

SL50 Network Column Speaker User Guide



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1. Preface

1.1 Audience

This manual is intended to provide clear operating instructions for those who will configure and manage the SL50 Network Column Speaker. By carefully reading and consulting this guide, users could solve the setting and deployment issues of the SL50 Network Column Speaker.

1.2 Revision History

Document Version	Applicable Firmware Version	Update Content	Update Date
1.2.8	1.2.8 and 2.0.4 (hardware version 2.0 or above ONLY)	Updated operating instructions for software version v1.2.8/2.0.4.	Nov,2023

2. Overview

2.1 Product Overview

SL50 Network Column Speaker is a high-performance SIP-enabled column speaker used for SIP paging, notification/tone broadcasting, and streamed high-definition music playback. SL50 is equipped with 4 woofer drive units and 1 tweeter drive unit. It has high sensitivity and capacity, giving clear and rich saturation, whether SIP-based propaganda broadcasting or background music playing. SL50 can perfectly analyze various sound effects of human voice and music.

2.2 Product Specifications

SL50 Network Colu	mn Speaker Specifications	
Speaker Components	5.25" woofer unit + 1" tweeter unit	
Sensitivity	85dB / 1W / 1m	
Max Sound Pressure Level	100dB	
Rated Power	8Ω 15W	
Frequency Range	70Hz – 20KHz	
Coverage Pattern	90°H 90°V 30m²	223
Amplifier	Built-in Class D Amplifier	

3. Login the Device

3.1 Accessing the Web GUI

SL50 obtains the IP address through DHCP by default, please ensure that there is an available DHCP server in your LAN (If DHCP fails to obtain an address, it will use a static IP address: 192.168.1.101), or press and hold the reset button for 5 seconds and then release it to listen to the device's IP address broadcast, and enter the IP address in the browser to access the device's Web management interface.

Default username: admin

Default password: admin

For the safety purpose, it is recommended to change the default password on the first login, please go to **System --> Password Settings** page to change the password.

옷 Usemame	
B Password	
English	v

Login Interface

After entering the correct username and password, you can log in to the device's web management interface.

3.2 Device Info

After successful login, you will see the information interface of the device, and you can view the basic information of the device.

ZLCOD					English \vee Admin \vee
	SIP STATUS				
SIP Settings					
	Primary SIP Account	1013@192.168.11.231:5060		Registered Idle	
🗐 Advanced	Secondary SIP Account-1			Unconfigured	
	Secondary SIP Account-2			Unconfigured	
System					
Maintenance ~	DEVICE INFORMATION				
	Device Model		SL50		
	Hardware Version		Ver1.0		
	Software Version		s1.2.8		
	Uptime		7:18		
	Speaker Volume		3 (0-9) 🖉		
	Device Description		SL50 Q		
	NETWORK INFORMATION Mac Address Connection Mode IP Address Subret Mask Gateway Primary DNS Alternative DNS		68547E2A0000 STATC 197316411220 25552550 1973164111 1543154314 8888		
	Default Gateway Route		No		
	IP Address				
	Subnet Mask				
	Gateway				
	Primary DNS		114.114.114.114		

SIP STATUS			
Primary SIP Account	1013@192.168.11.231:5060	Registered	Idle
Secondary SIP Account-1		Unconfigured	
Secondary SIP Account-2		Unconfigured	

SIP Status

- **SIP Account:** Display the SIP number configured on this device.
- SIP Server: Display the SIP server (Such as ZYCOO IP Audio Center or IP PBX) address.
- **Register Status:** Display the SIP number registration status.

Device Model Hardware Version	SL50
Hardware Version	
The other of the solution	Ver1.0
Software Version	s1.2.8
Uptime	7:18
Speaker Volume	3 (0-9) 🖉
Device Description	SL50 🖉

Device Information

- **Device Model:** Displays the model of the device.
- Hardware Version: Displays the hardware version number of the device.
- Software Version: Display the system version number of the device.
- Start Time: Displays the last time the device was started up.
- Speaker Volume: Displays the current volume of the device.
- Mic Volume: Displays the current device microphone input volume.
- **Device Description:** Remark the device information. The description will be displayed in a browser tab. After the Device Description is set, the description will be displayed in the browser tab, which is convenient for distinguishing different terminals when there are many terminal configuration pages.

NETWORK INFORMATION	
Mac Address	68:69:2E:2A:00:00
Connection Mode	STATIC
IP Address	192.168.11.220
Subnet Mask	255.255.255.0
Gateway	192.168.11.1
Primary DNS	114.114.114
Alternative DNS	8.8.8.8

Network Information

- Mac Address: Display the MAC address of the current device.
- **Connection Mode:** Display the network acquisition method of the device, DHCP (dynamic acquisition) or STATIC (static configuration).
- **IP Address:** The current IP address of the device.
- Subnet Mask: The current subnet mask of the device.

- **Gateway:** The gateway address currently used by the device.
- **Primary DNS:** The primary domain name server address used by the device.
- Alternative DNS: The secondary domain name server address used by the device.

LTE NETWORK INFORMATION	
Default Gateway Route	No
IP Address	
Subnet Mask	
Gateway	
Primary DNS	114.114.114.114
Alternative DNS	8.8.8.8
Connect Status	Offline
Connect Time	Oh Om Os

LTE Network Information

- **Default Gateway Route:** Display the default gateway of the LTE network.
- **IP Address:** The current IP address of the LTE network.
- **Subnet Mask:** The current subnet mask of the LTE network.
- **Gateway:** The gateway address of the LTE network.
- **Primary DNS:** The primary domain name server address used by the device.
- Alternative DNS: The secondary domain name server address used by the device.
- **Connect Status:** Display the LTE network connection status as online or offline.
- **Connect Time:** Display the LTE network connection duration.

4.SIP Settings

4.1 SIP Account Settings

There are three (3) SIP accounts under the SIP Settings, one (1) primary and two (2) secondary for the use of different SIP accounts to proceed with various tasks. If the current device needs to cooperate with the ZYCOO IP Audio Center, please turn on the 'Enable Integration with ZYCOO IP Audio Center' option.

Please go to SIP Settings --> Primary SIP Account / Secondary SIP Account-1 / Secondary SIP Account-2 page.

* SIP Server:	192.168.11.62	
* SIP Port:	- 5060 +	
* User ID:	5001	
Auth User:	5001	
Domain:	192.168.11.62	
Password:		
Register Expiration(Sec):	- 180 +	
* Transport:	UDP	
Auto Answer:	Yes	
NAT Mode:	Disabled	
Enable Integration with		
ZYCOO IP Audio Center:		
Activate:		

Primary SIP Account

* SIP Server:	192.168.11.83	
SIF Server.	142,100,11,03	
* SIP Port:	- 5060 +	
* User ID:	1007	
Auth User:	1007	
Domain:	192.168.11.83	
Password:		
Register Expiration(Sec):	u- 180 +u	
* Transport:	UDP	
Auto Answer:	Yes	
NAT Mode:	Disabled	
Activate:		

Secondary SIP 1 Account

Secondary SIP Account-2		
* SIP Server:	og: 192.168.1.100	
* SIP Port:	- 5060 +	
* User ID:	eg: 100	
Auth User:	eg: 100	
Domain:	eg: pbx.com	
Password:		
* Register Expiration(Sec):	- 180 +	
* Transport:	UDP	
Auto Answer:	Yes	
NAT Mode:	Disabled	
Activate:		
	Submit	

Secondary SIP 2 Account

• **SIP Server:** Enter the IP address or domain name of the SIP server.

- **SIP Port:** Default SIP port is 5060. If the SIP server uses another port number as the SIP port, please modify this setting.
- User ID: The SIP account number provided by the SIP server.
- Auth User: Enter the authorized SIP account's username.
- **Domain:** Enter the SIP Domain.
- **Password:** Authorized SIP account password.
- **Register Expiration (sec):** SIP register expiration time, the default expiration time is 180 seconds.
- **Transport:** Set up the transport protocol, there are UDP, TCP, TLS options to choose.
- Auto Answer: Yes/No/Answer Delay, default in the Yes option.
- NAT Mode: Select the NAT mode and fill out the corresponding data. STUN, TURN, and ICE modes are supported.
- Enable Integration with ZYCOO IP Audio Center: This option is disabled by default. If you need to connect and use it with ZYCOO IP Audio Center, please enable this option. Only the main SIP account has this option.
- Activate: Once enabled, the account will be activated and registered to the SIP server.

4.2 P2P Account Settings

P2P stands for Peer to Peer. In a P2P network, the peers are connected to each other via the Internet, files can share, or peers can call each other directly between systems on the network without the need for a central server.

Please go to **SIP Settings ---> P2P Account Settings** page to configure the P2P settings. After configuring the P2P account, it can be used with the Outgoing Call feature in **Basic Settings ---> I/O Settings**, or use the Outgoing API in **Basic Settings ---> API Settings** to make a P2P call.

2P Account		
* User ID:	194	
Auto Answer:	Yes	~
Activate:		
	Submit	

P2P Account

- User ID: The User ID will be displayed as the outgoing number when calling out, or the number that another device needs to dial.
- Auto Answer: Yes/No/Answer Delay, default in the Yes option.
- Activate: Enable/Disable the P2P feature.

4.3 Audio Codecs

SL50 supports 4 audio codecs: G.722 (wideband codec), G.711(Ulaw), G.711(Alaw), and Opus.

To enable or disable an audio codec/codecs, please go to **SIP Settings --> Audio Codecs** page.

Audio Codecs	
G.722:	
G.711(Ulaw):	
G.711(Alaw):	
Opus:	
	Submit

Audio Codecs

Please keep at least one codec enabled and supported by the SIP server, otherwise, SIP paging will not work.

4.4 Advance SIP Settings

To configure some advanced parameters of the SIP protocol, please go to SIP Settings --> Advance SIP Settings page.

Local Port:		5060	+
* RTP Start Port:	_	10000	+
Kir start of a		10000	
* RTP End Port:	-	20000	+
* RTP Timeout(Sec):	-	60	+
Jitter Buffer:	off		~
SIP Autoanswer beep:			
Ptp Time Synchronization:		0	
	Submit		

Advance SIP Settings

- Local Port: This setting represents the port used to receive SIP packets.
- **RTP Start Port:** This setting represents the starting RTP port that will use for media sessions.
- **RTP End Port:** This setting represents the end RTP port that the system will use for media sessions.
- **RTP Timeout (sec):** This setting means that within a specific time range, if the system does not receive the RTP stream, the call will end.
- Jitter Buffer: This setting represents the Jitter buffer where voice packets can be collected, stored, and sent to the voice processor in even intervals. Three options are provided, off/adaptive/fixed. A fixed jitter buffer adds a fixed delay to voice packets. An adaptive jitter buffer can adjust based on the delays in the network.
- **SIP Autoanswer Beep:** Enable/Disable. This setting represents the ringtone beep when a call comes and only applies when the SIP Autoanswer feature is enabled.
- **PTP Time Synchronization:** Enable the PTP time synchronization with the SIP server, which requires the support of the SIP server.

5. Advanced Settings

5.1 Volume Settings

To set the volume of the SL50, please go to Advanced --> Volume page to configure.

Volume	
* Speaker Volume:	- 3 +
Key beep:	
Music Auto Resumes:	
Play IP on startup:	•
	Submit

Volume Settings

- Speaker Volume: The default speaker volume is 7, adjustable range is $0 \sim 9$.
- **Key Beep:** Enable/Disable the beep sound from the key button.
- **Music Auto Resumes:** When the device restarts or reconnects to the network, the previous music tasks will be automatically restored.
- **Play IP on Startup:** When the device starts, it automatically broadcasts its IP address once.

5.2 API Settings

This page is used to configure the API interface of the device. Through the API interface, you can realize device linkage, call control, relay control, and play sound by using the changing status of the call and/or relay.



Please go to Advanced --> API Settings page to enable API settings.

Call Event URL Callback & Relay Event URL Callback

When the call status changes, it will trigger an HTTP GET request to call a URL address. Within the URL address, you may use variables to identify some current information. For example:

\${ip}:	The current IP address of the device
\${mac}:	The current MAC address of the device
\${ua}:	The account of the current call
\${number}:	The number of the current call
When the relay status change	es, it will trigger an HTTP GET request to call a URL address.
Within the URL address, you	u may use variables to identify some current information.

For example:

\${ip}:	The current IP address of the device
\${mac}:	The current MAC address of the device

Call API Enable:	
Outgoing API:	http://192.168.17.54/api/sipphone?action=call&number=101&line=auto
Answer API:	http://192.168.17.54/api/sipphone?action=answer
Hangup API:	http://192.168.17.54/api/sipphone?action=hangup
Relay API Enable:	
On API:	http://192.168.17.54/api/relay?action=on
Off API:	http://192.168.17.54/api/relay?action=off
Delay API:	http://192.168.17.54/api/relay?action=on&duration=5
Play API Enable:	
Start Play API:	http://192.168.17.54/api/player?action=start&id=1&repeat=0&volume=7
Stop Play API:	http://192.168.17.54/api/player?action=stop
	Submit

API Settings

Using the API interface to realize features such as device linkage, call control, relay control, and play sound by the systems.

Note: Authentication and encryption are not used in the API interface, so please pay attention to the security of the network environment when opening and using these API interfaces.

5.3 Multicast

The multicast settings are used to configure the parameter settings of the multicast function on the SIP Safety Intercom. It can be configured to monitor up to 9 different levels of multicast addresses, the audio streams with a higher priority will interrupt the playback of the lower priority audio streams.

Please go to Advanced ---> Multicast page to enable the multicast feature.

	from 2000-65535									
	m highest 9 to lowest 1 ream with higher priority	y will super	sede the lo	wer on	e					
Priority	Multicast Address	Multic	ast Port		Name	Relay Control		Volume		
1			2000	+	Background-Music	Disabled		-	90	+
2	239.168.15.206		2200	+	1	Slow Flashing			90	+
3			2000	+		Disabled		-	90	4
4			2000	+		Disabled		-	90	3
5			2000	+		Disabled		-	90	1
6			2000	+		Disabled		-	90	ų.
7			2000	+		Disabled		-	90	J
В			2000	+		Disabled		-	90	
9			2000	+		Disabled		-	90	Ч

Multicast

• Priority:

Priority from highest 9 to lowest 1.

Multicast Address: The multicast address range is 224.0.0.0 – 239.255.255.255.

The multicast port range is 2000 - 65535.

- Multicast Port:
- Name:

•

- : Customize the name of the multicast address.
- Relay Control: Options to choose from are 'Disabled', 'On', 'Fast Flashing', 'Slow Flashing'.

5.4 Prompt Language

The language of local voice prompts, like IP address announcements. Currently, only Chinese and English are provided.

Please go to Advanced ---> Prompt Language page to set a voice prompt language.

Voice Prompts Language:	English	
	Submit	

Prompt Language

5.5 Audio Files

The Audio files section allows users to self-upload up to 5M of audio files to the endpoint and use it as a ringtone or Play API audio file. Please click on the 'Select audio file' button to select and upload the local audio file, then click on the 'upload' button to upload it. Click on the 'play' to test and play the audio file and the 'delete' button for deleting the audio file. Please go to Advanced ----> Audio Files to manage the audio files.

Audio Files Upload			
Audio files only accept w			
Current disk space rema	aining: 5.1M		
Custom audio file 1	Currently set to default	Select audio file 🛆	Upload Play Delete
Custom audio file 2	Currently set to default	Select audio file 🔺	Upload Play Delete
Custom audio file 3	Currently set to default	Select audio file 👁	Upload Play Delete
Custom audio file 4	Currently set to default	Select audio file 🔺	Upload Play Delete
Custom audio file 5	Currently set to default	Select audio file 👁	Upload Play Delete

Audio Files

6. System Settings

6.1 Network

SL50 uses DHCP to dynamically obtain IP addresses by default.

To change the IP assignment from DHCP to Static IP, please go to **System--> Network** page. Turn the DHCP switch button off to show the network parameter settings.

Access Type:	HTTP	
DHCP:		
• IP Address:	192.168.1.101	
* Subnet Mask:	255.255.255.0	
* Gateway:	192.168.1.1	
* Primary DNS:	114.114.114.114	
* Alternative DNS:	8.8.8.8	

Network Configuration

- Access Type: Specify the access method of the website, which currently supports HTTP and HTTPS.
- **IP Address:** Enter a vacant IP address within your LAN.
- **Subnet Mask:** Enter the subnet mask of your LAN.
- Gateway: Enter the default gateway of your LAN, this is essential for the device when the IP Audio Center or other SIP server is installed outside the LAN.
- **Primary DNS:** Enter an effective primary DNS server address.

• Alternative DNS: Enter an alternative DNS server address, when the primary DNS fails, alternative DNS will be used.

6.2 Time

SL50 obtains the time from the network time servers using NTP.

To change the NTP settings, please go to System --> Time page.

Time		
Current Time:	2023-11-02 09:42:53	
NTP:		
* NTP Server:	pool.ntp.org	
Time Zone:	Asia/Chongqing	
	Submit	

Time Settings

- **Current Time:** Display the current system time of the device.
- **NTP:** Enable/Disable using NTP to obtain the time.
- **NTP Server:** The network time server used to obtain the time.
- **Time Zone:** Set the time zone used by the device.

6.3 Account

For resetting the current device's password, please go to **Settings --> Password Settings** page.

Username:	admin	
* Old Password:		
* New Password:		

Web Password Settings

- **Old Password:** This setting represents the current user password.
- New Password: This setting represents the new password user would like to set up.

6.4 Upgrade

To upgrade the device's firmware, please go to **System --> Upgrade** page.

Current Firmware Info	
Current Firmware Version:	s1.2.8
Last Update:	2023-11-03
Upgrade	
Reset Factory Defaults:	Warning: It will take around 150 seconds to complete the upgrade process, during the upgrade process please DO NOT power-off the device!
Firmware:	Drag files here, or Click Upload

Upgrade Settings

- Current Firmware Version: Displays the version currently used by the system.
- Last Update: Displays the last system updating time.
- Reset Factory Defaults: Specify whether to restore factory settings when upgrading.
- Firmware: Click to select the firmware that needs to be used to upgrade the current device.

6.5 Reboot & Reset

SL50 can be rebooted and reset from the web management interface.

If you need to reboot or reset the device, please go to System --> Reboot & Reset page.

Reboot	
Warning: Rebooting the device will interrupt all ongoing broadcasting, intercom and calls!	
Reset	
Warning: Resetting the device will interrupt all ongoing broadcasting, intercom and calls, and it will empty all configurations!	

Reboot & Reset Settings

Users can restart the device without power failure on this page. The restart process takes about 10 seconds. After the restart is complete, refresh the page to log in again. If you need to restore the factory settings of the SL50, you can reset it through this page or you can press and hold the RST button for more than 10 seconds and release it. After hearing the broadcast voice, the device will enter the state of restoration. The key will flash once. After restarting, the pop-up window disappears, and the device is restored successfully. *Note: Restoring factory settings will erase all user settings, please operate with caution!*

bmit					
	omit	DMIL	DITIL	DITIL	omit

Reboot Schedule

When the Reboot Schedule feature is Enabled, you can set up the automatic reboot daily, weekly, or monthly at a specified time.

7. Maintenance

7.1 Diagnostic

Ping is a network administration utility or tool used to test connectivity on an IP network. Input other devices' IP addresses and click on the submit button to trace the network route. Please go to **Maintenance --> Diagnostic** page to execute ping command.



Ping

7.2 Ethernet Capture

The purpose of the Ethernet capture tool is to capture Ethernet network packets and store them in a standard Wireshark-compatible packet capture '.pacp' file for immediate viewing and data analysis.

Please go to **Maintenance --> Ethernet Capture** page to operate.

Ethernet Capture		
	Start	

Ethernet Capture

7.3 Import/Export

This page is used to import and export the current configuration of the device, and you may use this configuration file to backup and/or recover. Both YAML and JSON formats are supported.

Please go to **Maintenance --> Import/Export** page to backup or recover.

Export	
	Expert YAML Expert JSON
Import	
	Warning: Only yaml/json configuration file format is permitted. When importing a new configuration file, all ongoing broadcasts and/or calls will be interrupted. The device will restart with the new configuration after the process is
	done.
	0
	Drag files here, or Click Upload

Import/Export

7.4 Auto Provisioning

The system is supporting DHCP Option 066 and static TFTP/HTTP two auto provisioning methods.

When the system starts by default and the network mode is in DHCP, it will try to grab option 066 from the DHCP data as the TFTP server address. If the system couldn't get the option information, it will use the below Static Provisioning Server data to obtain the configuration file. When the system starts, and the network mode is in Static, it will use the below Static Provisioning Server data to directly obtain the configuration file.

The configuration file name's format rules:

1) all letters in the server MAC address need to be uppercase.

2) all colons ":" need to be removed. For example, 68692E290012.

Please go to Maintenance --> Auto Provisioning page to configure static server.

DHCP Provisioning Server					
	y default and the network mode is in DHCP; it will try to grab option 066 from the DHCP data as the TFTP server address. If the system couldn't get the option information, it will use the below Static Provisioning Server data to obtain the system starts, and the network mode is in Static, it will use the below Static Provisioning Server data to directly obtain the configuration file.				
The configuration file nam	The configuration file name's format rules:				
1) all letters in the server	MAC address need to be uppercase				
2) all colons ":" need to be	removed. For example, 68692E290012				
Static Provisioning Server					
Access Mode:	TFTP V				
TFTP Server Address:	10.10.1.5				
Configuration Format:	V NO2L				
State of the state of the state					
Configuration Filename:	\$macjson				
Update Mode:	Update after reboot				
	Submit				

Auto Provisioning

7.5 Test

The detection feature provides an option for the user to check whether the speaker,

microphone and relay will work functionally before registering it to the server.

Please go to **Maintenance --> Test** page to test whether the component is working properly.

Speaker Test		
	Start Test	

Test Settings

• Speaker Test: Click on the Start Test button, and the speaker will play a ringtone to test whether the speaker is working. If the speaker is working functionally, you should hear the voice back.

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