POLYCOM®

Administrators Guide

SoundStation® IP 3000

ADMINISTRATORS GUIDE

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Introduction

This Administrators Guide outlines the key features of the SoundStation IP 3000 conference phone and gives step-by-step instructions for installation and configuration.

This guide is for System Administrators or Network Administrators who will deploy and support this product in their networks.

To use this guide, you should have a working knowledge of H.323 systems and endpoints.

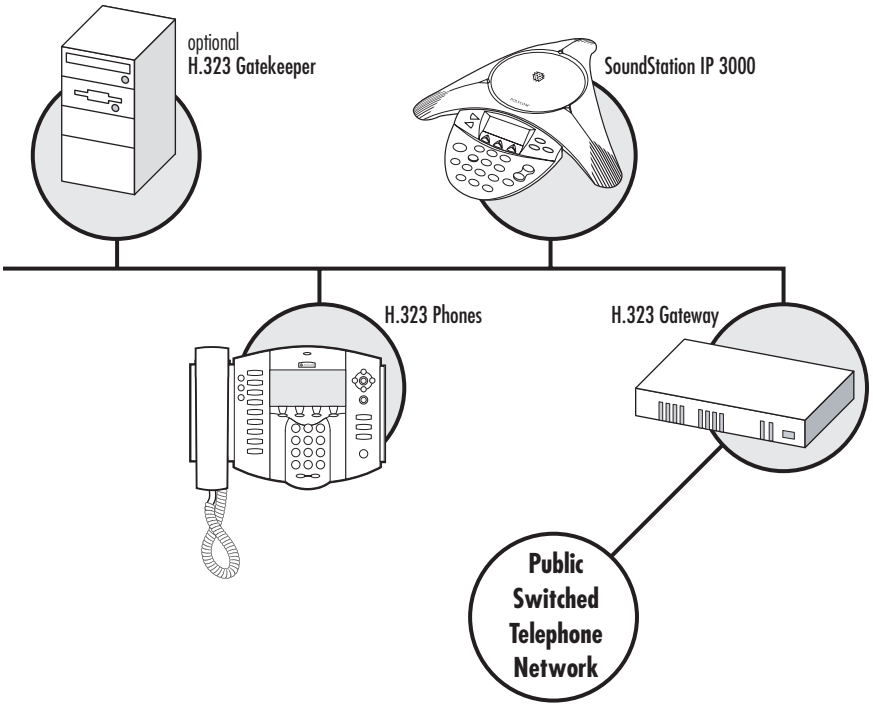
Overview

The SoundStation IP 3000 is a H.323 V4 compliant endpoint. The type of deployment dictates how users will dial calls (i.e. by phone number or IP address).

Typical Deployment

A typical deployment of the SoundStation IP 3000 is shown in Figure 1.

Figure 1 - Typical H.323 Network Setup



Features

This section provides a brief overview of the characteristics and features of the SoundStation IP 3000.

- Single line IP conference phone
- Frequency response of 300 Hz to 3500 Hz
- Full Duplex/Echo Cancellation, Clarity® by Polycom
- Silence Suppression
- Comfort Noise Generation
- User-Selectable Ringer tones
- Audio codec support :
  - G.711 µ-law & A-law
  - G.729a
- Multiple Call Support (up to 2 calls) with Call Waiting Alert
- Call Hold
- Redial
- Call Transfer
- DTMF (Dual-Tone Multi-Frequency)
- Real-time Call Statistics
- LCD or Web-based configuration options
- Time/Date synchronization with SNTP server.
- Local phone book - accessible from the phone or via the Web
- Operation in DHCP or Static IP environments
- Three context-sensitive soft keys
- QoS and VLAN

Please refer to the User Guide for more detailed information on how to use the phone.

Call Features

The SoundStation IP 3000 supports several call scenarios. These scenarios are described in more detail in the following sections.

Dialing By IP Address

Users can place calls by entering the IP address of the called party. This mode of dialing is possible regardless of whether the phone is registered with a Gatekeeper or not.

Dialing Phone Numbers Using a Gatekeeper

Calls may also be dialed by entering the phone number of the party to be called. In this mode of dialing, the Gatekeeper resolves the dialed number and routes the call appropriately.

Dialing Phone Numbers Without a Gatekeeper

SoundStation IP 3000 offers a specialized method of dialing parties on the PSTN. This method of dialing is available in conjunction with H.323 Gateways (when the phone is not deployed with a Gatekeeper).

When used with a H.323 Gateway System, up to three H.323 gateways may be configured on the phone. Users dial a special gateway prefix followed by a phone number e.g. 0∗nnnnnnnn. In this example, the call would be directed to the 1st configured gateway which would then dial out the number nnnnnnn on the circuit switched network to which it is connected.

Similarly, the other Gateways would be selected by dialing the prefix 1∗ or 2∗ before the number.

Preparing For Installation

The SoundStation IP 3000 can be configured in one of two modes including automatic configuration "plug and play" (which is the default) or manual configuration.

The configuration mode should be chosen before installing the phone.

Automatic Configuration "Plug and Play"

To use the SoundStation IP 3000 in automatic configuration, you must have:

a) A DHCP Server in the network configured to provide TFTP server addresses

b) A TFTP Server on the network on which phone configuration files are stored. (Refer to Auto Configuration, Sample plcmvoip.cfg File section on page 11 for the definition of this configuration file.)

Note: The DHCP and TFTP servers may be installed on the same machine.

The auto Configuration Section on page 10, provides further information about the Automatic Configuration Option.

DHCP Server Configuration

To ensure proper operation of the SoundStation IP 3000, the DHCP server must be configured with the following options:

Option Number	Description	Example
1	Subnet Mask	255.255.255.0
3	Router	172.16.5.1
6	DNS Server	172.15.5.100
15	Domain Name	yourdomain.com
66 *(see note below)*	Boot file Location	172.16.5.102
160 *(see note below)*	TFTP Server Address	172.16.5.102

Note: The location of the TFTP server may be specified by using either Option 160 or Option 66. It is not necessary to configure both options.

TFTP Server Configuration

The configuration file and/or binary software loads for the phone need to be stored in the root directory of the TFTP server.

Typical filenames are :

- Configuration file : plcmvoip.cfg
- Binary image : S010203V2123.bin

Manual Configuration

To use the Manual Configuration mode, first disable Auto Configuration as described in the Disabling Auto Configuration section on page 12. All pertinent configuration parameters need to be set manually.

Pre-Installation Information

Collect the following information (if applicable) before installing the SoundStation IP 3000:

- IP address of the Gatekeeper
- IP address of any Gateways
- Extension Numbers to be assigned to the phone

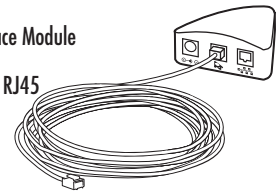
Installation

The SoundStation IP 3000 ships with the following items.

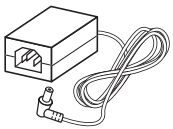
SoundStation IP 3000

One Power Interface Module

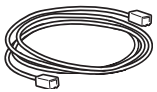
One 25 Foot Long RJ45 Keyed Cable



One Power Brick



One 6 Foot Long Ethernet Cable

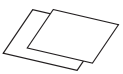


One Power Cord

Installation Instructions and Users Guide

Quick Reference Card

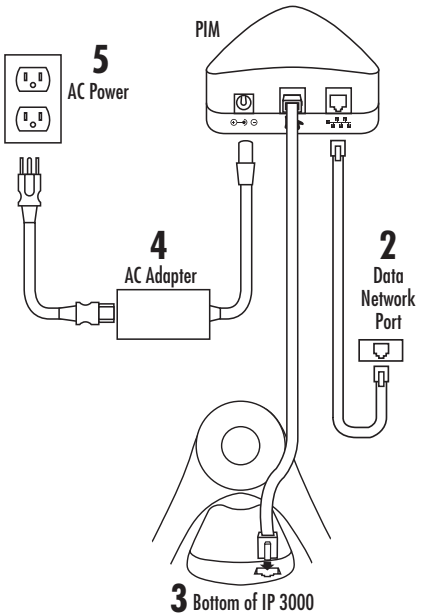
Warranty Card



Connect the SoundStation IP 3000 as follows:

1. Place the SoundStation IP 3000 on a table in a noise free environment.
2. Connect the 6 feet long Ethernet cable between the LAN port of the PIM and an Ethernet switch port.
3. Connect the free end of the 25 feet long keyed RJ45 cable to the bottom of the phone. (The other end of this cable should come pre-connected to the PIM.)
4. Connect the power adapter to the PIM.
5. Plug the Power adapter into an AC outlet with the supplied power cord.
6. Once connected to the AC outlet, the SoundStation IP 3000 will power up and go through a boot-up sequence. It will take approximately 15 seconds before any information is displayed on the LCD.

Figure 2 - Connecting the SoundStation IP 3000



Configuration

SoundStation IP 3000 configuration may be managed locally at the phone or remotely over a network using a Web browser. The system offers two levels of configuration privileges:

- User
- Administrator

Administrative privileges are obtained through a login process that requires an administrative password.

User Accessible Configuration Options

Users have limited access to the phone's configuration. Specifically, users only have access to the phone book, a subset of entries, and read only access to system information.

Phone Book

Users have unrestricted access to the Phone Book to edit entries, search for entries, and place phone calls.

Settings

User may change the following settings:

- LCD Contrast
- Ringer
- Time Format
- Date Format

System Information

Users have read-only access to other SoundStation IP 3000 configuration information including Network parameters, and versions of software.

Administrator Accessible Options

Administrator options are password protected. The default password for both local and Web configuration is ∗∗#

In addition to any user settings, the administrator has access to the following parameters:

Network Setup

- Network parameters (e.g. DHCP)
- H.323 parameters (e.g. Gatekeeper address)

Date/Time

- Enabling/disabling of SNTP time server synchronization
- Time zone

Compression

- Prioritization of available codecs

Diagnostics

- Ping
- Network Statistics

Ethernet Configuration

- Ethernet port

QoS Settings

- TOS
- Precedence bits
- VLAN ID

Configuration & SW Update

- Manual invocation of Software updates

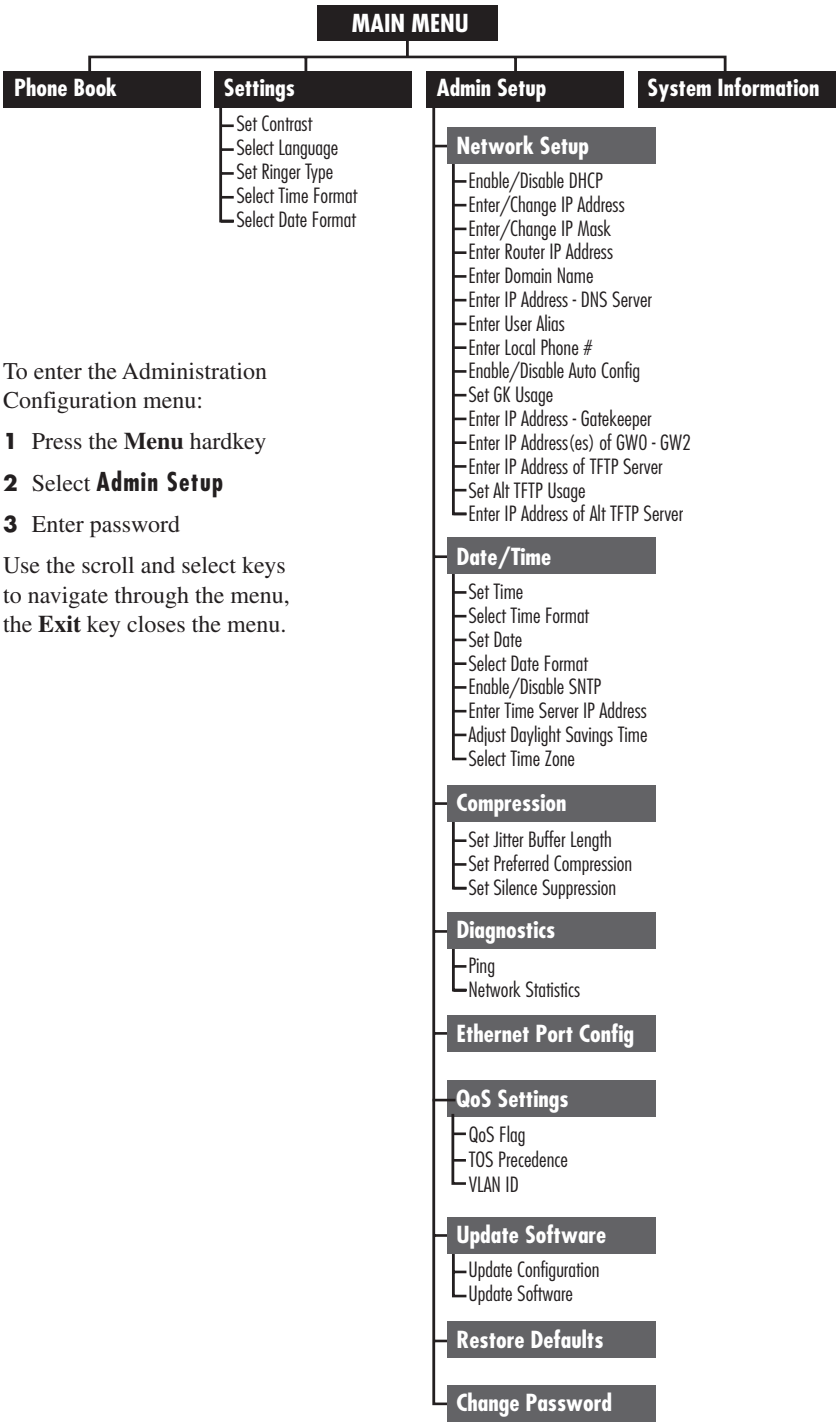
Restore Defaults

- Restore configuration to factory default

Change Passcode

- Managing phone passwords

Local Configuration



To enter the Administration Configuration menu:

1 Press the **Menu** hardkey

2 Select **Admin Setup**

3 Enter password

Use the scroll and select keys to navigate through the menu, the **Exit** key closes the menu.

Web Administration User Interface

Remote administration may be performed by using a web browser. This requires either Netscape Navigator Version 4.76 or higher, or Microsoft Internet Explorer Version 5.01 or higher.

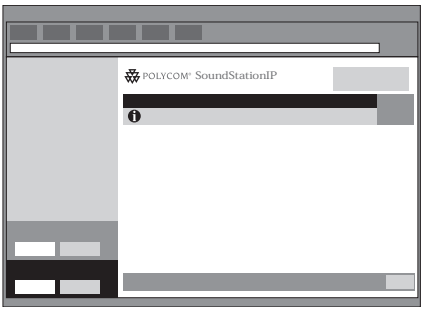
To open the Web Interface for your SoundStation IP 3000, you need to know its IP address.

1. Open your web browser.
2. In the browser's address field type: http://Your SoundStation's IP address

   For example, if your SoundStation IP's address is 172.16.6.144, you would type: http://172.16.6.144

The System Information page will open first, showing the settings that are applicable to your SoundStation IP.

All the configuration options accessible via the LCD/Key pad interface are also accessible via this Web interface. The diagnostics menu supports the Ping feature only.



Summary of Configuration Data

The following table summarizes the various configuration parameters, default values (if applicable), and whether the data may be edited by users and or administrators.

Parameter	User Controlled	Administrator Controlled	Available Options	Default Value	Comment
DHCP	N	Y	Enable/Disable	Enable	
IP Address	N	Y	-	- Admin for Static IP	Obtained from DHCP/Set by operation
IP Mask	N	Y	-	- Admin for Static IP	Obtained from DHCP/Set by operation
Router1	N	Y	-	- Admin for Static IP	Obtained from DHCP/Set by operation
MAC Address	N	N	-	-	Read-only
Use Gatekeeper	N	Y	Y/N	Y	Define if phone should attempt to register with a Gatekeeper
Gatekeeper address	N	Y	-	-	Obtained from Plcmvoip.cfg File/ Set by Admin
Main TFTP Server address	N	N	-	-	Obtained from DHCP
Alternate TFTP Server	N	Y	-	-	
Use Alternate TFTP Server	N	Y	Y/N	N	
Auto Configuration	N	Y	Y/N	Y	

Parameter	User Controlled	Administrator Controlled	Available Options	Default Value	Comment
Ethernet Port Configuration	N	Y	Auto 100-FDX, 100-HDX 10-FDX, 10-HDX	Auto	
GW0/GW1/GW2	N	Y	Enter IP address(es)	-	
Local #	N	Y	-	-	Extension assigned to phone
User ID	N	Y	Enter User Alias	SS IP Mac address	UserID assigned to phone
Time Server	N	Y	-	192.5.41.209	IP address of SNTP server
Use Time Server	N	Y	Y/N	Y	
Time Of Day	N	Y	-	-	Set via SNTP/Manually
Time Of Day Format	Y	Y	12 Hour/24 hour	12 Hour	
Date	N	Y	-	January 30, 1970	Set via SNTP/Manually
Date Format	Y	Y	MM/DD/YY or DD/MM/YY	MM/DD/YY	
DST Adjust	N	Y	Yes/No	No Daylight Savings.	Adjusts the time of day for
Time Zone	N	Y	-12 to +13	-8	Time Zone Offset from GMT
Language	Y	Y	English	English	
Compression Priority List	N	Y	G.711 A-law/µ-law G.729a	G.711 µ-law	Set by Call Set up; Priority list changed by Admin
QoS Flag	N	Y	Enable/Disable	Disabled	
TOS Prec	N	Y	0-7	0 setting	Type of service & precedence bit
VLAN ID	N	Y	0 - 4095	0	VLAN ID Number 0 -> Disable
Silence Supression	N	Y	Enabled/Disabled	Disabled	
LCD Contrast	Y	Y	Levels 1-15	6	
Ringer	Y	Y	Pro, Biz, Euro, Chirp, Bell	Pro	
Dial Tone	Y	Y	Tone1	Tone1	
Volume	Y	Y	Levels 1-31	21	
Administrator PW	N	Y	-	**#	
Boot Version	N	N	-	-	Read-only
OS Version	N	N	-	-	Read-only
SW version	N	N	-	-	Read-only
SW File	N	N	-	-	Read-only
Phone Book	Y	Y	20 entries	-	Read-only

Restoring the Default Configuration

To change the current setting to the default configuration, (either through the LCD or via the web) follow the steps outlined below.

> ! *Caution: When this option is invoked all the current settings will be lost including all the entries in the phone book.*

Restoring Default Configuration

1. Press the **Menu** Key.
2. Scroll down to Admin Setup and press **Select**.
3. Enter the Administrator Password (default is **#)
4. In the Admin Menu scroll down and choose Restore Defaults. Press **Select**.
5. A message will appear requesting a confirmation of the action.
6. Press **Yes**. SoundStation IP 3000 will restore the configuration and automatically restart.

Restoring Default Configuration Via Web Browser

Launch a browser on a device that can communicate with the SoundStation IP 3000.

1. Enter the IP address of the SoundStation IP 3000 in the URL field and press Enter.
2. Logon as an administrator by entering the administrator password (default is **#) and click Login.
3. In the left pane, click on the Restore Factory Defaults option.
4. Click on Restore Defaults. SoundStation IP 3000 will restore the configuration and automatically restart.

Auto Configuration

The SoundStation IP 3000 can automatically configure itself by reading information from a configuration file on the network (via DHCP/TFTP). This configuration file may be used to specify configuration information for all SoundStation IP 3000 devices on the network.

During Auto Configuration, the SoundStation IP 3000 will look for two files on the TFTP server. The files are:

- plcmvoip.cfg - containing configuration information in ASCII text format
- [filename].bin - binary file that will be used by SoundStation IP 3000 for Software updates.

The TFTP server address is provided via DHCP or it is obtained from the Alternate TFTP field when it is configured. The format of the configuration file is given to the right:

plcmvoip.cfg File Format

(1) SW Image File - Filename of the SS IP SW (Example: S010001V0203.bin)

(2) Use GK - Configuration Parameter - Defines if GK is used or not (Y/N)

(3) Mac Address, Local #, User ID - Mac address/Phone #/User ID (If user ID is not supplied then a default of SS IP Mac is used)

(4) GK Address - IP Address of Gatekeeper

(5) GW0 Address - IP Address of Gateway

(6) GW1 Address - IP Address of Gateway

(7) GW2 Address - IP Address of Gateway

(8) Time Zone - Local Time Zone

(9) Time Server - Defines if Time is set by remote server or User

Sample Plcmvoip.cfg File

A sample file with the configuration information is shown in below:

```
# plcmvoip.cfg  - V 2.3 11/4/02
# Polycom Incorporated. 1565 Barber Lane, Milpitas CA 95035; www.polycom.com; 1-800-polycom
# SSIP 3000 configuration file - template
# Use Notepad to edit this file
# All the characters are case sensitive (use lower case for MAC Address)
# Refer to the comments at bottom for the possible timeZone
# Place this file in the root directory of the TFTP server
# The Max file size is 8000

image323=S010202V2123.bin
gateway0=172.18.1.2
gateway1=172.18.1.3
gateway2=172.18.1.1
gatekeeper=172.18.1.8
useGK=4
SNTP=192.5.41.209
TimeZone=-8
daylightSaving=n
SSIP00e075006419=1111,Eric
QoS =N
Precedence = 5
VLAN = 0

# SSIP00e075006419=1111,Eric ==> MAC address=Local #,user_id
# add as many users as necessary in this file.
#Select your time zone with respect to the GMT (Greenwitch Mean Time). The offset represents
#the number of time zone difference (plus some variances) between the local position and the GMT line.
#The range is from -12 to +13 hours.
#(GMT-12) Eniwetok,Kwajalein
#(GMT-11) Midway Island, Samoa
#(GMT-10) Hawaii
#(GMT-9) Alaska
#(GMT-8) Pacific Time(US & Canada); Tijuana
#(GMT-7) Mountain Time(US & Canada)
#(GMT-6) Central Time(US & Canada); Central America
#(GMT-5) Eastern Time(US & Canada);
#(GMT-4) Atlantic Time(Canada); Caracas; Santiago
#(GMT-3:30) Newfoundland
#(GMT-3) Brasilia; Buenos Aires; Greenland
#(GMT-2) Mid-Atlantic
#(GMT-1) Azores; Cape Verde Is.
#(GMT) Casablanca; Dublin; Lisbon; London
#(GMT+1) Amsterdam; Brussels; Paris; Berlin
#(GMT+2) Athens; Istambul; Cairo; Jerusalem
#(GMT+3) Baghdad; Kuwait; Moscow
#(GMT+3:30) Tehran
#(GMT+4) Abu Dhabi; Tbilisi;
#(GMT+4:30) Kabul
#(GMT+5) Islamabad; Karachi; Taskent
#(GMT+5:30) Calcutta; Chennai; Mumbai; New Delhi
#(GMT+5:45) Katmandu
#(GMT+6) Almati; Novosibirsk; Dhaka
#(GMT+6:30) Rangoon
#(GMT+7) Bangkok; Hanoi; Jakarta; Krasnoyarsk
#(GMT+8) Beijing; Hong Kong; Kuala Lumpur; Singapore; Perth; Taipei
#(GMT+9) Osaka; Sapporo; Seoul; Tokyo; Yakutsk
#(GMT+10) Brisbane; Melbourne; Sidney; Guam; Vladivostok
#(GMT+11) Magadan; Solomon Is; New Caledonia
#(GMT+12) Auckland; Fiji; Mashall Is.; Wellington
#(GMT+13) Nuku'alofa
```

Disabling Auto Configuration

Auto Configuration can be disabled. Disabling Auto Configuration must be done on the phone and applies to that device only. Disabling Auto Configuration means that the SoundStation IP 3000 will not use the configuration file from the TFTP server. Instead, the phone will use the parameters that are already on the device. If no new parameters are configured, it will use the parameters last obtained from the TFTP server.

Follow the process described below to disable Auto Configuration (either through the LCD on the phone or via the web).

Disabling Auto Configuration

1. Press the **Menu** Key.
2. Scroll down to Admin Setup and press **Select**.
3. Enter the Administrator Password (default is **#).
4. In the Admin Menu choose Network Setup and press **Select**.
5. Scroll down to Auto Configuration option and choose No and press **Save**.
6. Change other options (Gatekeeper address, User ID, Local #, etc.) as necessary.
7. Press **Exit**.

Disabling Auto Configuration Via Web Browser

Launch a browser on a device that can communicate with the SoundStation IP 3000.

1. Enter the IP address of the SoundStation IP 3000 in the URL field and press enter.
2. Logon as a administrator by entering the administrator password (default is **#) and click Login.
3. In the left pane, click Setup.
4. Scroll down to Auto Configuration Usage and choose No. Change other options (Gatekeeper address, User ID, Local #, etc.) as necessary.
5. Click Set at the bottom of the page.

Using the Phone in Static IP Mode

If the phone is set to operate with a static IP address, a TFTP server address must be manually configured so the Automatic Configuration option is possible.

Static IP Configuration

To initiate Static IP configuration, DHCP must first be Disabled.

1. Press the **Menu** Key.
2. Scroll down to Admin Setup and press **Select**.
3. Enter the Administrator Password (default is **#).
4. In the Admin Menu choose Network Setup and press **Select**.
5. Go to DHCP and choose Disable. Press **Save**.
6. A message will appear to indicate that Static IP addresses need to change. Enter the new IP address, IP Mask, and Router IP. Press **Confirm**.

SoundStation IP 3000 will automatically restart with this new Static IP address.

Static IP Configuration Via Web Browser

Launch a browser on a device that can communicate with the SoundStation IP 3000.

1. Enter the IP address of the SoundStation IP 3000 in the URL field and press Enter.
2. Logon as a administrator by entering the administrator password (default is **#). Click Login.
3. In the left pane click Setup.
4. Click on Disable DHCP and a screen to enter the Static IP address, IP Mask, and Router IP will appear. Enter the required addresses and click Set at the bottom of the page.

SoundStation IP 3000 will automatically restart with this new Static IP address.

QoS/VLAN Configuration

QoS configuration may be enabled or disabled. When enabled the Precedence bits may be set independent of the VLAN ID.

Examples:

(i) To set precedence bits only
- QoS Flag = Enabled
- TOS Precedence Bits = 5
- VLAN ID = 0

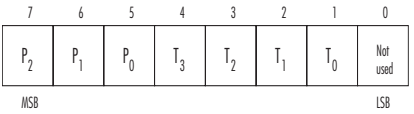
(ii) To set VLAN ID only
- QoS Flag = Enabled
- TOS Precedence Bits = 0
- VLAN ID = 55

(iii) To set Precedence Bits & VLAN ID
- QoS Flag = Enabled
- TOS Precedence = 5
- VLAN ID = 55

(iv) To Disable QoS
- QoS Flag - Disabled

Precedence Bit Settings

Precedence bits are part of the type of service (TOS) byte in an IP packet. SoundStation IP 3000 will set these bits as configured when QoS is enabled. The TOS byte consists of TOS bits that will always be set to a predefined value by SoundStation IP 3000. TOS byte definition is as follows.



Precedence bits may be set to a value anywhere between 0 and 7. SoundStation IP 3000 uses a default value of 5.
The definition of these values is as follows.

P_2	P_1	P_0	
0	0	0	Routine
0	0	1	Priority
0	1	0	Immediate
0	1	1	Flash
1	0	0	Flash Override
1	0	1	Critical
1	1	0	Internetwork Control (Not recommended)
1	1	1	Network Control (Not recommended)

TOS Bit Setting

TOS bits are pre-defined by SoundStation IP 3000. The definition of these bits is shown in the following table. When QoS is enabled TOS will be set as follows:

Bit	T_3	T_2	T_1	T_0
Meaning	Delay	Throughput	Reliability	Not used
Value	1 = low 0 = normal	1 = high 0 = normal	1 = high 0 = normal	
Default Setting	1	1	0	0

VLAN ID

VLAN ID is used to set the tagging field. A ‘0’ value indicates VLAN is disabled (802.1 p/q tagging is disabled) When VLAN ID is set to a value between 1-4095, the tag field is set to this value.

Updating

The SoundStation IP 3000 can be updated as follows:

- Configuration data only
- Configuration data and application

The update process may be performed automatically or manually.

Updating in Automatic Configuration Mode

If the SoundStation IP 3000 is configured for Auto Configuration, it will, on every restart, contact the TFTP server and read the configuration file and determine if it needs to update its software. The actual update process is then performed automatically.

If Auto Configuration is not enabled, then the update process must be initiated manually from the LCD menus or via the Web interface.

After an update, the new version number of the Application and boot files associated are all displayed as part of the System Information in the LCD menu and in the Web interface. Additionally, the file name that was used to update the phone will also be displayed.

Manual Update of Configuration Data Only

To initiate manual update of the configuration data only follow the process detailed below.

Manually Update Configuration Data

1. Press the **Menu** Key.
2. Scroll down to Admin Setup and press **Select**.
3. Enter the Administrator Password (default is ∗∗#).
4. In the Admin Menu scroll down to Update Software and press **Select**.
5. Go to Update Configuration and press **Select**.

Manually Update Configuration Data Via Web Browser

Launch a browser on a device that can communicate with the SoundStation IP 3000.

1. Enter the IP address of the SoundStation IP 3000 in the URL field and press Enter.
2. Logon as a administrator by entering the administrator password (default is ∗∗#) and click Login.
3. In the left pane, click Update Software.

6 The TFTP address from which the configuration information will be downloaded from is displayed. Press **Confirm** if that IP address is correct, or enter a new address by selecting the **Change TFTP** option.

SoundStation IP 3000 will contact the TFTP server and obtain the configuration information.

4 The TFTP address from which the configuration information will be downloaded from is displayed. Enter a new address if the displayed address is incorrect.

5 Select the Configuration option on the drop down box and click Update.

SoundStation IP 3000 will contact the TFTP server and obtain the configuration information.

Manual Update of Both Configuration Data and Application

To initiate manual update of the configuration and application, follow the steps below.

Manual Update of Configuration and Application

1 Press the **Menu** Key.

2 Scroll down to Admin Setup and press **Select**.

3 Enter the Administrator Password (default is ∗∗#).

4 In the Admin Menu scroll down to Update Software and config. and press **Select**.

5 Go to Update Software and press **Select**.

6 The TFTP address from which the configuration information will be downloaded from is displayed. Press **Confirm** if that IP address is correct, or enter a new address by selecting the **Change TFTP** option.

SoundStation IP 3000 will contact the TFTP server and obtain the configuration information and application.

Manual Update of Configuration and Application Via Web Browser

Launch a browser on a device that can communicate with the SoundStation IP 3000.

1 Enter the IP address of the SoundStation IP 3000 in the URL field and press Enter.

2 Logon as a administrator by entering the Administrator Password (default is ∗∗#) and click Login

3 In the left pane click Update Software.

4 The TFTP address from which the configuration information will be downloaded is displayed. Enter a new address if the displayed address is incorrect.

5 Select the Software option on the drop down box and click Update.

SoundStation IP 3000 will contact the TFTP server and obtain the configuration information and application.

Appendix: A

Gatekeeper Registration Details

The SoundStation IP 3000 is able to register with a Gatekeeper. This behavior is the default and needs to be deactivated if necessary.

The phone sends the following alias information in an H.323 Registration Request message to the Gatekeeper:

H323-Identification

This value is determined by the administrator. The default identification is SSIPmmmmmmmmmm (where mmmmmmmmm is the phone's MAC address). This may be changed to a user name e.g. jsmith.

E.164

This value is defined by the Administrator (e.g. 5411). There is no default value.

Typically the defined value will be the phone number assigned to the Conference phone.

Note: If the Use Gatekeeper field is set to Yes and the Gatekeeper address field is empty then the SoundStation IP 3000 will assume that the Gatekeeper IP address is the same as the IP address of the TFTP server. The SoundStation IP 3000 will then try to register with this server.

Restarts

The SoundStation IP 3000 will restart under the following conditions.

- From a manually initiated restart (entering ∗∗#∗∗ from the keypad).
- After certain configuration changes (i.e. Changing DHCP/Static IP Mode or the Router IP address).

Special Features

SoundStation IP 3000 recognizes several special key sequences that are not available through the regular user interfaces to allow special features to be invoked.

The following describes the commands that may be entered from the keyboard .

Keyboard Command	Accessible State	Feature Description
#	In Idle state	Initiates a phone re-start.
**1	In Idle state	Restores the default configuration of the phone and restarts the phone. A confirmation screen is displayed before execution.
<Select, Select>	During active call	Display call related statistics. Pressing the Select or Exit key will return the display to its normal state. Refer to the next section for more details.

Statistics

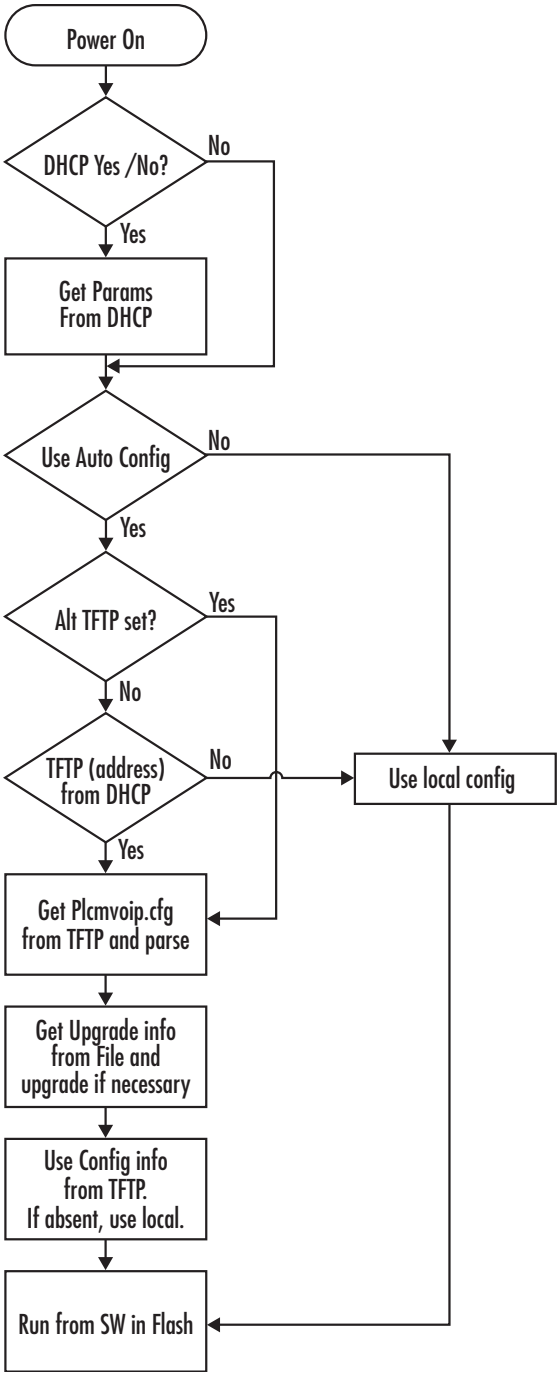
The phone maintains network and call related statistics on a per call basis. The statistics from a given call are maintained until a subsequent call is placed.

The following statistics are displayed on the screen:

- Codec Used in Receive and Transmit paths respectively (e.g. G.711 / G.711)
- Jitter in milliseconds (Average and Maximum variance)
- Counters for Received and Transmitted Packets
- Packet Loss:
  - Number of Discarded Voice Packets
  - Number of Lost Voice Packets

Appendix B: Start Up

When the SoundStation IP 3000 is powered up, it will follow the Start-Up Sequence illustrated in the associated diagram.



Appendix C: Troubleshooting

Below are some suggestions for troubleshooting the phone.

LCD/LED Not On

Make sure the SoundStation IP 3000 is plugged in properly and power is applied.

'NO GK' Message Displayed On LCD

SoundStation IP 3000 displays this message on the LCD when there is no Gatekeeper IP address configured but the Use Gatekeeper configuration parameter is set to Yes. IP calls are only possible in this configuration.

'Retrying' Message Displayed On LCD

SoundStation IP 3000 is configured to register with a Gatekeeper and is not able to contact the Gatekeeper. This problem may be due to one of the following reasons:

- The IP address of the Gatekeeper is incorrect
- The Gatekeeper may be on a routed network and the router IP is incorrect
- The Gatekeeper is rejecting the registration request
- The Gatekeeper is unavailable

'Obtaining IP' Address Message Never Goes Away

SoundStation IP 3000 is set up for DHCP and is unable to contact the DHCP server. Check that the device is plugged in to a network port, that it has access to a DHCP server, and that the DHCP server is configured properly. The DHCP server may have run out of leases.

'Starting Application, Please Wait' Message Never Goes Away

Software on the SoundStation IP 3000 is corrupted. Initiate an update by restarting the phone (if set for Auto Configuration) or manually by going to the Update Menu under Admin Setup.

SoundStation IP 3000 Does Not Ring On An Incoming Call

Make sure the user setting for ringer is set to 'On'.

Transfer Function Does Not Work

Some H.323 endpoints and systems do not support the Call Transfer functionality as implemented in the SoundStation IP 3000

Appendix D: Status Messages

This section summarizes the messages that are displayed on the SoundStation IP 3000.

Message	Phone State	Notes
Polycom, Inc. Copyright 2001	About 15 seconds after power up	
Initialization in Progress	After Power up and during boot load	This message will be displayed while the boot code is loading. A bong will also be heard before the actual DHCP Discovery process is started.
Obtaining IP Address (Press Menu to Re-configure)	When DHCP is initiated or while Static IP is being configured	
Starting Application. Please Wait …	While the application is being loaded.	This message is also displayed while auto configuration is in progress.
Updating …(%) done DO NOT POWER OFF	During update process	After contacting the TFTP server, SoundStation IP 3000 will automatically update. This message will also occur when update is locally initiated.
Updating …100% done	After update is complete	
Rebooting Please wait ...	SoundStation IP 3000 is rebooting	Due to configuration change or after update.
Restarting Please wait ...	Resting state or in Menu	When manual restart is initiated.
Bad Checksum in update file USING EXISTING VERSION	During update via Auto Configuration	The bin file is downloaded from TFTP server, then a checksum is calculated and checked. If the checksum fails, this message is displayed.
Bad Checksum in update file (Press Menu to Configure)	During manual update	The bin file is downloaded from TFTP server, then a checksum is calculated and checked. If the checksum fails, this message is displayed.
File not found on TFTP Server USING EXISTING VERSION	During update via Auto Configuration	The bin file is requested from the TFTP server. If that file is not available, then this message is displayed.
File not found on TFTP Server (Press Menu to Configure)	During manual update initiated via menus.	The bin file is requested from the TFTP server. If that file is not available, then this message is displayed.
Error in Version ID USING EXISTING VERSION	During update via Auto Configuration	Displayed when the Software update file supplied via TFTP doesn't match what is expected by the Software.
Error in Version ID (Press Menu to Configure)	During manual update initiated via menus	Displayed when the Software update file supplied via TFTP doesn't match what is expected by the Software.
Direct IP Call only Retrying (in top right of screen)	During normal operation	Displayed when the unit is configured to, but not able to register with a gatekeeper.
Service is Unavailable No Nwk (in top right of screen)	During normal operation	Displayed when the unit has lost connectivity with the Ethernet network.

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