



We Focus • We Deliver

SIP Speaker UserManual



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1. Brief Introduction

The SIP based audio system iSpeaker utilizes the built-in intercom and paging capability already inherent in most modern IPPBX systems and enhances this to improve end user experience by providing a dedicated high performance digital amplifier on which to broadcast announcements or play background music.

There are two models of ZYCOO iSpeaker now: B20 and C20. B20 supports 10 Watt amplifier and C20 supports 3.5 Watt amplifier, which will provide sufficient coverage to the assigned rooms or spaces as you required. And the big difference between B20 and C20 is that C20 supports broadcasting and intercom, but B20 supports broadcasting only.

They are ideal solutions to deploy in all types of environments including schools, offices, airports, and other public spaces. For additional functionality, an IP video camera can be connected to iSpeaker Ethernet interface and the resulting high definition images are transmitted to monitors located in assigned rooms.

Aside from announcements, remote access to the web interface provides remote control and configuration of your iSpeaker if the unit is located in other rooms or floors. Additionally there are 4 freely programmable pins that can be used for controlling the peripheral devices around iSpeaker.

2. Delivery Contents

- Base Unit
- Pre-assembled Brackets for Wall-mounting
- Pre-assembled phoenix connectors
- Power Supply

3. Safety Precautions

Note: To avoid any device damage and bodily injury caused by improper use, please observe the following rules.

- Please use only the power adapter provided by ZYCOO. Other power supplies may damage or even destroy the device, and as such will not be covered by the product warranty.
- Ensure that the supply voltage matches the specifications indicated on the rear panel of iSpeaker.
- The device is for INDOOR use ONLY! and NOT FOR OUTDOOR USE!
- To avoid an electric accident, DO NOT open or remove the cover of iSpeaker when it is



powered on.

- DO NOT install the device in rooms with high humidity (such as bathroom, laundry room, damp basement, kitchen). Keep the device far away from the water or other liquid!
- Before cleaning the device, shut off the power supply. DO NOT clean it with a wet cloth and NEVER use any other liquid cleaning method. The most suitable method is to use an anti-static cloth.
- DO NOT install the device in surroundings at risk of explosions (such as gas station, paint store, etc.). Also DO NOT use the device when you smell any fumes with the potential to explode.
- DO NOT use the device in thunderstorms in case of any electric shocks by lightning.

4. Device Installation

4.1 Device Information

Item		C20	B20
Telephony Protocol		SIP 2.0(RFC-3261)	
CPU		MIPS+DSP	
Keypad Expansion		Support 4×6, total of 24 keys	
LCD Expansion		Support SPI mode (Custom)	
Voice	Microphone	1 onboard connector	
	Speaker Output	3.5W	10W
	Handset	3.5mm standard input/ output interface	Not support
	Speaker Impedance	4Ω	
	DSP	Support echo cancellation and noise suppression	
Voice Flood	Supported protocol	RTP	
	Codec	G.711,G.722,G.723,G.726,G.729, etc..	
Other Interface	Input Power	5V/1A DC	12V/2A DC
	PoE	PoE 802.3af (Class 0 - 12.95W)	Not support
	LAN	2x10M,RJ45	
	RS232	Optional	
	GPO	4 programmable output pins	
Environment	Operation Temperature	0°C to 40°C	
	Storage Temperature	-40°C to 70°C	

	Humidity	10% to 95%,No Dew
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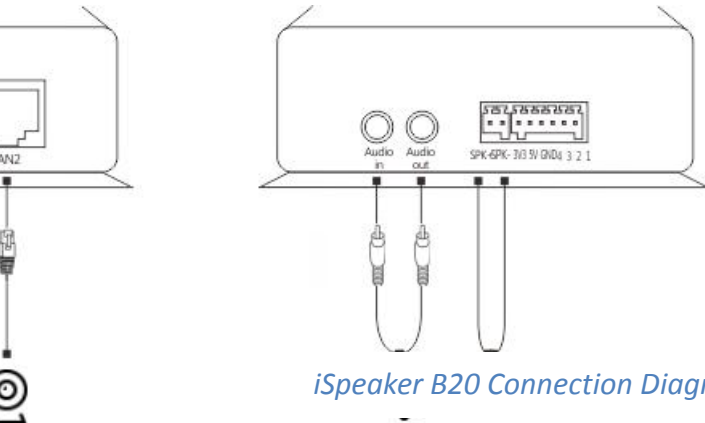
4.2 Physical Connection

- iSpeaker C20 supports PoE. If the switch server supports PoE, please plug the Ethernet cable to the RJ45 interface “LAN 1 POE” of iSpeaker C20. The two Ethernet interfaces of iSpeaker support bridge mode only; LAN2 is used to connect other devices for network expanding. If your IP PBX server doesn't support PoE, please use the 5V/1A power supply provided by Zycoo to power for iSpeaker.

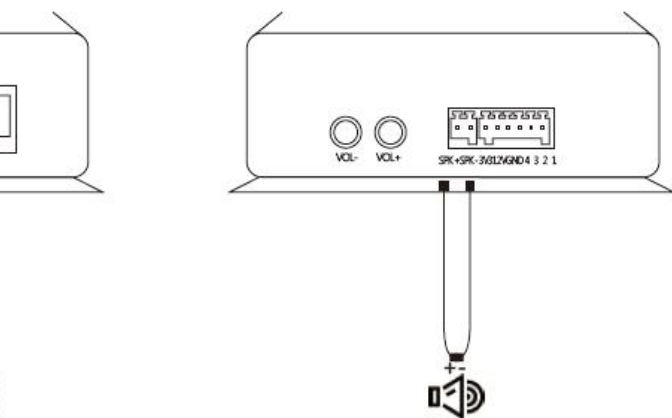
Note: iSpeaker B20 DOES NOT support PoE.

- The interface of “SPK+” and “SPK-” on iSpeaker C20 are used to connect the loudspeaker. If you are using headset, please plug the microphone of headset to “Audio in” of iSpeaker C20 and plug the speaker of headset to “Audio out”.

iSpeaker C20 Connection Diagram:



iSpeaker B20 Connection Diagram:



5. Configuration

5. Configuration

Abstract: Here we will take iSpeaker C20 as reference because the B20 has the similar web configuration as C20. If any difference, we will remark it in **red** relatively.

5.1 Web Login

Step1. Plug the Ethernet cable to LAN 1 or LAN 2 of iSpeaker.

Notice: To avoid network loops, the LAN 1 and LAN 2 cannot be connected to the same switch.

Step2. Open web browser and input <http://192.168.119.110/>, which is default IP address of iSpeaker.

Notice: Please use the IE browser(Ver8.0 or higher), Firefox or Chrome.

Step3. Input default username (admin) and password(admin).



Default URL Address: <http://192.168.119.110/>

Default Username: admin

Default Password: admin

Step4. Go to the home page after successful authentication.

(If you visit <http://192.168.119.110> again without closing the active browser, authentication is not needed because the browser already recorded login information.)

5.2 Network Configuration

Step1. Click **【 Network Configuration 】** to show the following display. Set static IP address for iSpeaker or dynamic IP address by enabling DHCP. When DHCP enabled, it will get the dynamic IP address and “Static IP” cannot be modified; After configuration, click **【 Submit 】** button.

Step2. After configuration, click **【 Submit 】** to display the following window; you have to choose **【 Continue 】** to make additional changes, or **【 Apply Now 】** to apply changes to device.

Click 'Continue' to make additional changes.

Click 'Apply Now' to apply changes to iSpeaker.

Continue

Apply Now

6. SIP Registration

6.1 SIP Basic Configuration

Click **【SIP Configuration】** to go to **【SIP Basic Configuration】**, including Server Address, SIP Extension, Autoanswer, Audio Output Mode(Defaulted Speaker), etc.. After configuration, please click “Submit”.

SIP Basic	Advanced	Codecs
SIP Basic Configuration		
Server Address	<input type="text" value="192.168.119.251"/>	
Proxy Address	<input type="text" value="192.168.119.251"/>	
SIP Extension	<input type="text" value="885"/>	
Password	<input type="password" value="*****"/>	
Autoanswer(sec.)	<input type="text" value="1"/>	
Audio Output Mode	<input type="text" value="Speaker"/>	
<input type="button" value="Submit"/>		

SIP Basic Configuration

Item	Explanation
Server Address	IP Address of IP PBX
Proxy Address	Proxy address of SIP proxy. Normally the proxy server and IP PBX is the same one, so the IP address is same.
SIP Extension	Registered SIP extension number provided by IP PBX
Password	Password of registered extension provided by IP PBX
Autoanswer	The time of Auto answer (by second). Default is 1; if set as 0, there is no auto answer.
Audio Output Mode (For iSpeaker C20 only)	Output mode of audio (Speaker or Handset). Default is Speaker.
InComingRing (For iSpeaker B20 only)	This option is to allow ringing if any incoming calls come.

6.2 SIP Advanced Configuration

Click **【Advanced】** to go to SIP Advanced Configuration. You can change the configuration based on your requirement, such as Local SIP Port(Default is 5060) and RTP/RTCP DSCP (Default is 8000/8001). After modification, please click “Submit”.

SIP Basic **Advanced** Codecs

SIP Advanced Configuration	
Local SIP Port	5060
T1 Timer (msec)	500
RTP Base Port	8000
RTCP Base Port	8001
Echo Canceller	<input checked="" type="checkbox"/>
Noise Suppression	<input checked="" type="checkbox"/>
Adaptive Jitter Buffer	<input checked="" type="checkbox"/>
SIP DSCP (Hex)	B8
RTP/SRTP DSCP (Hex)	68

Submit

SIP Advanced Configuration

Item	Explanation
Local SIP Port	Local SIP Port. Default is 5060.
T1 Timer	Timer for sending SIP message (by second). Default is 500 ms.
RTP Base Port	RTP base port of voice data. Default is 8000.
RTCP Base Port	RTCP base port for voice data. Default is 8001
Echo Canceller	Set echo cancellation. Default is enabled.
Noise Suppression	Set noise suppression. Default is enabled.
Adaptive Jitter Buffer	Set adaptive jitter buffer when receive/send SIP voice. Default is enabled.
SIP DSCP (Hex)	Set the hex value of SIP DSCP. Default is B8. DSCP (Differentiated Services Code Point)
RTP DSCP(Hex)	Set hex value of RTP DSC. Default is 68.

6.3 SIP Voice Codec

Click **Codecs** to configure the priority order of SIP codecs. After configuration, click **Submit**.

SIP Basic
Advanced
Codecs

Codecs Configuration

Priority	Codec
1.	PCM μ -Law ▼
2.	PCM A-Law ▼
3.	G.722 ▼
4.	G.722.1 24Kb/s ▼
5.	G.722.1 32Kb/s ▼
6.	G.722.2 ▼
7.	G.723 6.3Kb/s ▼
8.	G.726 16Kb/s ▼
9.	G.726 24Kb/s ▼
10.	G.726 32Kb/s ▼
11.	G.726 40Kb/s ▼
12.	G.729 ▼
13.	iLBC 20ms ▼
14.	iLBC 30ms ▼

Submit

6.4 SIP Auto Provision (Hidden by default)

SIP Auto Provision is very useful function for company to deploy the telephony terminals such as IP Phone and sip speaker quickly.

Step1. Open the IP PBX GUI, click **【Phone Provisioning】** to make settings of phone provisioning.

Notice: please make sure that your IP PBX support auto provision of iSpeaker; if not, please download the patch and update your PBX.

Phone Provisioning

Phones Settings
PnP Settings

List of Phones New Phone

#	MAC	Manufacturer	Type	Extension	Enable	Options
1	68692e111111	Zycoo	iSpeaker	803	yes	Edit Delete

Step2. Click **【PnP Settings】** to configure, input URL, use the default multicasting address: 224.0.1.75 and default port 5060.



Plug and Play(PnP) Settings

Phones Settings
PnP Settings

Plug and Play(PnP) Settings

Enable:

Interface: WAN

Custom URL: http://192.168.2.66:9

Multicasting Address: 224.0.1.75

Port: 5060

Save
Cancel

If custom URL is required, the IP PBX server IP address will be displayed here automatically once tick this option (E.g. : <http://192.168.2.66:9999/phones>).

Step3. Click **【Phone Settings】** → **【New Phone】** to configure the iSpeaker information.

New Phone X

General

Enable:

Manufacturer: Zycoo Type: iSpeaker

MAC: 68692e098823

Advanced

Extension: 808

Name: 808

IP Address: 192.168.2.24

Subnet Mask: 255.255.255.0

Gateway: 192.168.2.1

Save
Cancel

Item	Explanation
Enable	Enable to make the phone provisioning effective
Manufacturer	Select the factory of iSpeaker: Zycoo
Type	Select device type: iSpeaker
MAC	MAC of iSpeaker device
Extension	Select extension number of iSpeaker
Speaker Name	Define the name for this iSpeaker.
Speaker IP	Define the fixed IP of iSpeaker
Subnet Mask	Define the subnet mask of iSpeaker
Gateway	Define the default gateway of iSpeaker

Step4. Click **【Save】** → **【Active Changes】** to make the settings effective.

Configuration Saved!

Settings changed! Please Click on Activate Changes to make modifications effect!

Activate Changes

Phone Provisioning

Phones Settings PnP Settings

List of Phones New Phone

	MAC	Manufacturer	Type	Extension	Enable	Options
1	68692e111111	Zycoo	iSpeaker	803	yes	Edit Delete
2	68692e098823	Zycoo	iSpeaker	808	yes	Edit Delete

Move the mouse over to see tooltips

Step5. Reboot iSpeaker, and visit the device with the previous defined IP in Phone Provisioning, e.g.: <http://192.168.2.24>, input default username and password “admin/admin”, then you will see the device information which shows the iSpeaker is registered.

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Device Information

Network Information

SIP Configuration

Volume

Pin Function

Administration

Device Information

MAC Address: 68:69:2E:09:88:23
IP address: 192.168.2.24
Firmware Version: 1.0.0
Model: iSpeaker C20
SIP Extension: 808
SIP Register Status: Registered

7. Volume Settings

Output volume is for speaker and “Audio out”; Input Volume is for “Audio in”.

Click **【Volume】** to set the output volume and input volume.

After configuration, please click **【Submit】** .

Volume Configuration

Output Volume (1-9)

Input Volume (1-9)

Submit

Note: As iSpeaker B20 supports broadcasting only, you can just set the output volume for it, and

there is not option for input volume settings for B20.

8. PIN Settings

8.1 Pin Configuration

Pin is used to connect some related terminals, such as alarm, door-lock. Pin Function is used to define the function of pins.

Click **【Pin Function】** to go to Pin Name Configuration and define the name from Pin 1 to Pin 4.

Notice: Space is not allowed in Pin Name; please use “_” to replace space.

After configuration, please click **【Submit】** .

Pin Name	Pin Active
Pin Name Configuration	
Pin 1 Name	_____
Pin 2 Name	_____
Pin 3 Name	_____
Pin 4 Name	_____
<input type="button" value="Submit"/>	

8.2 Pin Active

Once enabled “Pin Active”, the corresponding Pin will output high voltage; otherwise, the corresponding Pin will output low voltage.

Click **【Pin Active】** to apply the function of Pin1 to Pin 4.

Pin Name	Pin Active
Pin Function Active	
Pin 1 Active	<input checked="" type="checkbox"/>
Pin 2 Active	<input checked="" type="checkbox"/>
Pin 3 Active	<input type="checkbox"/>
Pin 4 Active	<input type="checkbox"/>
<input type="button" value="Apply Now"/>	

9. System Management

9.1 Time Setting

Click **Administration** → **Time Setting** to configure the time. If NTP is enabled, the system will configure the system time by NTP mode (NTP is enabled by default). If NTP is not enabled, time should be set manually in “Manual Time Setting”.

“Daylight Saving Time” is available to choose (Not enabled by default). Also you can choose the time zone, default is “(UTC+08:00)Beijing”.

Time Setting

NTP Enable

NTP Setting:

NTP Sever 1

NTP Sever 2

Manual Time Setting:

Year Month Date

Hour Minute Second

Other Setting:

Daylight Saving Time

Time Zone

Submit

9.2 Change Login Password of Web

Click **Administration** → **Change Password** , input new password and confirm, then submit to make it effective.

Change Password

New Password

Confirm Password

Submit

9.3 Firmware Upgrade

Click **Administration** → **Firmware Upgrade** to upgrade the firmware. Download the firmware from Zycoo official website; to make sure successful upgrade please modify the firmware name as “iSpeaker_C20” or “iSpeaker_B20”.

Notice: Please DO NOT power off or reboot the device in upgrade; the system will reboot automatically after firmware upgrade succeeded.

Time Setting Change Password **Firmware Upgrade** Factory Default Reboot

Firmware Upgrade

New Firmware:

This page allows you to upgrade the firmware.
It may take about 10 minutes to complete firmware upgrade.
Please do not turn off the power during the upgrade process!

9.4 Restore to Factory Default

Click **【Administration】** → **【Factory Default】**, and click the button “Restore to Factory Default”. The system will be reset after 3~5 seconds, all the settings will be cleared and reset to factory default.

Time Setting Change Password Firmware Upgrade **Factory Default** Reboot

Factory Default

Click 'Restore To Factory Default' to restore all default settings.
Warning: This will erase all user configurations.

9.5 Reboot

Click **【Administration】** → **【Reboot】** and click the button “Reboot”, the system will reboot after 3~5 seconds.

Time Setting Change Password Firmware Upgrade Factory Default **Reboot**

Reboot iSpeaker

Click "Reboot" button to restart the iSpeaker