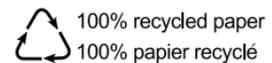




HCR-30D

True diversity camera
wireless receiver system



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Installation and Operation

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Thank you for choosing a RELACART professional wireless microphone system. You have joined thousands of other satisfied customers. Our years of professional experience of design and manufacturing to ensure our products' quality, performance and reliability.

01 Safety Operation and Notice

1. Please read instructions for safety operation carefully before installation and operation. Please save your safety operation guide for future reference.
2. Do not scratch, bend, twist, stretch or heat the power cord as this may cause damage to the power cord, resulting in a fire or electric shock.
3. Do not open the device shell, otherwise it may cause electric shock. If you need to repair, maintain or repair, please contact your local agent.
4. Do not touch the power plug with wet hands as this may cause a fire or electric shock.
5. Do not attempt to modify this device. Failure to do so may result in personal injury or product malfunction.
6. Do not use this equipment near water.
7. If the power cord is damaged (such as a broken wire or bare core), obtain replacement parts from your dealer. Continued use of the equipment with a damaged power cord may result in fire or electric shock.
8. To move the device he power, unplug the power cord, and unplug all connecting cables as this may damage the cable, resulting in a fire or electric shock.
9. Before cleaning the device, unplug the power cord and unplug all connecting cables. Please clean it with a dry soft cloth.
10. If the device is not in use for a long time, turn off the power, it is best to unplug the socket.
11. With the power plug and appliance coupler as the disconnecting device, it should be kept easy to operate.
12. For the safe use of the equipment and adequate ventilation, the minimum clearance around the equipment should be maintained at a distance of 5 cm or more.
13. DO NOT cover the Ventilation holes, such as: newspaper / fabric / curtains and other items.
14. Equipment should not be placed on a bare flame source, such as: lit candles.
15. Battery should not be exposed to sunshine, roasted or other high temperature overheating environment.
16. Do not throw the waste battery, please put in the designated bins.
17. Water protection rating: IPX0
18. The device can be used normally in tropical / temperate climates.
19. This product is only suitable for safe use at the altitude of 2000m and below.
20. This symbol "⚡" indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
21. All Relacart products will be afforded one year free maintenance except for man-made damage, such as:
 - the device is damaged by man-made factors.
 - the device is damaged by improper operation.
 - some components are damaged or loss after the self-disassembly.

02 System Performance Feature

HCR-30D is an ultra-small wireless microphone system designed for professional camera positioning. At the same time, the intelligent channel diversity receiver can be divided into single channel true diversity and dual channels antenna diversity switching. It is mainly used in professional Video camera, with wireless handheld microphone or wireless bodypack, so that the camera is free from the interference of microphone signal line during recording, so that the distance and positioning of video and sound are more closely combined, so as to achieve the recording effect of original sound reproduction, and ensure the mobile operation of the camera, more flexible, convenient and safe use.

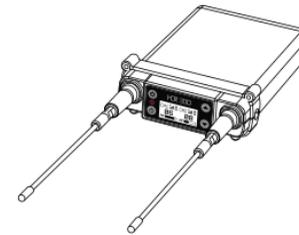
Key Features:

- Has a sturdy and water-resistant aluminum alloy housing to meet professional quality requirements. The new technology OLED display can display the transmitter battery, radio frequency and audio working status at the same time.
- Equipped with super quiet electronic touch switch, which can avoid the mechanical sound amplification of the switch.
- Equipped with "Panasonic" and "SONY" two kinds of easy to disassemble and replace the fixed bracket output module, easy to install in different video cameras.
- Separate SMA soft antenna and antenna connector with adjustable Angle of 1/4 wavelength are adopted.
- Super wide frequency selection UHF 521.25MHz~ 936.85MHz, true diversity reception.

03 Packing List

- It has the function of [AFS] to automatically search for the cleanest and non-interference frequency in the actual environment, enter the setup menu and select AFS function, the receiver will auto-scan and lock the working interference-free frequency.
- With [IR] infrared automatic frequency matching function, press the [SYNC] button, the transmitter can automatically and accurately lock the working frequency of the receiver.
- Stable PLL phase-locked oscillation circuit, with "noise detection" mute control function, can effectively block noise RF interference in the working environment.
- The unique DSP audio expansion algorithm of Relacart is adopted to minimize the noise caused by the wireless transmission process and restore the best sound. The audio output of the receiver can be set to multiple mode output (two mixing, mixing 1, mixing 2, audio separation)
- The design of hand-held microphone is simple, flexible and light, showing the soft grip feeling of humanization.
- Precision low-consumption circuit design, so that the battery life is twice as long as the ordinary microphone.
- The hardware circuit of the whole system is controlled by a microcomputer. Advanced computer technology is used to calculate the frequency without interference with each other, which makes the performance of the whole system more stable and less prone to frequency deviation and frequency break.

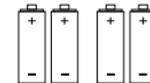
- ◆ Receiver *1
- ◆ Wireless transmitter *2 (optional product: handheld or bodypack)
- ◆ Fixed adapter * 1 (optional products: Panasonic, SONY)
- ◆ 1.5V AA battery *4
- ◆ Installation and operation * 1



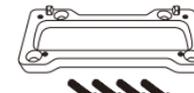
(Receiver)



(Transmitter optional product)



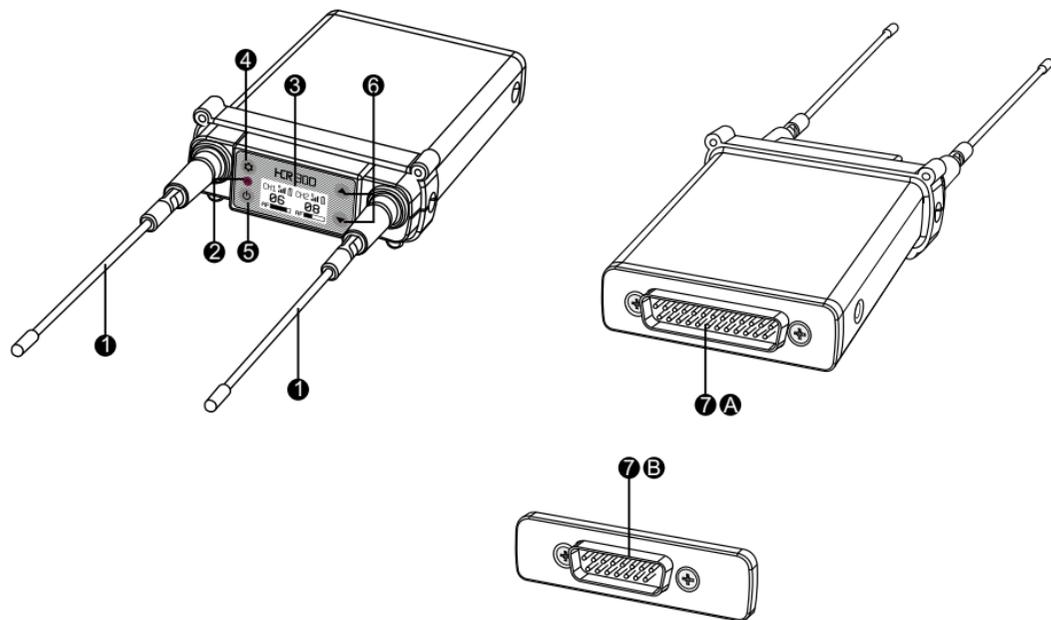
(SONY adapter)



(Panasonic adapter)



04 Receiver Function Introduction



- 1 SMA antennas A and B.
- 2 Infrared data transmission [IR] window: used to send infrared signals to the transmitter to achieve synchronization.
- 3 OLED display: For setting up and monitoring the receiver. The main window shown above is used during normal operation to display antenna signal and audio levels, frequency group channels, transmitter battery status, and diversity activity for both receivers.
- 4 “⊕” menu/Select button: This button is used to enter the setting interface and select the menu items during the setting process.
- 5 “⊖” Power/Return button: Long press this button to turn on power or turn off power. While navigating various menus and Settings screens, a short press also serves as a “back” button to return to a previous screen or menu item.
- 6 “▲/▼” button: it is used to select various options and adjust values in the setting interface. And provides accessibility features such as locking panels to prevent accidental changes.
- 7 The rear panel adapter: **A** panasonic and **B** SONY two different panel adapter can be used to configure the receiver, convenient and popular cameras slot. The adapters are secured through two screws on the side panels of the case, making them easy to install.

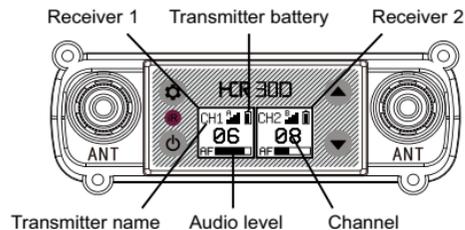
05 Receiver Display Overview

The appearance of the OLED main window will change depending on the selected diversity mode:

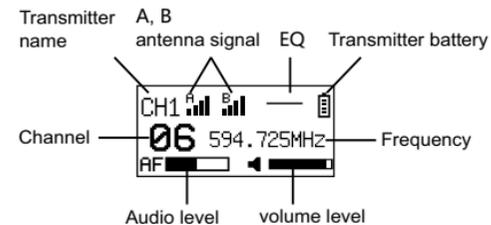
Dual channel mode: Set the receive separation mode to dual channel mode, two audio channels will be displayed.

Single-channel true Diversity mode: Setting the receive separation mode to single-channel true diversity mode will display a single audio channel.

Dual channel mode



Single channel true diversity mode



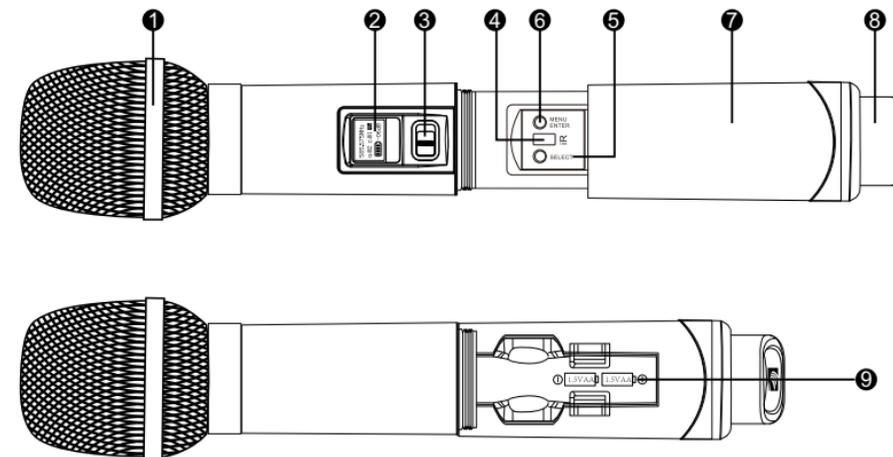
The main window displays information about antenna phase, audio level, frequency group channel, frequency, volume level, EQ, and battery status for the receiver and associated transmitter.

Press the "⊕" menu/select button to access the menu and interface to set the receiver and search for clear channels.

Note: When single-channel true diversity mode is selected, two receivers are combined to receive the same transmitter, so the main window displays a single audio channel.

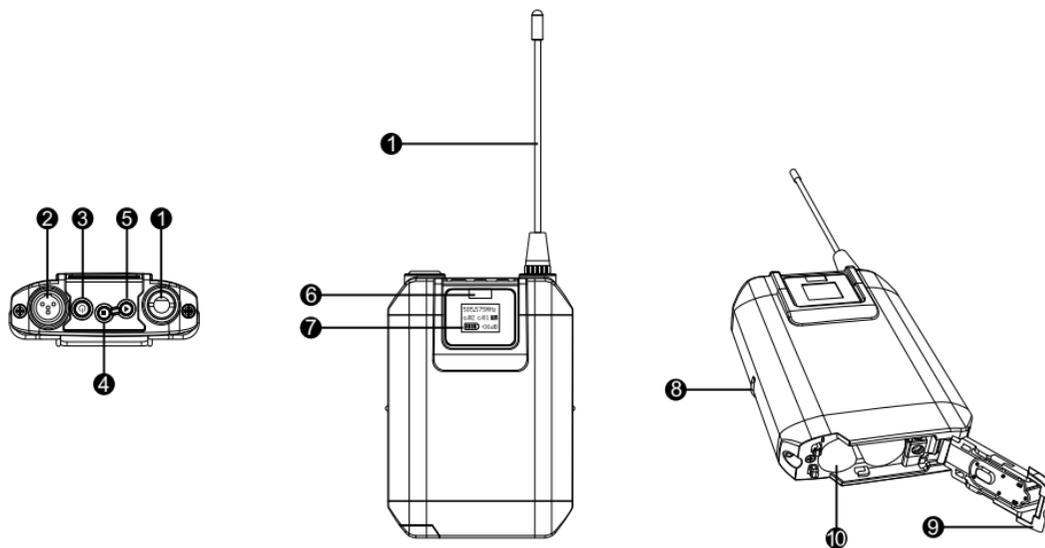
06 Transmitter Function Introduction

Handheld microphone (UH-2)



- ❶ The microphone cartridge: used to pick up the audio to the transmitter modulation.
- ❷ OLED display: display the frequency, group, channel and battery life, etc. Battery indicator displays a maximum of 4 bar segments. When it leaves 1 bar segment, the batteries should be replaced immediately.
- ❸ Toggle power switch: turn the power on or off.
- ❹ Infrared data receiving window (IR): Synchronization of transmitters via IR interface from receiver.
- ❺ “SELECT” button: press the button to edit the menu parameter values.
- ❻ Menu setting button: press to enter or confirm the setting.
- ❼ Battery cover: Unscrew it can reveal the battery compartment; When installing, replacing or setting the infrared frequency, the battery cover must be opened.
- ❽ Handheld transmitter tail cover: integrated antenna transmission output port.
- ❾ Battery compartment: Insert 2 fresh 1.5V AA batteries. (Alkaline type is recommended. Please remember to replace both batteries.)
Warn: Observe correct polarity as marked inside the battery compartment to avoid damage to the internal electric parts.

Bodypack transmitter (UT-2)



- ❶ φ 3.5mm with nut lock antenna: For transmitting a bodypack radio carrier.
- ❷ 4-pin mini XLR plug: Connect to 4-pin lavalier microphone or instrument cable.
- ❸ Light touch power switch: turn the power on or off.
- ❹ “■” button: Press the button to enter the selection or confirmation menu.
- ❺ “▶” button: Press the button to edit the menu parameter values.
- ❻ Infrared data receiving window (IR): Synchronization of transmitters via IR interface from receiver.
- ❼ OLED display: display the frequency, group, channel and battery life, etc. Battery indicator displays a maximum of 4 bar segments. When it leaves 1 bar segment, the batteries should be replaced immediately.
- ❽ Belt clip: fix the transmitter around the user's waist.
- ❾ Battery cover: pull to open the battery door.
- ❿ Battery compartment: Insert 2 fresh 1.5V AA batteries. (Alkaline type is recommended. Please remember to replace both batteries.)
Warn: Observe correct polarity as marked inside the battery compartment to avoid damage to the internal electric parts.

07 Install Camera Slot and Rear Panel Adapter

Install the camera slot adapter

SONY adapter

Pass four long countersunk stock hex screws through the screw holes on the adapter and slide them onto the receiver housing.

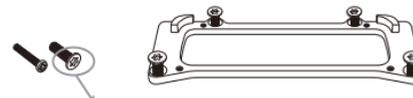
Pass the four cross screws through the lug on the receiver adapter plate as shown, then line them up with the small screw holes on the adapter.



Attach the adapter to the receiver adapter plate by sliding it up and tightening the fixing screw.
The four lower screws are fixed to the camera body.

Panasonic adapter

Two different types of screws are used to connect the receiver adapter to the adapter.



The short countersunk stock hex screw is threaded through the adapter and screwed into the camera body.



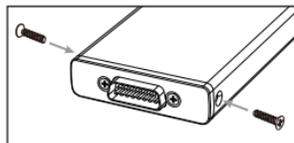
A cross screw holds the receiver to the adapter.

Countersunk hex screws secure the adapter to the camera body.

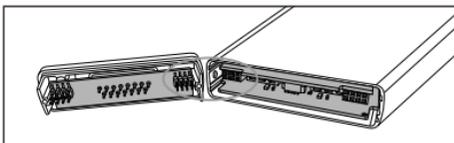
Note: If you are having trouble inserting the receiver into the camera slot, try attaching the black adapter to the camera first before inserting the receiver.

Install the rear panel adapter

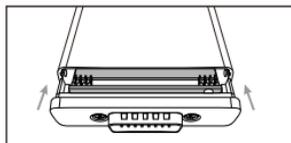
The installation of the rear panel output adapter is the same for all models.



The panels are held in place by two cross screws on either side of the housing.



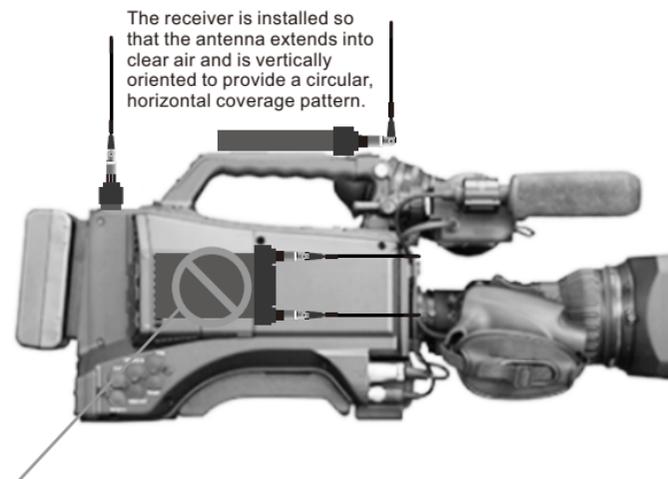
The connection between the panel and the main circuit board is made through miniature companion connectors.



Align the matching connectors and slide the panel directly into the housing until the screw hole is aligned with the housing.

08 Receiver and camera mounted and positioned

Various accessories are available to enable various installation options. For maximum operating range, the antenna should be placed vertically above the camera and other equipment. The SMA soft antenna is connected so the whip can be vertically oriented.

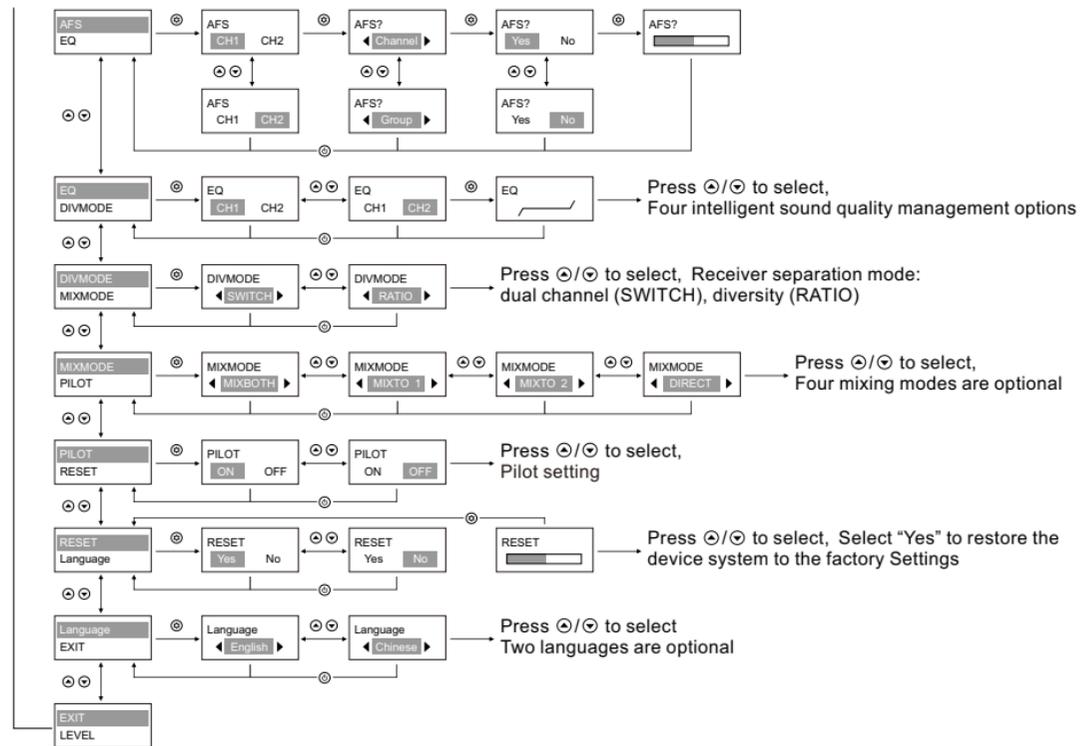
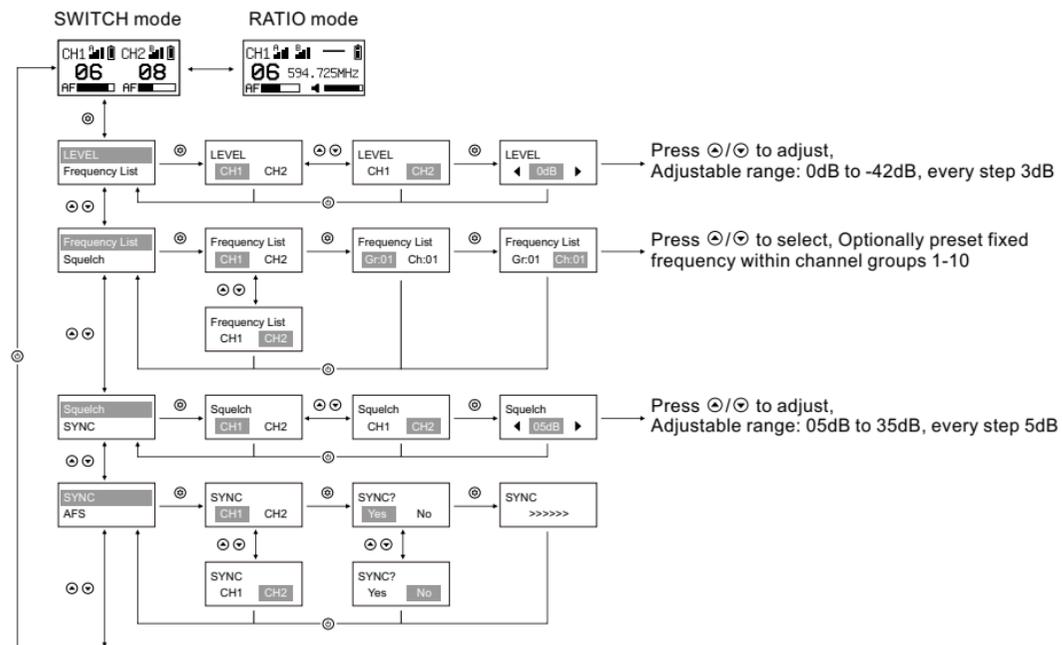


The receiver is installed so that the antenna extends into clear air and is vertically oriented to provide a circular, horizontal coverage pattern.

Do not install the receiver here, so that the antenna is close to other equipment or horizontal position.

09 Receiver Operation Menu

Note: When single-channel true diversity mode is selected, the main window displays a single audio channel without channel selection when entering the menu Settings.



10 Technical Specification

HCR-30D Receiver

Reception mode:	true diversity reception
Frequency Stability:	±0.005%
Carrier Frequency Range:	521.25MHz ~ 936.85MHz
Modulation Mode:	FM
Operating Range:	100M typical (in open space)
Oscillation:	PLL synthesized
Sensitivity:	6dBu, S/N >76dB at 25KHz deviation
Bandwidth:	32MHz
Max Deviation Range:	±75KHz
Sampling Rate:	ADC 24-bit, DAC 24-bit, sampling rate 96 KHz
S/N Ratio:	>105dB
T.H.D:	<0.7%@1KHz
Frequency Response:	80Hz — 18KHz ±3dB
Output Interface:	Panasonic + Sony
Power Supply:	DC 7 V/280 mA — 18 V/220 mA
Current Consumption:	180mA (typical)
Operating Temperature Range:	-25° ~ 60°C
Dimension (mm):	73 (W) x 28 (D) x 110 (H)
Weight:	Approximately 210g

UH-2 Handheld Microphone

Carrier Frequency Range:	521.25MHz ~ 936.85MHz
Harmonic Radiation:	<45dBm
Bandwidth:	Single-band 134MHz (It depends on the region)
Modulation Mode:	FM
Audio Compression:	Relacart classic audio compression circuit
Microphone Element:	Dynamic/Condenser, cardioid directivity (removable)
RF Output Power:	10MW/30MW
Battery:	AA x 2
Current Consumption:	130mA (Typical)
Battery Current/Life:	Approximately 10 hours
Microphone Lengths (mm):	52 (Φ) x 255 (L)
Weight:	Approximately 235g (w/o battery)

UT-2 Bodypack Transmitter

Carrier Frequency Range:	521.25MHz ~ 936.85MHz
Harmonic Radiation:	<45dBm
Bandwidth:	Single-band 134MHz (It depends on the region)
Modulation Mode:	FM
Audio Compression:	Relacart classic audio compression circuit
Input Connector:	4-pin mini-XLR connector, 3-level adjustable input gain
RF Output Power:	10MW/30MW
Battery:	AA x 2
Current Consumption:	130mA (Typical)
Battery Current/Life:	Approximately 10 hours
Dimension (mm):	84 (H) x 66 (W) x 23 (D)
Weight:	Approximately 155g (w/o battery)