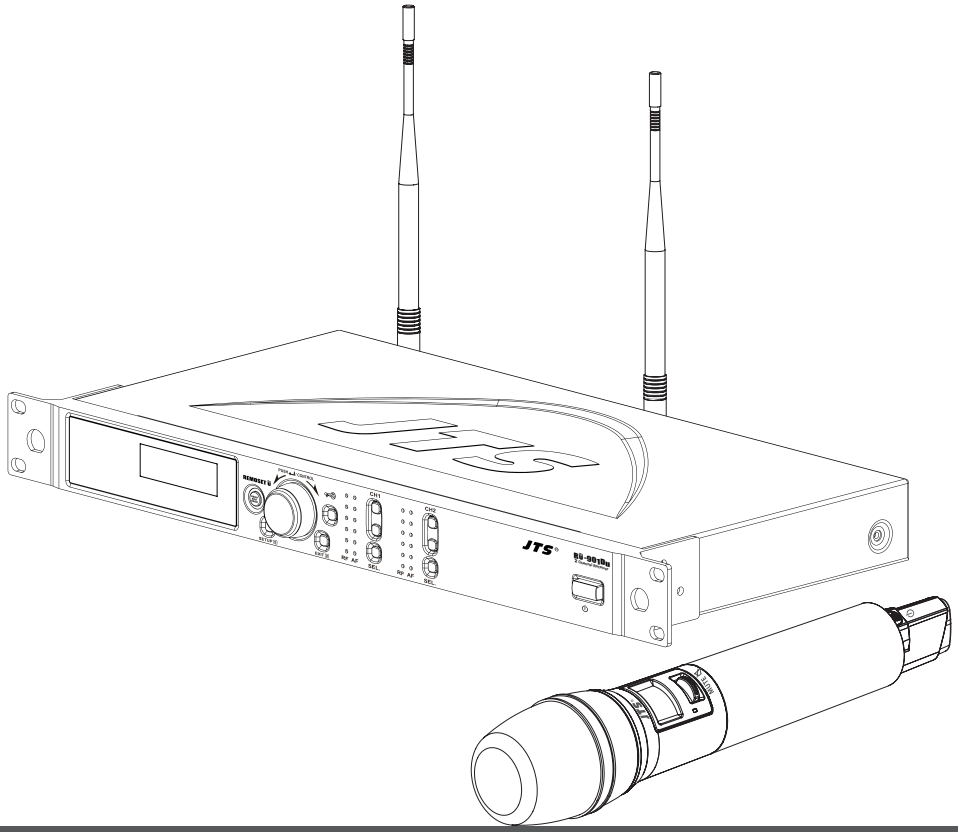
JTS PROFESSIONAL CO., LTD.



UHF PLL

RU-901Du / R-4TH Instruction Manual

With JTS **REMOSET**® 2.4G RF 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 to power, make sure the voltage marked on equipment is the same as that on the power socket.
- 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.
- Caution : The suitable environment for this product is with a temperature between- 10°C (14°F) and +50°C (122°F).

2. Features

- 3rd generation True Diversity system.
- Transmission power selectable between '"High" and "Low".
- 6 groups are provided as default. Every group contains up to 23 default channels.
- There are in total 1,441 channels to choose from.
- 36MHz bandwidth.
- The patented RF REMOSET® pairing for synchronized setting of all parameters.
- Channel scan.
- Adjustable receiving sensitivity.
- Automatic microphone power off.
- Charging contact ready.

3. Specifications

3-1 UHF PLL Dual-channel True Diversity receiver // RU-901Du

Frequency Oscillation Mode	Phase-locked loop (PLL)
Carrier Frequency Range	470~608MHz
Remoset Frequency	2.4G RF REMOSET®
Diversity	True 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	DC12V/100mA
Function Display By	LCD
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), scan ,Mix Output
Audio Frequency Output Level(MAX)	Ø6.3 Phone Jack：+4dBu
	XLR Jack：+10dBu(Line)、-10dBu(MIC)
Audio Frequency Output Impedance	600Ω
Muting	Noise muting and tone code locking
Output Port	2 x balanced XLR jack 2 x unbalanced Ø6.3 jack
Power Supply	100~240VAC
Dimension (Mm)	485mm (W) x45mm (H) x 260mm (L)

3-2 UHF PLL hand-held transmitter // R-4TH

Frequency oscillation	Phase-locked loop, PLL
Carrier frequency	470~608MHz
Bandwidth	36MHz
Paring	RF Remoset
RF power output	Low / High
RF stability	<±10KHz@Fc
Modulation frequency deviation	±48KHz
Spurious Emissions	<-50dBc
LCD display	Group, channels, frequency, mute, input level attenuation, sensitivity adjustment, power indication, Device ID
Controls	Power, mute, groups, channels, frequency, sensitivity adjustment, input level attenuation, transmission power, key lock
Battery	AA Alkaline battery x 2
Charging	Yes
Dimension	265mm L x 51.2mm W x 51.2mm H
Remark	Specifications provided above may be slightly different from the product without further notice.

4. Description of parts

4-1 UHF PLL Dual-channel diversity receiver(True Diversity) // RU-901Du

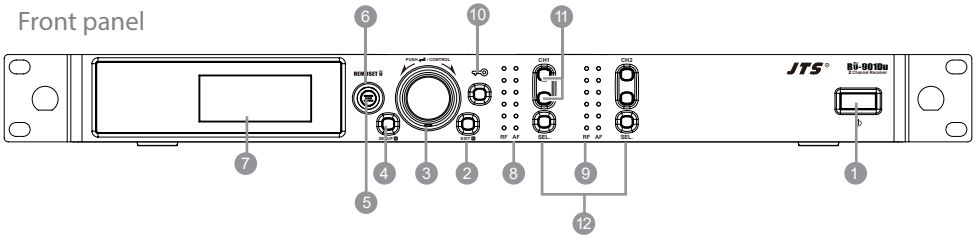
Front panel

1. **Power ON/OFF:**
   ON：push once to turn on.
   OFF：push and hold until "Power OFF" is shown on the LCD to turn off.
2. **EXIT:** Push exit to cancel a selection or exit from the current menu when RU-901Du is in the "setting menu."
3. **Rotary Switch:** when in the "function menu," turn the switch to select the desired function; push the switch (or SETUP) to enter the selection and spin the switch to select the setting. Push [SETUP] to save the setting.
4. **SETUP:** Push and hold for 2 seconds to enter the "setting menu." Push SETUP to save the setting once the selection and setting are made according to "3. Rotary Switch."
5. RF **REMOSET** : this allows user to synchronize the transmitter after modifying a parameter. Push " **REMOSET** " to synchronize the settings to the transmitter.
6. **Remoset indicator:** this shows the current pairing status. It flashes rapidly when data is being transmitted and the flashing stops when the synchronization is completed. However, the flashing slows down if synchronization fails after a period of time of pairing attempt.
7. **LCD display:** See "Receiver LCD display instructions."
8. **AF:** indicates the current strength of audio frequency signals.
9. **RF:** indicates the current strength of radio frequency signals.
10. **Key lock:** push and hold for 2 seconds to lock all keys, and again to unlock.
11. **Volume keys:** push▲/▼keys to adjust the volume between 0 and -31dB.
12. **Selection key:** push this button
    a. Push SETUP to enter the setting for the selected channel for parameter settings.
    b. Push REMOSET to transmit the setting data to the transmitter in this selected channel.

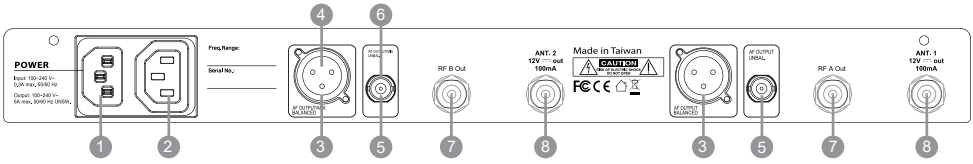
Rear panel

1. **Power :** AC power 100~240VAC
2. **AC power outlet(for cascading):** it allows power connection to next receiver with an extension AC power cable.
4. **XLR audio jack:** balanced audio signal output
3. **XLR audio jack:** balanced audio signal output after mixing
5. **Ø6.3 audio output jack:** unbalanced audio signal output
6. **Ø6.3 audio output jack:** unbalanced audio signal output after mixing
7. **RF A (or B) Out:** RF signal output socket(for cascading): Provide RF signal to next receiver.
8. **Antenna A (B) input terminal:** BNC antenna input jack that also provides DC12V/100mA output.

Front panel

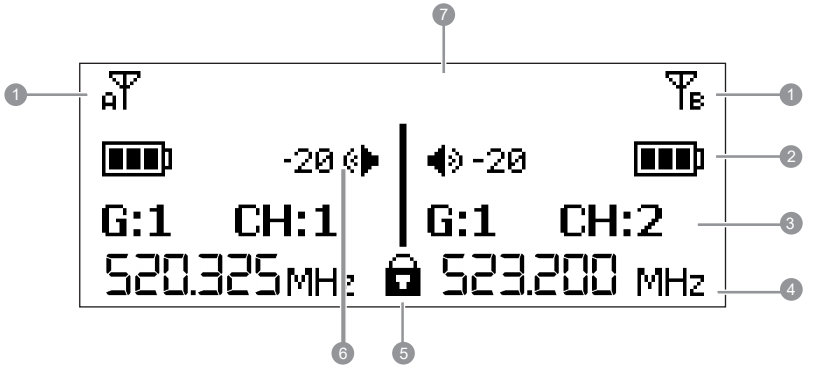


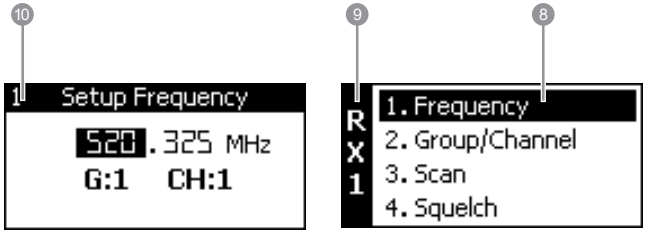
Rear panel



Content Displayed under the Non-Setting Mode:

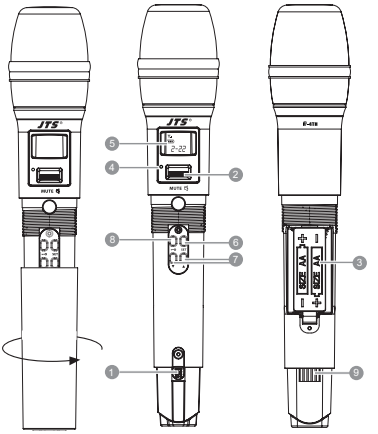
1. :Antenna Selection A/B. The Receiver is mute.
2. : Transmitter Battery Level
3. G:1 CH:1 :Frequency (Group/Channel)
4. 520.325 : Frequency
5. : Key Lock (Key Lock ON)
6. -20 : Volume
7. AT : Output attenuation ON
8. Setup Menu
9. RX1: Set the Receiver's Channel 1. RX2: Set the Receiver's Channel 2.
10. 1: Set the Receiver's Channel 1. 2: Set the Receiver's Channel 2.

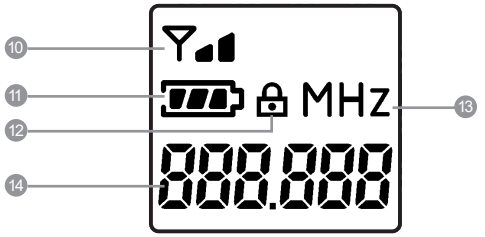




4-2 UHF PLL handheld transmitter // R-4TH

1. **Power ON/OFF**：push once to turn on. Push and hold for 2 seconds while the power is on to turn off. While the power is on, a quick push of this button will show the Device ID on the LCD display.
2. **Mute**：switch up to talk and down to mute while the power is on. If the power is off, switching up from mute will turn the microphone on.
3. **Battery compartment**：it holds 2 UM3, AA 1.5V Alkaline batteries or MiNH rechargeable batteries.
4. **LED indicator**：it shows the microphone's status, including battery power, mute and pairing.
5. **LCD display**：it shows the parameter settings of transmitter.
6. **SET**：for parameter settings, including frequency, group, channel, sensitivity, transmission frequency, auto off time, Device ID , REMOSET® function (ON/OFF).
7. **Up/down selection keys**：they are used with ''SET'' to change parameter settings. Before entering the setting mode, a quick push will show the Device ID on the LCD display.
8. **LOCK** ⊸ ：push and hold ''LOCK'' for 2 seconds to lock and again to unlock. Under ''LOCK'' status MUTE function is still valid.
9. **Charging contact module**: if rechargeable batteries are used, charging is possible with the matching charger.

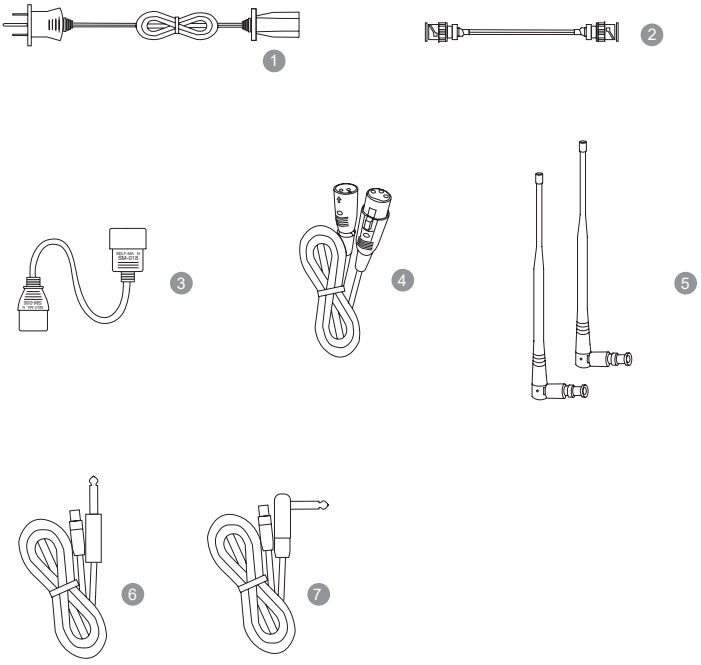




10 RF output power (Low / High)
11 Battery level
12 Key lock
13 Frequency (MHz)
14 Indication of frequency, group and channel

4-3 Accessories

1. AC power cable * 1
2. BNC/BNC RF extension cable for cascading * 2
3. Extension AC power cable for series connection * 1
4. XLR(M)/XLR(F) Audio cable * 2
5. Antenna * 2
6. GC-80/GC-100 Guitar Cable Option
7. GC-80L/GC-100L Guitar Cable Option



5. Preparing Procedures

5-1 How to connect the receiver// RU-901Du

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

1.1RU-901Du：

(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 to power

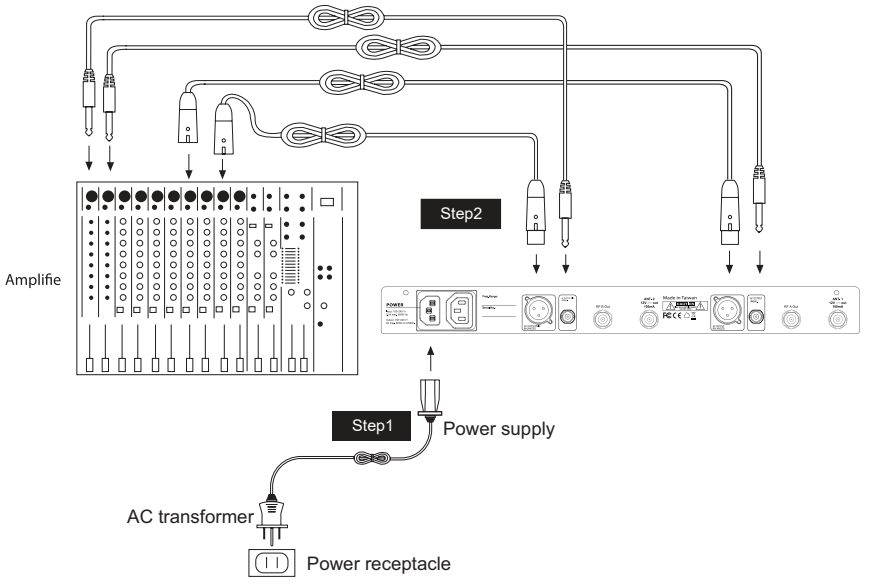
2.1. Connect to AC outlet:

One end connects to receiver "power input", while the other end connects to AC power receptacle.

2.2. Set the parameters:

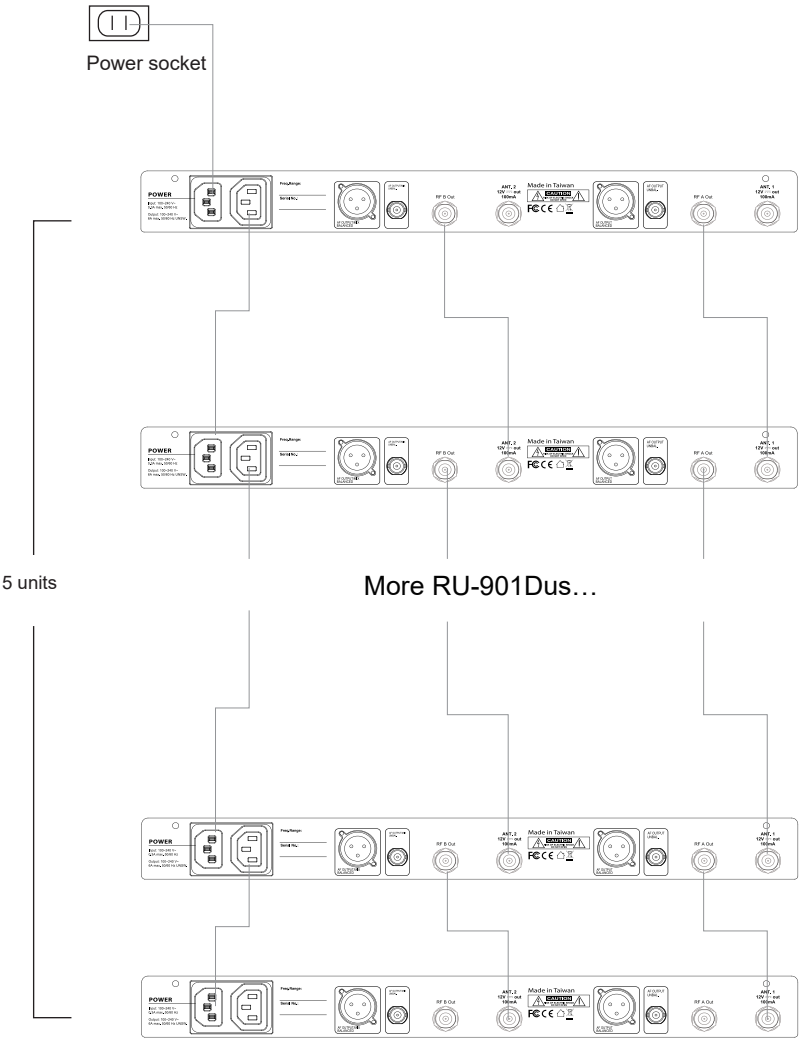
Turn the power on and set the parameters of receiver according to the setting instructions.

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



3. Cascading of AC power cable and antenna

It is allowed to cascade power and antennas for 5 units.



5-2 Installing transmitter // R-4TH

The mute switch of handheld transmitter also serves to turn the power on. Therefore, the power will come on when the batteries are replaced. Place the mute switch at mute if you do not want to turn the power on immediately after battery replaced.

1.Unscrew the outer tube of the transmitter.(Figure1)

2.Place 2 AA batteries in the battery compartment according to their polarity.(Figure 2)

3. Screw the outer tube back on.(Figure 3)

4. To turn the transmitter on:

a. Push Power ON/OFF to turn on. (Figure 4a)

b. Or, turn the power on by switching the MUTE switch up.(Figure 4b)

5. Define the transmitter parameters according to the instructions.

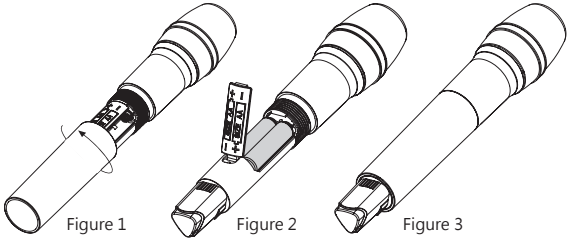


Figure 1 Figure 2 Figure 3

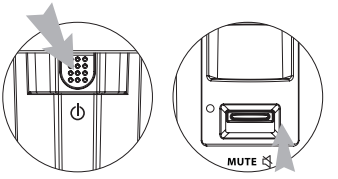


Figure 4a Figure4b

6. Instructions for use

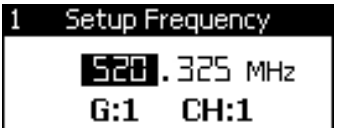
6-1 How to use // RU-901Du

Press and hold the SETUP key for 2 seconds to enter the Setup Menu. Trun the Rotary Switch to select the item to be set, and press SETUP again to enter the settings.

※ Press EXIT to return to the previous item. Note that the set value will not be saved.

◎Frequency Setting

Adjust the left 3 digits of the Frequency. Trun the Rotary Switch to change by "+/-" 1 MHz each time. Press the SETUP key after adjustment is completed. Adjust the right 3 digits of the Frequency. Trun the Rotary Switch to change by"+/-" 0.025MHz each time. After the setup is completed, press the SETUP key to save the set value.



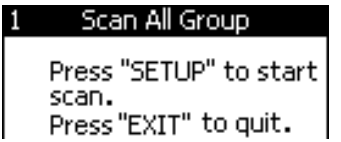
◎Default Group

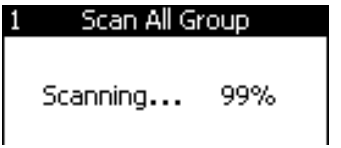
Trun the Rotary Switch to select Group "G:" ; Press the SETUP key adjustment is completed. Trun the Rotary Switch to adjust Channel "CH:" After adjustment is completed, press the SETUP key to save the set value.

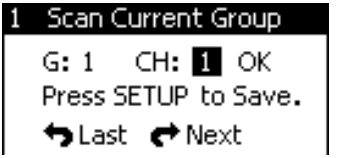


◎The Scanning Function

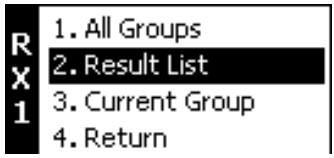
Scan All Groups. Press the SETUP key to start scanning. After the scan is completed, the "Scan Results List" screen will be displayed automatically. Users can also click on the menu to enter the "Scan Results List" directly.



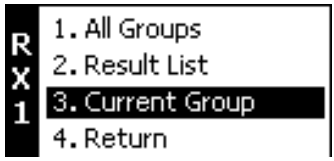


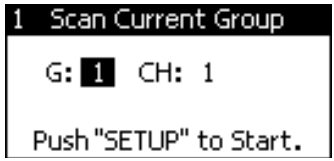


"Scan Results List": Press the SETUP key to enter the menu screen and view the scan results. Select the available channels, and press the SETUP key to save the settings.



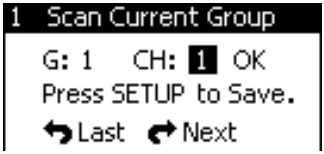
Scanning the current Group: Upon entry into the screen, trun the Rotary Switch to select the group to be scanned, and press SETUP to start scanning. Press ▲ to search for the previous available Channel.





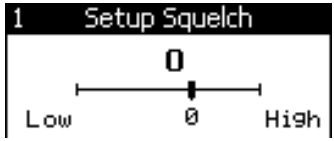
Rotate the Rotary switch to the right to search for the next available Channel. Press the SETUP key to save the settings.





◎Receiver Sensitivity

+10 ~ -5: The higher the value, the lower the Receiver Sensitivity; the lower the value, the higher the Receiver Sensitivity. Default Value is 0.

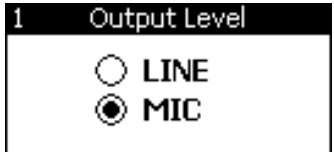


◎Output Attenuation

Rotate the Rotary switch to the right to set the balanced output level for Line to Line output.

Rotate the Rotary switch to the left to set the balanced output level for Mic to

Mic output.

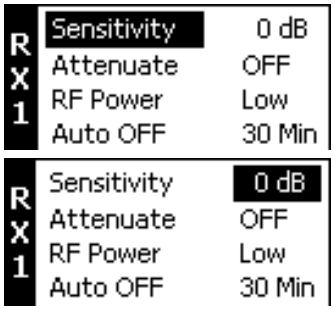


◎Microphone Options: Trun the Rotary Switch to select the item to be adjusted. Press SETUP, and then trun the Rotary Switch to select the settings to be adjusted, and then press SETUP to return to the item selection.

Sensitivity

Scope of Adjustment:

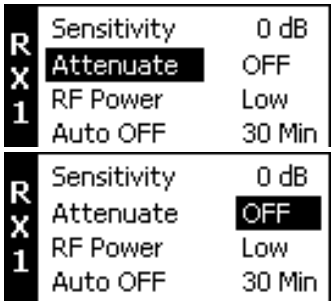
-15dB~+15dB；Default Value is 0.



Input Attenuation

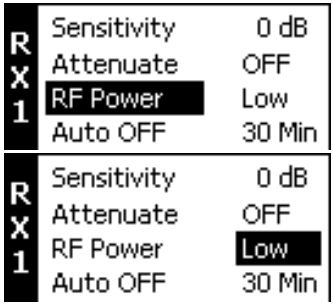
ON	Audio input is attenuated by 20dB. (Depending on whether the transmitter has this function)
OFF	Not Attenuated (Default Value)

This function only applies to the Waist-Mounted Transmitter RU-G3TB.



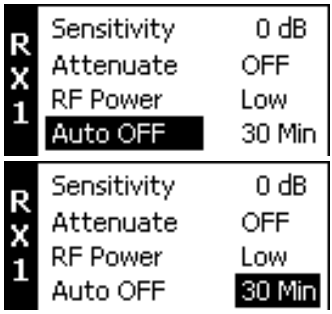
Radio Frequency Power

High	High Transmitting Power 50mW
Low	Low Transmitting Power 10mW(Default Value)



Automatic shutdown (when the Microphone is muted)

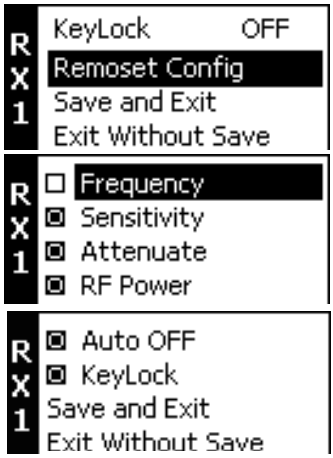
OFF	This function is turned off.
1 min	Automatic shutdown after 1 minute
10min	Automatic shutdown after 10 minutes
30min	Automatic shutdown after 30 minutes



Synchronization Options

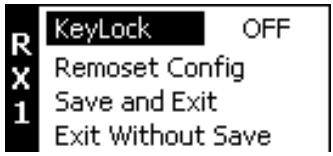
Trun the Rotary Switch to select REMOSET® and synchronize transmission of the setup items, and then press the SETUP key to perform the selection action.

☐ Frequency
☐ Sensitivity
☐ Attenuate
☐ RF Power
☐ Auto OFF
☐ Key Lock
Save and Exit
Exit Without Save

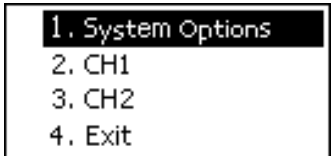


◎Key Lock

ON	Key Pad Lock ON
OFF	Key Pad Lock OFF

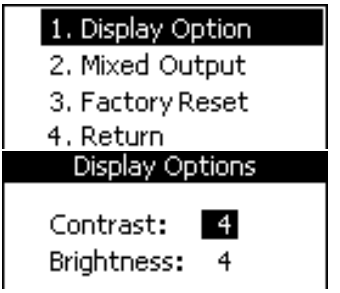


◎System Settings



◎Display Settings

Contrast	0~7 (Default Value4)
Brightness	0~7 (Default Value4)



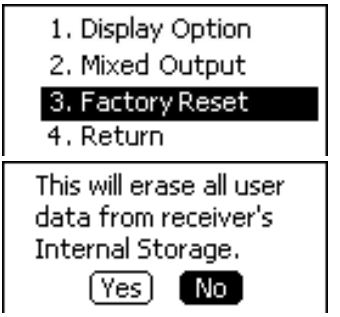
◎Mixed Output

ON	Mixed Output Enable
OFF	Mixed Output Disable

Mix the signal with RX1 and RX2 then output together from RX2



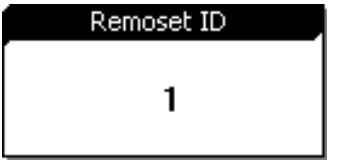
◎Reset to original manufacturer settings



◎Device ID

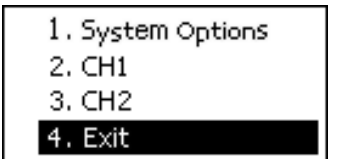
Device ID: 0~255: this setting affects the use of REMOSET; both the receiver and transmitter must be on the same Device ID before REMOSET is available.

Note: this does not apply when the microphone Device ID is not activated.



◎Exit the Setup Screen.

Press the SETUP key to exit the setup screen and return to the home screen.

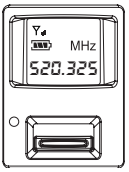


6-2 How to use // P-4TH

Push and hold SET for 2 seconds to enter the setting mode. Push SET repeatedly to locate the desired item. Use▲/▼for parameter settings. Push SET again to save the changes and exit.

◎ FREQ: frequency setting

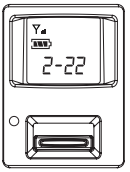
Increment of 1MHz	Select with▲/▼
Increment of 0.025MHz	Select with▲/▼



Start with those digits in 1MHz and then those in 0.025MHz

◎ GROUP: group/channel setting

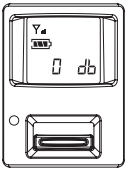
G (group)	Select default group1~6
CH (channel)	Select default channel(s), up to22



Start with group number and then channel number.

◎Sensitivity: for microphone input

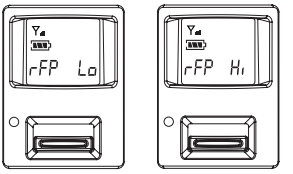
Normal sensitivity	GAIN：+15dB GAIN：+12dB GAIN：+9dB GAIN ：+6dB GAIN：+3dB GAIN：0dB(default) GAIN：-3dB GAIN：-6dB GAIN：-9dB GAIN：-12dB GAIN：-15dB



The sensitivity is at GAIN 0dB (default) as shown above.

◎ RFP: RF power of microphone

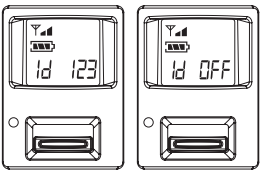
rF Lo	Low (default)
rF Hi	High



RFP low RFP Hi

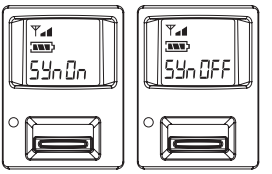
◎ Device ID

ID OFF	Device ID deactivated
ID 0~255	Device ID 0 ~ 255



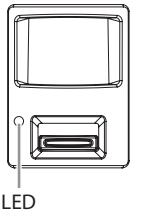
◎ Remoset (ON/OFF)

Syn on	Remoset activated
Syn oFF	Remoset deactivated



Indicator

Green: power is sufficient, > 2V
Green flashing: microphone mute
Red: power low, ≤ 2V
Red and green flashing alternately: microphone mute and power low
Blue: on for 3 seconds, indicats pairing successfully
Blue flashing: data receiving error



Others

Battery charging is supported. The transmitter turns off automatically when charging.
When battery is < 1.8V, the transmitter will turn off automatically.
If the microphone is turned off with the mute switch on mute, just slide the switch up to turn the microphone on.

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.

IMPORTANT NOTE

- The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.
- This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

- If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

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