COM-MIC-HUB

Microphone Hub

User Manual

Version: V1.0.0

Important Safety Instructions

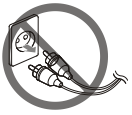
1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

6. Clean this apparatus only with dry cloth.

2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.

7. Unplug this apparatus during lightning storms or when unused for long periods of time.

3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



8. Protect the power cord from being walked on or pinched particularly at plugs.

4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Only use attachments / accessories specified by the manufacturer.

5. Do not place sources of naked flames, such as lighted candles, on the unit.

10. Refer all servicing to qualified service personnel.

Table of Contents

Introduction

This product is a microphone controller designed to work with wireless and digital cascading microphones to manage and control sound system in conference rooms and classrooms.

Features

- Supports two microphone inputs, one for wired digital microphones and another for the wireless microphone.
- Allows up to five digital microphones (e.g. APO-SKY-MIC) to be cascaded together, significantly expanding the pickup distance.
- Provides connection of either one USB-B host or two 5-pin phoenix connectors with a computer.
- Supports AEC (Acoustic Echo Cancellation), making remote attendees hear clearly what people are saying in near end.
- Supports audio ducking processing, ensuring the speaker's voice is always heard over background sound, loud and clear.

Package Contents

1x COM-MIC-HUB
1x DC 12V 2A Power Supply (US/EU/UK/AU)
3x 5-pin Phoenix Male Connector
2x 3-pin Phoenix Male Connector
3x 2-pin Phoenix Male Connector
4x Mounting Brackets
1x Quickstart Guide

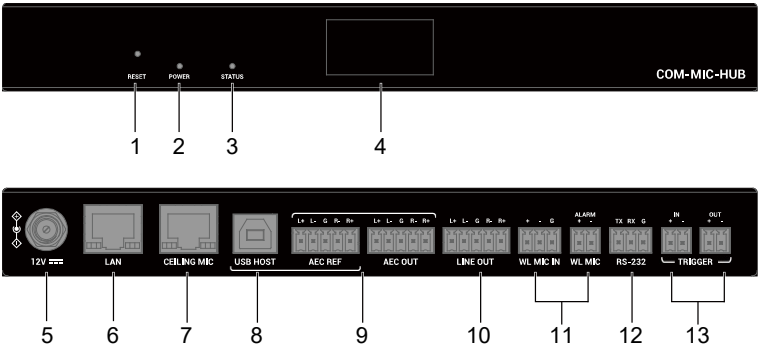
Specifications

Audio	
Input	1x RJ45 (CEILING MIC) 1x USB Type-B (USB HOST) or 1x 5-Pin phoenix female connector (AEC REF) 1x 3-Pin phoenix female connector (WL MIC IN)
Output	1x USB Type-B (USB HOST) or 1x 5-Pin phoenix female connector (AEC OUT) 1x 5-Pin phoenix female connector (LINE OUT)

Control	
Control Method	LAN (Web UI)

General	
Operating Temperature	0°C ~ 40°C (32°F to 104°F), 10% to 90%, non-condensing
Storage Temperature	-20°C ~ 60°C (-4°F to 140°F), 10% to 90%, non-condensing
Power Supply	DC 12V 2A
Power Consumption	10.2W (Max)
Dimension (W x H x D)	215mm x 25mm x 120mm / 8.46" x 0.98" x 4.72"
Net Weight	0.69kg/1.52lbs

Panel Description



#	Name	Description
1	RESET	Use a pointed stylus to press and hold this recessed

#	Name	Description
		button for at least 5 seconds to reset the device to factory defaults.
2	POWER LED	**On:** The device is powered on. **Off:** The device is powered off.
3	STATUS LED	**On:** The device is working properly. **Blinking:** The device is being upgraded. / The device is reset to factory defaults. **Off:** The device is powered off.
4	LCD Display	Displays the device's IP address and firmware version. Example: 192.168.10.254 V1.0.22
5	12V	Connect to the power adapter provided for DC 12V power input.
6	LAN	Connect to a LAN for Web UI and Telnet control.
7	CEILING MIC	Connect to one or multiple cascading ceiling microphones for capturing sound and charging these microphones. **Note:** The device allows up to five microphones to be cascaded together.
8	USB HOST	USB Type-B port. Connect to a PC for receiving reference signal of PC, and for transmitting the microphone signal (with echoes eliminated) to the PC. **Note:** You can select either USB HOST port or AEC REF & AEC OUT ports to connect to the PC. When both are connected to the PC, only one alternative is available. For more information, refer to Audio Mode section.
9	AEC REF	• **AEC REF:** Connect to a PC for receiving reference signal of PC. • **AEC OUT:** Connect to a PC for transmitting the microphone signal (with echoes eliminated) to the PC. **Note:** "AEC REF" and "AEC OUT" are designed to be used together. You can select either AEC REF & AEC OUT ports or USB HOST port to connect to the PC. When both are connected to the PC, only one alternative is available. For more information, refer to Audio Mode section.
9	AEC OUT	
10	LINE OUT	Connect to an audio receiver (e.g. a speaker) for outputting sound.

#	Name	Description
11	WL MIC IN	• **WL MIC IN:** Connect to a wireless microphone receiver for capturing sound. • **WL MIC (ALARM):** Connect to a wireless microphone receiver for alarm signal input. **Note:** When the "WL MIC (ALARM)" detects alarm signal input, the device will give an alarm on web UI, and can send the alarm to the external control system through the LAN, RS232 or TRIGGER OUT port. "WL MIC (ALARM)" is designed to be used in conjunction with "WL MIC IN".
11	WL MIC (ALARM)	
13	RS232	Connect to an RS232 device (e.g. a control system) for bidirectional serial communication.
14	TRIGGER IN	Input port for signal input from the third-party control system. Input mode: contact closure or voltage input (3.3V ~ 5A).
14	TRIGGER OUT	Output port for signal output to the third-party control system. Output mode: contact closure or 5V voltage.

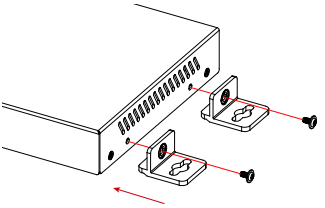
Installation

Warning:

Disconnect the device from power source before installation.

The device can be installed on a flat surface, see the following:

1. Position and install the mounting brackets (two for each side) using the mounting screws provided.

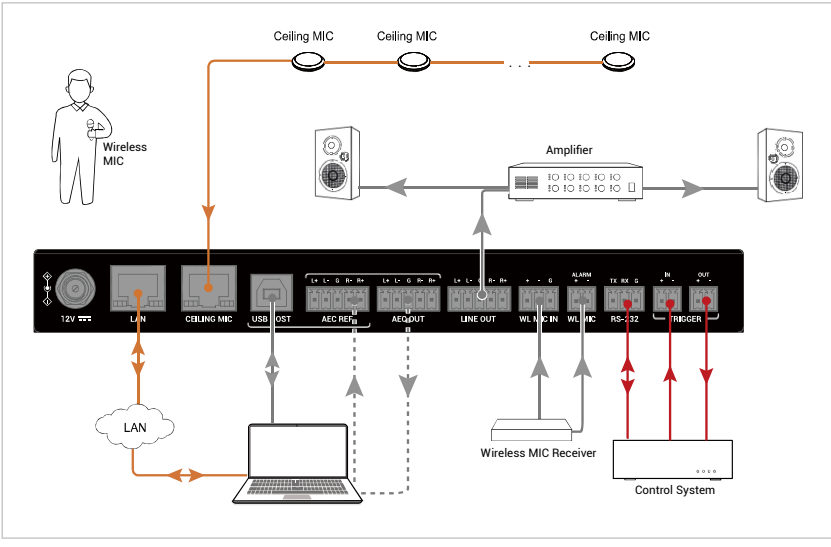


2. Repeat above step for the other side of the device.
3. Attach the brackets to the desired location.

Typical Application

Important:

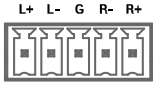
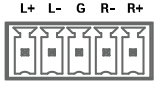
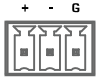
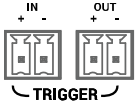
- Before wiring, disconnect the device from power source.
- During wiring, connect and disconnect the cables gently.



Note: After the device is connected to a computer, it can be detected by the system and specific applications as a speaker and a microphone in the name of **COM-MIC-HUB**.

Pinout Information

#	Pinout	Description
1	L+ L- G R- R+ AEC REF	For balanced stereo input: • "L+": Connects to left positive. • "L-": Connects to left negative. • "G": Connects to ground. • "R-": Connects to right negative. • "R+": Connects to right positive.

#	Pinout	Description
2	 AEC OUT	For balanced stereo output: • “L+”: Connects to left positive. • “L-”: Connects to left negative. • “G”: Connects to ground. • “R-”: Connects to right negative. • “R+”: Connects to right positive.
3	 LINE OUT	For balanced stereo output: • “L+”: Connects to left positive. • “L-”: Connects to left negative. • “G”: Connects to ground. • “R-”: Connects to right negative. • “R+”: Connects to right positive.
4	 WL MIC IN	For balanced mono output: • “+”: Connects to positive. • “-”: Connects to negative. • “G”: Connects to ground.
5	 WL MIC	For voltage input: • “+”: Connects to high level end. • “-”: Connects to low level end.
6	 RS-232	For bidirectional serial communication: • “TX”: Connects to RX (Receiving end). • “RX”: Connects to TX (Transmitting end). • “G”: Connects to ground.
7		IN: For signal input. OUT: For signal output. • “+”: Connects to high level end. • “-”: Connects to low level end.

Web UI

The Web UI is an intuitive interface for users to manage and control the device with ease through a browser. A Chrome, Safari, Microsoft Edge or Firefox browser is recommended.

Accessing the Web UI

The device comes with a default IP address **192.168.10.254**, and subnet mask is 255.255.0.0.

To access the web UI:

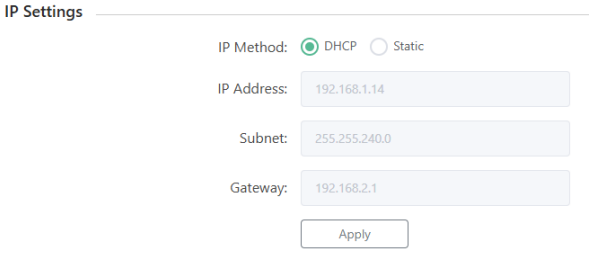
1. Connect the LAN port of the device to your PC using an Ethernet cable.
2. Set your PC to the same network segment as the device.
3. Input the device's IP address in your browser and press Enter. Enter the username and password (default username and password are “admin"), and click “Login".
4. For the first login, you need to set a new login password. Input a new password in the window and click “Apply” to enter the main page.

   Note: The new password must be 4 to characters in length including alphanumeric, hyphens (“-"), underscores (“_") or periods (“.").

The main page consists of three tabs: IP Settings, Audio and System.

IP Settings

IP Settings



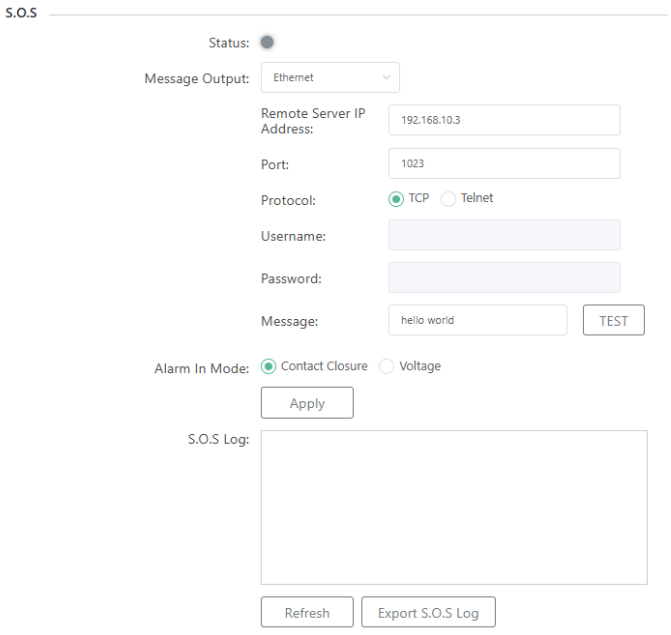
The device provides static and DHCP IP setting.

- **IP Method:**
  - **DHCP:** Select to make the DHCP server dynamically assign an IP address to the device.
  - **Static:** Select to set a static IP address for the device

  Default setting: Static
- **IP Address:** Default setting is 192.168.10.254.
- **Netmask:** Set subnet mask manually for the device when Static is selected
  Default setting: 255.255.0.0
- **Gateway:** Set gateway address manually for the device to communicate with another network when Static is selected.
- **Apply:** Click to apply the settings.

S.O.S

This section is used to configure the input and output ports as well as messages for the alarming system.



- **Status:** Displays the alarming system's current state. Grey icon indicates that the alarm doesn't go off; while red icon indicates that the alarm is going off.
- **Message Output:** Select the output port for the messages to be sent.
  - **Ethernet:** Select the LAN port for the message to output.
    - ⇨ Remote Server IP Address & Port: Input the server's IP address and port number.
    - ⇨ Protocol: Select the transport protocol between TCP and Telnet. When Telnet is selected, please enter the username and password to log on to the server.
    - ⇨ Message: Input the message content to be sent.
  - **RS232:** Select the RS232 port for the message to output.
    When RS232 is selected, you shall configure the following serial parameters properly.
    - ⇨ Baud Rate/Data Bits/Parity/Stop Bits
      Default setting: 115200n-1

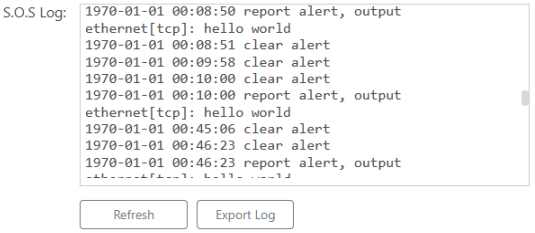
- ⇨ Hex Mode: To define the format for the serial string. Available options: ASCII, Hex
- ⇨ Append Carriage-Return/Line-Feed: When enabled, the carriage return or line feed terminator will be added for each command to be sent.
- ⇨ Command: Input the command content to be sent.

■ **Contact:** Select the "TRIGGER OUT" port for the signals to output.

- ⇨ Output Mode: Select signal output mode between Contact Closure and Voltage (5V).

■ **TEST:** Select to send the message/signal through the selected output port.

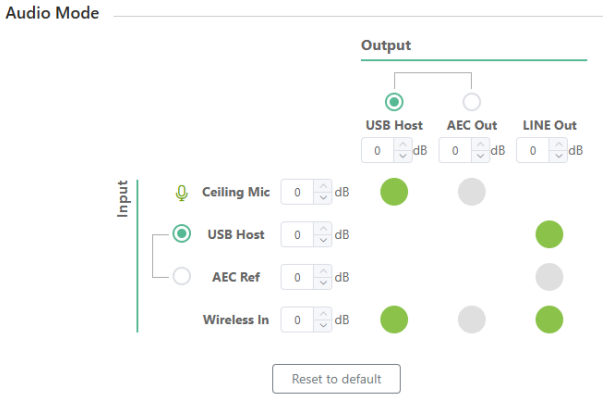
- **Alarm In Mode:** Select signal input mode between Contact closure and Voltage (3.3V - 5V).
- **Apply:** Click to apply the settings.
- **S.O.S Log:** Displays the S.O.S operation log.



- **Refresh:** Click to refresh the S.O.S log.
- **Export S.O.S Log:** Click to export the S.O.S log to a local computer.

Audio

Audio Mode



This section is for audio routing between inputs and outputs, here are what you should note:

(1) The device includes three input channels and two output channels, among which there're two groups of mutually exclusive options—between USB Host and AEC Ref, and between USB Host or AEC Out. By default, USB Host channel is selected. If you want to select AEC Ref and AEC Out channel, you need to tap the correspondingbuttons respectively.

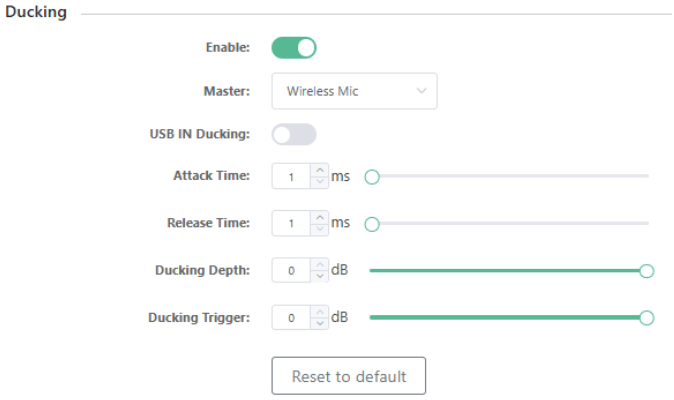
(2) The device allows you to route between one input and a certain output as the following.

Input \ Output	USB Host or AEC Out	LINE Out
Ceiling MIC (RJ45)	✓	N/A
USB Host or AEC Ref	N/A	✓
Wireless In	✓	✓

In the Input and Output matrix, tap the button that corresponds to the input and output, if the button turns green, it indicates the input is bound to the output; if the button turns grey, it indicates that the input is unbound to the output.

- **dB:** Define the volume in dB for the input and output audio.
- **:** Click to mute/unmute the ceiling mics.
- **Apply:** Click to apply settings.
- **Reset to default:** Click to reset audio settings.

Ducking



This section is for settings of audio ducking which is simply the process of lowing (or "ducking down") the volume of an audio signal whenever another audio signal goes above a predefined threshold.

- **Enable:** Click to turn on/off audio ducking function. Default setting is on.
- **Master:** Select one audio input as a ducking master between Wireless MIC and Ceiling MIC. When Wireless MIC is selected, the volume of the Ceiling MIC input will be ducked down once ducking is triggered, and vice versa.

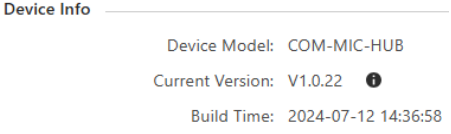
  Default setting is Wireless MIC.
- **USB IN Ducking:** Click to turn on/off audio ducking for USB IN. Default setting is off.
- **Attack Time:** Drag over the slider to specify the time it takes to lower the volume to the Ducking Depth after the Ducking Trigger threshold is met. Default setting is 100ms.
- **Release Time:** Drag over the slider to specify the time it takes to return to the regular volume from Ducking Depth. When the release time times out,

the ducking audio's volume comes back up to its normal volume.
Default setting is 1000ms.

- **Ducking Depth:** Drag over the slider to specify the volume reduction. The lower the value is set, the lower the volume of the specified audio input is when ducking is triggered.
  Default setting is -20dB.
- **Ducking Trigger:** Drag over the slider to specify the volume threshold for ducking to occur. The lower the value is set, the easier the ducking is triggered.
  For example, if ducking trigger is set as -30dB, the ducking is triggered when the ducking master's volume reaches -30dB.
  Default setting is -30dB.

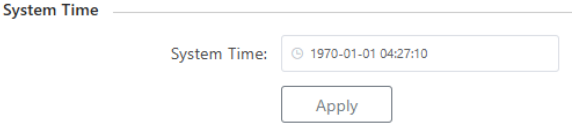
System

Device Info



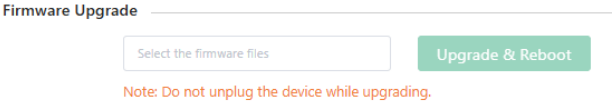
- **Device Model:** Displays the device model#.
- **Current Version:** Displays the device's firmware version.
- **Build Time:** Displays the firmware's build time.

System Time



This section is for defining the system time and date.

Firmware Upgrade

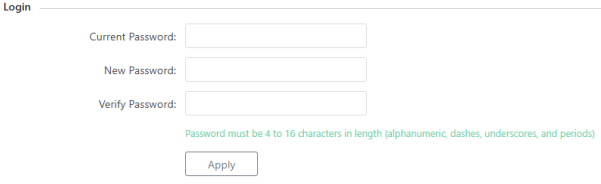


To upgrade the device's firmware, complete the following:

1. Contact the manufacturer for the latest firmware file (*.bin) and download it on your computer.
2. Click "Upgrade & Reboot" to select the firmware file to upload to the device.
3. The upgrade process may take several minutes. After upgrading is complete, the device will reboot. Please refresh the web UI page and log in again.

Note: Do not cut off power for the device during upgrade process.

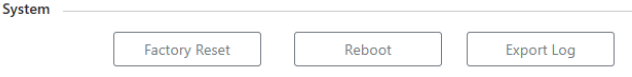
Login



This section is for setting a new login password. Enter the current password and the new password in the corresponding fields, and click "Apply" for settings to take effect.

Note: The new password must be 4 to 16 characters in length, including alphanumeric, hyphens ("-"), underscores ("_") and periods (".").

System



- **Factory Reset:** Click to reset the device to factory defaults. After the device is reset, you need to wait for 40 seconds to log on to the web UI by refreshing the web page.
- **Reboot:** Click to reboot the device.
- **Export Log:** Export the system log.