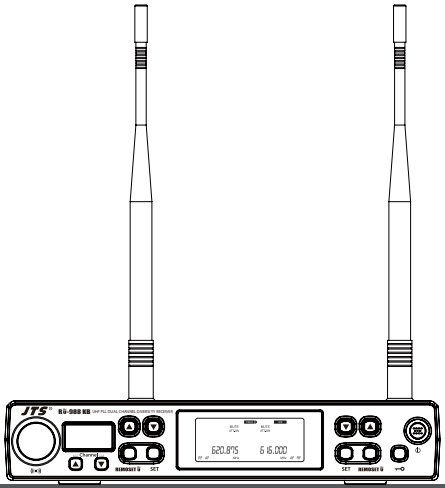

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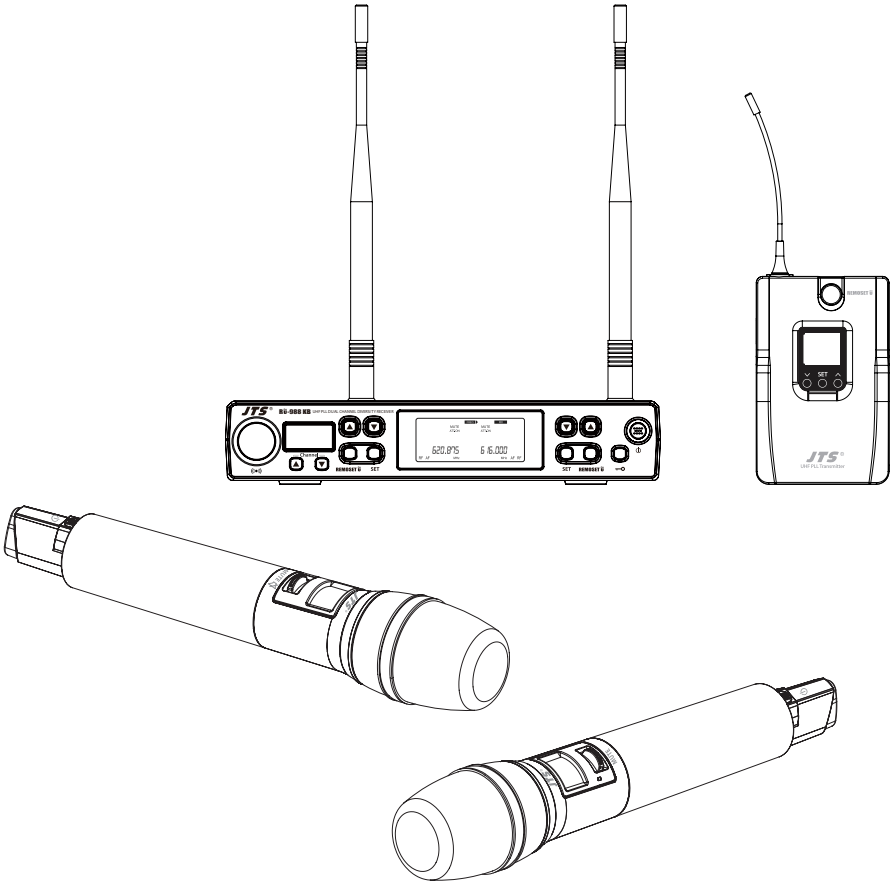
JTS PROFESSIONAL CO., LTD.



Instruction Manual

UHF PLL

RU-988KB / RU-988TH / RU-988TB

With JTS **REMOSET** Ultrasonic Synchronizing Technology

One year product warranty

Product Model		Equipment serial number	
Customer name		Contact number	
Address			
Purchase date			
Selling store stamp	Be sure to put store stamp and fill in purchase date for the warranty to be effective!		

Warranty description

1. Be sure to put the warranty label indicating purchase date on the bottom of equipment to ensure your interest in maintenance and service.
2. Product warranty, starting on the purchase date indicated on "warranty label", will last for one year; if the equipment does not have "warranty label", the warranty period is 15 months from the manufacturing date. If a microphone is broken but not sent back with the equipment, the warranty period is 15 months from the manufacturing date of the microphone.
3. Within the warranty period, if the equipment is broken under normal use as instructed in manual, please contact the original selling store for repair.
4. When the product is returned for repair, to facilitate proper determination of cause of malfunction and of whether repair fee is needed, please ship back the equipment and microphone together.
5. Within the warranty period, our company provides repair service at no cost except for the following conditions that parts and repair may be charged:
   a.Damages due to natural disaster or irresistible outside forces.
   b.Damages due to drop, water, moisture, corrosion, foreign objects, missing components.
   c.The warranty does not cover consumable parts. (such as microphone capsule, ball grille etc.)
   d.Those without "warranty label" on equipment or with "warranty label" being damaged and failing to identify warranty period.
6. Please keep the warranty properly. No replacement will be made if the warranty is missing.

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1. Notes for system operations

- Before connecting the power, check that the power requirement shown on the unit is the same as the power output on the adaptor supplied.
- Do not leave the unit at where the humidity and temperature are high.
- Dry your hands before operating the system.
- Keep the unit away from fire and heat source.
- Turn the volume to minimum at both the mixer and amplifier before setting up the system.

2. Features

- Wide band of 36MHz, specially intended for exquisite KTV rooms and classrooms.
- Preset 90 pairs of channels.
- One key sets two channels.
- Easy squelch adjustment from front panel.
- Both frequency and channel are adjustable.

3. Specifications

3-1 UHF PLL dual-channel diversity receiver

Model	**RŨ-988KB**
Frequency Oscillation Mode	Phase-locked loop (PLL)
Carrier Frequency Range	470~960 MHz
Remoset Frequency	Ultrasonic
Diversity	Antenna diversity
Bandwidth	36MHz
Signal/Noise Ratio	>105dB(A)
Total Harmonic Distortion (Thd)	<0.6%@1KHz
Receiving Sensitivity	-95dBm，S/N>80dB
Image Rejection Ratio	>80 dB
Frequency Response	50Hz~16KHz±2dB
Antenna Type	1/2λ BNC detachable
Antenna Booster Power	DC12~15V/100mA
Function Display By	LCD / LED
Contents Of Display	Group, channel, frequency, battery level, antenna A/B, muting level, AF indication, RF indication, channel scanning, output level attenuation, volume indication
Control Functions	Power, group, channel, frequency, muting level, button lock, volume, output attenuation (XLR), channel scan (on/off)
Audio Frequency Output Level	Ref：±22.5KHz Dev@1KHz Tone
	ψ6.3 Phone Jack：-10dBV
	XLR Jack：-4dBV(Line)、-24dBV(MIC)
Audio Frequency Output Impedance	600Ω
Muting	Noise muting and tone code locking
Output Port	2 x balanced XLR jack 1 x unbalanced ϕ6.3 jack
Power Supply	12~15V DC / 500mA
Dimension (Mm)	210mm (W) x 40mm (H) x 172mm (L)

3-2 UHF PLL hand-held transmitter

Model	RÜ-988TH
Frequency Oscillation Mode	Phase-locked loop (PLL)
Carrier Wave Frequency Range	470~960 MHz
Remoset Frequency	Ultrasonic
RF Power Output	10mW/50mW(as per local regulations)
RF Stability	<±10KHz@Fc
Modulation Frequency Shift	±48KHz
Harmonic Radiation	<-50dBc
Functions	Mute, auto off, sensitivity adjustment, low power indication
Display By	LCD+LED
Controls	Power, mute, group, channel, frequency, sensitivity adjustment, auto off, button lock
Battery	AA alkali battery or MiNH rechargeable battery x 2
Charging	Yes
Dimension	51mm (W) x 269mm (H) x 26mm (L)

3-3 UHF PLL body-pack transmitter

Model	RÜ-988TB
Frequency Oscillation Mode	Phase-locked loop (PLL)
Carrier Wave Frequency Range	470~960MHz
Remoset Frequency	Ultrasonic
RF Power Output	10mW/50mW(as per local regulations)
RF Stability	<±10KHz@Fc
Modulation Frequency Shift	±48KHz
Harmonic Radiation	<-50dBc
Functions	Mute, auto off, input level attenuation, sensitivity adjustment, low power indication
Display By	LCD+LED
Input Port	4 pin Mini XLR
Controls	Power, mute, group, channel, frequency, sensitivity adjustment, input level attenuation, auto off
Battery	AA alkali battery or MiNH rechargeable battery x 2
Charging	Yes
Dimension	62mm (W) x 97mm (H) x 20mm (L)

3-4 Optional condenser microphone

Lavaliere microphone

Model	CM-501	CM-201i	CM-125i
Connector	4-pin mini XLR	4-pin mini	4-pin mini XLR
Frequency Response	100~15,000 Hz	XLR60~15,000 Hz	50~18,000 Hz
Polar Pattern	Cardioid	Omni-directivity	
Sensitivity (at 1000Hz)	-60 ± 3dB	-60 ± 3dB	-53 ± 3dB
Impedance	2.2K Ω		4.4K Ω
Max. SPL for 1% THD	130dB		
Dimension (mm)	Ø10.1mm (W) x 26.4mm (H)	Ø5mm (W) x 9mm (H)	Ø4mm (W) x 11mm (H)
Net Weight	21.5g	20.7g	7g (cable not included)

Headset microphone

Model	CM-214i	CM-214Ui	CM-214ULi
Connector	801C4 (4P Mini XLR)	4P Mini XLR	801C3 (3P Mini XLR) 801C4 (4P Mini XLR) 801CS (3.5 stereo plug)
Option Connector	801C3 (3P Mini XLR) 801CS (3.5 stereo plug) 801CR		801CR
Frequency Response	60~15,000 Hz	30~18,000 Hz	100 ~ 18,000Hz
Polar Pattern	Omni-directional	Cardioid	
Sensitivity (at 1000Hz)	-60±3 dB	-68±3 dB	-65±3 dB
Impedance	1.8kΩ	680Ω	1.8kΩ
Max. SPL for 1% THD	130dB		120dB
Dimension(mm)	125mm(W) x 134mm(H)x 157mm(D)	205mm(W)x 134mm(H)x 157mm(D)	125mm(W)x 134mm(H)x 157mm(D)
Net Weight	32.9g	38.4g	18g (cable excluded)

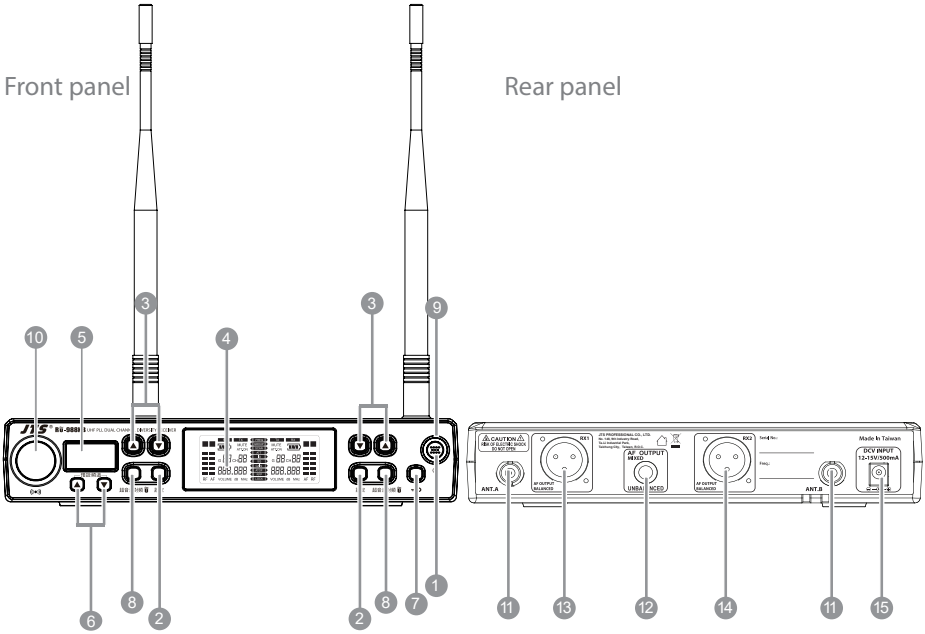
Model	CM-235i	CX-504
Connector	801C4 (4P Mini XLR)	4P Mini XLR
Frequency Response	50~18,000 Hz	30~18,000 Hz
Polar Pattern	Omni-directional	Cardioid
Sensitivity (at 1000Hz)	-53 ± 3dB	-68 ± 3dB
Impedance	1.8kΩ	680Ω
Max. SPL for 1% THD	130dB	130dB
Dimension(mm)	155mm(W)x 134mm(H)x 157mm(D)	285mm(W)x 55mm(H)x 111.3mm(D)
Net Weight	17g (cable excluded)	56.3g

Ear-hook microphone

Model No	CM-801 / CM-804i	CM-8015 / CM-825i
Connector	801C4 (4P Mini XLR)	801C4 (4P Mini XLR)
Option Connector	801C3 (3P Mini XLR) 801CS (3.5 stereo plug) 801CR	801C3 (3P Mini XLR) 801CS (3.5 stereo plug) 801CR
Frequency Response	60~15,000 Hz	50~18,000 Hz
Polar Pattern	Omni-directional	Omni-directional
Sensitivity (at 1000Hz)	-64±3 dB	-53±3 dB
Impedance	1.8kΩ	1.8kΩ
Max. SPL for 1% THD	130dB	130dB

4. Description of parts

4-1 UHF PLL dual-channel diversity receiver // RU-988KB



1. Power switch:short press to start up, long press for two seconds to shut down.
2. SET key:Keys to set the functions. Long press for two seconds to enter the setting mode, press the "SET" key again to enter the setting of different functions.
3. ▲/▼Keys to select functions: In the setting mode, press the ▲/▼ key to adjust function parameters. In the non-setting mode, press the ▲/▼ key to set the output volume.
4. LCD Screen
5. 3 Digits Seven-Segment Display: Display current preset channels *01~*90, and the group channels *91~*96.
6. Default preset channel selection key:For users to quickly set the preset channels.
7. Lock key:long press the "LOCK" key for two seconds to lock the function of key. Avoid accidentally touch the setting.
8. **REMOSET** button: For users to synchronize the setting set in the receiver with that of the transmitter.

9. Power, indicator light: In the normal state, it serves as the power indicator light (bright red). The display will show the following when carrying out channel matching: **REMOSET**, when transmitting data, the indicator light will blink fast (green light); once the synchronization is done, it will stop blinking. If synchronization fails after channel matching is carried out for some time, the blinking rate of indicator light will slow down.

10. Ultrasonic transmitter unit:Transmit the content of setting as digital data through the ultrasonic transmitter.

11. BNC Antenna base: Connect 50Ω BNC antenna and provide DC12 ~ 15V / 100mA as the booster power supply. It may be connected to an external antenna amplifier to increase the receiving distance.

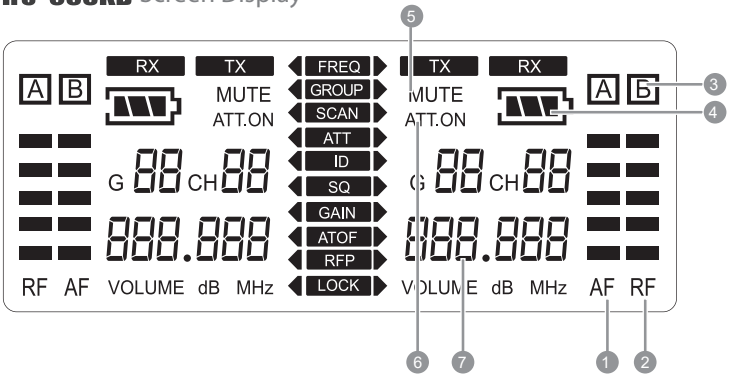
12. 6.3 mm PHONE JACK (MIXED):Unbalanced audio output socket.

13. XLR Male Socket (RX1):RX1 balanced audio output socket

14. XLR Male Socket (RX2):RX2 balanced audio output socket

15. DC power input socket:DC power input socket DC12~15V/500mA

RU-988KB Screen Display

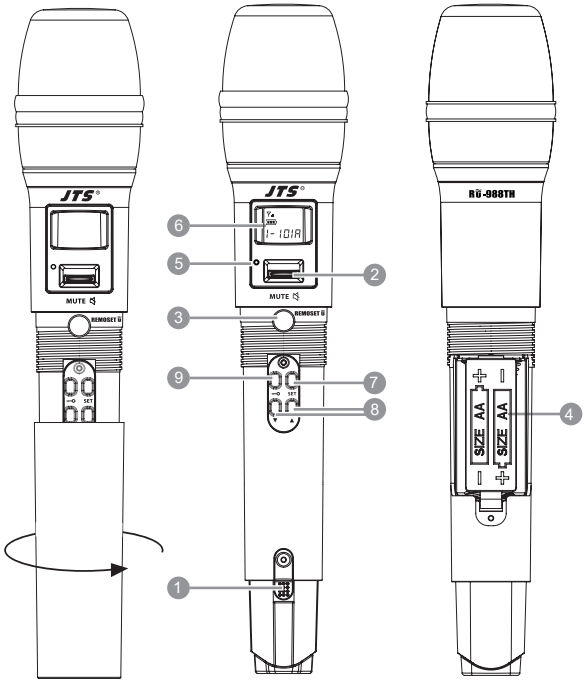


The following content is displayed in the non-setting mode:

1. AF : audio signal strength
2. RF : RF signal strength
3. A B : Antenna Selection A / B
4. : Transmitter battery power
5. MUTE : Receiver (MUTE)
6. ATT.ON : Output attenuation (ATT.ON)
7. 888.888 MHz : Frequency

4-2 UHF PLL hand-held transmitter // RÜ-988TH

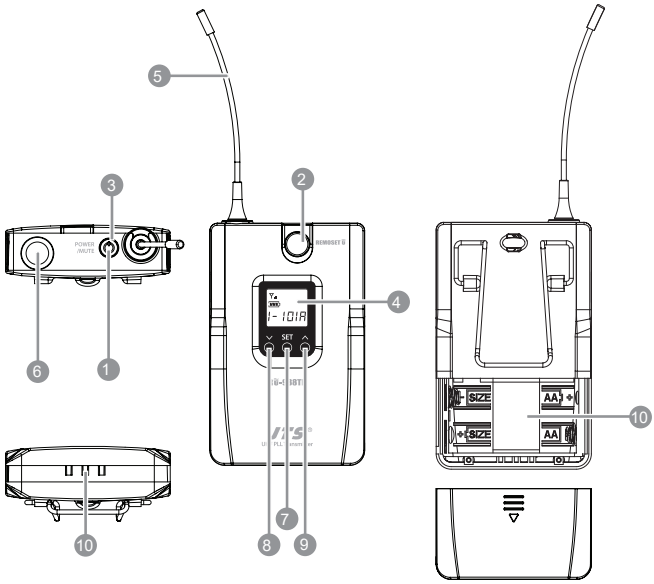
1. Power: push to turn the transmitter on. When the transmitter is on, push and hold for 2 seconds to turn it off.
2. Mute: while the transmitter is on, switch Mute up to talk and down to mute. If the transmitter is off, switch the Mute up to turn the unit on. The transmitter turns itself off automatically after 1, 10 or 30 minutes of muting depending on setting.
3. Ultrasonic receiving unit: it receives pairing signals from the ultrasonic transmission unit at the receiver end.
4. Battery holder: it holds UM3, AA 1.5V battery or rechargeable battery x 2.
5. LED indicator: it shows the transmitter's status, including battery level, mute and pairing indication.
6. LCD display: it shows the parameter settings in the transmitter.
7. SET: it allows parameter settings, including frequency, group, channel, sensitivity, transmission power, auto off countdown and machine code.
8. ▲/▼: these are used with "SET" to change the parameter settings.
9. ⊸: push and hold the "LOCK" button for 2 seconds to lock the buttons. Push and hold again for 2 seconds to unlock.



4-3 UHF PLL body-pack transmitter // RÜ-988TB

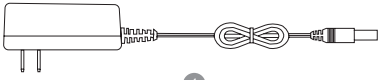
1. Mute/Power: push once to turn the unit on. While the unit is on, push once to mute and push again to talk. Push and hold for 2 seconds to turn off.
2. Ultrasonic receiving unit: it receives the pairing signals from the ultrasonic transmission unit at the receiver end.
3. LED indicator: it shows the transmitter's status, including battery level, mute and pairing indication.
4. LCD display: it shows the parameter settings in the transmitter.
5. Antenna: the antenna of transmitter
6. Microphone input port: 4P mini XLR jack
7. SET: it allows parameter settings, including frequency, group, channel, sensitivity, input signal attenuation, auto off countdown, lock on and machine code.
8. ▲/▼: these are used with "SET" to change the parameter settings.
9. Battery holder: it holds UM3, AA 1.5V battery or rechargeable battery x 2.
10. Charging contact: if rechargeable batteries are used, this transmitter can be recharged with an optional charger.

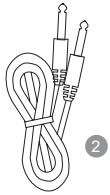
    Note: a user can also choose Auto power off with RÜ-988TB



4-4 Accessories

1. AC/DC adaptor
   Switching Power Supply(100V~240V , 50~60Hz)
   AC IN: AC100~240V/50~60Hz
   DC OUT: DC12V/0.5A Option
2. AF output cable (with Φ6.3 plug at both ends)

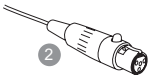


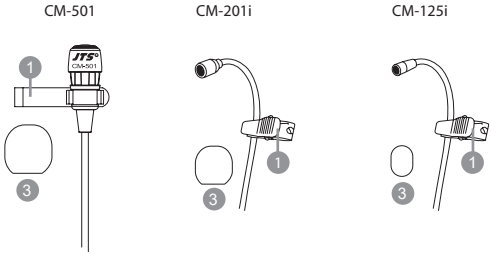


4-5 Optional Condenser Microphone

Lavaliere Microphone // CM-501 CM-201i CM-125i

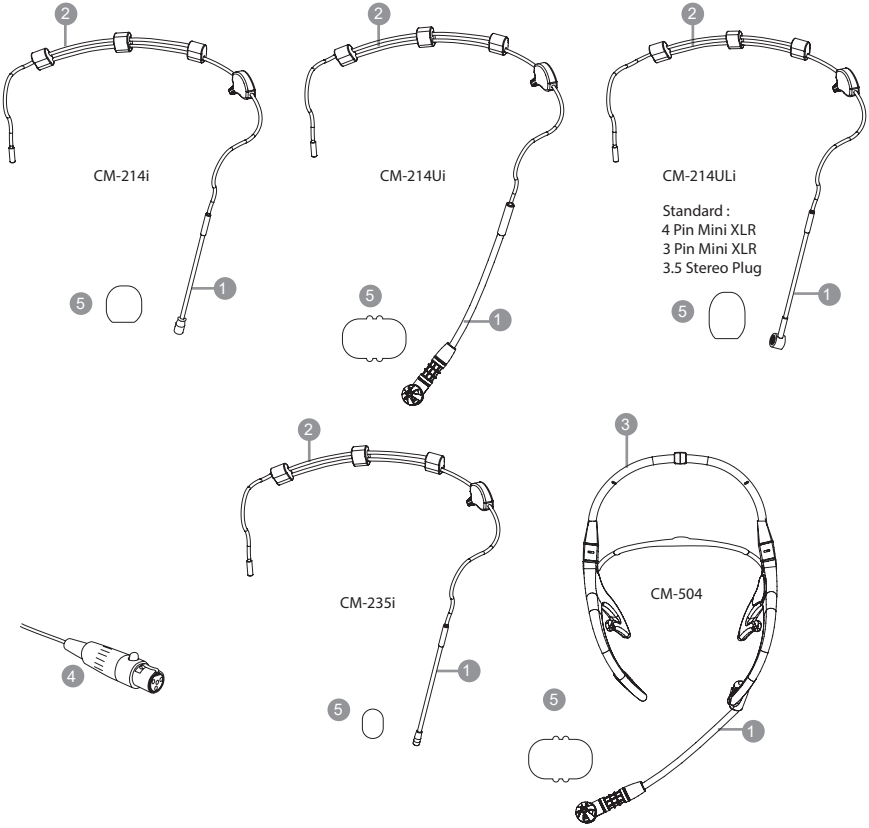
1. Clip
2. 4 Pin Mini XLR
3. Windscreen





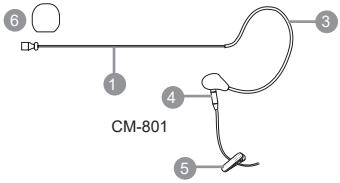
Headset Microphone // CM-214i CM-214Ui CM-214ULi CM-235i CX-504

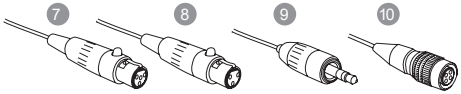
1. Gooseneck
2. Adjustable headband
3. Headband
4. 4 Pin Mini XLR
5. Windscreen

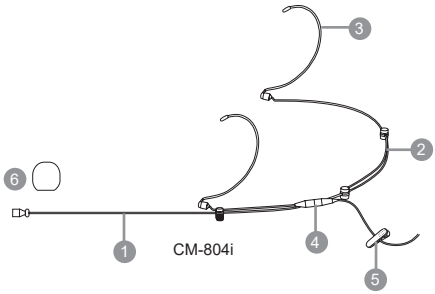


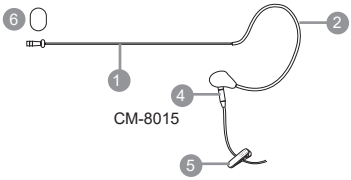
Ear-hook Microphone // CM-801 CM-804i CM-8015 CM-825i

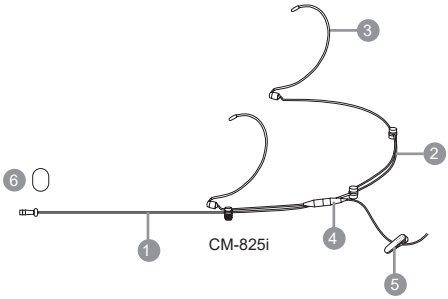
1. Boom
2. Adjustable Headband
3. Adjustable ear hook
4. Detchable Cable
5. Cable Clip
6. Windscreen
7. 4 Pin Mini XLR
8. 3 Pin Mini XLR Option
9. 3.5 Stereo Plug Option
10. 4Pin Hirose connecter Option











5. Connecting

5-1 How to connect the receiver

1. Connect the audio output of receiver to mixer or amplifier

1.1 **RU-988KB** ：

(1) The XLR output jack or 6.3mm unbalance output jack can be selected individually to connect the AF output to a mixer or amplifier for volume control.

(2) Switch the "Mixed" on the back to ON. This allows to mix the RX1 and RX2 signals to RX1's 6.3mm non-balance output jack and then to a mixer or amplifier for volume control.

2.Connect the power

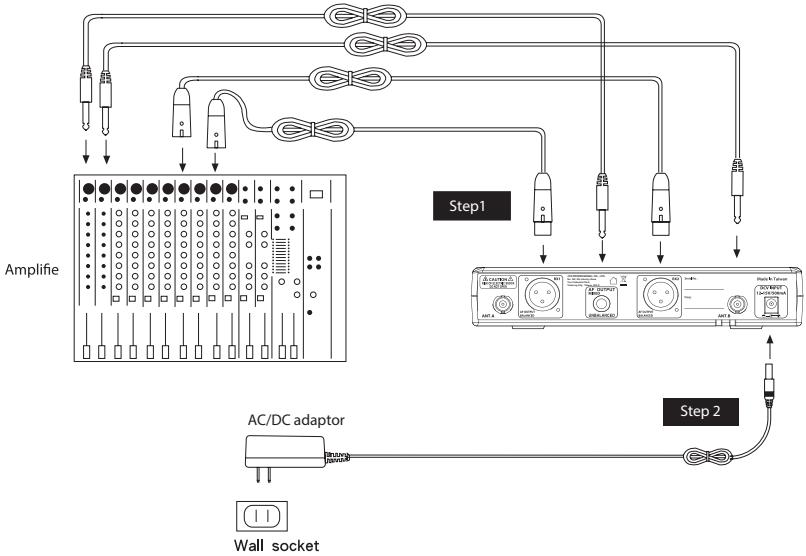
2.1. Connect the AC/DC adapter:

Check that the DC current and voltage ratings of the adapter match the label on the unit. Connect the DC terminal to the "DC input" port on the unit, and the AC end to an AC socket.

2.2. Set the parameters:

Turn the power on and set the parameters of receiver according to the setting instructions.

⚠ Caution! Secure the power cable on the fastening hook of anti-pulling clip in order to prevent the power cable from falling.



5-2 Transmitter installation // RÜ-988TH

The Mute button on the hand-held unit also triggers the power-on. That's why the unit is on as soon as the batteries are replaced. Therefore, if you do not wish to turn on after changing the batteries, keep the Mute switch on mute.

1. Unscrew the outer tube of the transmitter (Figure 1).
2. Place 2 AA batteries in the battery holder while make sure they are in the correct polarities (Figure 2).
3. Screw the outer tube on (Figure 3).
4. To turn the unit on:
   a. Push the power button to turn on (Figure 4a), or
   b. Push the Mute switch up also to turn the unit on (Figure 4b).
5. Set the transmitter parameters according to the instructions.

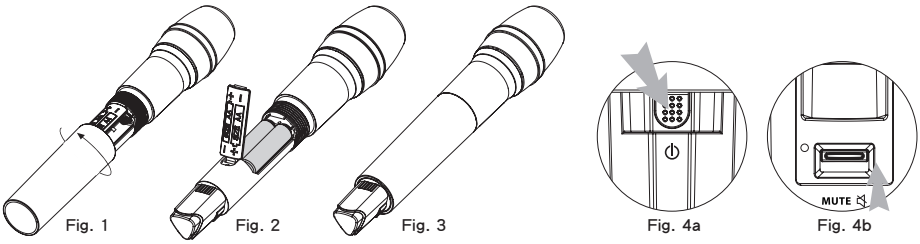


Fig. 1 Fig. 2 Fig. 3 Fig. 4a Fig. 4b

RÜ-988TB

1. Slide the battery holder cover downwards (Figure 1).
2. Place 2 AA batteries in the battery holder while make sure they are in the correct polarities (Figure 2).
3. Slide the battery holder cover upwards to close (Figure 3)
4. According to the type of microphone, insert the 4-pin mini XLR jack in MIC IN to complete the installation (Figure 4).
5. Push the Power button to turn the unit on (Figure 5).
6. Set the transmitter parameters according to the instructions.

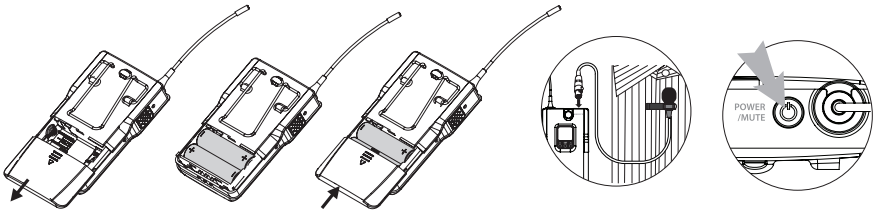


Fig. 1 Fig. 2 Fig. 3 Fig. 4 Fig. 5

6. Instructions for use

6-1 How to use // RU-988KB

Parameter setting

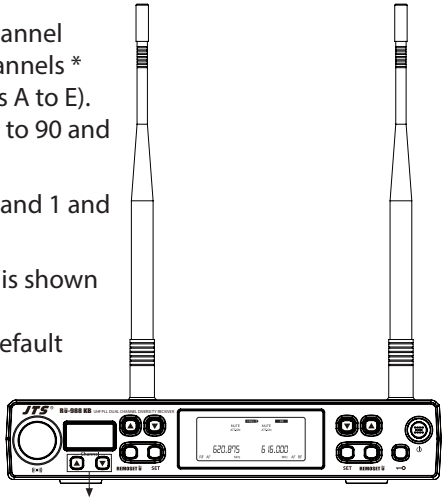
1. In the normal state, press the "Preset channel button ▲/▼" to fast select the preset channels * 01 ~ * 96. (* are for bands 1 to 3, or groups A to E). Quick setting icon: Preset channels are 01 to 90 and group channels are 91 to 96.

Example 1:Preset channels for Band 1 and Group 2 are shown as 102.

Example 2: Group B Channel 93 is shown as b93.

Note: It is not recommended to mix the default channel with the group channel.

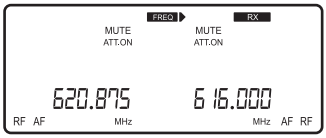
2. Press "SET" for two seconds to enter the setting mode, then press ▲/▼ key to select the relevant parameter to set RX (receiver) or TX (transmitter).



Select RX Receiver

◎ FREQ Frequency setting

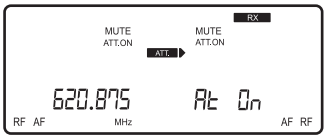
Take 1MHz as the unit	Press▲/▼ key to set frequency
Take0.025MHz as the unit	Press▲/▼ key to set frequency



Set the frequency number that takes 1MHz as the unit first, and then set the frequency number that takes 0.025MHz as the unit.

◎ ATT. Audio output attenuation(XLR)

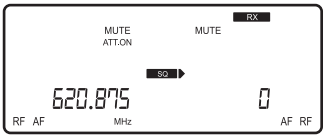
At OFF	Audio output without attenuation
At On	Audio output attenuation 20dB



Indicates that the function is turned on, and the output attenuation is 20dB

◎ SQ Receiving sensitivity

-5~+10dB, press the ▲/▼ key to select SQ	-5 most sensitive
	+10 least sensitive
	Default value 0

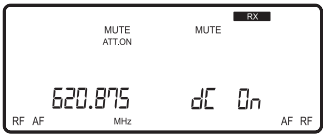


The chart SQ is in 0dB(default value).

◎ Digital Code (Digi Code)

dC On	Turns on the digital code function
dC OFF	Turns off the digital code function

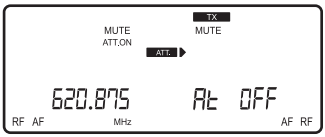
Note: In the digital code start mode, the microphone should wait for a few seconds to be turned on until the receiver finishes decoding. If not activated, LCD screen will show warning words (frequency and dC OFF flash in turn)



Select TX Transmitter

◎ ATT. Microphone audio input attenuation

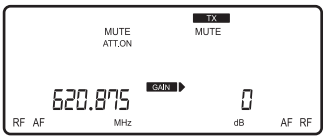
At OFF	Audio input without attenuation
At On	Audio input attenuates at 20dB (depending on whether the transmitter has this function)



Indicates: The function is off.

◎ Microphone Input Sensitivity

Normal sensitivity	GAIN：+15dB GAIN：+12dB GAIN：+9dB GAIN ：+6dB GAIN：+3dB GAIN：0dB GAIN：-3dB GAIN：-6dB GAIN：-9dB GAIN：-12dB GAIN：-15dB

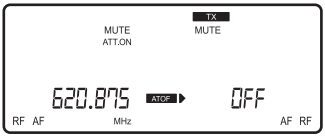


Indicates: The mic input sensitivity is set as 0dB(default value).

◎ ATOF Microphone Automatic Shutdown Time (in silent state)

OFF	The function is off.
1	Auto shutdown after 1 min
10	Auto shutdown after 10 mins
30	Auto shutdown after 30 mins.

Note:The default value is 10 mins.

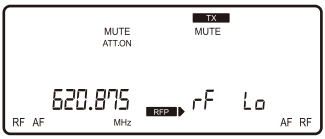


Indicates: The function is off

◎ RFP Microphone transmitter frequency

The transmitter contains two RF power outputs (depending on local regulations.)

rF Lo	10mW
rF Hi	50mW

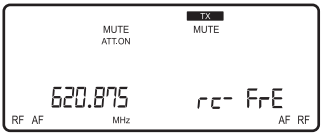


Indicates: RF power output is LOW (10mW).

◎ Channel matching synchronization options RC(Remoset Config)

rC-FrE	Synchronize frequencies and groups only
rC-ALL	Synchronize all settings

Note:Default value is synchronizing frequencies and groups only.

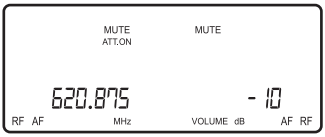


Indicates: Synchronize frequencies and groups only.

Volume adjustment

In the non-setting model, press ▲/▼ key to adjust the volume -31~ 0dB

- VOL. -31dB is the minimal volume.
- VOL. 0dB is the maximum volume.
- Default value VOL. -10dB

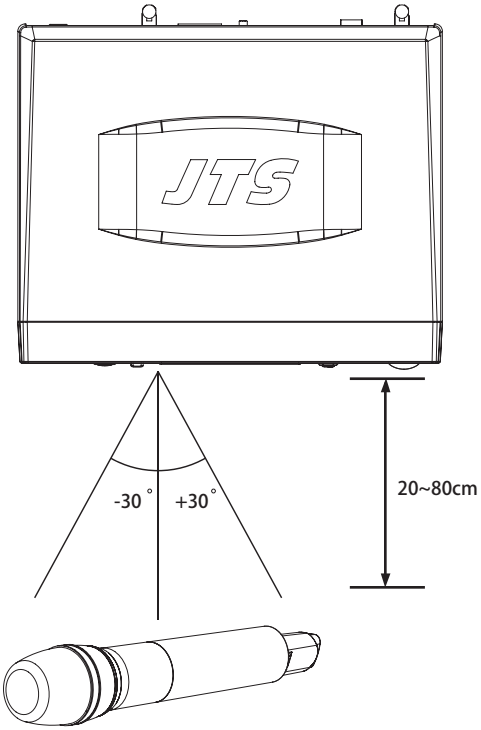


-31dB minimal volume ： 0dB maximum volume.

Channel matching REMOSET

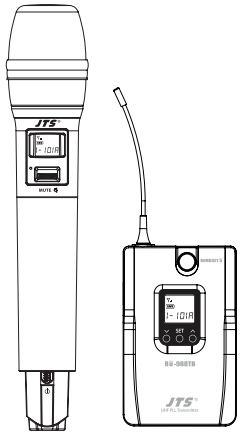
Unscrew the outer tube of transmitter to fully see the ultrasonic receiving unit. Place the receiving unit right in front of the receiver end of the ultrasonic transmitter (20 ~ 80cm: ± 30 °, and then press the " REMOSET " key. If the data is received successfully, the LED indicator shows blue light for 5 seconds. If the data is not correctly received during the receiving process, the blue light will flash as a warning signal.

Note: The best distance for channel matching is 20 ~ 80cm, ± 30 °



6-2 Operation and Use // RŨ-988TH / RŨ-988TB

Parameter setting



◎ Light Indication

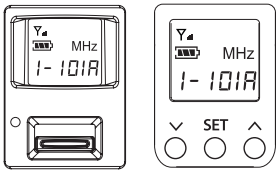
- Green:Fully charged＞2V
- Flashing green:Microphone is in mute mode.
- Red:Power shortage≦2V, battery level＜1.8V, transmitter will be forced into the shutdown process.
- Red and green flash alternately:mic mute (low battery).
- Blue:channel matching succeeded.
- Flashing blue:data receiving error.

◎ Channel setting

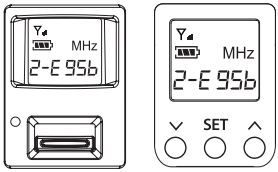
Press the "SET key" for two seconds, enter the setting mode, and then press the ▲/▼ key to select relevant parameters.

Icon 1	1-101A represents band 1, the first channel, A Channel
Icon 2	2-E95b represents band 2, group E, the 95th channel, B Channel

▼ Icon 1



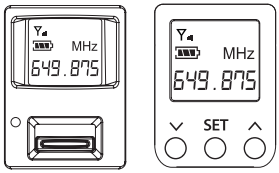
▼ Icon 2



First set bands 1~3，and then set frequencies 01~90 and groups 91~96.

◎ FREQ Frequency Setting

Take 1MHz as the unit	Press the ▲/▼ key to set the frequency.
Take 0.025MHz as the unit	Press the ▲/▼ key to set the frequency.

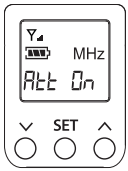


First set the frequency number that takes 1MHz as the unit, and then set the frequency number that takes 0.025MHz as the unit.

◎ ATT. Audio Input Attenuation

At OFF	Audio input is without attenuation.
At On	Audio input attenuation is 20dB.

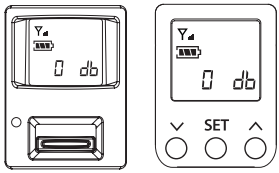
Only RU-988TB has this function.



The icon indicates that the current audio input attenuation is 20dB.

◎ AUTO-OFF: Automatic microphone off countdown under mute status

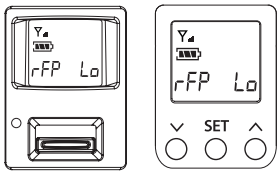
Normal sensitivity	GAIN:+15dB 〜 GAIN:+3dB GAIN:+2dB GAIN:+1dB GAIN:0dB GAIN:-1dB GAIN:-2dB GAIN:-3dB 〜 GAIN:-15dB



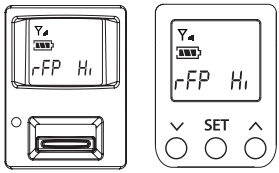
The icon indicates that the current sensitivity set is Gain 0dB(default value)

◎ RFP Microphone RF Power

rFP Lo	10mW
rFP Hi	50mW



RF power is low.

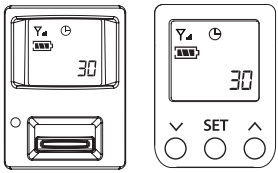


RF power is Hi.

◎ AUTO-OFF Microphone Automatic Shutdown time (in mute)

OFF	Turn off the function.
1	Auto shutdown after 1 min.
10	Auto shutdown after 10 minutes.
30	Auto shutdown after 30 minutes.

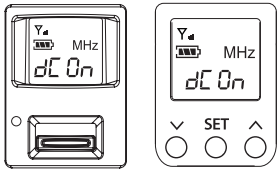
Note: The default value is 10 minutes.



◎ Digital Code (Digi Code)

dC On	Turn on digital code function.
dC OFF	Turn off digital code function.

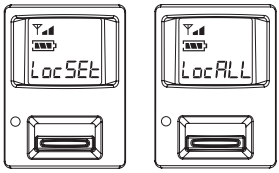
Note: In the digital code start mode, the microphone should wait for a few seconds to be turned on until the receiver finishes decoding.



◎ Key Lock

RÜ-988TH

Loc SET	Loc SET Lock the operation function keys only.
Loc ALL	Loc ALL Lock all keys.



RÜ-988TB

Loc OFF	Loc OFF Unlock.
Loc SET	Loc SET Lock the operation function keys only.
Loc ALL	Loc ALL Lock all keys.

7. Notes for the product

(1) For the best signal receiving quality, always keep the receiver within 3m of the transmitter.

(2) The receiver and transmitter shall be away from other metal objects, preferably 50cm or farther.

(3) Do not point the microphone directly to a speaker, or there will be feedbacks.

It is recommended to hold the transmitter (microphone) at the middle section for the best pickup.

(4) In case that the transmitter will not be in use for an extended period of time, the batteries shall be removed from the battery holder to prevent damage to the transmitter due to leak of battery electrolyte solution.

(5) For the best power performance, it is recommended to change both batteries or use the products of the same manufacturer when they are to be changed.