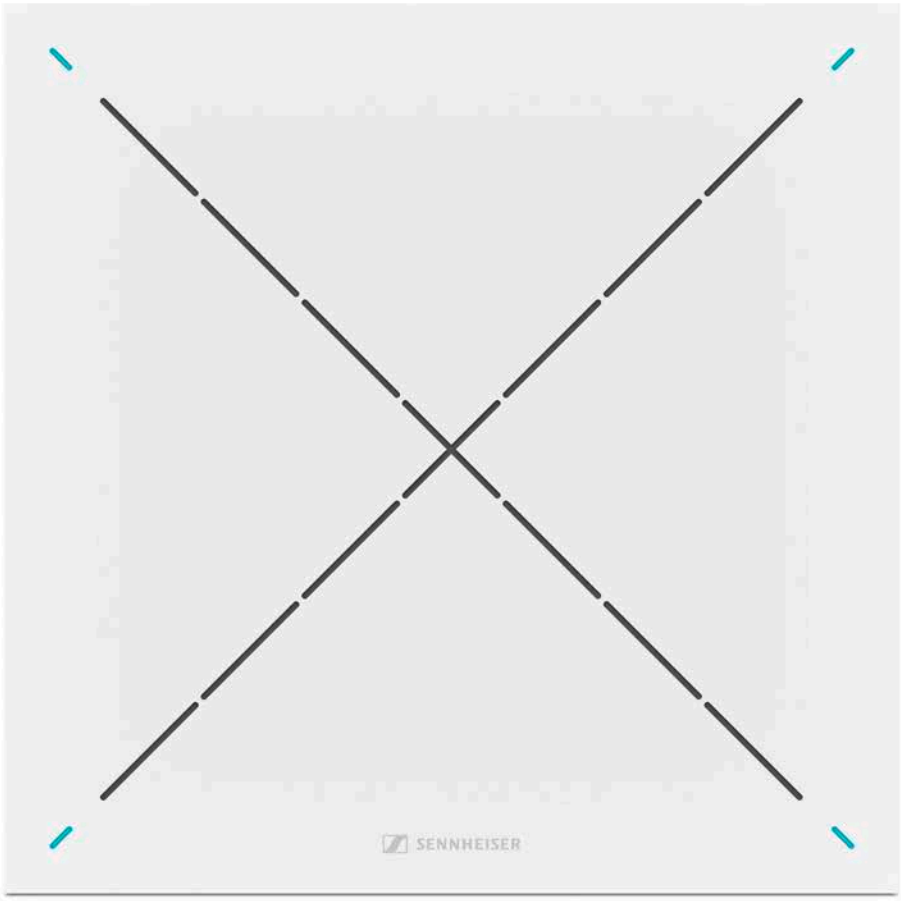

TeamConnect Ceiling 2

Instruction manual

SENNHEISER

Sennheiser electronic GmbH & Co. KG

Am Labor 1, 30900 Wedemark, Germany, www.sennheiser.com
Publ. 02/22

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Important safety instructions

1. Read these safety instructions and the instruction manual of the product.
2. Keep these safety instructions and the instruction manual of the product. Always include all instructions when passing the product on to third parties.
3. Always include this instruction manual and the safety guide when passing the product on to third parties.
4. Only use attachments, accessories and spare parts specified by the manufacturer.
5. Do not attempt to open the product housing on your own. The warranty is voided for products opened by the customer.
6. Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, liquid has been spilled or objects have fallen into the product, when the product has been exposed to rain or moisture, does not operate normally, or has been dropped.
7. Use the product only under the conditions of use listed in the specifications.
8. Do not operate the product if it was damaged during transportation.
9. Always run cables so that no one can trip over them.
10. Keep the product and its connections away from liquids and electrically conductive objects that are not necessary for operating the product.
11. Do not use any solvents or aggressive cleaning agents to clean the product.
12. Caution: Very high signal levels can damage your hearing and your loudspeakers. Reduce the volume on the connected audio devices before switching on the product; this will also help prevent acoustic feedback.

Intended use

The product is designed for indoor use, such as in conference rooms or presentation halls.

The product can be used for commercial purposes.

It is considered improper use when the product is used for any application not named in the corresponding instruction manual.

Sennheiser does not accept liability for damage arising from improper use or misuse of this product and its attachments/ accessories.

Before putting the products into operation, please observe the respective country-specific regulations!

Safety instructions for installation

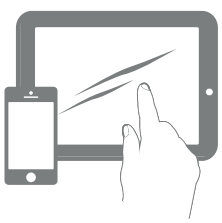
Observe the following safety instructions when installing the product.

- ▷ The physical mounting and all electrical installations must be performed by a specialist.
- ▷ The specialist must have sufficient professional training, experience and knowledge of applicable provisions, regulations and standards to be able to properly assess the work assigned to them, identify possible hazards and take appropriate safety measures.
- ▷ When mounting the product, observe and follow all local, national and international regulations and standards.

This instruction manual is available in other languages in PDF and HTML versions on the Sennheiser website and as a mobile version in the Documentation App:

- Sennheiser website: www.sennheiser.com/tcc2
- Sennheiser documentation app: Accessible using the QR codes shown below

Online instruction manual



www.sennheiser.com/download

TeamConnect Ceiling 2

Sennheiser Documentation App

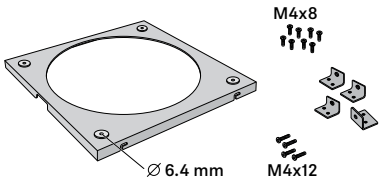
Package contents

- TeamConnect Ceiling 2
- 3-pin Phoenix connector (3.81)
- 8 self-adhesive rubber feet
- 2 eye bolts (M4x10)
- Instruction manual
- Supplement sheet with manufacturer declarations

Accessories

SL CM FB

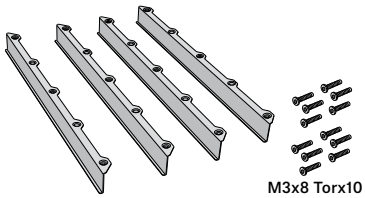
Ceiling mounting frame



Art. no. 506846

SL CM EB US

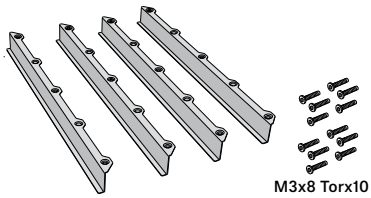
Angle brackets
(for 2 ft ceiling grid)



Art. no. 508528

SL CM EB 625

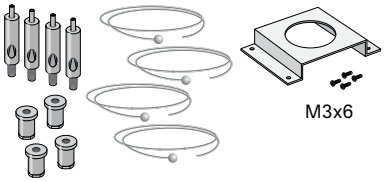
Angle brackets
(for 625 mm ceiling grid)



Art. no. 508290

SL CM SK

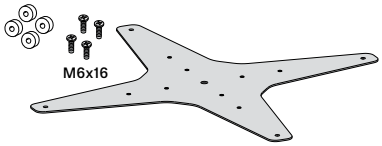
Ceiling suspension set



Art. no. 508291

SL CM VB

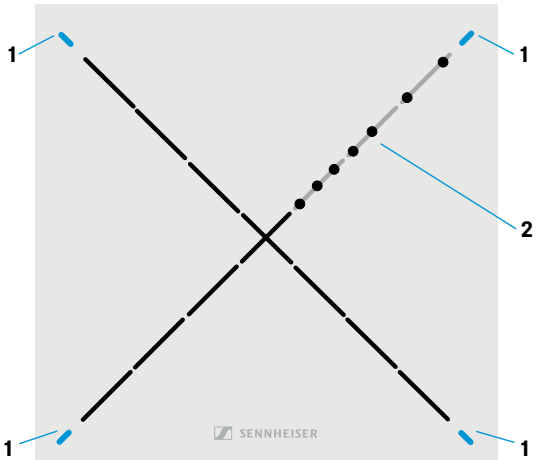
VESA adapter



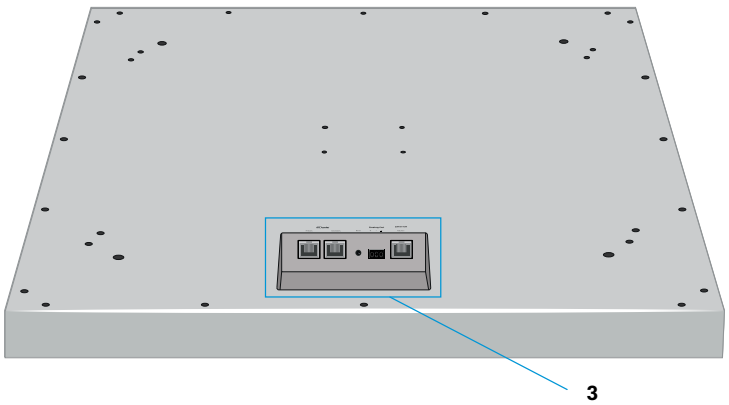
Art. no. 508620

Product overview

Bottom

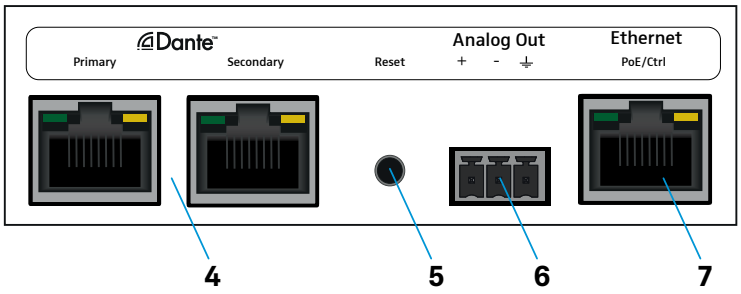


Top



1	Status LEDs	Multi-colored, can be configured with software
2	Microphone capsules	28 x KE 10-237
3	Connection sockets	See next page

Connectors and controls



4	Digital audio output	Dante™ interface with two RJ-45 sockets, **Primary** and **Secondary** • Supports redundancy and switched mode
5	Reset button	To restore the factory settings • Hold for 5 seconds
6	Analog audio output	3-pin socket • Suitable for Phoenix Contact MCVW 1.5-3-ST-3.81
7	PoE/Ctrl socket	RJ-45 socket • PoE supply (Power over Ethernet) • Configuration via the software or a media control system

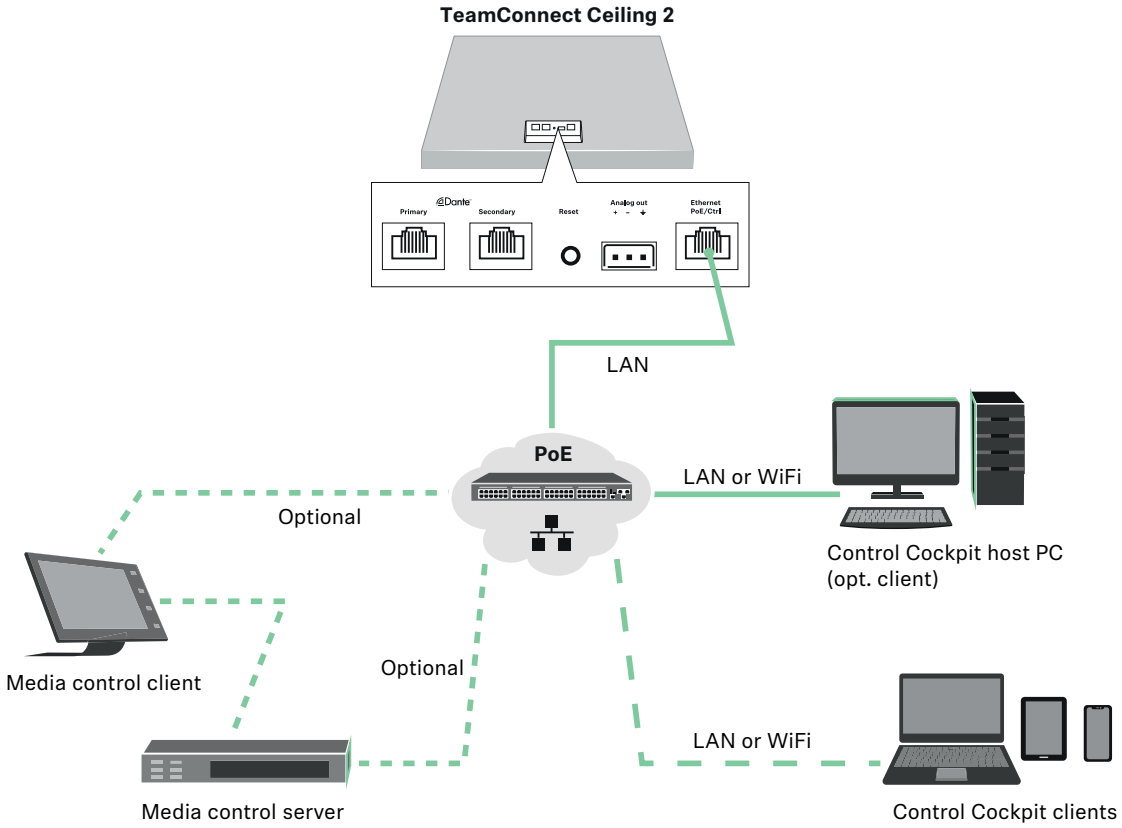
Connecting the TeamConnect Ceiling 2

Connecting to the network (power supply and configuration)

The **Ethernet PoE/Ctrl** RJ-45 socket is used to both power the TeamConnect Ceiling 2 via **Power over Ethernet** and configure it using the **Sennheiser Control Cockpit** software (see „Configuring the TeamConnect Ceiling 2“ on page 32).

▷ In your network you can either use a switch that provides PoE or a PoE injector.

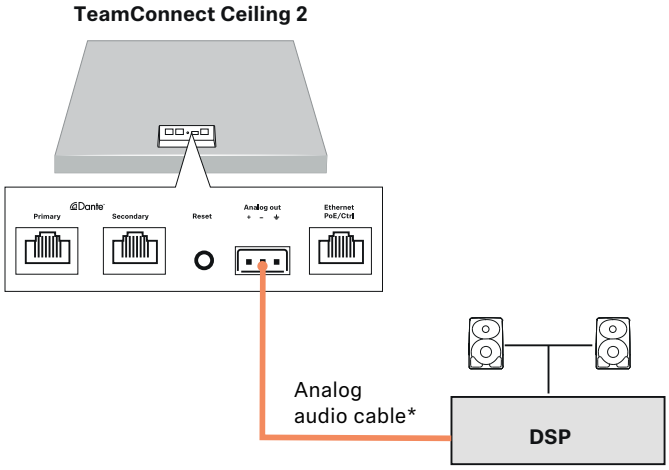
Use only shielded STP network cables that do not exceed an AWG value of 24.



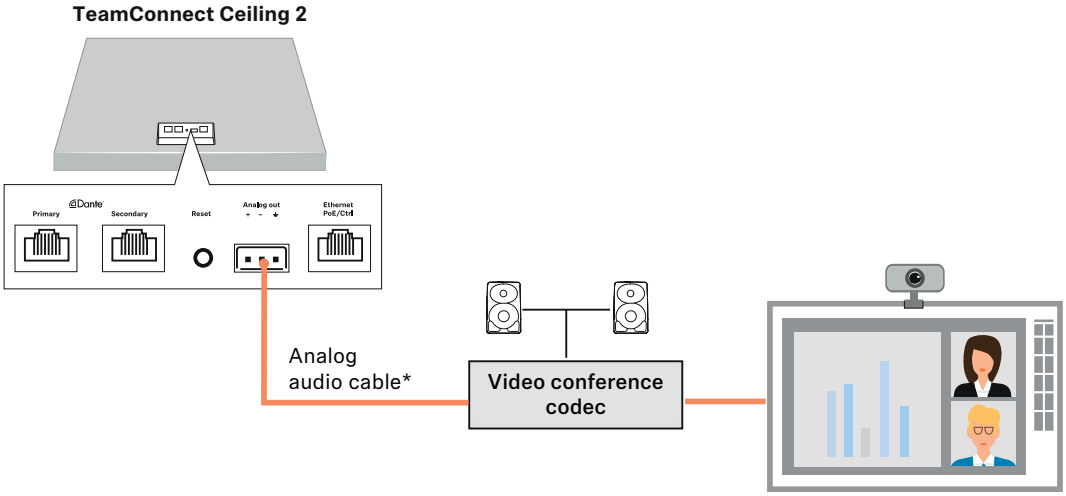
Outputting analog audio signals

Use the **Analog Out** socket to output analog audio signals.

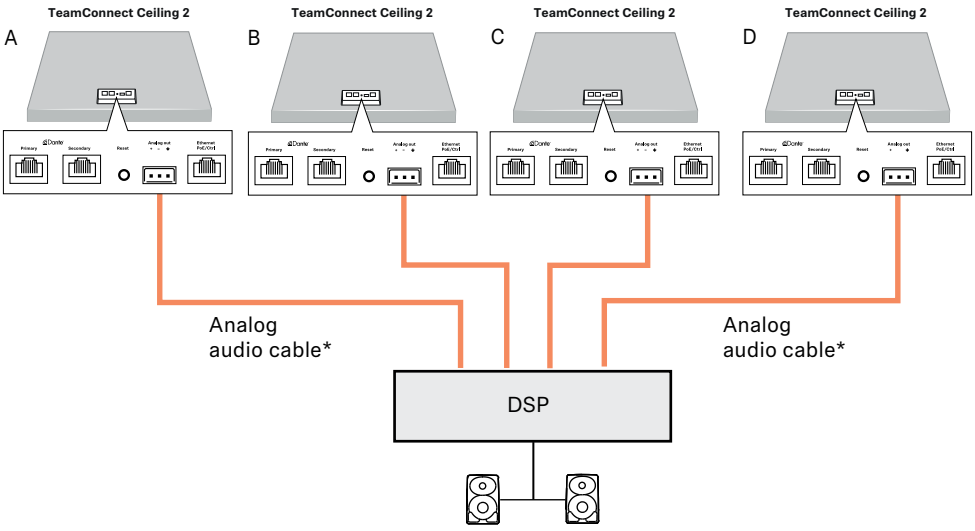
Variant 1: output analog audio signal to a DSP.



Variant 2: output analog audio signal to video conference codec.



Variant 3: output analog audio signal from multiple ceiling microphones to a single DSP.

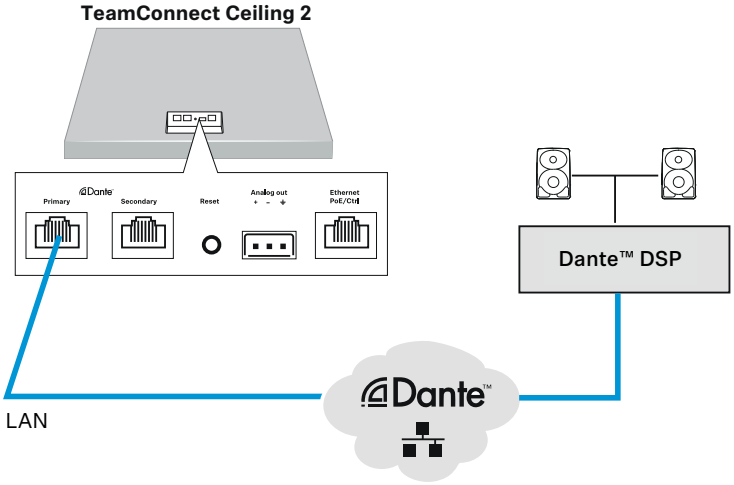


*The cable is not included with delivery. Depending on the audio input of your DSP, the cable must connect 3-pin terminal to 3-pin XLR terminal or to jack.

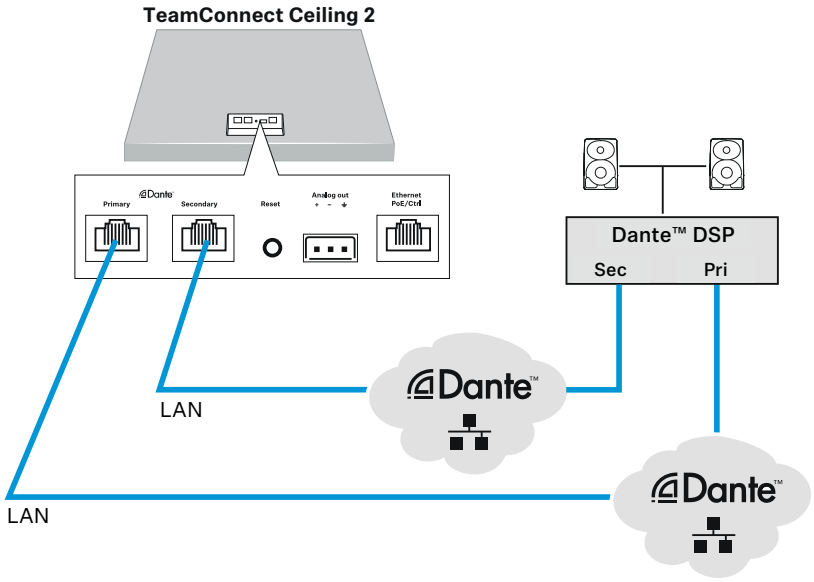
Outputting digital audio signals

The Dante™ interface with two RJ-45 sockets, **Primary** and **Secondary**, is used for outputting digital audio signals. The interface supports redundant output and series connection of multiple ceiling microphones (switched mode). The mode is configured using the **Dante Domain Manager or Dante Controller** from Audinate (www.audinate.com).

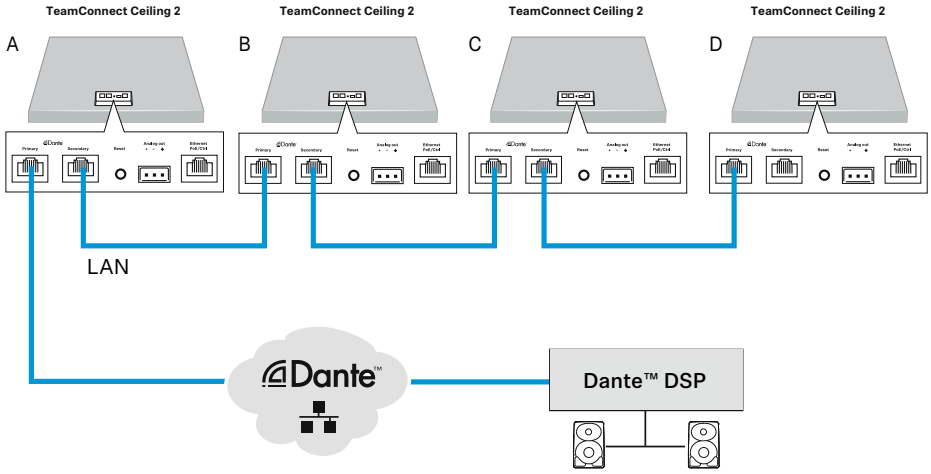
Variant 1: output digital audio signal to one Dante™ network



Variant 2: output redundant audio signals to two separate Dante™ networks



Variant 3: output digital audio signals from multiple ceiling microphones connected in series to one Dante™ network

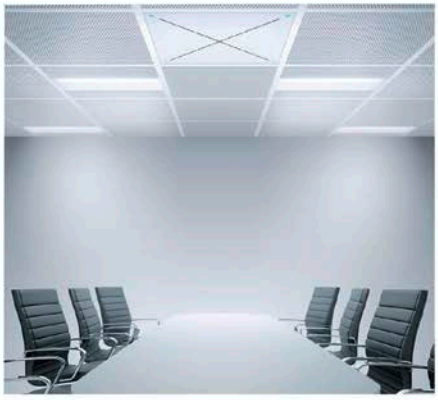


Planning the installation

Possible installation variants

Variant 1:

installed flush in a dropped/coffered ceiling



Accessories required:

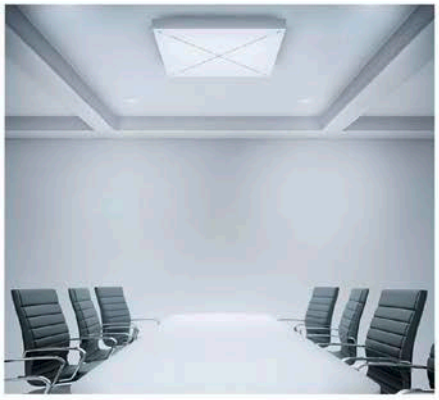
SL CM EB US (590 mm to 2 ft) or
SL CM EB 625 (590 mm to 625 mm)

Angle brackets

See „Accessories“ on page 21

Variant 2:

mounted directly below the ceiling



Accessories required:

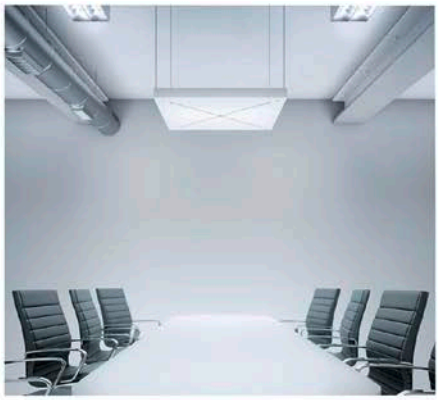
SL CM FB

Ceiling mounting frame

See „Accessories“ on page 21

Variant 3:

suspended from the ceiling



Accessories required:

SL CM SK

Ceiling suspension set

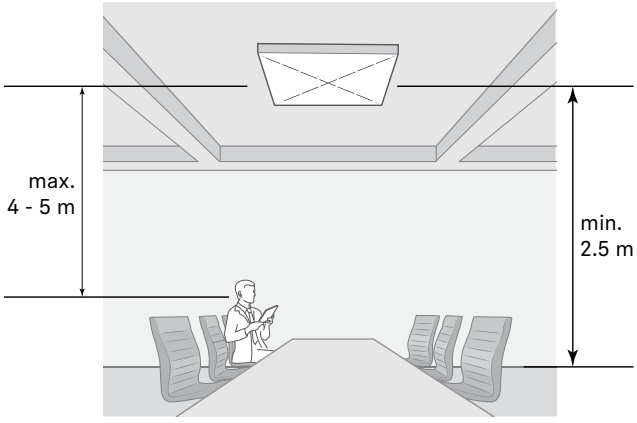
See „Accessories“ on page 21

Detailed installation instructions can be found in the section „Installing the TeamConnect Ceiling 2“ on page 26.

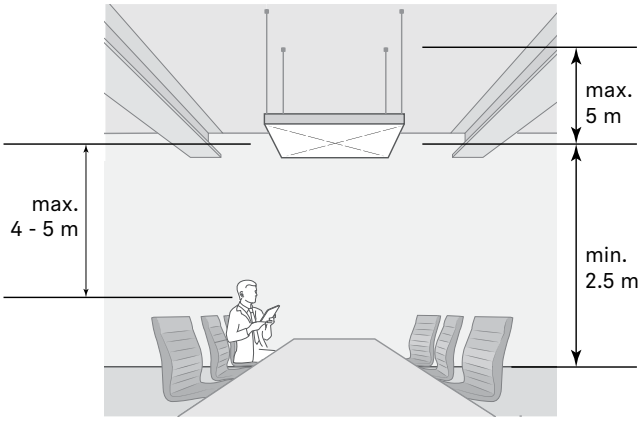
Adapting the installation height

Observe the following minimum and maximum distances when installing the TeamConnect Ceiling 2

Recommended distances for variants 1 and 2:



Recommended distances for variant 3:



The recommended maximum distance from the speaker to the TeamConnect Ceiling 2 is 4 to 5 m.

The minimum distance from the TeamConnect Ceiling 2 to the floor is 2.50 m.

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.

Installing the TeamConnect Ceiling 2

Variant 1: installed flush in a dropped/coffered ceiling

The TeamConnect Ceiling 2 can be easily installed in a dropped ceiling or coffered ceiling with square ceiling tiles (600 x 600 mm). Angle brackets are available for ceiling tiles with the standard dimensions of 2 ft or 625 mm. When flush mounting, do not install the TeamConnect Ceiling 2 directly next to lights or other electrical devices in the ceiling.

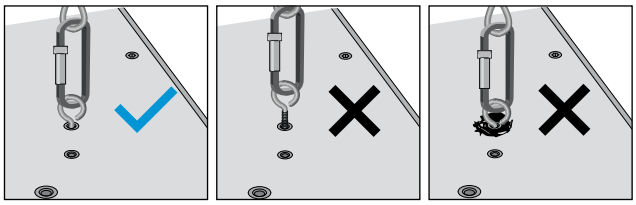
When mounting the unit in the ceiling, always additionally secure the TeamConnect Ceiling 2 against falling:

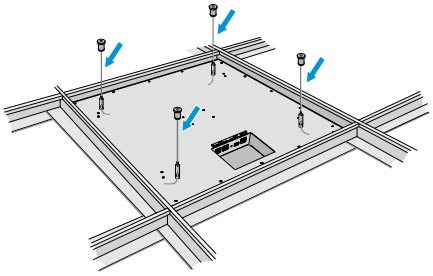
a. by using the SLCMSK ceiling suspension kit (see “Variant 3 – suspended from the ceiling” on p. 13)
or

b. by using the safety ropes and quick links, which can be attached at the intended mounting points using the included eye bolts.

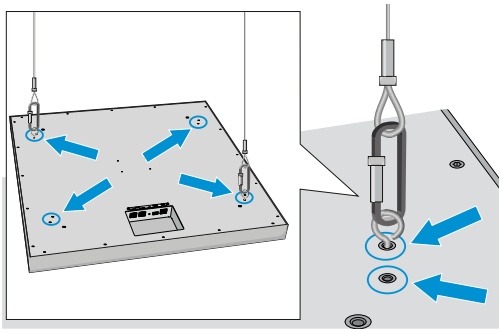
▷ Hand-tighten the M4x10 eye bolts in the Team-Connect Ceiling 2 to avoid damaging the metal housing by screwing them in too deeply.

▷ Make sure that the thread on the eye bolt is fully within the thread at the mounting point.





A: secured with SL CM SK suspension kit



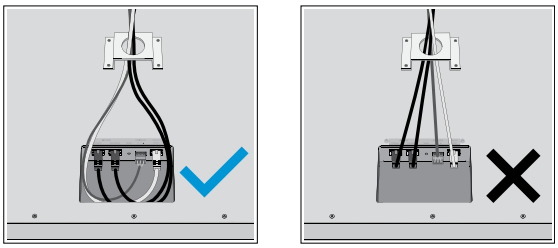
B: secured with eye bolts

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.

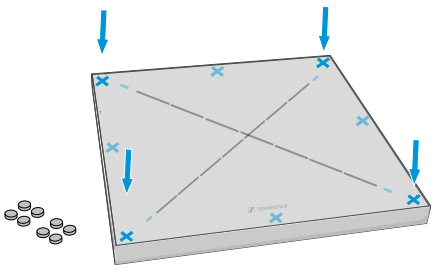
▷ Make sure not to kink the cables to avoid breaking them or damaging the plugs.



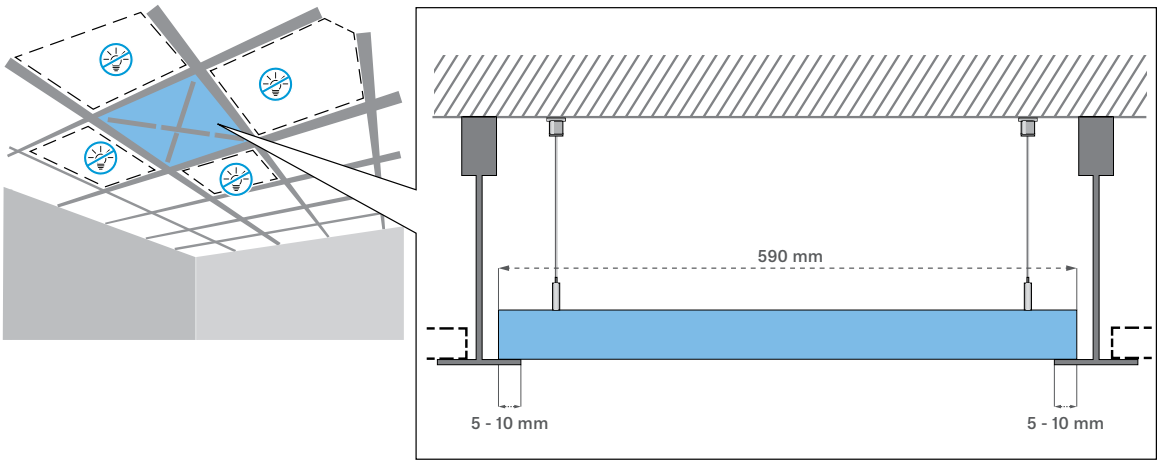
Protect the surface of your TeamConnect Ceiling 2 against scratches or damage to the paint by using the clear rubber feet included with delivery.

▷ On the underside of the TeamConnect Ceiling 2, clean the areas where you want to attach the feet.

▷ Attach the feet to the product.



Installing the TeamConnect Ceiling 2 in the ceiling without angle brackets (600 x 600 mm grid)

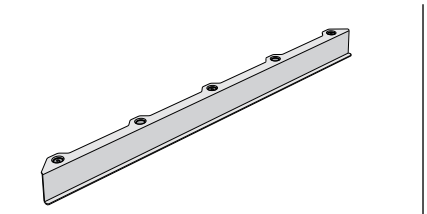


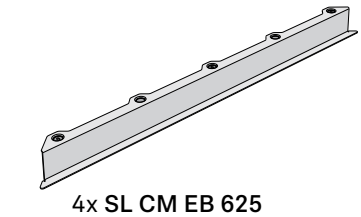
▷ Remove a tile from the ceiling.

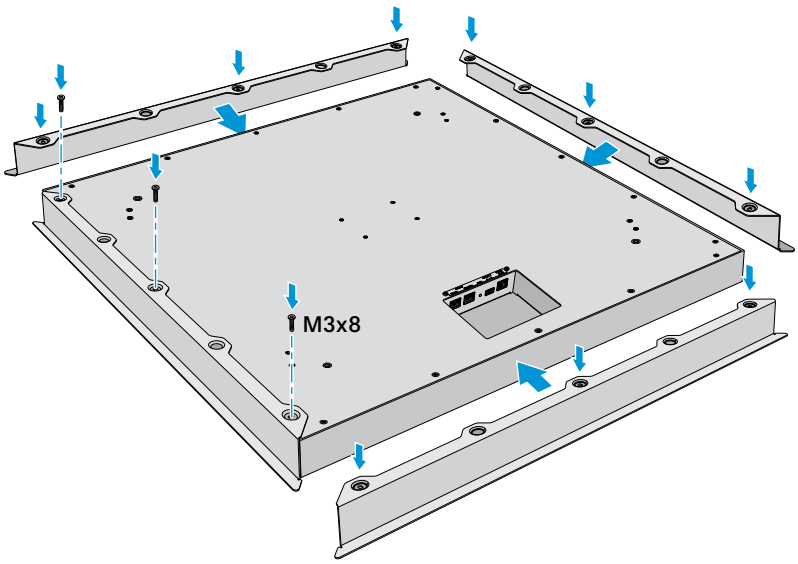
▷ Place the TeamConnect Ceiling 2 in the frame in the coffered ceiling.

▷ Maintain the distances indicated in the figure.

Installing the TeamConnect Ceiling 2 in the ceiling with angle brackets (2 x 2 ft or 625 x 625 mm grid)

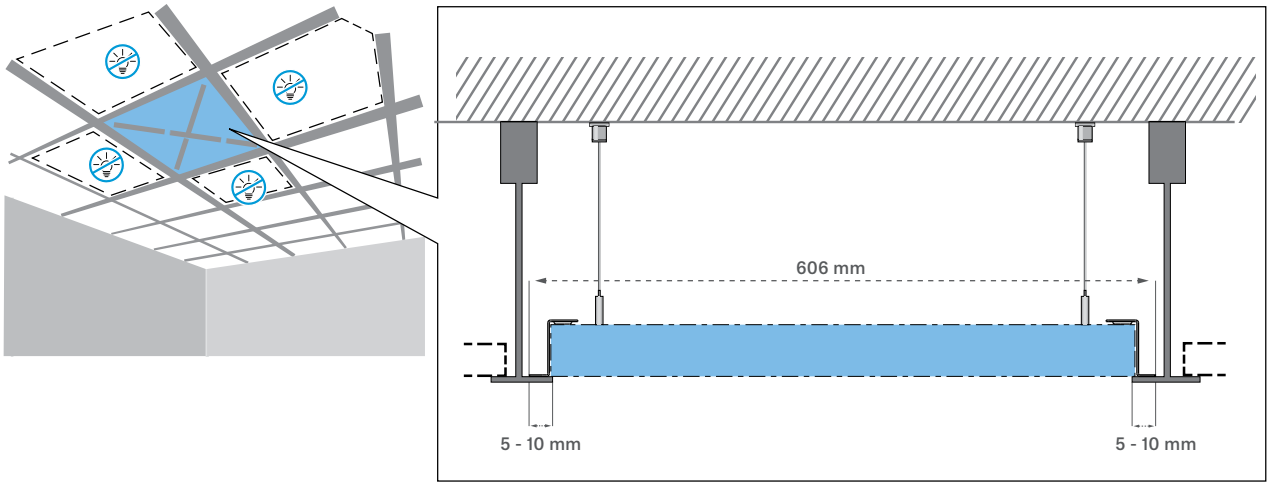




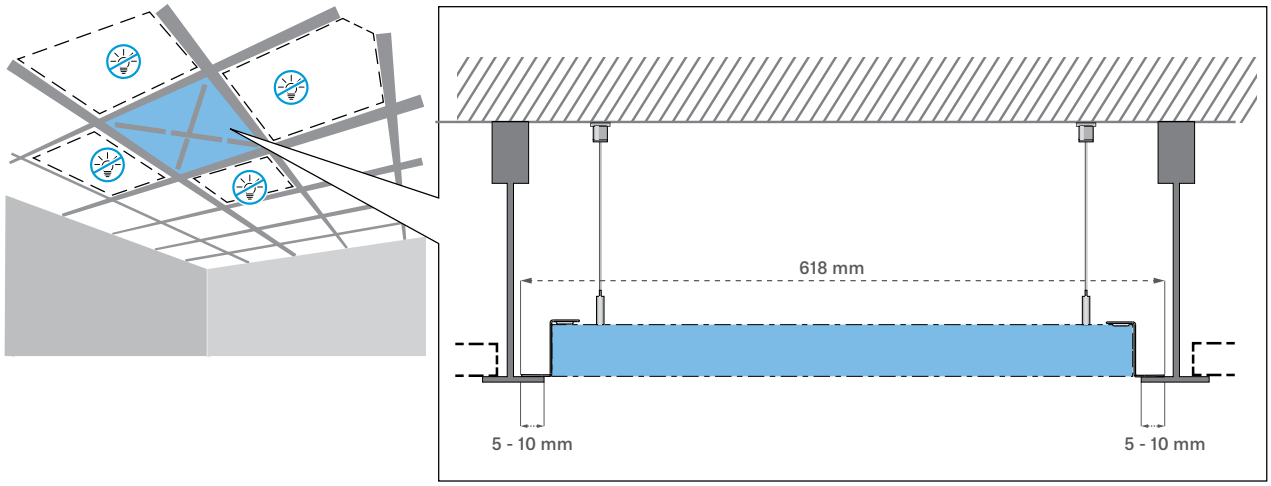


▷ Attach the angle brackets to the TeamConnect Ceiling 2 as shown in the figure.

Mounting with SL CM EB US:

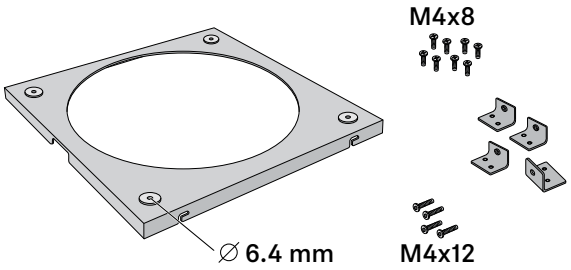


Mounting with SL CM EB 625:



- ▷ Remove a tile from the ceiling.
- ▷ Place the TeamConnect Ceiling 2 in the frame in the coffered ceiling.
- ▷ Maintain the distances indicated in the figures.

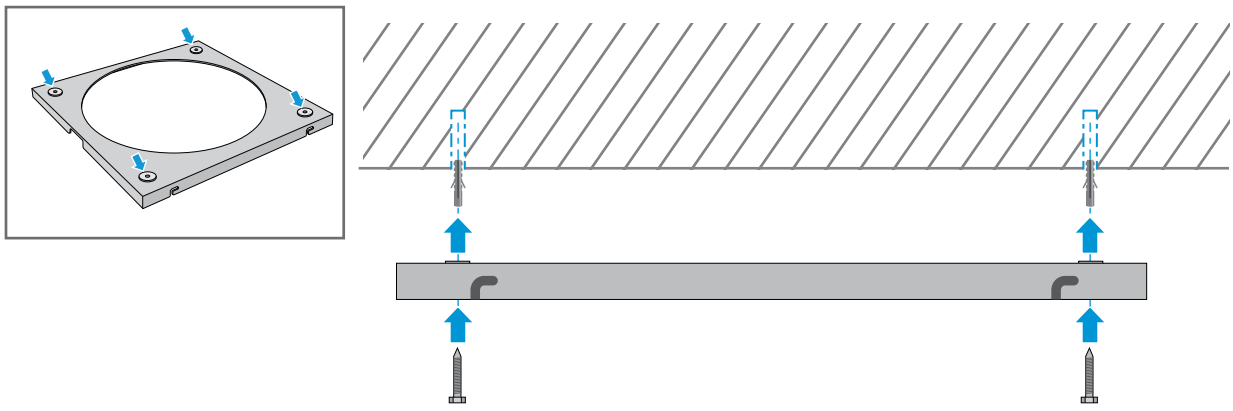
Variant 2: mounted directly below the ceiling



To mount the product directly below the ceiling, you need the **SL CM FB** ceiling mounting frame.

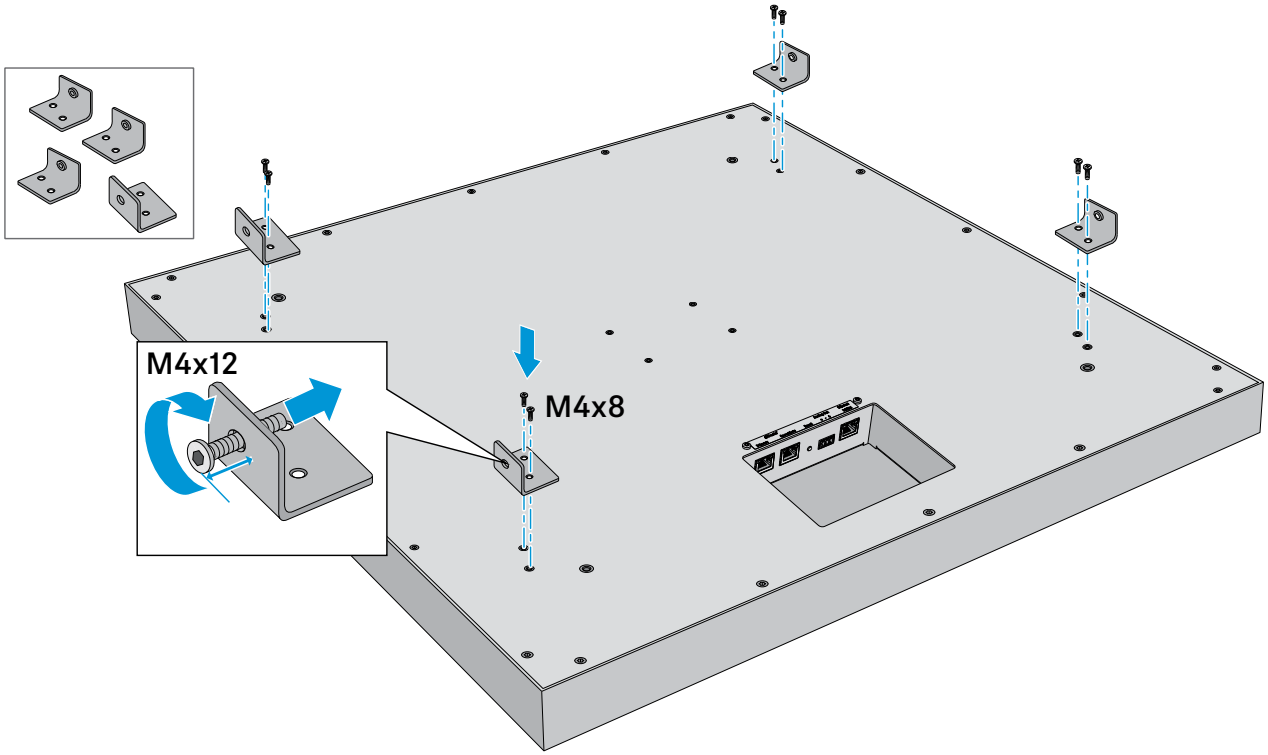
Screws and anchors for mounting the product to the ceiling are not included with delivery. Use screws and anchors that are appropriate for the particular characteristics of your ceiling.

Mounting the ceiling mounting frame



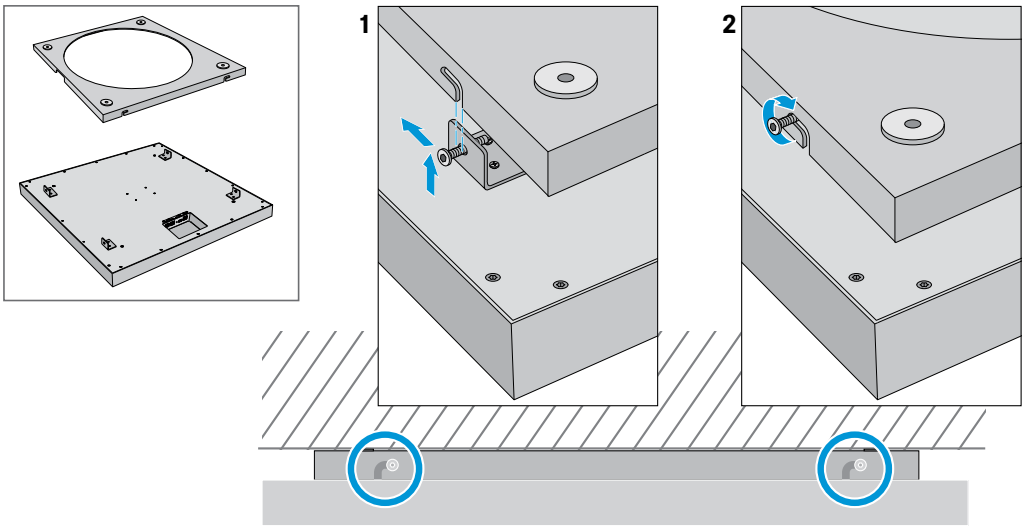
- ▷ Screw the ceiling mounting frame to the ceiling using four suitable screws and anchors.

Fastening the angle brackets to the TeamConnect Ceiling 2



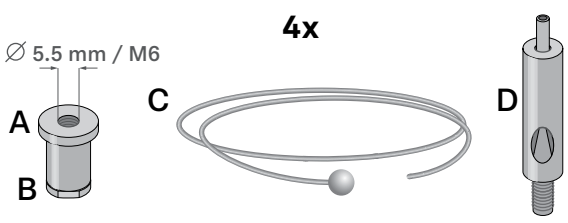
- ▷ As shown in the figure, fasten the four angle brackets to the TeamConnect Ceiling 2 using two of the included M4x8 screws for each bracket.
- ▷ Screw one M4x12 screw into each of the four angle brackets from the side.
- ▷ Do not screw the screw all the way in (see figure).

Fastening the TeamConnect Ceiling 2 to the ceiling mounting frame



- ▷ As shown in the figure, hook the TeamConnect Ceiling 2 into the grooves in the ceiling mounting frame using the four M4x12 screws installed in the previous step.
- ▷ Tighten the four M4x12 screws so that the TeamConnect Ceiling 2 sits tightly in the ceiling mounting frame.

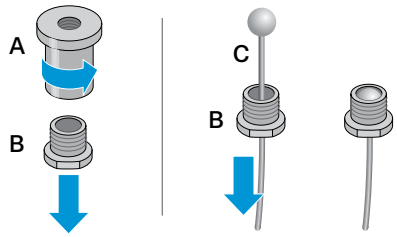
Variant 3: suspended from the ceiling



For suspended mounting, you need the **SL CM SK** ceiling suspension set.

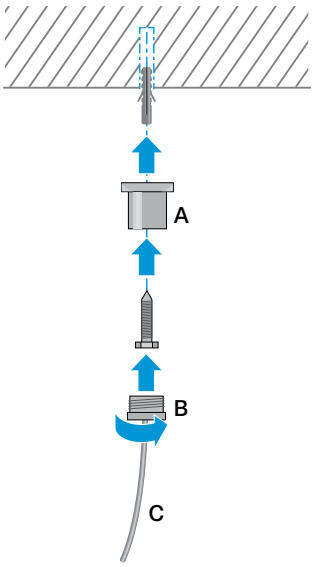
Screws and anchors for mounting the product to the ceiling are not included with delivery. Use screws and anchors that are appropriate for the particular characteristics of your ceiling.

Preparing the ceiling fastener

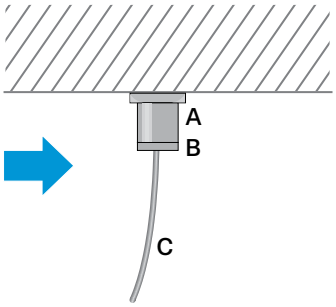


- ▷ Unscrew part **A** of the ceiling fastener from part **B**.
- ▷ Thread the steel cable **C** into part **B** so that the ball on the steel cable is in part **B**.
- ▷ Repeat these steps for the other three fasteners.

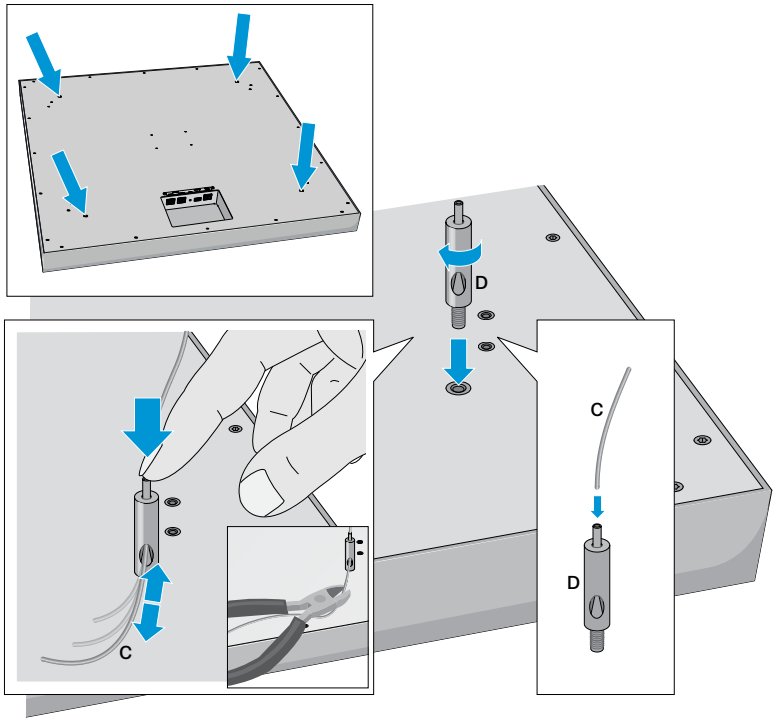
Mounting the ceiling fastener



- ▷ 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.



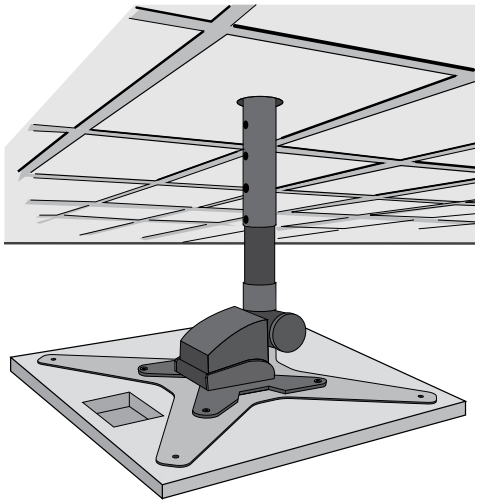
Mounting the product fastener



- ▷ As shown in the figure, screw the product fastener **D** into the threaded mounting hole on the top of the TeamConnect Ceiling 2.
- ▷ Set the steel cable **C** to the desired length by using your finger to press the cable guide into the product fastener **D** and sliding the steel cable as needed.
- ▷ Cut the excess steel cable using suitable pliers.
- ▷ Repeat these steps for the other three fasteners.

Mounting the TeamConnect Ceiling 2 on a VESA mount

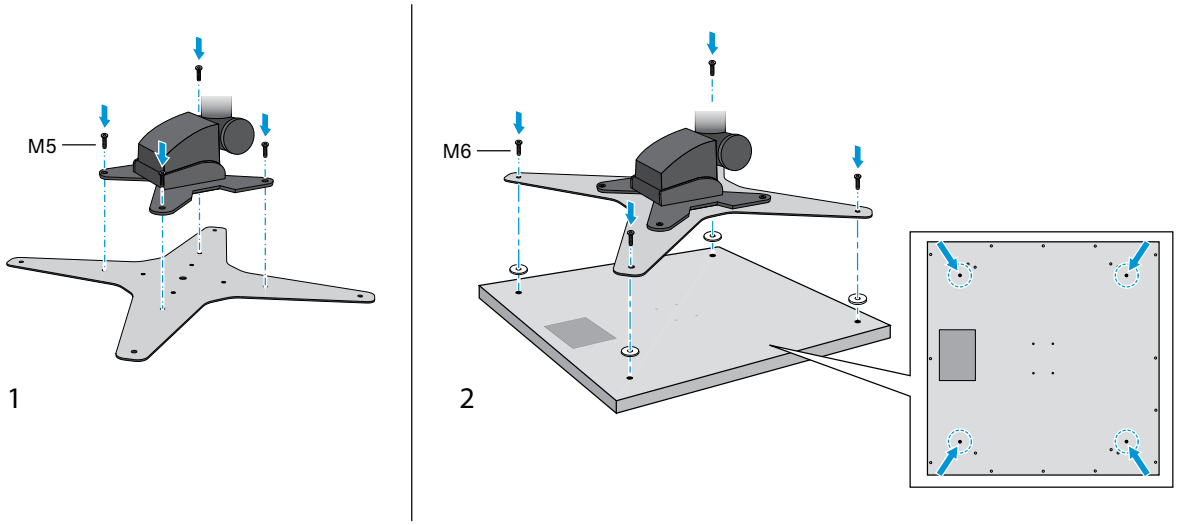
The **SL CM VB** VESA adapter (available separately) allows you to mount the TeamConnect Ceiling 2 on any 100 x 100 mm or 200 x 200 mm VESA mount.



▷ Fasten the ceiling mount to the ceiling using suitable screws and anchors.

▷ Observe the mounting specifications from the manufacturer.

Proceed as follows to fasten the **SL CM VB** VESA adapter plate to the VESA mount:



▷ First fasten the **SL CM VB** VESA adapter plate to the VESA mount.

▷ Then mount the TeamConnect Ceiling 2 to the **SL CM VB** VESA adapter plate as shown in figure 2.

Configuring the TeamConnect Ceiling 2

Downloading Sennheiser Control Cockpit

To configure and use the TeamConnect Ceiling 2, you need the free **Sennheiser Control Cockpit** control software. You can download it here:

www.sennheiser.com/control-cockpit-software

To use the **Sennheiser Control Cockpit**, you must complete a one-time registration with your e-mail address to receive the software activation code.

The **Sennheiser Control Cockpit** must be used to configure the product for the first time. After that, the TeamConnect Ceiling 2 can also be operated using a media control system. To have access to the full range of functions, however, you should use the **Sennheiser Control Cockpit**.

Configuring the TeamConnect Ceiling 2 with the Sennheiser Control Cockpit

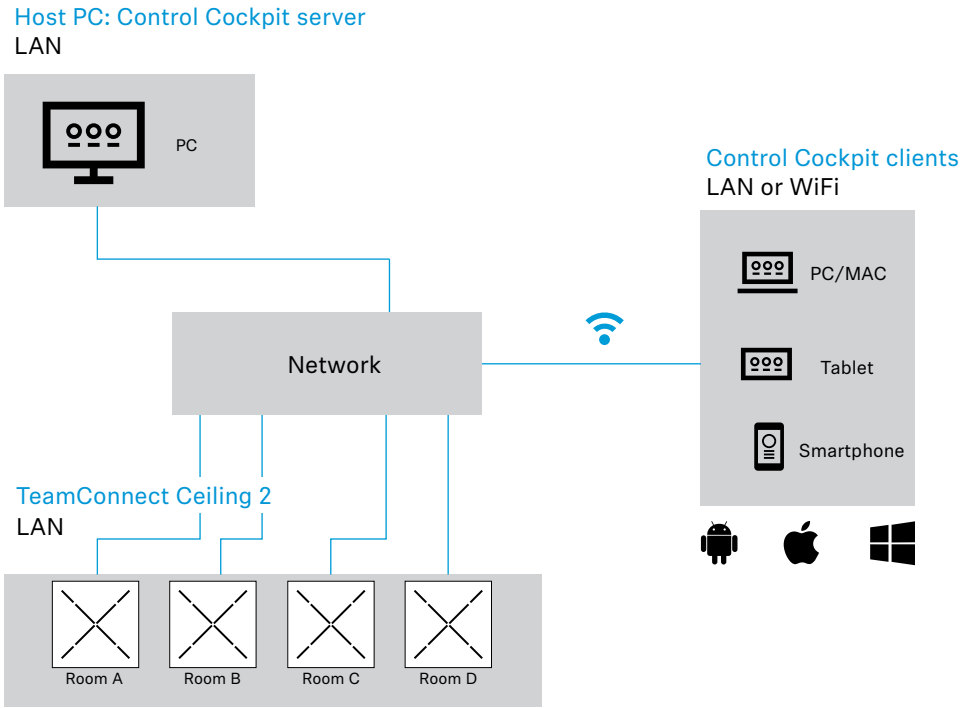
There are two ways to operate the TeamConnect Ceiling 2 using the Sennheiser Control Cockpit:

- **Variant 1:** integrated in an existing network
- **Variant 2:** as a standalone solution with a PC and a PoE-capable network switch

Variant 1: integrating the TeamConnect Ceiling 2 in an existing network

The **Sennheiser Control Cockpit** should be installed on a host PC (Windows 7 or later) that is in the same network as the TeamConnect Ceiling 2 that you want to configure. The **Sennheiser Control Cockpit** runs on the host PC as a Windows service.

Any browser-capable device in the network (e.g. PC/Mac, tablet or smartphone) can operate the product using the Control Cockpit Client, which is accessed at a specific URL in the browser.

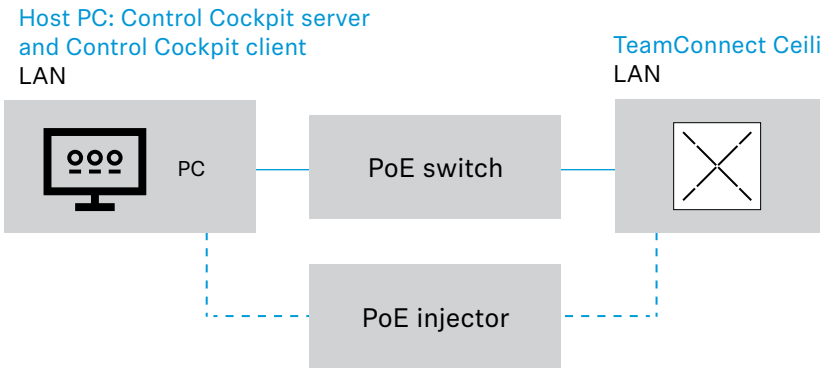


The online help contains detailed information about the functions of the **Sennheiser Control Cockpit** and how to configure the **TeamConnect Ceiling 2** and the network. The online help can be found on the **Sennheiser Control Cockpit** product page (www.sennheiser.com/control-cockpit-software) and in the software itself.

Variant 2: configuring the TeamConnect Ceiling 2 as a standalone solution using a computer

Proceed as follows to configure the TeamConnect Ceiling 2 without network integration using a computer:

- ▷ Connect the computer to a PoE-capable network switch using a network cable (Cat5e or higher). Alternatively, you can use a PoE injector.
- ▷ Connect the network switch to the **Ethernet PoE/Ctrl** socket on the TeamConnect Ceiling 2.



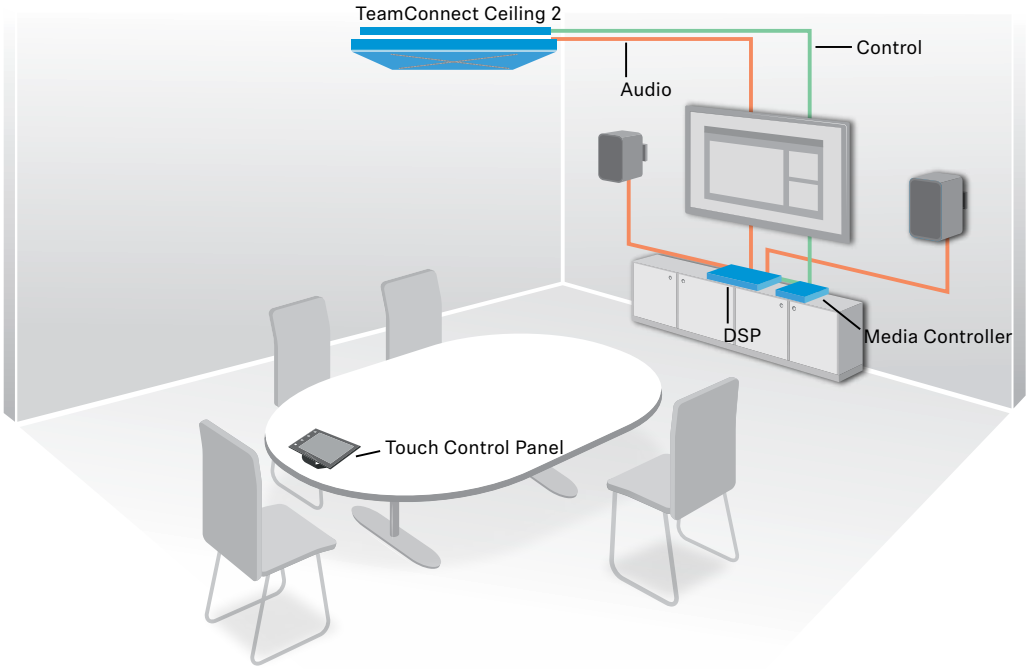
Configuring the TeamConnect Ceiling 2 with a media control system

After initial configuration with the **Sennheiser Control Cockpit**, the **TeamConnect Ceiling 2** can also be operated using a media control system.

A media control system allows you to use a custom user interface with the following functions:

- ▷ Control the mute function
- ▷ Edit audio parameters (adjust output level, show microphone level, set EQ)
- ▷ LED control
- ▷ Transmit speaker position

Sample application:



The media control protocol for **TeamConnect Ceiling 2** is available for download as a PDF file on the product web page.

www.sennheiser.com/tcc2

Specifications

Product properties	
Dimensions (L x W x H)	590 x 590 x 43 mm
Weight	6 kg (5.5 oz)
Audio outputs	One 3-pin socket (suitable for Phoenix Contact MCVW 1.5-3-ST-3.81) Two Dante™ Digital Audio Network sockets (RJ-45)
Network/Control	One RJ-45 Ethernet socket for PoE supply and data/ control
Supply voltage	PoE IEEE 802.3af Class 3
Power consumption	Max. 8.8 W
Plenum rating	Tested according to UL 2043

Acoustic properties	
Transducer principle	Pre-polarized condenser microphone
AF frequency response	160 Hz to 18,000 Hz
Sensitivity	0 dBV/Pa (988 mV/Pa)
Signal-to-noise ratio	83 dB(A)
Latency	4 ms
Equivalent noise level	11 dB(A)
Number of KE 10-237 microphone capsules	28
Pick-up pattern	Beam pattern
Max. sound pressure level	104 dB SPL
Dynamic range	93 dB(A)

Ambient conditions	
Temperature range	Operation: 0 – 40°C Storage: -10 – 60°C
Relative air humidity	20 – 95%, non-condensing