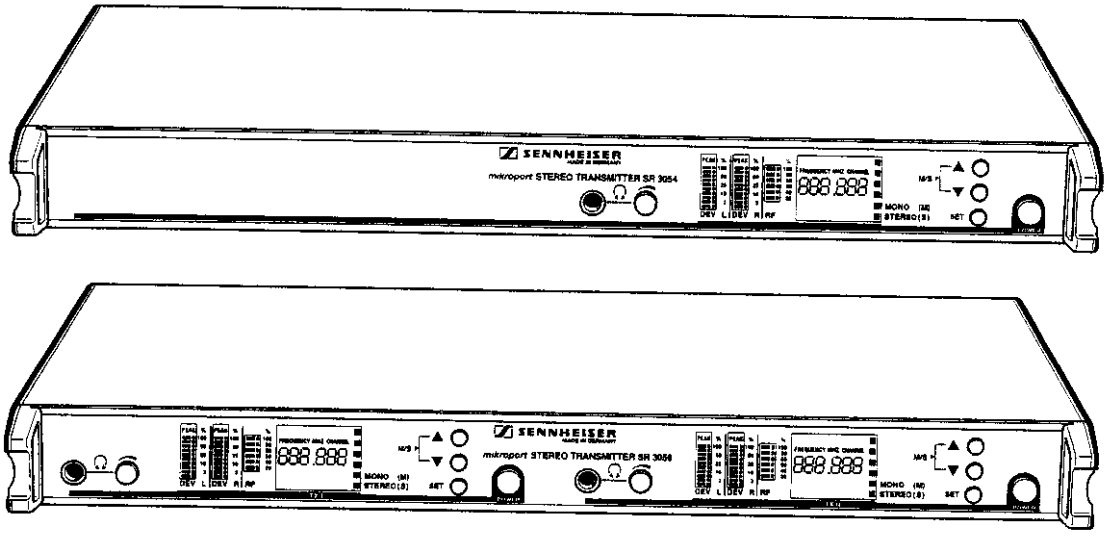
SENNHEISER
defining sound

INSTRUCTIONS FOR USE

Stereo Transmitters
SR 3054-U / SR 3056-U



Thank you for choosing Sennheiser!

We have designed this product to give you reliable operation over many years.

Please take a few moments to read these instructions carefully, as we want you to enjoy your new Sennheiser product quickly and to the full.

1 Brief description

With the new wireless in-ear monitoring system for stage and broadcast use, the listener can directly monitor the received sound signals without troublesome cables or monitor speakers being required. In addition, the monitoring system can also be used for any application where talk-back signals are to be transmitted.

The system has superb audio quality with an increased signal-to-noise ratio and dynamic range due to the inclusion of Sennheiser's **HiDyn *stage*** noise reduction system.

SR 3054-U / SR 3056-U transmitters

The SR 3054-U is a stereo transmitter with 16 programmable UHF transmission frequencies, the SR 3056-U consists of two complete stereo transmitters with 16 programmable UHF transmission frequencies each. RF characteristics are the same as for a standard radiomicrophone, making multi-channel frequency selection easy. Their ease of use and excellent mechanical stability make these transmitters an ideal choice for use in large shows and for touring artists.

- Stereo/mono selector switch
- 16 programmable transmission frequencies per transmitter, PLL-controlled
- Switching bandwidth max. 24 MHz per transmitter (3 TV channels)
- **HiDyn *stage*** noise reduction system with more than 90 dB signal-to-noise ratio
- LC display for frequency, RF output power, and deviation
- 19" 1 U housing with built-in mains power supply unit and rack mounts
- Suitable for multi-channel applications

Note

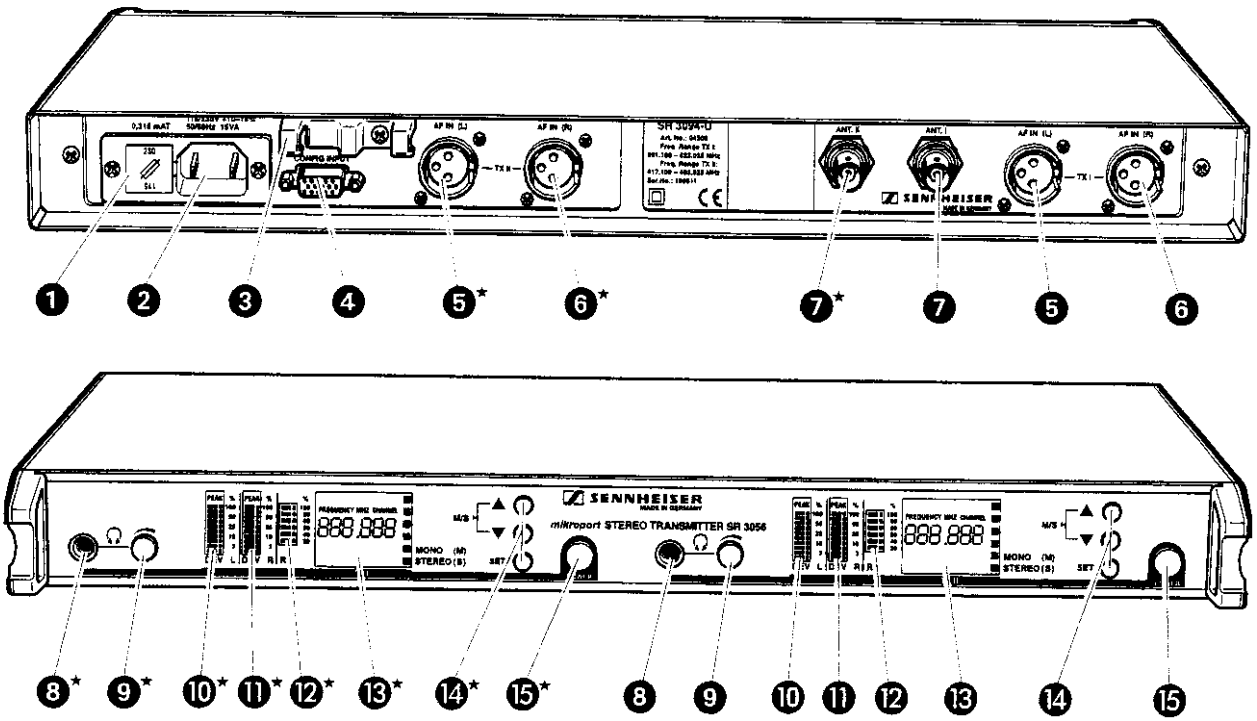
This manual is restriced to the description of the SR 3054-U transmitter, the operation of the SR 3056-U twin transmitter is identical.

Suitable receiver: EK 3052-U

(The EK 3052-U is not included in the supply schedule!)

The EK 3052-U is a miniature stereo receiver designed for receiving monitoring signals transmitted by the SR 3054-U and SR 3056-U transmitters. Its small size allows complete freedom of movement on stage. Via an in-ear headphone connected to the receiver, the listener can directly monitor the AF stereo signal received. 16 switchable UHF receiving frequencies ensure high flexibility and optimum reception.

- Small and rugged stereo receiver
- 16 switchable receiving frequencies, PLL-controlled
- **HiDyn *stage*** noise reduction system with more than 90 dB signal-to-noise ratio
- Volume control can be covered to prevent accidental adjustment
- LED operation and "Low Batt" indicator



2 Connections, displays and operating elements

❶ Fuse holder and mains voltage selection (230 or 115 V)

❷ 2-pin IEC mains connector

❸ Cable grip for mains cable

❹ Programming interface (15-pin sub-D socket)

❺ AF input (left)

❻ AF input (right)

❼ Antenna output

❽ Headphone socket

❾ Headphone volume control

❿ Deviation bargraph for the left channel, with overmodulation display („peak")

⓫ Deviation bargraph for the right channel, with overmodulation display („peak")

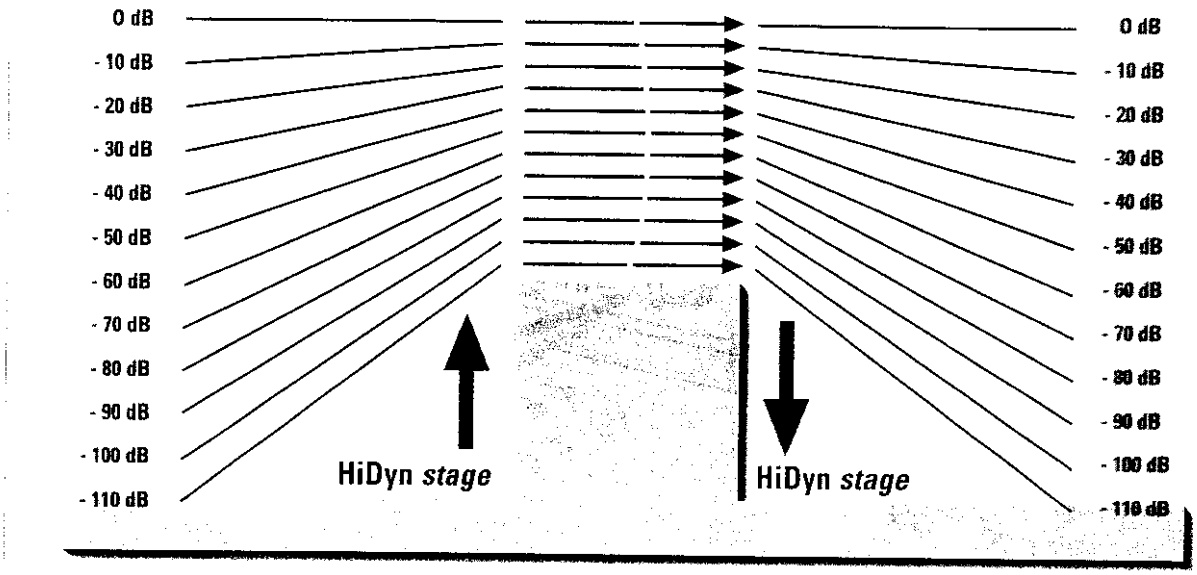
⓬ RF level bargraph

⓭ Multi-function display panel for transmission frequency, muting, mono/stereo, frequency groups 1–4

⓮ Operating and programming buttons

⓯ ON/OFF switch

Connections and operating elements marked with an asterisk (★) in the above illustration are those for the second transmitter of the SR 3056-U twin transmitter.



3 Noise reduction with **HiDyn *stage***

This transmitter is equipped with **HiDyn *stage***, the Sennheiser noise reduction system that has been specially developed for stage use.

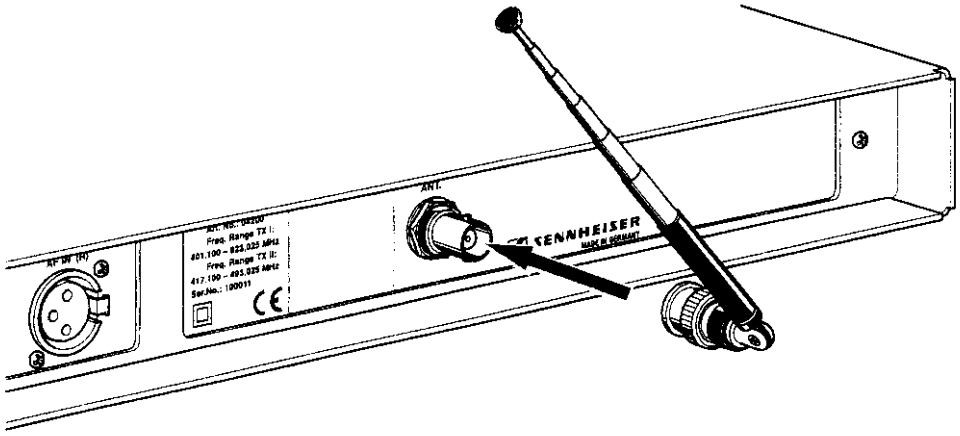
HiDyn *stage* reduces RF interference and increases the signal-to-noise ratio in wireless audio transmission to over 90 dB.

HiDyn *stage* is a wideband compander system which compresses the AF level on the transmitter side in a ratio of 2:1 (related to dB), and expands it in exactly the same way on the receiver side. The optimisation of the dynamic range and the supporting effect of the control amplifier in the transmitter effectively reduce modulation problems.

Note

Only receivers which are also equipped with **HiDyn *stage*** can work correctly in combination with the SR 3034-U / SR 3056-U transmitter. If this is not the case, the dynamic range is drastically reduced and the transmission sounds blunt and flat.

HiDyn *stage* cannot be switched off on the SR 3034-U / SR 3056-U transmitters.

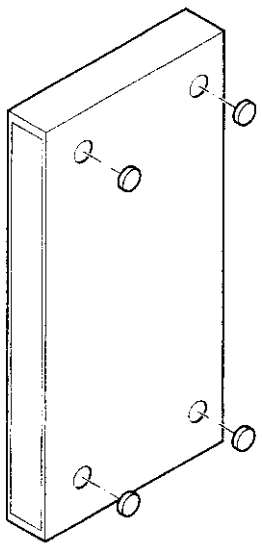


4 Assembly and mounting

Use as a stand-alone transmitter

For use as a stand-alone transmitter, it is recommended that the supplied telescopic antenna are used. They can be fixed quickly and easily to the rear of the transmitter and are suitable for all applications where – good reception conditions provided – a wireless transmission system is to be used without a large amount of installation work.

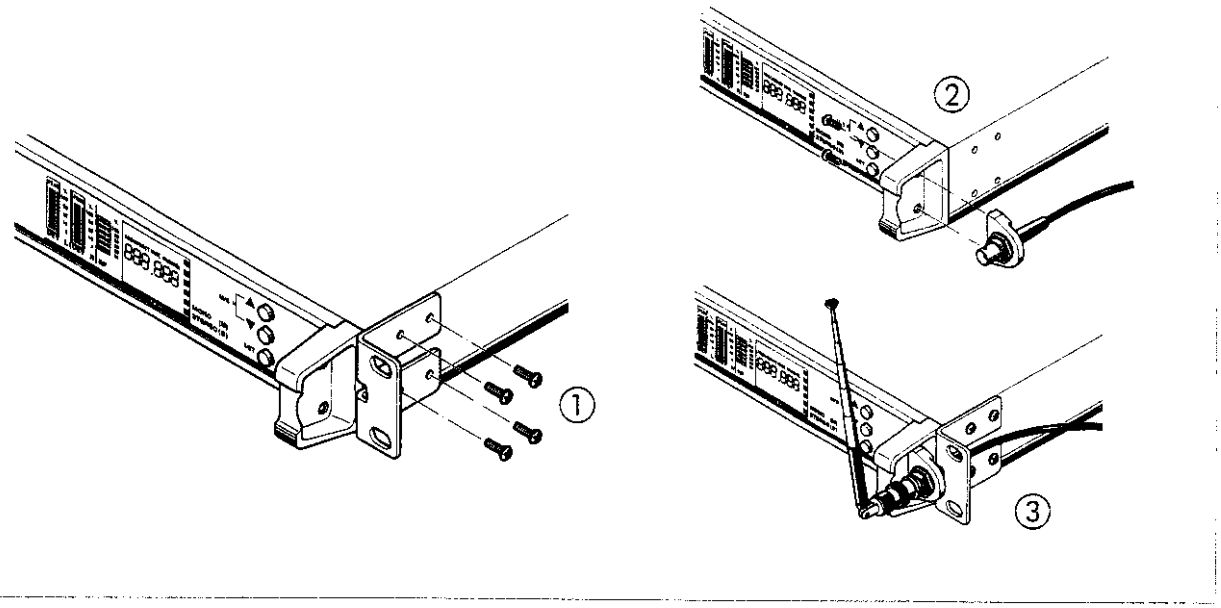
To ensure that the transmitter is securely mounted on a surface on which it can not slip, four self-adhesive soft rubber feet are supplied. These feet are stuck into the recesses on the lower side of the receiver.



Ensure that the recesses are clean and free from grease before mounting the feet.

Note

Do not use these feet if rack-mounting the transmitter.



Mounting the transmitter into a rack

With the two supplied rack mount "ears", the transmitter can be mounted into a 19" rack (1 U). The rack mount "ears" are screwed to the transmitter on the left and right ①.

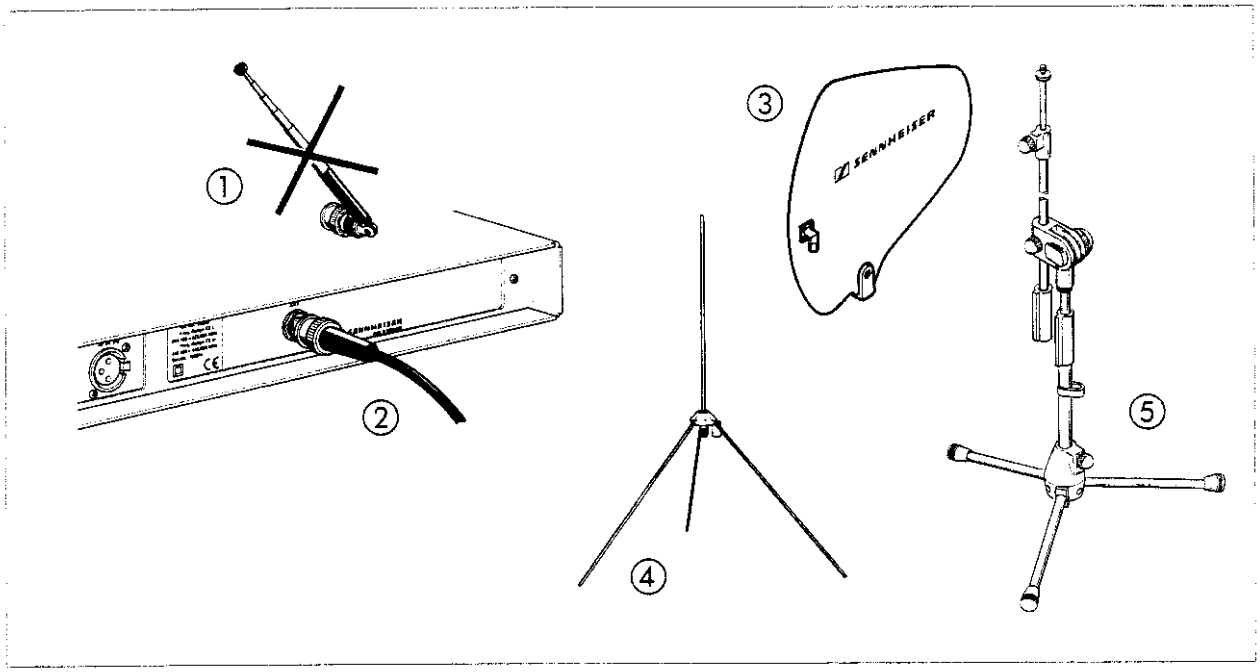
> Note
>
> If you wish to connect the antenna to the front side, you must pull the cables of the GA 3030-AM antenna mount through the holes on the rack mount "ears" before mouting the "ears" ③.

The GA 3030-AM antenna mount (accessory, see chapter 16) allows the antenna to be connected to the front of the transmitter, for example if the rear of the rack is closed.

Mount the antenna holders to the right and left to the handles of the transmitter ②. The connection cables, which are firmly fixed to the antenna holders, are connected to the antenna sockets on the rear of the transmitter.

Assembly instructions

- Do not place transmitters in direct proximity to digitally controlled devices!
- Site the transmitters as high as possible so that the transmitter antenna have a "free line of sight" to the receiving antenna ! If necessary, use remote antenna ! (see chapter 5)



5 Connection and mounting of remote antenna

If the transmitter position is not the best antenna position for optimum reception, you can use the following Sennheiser remote antenna (accessories, see chapter 16):

③ A 2003 UHF passive directional antenna

④ GZA 1036-9 ground plane antenna

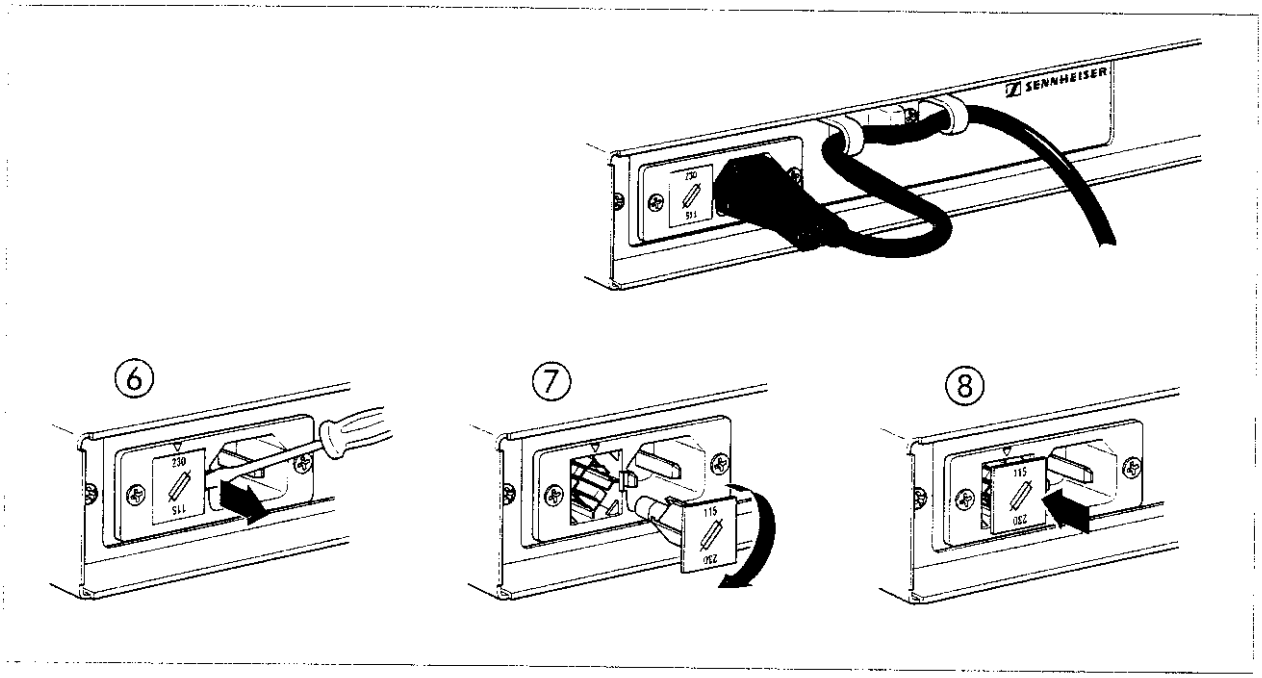
Both antenna can also be mounted onto a stand⑤.

Antenna and transmitters can be connected with RG 58 co-axial cable.

Ready-made antenna cables from Sennheiser② are available as accessories with lengths of 5 m and 10 m. Please note that relatively long antenna cables lead to an attenuation of the antenna signal. If possible, place the remote antenna in the proximity of the transmitter. (If longer cables are required, use RG 213 cable which has a lower loss than RG 58).

Essential notes on mounting the antennæ

- Position antenna in the same room in which the reception takes place!
- Maintain a minimum distance of 1 metre from metal objects (including reinforced concrete walls)!



6 Mains connection

Insert the supplied mains cable into socket 2 on the transmitter and pass the cable through the cable grip C.

Because of the cable grip, the cable cannot slip out of socket 2 and interrupt operation.

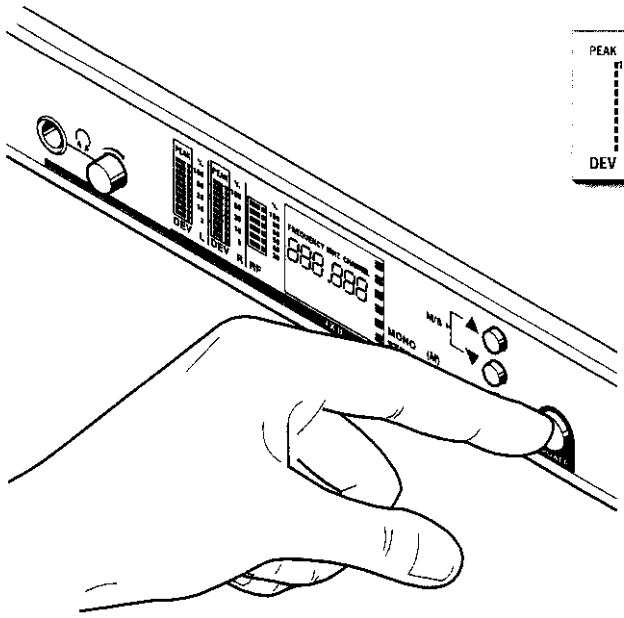
Note

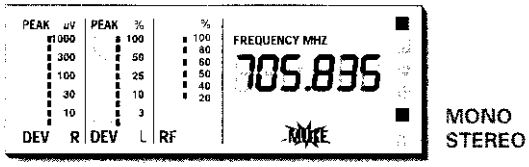
A cable grip is particularly important when the transmitter is permanently rack mounted. Inside the rack there are often a large number of cables – a cable grip prevents the cables from pulling each other out.

Selecting the mains voltage

Before you plug the mains connector into the mains, please first check that the transmitter is set to the correct mains voltage!

You can change the mains voltage by removing the fuse holder with the inserted fuse ⑥, turning it through 180° ⑦, and inserting it again ⑧. The set voltage can be seen at the top of the fuse holder.



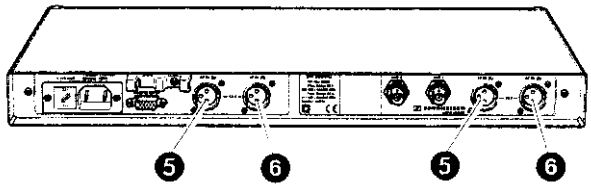


7 Putting the transmitter into operation

The receiver is switched on with the ON / OFF switch ⓯. Display panel ⓭ is now lit up to show that the transmitter is switched on, and the last frequency set is shown (see chapter 12). Until the PLL has locked on the desired transmission frequency, the transmission is muted and „MUTE" lights up on the display.

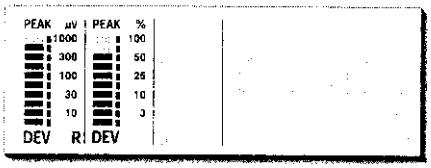
Note

The ON / OFF switch ⓯ works in the secondary circuit of the integrated mains transformer, and thus only switches the low voltage side. By using a modern magnetic core transformer, the power consumption of an SR 3054 / SR 3056 transmitter when switched off is extremely low. For larger installations with several transmitters, a complete mains disconnection can best be achieved by an additional common ON / OFF switch.



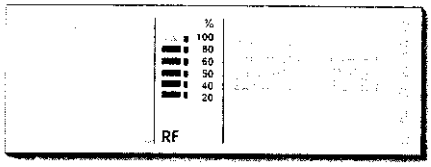
8 AF connection

The AF connection is via sockets ❺ (left) and ❻ (right) on the rear. Please use standard XLR-3 connection cables.



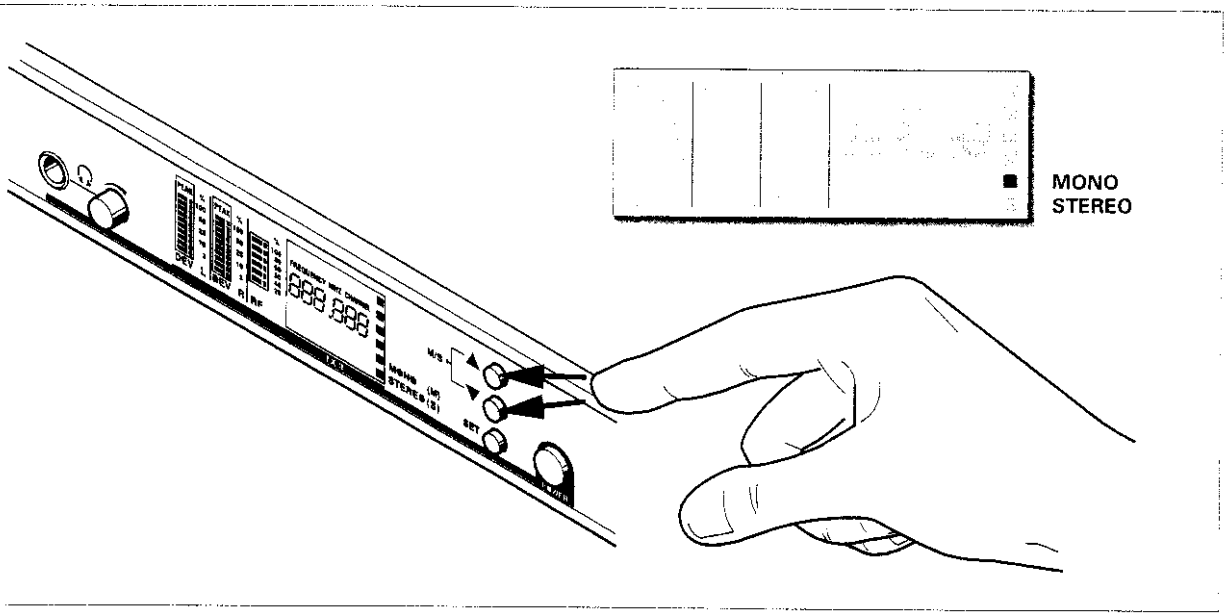
9 Display of the transmitted AF signal

The deviation of the AF signal is indicated by two deviation bargraphs („DEV R“ and „DEV L“) on the display panel.



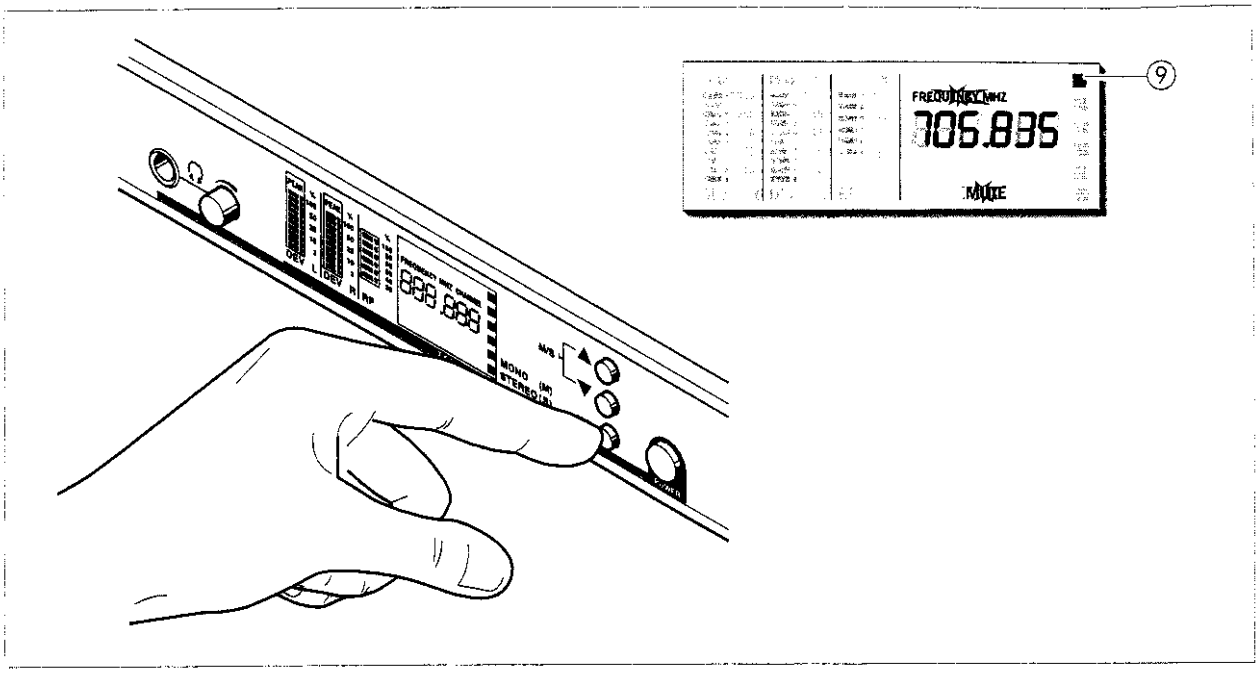
10 Display of the RF output power

The power of the transmitted RF signal is indicated by the RF level bargraph on the right of the deviation bargraphs. During normal operation, the bargraph indicates an output power of 100 %.



11 Mono / stereo selection

You can switch between mono and stereo operation by simultaneously pressing the ▲ / ▼ buttons. The switching between mono and stereo operation is shown on the display. During mono operation, only the AF signal at socket ❻ (right) is transmitted.



12 Changing the transmission frequency

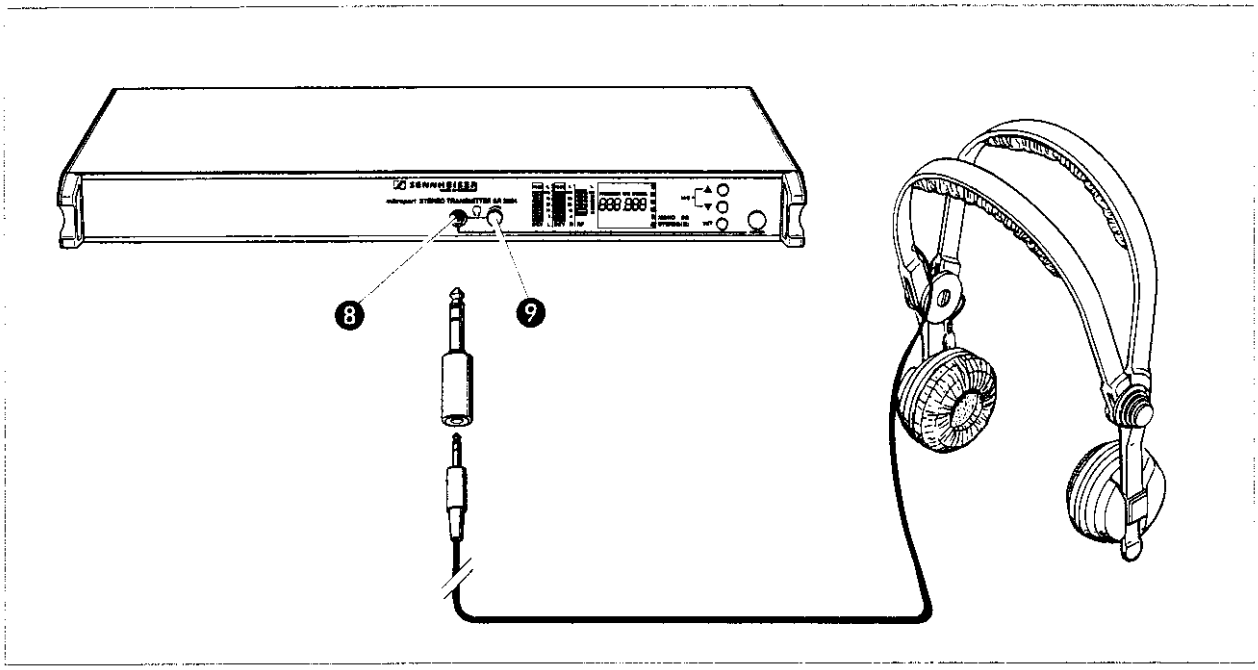
To change the transmission frequency, please proceed with the following steps:

- ▶ Briefly press the **SET** button. The "FREQUENCY MHZ" display on the display panel begins to flash.
- ▶ With ▲ / ▼ buttons you can now select a different frequency. The display always jumps to the next fixed frequency setting in the program. Four channels are allocated to each group. The four possible groups are always shown by the display ⑨ in the display panel.
- ▶ When you get to the desired frequency, press the **SET** button again for about 1 second. Your entry is confirmed by the fact that the "FREQUENCY MHZ" display ceases to flash. At the same time, "Sto" appears and the other displays in the display panel go off briefly. Until the PLL has locked on the new transmission frequency, the transmission is muted and „MUTE" appears on the display.

  Only now does the transmitter change to the new frequency, any existing RF link to a receiver on the previous frequency is interrupted.

You can discontinue your entry at any time by briefly pressing the **SET** button. The cancellation is briefly confirmed on the display with "ESC". The transmitter switches back to normal operation and the "FREQUENCY MHZ" display ceases to flash. The transmitter returns to the frequency to which it was last set.

After about 5 seconds, the transmitter automatically returns to normal operation if no entry has been made during this period. Here, too, "ESC" flashes briefly. You must then begin operation over again.



13 Monitoring the sound signal, headphone connection

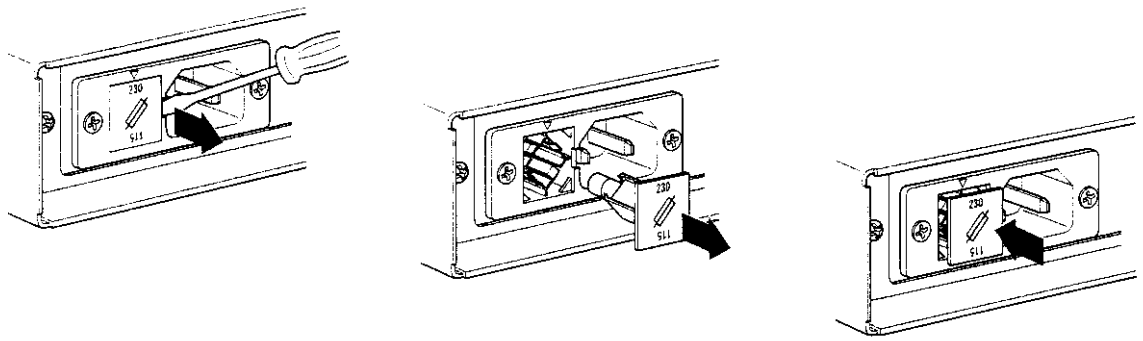
Socket ❽ on the transmitter can be used to monitor the stereo sound signal.

The headphone volume is adjusted with control ❾.

Please use headphones with a $^1/_4$" (6.3 mm) Ø stereo jack plug. The Sennheiser HD 25 headphone is especially usefull for this purpose.

Volume up? – No!

When people use headphones, they tend to choose a higher volume than with loudspeakers. Listening at high volume levels for long periods can lead to permanent hearing defects. Please protect your hearing, and as far as possible, check the sound signal only briefly with the headphone.



14 Replacing a fuse

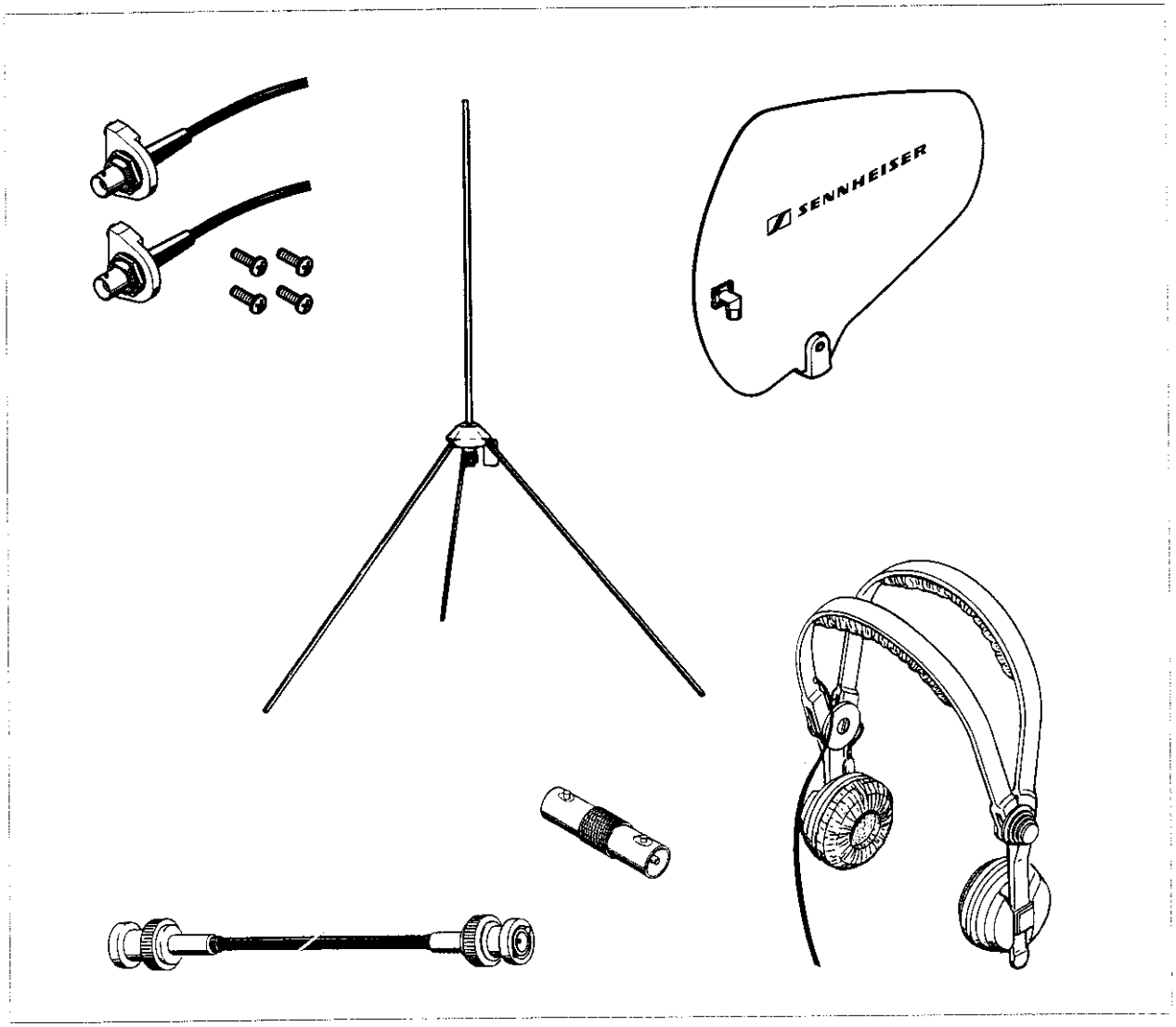
Disconnect the transmitter completely from the mains! To do so, pull out the mains connector ❷ on the transmitter Then remove the fuse holder ❶ with the inserted fuse. Replace the fuse by a new fuse with the same rating and switch on the receiver again. Make sure that you have inserted the fuse holder the correct way round! The set voltage is shown at the top of the fuse holder.

A faulty fuse should always be regarded as a warning. In most cases, the cause is harmless – a short voltage surge or some similar cause has triggered the protective mechanism. When the fuse has been replaced, the transmitter works again.

If the replacement fuse also blows, please consult a specialist who can discover the cause. We recommend you to contact your Sennheiser distributor or to send the transmitter, with a precise description of the trouble, to a Sennheiser service department in your area. You can find the address of your nearest service department in the enclosed Service card or on the Internet at "http://www.sennheiser.com".

15 Safety instructions

- Never open electronic devices! This must only be done by authorised personnel and is all the more important for current-carrying units. If devices are opened by customers in breach of this instruction, the warranty becomes null and void.
- Always disconnect the transmitter from the mains by removing the plug when you wish to change connections or move the device to a different place.
- Keep the transmitter away from central heating radiators and electric heaters. Never expose it to direct sunlight.
- Use the transmitter in dry rooms only.
- Use a damp cloth for cleaning the transmitter Do not use any cleansing agents or solvents.



16 Recommended accessories

•	Antenna mount	GA 3030-AM	Cat. no. 04368
•	Passive directional antenna	A 2003 UHF	Cat. no. 02336
•	Ground plane antenna	GZA 1036-9	Cat. no. 02332
•	Co-axial cable, 5 m	GZL 1019 A5	Cat. no. 02325
•	Co-axial cable, 10 m	GZL 1019 A10	Cat. no. 02326
•	BNC coupler	GZV 1019 A	Cat. no. 02368
•	Monitoring headphone	HD 25	Cat. no. 02976

RF characteristics

Frequency range	450–960 MHz
Transmission frequencies	max. 16 in 4 groups, pre-programmed to customer specifications
Switching bandwidth	24 MHz
Frequency stability	± 10 ppm (– 10 °C to + 55 °C)
Antenna output	BNC socket, 50 Ω
RF output power	max. 100 mW

AF characteristics

Modulation	stereo FM working on the „pilot tone" principle
Compander system	Sennheiser **HiDyn *stage***
Nominal/peak deviation	± 40 kHz/± 56 kHz
Pilot tone deviation	± 5 kHz
AF frequency response	40–15,000 Hz
Headphone output	$^1/_4$" (6.3 mm) Ø stereo jack, 0–3 V adjustable
Load impedance of headphone output	≥ 16 Ω
AF inputs	2 x XLR-3, electronically balanced
AF input voltage (at nominal deviation)	– 10 dBu at 1 kHz, internally adjustable
Signal-to-noise ratio	≥ 90 dB(A) rms (refers to overall link with EK 3052-U)
THD at 1 kHz and nominal deviation	≤ 1 %, typ. 0.5 %

The above data also apply to the second transmitter in the SR 3056-U.

Overall device

Temperature range	– 10 °C to + 55 °C
Power supply	115/230 V AC + 10 %/- 15 %
Power consumption SR 3054-U	max. 13 VA
Power consumption SR 3056-U	max. 23 VA
Dimensions (without rack mount "ears")	436 x 228 x 43 mm (19", 1 U)
Weight SR 3054-U	approx. 3300 g
Weight SR 3056-U	approx. 4000 g
In compliance with	ETS 300 422