TeamConnect Ceiling M Plus

ceiling microphone array

PDF export of the original HTML manual

Contents

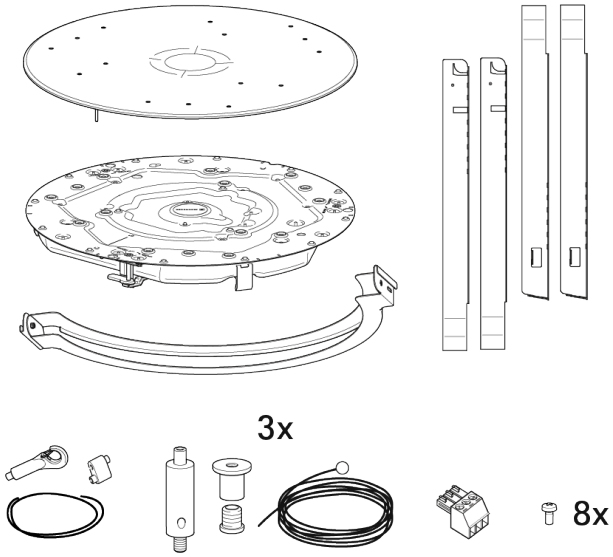
1. Product information

Information about the scope of delivery, the device's structure and connections, and available accessories.

Scope of delivery

The TeamConnect Ceiling M Plus is available in the following variants:

Ceiling Mic Flush Mount Set:

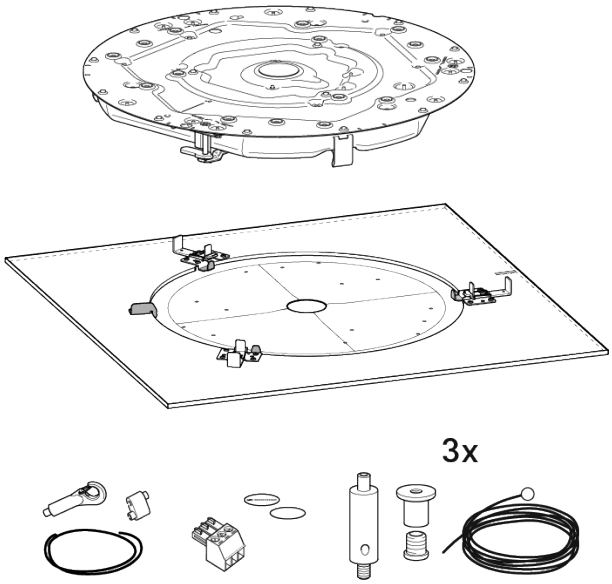


TCC M Plus F-W | White version | Item no. 700507

TCC M Plus F-B | Black version | Item no. 700508

- TeamConnect Ceiling M Plus ceiling microphone
- Ceiling flush mount kit
- Front panel
- Ceiling suspension set
- Installation rope
- 3-pin Phoenix connector (3.81)
- 8 × M3×6 fillister head screws

Ceiling Tile Set:

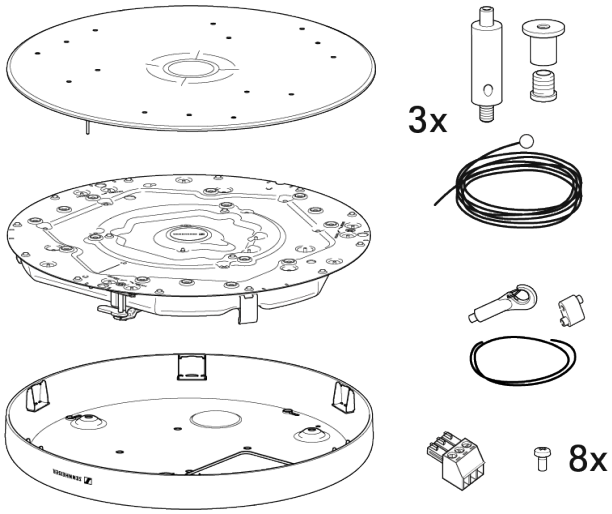


TCC M Plus CT-W | 60 cm grid ceiling set | Item no. 700519

TCC M Plus CT-W 2FT | 2 ft grid ceiling set | Item no. 700520

- TeamConnect Ceiling M Plus ceiling microphone
- Ceiling Tile mounting plate
- Installation rope
- Ceiling suspension set
- 3-pin Phoenix connector (3.81)

Ceiling Mic Housing Set



TCC M Plus S-W | White version | Item no. 700509

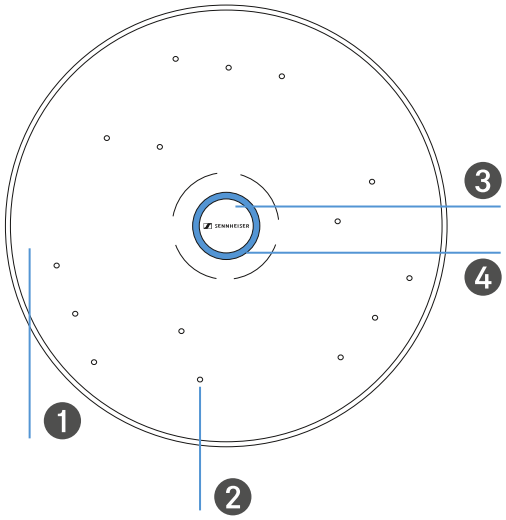
TCC M Plus S-B | Black version | Item no. 700510

- TeamConnect Ceiling M Plus ceiling microphone
- Design housing
- Front panel

- Ceiling suspension set
- Installation rope
- 3-pin Phoenix connector (3.81)
- 8 × M3×6 fillister head screws

Front and back

Front



1 Front panel

2 Microphone capsules (15x)

3 Removable logo plate

See Replacing the logo plate

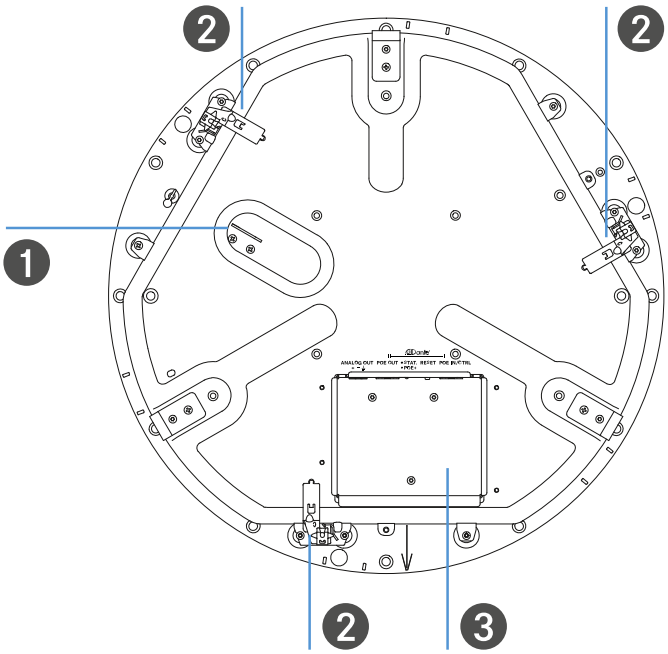
4 Status LED ring

Green: device is switched on (factory setting, adjustable)

Red: device is muted (factory setting, adjustable)

Blue: custom color

Rear



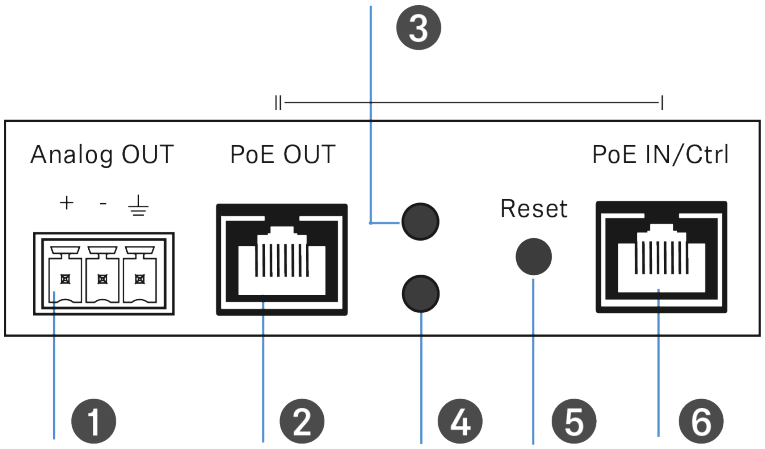
1 Hook for suspension cable

2 Clamp for installation in ceiling chassis or design housing

3 Cable compartment with connection sockets

See Connectors and controls

Connectors and controls



1 **Analog OUT**

Analog audio output

3-pin socket

Suitable for Phoenix Contact MCVW 1.5-3-ST-3.81

See Outputting analog audio signals

2 **PoE OUT**

RJ-45 socket

Daisy chaining

See Outputting digital audio signals

3 **Daisy chain status LED**

Flashing: too many devices or insufficient power supply

Steady light: daisy chain device connected

4 **PoE status LED** (Power over Ethernet)

Steady light: PoE connected / 30-60 W connected

5 **Reset button**

To reset to factory settings, press and hold the reset button for at least 5 seconds.

6 **PoE IN / CTRL**

RJ-45 socket

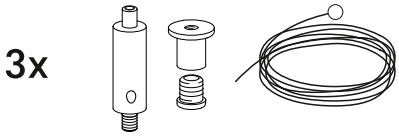
Power supply via PoE

Configuration via the software or a media control system

See Connecting to a network

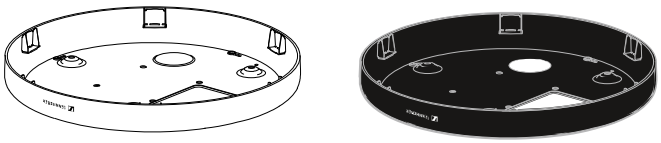
Accessories

Ceiling suspension set



TCC M SK | Ceiling microphone M suspension set | Item no. 700237

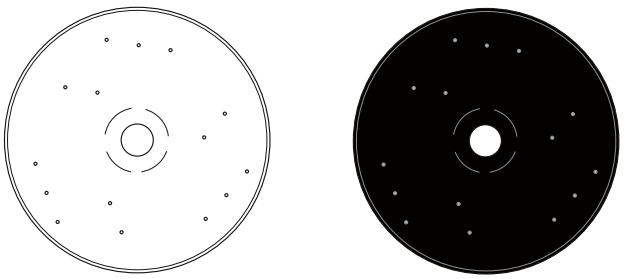
Ceiling microphone housing



TCC M H-W | Ceiling microphone housing, white | Item no. 700238

TCC M H-B | Ceiling microphone housing, black | Item no. 700239

Front panel



TCC M SFP | Replacement front panel, white | Item no. 700235

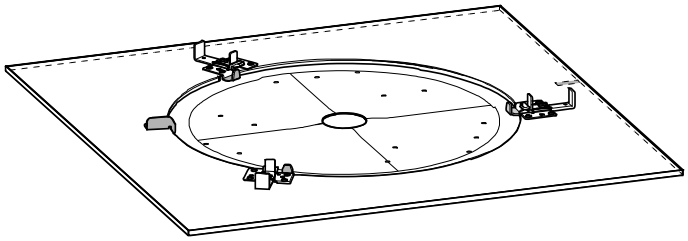
TCC M SFP | Replacement front panel, black | Item no. 700236

Logo plate

TCC M SLP | Replacement logo plate, white | Item no. 700673

TCC M SLP | Replacement logo plate, black | Item no. 700672

Square front panel



TCC M CTFP-W | Square front panel, 60 cm | Item no. 700515

TCC M CTFP-W 2FT | Square front panel, 2 ft | Item no. 700516

Mounting set

TCC M SFK | Mounting kit for flush mounting | Item no. 700305

Plenum cover

TCC PC | Cover plate for cable compartment | Item no. 700676

2. Instruction manual

Information on planning, installation, commissioning, operation, and control.

Planning and installation

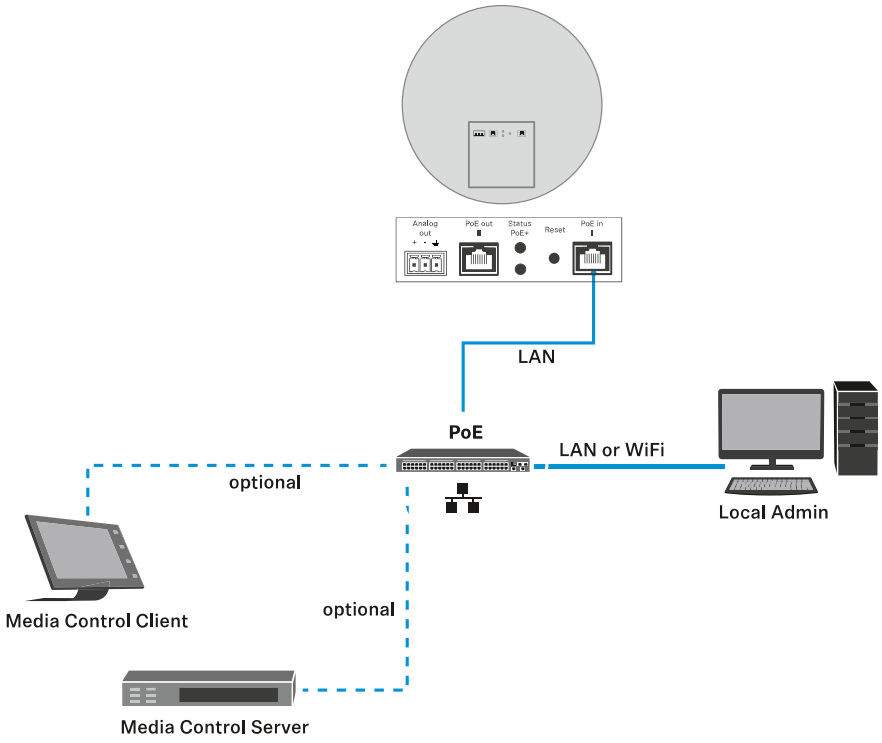
Information about connecting to a network, audio output and installation planning.

Connecting to a network

Power supply and configuration

The TeamConnect Ceiling M Plus is supplied with power via Power over Ethernet through the RJ-45 Ethernet PoE/Ctrl socket and can be configured using the local web UI (LUI). In your network, either use a switch that provides PoE or alternatively use a PoE injector.

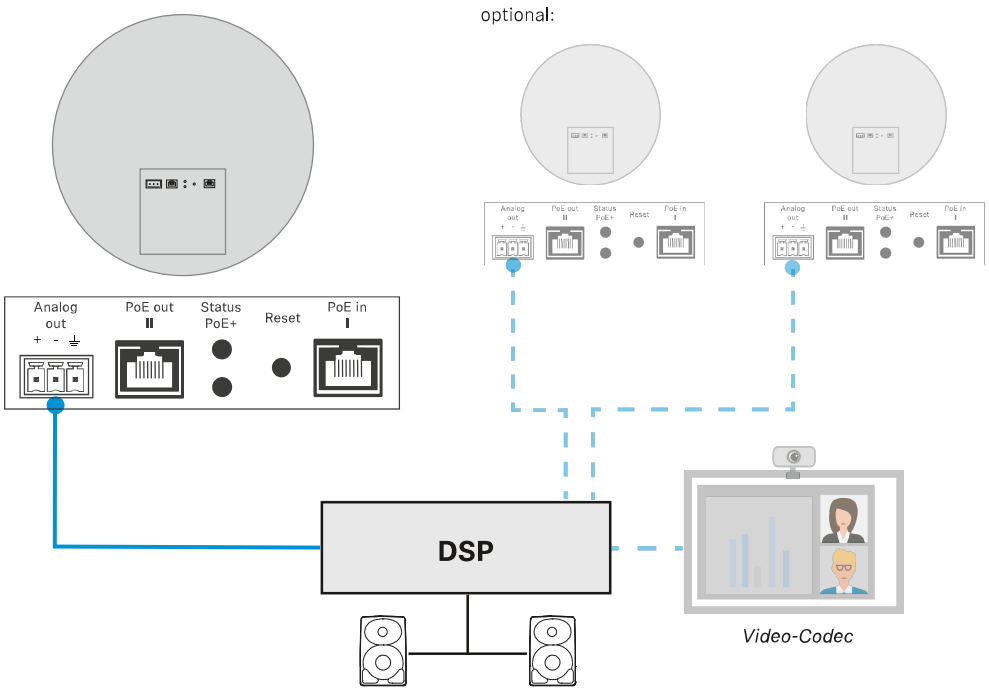
> **i** Use only shielded STP network cables that do not exceed an AWG value of 24.



Outputting analog audio signals

Use the Analog Out connection socket to output analog audio signals. The analog audio cable is not included in the scope of delivery. Depending on the audio input of your DSP, the cable must connect 3-pin terminal to 3-pin XLR terminal or to jack.

Output analog audio signal to a DSP

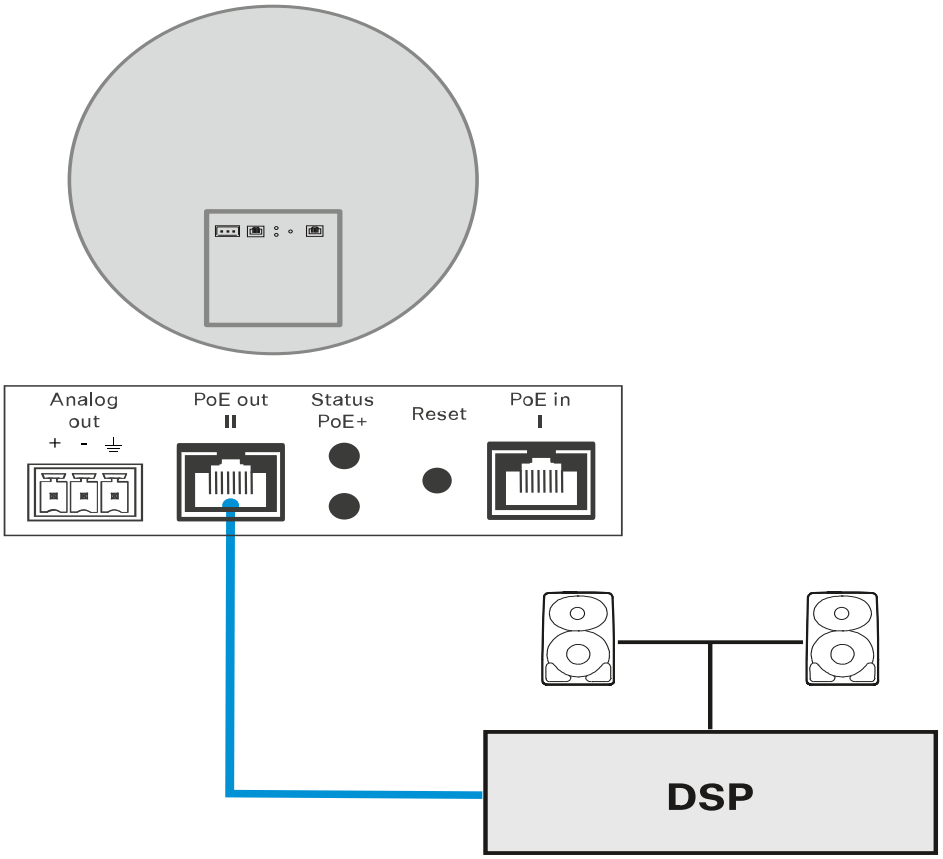


The devices are connected to the DSP according to the overview, with the option to connect up to three microphones in parallel. The DSP aggregates and processes the audio signals and can then pass them on to a video codec.

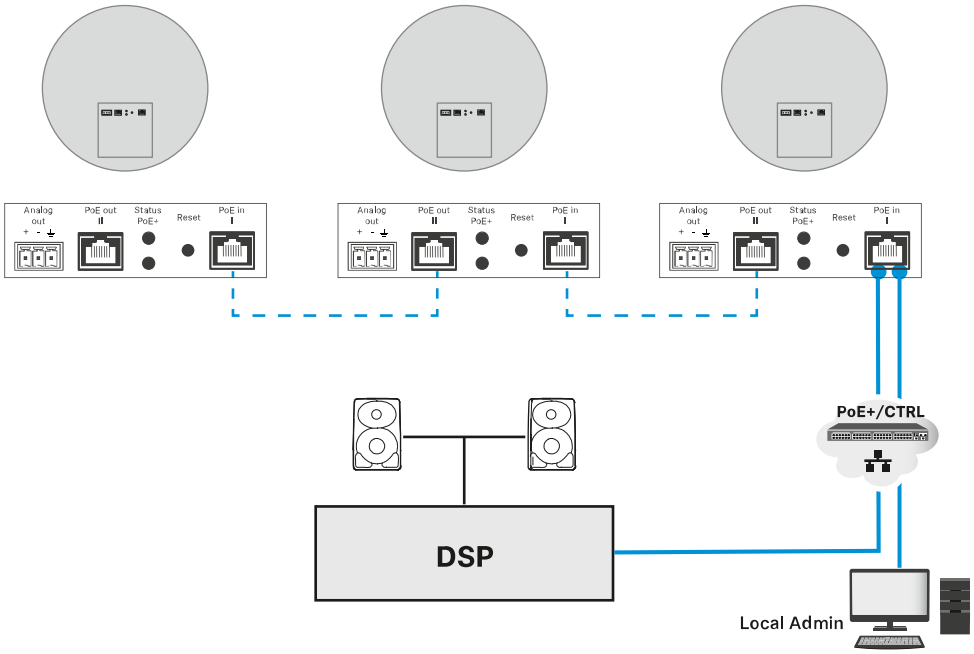
Outputting digital audio signals

Two RJ-45 sockets are available for outputting digital audio signals. The interface supports redundant output and daisy-chaining (switched mode) of multiple ceiling microphones.

Split mode



Single Cable Mode / Daisy Chain

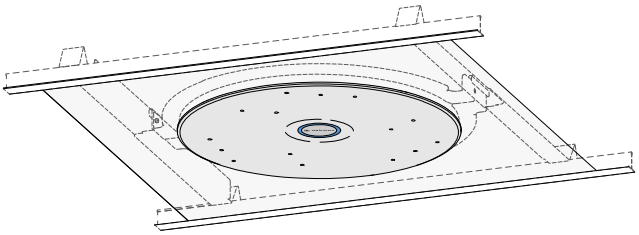


Planning the installation

Possible installation variants

> **i** Detailed installation instructions can be found in the section “Installation and startup.”

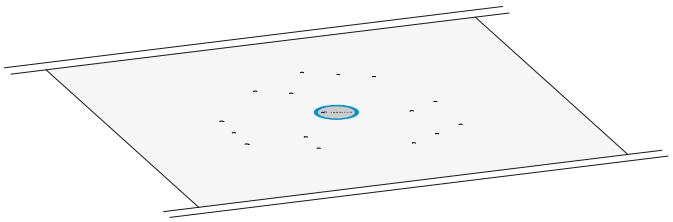
Variant 1: flush-mounted in a dropped/coffered ceiling



Ceiling microphone installation kit: TCC M Plus F-W (white) or TCC M Plus F-B (black)

- See Variant 1: installed flush in a dropped/coffered ceiling

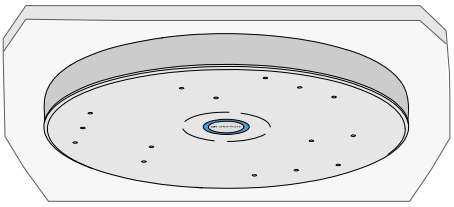
Variant 2: installed flush with the Ceiling Tile panel in a dropped/coffered ceiling



Ceiling microphone installation kit: TCC M CTFP-W or TCC M CT-W 2FT

- See Variant 2: installed flush with Ceiling Tile Element in a dropped/coffered ceiling

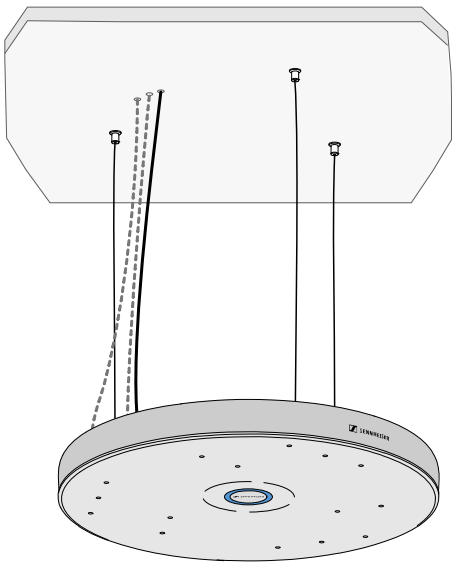
Variant 3: mounted directly below the ceiling



Ceiling microphone housing set: TCC M Plus S-W (white) or TCC M Plus S-W (black)

- See Variant 3: mounted directly below the ceiling

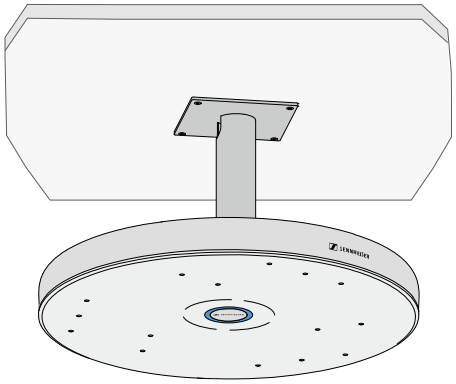
Variant 4: suspended from the ceiling



Accessories required:

- See Variant 4: suspended from the ceiling

VESA mount



Installation information:

- See Mounting the TeamConnect Ceiling M Plus on a VESA mount

Adapting the installation height

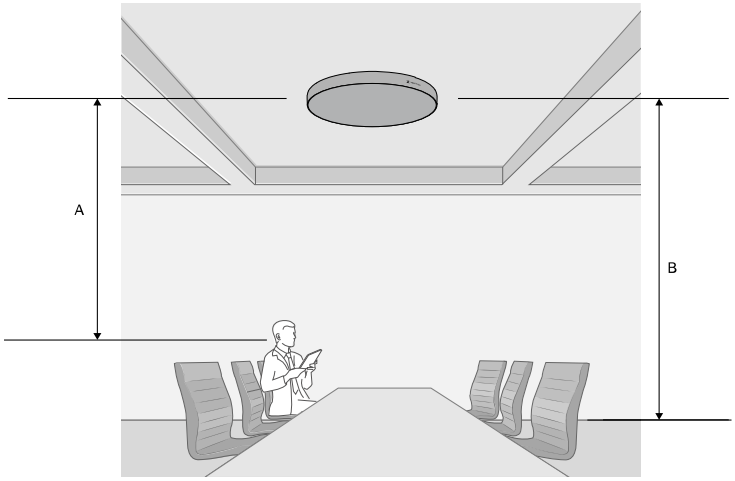
> **i** When installing the TeamConnect Ceiling M Plus, observe the following minimum and maximum distances.

The recommended distance between the speaker and the TeamConnect Ceiling M Plus should be a maximum of 3 to 3.5 m.

The minimum distance between the TeamConnect Ceiling M Plus and the floor should be at least 2.50 m.

> **i** If installation variants 1 or 2 would result in a distance greater than the recommended maximum due to the room height, we recommend installation variant 3.

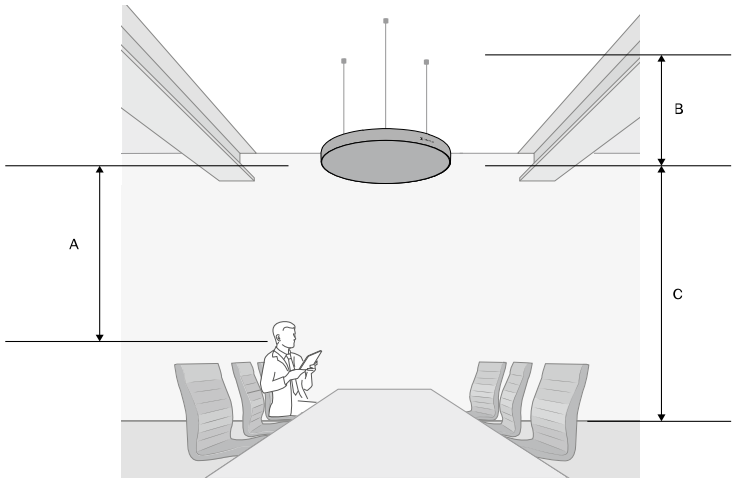
Recommended distances for variants 1 and 2:



Distance A: max. 3 - 3.5 m

Distance B: min. 2.5 m

Recommended distances for variant 3:



Distance A: max. 3 - 3.5 m

Distance B: max. 5 m

Distance C: min. 2.5 m

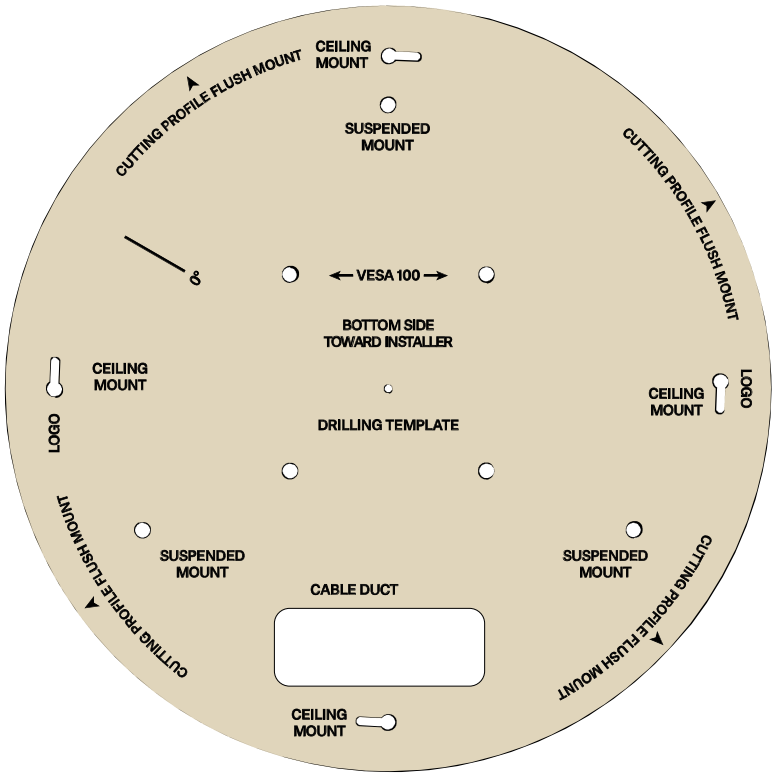
Installation and startup

Instructional chapters on mounting and configuring the device.

> **i** The TeamConnect Ceiling M Plus is delivered with **muted microphones**. Before the first use, it is therefore necessary to configure the device in the Local web UI (LUI) and unmute it.
>
> 1. Connect to the network
> 2. Run the local web UI (LUI)
> 3. Set a new password
> 4. Select the operation mode

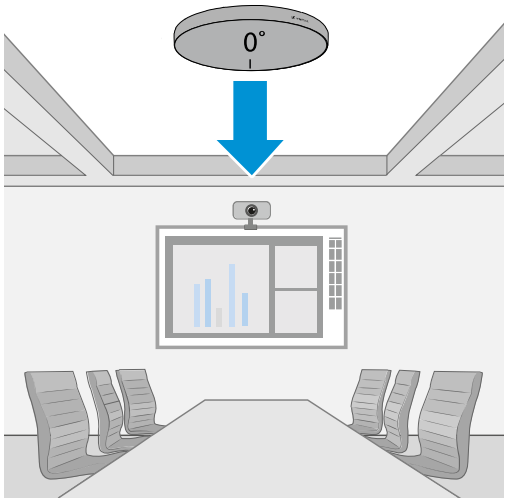
General notes

Drilling template



- Use the drilling template (item no. 594561) included with delivery to draw the drill holes and the circumference of the device.

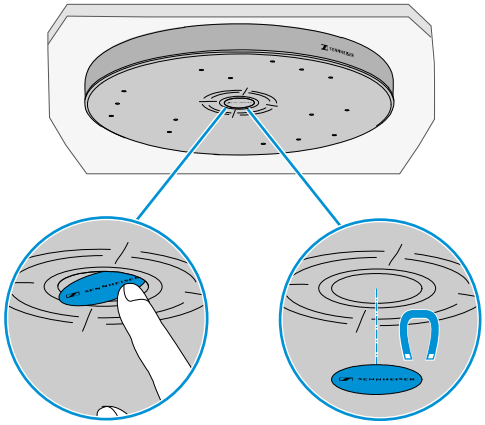
Camera orientation



- Before mounting, pay attention to the microphone orientation. It can be identified by the embossed “0°”.

Replacing the logo plate

If you want to replace the logo plate on the front of the microphone:



- Push the side of the plate so that it tilts out.
- Remove the plate from the housing.
- Insert the new plate. It is held magnetically.

Variant 1: installed flush in a dropped/coffered ceiling

The TeamConnect Ceiling M Plus can easily be installed flush in dropped or closed ceilings.

For this, a corresponding ceiling installation kit is supplied with the product variant TCC M Plus F. Make sure not to install the TeamConnect Ceiling M Plus directly next to lights or other electrical devices in the ceiling.

ATTENTION

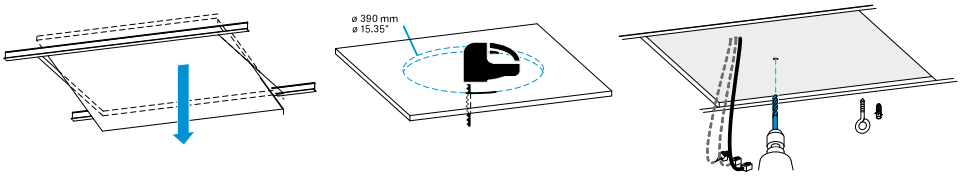
Danger of property damage if the product should fall

If mounted incorrectly, the product may fall.

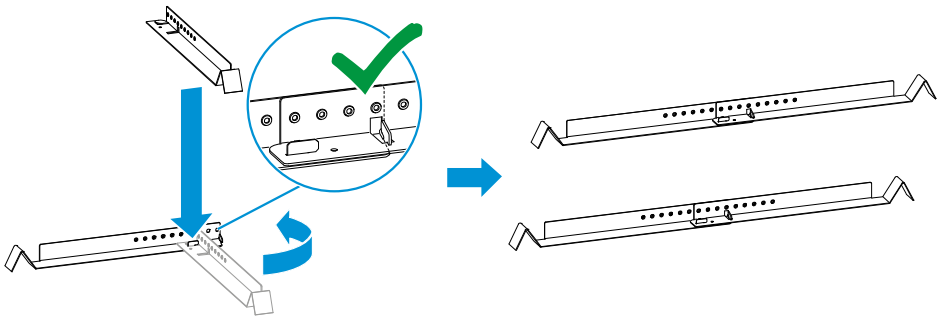
- When mounting in the ceiling, always additionally secure the TeamConnect Ceiling Medium Plus against falling, e.g. with the supplied ceiling suspension set TCC M SK (see Variant 4: suspended from the ceiling) **and additionally** with the supplied suspension cable, which is attached to a ceiling hook and the top of the microphone.

Attaching the ceiling flush mount kit

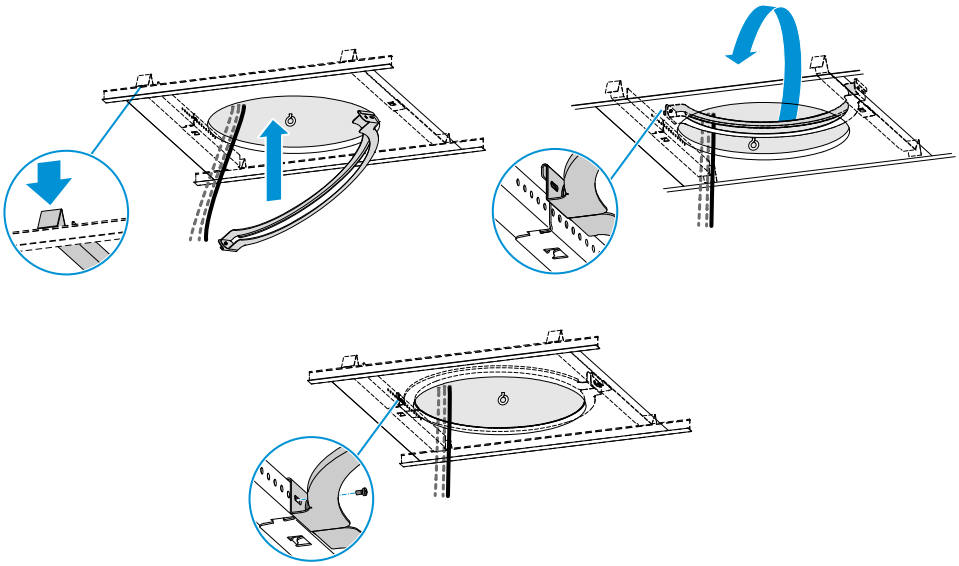
- Remove a tile from the ceiling.
- Trace the circumference using the drilling template supplied and saw the hole.
- Using a suitable anchor, insert an eye bolt into the ceiling to attach the installation rope.
- Reinsert the ceiling tile.



- Assemble the longitudinal sections of the ceiling flush mount kit by hooking them into each other at right angles and then straightening them out until they snap into place.



- Place the longitudinal sections over the crossbeams in the coffered ceiling.
- With the C-ring closed or slightly open, guide it through the hole and unfold it.
- Slide the tabs on the C-ring onto the longitudinal sections on both sides.
- Attach the ceiling flush mount kit by inserting the supplied screws through the slots on both sides.



Securing and connecting the microphone

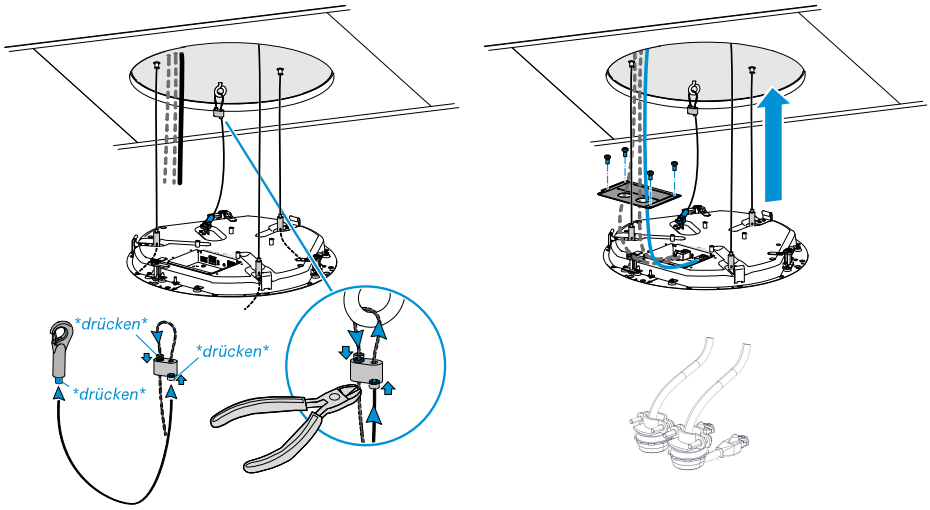
- Install the suspension cable as shown and attach it to the eye bolt and the microphone.
- If using, mount the TCC M SK ceiling suspension kit (see Variant 4: suspended from the ceiling).
- Insert the cables you need.
- If required, you can attach a cover plate (included with delivery) and pipe clamps (not included with delivery).

Recommended cabling

Observe the following when connecting and running the cables:

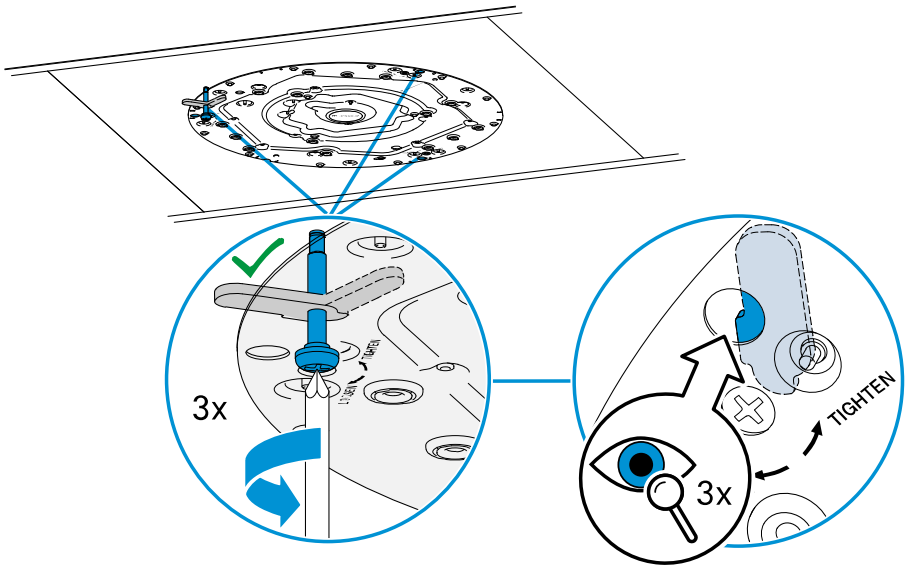
- Always run the cables carefully and in a loop shape inside the installation recess.
- Make sure not to kink the cables to avoid breaking them or damaging the plugs.

- Lift the microphone toward the ceiling, pull the rope tight and cut off any superfluous length of rope.

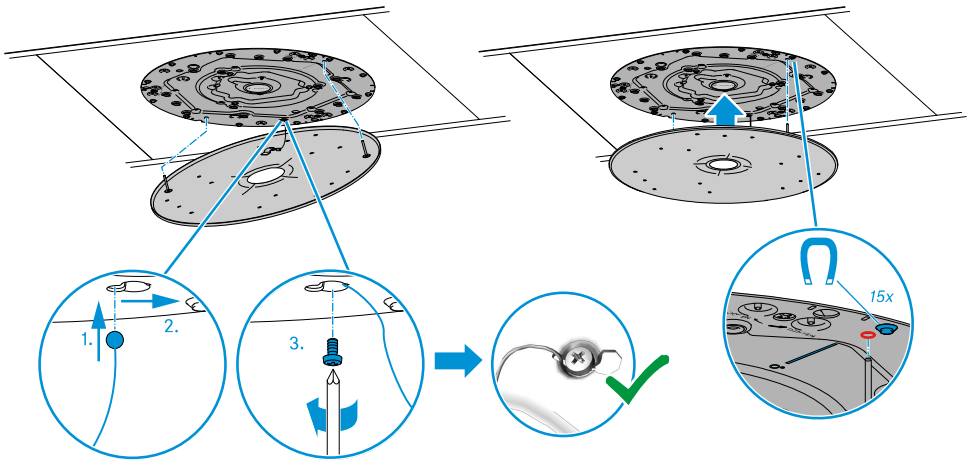


Securing the microphone and attaching the front panel

- Hold the microphone in the ceiling flush mount frame with one hand and use the other hand to screw the three clamps until tight.
- Look through the inspection holes to check that the clamps are properly tightened and the microphone is firmly seated in the frame.



- Insert the guy rope on the front panel into the corresponding recess in the microphone as shown and secure it with the supplied screw.



- Insert the two pins of the retaining plate into the corresponding holes in the microphone (marked in red). The front panel is now held magnetically.

Variant 2: installed flush with Ceiling Tile Element in a dropped/ coffered ceiling

The TeamConnect Ceiling M Plus can be installed flush in closed ceilings with the Ceiling Tile Element without having to saw out an existing ceiling panel.

For this, the product variant TCC M CTFP-W or TCC M CT-W is required. Make sure not to install the TeamConnect Ceiling M Plus directly next to lights or other electrical devices in the ceiling.

ATTENTION

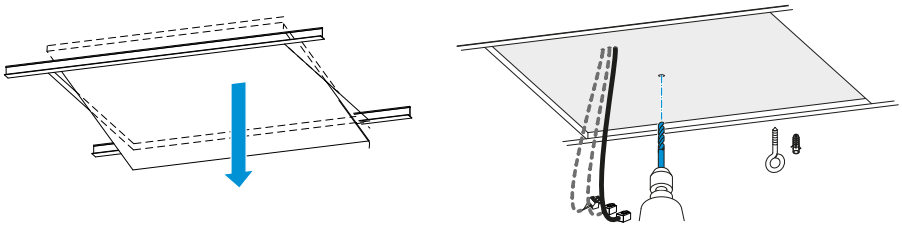
Danger of property damage if the product should fall

If mounted incorrectly, the product may fall.

- When mounting in the ceiling, always additionally secure the TeamConnect Ceiling Medium Plus against falling, e.g. with the supplied ceiling suspension set TCC M SK (see Variant 4: suspended from the ceiling) **and additionally** with the supplied suspension cable, which is attached to a ceiling hook and the top of the microphone.

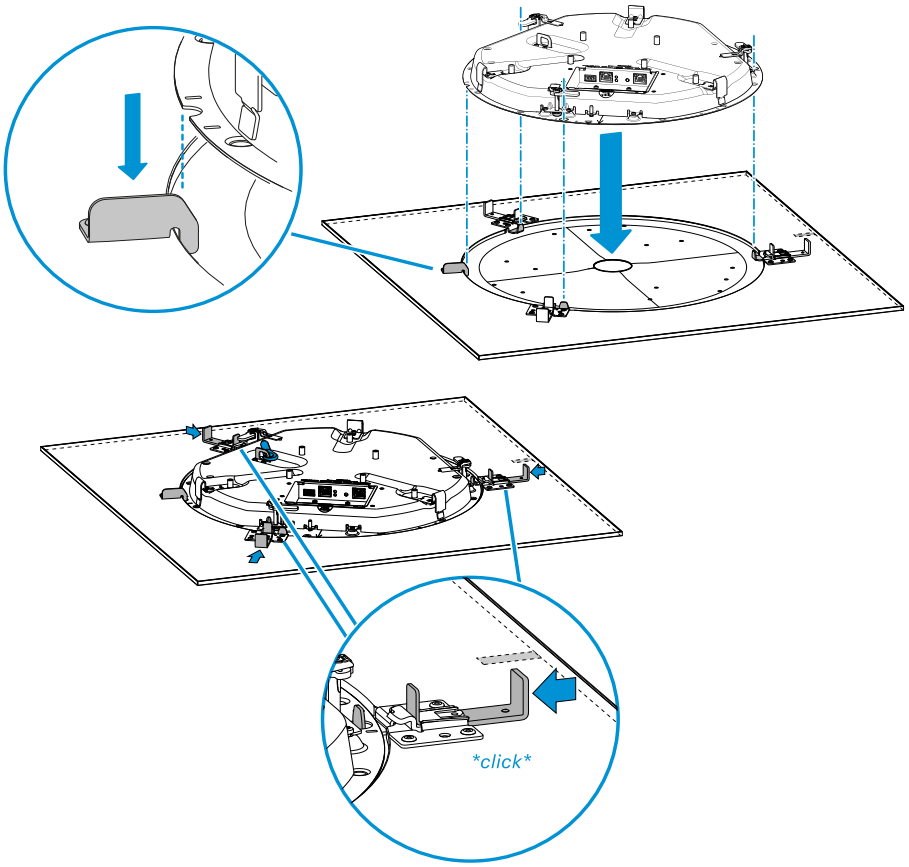
Attaching the ceiling flush mount kit

- Remove a tile from the ceiling.
- Using a suitable anchor, insert an eye bolt into the ceiling to attach the installation rope.



- Insert the microphone into the Ceiling Tile plate. Only one position is possible: the metal tab on the plate must be inserted into the corresponding recess on the microphone as shown in the illustration.

- Then the microphone must be secured by the three locks on the plate. They must audibly engage with a click.

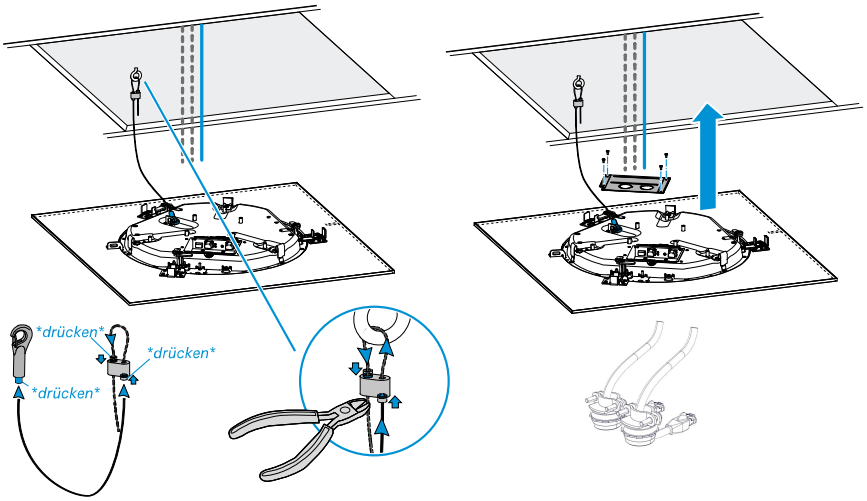


Securing and connecting the microphone

- Install the suspension cable as shown and attach it to the eye bolt and the microphone.
- Install the ceiling suspension set TCC M SK (see “Variant 4: suspended from the ceiling”).
- Insert the cables you need.
- If required, you can attach a cover plate (not included with delivery) and pipe clamps (not included with delivery).

> **Recommended cabling**
> Observe the following when connecting and running the cables:
>
> - Always run the cables carefully and in a loop shape inside the installation recess.
> - Make sure not to kink the cables to avoid breaking them or damaging the plugs.

- Lift the microphone toward the ceiling, pull the rope tight and cut off any superfluous length of rope.



Inserting the microphone

- Insert the microphone which is mounted in the Ceiling Tile into the ceiling.

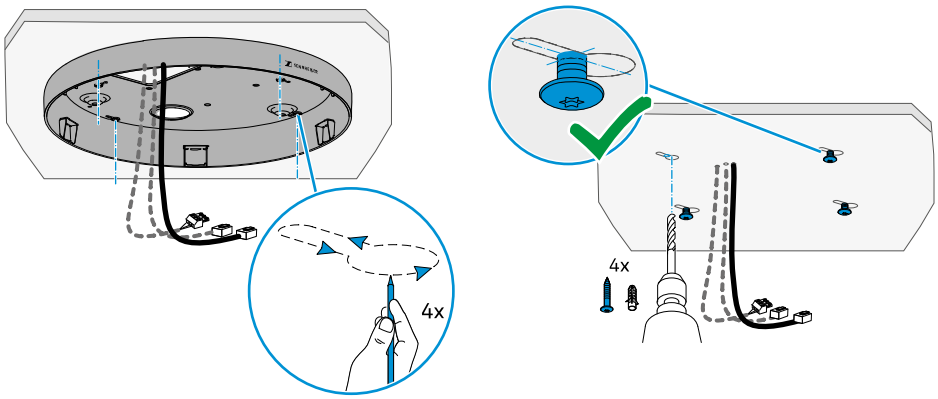
Variant 3: mounted directly below the ceiling

For installation directly below the ceiling, you need the TCC M Plus S-W or TCC M Plus S-B product variant, or the TCC M-H-W or TCC M-H-B ceiling microphone housing.

> **i** Screws and anchors for mounting on the ceiling are not included in the scope of delivery. Make sure to use suitable screws and anchors for the installation according to the properties of the room ceiling.

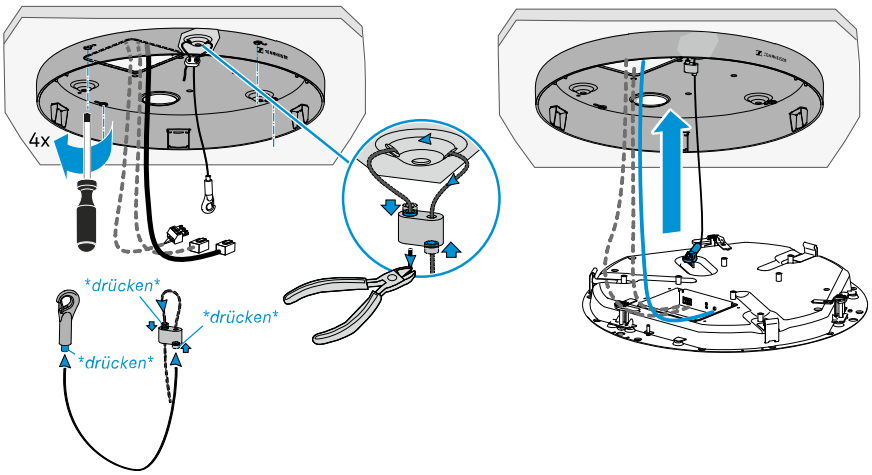
Mounting the ceiling mounting frame

- Use the drilling template or the housing to draw the keyholes on the ceiling.
- Place the screws in the center of the key holes.



Securing and connecting the microphone

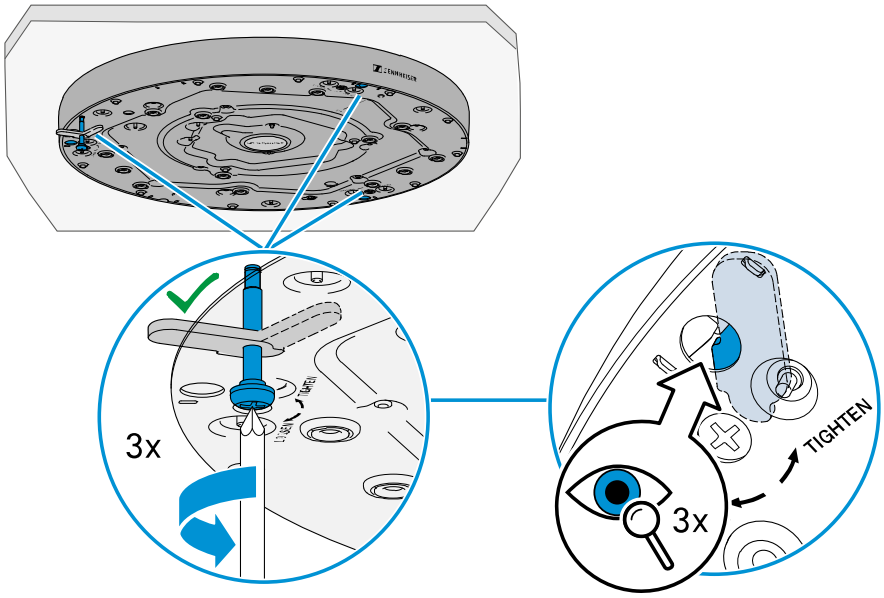
- Fit the installation rope as shown and attach it to the housing and microphone.
- Insert the cables you need.
- Lift the microphone toward the ceiling, pull the installation rope tight and cut off any superfluous length of rope.



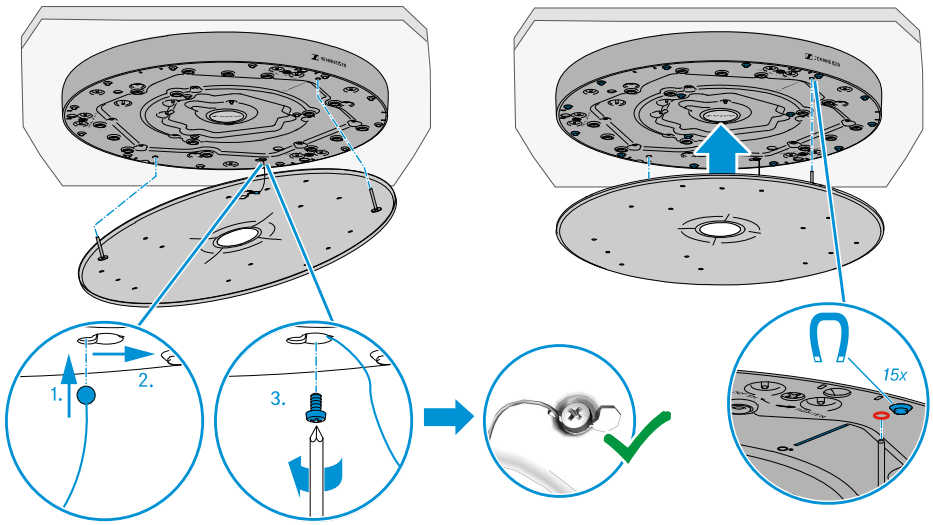
i Observe the following information when connecting and routing the cables: Always route the cables carefully, in the form of a loop, within the connection recess. Make sure not to kink the cables in order to avoid cable breaks and damage to the connectors.

Securing the microphone and attaching the front panel

- Hold the microphone in the housing with one hand and use the other hand to screw the three clamps until tight. Attention: left-hand thread!
- Look through the inspection holes to check that the clamps are properly tightened and the microphone is firmly seated in the housing.



- Insert the guy rope on the front panel into the corresponding recess in the microphone as shown and secure it with the supplied screw.
- Insert the two pins of the retaining plate into the corresponding holes in the microphone (marked in red). The front panel is now held magnetically.



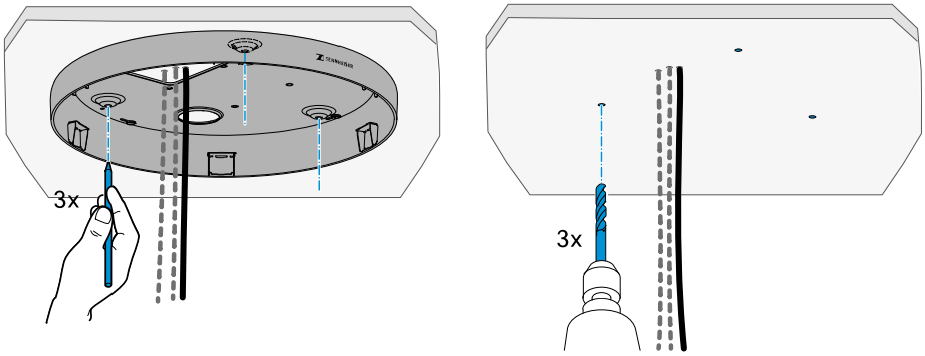
Variant 4: suspended from the ceiling

For suspended mounting, you need the TCC M-SK ceiling suspension kit.

> **i** Screws and anchors for mounting on the ceiling are not included in the scope of delivery. Make sure to use suitable screws and anchors for the installation according to the properties of the room ceiling.

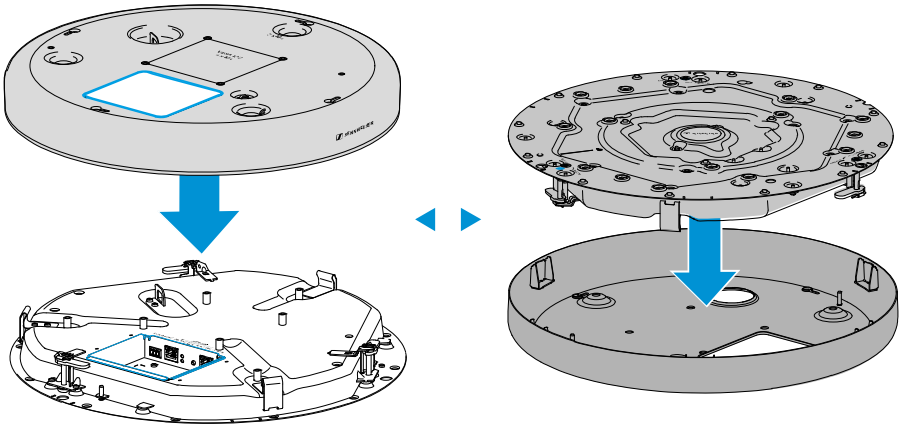
Drawing the drill holes

- Use the drilling template or the housing to draw the keyholes on the ceiling.

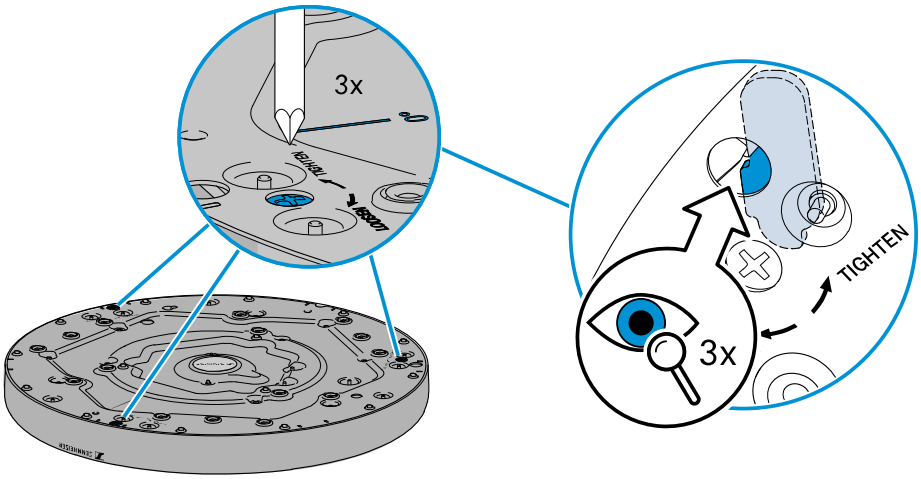


Premounting the microphone

- Insert the microphone into the housing or slide the housing onto the microphone.
- Make sure that the recess in the microphone is aligned with the corresponding hole in the housing.

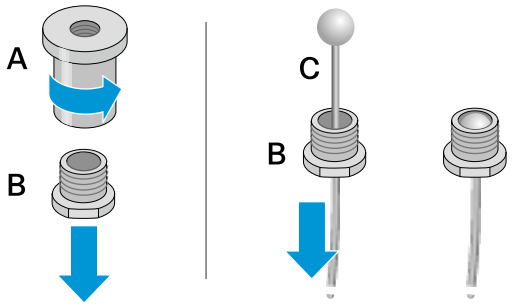


- Secure the microphone using the three clamps. Attention: left-hand thread!



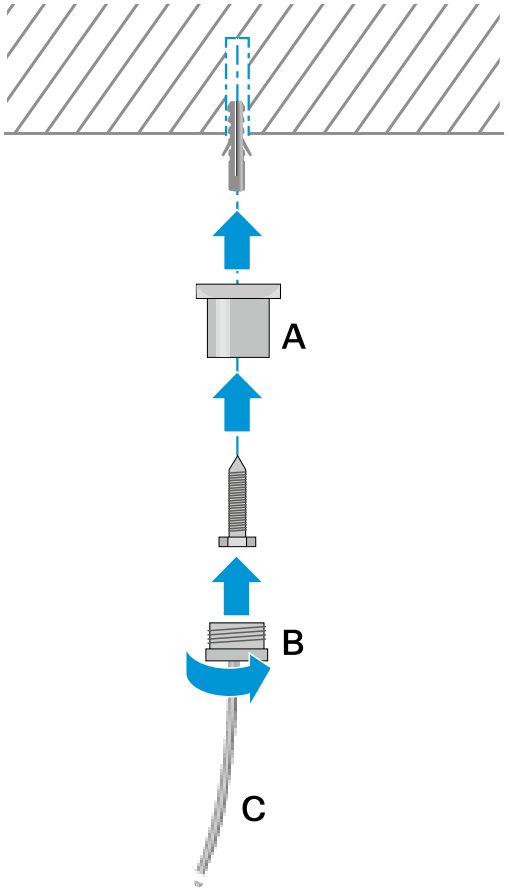
Preparing the ceiling fastener

- Unscrew part A of the ceiling fastener from part B.
- Thread the steel cable C into part B so that the ball on the steel cable is in part B.
- Repeat these steps for the other three fasteners.

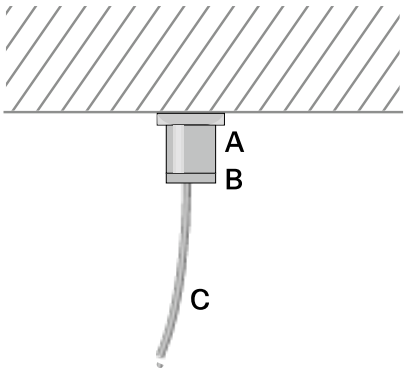


Mounting the ceiling fastener

- Attach part A of the ceiling fastener to the ceiling using a suitable anchor and screw.
- Use the included drilling template to align the drill holes.

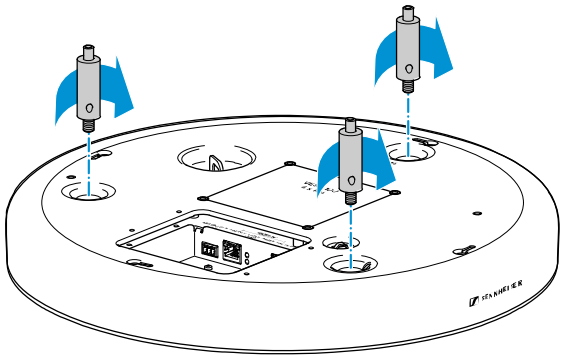


- Then screw part B of the ceiling fastener into part A.
- Repeat these steps for the other three fasteners.

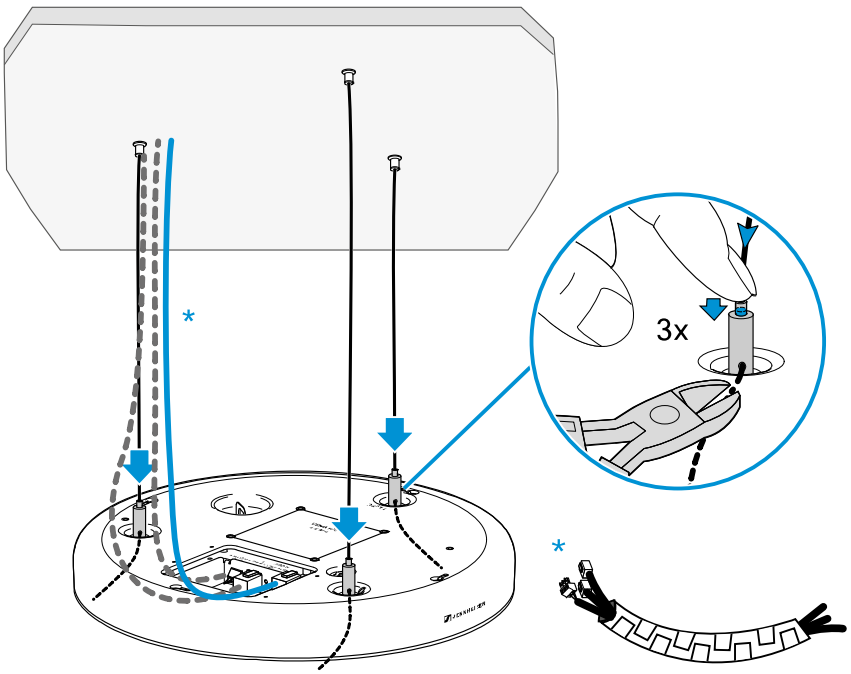


Mounting the product fastener

- As shown in the figure, screw the product fastener into the threaded mounting hole on the top of the TeamConnect Ceiling Medium.



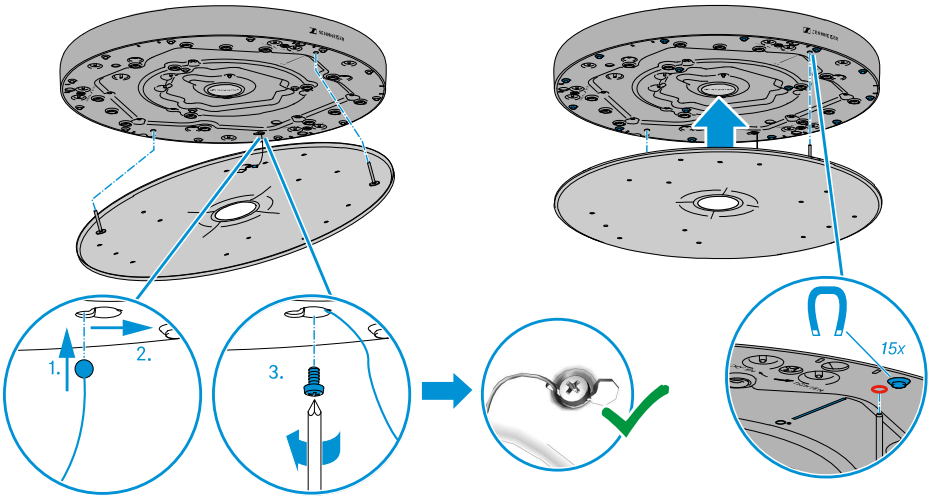
- Set the steel cable C to the desired length by using your finger to press the cable guide into the product fastener and sliding the steel cable as needed.



- Cut the excess steel cable using suitable pliers.
- Repeat these steps for the other three fasteners.
- Insert the cables you need.
- If necessary, use a cable conduit (not included with delivery) to bundle the cables.

Attaching the front panel

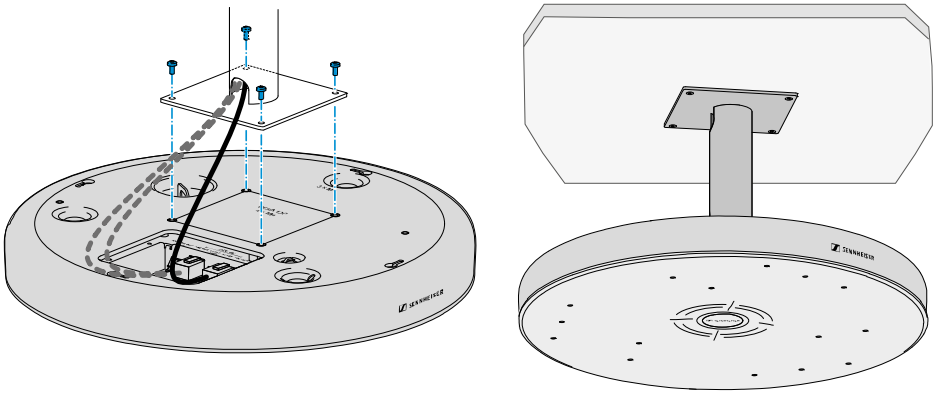
- Insert the guy rope on the front panel into the corresponding recess in the microphone as shown and secure it with the supplied screw.
- Insert the two pins of the retaining plate into the corresponding holes in the microphone (marked in red). The front panel is now held to the microphone magnetically.



Mounting the TeamConnect Ceiling M Plus on a VESA mount

The TeamConnect Ceiling M Plus can be mounted on standard VESA MIS D mounts.

- Fasten the ceiling mount to the ceiling using suitable screws and anchors.
- Observe the mounting specifications from the manufacturer.
- Then mount the TeamConnect Ceiling M Plus to the VESA mount (VESA Standard MIS-D M4) using suitable screws, as shown in the illustration.



Configure TeamConnect Ceiling M Plus with a media control system

After the initial configuration with the Local Web UI (LUI), TeamConnect Ceiling M Plus can also be operated with a media control system.

> TeamConnect Ceiling M Plus is shipped with **muted microphones**. Before first use, you must configure the device in the Local Web UI (LUI) and unmute it. See Monitoring & Control with the Local web UI (LUI).
>
> 1. Establish a network connection
> 2. Open the Local Web UI (LUI)
> 3. Set a new password
> 4. Select the operation mode

A media control system can provide a custom user interface with the following functions:

- Control the mute function
- Edit audio parameters (adjust the output level, display the microphone level, set the EQ)
- Control LEDs
- Transmit the speaker position

Example application:

The media control protocol for TeamConnect Ceiling M Plus is available as a PDF download on the product page on the internet: sennheiser.com/tccmplus.

Monitoring & control

The TCC M Plus offers comprehensive monitoring and control functions that allow users to efficiently manage audio settings via various applications and interfaces.

The TCC M Plus can be operated via the following applications:

- **Local web user interface:** a local control interface included in the device (see Local web UI (LUI))
- **DeviceHub:** a location-independent, cloud-based solution for seamless monitoring and control of Sennheiser devices (see DeviceHub)
- **PartnerLink:** a solution that allows third-party applications to control the TCC M Plus (see PartnerLink)

Local web UI (LUI)

The TCC M Plus offers comprehensive monitoring and control functions that allow you to efficiently manage audio and device settings via various applications and interfaces.

Initial setup

The TCC M Plus offers comprehensive monitoring and control functions that allow you to efficiently manage audio and device settings via various applications and interfaces.

Security information

Local Web UI uses HTTPS, but your browser may show a warning because the device uses a self-signed certificate.

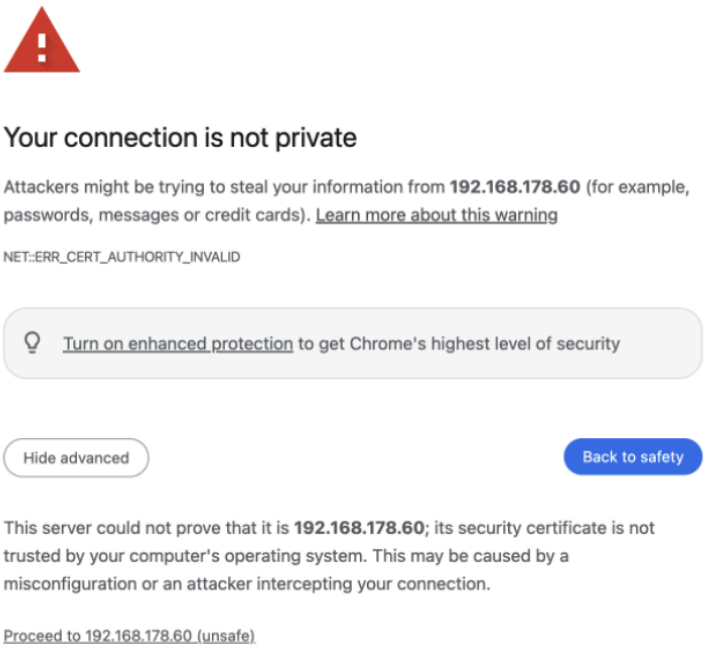
The Local Web UI uses HTTPS to encrypt communication between your computer and the device.

When an HTTPS connection is established, the browser checks the security certificate presented by the website. Local network devices such as Sennheiser AV devices cannot obtain and maintain publicly trusted certificates, so they use a self-signed certificate for encrypted communication. This is common in local network environments where devices provide encrypted web-based management interfaces.

Because the browser cannot verify these certificates automatically, a security warning may appear when you access the Local Web UI. The warning depends on the browser you use.

Examples:

- **Google Chrome**: “Your connection is not private”
- **Microsoft Edge**: “Your connection isn't private”
- **Mozilla Firefox**: “Unable to connect”
- **Safari**: “This Connection Is Not Private”



The warning does not mean that communication is unencrypted. Communication between your browser and the Local Web UI is still encrypted using HTTPS, and data transmitted between the browser and the device is protected against passive interception. However, the browser cannot independently confirm that the device is the intended device.

> If you access the device on your local network and have intentionally opened the Local Web UI, you can continue through the browser warning.

Google Chrome:

- Click **Advanced** > **Proceed to** {IP address} **(unsafe)**.

Microsoft Edge:

- Click **Advanced** > **Continue to** {IP address} **(unsafe)**.

Mozilla Firefox:

- In the permission dialog displayed by your operating system, click **Allow**.
- Click **Advanced** > **Proceed to** {IP address} **(Risky)**.

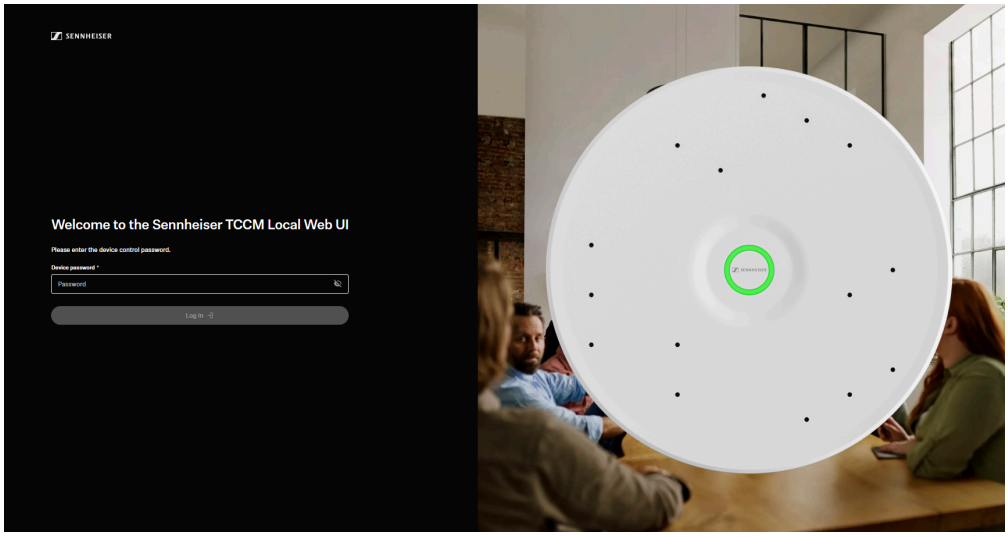
Safari:

- Click **Show Details** > **Visit this website**.
- Confirm the permission dialog displayed by your operating system.

After you accept the warning, the Local Web UI opens normally.

Running the local web UI (LUI)

Connect and configure your TCC M Plus using the integrated local web UI.



You have two options to run the local web UI:

- First connect the TCC M Plus to your network via PoE.
- Read the serial number of your device from the product label and enter **https://tccm-plus-serialnumber.local** in the browser. Or:
- Enter **https://IP address** in the browser.

To determine the IP address of your device:

- Note the MAC address of the device as specified on the product label.
- Open the command prompt (CMD) on your computer.
- Enter the following command to determine the MAC address and IP address of the device: **configip**. If the MAC address and IP address are not displayed, enter the command **arp -a** to display all hidden devices.
  Depending on the configuration, it may take a few minutes until the device is detected in the network.
- Use the noted MAC address to read out the IP address of the device and note it down.
  - ✓ The IP address has been determined.

To access the local web UI:

- In your browser, enter the following URL with the determined IP address: **https://IP address**.
  Since the certificate is not known to your browser, a security warning appears when the application is started for the first time. The security warning depends on the browser used.

- Depending on the browser, click Advanced and then:
  - Continue to localhost (unsafe) (Microsoft Edge)
  - Continue to localhost (unsafe) (Google Chrome)
  - Accept the risk and continue (Firefox)
  - or a similar option (other browsers).

✓ You now have access to the local web UI.

Setting the password

Before you can configure the TCC M Plus with the local web UI (LUI), you must set a password.

> If the device was previously initialized by another instance, the password set at that time must be entered. If you no longer remember this password, please perform a device reset.

To set the initial password:

- When you first access the application in the device overview, set a password.
  Note that the new password must meet the following requirements:
  - At least ten characters
  - At least one lowercase letter
  - At least one uppercase letter
  - At least one number
  - At least one special character: !#$%&()*+,-./:;<=>?@[]^_{|}~
  - Minimum length: 10 characters
  - Maximum length: 64 characters

  ✓ The new password is now set.

To change the password:

- In the application, go to the menu item **Maintenance**.
- Under **Device password**, click “Change password” and enter the new password.

Selecting the operation mode

Select the appropriate operation mode to use the TCC M Plus either as a standalone device or optionally integrate it into a Q-SYS system.

To select an operation mode:

- Go to the menu item **Device → PartnerLink.**
- Select one of the following operation modes:
  - **Default (Dante)**
  - **Q-SYS**

> **i** Since the device cannot be operated independently, select either **Default (Dante)** if the device is to be operated without integration into a third-party platform, or select **Q-SYS** to enable native control and optimized audio-over-IP integration within a Q-SYS system. For more information about operating the device in Q-SYS systems, refer to the Q-SYS Manual.

✓ The selected operation mode is now saved.

Selecting the installation option

To achieve optimal acoustic performance, you must select the correct installation option during initial setup. Dedicated default settings are stored for each mounting option.

To select an installation option:

- Go to the menu item **Audio → Setup**.
- In the drop-down menu under “Installation type,” select the installation option that applies to you.

✓ The installation option has been saved.

Selecting the network mode

Choose between Single Cable Mode and Split Mode to optimally adapt network and audio transmission to your installation requirements.

- The device is delivered in Single Cable Mode.
- Split Mode cannot be selected in Partner-Link Mode.

To select a network mode:

- Go to the menu item **Network → Network Mode.**
- Select one of the following network modes:
  - **Single Cable Mode**
  - **Split mode**

  Select **Single Cable Mode** if you require a simple installation with only one cable and optional daisy-chaining. Select **Split Mode** if you want to route Dante audio separately from the rest of the network.

The selected network mode is now saved.

Audio settings

The TCC M Plus offers comprehensive monitoring and control functions that allow you to efficiently manage audio and device settings via various applications and interfaces.

Audio Settings

In this chapter, you can configure basic audio functions of the microphone, including Intelligent Noise Control, the installation type, and TruVoicelift parameters to optimize speech intelligibility and prevent feedback.

To make adjustments for Intelligent Noise Control:

- Go to the menu item **Audio → Audio Setup → Intelligent Noise Control**.
- In the drop-down menu, select the desired setting.

To make adjustments for the installation type:

- Go to the menu item **Audio → Audio Setup → Installation type**.
- In the drop-down menu, select the installation option that applies to you.

To make adjustments for TruVoicelift:

> **Mute threshold:** Defines the level below which the audio signal is automatically muted to avoid feedback and noise.
> **Mute interval:** Determines the delay time before the signal is muted after falling below the threshold in order to naturally bridge short pauses in speech.

- Go to the menu item **Audio → Audio Setup → TruVoiceLift**.
- Use the controls to make the settings that suit your needs.

✓ The changes for the Audio Settings have been saved.

Input/Output Settings

In this chapter, you can configure the audio outputs of the microphone, including output gain, equalizer, signal delay, and the settings for the analog audio output.

To make adjustments for Digital Output Gain, Equalizer, or Delay:

- Go to the menu item **Audio → Outputs**.
- Now make the desired settings in the respective sections by adjusting the controls for Main Output or Far End Output.
  Main Out: Main Out is intended for playback in the room, which is particularly relevant for TruVoicelift. Certain algorithms adapt the output signal so that feedback loops are less likely to occur.

  Far-End Out: Refers to the remote (far end) signal.

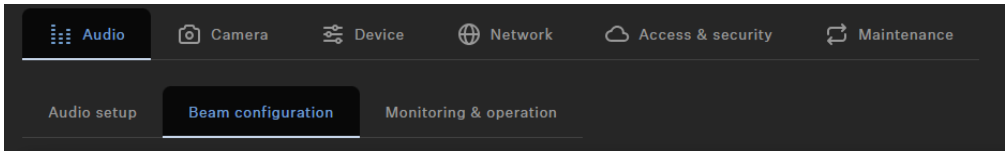
To make adjustments for Analog Audio Output:

- Go to the menu item **Audio → Outputs**.
- In the last section of the dialog, select the desired source from the drop-down list and adjust the values as required using the adjacent control. You can define which output is to be used for the analog output: **Main Out** or **Far-End Out**.
- Adjust the level as desired using the control.

✓ The changes for the Output Settings have been saved.

Beam configuration

In the beam configuration section, you can manage the following settings.



The TCC M Plus allows you to define two different zone types:

- One Priority Zone
- Up to five Exclusion Zones

The horizontal angles can be set individually for each zone.

Priority Zone

> **i** If the two zone types overlap, the rules of the Exclusion Zone apply.

The Priority Zone allows you to set up a zone that is given preference when audio signals arrive simultaneously from different positions. This function is useful, for example, in conferences with a particularly important person.

You can set a weighting for this zone. The weighting increases the focus on the signals coming from the zone by the selected values. The following settings are available:

- **Mid**: Increases the weighting of the audio output from the zone to approximately 1.5 times the normal value.
- **High**: Increases the weighting of the audio output from the zone to approximately 2.5 times the normal value.
- **Max**: Increases the weighting of the audio output from the zone to approximately 4 times the normal value.

> **i** When defining the Priority Zone, the area that is to be prioritized for audio source detection is displayed in green.

You can use the slider to define a Priority Zone. The zone can be set individually from 15° to 165°. Minimum angle size: 15°.

Exclusion Zones

> **i** If the two zone types overlap, the rules of the Exclusion Zone apply.

The TCC M Plus allows you to define up to five Exclusion Zones. When these zones are enabled, all audio signals coming from these areas are ignored.

> **i** When defining the Exclusion Zones, the area that is to be excluded for audio source detection is displayed in red.

You can use the sliders to define the Exclusion Zones. The horizontal zone can be set individually from 15° to 165°.

Creating the zones

The zones can be drawn in the overview using the cursor. You can zoom in or out and rotate the view by right-clicking.

Configuring an external AEC reference channel

With the TeamConnect Ceiling devices, you can use an external AEC reference channel for echo cancellation (remote participants / far end signal) to temporarily stop the automatic dynamic beamforming while the far end signal is being played back through the loudspeakers in the room.

In this far end mode, the dynamic beam is aligned 90° downward. This function can be useful in certain situations where the AEC algorithm has difficulties with the dynamic reference signal.

The external AEC reference channel is sent by the DSP to the Dante input of the TeamConnect Ceiling device.

Requirements

- Route the AEC reference channel to the microphone input using Audinate's "Dante Controller" software.

Best practice recommendation

i From our experience, the following procedure should work for most scenarios.

- Leave the Dante input level of your microphone at the factory default value of **0 dB**.
- Start from a minimum output gain of the DSP on the reference channel so the automatic dynamic beamforming can work normally.
- Check this by speaking in the room and observing the beam position in the LUI. The far end must be inactive during this time.
- While the far end remains inactive, then slowly increase the DSP output gain until the beam alignment of the microphone drops/switches to **90°**.
- At this point, reduce the output gain of the reference channel on the DSP by **15** to **18 dB** to provide some headroom for far end detection.
- Optionally, you can set the Dante input level on the microphone if this is more practical than adjusting the output level on the DSP.

✓ The external AEC reference channel has been configured.

Device settings

The TCC M Plus offers comprehensive monitoring and control functions that allow you to efficiently manage audio and device settings via various applications and interfaces.

Updating firmware

As soon as has Internet access, the latest firmware versions for all updatable devices are provided automatically.

> **i** The latest firmware version is available on the product page sennheiser.com/tccmplus under Downloads → Firmware Updates.

> **i** In order to use the latest features of the software and in order for all devices to work properly, we strongly recommend keeping the firmware of all devices up to date.

> **i** For security reasons, firmware (FW) updates are not backward compatible. You cannot install FW versions that are older than the currently installed version.

ATTENTION

Loss of data if the firmware transfer is interrupted

If the transfer is interrupted, this may lead to a loss of data. The devices may be damaged by this.

- Do not remove any connections to the stationary devices during firmware updates.

- In , navigate to the start page.
  - The Firmware Info dialog indicates the available firmware versions.
- From the drop-down list, select the firmware version you want to install.

> **i** To add manually downloaded firmware, click on Add firmware file and select the downloaded file. Firmware versions downloaded automatically by are marked **via update server**. Firmware versions downloaded manually by yourself are marked **added manually**.

- Click on **Update**.
  - The firmware of the TC Bar is updated. Afterwards, the device reboots. The LED display presents a short demo.

✓ The firmware has been successfully updated.

Setting the LED color and brightness

This setting allows you to adjust the color of the LED on the TCC M Plus.

To adjust the brightness of the LED:

- In the menu, go to **Device**.
- In the **LED Brightness** field, set the desired value from 0 (off) to 5 (very bright).
  - The brightness of the LED has been adjusted.

To adjust the color of the LED:

- In the menu, go to **Device**.
- In the **LED Settings** section, select the desired color for the device states **MUTE** or **ON**.
  - The LED colors have been adjusted.

Performing a reset

There are several options for a reset: Factory Reset restores all device settings to their factory defaults, while Audio Reset only resets the audio settings. The Audio over IP reset only resets the AoIP settings.

To perform a device or audio reset:

- Go to the menu item **Maintenance → Factory Reset / Audio Reset**.
- Select either “Reset to factory settings” or “Reset audio settings.”
- Alternatively, perform the device reset by pressing and holding the **reset button** directly on the device.

To perform an Audio over IP reset:

- Go to the menu item **Audio or IP → Audio over IP Reset**.
- Select “Reset Audio over IP settings.”

✓ The settings have been reset.

Enabling/disabling standby

To achieve optimal acoustic performance, you must select the correct installation option during initial setup. Dedicated default settings are stored for each mounting option.

To enable/disable standby mode:

- Go to the menu item **Device → Standby**.
- Select the switch status **ON** or **OFF**.

✓ The settings have been saved.

DeviceHub

DeviceHub is a central, cloud-based platform designed for seamless monitoring and control of various devices.

Get started

The basic steps are: registration, organization, user management, and preparing devices for enrollment.

Perform these steps to get started with DeviceHub and prepare your organization and devices to be managed.

1. Prepare your devices for DeviceHub, including network connection, power supply, and firmware check:
    - See Preparing the device for DeviceHub.
2. Register for DeviceHub and sign in with your account:
    - See Registration (Sign-up/Sign-in).
3. Set up your organization and define basic settings such as locations or rooms:
    - See Setting up organization.
4. Invite additional users and assign appropriate roles:
    - See Joining an organization by invite.
5. Enroll your devices in DeviceHub and assign them to the appropriate rooms in your organization:
    - See Device registration.

Preparing the device for DeviceHub

Ensure your device is correctly set up with the latest firmware and network configuration before enrolling it in DeviceHub for effective cloud management.

Before enrolling the device in DeviceHub, make sure that it is set up correctly. This will allow you to effectively manage and monitor the device in a cloud environment.

To prepare your device for the cloud:

- Make sure that the latest firmware image supporting cloud is installed on your device by using Sennheiser Control Cockpit, which can be downloaded here: sennheiser.com/control-cockpit.
- Connect the device to the network and power.
- Make sure your device network is configured properly for cloud connectivity.

✓ The device has been prepared.

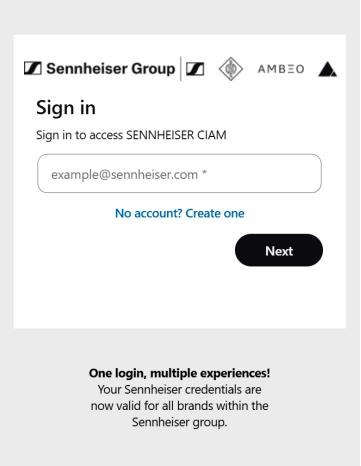
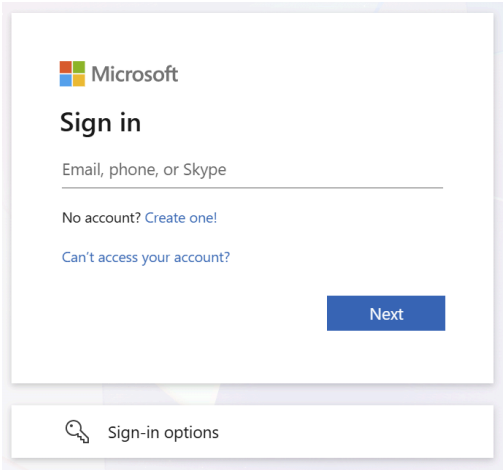
The Cloud Connectivity Guide will assist you in preparing your device for a cloud connection. Please open the document and follow the instructions before enrolling your device in the cloud.

Registration (Sign-up/Sign-in)

Learn how to sign up and sign in with a local Sennheiser account or a Microsoft account to access DeviceHub securely.

You can sign in with either a local Sennheiser account or a Microsoft account by entering your email address and password.

If a Microsoft session is already active, or after you provide valid Microsoft credentials, you are signed in and forwarded automatically.

Sennheiser Group	Global Microsoft Login
	
• Sign up or sign in with a local Sennheiser account	• Sign in with a Microsoft account
• See Sennheiser account	• See Microsoft account

Sennheiser account

Learn how to create a Sennheiser account to access DeviceHub and manage your credentials securely.

Your Sennheiser credentials are valid for all brands within the Sennheiser group.

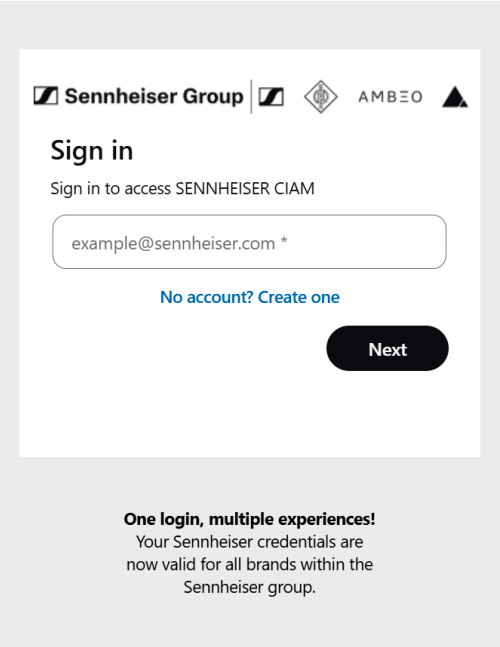
- Sign-up (Sennheiser) to create a new account services.
- Sign in (Sennheiser) with an existing account and access the application.

Sign-up (Sennheiser)

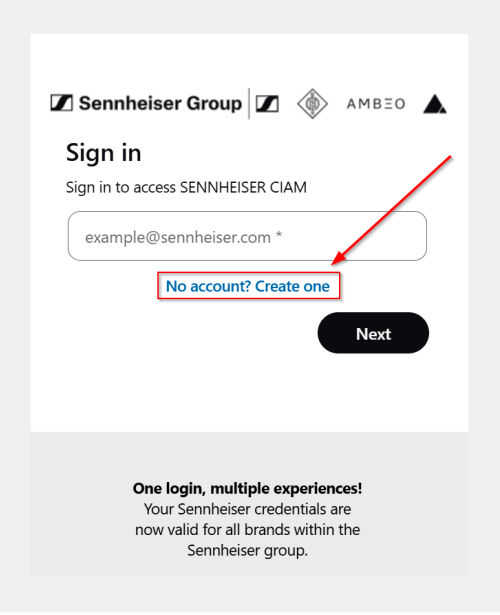
Register a new Sennheiser account in order to use DeviceHub.

To sign up:

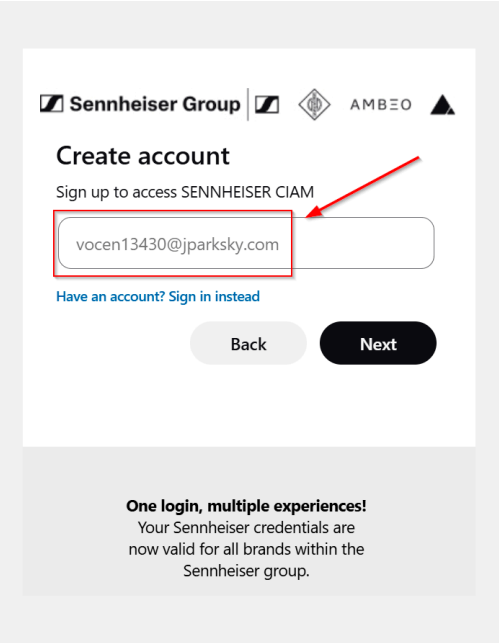
- Open the DeviceHub login page at https://devicehub.sennheiser.com/.



- Click on **No account? Create one**.

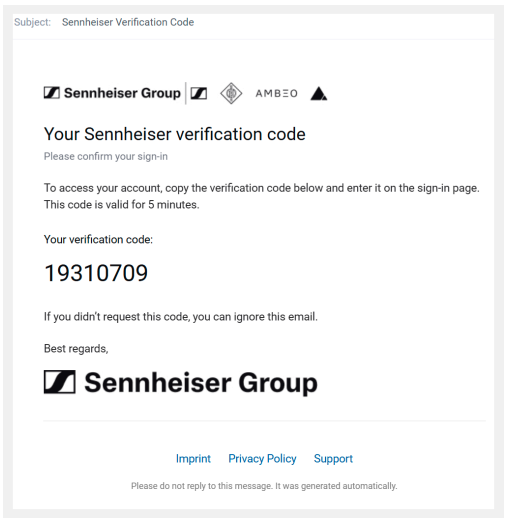


- Enter your email address in the text box.



ℹ To return to the sign-in page, click on **Have an account? Sign in instead** below the email text box.

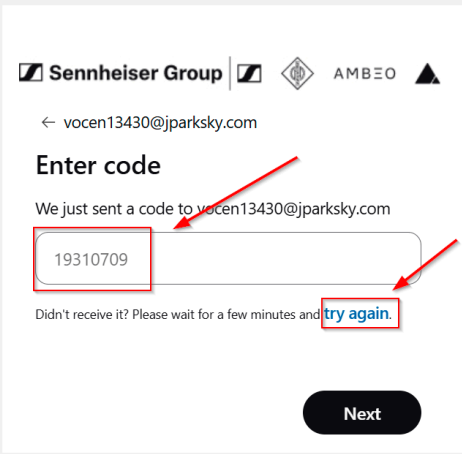
✓ A One-Time Passcode (OTP) is sent to your email address to verify your account and looks like this:



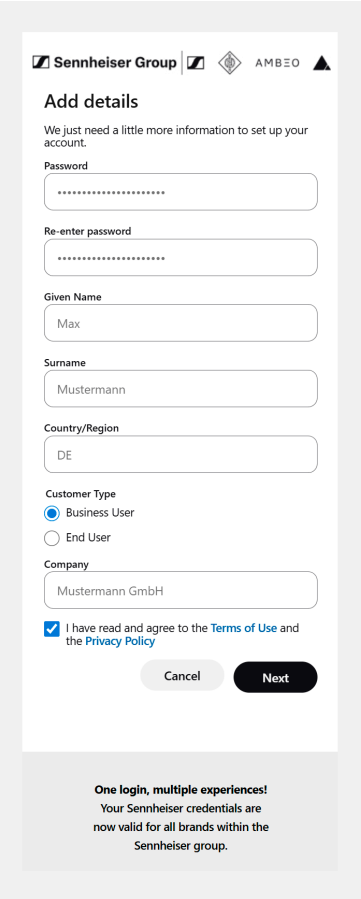
ℹ OTP codes are valid for 5 minutes only.

▶ Enter the OTP on the screen.

If it takes longer than expected to receive the OTP email, a hint appears indicating that you can request a new code. Click on the link **Try again** and wait for the new OTP email to arrive in your mailbox.



- Enter your preferred password and provide all additionally required information. You must also agree to our https://www.sennheiser.com/de-de/legal/terms-of-use-ciam and Security and data protection.



Please note that the terms of use can be updated at any time during the CIAM lifecycle based on legal or infrastructure changes. By not accepting the terms of use, login access will be lost.

- Click on **Next**.

  You are logged in and redirected to the application where you started the process.

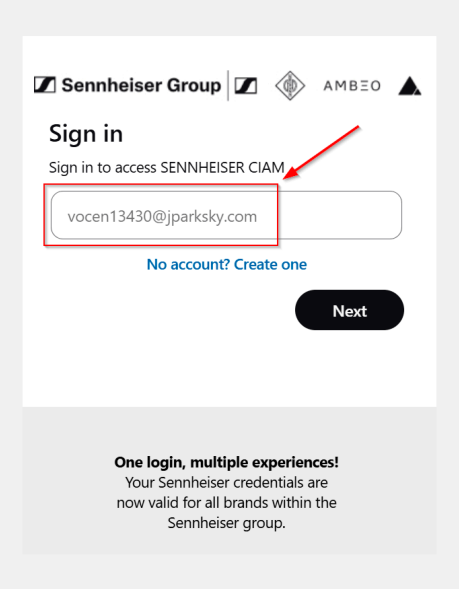
You have signed up successfully.

Sign in (Sennheiser)

You can sign in with an existing Sennheiser account.

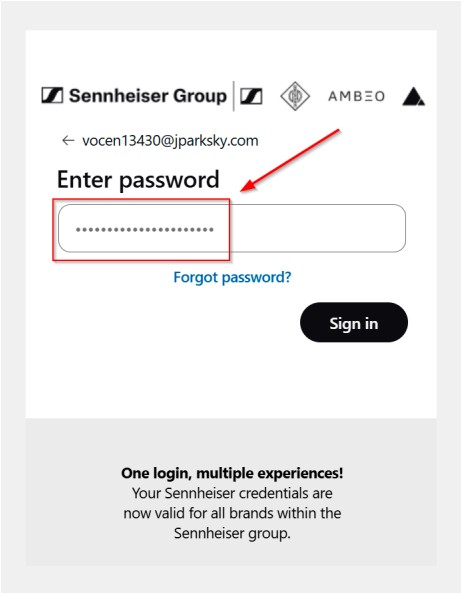
To sign in:

- Open the DeviceHub login page at https://devicehub.sennheiser.com/.
- Enter your email address in the text box.



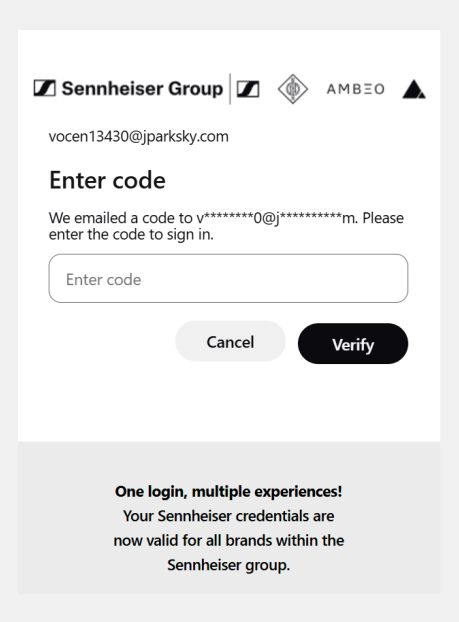
> If you can't remember your password, click the link **Forgot password?**

In some cases, you will also be asked for a One-Time Pass code (OTP). If this happens, you will see the following screen:

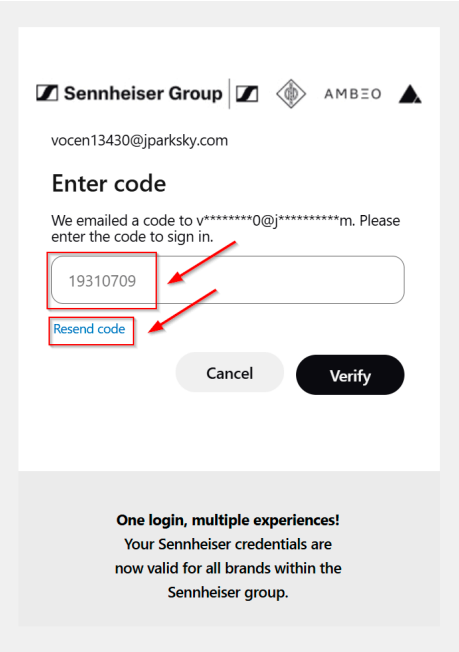


.

- Click the message **Email code to v********0@j********m**.
  - This text acts as a button and sends the OTP email to you.
- Enter the OTP code that is sent to your email for verification.



If retrieving the OTP code from your email takes longer than expected, you will see a prompt to request a new code. Click the link **Resend code** and wait for the new OTP email to arrive in your mailbox.



You have signed in successfully.

Microsoft account

You can use your existing Microsoft account to sign in to Sennheiser products.

> Please note that you cannot use a private Microsoft account for this.

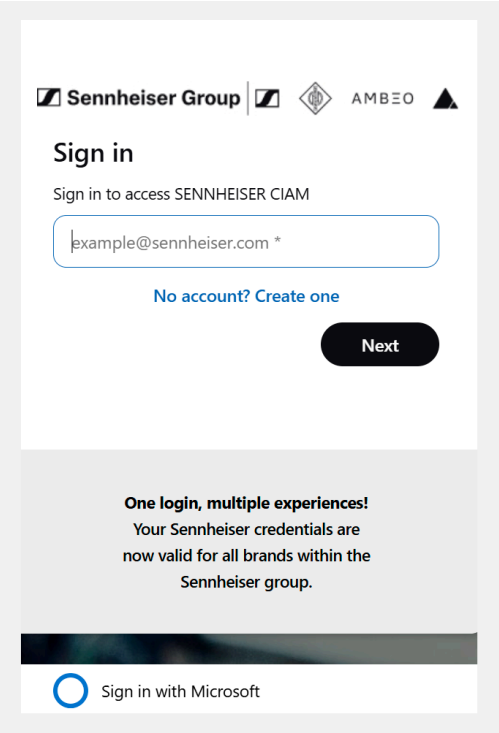
- Sign-up (Microsoft) to create a new account and use it for all future services.
- Sign in (Microsoft) to sign in with an existing account and access the application.

Sign-up (Microsoft)

Register with the Sennheiser Identity Platform using your existing Microsoft account from your customer tenant and provide the requested additional information.

To sign up:

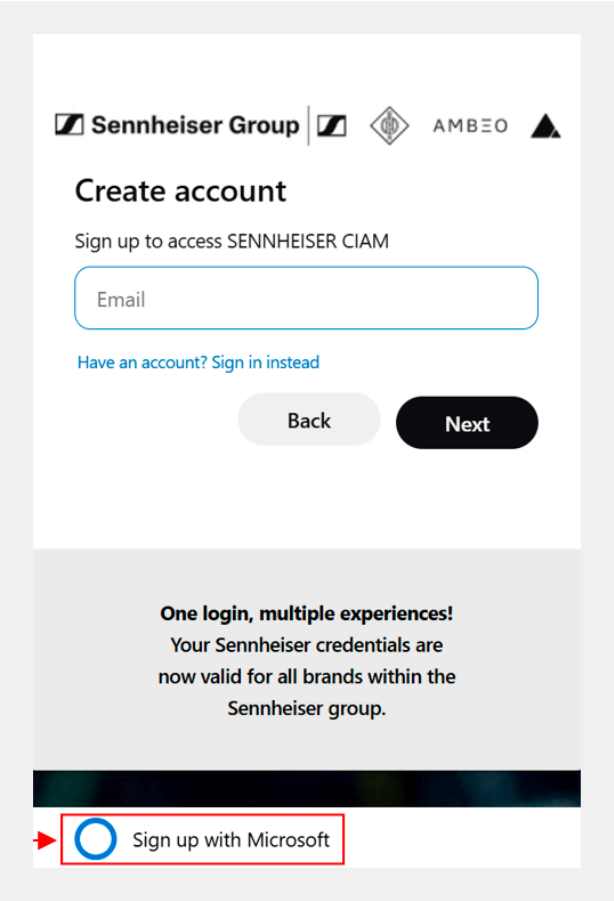
▶ Open the DeviceHub login page at https://devicehub.sennheiser.com/.



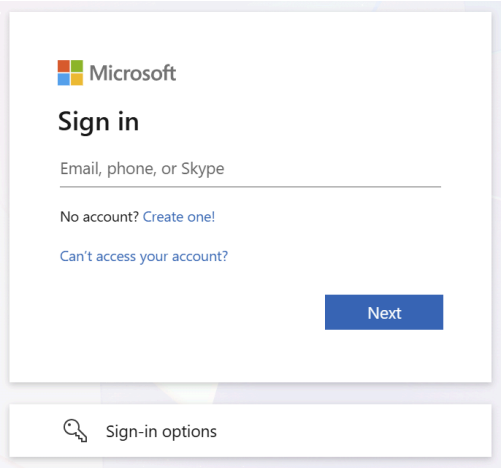
▶ Click **No account? Create one**.

✓ The Microsoft button changes from **Sign in with Microsoft** to **Sign up with Microsoft**.

You are forwarded to the common Microsoft login page.

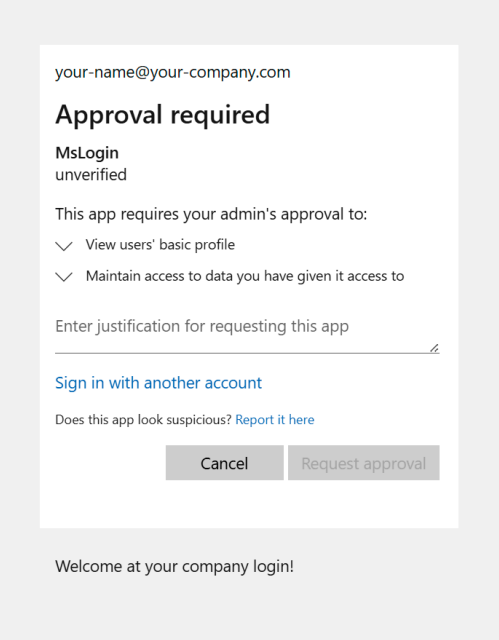


- Click on **Sign up with Microsoft** and enter your microsoft account email address.
  - After you enter your account email address, you are forwarded to your company-branded login page to enter your password. If you already have an active session for this account, you do not need to enter your password again.

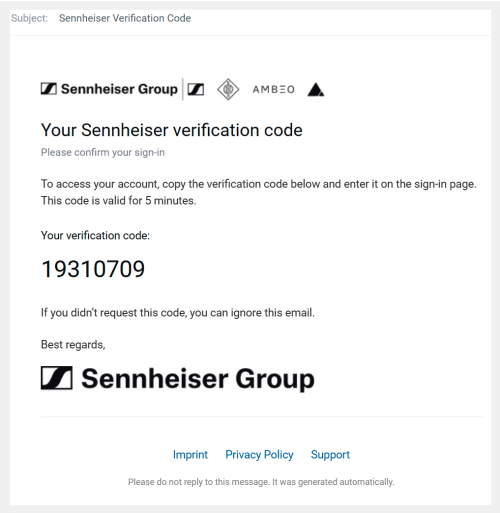


Depending on your customer tenant configuration, you may be required to complete your configured MFA challenge, such as Authenticator App, Passkeys, SMS, etc. This additional MFA depends entirely on your configuration.

If you are the first user in your company to use the Microsoft login from Sennheiser, it may happen that your administrator needs to approve the connection to Sennheiser. If this is the case, you are redirected to a page similar to this, where you are asked to enter a reason for the request (see Admin approval to enable trust between tenants).



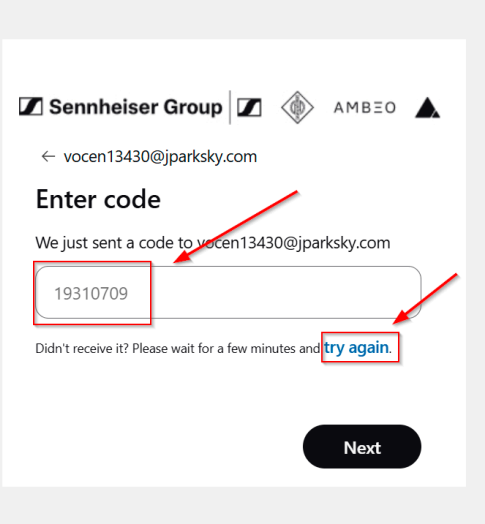
- Wait until your request has been approved by the admin.
  - Once the admin approves the request, a One-Time Passcode (OTP) is sent to your email address to verify your account and looks like this:



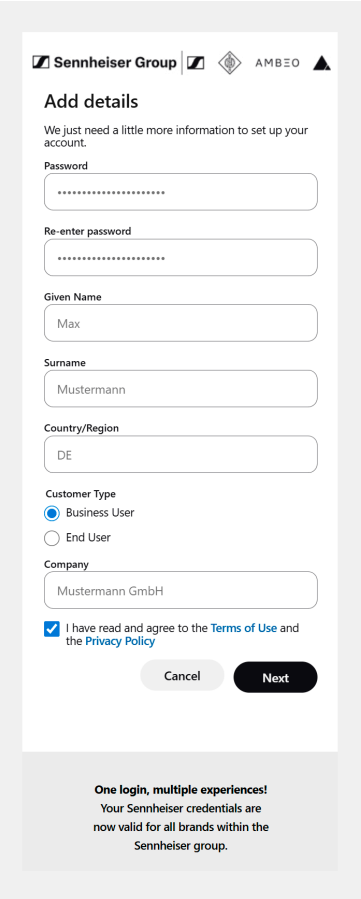
> OTP codes are valid for 5 minutes only.

- Enter the OTP on the screen.

> If it takes longer than expected to receive the OTP email, a hint appears indicating that you can request a new code. Click the link **Try again** and wait for the new OTP email to arrive in your mailbox.



- Enter your preferred password and provide all additional required information. You must also agree to our https://www.sennheiser.com/de-de/legal/terms-of-use-ciam and Security and data protection.



Please note that the terms of use can be updated at any time during the CIAM lifecycle based on legal or infrastructure changes. If you do not accept the terms of use, you will lose login access.

- Click **Next**.

  You are logged in and redirected to the application where you started the process.

You have signed up successfully.

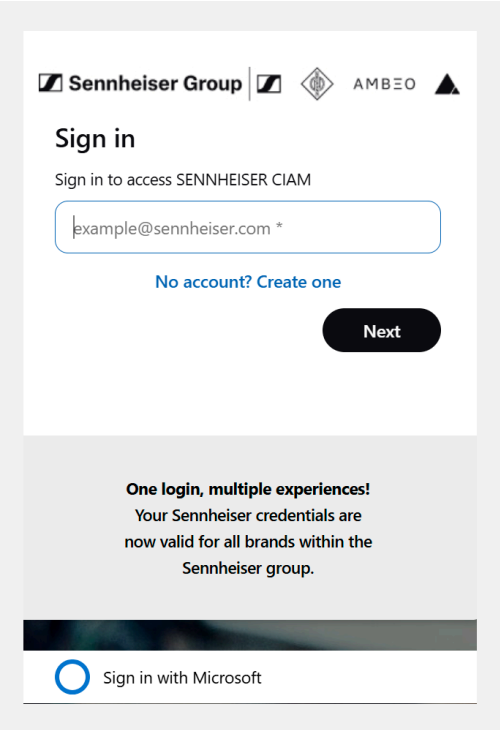
Sign in (Microsoft)

You can sign in with an existing Microsoft account.

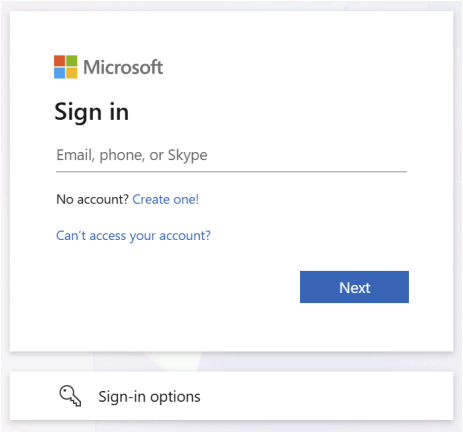
> If you are the first user in your company to use Microsoft sign-in with Sennheiser, your administrator must approve the connection to Sennheiser before you can sign in with your Microsoft account. In this case, you are redirected to a page where you must enter a reason for the request (see Admin approval to enable trust between tenants).

To sign in:

- Open the DeviceHub login page: https://devicehub.sennheiser.com/.
  - A new sign in/sign-up window is displayed.



- Enter your email address and select **Sign in with Microsoft**.
  - You are redirected to the standard Microsoft sign-in page.

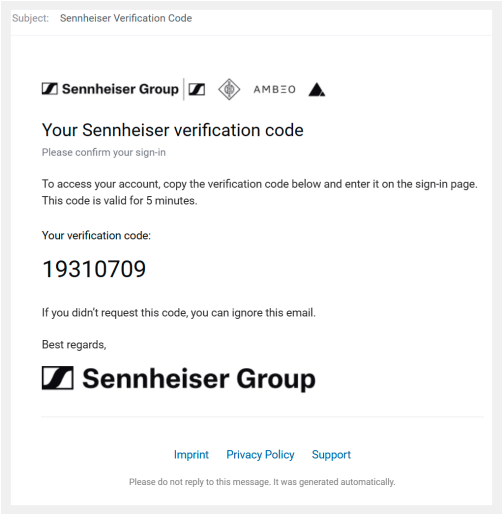


- Enter your email address again on the Microsoft sign-in page.

  After you enter your account email address, you are redirected to your company-branded login page to enter your password. If you already have an active session for this account, you may not need to enter your password again.

  > Depending on your organization's tenant configuration, you may be required to complete a configured MFA challenge, such as an authenticator app, passkeys, or SMS code. The required MFA method depends entirely on your configuration.

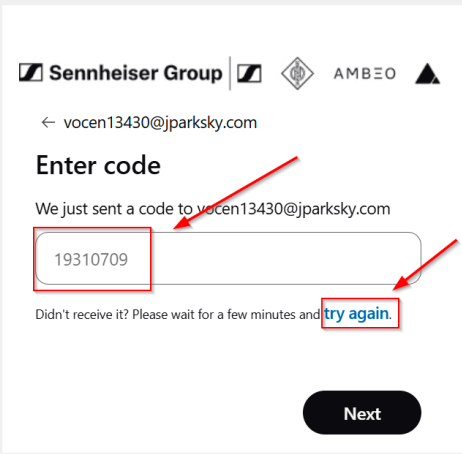
  A One-Time Passcode (OTP) is then sent to your email address to verify your account, for example:



  > OTP codes are valid for 5 minutes only.

- Enter the OTP on the screen.

If it takes longer than expected to receive the OTP email, a message appears indicating that you can request a new code. Select **Try again** and wait for the new OTP email to arrive.



You have signed in successfully and can now use DeviceHub with your Microsoft account.

Admin approval to enable trust between tenants

Audience: It-admin

Administrators manage Microsoft permission consent requests and, once approved, users in the tenant can sign in to the Sennheiser screen with their Microsoft accounts.

As an admin, you are notified when there is a pending approval request. For more information about these requests, see the Microsoft documentation: Request permissions that require administrative consent.

As an admin, you can decide whether to grant or revoke permissions. After you grant the permissions, users in this tenant can use their Microsoft accounts to sign in on the Sennheiser screen.

Setting up organization

An organization serves as the central workspace within the cloud application, where both devices and team members are managed.

If you log in to DeviceHub for the first time without an invitation, you will be prompted to set up your own organization.

> **i** Each user can create only one organization with the same email address, but they may be a member of multiple organizations by accepting invitations from others. Devices, however, can only be assigned to a single organization at any given time. To move a device to a different organization, it must first be removed from its current one before being added to the new organization.

To set up an organization:

- Agree to the Terms of Use and the Privacy Policy and click **Start setup**.
- Enter the required details for your organization and your job role.
- Click **Finish setup** to complete the process.

✓ Your organization is now set up.

> **i** The name of the active organization is always displayed at the top of the side navigation bar, enabling users to easily switch between the organizations they belong to. If you are a member of multiple organizations, you can switch organizations by:
>
> - Clicking the organization name at the top of the navigation bar.
> - Selecting the desired organization from the drop-down menu.

Joining an organization by invite

Learn how to join to your organization by receiving an invitation.

To join an organization invite:

- Open the invitation email you received and click the link it contains.
  - You will be redirected to the DeviceHub account.
- Log in with your credentials or create a new Sennheiser account.
- Finalize the onboarding process and click on **Finish setup** to complete process.

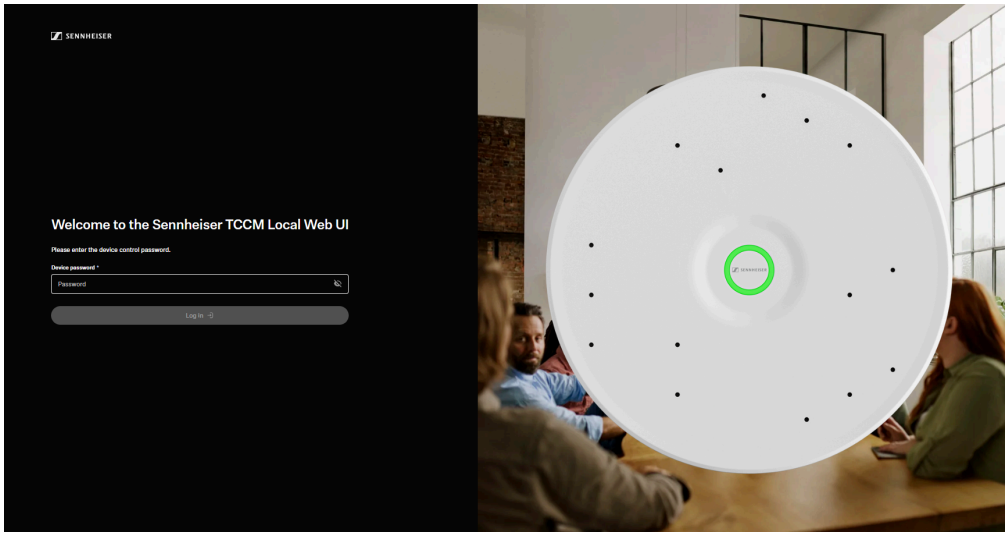
You have successfully joined to your organization DeviceHub.

Initial setup of the device

The TCC M Plus offers comprehensive monitoring and control functions that allow you to efficiently manage audio and device settings via various applications and interfaces.

Running the local web UI (LUI)

Connect and configure your TCC M Plus using the integrated local web UI.



You have two options to run the local web UI:

- First connect the TCC M Plus to your network via PoE.
- Read the serial number of your device from the product label and enter **https://tccm-plus-serialnumber.local** in the browser. Or:
- Enter **https://IP address** in the browser.

To determine the IP address of your device:

- Note the MAC address of the device as specified on the product label.
- Open the command prompt (CMD) on your computer.
- Enter the following command to determine the MAC address and IP address of the device: **configip**. If the MAC address and IP address are not displayed, enter the command **arp -a** to display all hidden devices.
  Depending on the configuration, it may take a few minutes until the device is detected in the network.
- Use the noted MAC address to read out the IP address of the device and note it down.
  - ✓ The IP address has been determined.

To access the local web UI:

- In your browser, enter the following URL with the determined IP address: **https://IP address**.
  Since the certificate is not known to your browser, a security warning appears when the application is started for the first time. The security warning depends on the browser used.

- Depending on the browser, click Advanced and then:
  - Continue to localhost (unsafe) (Microsoft Edge)
  - Continue to localhost (unsafe) (Google Chrome)
  - Accept the risk and continue (Firefox)
  - or a similar option (other browsers).

✓ You now have access to the local web UI.

Setting the password

Before you can configure the TCC M Plus with the local web UI (LUI), you must set a password.

> If the device was previously initialized by another instance, the password set at that time must be entered. If you no longer remember this password, please perform a device reset.

To set the initial password:

- When you first access the application in the device overview, set a password.
  Note that the new password must meet the following requirements:
  - At least ten characters
  - At least one lowercase letter
  - At least one uppercase letter
  - At least one number
  - At least one special character: !#$%&()*+,-./:;<=>?@[]^_{|}~
  - Minimum length: 10 characters
  - Maximum length: 64 characters

  The new password is now set.

To change the password:

- In the application, go to the menu item **Access & Security**.
- Under **Device password**, click “Change password” and enter the new password.

Selecting the operation mode

Select the appropriate operation mode to use the TCC M Plus either as a standalone device or optionally integrate it into a Q-SYS system.

To select an operation mode:

- Go to the menu item **Device → PartnerLink.**
- Select one of the following operation modes:
  - **Default (Dante)**
  - **Q-SYS**

> Since the device cannot be operated independently, select either **Default (Dante)** if the device is to be operated without integration into a third-party platform, or select **Q-SYS** to enable native control and optimized audio-over-IP integration within a Q-SYS system. For more information about operating the device in Q-SYS mode, refer to the Q-SYS Manual.

✓ The selected operation mode is now saved.

Selecting the installation option

To achieve optimal acoustic performance, you must select the correct installation option during initial setup. Dedicated default settings are stored for each mounting option.

To select an installation option:

- Go to the menu item **Audio → Setup**.
- In the drop-down menu under “Installation type,” select the installation option that applies to you.

✓ The installation option has been saved.

Selecting the network mode

Choose between Single Cable Mode and Split Mode to optimally adapt the network and audio transmission to your installation requirements.

- The device is delivered in Single Cable Mode.
- Split Mode cannot be selected in Partner-Link Mode.

To select a network mode:

- Go to the menu item **Network → Network Mode.**
- Select one of the following network modes:
  - **Single Cable Mode**
  - **Split mode**

  Select **Single Cable Mode** if you require a simple installation with only one cable and optional daisy-chaining. Select **Split Mode** if you want to route Dante audio separately from the rest of the network.

The selected network mode is now saved.

Device registration

Follow the steps to register your device with DeviceHub and ensure correct network connectivity and time synchronization.

> **i** The registration code is valid for 5 days and can be used for multiple devices. If the registration code is no longer valid, simply create a new one and copy it into the Sennheiser DeviceHub by clicking **Add device** and **Copy code**.

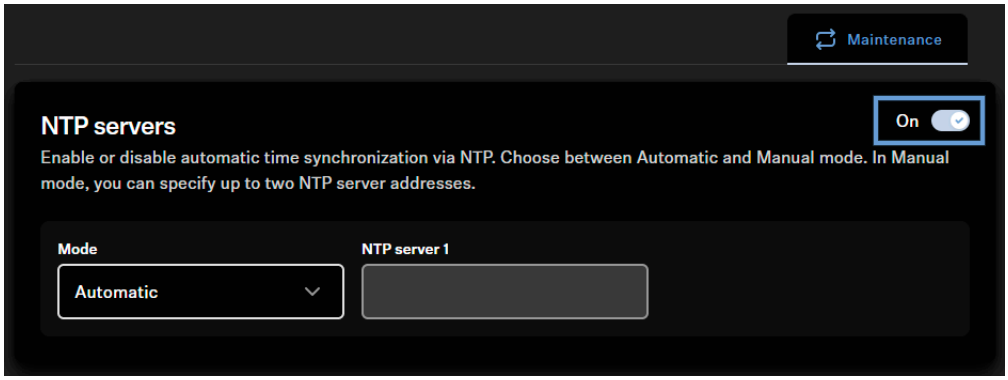
After the device has been prepared for DeviceHub (see Preparing the device for DeviceHub), you can start the registration process with the following steps:

1. Running the local web UI (LUI)
2. Configuring NTP servers
3. Enabling cloud connectivity
4. Enrolling devices
5. Disenrolling devices

Configuring NTP servers

Switch on NTP servers or temporarily use the browser time.

> **i** Choose between the three different NTP settings:
>
> a. **Auto:** The device retrieves the time automatically via the network, typically from the DHCP server or a standard network source. Manual configuration is not required.
> b. **Preset:** The device uses a predefined NTP server from a stored list. This option enables quick setup without having to enter server details manually.
> c. **Manual:** The NTP server is configured manually by entering a specific server address. This is used when you want to use a company-owned or custom time server.



To configure an NTP server (Network Time Protocol):

- Open your device's **local web UI** and switch to the **Network** tab.
- Set **NTP servers** to **On**.
- When enabled, the system uses the NTP server provided by the DHCP server by default ("Automatic").
- If your DHCP server does not provide an NTP server or you are using a static IP configuration, change the selection in the **NTP servers** field to "Manual" and enter your NTP server. You can enter either an IP address or a DNS name.

  i When configuring the time server, the device accepts any address or name that is provided via DHCP or entered manually without checking its reachability or validity. This allows you to preconfigure the device for later use in another environment. If problems occur with time synchronization, ensure that the configured server is reachable and a valid NTP server.

  i If you cannot use an NTP server, you can sync the device's time with your browser time by clicking "Use browser time" in the "System time" field. Note that this time is only retained until the next restart/shutdown. To establish a connection to the cloud after a restart, you must set the time manually again if you do not use NTP.

✓ The NTP server has been configured.

Enabling cloud connectivity

Learn how to enable cloud connectivity for your device.

To enable cloud connectivity:

- Open your device's **local web UI** and switch to the **Access & Security** tab.
- Under **Sennheiser DeviceHub**, set the switch to **On**.
  - An input form for the enrollment code is displayed.

Cloud connectivity has been enabled.

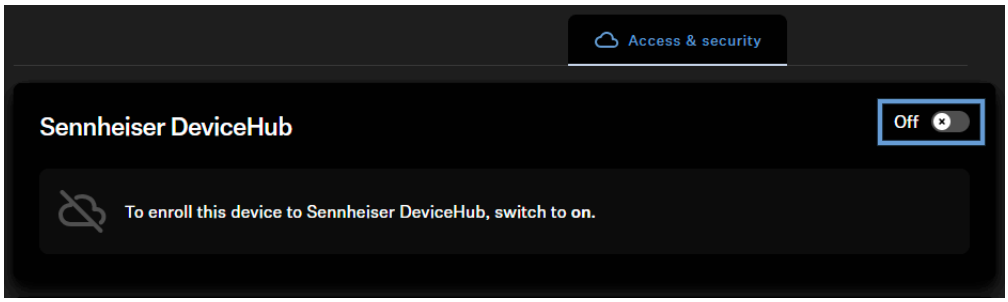
Continue with the next step: Enrolling devices

Enrolling devices

Audience: Owner

Learn how to enroll your device with DeviceHub.

To enroll your device:



- Open DeviceHub and switch to the **Device** section.
- Click **Add device**.
  - An enrollment code is displayed.
- Copy the enrollment code and switch to the device's local web UI.
- In the local web UI, go to the **Access & Security** tab and enable cloud connectivity under **Sennheiser DeviceHub** (if not already enabled).
  - A form requesting the required activation code will appear.
- Paste the enrollment code into the designated field.
- Click **Enroll device**.
  - After completion, Sennheiser DeviceHub displays the enrolled device(s) in the device list.

✓ The devices have been enrolled.

Disenrolling devices

Audience: Owner

Securely remove a device from DeviceHub to uncouple it from the organization and delete all device-related information in the IoT hub.

If a device is no longer in use or is being temporarily stored, for example during a room renovation, you should remove it from your DeviceHub account so that your device list remains clear and up to date. Each device can only be enrolled in one organization at a time. If you want to use a device in a new organization, you must disenroll it from the previous organization first.

To disenroll your device:

- In DeviceHub, go to the Devices page.
- For the device you want to disenroll, click the three dots and then click **Disenroll device**.
- Confirm the disenrollment.

  > Remember to disable cloud connectivity on the device's LUI to complete the disenrollment.

  ✓ The disenrollment starts in the background and the device shows the status **disenrolling**.

  > When the disenrollment has been successfully completed, the device is removed from the DeviceHub account and a success notification ("toast") confirms this. If the disenrollment fails, the device reappears in the list (in its previous state) and an error message indicates the issue.

✓ The device has been disenrolled.

Audio settings

The TCC M Plus offers comprehensive monitoring and control functions that allow you to efficiently manage audio and device settings via various applications and interfaces.

Audio Settings

In this chapter, you can configure basic audio functions of the microphone, including Intelligent Noise Control, the installation type, and TruVoicelift parameters to optimize speech intelligibility and prevent feedback

To make adjustments for Intelligent Noise Control:

- Go to the menu item **Audio → Audio Setup → Intelligent Noise Control**.
- In the drop-down menu, select the desired setting.

To make adjustments for the installation type:

- Go to the menu item **Audio → Audio Setup → Installation type**.
- In the drop-down menu, select the installation option that applies to you.

To make adjustments for TruVoicelift:

> **Mute threshold:** Defines the level below which the audio signal is automatically muted to avoid feedback and noise.
> **Mute interval:** Determines the delay time before the signal is muted after falling below the threshold in order to naturally bridge short pauses in speech.

- Go to the menu item **Audio → Audio Setup → TruVoice Lift**.
- Use the controls to make the settings that suit your needs.

✓ The changes for the Audio Settings have been saved.

Output Settings

In this chapter, you can configure the audio outputs of the microphone, including output gain, equalizer, signal delay, and the settings for the analog audio output.

To make adjustments for Digital Output Gain, Equalizer, or Delay:

- Go to the menu item **Audio → Outputs**.
- Now make the desired settings in the respective sections by adjusting the controls for Main Output or Far End Output.
  Main Out: Refers to the local microphone signal, i.e. the voices of the people in the room that are captured and output by the microphone. **Far-End Out**: Refers to the remote, far end signal, i.e. audio from external conference participants that can be processed or output separately. Each output can be adjusted individually with a level and an EQ.

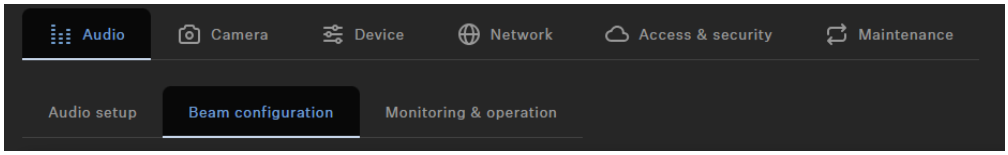
To make adjustments for Analog Audio Output:

- Go to the menu item **Audio → Outputs**.
- In the last section of the dialog, select the desired source from the drop-down list and adjust the values as required using the adjacent control. You can define which output is to be used for the analog output: **Main Out** or **Far-End Out**.
- Adjust the level as desired using the control.

✓ The changes for the Output Settings have been saved.

Beam configuration

In the beam configuration section, you can manage the following settings.



The TCC M Plus allows you to define two different zone types:

- One Priority Zone
- Up to three Exclusion Zones

The horizontal angles can be set individually for each zone.

Priority Zone

> **i** If the two zone types overlap, the rules of the Exclusion Zone apply.

The Priority Zone allows you to set up a zone that is given preference when audio signals arrive simultaneously from different positions. This function is useful, for example, in conferences with a particularly important person.

You can set a weighting for this zone. The weighting increases the focus on the signals coming from the zone by the selected values. The following settings are available:

- **Mid**: Increases the weighting of the audio output from the zone to approximately 1.5 times the normal value.
- **High**: Increases the weighting of the audio output from the zone to approximately 2.5 times the normal value.
- **Max**: Increases the weighting of the audio output from the zone to approximately 4 times the normal value.

> **i** When defining the Priority Zone, the area that is to be prioritized for audio source detection is displayed in green.

You can use the slider to define a Priority Zone. The zone can be set individually from 15° to 165°. Minimum angle size: 15°.

Exclusion Zones

> **i** If the two zone types overlap, the rules of the Exclusion Zone apply.

The TCC M Plus allows you to define up to five Exclusion Zones. When these zones are enabled, all audio signals coming from these areas are ignored.

> **i** When defining the Exclusion Zones, the area that is to be excluded for audio source detection is displayed in red.

You can use the sliders to define the Exclusion Zones. The horizontal zone can be set individually from 15° to 165°.

Overview

When you enable the zones, a 2D overview is created on the right-hand side that shows all enabled zones in real time. The zones in the 2D model are displayed either in green (prioritized) or red (excluded).

Configuring an external AEC reference channel

With the TeamConnect Ceiling devices, you can use an external AEC reference channel for echo cancellation (remote participants / far end signal) to temporarily stop the automatic dynamic beamforming while the far end signal is being played back through the loudspeakers in the room.

In this far end mode, the dynamic beam is aligned 90° downward. This function can be useful in certain situations where the AEC algorithm has difficulties with the dynamic reference signal.

The external AEC reference channel is sent by the DSP to the Dante input of the TeamConnect Ceiling device.

Requirements

- Route the AEC reference channel to the microphone input using Audinate's "Dante Controller" software.

Best practice recommendation

i From our experience, the following procedure should work for most scenarios.

- Leave the Dante input level of your microphone at the factory default value of **0 dB**.
- Start from a minimum output gain of the DSP on the reference channel so the automatic dynamic beamforming can work normally.
- Check this by speaking in the room and observing the beam position in the LUI. The far end must be inactive during this time.
- While the far end remains inactive, then slowly increase the DSP output gain until the beam alignment of the microphone drops/switches to **90°**.
- At this point, reduce the output gain of the reference channel on the DSP by **15** to **18 dB** to provide some headroom for far end detection.
- Optionally, you can set the Dante input level on the microphone if this is more practical than adjusting the output level on the DSP.

✓ The external AEC reference channel has been configured.

Device settings

The TCC M Plus offers comprehensive monitoring and control functions that allow you to efficiently manage audio and device settings via various applications and interfaces.

Updating firmware

As soon as has Internet access, the latest firmware versions for all updatable devices are provided automatically.

> **i** The latest firmware version is available on the product page sennheiser.com/tccmplus under Downloads → Firmware Updates.

> **i** In order to use the latest features of the software and in order for all devices to work properly, we strongly recommend keeping the firmware of all devices up to date.

> **i** For security reasons, firmware (FW) updates are not backward compatible. You cannot install FW versions that are older than the currently installed version.

ATTENTION

Loss of data if the firmware transfer is interrupted

If the transfer is interrupted, this may lead to a loss of data. The devices may be damaged by this.

- Do not remove any connections to the stationary devices during firmware updates.

- In , navigate to the start page.
  - The Firmware Info dialog indicates the available firmware versions.
- From the drop-down list, select the firmware version you want to install.

> **i** To add manually downloaded firmware, click on Add firmware file and select the downloaded file. Firmware versions downloaded automatically by are marked **via update server**. Firmware versions downloaded manually by yourself are marked **added manually**.

- Click on **Update**.
  - The firmware of the TC Bar is updated. Afterwards, the device reboots. The LED display presents a short demo.

✓ The firmware has been successfully updated.

Setting the LED color and brightness

This setting allows you to adjust the color of the LED on the TCC M Plus.

To adjust the brightness of the LED:

- In the menu, go to **Device**.
- In the **LED Brightness** field, set the desired value from 0 (off) to 5 (very bright).
  - The brightness of the LED has been adjusted.

To adjust the color of the LED:

- In the menu, go to **Device**.
- In the **LED Settings** section, select the desired color for the device states **MUTE** or **ON**.
  - The LED colors have been adjusted.

Performing a reset

There are several options for a reset: Factory Reset restores all device settings to their factory defaults, while Audio Reset only resets the audio settings. The Audio over IP reset only resets the AoIP settings.

To perform a device or audio reset:

- Go to the menu item **Maintenance → Factory Reset / Audio Reset**.
- Select either “Reset to factory settings” or “Reset audio settings.”
- Alternatively, perform the device reset by pressing and holding the **reset button** directly on the device.

To perform an Audio over IP reset:

- Go to the menu item **Audio or IP → Audio over IP Reset**.
- Select “Reset Audio over IP settings.”

✓ The settings have been reset.

Enabling/disabling standby

To achieve optimal acoustic performance, you must select the correct installation option during initial setup. Dedicated default settings are stored for each mounting option.

To enable/disable standby mode:

- Go to the menu item **Device → Standby**.
- Select the switch status **ON** or **OFF**.

✓ The settings have been saved.

PartnerLink

PartnerLink is a Sennheiser integration feature that allows supported products to be configured directly in selected third-party AV platforms.

PartnerLink simplifies audio integration and speeds up the configuration and commissioning of supported Sennheiser products. It reduces the need for additional components and simplifies the system architecture. PartnerLink was designed as a scalable framework for future integrations with partner platforms.

Features

- No separate microphone plug-ins required for TCC M Plus
- No additional Dante configuration required for TCC M Plus
- Fewer switches between different configuration tools
- Optimized workflows for planning, implementation, and operation

Supported partner platforms

PartnerLink currently supports the following platform:

- **Q-SYS**:
  - TCC M Plus microphones appear directly in Q-SYS Designer and are treated like native Q-SYS components.
  - TCC M Plus is displayed in the Q-SYS inventory alongside native Q-SYS components.
  - Microphones can be identified and assigned within Q-SYS workflows.
  - Configuration is carried out entirely in Q-SYS Designer.

> **i** For more information on selecting the operation mode for PartnerLink, see the chapter Selecting the operation mode.

Cleaning and maintenance

ATTENTION

Liquids can damage the electronics of the product

Liquids entering the product housing can cause a short-circuit and damage the electronics.

- Keep all liquids away from the products.
- Do not use any solvents or cleansing agents.
- Disconnect the products from the power supply system and remove rechargeable batteries and batteries before you begin cleaning.
- Clean all products only with a soft, dry cloth.

- Disconnect the products from the power supply before you begin cleaning.
- Clean all products only with a soft, dry cloth.

Transport

This chapter contains information on the proper transport of the TeamConnect Ceiling Medium Plus.

ATTENTION

Material damage from improper transport

Incorrect packing of the product for transport may result in damage.

- Only transport the product in its original packaging.

3. Knowledge base

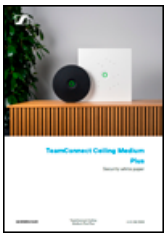
Central hub for information, resources, and guides with further content on the product and/or service.

This page provides an overview of additional information such as instructions, know-how, best practices, and other links for the product.

Helpful links

- sennheiser.com/devicehub

PDF downloads

Download	Document
	**Cybersecurity Whitepaper** This security whitepaper provides IT professionals with a comprehensive understanding of the TeamConnect Ceiling M Plus product, its components, and security features.

FAQ

The most frequent questions and answers summarized in a chapter.

Why can I not use the TCC M Plus immediately after installation?

For security reasons, the TCC M Plus must be claimed before it can be used for the first time. Access the local user interface (LUI) and perform the initial configuration by creating a password. Once the device has been claimed, it can be configured and operated normally.

How do I access the local user interface (LUI)?

The LUI can be accessed via a web browser using the IP address of the device or the mDNS hostname. The default mDNS hostname is located on the product label, the packaging, or in the QR code. By default, the hostname follows this format: `https://tccm-plus-[serialnumber].local`.

Why is the TCC M Plus not visible in Q-SYS Designer?

The TCC M Plus starts in the default mode. To use the microphone with Q-SYS, activate Q-SYS Mode in the device settings. After activation, the LED flashes red and blue, indicating

that the device can be detected in Q-SYS Designer. Make sure that you are using the currently supported version of Q-SYS Designer.

Can I change the device name?

Yes. The device name can be changed in the Device Management section of the LUI or in DeviceHub. When changing the device name, the hostname and the mDNS name are updated automatically. Optionally, the same name can also be used for the AoIP device name in the AoIP settings.

Why can my device not connect to DeviceHub?

Check whether the device has access to the Internet, a valid system time is set, and the required firewall permissions are in place. If necessary, configure an NTP server or use the browser time to synchronize the device time before onboarding.

Can I use the TCC M Plus without DeviceHub?

Yes. All basic device configurations and operation can be performed locally via the LUI. DeviceHub is only required for cloud-based monitoring and remote management functions.

4. Specifications

Product characteristics and acoustic properties, ambient conditions, polar diagram and frequency response curve.

Specifications

Product properties

Dimensions (Ø×H)

- 407 x 46 mm
- 590.8 mm x 590.8 mm x 45.8 mm (Ceiling Tile)
- 606.5 mm x 606.5 mm x 45.8 mm (2 ft ceiling tile)

Weight

- 4.9 kg max.
- 4.5 kg (Ceiling Tile)
- 4.6 kg (2 ft ceiling tile)

Audio outputs

- 1 × 3-pin connection socket (suitable for Phoenix Contact MCVW 1.5-3-ST-3.81)
- 1x digital Dante® network audio (RJ-45)

Network/Control

- 1 × RJ-45 Ethernet socket for PoE power supply and data/control

Supply voltage

- PoE IEEE 802.3af Class 3 or PoE IEEE 802.3at / Type 2 / Class 4 (if cascaded)

Power consumption

- approx. 8 W

Security certification

- Tested according to UL 2043

Acoustic properties

Transducer principle

- Pre-polarized condenser microphone

AF frequency response

- 100 Hz - 16,000 Hz

Sensitivity

- 2 dBV/Pa @ 1 kHz

Signal-to-noise ratio

- 82 dB(A)

Equivalent noise level

- 12 dB SPL (A-weighted)

Number of microphone capsules (KE 10-237-SMT)

- 15

Pick-up pattern

- Beam pattern

Max. sound pressure level

- 98 dB SPL

Dynamic range

- 86 dB(A)

Ambient conditions

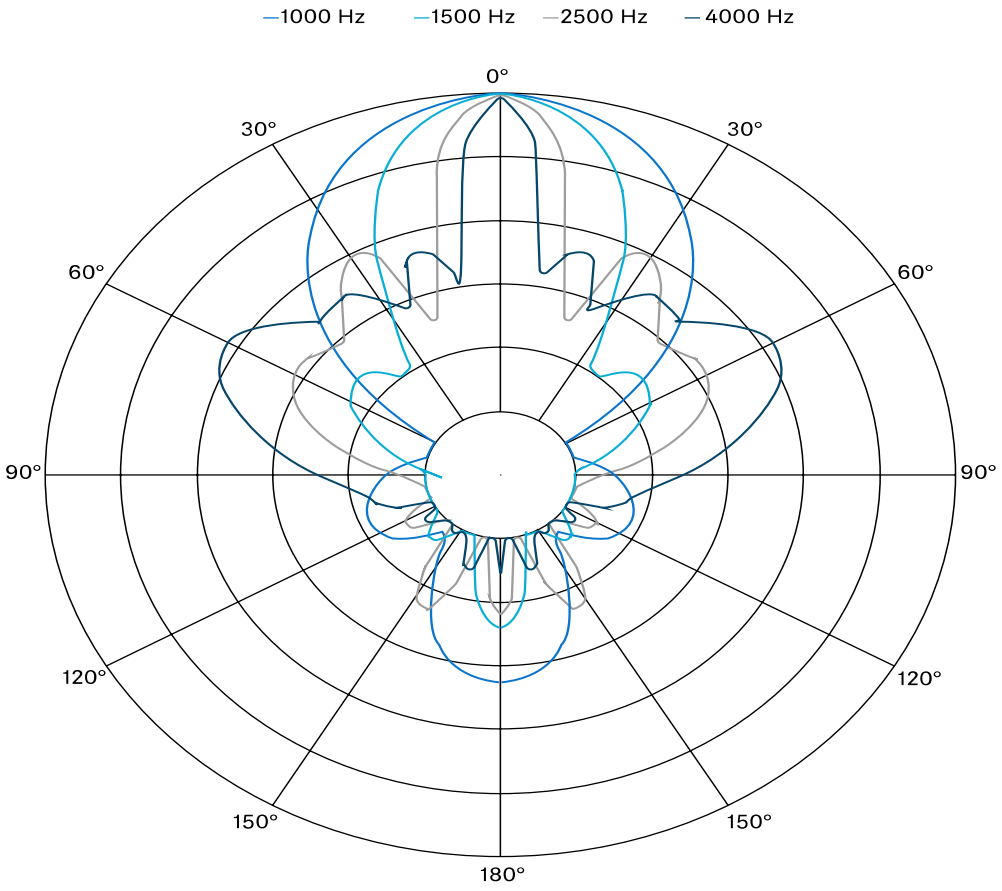
Temperature range

- Operation: 0 - 40 °C
- Storage: -10 - 60 °C

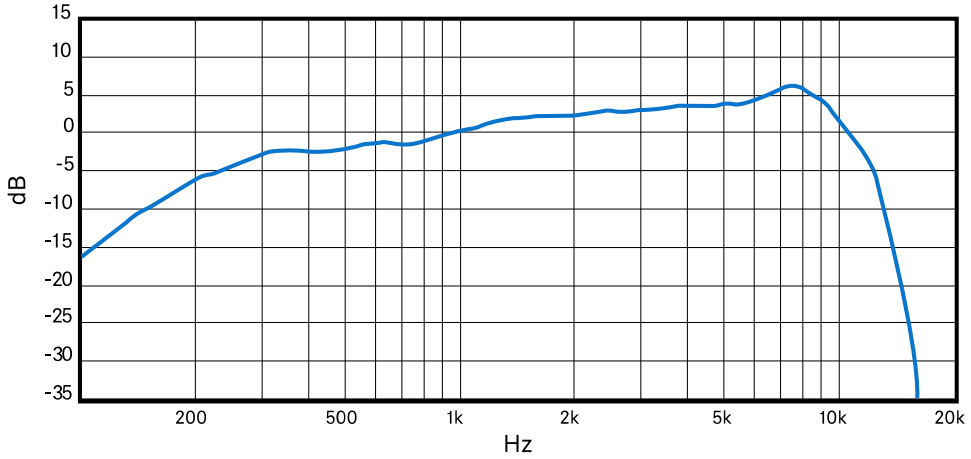
Relative humidity

- 20 - 95%, non-condensing

Polar diagram



Frequency response



5. Regulatory information

Information on manufacturer declarations, environmental and disposal notices, and terms of use.

Model: TCC M Plus

Warranty

Sennheiser electronic SE & Co. KG gives a warranty of 24 months on these products.

For the current warranty conditions, please visit our website at sennheiser.com or contact your Sennheiser partner.

In the US please contact:

Sennheiser Electronic Corporation

1 Enterprise Drive, Old Lyme, CT 06371

www.sennheiser.com

Warranty for Australia and New Zealand only

Sennheiser Australia Pty Ltd provides a warranty of 24 months on these products. For the current warranty conditions, visit Sennheiser website: Australia: sennheiser.com, New Zealand: sennheiser.com

Sennheiser goods come with guarantees that cannot be excluded under Australian and New Zealand Consumer law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

This warranty is in addition to other rights or remedies under law. Nothing in this warranty excludes, limits or modifies any remedy available to be consumer which is granted by law.

To make a claim under this contract, raise a case via Sennheiser website. Australia: sennheiser.com/support, New Zealand: sennheiser.com/support

All expenses of claiming the warranty will be borne by the person making the claim.

Sennheiser international warranty is provided by: Sennheiser Australia Pty Ltd (ABN 68 165 388 312) Level 14, Tower A Zenith Building, 821 Pacific Highway, Chatswood NSW 2067, Australia

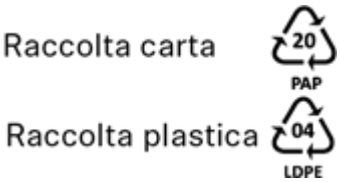
Europe

CE

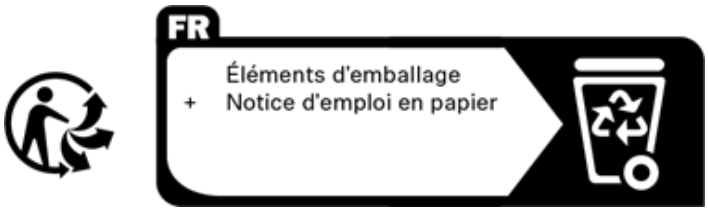
In compliance with the following requirements

- Regulation (EU) 2023/988 on general product safety
- WEEE Directive (2012/19/EU)

Italy:



France:



Notes on disposal

The symbol of the crossed-out dumpster on the product, the (rechargeable) battery (if applicable) and/or the packaging indicates that these products must not be disposed of with normal household waste, but must be disposed of separately at the end of their service life. For the packaging, follow the regulations in your country for separating waste. Improper disposal of packaging materials can be harmful to your health and the environment.

The separate collection of waste electrical and electronic equipment, (rechargeable) batteries (if applicable) and packaging is intended to promote reuse and recycling and to prevent negative impacts on public health and the environment, for example due to hazardous substances contained in these products. At the end of their service life, recycle electrical and electronic equipment and (rechargeable) batteries so that their materials can be reused and to prevent environmental pollution.

If (rechargeable) batteries can be removed without destroying them, you are obliged to dispose of them separately (see the product's operating instructions for information on how to remove the batteries safely). Be especially careful when handling (rechargeable) batteries containing lithium, as these pose special hazards, such as the risk of fire and/or health risks if button cells are swallowed. Reduce battery waste as much as possible by using longer-life batteries or rechargeable batteries.

Further information on the recycling of these products can be obtained from your municipal administration, from the municipal collection points, or from your Sennheiser partner. You may also be able to return electrical or electronic equipment to your distributor, if they are legally required to do so. By disposing of your batteries properly, you are helping to protect public health and the environment.

EU Declaration of conformity

- RoHS Directive (2011/65/EU)
- EMC Directive (2014/30/EU)

The full text of the EU declaration of conformity is available at the following internet address: sennheiser.com/download.

United Kingdom

In compliance with the following requirements

- WEEE Regulations (2013)

UK Declaration of conformity

- RoHS Regulations (2012)
- EMC Regulations (2016)

Importer: Sennheiser UK Ltd.

Pacific House, Third Avenue, Globe Park, Marlow

Buckinghamshire SL7 1EY, United Kingdom

USA

Statements regarding FCC and ISED

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contact information: Sennheiser Electronic Corporation, 1 Enterprise Drive, Old Lyme, CT 06371; sennheiser.com

Canada

Statements regarding FCC and ISED

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contact information: Sennheiser Electronic Corporation, 1 Enterprise Drive, Old Lyme, CT 06371; sennheiser.com

Australia / New Zealand

Mexico

South Korea

R-R-SE9-TCC MPlus

A/S 연락처: +82 070-4746-7903

Vietnam

Kể từ ngày 1 tháng 12 năm 2012, các sản phẩm được sản xuất bởi Sennheiser tuân thủ Thông tư 30/2011/TT-BCT quy định về giới hạn cho phép đối với một số chất độc hại trong các sản phẩm điện và điện tử.

China

China RoHS

部件名称 (Parts)	有害物质										
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	邻苯二甲酸二(2-乙基己)酯 (DEHP)	邻苯二甲酸丁苄酯 (BBP)	邻苯二甲酸二丁酯 (DBP)	邻苯二甲酸二异丁酯 (DIBP)	产品环保年限 EFUP
金属部件 (Metal parts)	x	o	o	o	o	o	o	o	o	o	15
电路模块 (Circuit Modules)	x	o	o	o	o	o	o	o	o	o	15

本表格依据 SJ/T 11364 的规定编制。
o: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 规定的限量要求以下。
x: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 规定的限量要求。

Trademark

Audinate®, Dante®

Audinate® is a registered trademark of Audinate Pty Ltd. Dante® is a registered trademark of Audinate Pty Ltd.

Sennheiser electronic SE & Co. KG | Am Labor 1 | 30900 Wedemark | Germany