



# Tourguide 2020-D

Bedienungsanleitung

Instruction manual

Notice d'emploi

Istruzioni per l'uso

Instrucciones de manejo

Gebruiksaanwijzing

**SENNHEISER**

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## Important safety instructions

1. Read these safety instructions and the instruction manual of the product.
2. Keep these safety instructions and the instruction manual of the product. Always include all instructions when passing the product on to third parties.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Only clean the product when it is not connected to the power supply system. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where it exits from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, when the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.
16. To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.
17. The mains plug of the power supply cord shall remain readily accessible.

## Hazard warnings on the rear of the device (EZL-2020-20 L, L 2021-40)



The label shown opposite is attached to the rear of the product. The symbols on this label have the following meaning:



Presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



Never open the product as there is a risk of electric shock. There are no user serviceable parts inside the product. Always refer repairs to an authorized Sennheiser service partner.



Read and follow the safety and operating instructions contained in the instruction manual.

## Risk of fire due to overloading

Do not overload wall outlets and extension cables as this may result in fire and electric shock.

## Replacement parts

When replacement parts are required, be sure the service technician uses replacement parts specified by Sennheiser or those having the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

## Safety check

Upon completion of any service or repairs to this device, ask the service technician to perform safety checks to determine that the devices are in a safe operating condition.

Note on checking the protective earth connection:

The protective earth conductor is only connected to the lower aluminium strip of the case. For this reason, the protective earth connection can only be checked against the metal angled section at the base of the charging case. Only this part has a low-impedance connection to the protective earth conductor.

## Danger due to high volume levels

This product is used for commercial purposes. Commercial use is subject to the rules and regulations of the trade association responsible. Sennheiser, as the manufacturer, is therefore obliged to expressly point out possible health risks arising from use.

This product is capable of producing sound pressure levels exceeding 85 dB (A). 85 dB (A) is the sound pressure corresponding to the maximum

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## Important safety instructions

permissible volume which is by law (in some countries) allowed to affect your hearing for the duration of a working day. It is used as a basis according to the specifications of industrial medicine. Higher volumes or longer durations can damage your hearing. At higher volumes, the duration must be shortened in order to prevent hearing damage.

The following are sure signs that you have been subjected to excessive noise for too long a time:

- You can hear ringing or whistling sounds in your ears.
- You have the impression (even for a short time only) that you can no longer hear high notes.

Inform all users of these risks and ask them to set the volume to a moderate level if necessary.

## Intended use

The product is designed for indoor and outdoor use.

The product can be used for commercial purposes.

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

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

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

Sennheiser is not liable for damages resulting from the loss of connection due to flat or overaged (rechargeable) batteries or exceeding the transmission range.

## Safety instructions for standard/rechargeable batteries

- Caution: Risk of explosion if you use or replace a battery by an incorrect type.
- Do not short-circuit a cell or battery.
- Do not expose cells or batteries to heat or fire. Avoid storage in sunlight.
- Do not subject cells or batteries to mechanical shock.
- Do not touch leaking/defective batteries unprotected.
- Observe correct polarity.
- Do not use different battery types.
- Charge rechargeable batteries at ambient temperatures between +10 °C and +40 °C (+50 °F and +104 °F).

# System components

The Tourguide System 2020-D consists of the following components which are available from your Sennheiser partner:

- EZL 2020-20 L charging case including instruction manual of the overall system
- L 2021-40 charger
- SK 2020-D bodypack transmitter
- SKM 2020-D radio microphone
- HDE 2020-D-II stethoset receiver
- EK 2020-D-II receiver
- BA 2015 accupack
- Mains cable
- Microphone (see „SK 2020-D bodypack transmitter“ on page 6)

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## Overview of the system

The Tourguide System 2020-D offers optimum digital speech transmission for conferences and guided tours e.g. in factories or museums. The use of RF transmission allows freedom of movement for all members of the group. Six preset intermodulation-free receiving frequencies offer high flexibility and adaptability.

The Tourguide System 2020-D operates in the 863 MHz – 865 MHz frequency band, which is license-free in Europe.

### SK 2020-D bodypack transmitter

You can connect one of the following Sennheiser microphones (to be ordered separately) to the bodypack transmitter:

- Clip-on microphones:  
ME 2-II, ME 4, MKE 1-ew, MKE 2-EW Gold
- Headmics:  
ME 3-II, HS 2-ew BK, HS 2-ew BE, SL Headmic 1 SB, SL Headmic 1 BK, SL Headmic 1 BE
- Hand-held microphones with special connecting cable:  
e 825 S, e 835, e 845

In addition, you can connect any audio source (e.g. a flash / MP3 player) to the bodypack transmitter.

### SKM 2020-D radio microphone

This extremely rugged radio microphone can be used in various tour situations. The radio microphone is easy to configure and use.

For storage and safe transportation, the radio microphone can be placed in the charging case and secured with Velcro tape.

### HDE 2020-D-II and EK 2020-D-II receivers

The receivers are easy to use and comfortable to wear. The built-in LC display shows all the important information at a glance (receiving channel, reception quality, charge status of the built-in Lithium-polymer rechargeable battery as well as the currently set volume). The rocker button allows fast and easy setting of the desired channel.

The EK 2020-D-II allows you to connect any headphones or an induction loop for wearers of hearing aids.

The system can be expanded at any time by adding additional receivers.

## EZL 2020-20 L charging case

The charging case simultaneously recharges up to 20 stethoset receivers with their built-in rechargeable batteries, as well as the BA 2015 accupack of the bodypack transmitter/radio microphone. You can also charge the bodypack transmitter with the BA 2015 accupack inserted plus an additional spare accupack. The channel copy function lets you set all receivers to the same channel at the press of a button.

Additional features of the charging case:

- Quick charge of accupacks.
- Automatic detection of full charge and subsequent switching to trickle charging so the accupacks can remain in the charger even when they have been fully charged.
- Highest possible operational reliability, since temperature and voltage of the accupacks are monitored during charging.
- Long accupack service life due to overcharge protection and recovery of deep-discharged accupacks.
- Safe storage and transportation of the system components.

## The L 2021-40 charger

The L 2021-40 charger can charge a total of 40 HDE 2020-D-II and/or EK 2020-D-II receivers with their built-in rechargeable batteries. The channel copy function lets you set all receivers to the same channel at the press of a button.

In addition, the charger allows you to directly configure the receivers via a PC. You can connect up to 125 chargers to a single PC, allowing you to simultaneously configure up to 5000 receivers.

Additional features of the charger:

- Quick charge of receiver rechargeable batteries.
- Highest possible operational reliability, since temperature and voltage of the rechargeable batteries are monitored during charging.

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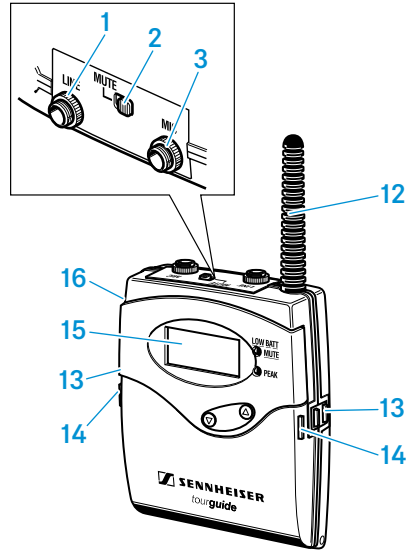
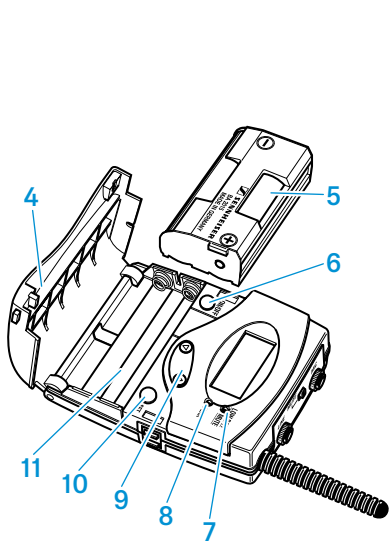
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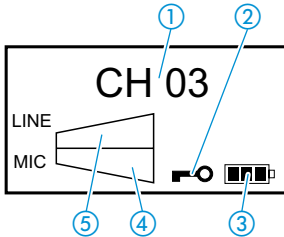
# The operating controls

## SK 2020-D bodypack transmitter



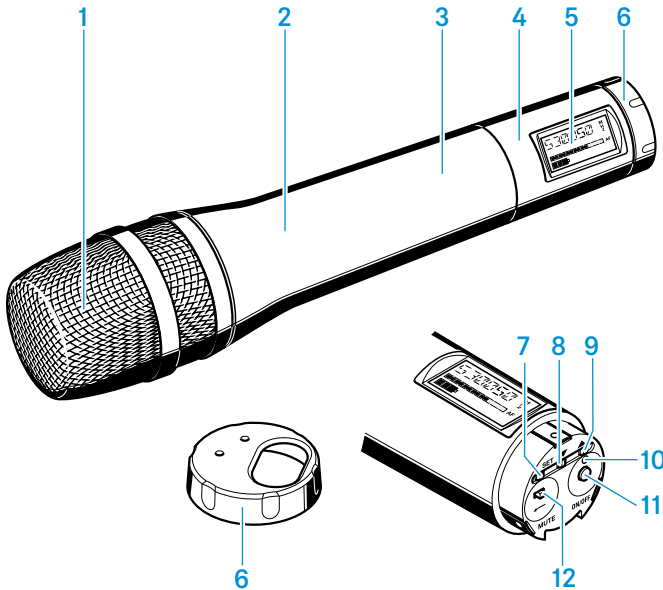
- 1 Line input
- 2 MUTE switch
- 3 Microphone input
- 4 Battery compartment cover
- 5 BA 2015 accupack
- 6 ON/OFF button
- 7 Red LED LOW BATT/MUTE
- 8 Yellow LED PEAK
- 9 ▲/▼ rocker button

- 10 SET button
- 11 Battery compartment
- 12 Antenna
- 13 Charging contacts
- 14 Battery compartment catches
- 15 LC display
- 16 Belt clip (on the back of the transmitter)

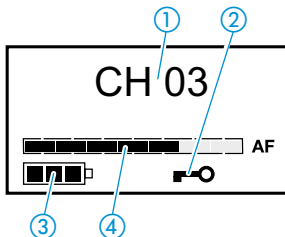


- ① Channel display
- ② Lock mode icon
- ③ 4-step battery status indication
- ④ MIC level display
- ⑤ LINE level display

## SKM 2020-D radio microphone



- 1 Sound inlet basket
- 2 Body of radio microphone
- 3 Battery compartment (not visible from outside)
- 4 Display section
- 5 LC display
- 6 Turnable protective cap for operating controls (shown removed); the following operating controls become accessible in turn by turning the protective cap:
  - 7 **SET** button
  - 8 **▼** button
  - 9 **▲** button
  - 10 Operation/battery status indicator, red LED (**ON/LOW BATT**)
  - 11 **ON/OFF** button with **ESC** function (cancel) in the operating menu
  - 12 **MUTE** switch



- ① Channel display
- ② Lock mode icon
- ③ 4-step battery status indication
- ④ 7-step audio level display "AF"

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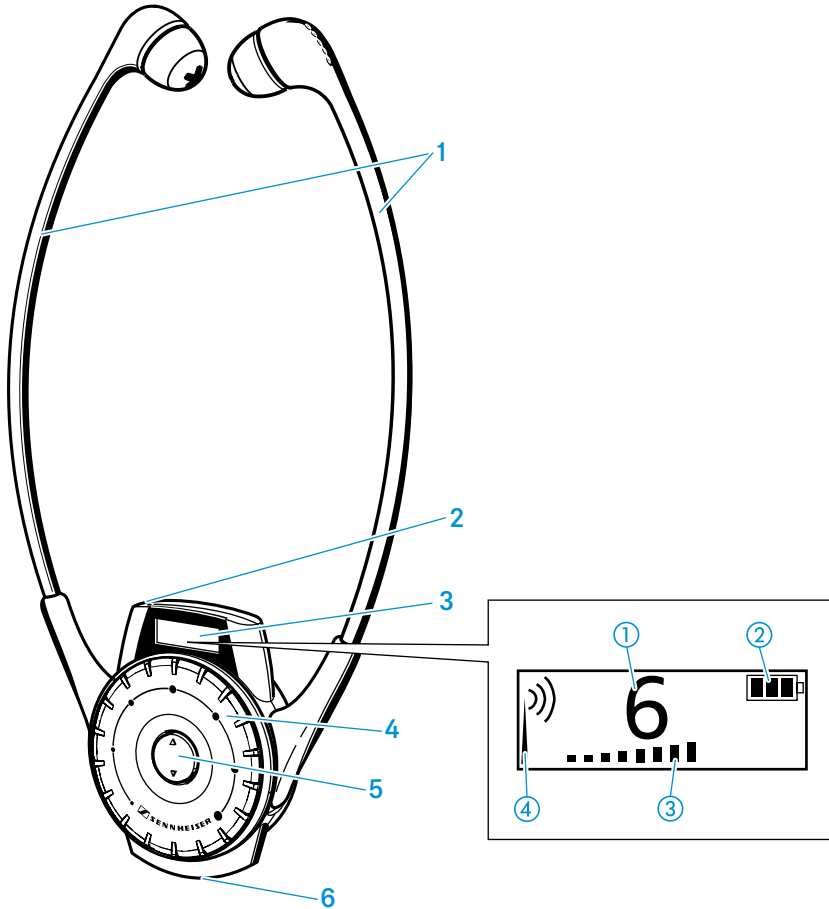
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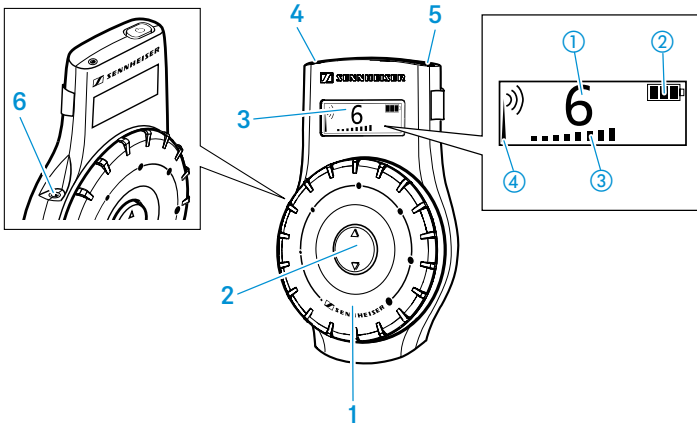
COMPLIANCE

## HDE 2020-D-II stethoset receiver



- 1 Earbows
- 2 Red/green LED for charge status
- 3 LC display
- 4 Volume control
- 5 Channel selection button ▲/▼
- 6 Charging contacts
- ① Channel display
- ② 4-step battery status display
- ③ Volume display
- ④ RF signal indication

EK 2020-D-II receiver



- |   |   |   |                               |
|---|---|---|-------------------------------|
| 1 | Volume control  | ① | Channel display               |
| 2 | Channel selection button ▲/▼  | ② | 4-step battery status display |
| 3 | LC display  | ③ | Volume display                |
| 4 | LED for charge status   | ④ | RF signal indication          |
| 5 | ON/OFF button  |   |                               |
| 6 | Headphone socket  |   |                               |

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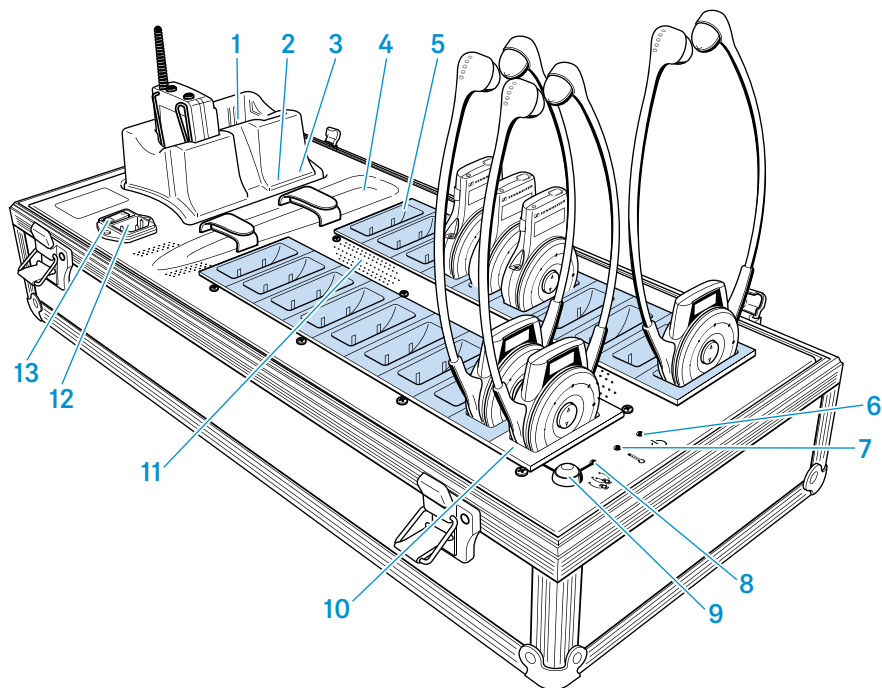
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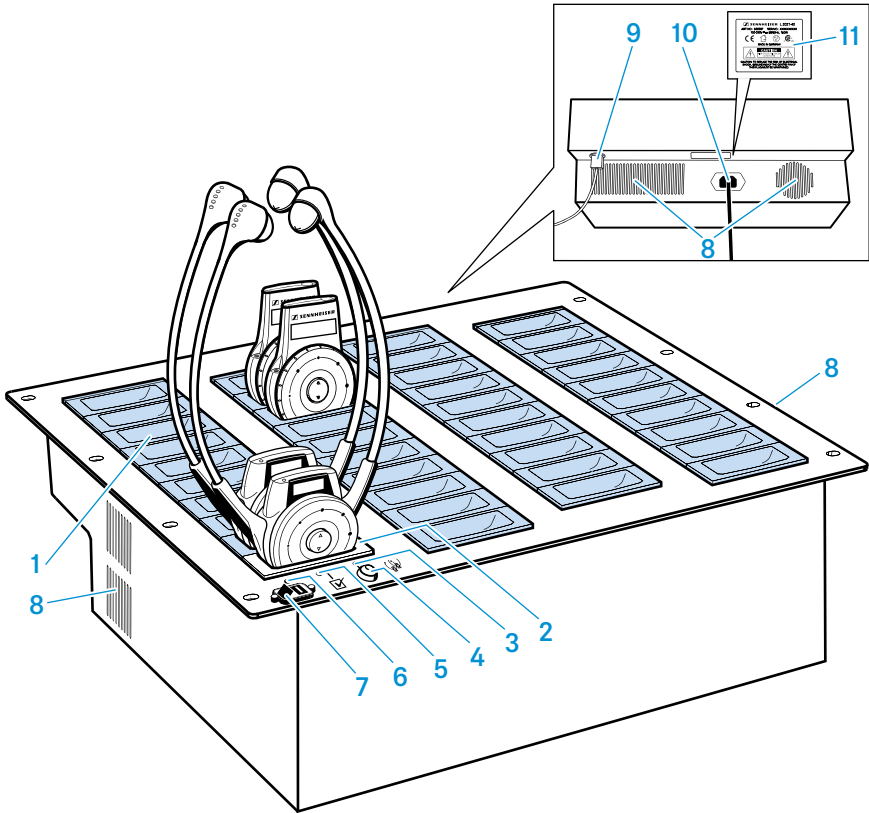
## The operating controls

### EZL 2020-20 L charging case



- |   |  |    |  |
|---|--|----|--|
| 1 | Charging compartments for accu-pack/bodypack transmitter                   | 7  | LED <b>TEMP ERROR</b>                                    |
| 2 | Red LED <b>CHARGE/ERROR</b>  | 8  | LED <b>COPY AVAILABLE</b>                                |
| 3 | Green LED <b>READY</b>   | 9  | <b>COPY</b> button                                       |
| 4 | Storage place for radio microphone   | 10 | Charging compartment with channel copy function (master) |
| 5 | 19 charging compartments for receivers (slaves, light blue in the diagram) | 11 | Air vents  |
| 6 | LED <b>POWER</b>   | 12 | IEC mains socket   |
|   |  | 13 | Mains switch   |

L 2021-40 charger



- |   |  |    |                      |
|---|--|----|----------------------|
| 1 | 39 “slave” charging compartments (light blue in the diagram) | 6  | Red LED <b>POWER</b> |
| 2 | “Master” charging compartment (with channel copy function)   | 7  | Mains switch         |
| 3 | Green LED <b>COPY AVAILABLE</b>                              | 8  | Air vents            |
| 4 | <b>COPY</b> button   | 9  | Network socket       |
| 5 | Yellow LED <b>SELECT</b>                                     | 10 | Mains socket         |
|   |  | 11 | Type plate           |

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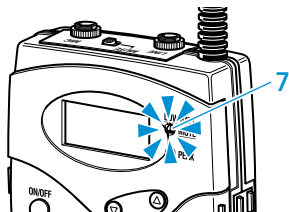
COMPLIANCE

The operating controls

## Indications and displays on the bodypack transmitter

### Operation and battery status indication

The red LED **LOW BATT/MUTE 7** provides information on the current operating state of the bodypack transmitter:



#### Red LED off:

The bodypack transmitter is switched on and the capacity of the batteries/BA 2015 accupack is sufficient.

#### Red LED flashing:

The batteries are/the BA 2015 accupack is going flat (**LOW BATT**).

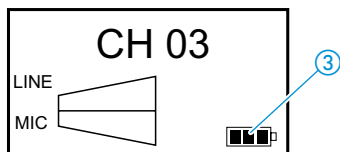
In addition, the 4-step battery status display ③ on the display panel provides information on the remaining battery/BA 2015 accupack capacity:

3 segments                      capacity approx. 100%

2 segments                      capacity approx. 70%

1 segments                      capacity approx. 30%

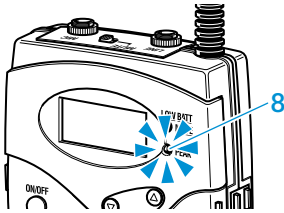
Battery icon flashing            **LOW BATT**



### AF peak indication

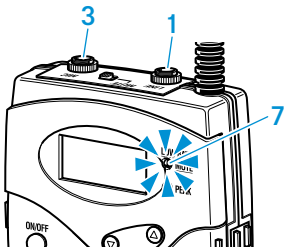
The yellow LED **PEAK 8** lights up when the transmitter's audio input is over-modulated.

If the transmitter's audio input level is excessively high, the sound of the receivers may be distorted. In order to avoid distortion in the receivers, reduce the sensitivity of the transmitter's line and/or microphone input (see „Changing the sensitivity of the bodypack transmitter's line input“ on page 53 and „Changing the sensitivity of the bodypack transmitter's microphone input“ on page 53).



## MUTE display

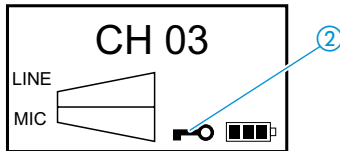
The red LED **LOW BATT/MUTE 7** lights up when the transmitter's microphone input is muted (see „Muting the devices“ on page 51).



**Note:** The muting function (**MUTE**) mutes the microphone input **3** only, not the line input **1**.

## Lock mode icon

The lock mode icon **②** appears on the display when the lock mode is activated (see „Activating/deactivating the lock mode“ on page 57).



## Display backlighting

After pressing a button, the display remains backlit for approx. 30 seconds.

## Display of the energy saving mode

When there is no audio signal for 5 minutes or when the bodypack transmitter is muted, it automatically switches to energy saving mode. „**CH OFF**“ appears on the display and the transmission signal is deactivated.

When an audio signal reaches the bodypack transmitter, it automatically switches back to normal operation and the display displays the selected channel.

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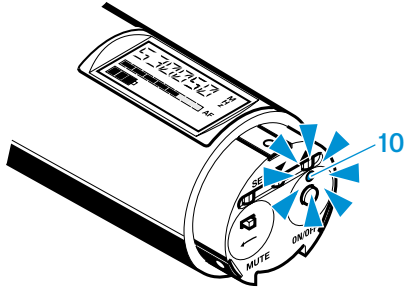
COMPLIANCE

The operating controls

## Indications and displays on the radio microphone

### Operation and battery status indication

The red LED **LOW BATT/ON 10** provides information on the current operating state of the radio microphone:



#### Red LED off:

The radio microphone is switched on and the capacity of the batteries/BA 2015 accupack is sufficient.

#### Red LED flashing:

The batteries are/the BA 2015 accupack is going flat (**LOW BATT**)!

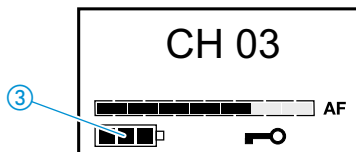
In addition, the 4-step battery status display ③ on the display panel provides information on the remaining battery/BA 2015 accupack capacity:

3 segments                      capacity approx. 100%

2 segments                      capacity approx. 70%

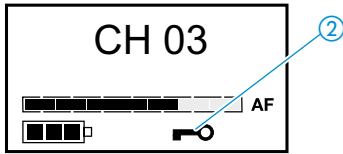
1 segments                      capacity approx. 30%

Battery icon flashing            **LOW BATT**



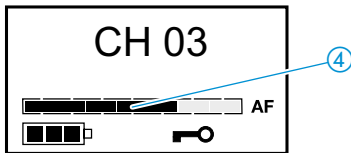
## Lock mode icon

The lock mode icon ② appears on the display when the lock mode is activated (see „Activating/deactivating the lock mode“ on page 57).



## Modulation display

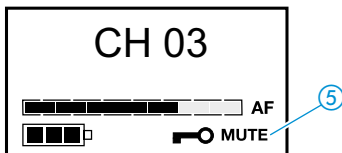
The level display for audio signal “AF” ④ shows the modulation of the radio microphone.



When the radio microphone’s audio input level is excessively high, the level display for audio signal “AF” ④ shows full deflection for the duration of the overmodulation. You can change modulation by changing the input sensitivity of the radio microphone as described on page 43. (see „Adjusting the radio microphone’s input sensitivity“ on page 54).

## MUTE display

When the radio microphone is muted, „MUTE“ ⑤ appears on the display (see „Muting the radio microphone“ on page 51).



## Display backlighting

After pressing a button, the display remains backlit for approx. 15 seconds.

## Display of the energy saving mode

When there is no audio signal for 5 minutes or when the radio microphone is muted, it automatically switches to energy saving mode. “CH OFF” appears on the display and the transmission signal is deactivated.

When an audio signal reaches the radio microphone, it automatically switches back to normal operation and the display displays the selected channel.

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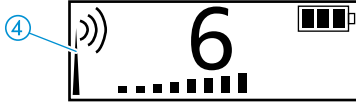
COMPLIANCE

The operating controls

## Indications and displays on the receiver

### RF signal indication

The RF signal indication ④ (tower with radio waves) on the LC display provides information on the RF signal reception:



#### Tower with radio waves:

An RF signal is being received on the selected channel.

#### Tower without radio waves:

No RF signal is being received on the selected channel or the received signal level is too low.

#### No tower, no radio waves:

HDE 2020-D-II only: The receiver is in standby mode. You can, however, change the settings on the receiver.

### Signal strength



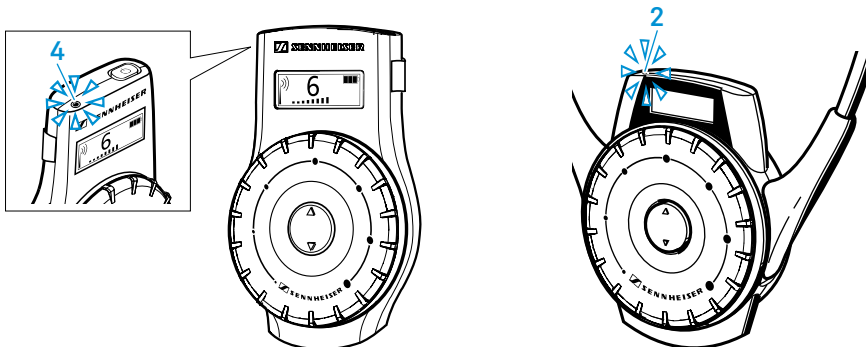
The received signal strength may be reduced due to body absorption of the RF signal.

### Charge status LED

During charging,

- the LED ④ of the EK 2020-D-II or
- the LED ② of the HDE 2020-D-II

provides information on the charge status of the receiver's built-in rechargeable battery.



**LED lights up red:**

The built-in rechargeable battery is being charged.

**LED lights up green:**

The built-in rechargeable battery is fully charged. The receiver is now ready for operation.

**LED slowly flashes red:**

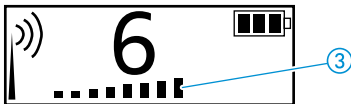
The temperature of the built-in rechargeable battery is outside the permissible range (3°C to 40°C). The charging process is interrupted until the temperature is again within the admissible range.

**LED lights up yellow/orange:**

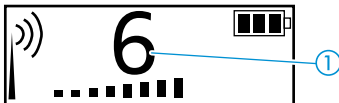
The built-in rechargeable battery is defective. Please contact your Sennheiser partner.

**Volume display**

The volume display ③ provides information on the current volume level.

**Channel display**

The channel display ① provides information on the currently selected channel.

**Battery status display**

The 4-step battery status display ② provides information on the capacity of the receiver's built-in rechargeable battery.



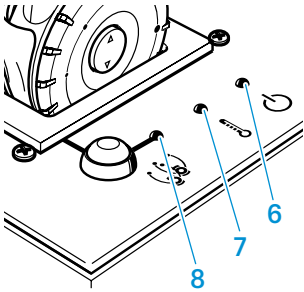
Shortly before the rechargeable battery is completely discharged, the display backlighting flashes, indicating that the receiver will soon switch off automatically.

The operating controls

## Indications and displays on the charging case

### Operation indication

The LED **POWER 6** lights up as long as the mains supply is switched on.



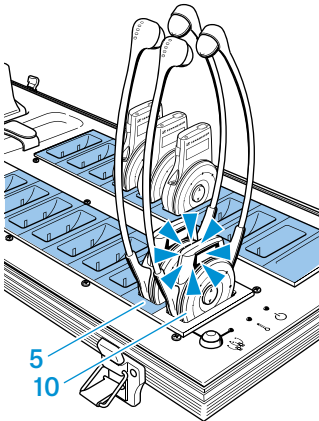
### Temperature indication

The LED **TEMP ERROR 7** lights up if the temperature in the charging case gets too high and will remain on until the temperature drops to a safe level. All charging processes are interrupted until the temperature drops to a safe level.

### LED indication for “automatic copying” function

The LED **COPY AVAILABLE 8** lights up green when the “automatic copying” function is available. This happens

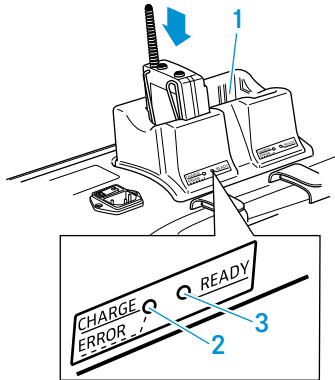
- when a switched-on receiver is placed into the charging compartment with channel copy function (master) **10**
- and at least one receiver is placed into one of the other receiver charging compartments (slaves, light blue in the diagram) **5**.



The LED **COPY AVAILABLE 8** goes off when the “automatic copying” function is not available. This happens

- when the receiver in the charging compartment with channel copy function (master) **10** is switched off,
- or when the receiver is removed from the charging compartment with channel copy function (master) **10**,
- or when all 19 charging compartments (slaves) **5** are empty.

## LED indication for charging compartments for BA 2015 accu-pack/bodypack transmitter



Each charging compartment for accu-pack/bodypack transmitter **1** as an LED **CHARGE/ERROR 2** and an LED **READY 3**, which indicate the following operating states:

### No LED lit:

- The charging compartment for accu-pack/bodypack transmitter **1** is ready for operation but empty.
- OR: A bodypack transmitter without accu-pack has been placed into the charging compartment.

### Red LED CHARGE/ERROR 2 lit:

The accu-pack is being charged. A red flashing LED for error indication, as with the L 2015 charger, is not available on the EZL 2020-20 L charging case.

### Green LED READY 3 lit:

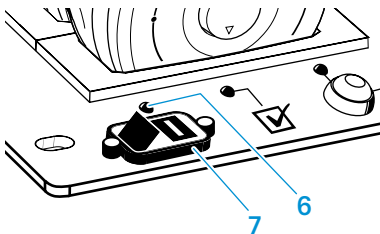
The accu-pack is fully charged and the charging case has switched to trickle charging.

### Green LED READY 3 lights up briefly and then goes off:

The bodypack transmitter is powered by standard batteries which cannot be recharged.

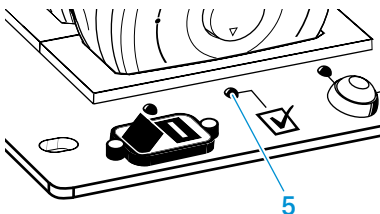
## Indications and displays on the charger

### Operation indication



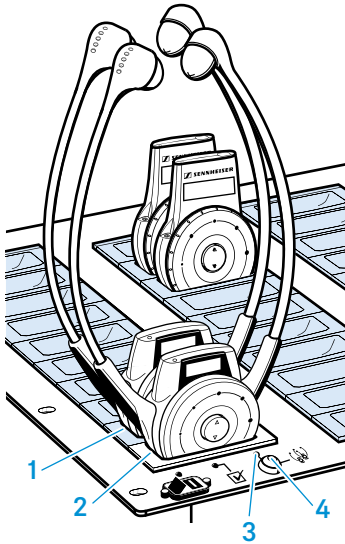
LED POWER 6	Meaning
lights up red	The mains switch 7 is in position „I“, the mains supply is switched on.
is off	The mains switch 7 is in position „0“, the mains supply is switched off.

### Status indication



LED SELECT 5	Meaning
flashes yellow	You have just switched on the device (LED flashes for a maximum of 2 seconds) or an error has occurred.
lights up yellow	The charger is connected to a PC and the “Conference Control” software is running and has established a network connection with the charger and you have selected the charger or at least one receiver placed into the charger via the “Conference Control” software.
is off	Neither the charger nor a receiver have been selected via the “Conference Control” software.

## LED indication for “automatic copying” function

**LED COPY  
AVAILABLE 3****Meaning**

lights up green	The “automatic copying” function is available (see below).
if off	The “automatic copying” function is not available (see below).

When the “automatic copying” function is available, the green LED **COPY AVAILABLE 3** lights up. This is the case when:

- at switch-on of the charger, a receiver is already placed into the “master” charging compartment **2** or you place a receiver into the “master” charging compartment **2** or you switch on a receiver that is already placed into the “master” charging compartment **2** and
- at least one receiver is placed into one of the “slave” charging compartments **1** and
- no network connection exists.

When the “automatic copying” function is not available, the green LED **COPY AVAILABLE 3** goes off. This is the case when:

- you remove the receiver from the “master” charging compartment **2** or
- all “slave” charging compartments **1** are empty or
- the “Conference Control” software accesses the charger or
- you do not press the **COPY** button **4** within two minutes.

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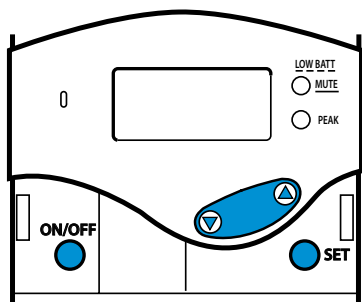
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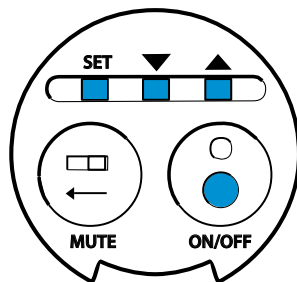
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COMPLIANCE

## The functions of the operating controls of the bodypack transmitter/radio microphone



Bodypack transmitter

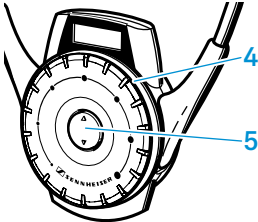


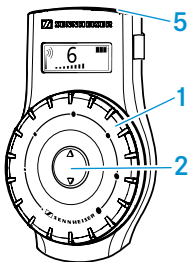

Radio microphone

Operating control	Mode*	Function
ON/OFF button	Switched off	Pressing the button: Switches the bodypack transmitter/radio microphone on
	Switched on	Pressing the button for approx. 3 seconds: Switches the bodypack transmitter/radio microphone off
	Selection mode	Cancels the selection and returns to the standard display (ESC function)
	Setting mode	Cancels the entry and returns to the selection mode without storing the changes made (ESC function)
SET button	Standard display	Changes to the selection mode
	Selection mode	Changes to the setting mode of the selected menu
	Setting mode	Stores the setting and returns to the selection mode (“STORED” is displayed briefly)
	Lock mode activated	Changes directly to the “LOCK” menu item where you can deactivate the lock mode
▲/▼ buttons	Standard display	No function
	Selection mode	Changes to the previous menu item (▲) or changes to the next menu item (▼)
	Setting mode	Increases (▲) or reduces (▼) the setting of the selected menu item or switches the menu item (ON) or (OFF)

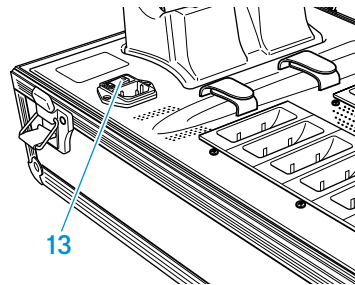
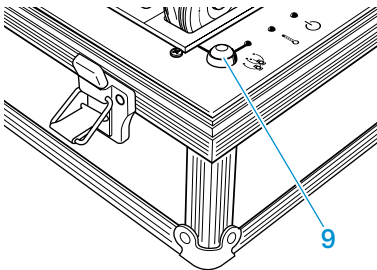
\* For information on the menu areas “standard display“, “selection mode” and “setting mode“, please see „Overview of the bodypack transmitter’s operating menu“ on page 60.

## The functions of the operating controls of the receivers

HDE 2020-D-II	Operating control	Function
	Volume control 4	Turning the volume control: Changes the volume
	Channel selection button ▲/▼ 5	Changes to the next channel (▲) or changes to the previous channel (▼)
	Earbows	Pulling the earbows apart: Switches the stethoset receiver on

EK 2020-D-II	Operating control	Function
	Volume control 1	Turning the volume control: Changes the volume
	Channel selection button ▲/▼ 2	Changes to the next channel (▲) or changes to the previous channel (▼)
	ON/OFF button 5 	Switches the receiver on/off

## The functions of the operating controls of the charging case



Operating control	Function
COPY button 9	Starts the channel copy function (see page 49)
Mains switch 13	Switches the charging case on/off

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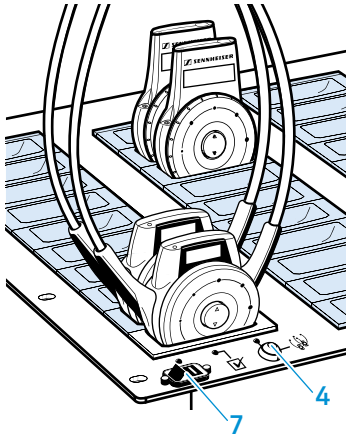
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COMPLIANCE

## The functions of the operating controls of the charger



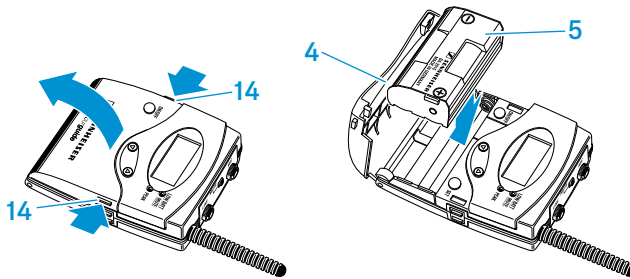
Operating control	Function
COPY button 4	Starts the channel copy function (see page 49)
Mains switch 7	Switches the charger on/off

# Putting the components into operation

## Inserting and replacing the batteries/accupack of the bodypack transmitter

For powering the bodypack transmitter, you can either use the rechargeable BA 2015 accupack **5** or two 1.5 V AA size batteries. NB: Do not use any other rechargeable batteries!

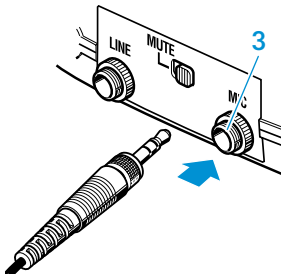
- ▷ Push the two battery compartment catches **14** and open the battery compartment cover **4**.
- ▷ Insert the BA 2015 accupack **5** or the batteries as shown in the diagram on the left. Please observe correct polarity when inserting the accupack/ batteries.
- ▷ Close the battery compartment cover **4**.



## Connecting a microphone to the bodypack transmitter

**Note:** Suitable Sennheiser microphones are listed on page 6.

- ▷ Connect the microphone to the microphone input **3** of the bodypack transmitter.



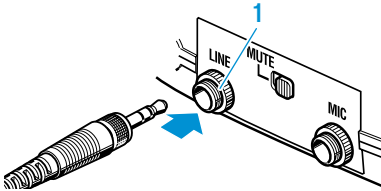
- ▷ Lock the plug by screwing down the coupling ring.
- ▷ Adjust the sensitivity of the microphone input as described on page 53.

## Putting the components into operation

### Connecting external audio sources

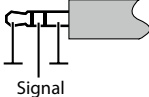
You can connect an external audio source such as a CD player, MP3 player, tape player, etc. to the bodypack transmitter. (Please note that you cannot connect a second microphone.) Both signals – the microphone input signal and the line input signal – are mixed together equally in the transmitter.

- ▷ Connect the line output of the external audio source to the line input **1** of the bodypack transmitter.

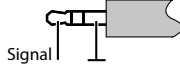


- ▷ Lock the plug by screwing down the coupling ring.
- ▷ Switch the line input on as described on page 52.
- ▷ Adjust the sensitivity of the line input as described on page 53.

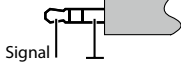
Mic input (dynamic):



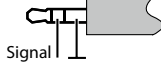
Mic input (Electret):



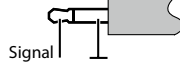
LINE input:



LINE input:

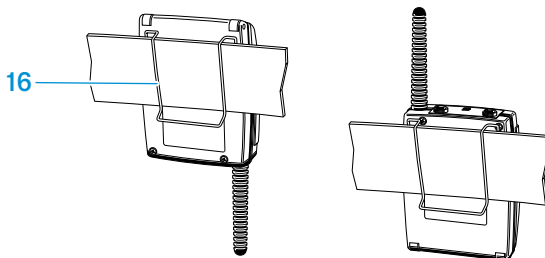


LINE input:



### Attaching the bodypack transmitter to clothing

The bodypack transmitter is attached to clothing (e.g. belt, waistband) with the supplied belt clip **16**.

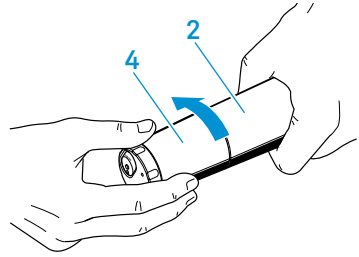


The clip is detachable so that you can also attach the bodypack transmitter with the antenna pointing downwards. To do so, withdraw the clip **16** from its fixing points and attach it the other way round.

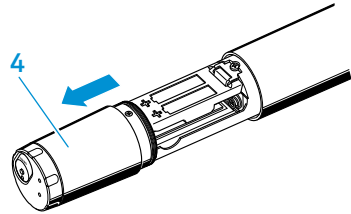
## Inserting and replacing the batteries/accupack of the radio microphone

For powering the radio microphone, you can either use the rechargeable BA 2015 accupack or two 1.5 V AA size batteries. NB: Do not use any other rechargeable batteries!

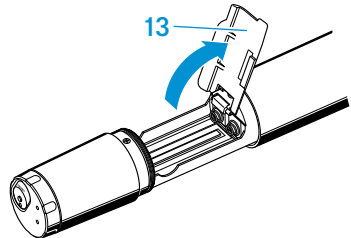
- ▷ Unscrew the display section 4 from the radio microphone's body 2 by turning it counterclockwise.



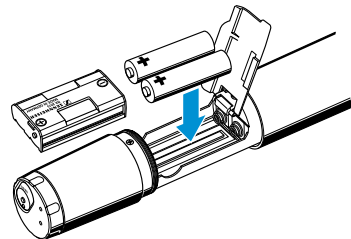
- ▷ Slide back the display section 4 as far as it will go.



- ▷ Open the battery compartment cover 13.



- ▷ Insert the batteries or the BA 2015 accupack as shown on the battery compartment cover. Observe correct polarity when inserting the batteries/accupack.



- ▷ Close the battery compartment cover 13.
- ▷ Push the battery compartment into the radio microphone's body.
- ▷ Screw the display section tight.

**Note:** Always charge the accupack in the charging compartment 1 of the charging case (see „Charging the BA 2015 accupack“ on page 43).

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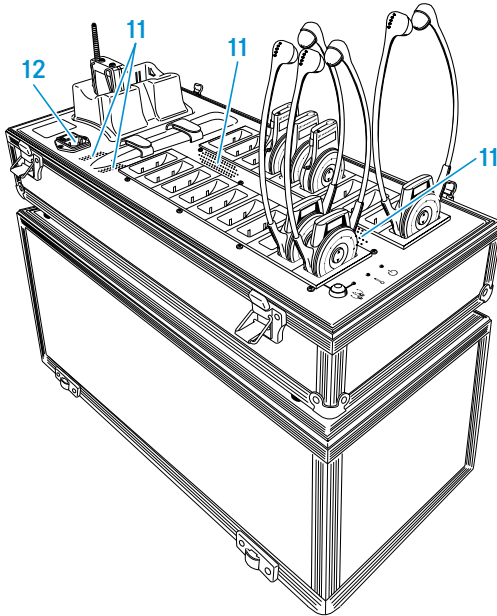
COMPLIANCE

## Putting the components into operation

### Setting up the charging case

**Note:** The charging case as well as the accupacks and the receivers' built-in rechargeable batteries will get hot during charging. Please ensure the following so that the generated heat can dissipate:

- The air vents **11** of the charging case must not be covered or blocked.
- The charging case must be kept away from heat sources and must never be exposed to direct sunlight.
- During charging, do not put the case cover on the charging case.



The charging case has four plastic feet to ensure that it cannot slip on the surface on which it is placed.

---

### CAUTION

#### RISK OF STAINING OF FURNITURE SURFACES!

Some furniture surfaces have been treated with varnish, polish or synthetics which might cause stains when they come into contact with other synthetics. Despite a thorough testing of the synthetics used by us, we cannot rule out the possibility of staining.

▷ Do not place the charger on delicate surfaces.

▷ Place the charging case on a flat, even surface.

**Note:** The case cover can be used as a stand for the charging case.

## Connecting the charging case to and disconnecting it from the mains

To connect the charging case to the mains:

- ▷ Connect the mains cable to the mains socket **12** (see „Setting up the charging case“ on page 30).
- ▷ Plug the mains connector into a wall socket.

To disconnect the charging case from the mains:

- ▷ Pull out the mains connector from the wall socket.

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COMPLIANCE

Putting the components into operation

## Setting up the charger

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### **CAUTION**

#### **DANGER DUE TO HEAT ACCUMULATION!**

The charger and the receiver rechargeable batteries can get very hot during charging. If the heat cannot dissipate, the devices can be damaged.

- ▷ Make sure that the air vents of the charger are not covered or blocked.
  - ▷ Provide sufficient ventilation so that the maximum ambient temperature of the charger does not exceed 40°C.
  - ▷ Keep the charger away from heat sources and never expose it to direct sunlight.
- 

The charger can be:

- placed on a table or cabinet
- installed in a 19" rack
- installed in a cabinet or similar.

When using the “Conference Control” software, it automatically sorts all charger displays according to ascending serial numbers. The assignment of the charger displays of the software to the chargers becomes easier and clearer if you install the chargers according to ascending serial numbers.

## Placing the charger on a table or cabinet

The charger has four plastic feet to ensure that it cannot slip on the surface on which it is placed.

---

### **CAUTION**

#### **RISK OF STAINING OF FURNITURE SURFACES!**

Some furniture surfaces have been treated with varnish, polish or synthetics which might cause stains when they come into contact with other synthetics. Despite a thorough testing of the synthetics used by us, we cannot rule out the possibility of staining.

- ▷ Do not place the charger on delicate surfaces.
- 
- ▷ Place the charger on a table, cabinet or similar.

## Installing the charger

The housing of the charger is designed so that it fits into a 19" rack. The charger can also be installed in a cabinet or similar.

---

### CAUTION

#### RISKS WHEN RACK MOUNTING THE CHARGER!

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.

- ▷ The ambient temperature within the rack, cabinet or similar must not exceed the temperature limit specified in the specifications.
- ▷ When installing the device, take good care not to affect the ventilation required for safe operation. If necessary, provide additional ventilation.
- ▷ Make sure the mechanical loading of the rack is even to avoid a hazardous condition.
- ▷ When connecting the device to the power supply, observe the information indicated on the type plate. Avoid circuit overloading. If necessary, provide overcurrent protection.
- ▷ Ensure a reliable mains ground connection of the device by taking appropriate measures – especially when you are using an extension cable or a multi-outlet power strip.
- ▷ When installing the device in a closed or multi-rack assembly, please note that intrinsically harmless leakage currents of the individual devices may accumulate, thereby exceeding the allowable limit value. As a remedy, ground the rack via an additional ground connection.

- 
- ▷ Use eight screws to fasten the charger.

You can install the charger fixedly, e.g. in a cabinet or similar. For the dimensions required for fixed installation, please refer to the below installation drawing.

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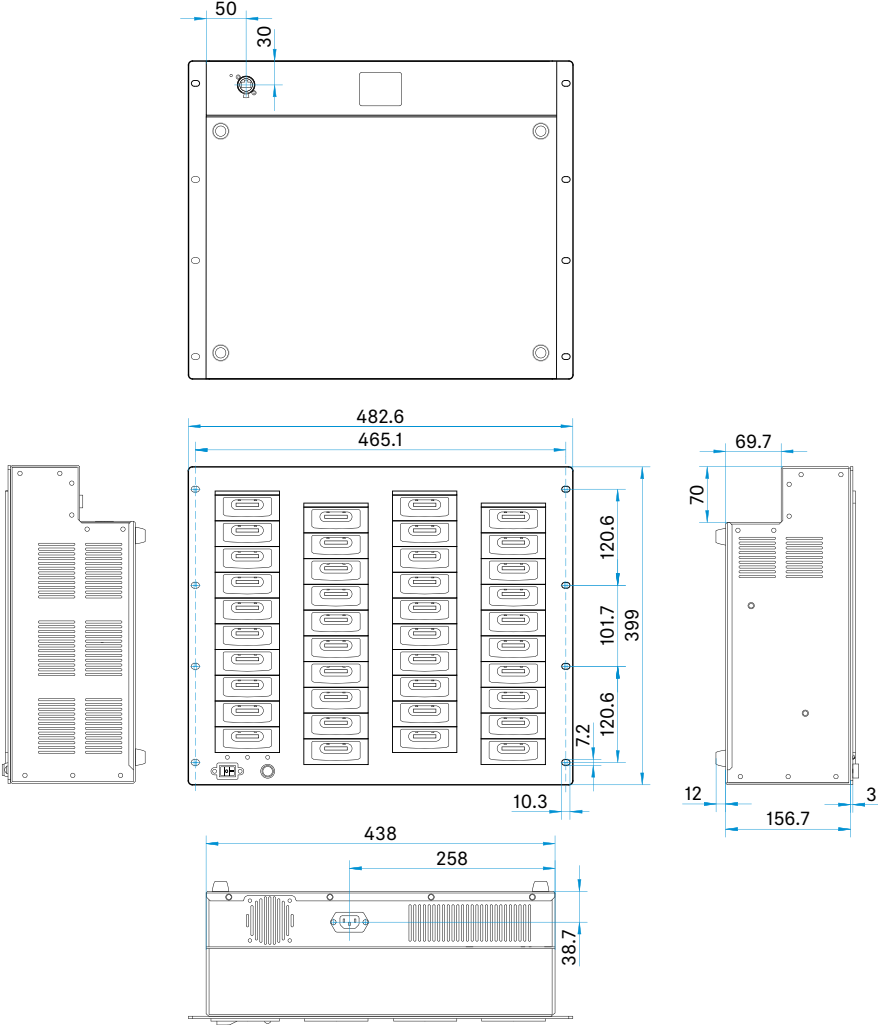
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COMPLIANCE

# Putting the components into operation



## Connecting the charger to a PC

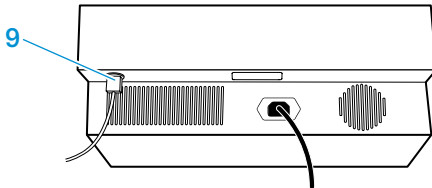
You can connect one or several chargers to a PC. The supplied “Conference Control” software allows you to centrally and easily configure and monitor several chargers and receivers.

For this, the charger requires a network connection with a PC. The charger can be connected directly to an individual PC or integrated into an existing network. The charger cannot communicate with several PCs at the same time.

The charger also functions without connection to a PC.

### Connecting the network cable

- ▷ Use a standard network cable (RJ45 CAT.5E, to be ordered separately) to connect the network socket **9** and an Ethernet socket of the network.
- ▷ Install the “Conference Control” software.
- ▷ Configure the network communication between the “Conference Control” software and the charger (see the instruction manual of the “Conference Control” software on the enclosed CD).



Putting the components into operation

## Connecting the charger to and disconnecting it from the mains

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### CAUTION

#### DANGER DUE TO ELECTRIC CURRENT!

If you connect the charger to an unsuitable power supply, this can cause damage to the device!

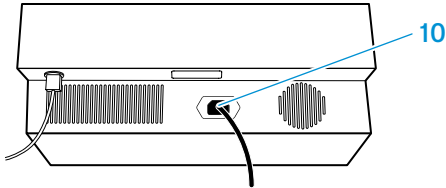
- ▷ Use a mains cable with a 3-pin IEC mains connector to ensure a reliable mains ground connection of the charger – especially when you are using an extension cable or a multi-outlet power strip.
  - ▷ Avoid circuit overloading. If necessary, provide overcurrent protection.
- 

To connect the charger to the mains:

- ▷ Connect a mains cable (to be ordered separately) to the mains socket **10**.
- ▷ Plug the mains connector into a wall socket.

To disconnect the charger from the mains:

- ▷ Pull out the mains connector from the wall socket.



# Operation

## Switching the devices on/off

### Notes:

- Remove the batteries or the accupack when the bodypack transmitter/radio microphone will not be used for extended periods of time.
- If no transmission is to take place, switch the transmitters off in order to free up the frequency range for other applications.

### Switching the bodypack transmitter on/off

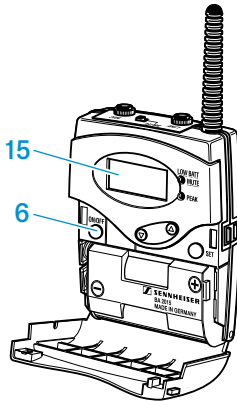
To switch the bodypack transmitter on:

- ▷ Briefly press the **ON/OFF** button **6**.

The display **15** indicates the device name and then switches to the standard display.

To switch the bodypack transmitter off:

- ▷ Press and hold the **ON/OFF** button **6** until „OFF“ appears on the display.



### Switching the radio microphone on/off

To switch the radio microphone on:

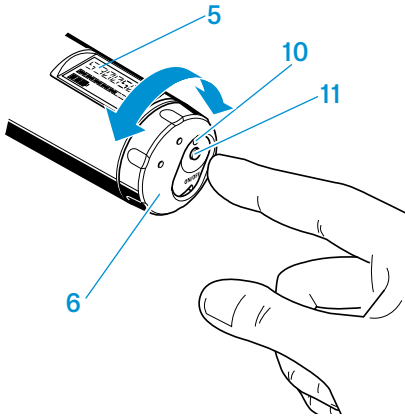
- ▷ Turn the protective cap **6** so that the **ON/OFF** button **11** becomes accessible.
- ▷ Press the **ON/OFF** button **11**, to switch the radio microphone on.

The red LED **10** lights up. The display **5** indicates the device name and then switches to the standard display.

## Operation

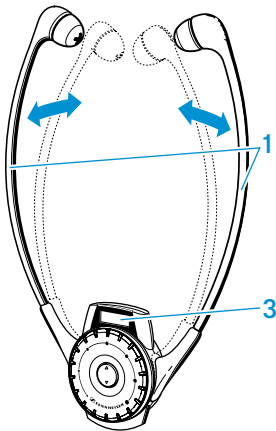
To switch the radio microphone off:

- ▷ Press and hold the **ON/OFF** button **11** until „OFF“ appears on the display. The display **5** and the red LED **10** go off.



## Automatically switching the HDE 2020-D-II on/off

The receiver automatically switches on when you pull the earbows **1** apart. The display **3** switches on.




When you release the earbows, the receiver switches to standby mode (audio deactivated) and then switches off after 2 minutes.

## Switching the EK 2020-D-II on/off

You can connect an induction loop or any pair of headphones with a 3.5 mm mono or stereo jack plug to the headphone socket **6** of the EK 2020-D-II. The headphone impedance must be 32  $\Omega$  or higher.


- ▷ Connect the 3.5 mm jack plug of your headphones to the headphone socket of the EK 2020-D-II.

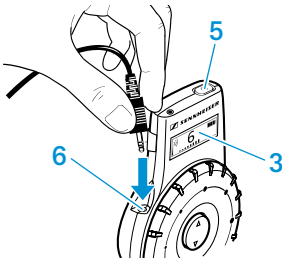
To switch the receiver on:

- ▷ Briefly press the **ON/OFF** button **5** .
- The display **3** switches on.

To switch the receiver off:


- ▷ Press the button **5**  for 3 seconds.

-  When you unplug the headphones from the receiver or switch off the transmitter, the receiver automatically switches off after 5 minutes.




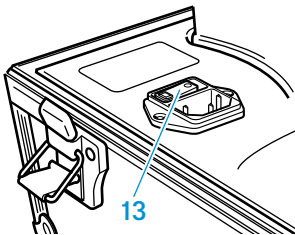
## Switching the charging case on/off

To switch the charging case on:

- ▷ Set the main switch **13** to position „I“.
- The LED **POWER 6**  lights up.

To switch the charging case off:

- ▷ Set the mains switch **13** to position „0“.
- The LED **POWER 6**  goes off.



**Note:** When not using the charging case for extended periods of time, switch it off and disconnect it from the mains by pulling out the mains connector from the wall socket.

## Switching the charger on/off

---

### CAUTION


#### HIGH SWITCH-ON VOLTAGE CAN BLOW THE FUSE!

If you switch on more than three chargers at the same time, you can blow the fuse due to the high switch-on voltage!

- ▷ Only switch on a maximum of three chargers at the same time, e.g. via a switchable multi-outlet power strip.
- 


To switch the charger on:

- ▷ Set the mains switch **7** to position „I“.


The red LED **POWER 6**  lights up. The rechargeable batteries of the receivers in the charger are recharged. The “Conference Control” software detects the charger in the network.

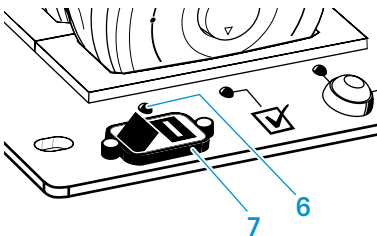
To switch the charger off:

- ▷ Set the mains switch **7** to position „0“.

The red LED **POWER 6**  goes off. The charger is disconnected from the mains. The rechargeable batteries of the receivers in the charger are no longer recharged. The “Conference Control” software does not detect the charger in the network.

If you do not use the charger for extended periods of time:

- ▷ Disconnect the charger for the mains by
- ▷ setting the mains switch **7** to position „0“ or pulling out the mains connector from the wall socket.
- ▷ The red LED **POWER 6**  goes off.



## Adjusting the volume on the receiver

### CAUTION

#### DANGER OF HEARING DAMAGE!

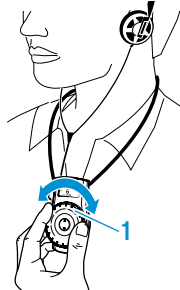
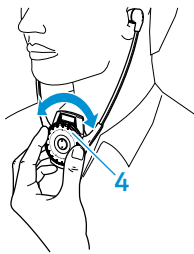
Listening at high volume levels for long periods can lead to permanent hearing defects.

▷ Adjust the volume to a low level before using the receiver.



▷ Use

- the volume control **4** of the HDE 2020-D-II or
  - the volume control **1** of the EK 2020-D-II
- to adjust the volume so that you can hear the speaker's voice loud and clear.



**Note:** The volume control **4** or **1** has no end stop, i. e. you can turn it endlessly to the left or right.

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COMPLIANCE

## Charging the rechargeable batteries

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### CAUTION

- ▷ Only use the charging case for charging the SK 2020-D bodypack transmitter, the HDE 2020-D-II and EK 2020-D-II receivers and the BA 2015 accupack.
  - ▷ Never try to charge other rechargeable batteries or non-rechargeable batteries!
- 

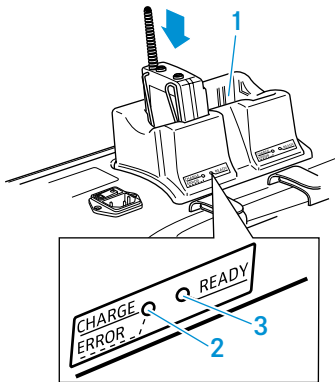
### Charging the accupack in the bodypack transmitter

To charge the bodypack transmitter in the EZL 2020-20 L charging case:

- ▷ Place the transmitter with the accupack inserted into the charging compartment for accupack/bodypack transmitter **1**.

When placed into a charging compartment, the bodypack transmitter automatically switches off. The red LED **CHARGE/ERROR 2** of the charging compartment lights up.

After the accupack has been fully charged, the green LED **READY 3** lights up.



### Notes:

- Charging a completely discharged accupack takes approx. 3½ hours at room temperature.
- Alternatively, you can remove the accupack from the bodypack transmitter and insert it into the charging compartment for accupack/bodypack transmitter **1** as described in the following section.
- The charging case has no error indication like the one on the L 2015 charger (“red flashing LED”).

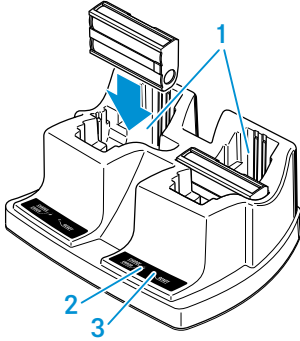
## Charging the BA 2015 accupack

To charge the accupack of the radio microphone or bodypack transmitter:

- ▷ Remove the accupack as described on page 27 or page 29.
- ▷ Place the accupack into the charging compartment for accupack/bodypack transmitter **1**.

The red LED **CHARGE/ERROR 2** of the charging compartment lights up.

After the accupack has been fully charged, the green **READY 3** lights up.



### Notes:

- Charging a completely discharged accupack takes approx. 3½ hours at room temperature. It is normal for the accupacks to get hot during charging.
- However, the charging process may take longer if:
  - the accupack is deep-discharged and first has to be reconditioned by a deep discharge recovery charge,
  - the ambient temperature is close to or over 40°C, since, in order to protect the accupack, the charging process will be interrupted until the temperature has dropped to a safe level.
- For safety reasons, each charging process will be interrupted after 4 hours.
- When not using the BA 2015 accupack for extended periods of time, charge it about every three to six months.

## Charging the receivers' built-in rechargeable batteries

- ▷ Place the receiver into one of the charging compartments for receivers **5/10** (light blue in the diagram).
- The LED **2** of the HDE 2020-D-II or
- the LED **4** of the EK 2020-D-II lights up (see table).

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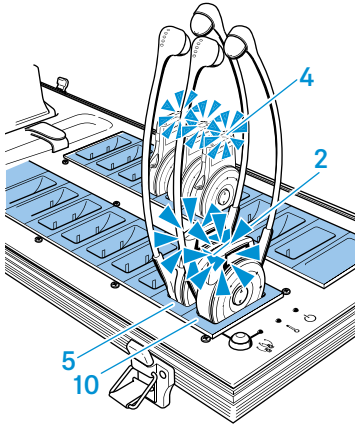
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COMPLIANCE

## Operation



LED color	Meaning
red	The built-in rechargeable battery is being charged.
green	The built-in rechargeable battery is fully charged.
red (flashing)	The temperature of the built-in rechargeable battery is over 40 °C or below 3 °C.
yellow/orange	The built-in rechargeable battery is defective. Interrupt the charging process and contact your Sennheiser Service.

### Notes:

- Charging a completely discharged rechargeable battery of the HDE 2020-D-II takes approx. 2½ hours at room temperature.
- Charging a completely discharged rechargeable battery of the EK 2020-D-II takes approx. 5 hours at room temperature.
- However, the charging process may take longer if:
  - the rechargeable battery is deep discharged and first has to be reconditioned by a deep discharge recovery charge,
  - the temperature of the built-in rechargeable battery is over 40 °C or below 3 °C, since, in order to protect the rechargeable battery, the charging process will be interrupted until the temperature is again within the permissible range (the LED 2 of the HDE 2020-D-II or the LED 4 of the EK 2020-D flashes red).
- An additional temperature protection prevents overheating inside the charging case. If the temperature inside the charging case exceeds safety limits, the charging process will be interrupted and will only be restarted when the charging case has cooled down.
- When not using the receivers for extended periods of time, charge them about every six months in order to prevent deep discharge damage to the rechargeable batteries.

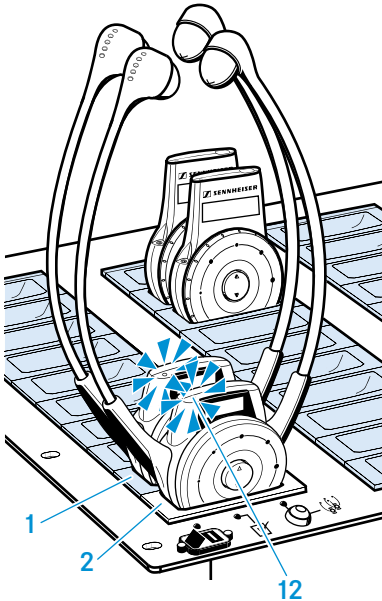
## Charging the receiver rechargeable batteries

### CAUTION

#### DANGER OF DAMAGE TO THE RECEIVERS DUE TO OVERHEATING!

The receivers' built-in rechargeable batteries can get very hot during charging and thus be damaged!

- ▷ Only use the charger for charging the rechargeable batteries of the HDE 2020-D-II and EK 2020-D-II receivers. For more information on the HDE 2020-D-II and EK 2020-D-II receivers with their built-in Lithium-Polymer rechargeable batteries, refer to the detailed instruction manual.
  - ▷ Never try to charge other rechargeable batteries or non-rechargeable batteries in the charger!
- 
- ▷ Place the receiver into any charging compartment. The LED **12** on the receiver indicates the charge status.



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## Operation

<b>LED 12</b>	<b>Meaning</b>
lights up red	The rechargeable battery is being charged.
lights up green	The rechargeable battery is fully charged.
flashes red	The temperature of the rechargeable battery is below 3 °C or over 40 °C. The charging process will be interrupted until the temperature of the rechargeable battery is again between 3 °C and 40 °C.
lights up orange	The rechargeable battery is defective. Interrupt the charging process and contact your Sennheiser service partner.
is off	The receiver is not placed correctly into the charging compartment.

Charging time of a completely discharged rechargeable battery at room temperature:

<b>Receiver</b>	<b>Charging time</b>
HDE 2020-D-II	approx. 2.5 hours
EK 2020-D-II	approx. 5 hours

The charging process may take longer if:

- the rechargeable battery is deep discharged and first has to be reconditioned by a deep discharge recovery charge,
- the temperature of the built-in rechargeable battery is below 3 °C or over 40 °C, since, in order to protect the rechargeable battery, the charging process will be interrupted until the temperature is again within the permissible range and the LED 12 lights up,
- the additional temperature protection of the charger interrupts the charging process until the charger has cooled down.

## Setting a channel

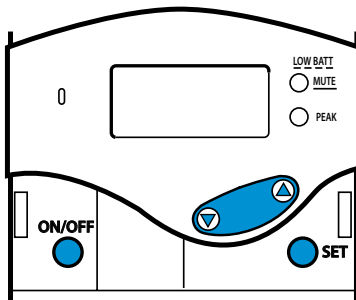
To set the complete system to a certain channel, proceed as follows:

- ▷ Set the bodypack transmitter/radio microphone to the desired channel (see next section).
- ▷ Set one of the receivers to the same channel (see „Setting the channel on the receiver“ on page 48).
- ▷ Automatically set all other receivers to the same channel using the channel copy function (see „Setting the receiver channel(s) using the channel copy function EZL 2020-20 L/L 2021-40“ on page 49).

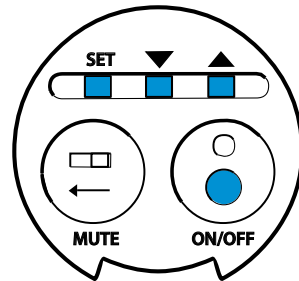
### Setting the channel on the bodypack transmitter/ radio microphone

To set the bodypack transmitter or the radio microphone to the desired channel, use the operating menu of the device. An overview of the operating menus is given from page 60 onwards.

- ▷ Make sure that the lock mode is deactivated (see „Activating/deactivating the lock mode“ on page 57).



Bodypack transmitter



Radio microphone

- ▷ Press the **SET** button.

The operating menu appears and the first menu item „CHAN“ flashes on the display.

- ▷ Press the **SET** button.

The current channel flashes on the display.

- ▷ Press ▲/▼ to change the channel.

If you press ▲, the display jumps to the next channel; if you press ▼, the display jumps to the previous channel.

By pressing and holding the ▲/▼ buttons, the display cycles continuously (repeat function).

## Operation

- ▷ Press the **SET** button to permanently store the selected channel.  
„**STORED**“ briefly appears on the display. The bodypack transmitter or the radio microphone now transmits on the selected channel. The last menu item selected is shown on the display.

To exit the operating menu:

- ▷ Use **▲/▼** to select the „**EXIT**“ menu item and press the **SET** button.  
The standard display is shown.

Or:

- ▷ Press and hold the **ON/OFF** button until the standard display is shown.

## Setting the channel on the receiver

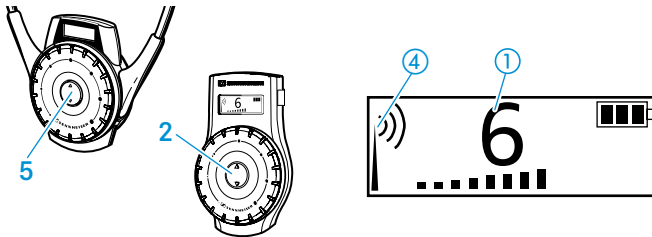
In order for the receiver to receive the signal from the bodypack transmitter or radio microphone, it has to be set to the **same channel**.

To manually set the receiver channel:

- ▷ Press
  - the channel selection button **▲/▼ 5** of the HDE 2020-D-II or
  - the channel selection button **▲/▼ 2** of the EK 2020-D-II.

The channel changes. The selected channel is shown on the channel display ①.

If the bodypack transmitter or radio microphone is transmitting on this channel, the RF signal indication ④ indicates the field strength of the received RF signal.



## Setting the receiver channel(s) using the channel copy function EZL 2020-20 L/L 2021-40

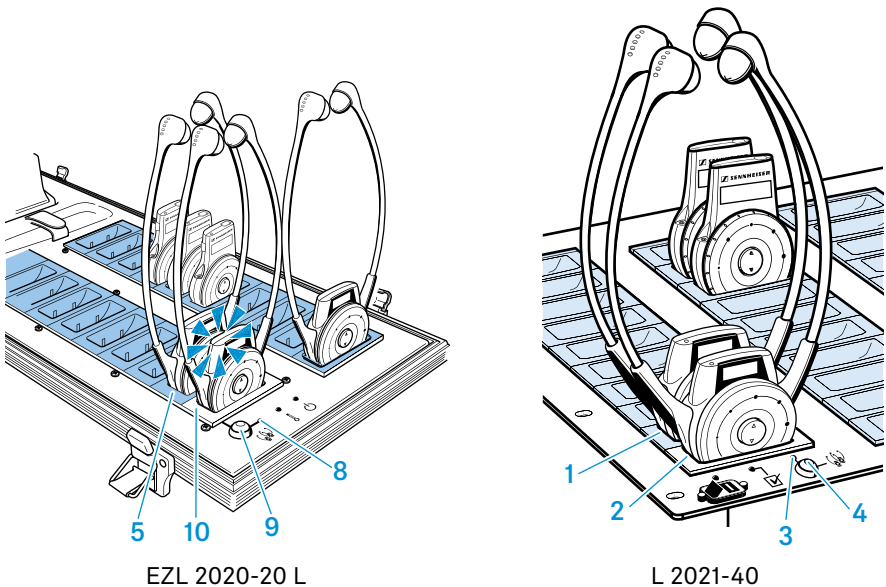
The channel copy function lets you simultaneously set a maximum of 19 receivers in the charging case/charger to the same channel. This is achieved by copying the current channel of the receiver placed into the charging compartment with channel copy function (master) 10/2 to all other receivers in the charging case/charger.

- ▷ Place all receivers which are to be set to the same channel into the charging compartments for receivers (slaves, light blue in the diagram) 5/1.
- ▷ Switch on the receiver whose channel you want to copy.
- ▷ Place this receiver into the charging compartment with channel copy function (master) 10/2.

The LED **COPY AVAILABLE** 8/3 lights up green as long as the channel copy function is available.

- ▷ Press the **COPY** button 9/4 to start the channel copy function.

The displays of all receivers which are successfully set to the same channel light up.



EZL 2020-20 L

L 2021-40

### Notes:

- If you do not press the **COPY** button 9/4 the receiver placed into the charging compartment with channel copy function (master) 10/2 will automatically switch off after approx. 2 minutes.
- If the receivers' built-in rechargeable batteries are not discharged, you can use the channel copy function even when the charging case ELZ 2020-20 L is not connected to the mains.

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## Operation

### Using several Tourguide systems simultaneously

If you are using the Tourguide System 2020-D to run several guided tours simultaneously, the systems could interfere with one another. To prevent this happening, you have to set the systems to different channels (a system consists of one bodypack transmitter or one radio microphone and any number of receivers).

### Configuring L 2021-40 via a PC

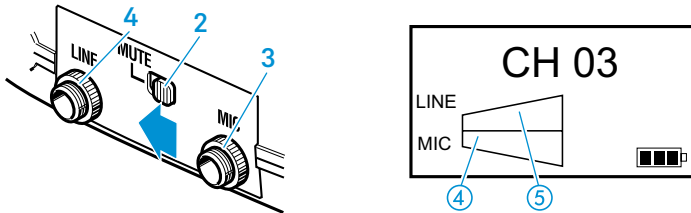
The “Conference Control” software offers additional possibilities to configure the receivers and to display the configurations in detail. The “Conference Control” software and the corresponding instruction manual are included on the supplied CD.

## Muting the devices

### Muting the bodypack transmitter

- ▷ Slide the **MUTE** switch **2** to the left, to „MUTE“.

The red LED **LOW BATT/MUTE 7** lights up permanently. The **MIC** level display **④** no longer shows any deflection. The bodypack transmitter's microphone input is muted.



**Note:** The muting function (**MUTE**) mutes the microphone input **3** but not the line input **4**. This function enables a pre-recorded track to be played through the line input without being disturbed by the tour guide's microphone. When the track has finished, the guide can un-mute the microphone and continue talking.

To deactivate the muting function:

- ▷ Slide the **MUTE** switch **2** back to the right.

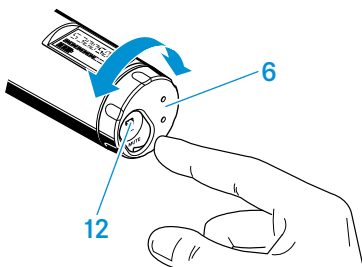
The red LED **LOW BATT/MUTE 7** goes off. The **MIC** level display **④** and the **LINE** level display **⑤** indicate the current levels.

### Muting the radio microphone

- ▷ Turn the protective cap **6** so that the **MUTE** switch **12** becomes accessible.
  - ▷ Slide the **MUTE** switch **12** in the direction of the arrow.
- „MUTE“ appears on the display of the radio microphone. After 5 minutes, „CH OFF“ appears on the display (see „Display of the energy saving mode“ on page 15).

To deactivate the muting function:

- ▷ Slide the **MUTE** switch **12** back in order to transmit the audio signal again.



## Special bodypack transmitter/radio microphone settings

The following special settings can only be made via the bodypack transmitter's/radio microphone's operating menu. An overview of this operating menu is given from page 60 onwards.

### Switching the bodypack transmitter's line input on/off

You can connect an audio source such as a CD player, MP3 player, etc. to the bodypack transmitter's line input. If you have connected an audio source, you then have to switch on the line input as follows:

- ▷ Press the **SET** button **10**.

The operating menu appears and the first menu item „**CHAN**“ flashes on the display.

- ▷ Repeatedly press the **▲/▼** rocker button **9** in the **▼** direction until „**LINE**“ flashes in the display.

- ▷ Press the **SET** button **10**.

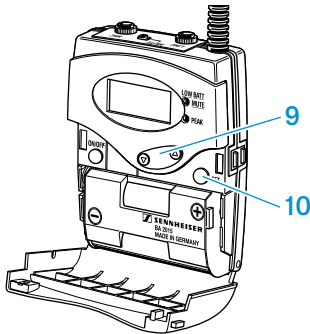
If the line input is switched off, „**LINE.OFF**“ flashes on the display; if the line input is switched on, „**LINE.ON**“ flashes on the display.

- ▷ Press the **▲/▼** rocker button **9** to change the setting.

- ▷ Press the **SET** button **10** to permanently store the setting.

„**STORED**“ briefly appears on the display.

- ▷ Adjust the sensitivity of the line input to match the connected audio source as described in the following section.



## Changing the sensitivity of the bodypack transmitter's line input

To adjust the sensitivity of the line input to match the connected audio source:

- ▷ Make sure that the line input is switched on (see previous section).
- ▷ Connect the external audio source, switch it on and start playback.
- ▷ Press the **SET** button **10**.

The operating menu appears and the first menu item „**CHAN**“ flashes on the display.

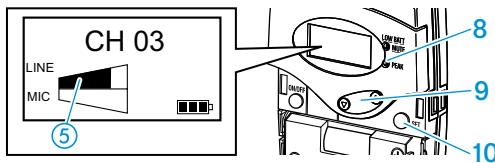
- ▷ Repeatedly press the **▲/▼** rocker button **9** until „**SENSIT**“ flashes on the display and the **LINE** level display **5** appears.
- ▷ Press the **SET** button **10**.

The current input sensitivity and the **LINE** level display **5** appear on the display.

- ▷ Press the **▲/▼** rocker button **9** to change the input sensitivity so that the **LINE** level display **5** shows full deflection during the loudest passages, but the yellow LED **PEAK 8** does not light up permanently.

- ▷ Press the **SET** button **10** to permanently store the setting.

„**STORED**“ briefly appears on the display, indicating that the sensitivity of the line input has been stored.



## Changing the sensitivity of the bodypack transmitter's microphone input

To adjust the sensitivity of the microphone input to match the connected microphone:

- ▷ Connect the microphone, position it correctly (refer to the microphone's instruction manual) and speak into the microphone as usual.
- ▷ Press the **SET** button **10**.

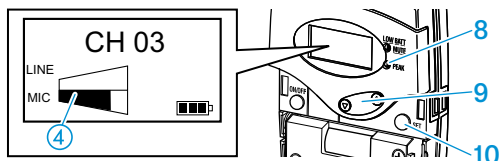
The operating menu appears and the first menu item „**CHAN**“ flashes on the display.

- ▷ Repeatedly press the **▲/▼** rocker button **9** until „**SENSIT**“ flashes on the display and the **MIC** Level display **4** appears.
- ▷ Press the **SET** button **10**.

## Operation

The current input sensitivity and the MIC level display ④ appear on the display.

- ▷ Press the ▲/▼ rocker button 9 to change the input sensitivity so that the MIC level display ④ shows full deflection during the loudest passages, but the yellow LED PEAK 8 does not light up permanently.
- ▷ Press the SET button 10 to permanently store the setting.  
„STORED“ briefly appears on the display, indicating that the sensitivity of the microphone input has been stored.



## Adjusting the radio microphone's input sensitivity

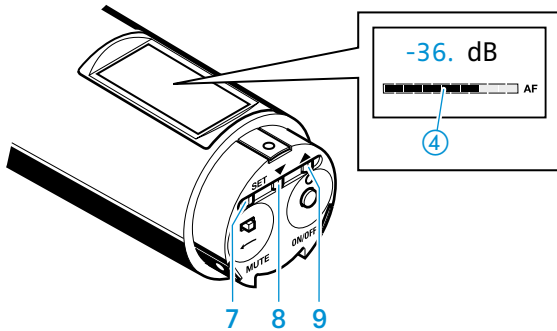
The input sensitivity is adjusted too high when close talking distances or speakers with loud voices cause overmodulation in the transmission link. When the audio input level is excessively high, the audio level display (AF) ④ shows full deflection.

If, on the other hand, the input sensitivity is adjusted **too low**, the transmission link will be undermodulated, which would result in a signal with high background noise.

The input sensitivity is **correctly** adjusted when the audio level display (AF) only shows full deflection only during the loudest passages.

To adjust the sensitivity of the radio microphone:

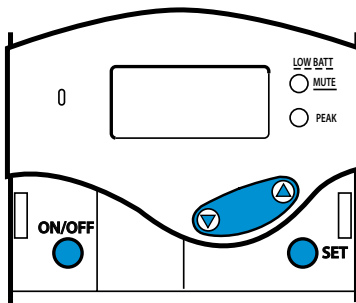
- ▷ Press the SET button 7.  
The operating menu appears and the first menu item „CHAN“ flashes on the display.
- ▷ Repeatedly press the ▲/▼ rocker buttons 8/9 until „SENSIT“ flashes on the display and the audio level display ④ appears.
- ▷ Press the SET button 7.  
The current input sensitivity and the audio level display ④ appears on the display.
- ▷ Press the ▲/▼ buttons 8/9 to change the setting so that the audio level ④ shows full deflection only during the loudest passages.
- ▷ Press the SET button 7 to permanently store the setting.  
„STORED“ briefly appears on the display, indicating that the input sensitivity of the radio microphone has been stored.



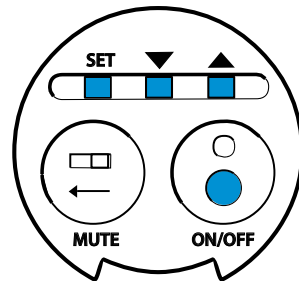
The following figures are a guide to the best settings:

- Presentation: -24 to -12 dB
- Interview: -12 to 0 dB

### Displaying the transmission frequency of the bodypack transmitter/radio microphone



Bodypack transmitter



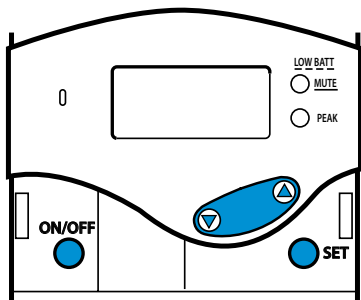
Radio microphone

To display the transmission frequency assigned to the current channel:

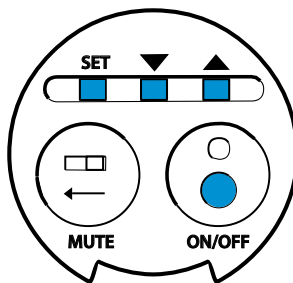
- ▷ Press the **SET** button.  
The operating menu appears and the first menu item „CHAN“ flashes on the display.
- ▷ Repeatedly press **▲/▼** until „FREQ“ flashes on the display.
- ▷ Press the **SET** button.  
The transmission frequency assigned to the current channel appears on the display. You cannot change this transmission frequency.
- ▷ Press the **ON/OFF** button or the **SET**, button to return to the operating menu.

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## Loading the factory-preset default settings



Bodypack transmitter



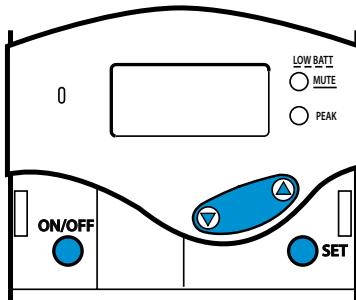
Radio microphone

To load the factory-preset default settings of the bodypack transmitter/radio microphone:

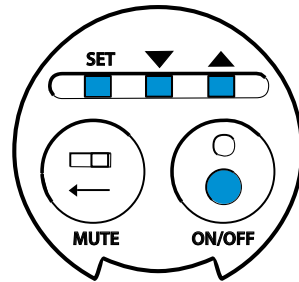
- ▷ Press the **SET** button.  
The operating menu appears and the first menu item “**CHAN**” flashes on the display.
- ▷ Repeatedly press **▲/▼** until „**RESET**“ flashes on the display.
- ▷ Press the **SET** button.  
„**RST.OK**“ flashes on the display.
- ▷ Press the **SET** button to load the factory-preset default settings.  
„**DONE**“ briefly appears on the display. The bodypack transmitter/radio microphone is reset to the following factory-preset default settings:
  - Channel: 1
  - Line input: switched off (bodypack transmitter only)
  - Input sensitivity
    - Line input: -24 dB (bodypack transmitter only)
    - Microphone input: -12 dB
  - Lock mode: deactivated
  - Infra-red service interface: deactivated

## Activating/deactivating the lock mode

The lock mode prevents the bodypack transmitter/radio microphone from being accidentally programmed or switched off during operation.



Bodypack transmitter



Radio microphone

To **activate** the lock mode:

- ▷ Press the **SET** button.

The operating menu appears and the first menu item “CHAN” flashes on the display.

- ▷ Repeatedly press ▲/▼ until „LOCK“ appears on the display.

- ▷ Press the **SET** button.

„LOC.OFF“ flashes on the display.

- ▷ Press ▲/▼.

„LOC.ON“ flashes on the display.

- ▷ Press the **SET** button to activate the lock mode.

„STORED“ briefly appears on the display, indicating that the lock mode has been activated. The lock mode icon is displayed on the standard display.



To **deactivate** the lock mode:

- ▷ Press the **SET** button.

„LOC.ON“ flashes on the display.

- ▷ Press ▲/▼.

„LOC.OFF“ flashes on the display.

- ▷ Press the **SET** button to deactivate the lock mode.

„STORED“ briefly appears on the display, indicating that the lock mode has been deactivated. The lock mode icon (②) is no longer displayed on the standard display.

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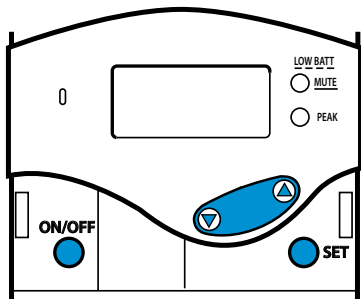
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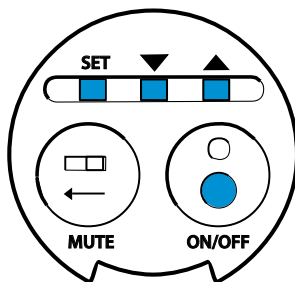
COMPLIANCE

## Operation

### Displaying the version number of the bodypack transmitter/ radio microphone



Bodypack transmitter



Radio microphone

To display the version number of the operating system installed:

- ▷ Press the **SET** button.

The operating menu appears and the first menu item “**CHAN**” flashes on the display.

- ▷ Repeatedly press **▲/▼** until „**SERVIC**“ flashes on the display.

- ▷ Press the **SET** button.

The version number is displayed.

V 1.001

## The operating menu of the bodypack transmitter/ radio microphone

The bodypack transmitter's/radio microphone's operating menu contains the following menu items:

Menu item	Meaning
CHAN	Selects a channel (see page 47)
LINE*	Switches the line input on/off (see page 52)
SENSIT (LINE)*	Changes the sensitivity of the line input (see page 53)
SENSIT (MIC)	Changes the sensitivity of the microphone input (see page 53)
FREQ	Displays the frequency of the current channel (see page 55)
RESET	Loads the factory-preset default settings (see page 56)
LOCK	Activates/deactivates the lock mode (see page 57)
SERVIC	Displays the version number (see page 57)
EXIT	Exits the operating menu (see page 48)

\* only available with bodypack transmitter

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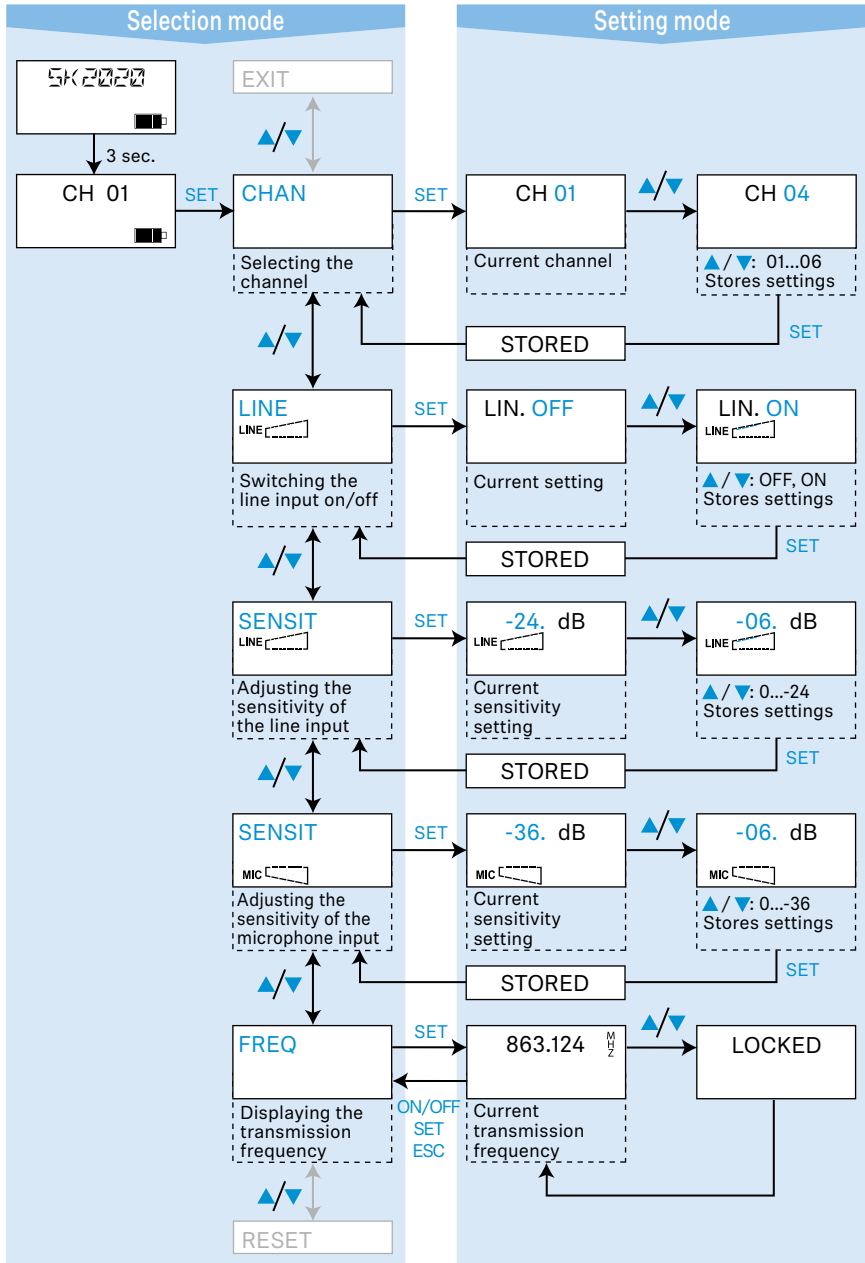
ES

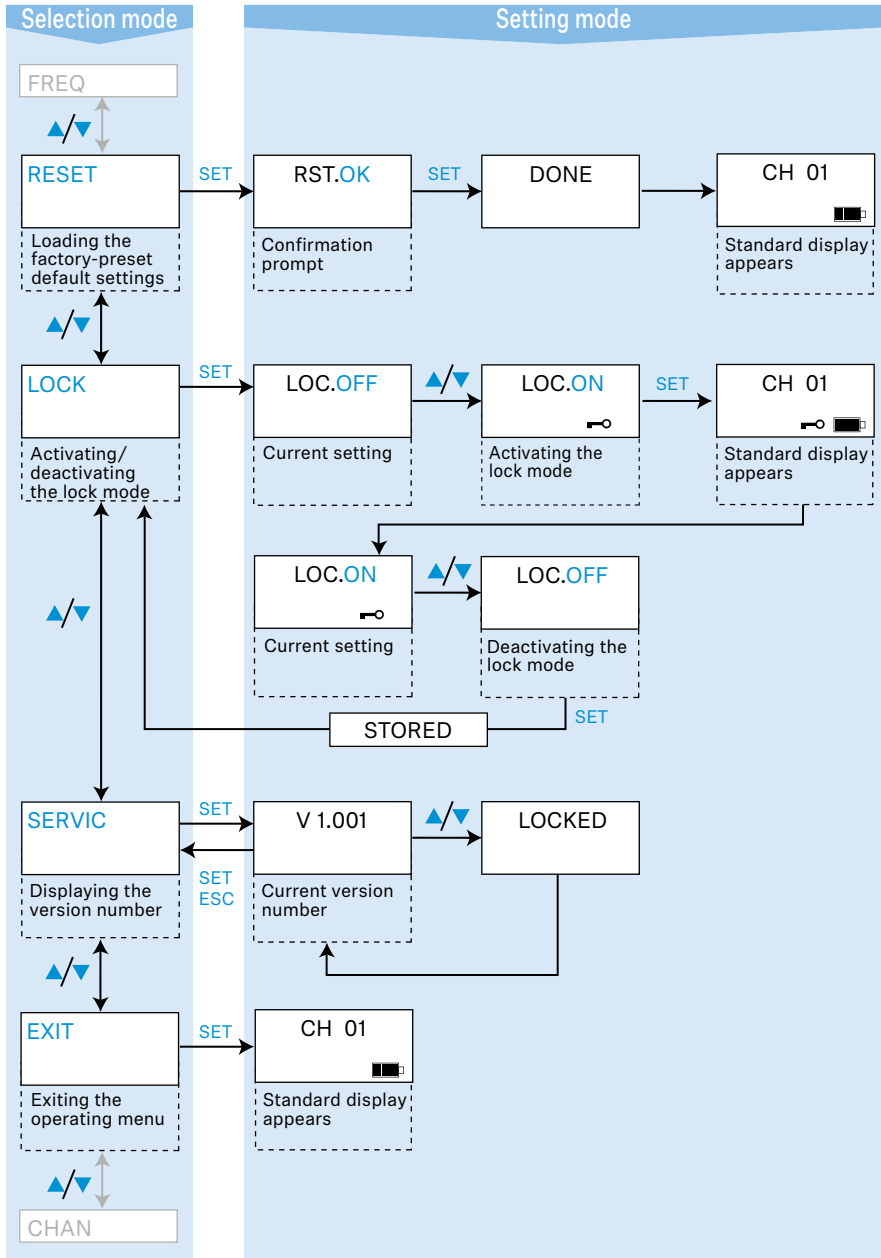
NL

COMPLIANCE

# Overview of the bodypack transmitter's operating menu

Use the **ON/OFF** button to cancel your entry in all areas of the operating menu.

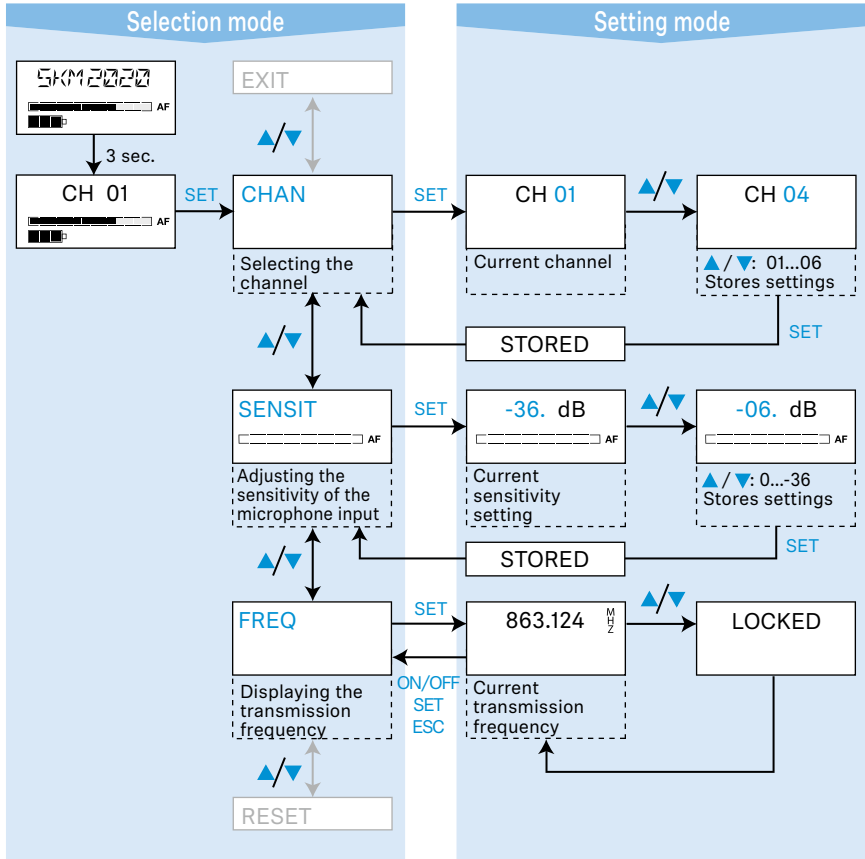


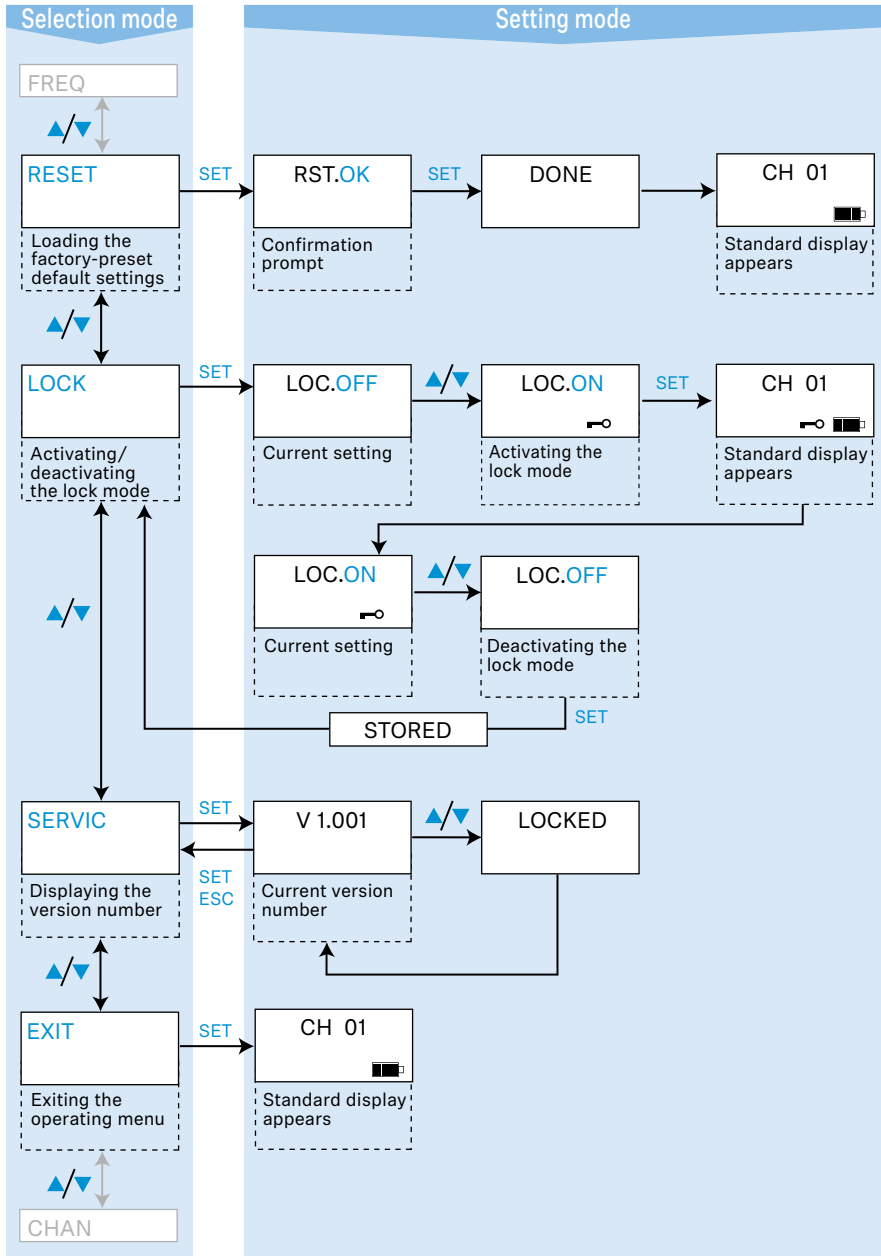


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# Overview of the radio microphone's operating menu

Use the **ON/OFF** button to cancel your entry in all areas of the operating menu.





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## Care and maintenance

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### CAUTION

#### LIQUIDS CAN DAMAGE THE ELECTRONICS OF THE DEVICES!

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

▷ Keep all liquids away from the devices.

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- ▷ Before cleaning, make sure that all devices are switched off and unplugged from the power supply.
- ▷ Only clean the plastic surface of the L 2021-40 charger using a dust-free and dry cloth.
- ▷ Use only a soft and dry cloth to clean the devices.

### Cleaning the earbuds of the HDE 2020-D-II

- ▷ Carefully pull the earbuds off the receiver.
- ▷ Clean the earbuds e. g. with warm, soapy water and rinse them well.
- ▷ Dry the earbuds before putting them back on the receiver.



**Note:** For reasons of hygiene, you should replace the earbuds from time to time (see „Accessories“ on page 69).

## If a problem occurs...

In the following table, the term “transmitter” refers to both “bodypack transmitter” and “radio microphone”.

Problem	Possible cause	Possible solution
No operation indication on the transmitter	Batteries are flat or accupack is flat	Replace the batteries or recharge the accupack (see page 43)
No radio waves on the receiver display	No RF signal, transmitter and receiver are not on the same channel	Set transmitter and receiver to the same channel (see page 47)
	No RF signal, transmitter is out of range	Reduce the distance between receiver and transmitter
RF signal available, no audio signal, the red LED <b>LOW BATT/MUTE 7</b> lights up on the transmitter	Transmitter is in energy saving mode (see page 15)	Check the signal source
	Transmitter is muted ( <b>MUTE</b> )	Deactivate the muting function (see page 51)
Audio signal is distorted	Transmitter sensitivity is adjusted too high	Change the sensitivity of the microphone input (see page 53) or line input (see page 53)
Operating time of the transmitter is drastically reduced	Normal aging or damage of BA 2015 accupack	Replace the BA 2015 accupack
Operating time of the receivers is drastically reduced	Normal aging or damage of rechargeable batteries	Have the rechargeable batteries replaced by a Sennheiser Service Department
Occasional drop outs in the audio signal	Distance to the transmitter is too great	Reduce the distance to the transmitter
	Interference is being received from an external source	Change the system to a different channel
	Interference is being received from a second transmitter	Change the transmitters to different channels

If a problem occurs that is not listed in the above table or if the problem cannot be solved with the proposed solutions, please contact your local Sennheiser agent for assistance.

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# Specifications

## SK 2020-D bodypack transmitter (Art. No.: 500548)

## SK 2020-D-US bodypack transmitter (Art. No.: 500549)

Modulation	2 FSK (46K0F1D)
Frequency range	863 – 865 MHz
Frequency range (US)	926 – 928 MHz
Channels	6
RF output power	10 mW
RF output power (US)	max. 50 mV/m (distance: 3 m)
AF frequency response	100 – 7,000 Hz
Max. input voltage at mic/line input	microphone: 650 mV <sub>eff</sub> (sensitivity –36 dB) line: 2 V <sub>eff</sub> (sensitivity –24 dB)
Operating time	typ. 8 h
Power supply	BA 2015 accupack, 2.4 V or 2 AA size batteries, 1.5 V
Temperature range	0 – 50 °C
Dimensions	approx. 82 x 64 x 24 mm
Weight	approx. 160 g (incl. BA 2015 accupack)

## SKM 2020-D radio microphone (Art. No.: 500894)

## SKM 2020-D-US radio microphone (Art. No.: 500895)

Modulation	2 FSK (46K0F1D)
Frequency range	863 – 865 MHz
Frequency range (US)	926 – 928 MHz
Channels	6
RF output power	10 mW
RF output power (US)	max. 50 mV/m (distance: 3 m)
AF frequency response	100 – 7,000 Hz
Operating time	typ. 8 h
Power supply	BA 2015 accupack, 2.4 V or 2 AA size batteries, 1.5 V
Temperature range	0 – 50 °C
Dimensions	approx. Ø 50 x 225 mm
Weight	approx. 422 g (incl. BA 2015 accupack)

[HDE 2020-D-II stethoset receiver \(Art. No.: 504796\)](#)

[HDE 2020-D-II-US stethoset receiver \(Art. No.: 504797\)](#)

[EK 2020-D-II receiver \(Art. No.: 504794\)](#)

[EK 2020-D-II-US receiver \(Art. No.: 504795\)](#)

	<b>HDE 2020-D-II</b>	<b>EK 2020-D-II</b>
Modulation	2 FSK	2 FSK
Frequency range	863 – 865 MHz	863 – 865 MHz
Frequency range (US)	926 – 928 MHz	926 – 928 MHz
Channels	Tourguide mode: 6 in parallel Conference mode: 8 in parallel	Tourguide mode: 6 in parallel Conference mode: 8 in parallel
AF frequency response	100 – 7,000 Hz	100 – 7,000 Hz
Headphone output power	–	max. 40 mW/ 32 Ω
Min. headphone impedance	32 Ω	32 Ω
THD at 1 kHz	< 1 %	< 1 %
Operating time	typ. 8 h	typ. 16 h
Power supply	Lithium-Polymer rechargeable battery, 830 mAh	Lithium-Polymer rechargeable battery, 1500 mAh
Temperature range	0 – 50 °C	0 – 50 °C
Dimensions	245 x 125 x 20 mm	98 x 61 x 24 mm
Weight	approx. 73 g	approx. 78 g

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## Specifications

### EZL 2020-20 L charging case (Art. No.: 500542)

Temperature range during charging	0 – 40 °C
Mains voltage	100 – 240 V ~ (50/60 Hz)
Primary power consumption	max. 70 W
Charging voltage for HDE 2020-D-II	typ. 5 V
Charging current per charging compartment for HDE 2020-D-II	typ. 400 mA
Charging time HDE 2020-D-II	approx. 2,5 h
Charging time EK 2020-D-II	approx. 5 h
Charging voltage for SK 2020-D / BA 2015	max. 3.4 V
Charging current per charging compartment for SK 2020-D / BA 2015	typ. 500 mA
Charging time SK 2020-D / BA 2015	approx. 3.5 h
Dimensions	approx. 600 x 270 x 380 mm
Weight (empty)	approx. 8300 g

### L 2021-40 charger

Temperature range during charging	3 – 40 °C
Mains socket	3-pin, protection class I, as per IEC/EN 60320-1
Mains voltage	100 – 240 V ~ (50/60 Hz)
Primary power consumption	max. 150 W
Charging voltage per charging compartment	typ. 5 V
Charging current per charging compartment	max. 400 mA
Charging time for HDE 2020-D-II	approx. 2,5 h
Charging time for EK 2020-D-II	approx. 5 h
Dimensions	approx. 483 x 399 x 172 mm
Weight (empty)	approx. 8800 g

# Accessories

Product name	Product description	Art. No.
HDE 2020-D-II	Stethoset receiver	504796
HDE 2020-D-II-US	Stethoset receiver (US)	504797
	Earbuds for HDE 2020-D-II and HDE 2020-D-II-US (black) stethoset receivers	531435
	Earbuds for HDE 2020-D-II and HDE 2020-D-II-US (transparent) stethoset receivers	520379
EK 2020-D-II	Receiver	504794
EK 2020-D-II-US	Receiver (US)	504795
EZT 3012	Induction loop	504061
SK 2020-D	Bodypack transmitter	500548
SK 2020-D-US	Bodypack transmitter (US)	500549
SKM 2020-D	Radio microphone	500894
SKM 2020-D-US	Radio microphone (US)	500895
EZL 2020-20 L	Charging case	500542
L 2021-40	19" charger rack	502037
BA 2015	Accupack	009950
CL 1	Connecting cable for external audio devices (line input), 52 cm	005022
CL 2	Microphone cable, 1,5 m	004840
ME 2-II	Clip-on microphone, omni-directional	507437
ME 3-II	Headmic, cardioid capsule	506295
ME 4	Clip-on microphone, cardioid capsule	005020
MKE 1-ew	Clip-on microphone, omni-directional	502876
MKE 2-ew Gold	Clip-on microphone, omni-directional	009831
HS 2-ew BK	Headmic, omni-directional, black	508530
HS 2-ew BE	Headmic, omni-directional, beige	508531
SL Headmic 1 SB	Headmic, omni-directional, silver	506904
SL Headmic 1 BK	Headmic, omni-directional, black	506271
SL Headmic 1 BE	Headmic, omni-directional, beige	506272
e 825 S	Cardioid handheld microphone with connecting cable	004511
e 835	Cardioid handheld microphone with connecting cable	004513

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## Accessories

<b>Product name</b>	<b>Product description</b>	<b>Art. No.</b>
e 845	Super-cardioid handheld microphone with connecting cable	004515
L 2015	Quick-charging unit for 2 bodypack transmitter SK 2020-D or 2 BA 2015 batteries	009828
“Conference Control” PC software	Software for monitoring and configuring L 2021-40 chargers and HDE 2020-D-II and EK 2020-D-II receivers	
EU mains cable	Mains cable with EU plug, 1.8 m, black	054324
US mains cable	Mains cable with US plug, 1.8 m, black	054325
UK mains cable	Mains cable with UK plug, 1.8 m, black	057256
EP 01-100	Earpiece headphones	505963
EP 01-140	Earpiece headphones	505964
EP 01-L100	Earpiece headphones	505960
EP 01-R100	Earpiece headphones	505961
EP 01-R140	Earpiece headphones	505962
NP 02-100	Neckband headphones	505967
NP 02-140	Neckband headphones	505968
HP 02-100	Headband headphones	505965
HP 02-140	Headband headphones	505966
SR 2020-D	Transmitter	500550
SR 2020-D-US	Transmitter (US)	500551
SL Interpreter	Interpreter console	506242
GZR 2020	Trolley for EZL 2020-20 L charging case	502191

# Manufacturer declarations

## Warranty

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

For the current warranty conditions, please visit our website at [www.sennheiser.com](http://www.sennheiser.com) or contact your Sennheiser partner.

### FOR AUSTRALIA ONLY

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

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

To make a claim under this warranty, contact

Sennheiser Technical Services and Spare Parts Sales  
c/o Linfox, Gate 3, 1 Fox Lane, Erskine Park, 2759, NSW  
Australia

Phone: (02) 9910 6700, email: [au-service@sennheiser.com](mailto:au-service@sennheiser.com)

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

The Sennheiser International Warranty is provided by Sennheiser Australia Pty Ltd (ABN 68 165 388 312), The Zenith, Tower A, L14, 821 Pacific Highway Chatswood NSW 2067, Australia.

## In compliance with the following requirements

- WEEE Directive (2012/19/EU)
- Battery Directive (2006/66/EC & 2013/56/EU)



### Notes on disposal

The symbol of the crossed-out wheeled bin (imprint available depending on national requirements) on the product, the battery/rechargeable battery (if applicable) and/or the packaging indicates that these products must be disposed of separately at the end of their operational lifetime in accordance with the national legislation. For packaging disposal, please observe the legal regulations on waste segregation applicable in your country.

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## Manufacturer declarations

The separate collection of waste electrical and electronic equipment, batteries/rechargeable batteries (if applicable) and packagings is used to promote the reuse and recycling and to prevent negative effects caused by e.g. potentially hazardous substances contained in these products. Herewith you make an important contribution to the protection of the environment and public health.

### EU Declaration of conformity

- RoHS Directive (2011/65/EU)

Hereby, Sennheiser electronic GmbH & Co. KG declares that the radio equipment type SK 2020-D, SKM 2020-D, HDE 2020-D-II, EK 2020-D-II, EZL 2020-20 L, L 2021-40 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: [www.sennheiser.com/download](http://www.sennheiser.com/download).

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# Compliance

SK 2020-D | SKM 2020-D | HDE 2020-D-II | EK 2020-D-II

## In compliance with


Europe		Radio: EMC: Safety:	ETSI EN 301357 ETSI EN 301489-1/-9 IEC / EN 62368-1
USA		FCC-Part 15	
Canada		RSS-210	

## Certified by


Europe			
USA	SK 2020-D HDE 2020-D-II SKM 2020-D	FCC ID: FCC ID: FCC ID:	DMOTG2020D DMOTG2020D DMOSKM2020D
Canada	SK 2020-D HDE 2020-D-II SKM 2020-D EK 2020 D-II	IC: IC: IC: IC:	2099A-TG2020D 2099A-TG2020D 2099A-SKM2020D 2099A-EK2020D

EZL 2020-20 L | L 2021-40

## In compliance with

Europe		EMC: Safety:	EN 301489-1/-9 EN 60065
USA		FCC 47 CFR 15 subpart B	

## Certified by

Europe			
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