Public Broadcasting IP Speaker User Manual
S21P

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About this manual

Thank you for choosing Public Broadcasting IP Speaker S21P. This IP Speaker is specially designed for the user under the public environment with fashionable appearance and complete functions. This manual aims to help you quickly use IP Speaker S21P. Before use, please read the packing list and safety notes section of this manual, communicate with the system administrator to confirm if the current network environment can meet the requirements of configuring the phone. If this is your first time to use IP Speaker S21P, we recommend that you should read the quick installation guide and product technical manual. The document can be downloaded from the following website: http://www.sahabtec.com.

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1. Getting Started

1.1 Outline

S21P Public Broadcasting Wired and Wireless-based IP Phone, a new generation of IP speakers. The Multicast functions settings of the device is more user-friendly than previous devices, the incidental tools and functions of this product will make Multicast easier to manage, notify, expand, and monitor.

The device adopting well-designed and elegant color (white), makes it look more beautiful, more suitable for installation on most of the ceiling without any influence. This device is more suitable for large and small public broadcasting projects e.g. schools, hospitals, stadiums, hotels, shopping malls, commercial buildings, venues, theaters, government buildings scene.

1.2 Product Features

- 3 VoIP (SIP) accounts.
- Support up to 20 groups multicast functions.
- LEDs and function keys embedded design, LEDs reflects the device work status, function keys can be used to adjust the volume, broadcast IP and a key to restore the factory values.
- Built-in microphone and external 3.5mm microphone interface can be switched freely.
- Support remote web management and maintenance, such as account maintenance, software upgrades, and the volume control.
- POE power supply (802.3af/at) which cannot coexist with WIFI series.
- WIFI Series is easy to be installed with strong expansion, its RJ45 port having a dual-use nature can be used as LAN port which is the same with the use of ordinary series when people manually turn off WIFI.

NOTE: If speaker voice is up to 5 level. For avoid power shortages and lead it restart, you need to use power adapter or support 802.3at's POE power adapter.

1.3 Technical Information

Phone features
WEB Multi-language；Support 3 accounts line Active / passive support; Support calls holding, calls waiting and calls transfer; Call transfer (busy turn, blind turn, consulting turn)， mute, don't disturb， Auto answer， three-way conference, the volume control and so on；support IP direct dial without account，Support up to 20 groups multicast functions simultaneously (the priority decreases from 1 to 20)

Network parameters
Support SIP V1（RFC2543）,V2（RFC3261）；Support DNS SRV（RFC3263）；Support STUN network penetration；Support 3 DTMF model: In-band,、RFC2833、SIP INFO；Support Network model： Static IP/DHCP/PPPoE；built-in DNS/TFTP/FTP terminal；Support NAT/DHCP service ；Support SIP and RTP QOS

Security
Support VLAN（802.1pq），LLDP，VPN（L2TP/OPEN_VPN）；Support TLS(Transport Layer Security）protocol；Support information authentication mechanism MD5； Support AES encryption protocol；Support phone locks, support the Admin/User level management mode

Audio features
Wideband encoding: G.722；Narrow band encoding:G.711μ/A, G723.1, G726, G.729AB，iLBC； Support VAD,CNG,AEC,AGC etc. audio processing ； Full duplex speaker, with automatic echo elimination (AEC).

Physical properties

One RJ-45 10/100M Ethernet interfaces(LAN)，LAN port is for the use of ordinary model ；

LAN/PC port is for WS series, when WIFI function opening, it is PC port，when WIFI function

closing, it is LAN port；One power adapter; Speaker Output：13Watts； Power ：DC

12V/1A；

ABC keys function definitions:

A key: volume increase; B key: quickly restore the factory value by pressing the button 20 seconds (refer to soft recovery, not hard recovery), press 1 time means broadcasting the current IP address; C key: volume decrease.

ABC-LEDs keys function definitions:

A (network) Green slow flash - network connection is fail; The light off - the network connection is normal; B (multicast) The light off - multicast is idle; red flash - multicast is busy; C (SIP Account) The light off - the registration is successful / idle; blue flash - Account busy; blue flashing slowly - registration is fail;

Flash is 1s / times; slow flash is 2s / times

Carton packaging
Size ： 8.5"x6" ； The mask width 215mm, Height65mm ， The cover width x160mm, Heightx135mm，Total height:155mm； Net weight:1.1kg Gross weight:2.0kg；

Product Certification
RoHS Compliant CE FC ISO 9001

Platform Compatibility Test (non-certificate)
ZTE/Alcatel-Lucent/Asterisk/Broadsoft/Metaswitch/Yeastar/Avaya/3CX/Elastix/HUAWEI etc.

2. Telephone installation

Generally, the system administrator will connect your new S21P Speaker to the corporate IP telephony network. If not, please refer to the following instructions.

Open the S21P Speaker boxes, carefully contrast the packing list, check if the related accessories of S21P phone are complete, the packing list as follows:

- 1 set S21P Speaker
- 1 steel mesh iron cover
- 12 screws
- 1 small pull hook
- 1 Quick Guide

In compliance with the following procedure, S21P Speaker can be installed into the ceiling.

2.1 Ceiling entrance specification

Cut out an installation hole of Ø170mm ~Ø180mm on the ceiling (Figure ②, Notice: The figure is just for your reference, as below

Plastic panel

Hook

Steel mesh

Figure ①

170mm

Cutout Template
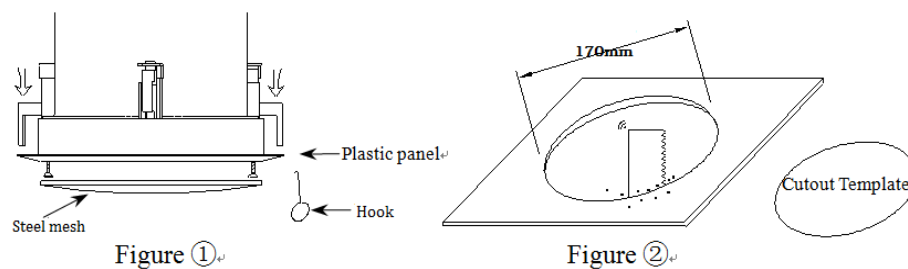
Figure ②

2.2 Installation of speaker equipment

1、open the cover (use a small hook to make steel mash up) (Figure ①);

2、Through the cut-down hole, build the speaker in, after the built-in, use screw driver to remount the four binding post. (Figure ③);

Installing screw×4

Figure ③
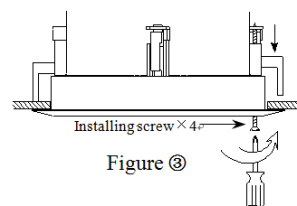
3 、when installation completed, load the steel mash back to speaker, then electrify and test it.
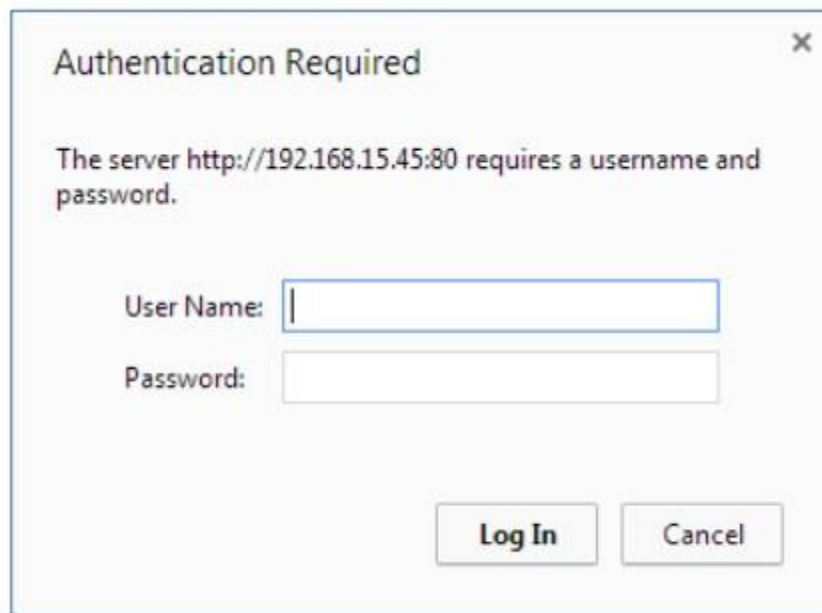
3. Configuration of speaker

Before you adjust the speaker, you need to know the IP address of the speaker. There a way you could learn how to get the IP address below. IP address will be gained by DHCP; you could press the second button from the left side. And it will let you know the speaker

IP.

3.1 Login web management of speaker

Once you input the IP address on the web browser and tape enter key on the keyboard, then a login screen will pop up from the speaker equipment. You need to input user name and password. The username and password of XonTel S21P is **admin / xontel**

After the login to the administrate web page of the speaker will pop up.

The setting and parameter of each option will be describe as follow.

3.2 Network

This option is used for the network setting, please notice that if you have WIFI speaker, then you could set the LAN and VPN.

3.2.1 WIFI Settings

Please note that the option is just support item S21P. The below operation will guide you how to connect the WIFI speaker to WIFI network, if you know WIFI hotspot SSID, you could input in the text box are, you could also search "SITE SURVEY" according to the hotspot.

3.2.2 WIFI Status

Please note that the option is just support item S21P. Once the device connects to the WIFI hotspot, you could use the below operation to check the WIFI connecting status.

3.2.3 LAN Settings

This option is used for setting speaker IP address, as shown below.

3.2.4 VPN Settings

If your speaker install into VPN network, then you need to set the VPN as below.

3.3 SIP Accounts

XonTel S21P IP speaker could be set three SIP accounts, user name, password and server address is necessary. If information are correct and available, after submitting, there will be a register to the server.

3.4 Multicast settings

XonTel S21P IP speaker could be set 20 groups multicast. You could add them and input several IP address and ports according to the below diagram. Notice: The priority of multicast is from 1-20. The highest degree is 1, the lowest degree is 20.

```
Paging Setting

Paging 1:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 2:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 3:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 4:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 5:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 6:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 7:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 8:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 9:    ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 10:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 11:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 12:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 13:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 14:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 15:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 16:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 17:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 18:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 19:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]
Paging 20:   ◉ off  ○ on
Group IP:  [            ]  Port: [10000]

[Submit]
```

3.5 Voice

You can manage the speaker volume ranks and microphones which showed in the following table. Please note that in most cases, if you open the microphone and switch to level 7, then don't use speaker volume more than level 4, unless you can ensure that your coverage is small or noise reduction level is high.

NOTE: If speaker voice is up to 5 level. For avoid power shortages and lead it restart, you need to use power adapter or support 802.3at's POE power adapter.
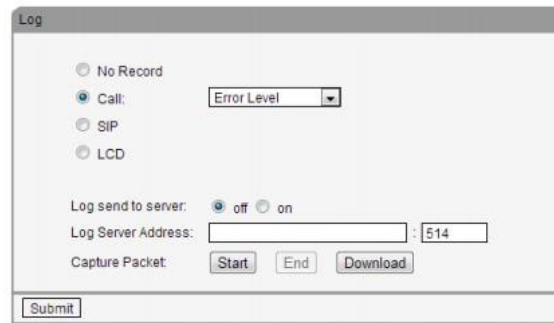
3.6 Maintains for the speaker

Sometimes, you need to check the speaker's status and usage, or configure some extra options. According to the below, you can reconfigure the speaker or view maintenance logs for more information.

3.6.1 Log

For most well-known system, log file will provide the speaker behavior change and some causes of records, information contained in the log files you need to investigate the problem, if you need to get information from it, then it can upload the log file to the specified server.

- System Info
- Network
- SIP Account
- Paging Setting
- Audio
- Speaker Maint
  + Log
  + Speaker Setting
  + VLAN Setting
  + Password
  + Default Set
  + Auto Provision
  + FTP Upgrade
  + TFTP Upgrade
  + HTTP Upgrade
  + Reboot

Log

○ No Record
● Call: Error Level ▼
○ SIP
○ LCD

Log send to server: ● off ○ on
Log Server Address: [   ] : [514]
Capture Packet: [Start] [End] [Download]

[Submit]

3.6.2 Speaker setup

Most of the following list will serve as a backup, you can set a time and date only and other options can be ignored directly.

Speaker Setting

Basic

Called No AnswerTime:	☑ 70 s (Min:20, Max:1800)
Caller No AnswerTime:	☑ 180 s (Min:90, Max:1800)
DTMF :	◉ RFC 2833 ○ Inband ○ SIP Info ○ Auto
Pound Send Method :	◉ # ○ %23
RFC 2833 PayLoad:	101
BackLight:	○ off ○ Always On ◉ timer 60 s (Min:1, Max:255)
Keyboard Lock:	Disabled ▼

PSTN Setting

PSTN Ring Type:	○ PSTN Ring ◉ VOIP Ring
PSTN Prefix Code:	
VOIP Prefix Code:	
Hook:	○ off ◉ on
Hook Frequency:	500 (Default:500 ms;min:100 ms;max:1600 ms)

Qos

SIP Qos:	26 (0-63)
Voice Qos:	46 (0-63)

Call

BLF Transfer In Taking	◉ off ○ on
BLF Transfer Mode	◉ Blind Transfer ○ Attended Transfer
Hot Line Function:	◉ off ○ Immediately Hot Line ○ Delay 5 s (5-30)
Hot Number:	
Call Waiting:	○ off ◉ on
Call Waiting Tone:	◉ off ○ Play on currently active device Frequency: 10 s (5-60)
Auto Answer:	○ off ◉ on ○ Turn On But Filter This Group: NONE ▼
Auto Answer Mode:	◉ Hands Free ○ Handle ○ Headset
Pickup Function:	○ off ◉ on
Pickup Code:	123
Message:	*97
Fuzzy Search:	◉ off ○ on
Booking Voicemail:	No ▼
Play Voicemail Tone:	◉ off ○ on
Miss Call Display:	○ off ◉ on
Call List Save:	○ off ◉ on
DND Softkey:	○ off ◉ on
Play Hangup Tone:	◉ off ○ on
Transfer Code :	◉ off ○ on Number:
Conference Exit Result:	◉ Disconnect All ○ Others Remain Connected
Return code when refuse:	603(Decline) ▼
Return code when DND:	603(Decline) ▼
Flash hook time(<800ms):	500

VOIP Call Forward

Always :	◉ off ○ on Number:
If Busy :	◉ off ○ on Number:

3.6.3 VLAN setup

If you need your speaker work under the situation of VLAN, you need to configure the VLAN information, otherwise you will not be able to operate the speaker or play any announcements.

3.6.4 Password

If you need to change the speaker's default password, you need to configure the password information. Please note that the password change should be ensured safety and not distribute to anyone, unless they are allowed to interact with the speaker.

- System Info
- Network
- SIP Account
- Paging Setting
- Audio
- Speaker Maint
  + Log
  + Speaker Setting
  + VLAN Setting
  + Password
  + Default Set
  + Auto Provision
  + FTP Upgrade
  + TFTP Upgrade
  + HTTP Upgrade
  + Reboot

Password

Username: admin
Old Password :
New Password:
Confirm Password:
○ Administrator ○ User

Submit

3.6.5 Factory Defaults Setting

The following will direct you how to set the factory defaults. Please note that factory default setting will erase all the original configuration info, so please be cautious to use this function.

- System Info
- Network
- SIP Account
- Paging Setting
- Audio
- Speaker Maint
  + Log
  + Speaker Setting
  + VLAN Setting
  + Password
  + Default Set
  + Auto Provision
  + FTP Upgrade
  + TFTP Upgrade
  + HTTP Upgrade
  + Reboot

Default Setting

When click this button this equipment will restore to the default status

Pay Attention: It will take effect on next reboot.

Reset to Factory Setting

3.6.6 Auto provision

The auto provision function makes the speaker read the related configuration file by itself. The operation below will show the related operation, such as, name or address of Sever, verify by user name or password (optional), testing period, reboot testing, etc.
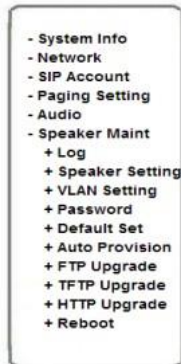
3.6.7 FTP Upgrade

You can use FTP/TFTP/HTTP to upgrade new firmware and the software of speaker. The following will direct you if use FTP to upgrade

3.6.8 TFTP Upgrade

The following will direct you if use TFTP to upgrade.

3.6.9 HTTP Upgrade

The following will direct you if use HTTP to upgrade。

3.6.10 Reboot

The following will direct you if rebooting speaker. Please note that do not rebooting speaker unless hooking or no reaction situation which is rare occurrence.

3.7 Language

The following will direct you how to change language with the speaker.