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You can read the recommendations in the user guide, the technical guide or the installation guide for SENNHEISER EW 500. You'll find the answers to all your questions on the SENNHEISER EW 500 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

**User manual SENNHEISER EW 500**  
**User guide SENNHEISER EW 500**  
**Operating instructions SENNHEISER EW 500**  
**Instructions for use SENNHEISER EW 500**  
**Instruction manual SENNHEISER EW 500**



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#### Manual abstract:

Due to further optimised PLL and microprocessor technology, the HDX noise reduction system and true diversity technology (excluding pocket receivers), these transmission systems ensure interference-free transmission and minimise dropouts in the RF link. The systems can be supplied in five frequency ranges within the UHF band. Please note: Frequency usage is different for each country. Your Sennheiser agent will have all the necessary details on the available legal frequencies for your area. @@@@This must only be done by authorised personnel and is all the more important for units connected to AC outlets. If devices are opened by customers in breach of this instruction, the warranty is voided. Always disconnect the devices from the mains by removing the plug when you wish to change connections or move the devices to a different place. Keep the devices away from central heating radiators and electric heaters.

Never expose them to direct sunlight. Use the devices in dry rooms only.

use a damp cloth for cleaning the devices. Do not use any cleansing agents or solvents. This is a versatile system suitable for many applications. the plug-on transmitter converts a standard wired microphone into a radiomicrophone. The transmitter includes a switch for 48 V phantom powering for use with phantom powered condenser microphones - thus eliminating battery power packs as well as the cable.

Having the same transmitter as the Set ew 501, this system replaces the mains receiver with a pocket receiver for mobile, monitoring or cameramounted applications. Set ew 501-p consists of: EK 500 pocket receiver, SKP 500 plug-on transmitter, two batteries, antennas, line output cable, camera kit and operating manual. The unobtrusive clip-on microphone is virtually invisible, and its omni-directional pattern minimises drop-outs caused by the speaker turning his/her head. Set ew 512 consists of: EM 500 receiver, SK 500 pocket transmitter, ME 2 miniature clip-on omni-directional condenser microphone, plug-in mains unit, battery, antennas and operating manual. Having the same transmitter as the Set ew 512, this system replaces the mains receiver with a pocket receiver for mobile, monitoring or cameramounted applications.

Set ew 512-p consists of: EK 500 pocket receiver, SK 500 pocket transmitter, ME 2 miniature clip-on omni-directional condenser microphone, two batteries, antennas, line output cable, camera kit and operating manual. The unobtrusive cardioid clip-on microphone can be directed towards the speakers mouth. Set ew 522 consists of: EM 500 receiver, SK 500 pocket transmitter, ME 4 miniature clip-on cardioid condenser microphone, plug-in mains unit, battery, antennas and operating manual. Having the same transmitter as the Set ew 522, this system replaces the mains receiver with a pocket receiver for mobile, monitoring or cameramounted applications. Set ew 522-p consists of: EK 500 pocket receiver, SK 500 pocket transmitter, ME 4 miniature clip-on cardioid condenser microphone, two batteries, antennas, line output cable, camera kit and operating manual. Set ew 535 consists of: EM 500 receiver, SKM 500 hand-held transmitter with MD 835 cardioid dynamic microphone module, plug-in mains unit, battery, antennas, microphone clamp and operating manual. SKM 500 Having the same transmitter as the Set ew 535, this system replaces the mains receiver with a pocket receiver for mobile, monitoring or cameramounted applications. Set ew 535-p consists of: EK 500 pocket receiver, SKM 500 hand-held transmitter with MD 835 cardioid dynamic microphone module, two batteries, antennas, line output cable, camera kit, microphone clamp and operating manual. This system is ideal for vocal applications in venues with high ambient noise levels. the super-cardioid dynamic microphone head has excellent feedback rejection.

Set ew 545 consists of: EM 500 receiver, SKM 500 hand-held transmitter with MD 845 super-cardioid dynamic microphone module, plug-in mains unit, battery, antennas, microphone clamp and operating manual. Having the same transmitter as the Set ew 545, this system replaces the mains receiver with a pocket receiver for mobile, monitoring or cameramounted applications. Set ew 545-p consists of: EK 500 pocket receiver, SKM 500 hand-held transmitter with MD 845 super-cardioid dynamic microphone module, two batteries, antennas, line output cable, camera kit, microphone clamp and operating manual. Supplied complete with the ME 3 headmic (which has superb feedback rejection), this system gives complete freedom of expression to stage vocalists as well as proving a boon to sports commentators/referees and aerobic instructors. Set ew 552 consists of: EM 500 receiver, SK 500 pocket transmitter, ME 3 condenser super-cardioid headmic, plug-in mains unit, battery, antennas and operating manual. Having the same transmitter as the Set ew 552, this system replaces the mains receiver with a pocket receiver for mobile, monitoring or cameramounted applications. Set ew 552-p consists of: EK 500 pocket receiver, SK 500 pocket transmitter, ME 3 condenser super-cardioid headmic, two batteries, antennas, line output cable, camera kit and operating manual. This system, due to its excellent feedback rejection and wide dynamic range, is the ideal choice for vocals and presentations. Set ew 565 consists of: EM 500 receiver, SKM 500 hand-held transmitter with ME 865 super-cardioid condenser microphone module, plug-in mains unit, battery, antennas, microphone clamp and operating manual. Having the same transmitter as the Set ew 565, this system replaces the mains receiver with a pocket receiver for mobile, monitoring or cameramounted applications.

Set ew 565-p consists of: EK 500 pocket receiver, SKM 500 hand-held transmitter with ME 865 super-cardioid condenser microphone module, two batteries, antennas, line output cable, camera kit, microphone clamp and operating manual. Set ew 572 consists of: EM 500 receiver, SK 500 pocket transmitter, CI 1 instrument (guitar) cable, plug-in mains unit, battery, antennas and operating manual. Having the same transmitter as the Set ew 572, this system replaces the mains receiver with a pocket receiver for mobile, monitoring or cameramounted applications. Set ew 572-p consists of: EK 500 pocket receiver, SK 500 pocket transmitter, CI 1 instrument (guitar) cable, two batteries, antennas, line output cable, camera kit and operating manual. 3 mm) jack socket (PHONES) Headphone volume control (VOL) LC display button (UP) button (DOWN) SET button POWER (ON/OFF) button Cable grip for power supply DC cable DC socket for connection of mains unit (DC-IN)  $\mu$ , 'AF output, XLR-3M socket (AF OUT BAL/UNBAL) AF output, 1/4" (6.

Mounting the rubber feet To ensure that the receiver cannot slip on the surface on which it is placed, four self-adhesive soft rubber feet are supplied. These feet are stuck into the recesses on the bottom side of the receiver. : Do not use these feet if rackmounting the receiver). Ensure that the recesses are clean and free from grease before fixing the feet.



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attention! 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 discolouration, since we don't know your furniture. Connecting the antennas The EM 500 receiver can be used with either telescopic antennas (supplied) or remote antennas (available as accessories). The supplied telescopic antennas can be mounted quickly and easily to the rear of the receiver and are suitable for all applications where good reception conditions provided a wireless transmission system is to be used without a large amount of installation work. connect the telescopic antennas to BNC sockets and at the rear of the receiver. Pull the antennas out and align them upwards in a V-shape. If the receiver position is not the best antenna position for optimum reception, you can use remote antennas. Connecting the mains unit Insert the DC connector on the power supply output cable into socket ¾ at the rear of the receiver. To switch the receiver off, press the POWER button until "OFF" appears on the display. You can then release the button. After a power failure, the device returns to the previous setting (ON/OFF).

Adjusting the AF output level Use the AF output level control <sup>1</sup> to adjust the AF signal level that appears at outputs  $\mu$  and  $\nu$ . When people use headphones, they tend to choose a higher volume than with loudspeakers. Listening at high volume levels for long periods can lead to permanent hearing defects. Please protect your hearing, Sennheiser headphones have an excellent sound quality even at low volumes. @@Please observe correct polarity when inserting the battery. close the battery compartment. To remove the battery, push the small red lever in the battery compartment towards the bottom side of the receiver. Use the supplied line cable with 3.5 mm jack plug to connect the sound recording or reproducing device to the line output (AF OUT) ¶. Lock the jack plug by screwing down the locking ring.

Adjusting the volume / AF output level Use volume control <sup>o</sup> to adjust the volume / AF signal level for sockets <sup>2</sup> and ¶. Switching the receiver on/off Slide back the cover plate <sup>1</sup>. To switch the receiver off, press the ON/OFF button until "OFF" appears on the display. You can then release the button. Signal and battery status indication The green LED » at the top of the EK 500 receiver indicates that an RF signal is being received.

You should immediately replace the battery! The clip is detachable so that you can also attach the receiver with the antenna pointing downwards. @@Ensure that the surfaces are clean and free from grease. @@@@Please observe correct polarity when inserting the battery. close the battery compartment. @@@@You can then release the button.

@@@@@@@@ please note , however , that the transmitter sensitivity is dependent on the application. To avoid overmodulation and distortion, please first check whether the preset sensitivity is suitable f81) Activating the lock-mode function to prevent accidental adjustment (u page 82) Selecting a frequency memory selecting the frequency, channel number, name (EM 500 only) With the / buttons you can directly switch between the factory preset fixed frequency memories (presets). @@@@@@@@@@@@@@@@@@With the / buttons you can now select a different setting. The sensitivity can be adjusted in 10-dB steps from 0 to 30 dB. @@ press the SET button to return to the top menu level. The display then switches back to the standard display. @@@@@@With the / buttons you can now select a different setting. @@@@@@The new setting starts flashing on the display. @@@@@@ press the SET button to return to the top menu level. The display then switches back to the standard display.

@@@@@@@@@The display then switches back to the standard display. Wildlife) with a condenser microphone, you may find it better to set the sensitivity to "Att off". By doing a soundcheck you can check the reception area for field strength gaps ("dropouts") which cannot be compensated for by the EM 500's diversity circuitry. The EM 500 enables you to do the soundcheck without the help of another person. Choose the setting "RF/AF" in the "BARS" menu and set the squelch threshold to at least "5" (dB). Select the "SCM" menu by pressing the SET button until "Sound Check Mode, Repeat, END" appear running across the display and the soundcheck starts. Switch the transmitter on and walk up and down the transmission area. You can now check the results of the soundcheck on the receiver. The displays "I" and "II" indicate that both receiver sections are active. If "dropouts" have occurred, you now have to find out where exactly the reception is subject to interference.

if only one receiver section is indicated , check the antenna connections. You must then repeat the soundcheck for smaller sections of the area. The soundcheck starts over again and the previously measured data are then deleted. The display then switches back to the standard display. The SKP 500 transmitter can supply condenser microphones with 48 V phantom powering (P 48).

Please note: Dynamic microphones can be operated in phantom powering mode without harm. However, if no condenser microphone module is being used, you should switch off the phantom powering. The phantom powering can be switched on or off via the operating menu: Select the "PHAnto" menu by pressing the SET button until "PHAnto" appears on the display; after a short pause the current setting is displayed. The display then switches back to the standard display. Generally, the EM 500's two bargraph displays are programmed such that the upper bargraph indicates the RF level, while the AF level is indicated by the lower bar.

You can, however, program the bargraph displays so that they indicate the RF levels of the two receiver sections. Select the "BARS" menu by pressing the SET button until "BARS" appears on the display; after a short pause the current setting is displayed. Buttons you can now change the function of the bargraph RF level of both receiver sections "RF I/II" appears on the alphanumeric main display RF and AF level "RF/AF" appears on the alphanumeric main display If the bargraphs indicate the RF levels of the two receiver sections, the displays RF, I and II on the left of the bargraphs light up. If the bargraphs indicate the RF and AF level, the displays RF and AF on the left of the bargraphs light up. The display then switches back to the standard display. In the "Ltd" menu, you can choose the standard volume at the EK 500's headphone output. Select the "Ltd" menu by pressing the SET button until "Ltd" appears on the display; after a short pause the current setting is displayed.



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The display then switches back to the standard display. With all transmitters and receivers you can choose the content of the standard display i. e.

@@@ press the SET button to return to the top menu level. The display then switches to the new standard display. @@@@ the factory-preset frequencies are intermodulation-free. @@@@ With the / buttons you can now select a different frequency. the frequencies are tunable in 25-kHz steps. The new frequency starts flashing on the display and becomes effective immediately. press the SET button to return to the top menu level. The display then switches back to the standard display. Assigning a channel number You now have to assign the frequency memory a channel number (from 0 to 255). With larger systems, we recommend using the same channel numbers for both transmitters and receivers in order to provide for simpler monitoring of the system.

Select the frequency memory for which you wish to assign a channel number (u "Selecting a frequency memory"). Select the "CH NO" menu by pressing the SET button until "CH NO" appears on the display; after a short pause the currently assigned channel number is displayed. With the / buttons you can now select a different channel number. The new channel number starts flashing on the display and becomes effective immediately. Note: Channel numbers which have already been assigned to a fixed frequency memory are skipped.

press the SET button to return to the top menu level. The display then switches back to the standard display. Assigning a name to a frequency memory (EM 500 only) With the EM 500 receiver, each frequency memory can be assigned a name in addition to the receiving frequency and channel number. Letters (without pronunciation marks), numbers from 1 to 0, special characters e. You can, for example, enter the name of the musician for whom the adjustments have been made.

Select the frequency memory for which you wish to enter a name (u "Selecting a frequency memory"). Select the "NAME" menu by pressing the SET button until "NAME" appears on the display; after a short pause the name entered for the selected frequency memory is displayed. press the / buttons to start with your entry. The first segment starts flashing on the display. Buttons you can now choose a character. Press the SET button to change to the next segment and choose the next character. The display then switches back to the standard display. You can lock the / buttons and the ON/OFF button to prevent accidental programming or switching off during operation. Note: If you press the / buttons or the ON/OFF button, "LOCK" appears on the display and the buttons are now locked. The display switches back to the standard display and the buttons can now be operated as usual.

Possible cause Batteries are flat No mains connection Transmission frequency is not the same as the receiving frequency Transmitter is out of range Transmitter is muted ("MUTE") Receiver's squelch threshold adjusted too high SKP 500 plug-on transmitter does not supply phantom powering to condenser microphone (u "Preparing the devices for use") Transmitter sensitivity adjusted too low Receiver's AF output level adjusted too low Transmitter sensitivity adjusted too high Receiver's AF output level adjusted too high Audio signal has a high level of background noise If problems occur that are not listed in the above table, please contact your local Sennheiser agent for assistance. For the ME 2 and ME 4 clip-on microphones To reduce level variations to a minimum when the user turns his or her head away from the microphone, attach the microphone as centrally as possible. To protect the microphone against excessive sweat/moisture, avoid direct skin contact. Attach the microphone carefully and conduct the cable such that noise due to friction is avoided. Always use the ME 4 directional microphone with a windshield and direct the microphone towards the sound source (e. For the ME 3 headmic Always use the microphone with a popshield and position the microphone at the corner of the mouth. You can vary the bass reproduction by increasing/decreasing the talking distance. Make sure that the sound inlet is directed towards the mouth. The sound inlet is marked with a little dot. For the SK 500 pocket transmitter Make sure that the antenna and the microphone cable do not cross.

The antenna should hang freely and be at least 1 cm away from the body. The antenna must not be in direct contact with the skin. Holding it close to the sound inlet basket will influence the microphone's pick-up pattern, holding it at the lower part of the body will reduce the transmitter's range. You can vary the bass reproduction by increasing/decreasing the talking distance. For the EK 500 receiver The antenna should hang freely and be at least 1 cm away from the body. The antenna must not be in direct contact with the skin. If the receiver is mounted onto a camera, we recommend using the A 17 helical antenna. 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 transmitting and receiving antennas. If, with the EM 500 receiver, reception conditions are unfavourable, you should use two remote antennas which are connected via antenna cable (see "Accessories").

To avoid overmodulating the receiver, observe a minimum distance of 5 m between transmitting and receiving antennas. Observe a minimum distance of 50 cm between receiving antennas and metal objects (such as cross members or reinforced-concrete walls). The factory-preset frequencies (presets), however, are intermodulation-free. If you wish to program new frequency combinations, please contact your local Sennheiser agent who will provide you with information on the correct frequency choice. When using several transmitters simultaneously, interference can be avoided by maintaining a minimum distance of 20 cm between two transmitters. The SKM 500's sound inlet basket should be cleaned from time to time. unscrew the inlet basket (turn counter-clockwise) and remove it. @@Note: Do not use any cleansing agents or solvents. do not touch the microphone's contacts. @@@@ the systems operate exclusively in the UHF band.

@@ are virtually eliminated. Also indoor propagation of UHF radio waves is better than VHF so that the RF power can be kept low this is also an advantage when using multi-channel systems. Finally, UHF frequency ranges are being approved all over the world for radiomicrophone usage in some countries licence-free. There are three transmitter versions: The hand-held transmitter is a complete radiomicrophone in a single unit, the plug-on transmitter converts your favourite wired microphone into a radiomicrophone (and, with its builtin 48V phantom power, can even power condenser microphones), the pocket transmitter can accept a wide range of inputs including: omni-directional or cardioid "tie" microphones, head-worn microphone, guitar/instrument direct input and auxiliary devices via the optional CL 2 line input cable.



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Fresh batteries ensure good transmission power during operation. Always use alkaline batteries for best operation a 9 V PP3 battery has a much longer operating time than a NiCd rechargeable battery (approx. 8 hours with a 9 V PP3 or 1 hour with a rechargeable). correct adjustment of transmitter sensitivity is vital. Too high and you get overmodulation and distortion, too low and you get undermodulation and a noisy signal. please set the sensitivity correctly for the microphone/usage and check it before every performance to ensure best operation.

@@@@@@@For other frequency sets please contact your local Sennheiser agent, who will be able to provide you with information on correct frequency choice and/or be able to calculate special frequency sets for you. The evolution wireless Series is equipped with HDX, the new Sennheiser noise reduction system that reduces RF interference. it increases the signal-to-noise ratio in wireless audio transmission to up to 110 dB. HDX is a wideband compander system which compresses the audio signal in the transmitter in a 2:1 ratio (related to dB) to lift it above the inherent noise floor of the RF link. A 110 dB dynamic range signal is thus transmitted with an effective dynamic range of only 55 dB, which is above the 60 dB noise floor of the RF link.

In the receiver the signal is expanded in an identical and opposite way in a 1:2 ratio to restore the original signal, at the same time reducing the RF noise to below the noise floor of the receiver. Giving a radio link with a better signal-to-noise ratio than a CD. hDX has been specially developed for high quality radiomicrophone systems. Note: Only transmitters and receivers that are equipped with HDX can work correctly with each other. If non HDX equipment was mixed with HDX, the dynamic range would be drastically reduced and the transmission would sound blunt and flat.

The EM 500 receiver operates on the "True Diversity" principle: A receiving antenna receives not only the electromagnetic waves which reach it by a direct path, but also the reflections of these waves which are created in the room by walls, windows, ceilings and fittings. When these waves are superimposed, destructive interference occurs, which can also be called "field strength gaps". Repositioning the receiving antenna can bring a solution, provided the transmitter remains in its original position. With mobile transmitters, however (which all radiomicrophones are), the "field strength gap" will then occur with a different transmitter position. These "field strength gaps" can only be eliminated with true diversity receivers. In true diversity, instead of one antenna and one receiver there are now two antennas and two receiver sections. the antennas are spatially separated. By means of a comparison circuit, the receiver section with the strongest RF signal is always switched to the common AF output. The risk of the occurrence of "field strength gaps" in both antennas at the same time is virtually nonexistent. Deviation and 1 kHz Overall device Temperature range Dimensions Carrying case [mm] Weight Carrying case with EM 500 Carrying case with EK 500 In compliance with 3 mm jack plug CL 2 Line input cable for SK 500, with female 3-pin XLR connector GA 1 19" rack adaptor for EM 500, for mounting two EM 500/ASP 1 or one EM 500/ASP 1 with AM 1 into a 19" rack AM 1 Antenna mount for connecting antennas to the front of the GA 1 A 1031-U UHF antenna, passive, omni-directional, can be mounted onto a stand AB 1-A UHF antenna booster AB 1-B 10 dB gain AB 1-C (powered via ASP 1/NT 1) AB 1-D AB 1-E 518 550 MHz 630 662 MHz 740 772 MHz 790 822 MHz 838 870 MHz GZL 1019-A1 / 5 / 10 Antenna cable with BNC connectors 1 m / 5 m / 10 m ASP 1 Antenna splitter, 2 x 1:4, passive, for connecting four EM 500 to two A 1031-U / AB 1 NT 1 Plug-in mains unit for ASP 1 (to power four receivers and two AB 1) DC 1 DC power adaptor, for external 12 V DC powering of SK/EK 500 (instead of 9 V PP3 battery) A 17-1 Helical antenna for EK 500 A 17-2 for use with cameras CC 1 Carrying case for SET 500 518 662 MHz 740 870 MHz @@@@.



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