numbers.
3. Press the **Update** button.

10.3.2 Edit panel

The *Edit* panel, shown in figure 10-4, displays the contents of your phone book and allows you to edit any filled memory location. To access the *Edit* panel, select *Phone Book | Edit*.

To edit a contact:

1. Press that contact's **Edit** button on the right side of the panel.

The Web Interface displays a panel similar to the Add Entry panel, with the field filled with the contact's information.
2. Change the contact information as desired.

An asterisk next to a memory location number indicates that location is filled with contact information. Storing a contact in a filled location removes the original information.
3. After editing the contents of the desired phone book locations, press the **Update** button to save your changes to the phone.

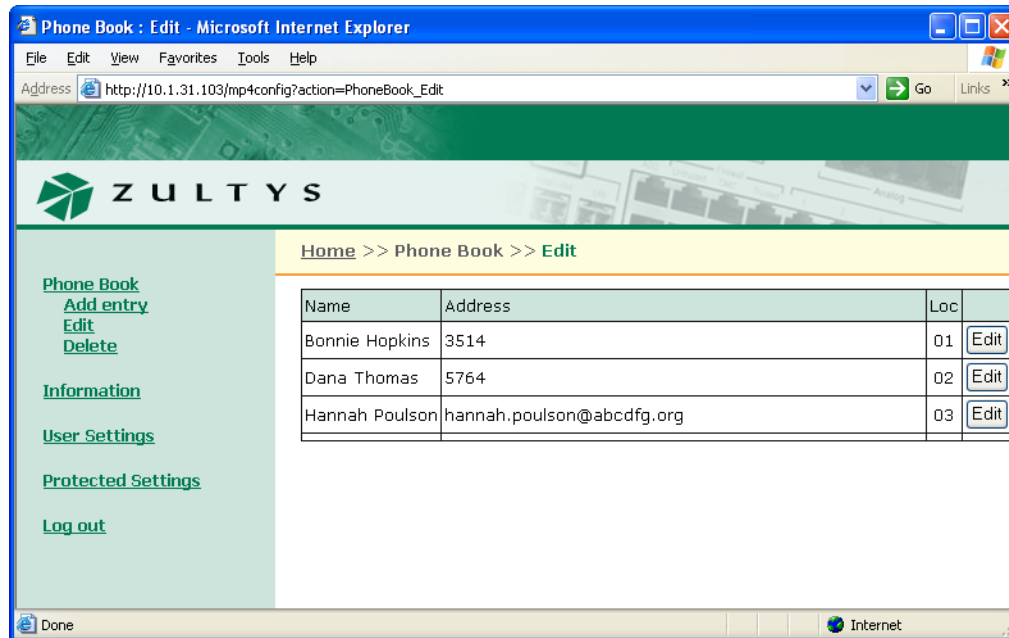


Figure 10-4 Phone Book – Edit panel

10.3.3 Delete panel

The *Delete* panel, shown in figure 10-5, removes contacts from of your phone book. To access the *Delete* panel, select *Phone Book | Delete* from the interface menu.

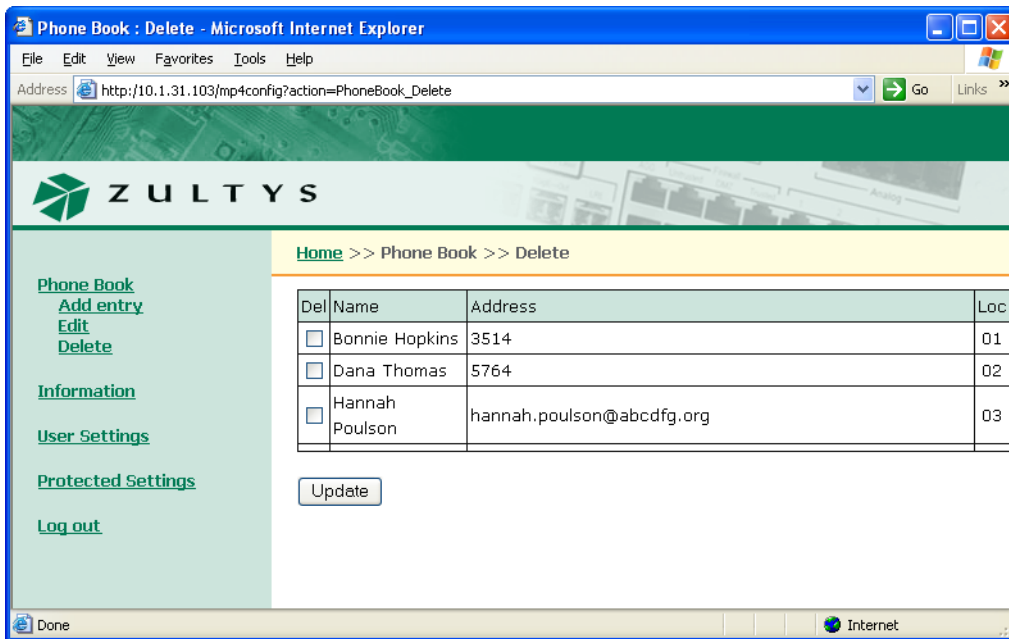


Figure 10-5 Phone Book – Delete panel

To remove a contact from the phone book:

1. Place a check mark to the left of the contact,
2. Press the **Update** button.

10.4 Information

The Information menu displays circuit status, operational, and manufacturing information about the phone. You cannot change any parameter settings directly from Information menu panels. Section 8.5 on page 89 describes the menu commands that accesses this information directly from the phone.

10.4.1 Times Panel

The *Times* panel, as shown in figure 10-6, indicates the time that the phone was initially powered on and the total activity time of the phone. For more information, see section 3.2.6.3 on page 20. To access the *Times* panel, select *Information* | *Times* from the interface menu.

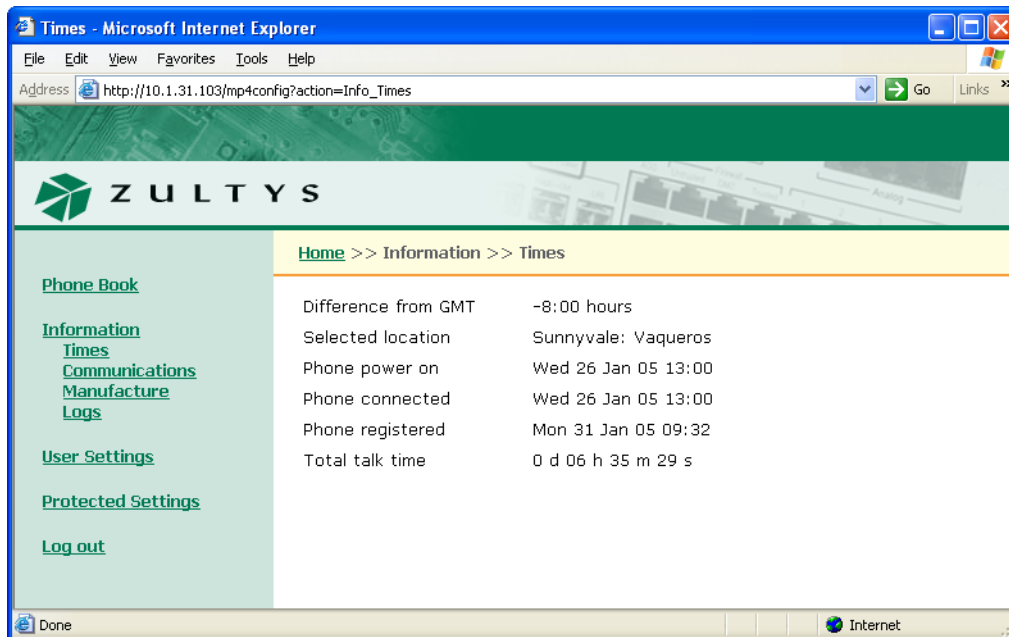


Figure 10-6 Information – Times panel

- **Difference from GMT:** This is the value that was either manually entered (section 3.2.6.1 on page 18) or obtained from the configuration file.
- **Selected Location:** This parameter specifies the geographic location of the phone. The setting of this parameter may affect the way that the phone is managed by the system.
- **Phone Power On:** This parameter indicates when the phone was turned on.
- **Phone Connected:** This parameter indicates when the phone was connected to the network.
- **Phone Registered:** This parameter indicates when the phone last registered with the SIP server. The phone registers periodically, typically each hour.

- **Total Talk Time:** This parameter is the summation of time spent on calls that originated from and were received by the phone. The time is reset each time the phone is power cycled.

10.4.2 Communications Panel

The *Communications* panel, shown in figure 10-7, displays circuit and configuration file status along with the address of the TFTP server that stores the configuration files. For more information, see section 3.2.6.3 on page 20.

To access the *Communications* panel, select *Information | Communications* from the interface menu. To update panel contents, press the **Refresh** button.

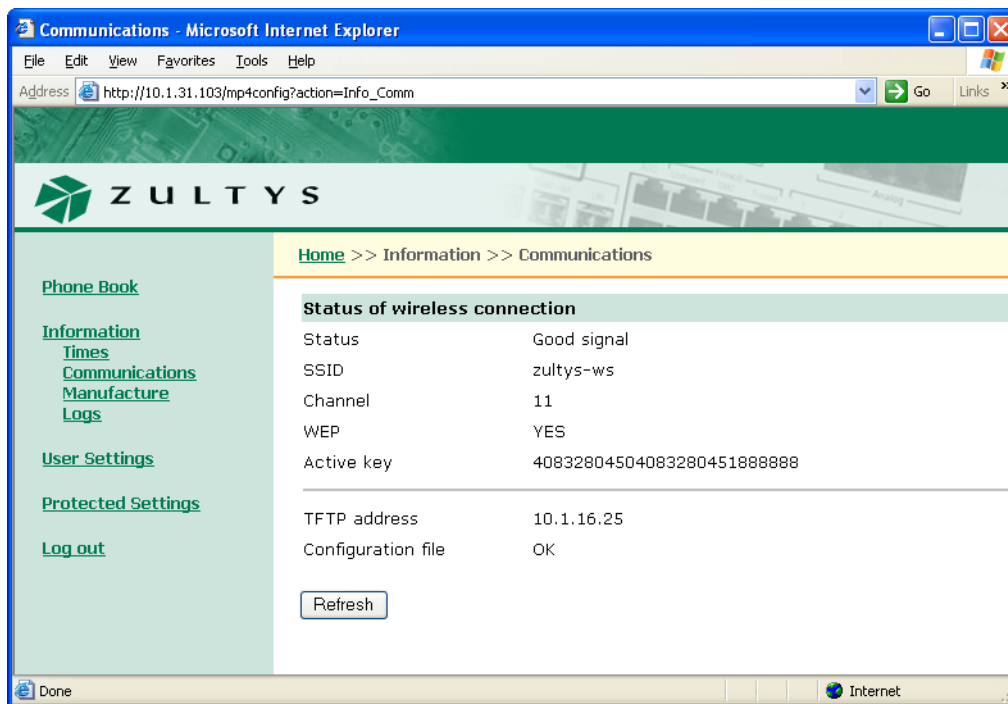


Figure 10-7 Information – Communications panel

- **Status:** This panel displays the WIP2 reception status of the wireless signal.
- **SSID:** This panel the wireless network that the WIP2 is configured to access. Refer to section 4.5.1 on page 31 for information on altering the SSID setting.
- **Channel:** This panel displays the 2.4 GHz wireless band that the WIP2 is using. This parameter cannot be configured by the user. Refer to section 4.5.1 on page 31.
- **WEP:** This panel displays the WIP2 use of the WIP security protocol. Valid parameter settings are Yes and No. Refer to section 4.5.1 on page 31 for information on altering the WEP setting.
- **Active Key:** This panel displays the WEP key used by the WIP2 to secure communications. Refer to section 4.5.1 on page 31 for information on altering the WEP key.

10.4.3 Manufacture Panel

The *Manufacture* panel, as shown in figure 10-8, displays information concerning the manufacture of your phone. For more information, see section 4.4 on page 27.

To access the *Manufacture* panel, select *Information* | *Manufacture* from the interface menu.

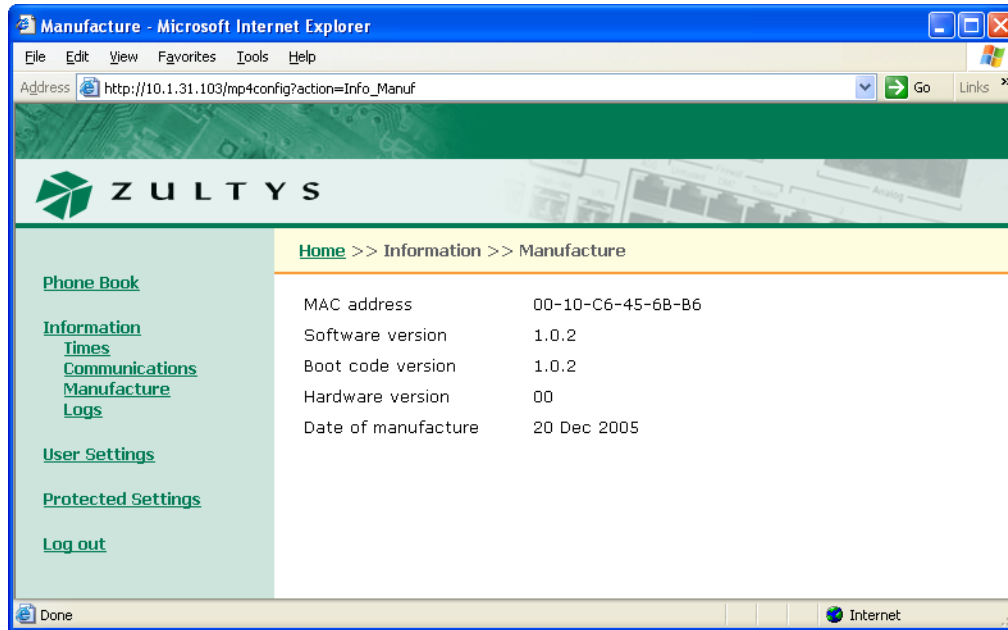


Figure 10-8 Information – Manufacture panel

- **MAC Address:** This number, which uniquely identifies your device, is hard coded into the phone during manufacture and cannot be modified.
- **Software version:** The software version installed on the phone. Later versions may include more features or better support for existing features.
- **Boot code version:** The boot code version installed on the phone. The boot code resides permanently on the phone.
- **Hardware version:** The hardware version of the phone.
- **Date of manufacture:** The date the phone was manufactured.

10.4.4 Logs Panel

The Logs Panel provides access to two Log screens: Current RTP Status and RTP History.

10.4.4.1 Current RTP Status

The Current RTP Status Log, as shown in figure 10-9, displays the RTP settings for the sessions currently routed through the phone.

To access the *Current RTP Status* panel, select *Information* | *Logs* | *Current RTP Status* from the interface menu. To update the log, press the **Refresh** button.

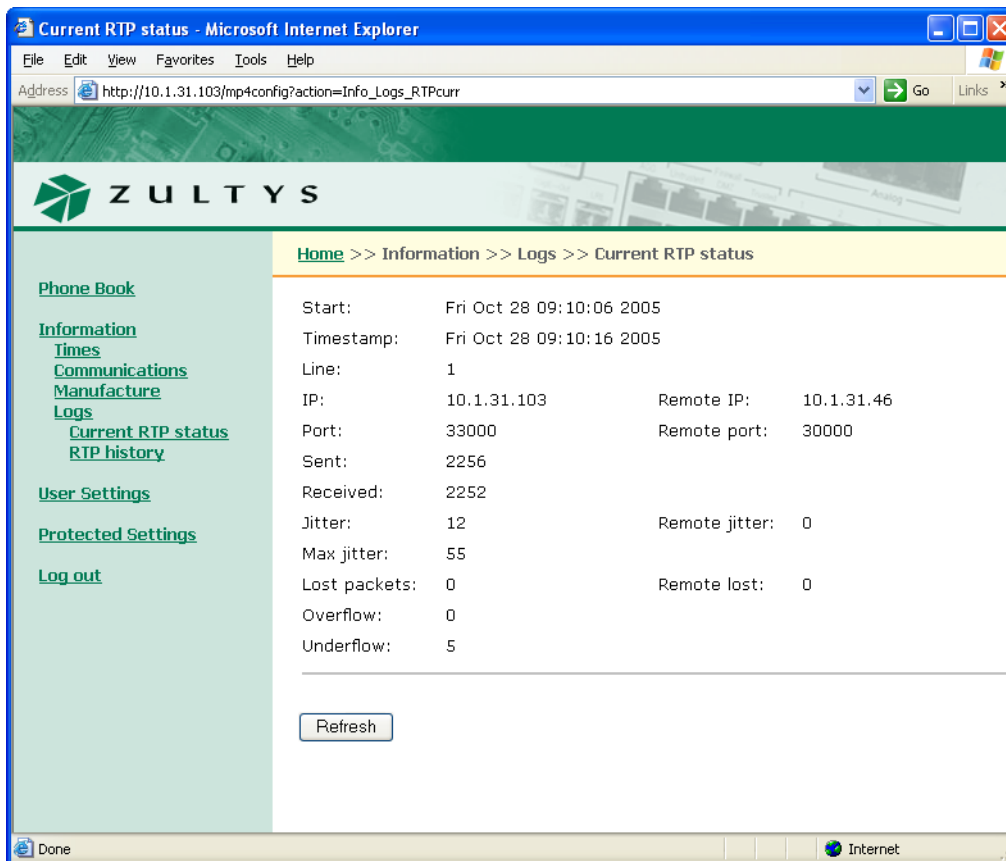


Figure 10-9 Current RTP Status Log

10.4.4.2 RTP History Log

The *RTP History Log*, as shown in figure 10-10, displays the RTP settings of the most recent 32 sessions routed through the phone.

To access the *RTP History Log* panel, select *Information | Logs | RTP History Log* from the interface menu. To update the RTP History log, press the **Refresh** button. Press the **Clear** button to delete the log contents.

10.5 User Settings Menu

User Settings Menu panels provides options for customizing your phone to suit your personal preferences.

10.5.1 General Info panel

The *General Info* panel, as shown in figure 10-11, provides access to LCD display and power up configuration options.

To access the *General Info* panel, select *User Settings | General Info* from the interface menu. After adjusting the settings, press the **Update** button to store the changes.

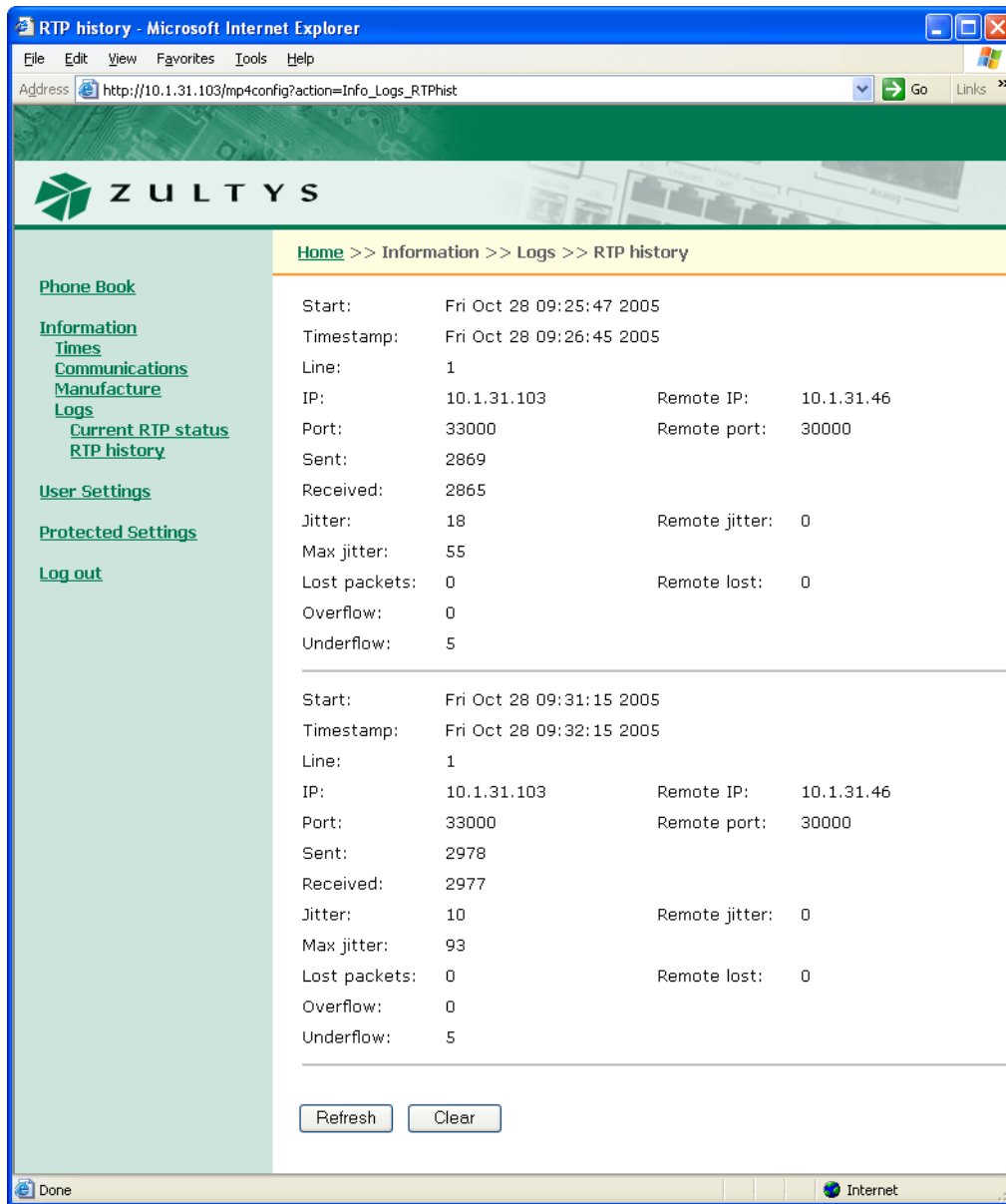


Figure 10-10 RTP History Log

- **LCD contrast:** The **LCD contrast** parameter alters the contrast of the LCD to improve readability. The combo box contains the current LCD contrast value. To change the LCD contrast, select the desired value in the combo box. See section 5.2.3.1 on page 39.
- **Greeting Message:** The **Greeting message** parameter determines the message on the top row of the LCD when the phone is idle. The data entry box contains the current greeting message. To change the greeting message, type the desired message in this box. See section 5.2.3.2 on page 39.
- **Event timer:** The **Event Timer** parameter determines the period that the phone displays status messages. The combo box contains the current value. See section 5.2.4 on page 40.

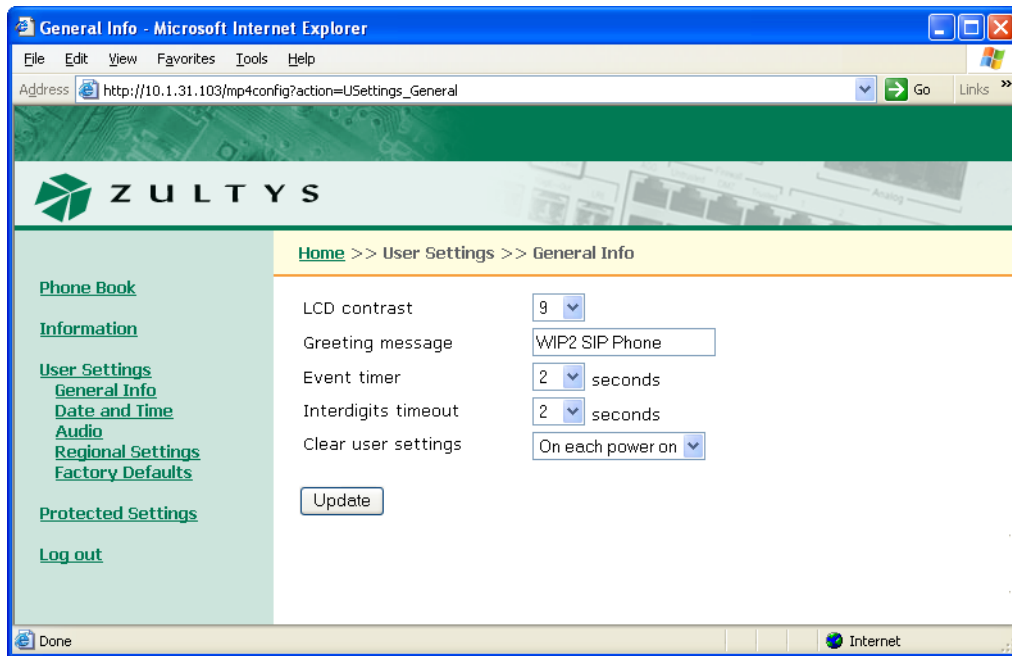


Figure 10-11 User Settings – General Info panel

- **Dial Timeout:** The **Dial Timeout** parameter determines the period that the phone waits after the last digit is dialed before sending the number to the SIP server if the # button is not pressed. See section 5.3.3 on page 43.
- **Clear user Settings:** The **Clear user settings** parameter determines the settings that the phone uses each time it powers up. The data entry box contains the current value. See section 4.2.1.5 on page 24.

Valid parameter settings include:

- *Never:* Each time the phone powers on, it retains the user settings that were previously entered. This parameter is typically set to **never** in most situations.
- *On next power on:* The next time that the phone powers on, it takes its user settings from the configuration file saved on the TFTP site. After the phone takes its settings from the configuration file, it sets this parameter to *never*, and will not take the settings from the configuration file again.

This is very useful if a telephone is being transferred to a different person or if the person is changing locations. The administrator can maintain the default setting (within the administration UI) and change this parameter on the phone to *on next power on*. The next time the phone boots up it will take the default configuration, eliminating any undesirable settings. The new phone user can now configure his or her own preferences.

- *On each power on:* The phone takes its user settings from the configuration file saved on the TFTP site every time that the phone powers up. This is useful if the phone is in a common area and users may change the settings from those desired by the system administrator.

10.5.2 Date and Time

The *Date and Time* panel, shown in figure 10-12, restarts the phone to adjust date and time settings and change the GMT time offset. To restart the phone, select **Yes** and press the **Update** button. After the phone restarts, it prompts for the time, date, and GMT offset if DHCP is not enabled and the phone cannot access its configuration files. See section 3.2.6.1 on page 18.

To access the *Date and Time* panel, select *User Settings* | *Date and Time* from the interface menu.

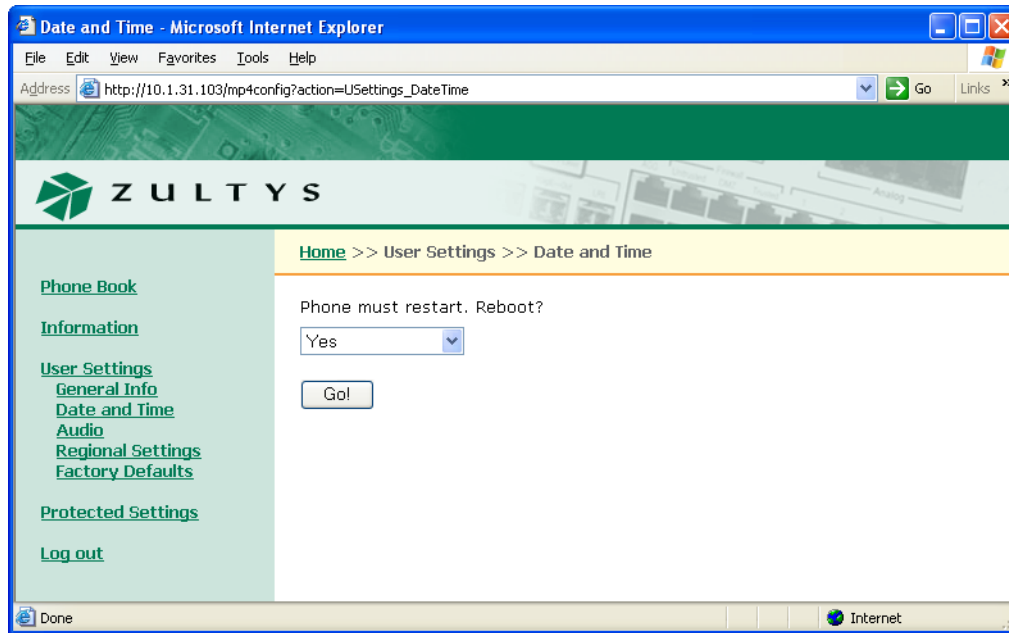


Figure 10-12 User Settings – Date and Time panel

10.5.3 Audio

The Audio panel, shown in figure 10-13, configures ring tones and sounds that the phone emits when a button or key is pressed. To access the *Audio* panel, select *User Settings* | *Audio* from the interface menu. Press the **Update** button to store the parameter changes to the phone.

The *Audio* panel displays the configuration options for the following parameters:

- **External ring tone:** This parameter specifies the tone that the phone plays when receiving a call from outside of your enterprise.¹ When selecting *custom*, you must select the WAV file that provides the custom tone in the adjacent data entry box. See section 6.4.1.1 on page 59.
- **Internal ring tone:** This parameter specifies the tone that the phone plays when receiving calls from a source internal to your enterprise.¹ When selecting *custom*, you must select the WAV file providing the custom tone in the adjacent data entry box. See section 6.4.1.1 on page 59.
- **External call answer:** This parameter specifies the phone's response to incoming calls from sources external to your enterprise. You can set the phone to ring normally or to automatically answer through the speaker or the handset after one ring. See section 6.4.3.2 on page 61.

1. If **Distinctive Ring** (section 10.6.5 on page 169) is set to *do not allow*, then **External ring tone** and **Internal ring tone** are replaced by the **Ring Tone** parameter that specifies the tone that the phone plays when it receives any phone call.

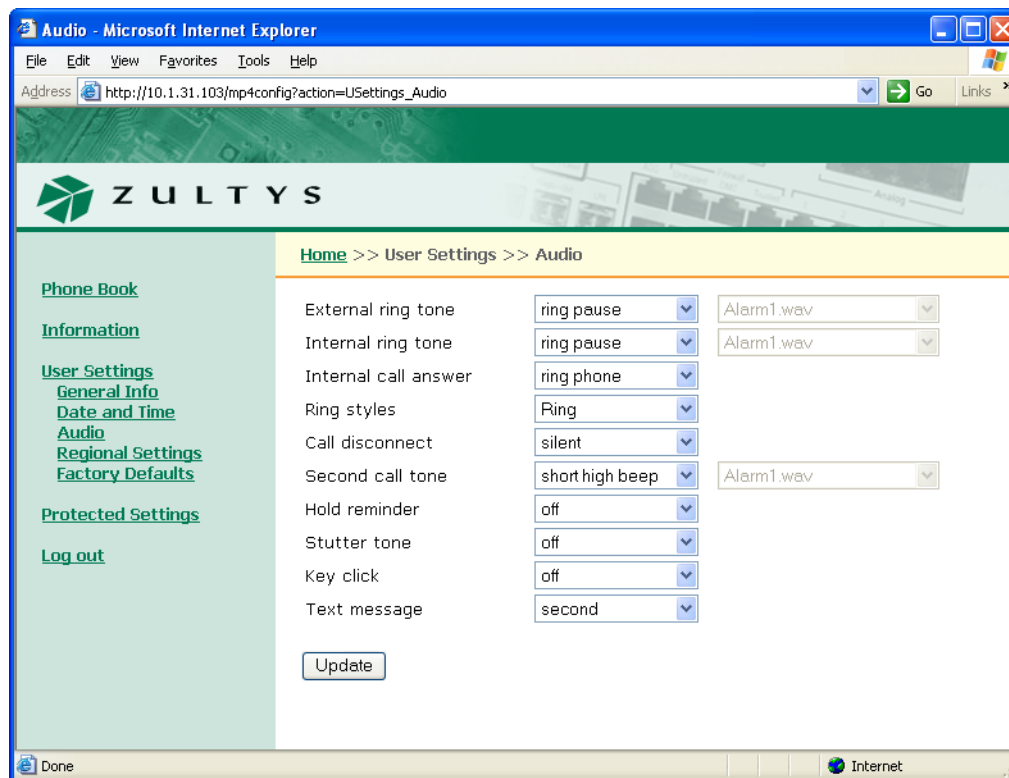


Figure 10-13 User Settings – Audio panel

- **Internal call answer:** This parameter specifies the phone's behavior when receiving a call from a source internal to your enterprise. You can set the phone to ring normally or to automatically answer through the speaker or handset after one ring. See section 6.4.3.2 on page 61.
- **Ring Styles:** This parameter specifies the method of alert you of an incoming call. Alert methods include audible tones or vibrating. See section 6.4.1.1 on page 59.
- **Call Disconnect:** This parameter specifies phone behavior when the other party terminates a call. *Busy Tone* programs the phone to play a busy tone until you press the red END button. *Busy Tone Timeout* programs the phone to play a busy tone for five seconds. *Silent* programs the phone to disconnect without playing any tone. See section 6.6.2 on page 64.
- **Second call tone:** This parameter specifies the tone that the phone plays when receiving a call while you are talking on the phone. When selecting *custom*, you must select the WAV file providing the custom tone in the adjacent data entry box. See section 6.4.1.2 on page 60.
- **Hold reminder tone:** This parameter specifies the sound that your phone plays periodically when you have a call on hold. See section 7.1.1.1 on page 67.
- **Startup Tone:** This parameter specifies the tone that the phone emits when you power up the phone. See section 3.2.2 on page 14.
- **Key click:** This parameter specifies the tone that your phone plays when you press a button while you are not engage in a phone conversation. See section 5.3.2 on page 42.
- **Text Message:** This parameter specifies the tone that your phone plays when you receive a text message. See section 7.6.2 on page 80.

10.5.4 Regional Settings

The *Regional Settings* panel, shown in figure 10-14, sets country, language, time format, and date format parameters. To access the *Regional Settings* panel, select *User Settings | Regional Settings* from the interface menu. Press the **Update** button to store changes to the phone.

The *Regional Settings* panel displays the configuration options for the following parameters:

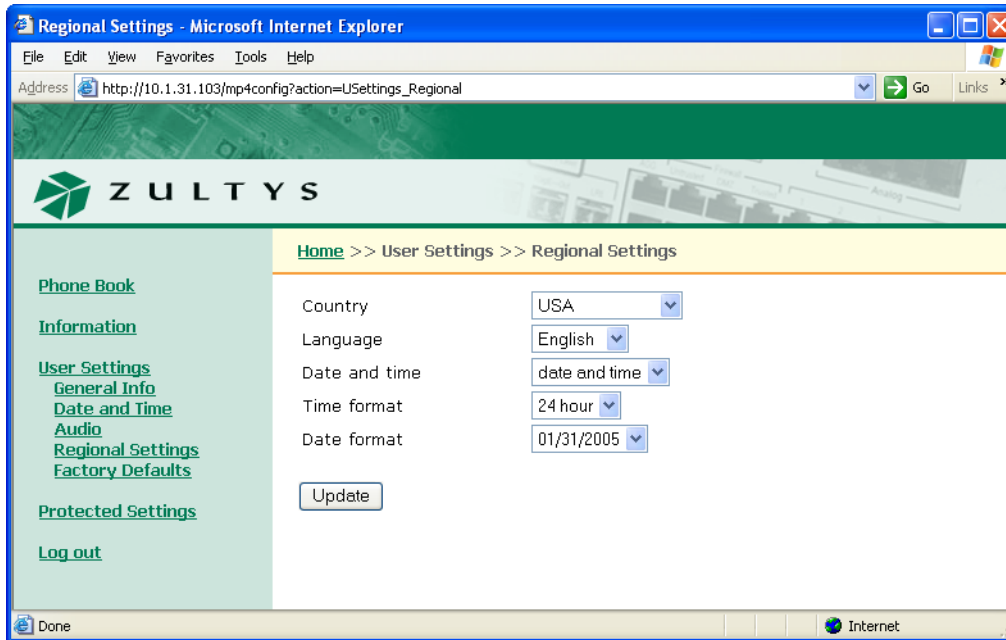


Figure 10-14 User Settings – Regional Settings panel

- **Country:** This parameter specifies the call progress tones played by the phone, based on standards defined for the selected country. See section 6.3.2 on page 57.
- **Language:** This parameter specifies the language that the LCD uses to display information. See section 5.2.3.3 on page 40.
- **Date and time:** This parameter specifies the order that the phone displays the time and date. Select *date and time* to display the time on the middle display row and the date on the bottom display row. Select *time and date* to display the date on the middle display row and the time on the bottom display row. See section 5.2.3.4 on page 40.
- **Time format:** This parameter specifies the format for displaying the time of day. See section 5.2.3.4 on page 40.
- **Date format:** This parameter specifies the format for displaying the current date. See section 5.2.3.4 on page 40.

10.5.5 Factory Defaults

The *Factory Defaults* panel, shown in figure 10-15, restores factory defaults for all configuration settings. See section 5.8 on page 50.

To access *Factory Defaults*, select *User Settings | Factory Defaults* from the interface menu.

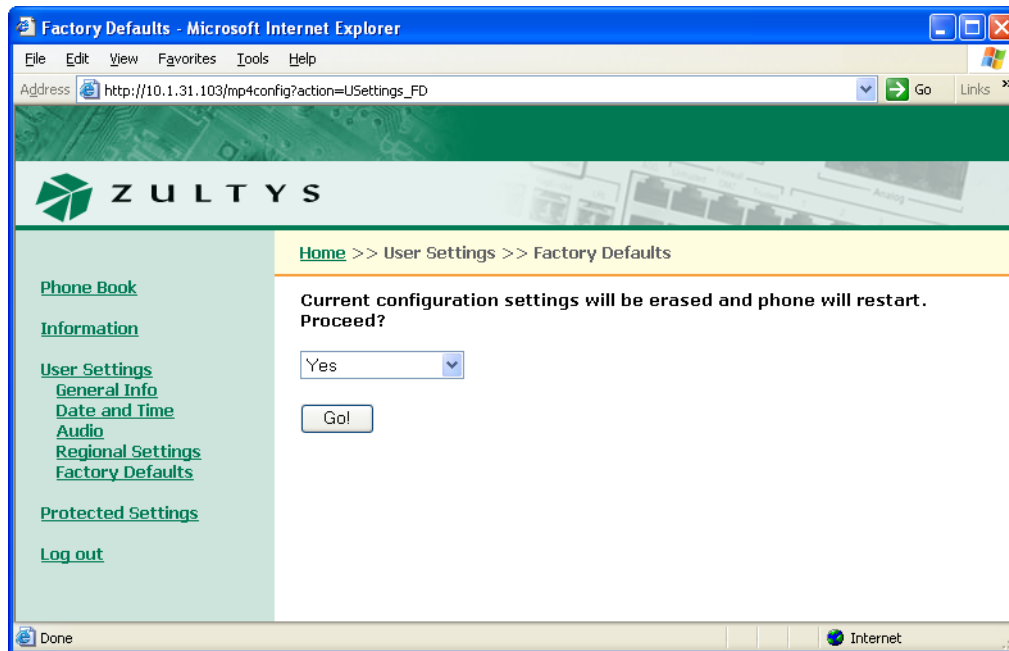


Figure 10-15 User Settings – Factory Defaults panel

10.6 Protected Settings

Protected Settings menu panels alter the communication parameters of the phone. You may need to configure these parameters if your system does not support automatic provisioning.

Each Protected Settings parameter is protected by a password. If you do not login with the correct password, all Protected Settings pages will be read only and the **Update** button will be disabled.

10.6.1 Network Setup

The *Network Setup* panel, as shown in figure 10-16, determines the network mode of the phone and provides parameter settings that incorporate the phone into your network.

- **Default Gateway:** This parameter is the IP address of the default gateway. The phone uses the address entered in this box if DHCP mode is not enabled (IP communications panel) or DHCP does not return a value for the default gateway. See section 4.5.2.2 on page 32.
- **Primary DNS Server:** This parameter is the IP address of primary DNS Server. The phone uses the address entered in this box if DHCP mode is not enabled (IP communications panel) or DHCP does not return a value for the primary DNS server. See section 4.5.2.2 on page 32.
- **Secondary DNS Server:** This parameter is the IP address of secondary DNS Server. The phone uses the address entered in this box if DHCP mode is not enabled (IP communications panel) or DHCP does not return a value for the secondary DNS server. See section 4.5.2.2 on page 32.
- **NTP Server:** This parameter specifies the NTP Server IP address. The phone uses the address entered in this box if DHCP mode is not enabled (IP communications panel) or DHCP does not return a value for the NTP server. See section 4.5.2.2 on page 32.

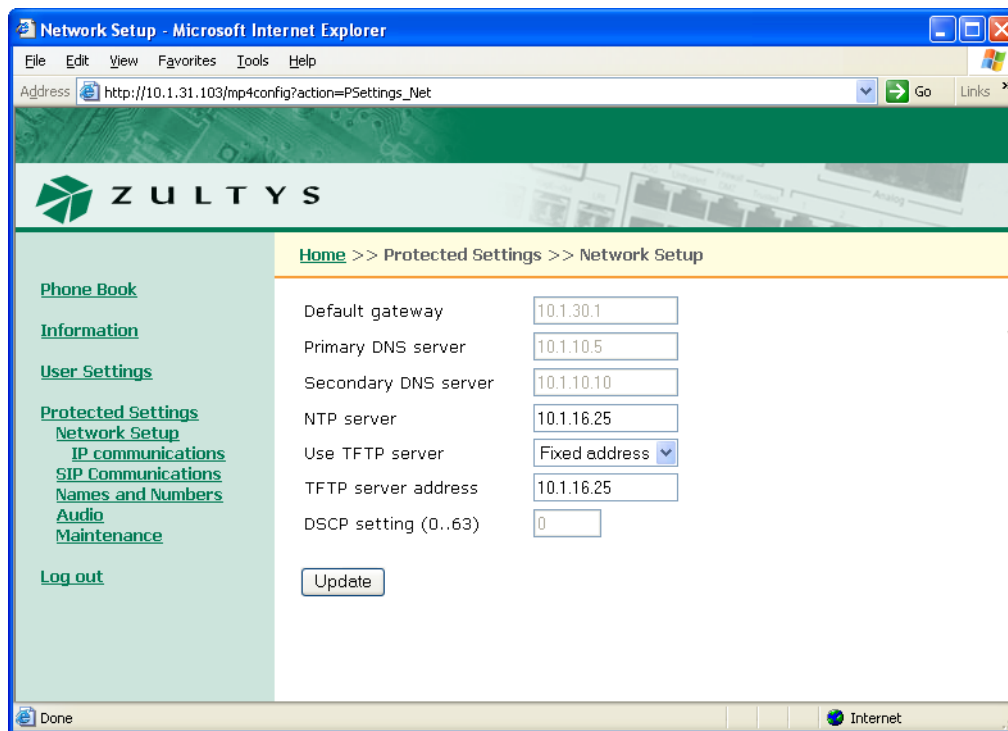


Figure 10-16 Network Setup panel

- **Use TFTP Server:** This parameter specifies the TFTP server address source. When set to *From DHCP*, the phone obtains the TFTP server address from the DHCP server. When set to *Fixed address*, the phone uses the fixed TFTP address entered in this panel. See section 4.5.2.2 on page 32 and section 4.3.1.1 on page 25.
- **TFTP Server Address:** When *Use TFTP Server* is set to *Fixed Address*, this parameter specifies the fixed TFTP Server address. See section 4.5.2.2 on page 32 and section 4.3.1.1 on page 25.
- **DSCP Setting:** This parameter configures DiffServ (layer 3 QoS) setting. All voice packets (RTP) leaving the phone will have the ToS byte in the IP header set to this value. Valid settings range from 0 to 63. See section 4.5.2.2 on page 32.

10.6.2 IP Communications

The *IP Communications* panel, as shown in figure 10-17, displays the parameters needed by the phone to communicate with the network. The *IP Communications* panel displays the configuration options for the following parameters:

- **DHCP:** This option enables or disables DHCP mode. See section 4.5.2.1 on page 32 and section 4.5.2.2 on page 32.
- **Phone Address:** This parameter lists the IP address that the phone obtained dynamically from the DHCP server or specifies the static address that you manually configure. See section 4.5.2.1 on page 32 and section 4.5.2.2 on page 32.

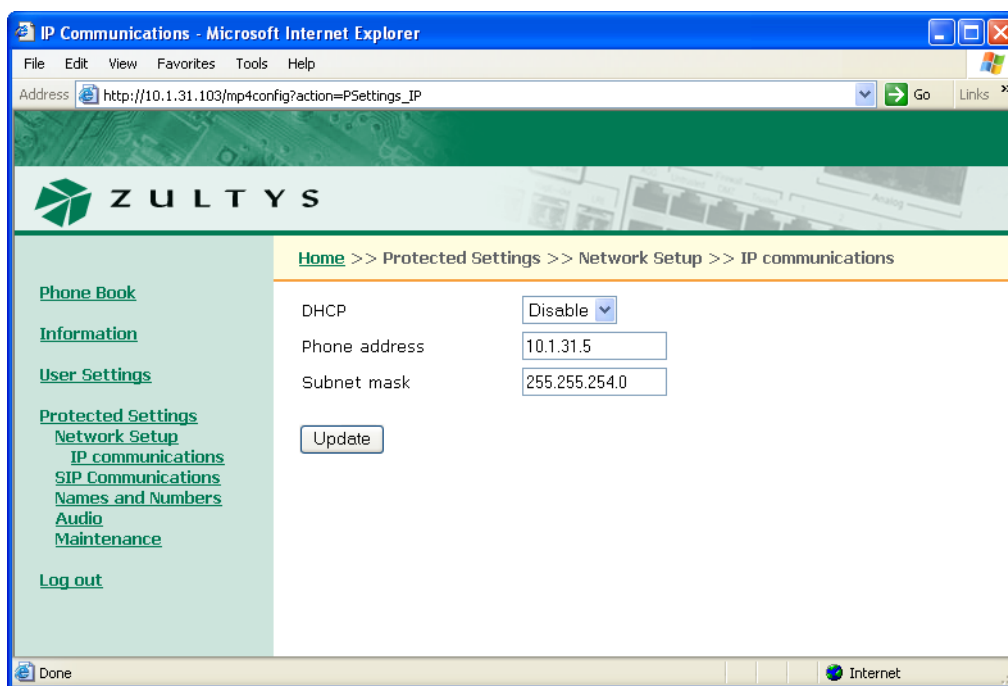


Figure 10-17 Protected Settings – IP Communications panel

- **Subnet Mask:** This parameter identifies the subnet mask for the phone. If DHCP is enabled, the phone obtains this parameter from the DHCP server. See section 4.5.2.1 on page 32 and section 4.5.2.2 on page 32.

10.6.3 SIP Communications

The *SIP Communications* panel, as shown in figure 10-18, displays the parameters required by the phone to communicate with the SIP proxy and registrar servers. See section 4.5.3 on page 33 for more information on the following panel parameters:

- **Proxy Address:** This parameter specifies the IP address of the server that handles call control.
- **Proxy Port:** This parameter specifies the TCP or UDP port that the phone uses to send SIP messages. The default value is 5060.
- **Register with Proxy:** When this parameter is set to *Yes*, the phone registers with the registrar server if specified; otherwise phone registers with proxy server. Phone does not register with either server when parameter is set to *No*.
- **Proxy Password:** The proxy password authenticates the phone to proxy servers that require authentication.
- **Registration Expires:** This parameter specifies the time period, in seconds, after which a REGISTRATION expires. This value is inserted into the Expires header field.
- **Subscription Expires:** This parameter specifies time period, in seconds, after which a SUBSCRIBE expires. This value is inserted into the Expires header field.
- **DNS SRV Lookup:** This parameter configures the phone to resolve the SIP Proxy IP address through DNS SRV records.

Figure 10-18 Protected Settings – SIP Communications panel

- **Backup Proxy Address:** This parameter displays the IP address of the backup proxy server. The phone will attempt to switch to the backup proxy if the primary proxy server fails.
- **Backup Proxy Port:** This parameter specifies the TCP or UDP port number of the backup proxy. The default value is 5060.
- **Register with Backup Proxy:** When this parameter is set to *Yes*, the phone registers with the backup proxy at start up.
- **Backup Registration Expires:** This parameter specifies the REGISTRATION expiry period, in seconds for the Backup proxy. This value is inserted into the Expires header field.
- **Registrar Address:** This parameter specifies the SIP registrar server address. When this value is set, phone attempts to register with this server instead of the proxy server.

- **Registrar Port:** This parameter specifies the SIP Registrar server port. The default value is 5060.
- **Phone SIP Port:** This panel displays the TCP or UDP port number the phone uses to receive SIP messages.
- **RTP Starting Port:** The phone uses consecutively numbered RTP and RTCP port numbers (actually UDP port numbers) for communication. RTP carries media and RTCP carries control information. The default RTP start port is 1760.
- **Transport Protocol:** This parameter specifies the protocol used to transport SIP messages.
- **Invite Retransmissions:** This parameter specifies the number of unsuccessful INVITE transmissions the phone attempts before switching to the backup proxy.
- **Non-Invite Retransmissions:** This parameter specifies the number of unsuccessful message retransmissions (excluding INVITE) the WIP2 attempts before switching to the backup proxy.
- **Validate Request URI in SIP messages:** When this parameter is set to *Yes*, the phone verifies the IP address, Device ID, and port number of any SIP messages that it receives. If these parameters do not match those of the phone, the SIP message is discarded.

10.6.4 Names and Numbers

The *Names and Numbers* panel, as shown in figure 10-19, displays the parameters required by the phone to identify itself and to access the voice mail server. The *Names and Numbers* panel displays the configuration options for the following parameters:

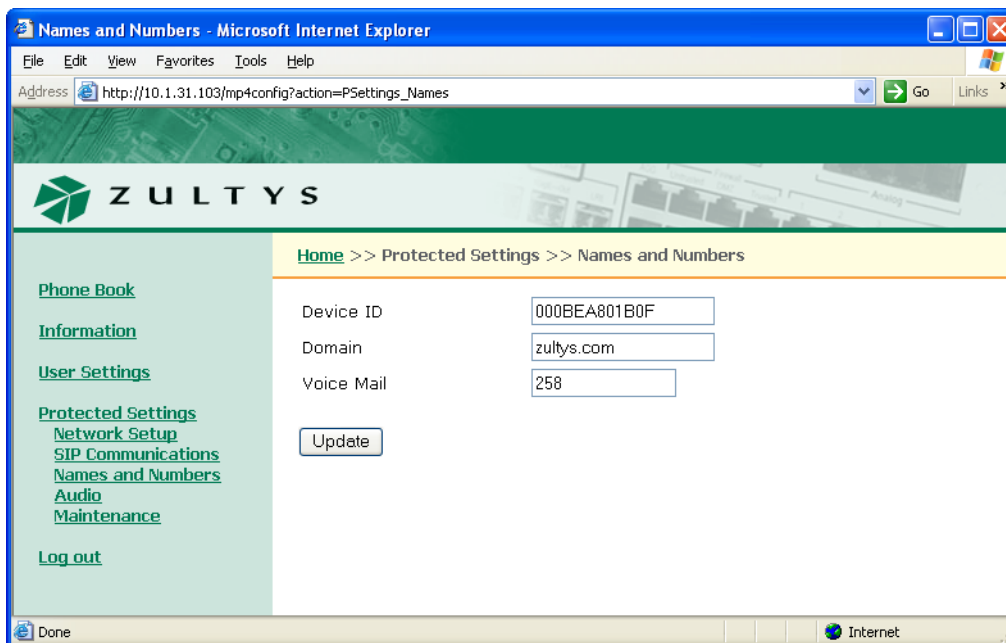


Figure 10-19 Protected Settings – Names and Numbers panel

- **Device ID:** This parameter specifies the name which this phone uses to register with the SIP registrar and to subsequently make calls. This parameter is the user portion of the address “user @ domain”. See section 4.5.3.1 on page 33.

- **Domain:** This parameter specifies the domain name for the enterprise. See section 4.5.3.1 on page 33.
- **Voice Mail:** This parameter specifies the name or number for the server that stores voice mail. See section 7.6.1 on page 79.

10.6.5 Audio

The *Audio* panel, as shown in figure 10-20, controls the way that the phone handles speech and ringing tones. The *Audio* panel displays the configuration options for the following parameters:

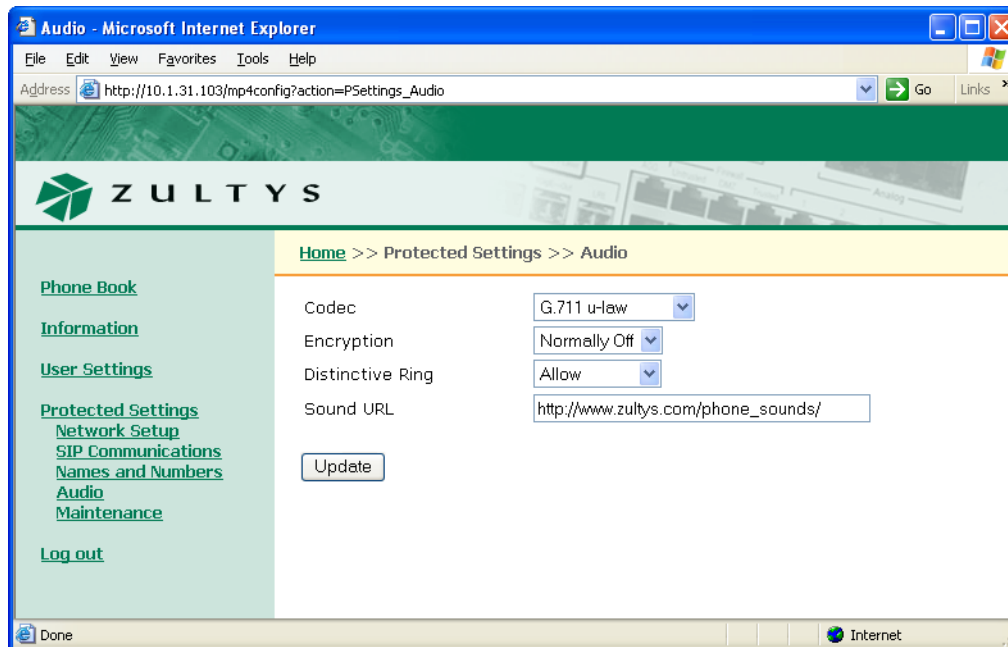


Figure 10-20 Protected Settings – Audio panel

- **Codec:** This parameter defines the way that the phone encodes speech. Normally, you should select G.711- μ law for North America and Japan, and G.711-A law everywhere else. The phone also provides G.729A and G.729AB for networks where bandwidth may be restricted. See section 4.5.4 on page 34
- **Encryption:** This parameter determines if encryption must be used by the phone. Section 7.5 on page 75 describes encryption and the encryption options provided by this panel.
- **Distinctive Ring:** This parameter allows the user to select a single ring tone for all incoming calls or different ring tones for internal and external calls. See section 6.4.1.1 on page 59.
- **Sound URL:** This setting specifies the location of WAV files that are used for custom ring tones. See section 6.4.1.1 on page 59.

10.6.6 Maintenance

10.6.6.1 Change Password

The *Change Password* panel, as shown in figure 10-21, allows you to change the phone password. When the phone is shipped from the factory, its default password is 985897. Section 8.7.1 on page 108 describes the equivalent menu command.

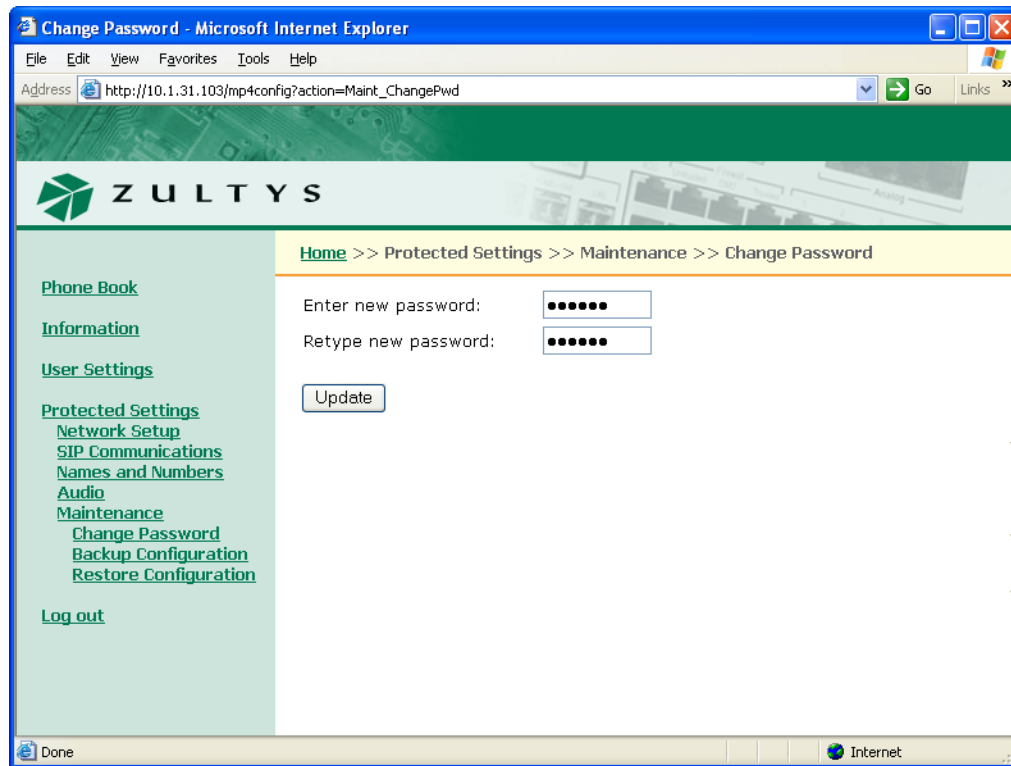


Figure 10-21 Protected Settings – Password panel

10.6.6.2 Backup Configuration

The *Backup Configuration* panel, as shown in figure 10-22, allows you to store your phone's configuration settings, as listed in the flash memory, to a file on your local PC or network. You can then restore the saved configuration from the Restore Configuration panel.

In many cases, the commands listed in the flash memory are identical to the configuration commands that are downloaded from the TFTP server. However, not all of these commands are available through the configuration file and a few commands are formatted differently in the flash memory from the commands listed in the configuration file.

To backup your phone's configuration, press the **Backup** button, then specify the local PC or network location.

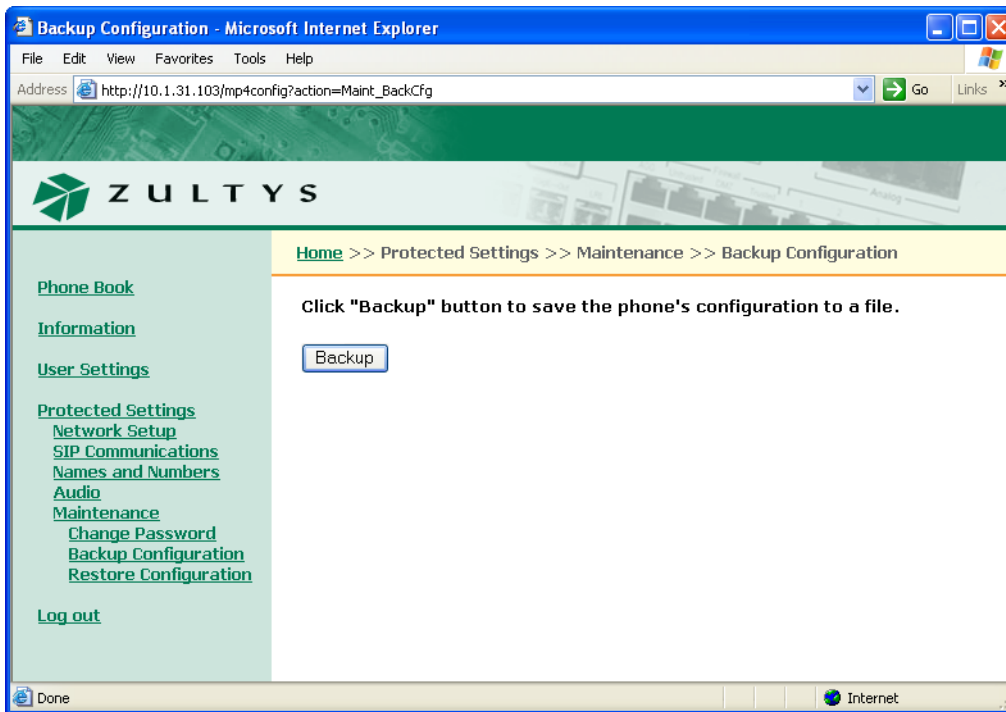


Figure 10-22 Maintenance – Backup Configuration panel

10.6.6.3 Restore Configuration

The *Restore Configuration* panel, as shown in figure 10-23, enters a configuration into your phone that you previously stored to your local PC or network.

To restore a configuration, press the **Browse** button to search your system for the backup file, then specify that file and press the **Restore** button.

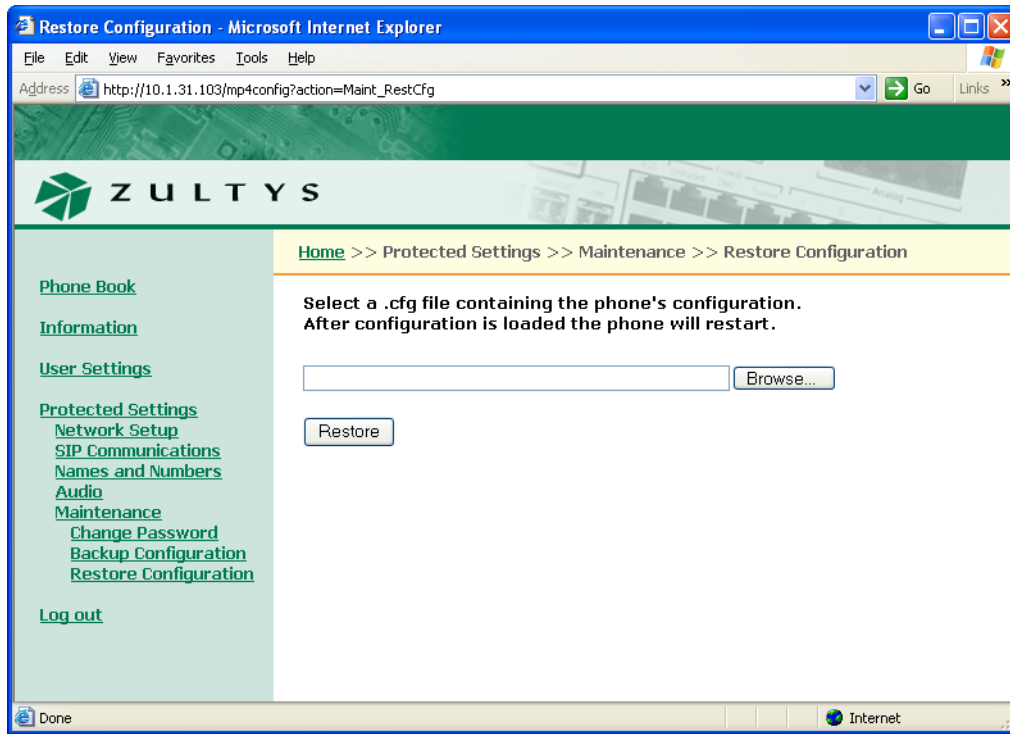


Figure 10-23 Maintenance – Restore Configuration panel

Menu Structure

Presence (section 8.2)		
• Available ⇒	• Not available ⇒	• Busy ⇒
• At lunch ⇒	• In a meeting ⇒	• Be right back ⇒
• Appear offline		
Phone Book (section 8.3)		
[New Entry]		
<i>Contact Name</i>		
• Edit ⇒	• Delete ⇒	
Text Messages (section 8.4)		
New Messages		
• Send ⇒	• Erase all text	
Inbox		
• Reply ⇒	• Delete	
Outbox		
• Resend ⇒	• Delete	
Erase All		
• Inbox ⇒	• Outbox ⇒	• Both
Configure		
• Receive & Show ⇒	• Reject	
Information (section 8.5)		
Times		
• Offset from GMT ⇒	• Powered on ⇒	• Connected ⇒
• Registered ⇒	• Total talk time	
Communications		
• Wireless ⇒	• TFTP address ⇒	• Config file
Manufacture		
• MAC address ⇒	• S/W version ⇒	• Boot code ⇒
• H/W version ⇒	• Date	

User Settings (section 8.6)		
LCD Contrast		
Right Button		
• Presence ⇒	• Page ⇒	• Phone Book
Greeting		
Clear settings		
• Never ⇒	• Next pwr on ⇒	• Each pwr on
Date and Time		
• No, go back ⇒	• Continue	
Audio		
• External ring ⇒	• Internal ring ⇒	• Extl call answer ⇒
• Itnl call answer ⇒	• Ring styles ⇒	• Hook & Speaker ⇒
• Page function ⇒	• Call disconnect ⇒	• Second call ⇒
• Hold reminder ⇒	• Key click ⇒	• Startup tone
Timeouts		
• Event Timer ⇒	• Dial timeout	
Regional Optns		
• Country ⇒	• Language ⇒	• Date& Time ⇒
• Time format ⇒	• Date format	
Factory Defaults		
• No ⇒	• Yes	
Pswd Settings (section 8.7)		
Password		
• Enter Password⇒	• Log out ⇒	• Change
Wi-Fi Settings		
• Scan ⇒	• SSID ⇒	• Network ⇒
• Channel ⇒	• WEP ⇒	• WEP keys⇒
• WEP active key		
IP Settings		
• DHCP ⇒	• Phone address ⇒	• Subnet mask ⇒
• Default gateway ⇒	• Primary DNS ⇒	• Secondary DNS ⇒
• NTP server ⇒	• TFTP server ⇒	• TFTP address ⇒
• DSCP		
SIP Settings		
• Outbnd proxy ⇒	• Backup proxy⇒	• Registrar ⇒
• RTP start port ⇒	• Receive port ⇒	• Transport ⇒
• Invite retrans ⇒	• Noninv retrans ⇒	• SIP Validation ⇒
• DNS Server		
Names and Numbers		

• Device ID ⇒	• Domain ⇒	• Voice mail
Audio		
• Codec ⇒	• Encryption ⇒	• Distinctive rings⇒
• Audio URL	•	
Self Test (section 8.8)		
PER		
Buttons & keys		
LEDs		
LCD		
Audio		
Audio Return		

Acronyms

ACD	automatic call distributor
CAS	channel associated signalling
CoS	class of service
DHCP	dynamic host configuration protocol
DND	do not disturb
DNS	domain name service
DTMF	dual tone multi-frequency
FQDN	fully qualified domain name
GMT	Greenwich Mean Time
ICMP	Internet control message protocol
IEEE	Institute of Electrical and Electronic Engineers
IP	Internet protocol
LAN	local area network
MAC	media access control
MDI	media dependent interface
NTP	network time protocol
PBX	private branch exchange
PCM	pulse code modulation
PHB	per hop behavior
PIN	personal information number
PSTN	public switched telephone network
QoS	quality of service
RTCP	real time transport control protocol
RTP	real time transport protocol
SIP	session initiation protocol
SNTP	simple network time protocol
TCP	transmission control protocol
TFTP	thin file transfer protocol
UDP	user datagram protocol
URI	uniform resource identifier
URL	universal reference locator

VLAN virtual local area network

Index

A

- ac adapter 13
- access points
 - description 13
 - scanning 110
- acronyms 5, 177–178
- alphanumeric mode 43–44
- always on, encryption 76
- answering a call 61, 68
- attended transfer 73
- audio return self test 129
- audio self test 129
- automatic call answering
 - description 61
 - menu command 97

B

- backup configuration 170
- backup of data 50
- backup proxy server parameters
 - configuration command . 136, 137
 - menu command 119
 - web interface utility 167
- backup registration expires setting
 - configuration command 136
 - description 34
 - web interface utility 167
- battery, installation 12
- binary file 29
- blind transfer 73
- boot code version indicator
 - menu 91
 - web interface utility 157
- boot process 25–31
- bridge type access points 13
- buttons
 - Call 1 41
 - Call 2 41
 - definition 41
 - Hold 67
 - Menu 47
 - see also* keypad

C

- Call 1 button 41
- Call 2 button 41
- call alert mode
 - configuration command 147
 - description 59
 - menu command 98
 - web interface utility 162
- call answered 58
- call appearance buttons 41
- call appearances 35

- call disconnect setting
 - configuration command 146
 - description 64
 - menu command 99
 - web interface utility 162
- call forwarding calls, *see* forwarding calls
- call hold
 - description 67
 - encrypted call 78
 - resuming the conversation 68
- call log 49
- call progress tones
 - description 57
 - see also* country setting
- call transfer
 - description 73
 - encrypted call 78
- calling
 - after placing call on hold 68
 - display 57
 - encrypted calls 77
 - without a SIP proxy 56
- caution, definition 5
- channel, wireless
 - description 31
 - view setting 91, 112
- charging cradle 4
- charging the phone 13
- clear user settings
 - configuration command 140
 - description 24
 - menu command 95
 - web interface utility 160
- codec setting
 - configuration command 145
 - description 34
 - menu command 126
 - web interface utility 169
- common configuration file 21, 131
- conference calls
 - description 70–73
 - encrypting 78
 - muting 72
 - terminating 73
- configuration
 - backup configuration 170
 - restore configuration 171
- configuration file
 - comments 132
 - common file 21, 131
 - description 21–24
 - format 22
 - function sections 132
 - parameter entries 132
 - retrieval from TFTP server . 17, 26
 - specific file 22, 131
 - view status 91
- configuration file status indicator ... 91
- congestion tone 58

- connected call 58
- connection date indicator
 - menu command 90
 - web interface utility 155
- country setting
 - configuration command 140
 - description 57
 - menu command 105
 - web interface utility 163
- cradle
 - description 4
 - installation 11
- current RTP status log 157
- custom audio tone settings
 - configuration command . 145, 146
 - menu command 102
 - web interface utility 161

D

- danger, definition 5
- data backup 50
- date adjustment
 - at setup 19
 - menu command 95
 - web interface utility 161
- date and time order
 - configuration command 140
 - description 40
 - menu command 106
 - web interface utility 163
- date format setting
 - configuration command 140
 - description 40
 - menu command 107
 - programming restrictions 142
 - web interface utility 163
- default gateway
 - configuration command 133
 - description 32
 - menu command 115
 - web interface utility 164
- default location command 149
- default password 170
- device activation modes 46
- device ID setting
 - configuration command 136
 - description 33
 - menu command 124
 - web interface utility 168
- DHCP
 - connecting to server 16
 - function 25
- DHCP mode
 - configuration command 134
 - description 32
 - menu command 114
 - web interface utility 165

dial timeout
 configuration command 141
 description 43
 menu command 104
 web interface utility 160

dialling
 accessing the call panel 54
 using SIP address 54
 with dial tone 54

display name, setting 136

display, LCD, *see* LCD display

distinctive ring setting
 configuration command 145
 description 59
 menu command 127
 web interface utility 169

DNS address setting
 configuration command 134
 description 32
 menu command 115
 web interface utility 164

DNS SRV lookup
 description 34
 menu command 123
 web interface utility 166

domain name setting
 configuration command 133
 menu command 124
 web interface utility 169

DSCP setting
 configuration command 133
 description 33
 menu command 118
 web interface utility 165

dynamic IP address, configuring ... 25

E

encryption
 always on 76
 call hold 78
 call transfer 78
 conference calls 78
 description 75–79
 making calls 77
 never on 76
 normally on or off 76

encryption setting
 configuration command 136
 description 76
 menu command 126
 web interface utility 169

ending a call 64

event timer setting
 configuration command 141
 description 40
 menu 104
 web interface utility 159

external call answer setting
 configuration command 145
 description 61
 menu command 97

external ring tone setting
 configuration command 145
 description 59
 menu command 96
 web interface utility 161

F

factory defaults reset
 description 50
 menu command 107
 web interface utility 163

far end busy 58

fast busy tone 58

files, binary 29

fixed IP address, configuring 25

forwarding calls
 configuration command 136
 description 74–75
 menu command 93

FTP, *see* TFTP

G

gateway, default
 configuration command 133
 description 32
 menu command 115
 web interface utility 164

GMT 90

greeting message
 configuration command 141
 description 39
 menu command 94
 web interface utility 159

H

handset 45

handset volume setting
 configuration command 144
 phone command 47

hardware version indicator
 menu 91
 web interface utility 157

headset 45

Hold button 67

hold reminder tone setting
 configuration command 146
 description 68
 menu command 100
 web interface utility 162

hold, *see* call hold

hook and speaker
 description 46
 menu command 98

I

important, definition 5

incoming calls
 answering 61
 missed 60
 not answering 60
 rejecting 60
 when using menu 48

independent, wireless network mode 31

infrastructure, wireless network mode 31

installation 11

internal call answer setting
 configuration command 146
 description 61
 menu command 97
 web interface utility 161, 162

internal ring tone setting
 configuration command 146
 description 59
 menu command 96
 web interface utility 161

invalid address or number 58

invite retransmission setting
 configuration command 138
 description 34
 menu command 122
 web interface utility 168

IP address of phone
 configuration command 133
 description 32
 dynamic 25
 failure to configure 18
 fixed 25
 menu command 114
 web interface utility 165

ISDN calls, ringback 57

J

jargon 5

K

key click tone setting
 configuration command 147
 description 42
 menu command 101
 web interface utility 162

keypad
 buttons 41
 definition 41
 keys 42

keys
 definition 41
 numeral 42

L

ladder diagram, boot process 29

language setting
 configuration command 141
 description 40
 menu 106
 web interface utility 163

- LCD
- description 4
 - displaying menu options 35
 - modes 62
- LCD contrast setting
- configuration command 144
 - description 39
 - menu command 92
 - web interface utility 159
- LCD panel
- call connected 58
 - call on hold 67
 - calling 57
 - far end busy 58
 - missed calls 60
 - network busy 58
 - network failure 58
 - Quality of Service (QoS) 62
 - ringing 57
- lines, phone 35
- listening device modes
- locations, configuration command . 149
- M**
- MAC address
- menu 91
 - web interface utility 157
- making encrypted calls 77
- manual
- acronyms 177–178
 - feedback 6
 - special paragraph styles 5
- manufacture date indicator
- menu 91
 - web interface utility 157
- memory, non-volatile 50
- menu
- commands 81–129
 - how to use 47–49
 - incoming call 48
 - saving data 48
- Menu button 35, 47
- message display period, *see* event timer setting
- message validation setting
- configuration command 138
 - description 34
 - menu command 123
 - web interface utility 168
- missed calls indicator 60
- mute
- conference call 72
 - description 63
- MX250, MX30 1
- N**
- network busy tone 58
- network failure 58
- never on, encryption 76
- no ring tone 59
- normal device mode 46
- normal display mode 62
- normally off, encryption 76
- normally on, encryption 76
- not answering a call 60
- NTP server address setting
- configuration command 134
 - description 32
 - menu command 116
 - web interface utility 164
- NTP, connecting at startup
- numeral keys 42
- P**
- page function
- description 65
 - menu command 99
- password
- configuration command 141
 - description 48
 - menu command 108–109
 - web interface utility 151, 170
- PER self test 128
- phone book
- description 49
 - menu 82–85
 - web interface utility 152–155
- phone lines 35
- phone SIP port setting, *see* receive port
- power on date indicator
- menu command 90
 - web interface utility 155
- power on self test (POST) 15–16
- power on sequence 14
- power on, process 13
- power, installation 11
- presence
- description 50
 - menu command 82
- primary DNS address setting
- configuration command 134
 - description 32
 - menu command 115
 - web interface utility 164
- protected mode
- description 48
 - menu command 108–109
 - web interface utility 164
- provisioning 21–34
- Q**
- Quality of Service (QoS) indicator .. 62
- quick test 15–16
- R**
- receive port setting
- configuration command 137
 - description 34
 - menu command 121
 - web interface utility 168
- receiving equipment
- in case of damage 8
 - inspection 7
 - procedures 7–10
- registrar server parameters
- configuration command 137
 - description 34
 - web interface utility 167
- registration date indicator
- menu command 90
 - web interface utility 155
- registration expires setting
- configuration command 137
 - description 33
 - menu command 120
 - web interface utility 166
- rejecting an incoming call 60
- removing battery cover 12
- reset to factory defaults
- description 50
 - menu command 107
 - web interface utility 163
- restore configuration 171
- retransmission setting
- configuration command 138
 - description 34
 - menu command 122
 - web interface utility 168
- RIGHT button, configuring
- configuration command 141
 - description 43
 - menu command 93
- ring tone setting
- configuration command 146
 - description 59
 - menu command 96
- ring tone, description 59
- ring volume setting
- configuration command 144
 - phone command 46
- ringback 57
- RMA 9
- RTP history log 158
- RTP port settings
- configuration command 137
 - description 34
 - menu command 121
 - web interface utility 168
- RTP, current status log 157
- S**
- saving menu data 48
- scanning for access points 110
- second call tone setting
- configuration command 147
 - description 60
 - menu command 100
 - web interface utility 162
- secondary DNS address setting
- configuration command 134
 - menu command 116
 - web interface utility 164

secondary functions 41

selected location indicator 155

self test

- menu command 128–129
- power on 15–16

separate ring setting

- configuration command 145
- description 59
- menu command 127
- web interface utility 169

serial number

- under battery of phone 8
- view through menu 91
- web interface utility 157

session expires setting 137

shift functionality 41

shipments

- damaged 8
- inspection 7
- returning to Zultys 9

SIP address, entering 54

SIP calls, ringback 57

SIP proxy server parameters

- configuration command 136, 137
- description 33
- menu command 119
- web interface utility 166

SIP proxy, calling without 56

SIP registration 17

SIP settings

- configuration commands 136–138
- web interface utility 166–168

SNTP, *see* NTP

socket, battery 12

software

- updating 27–31

software version command 142

software version indicator

- menu command 91
- web interface utility 157

sound URL setting

- configuration command 59, 147
- menu command 127
- web interface utility 169

speaker phone 45

speaker volume setting

- configuration command 144
- phone command 47

speakers 4

specific configuration file 22, 131

SSID

- configure setting 111
- view setting 31, 91

start up process 26

startup panels 14

startup tone setting

- configuration command 147
- description 14
- menu command 101
- web interface utility 162

subnet mask

- configuration command 134
- description 32
- menu command 115
- web interface utility 166

subscription expires setting

- configuration command 138
- description 34
- web interface utility 166

summary display mode 62

T

terminating a call 64

text message alerts

- configuration command 146
- description 80
- menu command 102
- web interface utility 162

text messages

- description 80
- menu command 85–89

TFTP address indicator 91

TFTP address source setting

- configuration command 134
- description 25
- menu command 117
- web interface utility 165

TFTP server address setting

- configuration command 134
- description 33
- menu command 117
- view setting 91
- web interface utility 165

TFTP, connecting to server 17

time adjustment

- at setup 19
- menu command 95
- web interface utility 161

time and date order

- configuration command 140
- description 40
- menu command 106
- web interface utility 163

time difference from GMT 90

- set during startup
- web interface utility 155

time format setting

- configuration command 142
- description 40
- menu command 106
- programming restrictions 142
- web interface utility 163

time offset indicator 90, 155

time zone setting command 142

tooggling device modes 46

total talk time indicator

- menu command 90
- web interface utility 156

transfer, *see* call transfer

transport protocol setting

- description 34
- menu command 122
- web interface utility 168

transposed device mode 46

U

unattended transfer 73

unavailable address or number 56

updating software 27–31

USB port 4

user's guide 1

V

vibrating mode 59

voice mail server address

- configuration command 138
- menu 125
- web interface utility 169

W

warning definition 5

web interface utility

- accessing 151
- commands 151–171
- description 25
- interface structure 152

web site 1

WEP

- description 31
- view setting 91

WEP active key

- configuring 113
- description 32
- view setting 91

WEP keys

- configuring 112
- description 32

wi-fi, *see* wireless network

WIP2 features 2

wired equivalent policy, *see* WEP

wireless network mode

- configuring 111, 112
- description 31

wireless network, status 90