



Edge 5000™

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# Installation & Configuration Guide





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## REVISION HISTORY

Release	Date	Documentation Changes	Page No.
2.0 SP1	04-11	DND capabilities are enabled.	<a href="#">3-54</a>
		Added default password to Lock/Unlock procedure.	<a href="#">3-4</a>
		Added new default password to System Settings table.	<a href="#">A-1</a>
		Wave does not support the DSS function. - All references to DSS have been removed from this Guide.	--
2.0	11-10	Added a section to configure the Bluetooth module. - How to install	<a href="#">3-50</a> <a href="#">2-4</a>
		Added a chapter that describes the WiFi module. - How to install	<a href="#">5-1</a> <a href="#">2-5</a>
1.0	09-10	Initial Release	--

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# Introducing the IP5000

## Overview

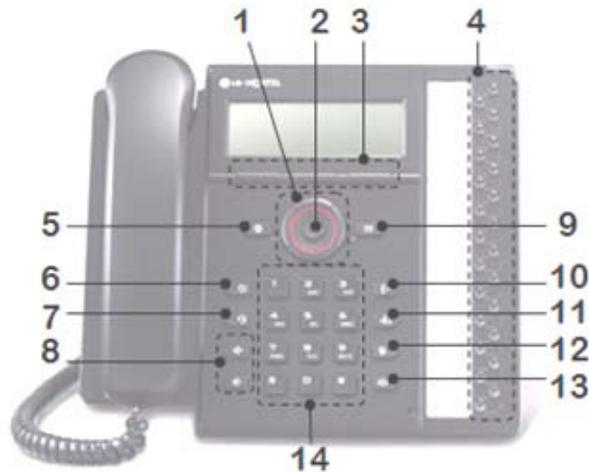
The Edge 5000 phones are Internet Protocol (IP) phones designed to support hosted telephony services over a managed IP network. Based on the open standard Session Initiation Protocol (SIP), the IP5000 series phones interoperate and exchange signaling messages with SIP call servers, proxies and gateways to establish, maintain and terminate calls. Real-time Transport Protocol (RTP) packets transport audio between end-points through the service provider's network.

Features available to the IP Phones when used with SIP call servers are similar to those of a conventional business telephone. Features available for a given phone depend on the configuration of the call server as well as configuration of the IP phone and include:

Anonymous call blocking	Call Pick-up	LCD contrast control
Auto answer	Directed	Message wait with indicator lamp and tone
Bridged Line Appearance (BLA)	Group	Mute
Call forward	Park pick-up	Multiple line appearance (MLA)
Busy	Call refusal	One-button Call Transfer
No answer	Call transfer	Phone Book
Busy & No answer	Call waiting	Private line
Immediate	Caller ID blocking	Private Hold
Call hold	Caller ID display	Speakerphone, full duplex
Call hold ringback	Click-to-call	Speed dial buttons
Call logs	Distinctive ring tones	Speed number dialing
Missed	Do Not Disturb (DND)	Station-to-Station dialing
Incoming	Hands-free dialing	Volume control (handset, headset, speakerphone, and ring
Outgoing	Hotline/Warm-Line (Direct Call)	Wireless Network, WiFi Support
Call Park	Last call return	3-Way conference, centralized or local
	Last number redial	

### About the Edge 5000

For ease of use, the IP5000 phones are equipped with fixed buttons, flexible (programmable) buttons, an LCD display, softkeys, menu navigation buttons, and a dial pad.



IP5000

NUMBER	BUTTON	FUNCTION
1	<b>Left</b>	When  appears in the bottom-left corner of the LCD, the previous menu may be selected with the left navigation button.
	<b>Right</b>	When  appears in the bottom-right corner of the LCD, the next group of softkeys may be selected with the right navigation button.
	<b>Up</b>	When the phone is in the idle state, accesses the call log.
	<b>Down</b>	When the phone is in the idle state, accesses the phonebook.
2	<b>OK</b>	Select a current item or save a value in the settings menu.
3	<b>Softkeys</b>	Softkeys are interactive, changing function based on the IP Phone status.
4	<b>Flexible</b>	Red/Green LEDs - Assign as Line or feature in Phone configuration. Default assignments for buttons 1 and 2 are primary and secondary Line appearance for the extension. IP5000 has 24-flexible buttons.
5	<b>Settings</b>	Accesses and exits the menu for display and changes to the IP Phone configuration.
6	<b>DND</b>	<b>(Do-Not-Disturb)</b> - Use to activate DND so that extension will not ring.
7	<b>Headset</b>	When using a headset, this button toggles the headset state. When the headset is active, the button LED illuminates red.
8	<b>Volume control</b>	Use to adjust Ring, Headset, Handset, and Speaker volume.
9	<b>Message</b>	When the Message LED indicates you have a message use to access Voice Mail server.
10	<b>Transfer</b>	Use to transfer the current active call.
11	<b>Hold</b>	Use to place a call on Hold. Also, use to access a held call.
12	<b>Mute</b>	Toggle audio from the microphone to the connected party On and Off.
13	<b>Speakerphone</b>	Toggle the IP phone speakerphone On and Off.
14	<b>Dial pad</b>	Use to dial a number, select a menu item, or input a value.

## Flexible Buttons

The flexible buttons access lines and features based on the IP Phone configuration. Flexible buttons assigned for line access, which are called line buttons, represent a telephone line or a SIP user. A line may be private; calls to a private line signal at all appearances of the line but an active or held call is only visible and accessible by the original end-point. A shared line, also known as a BLA (Bridged Line Appearance), may appear at multiple phones and all calls are visible and accessible by all end-points with the line. Each line button employs LEDs to indicate status as shown below.

Incoming call	Orange*	LED flashes at 60 ipm, fast flash
Line in use at this phone	Orange*	LED On
Call held at this phone	Orange*	LED flashes at 30 ipm, slow flash
BLA in use at another phone	Red	LED On
BLA Call held at another phone	Red	LED slow flash
Line not registered w/server	Red/Orange	LED flashes color, red to orange at 30 ipm

\* When the LCD displays information for a line, such as when an incoming call first rings, the LED color is orange otherwise, the LED color will be green.

Flexible buttons not assigned for line access may access features such as Speed dial, DND, Redial and others. Refer to "Flexible Button Setting" on page [1-4](#) for instructions on defining flexible buttons.

## LCD (Liquid Crystal Display) and Menu

The IP5000 phones have an LCD used to display information to the user.

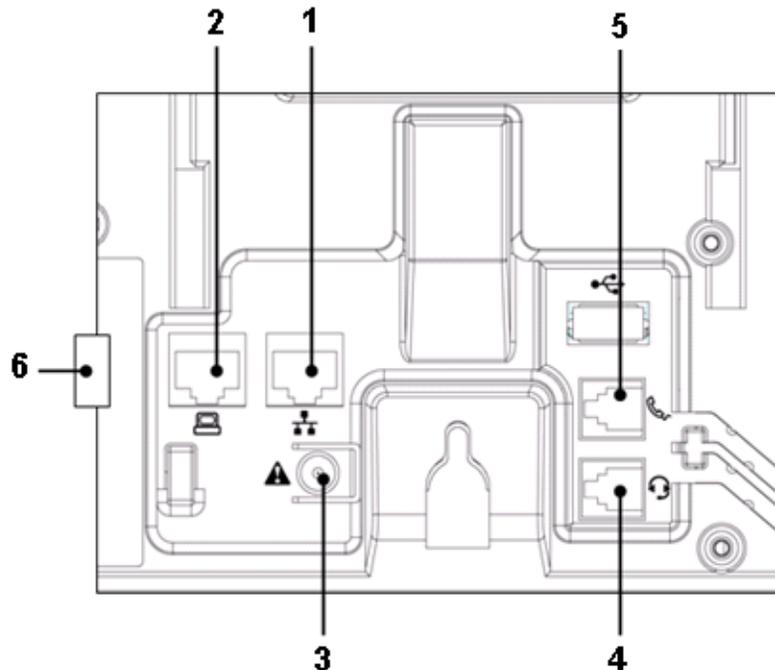
- The IP5000 has a 240 by 56 dot graphic LCD.
- These phones also have a top-bar status line to display icons, date and time.
- The bottom line of all of models shows choices associated with the three (3) context sensitive softkeys located just below the LCD.
- The top line provides various icons to assist the user in understanding the state of the phone. Refer to [Appendix H](#) for a description of the icons.

# Installing the IP Phone

## Connecting the IP Phone

The figure below shows the cable connections for your IP Phone. The LAN and desktop PC connections employ standard 5 cables terminated with RJ-45 connectors. The Edge 5000 series phones support PoE (Power over Ethernet) in accordance with the IEEE-802.1af standard.

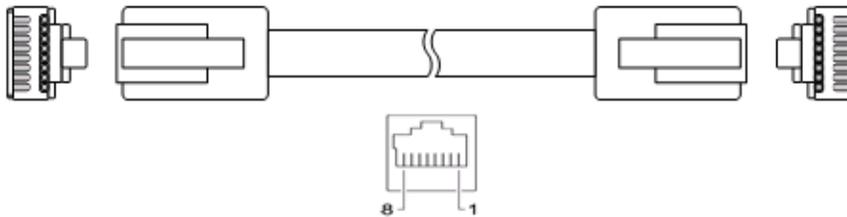
When connected to a PoE compliant LAN port, the IP Phone derives power from the port. If the LAN port does not support PoE, use the AC/DC adaptor, available separately, for connection to power. The handset connects to the base with the supplied standard handset coiled cord. Use the chart below to make connections to the IP Phone.



IP Phone Connections

Wiring Chart

1	LAN	Connect the IP Phone LAN port to the LAN wall jack with the provided LAN cable.
2	PC	Connect the IP Phone PC port to your desktop PC with an RJ-45 terminated UTP-5 cable.
3	Power	If the LAN port supports PoE, IEEE 802.3af compliant, Class 2, the AC/DC adapter is not required. If not supported, connect the IP Phone power port to the DC out of Power Adapter. Connect the Power Adapter AC plug to an AC wall jack.
4	Headset	Connect Headset RJ-11 jack to the IP Phone headset jack.
5	Handset	Connect the Handset coiled cord to the IP Phone base and handset.



RJ-45 Pin Assignments

**LAN port**

Pin 1 = TX+  
 Pin 2 = TX-  
 Pin 3 = RX+  
 Pin 4 = optional: 48V (or GND)  
 Pin 5 = optional: 48V (or GND)  
 Pin 6 = RX-  
 Pin 7 = optional: GND (or 48V)  
 8 = optional: GND (or 48V)

**PC port**

Pin 1 = RX+  
 Pin 2 = RX-  
 Pin 3 = TX+  
 Pin 4 = No connection  
 Pin 5 = No connection  
 Pin 6 = TX-  
 Pin 7 = No connection  
 Pin 8 = No connection

RJ-45 Terminations

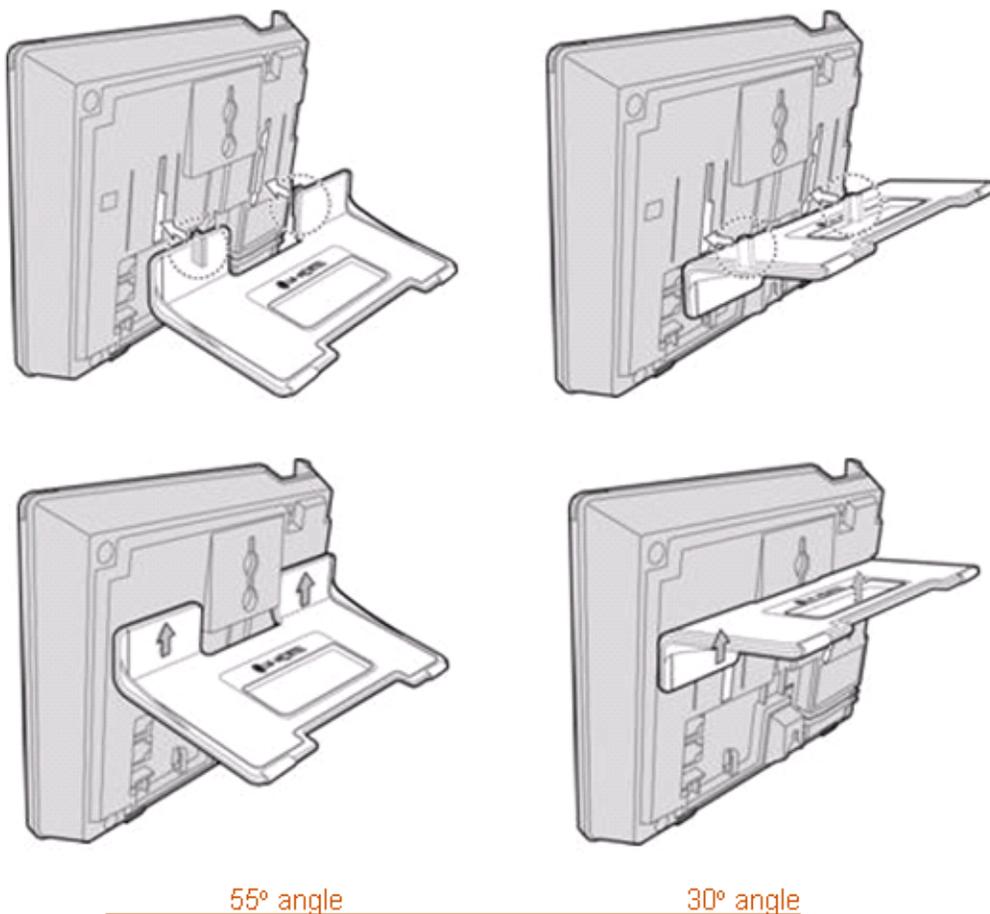
## Attaching the Foot Stand

The IP Phone is designed to use a Foot Stand to set the angle of the face of the phone. The Foot Stand can be installed at an angle of about 30o or 55o based on the orientation of the Foot Stand. The Foot Stand is attached to the base of the IP Phone as shown below.

*To attach the Foot Stand,*

Align the tabs on the Foot Stand with the notches in the base of the IP Phone.

Push the Foot Stand upward until it clicks indicating it is fully engaged.

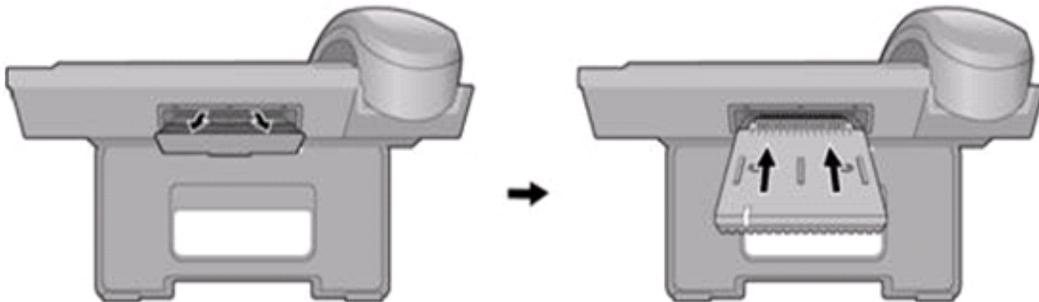


## Bluetooth Module Installation

The IP5000 phones can be equipped with an optional Bluetooth module for use with a customer provided Bluetooth compatible headset. The headset is paired and connected to the IP Phone as described in "Bluetooth Support" on page [2-4](#). The optional module is installed in the slot below and behind the LCD as shown in the figure below. Before inserting the Bluetooth module in the IP Phone, make sure the LAN and power connections are disconnected from the phone, see "Connecting the IP Phone" starting on [page 2-1](#).

*To install the Bluetooth module:*

- Disconnect the IP Phone from power and the LAN.
- Remove cover from the option module slot behind and below LCD.
- Insert the Bluetooth module in the slot.
- Reconnect to LAN and power.

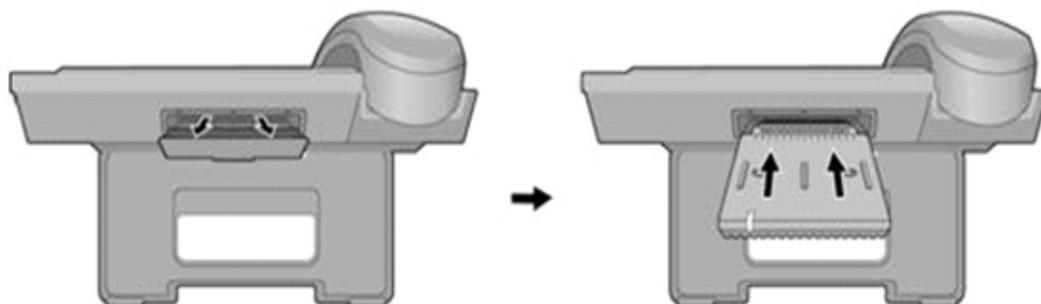


## WiFi Module Installation

The IP 5000 phones can be equipped with an optional WiFi module to allow connection to a wireless WiFi network. The WiFi Module is installed in the slot below and behind the LCD as shown in the following diagram. When installed, Network Configuration of the WiFi module is accomplished as described in [Chapter 5](#).

*To install the WiFi module:*

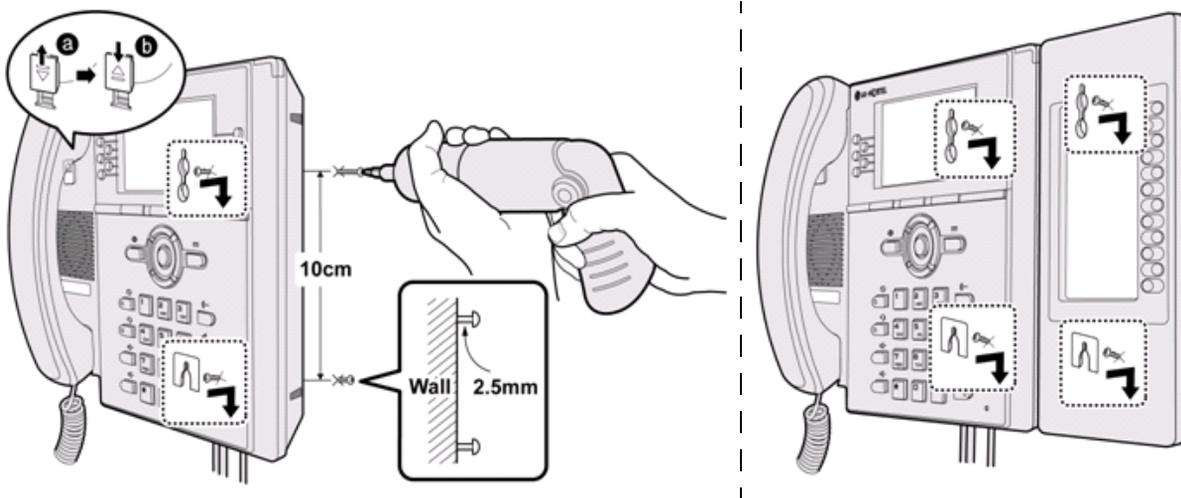
1. Disconnect the IP Phone from power and the LAN.
2. Remove cover from the option module slot behind and below LCD.
3. Insert the WiFi module in the slot.
4. Reconnect to power.



## Wall Mounting

The IP5000 series phones incorporate wall mounting in the base of the phone housing. Using the instructions below and the illustration, wall mount the IP-5000 phone.

- Mark and drill two 7 MM. holes for plastic wall anchors with a vertical separation of 10 cm.
- Insert two (2) anchors into the holes, then insert and tighten the two (2) screws leaving about 2.5 mm exposed. Refer to the figure below.
- Attach all wiring to the IP Phone as described in "Connecting the IP Phone" starting on page [2-1](#).
- Slide the IP Phone over the screws and assure the phone is secure. Note it may be necessary to remove the phone and tighten or loosen the screws for a secure mounting. Also note, the Foot Stand must not be attached to the IP Phone when wall mounting.
- Remove the Handset hook from the phone as shown in the figure below. Reverse the hook and re-install in the IP Phone so that the hook catches the groove in the handset receiver.
- Complete all wiring as described in "Connecting the IP Phone" starting on page [2-1](#).



## Provisioning the Edge 5000

The Edge 5000 phones support "plug and play" installation employing the automated provisioning process described in [Appendix E](#). After connecting to the LAN, desktop PC and power, refer to "Connecting the IP Phone" starting on page [2-1](#), the IP phone retrieves LAN settings including IP address, subnet mask and default gateway address from the local DHCP (Dynamic Host Control Protocol) server.

In addition, the IP phone requests address information for the provisioning server where configuration and software files are maintained. The IP phone downloads the configuration and, if required, software files from the provisioning server. When complete, the IP phone automatically registers and subscribes for SIP call services using the information from the configuration files. Refer to [Appendix C](#) for more details.

IP5000 series phones incorporate means for manual configuration when the automated process is not fully available. As a minimum, the IP5000 phones require the information below for proper operation. When not assigned through the automated provisioning process, manual entry of the below parameters is required for proper operation.

- Line 1 SIP parameters including:
  - Line 1 SIP call server IP address
  - Line 1 Name (SIP user id)
  - Line 1 Authentication user name
  - Line 1 Authentication password

In addition using static IP addressing requires manual entry of the following IP network configuration data.

- IP address of the IP phone
- Default gateway address
- Subnet mask

Two methods are available for manual configuration.

- The LCD Configuration Menu permits local configuration using the dial pad and softkeys, see [Chapter 3](#).
- The second method employs the IP5000 Web Manager, which allows access to the IP phone configuration using a Web browser, see [Chapter 4](#).

Manual configuration permits assignment of all parameters required to gain full operation of the IP phone. However, manual configuration is time consuming and is intended only to augment the automated process and to allow customizing user preferences.

For configuration with the WiFi Module installed, refer to [Chapter 5](#).

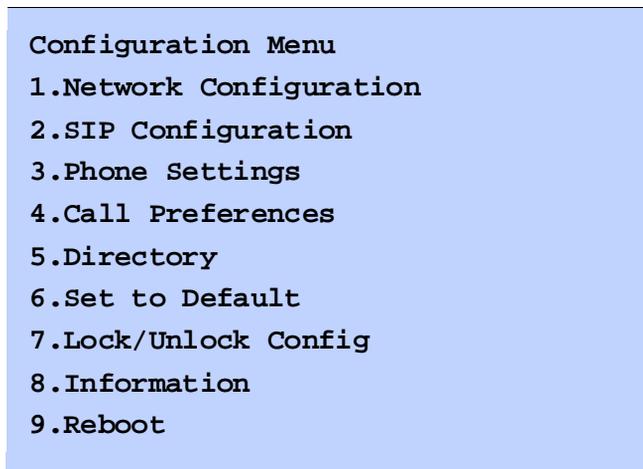
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## Using the LCD Configuration Menu

This chapter provides detailed information to configure the IP5000 phones using the LCD Configuration Menu. The LCD displays the configuration menu and softkey functions. The softkeys and dial pad select menu items and input values. A configuration session begins by pressing the Settings (  ) button, which accesses the LCD Configuration Menu shown below. Select the desired menu item using one of the following methods:

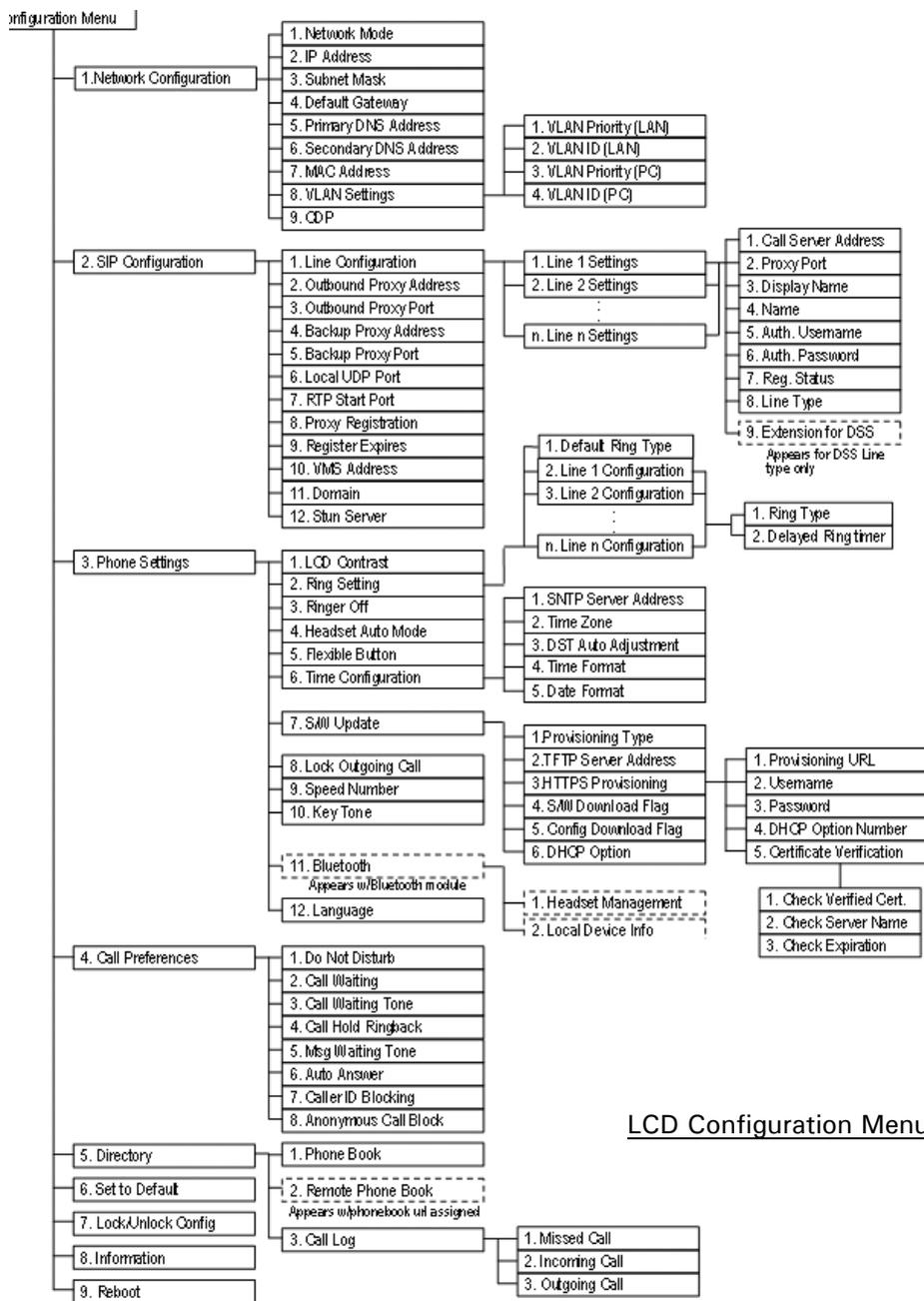
- Use the dial pad to input the menu item number. This is the digit displayed in front of the item,  
OR
- Navigate with the [Next]-[Previous] softkeys to highlight the item and select with the [OK] softkey.



### LCD Configuration Main Menu

When the desired parameter is reached, enter data with the dial pad or select values with the softkeys. Refer to the "LCD Configuration Menu" below for the complete menu.

The first three sections: "Navigating the Menu", "Entering Values", and "Lock/Unlock Configuration" give general information on the use of the LCD Menu. The remaining paragraphs of this section give descriptive and procedural information for each parameter of the menu. Information is organized to follow the structure of the menu as shown in the "LCD Configuration Menu" below. The next menu applies to IP Phones using the wired network connection. When employing the WiFi module, the Network Configuration sub-menu is changed as described in [Chapter 5](#) of this guide.



## LCD Configuration Menu

## Navigating the LCD Configuration Menu

The IP phone must be idle to access the configuration menu and may be password protected (Locked). If locked, advanced configuration parameters can be viewed, however, data entry is not possible. Refer to "Lock/Unlock Configuration" on [page 3-4](#).

*To access the configuration menu:*

Press the Settings () button.

*To select an item:*

Dial the digit associated with the menu item,

OR

Use the [Next]-[Previous] softkeys to move the cursor to the item, then press the [OK] softkey.

The bottom line of the display shows three (3) softkey functions at a time. Additional softkey functions are available when the right arrow, , appears in the bottom-right corner of the LCD.

Use the right navigation button, , to view the additional softkeys.

To return to a previous branch in the menu when the return arrow, , appears in the bottom left corner of the LCD:

Press the left navigation button, .

*To exit the configuration menu:*

Press the Settings () button.

## Entering Values with the Dial Pad and Softkeys

Use the dial pad to input numbers, letters, special characters, and a period. The [Mode] softkey displays to indicate a parameter can accept an alphanumeric entry. Selecting the [Mode] softkey switches the dial pad mode. The dial pad mode displays in the upper-right corner as  for numeric,  for upper case characters and  for lower case characters. [Appendix E](#) defines the relationship between the dial pad digits and characters.

To enter characters with the dial pad, use the digit with the desired character. Press the same digit repeatedly until the desired character appears in the LCD. After entering a character, pause to allow the cursor to move to next character position.

Other special entries include:

- To enter a period or dot (ex., to input an IP address), press asterisk, \* on the dial pad.
- To delete a letter in front of the cursor, press the backspace, [←], softkey
- To clear an entire string, press the [Clear] softkey.

Prior to saving an entry, you may discard changes by pressing the left navigation button, (←), to move to the previous menu, or press the Settings (ⓘ) button to exit the Settings menu.

## Lock/Unlock Configuration

The LCD Configuration Menu can be protected for security using a four to eight digit password. With a password assigned, exiting the LCD Menu automatically locks the menu. Configuration data displays while the menu is locked, however, the menu must be unlocked using the password in order to change advanced parameters.

**NOTE:** Changing some configuration options from the phone keypad interface (ex. Network mode, static or DHCP) requires unlocking this feature and entering a password. **The DEFAULT password for the MBX IP system is five twos (22222).**

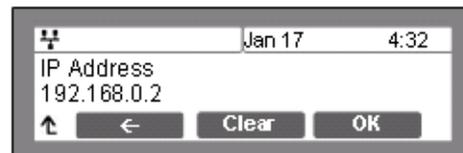
Parameters under the "Phone Settings" item listed below are not subject to the lock feature, allowing the user access without the need to enter a password.

- LCD
- Ring Type
- Ringer
- Headset
- Flexible settings
- Time Configuration
- Speed Number Dialing
- Key Tone
- Bluetooth
- Language

With the menu locked, the padlock icon appears in the upper line of the LCD as shown below.



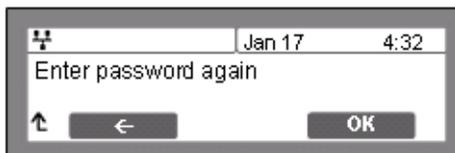
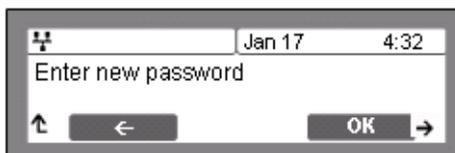
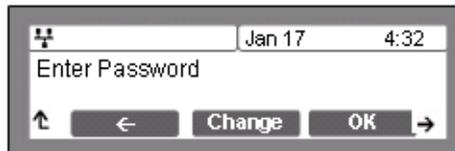
**Locked Display**



**Unlocked Display**

To assign a password:

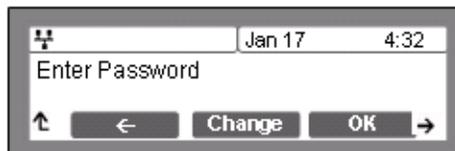
- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 7.Lock/Unlock Config using the [Next]-[Previous] softkeys and press the [OK] softkey. If a password has been previously established, the previous password must be entered, then press the [Change] softkey.
- Enter your new password using the dial pad and press the [OK] softkey. A password is composed of four (4) to eight (8) digits.
- To confirm your password, input the new password again and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session, which will lock the LCD Menu automatically if a password is assigned.



**NOTE:** The [None] softkey removes a password.  
 A password consists of four (4) to eight (8) digits.  
 Assigning a new password automatically unlocks the LCD Configuration Menu.

To unlock the LCD Menu:

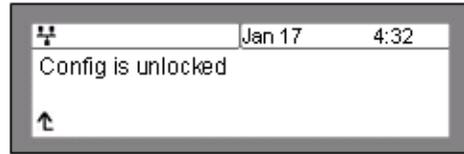
- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 7.Lock/Unlock Config using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the password (4 to 8 digits) and press the [OK] softkey, the Unlocked message appears for approximately 2 seconds and the LCD Menu is unlocked.



- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.

**NOTE:** - With a password assigned, exiting the LCD Configuration Menu automatically locks the menu.

- Entering an invalid password returns an error message followed by the "Enter Password" display.



## Network Configuration

Under Network Configuration are the Network mode (DHCP or static), various IP addresses, DNS (Domain Name Service), and other LAN parameters. In addition, the IP phone MAC (Media Access Control) address can be viewed. When using the WiFi Module refer to [Chapter 5](#) for the Network Configuration sub-menus.

**NOTE:** Changing network parameters requires a reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

### Network Mode

The IP phone is capable of obtaining all of its IP configuration data from a DHCP server. When a DHCP server is not available, static addressing is used for the Network Mode. Selecting static addressing requires manual entry of other IP network parameters including:

- IP address of the phone
- Default gateway IP address
- Subnet mask
- DNS address

*To set the Network Mode:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Network Mode* using [Next]-[Previous] softkeys and press the [OK] softkey.

- Select the Network Mode using [Next]-[Previous] softkeys and press the [OK] softkey to save your selection.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



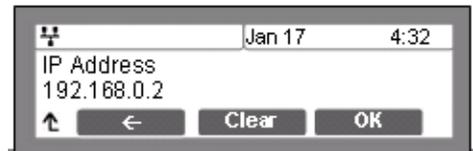
**NOTE:** An asterisk, \*, is displayed in front of the current selection. Changing the Network Mode requires a reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. The IP phone must reboot to utilize the new values entered.

## IP Address

Selecting static addressing for the Network mode requires manual entry of an IP address for the IP phone. The IP phone requires a valid available IP address for proper operation.

*To set the IP Address:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.IP Address* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the IP Address using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



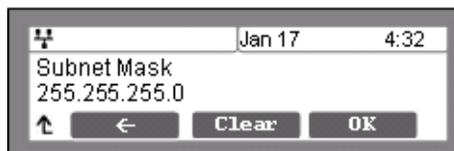
**NOTE:** The IP Address can be changed only in static mode and not if DHCP mode is active. In DHCP mode, the IP phone retrieves an IP address from the DHCP server. Changing the IP Address requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. The IP phone must reboot to utilize the new values entered.

## Subnet Mask

Selecting static addressing for the Network mode requires manual entry of a subnet mask for the IP phone. The IP phone requires a valid subnet for proper operation.

*To enter the Subnet Mask:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *3.Subnet Mask* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Subnet Mask using the dial pad and press the [OK] softkey to save your configuration.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** The Subnet Mask can be changed only in static mode and not if DHCP mode is active. In DHCP mode, the IP phone retrieves a subnet mask from the DHCP server. Changing the Subnet Mask requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. The IP phone must reboot to utilize the new values entered.

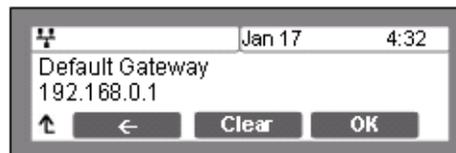
## Default Gateway

Selecting static addressing for the Network mode requires manual entry of a default gateway address for the IP phone. The IP phone requires a valid default gateway address for proper operation.

*To assign the Default Gateway address:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *4.Default Gateway* using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Input the Default Gateway IP address using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



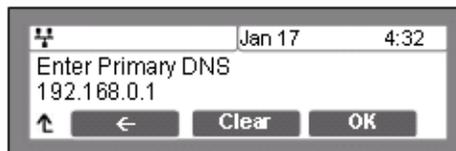
**NOTE:** The Default Gateway address can be changed only in static mode and not if DHCP mode is active. In DHCP mode, the IP phone retrieves a default gateway address from the DHCP server. Changing the Default Gateway address requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. The IP phone must reboot to utilize the new values entered.

## Primary DNS Address

Using an FQDN (Fully Qualified Domain Name) for any of the servers in the IP phone configuration requires entry of a primary DNS IP address. The IP phone contacts the primary DNS server to resolve the FQDN to an IP address.

*To assign the Primary DNS Address:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *5.Primary DNS Address* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Primary DNS Address using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



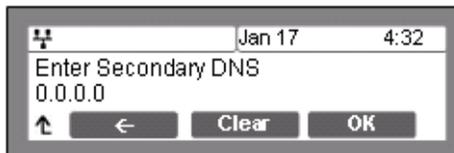
**NOTE:** Changing the Primary DNS Address requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. The IP phone must reboot to utilize the new values entered.

## Secondary DNS Address

With an FQDN assigned as any of the servers in the IP phone configuration, the IP phone contacts the primary DNS server to resolve the FQDN to an IP address. Should the primary not respond, the IP phone contacts a secondary DNS for FQDN resolution. This is an optional but recommended setting.

*To assign the Secondary DNS Address:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *6.Secondary DNS Address* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Secondary DNS Address using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** Changing the Secondary DNS Address requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. The IP phone must reboot to utilize the new values entered.

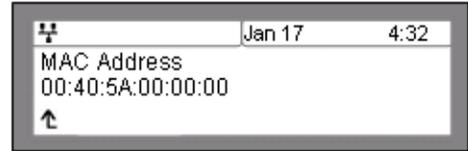
## MAC Address

IEEE specifications require manufacturers of data equipment to store a unique 6-byte MAC or Ethernet address in the permanent memory of each network device.

*To view the MAC Address:*

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *7.MAC Address* using the [Next]-[Previous] softkeys and press the [OK] softkey.

- View the MAC Address of the IP phone.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



## VLAN Settings

VLAN settings define the Ethernet frame priority and VLAN identification in accordance with IEEE 802.1p/Q standards. Separate VLAN tags are assigned for the IP Phone PC port and the LAN (voice) port. With a VLAN Id assigned, only frames with the assigned Id are accepted, and all SIP and voice frames sent by the IP5000 include the VLAN Id assigned to the LAN port.

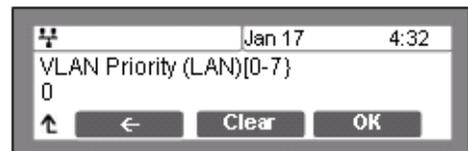
**NOTE:** For proper operation, other network elements (LAN switches and default gateway) must support and be configured with proper VLAN parameters. VLAN settings are overwritten if CDP is enabled. Changing the VLAN parameters requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. The IP phone must reboot to utilize the new values entered.

### VLAN Priority (LAN)

The VLAN Priority (LAN) establishes the priority for Ethernet frames from the IP5000 voice port including signaling and voice packets. Setting the VLAN ID to zero (0) disables VLAN framing and the IP Phone uses only standard Ethernet frames.

*To assign VLAN Priority for the LAN (voice) port:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 1. Network Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 8. VLAN Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1. VLAN Priority (LAN) using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the VLAN Priority for the LAN port using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



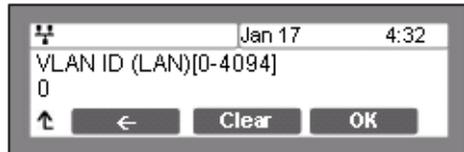
**NOTE:** Changing the VLAN Priority requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered. The recommended value for VLAN Priority (LAN) port is 5. To disable VLANs, assign the VLAN ID as zero (0).

### VLAN ID (LAN)

The VLAN ID (LAN) assigns the identification for Ethernet frames for the IP Phone voice port including signaling and voice payloads. Setting the VLAN ID to zero (0) disables the VLAN framing and the IP Phone uses only standard Ethernet frames.

*To assign the VLAN ID for the LAN (voice) port:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *8.VLAN Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.VLAN ID (LAN)* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the VLAN ID for the LAN port using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** Changing the VLAN ID requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered. To disable VLANs, assign the VLAN ID as zero (0).

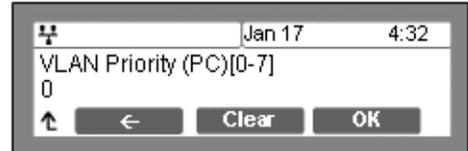
### VLAN Priority (PC)

The VLAN Priority (PC) establishes the priority for Ethernet frames for the IP Phone PC port. Setting the VLAN ID to zero (0) disables VLAN framing and the IP Phone uses only standard Ethernet frames.

*To assign the VLAN Priority for the PC port:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).

- Press the  digit, or move the cursor to *1. Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *8. VLAN Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *3. VLAN Priority (PC)* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the VLAN Priority for the PC port using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



**NOTE:** Changing the VLAN priority for the PC port requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

To disable VLANs, assign the VLAN ID as zero (0).

The recommended value for the VLAN Priority for the PC port is 3.

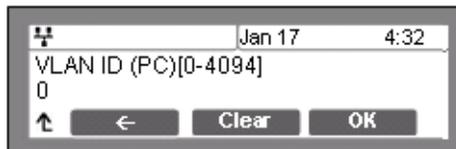
### VLAN ID (PC)

The VLAN ID (PC) assigns the identification for Ethernet frames for the IP Phone PC port. Setting the VLAN ID to zero (0) disables VLAN framing and the IP Phone uses only standard Ethernet frames.

*To assign the VLAN ID (PC) port:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1. Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *8. VLAN Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  button, or move the cursor to *4. VLAN ID (PC)* using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Input the VLAN ID (PC) port using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session, or press the Settings ( ) button to exit the configuration session.



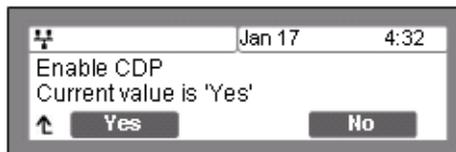
**NOTE:** Changing the VLAN ID (PC) port requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered. To disable VLANs, assign the VLAN ID as zero (0).

## CDP

IP Phones can be assigned to employ the Cisco® Discovery Protocol to determine if VLANs are to be used and the associated VLAN Id. The CDP selection displays only if 'function\_cdp' is enabled in the configuration file, see [Appendix D](#). As a default, the CDP selection displays.

*To set the CDP status when 'function\_cdp' is enabled:*

- Press the Settings ( ) button. If the LCD Menu is locked, use the unlock procedure. Refer to [page 3-4](#).
- Press the 1 digit, or move the cursor to 1.Network Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the 9 digit, or move the cursor to 9.CDP using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the desired softkey ([Yes] or [No]) to enable or disable CDP.
- Move to another parameter with the navigation buttons and continue the session or press the Settings ( ) button to exit the configuration session.



**NOTE:** Changing the CDP status requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered. When CDP is enabled, VLAN settings are overwritten.

## SIP Configuration

The SIP Configuration selection establishes parameters for each line appearance, SIP User Id, allowing the IP Phone to register and, if required, subscribe for the line appearance with the appropriate call server. Additionally, general Voice over IP (VoIP) characteristics are assigned, which affect characteristics associated with all lines.

Lines are assigned to the IP Phone flexible buttons in consecutive order from the first button. For each line, the following parameters are available:

- call server IP address
- authorization Id and password
- line type
- special line attributes

As a default, the maximum number of lines is two and only the first two line appearances are available using the LCD Menu. When the IP Phone requires more than two (2) lines, use the Web Manager or configuration file to change the number of lines and line parameters.

**NOTE:** For proper operation, assign the first line button as an appearance of the user's line. For features where the IP Phone uses one-button line access such as Speed Dial, the IP Phone employs the first line button.

### SIP Configuration - Line Parameters

Assign parameters in this section for each SIP line appearance.

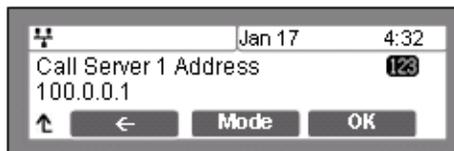
#### Call Server Address

The Call Server Address is the IP address or FQDN of the IP Phone host call server. Different call servers can be defined for each line.

*To assign the Call Server address:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on page [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Line Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.
- Press the  digit, or move the cursor to 1.Call Server Address using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Input the Call Server Address or FQDN using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



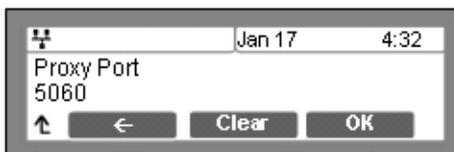
**NOTE:** Changing the Call Server Address requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered. To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

### Proxy Port

The Proxy Port defines the TCP/UDP port number employed for SIP signaling transport. In common practice, port number '5060' is used.

*To change the Proxy Port number:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Line Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.
- Press the  digit, or move the cursor to 2.Proxy Port using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Proxy Port number using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



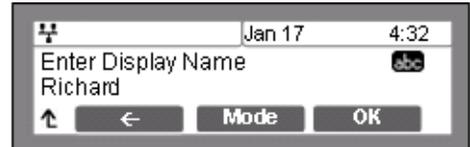
**NOTE:** Changing the Proxy Port requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

## Display Name

When assigned, the Display Name is used in SIP headers as the caller id name.

*To enter the Display Name:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *2.SIP Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Line Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.
- Press the  digit, or move the cursor to *3.Display Name* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Display Name using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

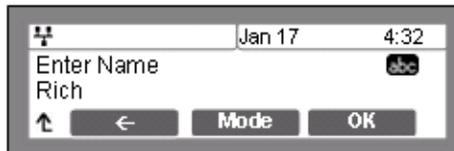
## Name

The Name is used in SIP headers as the SIP user id or account assigned in the call server. A name is required for proper operation and must match the user id or account assigned in the call server.

*To enter the Name:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *2.SIP Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Line Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.

- Press the  digit, or move the cursor to *4.Name* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Name using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



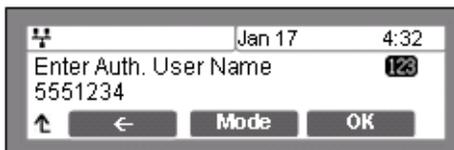
**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

### Authentication User Name

Authentication of the line appearance with the SIP call server uses the Authentication User Name.

*To assign the Authentication User Name:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *2.SIP Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Line Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.
- Press the  digit, or move the cursor to *5.Auth. Username* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Authentication User Name using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

## Authentication Password

Authentication of the line appearance with the SIP call server uses the Authentication Password in conjunction with the user name.

*To assign the Authentication Password:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *2.SIP Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Line Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.
- Press the  button, or the move cursor to *6.Auth. Password* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Authentication Password using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

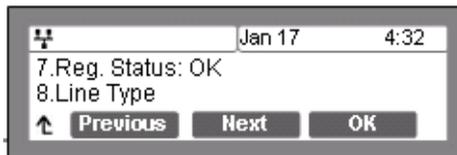
## Registration Status

The status of the line registration with the SIP call server can be viewed. The status is displayed as OK, NOK (Not OK) or undefined. The latter displays when no call server address is assigned.

*To view the Registration status for a line:*

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to *2.SIP Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Line Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.

- Press the  button, or move the cursor to 7.Reg. Status using the [Next]-[Previous] softkeys, view the registration status.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



## Line Type

Each line button represents a SIP user id or account in the call server. A line must have a Line Type assignment. The three line types available are private, shared or BLA (Bridged Line Appearance). A private line generally appears on line buttons of one phone but may appear at multiple phones as a Multiple Line Appearance (MLA). While incoming calls on a private line ring at all phones with an appearance, an active or held private line call is accessible only to the associated phone.

In addition, the status of an active or held private line call displays only at the associated phone. Only the active user may transfer or conference calls on a private line.

A BLA appears at line buttons of more than one phone. All phones with an appearance can access incoming and held calls on the BLA and receive status information for the call. Note for proper operation, assign the line as a BLA in the call server as well as the IP Phone.

Each line button employs LEDs to indicate status of the line as shown below.

Incoming call	Orange*	LED flashes at 60 ipm, fast flash
Line in use at this phone	Orange*	LED On
Call held at this phone	Orange*	LED flashes at 30 ipm, slow flash
BLA in use at another phone	Red	LED On
BLA Call held at another phone	Red	LED slow flash
Line not registered w/server	Red/Orange	LED flashes color, red to orange at 30 ipm

\* When the LCD displays information for a line, such as when an incoming call first rings, the LED color is orange otherwise, the LED color will be green.

### To assign the Line Type:

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Line Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.
- Press the  digit, or move the cursor to *8.Line Type* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the type for the line using the [Next]-[Previous] softkeys and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



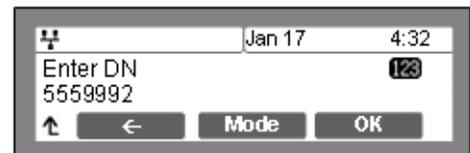
**NOTE:** Changing the Line Type requires a reboot of the IP Phone; when you leave the menu, you will receive a Reboot notice. The IP Phone must reboot to utilize the new values entered. An asterisk, \*, is displayed in front of the current selection.

### MADN Directory Number

A shared line requires entry of the associated DN (Directory Number). Note assign a DN only for a shared line type.

*To assign the DN for a shared line,*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *2.SIP Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Line Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the line button number or move the cursor using the [Next]-[Previous] softkeys and press the [OK] softkey to select a line button.
- Press the  digit, or move the cursor to *9.Directory Number* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Directory Number for the shared line using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



**NOTE:** Assign a Directory Number only for a shared line. Do not assign a Directory Number for a private line.

## SIP Configuration - General Parameters

Parameters in this section assign the overall SIP operation.

### Outbound Proxy Address

With the Outbound Proxy Address defined, the IP Phone sends all requests to the proxy instead of the SIP call server configured in [“Call Server Address” on page 3-16](#). The address may be in the form of an IP address or a FQDN.

*To assign an Outbound Proxy Address*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.Outbound Proxy Addr. using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Outbound Proxy Address using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:**

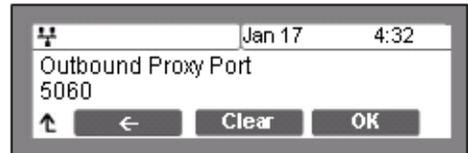
- To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.
- Changing the Outbound Proxy Address requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. (The IP Phone must reboot to utilize the new values entered.)

## Outbound Proxy Port

With the Outbound Proxy Server defined, the associated port must be defined as the Outbound Proxy Port. All SIP requests are sent to the assigned port instead of the proxy port configured in [“Proxy Port” on page 3-17](#).

*To assign the Outbound Proxy Port:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 3.Outbound Proxy Port using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Outbound Proxy Port using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** Changing the Outbound Proxy Port requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

## Backup Proxy Address

When employing an outbound proxy, a backup proxy can be defined for use should the primary proxy fail to respond. The Backup Proxy Address is an IP address or a FQDN.

*To assign a Backup Proxy Address:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 4.Backup Proxy Address using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Input the Backup Proxy Address using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** Changing the Backup Proxy Address requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

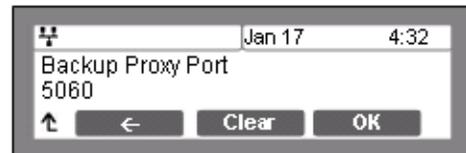
To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

### Backup Proxy Port

The Backup Proxy Port defines the port used when sending SIP messages to the backup proxy defined under [“Backup Proxy Address” on page 3-24](#).

*To assign the Backup Proxy Port:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *2.SIP Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *5.Backup Proxy Port* using the Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Backup Proxy Port using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



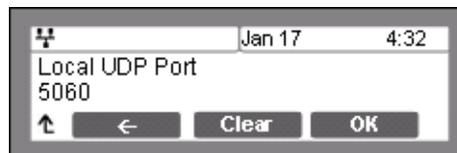
**NOTE:** Changing the Backup Proxy Port requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

### Local UDP Port

The Local UDP Port defines the port, normally 5060, the IP Phone uses to send and receive SIP signaling packets. In some instances, particularly when behind a firewall, the normal port may not be available. If port 5060 is not available, a different port can be defined.

*To set the Local UDP Port:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 6.Local UDP Port using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Local UDP Port using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** Changing the Local UDP Port requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

### RTP Start Port

When a SIP call is established, Real-Time Transport Protocol (RTP) packets transport media and digitized voice. The port used for RTP packets is usually 23000, but a different port may be defined.

*To assign an RTP Start Port:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 7.RTP Start Port using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Input the RTP Start Port using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



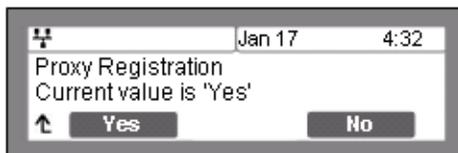
**NOTE:** Changing the RTP Start Port requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

### Proxy Registration

If Proxy Registration is set to [Yes], the IP Phone will register with the appropriate call or proxy server upon initial power-up, during a reboot and at periodic intervals based on the timer defined in [“Register Expires” on page 3-27](#).

*To enable Proxy Registration:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  button, or move the cursor to 8.Proxy Registration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- To enable registration, press the [Yes] softkey or, to disable SIP registration, press the [No] softkey.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



### Register Expires

To assure a connection with the proxy or SIP call server, the IP Phone periodically re-registers. Unless defined by the host server during registration, the Register Expires timer determines the interval between registration attempts and is set from 0 to 6400 seconds, default 3600 seconds.

*To modify the Register Expires timer:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).

- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 9.Register Expires using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the registration expiration time using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.

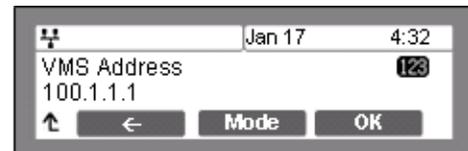


### VMS Address

The Voice Mail Server (VMS) address is the IP address or phone number of the user's voice mail system.

*To assign the VMS Address:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the digits  , or move the cursor to 10.VMS Address using the [Next]-[Previous] softkeys and press the [OK] softkey to save your entry.
- Input the VMS Address using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



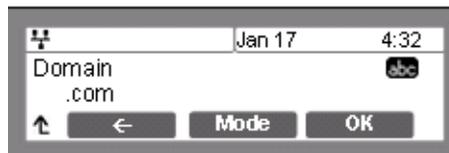
**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

## Domain

The Domain specifies the domain for SIP service when the provider desires to use a specific SIP domain for the IP Phone.

### To assign the Domain

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the digits   , or move the cursor to 11.Domain using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Domain name using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



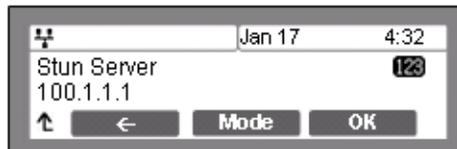
**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

## STUN Server

When the phone is located behind NAT and a STUN server exists, this menu sets the STUN server IP address or FQDN.

### To assign the STUN server

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 2.SIP Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the digits   , or move the cursor to 12.Stun Server using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Stun Server using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

## Phone Settings

Under the Phone Settings menu item the user parameters listed below can be changed.

- LCD contrast
- Ring setting
- Ringer
- Headset auto mode
- Flexible button settings
- Time Configuration
- S/W Update
- Outgoing Call Lock
- Speed Number Dialing
- Key Tone
- Bluetooth
- Language

With the exception of S/W Update, these settings are not password protected. The user may access these parameters even if the LCD Configuration Menu is locked.

### LCD Contrast

The contrast of the LCD is adjustable for best viewing angle.

*To adjust the LCD contrast:*

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.LCD Contrast* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Down] softkey to decrease the contrast, or press the [Up] softkey to increase the contrast.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



## Ring Setting

The IP Phone uses one of 14 ring signals (Ring Types) or no ring ("Ringer Off") for incoming call notification. Each line and Phone Book record may have a different ring type assigned including "Ringer Off" and "Set as Default". The "Default Ring Type" is used when a ring type is "Set as Default" or not defined for a line or Phone Book record. By assigning different ring signals to closely located phones, lines or Phone Book records, the user can identify the ringing phone, line or caller.

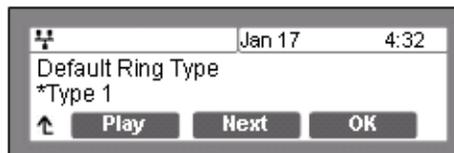
Ring types 1 through 4 and 101 to 105 are fixed in the IP Phone memory and may be selected by the user. An additional five tones, Ring Type 201 to 205, use an RTTTL (Ring Tone Text Transfer Language) format text file, which must be downloaded to the IP Phone prior to selection. Refer to [Appendix G](#) for additional details on RTTTL ring tones.

For each line, the ring signal can be immediate or delayed by up to 10 seconds. Delayed ring is defined in one-second increments from 0 to 10 seconds. By assigning different ring signals to closely located phones lines or Phone Book records, the user can identify the ringing phone, line or caller.

### Default Ring Type

To select the Default Ring Type for the IP Phone:

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.Ring Setting using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Default Ring Type using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the Ring Type using the [Next] softkey. Press the [Play] softkey to hear the selected tone.
- Press the [OK] softkey to change to the selected Ring Type.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.

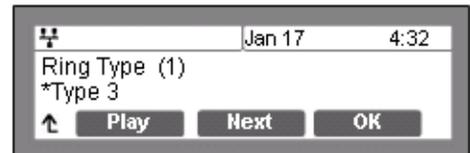


**NOTE:** The Edge 5000 series phone uses one of 14 ring types, nine fixed in memory and the remaining 5 user-defined, as the phone or default ring, see [Appendix G](#). Each line and Phone Book entry may use a different type.

## Line Ring Setting

To adjust the Ring type (tone) for a line:

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.Ring Setting using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Dial the line number plus one (2 for Line 1, 3 for Line 2, etc.), or move the cursor to Line n Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey. The value of n is the line button number.
- Press the  digit, or move the cursor to 1.Ring Type using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the Ring Type using the [Next] softkey. Press the [Play] softkey to hear the selected tone. The Ringer Off selection turns the ringer off for incoming calls on the line. The "Set as Default" uses the Default Ring Type for incoming calls on the line, see ["SNTP Server Address" on page 3-37.](#)
- Press the [OK] softkey to save the selection.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



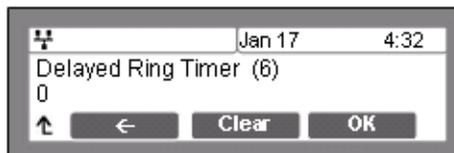
**NOTE:** If no Ring Type or "Set as Default" is assigned for a line, the "Default Ring Type" is used. The Ring Type can be set to any of the 14 Ring types, "Set as Default" or "Ringer Off". When set as Ringer Off, the phone will not ring for incoming calls on the line. For Ring Type, an asterisk, \*, displays in front of the current selection.

## Delayed Ring

To set delayed ring for a line:

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.Ring Setting using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Dial the line number plus one (2 for Line 1, 3 for Line 2, etc.), or move the cursor to Line n Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey. The value of n is the line button number.
- Press the  digit, or move the cursor to *2.Delayed Ring* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Enter the delay time as 0 to 10 seconds in 1-second increments. A zero (0) provides no delay; the ring signal is immediate.
- Press the [OK] softkey to save to the delayed ring setting.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.

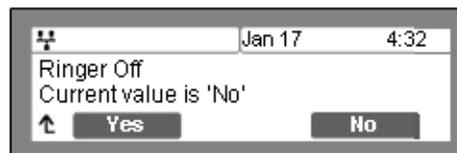


## Ringer Off

The IP Phones can be programmed not to ring when an incoming call is received.

*To set the Ringer Off parameter:*

- Press the Settings () button.
- Press the  digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *3.Ringer Off* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable Ringer Off, or press the [No] softkey to disable Ringer Off.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.

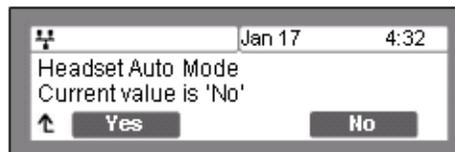


## Headset Auto Mode

The Edge 5000 phones support use of a headset that has a standard 2.5 mm plug. With Headset Auto Mode enabled, pressing a line button automatically connects audio to the headset. Also, redial, Speed dial, Speed number dialing and click-to-call places calls with audio through the headset.

*To enable Headset Auto Mode:*

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *4.Headset Auto Mode* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable the Headset Auto Mode or press the [No] softkey to disable the Headset Auto Mode.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



## Flexible Button Setting

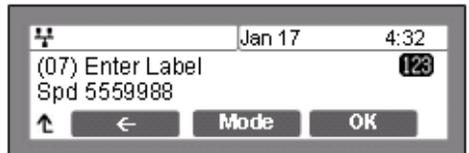
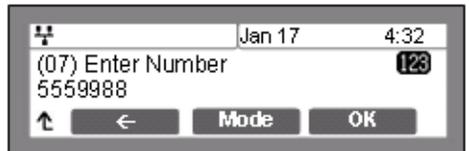
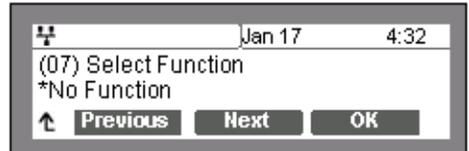
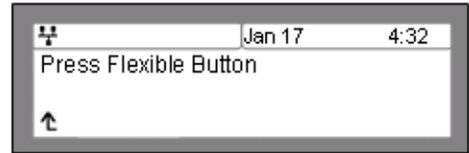
The flexible buttons not assigned as line buttons can access various functions. The table below indicates the available functions with a description of each.

Feature		Description
0	No Function	Unassigned
1	Speed Dial Function	Dials the assigned number
2	Phone Book Function	Views the personal phone book
3	Call Log Function	Views the call log list
4	Mute Function	Toggles the Mute feature on and off
5	Headset Function	Toggles the Headset on and off
6	Redial Function	Dials the last number dialed by the user.
7	Return Call Function	Dials the number of the last answered call
8	Set Call Forwarding	Sets the call forwarding configuration
9	Conference Function	1. Initiates a conference call 2. Joins calls in a conference 3. Terminates the conference call
10	Transfer Function	Initiates a call transfer
11	Hold Function	Places an active call on hold
12	Do not disturb	Toggles the DND on and off
13	Set Ringer Off	Toggles the ringer on and off
14	Message Function	Views the number of new and old messages stored in the Voice Mail server, and dials the Voice Mail server by pressing the <b>[Dial]</b> softkey

To assign a function to a flexible button:

- Press the Settings () button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 5.Flexible Button using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Select the desired flexible button.
- Select a function using the [Next]-[Previous] softkey and press the [OK] softkey. Refer to the table above for "Flexible Button Functions".
- If the selected function is Speed dial or Message, enter the speed number or voice mail number and press the [OK] softkey.
- Each flexible button can have its own label, enter the label and press the [OK] softkey to save the entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (ⓘ) button to exit the configuration session.



- NOTE:**
- Only flexible buttons not assigned as line buttons can be assigned a function. For proper operation, Flexible button 1 should be assigned as the user's primary extension line appearance.
  - The Edge 5000 has 24 flexible buttons.
  - An Expansion Module may be connected to the IP Phone expanding the number of Flexible buttons available with the IP Phone by 12.
  - To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

## Time Configuration

Within the Time Configuration menu, the IP Address or FQDN of the desired Simple Network Time Protocol (SNTP) server and the local time zone are defined. In addition, Daylight Savings Time (DST) is enabled.

The following SNTP server addresses or other private SNTP server addresses may be used for Time Configuration:

- clock.via.net
- ntp.nasa.gov
- tick.ucla.edu

### SNTP Server Address

SNTP is a standard protocol that permits a network device to obtain the network's current time. For operation with SNTP, the IP Phones require an SNTP server IP address or FQDN.

*To assign the SNTP Server Address:*

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 6.Time Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.SNTP Server Address using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the SNTP Server Address using the dial pad and press the [OK] softkey to save the entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

### Time Zone

For proper operation of the clock, the IP Phone requires the local time zone.

*To enter the Time Zone:*

- Press the Settings (  ) button.

- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 6.Time Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.Time Zone using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the Time Zone desired using the [Next]-[Previous] softkeys and press the [OK] softkey to save the entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



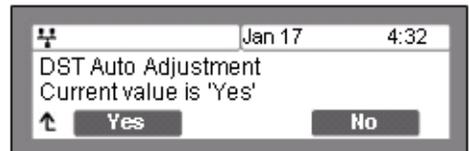
**NOTE:** An asterisk, \*, displays in front of the current selection. Select the nearest region as shown in the [“Time Zones Chart” on page D-31](#).

### DST Auto Adjustment

The IP Phone automatically adjusts for DST when enabled.

*To enable/disable automatic day light savings time:*

- Press the Settings () button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 6.Time Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 3.DST Auto Adjustment using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable DST Auto Adjustment, or press the [No] softkey to disable DST Auto Adjustment.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



## Time Format

The format of the LCD time display can be set to display time in the 12-hour format or 24-hour format. In addition, the LCD time display can be disabled.

*To set the display format for time:*

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 6.Time Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 4.Time Format using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Next]-[Previous] softkeys to select the Time Format and press the [OK] softkey to set the format.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** An asterisk, \*, displays in front of the current selection.

## Date Format

The format of the LCD date displays in the one of the formats below:

MM/DD (01/22)

DD/MM (22/01)

DD Month (22 Jan)

Month DD (Jan 22)

None

*To set the date display format:*

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Press the  digit, or move the cursor to *6.Time Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *5.Date Format* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Next]-[Previous] softkeys to select the display format and press the [OK] softkey to set the format.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



**NOTE:** An asterisk, \*, displays in front of the current selection.

## S/W Update

Within the S/W Update selection, the type of provisioning (TFTP/HTTPS), the Server Address, HTTPS Verification settings and DHCP Options can be viewed and changed.

### Provisioning Type

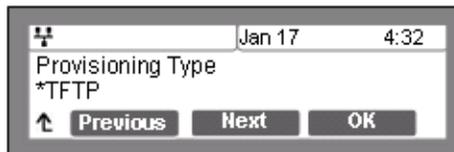
The 5000 phone supports two provisioning protocols:

- Trivial File Transfer Protocol (TFTP) - a simple transfer mechanism using UDP but lacks security and TFTP ports are often blocked at firewalls.
- Hyper-Text Transfer Protocol/Secure (HTTP/S) - employs TCP and using SSL (Secure Sockets Layer) encryption is a more secure method. In addition, ports employed by HTTPS are commonly available.

*To assign the provisioning protocol:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure. Refer to [page 3-4](#).
- Press the  digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *7.S/W Update* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Provisioning Type* using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Select the Provisioning Type (TFTP or HTTPS) using the [Next]-[Previous] softkeys and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings ( ) button to exit the configuration session.



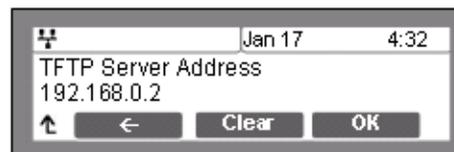
**NOTE:** Changing the Provisioning Type requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered. An asterisk, \*, displays in front of the current selection.

### TFTP Server Address

With TFTP provisioning selected, the IP address or FQDN of the TFTP server must be defined. The TFTP Server Address may be retrieved automatically from the DHCP server or set manually.

*To enter a TFTP Server Address:*

- Press the Settings ( ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 7.S/W Update using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.TFTP Server Address using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the TFTP Server Address using the dial pad, and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings ( ) button to exit the configuration session.



**NOTE:** Changing the TFTP address requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

## HTTPS Provisioning

The HTTP/HTTPS server URL is a required parameter for HTTP/HTTPS provisioning. Normally, HTTP employs TCP port 80, and HTTPS employ port 443. In addition, if required by the HTTP/HTTPS server for authentication, a Username and Password are assigned.

**NOTE:** When using HTTPS, the server must support SSL (Secure Sockets Layer) for proper operation.

### Provisioning URL

The Provisioning URL is the URL of the HTTP/HTTPS server.

*To assign the provisioning server URL:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *7.S/W Update* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *3.HTTPS Provisioning* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Provisioning URL* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the provisioning server URL using the dial pad and press the [OK] softkey to save the entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



- NOTE:**
- Changing the provisioning server URL requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. (The IP Phone must reboot to utilize the new values entered.)
  - To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

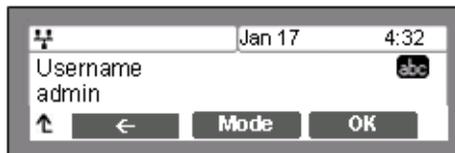
### Username

In some cases, the HTTP/HTTPS server requires a Username (Id) and Password for authentication prior to allowing file access.

*To set the Username:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).

- Press the  digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *7.S/W Update* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *3.HTTPS Provisioning* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.Username* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Username using the dial pad, and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



- NOTE:**
- Changing the Username requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.
  - To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

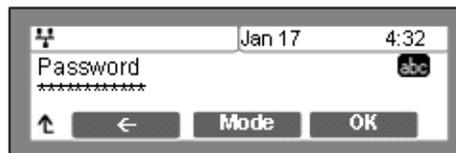
### **Password**

In some cases, the HTTP/HTTPS server requires a Username (Id) and Password for authentication prior to allowing file access.

*To set the Password:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *7.S/W Update* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *3.HTTPS Provisioning* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *3.Password* using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Input the Password using the dial pad, and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



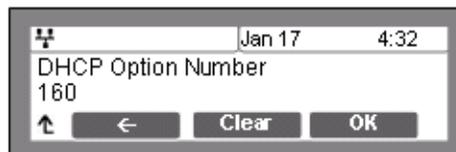
- NOTE:**
- Changing the Password requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.
  - To enter alphanumeric characters select the [Mode] softkey. [Appendix E](#) for the character mapping of dial pad digits.

### HTTPS URL DHCP Option Number

An unused DHCP option can be used to define the HTTPS provisioning server URL. As a default, the IP Phone uses DHCP option 160.

*To modify the DHCP option used for the HTTPS URL:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 7.S/W Update using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 3.HTTPS Provisioning using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 4.DHCP Option Number using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the DHCP option, 1 to 255, using the dial pad, and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



- NOTE:** Changing the DHCP option requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

### **Certificate Verification**

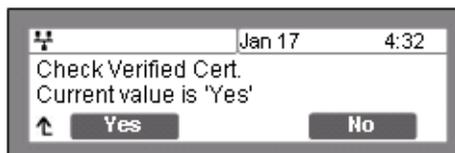
The IP5000 series IP Phones can verify specific characteristics of the HTTPS server and the Certificate of Authority stored on the server. Verifiable characteristics are:

- Valid Certificate signature
- HTTPS server name
- Certificate of Authority expiration date

If the verification fails, IP Phones terminate the HTTPS session.

*To modify the verification options:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 7.S/W Update using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 3.HTTPS Provisioning using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move cursor to 5.Check Certificate using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the desired option using the dial pad digits 1-3 or the [Next]-[Previous] softkeys and press the [OK] softkey.
  1. Check Valid Cert.
  2. Check Server Name
  3. Check Expiration
- For each option, press the [Yes] softkey to enable the check, or press the [No] softkey to disable the check
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



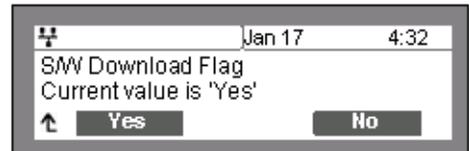
**NOTE:** Changing the verification options requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. (The IP Phone must reboot to utilize the new values entered.) The display will indicate the present value (Yes or No) for each option.

### S/W Download Flag

When Power is applied or a reboot is processed, the IP-Phone automatically checks and downloads IP Phone Software from the defined provisioning server. The IP Phone will download software if the software versions are different and the S/W Download flag is enabled. Note this menu item displays only when the Download Flag function is enabled in the Web Manager, see [“Phone Settings” on page 4-18](#), or configuration file, see [Appendix D](#).

To set the S/W Download Flag:

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 7.S/W Update using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press  button, or move cursor to 4.S/W Download Flag using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable the S/W Download, or press the [No] softkey to disable the S/W Download.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session



**NOTE:** Changing the S/W Download Flag requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

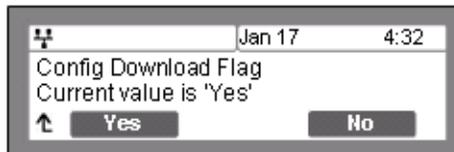
### Config Download Flag

When Power is applied or a reboot is processed, the IP-Phone automatically downloads a Global (system) and a Phone specific (MAC) Configuration file from the defined provisioning server. To download the configuration files during provisioning, the Config Download flag must be enabled. Note this menu item displays only if the Download Flag function is enabled using the Web Manager, see [“Phone Settings” on page 4-18](#), or the configuration file, see [Appendix D](#).

To set the Config Download Flag:

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Press the  digit, or move the cursor to 7.S/W Update using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press  button, or move cursor to 5.Config Download Flag using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable the Configuration Download, or press the [No] softkey to disable the Configuration Download.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



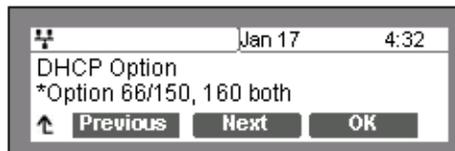
**NOTE:** Changing the Config Download Flag requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to use the new values entered.

### DHCP Option

The IP Phone supports DHCP Options 66 & 150 (TFTP server) and a custom Option, default 160, for the HTTP/HTTPS URL to define the provisioning server. In some situations, it is useful to disable use of the DHCP Options.

*To set the DHCP Options flag:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 7.S/W Update using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 6.DHCP Option using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the DHCP Option desired using [Next]-[Previous] softkeys and press the [OK] softkey to save the entry. Options available include "Don't use any Option", "Option 66/150 only", "Option 160 only" and "Option 66/150, 160 both".
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



- NOTE:**
- Changing the DHCP Options requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.
  - An asterisk, \*, displays in front of the current selection.

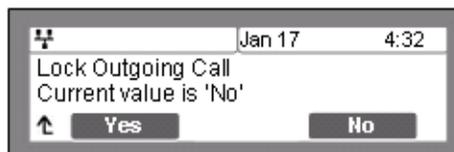
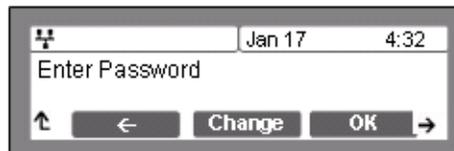
## Lock Outgoing Call

The IP Phone can be configured to allow outgoing calls only if a password is entered. When enabled, the LCD screen will display the password request and the password must be entered prior to connecting for outgoing call.

To activate this feature, the LCD password must be set, refer to "Lock/Unlock Configuration" on [page 3-4](#) and Lock Outgoing Call must be enabled.

To enable/disable the Lock Outgoing Call feature:

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move cursor to 8.Lock Outgoing Call using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable the Lock Outgoing Call, or press the [No] softkey to disable the Lock Outgoing Call.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



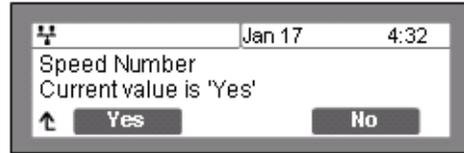
## Speed Number

Each IP5000 series phone includes a Phone Book that supports up to 100 entries. Each Phone Book record includes a two (2) digit Speed number, see ["Phone Book" on page 59](#). When enabled, dialing the Speed Number (00-99) sends the contact information from the associated Phone Book record.

To enable/disable Speed Number operation:

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Press the  digit, or move the cursor to 9.Speed Number using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable the Speed Number, or press the [No] softkey to disable the Speed Number.
- Move to another parameter with the navigation buttons and continue the session or press the Settings  button to exit the configuration session.



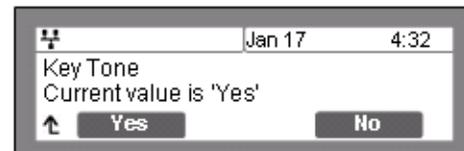
When enabled, dialing an empty Speed Number terminates the call and the empty status of the Speed Number displays for approximately 2 seconds.

## Key Tone

Normally, when a button on the phone is pressed a tone is generated to confirm to the user that the phone has recognized the key depression. If desired, this tone can be disabled.

*To enable/disable the Key Tone:*

- Press the Settings  button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digits, or move the cursor to 10.Key Tone using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable the Key Tone, or press the [No] softkey to disable the Key Tone.
- Move to another parameter with the navigation buttons and continue the session or press the Settings  button to exit the configuration session.



## IP5000 Bluetooth Support

The IP5000 can be equipped with a Bluetooth module allowing use of a headset that supports Bluetooth connections in place of a wired headset, see [“Bluetooth Module Installation” on page 2-4](#) details. Prior to using a Bluetooth headset, it must be paired and can then be connected with the Bluetooth module. This section describes how to pair, connect, disconnect and delete a Bluetooth headset. Note that the Bluetooth menu is only available when a Bluetooth module is installed in the IP phone

**NOTE:** An asterisk, \*, displays in front of the current headset selection.

When the Bluetooth module is installed, the icon  is displayed in upper part of the IP8830 or IP8840 LCD. When one or more, maximum five (5), Bluetooth headsets are paired, the icon  is displayed and, when connected, the icon  is displayed.

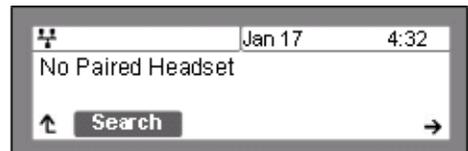
When a Bluetooth headset is connected, a wired headset cannot be used and the Headset button will control the Bluetooth headset.

### Pairing a Bluetooth headset

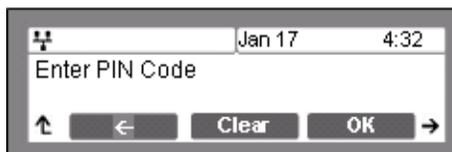
A Bluetooth headset must be paired with the Bluetooth module before it can be connected (activated). Up to five (5) headsets may be paired with the IP Phone at one time.

*To Pair and connect a new headset with the IP Phone:*

- Press the Settings () button.
- Press the  digit, or move the cursor to 3.Phone Settings using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the   digits, or move the cursor to 11.Bluetooth using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Headset Management using the [Next]-[Previous] softkeys, and press the [OK] softkey. This will display a list of previously paired headsets.
- If no headsets are paired with the IP Phone, press the [Search] softkey, the IP Phone will search for nearby Bluetooth headsets. If one or more Bluetooth headsets are already paired with the IP Phone, press the [ → ] softkey and select the [Add] softkey to add another headset.



- Select a Bluetooth headset from the list of headsets found using the [Next]-[Previous] softkeys, and select the [Pair] softkey.
- When the "Enter PIN Code" is displayed, input the PIN associated with the headset and press [OK] softkey.
- Move to another parameter with the navigation buttons and continue the session or press the Settings ( ) button to exit the configuration session.



**NOTE:** If the PIN entered is valid, the Bluetooth headset is paired and automatically connected to the IP Phone.

#### Connect or Disconnect a Paired Headset

When one or more headsets are paired with the IP8830 or IP8840 phone, the headset must be connected prior to use. When it is desired to change the active headset, the presently active headset must be disconnected prior to connecting the new headset. The following procedure describes the steps required to connect or disconnect a headset that is paired to the IP Phone.

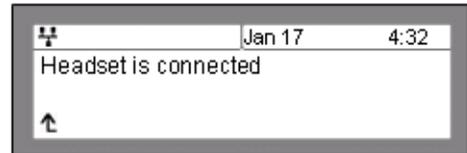
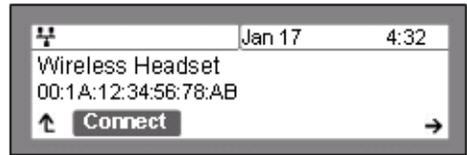
*To connect a headset that is already paired or disconnect an active headset:*

- Press the Settings ( ) button.
- Press the **3** digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the **1** **1** digits, or move the cursor to *11.Bluetooth* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the **1** digit, or move the cursor to *1.Headset Management* using the [Next]-[Previous] softkeys, and press the [OK] softkey. This displays a list of previously paired headsets.
- Select a Bluetooth headset from the list of headsets found using the [Next]-[Previous] softkeys.



- Press the [Connect] softkey to activate the previously paired headset or press the [Discon] to deactivate the headset.
- Move to another parameter with the navigation buttons and continue the session or press the Settings ( ) button to exit the configuration session.

**NOTE:** An asterisk, \*, displays in front of the current headset selection.



### Deleting a Headset from the Paired List

A Bluetooth headset can be removed from the Paired list.

*To remove a headset from the Paired list:*

- Press the Settings ( ) button.
- Press the **3** digit, or move the cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the **1** **0** digits, or move the cursor to *10.Bluetooth* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the **1** digit, or move the cursor to *1.Headset Management* using the [Next]-[Previous] softkeys, and press the [OK] softkey. This will display a list of previously paired headsets.
- Select a Bluetooth headset from the list of headsets found using the [Next]-[Previous] softkeys.
- Press the [Delete] softkey to remove the headset from the Paired list
- Move to another parameter with the navigation buttons and continue the session or press the Settings ( ) button to exit the configuration session.



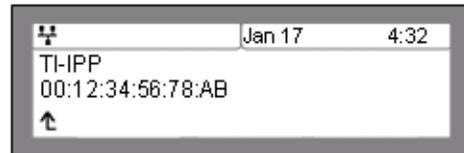
**NOTE:** A Bluetooth headset must be disconnected as described in [“Connect or Disconnect a Paired Headset” on page 3-51](#) before it can be removed from the Paired list.

## Bluetooth Module Information

To assure the operation of the Bluetooth module, the address information for the module can be viewed from the Bluetooth menu item.

To view the active headset information:

- Press the Settings (  ) button.
- Press the  digit, or move cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the   digits, or move cursor to *11.Bluetooth* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the  digit, or move cursor to *2.Local Device Info* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



## Language

The IP Phone firmware includes an xml file, which, among other things, determines the languages available to the phone. When the xml file contains more than one (1) language, the Language parameter will be available.

To select an available language:

- Press the Settings (  ) button.
- Press the  digit, or move cursor to *3.Phone Settings* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the   digits, or move cursor to *12.Language* using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Select a Language from the list using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** An asterisk, \*, displays in front of the current language selection.

## Call Preferences

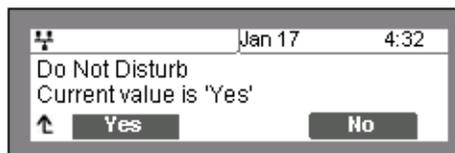
Call Preferences define various call handling features of the IP Phones.

### Do Not Disturb

When the DND (Do Not Disturb) feature is active, the IP Phone does not notify the user of an incoming call. The IP Phone does not ring and the associated line LED does not flash. This allows you to work without interruption from an incoming call. The call server configuration determines routing of the incoming call while your phone is in DND. To activate DND, DND must be enabled.

*To enable the DND operation:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *4.Call Preferences* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Do Not Disturb* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable DND, or press the [No] softkey to disable DND.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



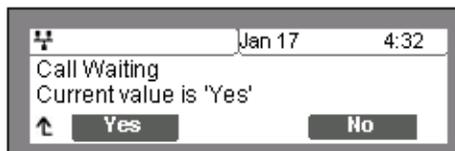
## Call Waiting

With Call Waiting configured, while on a call the IP Phone alerts the user of an incoming call. The line button flashes to indicate the new call, and an optional beep tone is delivered over the existing conversation, see [“Call Waiting Tone” on page 3-55](#). In addition, the LCD displays the incoming caller id during the ring signal so you know who is calling before you interrupt the current call.

If Call Waiting is disabled, the IP Phone will reject the new call. The call server configuration determines routing of the incoming call.

*To enable/disable Call Waiting:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 4.Call Preferences using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.Call Waiting using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable Call Waiting, or press the [No] softkey to disable Call Waiting.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



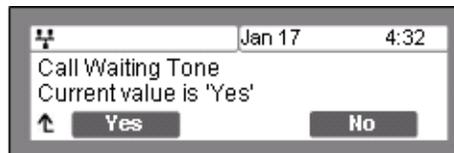
## Call Waiting Tone

While off-hook, the IP Phone can provide a tone over the existing conversation to indicate a call waiting. To receive the tone, Call Waiting must also be enabled. Refer to [“Call Waiting” on page 3-55](#).

*To enable/disable Call Waiting Tone:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 4.Call Preferences using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 3.Call Waiting Tone using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Press the [Yes] softkey to enable Call Waiting Tone, or press the [No] softkey to disable Call Waiting Tone.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.

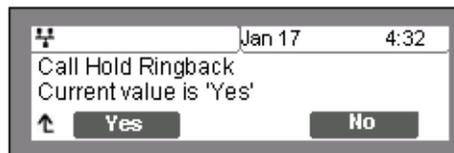


## Call Hold Ringback

With Call Hold Ringback enabled, the IP Phone rings as a reminder of calls on hold when the user returns the IP Phone to idle.

*To enable/disable Call Hold Ringback:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *4.Call Preferences* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *4.Call Hold Ringback* using the Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable hold hornbook, or press the [No] softkey to disable hold ringback.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



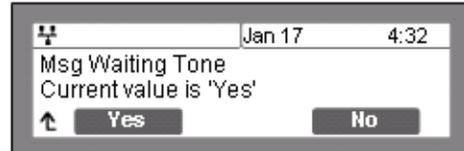
## Message Waiting Tone

When notification of a new message is received, the Message LED flashes. As an option, a 'stutter' dial tone provides an audible indication for a message waiting. When the user goes off-hook to place a call, the user receives stutter dial tone.

*To enable/disable stutter dial tone for a message wait indication:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *4.Call Preferences* using the [Next]-[Previous] softkeys and press the [OK] softkey.

- Press the  digit, or move the cursor to *5.Msg Waiting Tone* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable stutter dial tone, or press the [No] softkey to disable stutter dial tone.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.

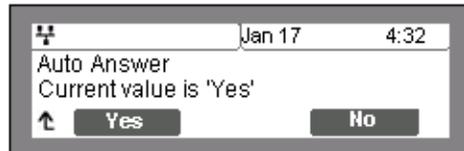


## Auto Answer

When idle, the IP Phone can connect an incoming caller to the speakerphone or headset automatically.

*To enable/disable Auto Answer:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *4.Call Preferences* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *6.Auto Answer* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable Auto Answer, or press the [No] softkey to disable Auto Answer.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.

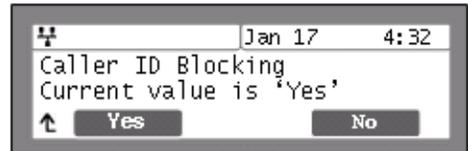


## Caller ID Blocking

The IP Phone normally sends the assigned display name as the SIP caller id for outgoing calls. Optionally, the IP Phone can send "anonymous" as the caller id in SIP message headers.

To enable/disable blocking of caller id:

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 4.Call Preferences using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 7.Caller ID Blocking using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable blocking of outgoing caller id, or press the [No] softkey to disable blocking of outgoing caller id.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.

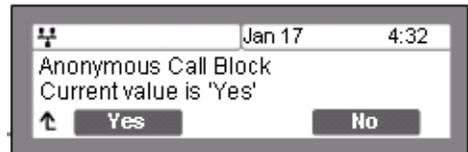


## Anonymous Call Block

The IP5000 series phone can block incoming calls with an anonymous caller id.

To enable/disable Anonymous Call Blocking:

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 4.Call Preferences using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 8.Anonymous Call Block using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Yes] softkey to enable or press the [No] softkey to disable Anonymous Call Blocking.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



## Phone Book

The IP Phone supports two Phone Books, an internal Phone Book and a Remote (external Phone Book). The internal Phone Book is stored and managed at the IP Phone. The Remote Phone Book is managed externally and the IP Phone can access the Phone Book as an xml file to search and call contacts in the Remote Phone Book.

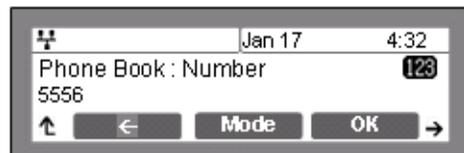
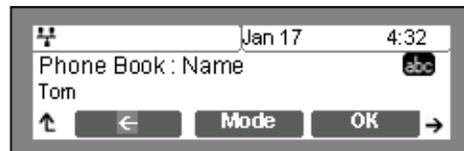
### Internal Phone Book

IP Phones include an internal Phone Book of names and numbers or SIP user ids for up to 100 contacts. The Phone Book menu is accessed through the LCD Menu, with the Down navigation button or, when assigned, a Phone Book flexible button. In the Phone Book menu, records may be added, edited, deleted or searched. The phone number or SIP user id in the Phone Book is the contact information used with Speed Number dialing, see [“Key Tone” on page 3-49](#). Each contact can have a Ring type assigned. When a call is received from the contact, the specified ring signal is employed.

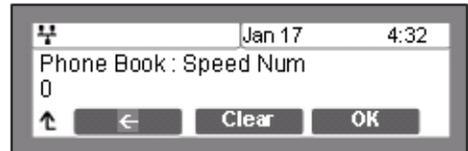
### Adding a Phone Book Record

To add a new contact:

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to *5.Directory* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Phone Book* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Add] softkey after moving to the next group of softkeys using the right navigation button,  .
- Enter a Name for the new contact and press the [OK] softkey.
- Enter a Number or SIP user id for the contact and press the [OK] softkey.



- Select the Ring type to use when receiving a call from this contact.
- Enter a Speed Number (00 - 99) for the new contact and press the [OK] softkey.
- The IP Phone adds the new contact to the Phone Book and returns to the Phone Book list.

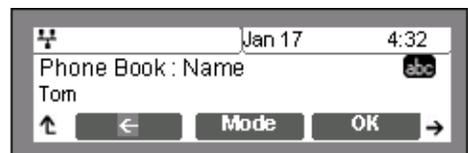
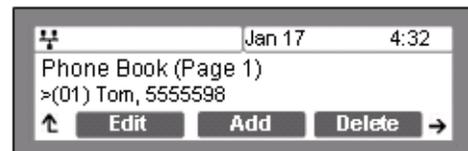
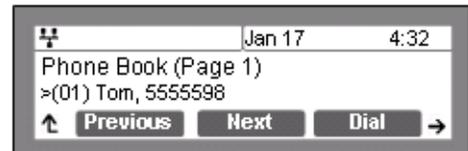


**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits. If no Ring type is defined for a Phone Book entry, the Default Ring Type is used.

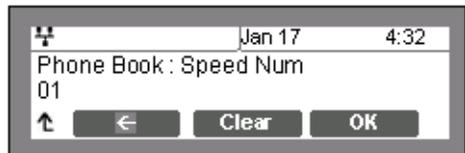
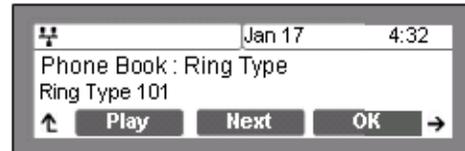
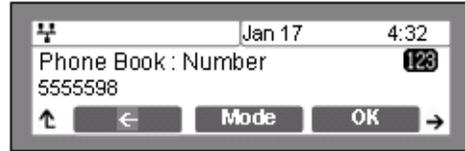
### Editing a record

*To edit a Phone Book record:*

- Press the Settings (⚙️) button.
- Press the 5 digit, or move the cursor to 5.Directory using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the 1 digit, or move the cursor to 1.Phone Book using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select a contact to edit using the [Next]-[Previous] softkeys.
- Press the [Edit] softkey after moving to the next group of softkeys using the right navigation button, ➡️.
- Enter the new Name for the contact and press the [OK] softkey.



- Enter the new Number for the contact and press the [OK] softkey.
- Select the Ring type to use when receiving a call from this contact.
- Enter the new Speed Number for the contact and press the [OK] softkey.
- The IP Phone modifies the contact in the Phone Book and returns to the Phone Book list.



**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits. If no Ring type is defined for a Phone Book entry, the Default Ring Type is used.

### Deleting a Phone Book Record

*To delete a Phone Book record:*

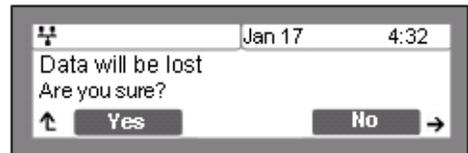
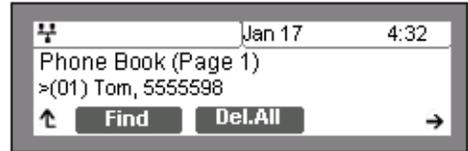
- Press the Settings (  ) button.
- Press the  digit, or move the cursor to *5.Directory* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Phone Book* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select a contact to delete using the [Next]-[Previous] softkeys.
- Select the [Delete] softkey and confirm by selecting the [Yes] softkey. Caution this action deletes the record from the Phone Book.
- The IP Phone deletes the contact from the Phone Book and returns to the Phone Book list.



## Deleting All Records

To delete all Phone Book records:

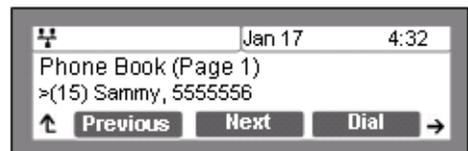
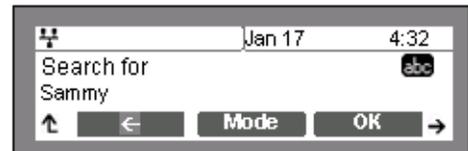
- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 5.Directory using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Phone Book using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Del.All] softkey after moving to the next group of softkey using the right navigation button,  .
- Press the [Yes] softkey to confirm deletion of all contacts.
- The IP Phone deletes all contacts from the Phone Book and returns to the Phone Book list.



## Searching the Phone Book

To search for the Phone Book using either Name or Number:

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to 5.Directory using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Phone Book using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the [Find] softkey after moving to the next group of softkeys using the right navigation button,  .
- Input a search keyword, and press the [OK] softkey.
- The search result displays showing the Speed number name and number.



**NOTE:** To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

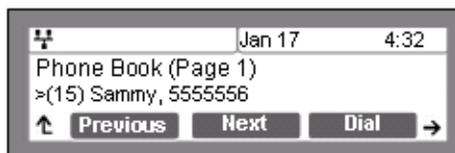
## Dialing from the Phone Book

To dial a number from the Phone Book:

- Press the Settings (  ) button.
- Press the  digit, or move the cursor to *5.Directory* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Phone Book* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Select a contact to dial using the [Next]-[Previous] softkeys.
- Press the [Dial] softkey to place the call.

To dial a contact using the Down Navigation or Phone Book flexible button, see [“Flexible Button Setting” on page 3-35](#):

- Press the Down navigation of Phone Book flexible button while the IP Phone is idle.
- Select a contact to dial using the [Next]-[Previous] softkeys,
- Press the [Dial] softkey to place the call.

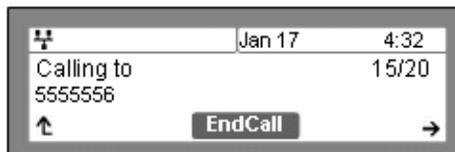


## Remote Phone Book

The Remote Phone Book is managed external to the IP Phone. The IP Phone accesses the Remote Phone Book as an xml file to search and dial contacts from the Phone Book.

To access the Remote Phone Book:

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *5.Directory* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.Remote Phone Book* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- When completed using the Remote Phone Book, move to another parameter with the Return button, , and continue the session or press the Settings (  ) button to exit the configuration session.

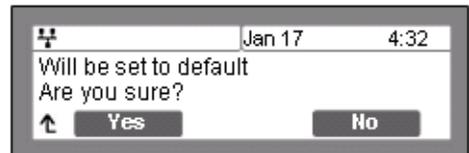


## Default

The IP Phone configuration can be returned to the original factory defaults, see [Appendix A](#).

*To return to the default configuration:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  button, or move the cursor to 6.Default using the [Next]-[Previous] softkeys, and press the [OK] softkey.
- Press the [Yes] softkey to set the IP Phone to the default configuration, or press the [No] softkey to cancel.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** Returning the configuration to default requires a reboot of the IP Phone; when you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.  
Returning the IP Phone to the default configuration deletes all previous customized settings.

## Reboot

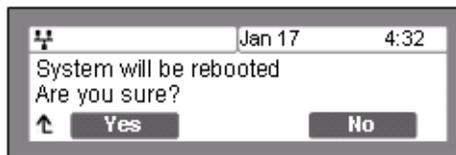
After changing certain parameters, the IP Phone will require a reboot to utilize the settings. These settings include the following:

- Network Configuration settings
- Call Server Address settings
- Software Update settings
- Default settings

*To reboot the IP Phone:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 9.Reboot using the [Next]-[Previous] softkeys, and press the [OK] softkey.

- Press the [Yes] softkey to reboot the IP Phone, or press the [No] softkey to cancel this menu.
- If you press [No] in the above step, move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session without activating the changes. Any parameter changes will update during the next reboot.





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## Using Web Manager for Configuration

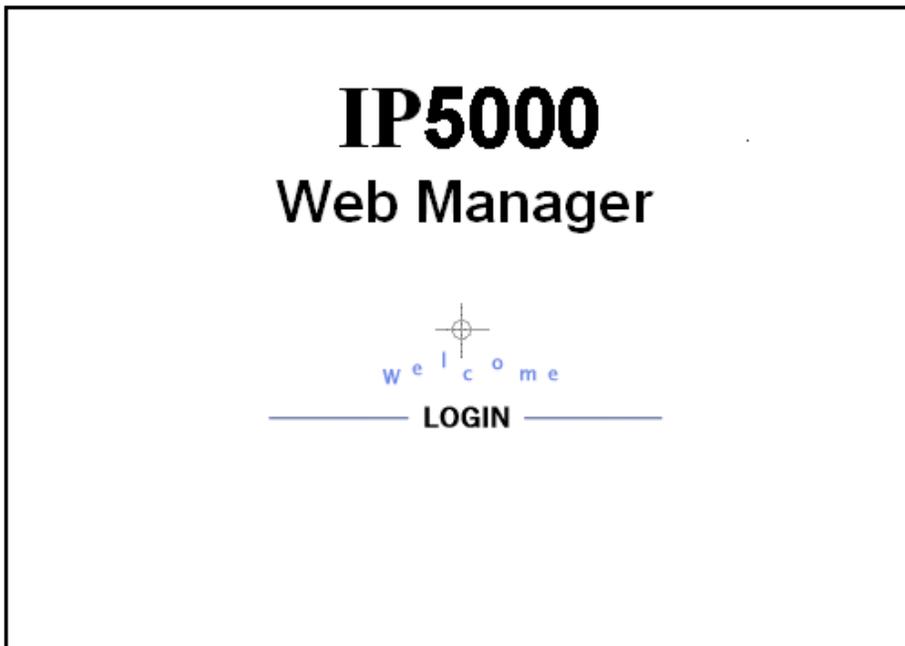
The Web Manager is a web-based tool for configuring the IP Phone parameters. The Web Manager has access to parameters not available through the LCD Configuration Menu. [Appendix A](#) includes information on parameter availability. In addition to remote access to the IP Phone configuration, Web Manager is a more convenient tool when configuring a number of IP Phones or parameters of a single IP Phone.

Pointing your Web browser at the IP Phone IP address and port number 8000 will access Web Manager. Thus, an IP address in the IP Phone is necessary prior to attempting access to Web Manager. In addition, the IP address must be available to the Web browser host. The IP address of the IP5000 series phones is available through the LCD, see [Chapter 5](#).

The section below describes the login procedure and site map structure. The remaining sections describe the parameters on each Web page in the order shown in the page link area of the site map.

### Login & Site Map

Point your browser at the IP5000 series phone IP address and port 8000, <<http://150.150.255.251:8000>>, which returns the IP Phone Login page as shown below.



- Click LOGIN; the password page displays as below.



- Enter a valid User name and Password to display the Web Manager Site map shown below. The default User name is **private** and the Password is **lip**.

<b>Site Map</b>	
<b>Web Manager (SIP)</b>	<b>VoIP Configuration</b>
	SIP Configuration
VoIP Configuration	<b>LAN Configuration</b>
LAN Configuration	Network Mode Selection (Static,DHCP) IP Address,Subnet Mask, Gateway Primary/Secondary DNS Address Domain Name, CDP
Call Preferences	<b>Call Preferences</b>
Dial Plan	Block CallerID/AnonymousCall Allow Call/Msg/Hold Notification Tone Auto Answer Call Forwarding Direct Call
Phone Information	<b>Routing Table Configuration</b>
Phone Settings	Current Routing Table Add Entry Delete Entry Digit Map
Phone Book	<b>Phone Information</b>
Programmable Key	Version Information Phone Name Change Password
Call Log	<b>Phone Settings</b>
Network Time Configuration	Ringer Type/Off DTMF Payload/Relay/Duration Frame Duration Headset Auto Mode Line Number & Outgoing Call Lock Speed Number Usage & One-touch Pickup Hide Download Flag Menu on LCD
Upgrade Configuration	<b>Phone Book</b>
QoS Configuration	Current Phone Book List Add/Delete/Modify Phone Book Entry Upload/Download Phone Book List
Load Default Configuration	<b>Programmable Key</b>
Reboot	Current Programmable Key Setting Add/Delete/Modify Programmable Key Setting
	<b>Call Log</b>
	Missed/Incoming/Outgoing call Log
	<b>Network Time Configuration</b>
	SNTP Server Address TimeZone DST(Daylight Saving Time) Selection
	<b>Upgrade Configuration</b>
	Upgrade Result TFTP Server Address, HTTP/HTTPS Settings Configure S/W & Config. file download flag Smart Upgrade
	<b>QoS Configuration</b>
	Diffserv Configuration IEEE 802.1Q Jitter Buffer
	<b>Load Default Configuration</b>
	Load Defaultvalue(Factory setting)
	<b>Reboot</b>
	Reboot

On the left is the Web Manager page-link window and in the main screen is a more detailed site map.

- Select the desired page from either the page-link or the site map window.

# VoIP Configuration

**Web Manager (SIP)**

[VoIP Configuration](#)

[LAN Configuration](#)

[Call Preferences](#)

[Dial Plan](#)

[Phone Information](#)

[Phone Settings](#)

[Phone Book](#)

[Programmable Key](#)

[Call Log](#)

[Network Time Configuration](#)

[Upgrade Configuration](#)

[QoS Configuration](#)

[Load Default Configuration](#)

[Reboot](#)

## VoIP Configuration

Line 1	Line 2					
Common Settings						

**Line 1**

(TOP)

### Line Settings

<input type="text"/>	<b>Proxy Address</b>	<input type="text"/>
5060	<b>Proxy Port</b>	5060
<input type="text"/>	<b>Display Name</b>	<input type="text"/>
<input type="text"/>	<b>Name</b>	<input type="text"/>
<input type="text"/>	<b>Authentication Name</b>	<input type="text"/>
<input type="text"/>	<b>Authentication Password</b>	<input type="text"/>
Private	<b>Line Type</b>	Private
<input type="text"/>	<b>Extension for DSS</b>	<input type="text"/>
Default ring	<b>Ring Type</b>	Default ring
Not Use	<b>Delayed Ring</b>	Not Use
OK	<b>Registration Status</b>	NOK

**Line 2**

(TOP)

### Common Settings (TOP)

<b>Outbound Proxy Address</b>	<input type="text"/>						
<b>Outbound Proxy Port</b>	5060						
<b>Backup Proxy Address</b>	<input type="text"/>						
<b>Backup Proxy Port</b>	5060						
<b>Domain</b>	<input type="text"/>						
<b>VMS Address</b>	<input type="text"/>						
<b>Proxy Registration</b>	enable						
<b>Registration Timer (sec)</b>	3600						
<b>Local UDP Port</b>	5060						
<b>Start Rtp Port</b>	23000						
<b>Codec Priority</b>	<table style="width: 100%; border: none;"> <tr><td>1. G729</td><td>2. G723</td></tr> <tr><td>3. PCMU</td><td>4. PCMA</td></tr> <tr><td>5. G722_64</td><td></td></tr> </table>	1. G729	2. G723	3. PCMU	4. PCMA	5. G722_64	
1. G729	2. G723						
3. PCMU	4. PCMA						
5. G722_64							
<b>Centralized Conference</b>	disable URL <input type="text"/>						
<b>Broadsoft BLF</b>	disable URL <input type="text"/>						
<b>STUN Server Address</b>	0.0.0.0						

[Return to the Site Map](#)

At the top of the VoIP screen is a table indicating the SIP lines available. Selecting a line from the list will display the characteristics assigned for the line.

Within the VoIP screen, adjustable parameters are:

- Line based parameters
  - Proxy Server Address is the IP address or FQDN of the SIP call server or SIP proxy.
  - Proxy Port is the server port for incoming requests and outgoing responses
  - Display Name is the name used as part of the IP Phone caller ID. The display name assigned for Line1 displays on the LCD display.
  - Name is the name used during registration. The name is generally the telephone number or the SIP user Id.
  - Authentication Name is the user id for authentication of the line appearance with the call server.
  - Authentication Password is the password for authentication of the line appearance with the call server.
  - Line Type is the type of line (private, shared (BLA), see [page 3-21](#)).
  - Ring Type sets the ring tone for incoming calls on the line. The Ring Type can be "Set as Default", "Ringer Off" or Ring type 1 to 4, 101 to 105 or 201 to 205. The default ring is configured under the Phone Settings, see [page 4-18](#).
  - Delayed Ring delays audible notification (ring) for a line. The delay is set in 1-second increments from 0 (no delay) to 10 seconds.
- General Parameters
  - Outbound Proxy Address is the IP address or FQDN of the outbound proxy server to receive SIP requests in place of the line-based Proxy Server.
  - Outbound Proxy Port is the port of the outbound proxy server
  - Backup Proxy Address is the IP address or FQDN of the backup proxy server, used when the connection with the primary proxy times-out.
  - Backup Proxy Port is the port of the backup proxy server
  - Domain is the domain for SIP service when the service provider desires to use a specific SIP domain.
  - VMS Address is the address (IP or phone number) of the Voice Mail Server.
  - Proxy Registration enables SIP registration to the proxy; this parameter is ignored if an Outbound Proxy Address is not defined.
  - Registration Timer is the interval, in seconds, between SIP registration renewal attempts.
  - Local UDP Port is the UDP port used on the LAN for sending and receiving SIP packets.

- Start RTP Port is the port for Real-time Transport Protocol (voice) packets.
- Codec selects the priority for audio codecs.
- Centralized Conference
  - This parameter enables or disables server control and processing of conferences. When enabled, the server provides a single RTP stream for the conference. When disabled, the IP Phone processes separate RTP streams for each participant, maximum 3-parties. A URL is required for Centralized conference.
  - URL is the URL of the conference server.
- BLF
  - This parameter enables or disables use of the BLF function that provides a location for BLF (Busy Lamp Field) indications for all line types. A URL is required.
  - URL defines the server where the IP Phone can retrieve BLF information .
- STUN Server Address, STUN server IP address or FQDN.

*To modify a parameter:*

- Select the parameter and modify the value.
- Select the  button.

**NOTE:** Changing the proxy server address, proxy port by line and outbound proxy, backup proxy, VMS address or local UDP port requires a reboot of the IP Phone. When you leave the menu, you will receive a reboot notice. The IP Phone must reboot to utilize the new values entered.

## LAN Configuration

**Web Manager (SIP)**

- VoIP Configuration
- LAN Configuration**
- Call Preferences
  - Dial Plan
- Phone Information
- Phone Settings
- Phone Book
- Programmable Key
- Call Log
- Network Time Configuration
- Upgrade Configuration
- QoS Configuration
- Load Default Configuration
- Reboot

**LAN Configuration**

Network Selection	<input type="radio"/> Static <input checked="" type="radio"/> DHCP
IP Address	<input type="text" value="192.168.1.1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="192.168.1.254"/>
Mac Address	<input type="text" value="00:1A:7E:00:00:00"/>
Primary DNS	<input type="text" value="0.0.0.0"/>
Secondary DNS	<input type="text" value="0.0.0.0"/>
Domain Name	<input type="text"/>
CDP	<input type="text" value="disable"/>

[Return to the Site Map](#)

When the WiFi Module is installed, refer to [Chapter 5](#) for LAN Configuration. When the WiFi module is not installed, the LAN screen the adjustable parameters are:

- LAN Configuration
  - Network Selection is the IP address mode for the IP Phone. The radial button selects static or DHCP address mode.
  - IP Address is the IP Phone IP address.
  - Subnet Mask is the IP Phone subnet mask.
  - Default Gateway is the IP Phone default gateway IP address.
  - Mac Address is the MAC address of the IP Phone, view only.
  - Primary DNS is the IP address of DNS server.
  - Secondary DNS is the IP address of an auxiliary DNS server.

- Domain Name is the domain name for the IP Phone.
- CDP enables and disables use of discovery protocol for VLAN ID.

*To modify the Network Selection (IP address mode):*

- Select the radial button for Static or DHCP address assignment.
- When complete, select the  button to load new values to the IP Phone memory.

*To modify any of the addressing information*

- Select the appropriate box and enter the new value. Changes can only be made if static network mode is selected.
- When complete, select the  button to load new values to the IP Phone memory.

**NOTE:** The MAC address is fixed and cannot be modified.  
The IP address, subnet mask, etc. can only be changed if the static Network Mode is assigned. Changing any value in the LAN screen requires a reboot of the IP Phone. When you leave the menu, you will receive a Reboot notice. The IP Phone must reboot to utilize the new values entered.

## Call Preferences

**Web Manager (SIP)**

- VoIP Configuration
- LAN Configuration
- Call Preferences
- Dial Plan
- Phone Information
- Phone Settings
- Phone Book
- Programmable Key
- Call Log
- Network Time Configuration
- Upgrade Configuration
- QoS Configuration
- Load Default Configuration
- Reboot

### Call Preferences

Caller ID Blocking	disable ▾
Anonymous Call Block	disable ▾
Call Waiting Function	enable ▾
Call Waiting Tone	enable ▾
Call Hold Ringback	enable ▾
Message Waiting Tone	enable ▾
Auto Answer	disable ▾

### Call Forwarding

Condition	not use ▾
Address to Forward	<input type="text"/>
No-answer Time (sec)	<input type="text" value="10"/> (1~30)

### Direct Call

Direct Call	disable ▾
Direct Call Number	<input type="text"/>
Direct Call Timer (0 ~ 10 sec)	<input type="text" value="5"/> ▾

[Return to the Site Map](#)

The IP Phone supports various user preferences as listed below.

- Call Preferences
  - Caller ID Blocking enables and disables blocking the outgoing caller id. When enabled, the IP Phone sends the anonymous id.
  - Anonymous Call Block, when enabled, blocks incoming calls with an anonymous caller id.
  - Call Waiting Function, when enabled, visually notifies the user of an incoming call while in a conversation. If disable, when in a conversation, a new call is refused and the call server routes the call.

- Call Waiting Tone, when the IP Phone is in use with call waiting enabled, a beep tone delivered over the existing call indicates an incoming call.
- Call Hold Ringback, when enabled, rings the phone if the user returns to idle with a call on hold.
- Message Waiting Tone, when enabled, stutter dial tone notifies the user a new message is waiting. Stutter dial tone notification is in addition to the visual flashing Message LED notification.
- Auto Answer, when enabled, will activate the speakerphone or headset automatically if an incoming call is received.
- Call Forwarding
  - Conditions define the condition for Call Forward (Busy, No-Answer, Busy & No-Answer, unconditional, or not used).
  - Address to Forward defines the destination to receive forwarded calls.
  - No-Answer Time sets the delay for no-answer forward.
- Direct Call (Hotline/Warm-Line)
  - Direct Call, when enabled, places a call to a predefined destination automatically when the phone goes off hook.
  - Direct Call Number defines the destination for a direct call.
  - Direct Call Timer sets a delay timer for Warm-Line operation. The timer specifies the period before placing a direct call. The timer is set in 1 second increments from zero (0) to ten (10) seconds. For Hotline operation, set the timer to zero (0) seconds.

*To modify parameters on the Call Preferences screen:*

- Select the desired parameter and enter new values, or select values from the drop-down menus.
- When complete, select the  button to load new values to the IP Phone memory.

## Dial Plan

The IP Phone incorporates a Dial Plan, which monitors the user-dialed digits for patterns matching the dial plan number. If a match occurs, the phone modifies the digits and processes the call using instructions in the dial plan. Either a Routing Table or a Digit Map Table defines the dial plan.

### Routing Table

#### Dial Plan Type

Digit Map     Routing Table

---

#### Current Routing Table

	Index	Number	TRNC	Pre	Post	Extra
	0	~	0	NULL	NULL	0.0.0.0
<input type="checkbox"/>	1	1234	0	1	NULL	0.0.0.0
<input type="checkbox"/>	2	2345	1	NULL	NULL	0.0.0.0

#### Add Entry

Number	TRNC	Pre	Post	Pause	Extra
<input type="text"/>	<input type="text" value="0"/>	<input type="text" value="NULL"/>	<input type="text" value="NULL"/>	<input type="text" value="NULL"/>	<input type="text" value="0.0.0.0"/>

In the Routing Table up to fifty (50) dial plan numbers may be defined. Each table entry includes instructions for modifying the dialed number. Specific entries for the Routing Table are:

- Number is the digit pattern to match with the user-dialed digits.
- TRNC defines the number of digits to delete, truncate, from the dialed number.

- Pre defines digits to insert in the front of the truncated number.
- Post defines the digits to insert at the end of the truncated number.
- Pause defines the position in the number where, if matched, the phone will pause for additional digits before processing the call. The pause duration is programmable under the [Dial] section of the configuration file and has a default of 3 seconds.
- Extra - IP address of phone to send a call if a match occurs. The call is placed to the IP address in place of the modified number.

In addition to the dial pad digits, special characters can be defined.

- A '?' matches any single digit.
- A "~" matches a string of characters of any length.
- A "," locates the position of a Pause.
- A "." returns dial tone"

The following are examples of dial plans using the Routing Table.

Simple Dial Plan

Customer requirements:

Process the call after any 7 digit number is dialed or if the Operator is dialed at digit '0'.

Number	TRNC	Pre	Post	Pause	Extra
0???????	0	NULL	NULL	?,	0.0.0.0
????????	0	NULL	NULL	NULL	0.0.0.0

From the above table, if the user dials 0 as the first digit, the IP Phone will pause for additional digits. After the pause, if no additional digits are dialed, the phone places a call to the Operator. In addition, after the user dials any seven digits, the call is processed.

Complex Dial Plan

Customer requirements:

Process the call after the local operator at 0, long distance operator at 00, a four-digit local extension number starting with 3,4 or 5, a seven-digit local number prefixed by an 8, two-digit number preceded by star (\*), a ten digit long distance number prefixed by 91, or an international number starting with 9011 is dialed.

Number	TRNC	Pre	Post	Pause	Extra
0?	0	NULL	NULL	?,	0.0.0.0
00	0	NULL	NULL	NULL	0.0.0.0
3???	0	NULL	NULL	NULL	0.0.0.0
4???	0	NULL	NULL	NULL	0.0.0.0
5???	0	NULL	NULL	NULL	0.0.0.0
8???????	0	NULL	NULL	NULL	0.0.0.0
*??	0	NULL	NULL	NULL	0.0.0.0
91??????????	0	NULL	NULL	NULL	0.0.0.0
0 9011~	0	NULL	NULL	NULL	0.0.0.0

2nd Dial Tone

Customer requirements:

To provide second dial tone after a '9' is dialed, establish a Dial Plan as below.

Number	TRNC	Pre	Post	Pause	Extra
9.~	0	NULL	NULL	?,	0.0.0.0

To change Routing Table parameters:

- Assure the Routing Table radial button is selected under the Dial Plan Type
- Enter the desired values into the respective boxes.
- Select the [Add Entry](#) button.

To delete an entry from the Current Routing Table:

- Select the check box in front of the desired entry.
- Click the [Delete Entry](#) button.

To delete all the entries:

- Enter 'all' as the index.
- Click the [Delete Entry](#) button.

## Digit Map Table

**Digit Map (Routing)**

**Digit Map (2nd Dial Tone)**

**Digit Map (Process)**

DEL	Number	TRNC	Pre	Post
<input checked="" type="checkbox"/>	1234	0		
<input type="checkbox"/>	2345	0		
<input checked="" type="checkbox"/>	4567	0		
	<input type="text" value="7890"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Using the Digit Map Table, a string of 512 characters may be entered to define the dial plan. Within the string individual numbers are entered, separated by a '|'. In addition to dial pad digits, special characters may be entered as follows:

- An 'x' matches any single digit, (0 to 9).
- A 'T' inserts a timed pause for additional digits.
- A '.' matches any number of occurrences of a digit, including zero occurrences and includes special character matches.
- A '+' matches any number of occurrences of the previous match, including special characters.

- The '[' ]' matches a digit from a group of digits. This character combination is used with "." to define a range, [2-6] matches any digit from 2 to 6 inclusive.

The dial plan can include modification of a matching dialed number before call set-up. The Digit Map Process defines the modification procedures for a number. The process may include:

- TRNC defines the number of digits to delete from the dialed number.
- Pre defines digits to insert in the front of the truncated number.
- Post defines the digits to insert at the end of the truncated number.

The following are examples of Dial Plans using the digit map tables.

#### Simple Dial Plan

Customer requirement:

Process the call after any 7 digit number is dialed or if the Operator is dialed at digit '0'.

Digit map routing entry

The digit map of this Dial Plan is (0T|xxxxxxx).

From this map, if the user dials '0' as the first digit, the IP Phone will wait for the pause time for additional digits. After the pause, if no additional digits are dialed, the phone places a call to the Operator. In addition, after the user dials any seven digits, the call is processed.

#### Complex Dial Plan

Customer requirement:

Process the call after the local operator at 0, long distance operator at 00, a four-digit local extension number starting with 3,4 or 5, a seven-digit local number prefixed by an 8, two-digit number preceded by star (\*), a ten digit long distance number prefixed by 91, or an international number starting with 9011 is dialed.

Digit map routing entry

The dial plan for this is (0T|00T|[3-5]xxx|8xxxxxxx|\*xx|91xxxxxxxxxx|9011x.T).

#### 2nd Dial Tone

A second 512-character string map is employed to provide 2nd Dial Tone.

Customer requirements:

To provide second dial tone after a '9' is dialed, establish a Dial Plan as below.

In the Digit Map (2nd Dial Tone) text box, the dial plan for this is (9|).

*To change Digit Map Table parameters:*

- Assure the Digit Map radial button is selected under the Dial Plan Type
- Enter the desired values into the Digit Map (Routing) box.
- Select the  button.

*To set-up or change a Digit Map to provide second dial-tone*

- Enter the digits in the Digit Map (2nd Dial Tone) box.
- Click the  button.

*To modify a Digit Map process:*

- Enter the digits in the Digit Map (Process) boxes.
- Click the  button.

*To delete a Digit Map process:*

- Select the DEL check box.
- Click the  button.

## Phone Information

**Web Manager (SIP)**

VoIP Configuration

LAN Configuration

Call Preferences

Dial Plan

Phone Information

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Programmable Key

Call Log

Network Time Configuration

Upgrade Configuration

QoS Configuration

Load Default Configuration

Reboot

**Version**

Model Name	IP8840 (SIP IP Phone)
H/W Version	1.0
S/W Version	1.0.00sb
S/W Link Time	Sep 11 2008, 16:20:35

**Phone Name**

Phone Name	<input style="width: 90%;" type="text"/>
------------	------------------------------------------

**Change Password**

Login Name	private
Old Password	<input style="width: 90%;" type="password"/>
New Password	<input style="width: 90%;" type="password"/>
Confirm Password	<input style="width: 90%;" type="password"/>

[Return to the Site Map](#)

The Phone Information screen displays the version information of the IP 5000 phone and the phone name. In addition, it is possible to change the Web Manager password through this screen.

*To change the phone name:*

- Enter the desired name.
- When complete, select the  button to load new values to IP Phone memory.

*To change the password:*

- Enter the existing password.
- Enter the new password and confirm.
- When complete, select the  button to load new values to IP Phone memory.

# Phone Settings

**Web Manager (SIP)**

- VoIP Configuration
- LAN Configuration
- Call Preferences
- Dial Plan
- Phone Information
- Phone Settings
- Phone Book
- Programmable Key
- Call Log
- Network Time Configuration
- Upgrade Configuration
- QoS Configuration
- Load Default Configuration
- Reboot

**Phone Settings**

Frame Duration (10~100)	<input type="text" value="20"/> ms
Headset Auto Mode	disable <span style="float: right;">v</span>
DTMF Relay	nego <span style="float: right;">v</span>
DTMF Payload (96~255)	<input type="text" value="101"/>
DTMF Duration (50~300)	<input type="text" value="120"/> ms
The Number of Lines (1~22)	2 <span style="float: right;">v</span>
Lock Outgoing Call	unlock <span style="float: right;">v</span>
Use Speed Number	use <span style="float: right;">v</span>
Key Tone	use <span style="float: right;">v</span>

**Functions**

<input type="checkbox"/> Private Hold	<input type="checkbox"/> Barge-In
<input checked="" type="checkbox"/> Download Flag	<input checked="" type="checkbox"/> One-touch Pickup

---

**Ring Settings**

Ringer Type	Ring Type 1 <span style="float: right;">v</span>
Ringer	on <span style="float: right;">v</span>

**User Define Rings (RTTL)**

File Name	<input type="button" value="Delete"/>
-----------	---------------------------------------

---

[Return to the Site Map](#)

In the Phone Settings screen, the following parameters may be modified.

- Phone Settings
  - Frame Duration sets the interval to send/receive RTP packets in milli-seconds.
  - Headset Auto Mode enables headset operation.
  - DTMF Relay selects the method for DTMF signaling (in-band, out-of-band or negotiate).
  - DTMF Payload sets the RFC 2833 payload type for DTMF signals.
  - DTMF Duration sets the duration of DTMF signals sent from the phone in milli-seconds.
  - The Number of Lines sets the number of flexible buttons allocated for lines. The minimum is one (1). The maximum number of line buttons is the maximum number of buttons available on the IP Phone.
  - Lock Outgoing Call locks the IP Phone, requiring password entry to place a call.
  - Use Speed Number enables or disables use 2-digit dialing to dial Phone Book contacts.
  - Key Tone enables or disables the tone generated when a button on the IP Phone is pressed.
- Functions
  - Private Hold enables private hold for a call on a shared line.
  - Barge-In enables the barge-in feature for the shared call.
  - Download Flag enables the display of the S/W and configuration download flags functions under the LCD Configuration Menu.
  - One-touch Pickup normally, pressing a line button will connect the call to the speakerphone or headset. Disabling One-touch Pickup causes the IP Phone to display the call status when a line button is pressed; the call does not connect to the speakerphone or handset unless the button is pressed a second time. This may be useful when the user cannot distinguish LED colors.
- Ring Settings
  - Ringer Type sets the default ring type, select one of 14 ring signals for audible notification of incoming calls,
  - Ringer turns the ring signal On or Off.

- User Define Rings (RTTTL)
  - Add and delete user-defined rings (RTTTL text format), see Appendix G. The Browse button can be used to find and upload an RTTTL file for use. The RTTTL file must be uploaded before it can be assigned for use as the Ring Type. Up to five (5) RTTTL ring types, no greater than 512 characters, may be stored in the IP Phone.

*To modify Phone Setting parameters:*

- Select the parameter.
- Enter the new value or select a value from the drop-down menu.
- When complete select  button.

**NOTE:** Changing DTMF Payload, Frame Duration or DTMF Relay requires a reboot of the IP Phone. When you leave the menu, you will receive a Reboot notice. The IP Phone must reboot to utilize the new values entered.

## Phone Book

**Web Manager (SIP)**

- VoIP Configuration
- LAN Configuration
- Call Preferences
- Dial Plan
- Phone Information
- Phone Settings
- Phone Book**
- Programmable Key
- Call Log
- Network Time Configuration
- Upgrade Configuration
- QoS Configuration
- Load Default Configuration
- Reboot

**Phone Book List**

Speed Number	Name	Address	Information	Clear	Modify	Dial
0	Sam	1234		<input type="checkbox"/>	<input type="button" value="Modify"/>	<input type="button" value="Dial"/>
1	Tommy	9876		<input type="checkbox"/>	<input type="button" value="Modify"/>	<input type="button" value="Dial"/>

[Return to the Site Map](#)

### Internal Phone Book

The IP Phone includes an internal Phone Book with 100 contact records. Calls to a contact are made using the Speed number (00-99). The contact number or SIP user id is maintained in the Phone Book. In the Phone Book menu, records may be added, edited, deleted or searched.

*To add a Phone Book entry:*

- Click the  button and enter the new values in the Phone Book Entry screen. The Address field is the contact's phone number or SIP user id.

**Add a Phone Book Entry**

<b>Speed number</b>	<input type="text" value="0"/> (0 ~ 99)
<b>Name</b>	<input type="text"/>
<b>Address</b>	<input type="text"/>
<b>Ring Type</b>	Default Ring <input type="button" value="v"/>
<b>Info</b> (optional)	<input type="text"/>

- When complete, select the  button to store the record.

*To modify an entry:*

- Select Modify for the desired record and enter the new values in the Phone Book Entry screen.
- When complete, select  to store the modified record.

*To place a call using the Phone Book:*

- Click the  button for the desired contact.

*To delete specific entries from the Phone Book:*

- Click the 'Clear' box for the desired records and select the  button to delete checked records.

*To delete all entries from Phone Book:*

- Select the  button.

The Phone Book can be downloaded or uploaded to and from a \*.csv formatted file. To Upload/download:

- Click  and locate the desired csv file in your PC.
- Select upload or download, as desired.

An example Phone Book and resulting file are shown below.

Phone Book

Speed Number	Name	Phone Number	Information
1	Lee Masters	1000	lm@abc.com
2	support	2000	techsupport@vertical.com
3	lmh	3000	germany

sample \*.csv file

SpeedNumber,Name,PhoneNumber,Information

1, Lee Masrers,1000,lm@abc.com

2,support,2000,techsupport@vertical.com

3,lmh,3000,germany

Remote Phone Book URL

The IP Phone can access and dial from an external Phone Book. The Remote Phone Book is an xml file managed remotely. To use the Remote Phone Book feature, the URL of the HTTP server hosting the Phone Book must be entered.

## Flexible Button

**Web Manager (SIP)**

VoIP Configuration

LAN Configuration

Call Preferences

Dial Plan

Phone Information

Phone Settings

Phone Book

Programmable Key

Call Log

Network Time Configuration

Upgrade Configuration

QoS Configuration

Load Default Configuration

Reboot

### Assign a Programmable Key

F1	[private LINE] Label <input type="text"/>	None <input type="button" value="v"/>	<input type="text"/> Label <input type="text"/>	F7
F2	[private LINE] Label <input type="text"/>	None <input type="button" value="v"/>	<input type="text"/> Label <input type="text"/>	F8
F3	None <input type="button" value="v"/> Label <input type="text"/>	None <input type="button" value="v"/>	<input type="text"/> Label <input type="text"/>	F9
F4	None <input type="button" value="v"/> Label <input type="text"/>	None <input type="button" value="v"/>	<input type="text"/> Label <input type="text"/>	F10
F5	None <input type="button" value="v"/> Label <input type="text"/>	None <input type="button" value="v"/>	<input type="text"/> Label <input type="text"/>	F11
F6	None <input type="button" value="v"/> Label <input type="text"/>	None <input type="button" value="v"/>	<input type="text"/> Label <input type="text"/>	F12

---

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The IP5000 has 24 flexible buttons. The buttons not used for lines can be assigned to various functions. In addition, an Expansion Module can be connected to the IP 5000 phone to expand the number of flexible buttons by 12. Refer to [“Flexible Button Setting” on page 3-35](#) for available functions.

*To change button functions:*

- Select the function from the drop-down menu next to button.
  - For a Speed dial button, enter the contact number or user id.
  - For a Message button, enter the address or phone number of the Voice Mail Server.
- Click the  button to store changes.

To delete the function assigned to all flexible buttons, except line buttons:

- Select the **ClearAll** button. Caution, selecting Clear All will delete all flexible button assignments, except for line buttons.

## Call Log

The screenshot shows the Web Manager (SIP) interface. On the left is a sidebar with the following menu items: VoIP Configuration, LAN Configuration, Call Preferences, Dial Plan, Phone Information, Phone Settings, Phone Book, Programmable Key, Call Log (highlighted), Network Time Configuration, Upgrade Configuration, QoS Configuration, Load Default Configuration, and Reboot. The main content area is titled "Call Log" and features a table with the following headers: Num, Dir, User, Host, Date, Time, Call Duration, State, Add, and Dial. Below the table header is a "ClearAll" button and a link that says "Return to the Site Map".

The Call Log is a list of all calls (incoming, outgoing or missed) at the extension. The log indicates the type of call (IC, OG and M), the contacts name and contact information, time and duration of the call, and state of the call. From the Call log, the user can call a contact or store a call log record directly to the Phone Book. The Call Log will be lost if the phone loses power or reboots.

*To add a number from the Call Log to the Phone Book list:*

- Select the  button.

*To delete all Call logs:*

- Select the  button.

**Caution:** selecting the  button will delete all records in the Call Log.

*To call a party from the Call Log:*

- Click the  button associated with the desired Call log record.

# Network Time Configuration

**Web Manager (SIP)**

VoIP Configuration

LAN Configuration

Call Preferences

Dial Plan

Phone Information

Phone Settings

Phone Book

Programmable Key

Call Log

Network Time Configuration

Upgrade Configuration

QoS Configuration

Load Default Configuration

Reboot

**Network Time Configuration**

SNTP Server Address	pool.ntp.org
Time Zone	(GMT-08:00) PACIFIC STANDARD
DST Usage	off

**Time Format**

Off   
  12H (4:53 pm)   
  24H (16:53)

**Date Format**

Off   
  MM/DD (09/23)   
  DD/MM (23/09)

DD m (23 Sep)   
  m DD (Sep 23)

Format

YYYY (4 digit year)    YY (2 digit year)  
 MM (2 digit month)    M (1~2 digit month)  
 DD (2 digit day)    D (1~2 digit day)  
 m (abbr. month name)    d (abbr. day of week)  
 / , - (Special Characters)

**DST Configuration**

Format	<input type="radio"/>	<input checked="" type="radio"/>
DST Start Condition	Month	MAR
	Day	1
	Time	2
DST End Condition	Month	NOV
	Day	1
	Time	2

※ Dst Configuration Example

TimeZone	PACIFIC STANDARD
Dst	Start/End Month : MAR/NOV
	Start/End Week of Month : 2/1
	Start/End Day of Week : SUN/SUN
	Start/End Time : 2/2

[Return to the Site Map](#)

The Network Time screen allows you to set up the configuration for time and daylight savings time. Within Network Time Configuration, the following parameters can be set.

- Network Time Configuration
  - SNTP Server Address is the IP address or FQDN of the SNTP (Simple Network Time Protocol) server.
  - Time Zone defines the local time zone of the IP Phone.
  - DST Usage enables or disables Daylight Savings Time.
- Time Format sets the format of the LCD time display, off, 12- or 24-hour.
- Date Format sets the format of the LCD date display using radial button selection. In addition, the format of the date display can be customized using the "Format" text box by entering the desired format with the characters shown below the text box.
- DST Configuration

The DST configuration sets the format for daylight savings time. The start and end for DST can be configured in the Month/Day/Time format or the North American standard, Month/Week/Day/Time format.

Known SNTP servers that can be used:

- ntp.nasa.gov
- clock.via.net
- tick.ucla.edu

To modify parameters on the Network Time screen, select the desired parameter and enter new values or select values from the drop-down menus. When complete, select **Apply** to load new values in the IP Phone memory.

# Upgrade Configuration

**Web Manager (SIP)**

VoIP Configuration

LAN Configuration

Call Preferences

Dial Plan

Phone Information

Phone Settings

Phone Book

Programmable Key

Call Log

Network Time Configuration

[Upgrade Configuration](#)

QoS Configuration

Load Default Configuration

Reboot

**Upgrade Result**

S/W Image	VER FILE NOT FOUND
Sys Config.	LOAD FLAG OFF
Mac Config.	LOAD FLAG OFF

**Upgrade Configuration**

TFTP

HTTP/HTTPS

<b>TFTP Server Address</b>	<input type="text"/> <input checked="" type="checkbox"/> Received by DHCP on boot
<b>HTTP/HTTPS URL</b>	<input type="text"/> <input checked="" type="checkbox"/> Received by DHCP on boot, Option <input type="text" value="160"/>
<b>ID</b>	<input type="text"/>
<b>Password</b>	<input type="text"/>
<b>MAC Cfg. Format</b>	<input type="text" value="\$MAC"/> (*\$MAC:;MAC (ex)001234567890)
<b>Verifying Cert.</b>	<input checked="" type="checkbox"/> Verified Cert. <input checked="" type="checkbox"/> Server name verification <input checked="" type="checkbox"/> Expiration
<b>Root CA</b>	
<div style="border: 1px solid gray; min-height: 100%;"></div>	

<b>File to Upgrade</b>	<input checked="" type="checkbox"/> S/W <input type="checkbox"/> Configuration
<b>Decryption Key</b>	<input type="text"/>
<b>Smart Upgrade</b>	<input type="checkbox"/> Use Smart Upgrade <input type="radio"/> Every <input type="text" value="1"/> hour(s) <input checked="" type="radio"/> Every <input type="text" value="0"/> o'clock <input checked="" type="checkbox"/> When found new, confirm downloading.

[Return to the Site Map](#)

In the Upgrade screen, the results of the most recent download attempt are displayed at the top of the screen. Upgrade result messages are defined in Appendix C. A log displays any error conditions for the configuration file download. In addition, the following parameters can be modified:

- Upgrade Configuration
  - TFTP/HTTPS sets the protocol of the server where configuration and software files are stored.
  - TFTP Server Address assigns the IP address or FQDN of the TFTP server where configuration and software files are located. With the "Received by DHCP on boot" box checked, the IP Phone only uses the TFTP server retrieved with DHCP option 66 or 150.
  - HTTPS URL is the URL of the HTTP/HTTPS server where configuration and software files are located. When the "Received by DHCP on boot" box is checked, the IP Phone uses the DHCP Option defined to retrieve the URL. If the option is present, the provisioning type is changed automatically to HTTP/HTTPS using the URL from the DHCP option, default 160.
  - HTTPS Port sets the port of the HTTP/HTTPS server. Port 80 is commonly used for HTTP and 443 is used for HTTPS.
  - ID assigns the user name for HTTPS authentication.
  - Password sets the password for HTTPS authentication.
  - MAC Cfg. Format defines the format of the MAC (Phone specific) configuration filename; "\$MAC" is replaced with the MAC address of the IP Phone and must be included as part of the file name or path to the configuration file on the HTTP/HTTPS server.
  - Verifying Cert. boxes enable verifying the Certificate of Authority (CA) on the HTTPS server. When "Verified Cert." is checked, the phone checks the CA signature. When "Server name verification" is checked, the phone checks whether the name of the server sending the CA is valid. When "Expiration" is checked, the IP Phone checks the certification expiration date.
  - Root CA defines a CA other than the internal CAs, which include Versign®, to use for verifying the CA from the server. When the CA is not available in the IP Phone memory, paste the Root CA in this area of web page.
  - File to Upgrade defines the files (software and configuration) to download during a reboot.
  - Decryption Key sets the hexadecimal key required to decrypt configuration files.

- Smart Upgrade enables periodic checks for new software on the provisioning server. Two methods of smart upgrade are available; one checks the server at a specified interval, the second checks daily at the time specified. In the first drop-down menu next to "Use Smart Upgrade", select enable or disable. In the second drop-down menu, select the files to upgrade CFG, SW or CFG\_SW\_both. Select the method (interval or daily) with the radial button and enter the interval or time in the 24-hour format including hour and minute.  
If the IP Phone finds a new version of software during the smart upgrade, the IP Phone either downloads the file or displays the availability of the new version and awaits user confirmation to download. To await user confirmation, check the "when new found, confirm downloading" box

*To modify the upgrade configuration:*

- Select the parameter and enter the new value, select a value from the drop-down menu or select the check box.
- When finished, select the  button.

**NOTE:** If the "Received by DHCP on boot" box is checked, then an address entered into the TFTP server address or HTTPS URL is ignored and only the server information retrieved from the DHCP server is used.

The radial button next to the provisioning server type (TFTP or HTTPS), must be checked. If no type is selected, file download is disabled.

Changes made to the Upgrade screen require a reboot of the IP Phone. When you leave the menu, you will receive a Reboot notice. The IP Phone must reboot to utilize the new values entered.

## QoS Configuration

**Web Manager (SIP)**

VoIP Configuration

LAN Configuration

Call Preferences

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Phone Information

Phone Settings

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Programmable Key

Call Log

Network Time Configuration

Upgrade Configuration

**QoS Configuration**

Load Default Configuration

Reboot

### Diffserv Configuration

Choose one of these codepoint and enter the value in hexa code.  
At VoIP system, the AF codepoint(0x28 ~ 0x98) may be recommended!

Recommended Codepoint for Standard Per-Hop Behavior

1. DE (Default Expected) : 0x00
2. EF (Expected Forwarding) : 0xb8
3. AF (Assured Forwarding) : 0x28 ~ 0x98

Grade	Ave	Bronze	Silver	Gold
Low	0x28	0x48	0x68	0x88
Medium	0x30	0x50	0x70	0x90
High	0x38	0x58	0x78	0x98

ToS

### IEEE 802.1Q

	PC Port	LAN Port
Priority	<input type="text" value="3"/> ▼	<input type="text" value="5"/> ▼
VLAN ID (0 ~ 4094)	<input type="text" value="0"/>	<input type="text" value="0"/>

### Jitter Buffer Configuration

Minimum Delay (0 ~ 150)	<input type="text" value="30"/> ms
Normal Delay (0 ~ 150)	<input type="text" value="60"/> ms
Maximum Delay (0 ~ 150)	<input type="text" value="120"/> ms

[Return to the Site Map](#)

### Diffserv Configuration

On the QoS screen, the DiffServ Code Point (DSCP) and VLAN parameters are defined. DSCP or ToS establishes the priority of voice packets. Compatible routers apply the DSCP for packet priority, handling higher priority packets first. However, at congested routers, higher priority packets are discarded first. Thus, a median value for DSCP is recommended.

### IEEE 802.1Q

The VLAN tag defines the priority for Ethernet frames and the VLAN ID based on IEEE 802.1p/Q. The IP Phone PC and LAN (voice) ports use separate VLAN tags. With a VLAN ID assigned, only frames with the Id are accepted and frames sent by the IP Phone include the LAN port Id and priority. In addition, the PC, LAN switch ports and the default gateway must be assigned to employ the VLAN tags for proper operation.

### Jitter Buffer Configuration

A jitter buffer stores incoming packets to allow for re-sequencing out-of order packets. The Jitter Buffer configuration controls the size of the buffer used. The minimum, normal and maximum delays expected can be changed. Using larger values produce less packet loss as the IP Phone waits longer to receive packets before processing. Note that large values may delay voice packet processing and smaller values may produce more packet loss but quicker voice packet processing.

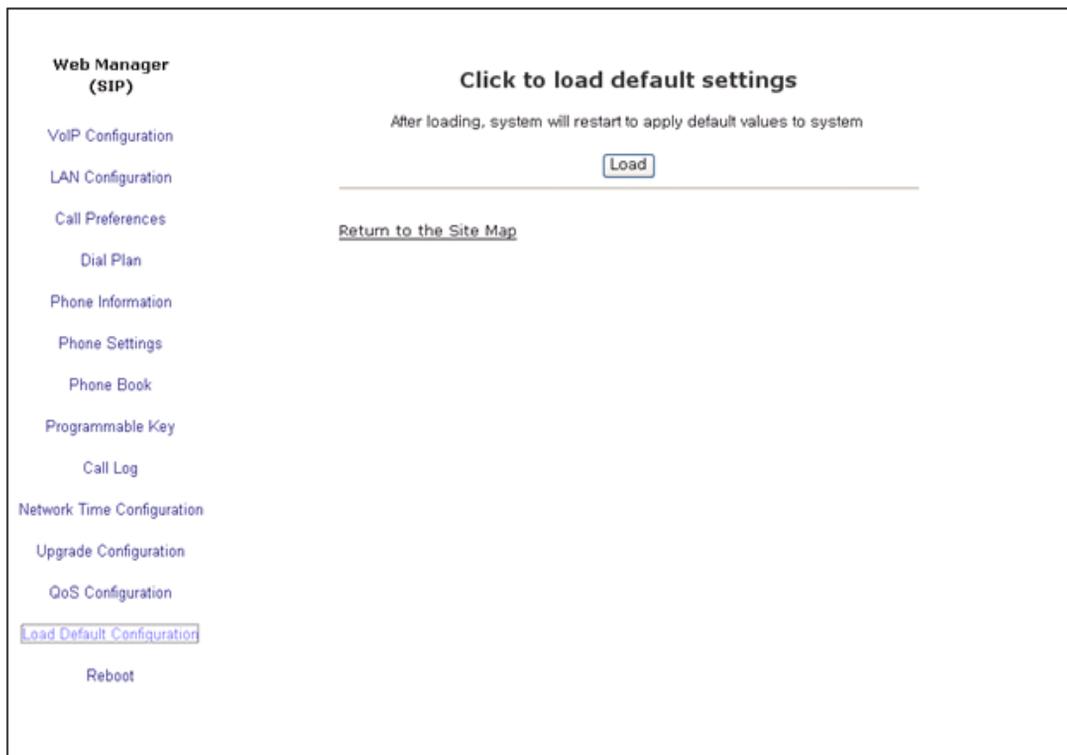
*To modify the QoS configuration:*

- Select the parameter and either enter a new value or select a value from the drop-down menu.
- When complete, select  to load the new values in the IP Phone memory.

**NOTE:** Modifications made to the IEEE 802.1p/Q configuration require a reboot of the IP Phone. When you leave the menu, you will receive a Reboot notice. The IP Phone must reboot to utilize the new values entered.

If CDP is enabled, manual VLAN settings are overwritten during a reboot of the IP Phone. To use manually defined VLAN settings, disable CDP, see [page 4-7](#).

## Load Default

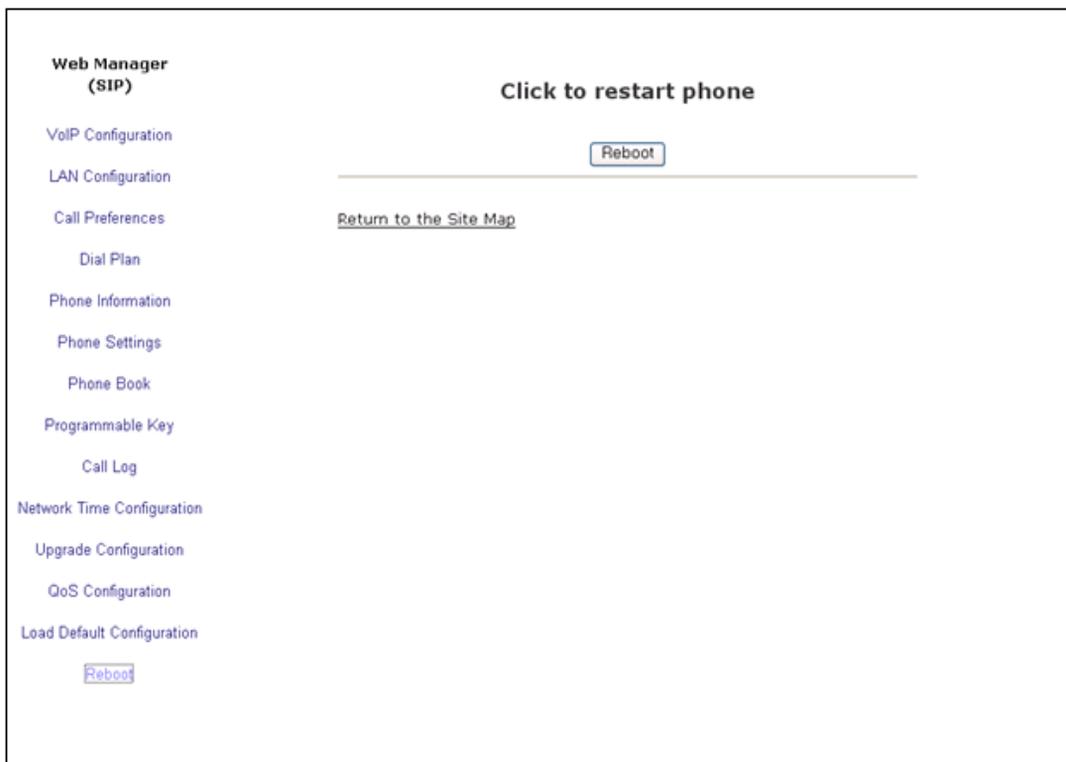


The Load Default page permits the IP Phone configuration to be returned to factory default values. Refer to [“Default Settings” on page A-1](#) for details.

*To set the IP Phone memory to the default configuration:*

- Select [Load](#) and confirm.
- The IP Phone loads the default configuration and reboots.

## Reboot



The Reboot screen is used to reboot the IP Phone manually.

*To reboot the IP Phone:*

- Select the **Reboot** button.
- The IP Phone saves and loads any changes in the configuration to active memory and reboots using the updated configuration.

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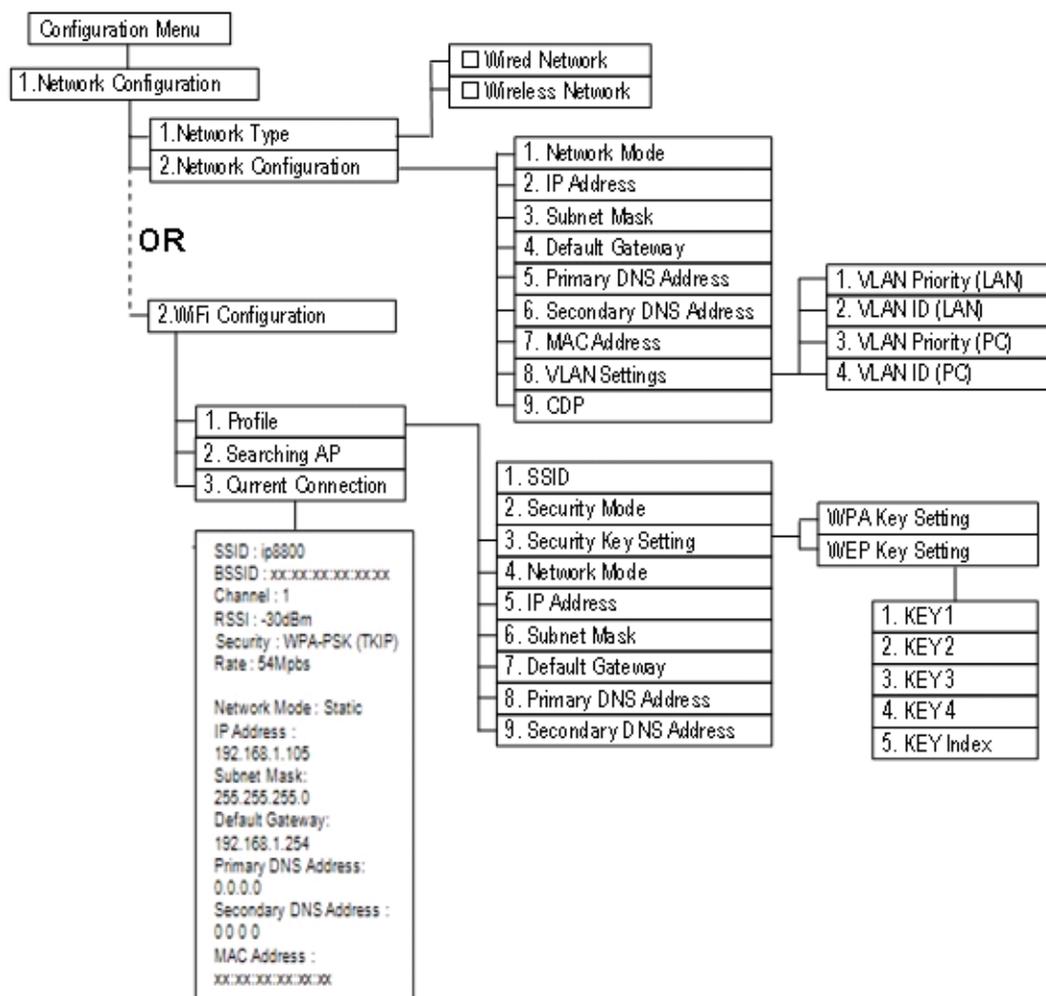
# WiFi Support

The IP5000 can be equipped with a WiFi Module that supports a wireless network in place of a wired Ethernet network. This chapter describes how to configure the Network configuration parameters for a WiFi Module. The WiFi menu is only available when a WIFI module is installed in the IP phone and the Network Type is set to Wireless. Prior to using a wireless connection with the IP5000, it must be linked with WiFi Access Point (AP). Troubleshooting Guide.

**NOTE:** - When the WIFI module is installed, the RSSI icon, , is displayed in upper part of the IP5000 LCD.

- Only one network connection can be supported at a time, either wired or wireless.

- Changing the Network Type requires an immediate reboot of the IP Phone to activate the appropriate Network Configuration menu. After the reboot, the IP Phone will apply the appropriate wired or wireless Network Configuration menu. Refer to the following diagram for the Network Configuration menu when the WiFi module is installed.



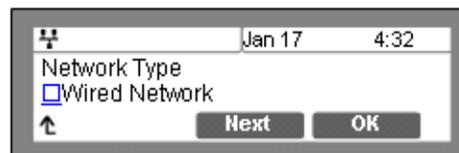
Network Configuration Tree with WiFi Module

## Network Type

When the WiFi Module is installed, Network Type selects the wired or wireless network interface and, based on the type, the appropriate Network Configuration menu is provide as shown in the diagram above.

To change the Network Type,

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 1.Network Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Network Type using [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the Network Type using the [Next]-softkey and press the [OK] softkey. Selections available are Wired Network and Wireless Network.
- Press the Settings (  ) button to exit the configuration session and agree to the reboot to save the Network Type setting.



**NOTE:** Changing the Network Type requires an immediate reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new value entered and select the appropriate Network Configuration menu.)

## Wired Network Configuration with WiFi Module

When the WiFi Module is installed and the Wired Network type is selected, Network Configuration is accomplished as outlined in "Network Mode" on [page 3-7](#) with an additional step. Use the steps below in place of the first two (2) steps shown in "Network Configuration" in "Network Configuration" on [page 3-7](#).

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 1.Network Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.Network Configuration using [Next]-[Previous] softkeys and press the [OK] softkey.
- Follow the procedures described in "Network Configuration" on [page 3-7](#) from the 3rd step.

## WiFi Configuration

The WiFi Configuration Menu is presented when the WiFi Module is installed and the Wireless Network Type is selected as described on [page 5-3](#). Note you must reboot the IP Phone after changing the Network Type to display the appropriate menus. Under WiFi Configuration, the WiFi Network Profile is configured, the IP Phone can be forced to search for available APs, and the current configuration can be viewed.

### Profile

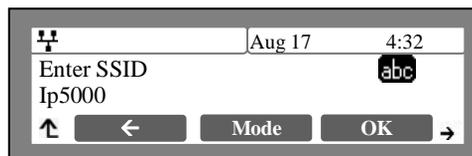
Profile configures the settings for the WiFi Module interface including SSID (Service Set Identification), security and security keys.

#### SSID

An SSID, is the name used to identify a particular WiFi (IEEE 802.11) network. The SSID can be up to 32 characters.

#### To set the SSID value

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.WIFI Configuration* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Profile* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.SSID* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the SSID using the dial pad and press the [OK] softkey to save your entry. The SSID can be up to 32 characters.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



- NOTE:**
- Changing the SSID requires a reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. The IP phone must reboot to use the new values entered.
  - To enter alphanumeric characters select the [Mode] softkey. Refer to [Appendix E](#) for the character mapping of dial pad digits.

## Security Mode

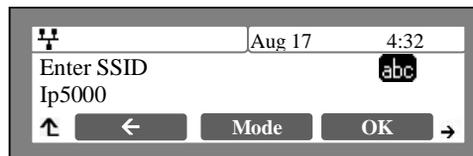
The WiFi standards (IEEE 802.11) provide several alternate security modes including WEP (Wired Equivalent Privacy) and WPA-PSK (WiFi Protected Access-Pre-Shared Key). Under Security Mode selections available are:

- None
- WEP64, Wired Equivalent Privacy, 64 bit
- WEP128, Wired Equivalent Privacy, 128 bit
- WPA-PSK,
- WPA2-PSK,

WPA security modes support TKIP and AES encryption methods of the IEEE 802.11 standard.

### To set the Security Mode

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 1.Network Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.WIFI Configuration using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1.Profile using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.Security Mode using [Next]-[Previous] softkeys and press the [OK] softkey.
- Dial the digit for the appropriate Security Mode or move the cursor to 1.None, 2.WEP 64, 3.WEP 128, 4.WPA-PSK or 5.WPA2-PSK using [Next]-softkeys and press the [OK] softkey.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session



**NOTE:** Changing the Security Mode requires a reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

### **Security Key Setting**

The Security Key Setting defines the key employed with the security mode protocol assigned (WPA or WEP). The Key available when selecting the Security Key menu, automatically selects the correct key protocol based on the Security Mode selected in the "Security Mode" section above.

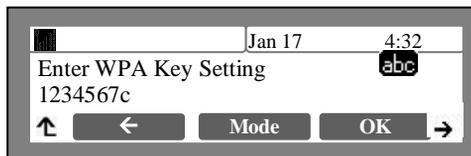
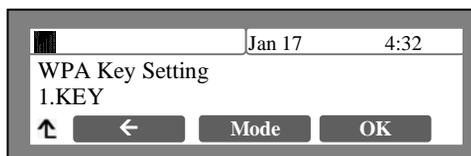
**NOTE:** Changing the Security Key Setting requires a reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

### **WPA Security Key**

The 5000 series IP Phones support both the TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption methods defined in IEEE 802.11i standard for WPA security. The Key may be 64 hexadecimal digits or 8 to 63 ASCII characters.

To set WPA-PSK and WPA2-PSK

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.WIFI Configuration* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Profile* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *3.Security Key Setting* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.KEY* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the WPA Key using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session

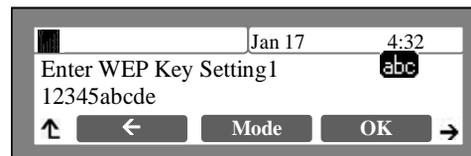
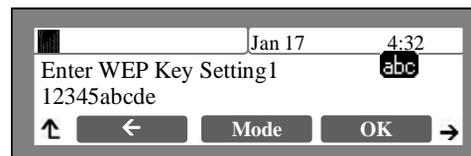
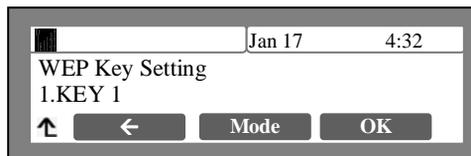


**WEP Security Key**

WEP is a deprecated algorithm to enhance security of the WiFi wireless network. Four (4) WEP keys can be defined and the active key selected using the WEP Security Key setting. The WEP key can be WEP64 or WEP128 based on the Security Mode defined. For WEP64 a 10-digit hexadecimal key is required. For WEP128 a 26-digit hexadecimal key is required.

To enter a WEP key and select the active key,

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 1. Network Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2. WIFI Configuration using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 1. Profile using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 3. Security Key Setting using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the digit for the desired key (1 to 4) or, to define the active Key, press the 5 digit or move the cursor to select the appropriate entry using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the WEP Key using the dial pad. For WEP64 bit mode use 10-hex digits and for WEP128 bit mode use 26-hex digits.



- To define the active Key, use the [Next]-[Previous] softkeys to select the desired Key number (1-4) and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.

**NOTE:** Changing the Security Key Setting requires a reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

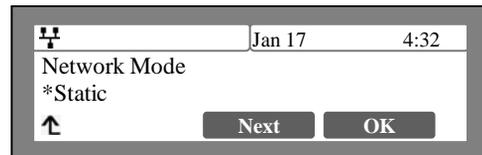
## Network Mode

The IP phone is capable of obtaining all of its IP configuration data from a DHCP server. When a DHCP server is not available, static addressing is used for the Network Mode. Selecting Static addressing requires manual entry of other IP network parameters including:

- IP address of the phone
- Default gateway IP address
- Subnet mask
- DNS address

*To set the Network Mode:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.WIFI Configuration* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Profile* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *4.Network Mode* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Select the Network Mode using [Next]-[Previous] softkeys and press the [OK] softkey to save your selection.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** - An asterisk, \*, is displayed in front of the current selection.

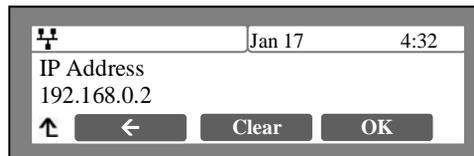
- Changing the Network Mode requires a reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

## IP Address

Selecting static addressing for the Network mode requires manual entry of an IP address for the WiFi Module. The WiFi Module requires a valid available IP address for proper operation.

*To set the IP Address:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.WIFI Configuration* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Profile* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *5.IP Address* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the IP Address using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** - Changing the IP Address requires a reboot of the IP phone; when you exit the LCD Configuration Menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

- The IP address can be changed only in static mode and not if DHCP mode is active. In DHCP mode, the IP phone retrieves an IP address from the DHCP server.

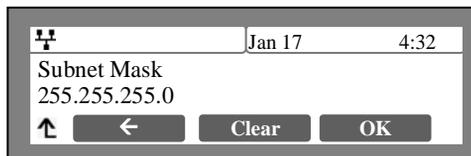
## Subnet Mask

Selecting static addressing for the Network mode requires manual entry of a subnet mask for the WiFi Module. The WiFi Module requires a valid subnet for proper operation.

*To enter the Subnet Mask:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.WIFI Configuration* using [Next]-[Previous] softkeys and press the [OK] softkey.

- Press the  digit, or move the cursor to *1.Profile* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *6.Subnet Mask* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Subnet Mask using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.

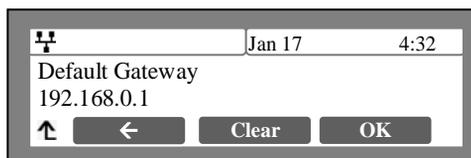


### Default Gateway

Selecting static addressing for the Network mode requires manual entry of a default gateway address for the WiFi Module. The WiFi Module requires a valid default gateway address for proper operation.

*To assign the Default Gateway address:*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.WIFI Configuration* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Profile* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *7.Default Gateway* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Default Gateway using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Setting () button to exit the configuration session.



**NOTE:**

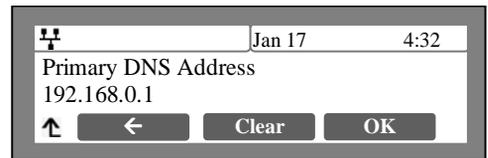
- The Default Gateway address can be changed only in static mode and not if DHCP mode is active. In DHCP mode, the IP phone retrieves a default gateway address from the DHCP server.
- Changing the Default Gateway address requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

## Primary DNS Address

Using an FQDN (Fully Qualified Domain Name) for any of the servers in the IP phone configuration requires entry of a primary DNS IP address. The IP phone contacts the primary DNS server to resolve the FQDN to an IP address.

*To assign the Primary DNS Address:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.WIFI Configuration* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *1.Profile* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *8.Primay DNS* using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Primary DNS using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session.



**NOTE:** Changing the Primary DNS Address requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

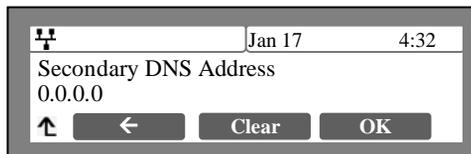
## Secondary DNS Address

With an FQDN assigned as any of the servers in the IP phone configuration, the IP phone contacts the primary DNS server to resolve the FQDN to an IP address. Should the primary not respond, the IP phone contacts a secondary DNS for FQDN resolution. This is an optional but recommended setting.

*To assign the Secondary DNS Address:*

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to *1.Network Configuration* using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to *2.WIFI Configuration* using [Next]-[Previous] softkeys and press the [OK] softkey.

- Press the  digit, or move the cursor to 1.Profile using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 9.Secondary DNS using [Next]-[Previous] softkeys and press the [OK] softkey.
- Input the Secondary DNS using the dial pad and press the [OK] softkey to save your entry.
- Move to another parameter with the navigation buttons and continue the session or press the Settings () button to exit the configuration session.



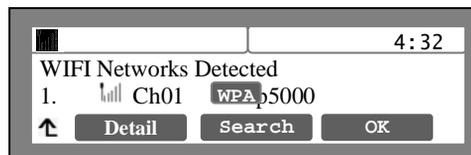
**NOTE:** Changing the Secondary DNS Address requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

## Searching AP (Access Point)

Using this menu, you can see the wireless AP list around and connect AP what you want. The results show RSSI Value, Channel, Security mode, and AP SSID.

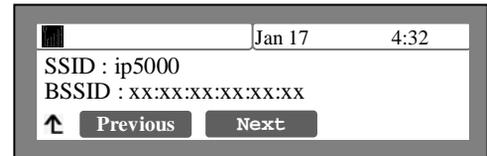
*To view Search AP lists and set wireless configuration.*

- Press the Settings () button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
  - Press the  digit, or move the cursor to 1.Network Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
  - Press the  digit, or move the cursor to 2.WIFI Configuration using [Next]-[Previous] softkeys and press the [OK] softkey.
  - Press the  digit, or move the cursor to 2.Searching AP using [Next]-[Previous] softkeys and press the [OK] softkey.
- After 'Searching' the list of detected WiFi Networks is displayed. Use the Up and Down Navigation buttons to scroll through the list of APs.



From the list:

- Press the [Detail] softkey to display information for the selected AP.
- Use the [Next]-[Previous] softkeys to display the following:
  - BSSID
  - RSSI
  - Rate



OR

- Press the [OK] softkey and follow the LCD instructions to input the WiFi Network Configuration settings including:
  - Security Key
  - Network Mode
  - IP Address
  - Subnet Mask
  - Default Gateway
  - Primary DNS
  - Secondary DNS

See the sections above for entry instructions.

- Move to another parameter with the navigation buttons and continue the session or press the Settings (⚙️) button to exit the configuration session

**NOTE:** - The maximum number of Access Points supported is 30 and are arranged in the list based on received signal strength, highest to lowest.

- RSSI is indicated for five (5) levels as shown in [Appendix H](#).

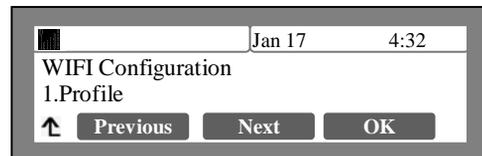
- Changing any of the WiFi Network Configurations settings requires a reboot of the IP phone; when you leave the menu, you will receive a reboot notice. (The IP phone must reboot to utilize the new values entered.)

## Current Connection

The Current Connection menu displays the characteristics of the currently connected WiFi network. The LED in the upper right corner of the WiFi module will illuminate to indicate a WiFi connection. Information displayed includes SSID, BSSID, Channel, RSSI, Security, Data Rate, Network Mode, IP Address, Subnet Mask, Default Gateway, Primary DNS Address, Secondary DNS Address, and MAC address as shown in the "Network Configuration" diagram on [page 5-2](#).

To view Current Connection information:

- Press the Settings (  ) button. If the LCD Menu is locked, use the unlock procedure on [page 3-4](#).
- Press the  digit, or move the cursor to 1.Network Configuration using the [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 2.WIFI Configuration using [Next]-[Previous] softkeys and press the [OK] softkey.
- Press the  digit, or move the cursor to 3.Current Connection using [Next]-[Previous] softkeys and press the [OK] softkey. Detailed information on the current WiFi connection is displayed, use the Up/Down navigation buttons to scroll through the various items.
- Move to another parameter with the navigation buttons and continue the session or press the Settings (  ) button to exit the configuration session



**NOTE:** -The maximum number of Access Points supported is 30 and are arranged in the list based on received signal strength, highest to lowest.

- The Current Connection information is view only and individual parameters cannot be changed through the Current Connection menu item.

# LAN Configuration with WiFi

**Web Manager (SIP)**

VoIP Configuration

LAN Configuration

Call Preferences

Dial Plan

Phone Information

Phone Settings

Phone Book

Programmable Key

Call Log

Network Time Configuration

Upgrade Configuration

QoS Configuration

Load Default Configuration

Reboot

### LAN Configuration

Wired Network     Wireless Network

Network Selection	<input checked="" type="radio"/> Static <input type="radio"/> DHCP
IP Address	<input type="text" value="192.168.1.1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="192.168.1.254"/>
Mac Address	<input type="text" value="00:02:78:00:00:00"/>
Primary DNS	<input type="text" value="192.168.100.100"/>
Secondary DNS	<input type="text" value="0.0.0.0"/>
Domain Name	<input type="text" value="0.0.0.0"/>

**WiFi Settings**

SSID	<input type="text" value="ip8800"/>
Security	<input type="text" value="WPA-PSK"/>
WEP Key	<input checked="" type="radio"/> Key 1 <input type="text" value="12345abcde"/>
	<input type="radio"/> Key 2 <input type="text"/>
	<input type="radio"/> Key 3 <input type="text"/>
	<input type="radio"/> Key 4 <input type="text"/>
WPA Key	<input type="text" value="12345678"/>

**Current Connection**

SSID	R&D Center
BSSID	00:21:00:00:00:00
Channel	3
RSSI	-24 dBm
Security	WPA-PSK(TKIP)
Rate	54 Mbps

[Return to the Site Map](#)

In the LAN screen with a WiFi Module installed the adjustable parameters are:

- LAN Configuration
  - Network type is defined with the radial buttons, select Wired Network or Wireless Network.
  - Network Selection is the IP address mode for the IP Phone. The radial button selects static or DHCP address mode.
  - IP address is the IP address of the Phone (wired connection) or WiFi module (wireless connection).
  - Subnet Mask is the subnet mask for the connection wired or wireless.
  - Default Gateway is the default gateway IP address for the connection wired or wireless.
  - Mac Address is the MAC address of the IP Phone or WiFi Module based on the selected Network Type, view only.
  - Primary DNS is the IP address of the primary DNS server.
  - Secondary DNS is the IP address of an auxiliary DNS server.
  - Domain Name is the domain name for the IP Phone.
- WiFi Settings, displayed only with Wireless network enabled.
  - SSID is the Service Set Identifier for the WiFi Module. The SSID must not exceed 32 characters.
  - Security is a security mode for the WiFi Module. Select None, WEP64, WEP128, WPA-PSK and WPA2-PSK.
  - WEP Key is the security Key values when WEP security mode is used. Multiple keys can be assigned and the active Key is selected with the radial button in front of the Key. For WEP 64 ten (10) hex digits are required, for WEP 128 or 26 hex digits must be entered.
  - WPA Key is the Key value when WPA-PSK or WPA2-PSK security mode is used.
- Current Connection:
  - Displays current connection information with AP.

*To modify the LAN Settings:*

- Select the radial button, enter the value in the text box or select a value from a drop down menu.
- When complete, select the  button to load new values to the IP Phone memory.

**NOTE:** - Changing the Network Type requires an immediate reboot of the IP Phone. When you exit the menu, you will receive a Reboot notice. The IP Phone must reboot to utilize the new value entered and change to the appropriate Network Configuration menu.

- Changing any value in the LAN screen requires a reboot of the IP Phone. When you leave the menu, you will receive a Reboot notice. The IP Phone must reboot to utilize the new values entered.

- The IP address, subnet mask, etc. can only be changed if the static Network Mode is assigned.

-The MAC address is fixed and cannot be modified.

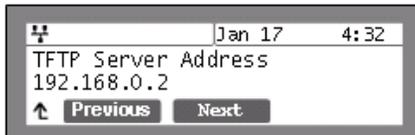
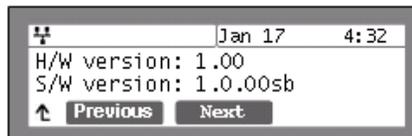
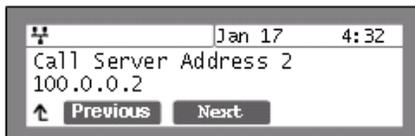
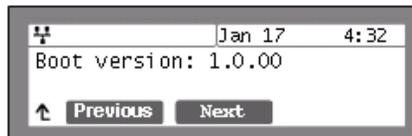
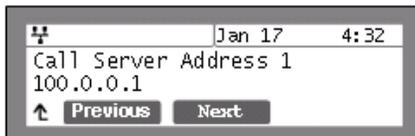
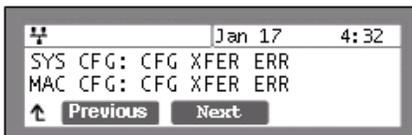
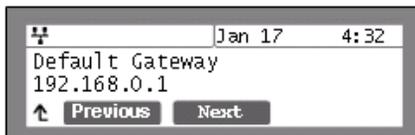
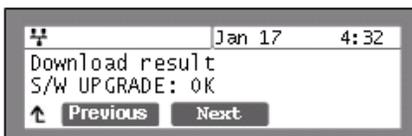
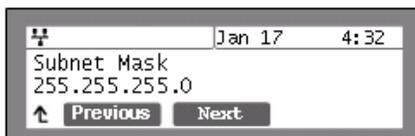
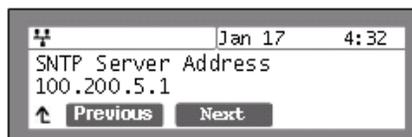
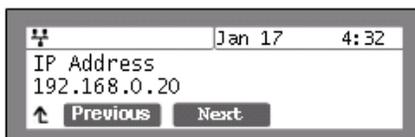
- The Current Connection display information only and these items cannot be changed in the Current Configuration menu.

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# Troubleshooting

The 5000-series phones provide the means to quickly view the Network parameters (IP address, default gateway address, and subnet-mask), server IP addresses (call server, TFTP server, and SNTP server), and results of the last file download attempt.

- Press the Settings (  ) button.
- Press the  digit, or move cursor to 8.Information using the [Next]-[Previous] softkeys, and press the [OK] softkey.



- Press the [Next] softkey to view the next information.  
The download information displays results of the most recent download attempt, see [Appendix C](#) for a list of the messages.
- Press the  button to exit the menu.

## Troubleshooting Guide

Symptom	Corrective Action
LCD Off	<ol style="list-style-type: none"> <li>1. Switch power source ON</li> <li>2. Check/replace AC/DC adapter</li> <li>3. Check/correct input power from the LAN</li> </ol>
Handset off-hook, no dial tone	<ol style="list-style-type: none"> <li>1. Assure the Network Type is properly selected for Wired or Wireless; a WiFi module must be installed for selection of wireless.</li> <li>2. Assure the RJ-45 LAN cable is connected correctly.</li> <li>3. Make sure that the call server IP Address is correct.</li> </ol>
Button LEDs flash red then orange	<p>Line not registered with the call server,</p> <ol style="list-style-type: none"> <li>1. Check phone configuration</li> <li>2. Check network connections</li> <li>3. Check call server.</li> </ol>
Phone displays "DHCP Searching" constantly, more than 2 minutes.	<p>DHCP server is not responding.</p> <ol style="list-style-type: none"> <li>1. Check DHCP server.</li> <li>2. Check VLAN settings.</li> </ol> <p>To exit the DHCP Searching mode, press Settings button 3 times, the phone will complete the boot and return to idle.</p>
Phone displays "VLAN Changed. Reboot?".	<p>The downloaded configuration file has changed the VLAN settings. After the next reboot, the phone will use the new settings. Select <b>[Yes]</b> to reboot now using the new settings. Select <b>[No]</b>, the Phone will not use the changed VLAN settings until the next reboot.</p>
Network setting error	<ol style="list-style-type: none"> <li>1. Verify the Network Type is correct, wired or wireless</li> <li>2. Network Mode: DHCP                     <ul style="list-style-type: none"> <li>Make sure Network Mode is DHCP.</li> <li>Make sure the RJ-45 LAN cable is connected securely to your IP Phone and LAN, switch, or router.</li> <li>Make sure that all network ports, routers, or switches are working.</li> <li>Make sure your network supports DHCP.</li> </ul> </li> <li>3. Network Mode: Static                     <ul style="list-style-type: none"> <li>Make sure Network Mode is static.</li> <li>If you entered the IP Address through a phone, make sure you reset your IP Phone.</li> </ul> </li> </ol>

Symptom	Corrective Action
<p>If the Wave server has a different IP address than that provided by the DHCP server</p>	<p>The phone must be configured manually.</p> <p><i>Verify the following configuration settings:</i></p> <p>Configuration Menu-&gt;Phone Settings-&gt;S/W Update-&gt;Provisioning Type = TFTP</p> <p>Configuration Menu-&gt;Phone Settings-&gt;S/W Update-&gt;TFTP ServerAddress = Wave IP address</p> <p>Configuration Menu-&gt;Phone Settings-&gt;S/W Update-&gt;S/W Download Flag = Yes</p> <p>Configuration Menu-&gt;Phone Settings-&gt;S/W Update-&gt;Config Download Flag = Yes</p> <p>Configuration Menu-&gt;Phone Settings-&gt;S/W Update-&gt;DHCP Option = Don't use any option</p>
<p>When I attempt to make a call, I can't hear</p>	<ol style="list-style-type: none"> <li>1. Check all cables and connections.</li> <li>2. Make sure the call server IP Address is correct.</li> </ol>
<p>When I attempted to reboot or change software, the IP Phone locks up.</p>	<p>Phone lock-up maybe caused by an error in transport during the software upgrade. To correct this problem:</p> <ol style="list-style-type: none"> <li>1. Disconnect power from the IP Phone.</li> <li>2. Press and hold the [Up] and 2 button while reapplying power.</li> <li>3. Release the buttons when the Message LED extinguishes.</li> <li>4. When the BootC screen appears, enter the digits 1, 2, 3 and 4.</li> <li>5. Follow the prompts to configure IP parameters for the IP Phone.</li> <li>6. At the "Server Addr?" prompt, enter the TFTP server address where the IP Phone can find the BootC firmware. If already correct, press the [Next] button.</li> <li>7. At the "Do you want to apply default?" prompt select the [Yes] softkey to use default or [No] softkey to use previously assigned parameters.</li> </ol> <p>The IP Phone will reboot and return to normal operation.</p>
<p>WiFi module does not work</p>	<ol style="list-style-type: none"> <li>1. Verify configuration of the WiFi Module.</li> <li>2. Verify the AP is properly configured and operational.</li> <li>3. Verify the WiFi module is properly installed.</li> </ol>

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# Default Settings

## Factory Default Configuration

Factory default configurations are settings for the configuration, which are set at the factory. The table below gives the default values for configurable parameters.

Config File Section Name	Parameter/Field	Default Value
[LAN]	Network mode	DHCP
	IP address	192.168.1.1
	Subnet mask	255.255.255.0
	Default gateway	192.168.1.254
	Primary DNS address	0.0.0.0
	Secondary DNS address	0.0.0.0
	TFTP server address	Not assigned
	ToS (Type of Service)*	0
	PC port VLAN priority	3
	PC port VLAN id	0
	LAN port VLAN priority	5
	LAN port VLAN id	0
	CDP	enabled
[VOIP]	Call server address line 1	0.0.0.0
	Proxy port line 1	5060
	Display name line 1	Not assigned
	Name line 1	Not assigned
	Auth. user name line 1	Not assigned
	Auth. password line 1	Not assigned
	Line 1 line type	Private
	Line 1 BLA primary line	Not assigned
	Ring Type for line 1	default ring
	Delayed ring for line 1	0 seconds

Config File Section Name	Parameter/Field	Default Value
[VOIP]	Call server address line 2	0.0.0.0
	Proxy port line 2	5060
	Display name line 2	Not assigned
	Name line 2	Not assigned
	Auth. user name line 2	Not assigned
	Auth. password line 2	Not assigned
	Line 2 line type	Private
	Line 2 BLA primary line	Not assigned
	Ring Type for line 2	default ring
	Delayed ring for line 2	0 seconds
	Outbound proxy address	Not assigned
	Outbound proxy port	5060
	Backup proxy address	Not assigned
	Backup proxy port	5060
	Domain	Not assigned
	Start RTP port	23000
	VMS address	Not assigned
	prack mode**	disabled
	User name	Not assigned
	Replaces header**	enabled
	Local UDP port	5060
	Register expires	3600 seconds
	SIP session timer**	0
	SIP T1 timer**	500 msec.
	SIP T2 timer**	4000 msec.
	Stun server address**	Not assigned
	Number of lines*	2
	Preferred codec*	G729/G723/PCMU/PCMA/G722

Config File Section Name	Parameter/Field	Default Value
[VOIP]	Centralized conference*	Enabled w/call server as URL
	BLF*	Disabled, no URL assigned
	De-register*	enabled
[ROUTE]	Interface type*	Not assigned
	Port**	Not assigned
	Destination*	Not assigned
	Truncation*	Not assigned
	Prefix number*	Not assigned
	Suffix number*	Not assigned
	Pause*	Not assigned
	IP address*	Not assigned
[DSP]*	Handsfree gain	6
	Handset gain	6
	Wired Headset gain	6
	Ring volume	6
	LCD Contrast	4
	Ringer off	Ringer on
	VAD**	Off
	Frame duration*	20
	Headset auto mode*	disabled
	DTMF relay*	negotiate
	DTMF payload*	101
	DTMF duration**	120 milli-seconds
	default ring	Ring type 1
	Key tone	enabled
	Undefined cadence (0)**	2000, 4000, 0, 0, 0, 0
	External call cadence (1)**	800, 400, 800, 4000, 0, 0
	Group call cadence (2)**	400, 200, 400, 200, 800, 4000
Internal call cadence (3)**	300, 200, 1000, 200, 300, 4000	

Config File Section Name	Parameter/Field	Default Value
[DSP]*	ACD call cadence (4)**	500, 0, 0, 0, 0, 0
	Priority call cadence (5)**	1500 4500 0 0 0 0 0 0
	Emergency call cadence (6)**	1500 500 1500 2500 0 0 0 0
	Community-1 call cadence (7)**	1500 500 500 3500 0 0
	Community-2 call cadence (8)**	1500 500 500 500 500 2500 0 0
	Community-3 call cadence (9)**	1500 500 500 500 1000 2500 0 0
	Community-4 call cadence (10)**	500 500 500 500 500 500 500 2500
	Auto answer call cadence (11)**	500 500 500 500 2500 3500 0 0
	Jitter buffer, (min, max, nom.)*	30, 60, 120 msec.
[FWRD]	Call forward	Not assigned
[DIAL]	Dial mode	Number
	Dial plan pause timer**	3 seconds
	Inter-digit timer**	6 seconds
[SYSTEM]	Language	English
	Lock outgoing call	unlock
	Speed number	enabled
	Web server**	enabled
	telnet_server**	enabled
	Phone password	22222
	Function private_hold*	disabled
	Function barge_in*	disabled
	Function cdp	enabled
	Function download_flag*	disabled
	Function onetouch_pickup*	enabled
	Function dnd*	enabled
	Web Manger login name*	private
	Web Manager login password*	lip
[NETTIME]	NTP server address	Not assigned
	Synchronization Interval**	24 hours

Config File Section Name	Parameter/Field	Default Value
[NETTIME]	Time zone	3 (PACIFIC STANDARD)
	DST enable	On
	DST format*	North American standard format
	DST start configuration*	March, 2 <sup>nd</sup> week, Sunday at 2 am
	DST end configuration*	November, 1 <sup>st</sup> week, Sunday at 2am
	Time format	24-hour
	Date format	DD Mon (21 Feb)
[PROVISION]	Provisioning type	TFTP
	DHCP option 66/150	enabled
	HTTPS URL	Not assigned
	HTTPS URL DHCP option	160
	Use TFTP DHCP option*	enabled
	Use HTTP/S DHCP option*	enabled
	ID	Not assigned
	Password	Not assigned
	Phone specific file name*	\$MAC
	HTTPS certification	Authority, server name & expiration
	Decryption key*	Not assigned
	Smart upgrade*	Upgrade at midnight
	S/W download flag	enabled
	Config download flag	enabled
Phone Book URL**	Not assigned	
[PROG]	Flex buttons	1 & 2 private lines
[CALL]	Caller id block	disabled
	Anonymous caller id block	disabled
	Call waiting	enabled
	Call waiting tone	enabled
	Call hold ringback tone	enabled

Config File Section Name	Parameter/Field	Default Value
[CALL]	Message waiting tone	enabled
	Auto answer	disabled
	Forwarding condition*	0 off
	Forwarding address*	Not assigned
	Forwarding no-answer time*	10 seconds
	Direct call*	disabled
	Direct call number*	Not assigned
	Direct call timer*	5 seconds

## IP5000 Specifications

The table below provides the basic specifications of the IP Phone.

Item	IP5000
Network Interface	RJ-45 IEEE 802.3 Ethernet/Fast Ethernet switch port
PC/Workstation Interface	RJ-45 IEEE 802.3 Ethernet/Fast Ethernet switch port
Power	802.3af or AC/DC Power Adapter
LED Indicators	Message Indicator, Speakerphone, Mute, DND, Headset, Red LED
	24 Programmable Buttons w/Red/Green LED
LCD	240 x 56 dot graphic
Physical Size (H x W x D)	206 x 235 x 51.2 cm 8.1 x 9.25 x 2 inches
Weight	771g
AC/DC Adaptor	Output: 48VDC, 0.3A (max.) Input: 100-240 VAC, 50/60 Hz.
Operation Temperature	0 - 40° C
Storage Temperature	-20 - 60° C
Operation Humidity	10 - 85 % RH, non-condensing
Audio	Acoustic Echo Canceller & Voice Active Detection
Codecs	G.711, G.723.1/a, G.729a/b, and G.722

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## Download LCD Messages

The following tables provide the messages displayed for the most recent s/w and configuration download attempts.

### Software Download Messages

Message	Description
LOAD FLAG OFF	S/W load is disabled
NULL SERVER ADDR	TFTP/WEB server address is 0.0.0.0
VER FILE XFER ERR	Downloading a new version of S/W has failed Check the TFTP/WEB server
IMAGE XFER ERR	
VER FILE NOT FOUND	The version file doesn't exist in TFTP/WEB server
VER STRING ERR	The version file contains an erroneous format
IMAGE NOT FOUND	The S/W image doesn't exist in TFTP/WEB server
IMAGE SIZE ERR	The S/W image size is 0 or larger than maximum size
INVALID ID OR PW	The current Id or password for authentication is invalid
NEW VERSION LOADED	S/W was successfully loaded
UPDATE NOT NEEDED	The current version is the latest

## Configuration Download Messages

Message	Description
LOAD FLAG OFF	Config file load is disabled.
NO SERVER ADDR	TFTP/WEB server address is 0.0.0.0
CFG XFER ERR	Downloading the configuration file has failed; check the TFTP/WEB server status
FILE SIZE ERR	The configuration file size is 0 or there is an error during transfer from the TFTP server
FILE NOT FOUND	The configuration file doesn't exist in TFTP/WEB server
INVALID FILE OR DECRYPT KEY	The received configuration file is an invalid format or encrypted with an unknown key
PARAMETER ERR	The configuration file contains an erroneous value; the value has been automatically converted to previous value
INVALID ID OR PW	The current Id or password for authentication is invalid
DOWNLOAD OK	Configuration was successfully downloaded

---

# Using the Configuration File

## Configuration Parameters

During automated provisioning with the Config. Download flag, see [“Upgrade Configuration” on page 4-29](#) enabled, IP Phones attempt to download a global and a phone specific configuration file from a TFTP or Web server supporting HTTP/HTTPS. The global file "sysconf\_5000\_sip.cfg", is typically for parameters with the same value for all IP Phones connecting to the server. Parameters such as Network mode, Provisioning, Daylight savings time mode are typical globally settings.

- The phone-specific configuration file as a default uses the MAC address of the phone or WiFi module when the WiFi module is installed and configured for the file name, for example 00405a123477. When using HTTP/S, the IP Phone can be assigned with a name for the phone specific file in place of the MAC address but the MAC address must be included in the file name or path. Parameters specified in the phone specific configuration file override those defined in the global configuration file.
- Both the global and MAC configuration files can configure any of the parameters of the IP Phone; the only difference is the MAC file values have priority over the global file. Each is an ASCII file with parameters (fields) grouped under the various sections of the configuration file, see "Configuration Parameters" starting on the next page. By assigning values after the field name, the IP Phone configuration parameters are established.
- A field listed in the configuration file with no value will return the value of the associated parameter to default. If a value is changed for a field marked with an asterisk in the [“Configuration Parameters”](#) table (starting on page D-2), the reboot flag will be enabled and the IP Phone will reboot after initialization is complete. The first line of the configuration file (global or phone specific) must be "IP5000 configuration information (v1.0)" as shown in "Sample Configuration File" on [page D-24](#).
- The IP Phone supports SSL and allows assignment of a user name and password to authorize access to the HTTPS files. In addition, using HTTP/HTTPS the configuration files can be encrypted using a 32-byte key, which must be assigned to the phone or passed via the configuration file; the phone will use the 3DES algorithm to decrypt the file.
- In DHCP mode, the values from the DHCP server have a higher priority than the values in the sysconf\_88xx\_sip.cfg and phone-specific configuration files.
- The table below shows the configuration parameters by Section and Field name along with descriptive information. The 2nd table on [page D-31](#) shows selections available for the time zones. The illustration on [page D-24](#) provides a blank configuration file. List a field in the configuration file only if the field requires an assignment other than default. If a field is erased or commented-out, it will have no affect on the IP Phone memory; the phone will use the existing value in memory. Deleting an unused field line from the configuration file also reduces traffic between the provisioning server and the IP Phone during a boot cycle.

Configuration Parameters

Section	Field Name	Description
LAN	network type	Establishes the use of the wired or, if the WiFi Module is installed, wireless network. Valid values are Wired or Wireless Default is wired.
	network_mode	Sets use of DHCP or static addressing. In static mode, IP parameters are set manually. In DHCP, the IP Phone requests addresses from the local DHCP server including Options below: Option #1: Subnet Mask Option #2 : Time offset in secs of the local time zone from GMT. Option #3 : Default gateway (router) IP address Option #6 : DNS server IP address Option #42 : SNTP server IP address Option #50 : IP address of the phone Option #66 : TFTP server name Option #150 : TFTP server IP address, has priority over Option #66 when set Option #160 : HTTPS URL for provisioning, has priority over Option #66 and #150 Valid values are static and dhcp. Default is dhcp.
	ipAddress	The phone's IP address. Valid value is an IP address. Default is "192.168.1.1".
	defaultGateway	The phone's default gateway. Valid value is an IP address. Default is "192.168.1.254"
	subnetMask	The phone's subnet-mask. Valid value is a subnet-mask. Default is "255.255.255.0".
	dns1_address	IP address of the primary DNS server used to resolve names to IP addresses. Valid value is an IP address. Default is blank.

Section	Field Name	Description
LAN	dns2_address	Optional IP address for a secondary DNS server; used if the primary DNS server is unavailable. Valid value is an IP address. Default is blank.
	domain_name	Not used
	tftp_server_address	Defines the IP address or URL of a TFTP provisioning server. The valid value is an IP address or FQDN. The default is blank
	tos	Sets Type of Service (ToS) value for SIP packets. Valid values are 00 to FF (Hex). Default is 0.
	pc_802_priority	Establishes the IEEE 802.1 priority for Ethernet frames at the PC port of the IP Phone. Valid values are 0 to 7. Default is 3.
	phone_802_priority	Establishes the IEEE 802.1 priority for Ethernet frames at the voice port, including signaling and voice packets, of the IP Phone. Valid values are 0 to 7. Default is 5.
	pc_vlan_id	Assigns unique identifier of the VLAN for the PC port. A '0' disables VLANS. Valid values are 0 to 4094 Default is 0, disable.
	phone_vlan_id	Assigns unique identifier of the VLAN for the LAN (voice) port. A '0' disables VLANS. Valid values are 0 to 4094 Default is 0, disable.
WiFi	ssid	Assigns the Service Set Identifier for the WiFi Network. Valid value is up to 32 characters. Default is unassigned.
	security mode	Defines the security mode as WEP or WPA. Valid values are 1-None, 2-WEP64, 3-WEP128, 4-WPA-PSK or WPA2-PSK. Default is 0, None.

Section	Field Name	Description
WiFi	wep key 1	Assigns the WEP Key value for Key 1. Valid value is 10 hex digits for WEP64 or 26 digits for WEP128. Default is null.
	wep key 2	Assigns the WEP Key value for Key 2. Valid value is 10 hex digits for WEP64 or 26 digits for WEP128. Default is null.
	wep key 3	Assigns the WEP Key value for Key 3. Valid value is 10 hex digits for WEP64 or 26 digits for WEP128. Default is null.
	wep key 4	Assigns the WEP Key value for Key 4. Valid value is 10 hex digits for WEP64 or 26 digits for WEP128. Default is null.
	wep key index	Assigns the active WEP security Key when WEP security is assigned. Valid values are 1 to 4. Default is unassigned.
	wpa key	Assigns the WPA security Key when WPA-PSK or WPA2-PSK security mode is assigned. Valid value is up to 64 hex digits or 8 to 63 ASCII characters. Default is null.
	network mode	Sets use of DHCP or static, manual, addressing when connecting over a WiFi network. In static mode, IP parameters are set manually. In DHCP, the IP Phone requests addresses from the local DHCP server including Options below: <ul style="list-style-type: none"> <li>Option #1 :Subnet Mask</li> <li>Option #2: Time offset in secs of local time zone from GMT.</li> <li>Option #3 :Default gateway (router) IP address</li> <li>Option #6 :DNS server IP address</li> <li>Option #42 :SNTP server IP address</li> <li>Option #50 :IP address of the phone</li> <li>Option #66 :TFTP server name</li> <li>Option #150 :TFTP server IP address, has priority over Option #66 when set</li> <li>Option #160 :HTTPS URL for provisioning, has priority over Option #66 and #150</li> </ul> Valid values are static and dhcp. Default is .

Section	Field Name	Description
WiFi	IPAddress	The IP address of the WiFi Module Valid value is an IP address or FQDN Default is "192.168.1.1"
	defaultGateway	The default gateway for the WiFi network Valid value is an IP address Default is "192.168.1.254"
	subnetMask	The subnet-mask for the WiFi Module Default is "255.255.255.0"
	dns1 address	IP address of the primary DNS server used to resolve names to IP addresses. Valid value is an IP address. Default is "0.0.0.0"
	dns2 address	Optional IP address for a secondary DNS server; used if the primary DNS server is unavailable. Valid value is an IP address. Default is "0.0.0.0"
NETTIME	sntp_server_address	Sets the IP address or FQDN of the SNTP server from which the phone obtains time data. Valid value is an IP address or FQDN. Default is blank,
	interval	Sets interval, in hours, between time sync with SNTP server. Valid values are 0 to 120 hours. Default is 1.
	timezone	Sets the time zone for the phone. Valid values are time zones shown on page Default is 3, Pacific Standard time.
	time_format	Sets the LCD display format for time. Valid values are 0 (off), 1 (12-hour) or 2 (24-hour). Default is 2.
	date_format	Sets the LCD display format for date. Valid values are (MM: 2-digit month), (M: month), (DD: 2-digit day), (D: day), (YYYY: 4-digit year), (YY: 2-digit year), (m: month abbreviation), (d: day of week), '/', ',', '-'. Default is DD m (21 Feb)".

Section	Field Name	Description
NETTIME	dst_auto_adjust	Enables automatic daylight savings time (DST) adjustment by the phone. Valid values are 0 (disabled) or 1 (enabled). Default is 1.
	dst_start_month	Sets month DST starts. Valid values are 1 to 12, with 1 being January and 12 being December. Default is 3 in the United States.
	dst_start_day	Sets day of the month DST starts. Valid values are the following: <ul style="list-style-type: none"> <li>• 1 to 31 (for day of the month)</li> <li>• 0 (use value in the dst_start_day_of_week parameter)</li> </ul> Default is 0.
	dst_start_day_of_week	Sets day of the week DST begins. Valid values are 1 to 7 (1 is Sunday; 7 is Saturday). Default is 1 in the United States.
	dst_start_week_of_month	Sets week of month DST begins. Valid values are 1 to 6 and 7. One (1) is the first week; each subsequent number is the subsequent week. Seven (7) is the last week of the month regardless of which week the last week is. Default is 2 for the United States.
	dst_start_time	Sets the hour of the day DST begins. Valid values are 0 to 23. The default is 2 for the United States.
	dst_stop_month	Sets month DST ends. Valid values are 1 to 12 with 1 being January and 12 being December. The default is 11 for the United States.
	dst_stop_day	Sets day of the month DST ends. Valid values are as follows: <ul style="list-style-type: none"> <li>• 1 to 31 (for the days of the month)</li> <li>• 0 (use the value in the dst_stop_day_of_week parameter)</li> </ul> The default is 0.

Section	Field Name	Description
NETTIME	dst_stop_day_of_week	Sets day of the week DST ends. Valid values are 1 to 7, with 1 being Sunday and 7 being Saturday. The default is 1 for the United States.
	dst_stop_week_of_month	Sets week of month DST ends. Valid values are 1 to 6 and 7, with 1 being the first week, each number thereafter being subsequent weeks. Seven (7) represents the last week in the month The default is 1 for the United States.
	dst_stop_time	Sets the hour of the day DST ends. Valid values are 0 to 23. The default is 2 for the United States.
VOIP	outbound_proxy_server	When defined, sends all SIP requests to the outbound proxy server instead of to the <code>line_n_proxy_address</code> . The media stream is not routed through the outbound proxy. The valid value is an IP address or FQDN. Default is blank.
	outbound_proxy_port	Defines the port number of the outbound proxy server. Valid values are 1024 to 32000. Default is 5060.
	backup_proxy_server	Defines a backup proxy server in case the outbound proxy server fails. The valid value is an IP address or FQDN. Default is blank.
	back_proxy_port	Defines the port number of the backup proxy server. Valid values are 1024 to 32000. Default is 5060.
	message_url	Defines the voice mail address, IP address or phone number format. The valid value is an IP address or telephone number. Default is blank.

Section	Field Name	Description
VOIP	SIP_service_domain	Specifies the SIP service domain. The valid value is an IP address or FQDN. The default is blank.
	preferred_codec	Defines the order of priority of codecs for negotiation. Valid values are g729, g723, g722, pcmu and pcma. The default order of priority is g729 g723 pcmu pcma g722.
	rtp_port	Defines the RTP port for media packets. Valid values are from 16300 to 32700. The default is 23000.
	outbound_proxy_register	Enables use of proxy server for SIP requests. Valid values are enable or disable. The default is enable.
	prack_mode	Disables the use of ACK response to provide reliable response to SIP requests. Valid values are enable or disable. Default is disable.
	user_param	Defines "user=phone" parameter in the To, From, and Contact headers of REGISTER messages. Valid values are disable and enable. Default is disable.
	replaces_mode	Enables use of the SIP "Replace" header. Valid values are enable or disable. Default is enable.
	local_udp_port	Defines UDP port used for SIP messages. Valid values are from 1024 to 32000. Default is 5060.
	timer_register_expires	Defines time, in seconds, that a registration expires and re-registration is required. The Expire header in the registration message includes this value. A value of '0' is a de-registration. Valid values are 0 to 6400. Default is 3600.
	timer_session	Specifies the SIP session timer, in seconds. Valid values are 0 to 640. Default is 0.

Section	Field Name	Description
VOIP	timer_t1	Sets the lowest value, in milliseconds, for the retransmission of SIP messages. Valid values are 100 to 640. Default is 250.
	timer_t2	Sets the highest value, in milliseconds, for the retransmission of SIP messages. Valid values are 641 to 6400. Default is 2000.
	max_line_num	Sets the number of flexible buttons allocated for SIP lines. Valid values are: <ul style="list-style-type: none"> <li>IP-5000 phone — 1 to 24 or 1 to 36 (w/Exp. module)</li> </ul> Default is 2.
	centralized_conference	Enables use of a centralized conference server to process audio for the conference. Valid values are enable or disable Default is enable.
	conference_url	Specifies the URI for the centralized conference server. The valid value is a URI of less than 50 characters. Default is the call server address.
	blf_url	Specifies the URI for the BLF server. The valid value is a URI of less than 50 characters. Default is the call server address.
	de_register	Enables de-registration of each line during a reboot prior to re-registering. Valid values are enable or disable Default is enable.
	stun_server	Sets the STUN server IP address or FQDN Valid value is an IP address or FQDN. Default is blank.

Section	Field Name	Description
VOIP	line1_proxy_address ~ linen_proxy_address	Each line requires the address of the SIP proxy server. The <code>linen_proxy_address</code> and the <code>linen_proxy_port</code> parameters assign the proxy address and port to each line. The value of "n" can be from 1 to the <code>max_line_num</code> . Valid value is an IP address or FQDN. Default is blank.
	line1_proxy_port ~ linen_proxy_port	Assigns the port number for the SIP proxy server. The <code>n</code> variable is the line button and can be from 1 to the <code>max_line_num</code> . Valid values are 1024 to 32000. The default is 5060.
	line1_displayname ~ linen_displayname	Specifies the caller identification for the line, the phone sends the caller id for the line. The <code>n</code> variable is the line button and can be from 1 to the <code>max_line_num</code> . Valid value is up to 50 characters. The default is blank.
	line1_name ~ linen_name	Defines the SIP user id that is often a number or SIP address for use when registering. Enter a number without dashes, enter 555-0100 as 5550100, or a SIP address without the host name. The <code>n</code> variable is the line button and can be from 1 to the <code>max_line_num</code> . Valid value is up to 50 characters. The default is blank.
	line1_authname ~ linen_authname	Specifies the name for authentication if the proxy server challenges the line registration. It is required only if a proxy server requires authentication. The <code>n</code> variable is the line button and can be from 1 to the <code>max_line_num</code> . Valid value is up to 50 characters. The default is blank.
	line1_password ~ linen_password	Specifies the password for authentication if the proxy server challenges the line registration. The <code>n</code> variable is the line button and can be from 1 to the <code>max_line_num</code> . Valid value is up to 50 characters. The default is blank.

Section	Field Name	Description
VOIP	line1_type ~ linen_type	<p>Defines the type of line. The <i>n</i> variable is the line button and can be from 1 to the max_line_num.</p> <p>Valid values are as follows:</p> <ul style="list-style-type: none"> <li>private: Calls to the line are presented to all appearances of the line but, an active call is visible and accessible through the original endpoints involved in setting up the call.</li> <li>shared (BLA): Calls to the line are presented to all call appearances of the line and are visible and accessible by all authorized endpoints.</li> </ul> <p>Default is private.</p>
	line1_extension ~ linen_extension	n/a
	line1_ring_type~ linen_ring_type	<p>Specifies the ring type for the line. The <i>n</i> variable is the line button and can be from 1 to the max_line_num. Ring type can be a value from -1 to 4, 101 to 105, or 201 to 205:</p> <ul style="list-style-type: none"> <li>1, use the default ring type</li> <li>0, ringer off</li> <li>1-4, ring type 1 to 4 (tone ring),</li> <li>101-105, ring type 101 to 105 (wav file ring),</li> <li>201-205, ring type 201 to 205 (user defined ring),</li> </ul> <p>Valid values are -1 or 0 to 4, 101 to 105, or 201 to 205. The default is -1.</p>
	line1_delayed_ring~ linen_delayed_ring	<p>Specifies a delay in the audible ring for the line. The <i>n</i> variable is the line button and can be from 1 to the max_line_num. Delayed ring is adjustable from 0 to 10 seconds in 1-second increments. Valid values are 0 to 10 seconds. The default is 0.</p>

Section	Field Name	Description
ROUTE	add	<p>Defines a dial plan using a Routing Table. This parameter adds entries to the table. If a dialed number matches an entry, the number is modified and the call processed. An entry may include 0 to 9, '*' and '#' and the following special characters.</p> <p>'~' a wild card character that matches any multiple characters.</p> <p>'?' any dialed digit.</p> <p>'.' represents "virtual dial tone"</p> <p>',' locates the position of a 3-sec. pause in the prefix number.</p> <p>Valid values are up to 50 entries with below information.</p> <p>The default is blank.</p>
		intf -- Must be "SIP".
		port -- Must be "0".
		<p>nums -- Sets the digit pattern for a match.</p> <p>The valid value is a sequence of digits 0 to 9, '*', '#', '~', '?', '.' or NULL.</p>
		<p>trunc -- Specifies the number of digits to be stripped before further processing.</p> <p>Valid values are 0 to 31.</p>
		<p>pre -- Specifies digits to add in front of the truncated number.</p> <p>Valid values are 0 to 9, '*', '#', '.', '~' or NULL.</p>
		<p>post -- Specifies the number to add at the back of the truncated number.</p> <p>Valid values are 0 to 9, '*', '#', '.', '~' or NULL.</p>
		<p>pause -- Locates the position of a 3 seconds pause before processing the number. A ',' locates the pause in the entry.</p> <p>Valid values are '?', ',' or NULL.</p>
		<p>ip-addr -- Specifies an IP address as the destination when a match occurs without regard to the proxy address.</p> <p>The valid value is an IP address</p>
DSP	handsfree	<p>Specifies the gain level for the phone's handsfree speaker.</p> <p>Valid values are 1 through 11.</p> <p>The default is 6.</p>
	handset	<p>Specifies the gain level for the phone's handset.</p> <p>Valid values are 1 through 11.</p> <p>The default is 6.</p>

Section	Field Name	Description
DSP	headset	Specifies the gain level for the wired headset connected to the phone. Valid values are 1 through 11. The default is 6.
	ring	Specifies the gain level for the phone's ring. Valid values are 1 through 11. The default is 6.
	lcd	Specifies the contrast level for the phone's LCD. Valid values are 1 through 7. The default is 4.
	ringer_off	Toggles the ringer on and off. Valid values are 1 (on) and 0 (off). The default is 1 (on).
	VAD	Sets voice activation detection (VAD). Valid values are 1 (on) and 0 (off). The default is 0.
	ring_type	Specifies the default ring type for the IP Phone. Ring type can be a value from 1 to 4, 101 to 105, or 201 to 205: <ul style="list-style-type: none"> <li>1-4, ring type 1 to 4 (tone ring),</li> <li>101-105, ring type 101 to 105 (wav file ring),</li> <li>201-205, ring type 201 to 205 (user defined ring),</li> </ul> Valid values are 1 to 4, 101 to 105, and 201 to 205. The default is 1.
	ringdata	Sets the user defined ring (RTTTL-format), see <a href="#">Appendix G</a> . The valid value is a maximum of 255 characters for each ring. The maximum number of ringdata is 5. Default is blank.
	dtmf_payload	Sets the DTMF payload type for RFC2833. Valid values are 96 through 255. The default is 101.
	dtmf_duration	Sets the DTMF duration. Valid values are 50 through 300 ms. The default is 120.

Section	Field Name	Description
DSP	cadence0	Sets the ring cadence for calls with undefined in Alert Info header. The valid value is a six value time array (on off on off on off). The valid range is 0 to 30000 milliseconds total time. The default is 2000-4000-0-0-0-0.
	cadence1	Sets the ring cadence for calls with External call in Alert Info header. The valid value is a six value time array (on off on off on off). The valid range is 0 to 30000 milliseconds total time. The default is 800-400-800-4000-0-0.
	cadence2	Sets the ring cadence for calls with Group call in Alert Info header. The valid value is a six value time array (on off on off on off). The valid range is 0 to 30000 milliseconds total time. The default is 400-200-400-200-800-4000.
	cadence3	Sets the ring cadence for calls with Internal call in Alert Info header. The valid value is a six value time array (on off on off on off). The valid range is 0 to 30000 milliseconds total time. The default is 300-200-1000-200-300-4000
	cadence4	Sets the ring cadence for calls with ACD call in Alert Info header. The valid value is a six value time array (on off on off on off). The valid range is 0 to 30000 milliseconds total time. The default is 500-0-0-0-0-0
	cadence5	Sets the ring cadence for calls with priority call in Alert Info header. The valid value is an eight value time array (on off on off on off on off). The valid range is 0 to 30000 milliseconds total time. The default is 1500-4500-0-0-0-0-0-0
	cadence6	Sets the ring cadence for calls with emergency call in Alert Info header. The valid value is an eight value time array (on off on off on off on off). The valid range is 0 to 30000 milliseconds total time. The default is 1500-500-1500-2500-0-0-0-0

Section	Field Name	Description
DSP	cadence7	<p>Sets the ring cadence for calls with community - 1 call in Alert Info header.</p> <p>The valid value is an eight value time array (on off on off on off on off). The valid range is 0 to 30000 milliseconds total time.</p> <p>The default is 1500-500-500-3500-0-0-0-0</p>
	cadence8	<p>Sets the ring cadence for calls with community - 2 call in Alert Info header.</p> <p>The valid value is an eight value time array (on off on off on off on off). The valid range is 0 to 30000 milliseconds total time.</p> <p>The default is 1500-500-500-500-500-2500-0-0</p>
	cadence9	<p>Sets the ring cadence for calls with community - 3 call in Alert Info header.</p> <p>The valid value is an eight value time array (on off on off on off on off). The valid range is 0 to 30000 milliseconds total time.</p> <p>The default is 1500-500-500-500-1000-2000-0-0</p>
	cadence10	<p>Sets the ring cadence for calls with community - 4 call in Alert Info header.</p> <p>The valid value is an eight value time array (on off on off on off on off). The valid range is 0 to 30000 milliseconds total time.</p> <p>The default is 500 500 500 500 500 500 500 2500</p>
	cadence11	<p>Sets the ring cadence for calls with auto answer call in Alert Info header.</p> <p>The valid value is an eight value time array (on off on off on off on off). The valid range is 0 to 30000 milliseconds total time.</p> <p>The default is 500 500 500 500 2500 3500 0 0</p>
	frame_duration	<p>Sets the RTP frame duration in milliseconds.</p> <p>Valid values are 10 to 100.</p> <p>The default is 20.</p>
	jitterbuffer_min_delay	<p>Sets the minimum jitter buffer size, in milliseconds. The Jitter buffer parameters control the buffer size for out-of-sequence packets. Using larger values produce less packet loss as the IP Phone will wait longer for receipt of packets. However, large values may delay voice packet processing. Smaller values may produce more packet loss but quicker voice packet processing.</p> <p>Valid values are 0 to 150.</p> <p>The default is 30.</p>

Section	Field Name	Description
DSP	jitterbuffer_nom_delay	Sets the nominal jitter buffer size, in milliseconds. Valid values are 0 to 150. The default is 60.
	jitterbuffer_max_delay	Sets the maximum jitter buffer size, in milliseconds. Valid values are 0 to 150. The default is 120.
	headset_mode	Toggles the headset mode on and off. Valid values are disable and enable. The default is disable.
	dtmf	Sets the method to determine RFC 2833 payload type. Valid values are: <ul style="list-style-type: none"> <li>inband — Always generate in-band DTMF.</li> <li>nego — Negotiate RFC2833 with remote side.</li> <li>rfc2833 — Always generate DTMF digits out-of-band RFC2833.</li> <li>info — Always generate DTMF digits out-of-band in INFO message.</li> </ul> Default is nego.
	key_tone	Controls the Key tone operation. If enabled, when a button on the IP Phone is pressed the key tone is heard. Valid values are enable and disable. The default is enable
FWRD	condition	Sets conditions for call forward. Valid values are: <ul style="list-style-type: none"> <li>1 — Disables forwarding feature.</li> <li>0 — Condition not defined by configuration file, user can define condition.</li> <li>1 — Forward calls when the call is not answered in the no-answer.</li> <li>2 — Forward calls when the phone is busy.</li> <li>3 — Forward calls when the phone is busy or the call is not answered.</li> <li>4 — Forward all calls.</li> </ul> The default is 0 (not defined by configuration file).
	forwarding_address	Sets the address to receive forwarded calls. The valid value is a maximum of 60 characters. The default is blank.

Section	Field Name	Description
FWRD	noanswer_time	Sets the no-answer time, in seconds, for no-answer forward. Valid values are 1 to 30. The default is 10.
DIAL	dial_mode	Sets the default dial mode. Valid values are number (digits), IP address or URL. The default is number.
	pause_timer	Specifies the pause timer, in seconds, for the dial plan. Valid values are 1 to 30. The default is 3.
	inter_digit_timer	Sets the time delay before dialed digits are sent for normal dialing, in seconds. Valid values are 1 to 30. The default is 6.
	dialplan	Specifies the dial plan type. Valid values are digitmap or routing. The default is routing.
	digitmap	Defines a digit map string for the dial plan, The valid value is a maximum 512-character string. Default is "x.T x+#".
	digitmap_tone	Defines the digit map string to deliver second dial tone for a dial plan. The valid value is a maximum 512-character string. Default is blank.
	digitmap_emergency	Defines the emergency call number. Valid value is a string up to 750 characters. The default is blank.
	digitmap_process	Defines the digit map process for a dial plan. Valid values are: <ul style="list-style-type: none"> <li>num: the digitmap string, maximum 512-characters.</li> <li>trunc: number of digits to strip, 0 to 30.</li> <li>prefix: digits to insert in front of the number, maximum 32 digits.</li> <li>post: digits to insert at the end of the number, maximum 32 digits.</li> </ul> The default is blank.

Section	Field Name	Description
PROG	add	-
	prog	Specifies the flexible button number being assigned. Valid values are • IP5000 — 2 to 24 The default is blank.
	func	Specifies the function for flexible buttons not assigned as a line. Valid values are: <ul style="list-style-type: none"> <li>• 1 — Speed Dial</li> <li>• 2 — Phonebook</li> <li>• 3 — Call Log</li> <li>• 4 — Mute</li> <li>• 5 — Headset</li> <li>• 6 — Last number redial</li> <li>• 7 — Last call return</li> <li>• 8 — Forward</li> <li>• 9 — Conference</li> <li>• 10 — Transfer</li> <li>• 11 — Hold</li> <li>• 12 — DND</li> <li>• 13 — Ringer Off</li> <li>• 14 — Message</li> </ul> The default is blank.
	num	Specifies the number for a Speed dial or Message button. The default is blank.
	label	-
	prog	Specifies the flexible button number being assigned. Valid values are • IP5000 — 1 to 24 The default is blank.
	string	Specifies the label for flexible buttons. The maximum length is 15-characters, 12 display on IP8840, 10 display on IP8812LSS. The default is blank.
CALL	callnum_in_line	Defines the number of active calls on a line. Valid value is 1-3. The default value is 3.

Section	Field Name	Description
CALL	caller_id_blk	Controls caller ID blocking. When enabled, the phone sends the anonymous caller id. Valid values are enable or disable. The default is disable.
	anonymous_call_blk	Controls blocking incoming calls with an anonymous caller id. Valid values are enable or disable. The default is disable.
	call_waiting	Controls visual notification of incoming call while busy. Valid values are enable or disable. Default is enable.
	call_waiting_tone	Controls audible notification when Call Waiting is enabled Valid values are enable or disable. Default is enable.
	call_hold_ringback	Sets Held call ringback. If a user returns to idle with a call on hold, the held line will ring. Valid values are enable and disable. Default is enable.
	msg_waiting_tone	Controls stutter dial tone when there is a message waiting. Valid values are enable or disable. Default is enable.
	auto_answer	Controls answering an incoming call automatically activating the speakerphone or headset. Valid values are enable or disable. Default is enable.
	call_direct	Controls Hotline/Warm-Line operation. Going off-hook automatically places a call to the designated party. Valid values are enable or disable. Default is disable.
	call_direct_number	Defines the destination for a direct call. Valid value is extension number. The default is blank.
	call_direct_timer	Sets the delay for Warm Line operation. After the timer expires, the direct call is made. Set to zero (0) for Hotline. Valid values are 0 to 10 seconds delay. Default is 5.

Section	Field Name	Description
SYSTEM	phone_name	Assigns a name to the phone for idle mode display. Valid value is a string of up to 15 characters. The default is blank.
	lang	Specifies the language displayed in the LCD. Support for a given language is limited by the LCD type and the xml file. Valid values are as follows: <ul style="list-style-type: none"> <li>• 0 — English</li> <li>• 1 — French</li> <li>• 2 — Korean</li> <li>• 3 — Danish</li> </ul> Default is 0 (English).
	lock_outgoing_call	Unlocks the phone so a password is not required to place an outgoing call. Valid values are 0 to unlock or 1 to lock. Default is 0 (unlock).
	use_speed_number	Assigns use of 2-digit Speed number dialing. Valid values are 0 to disable or 1 to enable. Default is 1 (enable).
	web_server	Enables access to the Web Manager. Valid values are 0 to disable or 1 to enable. Default is 1 enable.
	telnet_server	Enables access to the telnet server. Valid values are 0 to disable or 1 to enable. Default is 1 enable.
	function private_hold	Disables the private hold for a shared call. Valid values are disable or enable. Default is disable.
	function barge_in	Disables barge-in for a shared call. Valid values are disable or enable. Default is disable.
	function_dnd	Disables dnd function for the phone. Valid values are disable or enable. Default is enable.
	function cdp	Enables cdp on reboot to define VLAN. Valid values are enable or disable. Default is enable.

Section	Field Name	Description
SYSTEM	function onetouch_pickup	Enables call answer or resume from hold by pressing line button. With the parameter disabled, pressing the line button displays the line status. Valid values are enable or disable. The default is enable.
	function download_flag	Enables display of Config and S/W download flag under LCD Menu Phone Settings Valid values are disable or enable. Default is disable.
	phone_password	Assigns password for LCD Configuration Menu and Phone Unlock. Valid value is 4 to 8 digits string. Default is blank.
PROVISION	type	Defines the protocol of the provisioning server Valid values are 0 for TFTP or 1 for HTTPS Default is 0 (TFTP).
	cfg_download	Enables download of configuration file from the provisioning server. Valid values are enable or disable. Default is enable.
	sw_download	Enables download of firmware from the provisioning server. Valid values are enable or disable. Default is enable.
	dhcp_get_tftp	Enables use of DHCP options 66 or 150 for definition of the TFTP sever. Valid values are enable or disable. Default is enable.
	dhcp_get_http	Enables use of HTTP/S DHCP option, default 160, for definition of HTTP/S URL Valid values are enable or disable. Default is enable.
	https_url	Defines the HTTP/S provisioning server URL The valid value is a URL of less than 255 characters. The default is blank.
	https_opt	Defines the DHCP Option for the HTTP/HTTPS server URL. Valid values are 1 to 255. Default is 160.

Section	Field Name	Description
PROVISION	https_id	Specifies the ID for authenticating to an HTTPS session. The valid value is under 50 characters. The default is blank.
	https_password	Specifies the password for authenticating to an HTTPS session. The valid value is under 50 characters. The default is blank.
	https_macform	Specifies the filename of phone specific configuration file. The name or path must include "\$MAC", which is replaced by the MAC address during provisioning. The valid value is a maximum of 50 characters and includes "\$MAC". The default is "\$MAC".
	verifying_cert	Defines a hexadecimal value composed of a 3-bit field flag for HTTPS certification verification. 0x01 checks valid certification authority. 0x02 checks whether a server name is valid. 0x04 checks whether a certification is expired. Valid values are 0 to 7. Default is 7
	smartup_enable	Enables Smart Update, to check for and download configuration and/or firmware periodically. Valid values are enable or disable. Default is enable.
	smartup_option	Defines the files to upgrade (configuration files and S/W files) Valid values are 1 = Cfg, 2 = S/W and 3 = both Default is 3.
	smartup_interval	Specifies the interval, in seconds, between firmware checks. Valid values are 0 to 86400 seconds. Default is 3600.
	smartup_time	Specifies the time of the day for daily firmware checks. Valid values are 0 to 23 o'clock including hour and minutes. Default is 00:00.
	smartup_confirm	Enables user confirmation of firmware download from the provisioning server. Valid values are enable or disable. Default is enable.

Section	Field Name	Description
PROVISION	decrypt_key	Defines the decryption key. Valid value The default is blank.
	phonebook_url	Defines the http server url for the external (Remote) Phone Book. The valid value is a URL of less than 255 characters. The default is blank.

## Sample - Blank Configuration File

```
=====
;IP88XX configuration information(v1.0)
;copyright Vertical since 2010
;=====
;Description for configuration file
;configuration file has following format
; SECTION-NAME is placed in brackets as shown below and includes LAN, VOIP, DSP,
etc...
;name is the parameter or field name as shown below
;value is the value assigned for the parameter. If left blank, the value will be set
to default.
;A blank space must be inserted as a separator between the assigned value and the
start of any comments, ';'
;comments start with ';' and end with carriage return.
;=====
[LAN]
;Lan configuration
network type
network_mode
ipAddress
defaultGateway
subnetMask
dns1_address
dns2_address
domain_name
tftp_server_address
tos
pc_802_priority
phone_802_priority
pc_vlan_id
phone_vlan_id
```

```
[WIFI]
;WiFi configuration
ssid
security_mode
wep_key1
wep_key2
wep_key3
wep_key4
wep_key_index
wpa_key
network_mode
ipAddress
defaultGateway
subnetMask
dns1_address
dns2_address

[NETTIME]
;SNTP, Timezone and DST Configurations
sntp_server_address
interval
timezone
time_format
date_format
dst_auto_adjust
dst_start_month
dst_start_day
dst_start_day_of_week
dst_start_week_of_month
dst_start_time
dst_stop_month
dst_stop_day
dst_stop_day_of_week
dst_stop_week_of_month
dst_stop_time
```

```
[VOIP]
;VoIP configurations
outbound_proxy_server
outbound_proxy_port
backup_proxy_server
backup_proxy_port
message_url
SIP_service_domain
preferred_codec
rtp_port
outbound_proxy_register
outbound_proxy_mode
prack_mode
user_param

replaces mode
local_udp_port
timer_register_expires
timer_session
timer_t1
timer_t2
max_line_num
centralized_conference
conference_url
blf
blf_url
de_register
stun_server
line1_proxy_address
line1_proxy_address
line1_proxy_port
line1_proxy_port
line1_displayname
```

```
linen_displayname
linel_name
linen_name
linel_authname
linen_authname
linel_password
linen_password
linel_type
linen_type
linel_extension
linen_extension
linel_ring_type
linen_ring_type
linel_delayed_ring
linen_delayed_ring

[ROUTE]
;Call Routing Table Configurations
;add intf <port> nums [trunc pre post pause ip-addr]
add sip 0 ~ 0 null null null 0.0.0.0

[DSP]
;DSP configurations
handsfree
handset
headset
ring
lcd
ringer_off
VAD
ring_type
ringdata
dtmf_payload
dtmf_duration
cadence0
```

```
cadence1
cadence2
cadence3
cadence4
cadence5
cadence6
cadence7
cadence8
cadence9
cadence10
cadence11
frame_duration
jitterbuffer_min_delay
jitterbuffer_nom_delay
jitterbuffer_max_delay
headset_mode
dtmf
key_tone

[FWRD]
;Forwarding Configurations
condition
forwarding_address
noanswer_time

[DIAL]
;Dial Configurations
dial_mode
pause_timer
inter_digit_timer
dialplan
digitmap
digitmap_tone
digitmap_emergency
digitmap_process
```

```
[PROG]
;add prog func [num]
;   prog = programmable button number, 8820:3~12, 8830:3~24 8840:3~10
;   func = 0 for no function
;         1 for Speed Dial
;         2 for Phone Book
;         3 for Call Log
;         4 for Mute
;         5 for Headset
;         6 for Redial
;         7 for Return
;         8 for FWRD
;         9 for CONF
;        10 for TRNS
;        11 for Hold
;        12 for DND
;        13 Ringer Off
;        14 Message
;   num = phone number when a func is PhoneNum, max.50 length string.
;label prog name
;   prog = 8820:2~12(24), 8830:2~24(36), 8840:2~10(22)
;   name = phone label.

[CALL]
;Call Preference Configurations
call_num_in_line
caller_id_blk
anonymous_call_blk
call_waiting
call_waiting_tone
call_hold_ringback
msg_waiting_tone
auto_answer
call_direct
call_direct_number
```

```
call_direct_timer
[SYSTEM]
;System Configurations
phone_name
lang
lock_outgoing_call
use_speed_number
web_server_port
web_server
telnet_server
function private_hold
function barge_in
function cdp
function download_flag
function onetouch_pickup
function dnd
phone_password
[PROVISION]
;Provisioning Configurations
type
cfg_download
sw_download
dhcp_get_tftp
dhcp_get_http
https_url
https_opt
https_id
https_password
https_macform
verifying_cert
smartup_enable
smartup_option
smartup_interval
smartup_time
smartup_confirm
decrypt_key
phonebook_url
```

## Time Zones Chart

Country	No
GMT-12:00 International Date Line, West	60
GMT-11:00 Midway/Samoa	61
GMT-10:00 Hawaii	1
GMT-09:00 Alaska	62
GMT-08:00 Los Angeles, California	2
GMT-08:00 Pacific Standard	3
GMT-07:00 Mountain Standard	4
GMT-06:00 Central Standard	5
GMT-06:00 Mexico City, Mexico	6
GMT-06:00 Saskatc., Canada	7
GMT-05:00 Bogotá, Colombia	8
GMT-05:00 Eastern Standard	9
GMT-05:00 Lima, Peru	10
GMT-05:00 New York, NY	11
GMT-04:00 Atlantic Standard	12
GMT-04:00 Caracas, Venezuela	13
GMT-04:00 La Paz, Bolivia	14
GMT-03:30 New Found land	15
GMT-03:00 Brasilia, Brazil	16
GMT-03:00 Buenos Aires, Argentina	17
GMT-03:00 Georgetown, Guyana	18
GMT-02:00 Inuuk, Greenland	63
GMT-01:00 Azores, Portugal	19
GMT-01:00 Cape Verde	20
GMT 00:00 Casablanca, Morocco	21
GMT 00:00 Lisbon, Portugal	22
GMT 00:00 London, England	23
GMT+01:00 Amsterdam, Netherlands	24
GMT+01:00 Berlin, Germany	25
GMT+01:00 Bern, Switzerland	26
GMT+01:00 Brussels, Belgium	27
GMT+01:00 Central European	28
GMT+01:00 Copenhagen, Denmark	59
GMT+01:00 Madrid, Spain	29

Country	No
GMT+01:00 Oslo, Norway	30
GMT+01:00 Paris, France	31
GMT+01:00 Rome, Italy	32
GMT+01:00 Stockholm, Sweden	33
GMT+01:00 Vienna, Austria	34
GMT+02:00 Athens, Greece	35
GMT+02:00 Harare, Zimbabwe	36
GMT+02:00 Helsinki, Finland	37
GMT+02:00 Istanbul, Turkey	38
GMT+02:00 Jerusalem, Israel	39
GMT+03:00 Kuwait	40
GMT+03:00 Moscow, Russia	41
GMT+03:00 Nairobi, Kenya	42
GMT+03:00 Riyadh, Saudi Arabia	43
GMT+03:30 Tehran, Iran	44
GMT+04:00 Abu Dhabi, UAE	45
GMT+04:00 Tbilisi, Georgia	46
GMT+04:30 Kabul, Afghanistan	47
GMT+05:00 Islamabad, Pakistan	64
GMT+05:30 New Delhi, India	48
GMT+06:00 Dhaka, Bangladesh	65
GMT+06:30 Yangon, Myanmar	66
GMT+07:00 Bangkok, Thailand	49
GMT+07:00 Jakarta, Indonesia	50
GMT+08:00 Beijing, China	51
GMT+09:00 Seoul, Korea	52
GMT+09:00 Tokyo, Japan	53
GMT+09:30 Darwin, Australia	54
GMT+10:00 Guam Standard	55
GMT+11:00 Solomon Islands	67
GMT+12:00 Marshall Islands	56
GMT+12:00 Auckland, Wellington	57
GMT+13:00 Nuku'alofa	58

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## Dial Pad Mode

The Edge 5000 dial pad inputs digits or alphanumeric characters for specified entries such as hostname. The table below provides the input information for dial pad mode.

### Alphanumeric Character Set

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

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# Auto Provisioning Routine

## General

The IP5000 series terminals incorporate software routines to automatically provision the configuration and software of the phone. The basic routine employs CDP, if enabled, to initialize LAN settings, DHCP to gather basic network and provisioning server information, downloads configuration and software files from the provisioning server, and registers and subscribes with the SIP call server using the configuration data. The files with the configuration data can be encrypted to protect sensitive customer data.

The phone attempts contact with the provisioning server to download configuration files then checks for software updates. For more details on the configuration files, see [Appendix D](#). Note downloads can be disabled separately for the configuration and software files. As a default, the phone will employ TFTP as the download protocol. Optionally, the phone can employ HTTP/HTTPS as the provisioning server protocol. If the DHCP server returns a URL for the HTTP/S Option (default Opt. #160), the IP Phone shifts provisioning protocol to HTTP/HTTPS using the URL provided to access the server.

## DHCP

During the initial and subsequent boot-up cycles, the phone requests various data options from the DHCP server. The following lists the requested options.

- DHCP Option #1 Subnet Mask
- DHCP Option #2 Time offset in seconds of the local time zone from GMT.
- DHCP Option #3 Default Gateway (router) IP Address
- DHCP Option #6 DNS Server IP Address
- DHCP Option #42 SNTP Server IP Address
- DHCP Option #50 IP address of the phone
- DHCP Option #66 TFTP Server Name
- DHCP Option #150 TFTP Server IP Address has priority over Option 66 when set.
- DHCP Option #160 default HTTP/HTTPS URL for provisioning

## TFTP Downloads

When TFTP is employed, the IP Phone will contact the server provided from the DHCP server using the name or IP address from DHCP Option #66 or #150 or the TFTP server in memory when the DHCP option is not available. The IP Phone will request the TFTP server send the global configuration file ("sysconf\_8830\_sip.cfg"). Data from an unencrypted file is transferred to the phone memory. If the file is not readable, the phone attempts to decrypt the file using the decryption key ("decrypt\_key"). If decryption is unsuccessful, an error is logged and the file ignored.

Changes in the provisioning data from the global configuration file are transferred to the phone memory and the download process is repeated for the phone-specific configuration file. Configuration data in the phone specific file overwrites data from the global file.

If a value is changed for a field marked with an asterisk in ["Configuration Parameters" on page D-1](#), the reboot flag will be enabled and the IP Phone will reboot after the download cycle is completed. By default, the phone specific file uses the MAC address of the phone as the file name with no file extension.

After completing download of the configuration files, the IP Phone requests the software version file from the server. This file, which is named "IP\_8830\_VER\_SIP2" is an ASCII text file that identifies the software version available on the server as well as the names of software files to be downloaded. The phone compares the software version identified in the file with the version in the phone. If different, the files identified in the version file are downloaded. Typically, the files required for download include the main firmware file and an xml file but may include other files as needed for the upgrade. These files along with the version file are available from Vertical. If desired, comments may be added to the version file using "#" as the leading character of the comment line.

If software download is required, the IP Phone will enable the reboot flag and after completing the download cycle, the IP Phone reboots.

## HTTP/HTTPS Downloads

When HTTP/HTTPS is employed, the IP Phone will contact the URL defined in the memory or in the HTTPS DHCP Option, default #160. When the DHCP option is populated, the phone employs HTTP/HTTPS instead of the default TFTP mode. If the server uses HTTPS, the phone will establish an open SSL link. During the SSL handshake, the phone may optionally verify that the validity of the HTTPS Certificate of Authority (CA). The IP Phone verifies that the CA is from a valid authority such as Verisign®, the server providing the CA is correct and the certificate has not expired. The latter is verifiable only if an SNTP server provides time to the IP Phone. Each of these three verifications is enabled by default but can be disabled using the configuration file or manual configuration. The IP Phone supports several standard CAs including Verisign®. In addition, a CA may be copied to the phone using the Web Manager.

- If the HTTP/HTTPS server requires authentication, the IP Phone uses the HTTPS ID and Password assigned; the IP Phone supports the basic and digest method. At this point, the phone will follow the same routine as for TFTP. The IP Phone requests the global configuration file ( "sysconf\_8830\_sip.cfg" for the IP8830). If the file is provided as an unencrypted file, data is transferred to memory. If the file is not readable, the phone attempts to decrypt the file using the decryption key in memory ("decrypt\_key").
- Changes in the provisioning data from the global configuration file are transferred to the phone memory and the download process is repeated for the phone-specific file. Configuration data in the phone specific file overwrites data from the global file.
- Note if a value is changed for a field marked with an asterisk in the "Configurator Parameters" table, the reboot flag will be enabled and the IP Phone will reboot after the download cycle is completed. By default, the phone specific file uses the MAC address of the phone as the file name with no file extension. For HTTP/S, a different file name can be assigned in the phone to use as file name but the MAC address must be included as part of the file name or path.
- After completing download of the configuration files, the IP Phone requests the software version file from the server. This file, which is named "IP\_8830\_VER\_SIP2" based on the IP Phone model, is an ASCII text file that identifies the software version available on the server as well as the names of the files for download. The phone first requests the file "mac address/IP\_88xx\_VER\_SIP2, if not found, the file IP\_88xx\_VER\_SIP2 is requested. The phone compares the software version identified in the file with the version in the phone. If different, the files identified in the version file are downloaded. Typically, the files required for download include the main firmware file and an xml file but may include other files as needed for the upgrade. These files along with the version file are available from Vertical. If desired, comments may be added to the version file using "#" as the leading character of the comment line.
- If the software download is required, after completion of the download cycle the IP Phone reboots.

## **SIP Server Check-in Request**

Upon receipt of a SIP check-in or resync request from the SIP server (Notify check sync event message), the IP Phone initiates the reboot process. The phone must be idle to initiate provisioning, if busy, upon return to idle, the process starts. During the process, the IP Phone downloads any configuration file changes as well as new software regardless of the settings for the software and configuration download flags.

---

## User Defined and Fixed Ring Tones

The IP5000 phone support 14 ring tones that are assigned to the phone (default ring type), lines and Phone Book entries. Of these, four (4) are stored PCM tones and an additional five (5) tones are stored in memory as \*.wav files. Note Ring type 1 is used in conjunction with the cadences to establish the audible ring for a call.

The remaining five (5) Ring Types can be downloaded using an RTTTL text formatted file. An RTTTL file can be downloaded from a number of Web sites including [www.csoft.co.uk/ringtones](http://www.csoft.co.uk/ringtones) or constructed using RTTTL to generate a text file, which is downloaded to the phone. With RTTTL, a melody is constructed by building musical notes. Each melody is named, and multiple musical notes and commands, which consist of duration, scale and beat, are defined. The IP Phone plays the melody in a loop, replaying the melody until the call is answered or abandoned.

*The text representation of a tone is*

<name> <sep> [<default>] <sep> <note-command> delimiter

<name> := ten (10) character name, use Ring Type names, 201, 202, 203, 204, 205

<sep>: = "," comma

<defaults>: = "d= | o= | b= " where:

d = default duration:

"1" | -Full note

"2" | - ½ note

"4" | - ¼ note

"8" | - 1/8 note

"16" | - 1/16 note

"32" | - 1/32 note

o = default scale:

"5" | - note A is 440 Hz

"6" | - note A is 880 Hz

"7" | - note A is 1.76 KHz

"8" | - note A is 3.52 KHz

b = default beats per minute,

*If not specified, defaults are:*

d = 4, ¼ note

o = 6, note A = 880Hz

b = 63 beats per minute

<note-command>: = [<duration>] <note> [<scale>] [<special duration>] <delimiter>

<duration> = same as for default

<note> = musical note

"P" | for pause

"C" |

"C#" |

"D" |

"D#" |

"E" |

"F" |

"F#" |

"G" |

"G#" |

"A" |

"A#" |

"H" |

<special-duration> = "." dotted note

<delimiter> = ":" colon

*An example of an RTTTL melody:*

"205:d=1,o=6,b=60:1a6,2e6" or "205:d=4,o=6,b=60:1a,2e"

Ring type 205 = full note A at 880Hz followed by a ½ note E at 880Hz both at 60 beats.

For additional information about constructing Ring types with RTTTL, go to <http://www.activexperts.com/xmstoolkit/sms/rtttl/>

---

## IP Phone Icons

The Edge 5000 displays various icons in the upper line of the LCD to assist the user in understanding the status of the phone. Below is a list of icons and their meaning.

### LOWER LINE ICONS

	Forward icon indicates calls to the line are forwarded to another destination.
	Message icon indicates there are messages waiting for the line.
	DND icon indicates the line is in DND and will not notify you of incoming calls on the line.
	Hold icon indicates there are calls on hold for the line
	Busy icon indicates the line has an active call
	Ring icon indicates the line has an incoming call
	Available icon indicates the line is available for use
	Unavailable icon indicates the line is not available for use
	Phone Book icon indicates the Phone Book is being displayed
	Conference icon indicates the line is presently in a conference call

## UPPER LINE ICONS

	LAN or Network connection icon indicates the status of the LAN connection to the IP Phone. If the icon is blinking, the LAN connection is faulty. This icon displays as the first icon on the left										
	PC Port icon, when displayed, indicates a device, generally, a PC is connected to the PC port of the IP Phone.										
	RSSI icon indicates the signal strength received by the WiFi Module. The RSSI levels indications are: <table data-bbox="921 468 1263 642"> <tr> <td></td> <td>Level 1: -85dBm -</td> </tr> <tr> <td></td> <td>Level 2: -76dBm - 85dBm</td> </tr> <tr> <td></td> <td>Level 3: -66dBm - 75dBm</td> </tr> <tr> <td></td> <td>Level 4: -75dBm - 65dBm</td> </tr> <tr> <td></td> <td>Level 5: 0dBm - 55dBm</td> </tr> </table>		Level 1: -85dBm -		Level 2: -76dBm - 85dBm		Level 3: -66dBm - 75dBm		Level 4: -75dBm - 65dBm		Level 5: 0dBm - 55dBm
	Level 1: -85dBm -										
	Level 2: -76dBm - 85dBm										
	Level 3: -66dBm - 75dBm										
	Level 4: -75dBm - 65dBm										
	Level 5: 0dBm - 55dBm										
	No WiFi icon indicates the wireless network is not connected.										
	Only one of the following Bluetooth icons may display based on status										
	Bluetooth paired icon, indicates one or more (maximum 5) headsets are paired with the module but none are active.										
	Bluetooth connected icon indicates headset is connected to IP Phone.										
	Forward icon indicates calls to the extension are forwarded										
	Message icon, indicates one or more messages waiting in Voice Mail.										
	DND icon indicates the IP Phone is in DND and will not notify you of incoming calls.										
	Hold icon indicates extension has calls on hold.										
	Locked icon indicates the IP Phone is locked and a password is required to place calls.										

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