XSW IEM

PDF export of the original HTML instructions

Contents

1. Preface

PDF export of the original HTML instructions

This PDF document is an automated export of an interactive set of HTML instructions. It may be the case that not all contents and interactive elements are contained in the PDF as they cannot be presented in this format. Furthermore, automatically generated page breaks may cause coherent contents to be moved slightly. We can therefore only guarantee the completeness of the information in the HTML instructions, and recommend that you use these. You can find these in the download section of the website under www.sennheiser.com/download.

2. Product information

All information about the product and available accessories at a glance.

XSW IEM series products

The XSW IEM series of products includes the rack-mounted XSW IEM SR transmitter in a sturdy metal housing, the lightweight XSW IEM EK bodypack receiver, and the IE 4 in-ear monitoring headphones with natural sound and excellent protection against background noise.

XSW IEM EK bodypack receiver

The XSW IEM EK is a sturdy bodypack receiver for in-ear monitoring with reliable IE 4 in-ear monitoring earphones. The receiver has an infrared connection for easy and versatile synchronization with the XSW IEM transmitter.

The **XSW-IEM EK** bodypack receiver is available in the following versions:

XSW IEM EK-A | 476 – 500 MHz | Art. no. 509156

XSW IEM EK-B | 572 – 596 MHz | Art. no. 509157

XSW IEM EK-C | 662 – 686 MHz | Art. no. 509158

XSW IEM EK-E | 823.2 – 831.8 MHz | Art. no. 509159

XSW IEM EK-K | 925.2 – 937.3 MHz | Art. no. 509160

You can find more detailed information about the XSW IEM EK in the following sections:

- **Startup and operation**: XSW IEM EK bodypack receiver
- **Specifications**: XSW IEM EK

XSW IEM SR stereo transmitter

The XSW IEM SR is a sturdy stereo transmitter for in-ear monitoring with half-rack width, full metal housing and a high-contrast LC display. The stereo transmitter is designed for interference-free operation with the wireless microphones of the XS Wireless series.

The **XSW IEM SR** stereo transmitter is available in the following versions:

XSW IEM SR-A | 476 – 500 MHz | Art. no. 509151

XSW IEM SR-B | 572 – 596 MHz | Art. no. 509152

XSW IEM SR-C | 662 – 686 MHz | Art. no. 509153

XSW IEM SR-E | 823.2 – 831.8 MHz | Art. no. 509154

XSW IEM SR-K | 925.2 – 937.3 MHz | Art. no. 509155

i You can find more detailed information about the XSW IEM SR in the following sections:

- **Startup and operation**: XSW IEM SR stereo transmitter
- **Specifications**: XSW IEM SR

Accessories

A variety of accessories are available for the XSW IEM series.

Earphones

IE 4

IE 4 | Article no. 500432

Specifications: IE 4 earphones

IE 100 PRO

IE 100 PRO BLACK | Art. no. 508940

IE 100 PRO CLEAR | Art. no. 508941

IE 100 PRO RED | Art. no. 508942

Specifications: IE 100 PRO earphones

IE 400 PRO

IE 400 PRO SMOKY BLACK | Article no. 507483

IE 400 PRO CLEAR | Article no. 507484

Specifications: IE 400 PRO earphones

IE 500 PRO

IE 500 PRO SMOKY BLACK | Article no. 507479

IE 500 PRO CLEAR | Article no. 507480

Specifications: IE 500 PRO earphones

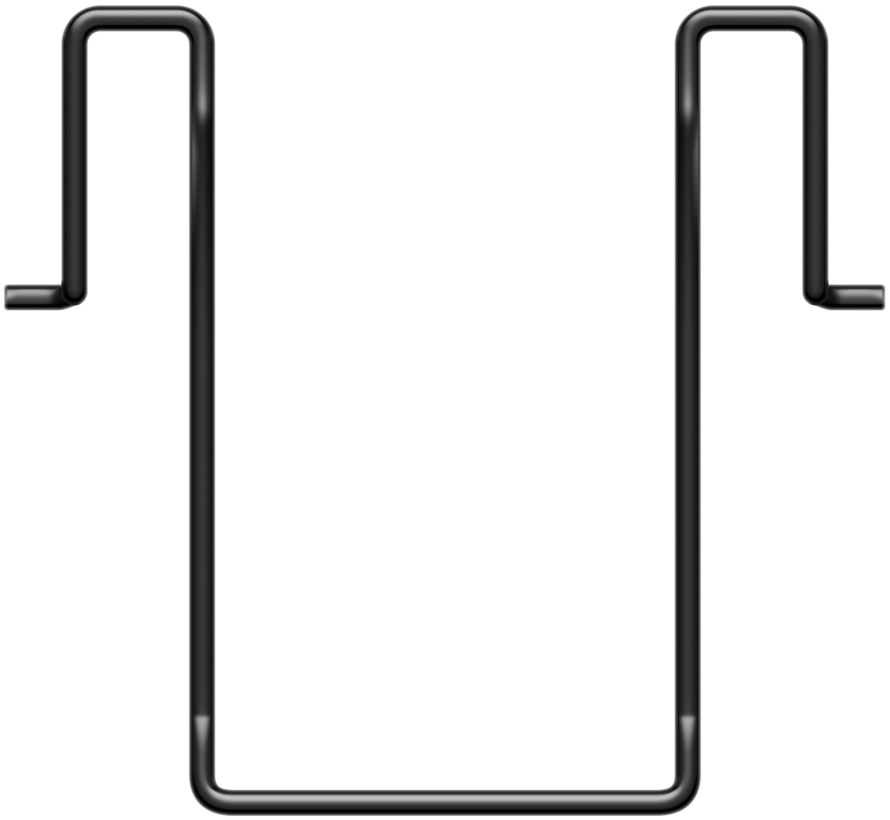
Antennas

BNC antennas | art. no. 522419

Belt clip

XSW IEM belt clip | art. no. 592582

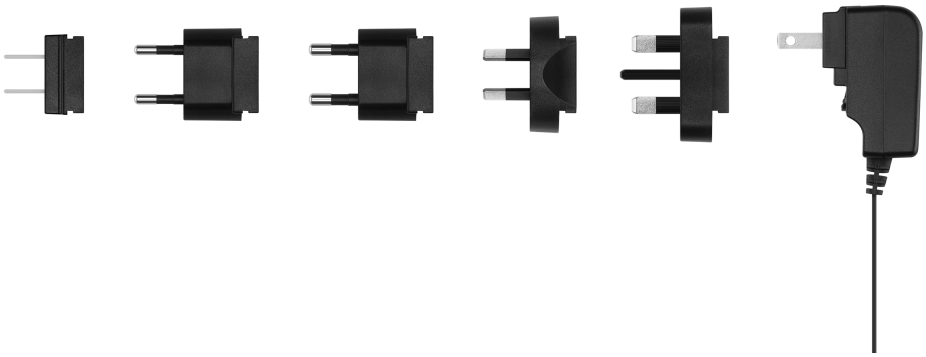
Belt clip for the XSW IEM EK receiver with two plastic fasteners.



Power supply unit

NT 12-5-CW | art. no. 507352

Power supply unit for the XSW 1, XSW 2, XSW IEM and ew G4 100 series. All adapters included (EU, US, UK, Korea, Australia, China).



Accessories for rack mounting

Rack mount kit

XSW Rack Mount Kit | art. no. 507351

Rack mount kit for XSW IEM and XSW 2

Antenna front mount kit

Antenna front mount kit for XSW IEM | art. no. 507468

Antenna front mount kit for installing antenna connectors on the front of the rack when using an XSW IEM together with the XSW rack mount kit

Frequency bank system

There are different frequency ranges in the UHF band available for transmission.

i There may be special conditions and restrictions for using frequencies in your country. Before putting the product into operation, find the information for your country at the following address: sennheiser.com/sifa.

i Please note the country-specific frequency ranges of public and private TV stations. Depending on where the transmitter is used, you are likely to find free frequencies within the following channel banks:

- Europe: channel banks 5 – 8
- America: channel banks 1 – 4

The following frequency ranges can be used in the various countries:

	A	B	C	E	K
	476-500	**572-596**	**662-686**	**823.2-831.8**	**925.2-937.3**
EU	✓	✓	✓	✓	
UK	✓	✓	✓	✓	
USA / CANADA	✓	✓			
BRAZIL	✓	✓	✓		
CHINA	✓		✓		
SINGAPORE	✓	✓	✓		
PHILIPPINES	✓	✓	✓		
MALAYSIA	✓	✓	✓		
ISRAEL	✓	✓	✓	✓	

	A	B	C	E	K
	476-500	**572-596**	**662-686**	**823.2-831.8**	**925.2-937.3**
QATAR	✓	✓	✓	✓	
UNITED ARABIAN EMIRATES	✓	✓	✓		
SAUDI ARABIA	✓	✓	✓	✓	
AUSTRALIA		✓	✓		
NEW ZEALAND		✓	✓		
RUSSIA			✓		
INDONESIA		✓	✓		
VIETNAM			✓		
SOUTH KOREA					✓

Frequency tables

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

Enter “XSW IEM” in the search bar to show the frequency tables.

There may be special conditions and restrictions for using frequencies in your country. Before putting the product into operation, find the information for your country at the following address: sennheiser.com/sifa.

Related information

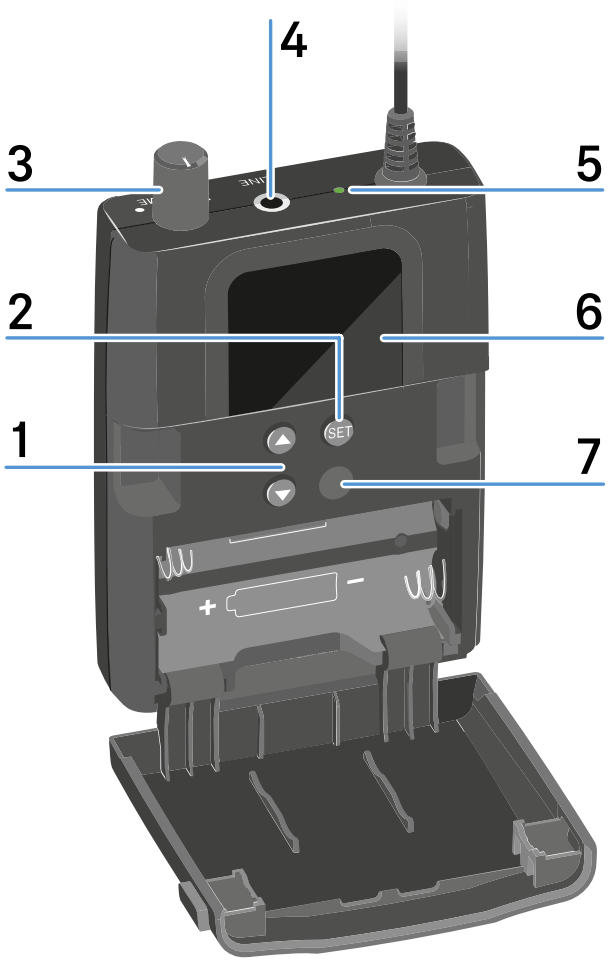
Establishing a radio link

3. User manual

Starting up and operating devices of the XSW IEM line.

XSW IEM EK bodypack receiver

Product overview



1 UP/DOWN buttons

- See Buttons for navigating the menu

2 SET button

- See Buttons for navigating the menu

3 Volume control with on/off switch

- Switch the receiver on/off
- See Switching the receiver on and off

4 PHONES 3.5 mm jack

- Jack for connecting earphones
- See Connecting earphones

5 Operation and battery indicator

- See Switching the receiver on and off
- See LED indicators

6 Display panel

- See Display on the display panel

7 Infrared interface

- See Synchronizing devices

Inserting and removing the batteries/rechargeable batteries

You can use the receiver with batteries (AA, 1.5 V).

- 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.

For more information about the batteries' charging status, see Display on the display panel.

Connecting earphones

WARNING

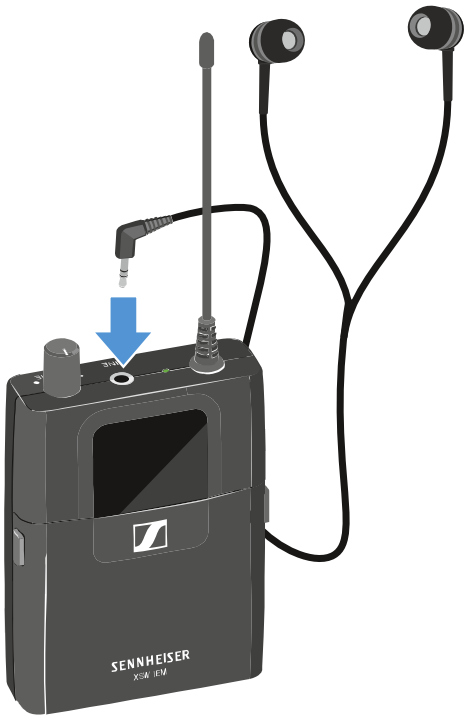
Danger due to high volume levels

Subjecting your ears to sudden, loud volumes can permanently damage your hearing.

- Turn down the volume of the receiver before inserting the earphones.

To connect the earphones to the receiver:

- Insert the cable's 3.5 mm jack plug into the **PHONES** socket on the receiver.



Attaching the receiver to your clothing

You can use the belt clip to attach the receiver to your waistband or on a guitar strap. The belt clip is secured so that it cannot slide out of its fixing points accidentally.

Replacing the belt clip

To replace the belt clip, you will need the following materials:

- XSW IEM EK belt clip | art. no. 592582
- Slotted screwdriver with a maximum width of 1.0 mm
- Standard tweezers

To remove the belt clip:

- Place the receiver on a soft cloth with the front of the housing facing down.
- Insert a slotted screwdriver with a maximum width of 1.0 mm into the gap between the first plastic fastener and the housing.
- Carefully lever out the plastic fastener.
  - Work the hook on the bottom of the plastic fastener free so that you can remove the plastic fastener with tweezers.

> **i** If you cannot remove the plastic fastener easily, try also levering out the second hook on the faster toward the inside.

CAUTION

Risk of injury if the clip pops out.

The clip is under mechanical tension and can cause injuries if it springs out uncontrollably.

- During disassembly, keep one side of the clip firmly pressed against the housing.

- Repeat this procedure for the second plastic fastener.
- During disassembly, press one side of the clip firmly against the housing while pulling the other end of the clip out toward the center of the housing and over the plastic protrusion.
- Pull the second end of the clip out of the housing and remove the clip.
- Discard the old plastic fasteners and clip.

To install the belt clip:

CAUTION

Risk of injury if the clip pops out.

The clip is under mechanical tension and can cause injuries if it springs out uncontrollably.

- During disassembly, keep one side of the clip firmly pressed against the housing.

- Take the new belt clip and insert the left end of the clip into the left hole in the housing to the left of the plastic protrusion.
- Press the left end of the clip against the housing while using your other hand to insert the other end of the clip into the right opening in the housing to the right of the plastic protrusion.
- Use tweezers to insert the new plastic fasteners into the holes in the housing with the hooks pointing downward.
- Press the plastic fasteners in with your finger.

  ✓ The plastic fasteners will snap into place.

Switching the receiver on and off

WARNING

Danger due to high volume levels

Subjecting your ears to sudden, loud volumes can permanently damage your hearing.

- Turn down the volume of the receiver before inserting the earphones.

To switch the receiver on:

- Turn the volume control clockwise until it clicks.

The LED on the receiver lights up red and the display panel shows the status **ON**. The default display with the frequency settings appears.

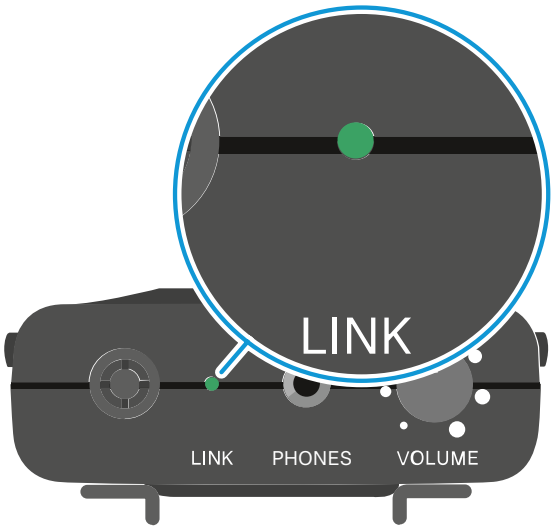
To switch the receiver off:

- Turn the volume control counterclockwise until it clicks.

✓ The red LED goes out. The receiver shows the status **OFF** on the display panel and switches off.

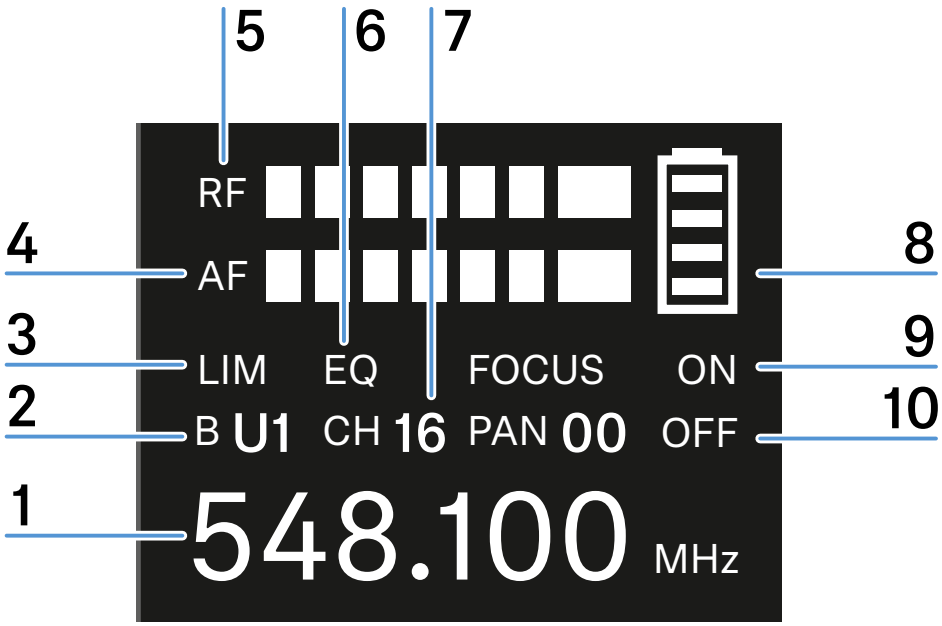
LED indicators

The LED indicators on the receiver show the current operating status, battery status and wireless reception status. The following statuses are possible:



Red [flashing steadily]:	Critical battery status
Red [constant light]:	no wireless reception
Green [constant light]:	wireless reception OK
Yellow [pulsing]:	audio level
Yellow [constant light]:	audio level too high
Red and green [flashing in alternation]:	synchronizing

Display on the display panel



1 Frequency

- Current receiving frequency
- See Setting the frequency on the receiver

2 Frequency bank (B)

- See Finding an interference-free frequency (frequency test)

3 Limiter (LIM)

- See Setting the limiter (LIM)

4 AF audio level (audio frequency)

- Displays the audio level of the received transmitter
- When the display shows full deflection, the audio input level is excessively high.
- See Setting the input sensitivity (GAIN)

5 RF signal level (radio frequency)

- RF signal level display

6 Equalizer (EQ)

- See Setting the high boost / equalizer

7 Frequency channel (CH)

- See Setting the frequency channel on the receiver

8 Battery status

- See Inserting and removing the batteries/rechargeable batteries
- See Battery status

9 FOCUS audio channel:

- See Setting the FOCUS

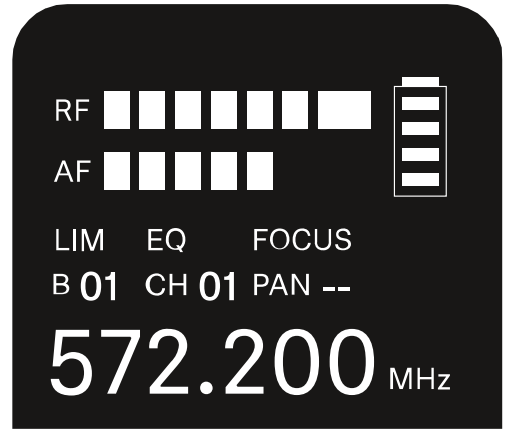
10 Panorama (PAN)

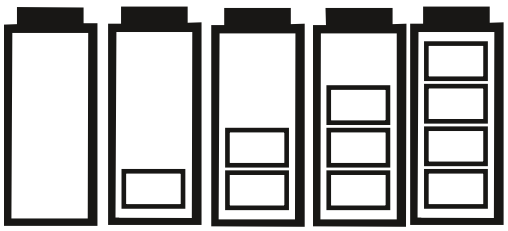
- See Panorama setting

Battery status

You can see the current charging status of the batteries on the receiver's display panel.

Charging status of the batteries:

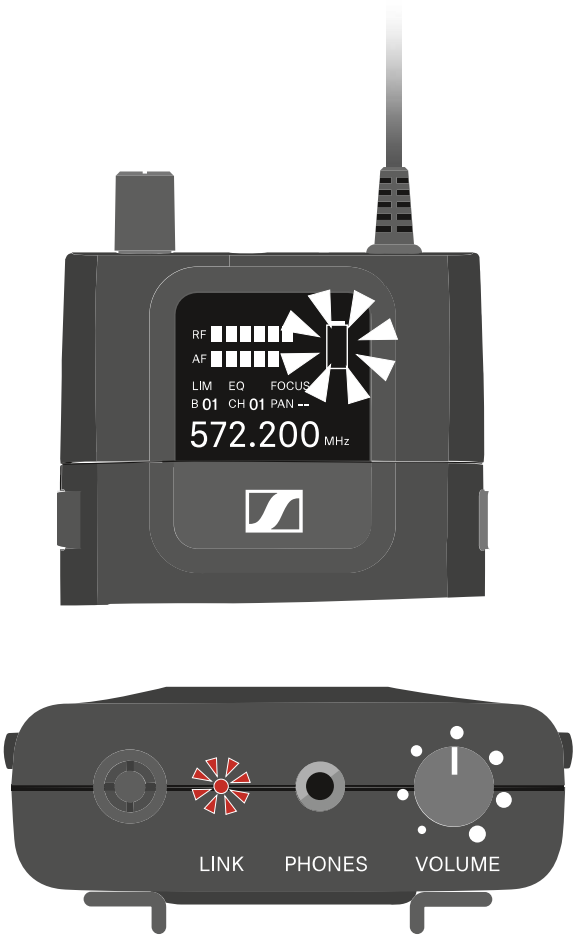




LOW BAT	25 % ≤ 1.5h	50% ≤ 3h	75% ≤ 4.5h	100% ≤ 6h

Charging status is critical (LOW BATT)

When the battery charge reaches a critical level, the battery icon flashes on the display panel and a red LED indicator flashes on the receiver.



Buttons for navigating the menu

The following buttons are located on the XSW IEM EK receiver:


UP


DOWN

SET

- You can use the **UP** and **DOWN** buttons to adjust the set values.
- Press the **SET** button to open each menu item in succession.

> **i** All changes are temporarily saved until you have cycled through all menu items. If you do not take any actions for 15 seconds, the device exits the SET menu and the changes are discarded.

You can perform the following actions on the XSW IEM EK receiver.

To open a menu item:

▶ Press the **SET** button.

To change a value in a menu item:

▶ Press the **UP** or **DOWN** button.

To save settings and open the next menu item:

▶ Press the **SET** button.

> **i** Tip: Press and hold the **SET** button for two seconds to quickly save your selected configuration. This applies the parameter changes and exits the menu.

Finding an interference-free frequency (frequency test)

You can perform a frequency test to check whether there are interfering frequencies in your area, without the help of another person.

CAUTION

Danger due to high volume levels

Subjecting your ears to sudden, loud volumes can permanently damage your hearing.

- Perform the frequency test without earphones or headphones.

To perform a frequency test:

- Switch the transmitter completely off (see Switching the transmitter on and off).
- Disconnect the earphones from the receiver and switch on the receiver (see Switching the receiver on and off).
- Move the receiver around the area in which it will be used.
- Observe the deflection of the **RF** signal level and the **AF** audio signal on the receiver's display panel.

Related information

When the receiver shows a deflection in the RF signal level

The receiver shows a deflection in the AF audio level (audio frequency)

When the receiver shows a deflection in the RF signal level

The selected frequency has interference. This means that this frequency or a nearby frequency is already in use in your area.

- Select another frequency.
- Perform the frequency test again.

The receiver shows no deflection in the RF signal level:

> There is no interference at the selected frequency. This frequency is interference free.

- Make sure that no AF audio level is displayed.
- Synchronize the selected frequency with the transmitter and perform a soundcheck (Performing a soundcheck).

Related information

Finding an interference-free frequency (frequency test)

The receiver shows a deflection in the AF audio level (audio frequency)

The receiver shows a deflection in the AF audio level (audio frequency)

The receiver is receiving audio signals from a transmitter that uses the same frequency.

- Select another frequency.
- Perform the frequency test again.

The receiver does not show a deflection in the AF audio level (audio frequency):

> **i** The receiver is not receiving any audio signals. This frequency is not used by another transmitter.

- Make sure that no RF signal level is displayed.
- Synchronize the selected frequency with the transmitter and perform a soundcheck (Performing a soundcheck).

Related information

Finding an interference-free frequency (frequency test)

When the receiver shows a deflection in the RF signal level

Performing a soundcheck

A soundcheck lets you test whether the transmission quality is sufficient over the entire area where you want to use the receiver, without the help of another person.

CAUTION

Danger due to high volume levels

Subjecting your ears to sudden, loud volumes can permanently damage your hearing.

- Turn down the volume of the receiver before inserting the earphones.

To perform a soundcheck:

- Switch on the transmitter and receiver (see Switching the receiver on and off | Switching the transmitter on and off).
- Set the same frequency on the transmitter and receiver (Establishing a radio link).
- Move the receiver around the area in which it will be used.
  - ✓ The receiver shows the following parameters: RF signal level (radio frequency) | AF audio level (audio frequency).

Related information

RF signal level (radio frequency)

AF audio level (audio frequency)

RF signal level (radio frequency)

- RF signal level display
- The RF signal level must be noticeably deflected (at least 3 bars)

If no RF signal level is displayed:

- Switch on the transmitter (see Switching the transmitter on and off).
- Make sure that the same frequency is set on the transmitter and receiver (Establishing a radio link | Synchronizing devices).
- Check that the antennas and the antenna cables are correctly connected to the transmitter.
- Move the transmitter to a better location.
- If necessary, use an antenna booster.

Related information

Performing a soundcheck

AF audio level (audio frequency)

AF audio level (audio frequency)

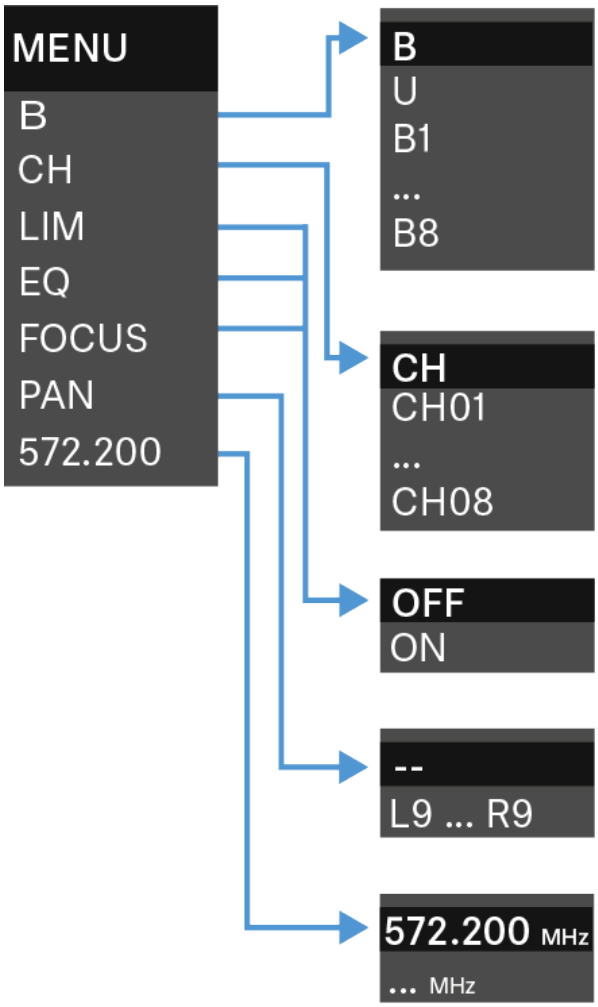
- Displays the audio level of the received transmitter
- When the display shows full deflection, the audio input level is excessively high (see Setting the input sensitivity (GAIN))
- A noticeable audio level must be displayed

If no audio level is displayed:

- ▶ Switch on the transmitter (see Switching the transmitter on and off).
- ▶ Make sure that the same frequency is set on the transmitter and receiver (Establishing a radio link | Synchronizing devices).
- ▶ Check that the antennas and the antenna cables are correctly connected to the transmitter.
- ▶ Move the transmitter to a better location.
- ▶ If necessary, use an antenna booster.

Related information
Performing a soundcheck
RF signal level (radio frequency)

Setting options in the menu



Setting the frequency bank on the receiver

You can set the frequency bank under the frequency bank menu item.

i Please note the country-specific frequency ranges of public and private TV stations. Depending on where the transmitter is used, you are likely to find free frequencies within the following channel banks:

- Europe: channel banks 5 – 8
- America: channel banks 1 – 4

i Before using the device, check whether there are interfering frequencies in your frequency range (Finding an interference-free frequency (frequency test)) and then carry out a soundcheck (Performing a soundcheck).

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

To set the frequency bank:

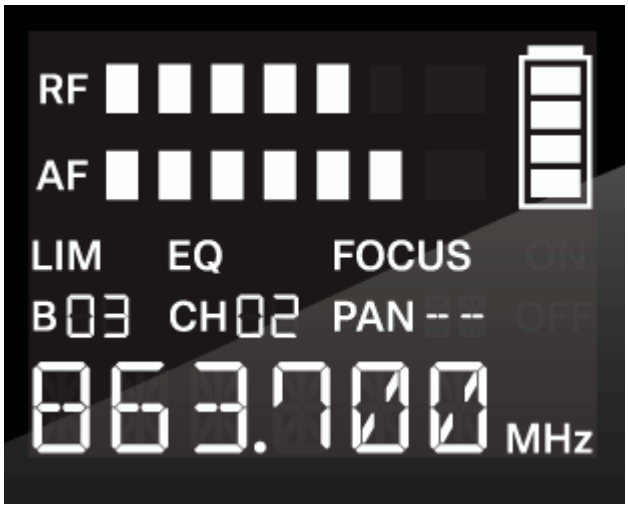
- Press the **SET** button repeatedly until the **B** display flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button
  - briefly to temporarily save the settings and move to the next menu item
  - for two seconds to immediately save the changes and exit the menu

Setting the frequency channel on the receiver

You can set the channel under the frequency channel menu item.

> **i** Before using the device, check whether there are interfering frequencies in your frequency range (Finding an interference-free frequency (frequency test)) and then carry out a soundcheck (Performing a soundcheck).

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



To set the frequency channel:

- Press the **SET** button repeatedly until the **CH** display flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button
  - briefly to temporarily save the settings and move to the next menu item
  - for two seconds to immediately save the changes and exit the menu

Setting the frequency on the receiver

You can set the receiving frequency manually under the frequency menu item.

> **i** Before using the device, check whether there are interfering frequencies in your frequency range (Finding an interference-free frequency (frequency test)) and then carry out a soundcheck (Performing a soundcheck).

You can set the frequencies in 25 kHz steps.

To set the frequency:

- Press the **SET** button repeatedly until the frequency display flashes.
- Press the **UP** or **DOWN** button to adjust the frequency in 25 kHz steps.
- Press the **SET** button
  - briefly to temporarily save the settings and move to the next menu item
  - for two seconds to immediately save the changes and exit the menu

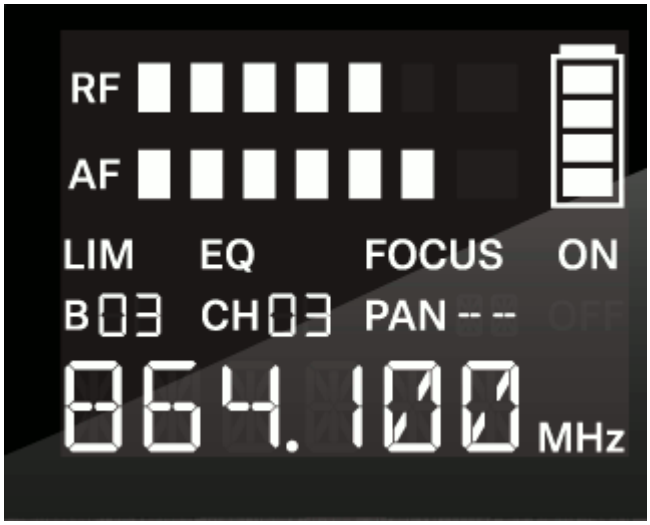
Setting the limiter (LIM)

Under the limiter menu item, you can adjust the volume of the PHONES headphones output.

When set to ON, the volume is reduced by 10 dB.

Setting range:

- ON (-10 dB)
- OFF



CAUTION

Risk of hearing damage!

Subjecting your ears to excessive volumes over an extended period of time can permanently damage your hearing.

- Switch on the limiter before putting the earphones on. The limiter limits the volume of the headphone output **PHONES** and thus protects your hearing.
- Do not continuously expose yourself to high volume levels.

To switch the limiter on or off:

- Press the **SET** button repeatedly until the **LIM** display flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button
  - briefly to temporarily save the settings and move to the next menu item
  - for two seconds to immediately save the changes and exit the menu

Setting the high boost / equalizer

Under the equalizer menu item, you can adjust the treble boost of the output signal.

Setting range:

- 10 dB at 13 kHz

Values:

- ON
- OFF

To switch the equalizer on or off:

- Press the **SET** button repeatedly until the **EG** display flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button
  - briefly to temporarily save the settings and move to the next menu item
  - for two seconds to immediately save the changes and exit the menu

Setting the FOCUS

In stereo mode, the FOCUS function controls the signal received from the transmitter at the receiver.

> i The **FOCUS** setting has no function in the mono configuration.

The signals at the receiver are reproduced either as mixed mono signals (**FOCUS ON**) or as mixed stereo signals (**FOCUS OFF**).

Setting range:

- ON
- OFF

To switch FOCUS on or off:

- Press the **SET** button repeatedly until the **FOCUS** display flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button
  - briefly to temporarily save the settings and move to the next menu item
  - for two seconds to immediately save the changes and exit the menu

Related information

FOCUS - Possible settings

FOCUS - Possible settings

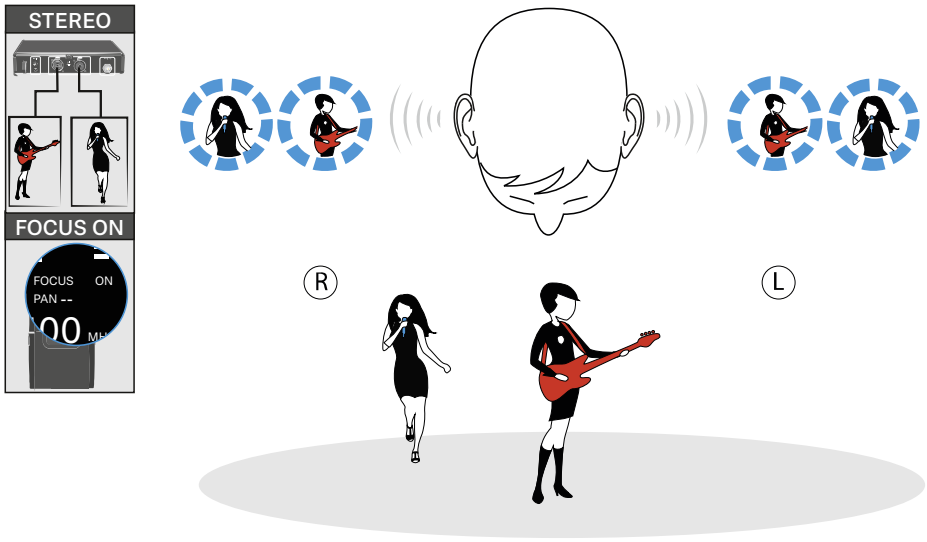
FOCUS ON

With the **FOCUS ON** setting, the two audio channels are added and arrive at the listener's left and right ears as mixed mono signals. The **PAN** function lets you adjust the mixing of the incoming mono signals.

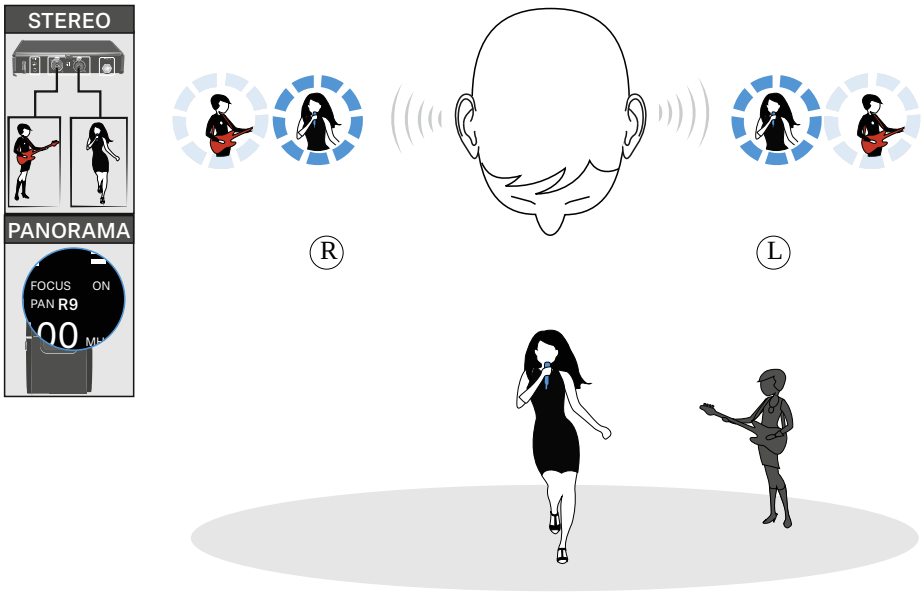
Example:

There are two artists on stage. They are using the STEREO audio transmission mode. Both are using the focus function on the receiver (**FOCUS ON**). The audio signals from both artists are received by both receivers.

- Artist A (guitar) does not change the panorama value (**PAN --**) on her receiver. With this setting, artist A hears both artists in both ears.



- Artist B (vocals) changes the panorama value on her receiver and shifts the mixed mono signal to the right channel (**PAN R9**). With this setting, artist B hears only herself in both ears.



FOCUS OFF

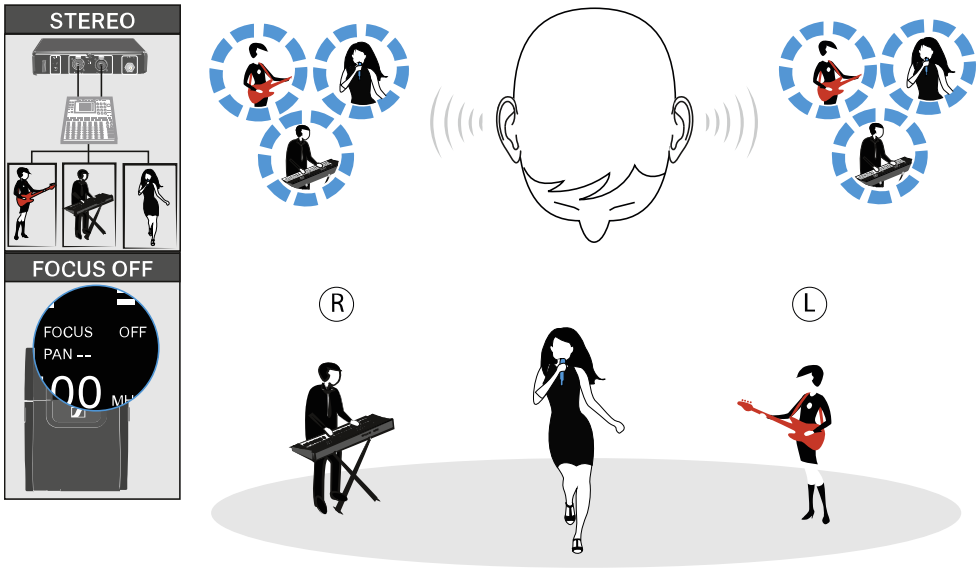
With the **FOCUS OFF** setting, the two audio channels arrive at the listener as mixed stereo signals.

You can use the panorama function (**PAN)** to adjust the relative mixing of the stereo signals (comparable to controlling the volume of the right and left channels of the headphones).

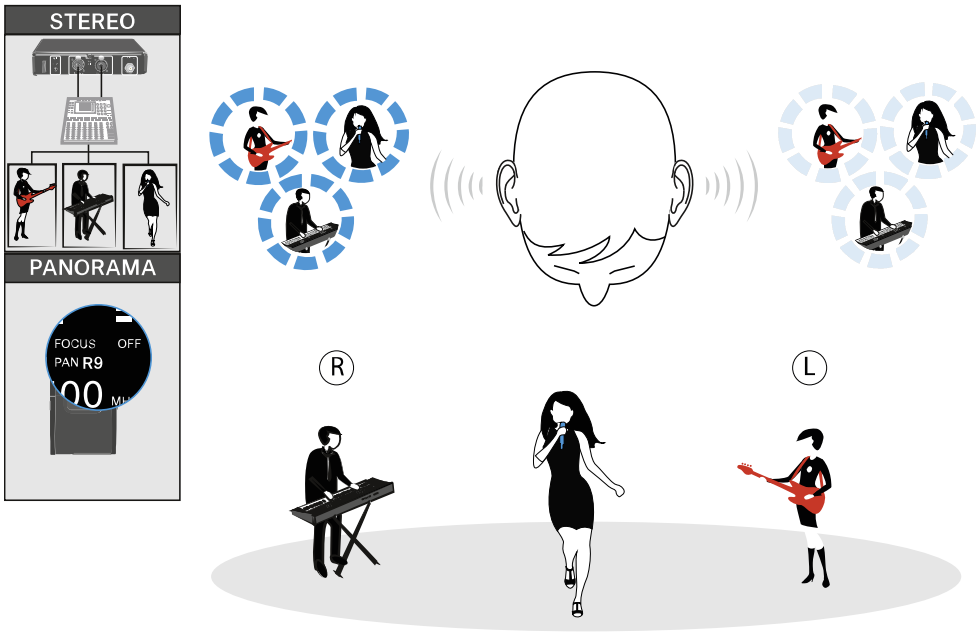
Example:

There are multiple artists on stage. They are using the STEREO audio transmission mode on the transmitter. The mixed stereo signals from the mixing console are connected to both audio inputs of the transmitter. The mixed stereo signals from all artists arrive at all receivers.

- Artist A (guitar) does not change the panorama value (**PAN --**). With this setting, Artist A hears the mixed stereo signals from all artists in both ears.



- Artist B (vocals) changes the panorama value to R9 and thus shifts the volume to the right (**PAN R9**). With this setting, artist B hears all artists but only in her right ear.



Panorama setting

In the PAN menu item, you can control the volume distribution of an audio signal over two channels.

> **i** In stereo mode, the **FOCUS** function controls the signal received from the transmitter at the receiver. In the mono configuration, **FOCUS** has no function.

Setting range:

- --
- L1 to L9
- R1 to R9

To adjust the balance/focus:

1. Press the **SET** button repeatedly until the **PAN** display flashes.
2. Press the **UP** or **DOWN** button to change the set values.
3. Press the **SET** button
   - briefly to temporarily save the settings and move to the next menu item
   - for two seconds to immediately save the changes and exit the menu

Related information

Panorama function in stereo mode

Panorama function in stereo mode

FOCUS ON

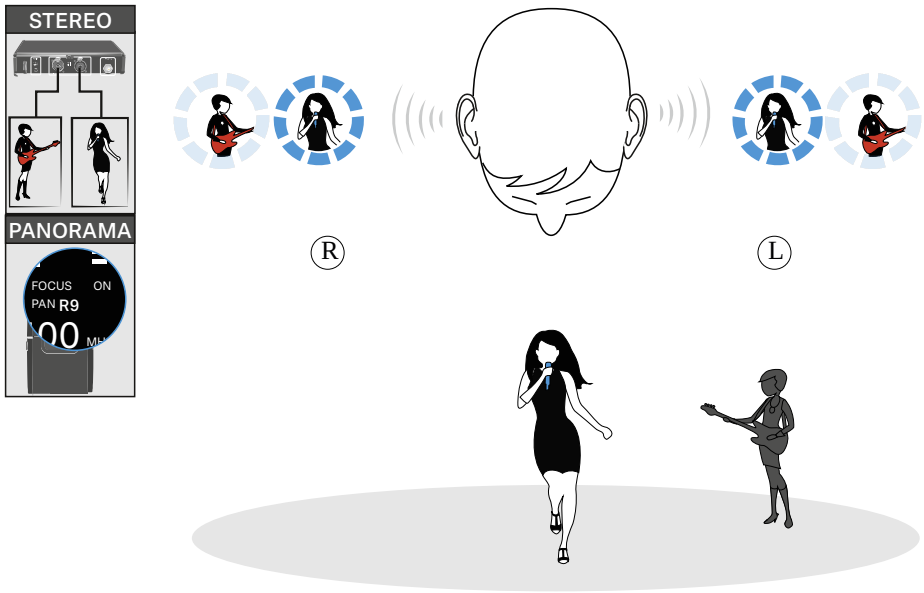
With the **FOCUS ON** setting, the two audio channels are added and arrive at the listener's left and right ears as mixed mono signals.

The **PAN** function lets you adjust the mixing of the incoming mono signals.

Example:

There are two artists on stage. They are using the STEREO audio transmission mode. The audio signals from both artists are received by both receivers.

Artist B (vocals) changes the panorama value on her receiver and shifts the mixed mono signal to the right channel (PAN R9). With this setting, artist B hears only herself in both ears.



FOCUS OFF

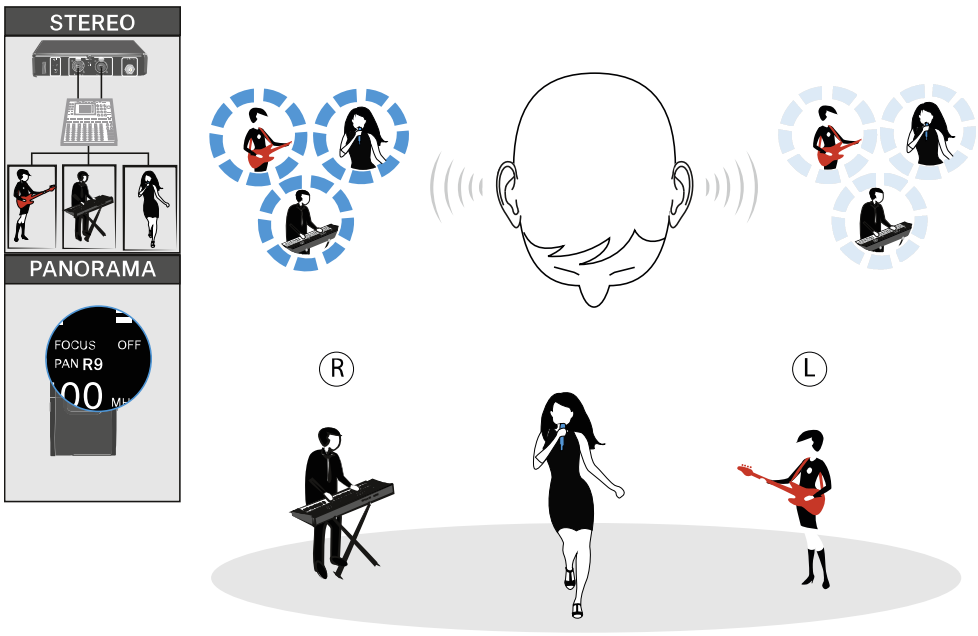
With the **FOCUS OFF** setting, the two audio channels arrive at the listener as mixed stereo signals.

You can use the **PAN** function to adjust the relative mixing of the stereo signals (comparable to controlling the volume of the right and left channels of the headphones).

Example:

There are multiple artists on stage. They are using the STEREO audio transmission mode on the transmitter. The mixed stereo signals from the mixing console are connected to both audio inputs of the transmitter. The mixed stereo signals from all artists arrive at all receivers.

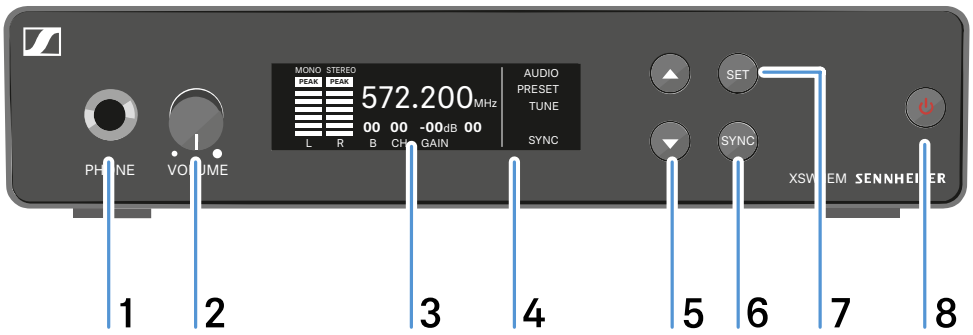
Artist B (vocals) changes the panorama value to R9 and thus shifts the volume to the right (PAN R9). With this setting, artist B hears all artists but only in her right ear.



XSW IEM SR stereo transmitter

Product overview

Front



1 Headphone socket

- See Using the headphone output

2 Volume control for the headphone socket

- See Using the headphone output

3 Display panel

- See Display on the display panel

4 Infrared interface

- See Synchronizing devices

5 UP and **DOWN** buttons for navigating the menu

- See Buttons for navigating the menu

6 SYNC button

- See Synchronizing devices

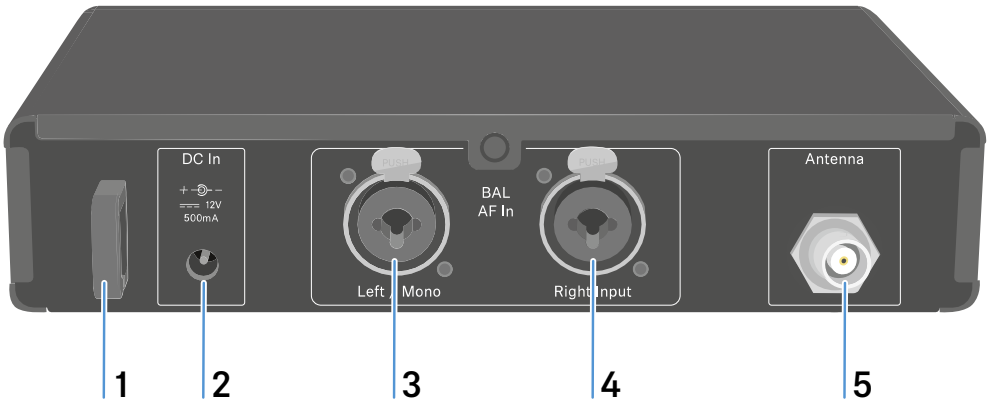
7 SET button

- See Buttons for navigating the menu

8 STANDBY button

- See Switching the transmitter on and off

Back



1 Strain relief for the connection cable of the power supply unit

- See Connecting/disconnecting the transmitter to/from the power supply system

2 DC IN socket

- For connecting the power supply unit
- See Connecting/disconnecting the transmitter to/from the power supply system

3 BAL AF In L XLR-3/6.3 mm jack combo socket

- Audio input, left
- See Connecting audio signals

4 BAL AF In R XLR-3/6.3 mm jack combo socket

- Audio input, right
- See Connecting audio signals

5 Antenna BNC socket

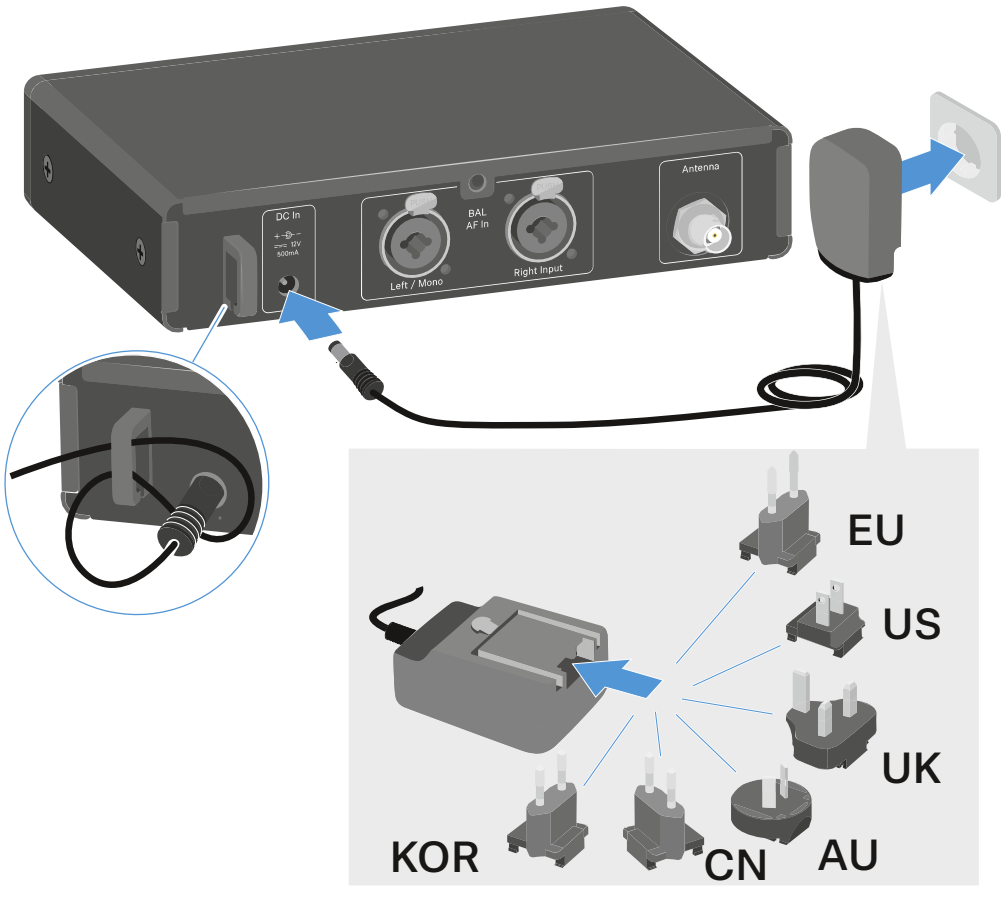
- Antenna output with remote feed input
- See Connecting rod antennas

Connecting/disconnecting the transmitter to/from the power supply system

> i Use only the supplied power supply unit. It is designed for your transmitter and ensures safe operation. You can find the suitable power supply unit under Accessories.

To connect the XSW IEM SR transmitter to the power supply:

- Insert the plug of the power supply unit into the **DC IN** socket of the receiver.
- Pass the cable of the power supply unit through the cable grip.
- Slide the supplied country adapter onto the power supply unit.
- Plug the power supply unit into the wall socket.



To disconnect the XSW IEM SR transmitter from the power supply:

- Unplug the power supply unit from the wall socket.
- Unplug the power supply unit from the **DC IN** socket of the receiver.

Connecting audio signals

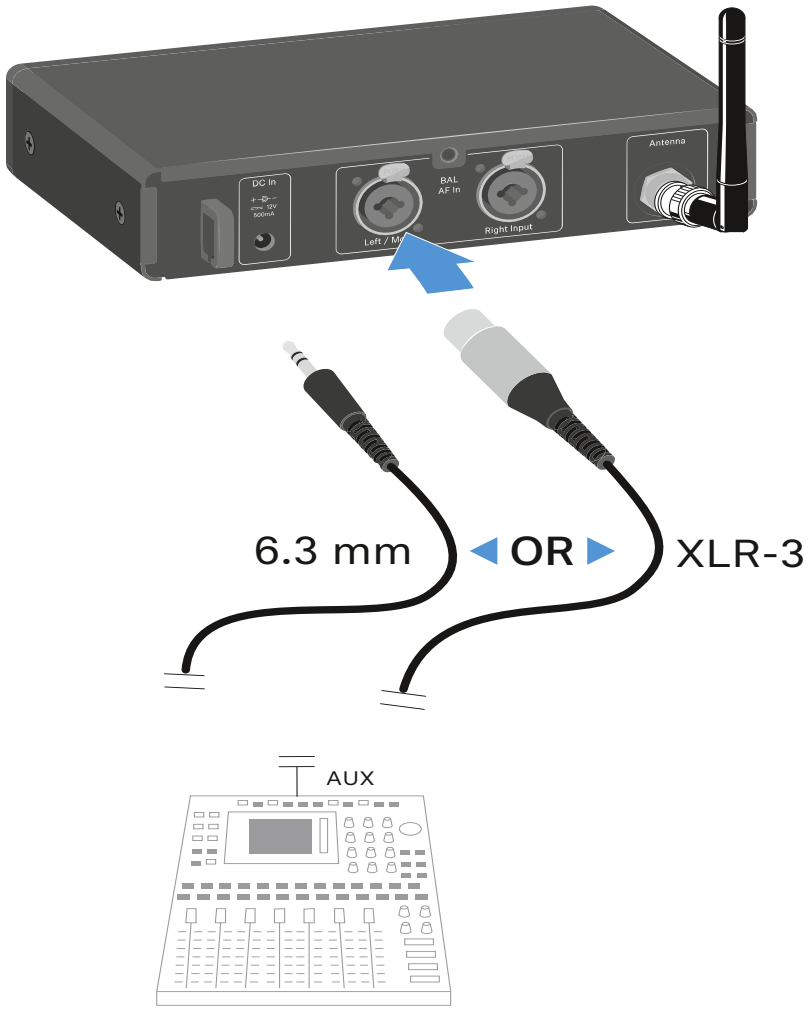
You can connect two mixed mono signals using the two input jacks **Left/Mono** and **Right Input**.

To do so, the XSW IEM SR must be configured for Mono or Stereo operation in the **AUDIO** menu. See Configuring the audio transmission mode (mono/stereo).

> **i** In stereo mode, you can receive the two input signals either as a mixed mono signal or as a stereo signal. To do this, set the **FOCUS** setting on the XSW IEM EK receiver to **ON** or **OFF** (see Setting the FOCUS).

Mono

- Connect the output of an external device (e.g. a mixing console or another XSW IEM SR) to the audio input socket **BAL AF In L** + **Left/Mono** using a suitable cable.



> **i** In mono mode, the **FOCUS** setting on the XSW IEM EK receiver has no function (see Setting the FOCUS).

Stereo

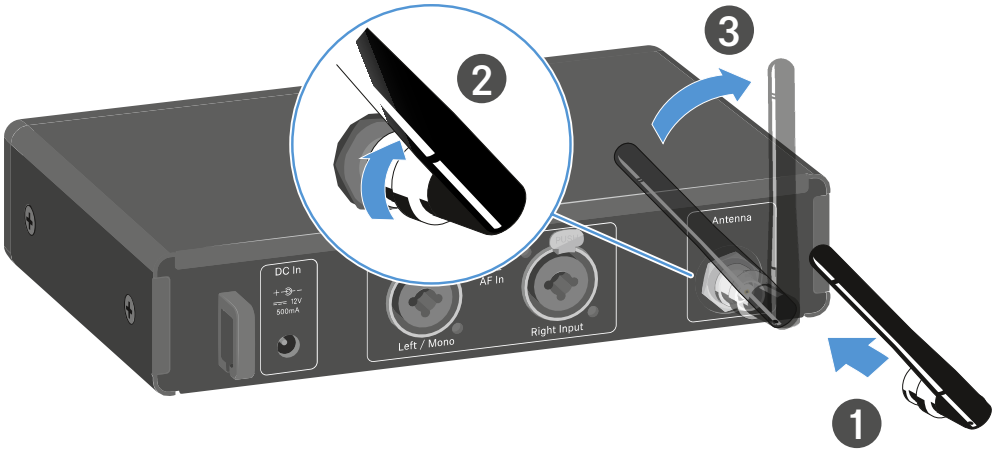
- Connect the output of an external device (e.g. a mixing console or another XSW IEM SR) to the audio input sockets **BAL AF In Left/Mono** and **BAL AF In Right Input** using suitable cables.

> **i** In stereo mode, the corresponding XSW IEM EK receiver can be operated in Focus mode or Stereo mode (see Setting the FOCUS).

Connecting rod antennas

To connect the supplied rod antenna:

- Connect the rod antenna to the **Antenna** socket on the rear side of the XSW IEM SR.



> For more information on mounting antennas on a rack mount rail, see Installing transmitters in a rack.

Installing transmitters in a rack

NOTICE

Rack mounting poses risks!

When installing the device in a closed 19" rack or multi-rack assembly, please consider that, during operation, the ambient temperature, the mechanical load and the electrical potentials will be different from those of devices which are not mounted into a rack.

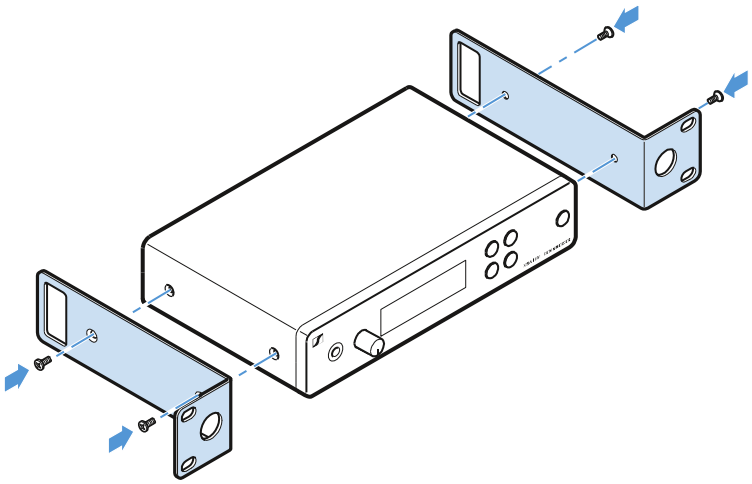
- Make sure that the ambient temperature within the rack does not exceed the permissible temperature limit stated in the specifications. See XSW IEM SR.
- Ensure sufficient ventilation; if necessary, provide additional ventilation.
- Make sure that the mechanical load of the rack is even.
- When connecting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

Mounting a single transmitter in a rack

i To mount the transmitter in a rack, you will need the GA 1- XSW 2 rack mount kit (see Accessories for rack mounting).

- Unscrew and remove the two recessed head screws (M4x8) on each side of the transmitter.
- Secure the left and right mounting brackets to the sides of the transmitter using the previously removed recessed head screws.

- Secure the blanking plate to one of the two mounting brackets using two recessed head screws (M6x10).

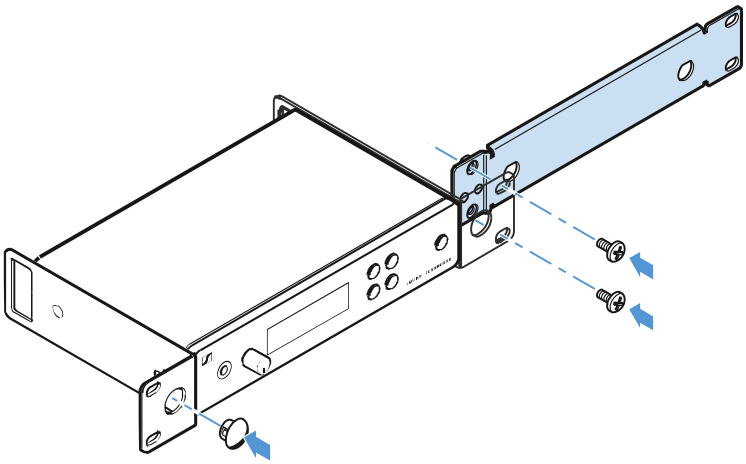


- Connect the rod antenna to the **ANTENNA** socket on the rear side of the XSW IEM SR. In this case, cover the antenna holes with the covers.

> i For more information on mounting antennas on the rear of the device, see Connecting rod antennas.

OR

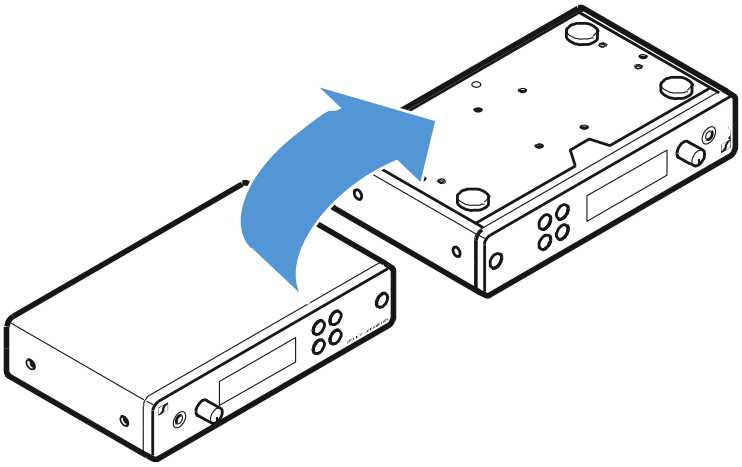
- Attach the antenna front mount kit and mount the rod antenna on the blanking plate.



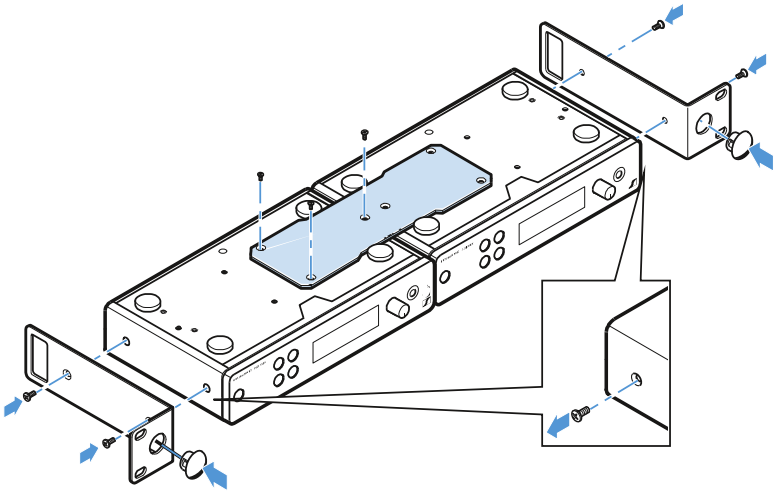
- Slide the transmitter with the mounted blanking plate into the 19" rack.
- Secure the mounting bracket and the blanking plate to the 19" rack.
- Align the mounted antennas in a V-shape.

Mounting two receivers side by side in a rack

- Place both transmitters upside down and side by side on an even surface.



- Secure the jointing plate to the transmitters using the six recessed head screws (M3x6).
- Secure the mounting bracket to the 19" rack.



Switching the transmitter 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:

- Press and hold the **STANDBY** button until **OFF** appears on the display panel.
  - The display panel switches off.

To switch the transmitter completely 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 XSW IEM SR (6.3 mm jack) to listen to the audio signal.

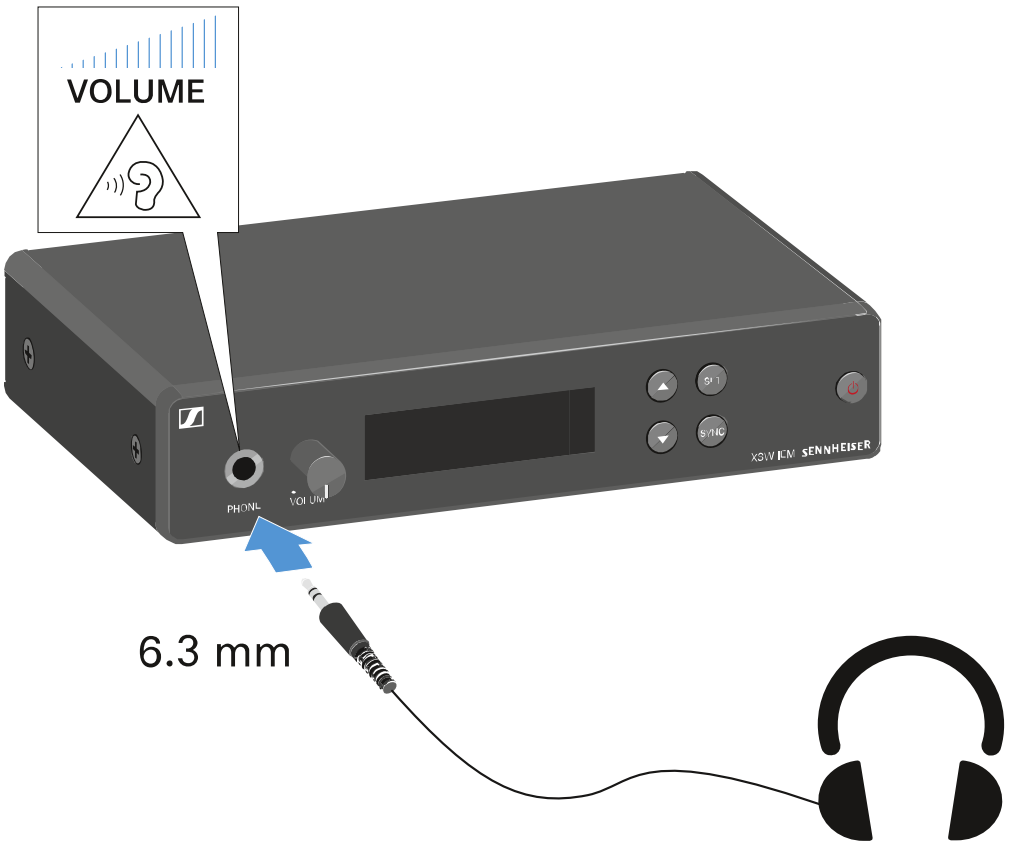
CAUTION

Danger due to high volume levels

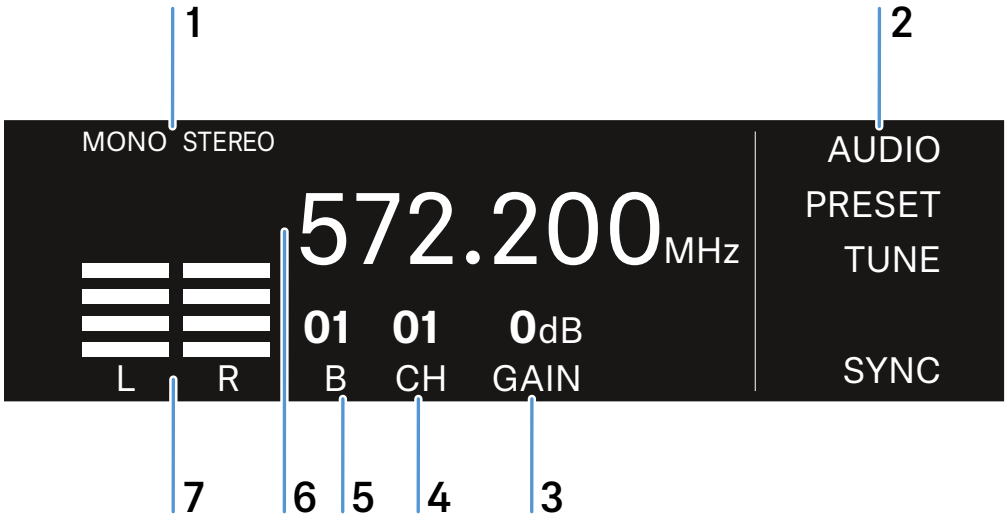
Volume levels that are too high may damage your hearing.

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

- Connect the headphones to the headphone socket.
- You can control the volume by turning the volume knob next to the headphone socket.



Display on the display panel



1 Mono/stereo settings

- See Configuring the audio transmission mode (mono/stereo)

2 Menu settings

- See Setting options in the menu

3 Audio sensitivity (**GAIN**)

- See Setting the input sensitivity (GAIN)

4 Channel bank (**CH**)

- See Selecting the frequency channel on the transmitter

5 Channel bank (**B**)

- See Selecting the frequency bank on the transmitter

6 Current receiving frequency

- See Setting the frequency on the transmitter

7 AF audio level (audio frequency)

- Modulation of the audio channels

Buttons for navigating the menu


UP


DOWN

SET

SYNC


STANDBY

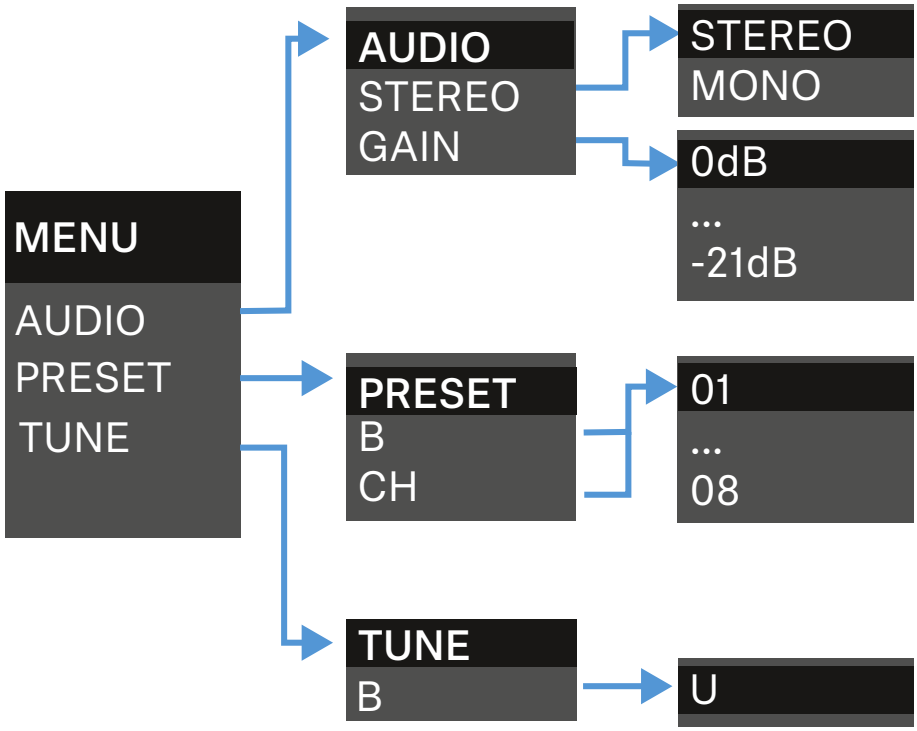
To open the menu:

- Press the **UP** or **DOWN** button to navigate through the menu.
- Press the **SET** button to open the menu.
  - The setting for the selected menu flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button to save the changes you made to the settings.

To exit the menu:

- Press the **STANDBY** button to exit the menu.

Setting options in the menu



AUDIO
Configuring the audio transmission mode (mono/stereo)
Possible settings
Setting the input sensitivity (GAIN)

PRESET
Selecting the frequency bank on the transmitter
Selecting the frequency channel on the transmitter

TUNE
Setting the frequency on the transmitter

Configuring the audio transmission mode (mono/stereo)

Under audio transmission mode, you can adjust the assignments of the audio inputs on the transmitter (mono/stereo).

Depending on how you configure the transmitter, the signals are converted to either mixed mono signals or mixed stereo signals. On the receiver, the user can control the distribution of incoming signals according to their preferences (see Panorama setting).

Setting range:

- MONO
- STEREO

To set the audio transmission mode to stereo/mono:

- Press the **UP** or **DOWN** button to access the **AUDIO** menu.
- Press the **SET** button to open the Stereo/Mono menu.
  - The setting for the selected menu flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button twice to save the settings you made.

To exit the menu:

- Press the **STANDBY** button to exit the menu.

Related information
Possible settings

Possible settings

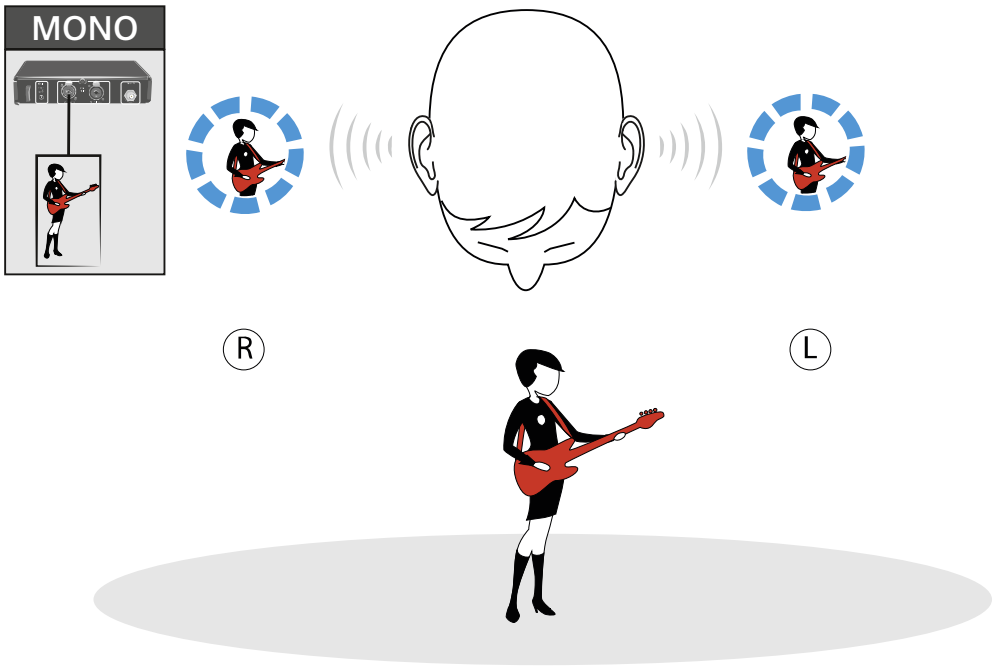
MONO

Only the transmitter's left audio input is transmitted. The receiver receives the signal as a mixed mono signal in both the left and right channels and reproduces it the same for both ears.

The **FOCUS** setting has no function in the mono configuration.

Example:

There is a solo artist on the stage. The artist sets the audio transmission mode to “Mono” and uses the left audio input on the transmitter. The mono signal is delivered to both ears at the receiver.



STEREO

The transmitter’s left and right audio inputs are transmitted. Depending on the signal type (direct mono signal from artists or mixed stereo signals from the mixing console), the two audio channels are added and delivered to the listener as mixed mono signals (direct signals from artists) or mixed stereo signals (mixed signals from the mixing console).

You can use the Focus (Setting the FOCUS) and Panorama (see Panorama setting) functions to control the volume distribution on individual channels.

Example:

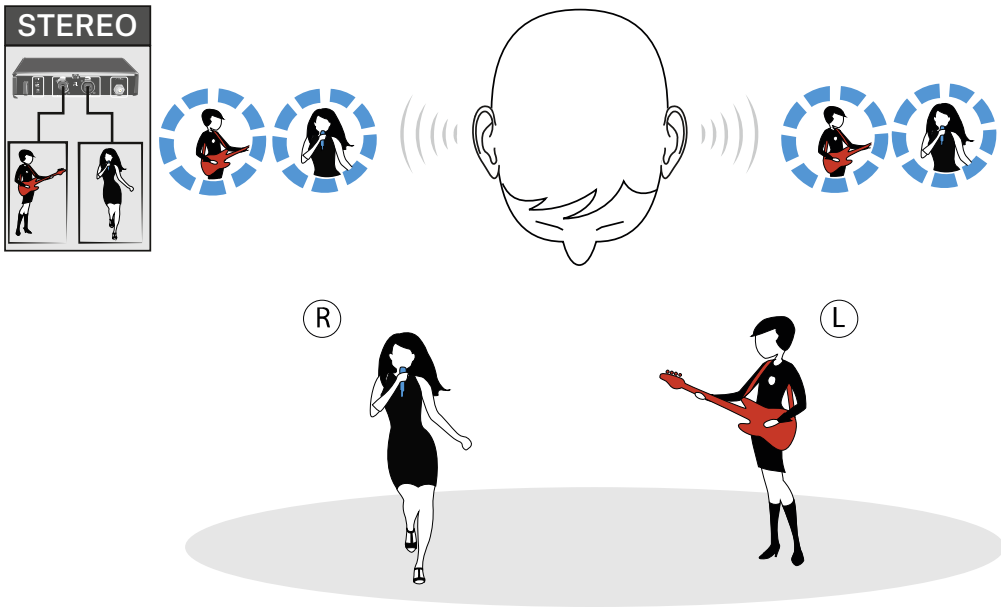
There are two artists on stage. You set the audio transmission mode to “Stereo” and assign the audio inputs as follows:

- Artist A uses the left audio input
- Artist B uses the right audio input

At the receiver, the mixed audio signals from both artists arrive at both ears and can then be individually controlled using the Focus and Panorama functions.

i With the **FOCUS ON** setting, the two audio channels are added and arrive at the listener's left and right ears as mixed mono signals. You can then adjust the mixing of the individual mono signals under Panorama (PAN).

i With the **FOCUS OFF** setting, the two audio channels are added and arrive at the listener as mixed stereo signals. You can then adjust the balance of the mixed stereo signals under Panorama (PAN).



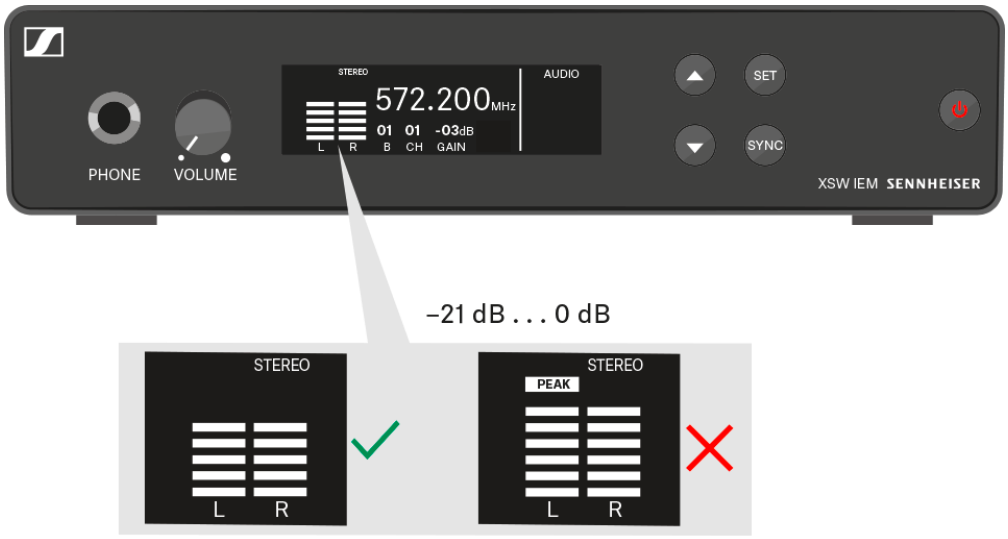
Setting the input sensitivity (GAIN)

In this menu item, you can set the input sensitivity.

Setting range:

- 0 dB to 21 dB in 3 dB steps

> **i** Set the input sensitivity (**GAIN**) on the transmitter so that the level shown on the display does not reach the maximum deflection (**PEAK**).



To adjust the input sensitivity:

- Press the **UP** or **DOWN** button to access the **AUDIO** menu.
- Press the **SET** button twice to open the GAIN menu.
  - The setting for the selected menu flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button twice to save the settings you made.

To exit the menu:

- Press the **STANDBY** button to exit the menu.

Selecting the frequency bank on the transmitter

In this menu item, you can select the frequency bank.

> **i** Please note the country-specific frequency ranges of public and private TV stations. Depending on where the transmitter is used, you are likely to find free frequencies within the following channel banks:
>
> - Europe: channel banks 5 – 8
> - America: channel banks 1 – 4

> **i** Before using the device, check whether there are interfering frequencies in your frequency range (Finding an interference-free frequency (frequency test)) and then carry out a soundcheck (Performing a soundcheck).

To select the frequency bank:

- Press the **UP** or **DOWN** button to access the **SET** menu.
- Press the **SET** button to open the frequency bank menu (**B**).
  - ✓ The setting for the selected menu flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button twice to save the settings you made.

To exit the menu:

- Press the **STANDBY** button to exit the menu.

Selecting the frequency channel on the transmitter

In this menu item, you can select the transmission channel.

> **i** Before using the device, check whether there are interfering frequencies in your frequency range (Finding an interference-free frequency (frequency test)) and then carry out a soundcheck (Performing a soundcheck).

To select the transmission channel:

- Press the **UP** or **DOWN** button to access the **SET** menu.
- Press the **SET** button to open the channel menu (**CH**).
  - The setting for the selected menu flashes.
- Press the **UP** or **DOWN** button to change the set values.
- Press the **SET** button twice to save the settings you made.

To exit the menu:

- Press **STANDBY** to exit the menu.

Setting the frequency on the transmitter

Under the frequency menu item, you can manually set the transmission frequency.

> **i** Before using the device, check whether there are interfering frequencies in your frequency range (Finding an interference-free frequency (frequency test)) and then carry out a soundcheck (Performing a soundcheck).

You can set the frequencies in 25 kHz steps.

To adjust the transmission frequency:

- Press the **UP** or **DOWN** button to access the **TUNE** menu.
- Press the **SET** button to open the frequency menu.
  - The current frequency flashes. The display for the frequency bank shows the value **U** and the display for the channel shows the value **00**.
- Press the **UP** or **DOWN** button to adjust the frequency in 25 kHz steps.
- Press the **SET** button twice to save the settings.

To exit the menu:

- Press the **STANDBY** button to exit the menu.

Establishing a radio link

> **i** To establish a radio link between the transmitter and receiver, the same frequency must be set in both devices. Before using the device, check whether there are interfering frequencies in your frequency range (Finding an interference-free frequency (frequency test)) and then carry out a soundcheck (Performing a soundcheck).

You have the following options to establish a radio link:

- Set the frequency on the transmitter manually (see Setting the frequency on the transmitter) and synchronize it with the receiver (see Synchronizing devices).
- Select a frequency already preset on the transmitter and synchronize it with the receiver (see Synchronizing devices). In this case, you can select the frequency bank (see Selecting the frequency bank on the transmitter) and the transmission channel (see Selecting the frequency channel on the transmitter).
- Set the same frequency on both devices (see Setting the frequency on the transmitter and Setting the frequency on the receiver). Synchronization is not necessary in this case.

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.
- Observe the general requirements and restrictions for using frequencies at the following address: sennheiser.com/sifa

Synchronizing devices

You can synchronize the XSW IEM transmitter and receiver using the infrared interfaces. The channel selected on the transmitter is transmitted to the receiver.

> **i** To synchronize the devices, ensure that no menu is selected on the transmitter (no values flashing). Before using the device, check whether there are interfering frequencies in your frequency range (Finding an interference-free frequency (frequency test)).

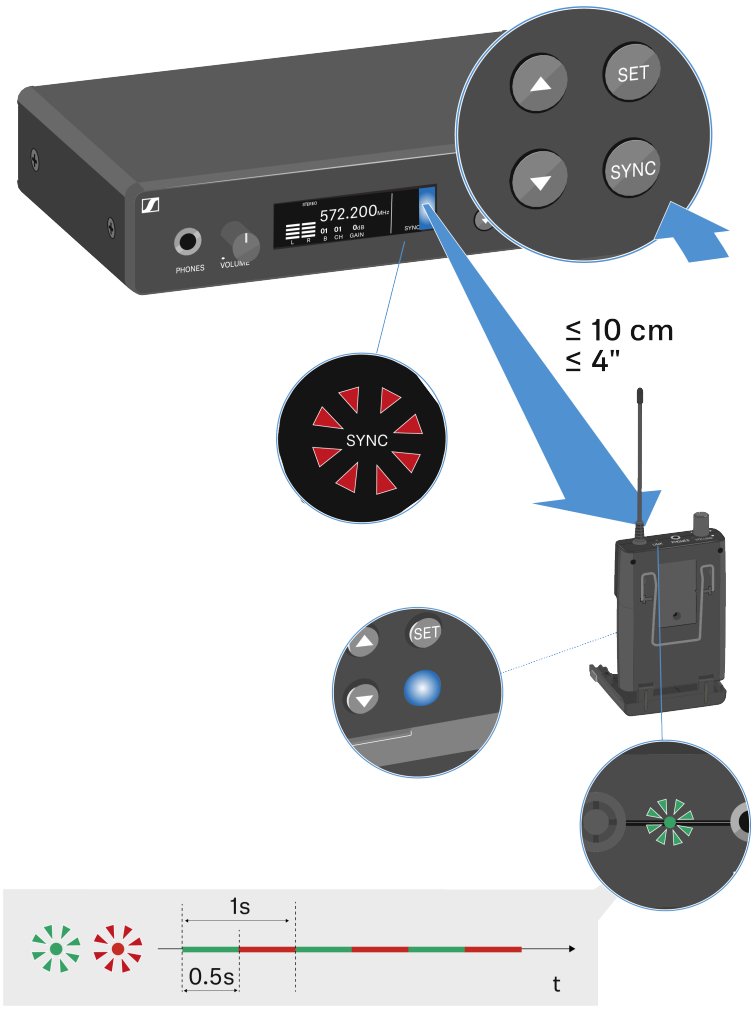
To synchronize the devices:

- Switch the transmitter and the receiver on.
- Press the **SYNC** button on the transmitter.
  - The **SYNC** display flashes on the transmitter display panel for 10 seconds.

- Hold the infrared interface of the receiver in front of the infrared interface of the transmitter.

  The parameters are transferred to the receiver.

  Once transmission is complete, the transmitter returns to the default display.



To cancel synchronization:

- Press either the **SET** button, the **UP** button or the **DOWN** button on the transmitter.

  The transmitter reverts to the default display.

Cleaning and maintenance

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

NOTICE

Liquids can damage the electronics of the product

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

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

4. FAQ

This section contains answers to frequently asked questions and further information.

Radio and frequencies

Why won't my transmitter synchronize with my receiver?

- To synchronize the devices, ensure that no menu is selected on the transmitter (no values flashing).
- The receiver's battery compartment must be open.
- The distance between the transmitter and receiver should be approx. 10 cm.

What is the transmission range of the transmitter/receiver?

- Up to 50 m in an ideal environment (without obstacles)

What is the best way to wear the bodypack receiver?

- Do not kink, bend or cover the antenna.
- Avoid skin contact with the antenna.
- If possible, attach it to your clothing with the belt clip.

The transmitter and receiver are synchronized, but there is no connection.

- Correctly mount the antennas on the transmitter (Connecting rod antennas).
- Resynchronize the transmitter and receiver (Synchronizing devices).

The receiver does not show a level during the soundcheck

- Switch on the transmitter (see Switching the transmitter on and off).
- Make sure that the same frequency is set on the transmitter and receiver (Establishing a radio link | Synchronizing devices).
- Check that the antennas and the antenna cables are correctly connected to the transmitter.
- Move the transmitter to a better location.
- If necessary, use an antenna booster.

The display on the receiver shows radio levels even though the paired transmitter is not switched on

- The selected frequency has interference. This means that this frequency or a nearby frequency is already in use in your area.
- Select another frequency.
- Perform a frequency test (Performing a soundcheck).
- Synchronize the devices again (Synchronizing devices).

Which frequency ranges are available?

- See the chapter Frequency bank system.

Audio

What other in-ear earphones can I use with my receiver?

- See sennheiser.com/in-ear-monitoring

What other devices can I use with my XSW IEM?

- Multiple receivers (XSW IEM EK) can be paired to one transmitter (XSW IEM SR) and used simultaneously.
- The stereo transmitter is also designed for interference-free operation with the wireless microphones of the XS Wireless series.

How many receivers can I use with a single XSW IEM SR?

- The transmitter delivers the data to an indefinite set of receivers within a fixed geometric area. Therefore, any number of receivers can receive the transmitted audio data.

What exactly does the “GAIN” setting do?

- “GAIN” adjusts the level of the audio signal coming from the transmitter (Setting the input sensitivity (GAIN)).

How can I adjust sensitivity on the receiver?

- You cannot make any settings on the receiver. You can adjust the level of the signal coming from the transmitter under the GAIN menu item (see Setting the input sensitivity (GAIN)) on the transmitter.

What audio inputs are there on the transmitter?

- 6.3 mm jack (see Back)

Usability

Why won't my transmitter synchronize with my receiver?

- To synchronize the devices, ensure that no menu is selected on the transmitter (no values flashing).
- The receiver's battery compartment must be open.
- The distance between the transmitter and receiver should be approx. 10 cm.
- For more information, see chapter Performing a soundcheck.

Can I see the receiver's battery status on the transmitter?

- No, the receiver's battery status is only displayed on the receiver (see Battery status).

How do I know if my receiver is switched on?

- The **LED** on the receiver lights up (LED indicators).
- The display panel shows the current settings (Switching the receiver on and off).
- You can reactivate the display panel by pressing any button on the receiver.

The LED on the receiver is steady yellow or flashing yellow. What does that mean?

- The receiver is receiving audio signals. The display indicates different audio signal levels (see LED indicators).

The LED on the receiver is steady red. What does that mean?

- The receiver has no wireless reception (see LED indicators).

The LED on the receiver is flashing red. What does that mean?

- The receiver's battery status is critical (see LED indicators).
- The batteries or rechargeable batteries must be replaced (Inserting and removing the batteries/rechargeable batteries).

Can I also operate an XSW IEM with desktop applications such as WSM or Control Cockpit?

- No, that is not possible.

Is there an app for the XSW IEM series?

- No, there is no app for this series.

Can I switch on my transmitter without it transmitting immediately?

- No. To find an interference-free frequency, we recommend leaving the transmitter switched off and carrying out a frequency test with the receiver (see Performing a soundcheck).

Can I operate the XS Wireless 1 and 2 series together with the XSW IEM series?

- Yes, the stereo transmitter is designed for interference-free operation with the wireless microphones of the XS Wireless series.

What exactly does the “GAIN” setting do?

- “GAIN” adjusts the level of the audio signal coming from the transmitter Setting the input sensitivity (GAIN).
- Set the input sensitivity on the transmitter so that the level shown on the display does not reach the maximum deflection (PEAK) (Setting the input sensitivity (GAIN)).

What is the best way to wear the bodypack transmitter?

- Do not kink, bend or cover the antenna.
- Avoid skin contact with the antenna.
- If possible, attach it to your clothing with the belt clip.

Accessories

What other in-ear earphones can I use with my receiver?

- See sennheiser.com/in-ear-monitoring

Which batteries can I use for my transmitter?

- 2 x AA 1.5 V
- See Inserting and removing the batteries/rechargeable batteries

Can I use accessories that I already have from other series?

- You can use passive devices without a power supply (e.g. AD 1800 or A 1031-U antennas).
- XSW IEM EK belt clip
- XSW IEM EK BATTERY COVER
- BNC antenna
- NT 12-5CW power supply unit
- XSW rack mount kit
- XSW antenna cable for rack front mounting
- Antenna combiner

Which antennas can I use with my transmitter?

- In principle, you can use all antennas with a BNC connector that cover the frequency ranges of the XSW IEM series (see Frequency bank system)
- Recommended Antennas

What does the XSW rack mount kit include?

- Mounting brackets for mounting a single transmitter in a rack
- Blanking plate for mounting and connecting the rod antenna with an antenna front mount kit
- Jointing plate for connecting two transmitters
- Necessary screws and caps

Can I use the rack mount kit from my XS Wireless 1 or 2?

- Yes, the XS Wireless 1 and 2 rack mount kits (XSW Rack Mount Kit) are compatible with the XSW IEM series and vice versa.

Can I replace the belt clip?

Yes, the belt clip can be replaced (see Replacing the belt clip)).

5. Specifications

All specifications at a glance.

XSW IEM EK

RF characteristics

Modulation type

- Wideband FM

Reception frequency ranges

- A: 476 – 500 MHz
- B: 572 – 596 MHz
- C: 662 – 686 MHz
- E: 823.2 – 831.8 MHz
- K: 925.2 – 937.3 MHz

Switching bandwidth

- up to 24 MHz

Nominal/peak deviation

- ±15 kHz / ±24 kHz

Squelch

- 10 µV

AF characteristics

Signal-to-noise ratio (1 mV, peak deviation)

- ≥ 88 dB

Total harmonic distortion (THD)

- ≤ 1 %

Output power

- 2 x 1.25 Veff at 16 Ω

High boost

- +10 dB at 13 kHz

Limiter

- -10 dB

Frequency response

- 45 Hz to 15 kHz

Cross talk (50 Hz – 10 kHz)

- > 45 dB

Overall device

Temperature range

- 0 °C to +40 °C (32 °F to 104 °F)

Power supply

- 2 AA batteries, 1.5 V or NiMH

Nominal voltage

- Battery: 3 V
- Rechargeable battery: 2.4 V

Operating time

- approx. 6 hours (depending on volume)

Dimensions

- Approx. 95 x 70 x 26 mm

Weight (with batteries)

- Approx. 110 g

XSW IEM SR

RF characteristics

Modulation type

- FM broadband stereo

Reception frequency ranges

- A: 476 – 500 MHz
- B: 572 – 596 MHz
- C: 662 – 686 MHz
- E: 823.2 – 831.8 MHz
- K: 925.2 – 937.3 MHz

Switching bandwidth

- up to 24 MHz

Nominal/peak deviation

- ±15 kHz / ±24 kHz

Antenna output

- BNC socket, 50 Ω

RF output power

- 10 to 30 mW (not adjustable, depends on the frequency variant and local regulations in the respective country)

AF characteristics

AF frequency response

- 45 to 15.000 Hz

AF input

- BAL AF In L (I) + MONO/
- BAL AF In R (II) 2x XLR-3/6.3 mm jack combo socket (1/4"), electronically balanced

Total harmonic distortion (at 1 kHz and nominal deviation)

- < 0.9%

Signal-to-noise ratio at nominal load and peak deviation

- ≥ 88 dB

Overall device

Temperature range

- 0 °C to +40 °C (32 °F to 104 °F)

Power supply

- DC +12 V

Power consumption

- Max. 400 mA (depending on the volume)

Dimensions

- Approx. 200 x 128 x 42 mm
- Weight approx. 700 g

IE 4 earphones

Frequency ranges	40 – 20,000 Hz
Max. sound pressure level	118 dB SPL
Sound pressure	106 dB (1 kHz / 1 V rms)
Impedance	32 Ω
Nominal impedance	16 Ω
Cable length	1.4 m
Connector	3.5 mm stereo plug, gold-plated

IE 100 PRO earphones

Frequency response	20 – 18,000 Hz
Impedance	20 Ω
Sound pressure level	115 dB (1 kHz / 1 V rms)
Total harmonic distortion (THD)	< 0.1 % (1 kHz, 94 dB)
Noise attenuation	< 26 dB
Magnetic field strength	1.63 mT
Temperature	
Operation:	-5 °C to +50 °C (23 °F to 122 °F)
Storage:	-20 °C to +70 °C (-4 °F to 158 °F)
Relative humidity	< 95%

IE 400 PRO earphones

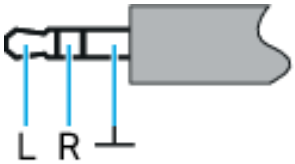
Frequency response	6 – 19,000 Hz
Impedance	16 Ω
Sound pressure level	123 dB (1 kHz / 1 V rms)
Total harmonic distortion (THD)	< 0.08 % (1 kHz, 94 dB)
Noise attenuation	< 26 dB
Magnetic field strength	2 mT
Temperature	
Operation:	-5 °C to +50 °C (23 °F to 122 °F)
Storage:	-20 °C to +70 °C (-4 °F to 158 °F)
Relative humidity	< 95%

IE 500 PRO earphones

Frequency response	6 – 20,000 Hz
Impedance	16 Ω
Sound pressure level	126 dB (1 kHz / 1 V rms)
Total harmonic distortion (THD)	< 0.08 % (1 kHz, 94 dB)
Noise attenuation	< 26 dB
Magnetic field strength	2 mT
Temperature	
Operation:	-5 °C to +50 °C (23 °F to 122 °F)
Storage:	-20 °C to +70 °C (-4 °F to 158 °F)
Relative humidity	< 95%

Connector assignment

3.5 mm stereo jack plug

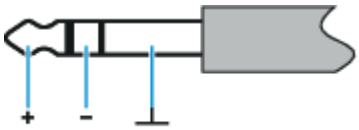


Plug for headphone and earphone cables, e. g. IE 4.

Connect to:

- EK 2000 IEM
- EK IEM G4
- XSW IEM EK

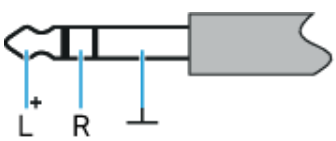
6.3 mm stereo jack plug, balanced (audio in/loop out)



Connect to:

- SR 2000 IEM / SR 2050 IEM Audio In
- SR 2000 IEM / SR 2050 IEM Loop Out
- SR IEM G4 Audio In
- SR IEM G4 Loop Out
- XSW IEM SR Audio In
- XSW IEM SR Loop Out

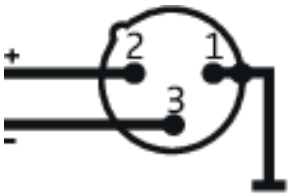
6.3 mm stereo jack plug for headphone connector



Connect to:

- SR 2000 IEM / SR 2050 IEM headphone input
- SR IEM G4 headphone input
- XSW IEM SR headphone input

XLR-3 plug, balanced



Hollow jack plug for power supply

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