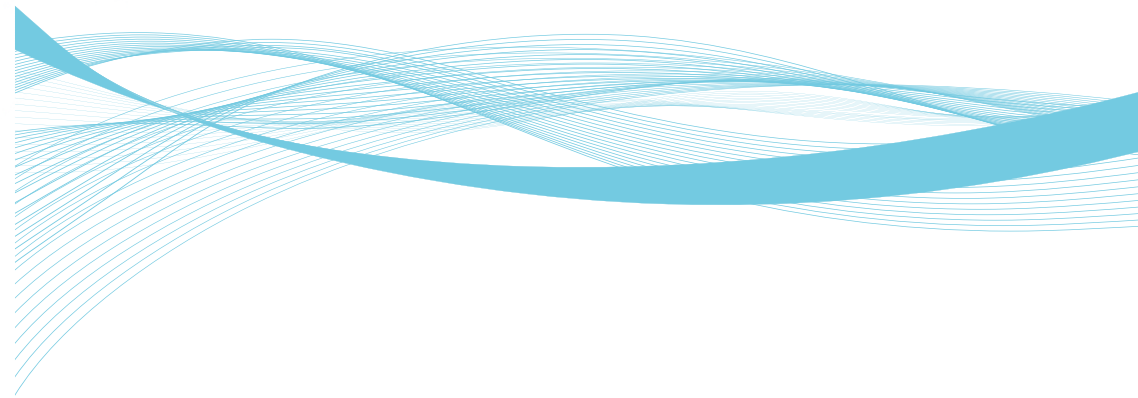




UHF PLL Dual Channel True Diversity
Wireless Microphone System



AM 100S
【Instructions Manual】

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Important safety instructions

- Read this instruction manual.
- Keep this instruction manual. Always include this instruction manual when passing the device and the mains unit on to third parties.
- Heed all warnings and follow all instructions in this instruction manual.
- Only clean the device and the mains unit when they are not connected to the mains. Use a cloth for cleaning.
- Refer all servicing to qualified service personnel. Servicing is required if the device or the mains unit have been damaged in any way, liquid has been spilled, objects have fallen inside, the device or the mains unit have been exposed to rain or moisture, do not operate properly or have been dropped.
- **WARNING:** To reduce the risk of fire or electric shock, do not use the device and the mains unit near water and do not expose them to rain or moisture. Do not place objects filled with liquids, such as vases or coffee cups, on the device.
- Only use the supplied mains unit.
Unplug the mains unit from the wall socket
 - to completely disconnect the device from the mains,
 - during lightning storms or – when unused for long periods of time.
- Only operate the mains unit from the type of power source specified in the chapter “Specifications”.
- Ensure that the mains unit is
 - in a safe operating condition and easily accessible,
 - properly plugged into the wall socket,
 - only operated within the permissible temperature range,
 - not covered or exposed to direct sunlight for longer periods of time in order to prevent heat accumulation.
- Do not block any ventilation openings. Install the device and the mains unit in accordance with the instructions given in this instruction manual.
- Do not install the device and the mains unit near any heat sources such as radiators, stoves, or other devices (including amplifiers) that produce heat.
- Do not overload wall outlets and extension cables as this may result in fire and electric shock.

Wideband Bodypack Transmitter

Carrier Frequency Range	UHF 603-690 MHz
Oscillation	PLL synthesized
Harmonic radiation	<-63dBm
Bandwidth	120MHz
Max. Deviation Range	±45KHz
Input Connector	4-pin mini-XLR connector
RF Power Output	15mW
Battery	AA X 1 alkaline
Current Consumption	60mA, typical
Battery Current / Life	Approximately 5 hours
Dimension	72(H) X 68(W) X 21(D)
Weight	71g (w/o battery)

Wideband Handheld Microphone

Carrier Frequency Range	UHF 603-690 MHz
Oscillation	PLL synthesized
Harmonic radiation	<-65dBm
Bandwidth	120MHz
Max. Deviation Range	±45KHz
Microphone Element	Cardioid Dynamic
RF Power Output	15mW
Battery	AA X 2 alkaline
Current Consumption	90mA, typical
Battery Current / Life	Approximately 10 hours
Dimension	51 (Φ) X 253 (L)
Weight	326g (w/o battery)

- Danger due to high volumes
- This device is capable of producing sound pressure exceeding 85 dB(A). 85 dB(A) is the sound pressure corresponding to the maximum 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
- Important safety instructions.
- 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.

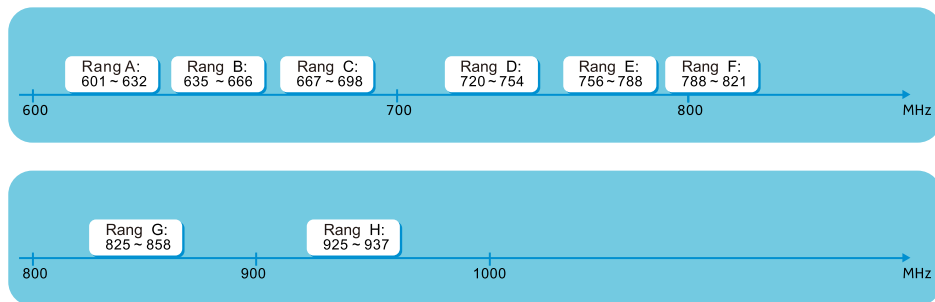
>> Diversity Receiver

Features:

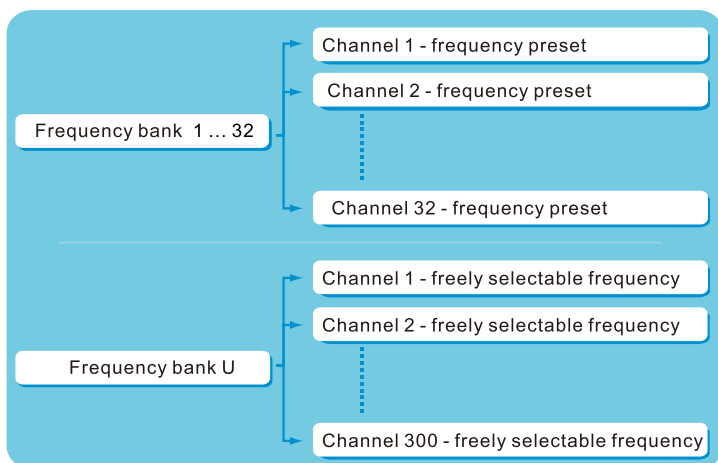
- Rugged metal chassis with soft-touch controls.
- Advanced diversity technology maintains dependable wireless signal quality.
- Pilot tone squelch for eliminating RF interference when transmitter is turned off.
- Enhanced AF frequency range
- Automatic Frequency Selection provides a straight shot to a clear channel.
- Transmitter Sync.
- 600 selectable frequencies across 15 MHz bandwidth.
- OLED display screen delivers a bright, clear viewing in day/night environments.
- Equipped with both XLR balanced and Ø6.3mm unbalanced outputs.
- Offers an exceptional value in both performance and price, for both working musicians and sound installers.

The frequency bank system

The receiver is available in 8 UHF frequency ranges with 600 receiving frequencies per frequency range:



Each frequency range (A–H) offers 64 frequency banks



Each of the channels in the frequency banks “1” to “32” has been factory-preset to a fixed receiving frequency (frequency preset).

The factory-preset frequencies within one frequency bank are intermodulation-free. These frequencies cannot be changed.

The frequency bank “U” allows you to freely select and store receiving frequencies. It might be that these receiving frequencies are not intermodulation-free.

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 our local partner for assistance.

Specifications

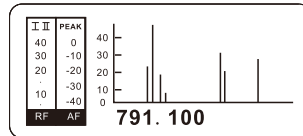
Diversity Receiver

Main Frame Size	EIA-Standard 19" 1/2U
Channels	Single Channel
Frequency Stability	±0.005%, Phase Lock Loop frequency control
Carrier Frequency Range	UHF 603-634 MHz
Preset Channels	32 preset channels
Operating Range	90M typical (in open space)
Oscillation	PLL synthesized
Sensitivity	6dBµV, S/N>60dB at 25 deviation
Band Width	15MHz
Max. Deviation Range	±45KHz
S/N	> 105dB
T.H.D.	<0.7% @ 1KHz
Frequency response	45Hz ~ 18KHz±1dB
Squelch	“PiloTone & NoiseLock” dual-squelch circuit
Power Supply	DC-12V/1A
Weight	720g
Dimension	212(W) X 44(H) X 202(D) (mm)
Output Connector	XLR balanced & 6.3φ phone jack unbalanced

When one of the standard displays is shown on the display panel, you can get into the main menu by pressing menu-driven knob.

Scan the frequency banks for clear channels:

- > Switch off all transmitters of your system that are to be automatically configured.
- > Press the knob to select "Scan".
- > The device will automatically scan the using frequencies and show the strength the signals.
- > Rotate the knob to see the using frequencies.
- > Press the knob to store a clear frequency.



If a problem occurs...

Problem	Possible cause	Possible solution
Receiver cannot be operated, "Locked" appears on the display panel	Lock mode is activated	Deactivated the lock mode
No RF signal	Transmitter and receiver are not on the same channel	Set the transmitter and receiver to the same channel. To do so, use the synchronization
	Transmitter is out of range	Reduce the distance between transmitter and receiving antennas
RF signal available, no audio signal, "MUTE" appears on the display panel	Transmitter is muted	Cancel the muting
	Receiver's squelch threshold is adjusted too high	Reduce the squelch threshold or reposition the antennas
Audio signal is distorted	Receiver's audio output level is adjusted too high	Reduce the audio output level
None of the diversity displays I or II appears on the display pane	Antennas are not correctly connected	Check the antenna cables or the antennas and reposition the antennas

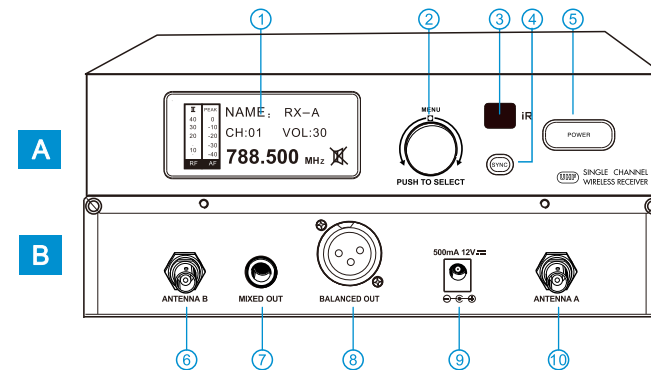
Delivery includes

The packaging contains the following items:

- 1 receiver
- 1 transmitter (handheld microphone / bodypack transmitter)
- 2 rod antennas
- 1 power supply
- 2 AA battery (w/ handheld mic) / 1 AA battery (w/ bodypack)
- 1 instruction manual

Product overview

Overview of the receiver



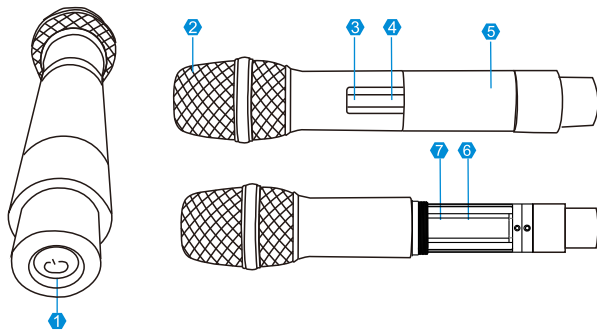
Operating elements – front panel

- 1 Display panel, backlit in orange
- 2 Smart menu-driven knob
- 3 Infra-red interface
- 4 SYNC button
- 5 Power switch

Operating elements – rear panel

- 6 ANTENNA B, BNC socket
- 7 MIXED OUT, unbalanced mixed output jack, 1/4" (6.3mm) jack socket.
- 8 BALANCED OUT, balanced output jack, XLR type connector
- 9 DC Power Output Jack: 12V / 500mA.
- 10 ANTENNA A, BNC socket

Overview of the handheld microphone



1. ① Power Button.
2. ② Lock function: Press this button 3 times to lock the functions, then press 3 times to unlock.
2. Microphone Head.
3. OLED Window: OLED display indicates operational frequency, channel, RF Gain and battery life.
* The transmitter's "fuel gauge" battery indicator displays a maximum of 4 bar segments. When it leaves 1 bar segment, the transmitter' batteries should be replaced immediately to ensure continued operation.
4. Infrared Data Receiving Window (IR): Use to receive the data from receiver.
5. Battery Cover: Unscrew it can reveal the battery compartment.
6. Battery Compartment: Insert 2 fresh 1.5V AA batteries. (Alkaline type is recommended, always replace both batteries.) Observe correct polarity as marked inside the battery compartment.
7. Gain HI -- LO switching

Using the operating menu

The buttons

Menu-driven knob	Function of the Knob
Press the knob	<ul style="list-style-type: none"> • Enters a submenu • Stores the settings and returns to the operating
Rotate left	<ul style="list-style-type: none"> • Enters a submenu • Stores the settings and returns to the operating menu • Selects a standard display • Changes to the next/previous menu item • Changes the setting of a menu item
Rotate right	<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

CHANNEL	Changes the frequency bank and the channel
Volume	Adjust the volume output level Range : 0—30dB
Scan	Scan function for scanning the frequency banks for clear channels
Squelch	Adjusts the squelch threshold
Name	Enters a freely selectable name
Autolock	Activates/deactivates the automatic lock mode
Tune	Sets the receiving frequencies for the frequency bank "U"
Exit	Exits the extended menu and returns to the main menu

Deactivating the lock mode temporarily

You can activate or deactivate the automatic lock mode via the “Auto Lock” menu item. If the lock mode is activated, you have to temporarily deactivate it in order to be able to operate the receiver:

Press the menu-driven knob, "locked" appears on the display panel.

> Press the knob, "unlock" appears on the display panel.

> Press the knob, the lock mode is temporarily deactivated.

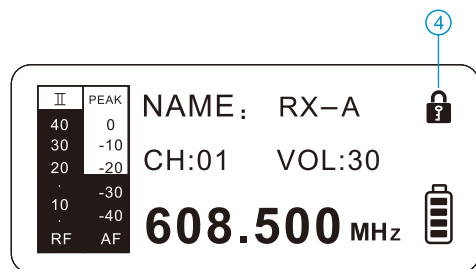
Press the SET button. “Locked” appears on the display panel. Press the UP/DOWN button. “Unlock?” appears on the display panel.

Press the SET button. The lock mode is temporarily deactivated:

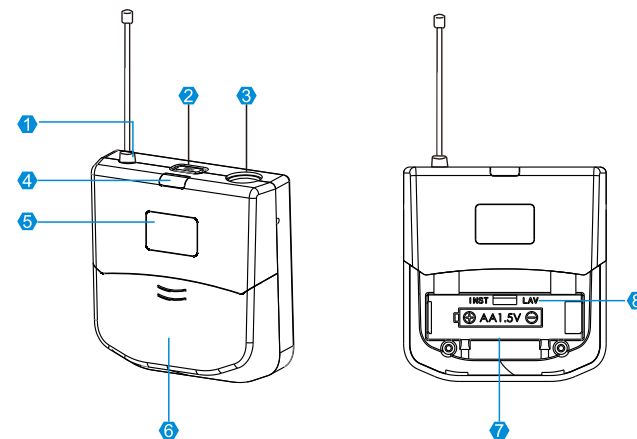
When you are in the operating menu The lock mode is deactivated as long as you are in the operating menu.

When one of the standard displays is shown The lock mode is automatically activated after 10 seconds.

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



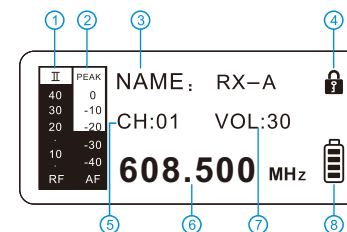
Overview of the bodypack transmitter

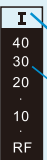

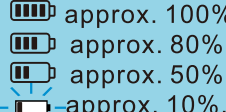


1. Antenna.
2. Power Button.
3. Audio Input Jack: To connect 4-pin mini-XLR connector.
4. Infrared Data Receiving Window (IR): Use to receive the data from receiver.
5. OLED Window: OLED display indicates operational frequency, channel, battery life and audio input type.
6. Battery Door Switch: Open the battery door by sliding the switch.
7. Battery Compartment: Insert 1 fresh 1.5V AA batteries. (Alkaline type is recommended, always replace both batteries.) Observe correct polarity as marked inside the battery compartment.
8. INST / LAV Audio Input Switch: Connect an audio input device (lavalier microphone or instrument cable) to the audio input jack on the top of the body-pack transmitter. Choose LAV for microphone input, then INST for instrument cable to connect with guitar or other instruments.

Overview of the displays

After switch-on, the receiver displays the standard display “Receiver Parameters”.



<p>① RF level "RF" (Radio Frequency)</p>	 <p>Diversity display I Antenna input I is active II Antenna input II is active RF Singal level: Field strength of the transmitted signal</p>
<p>② Audio level "AF" (Audio Frequency)</p>	 <p>Modulation of the transmitter with peak hold function When the level disply for audio level show full deflection, the audio input level is excessively high. When the transmiiter is overmodulated frequently or for</p>
<p>③ Name</p>	<p>Freely selectable name of the receiver</p>
<p>④ LOCK mode icon</p>	<p>Lock mode is activated</p>
<p>⑤ Frequency bank and Channel</p>	<p>Current frequency bank and channel number, when showing "--" means manual frequency</p>
<p>⑥ Frequency</p>	<p>Current receiving frequency</p>
<p>⑦ Volume</p>	<p>Receiver output volume</p>
<p>⑧ Battery status of the transmitter</p>	<p>Battery status:  approx. 100% approx. 80% approx. 50% approx. 10%, changing battery is critical</p>

Switching the receiver on/off

To switch the receiver on:

Briefly press the STANDBY button. The receiver switches on and the "Receiver Parameters" standard display appears.

To switch the receiver to standby mode:

- > If necessary, deactivate the lock mode.
- > Keep the STANDBY button, pressed until "OFF" appears on the display panel. The display panel then turns off.

To completely switch the receiver off:

Disconnect the receiver from the mains by unplugging the mains unit from the wall socket.

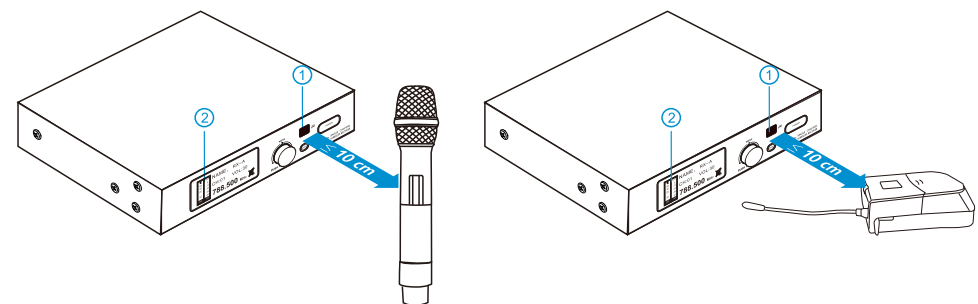
Synchronizing a transmitter with the receiver

You can synchronize a suitable transmitter with the receiver. During synchronization, **the following parameters are transferred to the transmitter:**

- > "Frequency Preset" Currently set frequency
- > "Name" Freely selectable name currently set on the receiver

To transfer the parameters:

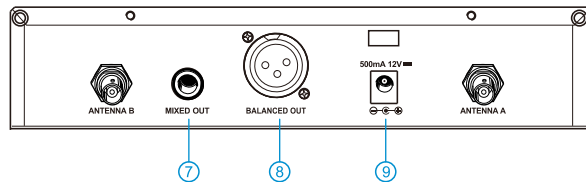
- > Switch the transmitter and the receiver on.
- > Press the "SYNC" button on the receiver. "Sync" appears on the display panel of the receiver.
- > Place the infra-red interface of the transmitter in front of the infra-red interface of the receiver.
- > The parameters are transferred to the transmitter. When the transfer is completed, "succeed" or "fail" appears on the display panel. The receiver then switches back to the current standard display.



Connecting an amplifier/mixing console

The receiver's XLR socket and the ¼" (6.3 mm) jack socket are connected in parallel.

- > Use a suitable cable to connect the amplifier and/or the mixing console to the XLR-3M socket or the ¼" (6.3 mm) jack socket
- > Via the operating menu, adjust the audio output level (AF OUT) of the receiver to the input of the amplifier or mixing console. The audio output level is adjusted via the operating menu and is common for both sockets.

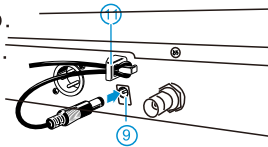


7 is 1/4" (6.3mm) jack socket, 8 is XLR socket

Connecting the mains unit

Only use the supplied mains unit. It is designed for the receiver and ensures safe operation.

- > Insert the connector of the mains unit into the socket of the receiver.
- > Pass the cable of the mains unit through the cable grip.
- > Slide the supplied country adapter onto the mains unit.
- > Plug the mains unit into a wall socket.



Using the receiver

To establish a transmission link, proceed as follows:

1. Switch the receiver on.
2. Switch the transmitter on. The transmission link is established and the receiver's RF level display "RF" reacts.

If you cannot establish a transmission link between transmitter and receiver:

- > Make sure that transmitter and receiver are set to the same frequency bank and to the same channel.
- > If necessary, read the chapter "If a problem occurs ...".

Putting the receiver into operation

Preparing the receiver for use

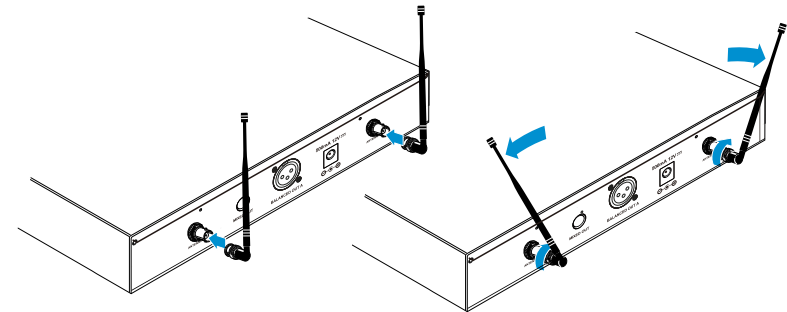
Setting up the receiver on a flat surface

Place the receiver on a flat, horizontal surface. Please note that the device feet can leave stains on delicate surfaces.

! NOTE: The stacking elements are designed to help protect the operating elements from damage or deformation, e.g. if the receiver is dropped. Therefore, fasten the stacking elements, even if you do not want to stack your receivers.

Fastening the stacking elements. To fasten the stacking elements:

- > Unscrew and remove the two recessed head screws on each side of the receiver (see diagram).
- > Secure the stacking elements to the sides of the receiver using the previously removed recessed head screws (see diagram).

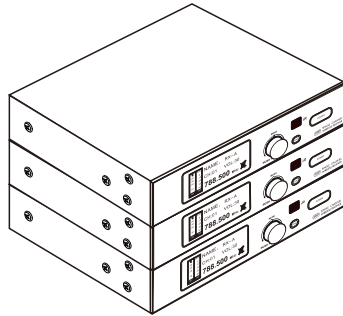


Fitting the device feet > The device feet are fitted to the base of the receiver (see diagram).

! NOTE: If you want to stack receivers (see following section), only fit the device feet to the base of the lowermost receiver. Do not fit the device feet when mounting the receiver into a 19" rack.

- > Clean the base of the receiver where you want to fix the device feet.
- > Fix the device feet to the base of the receiver by peeling off the backing paper and fitting them as shown on the left.

Stacking receivers > Stack several receivers on top of each other.



- ! CAUTION** Danger of injury due to toppling receiver stacks!
High receiver stacks can easily topple over
- > Place the stack on an absolutely flat surface.
 - > Secure the stack against toppling over.
 - > Fasten the stacking elements as described in the previous section.
 - > Stack the receivers so that the recesses of the stacking elements completely engage with each other.

Connecting the rod antennas > The supplied rod antennas are suitable for use in good reception conditions.

- > Connect the rod antennas (see diagram).
- > Align the antennas in a V-shape.

! NOTE: When using more than one receiver, we recommend connecting remote antennas and, if necessary, using antenna accessories.

Mounting the receiver into a 19" rack

! NOTE: Do not mount the stacking elements and do not fit the rubber feet when rack mounting the receiver.

! CAUTION: Risks when rack mounting the receiver!

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.

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

Rack mounting one receiver

To mount the receiver into a rack:

- > Slide the receiver with the mounted blanking plate into the 19" rack.
- > Secure the rack mount "ears" and the blanking plate to the 19" rack.
- > Align the antennas in a V-shape.