Ceiling

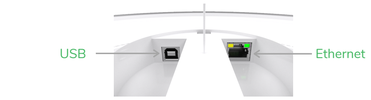
User Manual

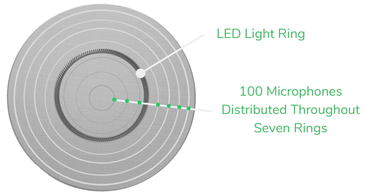
stem audio

model: ceiling1

Overview

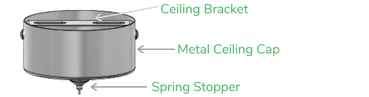
Stem Ceiling is a microphone array designed to be mounted above a conferencing space. Whether low profile mounted on a drop ceiling or suspended like a chandelier, Ceiling gives you the aesthetics you need with uncompromising performance. Ceiling's 100 built-in microphones and three array options (wide, medium, and narrow), focus on who's speaking so you can focus on your meeting.

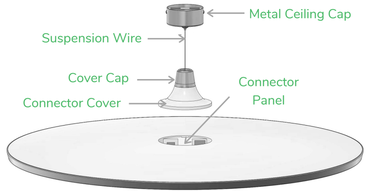




Setting Up

All Stem endpoints can be used as solo standalone devices or in unison with other devices within the Stem ecosystem. If you plan on using this device as an individual unit, then follow the standalone setup instructions. If you plan on using multiple Stem devices in your room, then skip ahead to the multiple device setup instructions.





Standalone Setup (option 1)

Note: Since Ceiling does not have speakers, standalone set up should only be used for audio capturing. If you plan on using this device for conferencing, please refer to multi-device set up so that you can utilize either another Stem device with speakers or install it alongside a Hub which will allow you to connect to external speakers.

1. Mount the device in a desired location in the room.
2. Using an Ethernet cable, connect the device to a network that supports PoE+. *This connection provides the device with power, data, and other IoT and SIP capabilities.*

   Note: If your network doesn't support PoE+, you should purchase a separate PoE+ injector or PoE+ enabled switch.
3. If you need video conferencing capabilities, use the USB type B cable provided and connect the device to your PC.
4. Lastly, we recommend you complete setting up your room via the Stem ecosystem platform. For more information on setting up your room, you can visit **stemaudio.com/manuals** or **stemaudio.com/videos**

   Note: The ecosystem platform is available on the Stem Control or in iOS, Windows, and Android apps. You can also access the platform through your web browser by typing in the product's IP address.
5. That's it! Your Ceiling is all set up to work as a standalone device.

Multi-Device Setup (option 2)

1. Mount the device in a desired location in the room.
2. Using an Ethernet cable, connect the device to a network that supports PoE+. *This connection provides the device with power, data, and other IoT and SIP capabilities.*

   Note: If your network doesn't support PoE+, you should purchase a separate PoE+ injector or PoE+ enabled switch.
3. When setting up multiple Stem devices in a room, make sure you have a Hub. All communications between the device and the far-end will be done through the Hub, so *no USB connection is needed.*
4. Since Ceiling does not have speakers, make sure you're also utilizing either a Stem Wall or Stem Table in the room (both have speakers). Otherwise, you can connect external speakers to your Hub for sound.
5. You must complete setting up your room via the Stem ecosystem platform. For more information on setting up your room, you can visit **stemaudio.com/manuals** or **stemaudio.com/videos**

   Note: The ecosystem platform is available on the Stem Control or in iOS, Windows, and Android apps. You can also access the platform through your web browser by typing in the product's IP address.
6. That's it! Your Ceiling is all set up to work within the Stem ecosystem.

Suspended "Chandelier" Mounting

1. Connect the necessary Ethernet and optional USB cable to the device.
2. Using the screw at the bottom of the suspension wire, screw in the wire to the device.
3. Slide the connector cover and the cover cap over the suspension wire.
4. Align the plastic connector cover with the indents and gently click it into place followed by the cover cap.
5. Unscrew the ceiling bracket from the metal ceiling cap and connect the bracket to a weight-bearing structure.
6. Feed all of the cables through the cable hole on the metal ceiling cap and connect the suspension cable by pressing up on the spring stopper and feeding the wire through.
7. Now you can determine your desired suspension length for the cable.
8. Lastly, screw in the metal ceiling cap into the ceiling bracket to complete the installation.

Low Profile Mounting

1. First, make all of the appropriate connections on your Ceiling device.
2. Then, using the provided center screw, secure the Ceiling device to the included straight bracket.
3. Next, drop the Ceiling device with the secured straight bracket connected into the provided square mount.
4. Then align the holes on the side of the mount with the holes on the side of the bracket on the side and use screws to connect the mount to the bracket.
5. Once the unit is connected to the square mount, it's time to drop it into the suspended ceiling.
6. After the device has been placed in the suspended ceiling, make sure to secure it to the structure by using the wire holes on the square mount corners and the provided gripple kit.
7. That's it! Your Ceiling is now low profile mounted!

Light Guide

Light Activity	Device Function
Slow red pulsing	Device is muted
Rapid red pulsing (approx. two seconds)	Device is being pinged
Solid red ring	Device error
Slow blue pulsing	Device is booting up
Slow blue pulsing then light turns off	Device is restarting
Blue light turning completely on & off repeatedly	Device is adapting & testing the environment
Dim solid blue light	Device is on
Rapid blue pulse	Device is finishing booting up

Product Specs

Connections

- USB: USB Type B
- Ethernet: RJ45 connector (requires PoE+)

Specs

- Frequency response 50Hz – 16KHz
- Broadcast level (peak): 90dB SPL @ 1Khz from 1m (5 watts RMS)
- Noise cancellation > 15dB (without pumping noise)
- 100% full duplex – no attenuation (in either direction) during full duplex
- High-end performance conforms to ITU-T G.167
- Acoustic echo cancellation > 40dB with conversion speed of 40dB/sec
- Residual echo is suppressed to the environment noise level, preventing artificial ducking of signal
- 100 high-quality directional microphones
- Direction-finding algorithm (determines the presence and direction of a speaker)
- Automatic voice-level adjustment (AGC)
- Ceiling Tile Weight: 7.5 lbs. (3.4 kg)
- Ceiling Microphone Weight: 9lbs. (4.1 kg)
- Ceiling Tile Dimensions: Length: 23.5 in. (59.7 cm) Width: 23.5 in (59.7cm) Height: 1.25 in. (3.2 cm)
- Ceiling Microphone Dimensions: Diameter: 21.5 in. (54.6 cm) Height at edge: 0.5 in. (1.8 cm) Height at center: 1.75 in (4.4 cm)
- Power Consumption: PoE+ 802.3 at Type 2
- Operating Systems: Windows 98 and up / Linux / MacOS.

Complies with:

- AS/NZS CISPR 32:2015
- EN 55032:2012/AC:2013
- VCCI 32-1
- FCC 15.109:2019
- FCC 15.109(g):2019
- ICES-003:2016 updated April 2017

Warranty

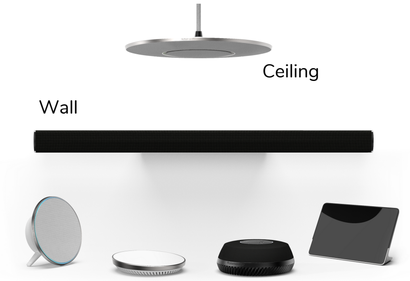
The following warranty statement is effective for all Stem Audio products as of May 1st, 2019. Stem Audio warrants that this product is free of defects in both materials and workmanship. Should any part of this product be defective, the Manufacturer agrees, at its option, to repair or replace with a like-new replacement any defective part(s) free of charge (except transportation charges) for a period of two years for all products. This warranty period begins on the date the end-user is invoiced for the product, provided the end-user provides proof of purchase that the product is still within the warranty period and returns the product within the warranty period to Stem Audio or an authorized Stem Audio dealer according to the Product Return and Repair Policy listed below. All inbound shipping costs are the responsibility of the end-user, Stem Audio will be responsible for all outbound shipping costs.

Product Return and Repair Policy
1. Return to seller if purchased through an authorized dealer Proof of purchase date from reseller within the warranty period must be provided by the end-user Seller may, at its discretion, provide an immediate exchange or repair or may return the unit to the manufacturer for repair
2. Return to Manufacturer
   a. An RMA (return merchandise authorization) number must be obtained by the end user from Stem Audio
   b. The end-user must return the product to Stem Audio with proof of purchase (showing purchase date) for a warranty claim, and display the RMA number on the outside of the shipping package.

THIS WARRANTY IS VOID IF:
The product has been damaged by negligence, accident, act of God, or mishandling, or has not been operated in accordance with the procedures described in the operating and technical instructions; or; The product has been altered or repaired by other than the manufacturer or an authorized service representative of the Manufacturer; or; Adaptations or accessories other than those manufactured or provided by the Manufacturer have been made or attached to the product which, in the determination of the Manufacturer, shall have affected the performance, safety or reliability of the product; or; The product's original serial number has been modified or removed.
NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE, APPLIES TO THE PRODUCT. MANUFACTURER'S MAXIMUM LIABILITY HEREUNDER SHALL BE THE AMOUNT PAID BY THE END USER FOR THE PRODUCT.

The manufacturer shall not be liable for punitive, consequential, or incidental damages, expenses, or loss of revenue or property, inconvenience, or interruption in operation experienced by the end-user due to a malfunction in the purchased product. No warranty service performed on any product shall extend the applicable warranty period. This warranty extends only to the original end-user and is not assignable or transferable. This warranty is governed by the laws of the State of California.
For more information or technical support please refer to our website www.stemaudio.com, email us at customerservice@stemaudio.com, or call (949) 877-7836.

The Ecosystem



Need Some Help?

Website: stemaudio.com

Email: customerservice@stemaudio.com

Telephone: (949) 877-STEM (7836)

Product Quickstart Guides:
stemaudio.com/manuals

Product Setup Videos:
stemaudio.com/videos