



SKP 2000

Bedienungsanleitung
Instruction manual
Notice d'emploi
Istruzioni per l'uso
Instrucciones de uso
Gebruiksaanwijzing
Manual de instruções
Руководство по эксплуатации
用法説明

Tastensymbole / Button icons / Icônes de touches /
Simboli dei tasti / Símbolos de las teclas / Toetssymbolen /
Símbolos dos botões / Символы кнопок / 按键图标

<div>ON/OFF</div> <div></div>	Taste ON/OFF / ON/OFF button / Touche ON/OFF / Tasto ON/OFF / Tecla ON/OFF / Toets ON/OFF / Botão ON/OFF / Кнопка ON/OFF / 开关键 ON/OFF
<div>ON/OFF</div> <div></div>	ON/OFF drücken / Press the ON/OFF button / Appuyer sur la touche ON/OFF / Premere il tasto di ON/OFF / Pulsar ON/OFF / ON/OFF indrukken / Premir ON/OFF / Нажать ON/OFF / 按 ON/OFF 键
<div>SET</div> <div></div>	Taste SET / SET button / Touche SET / Tasto SET / Tecla SET / Toets SET / Botão SET / Кнопка SET / 设置键 SET
<div>SET</div> <div></div>	SET drücken / Press the SET button / Appuyer sur la touche SET / Premere il tasto di SET / Pulsar SET / SET indrukken / Premir SET / Нажать SET / 按 SET 键
<div>▲</div>	Taste UP / UP button / Touche UP / Tasto UP / Tecla UP / Toets UP / Botão UP / Кнопка UP / 向上键
<div>▲</div>	UP drücken / Press the UP button / Appuyer sur la touche UP / Premere il tasto di UP / Pulsar UP / UP indrukken / Premir UP / Нажать UP / 按向上键
<div>▼</div>	Taste DOWN / DOWN button / Touche DOWN / Tasto DOWN / Tecla DOWN / Toets DOWN / Botão DOWN / Кнопка DOWN / 向下键
<div>▼</div>	DOWN drücken / Press the DOWN button / Appuyer sur la touche DOWN / Premere il tasto di DOWN / Pulsar DOWN / DOWN indrukken / Premir DOWN / Нажать DOWN / 按向下键

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For more detailed information on the individual sections of this instruction manual, visit the SKP 2000 product page on our website at www.sennheiser.com.

Important safety instructions

- Read this instruction manual.
- Keep this instruction manual. Always include this instruction manual when passing the product on to third parties.
- Heed all warnings and follow all instructions in this instruction manual.
- Use only a cloth for cleaning the product.
- Do not place the product near any heat sources such as radiators, stoves, or other devices (including amplifiers) that produce heat.
- Only use attachments/accessories specified by Sennheiser.
- Refer all servicing to qualified service personnel.
Servicing is required if the product has been damaged in any way, liquid has been spilled, objects have fallen inside, the product has been exposed to rain or moisture, does not operate properly or has been dropped.
- **WARNING:** To reduce the risk of short circuits, do not use the product near water and do not expose it to rain or moisture.

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.

Intended use

Intended use of the SKP 2000 plug-on transmitter includes:

- having read these instructions especially the chapter “Important safety instructions”,
- using the product within the operating conditions and limitations described in this instruction manual.

“Improper use” means using the product other than as described in this instruction manual, or under operating conditions which differ from those described herein.

The SKP 2000 plug-on transmitter

This plug-on transmitter is part of the 2000 series. With this series, Sennheiser offers high-quality state-of-the-art RF transmission systems with a high level of operational reliability and ease of use. Transmitters and receivers permit wireless transmission with studio-quality sound.

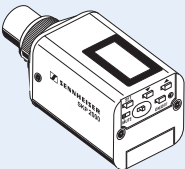
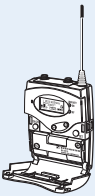
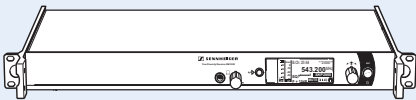

Features of the 2000 series:

- Optimized PLL synthesizer and microprocessor technology
- **HDX** noise reduction system
- Pilot tone squelch control
- Switching bandwidth of up to 75 MHz
- Increased immunity to intermodulation and interferences in multi-channel operation

Areas of application

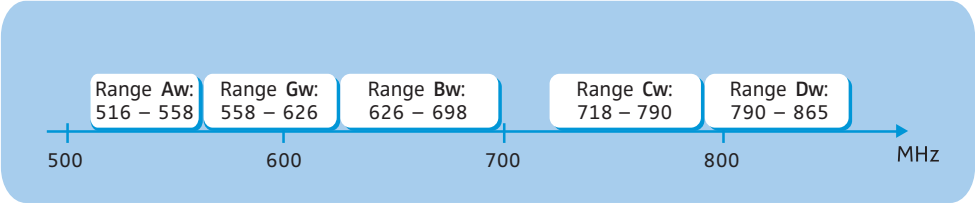
The plug-on transmitter can be combined with the EK 2000 portable receiver and the EM 2000 and EM 2050 rack-mount receivers. These receivers are available in the same UHF frequency ranges and are equipped with the same frequency bank system. This has the advantage that

- a transmission system is ready for immediate use after switch-on,
- several transmission systems can be operated simultaneously on the preset frequencies without causing intermodulation interference.

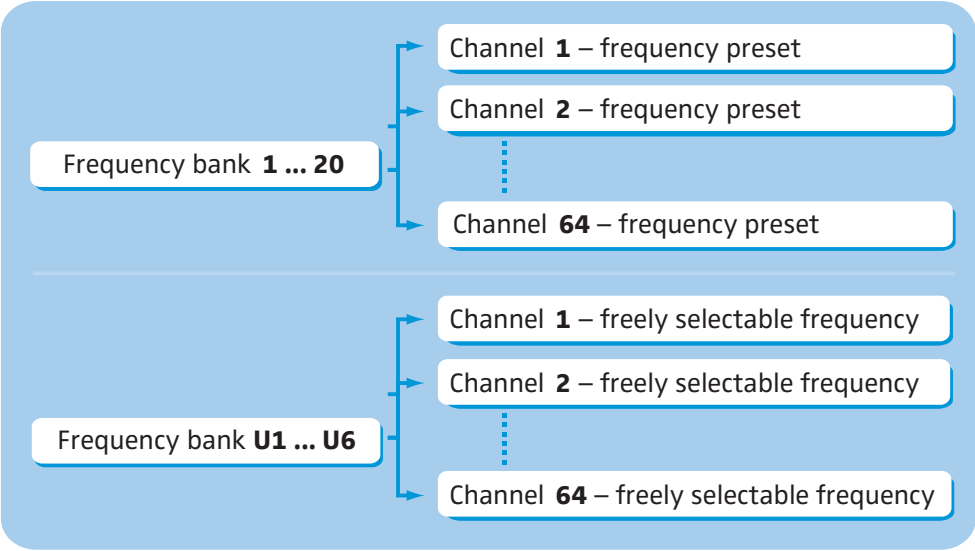
Transmitter	Combinable with ...	Receivers
<div>SKP 2000</div> <div></div>	<div>dynamic and condenser microphones</div> <div>We recommend using Sennheiser microphones.</div>	<div>EK 2000 portable receiver</div> <div></div> <div>EM 2000 receiver</div> <div></div> <div>EM 2050 twin receiver</div> <div></div>

The frequency bank system

The plug-on transmitter is available in 5 UHF frequency ranges with up to 3,000 transmission frequencies per frequency range:



Each frequency range (Aw-Dw, Gw) offers 26 frequency banks with up to 64 channels each:



Each of the channels in the frequency banks “1” to “20” has been factory-preset to a fixed frequency (frequency preset). The factory-preset frequencies within one frequency bank are intermodulation-free. These frequencies cannot be changed.

For an overview of the frequency presets, please refer to the supplied frequency information sheet. Updated versions of the frequency information sheet can be downloaded from the SKP 2000 product page on our website at www.sennheiser.com.

The frequency banks “U1” to “U6” allow you to freely select and store frequencies. It might be that these frequencies are **not** intermodulation-free.

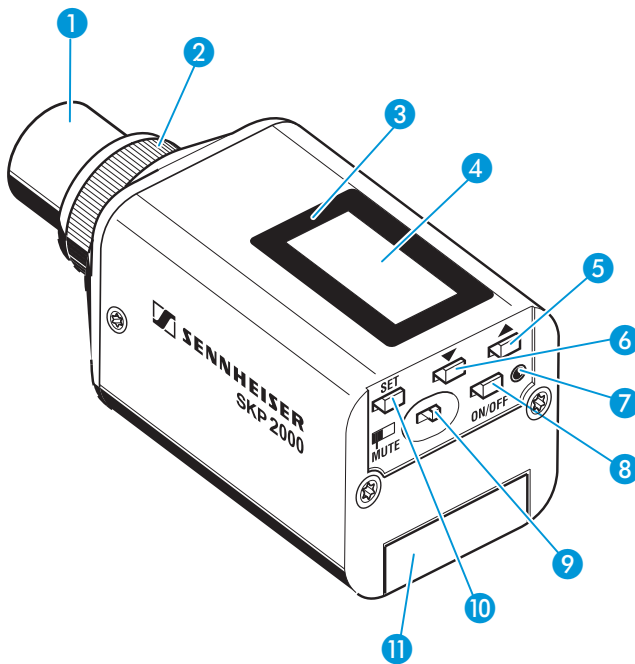
Delivery includes

The packaging contains the following items:

- 1 SKP 2000 plug-on transmitter
- 2 AA size batteries, 1.5 V
- 1 instruction manual
- 1 POP 1 pouch (with belt clip)
- 1 frequency information sheet
- 1 RF power information sheet

Product overview

Overview of the SKP 2000 plug-on transmitter

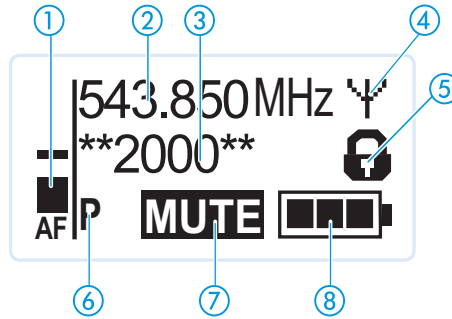







- 1 Microphone input, XLR-3 socket (female, unbalanced)
- 2 Mechanical locking ring of XLR-3 socket
- 3 Infra-red interface
- 4 Display panel, backlit in orange
- 5 UP button (▲)
- 6 DOWN button (▼)
- 7 Operation and battery status indicator, red LED
lit = ON
flashing = LOW BATTERY
- 8 ON/OFF button with ESC function (cancel)
- 9 MUTE switch
- 10 SET button
- 11 Battery compartment cover

Overview of the displays

After switch-on, the plug-on transmitter displays the “Frequency/Name” standard display. For further illustrations and examples of the different standard displays, refer to page 14.

The display backlighting is automatically reduced after approx. 20 seconds.



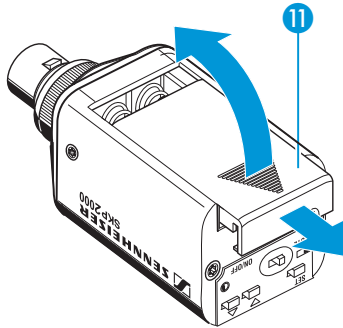
Display	Meaning
① Audio level “AF”	Modulation of the plug-on transmitter with peak hold function
② Frequency	Current transmission frequency
③ Name	User selectable name
④ Transmission icon	RF signal is being transmitted
⑤ Lock mode icon	Lock mode is activated
⑥ “P” (pilot tone)	Pilot tone transmission is activated
⑦ “MUTE”	Microphone input is muted
⑧ Battery status	Charge status:  approx. 100%  approx. 70%  approx. 30%  charge status is critical, the red LOW BATTERY LED ⑦ is flashing: 

Putting the plug-on transmitter into operation

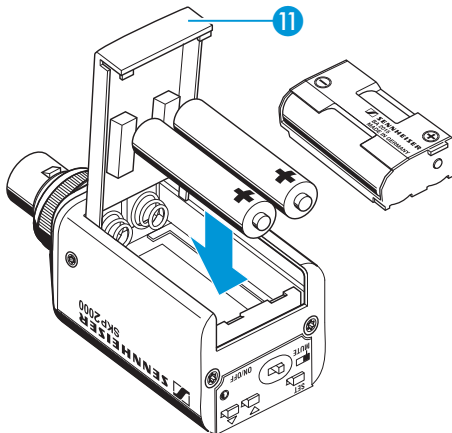
Inserting the batteries/accupack

For powering the diversity receiver, you can either use two 1.5 V AA size batteries or the rechargeable Sennheiser BA 2015 accupack (see "Accessories" on page 21).

- ▶ Slide the battery compartment cover 11 in the direction of the embossed arrow and open the cover 11.



- ▶ Insert the two batteries or the accupack as shown below. Please observe correct polarity when inserting the batteries/accupack.



- ▶ Close the battery compartment.
The battery compartment cover 11 locks into place with an audible click.

Charging the accupack

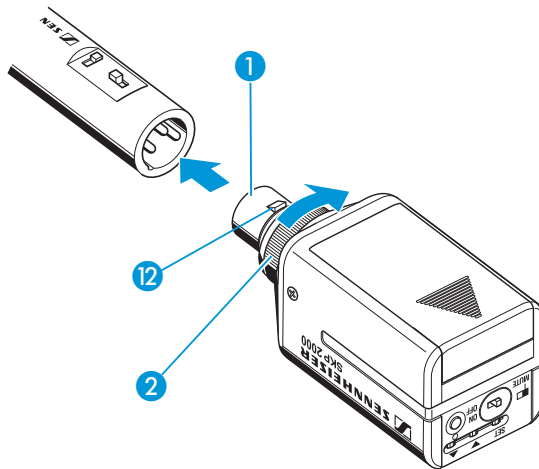
- ▶ Remove the BA 2015 accupack.
- ▶ Insert the BA 2015 accupack into the L 2015 charger (see “Accessories” on page 21).



The L 2015 charger can only charge the BA 2015 accupack. Standard batteries (primary cells) or individual rechargeable battery cells cannot be charged.

Plugging the plug-on transmitter onto a microphone

- ▶ Plug the microphone's XLR-3M socket onto the transmitter's XLR-3F socket ①. Make sure that the latch ② locks into place.



- ▶ Tighten the locking ring ③ in the direction of the arrow.



The transmitter uses the microphone body as an antenna – therefore microphones with a metal casing should be used for best signal transmission.

Using the plug-on transmitter

To establish a transmission link, proceed as follows:

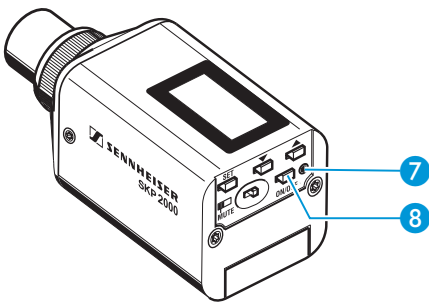
- 1. Switch the receiver on (see the instruction manual of the receiver).
 - 2. Switch the plug-on transmitter on (see next section).
- The transmission link is established and the diversity receiver's RF level display "RF" reacts.



It is vital to observe the notes on frequency selection on page 17.

If you cannot establish a transmission link between plug-on transmitter and receiver, read the chapter "Synchronizing the plug-on transmitter with a receiver" on page 17.

Switching the plug-on transmitter on/off



To switch the plug-on transmitter **on** (online operation):



- ▶ Press the **ON/OFF** button ⑧.

The plug-on transmitter transmits an RF signal. The red **ON LED** ⑦ lights up and the "**Frequency/Name**" standard display appears on the display panel. The transmission icon ④ is displayed.

To switch the plug-on transmitter **on** and to **deactivate the RF signal on switch-on** (offline operation):

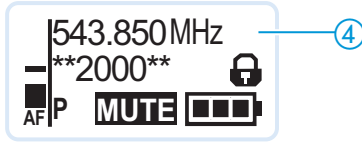


- ▶ Keep the **ON/OFF** button ⑧ pressed until "**RF Mute On?**" appears on the display panel.



- ▶ Press the **SET** button.

The transmission frequency is displayed but the plug-on transmitter does not transmit an RF signal. The transmission icon ④ is not displayed.



Use this function to save battery power or to prepare a plug-on transmitter for use during live operation without causing interference to existing transmission links.

To **activate** the **RF signal**:

ON/OFF



- ▶ Press the **ON/OFF** button.

“**RF Mute Off?**” appears on the display panel.

SET



- ▶ Press the **SET** button.

The transmission icon ④ is displayed again.

To switch the plug-on transmitter **off**:

- ▶ If necessary, deactivate the lock mode (see page 11).

ON/OFF



- ▶ Keep the **ON/OFF** button ⑧ pressed until “**OFF**” appears on the display panel.

The red **ON** LED ⑦ goes off and the display panel turns off.



When in the operating menu, pressing the **ON/OFF** button ⑧ will cancel your entry (ESC function) and return you to the current standard display.

Deactivating the lock mode temporarily

You can activate or deactivate the automatic lock mode via the “**Auto Lock**” menu item (see page 15). If the lock mode is activated, you have to temporarily deactivate it in order to be able to operate the plug-on transmitter:

ON/OFF / SET



- ▶ Press the **SET** button or the **ON/OFF** button.

“**Locked**” appears on the display panel.



- ▶ Press the **UP** button.

“**Unlock?**” appears on the display panel.

Using the plug-on transmitter



- ▶ Press the **SET** button.
The lock mode is temporarily deactivated.

How you are using the plug-on transmitter determines how long the lock mode remains deactivated:

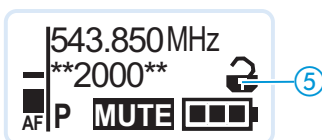
When you are in the operating menu

The lock mode remains deactivated until you exit the operating menu.

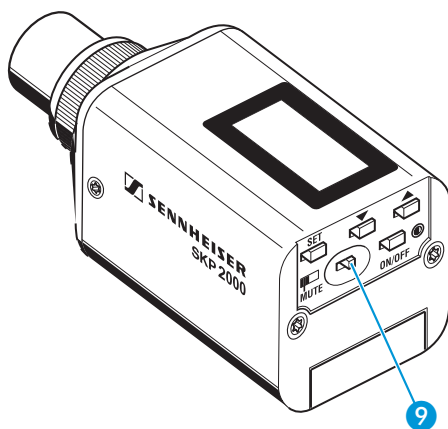
When one of the standard displays is shown

The lock mode is automatically activated after 10 seconds.

The lock mode icon ⑤ flashes prior to the lock mode being activated again.



Muting the audio signal or deactivating the RF signal

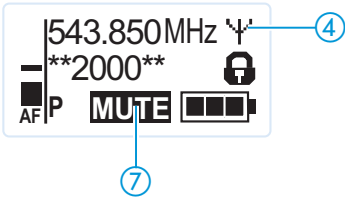


The **MUTE** switch ⑨ allows you to mute the audio signal or to deactivate the RF signal. Via the "**Mute Mode**" menu item, you can set the desired function of the **MUTE** switch ⑨ (see page 15).

Setting	Slide the MUTE switch ⑨ ...	Function
"AF On/Off"	... to the left (position MUTE)	Mutes the audio signal
	... to the right	Unmutes the audio signal
"RF On/Off"	... to the left (position MUTE)	Deactivates the RF signal (offline operation)
	... to the right	Activates the RF signal (online operation)
"Disabled"	No function	

- ▶ From the "Mute Mode" menu item, select the desired setting (see page 15).
- ▶ Exit the operating menu.
- ▶ Slide the MUTE switch ⑨ to the left, to the position MUTE. The plug-on transmitter reacts as indicated in the table.

The current state of the muting function or the RF signal is displayed on the display panel of the plug-on transmitter:



State	Transmitter's display panel
Audio signal is muted	"MUTE" ⑦ is displayed
Audio signal is activated (muting is canceled)	"MUTE" ⑦ is not displayed
RF signal is deactivated	Transmission icon ④ is not displayed, "MUTE" ⑦ is displayed
RF signal is activated	Transmission icon ④ is displayed, "MUTE" ⑦ is not displayed



You can also deactivate the RF signal on switch-on. For more information, refer to the chapter “Switching the plug-on transmitter on/off” on page 10.

Using the **ON/OFF** button, you can also activate/deactivate the RF signal during operation. To do so, briefly press the **ON/OFF** button and proceed as described on page 10.




Selecting a standard display

▼ ▲ ▶ Press the **UP** button (▲)/**DOWN** button (▼) to select a standard display:

Contents of the display	Selectable standard display
	"Frequency/Name"
	"Channel/Frequency"
	"Name/Channel"

Using the operating menu

The buttons

Button	Function of the button
Press the ON/OFF button 	<ul style="list-style-type: none"> • Switches the plug-on transmitter on and off • Cancels the entry and returns to the current standard display (ESC function) • Activates/deactivates the RF signal
Press the SET button 	<ul style="list-style-type: none"> • Changes from the current standard display to the operating menu • Calls up a menu item • Enters a submenu • Stores the settings and returns to the operating menu
Press the UP button/ DOWN button 	<ul style="list-style-type: none"> • Selects a standard display • Changes to the next/previous menu item • Changes the setting of a menu item

Overview of the operating menu



For more detailed information on the operating menu, refer to the instruction manual of the SKP 2000. This instruction manual can be downloaded from the SKP 2000 product page at www.sennheiser.com.

Main menu "Menu"

Sensitivity
Frequency Preset
Name
Auto Lock
Advanced
Exit

Extended menu "Advanced Menu"


Tune
Mute Mode
RF Power
PhantomPower48V
Pilot Tone
LCD Contrast
Reset
Software Revision
Exit

Display	Function of the menu item
---------	---------------------------

Main menu “Menu”

Sensitivity	Adjusts the sensitivity “AF”
Frequency Preset	Sets the frequency bank and the channel
Name	Enters the transmitter name
Auto Lock	Activates/deactivates the automatic lock mode
Advanced	Calls up the extended menu “Advanced Menu”
Exit	Exits the operating menu and returns to the current standard display

Extended menu “Advanced Menu”

Tune	Sets the transmission frequencies for the frequency banks “U1” to “U6”
	Sets the frequency bank, the channel and the transmission frequency (frequency banks “U1” to “U6”): ▶ Select this menu item and call it up by pressing the SET button 10 until the frequency bank selection appears.
Mute Mode	Sets the mode for the MUTE switch 9 (see page 12)
RF Power	Adjusts the transmission power <div> It is vital to observe the notes on the supplied frequency information sheet!</div>
PhantomPower48V	Activates/deactivates the phantom powering
Pilot Tone	Activates/deactivates the pilot tone transmission
LCD Contrast	Adjusts the contrast of the display panel
Reset	Resets the settings made in the operating menu
Software Revision	Displays the current software revision
Exit	Exits the extended menu “Advanced Menu” and returns to the main menu

Synchronizing the plug-on transmitter with a receiver

When synchronizing the plug-on transmitter with a receiver, please observe the following:



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

Synchronizing the plug-on transmitter with the receiver – individual operation

Upon delivery, the plug-on transmitter and the receiver are synchronized with each other. If, however, you cannot establish a transmission link between plug-on transmitter and receiver, you have to synchronize the channels of the devices.

For information on automatic synchronization of the plug-on transmitter with the receiver (individual operation), refer to the instruction manual of the receiver. This information is marked with the **sync** icon.

Alternatively, you can set the channel on the plug-on transmitter manually:

- ▶ Make sure that you set the plug-on transmitter to the same frequency bank and the same channel as the receiver.

If you still cannot establish a transmission link, refer to the chapter “If a problem occurs ...” on page 20.

Synchronizing plug-on transmitters with receivers – multi-channel operation

Combined with 2000 series receivers, 2000 series plug-on transmitters can form transmission links that can be used in multi-channel systems.

For information on automatic synchronization of plug-on transmitters with receivers (multi-channel operation), refer to the instruction manual of your receiver.

For more information on multi-channel operation, visit the SKP 2000 product page at www.sennheiser.com.

Cleaning the plug-on transmitter

CAUTION! Liquids can damage the electronics of the plug-on transmitter!

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

- ▶ Keep all liquids away from the plug-on transmitter.
- ▶ Do not use any solvents or cleansing agents.

-
- ▶ Use a cloth to clean the plug-on transmitter from time to time.

Recommendations and tips

... for the plug-on transmitter

- For best results, make sure that the transmitter sensitivity is correctly adjusted.

... for optimum reception

- Transmission range depends to a large extent on location and can vary from about 10 m to about 150 m. There should be a “free line of sight” between plug-on transmitter and receiving antennas.
- To avoid overloading the receiver, observe a minimum distance of 5 m between plug-on transmitter and receiving antennas.
- The plug-on transmitter uses the microphone body as an antenna – therefore microphones with a metal casing should be used for best signal transmission.

... for multi-channel operation

- When operating a multi-channel system, you should only use the channels within one frequency bank. Each of the frequency banks “1” to “20” accommodates factory-preset frequencies which are intermodulation-free.
- When using several transmitters simultaneously, interference can be avoided by maintaining a minimum distance of 20 cm between two transmitters.

If a problem occurs ...

Problem	Possible cause	Possible solution
Plug-on transmitter cannot be operated, "Locked" appears on the display panel	Lock mode is activated	Deactivate the lock mode (see page 11).
No operation indication	Batteries are flat or accupack is flat	Replace the batteries or recharge the accupack (see page 9).
No RF signal at the receiver	Plug-on transmitter and receiver are not on the same channel	Set the plug-on transmitter to the same channel as the receiver. Synchronize the plug-on transmitter with the receiver (see page 17).
	Transmission range is exceeded	Reduce the distance between plug-on transmitter and receiving antennas.
	RF signal is deactivated ("RF Mute")	Activate the RF signal (see page 12).
RF signal available, no audio signal, "MUTE" appears on the display panel	Plug-on transmitter is muted (MUTE)	Cancel the muting (see page 12).
	Receiver's squelch threshold is adjusted too high	Reduce the squelch threshold setting on the receiver.
	Plug-on transmitter doesn't transmit a pilot tone	Activate the pilot tone transmission on the transmitter.
Audio signal has a high level of background noise or is distorted	Plug-on transmitter's sensitivity is adjusted too low/too high	Adjust the input sensitivity.

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 partner for assistance.

To find a Sennheiser partner in your country, search at www.sennheiser.com under "Service & Support".

Accessories

The following SKP 2000 accessories are available from your specialist dealer:

Cat. No.	Accessory
009950	BA 2015 accupack
009828	L 2015 charger
005232	POP 1 pouch (with belt clip)

Specifications

RF characteristics

Modulation	wideband FM
Frequency ranges	516–558, 558–626, 626–698, 718–790, 790–865 MHz (Aw to Dw, Gw, see page 4)
Transmission frequencies	up to 3,000 frequencies, tuneable in steps of 25 kHz 20 frequency banks, each with up to 64 factory-preset channels 6 frequency banks, each with up to 64 user programmable channels
Switching bandwidth	up to 75 MHz
Nominal/peak deviation	±24 kHz/±48 kHz
Frequency stability	≤ ±15 ppm
RF output power at 50 Ω	switchable: typ. 10 mW ("Low") typ. 30 mW ("Standard") typ. 50 mW ("High")
Pilot tone squelch	can be switched off


AF characteristics

Compander system	Sennheiser HDX
AF frequency response	80–18,000 Hz
Signal-to-noise ratio (1 mV, peak deviation)	≥ 120 dBA
THD	≤ 0.9%
Max. input voltage	6 V _{rms}
Input impedance	6 kΩ, balanced
Adjustment range of input sensitivity	48 dB adjustable in steps of 6 dB

Overall device

Temperature range	– 10°C to + 55°C
Power supply	2 AA size batteries, 1.5 V or BA 2015 accupack
Nominal voltage	2.4 V ===
Power consumption:	
• at nominal voltage	typ. 210 mA (30 mW RF, w/o P48)
• with switched-off plug-on transmitter	≤ 25 µA
Operating time	typ. 7 hrs (30 mW RF, w/o P48)
Dimensions	approx. 105 mm x 43 mm x 43 mm
Weight (incl. batteries)	approx. 195 g

In compliance with

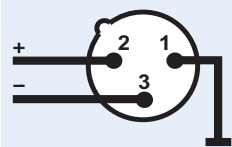
Europe:	EMC	EN 301489-1/-9
	Radio	EN 300422-1/-2
	Safety	EN 60065
		EN 62311 (SAR)

Approved by

Canada:	Industry Canada RSS 123 IC: 2099A-SKP2000 limited to 806 MHz
USA:	FCC-Part 74 FCC-ID: DMOSKP2000 limited to 698 MHz

Connector assignment

XLR-3 socket (female), balanced (Audio In)



Manufacturer Declarations

Warranty

Sennheiser electronic GmbH & Co. KG gives a warranty of 24 months on this product.

For the current warranty conditions, please visit our web site at www.sennheiser.com or contact your Sennheiser partner.

In compliance with the following requirements

- RoHS Directive (2002/95/EC)
- WEEE Directive (2002/96/EC)



Please dispose of the plug-on transmitter at the end of its operational lifetime by taking it to your local collection point or recycling center for such equipment.

- Battery Directive (2006/66/EC)



The supplied batteries or rechargeable batteries can be recycled. Please dispose of them as special waste or return them to your specialist dealer. In order to protect the environment, only dispose of exhausted batteries.

CE Declaration of Conformity

- **CE 0682** 

- R&TTE Directive (1999/5/EC)

The declarations are available at www.sennheiser.com.

Before putting the device into operation, please observe the respective country-specific regulations.

Statements regarding FCC and Industry Canada

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This class B digital device complies with the Canadian ICES-003.

Changes or modifications made to this equipment not expressly approved by Sennheiser electronic Corp. may void the FCC authorization to operate this equipment.

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