



2000 IEM Serie

Instruction manual

Sennheiser electronic GmbH & Co. KG

SENNHEISER

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2000 IEM Serie - v1.0



Product information



- [Overview of the products of 2000 IEM series >> Products of the 2000 IEM series](#)
- [Accessoires for the products of 2000 IEM series >> Accessoires](#)
- [Informationen about the frequency band system for 2000 IEM series >> The frequency bank system](#)



Products of the 2000 IEM series

Stereo diversity receiver EK 2000 IEM



Lightweight, robust bodypack transmitter. AF frequency response optimized for bass guitar. Up to 6 x 64 user-programmable channels. Easy receiver-transmitter synchronization at the push of a button. All-metal housing.

2-channel/stereo monitoring transmitter SR 2000 IEM



Rugged, reliable, and flexible - in short: professional. With SR 2000, you can choose from 26 frequency banks with up to 32 channels. The channels can be user-programmed six of the frequency banks. Three switchable RF output powers (10, 30, and 50 mW - additionally 100 mW in the US version) provide greatest artistic and technical freedom.



2-channel/stereo monitoring transmitter SR 2050 IEM



Robust 19"-rack twin transmitter for wireless monitoring. Up to 6 x 32 tunable channels. Switchable HF output power. Remote-controllable via "Wireless Systems Manager".



Accessories

Earphones

IE 40 PRO

IE 40 PRO BLACK - cat. no.. 507481



IE 40 PRO CLEAR - cat. no.. 507482





IE 400 PRO

IE 400 PRO SMOKY BLACK - cat. no. 507483



IE 400 PRO CLEAR - cat. no. 507484





IE 500 PRO

IE 500 PRO SMOKY BLACK - cat. no. 507479



IE 500 PRO CLEAR - cat. no. 507480





IE 4

cat. no. 500432





Rechargeable battery and charger

BA 2015 rechargeable battery

The BA 2015 rechargeable battery is designed for use with 2000 IEM series handheld transmitters, bodypack transmitters and bodypack receivers.



cat. no. 009950

L 2015 charger

The BA 2015 rechargeable battery can be charged in the L 2015 charger on its own or inside of the bodypack transmitter/bodypack receiver.



cat. no. 009828



Accessories for rack mounting

GZL 1019-A5

BNC/BNC co-axial cable. Antenna cable with 50 ohms impedance. Flexible wallmount included in delivery.





Antennas and accessories

Antenna Combiner AC 3200-II

Article No. 505497

Active 8-channel antenna combiner for large, wireless monitor systems. Up to eight inputs, up to 100mW per channel, for transmission via single antenna. Avoids bothersome intermodulation; quick overview via LED strip.



A 5000-CP

Article No. 500887

The A 5000-CP passive antenna provides an optimum solution for both transmitting and receiving RF signals throughout the UHF spectrum. Installations have demonstrated that the circular polarization of this antenna minimizes variations in signal strength and almost eliminates multipath problems, a primary cause dropouts. The gain of this antenna over the entire UHF band is superior to common 'off the shelf' antennas.

The wideband design (450-960MHz) of the A 5000-CP allows it to accommodate antenna distribution systems for either wireless monitors or wireless microphones across multiple frequency ranges, offering maximum flexibility when designing complex RF systems.



A 2003-UHF

Passive directional antenna. Transmitting and receiving antenna.

Frequency range: 450-960 MHz

Apex angle: approx. 100°

Front-to-back ratio: = 14 dB





A 1031-U

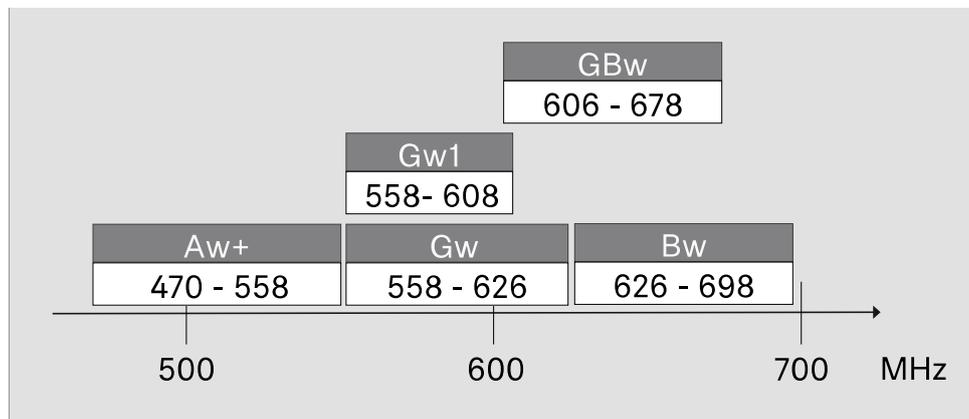
Passive omni-directional antenna.



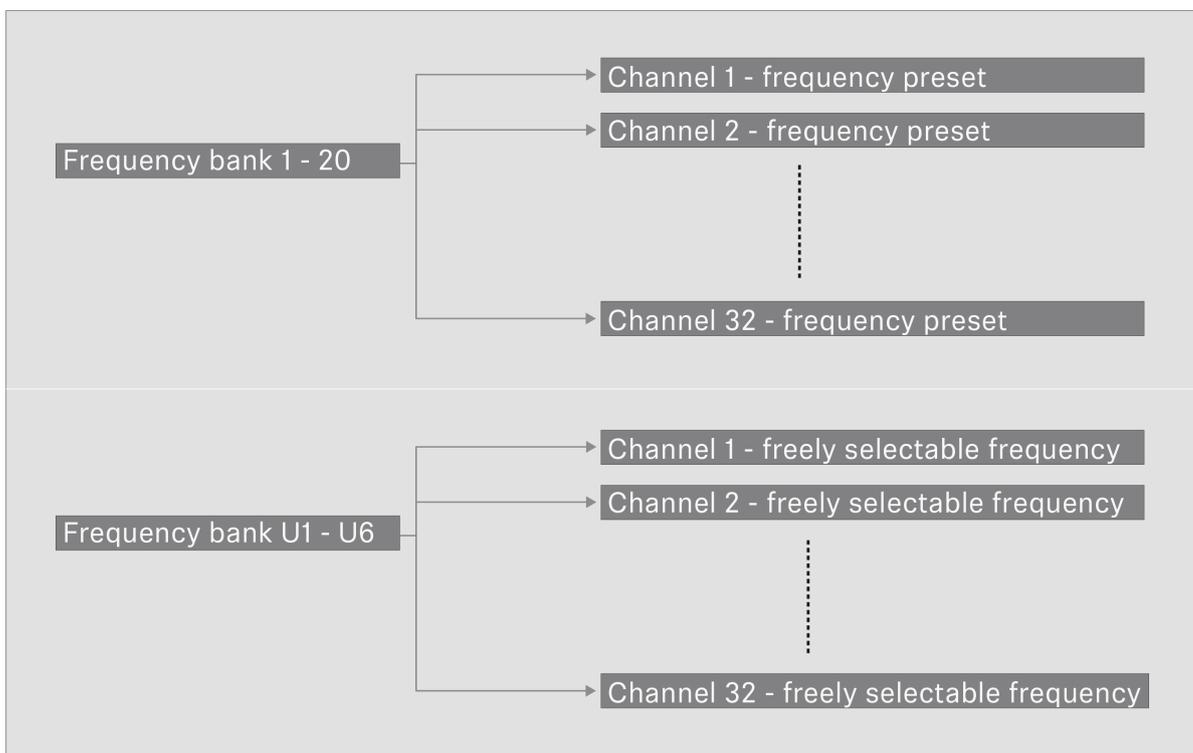


The frequency bank system

There are different frequency ranges in the UHF band available for transmission. The following frequency ranges are available for the 2000 series:



Every frequency range has 26 frequency banks with up to 32 channels:



You can find information about the frequency presets in the frequency tables of the respective frequency ranges under Frequency tables.



Installing 2000 IEM series devices



You can find information about installing and connecting 2000 IEM series devices in the following sections.

- Diversity receiver EK 2000 IEM >> Installing the EK 2000 IEM
- 2-channel/stereo monitoring transmitter SR 2000/2050 IEM >> Installing SR 2000 IEM / SR 2050 IEM
- Active 8-channel antenna combiner AC 3200-II >> Installing the AC 3200-II



You can find information about operating the products under Using 2000 IEM series devices

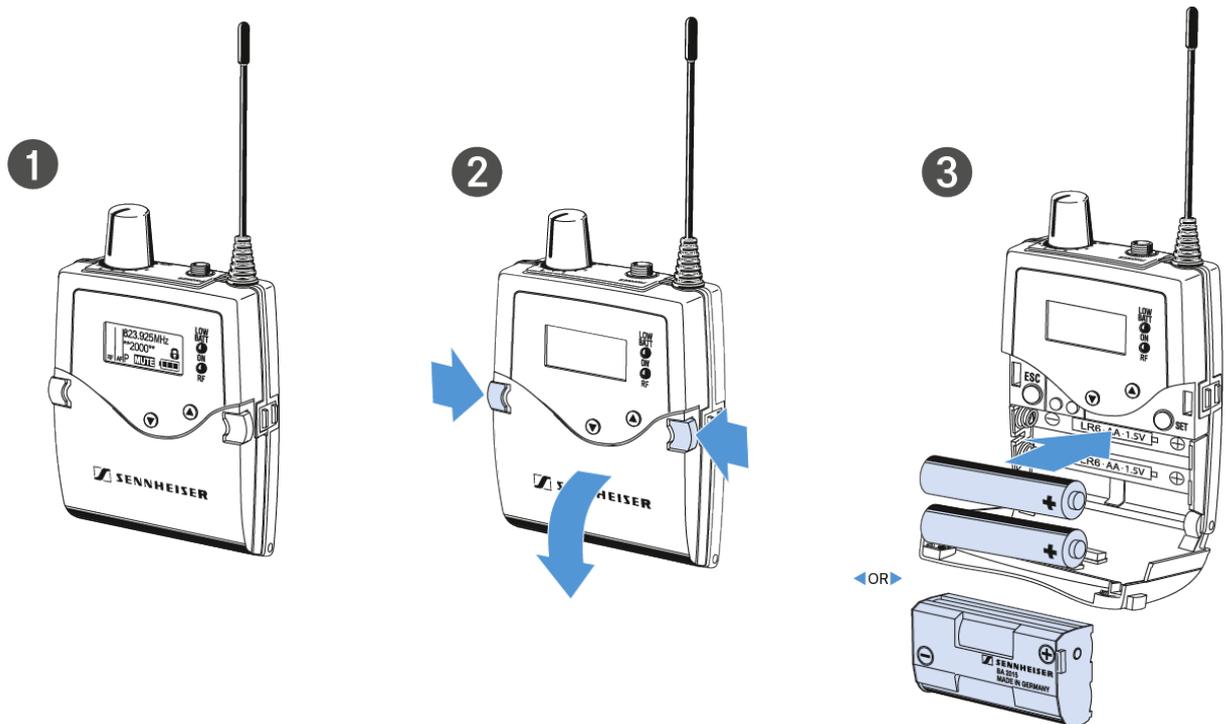


Installing the EK 2000 IEM

Inserting and removing the batteries/rechargeable batteries

You can operate the diversity receiver either with batteries (AA, 1.5 V) or with the rechargeable Sennheiser BA 2015 battery.

- ▷ Press the two catches and open the battery compartment cover.
- ▷ Insert the batteries or the rechargeable battery as shown below. Please observe correct polarity when inserting the batteries.



- ▷ Close the battery compartment. The cover locks into place with an audible click.

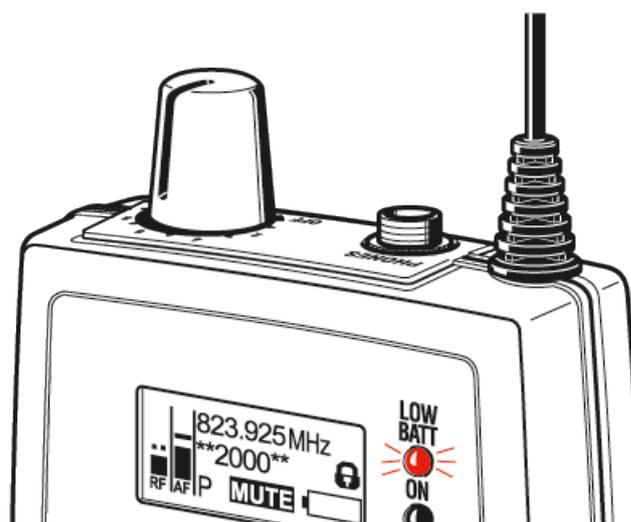


Battery status

Charge status of the batteries:

	100 %	> 8 h
	70 %	4 - 6 h
	30 %	2 - 3 h
LOW BATT 		...

Charge status is critical (LOW BATT):





Connecting earphones to the EK 2000 IEM

CAUTION

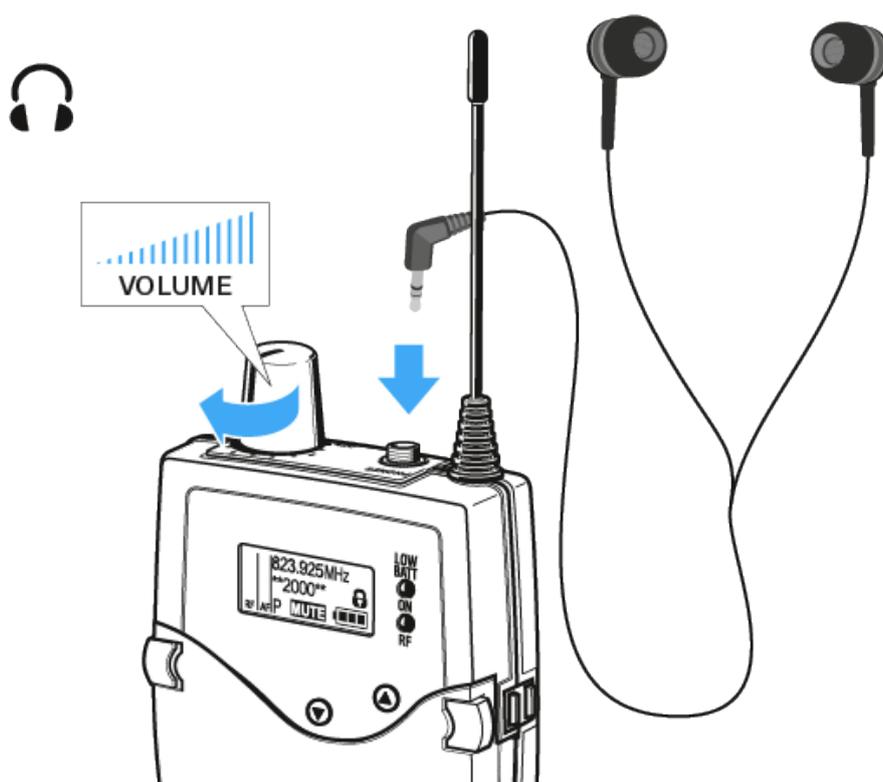
Danger due to high volume levels!

Volume levels that are too high may damage your hearing.

- ▷ Turn down the volume of the headphone output before you put on the headphone.

To connect the earphones to the receiver:

- ▷ Insert the cable's 3.5 mm jack plug into the PHONES socket on the receiver as shown in the diagram.



The ground connection of the earphone cable acts as an antenna for the second diversity branch. For details on the pin assignment, see Pin assignment.



Attaching the diversity receiver to your clothing

You can use the belt clip to attach the diversity receiver to your waistband or on a guitar strap.

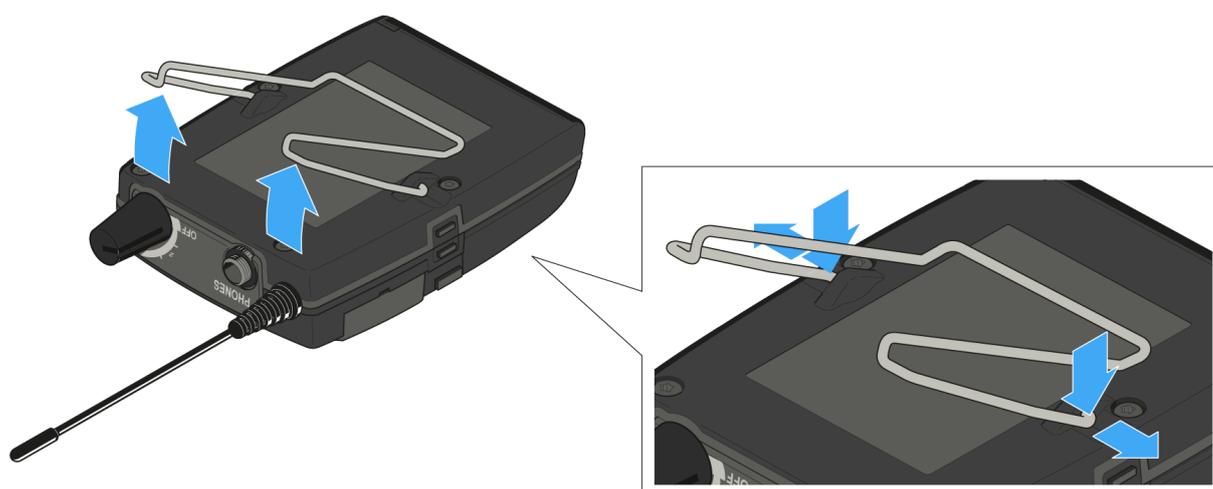
The belt clip is detachable so that you can also attach the diversity receiver with the antenna pointing downwards. To do so, withdraw the belt clip from its fixing points and attach it the other way round.



The belt clip is secured so that it cannot slide out of its fixing points accidentally.

To detach the belt clip:

- ▷ Lift the belt clip as shown in the diagram.



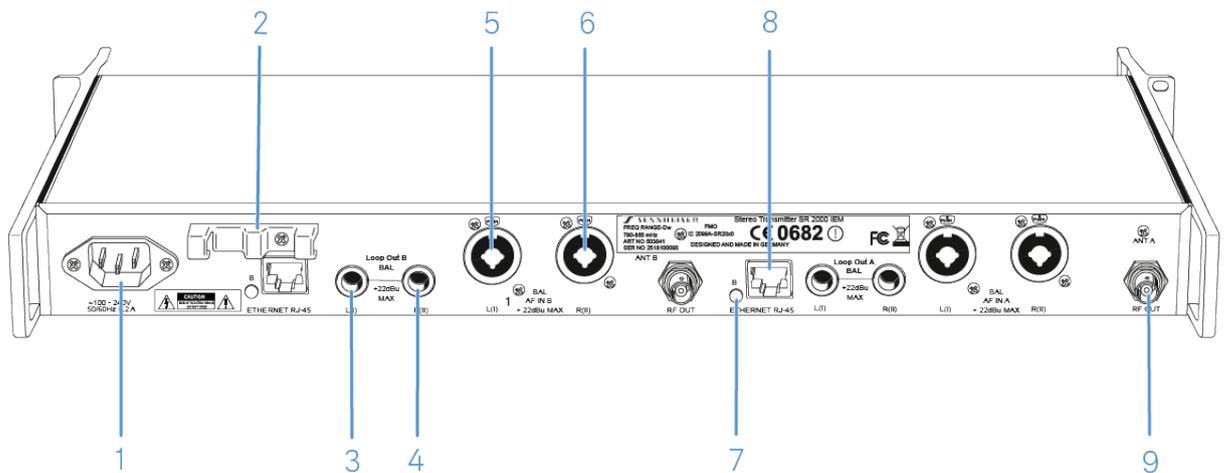


- ▷ Press one side of the clip downward on the fixing hole and pull it out of the housing.
- ▷ Do the same thing on the other side.



Installing SR 2000 IEM / SR 2050 IEM

Connectors on the rear of the device



- 1** 3-pin mains socket
- 2** Cable grip for power supply DC cable (see Connecting/disconnecting the SR 2000 IEM / SR 2050 IEM with/from the power supply).
- 3** ¼" (6.3 mm) jack socket **LOOP OUT BAL L(I)**
 - Audio output, left
 - see Daisy chaining audio signals
- 4** ¼" (6.3 mm) jack socket **LOOP OUT BAL R(II)**
 - Audio output, right
 - see Daisy chaining audio signals
- 5** ¼" (6.3 mm) jack/XLR-3 combo socket **BAL AF IN L(I)**
 - Audio input, left
 - see Connecting audio signals
- 6** ¼" (6.3 mm) jack/XLR-3 combo socket **BAL AF IN R(II)**
 - Audio input, right
 - see Connecting audio signals
- 7** LED (yellow) for network activity indication
- 8** LAN socket (**ETHERNET RJ 45**)
 - see Creating a data network
- 9** BNC socket **RF OUT**
 - Antenna output
 - see Connecting antennas



Connecting/disconnecting the SR 2000 IEM / SR 2050 IEM with/from the power supply

Only use the supplied power supply unit. It is designed for your receiver and ensures safe operation.

⚠ NOTICE

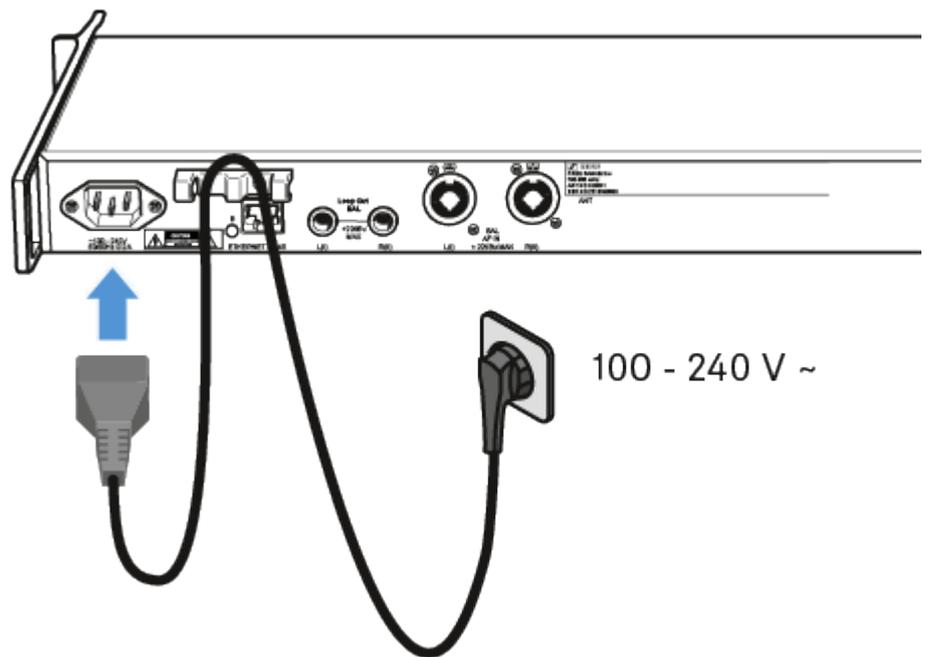
Damage due to electric current!

If you connect the transmitter to an unsuitable power supply, this can cause damage to the device.

- ▷ Use the supplied mains cable to connect the transmitter to the mains (100 to 240 V AC, 50 or 60 Hz).
- ▷ Ensure a reliable mains ground connection of the transmitter – especially when you are using multi-outlet power strips or extension cables.

To connect the SR 2000 IEM / SR 2050 IEM transmitter to the power supply:

- ▷ Pass the mains cable through the cable grip.
- ▷ Connect the mains cable to the mains socket.
- ▷ Plug the mains plug into the wall socket.





To disconnect the SR 2000 IEM / SR 2050 IEM transmitter from the power supply:

- ▷ Unplug the power supply unit from the wall socket.
- ▷ Unplug the mains plug from the wall socket.

Creating a data network

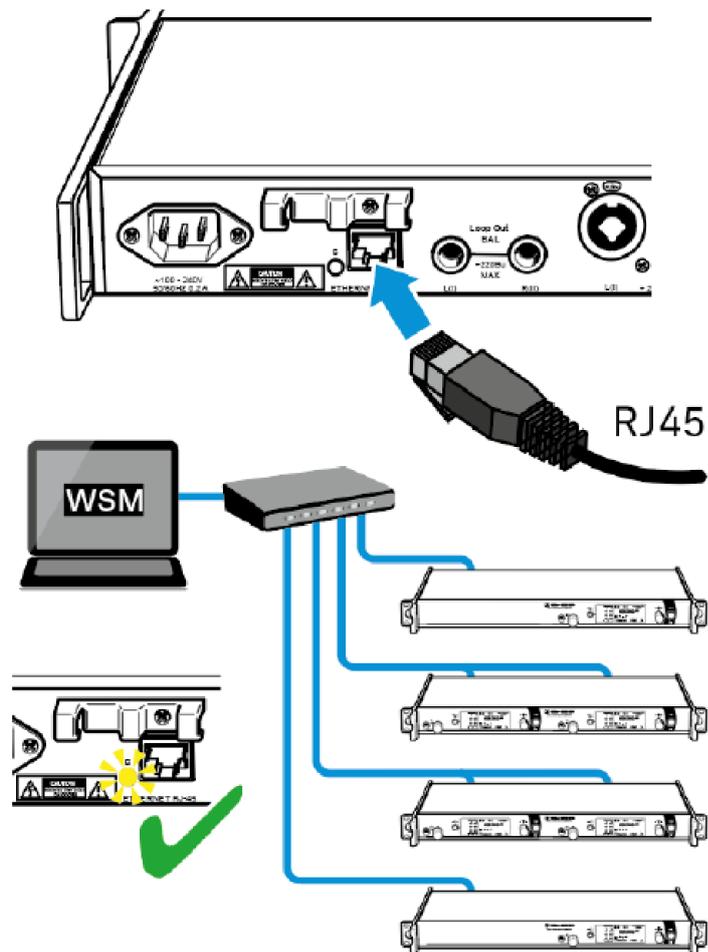
You can monitor and control one or more SR 2000 IEM / SR 2050 IEM transmitters via a network connection using Sennheiser Wireless Systems Manager (WSM) software.



Automatic frequency setup can also be performed over the network without the WSM software. See Easy Set-up menu item.

To connect the SR 2000 IEM / SR 2050 IEM to a network:

- ▷ Connect a network cable with an RJ-45 connector (to the Ethernet socket on the rear side of the SR 2000 IEM / SR 2050 IEM).
- ▷ Connect the other end of the network cable to a network switch.



For more information about controlling devices via the Sennheiser Wireless Systems Manager (WSM) software, refer to the instruction manual for the software. You can download the software here: www.sennheiser.com/wsm

Connecting audio signals

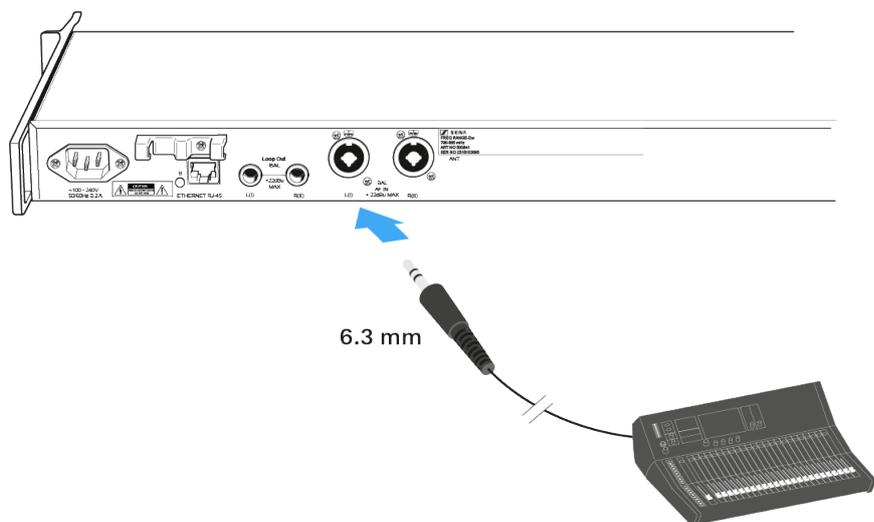
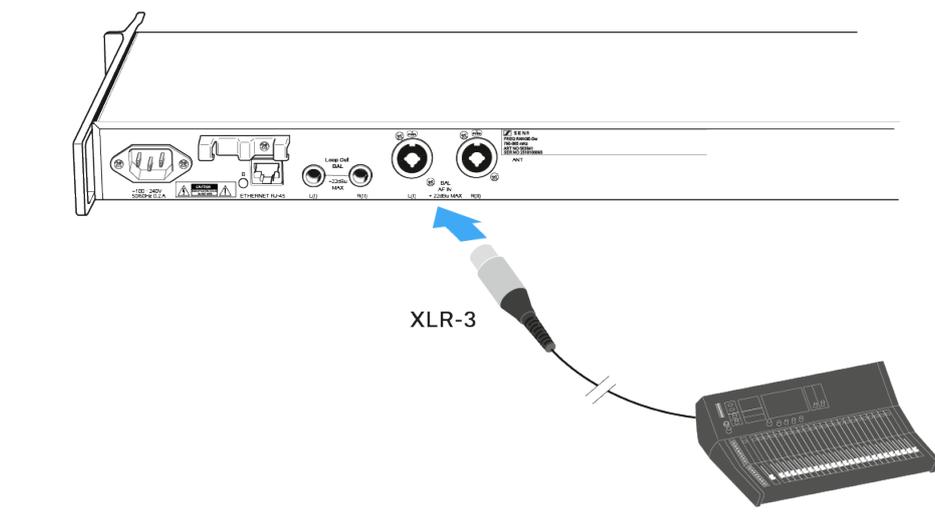
You can connect Mono or Stereo signals via the two input sockets **BAL AF IN L(I)** and **BAL AF IN R(II)**.

To do so, the SR 2000 IEM / SR 2050 IEM must be configured for Mono or Stereo operation in the Mode menu item.



In Stereo mode, you can receive the two input signals either as a mixed mono signal or as a stereo signal. To do so, you must select Focus or Stereo mode on the EK 2000 IEM receiver (see Mode menu item).

Mono



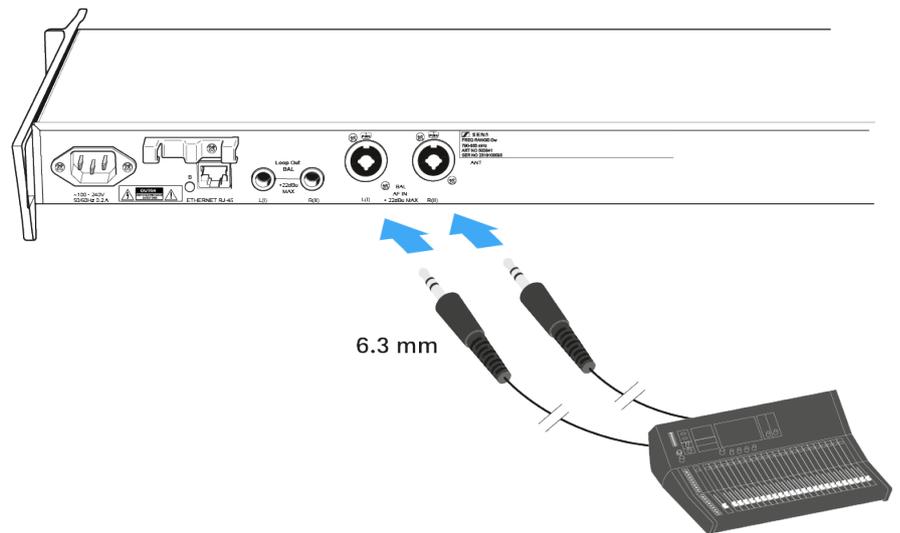
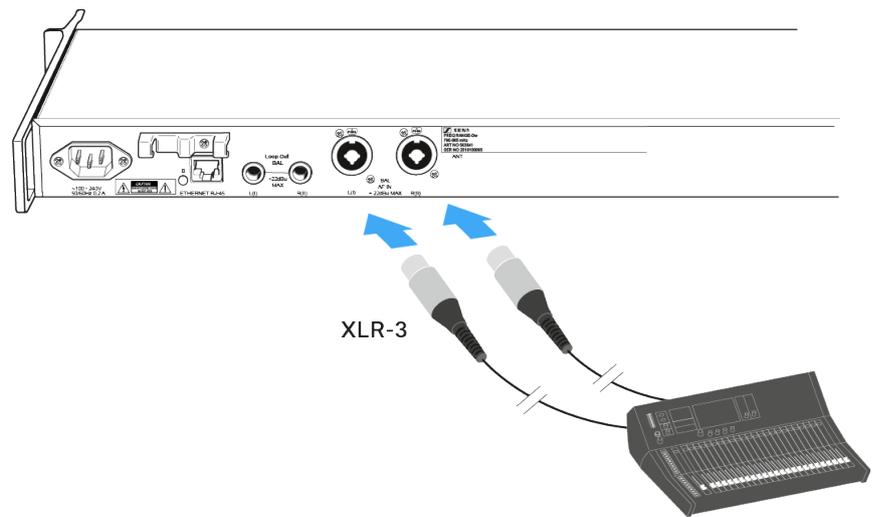
- ▷ Connect the output of an external device (e.g. a mixing console or another SR 2000 IEM / SR 2050 IEM) to the audio input socket **BAL AF IN L(I)** or **BAL AF IN L(II)**.
- ▷ Via the operating menu, adjust the transmitter's input sensitivity. The input sensitivity is adjusted via the Sensitivity menu item and is common for both inputs.



In Mono mode, the corresponding EK 2000 IEM receiver must be operated in Focus mode. See Mode menu item.



Stereo



- ▷ Connect the output of an external device (e.g. a mixing console or another SR 2000 IEM / SR 2050 IEM) to the audio input sockets **BAL AF IN L(I)** and **BAL AF IN R(II)**.



In Stereo mode, the corresponding EK 2000 IEM receiver can be operated in Focus mode or Stereo mode. See Mode menu item.

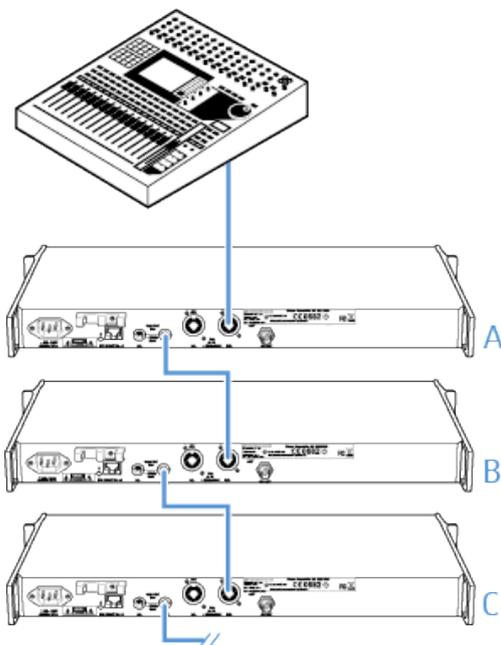


Daisy chaining audio signals

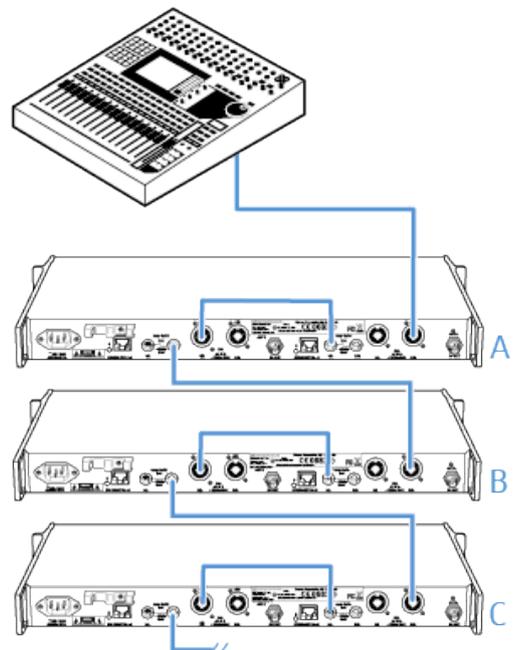
Using the **LOOP OUT BAL L** and/or **LOOP OUT BAL R** output sockets, it is possible to transmit a signal that you want to make available to all receivers from the mixing console to a transmitter and then to daisy chain this signal from the transmitter to the other transmitters.

In this way, for example, you can distribute an AUX path from the mixing console in Focus mode to multiple transmitters and output a separate signal on the other channel of the same transmitter (e.g. for the individual musician).

SR 2000 IEM



SR 2050 IEM



The AF output sockets **LOOP OUT BAL L** and/or **LOOP OUT BAL R** will work only when the transmitter is switched on and powered.

- ▷ Transmit a signal from the mixing console to the input socket of transmitter **A** (in this example: **BAL AF IN R**).
- ▷ Connect the **LOOP OUT BAL R** output socket of transmitter **A** with the **BAL AF IN R** input socket of transmitter **B**.
- ▷ Now connect the **LOOP OUT BAL R** output socket of transmitter **B** with the **BAL AF IN R** input socket of transmitter **C**.
- ▷ Continue on in this way for the remaining transmitters.



Connecting antennas



If you are using more than one transmitter, we recommend using remote antennas and the AC 3200-II antenna combiner.

You can find more information here:
[Installing the AC 3200-II](#)
[Using the AC 3200-II](#)

For professional use, we recommend connecting a remote antenna and, if necessary, using Sennheiser antenna accessories.

If the transmitter is to be put into operation without a large amount of installation work, you can:

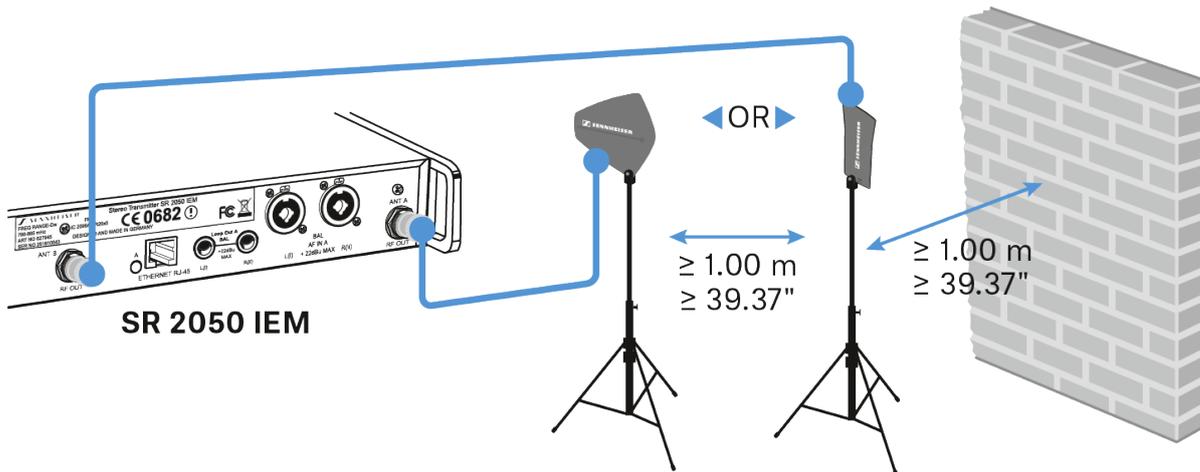
- connect the supplied rod antenna to the rear of the transmitter
- use the optional GA 3030 AM antenna front mount kit.

Connecting and positioning a remote antenna

Use a remote antenna when the transmitter position is not the best antenna position for optimum transmission. You can choose between two antennas (see Accessories):

- A 2003 UHF passive directional broadband antenna
- A 1031 passive omni-directional broadband antenna

- ▷ Use a low-attenuation 50-ohms cable to connect the antenna to the transmitter.
- ▷ If possible, use a short antenna cable and as little connections as possible, since long cables and many connectors lead to an attenuation of the antenna signal.
- ▷ Position the antenna in the same room in which the transmission takes place.
- ▷ Observe a minimum distance of 1 m between the antenna and metal objects (including reinforced concrete walls).



Connecting several transmitters to a remote antenna

To make multi-channel systems, you should use the AC 3200 antenna combiner (optional accessory). The AC 3200 allows you to operate up to eight transmitters with a single antenna without virtually any intermodulation.

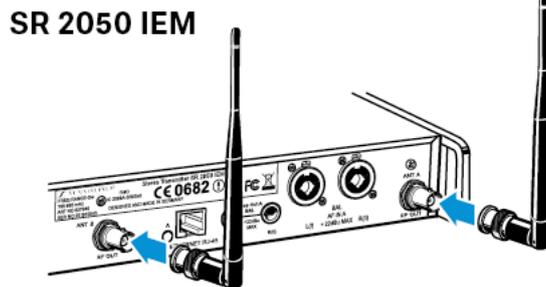
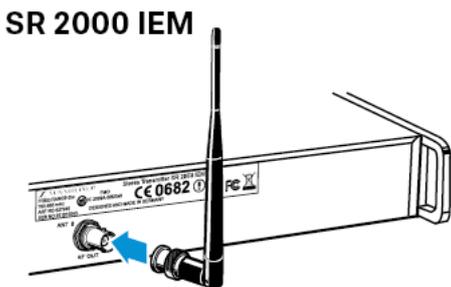
- Connect the AC 3200 antenna combiner to the BNC socket (see Connecting the AC 3200-II with transmitters).

Connecting the rod antenna to the rear of the transmitter

The supplied rod antenna & is suitable for all applications where the transmitter is to be put into operation without a large amount of installation work.

To connect the rod antenna to the rear of the transmitter:

- Connect the rod antenna to the BNC socket **RF OUT** on the rear panel of the SR 2000 IEM / SR 2050 IEM transmitter.





Mounting the antennas to the front of the rack

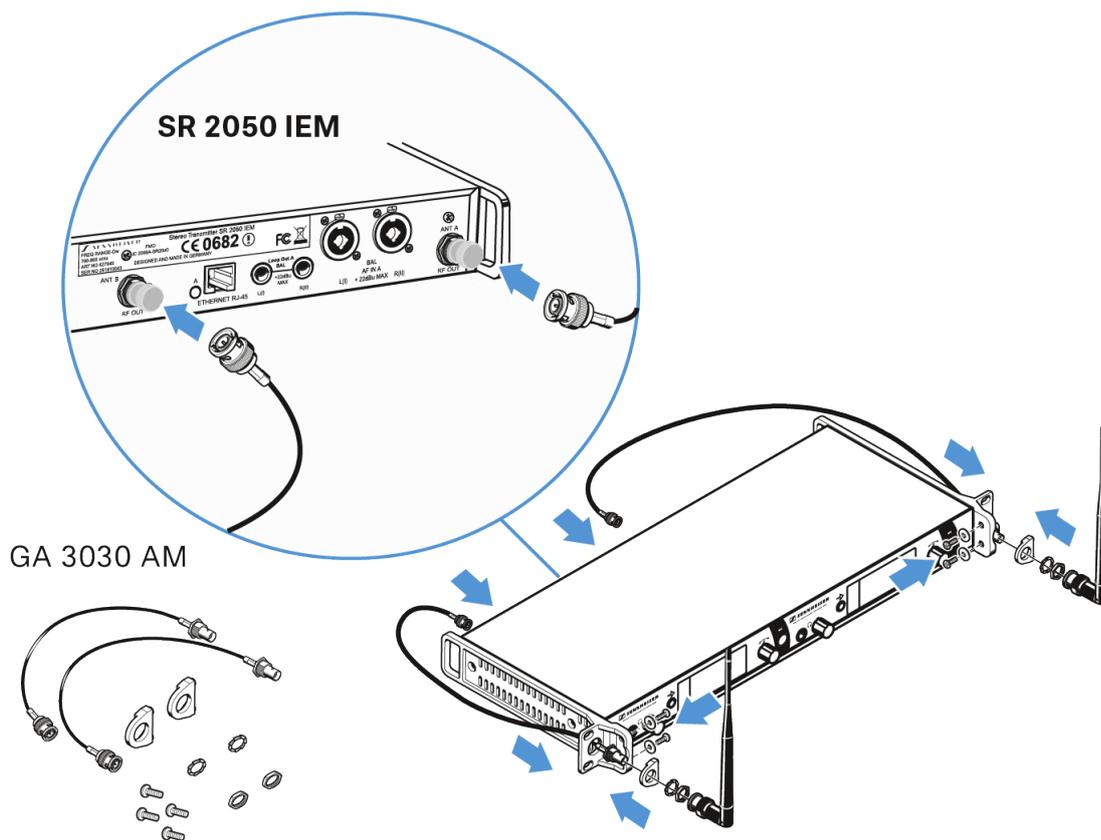
To mount the antenna connections to the front of the rack when rack mounting the transmitter, you require the GA 3030 AM antenna front mount kit (Accessories).

To mounting the antennas to the front of the rack:

- ▷ Guide the BNC connector of the BNC extension cable through the hole in the rack mount “ear”.
- ▷ Connect the BNC connector to the antenna output.
- ▷ Screw the antenna holder to the BNC socket using the supplied washer and nut.
- ▷ Secure the antenna holder to the rack mount “ear” of the transmitter using two of the supplied screws.

If you are using the SR 2050 IEM twin transmitter:

- ▷ Mount the second BNC extension cable in the same way.
- ▷ Slide the transmitter into the 19" rack.
- ▷ Connect the rod antennas to the two BNC sockets.





Mounting the transmitter into a rack

⚠ NOTICE

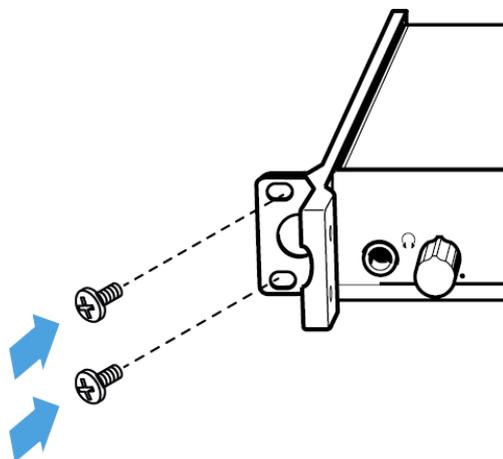
Rack mounting poses risks!

When installing the device in a closed or multi-rack assembly, please consider that, during operation, the ambient Temperature, the mechanical loading and the electrical potentials will be different from those of devices which are not mounted into a rack.

- ▷ Make sure that the ambient Temperature within the rack does not exceed the permissible Temperature limit specified in the specifications. See “Specifications”.
- ▷ Ensure sufficient ventilation; if necessary, provide additional ventilation.
- ▷ Make sure that the mechanical loading of the rack is even.
- ▷ When connecting to the power supply system, observe the information indicated on the type plate. Avoid circuit overloading. If necessary, provide overcurrent protection.
- ▷ When rack mounting, please note that intrinsically harmless leakage currents of the individual power supply units may accumulate, thereby exceeding the allowable limit value. As a remedy, ground the rack via an additional ground connection.

To mount the transmitter into a rack:

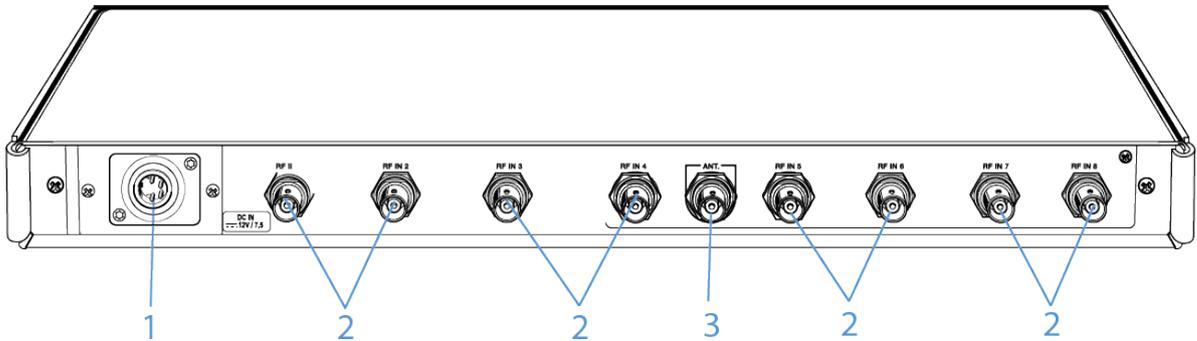
- ▷ Slide the transmitter into the 19" rack
- ▷ Secure the rack mount “ears” to the rack using four screws (not included in the delivery).





Installing the AC 3200-II

Connectors on the rear of the device



1 DC IN Socket

- To connect the NT 12-125D
- see Connecting/disconnecting the AC 3200-II to/from the power supply system

2 8 RF-Inputs **RF IN 1** to **RF IN 8**

- Antenna input
- see Connecting the AC 3200-II with transmitters

3 BNC Socket **ANT**

- Antenna output
- see Connecting antennas



Connecting/disconnecting the AC 3200-II to/from the power supply system

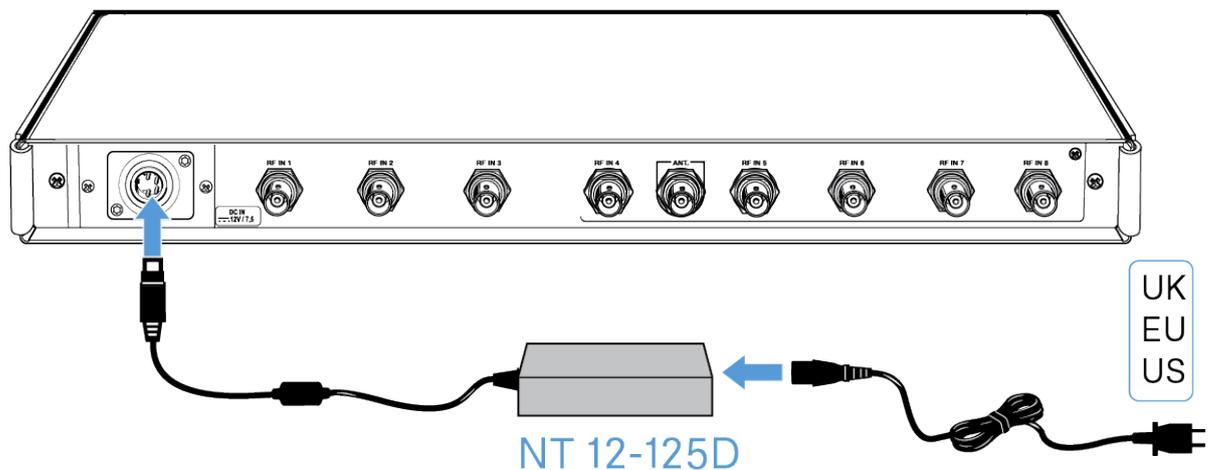
To supply power to the AC 3200-II, the connected transmitters and any antenna amplifiers used, you will need the NT 12-125D power supply unit.

Only use the supplied NT 12-125D power supply unit. It is designed for your antenna combiner and ensures safe operation.

Connect the AC 3200-II to the power supply system:

To connect the AC 3200-II antenna combiner to the power supply system:

- ▷ Connect the mains cable (EU, UK or US version, depending on your location) to the input socket on the NT 12-125D mains unit.
- ▷ Connect the DC connector of the mains unit to the DC input socket 6 of the AC 3200-II.
- ▷ Connect the mains connector of the mains cable to the mains power supply.



Disconnect the AC 3200-II from the power supply system:

To completely disconnect the AC 3200-II antenna combiner from the power supply system:

- ▷ Disconnect the mains cable (EU, UK or US version, depending on your location) from the input socket on the NT 12-125D mains unit.
- ▷ Disconnect the DC connector of the mains unit to the DC input socket 6 of the AC 3200-II
- ▷ Disconnect the mains connector of the mains cable from the mains power supply.

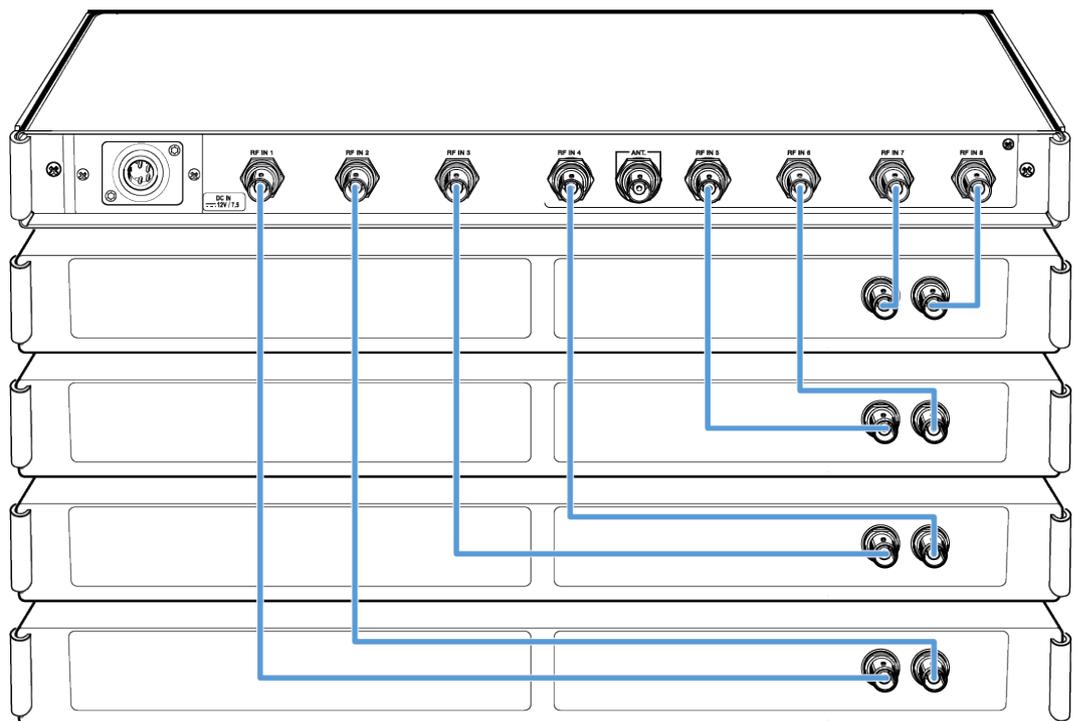


Connecting the AC 3200-II with transmitters

The AC 3200 is an active, high-power 8:1 antenna combiner for large multi-channel wireless monitoring systems. The AC3200-II combines up to eight channels for transmission via one antenna, with a broadband design covering 500 - 870 MHz.

To connect a transmitter:

- ▷ Connect the BNC cable of the transmitter to one of the eight RF inputs **RF IN 1** to **RF IN 8**
- ▷ Repeat the previous step until all four transmitters are connected to the antenna combiner.
- ▷ Connect the AC 3200-II to the power supply system (see Connecting/disconnecting the AC 3200-II to/from the power supply system).





Connecting antennas

NOTICE

Danger of damage to the devices!

Do not daisy-chain several AC 3200-II. Do not connect other active combiners to the AC 3200-II.

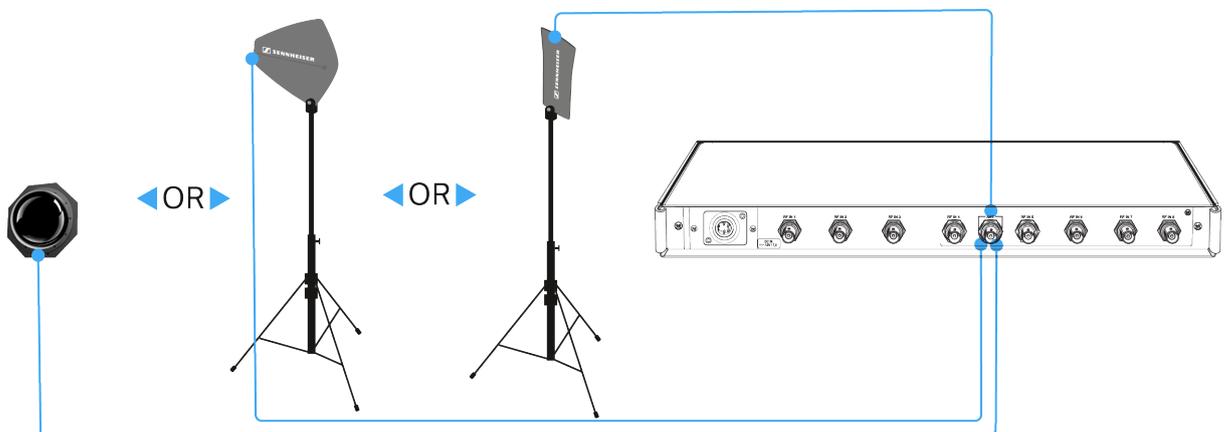
- ▷ Never connect the AC 3200-II to other active combiners.
- ▷ Only connect suitable antennas to the output of the AC 3200-II.

 The AC 3200-II active transmitter combiner can be used with either the A 2003 UHF directional antenna, the A 1031 U omni-directional antenna or the A 5000 CP circularly polarized UHF antenna. The antenna transmits the signals of all connected transmitters.

 The signals are combined onto the antenna output with no distribution attenuation.

To connect an antenna:

- ▷ Connect the antenna using a low-attenuation 50-ohms-coaxial cable.
- ▷ Connect the coaxial cable to the antenna output.





Installing the AC 3200-II in a 19" rack

CAUTION

Rack mounting poses risks!

When installing the device in a closed or multi-rack assembly, please consider that, during operation, the ambient Temperature, the mechanical loading and the electrical potentials will be different from those of devices which are not mounted into a rack.

- ▷ Make sure that the ambient Temperature within the rack does not exceed the permissible Temperature limit specified in the specifications. See “Specifications”.
- ▷ Ensure sufficient ventilation; if necessary, provide additional ventilation.
- ▷ Make sure that the mechanical loading of the rack is even.
- ▷ When connecting to the power supply system, observe the information indicated on the type plate. Avoid circuit overloading. If necessary, provide overcurrent protection.
- ▷ When rack mounting, please note that intrinsically harmless leakage currents of the individual power supply units may accumulate, thereby exceeding the allowable limit value. As a remedy, ground the rack via an additional ground connection.

To mount the AC 3200-II into a 19" rack:

- ▷ Slide the AC 3200-II into the 19" rack.
- ▷ Secure the rack mount “ears” to the rack using four screws (to be ordered separately).



Using 2000 IEM series devices



You can find information about using 2000 IEM series devices in the following sections.

- Diversity receiver EK 2000 IEM >> Using the EK 2000 IEM
- 2-channel/stereo monitoring transmitter SR 2000/2050 IEM >> Using the SR 2000 IEM / SR 2050 IEM
- Active 8-channel antenna combiner AC 3200-II >> Using the AC 3200-II



You can find information about installing the products under Installing 2000 IEM series devices

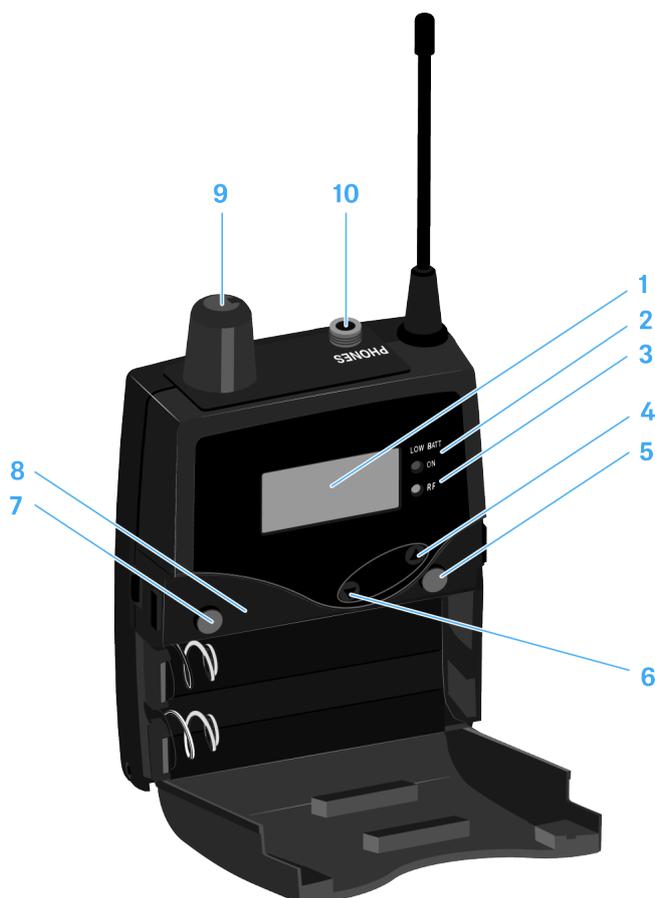
In the sections below, you can find important information about specific use cases.

- Establishing a radio link between the transmitter and receiver >> Establishing a radio link
- Synchronizing the receiver settings to the transmitter >> Synchronizing devices



Using the EK 2000 IEM

Operating elements of the EK 2000 IEM diversity receiver



- 1** Display panel
 - see Displays on the EK 2000 IEM display panel
- 2** Operation and battery indicator, red LED
 - illuminated = ON
see Switching the EK 2000 IEM
 - flashing = LOW BATTERY
see Inserting and removing the batteries/rechargeable batteries
- 3** Wireless reception indicator, green LED
 - illuminated = RF
see Squelch menu item
- 4** UP button
 - see Buttons for navigating through the menu



- 5** Taste **SET**
 - see Buttons for navigating through the menu
- 6** **DOWN** button
 - see Buttons for navigating through the menu
- 7** **ESC** button
 - see Buttons for navigating through the menu
- 8** Infra-red interface
 - see Synchronizing devices
- 9** Volume control with on/off switch
 - see Connecting earphones to the EK 2000 IEM
 - Switch the receiver on/off
see Switching the EK 2000 IEM
- 10** 3.5 mm PHONES jack socket, lockable
 - Jack for connecting an earphone
see Connecting earphones to the EK 2000 IEM



Switching the EK 2000 IEM

To switch the receiver on:

- ▷ Turn the volume control clockwise until it clicks.
The red ON LED is illuminated and the Frequency/Name standard display appears.



To switch the receiver off:

- ▷ Turn the volume control counterclockwise until it clicks.
The red **ON** LED will go out.



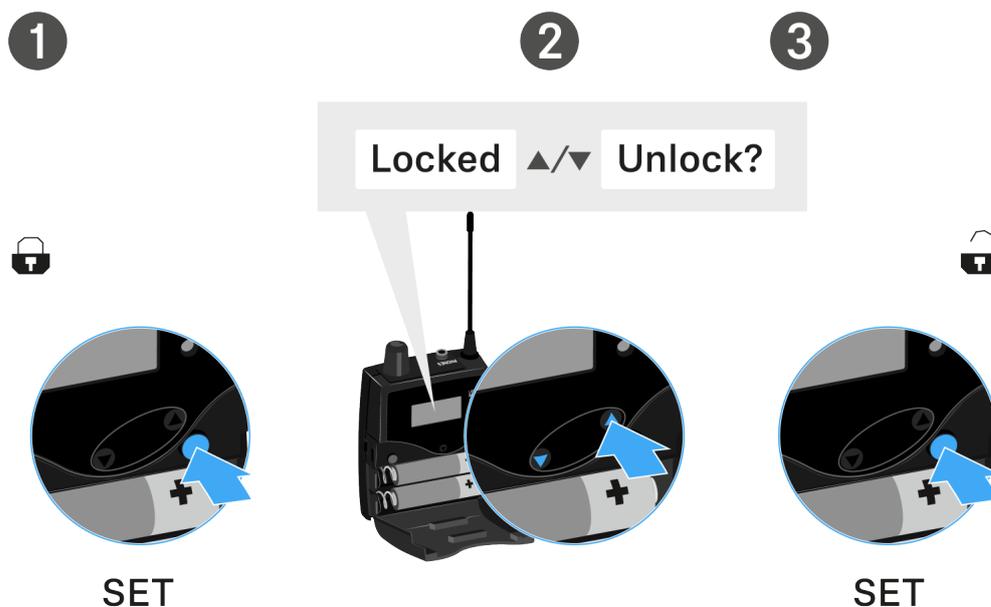
Lock-off function

You can set the automatic lock-off function in the **Auto Lock** (see Auto Lock menu item).

When you have switched on the lock-off function, you will have to turn the receiver off and on again in order to operate it.

To temporarily deactivate the lock-off function:

- ▷ Press the **SET** button.
LOCKED appears in the display panel.
- ▷ Press the **UP** or **DOWN** button.
UNLOCK? appears in the display panel.
- ▷ Press the **SET** button.
Lock-off function is now temporarily deactivated.



When you are in the operating menu:

>> Lock-off function is deactivated long enough for you to work in the operating menu.

When one of the standard displays is shown:

>> Lock-off function is automatically activated after 10 seconds.

The lock-off function icon flashes while the lock-off function is atng activated again.



Displays on the EK 2000 IEM display panel

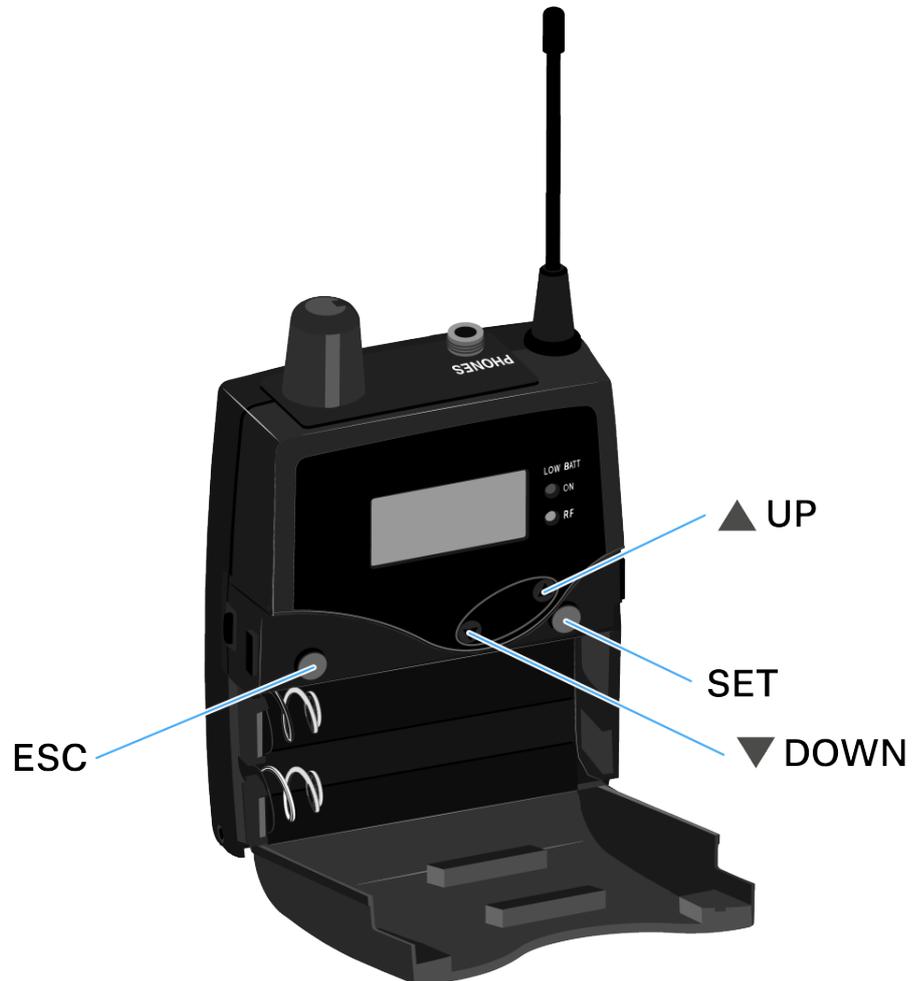
Status information such as reception quality, battery status, audio level, etc. is displayed on the home screen of the display panel. See Home Screen.

The display panel also displays the operating menu, which you can use to configure all of the settings. See Setting options in the menu.



Buttons for navigating through the menu

To navigate through the EK 2000 IEM operating menu, you need the following buttons.



ESC



Press the **ESC** button

- Cancels the entry and returns to the current standard display
- Selects a standard display (see Home Screen)

**SET**

Press the **SET** button

- Changes from the current standard display to the operating menu
 - Calls up a menu item
 - Changes to a submenu
 - Stores the settings and returns to the operating menu
-



Press the **UP** or **DOWN** button

- Changes to the previous or next menu item
- Changes the setting of a menu item
- In Focus mode: Adjusts the balance
- In Stereo mode: Selects a standard display (see Home Screen)



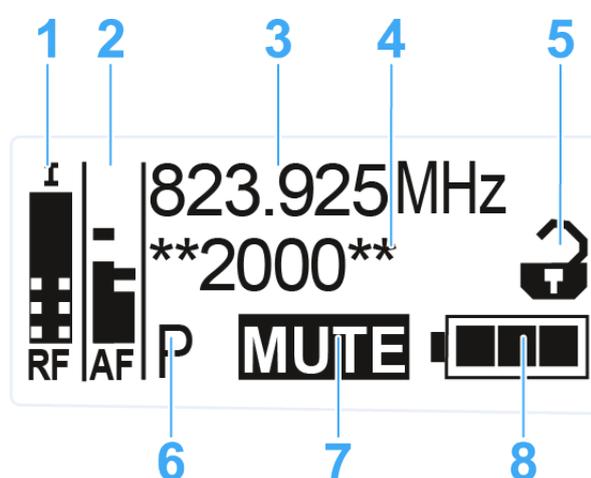
Home Screen

After you switch on the receiver, the display panel initially displays the Sennheiser logo. After a short time, the home screen is then displayed.

The home screen has three different standard displays.

- ▷ On the home screen, press the **ESC** button to switch between the standard displays.
In Stereo mode, you can also press the **UP/DOWN** button to switch between the standard displays.

Frequency/Name standard display



- 1 RF level (radio frequency)**
 - RF signal level display
 - including the display of the squelch threshold (see Squelch menu item)
- 2 AF audio level (audio frequency)**
 - Displays the audio level of the received transmitter (separated by channel in Stereo mode).
When the display shows full deflection, the audio input level is excessively high.
 - see Balance menu item
- 3 Frequency**
 - Current receiving frequency
 - see Frequency Preset menu item
- 4 Name**
 - Freely selectable name of the receiver
 - see Name menu item



5 Lock-off function

- Lock-off function is activated
- see Lock-off function

6 Battery status

- see Inserting and removing the batteries/rechargeable batteries2000 IEM Series

7 MUTE muting function

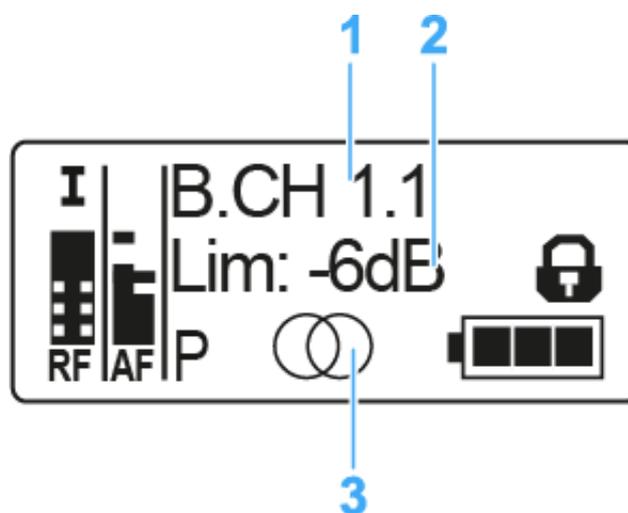
- The transmitter's RF signal is deactivated
see Deactivating the RF signal (RF mute)
- or the transmitter is in Mono mode
see Mode menu item

8 P pilot ton

- P = Activated pilot tone evaluation
- No symbol = Evaluation is deactivated
- P is black = pilot tone is atng received on the current frequency
- see Advanced -> Pilot Tone menu item

Bank/Frequency/Limiter standard display

The Bank/Frequency/Limiter standard display also shows the audio channel (Stereo/Focus) and the limiter.



1 Frequency bank and channel:

- see Frequency Preset menu item

2 Limiter

- see Advanced -> Pilot Tone menu item

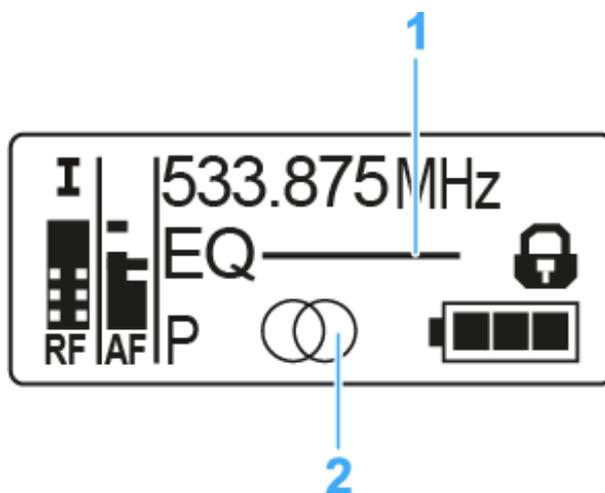
3 Audio channel, stereo

- Focus: ○○
- see Mode menu item



Frequency/High Boost standard display

The **Frequenz/High Boost** standard display also shows the audio channel (Stereo/Focus) and the treble boost.



- 1** Treble boost EQ
 - see High Boost menu item
- 2** Audio channel, stereo
 - Focus: ○○
 - see Mode menu item



Setting options in the menu

In the EK 2000 menu, you can configure the following settings.

Adjusting the squelch threshold

- ▷ see Squelch menu item
-

Scanning for unused frequency presets, releases and selects frequency presets

- ▷ see Easy Setup menu item
-

Setting the frequency bank and the channel

- ▷ see Frequency Preset menu item
-

Entering a freely selectable name

- ▷ see Name menu item
-

Adjusting the balance

- ▷ see Balance menu item
-

Adjusting Stereo or Focus mode

- ▷ see Mode menu item
-

Activating/deactivating the treble boost

- ▷ see High Boost menu item
-

Activating/deactivating automatic lock-off function

- ▷ see Auto Lock menu item
-

Configuring enhanced settings in the Advanced Menu:

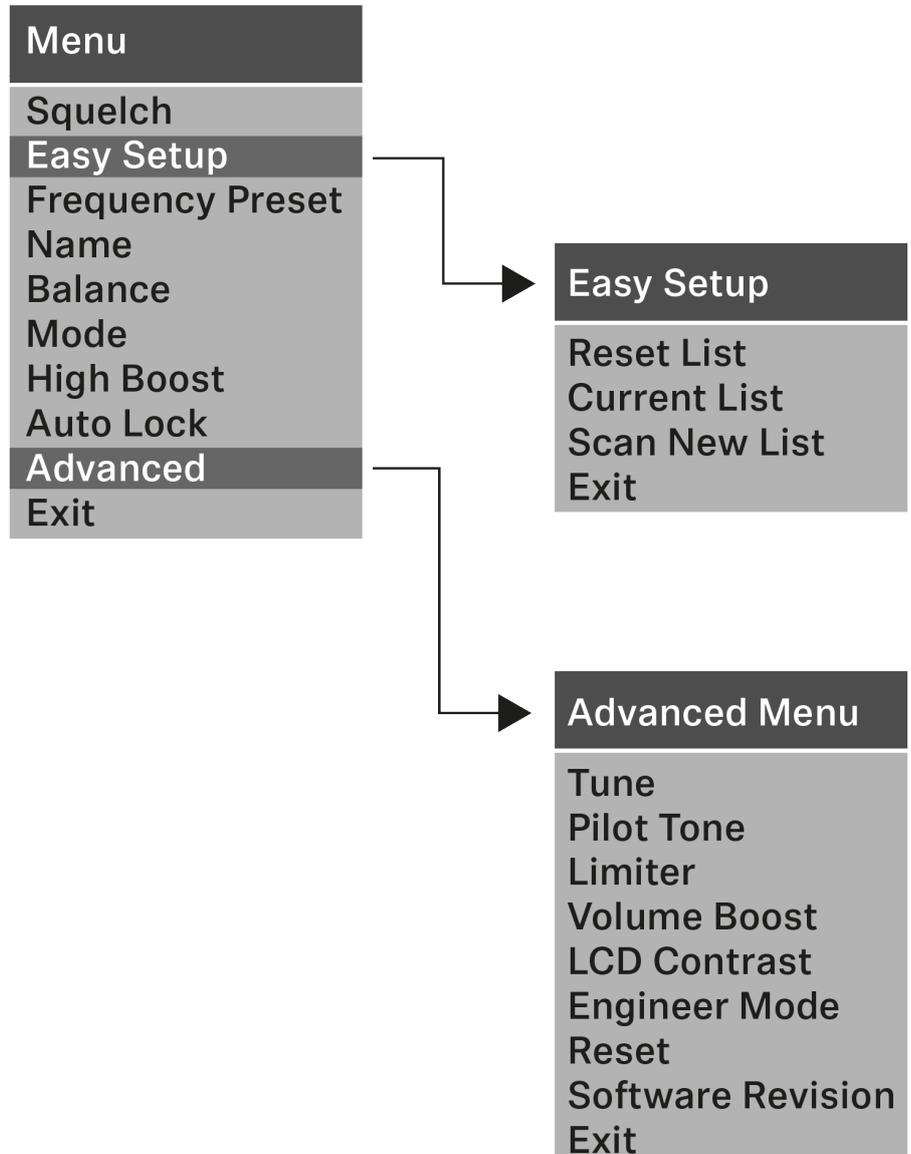


- Setting the receiving frequencies for the frequency banks U1 to U6
- Adjusting the limiter
- Adjusting the volume boost
- Adjusting the contrast of the display panel
- Adjusting the menu item and loading profiles
- Resetting the settings made in the operating menu
- Displaying the current software revision
- ▷ see Advanced menu item



Menu structure

The figure shows the complete EK 2000 IEM menu structure in an overview.





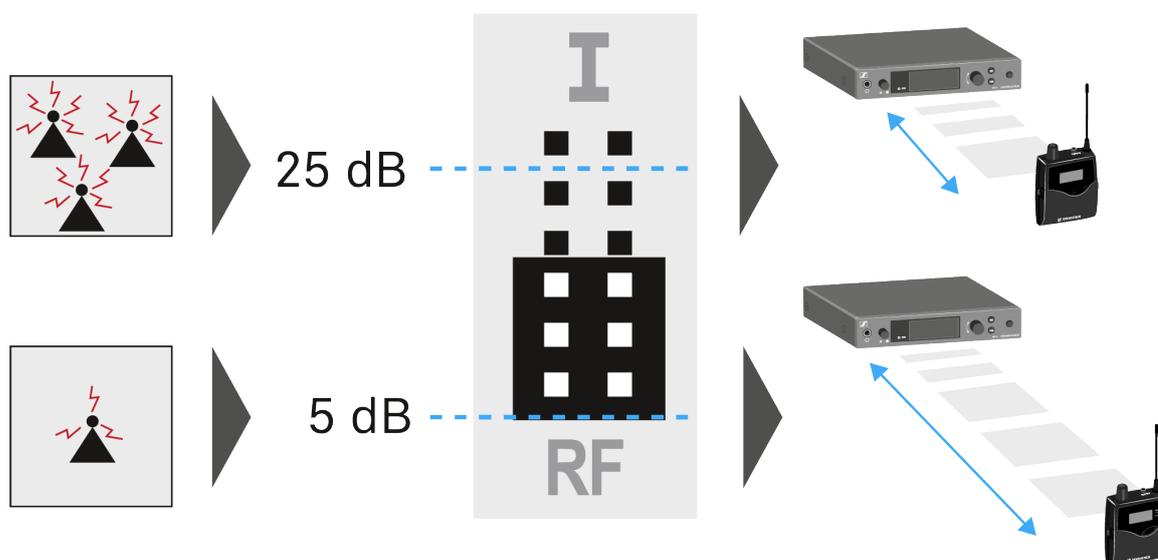
Squelch menu item

You can adjust the squelch threshold in the **Squelch** menu item.

Setting range:

- 5 to 25 dB μ V, adjustable in 2 dB steps

The squelch threshold is displayed on the home screen in the RF signal level area:



⚠ CAUTION

Risk of hearing and material damage!

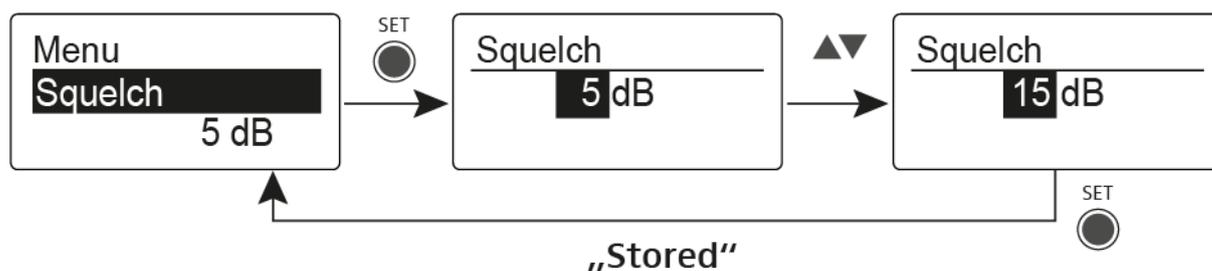
If you set the squelch threshold to a very low value, a very loud hissing noise can occur in the receiver. This hissing noise can be loud enough to cause hearing damage or overload your system's loudspeakers.

- ▷ Before adjusting the squelch threshold, set the volume of the audio output to the minimum.
- ▷ Never change the squelch threshold during a live transmission.



To open the Squelch menu item:

- ▷ On the home screen, press the **SET** button to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the **Squelch** menu item appears in the selection frame.
- ▷ Press the **SET** button to open the menu item.
- ▷ Adjust the settings as desired.



- ▷ Press the **SET** button to save the changes you made to the settings
or
- ▷ Press the ESC button to cancel the entry without saving the settings.



Easy Setup menu item

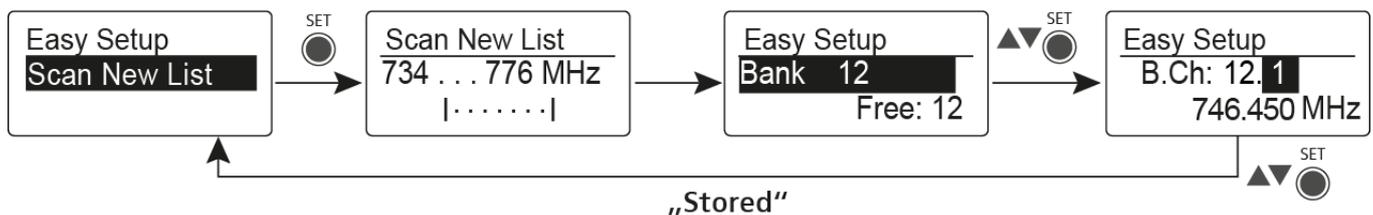
You can scan for unused frequencies using the **Easy Setup** menu item.

i Switch off all transmitters before you perform the scan. If transmitters are still switched on, they are detected as unavailable frequencies and the frequencies that are actually available cannot then be used.

i The squelch threshold setting influences the result. Set the squelch threshold to a low level for as many frequencies as possible, and to a high level for as many safe frequencies as possible (see Squelch menu item).

To open the Easy Setup menu item:

- ▷ Press the **SET** button on the Home Screen to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the **Easy Setup** menu item appears in the selection frame.
- ▷ Press the **SET** button to open the menu item.
- ▷ Adjust the settings as desired.



Scan New List

- ▷ Select **Scan New List**, to scan for unused frequencies.
- ▷ Press the **SET** button to start the scan.
- ▷ The frequency range of the receiver is scanned. As a result, the number of unused frequencies is displayed for every frequency bank.
- ▷ Press the **UP** or **DOWN** buttons to select a frequency bank.
- ▷ Press the **SET** button to confirm your selection.
- ▷ Press the **UP** or **DOWN** buttons to select an unused frequency from the selected bank.
- ▷ Press the **SET** button to save the changes you made to the settings.
- ▷ or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.



Current List

- ▷ Select **Current List** to show the list of unused frequencies from the last scan.

Reset

- ▷ Select **Reset List** to delete the list of unused frequencies.

Performing multi-channel frequency setup



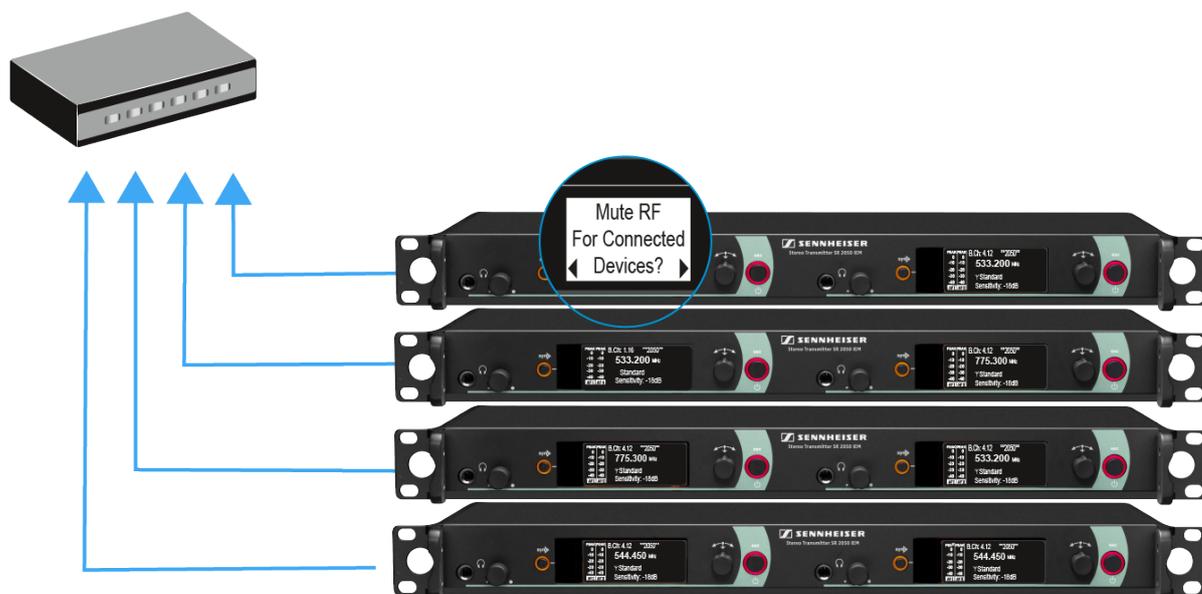
As an alternative to the following procedure, multi-channel frequency setup can also be performed using the Sennheiser Wireless Systems Manager (WSM) software. For more information about controlling devices via the Sennheiser Wireless Systems Manager (WSM) software, refer to the instruction manual for the software. You can download the software here: www.sennheiser.com/wsm

To perform the automatic frequency setup for multiple radio links simultaneously:

- ▷ Connect all of the SR 2000 IEM or SR 2050 IEM transmitters to one network using a network switch. See *Creating a data network*.

The automatic frequency setup function only works for transmitters in the same frequency range. Transmitters in a different frequency range are not included.

- ▷ Please note that all transmitters must be in the same **IP address range**.
 - The IP addresses can be automatically assigned if there is a DHCP server in the network.
 - If there is no DHCP server in the network, the IP addresses must be assigned manually. See *Advanced > IP Address* menu item.
 - Assign the IP addresses for all transmitters in the 192.168.x.x range (the link-local range 169.254.x.x is also a possible alternative).
- ▷ Open the **Easy Setup** menu item on one of the transmitters. The **Mute RF For Connected Devices?** message appears.



- ▷ Press the jog dial to confirm the message and deactivate the radio signal for all connected transmitters. All connected transmitters in the same frequency range will switch to **Easy Setup Sync** mode.



- ▷ Perform a frequency scan on an **EK 2000 IEM** portable receiver as described above.



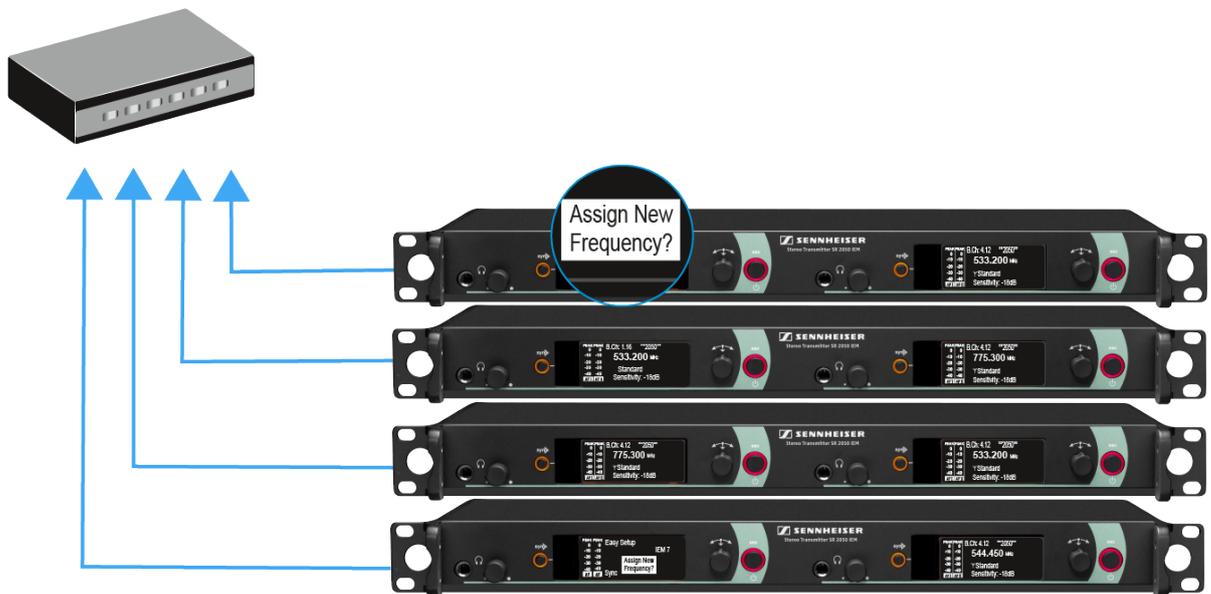
- ▷ From the scan results on the receiver, select a frequency bank with enough free channels.
- ▷ Hold the infrared interface of the **EK 2000 IEM** receiver in front of the infrared interface of an **SR 2000 IEM** or **SR 2050 IEM** transmitter to transfer the scan results from the receiver to this transmitter.



The selected transmitter becomes the master transmitter. The display panels of the other transmitters will display the message **Assign New Frequency?**



Receivers with non-compatible frequency ranges will not display a message.



- ▶ Select an unused frequency for one of the connected transmitters on the master transmitter.

The frequency selected on the master transmitter will also be shown on the display panel of the connected transmitters.
- ▶ Press the jog dial (**SET**) on the particular transmitter to save your selected frequency and synchronize it with the corresponding receiver at a later point (see Synchronizing devices).

or
- ▶ Press the **SYNC** button to synchronize the selected frequency with the receiver immediately.
- ▶ Use this procedure to assign an unused frequency to all connected transmitters, one after another.
- ▶ For the last step, assign a frequency to the master transmitter.

This completes the multi-channel frequency setup.



Frequency Preset menu item

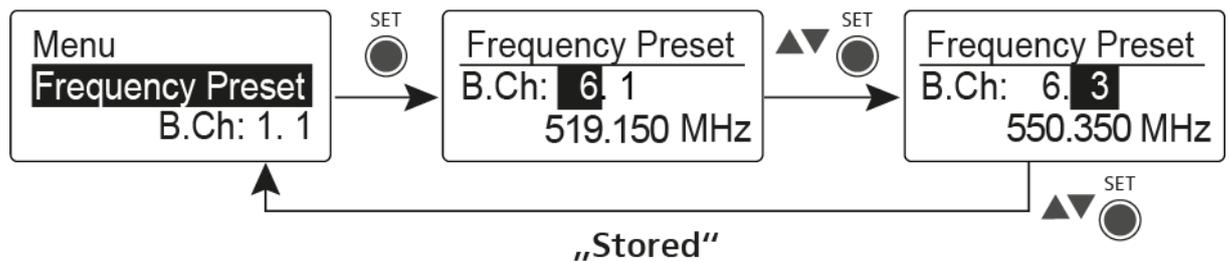
In the **Frequency Preset** menu item, you can adjust the receiving frequency of the receiver by adjusting the frequency bank and the channel.



You can set the frequencies of the frequency bank U here: Advanced -> Tune menu item.

To open the Frequency Preset menu item:

- ▷ On the home screen, press the **SET** button to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the **Frequency Preset** menu item appears in the selection frame.
- ▷ Press the **SET** button to open the menu item.
- ▷ Adjust the settings as desired.



- ▷ Press the **SET** button to save the changes you made to the settings.
or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.

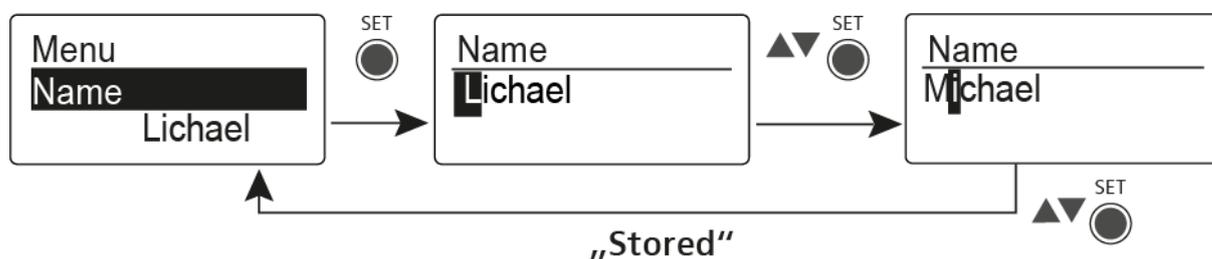


Name menu item

In the Name menu item you can enter a name for the radio link.

To open the Name menu item:

- ▷ On the home screen, press the **SET** button to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the Name menu item appears in the selection frame.
- ▷ Press the **SET** button to open the menu item.
- ▷ Adjust the settings as desired.



- ▷ Press the **SET** button to save the changes you made to the settings
or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.



Balance menu item

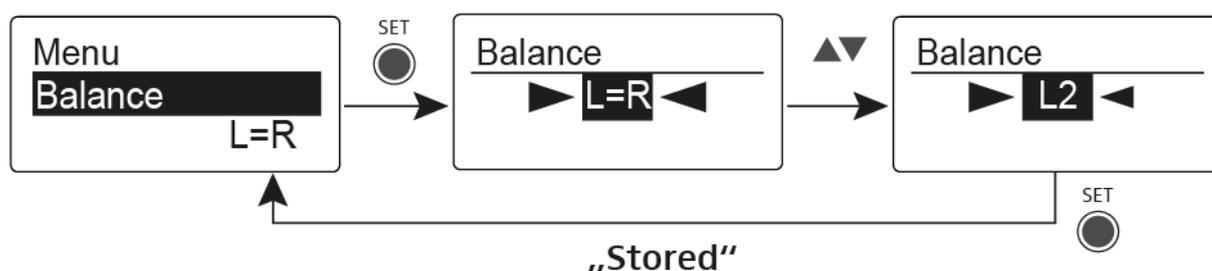
In the **Balance** menu item you can adjust the balance of the audio channels.

Setting range:

- 31 steps: L = R, L1 to L15 and R1 to R15

To open the Balance menu item:

- ▷ On the home screen, press the **SET** button to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the Balance menu item appears in the selection frame.
- ▷ Press the **SET** button to open the menu item.
- ▷ Adjust the settings as desired.



- ▷ Press the **SET** button to save the changes you made to the settings
or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.



Mode menu item

In the **Mode** menu item you can switch between **Stereo** and **Focus**.

Stereo mode

The left-right signals are available as usual.

The Balance setting serves to adjust the balance between the left and right stereo signal (See Balance menu item).

- ▷ To use it, activate **Stereo** mode on the corresponding **SR 2000 IEM / SR 2050 IEM** transmitter den Modus **Stereo** (see Mode menu item).

Focus mode

The corresponding **SR 2000 IEM / SR 2050 IEM** transmitter operates in **Stereo** mode.

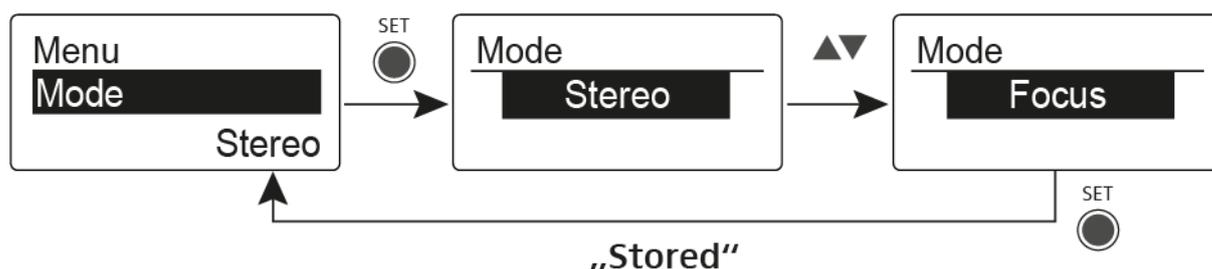
- The left-right signals are mixed and are available as a mono signal in both headphone channels.
- The balance setting serves to adjust the relative levels of the two separate channels in the mixed mono signal. See Balance menu item.

The corresponding **SR 2000 IEM / SR 2050 IEM** transmitter operates in **Mono** mode.

- Only the left audio input of the **SR 2000 IEM / SR 2050 IEM** is received as a mono signal.

To open the Mode menu item:

- ▷ On the home screen, press the **SET** button to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the Mode menu item appears in the selection frame.
- ▷ Press the **SET** button to open the menu item.
- ▷ Adjust the settings as desired.





- ▷ Press the **SET** button to save the changes you made to the settings.
- or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.

High Boost menu item

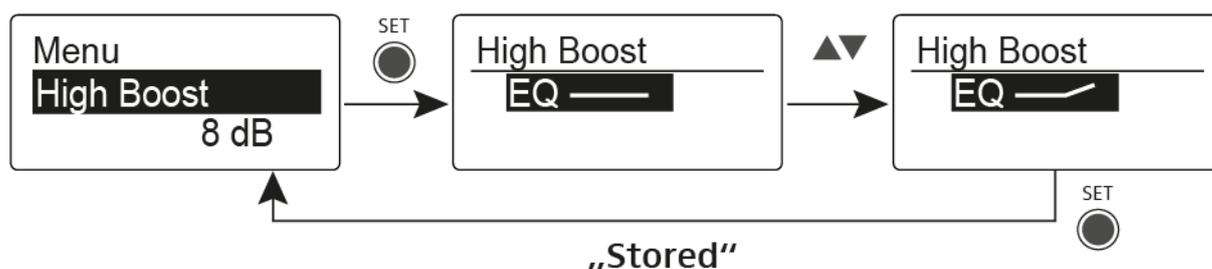
In the **High Boost** menu item you can change the treble boost of the output signal.

Setting range:

- 8 dB at 10 kHz

To open the High Boost menu item:

- ▷ On the home screen, press the **SET** button to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the **High Boost** menu item appears in **SET** selection frame.
- ▷ Press the SET button to open the menu item.
- ▷ Adjust the settings as desired.



- ▷ Press the **SET** button to save the changes you made to the settings
- or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.



Auto Lock menu item

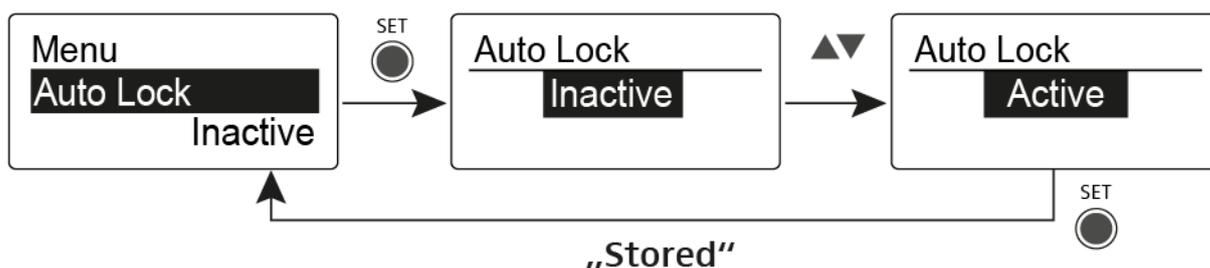
In the **Auto Lock** menu item you can activate or deactivate the auto lock-off function.



You can find information about temporarily deactivating the lock-off function during operation under Lock-off function.

To open the Auto Lock menu item:

- ▷ On the home screen, press the **SET** button to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the **Auto Lock** menu item appears in the selection frame.
- ▷ Press the **SET** button to open the menu item.
- ▷ Adjust the settings as desired.



- ▷ Press the **SET** button to save the changes you made to the settings
or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.



Advanced menu item

In the **Advanced** submenu you can configure enhanced settings.

To open the Advanced submenu:

- ▷ On the home screen, press the **SET** button to open the operating menu.
- ▷ Press the **UP** or **DOWN** button until the Advanced menu item appears in the selection frame.
- ▷ Press the **SET** button to open the menu item.

The following sub-items are available:

Adjusting the receiving frequency for the frequency bank U

- ▷ see Advanced -> Tune menu item
-

Adjusting the Pilot Tone

- ▷ see Advanced -> Pilot Tone menu item
-

Adjusting the limiter

- ▷ see Advanced -> Pilot Tone menu item
-

Adjusting the volume boost

- ▷ see Advanced -> Volume Boost menu item
-

Adjusting the contrast of the display panel

- ▷ see Advanced -> LCD Contrast menu item
-

Adjusting the menu item and loading profiles

- ▷ see Advanced -> Engineer Mode menu item
-



Resetting the receiver

- ▷ see Advanced -> Reset menu item

Displaying the current software revision

- ▷ see Advanced -> Software Revision menu item

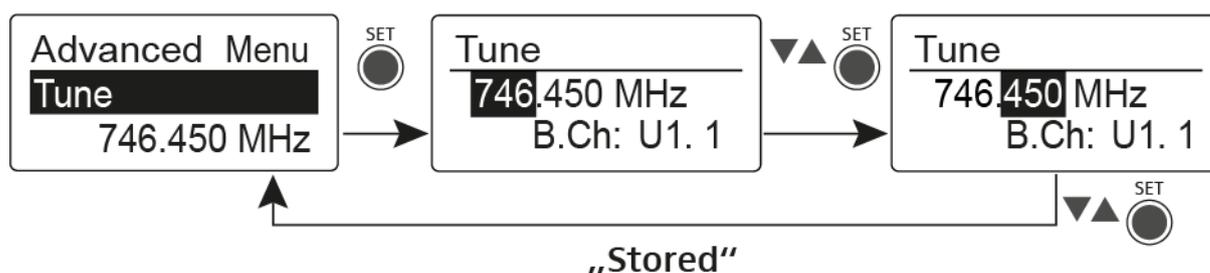
Advanced -> Tune menu item

In the **Tune** menu item of the **Advanced** submenu, you can configure the receiving frequencies for the frequency banks **U1** to **U6**.

You can save a total of 16 frequencies in every **U** frequency bank.

Only adjusting the frequency

- ▷ Open the **Tune** menu item in the **Advanced** menu.
- ▷ Adjust the settings.

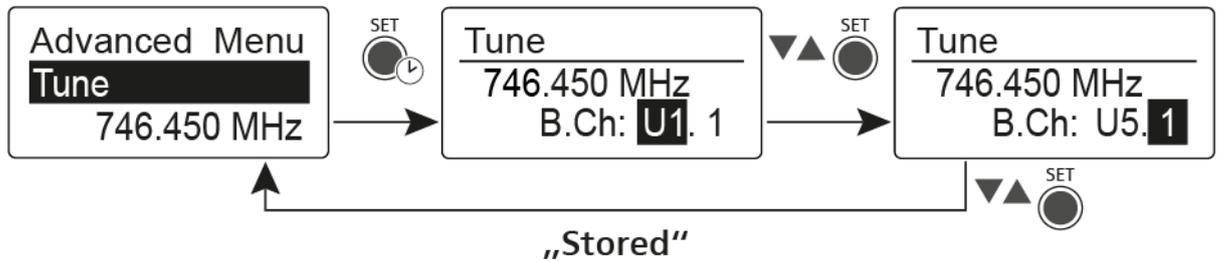


- ▷ Press the **SET** button to save the changes you made to the settings
or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.



Setting the channel and frequency

- ▷ Select the **Tune** menu item and call it up by holding down the **SET** button until the channel selection appears.
- ▷ Adjust the settings.

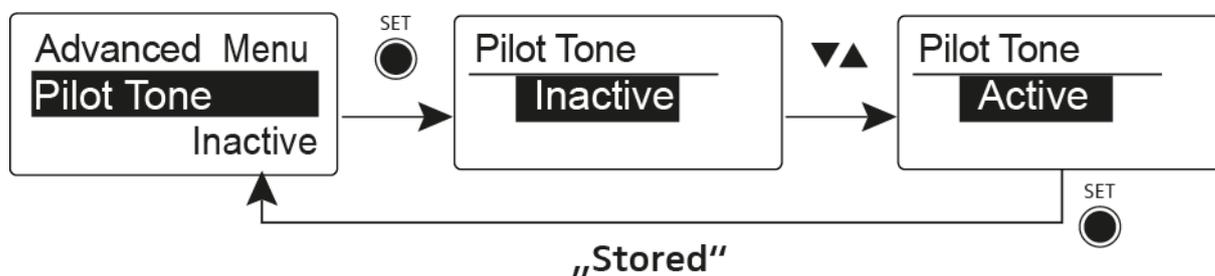


- ▷ Press the **SET** button to save the changes you made to the settings
or
- ▷ Press the **ESC** button to cancel the entry without saving the settings.



Advanced -> Pilot Tone menu item

In the **Pilot Tone** menu item of the Advanced submenu, you can activate and deactivate the pilot tone evaluation.



The **Pilot Tone** has an inaudible frequency which is transmitted by the transmitter and evaluated by the receiver. It supports the squelch function of the receiver.



Advanced -> Limiter menu item

In the **Limiter** menu item of the **Advanced** submenu, you can adjust the volume of the headphone output **PHONES**.

Setting range:

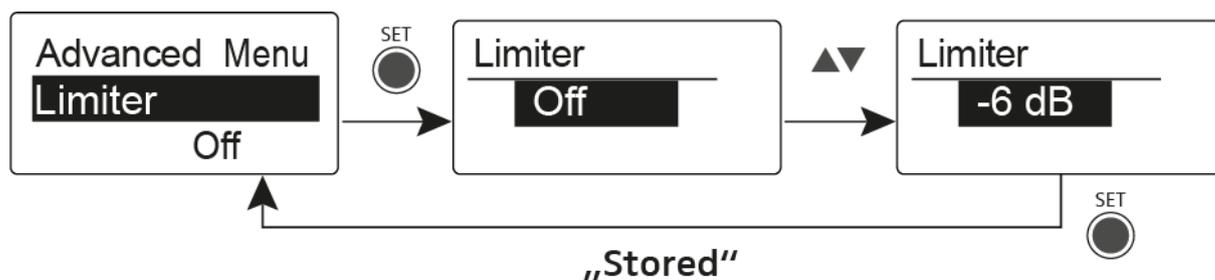
- Off
- -18 dB, -12 dB or -6 dB

CAUTION

Risk of hearing damage!

The limiter limits the volume of the headphone output **PHONES** and thus protects your hearing. When the limiter is switched off, you may expose yourself to high volumes over a prolonged period which can cause permanent hearing damage.

- ▷ Set the limiter to the lowest level before putting the earphones on.
- ▷ Do not continuously expose yourself to high volume levels.





Advanced -> Volume Boost menu item

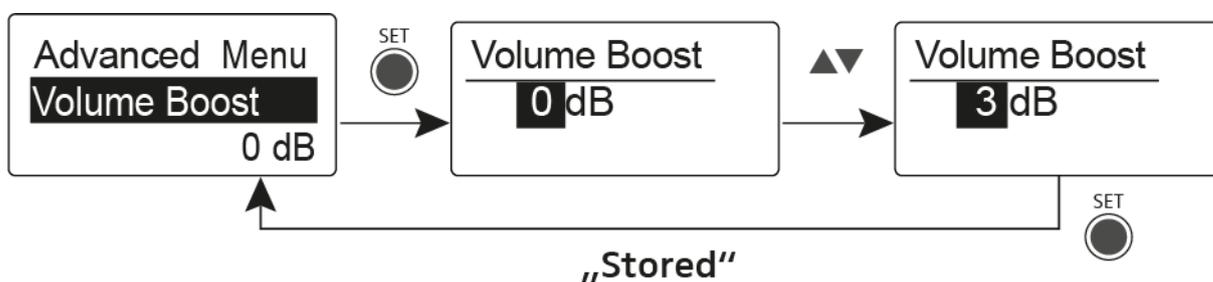
In the **Volume Boost** menu item of the **Advanced** submenu, you can adjust the volume boost.



When configuring the settings, ensure that the audio signal is not distorted.

Setting range:

- 0 dB, +3 dB or +6 dB



Advanced -> LCD Contrast menu item

In the **LCD Contrast** menu item of the **Advanced** submenu, you can adjust the display contrast of the display panel.





Advanced -> Engineer Mode menu item

In the **Engineer Mode** menu item of the **Advanced** submenu, you can configure the menu items and upload profiles.

In Engineer Mode, you can use your EK 2000 IEM to read out settings from other EK receivers and save them as profiles.

You can load these profiles during a live transmission in order to monitor and, if necessary, adjust an audio signal reproduced by a read-out EK receiver.

A profile contains the settings of the menu items:

- Squelch menu item
- Frequency Preset menu item
- Name menu item
- Balance menu item
- Mode menu item
- High Boost menu item
- Advanced -> Tune menu item
- Advanced -> Pilot Tone menu item
- Advanced -> Volume Boost menu item

Profiles List menu item

- Create up to 16 profiles and read out the settings of the different EK receivers.

Load Profiles menu item

- Activate/deactivate profile loading

Clear List menu item

- Delete all profiles

Profiles List

To read out settings and save them as a profile:

- ▷ Call up the **Engineer Mode** menu item in the Advanced menu.
 - ▷ Call up the **Profiles List** menu item.
 - ▷ Select an unused profile (a profile without a frequency entry).
 - ▷ Press the **SET** button.
- sync** appears on the display panel of the receiver.



Place the receiver's infra-red interface in front of the infra-red interface of another EK receiver.

The settings of the receiver are assigned to the selected profile.

- ▷ Repeat this procedure to create profiles of other EK receivers.



You can read out the data of an SR IEM transmitter in the same way. Please note, however, that these settings will only be up-to-date if transmitter and receiver have been synchronized before (Synchronizing devices).

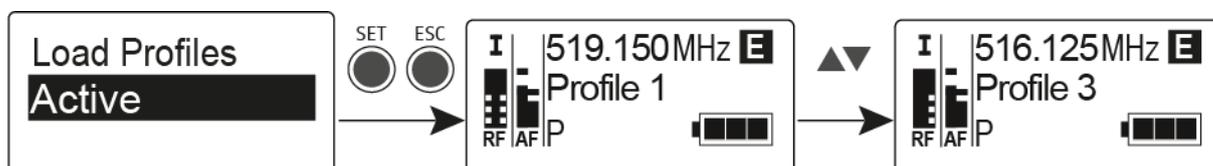
When the factory default settings are restored (Advanced -> Reset menu item), all profiles are deleted.

Load Profiles

To select a saved profile:

- ▷ Call up the **Load Profiles** menu item in the Engineer Mode submenu.
- ▷ Select **Active** to activate the loading of the profiles.
E appears on the standard display.
- ▷ Press the **ESC** button to exit the menu item.
- ▷ Select a profile by pressing the **UP/DOWN** button on the standard display.

The selected profile is loaded; you hear the audio signal of the corresponding receiver.



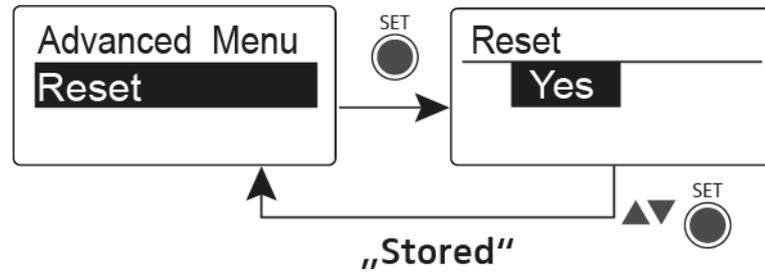
If there is no profile saved, **Inactive** appears in the **Load Profiles** menu item.

Engineer Mode remains activated, even if you replace the batteries or switch the EK off and on again.



Advanced -> Reset menu item

In the **Reset** menu item of the **Advanced** submenu, you can reset the settings of the receiver to the factory settings.



Advanced -> Software Revision menu item

In the **Software Revision** menu item of the **Advanced** submenu, you can display the current software version of the receiver.



Using the SR 2000 IEM / SR 2050 IEM

Operating elements of the transmitters SR 2000 IEM / SR 2050 IEM



- 1** Rack mount „ear“
- 2** Headphone socket
 - see Using the headphone output
- 3** Volume control for the headphone socket
 - see Using the headphone output
- 4** **SYNC** button
 - see Synchronizing devices
- 5** Infrared interface with a blue LED
 - see Synchronizing devices
- 6** Display panel
 - see Displays on the SR 2000 IEM / SR 2050 IEM display panel
- 7** **Jog dial** for navigating through the menu
 - see Buttons for navigating the SR 2000 IEM / SR 2050 IEM menu
- 8** **STANDBY** button
 - see Switching the SR 2000 IEM / SR 2050 IEM on and off



Switching the SR 2000 IEM / SR 2050 IEM on and off

To switch on the transmitter:

- ▷ Short-press the **STANDBY** button.
The transmitter switches on and the standard display appears.



To switch the transmitter to standby mode:

- ▷ If necessary, deactivate the lock-off function (see Lock-off function).
- ▷ Press and hold the **STANDBY** button until **OFF** appears on the display panel.
The display panel switches off.

To completely switch the transmitter off:

- ▷ Disconnect the transmitter from the power supply system by unplugging the power supply unit from the wall socket.



Using the headphone output

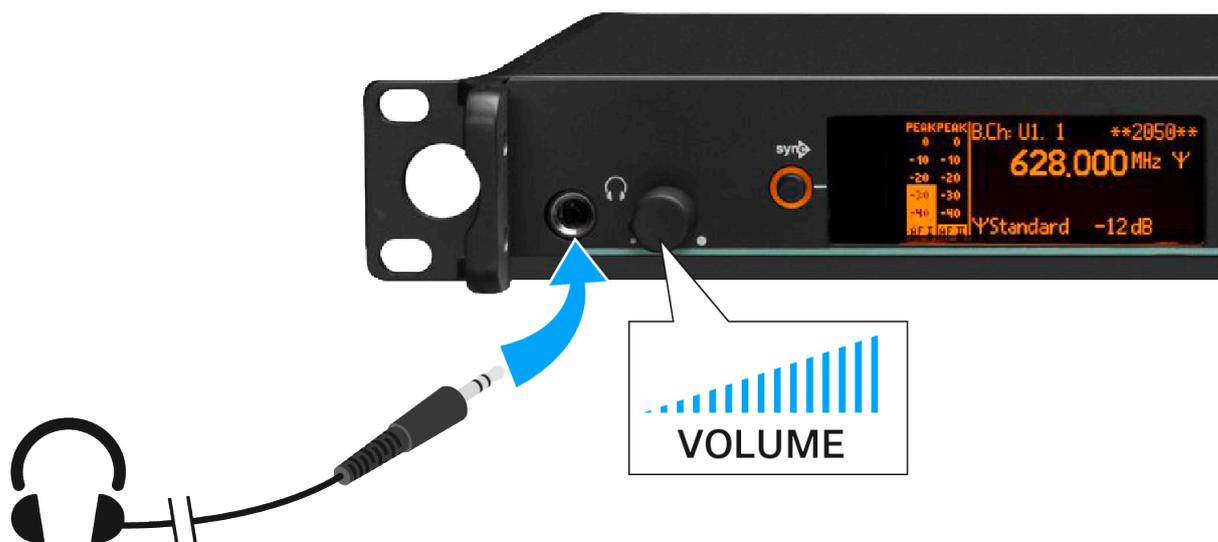
You can use the headphone output on the front of the SR 2000 IEM / SR 2050 IEM (6.3 mm jack) to listen to the audio signal.

CAUTION

Danger due to high volume levels!

- ▷ Turn down the volume of the headphone output before you put on the headphone.

- ▷ Connect the headphone to the headphone socket.
- ▷ Control the volume by turning the volume control next to the headphone socket.





Configuring the audio channels (mono/stereo)

You can configure audio channels in the Mode menu item. You can select either **Stereo** or **Mono**:

- ▷ Select **Stereo** when you want to send a separate audio signal on channel I and channel II (e.g. channel I = audio signal of the moderator/musician, channel II = sum of all audio signals).
- ▷ The moderator/musician then has the option to adjust the volume distribution on his or her receiver as needed.



In Stereo mode, you can receive the two input signals either as a mixed mono signal or as a stereo signal. To do so, you must select **Focus** or **Stereo** mode on the EK 2000 IEM receiver. See Mode menu item.



- ▷ Select **Mono** when you only want to transmit one channel. The signal of the left audio input **BAL AF IN L** is used.



In Mono mode, you have to deactivate the pilot tone evaluation on your EK 2000 IEM receiver. This is the only way to ensure that your receivers will transmit the same signal on channel I and channel II.





Deactivating the RF signal (RF mute)

To deactivate the RF signal:

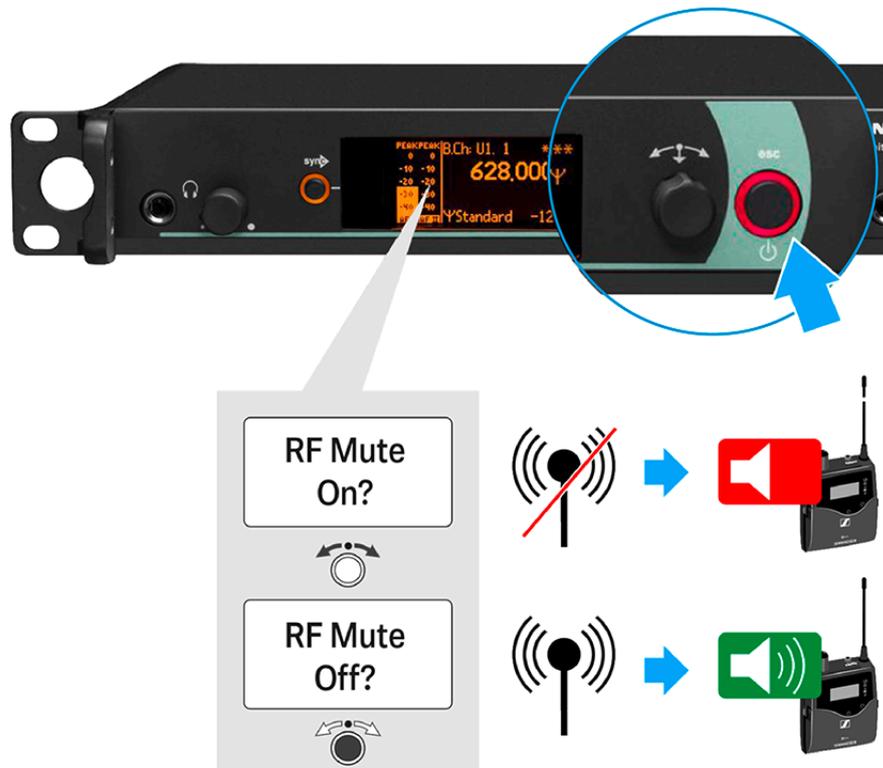
- ▷ Press the **STANDBY** button.
RF Mute Off? appears in the display panel.
- ▷ Turn the **jog dial**.
RF Mute On? appears in the display panel.
- ▷ Press the jog dial.

The transmission frequency is displayed, however the transmitter is not transmitting an RF signal. The RF Mute warning appears (see Displays on the SR 2000 IEM / SR 2050 IEM display panel) and the LED warnings are illuminated (see Operating elements of the transmitters SR 2000 IEM / SR 2050 IEM).

To activate the RF signal:

- ▷ Press the **STANDBY** button.
RF Mute Off? appears in the display panel.
- ▷ Turn the **jog dial**.
RF Mute On? appears in the display panel.
- ▷ Press the jog dial.

The RF signal is activated and the LED warnings of the display changes back to orange.





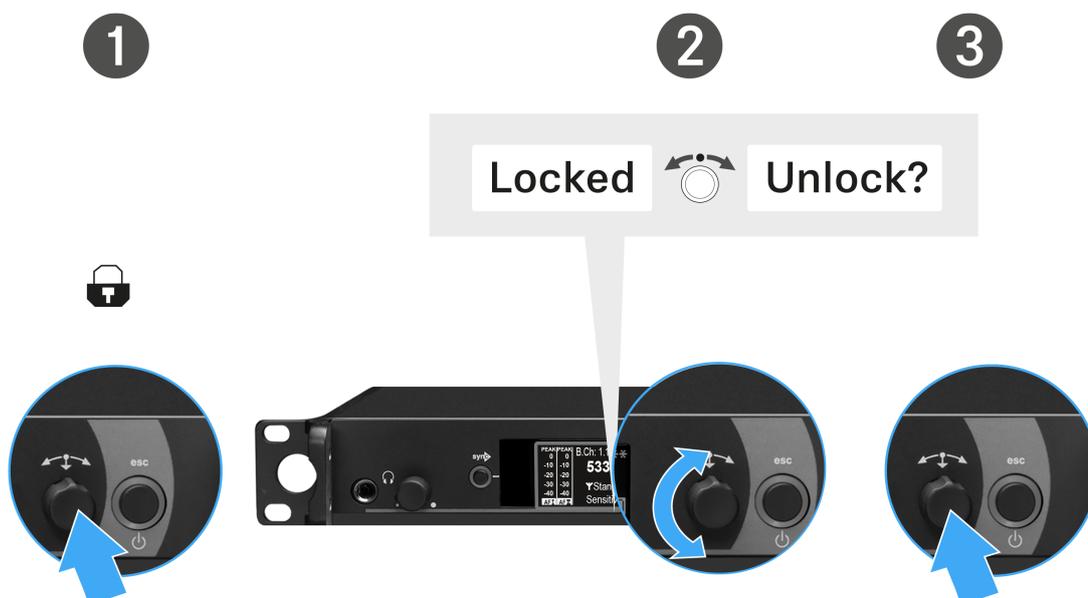
Lock-off function

You can set the automatic lock-off function in the **Auto lock** menu (see Auto Lock menu item).

When you have switched on the lock-off function, you will have to turn the transmitter off and on again in order to operate it.

To temporarily deactivate the lock-off function:

- ▷ Press the jog dial.
Locked appears in the display panel.
- ▷ Turn the jog dial.
Unlock? appears in the display panel.
- ▷ Press the jog dial.
Lock-off function is now temporarily deactivated.



When you are in the operating menu

>> Lock-off function is deactivated long enough for you to work in the operating menu.

You are in the standard display

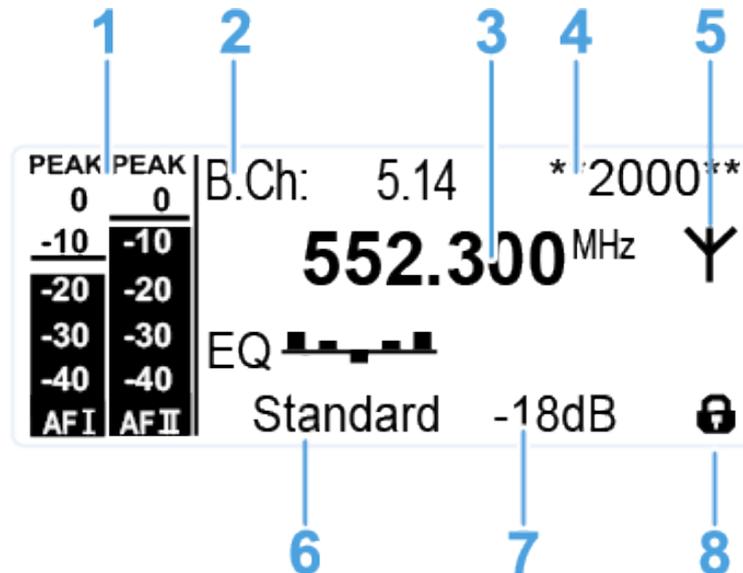
>> Lock-off function is automatically activated after 10 seconds.

The Lock-off function icon flashes while the lock-off function is atng activated again.



Displays on the SR 2000 IEM / SR 2050 IEM display panel

You can view the following information on the transmitter display.



- 1** AF audio level (audio frequency)
 - Audio channel level with peak hold function
 - When the display shows full deflection, the audio input level is excessively high. When the transmitter is overloaded frequently or for extended periods of time, the PEAK display is shown inverted.
 - see Sensitivity menu item
 - see Configuring the audio channels (mono/stereo)
- 2** Frequency bank and channel
 - Current frequency bank and channel number
 - see Frequency Preset menu item
- 3** Frequency
 - Configured transmission frequency
 - see Frequency Preset menu item
- 4** Name
 - Freely selectable name of the receiver
 - see Name menu item
- 5** Transmission icon and transmission power
 - RF signal is atng transmitted
 - see Advanced > RF Power menu item
 - see Deactivating the RF signal (RF mute)

**6** RF Power

- Configured RF Power

7 Input sensitivity

- Configured input sensitivity for the NF signal on the audio input sockets **BAL AF IN L (I)** and **BAL AF IN R (II)**
- see Sensitivity menu item

8 Lock-off function

- Lock-off function is activated.
- see Auto Lock menu item



Buttons for navigating the SR 2000 IEM / SR 2050 IEM menu

Navigating through the menu

To open the menu:

- ▷ Press the **jog dial**.
The operating menu is shown on the transmitter display panel.

To open a menu item:

- ▷ Turn the **jog dial** to navigate through the individual menu items.
- ▷ Press the **jog dial** to open the selected menu item.

See: Operating elements of the transmitters SR 2000 IEM / SR 2050 IEM

Making changes in a menu item

After you open a menu item, you can make changes as follows:

- ▷ Turn the **jog dial** to set the displayed value.
- ▷ Press the **jog dial** to save your setting.
- ▷ Press the **ESC** button to leave the menu item without saving the setting.



>> Operating elements of the transmitters SR 2000 IEM / SR 2050 IEM

>> Displays on the SR 2000 IEM / SR 2050 IEM display panel

>> Setting options in the menu



Setting options in the menu

In the SR 2000 IEM / SR 2050 IEM menu, you can configure the following settings.

Adjusting the input sensitivity

- ▷ see Sensitivity menu item
-

Configuring the audio transmission mode (mono/stereo)

- ▷ see Mode menu item
-

Activating Easy Setup Sync

- ▷ see Easy Setup menu item
-

Setting the frequency bank and the channel

- ▷ see Frequency Preset menu item
-

Entering a freely selectable name

- ▷ see Name menu item
-

Activating/deactivating the automatic lock-off function

- ▷ see Auto Lock menu item
-

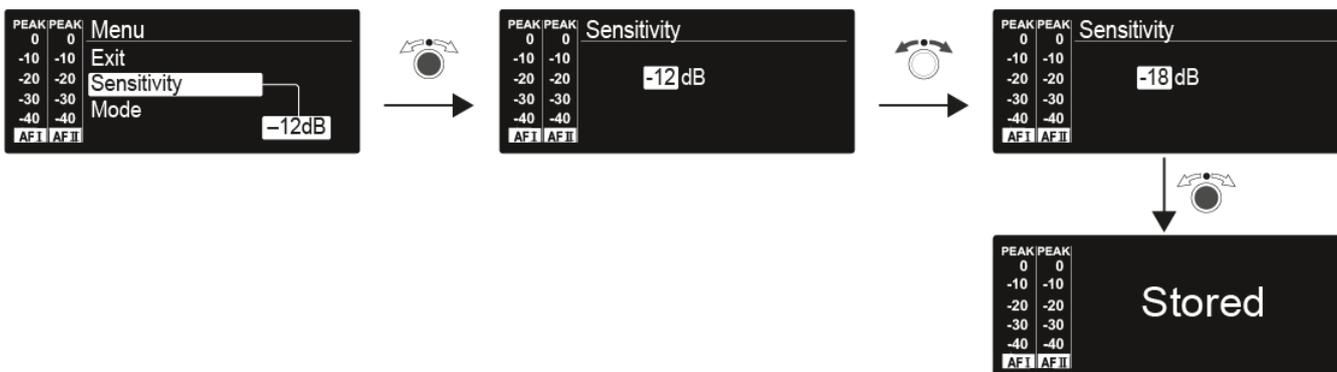
Configuring enhanced settings in the Advanced Menu:

- Adjusting the transmission frequencies for the U frequency bank
- Adjusting the parameters for transmission to the receivers
- Configuring the transmission power
- Adjusting the warnings
- Adjusting the contrast of the display panel
- Resetting the transmitter
- Configuring the IP address
- Displaying the current software revision
See Advanced menu item



Sensitivity menu item

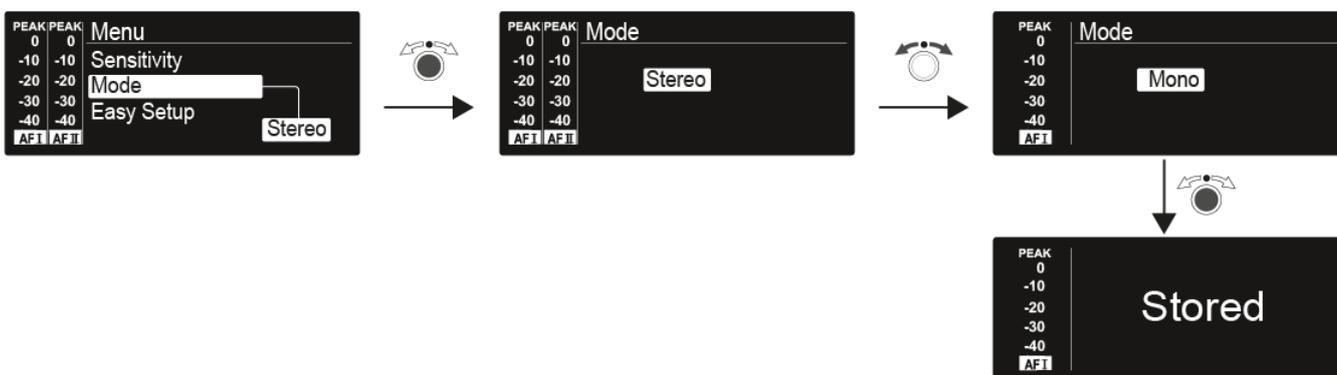
- Adjusting the input sensitivity – **AF** audio level



Setting range: 0 dB to -42 dB in 3 dB steps

Mode menu item

- Configuring the audio transmission



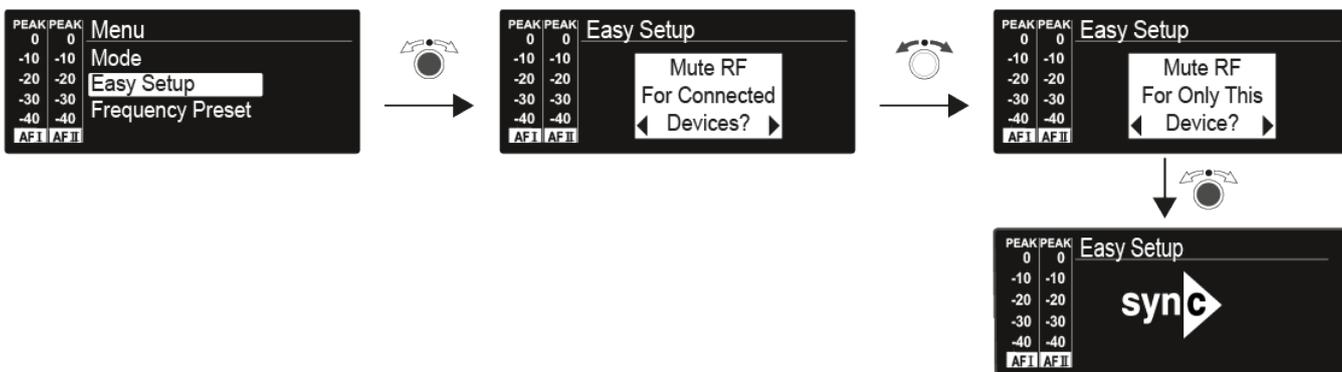
Setting range: Stereo and Mono

In stereo mode, you can receive the two input signals either as a mixed mono signal or as a stereo signal. To do so, you must select **Focus** or **Stereo** mode on the EK 2000 IEM receiver. See Mode menu item.



Easy Setup menu item

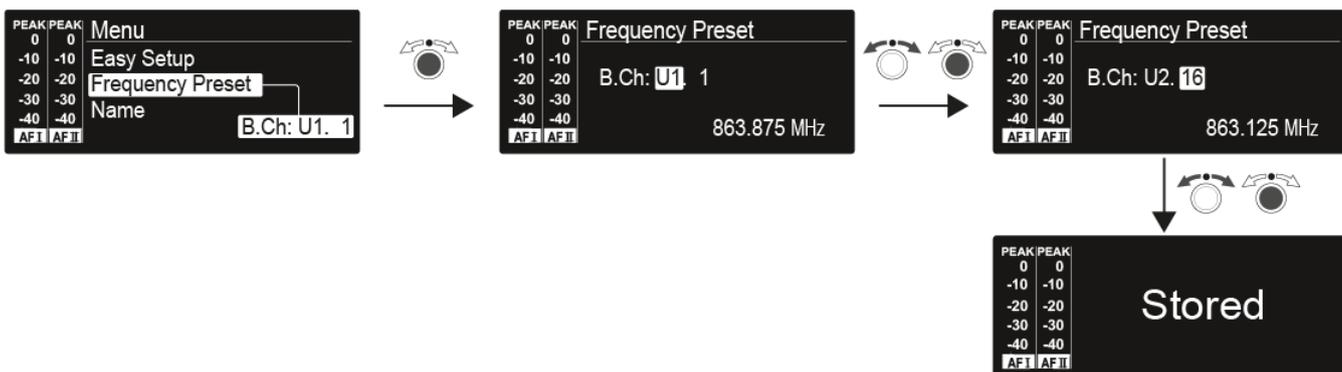
- Activating Easy Setup Sync



- The **Easy Setup Sync** function is needed to perform a frequency scan using the receiver and for automatic multi-channel frequency setup.
- See Easy Setup menu item for the EK 2000 IEM receiver.
- See Synchronizing devices.

Frequency Preset menu item

- Manually selecting a frequency bank and channel





Name menu item

- Entering names



In the Name menu item you can enter any name you want for the transmitters (e.g. the names of the musicians).

The names are a maximum of 8 characters:

- All letters except German umlauts.
- Numbers from 0 to 9
- Special characters and spaces

Enter the names as follows:

- ▷ Turn the **jog dial** to select a character.
- ▷ Press the **jog dial** to switch to the next position.

Once you have entered the last character, press the jog dial to save the name.



Auto Lock menu item

- Switching the automatic lock-off function on and off



This lock prevents the transmitter from being unintentionally switched off and also prevents any unintentional changes to the transmitter's configuration. In the standard display, the lock icon shows whether the lock-off function is currently switched on.



You can find information about using the lock-off function under Lock-off function.



Advanced menu item

In the **Advanced** submenu you can configure enhanced settings

The following sub-items are available:

Adjusting the transmission frequencies for the U frequency bank

- ▷ see Advanced > Tune menu item

Adjusting the parameters for transmission to the receivers

- ▷ see Advanced > Sync Settings menu item

Configuring the transmission power

- ▷ see Advanced > RF Power menu item

Adjusting the warnings

- ▷ see Advanced > Fullscreen Warnings menu item

Adjusting the contrast of the display panel

- ▷ see Advanced > LCD Contrast menu item

Resetting the transmitter

- ▷ see Advanced > Reset menu item

Configuring the IP address

- ▷ see Advanced > IP Address menu item

Displaying the current software revision

- ▷ see Advanced > Software Revision menu item



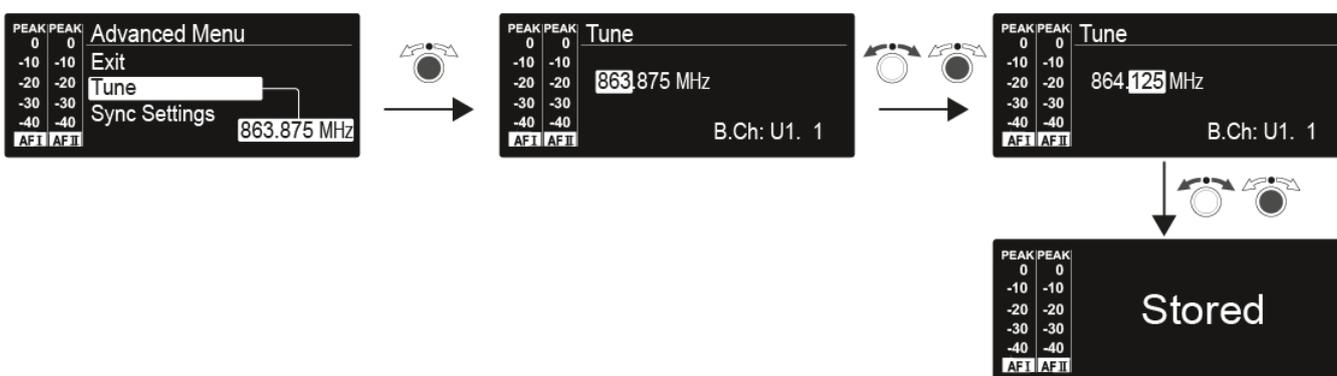
Advanced > Tune menu item

- Configuring transmission frequencies and frequency banks **U1** to **U6**.

You can save a total of 16 channels in the frequency banks **U1** to **U6**.

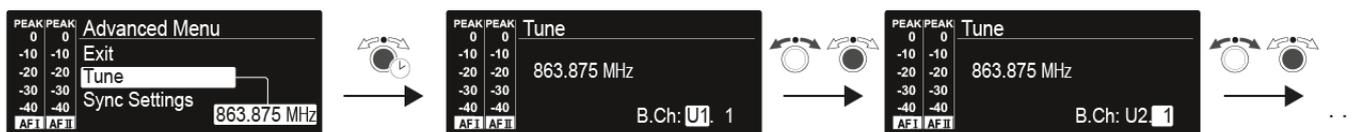
Only adjusting the frequency

- ▷ Open the **Tune** menu item in the **Advanced** menu.
- ▷ Adjust the settings.



Setting the channel and frequency

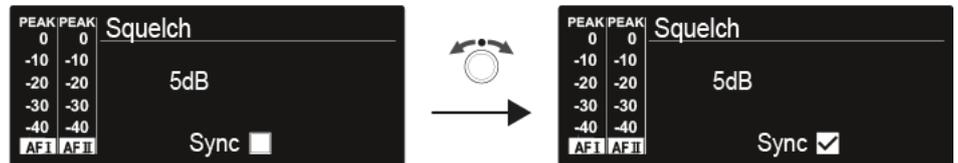
- ▷ Select the **Tune** menu item and call it up by holding down the **jog dial** until the channel selection appears.
- ▷ Adjust the settings.





Advanced > Sync Settings menu item

- Configuring, activating or deactivating parameters for transmission to the receivers.



When the check box is activated, the value will be transmitted during synchronization. If it is deactivated, the value will not be transmitted.

You can configure and activate/deactivate the following parameters:

- Balance
- Squelch
- Mode
- High Boost
- Auto Lock
- Limiter

See Synchronizing devices.



Advanced > RF Power menu item

- Configuring the transmission power



You can configure the transmission power in three steps in the **RF Power** menu item. Please note the general conditions and restrictions for the use of frequencies: www.sennheiser.com/sifa



When synchronizing your transmitter with an EK 2000 IEM receiver, please observe the following:

- ▷ Only use a transmitter and a receiver from the same frequency range (see the type plate on the transmitter and the receiver).
- ▷ Make sure that the desired frequencies are listed in the enclosed frequency information sheet.
- ▷ Make sure that the desired frequencies are approved and legal in your country and, if necessary, apply for an operating license.

Setting range:

- **Low:** 10 mW
- **Standard:** 30 mW
- **High:** 50 mW



Advanced > Fullscreen Warnings menu item

- Activating/deactivating warnings



You can activate or deactivate the following warnings:

AF Peak

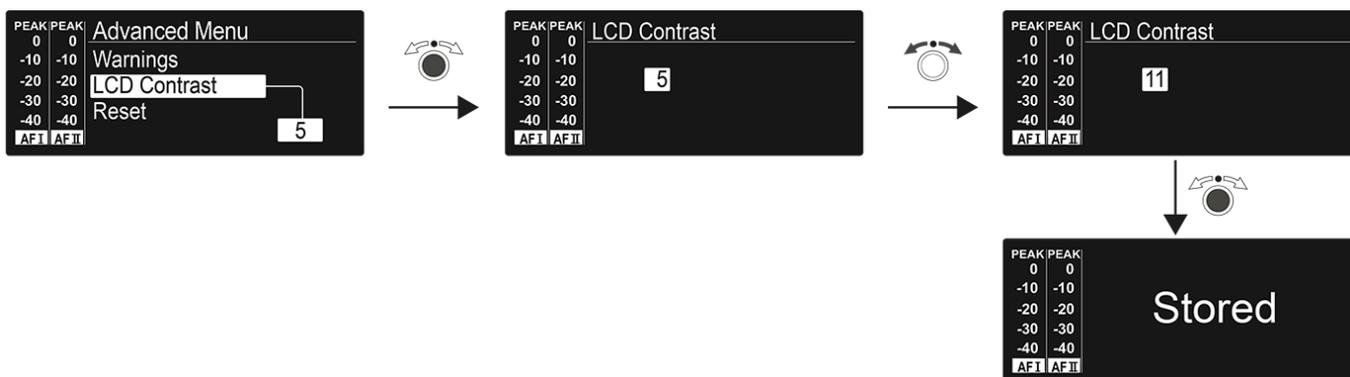
- The audio level is too high.

RF Mute

- The RF signal from the transmitter to the receiver is deactivated.

Advanced > LCD Contrast menu item

- Adjusting the contrast of the display panel



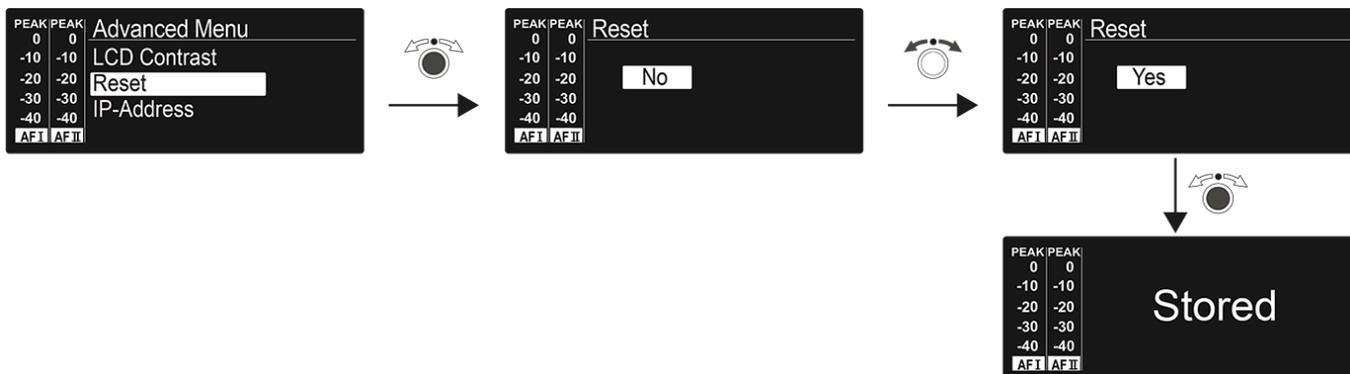
You can configure the contrast of the display in 16 steps.

Setting range: 0 to 15



Advanced > Reset menu item

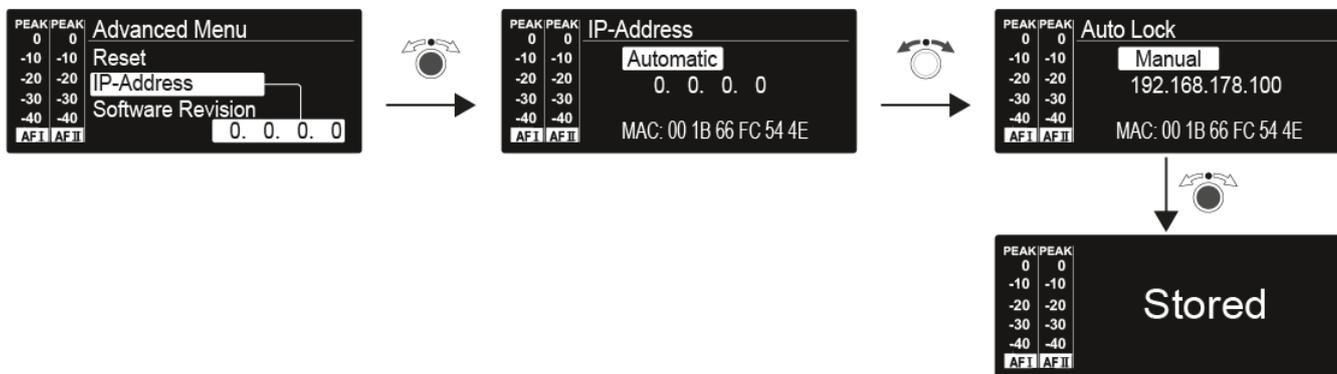
- Resetting the transmitter



When you reset the transmitter, only the selected settings of the pilot tone and the **U1** to **U6** frequency banks are retained.

Advanced > IP Address menu item

- Adjusting the network configuration



Setting range: Automatic or manual

Advanced > Software Revision menu item

- Show software revision

You can display the current software revision.



Establishing a radio link

To establish a radio link between the transmitter and receiver, the same frequency must be set in both devices.

You can do this in a number of different ways:

- ▷ Use the Easy Setup function to perform an automatic frequency setup (see Easy Setup menu item).
- ▷ Set a frequency in the receiver manually (see Frequency Preset menu item) and synchronize it with the transmitter (see Synchronizing devices).
- ▷ Set the frequency on the receiver and the transmitter manually (EK 2000 IEM: Frequency Preset menu item, SR 2000 IEM: Frequency Preset menu item).



Setting notes

Please note the following when synchronizing a transmitter with a receivers:

- ▷ Only use transmitters and receivers from the same frequency range (see the type plate on the transmitter and receiver).
- ▷ Make sure that your chosen frequencies are listed in the frequency table for the particular frequency range (see Frequency tables).
- ▷ Ensure that the desired frequencies are permitted in your country and apply for an operating license if necessary.



Synchronizing devices

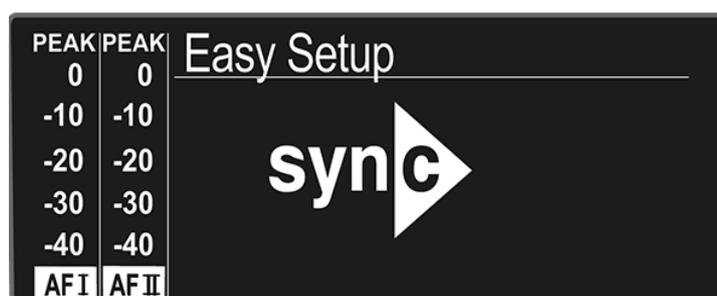
You can synchronize the 2000 IEM series transmitters and receivers via the transmitter's and receiver's infrared interfaces.

The **Easy Setup Sync** function makes it possible to transfer unused frequency presets from your EK 2000 IEM receiver to multiple transmitters via the infrared interface after you have performed a **Frequency Preset Scan** with this receiver. The next unused channel in the receiver's current frequency bank is transferred to your transmitter.

Vice versa, you can use the **Sync** function to configure the settings for your EK 2000 IEM portable receiver directly on your stationary SR 2000 IEM / SR 2050 IEM transmitter and transfer them to the receivers via the infrared interface.

Easy Setup Sync function (EK 2000 IEM -> SR 2000 IEM / SR 2050 IEM) for a single radio link

- ▷ Switch your stationary transmitter and your mobile receivers on.
- ▷ Call up the **Easy Setup** menu item on the transmitter.
- ▷ Choose the **Mute RF For Only This Device?** option.
The **SYNC** display appears in the transmitter display panel and the blue LED on the infrared interface lights up.



- ▷ Perform a frequency preset scan with your EK 2000 IEM mobile receiver (see Easy Setup menu item) and select a frequency bank with sufficient unused frequencies.
- ▷ Hold the infra-red interface of the receiver in front of the infra-red interface of the first transmitter.



The next unused frequency preset is transferred from the receiver to the transmitter.

Once the transfer is complete, the numbers of the transferred frequency bank and the transferred channel appear in the display panel of the transmitter.

- ▷ Press the **jog dial** on the transmitter to save the synchronized frequency.
- ▷ Hold the infrared interface of the mobile receiver in front of the infrared interfaces of the remaining transmitters one at a time.

Easy Setup Sync funktion (EK 2000 IEM -> SR 2000 IEM / SR 2050 IEM) for a multi-channel frequency setup

- ▷ Perform the multi-channel frequency setup as described under Performing multi-channel frequency setup.

Sync funktion (SR 2000 IEM / SR 2050 IEM -> EK 2000 IEM)

You can adjust the **Parameter** to be transferred to the receivers here: Advanced > Sync Settings menu item.

- ▷ Switch the transmitter and the receiver on.
- ▷ Press the **SYNC** button on the transmitter.
Sync appears in the transmitter's display and the blue LED turns blue.



- ▷ Hold the infra-red interface of the receiver in front of the infra-red interface of the transmitter.



The parameters are transferred to the receiver. The blue LED blinks during transmission.

When the transfer is complete, a tick appears in the transmitter's display as a confirmation. Then the transmitter will return to the standard display.

To cancel synchronization:

- ▷ Press the **ESC** button on the transmitter.
An **X** appears on the display.

This icon also appears when:

- no receiver is found or the receiver is not compatible.
- no receiver is found and the synchronization process automatically ends after 30 seconds.



Using the AC 3200-II

Operating elements on the front of the device



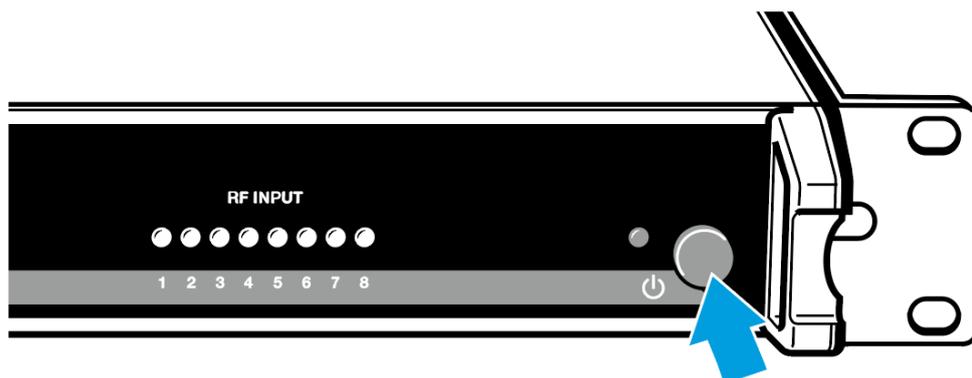
- 1** Rack mount „ear“
- 2** Air vents (on the sides)
- 3** 8 LEDs
 - operation indicators of the RF inputs
 - see RF indicators
- 4** LED 
- 5** On-/Off switch 
 - see Switching the AC 3200-II on and off



Switching the AC 3200-II on and off

To switch on the antenna combiner:

- ▷ Press the on/off switch .
The AC 3200-II switches on and the LED lights up red.
- ▷ Press the on/off switch again
The AC 3200-II switches off and the LED goes off.



After switch-off, the AC 3200-II is in standby mode. To disconnect the device and the NT 12-125D mains unit from the mains power supply, pull out the mains connector from the wall socket.

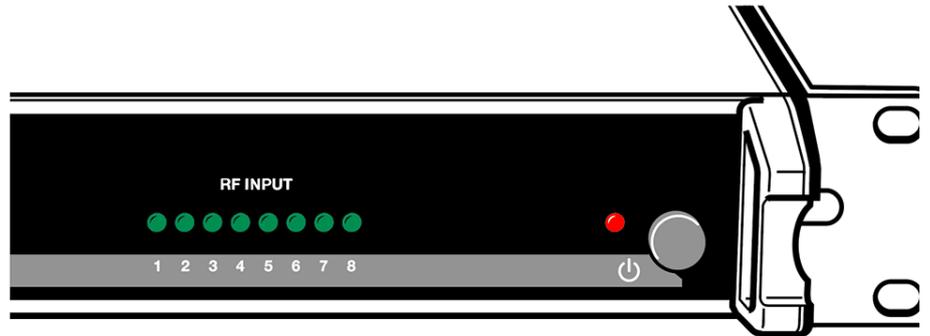
To fully switch off the antenna combiner:

- ▷ Disconnect the antenna combiner from the power supply system by unplugging the power supply unit from the wall socket.



RF indicators

The AC 3200-II has 8 control LEDs which light up green on the channels where transmission power is available.





Recommendations and tips for optimum transmission

- ▷ There should be a “free line of sight” between transmitting and receiving antennas.
- ▷ To avoid overloading the receiver, observe a minimum distance of 5 m between transmitting and receiving antennas.
- ▷ Observe a minimum distance of 50 cm between the transmitting antenna and metal objects (such as cross members or reinforced-concrete walls).
- ▷ When using a multi-channel system:
Set all transmitters of your multi-channel system to inter-modulation-free frequencies.



Overview



In the sections below, you can find information about the different variants of the products in the 2000 IEM series as well as technical data for the individual products.

- Product variants and frequency variants >> „Product variants“
- Frequency table with an overview of all banks and channels >> „Frequency tables“
- System-specific and product-specific technical data >> „Specifications“
- „Pin assignment“

You can also find information about safely cleaning and maintaining 2000 IEM series products.

- „Cleaning and maintenance“



Product variants

Product variants EK 2000 IEM

EK 2000 IEM-Aw+	470 - 558 MHz	Art.-no. 508641
EK 2000 IEM-Gw	558 - 626 MHz	Art.-no. 503863
EK 2000 IEM-Gw1	558 - 608 MHz	Art.-no. 608627
EK 2000 IEM-GBw	606 - 678 MHz	Art.-no. 504947
EK 2000 IEM-Bw	626 - 698 MHz	Art.-no. 503865

Product variants SR 2050 IEM

SR 2050XP IEM Aw+	470 - 558 MHz	Art. no. 508636
SR 2050 IEM Aw+	470 - 558 MHz	Art. no. 508644
SR 2050 IEM Gw	558 - 626 MHz	Art. no.503847
SR 2050XP IEM Gw	558 - 626 MHz	Art. no. 504058
SR 2050XP IEM Gw1	558 - 608 MHz	Art. no. 508626
SR 2050 IEM GBw	606 - 678 MHz	Art. no. 504955
SR 2050 IEM Bw	626 - 698 MHz	Art. no. 503851
SR 2050XP IEM Bw	626 - 698 MHz	Art. no. 504059



Frequency tables

You can find frequency tables for all available frequency ranges in the download section of the Sennheiser website: www.sennheiser.com/download

Enter the product name into the search bar to show the frequency tables.



Specifications

EK 2000 IEM

RF characteristics

Modulation	wideband FM
EmpfangsReceiving frequency ranges	Aw+: 470-558 MHz Gw1: 558 - 608 MHz Gw: 558 - 626 MHz GBw: 606- 678 MHz BW: 626 - 698 MHz
Receiving frequencies	up to 3,000 frequencies, tuneable in steps of 25 kHz 20 frequency banks, each with up to 32 factory-preset channels 6 frequency banks, each with up to 32 factory-preset channels
Switching bandwidth	to zu 75 MHz
Nominal/peak deviation	± 24 kHz / ± 48 kHz
Receiver principle	Adaptive-Diversity
Sensitivity ((with HDX, peak deviation))	< 4 μ V, typ. 1,6 μ V for 52 dBA _{eff S/N}
Adjacent channel rejection	typ. ≥ 80 dB
Intermodulation attenuation	typ. ≥ 78 dB
Blocking	≥ 80 dB
Squelch	Off, 5 to 25 dB μ V, in 2-dB-steps
Pilot tone squelch	can be switched off



AF characteristics

Compander system	Sennheiser HDX
S/N ratio (1 mV, peak deviation)	approx. 90 dB
THD	≤ 0,9 %
Output power at 2,4 V, 5 % THD, nominal deviatio	2 x 100 mW an 32 Ω
High Boost	+8 dB at 80 kHz
Limiter	-18 dB to -6 dB, in 3-dB-steps, can be switched off

Overall device

Temperature range	-10 °C to +55 °C
Power supply	2 batteries Typ Mignon AA 1,5 V oder Akkupack BA 2015
Nominal voltage	Batterie 3 V Akku 2,4 V
Power consumption:	
at Nominal voltage at ausgeschaltetem Sender	approx. 140 mA ≤ 25 μA
Operating time	approx. 4 to 6 hrs (depending on volume level)
Dimensions	approx. 82 x 64 x 24 mm
Weight (incl. batteries)	approx. 140 g



SR 2000 IEM / SR 2050 IEM

RF characteristics

Modulation	wideband FM-Stereo (MPX pilot tone)
Receiving frequency ranges	Aw+: 470 – 558 MHz Gw: 558 – 626 MHz Gw1: 558 – 608 MHz GBw: 606 – 678 MHz Bw: 626 – 698 MHz
Receiving frequencies	up to 3,000 frequencies, tuneable in steps of 25 kHz 20 frequency banks, each with up to 32 factory-preset channels 6 frequency banks, each with up to 32 user programmable
Switching bandwidth	up to 75 MHz
Nominal/peak deviation	± 24 kHz / ± 48 kHz
MPX Pilot tone (Frequency/deviation)	19 kHz/ ± 5 kHz
Frequency stability	± 10 ppm
Antenna output	BNC Buchse, 50 Ω
RF output power at 50 Ω	switchable: Low: typ. 10 mW Standard: typ. 30 mW High: typ. 50 mW



AF characteristics

Compander system	Sennheiser HDX
AF frequency response	25 to 15.000 Hz
AF input BAL AF IN L (I) + MONO/ BAL AF IN R (II)	2 x XLR-3/4" (6.3 mm) jack combo socket, combo socket (1/4"), elec- tronically balanced
Max. input level	+22 dBu
THD (at 1 kHz and nominal deviation)	≤ 0.9 %
Signal-to-noise ratio at no- minal load and peak deviat- ion	> 90 dB
AF output LOOP OUT BAL L (I)/ LOOP OUT BAL R (II)	6.3 mm stereo jack socket (1/4"), balanced

Overall device

Temperature range	-10 °C to +55 °C
Power supply	100–240 V~
Power consumption:	SR 2000: 0.1 A SR 2050: 0.2 A
Dimensions	approx. 217 x 483 x 43 mm
Weight	SR 2000: approx. 2500 g SR 2050: approx. 2700 g



Earphones IE 40 PRO

Frequency response	20 - 18.000 Hz
Impedance	20 Ω
Sound pressure level (SPL)	115 dB (1 kHz / 1 V rms)
THD	< 0,1 % (1 kHz, 94 dB)
Noise attenuation	< 26 dB
Magnetized field strength	3.5 mT
Temperature	
Operation:	-5 °C to +50 °C
Storage:	-20 °C to +70 °C
Relative humidity	< 95 %

Earphones IE 400 PRO

Frequency response	6 - 19.000 Hz
Impedance	16 Ω
Sound pressure level (SPL)	123 dB (1 kHz / 1 V rms)
THD	< 0,08 % (1 kHz, 94 dB)
Noise attenuation	< 26 dB
Magnetized field strength	2 mT
Temperature	
Operation:	-5 °C to +50 °C
Storage:	-20 °C to +70 °C
Relative humidity	< 95 %



Earphones IE 500 PRO

Frequency response	6 - 20.000 Hz
Impedance	16 Ω
Sound pressure level (SPL)	126 dB (1 kHz / 1 V rms)
THD	< 0,08 % (1 kHz, 94 dB)
Noise attenuation	< 26 dB
Magnetized field strength	2 mT
Temperature	
Operation:	-5 °C to +50 °C
Storage:	-20 °C to +70 °C
Relative humidity	< 95 %

Earphones IE 4

Receiving frequency ranges	40 - 20.000 Hz
Max. Sound pressure level (SPL)	118 dB SPL
Sound pressure level (SPL)	106 dB (1 kHz, 1 mW)
Impedance	32 Ω
Nominal impedance	16 Ω
Cable length	1.4 m
Connector	3.5 mm Stereo-Connector, vergoldet



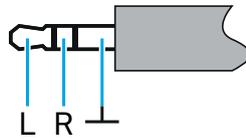
AC 3200-II

Receiving frequency ranges	500 - 870 MHz
Distribution attenuation	0 dB (± 1 dB)
RF input power	max. 100 mW Inputs protected up to max. 250mW
Impedance	50 Ω
Power supply	12 V DC
Power consumption	max. 7,5 A
Power consumption	max. 90 W
Relative humidity	20 to 90 %
Temperature range	-10 °C to +45 °C
Dimensions	approx. 436 x 215 x 44 mm
Weight	approx. 4 kg



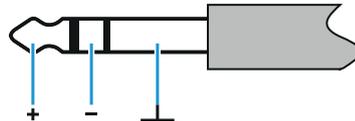
Pin assignment

3.5 mm stereo jack plug



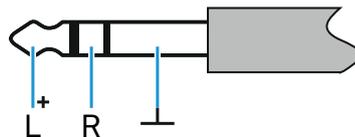
- Plug for headphone and earphone cables, e.g. IE 4.
- Connect to:
 - EK 2000 IEM

6.3 mm stereo jack plug, balanced (audio in/loop out)



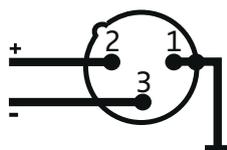
- Connect to:
 - SR 2000 IEM / SR 2050 IEM Audio In
 - SR 2000 IEM / SR 2050 IEM Loop Out

6.3 mm stereo jack plug for headphone jack



- Connect to
 - SR 2000 IEM / SR 2050 IEM Audio In

XLR-3 plug, balanced





Cleaning and maintenance

Note the following information when cleaning and maintaining 2000 IEM series products.

NOTICE

Liquids can damage the products' electronics!

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.