

US-902D Pro Instruction Manual

US-903DC Pro

DUAL CHANNEL PLL DIVERSITY WIRELESS SYSTEM

Thank you for choosing the JTS wireless system. In order to obtain the best efficiency from the system, you are recommended to read this instruction manual carefully.

TABLE CONTENTS

1. Important Cautions -----	01
2. Features -----	01
3. Specification -----	02
3-1 Overall System	02
3-2 Receiver	02
3-3 Transmitter	03
3-4 Optional Condenser Microphone	04
4. Parts Identification & Accessories -----	06
4-1 Receiver	06
4-2 Handheld Transmitter	08
4-3 Body-pack Transmitter	09
4-4 Condenser Microphones	09
5. Preparing procedures & basic operation -----	12
5-1 Receiver	12
5-2 Handheld Transmitter	18
5-3 Body-pack Transmitter	20
5-4 Installation of Condenser Microphones	21
6. System operation -----	22
7. Recommendations -----	23

1 IMPORTANT CAUTIONS

- Always makes all connections before plugging the unit into an AC power outlet.
- Do not leave the device in a place neither with high temperature nor high humidity.
- Always do not handle the power cord with wet hands!
- Keep the devices away from fire and heat sources.

2 FEATURES

- Operated in UHF band where there is less RF interference than the VHF band.
- Due to the PLL synthesized technology, the system offer 16 selectable channel.
- The diversity reception ensures the stable transmission and reception.
- Adjustable squelch control can effectively reduce the noise.
- Tuned antennas can benefit the stable RF reception.
- Built-in Tone key Squelch & Noise Mute detection are available to restrain the interference signal.
- Rugged metal housing can pass through the difficult environment.
- Equipped with balanced XLR and unbalanced for great convenience.
- Body-pack transmitter provides phantom power for condenser lavalier and headset microphones.

3 SPECIFICATION

3-1 Overall System


RF Frequency Range	494 MHz~870 MHz
Oscillation Type	PLL Synthesized Control OSC
Channels	16 Channels (US-902D Pro) / 64 Channel (US-903DC Pro)
Audio Frequency Response	50 Hz~18KHz
Band-width	24 Mhz
Operation Range	100M

3-2 Receiver

Receiver Model	US-902D pro	US-903DC pro
Frequency Stability	±0.005%	±0.005%
S/N Ratio	>100 dB	>100 dB
RF Sensitivity	-107dBm (12DB S/N AD)	-107dBm (12DB S/N AD)
Image Rejection	>60 dB	>60 dB
T.H.D. (1 KHz)	<0.6%@1 KHz	<0.6%@1 KHz
Display	LCD	LCD
Controls	Power On/Off, Volume Control, Channel Up/Down, Squelch level	Power On/Off, Volume Control, Channel Up/Down, Squelch level
Audio Output Level	-12 dB	-12 dB
Squelch	Pilot Tone & Noise Mute	Pilot Tone & Noise Mute
Operation Voltage	12-18V DC, 600 mA	12-18V DC, 1000 mA
Output Connector	2 Balanced XLR socket 1 Unbalanced ∅6.3mm Phone Jack (2.2 KΩ)	2 Balanced XLR socket 1 Unbalanced ∅6.3mm Phone Jack (2.2 KΩ)
Dimension(m/m)	480mm(W)*45mm(H)*232mm(D)	480mm(W)*45mm(H)*232mm(D)

3-3 Transmitter

Model No.	Mh-8800 / Mh-8016	Mh-8800G / Mh-8064
Channel	16	64
Type	Handheld	Handheld
Ball Grille Shape	Flat top	Flat top
Spurious Rejection	<-60dBc	<-60dBc
Stability	±10KHz	±10KHz
Frequency Deviation	±48 KHz	±48 KHz
S/N Ratio	>100 dB (1 KHz-A)	>100 dB (1 KHz-A)
Current Consumption	100 mA	100 mA
Battery	UM3,AA 1,5V*2	UM3,AA 1,5V*2

Model No.	PT-920B / PT-920BG
Type	Body-pack
Ball Grille Shape	
Spurious Rejection	<-60dBc
Stability	+0.005%
Frequency Deviation	±48 KHz
S/N Ratio	>100 dB (1 KHz-A)
Current Consumption	100 mA
LCD Indicates	Power On/Off, Low batt. Channel Frequency
Battery	UM3,AA 1,5V*2

3-4 Optional Condenser Microphone

Lavaliere Microphone

Model No.	CM-501	CX-201	CM-125
Frequency Range	100Hz~15,000Hz	60Hz~15,000Hz	50Hz~18,000Hz
Polar Pattern	Cardioid	Omini-directional	Omini-directional
Sensitivity @ 1 KHz	-60dB±3dB	-60dB±3dB	-53dB±3dB
Impedance	2.2k±30%	2.2k±30%	4.4k±30%
max. SPL for 1% T.H.D.	130dB	130dB	130dB
Connector Type	4 Pin Mini XLR	4 Pin Mini XLR	4 Pin Mini XLR
Standard Accessories	Windscreen	Windscreen	Windscreen

Headset Microphone

Model No.	CM-204	CM-204U	CM-225	CX-504
Frequency Range	60Hz~15,000Hz	30Hz~18,000Hz	50Hz~18,000Hz	30Hz~18,000Hz
Polar Pattern	Omini-directional	Cardioid	Omini-directional	Cardioid
Sensitivity @ 1 KHz	-60dB±3dB	-68dB±3dB	-53dB±30%	-68dB±3dB
Impedance	2.2k±30%	680±30%	4.4k±30%	680±30%
max. SPL for 1% T.H.D.	130dB	130dB	130dB	130dB
Connector Type	4 Pin Mini XLR	4 Pin Mini XLR	4 Pin Mini XLR	4 Pin Mini XLR
Standard Accessories	Windscreen	Windscreen	Windscreen	Windscreen

Instrument Microphone

Model No.	CX-508W	CX-516W
Frequency Range	50Hz~18,000Hz	50Hz~18,000Hz
Polar Pattern	Cardioid	Cardioid
Sensitivity @ 1 KHz	-67dB±30%	-70dB±3dB
Impedance	2.2k±30%	2.2k±30%
max. SPL for 1% T.H.D.	130dB	130dB
Connector Type	4 Pin Mini XLR	4 Pin Mini XLR
Standard Accessories	Windscreen	Windscreen

Ear-hook Microphone

Model No.	CM-802/CM-804	CM-815/CM-825
Frequency Response	60 ~ 15,000Hz	50 ~ 18,000Hz
Polar Pattern	Omni-directional	Omni-directional
Sensitivity (at 1KHz)	-66±3 dB* (0.5mV)*0dB	-53±3 dB* (2.24mV)*0dB
Impedance	=1V/μbar,1KHz Rated impedance 2.2kΩ	=1V/μbar,1KHz Rated impedance 4.4kΩ
Max. SPL for 1% THD	130dB	130dB
Connector	4P Mini XLR	4P Mini XLR

4 PARTS IDENTIFICATION & ACCESSORIES

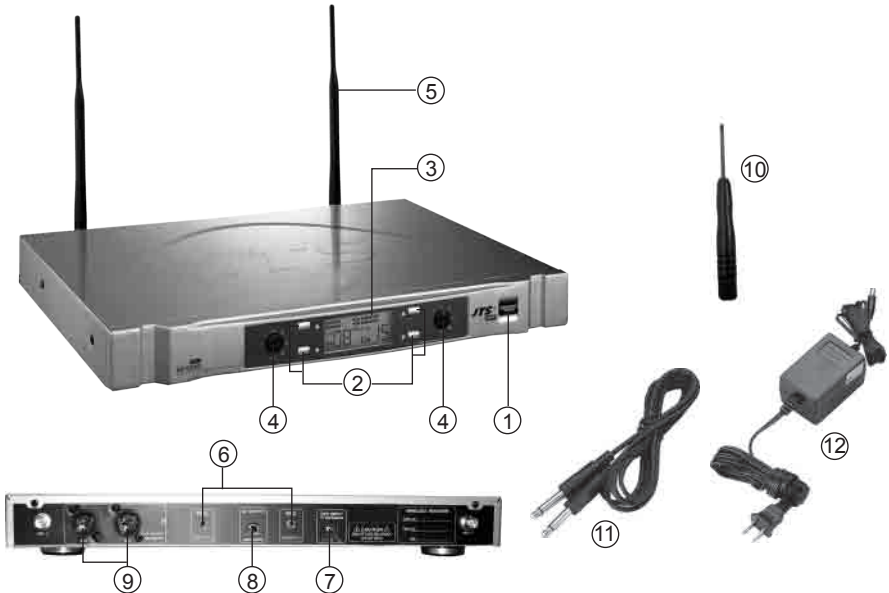
4-1 Receiver

US-902D Pro Dual Channel PLL Diversity Receiver

- ① Power Switch
- ② Channel Selector (Up/Down)
- ③ LCD panel
- ④ Volume control
- ⑤ Antenna
- ⑥ Squelch level adjustor
- ⑦ DCV Input (12-18V DC/600mA)
- ⑧ Unbalanced \varnothing 6.3mm jack socket
- ⑨ Balanced XLR socket

Accessories

- ⑩ Screwdriver
- ⑪ AF output cable (With unbalanced \varnothing 6.3 plug)
- ⑫ AC/DC adaptor

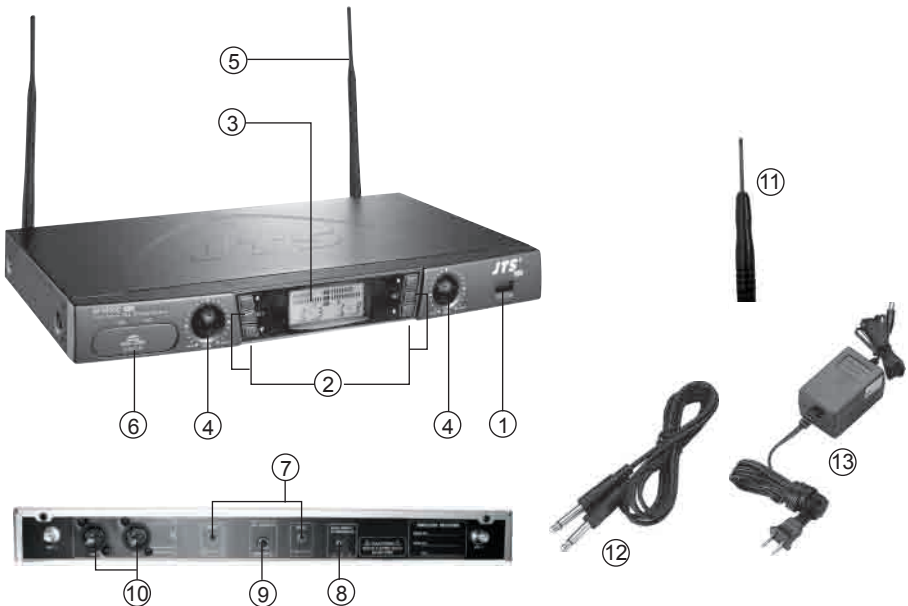


US-903DC Pro Dual Channel PLL Diversity Receiver

- ① Power Switch
- ② Channel Selector (Up/Down/Set)
- ③ LCD panel
- ④ Volume control
- ⑤ Antenna
- ⑥ Charger
- ⑦ Squelch level adjustor
- ⑧ DCV Input (12-18V DC/1000mA)
- ⑨ Unbalanced \varnothing 6.3mm jack socket
- ⑩ Balanced XLR socket

Accessories

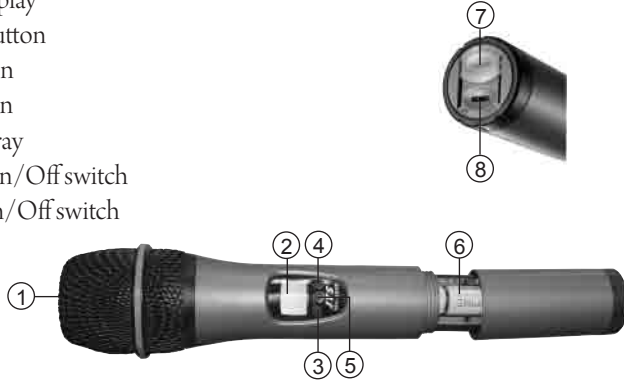
- ⑪ Screwdriver
- ⑫ AF output cable (With unbalanced \varnothing 6.3 plug)
- ⑬ AC/DC adaptor



4-2 Handheld Transmitter

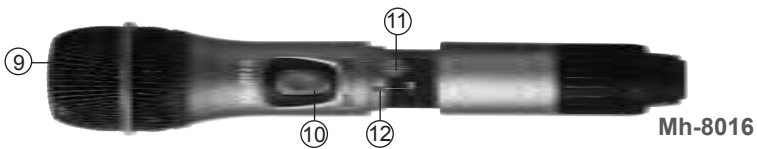
Mh-8800(Mh-8800G) Handheld Transmitter

- ① Interchangeable capsule module
- ② LCD display
- ③ Down button
- ④ Up button
- ⑤ Set button
- ⑥ Battery tray
- ⑦ Power On/Off switch
- ⑧ Mute On/Off switch

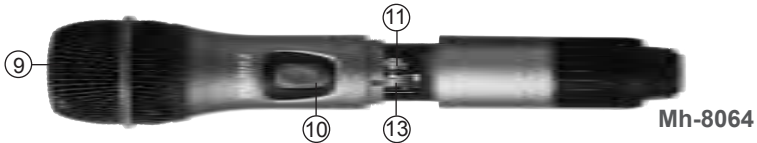


Mh-8016(Mh-8064) Handheld Transmitter

- ⑨ Interchangeable capsule module
- ⑩ Power On/Off switch
- ⑪ Channel Selection
- ⑫ Gain Level
- ⑬ Group Setting
- ⑭ Battery tray



Mh-8016



Mh-8064

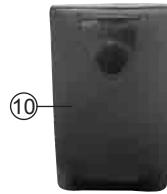
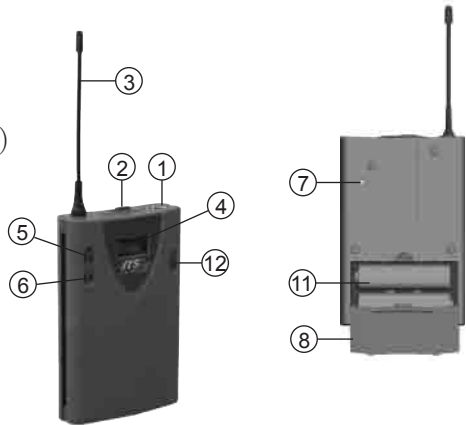


Mh-8016/Mh-8064

4-3 Body-pack Transmitter

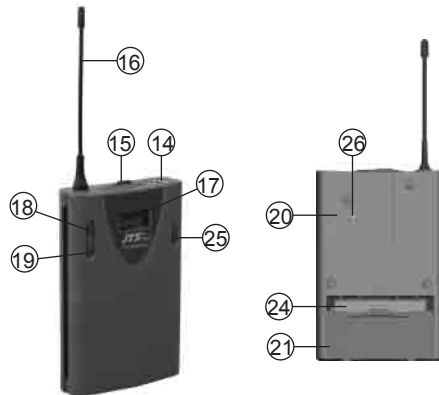
PT-920B(PT-920BG)

- ① Mic. input (4 pin mini XLR socket)
- ② Power On/Off switch
- ③ Antenna
- ④ LCD display
- ⑤ Up button
- ⑥ Down button
- ⑦ Gain adjust
- ⑧ Battery tray cover
- ⑨ Screwdriver
- ⑩ Carry case
- ⑪ Battery tray
- ⑫ Set button
- ⑬ Belt-loop



PT-920Bmi(PT-920BGmi)

- ⑭ Mic. input (4 pin mini XLR socket)
- ⑮ PowAer On/Off switch
- ⑯ Antenna
- ⑰ LCD display
- ⑱ Up button
- ⑲ Down button
- ⑳ Gain adjust
- ㉑ Battery tray cover
- ㉒ Screwdriver
- ㉓ Carry case
- ㉔ Battery tray
- ㉕ Set button
- ㉖ Attenuation Pad
- ㉗ Belt-loop



4-4 Condenser Microphones

Lavaliere Microphone

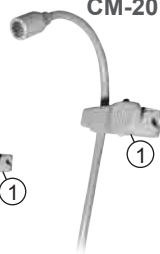
- ① Clip
- ② Mini XLR
- ③ Windscreen



CM-501



CM-201



CM-125

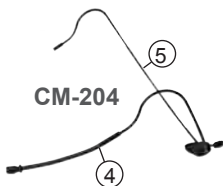


Headset Microphone

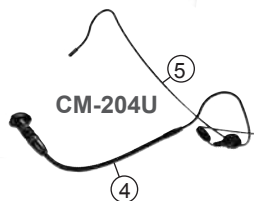
- ④ Gooseneck
- ⑤ Headband
- ⑥ 4 Pin Mini XLR
- ⑦ Windscreen



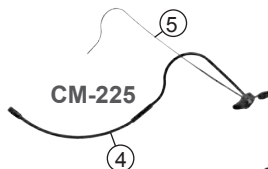
CM-204



CM-204U



CM-225



CX-504



Instrument Microphone

- ⑧ Gooseneck
- ⑨ Clip
- ⑩ 4 Pin Mini XLR
- ⑪ Windscreen



CX-508W

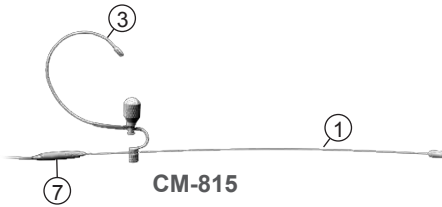
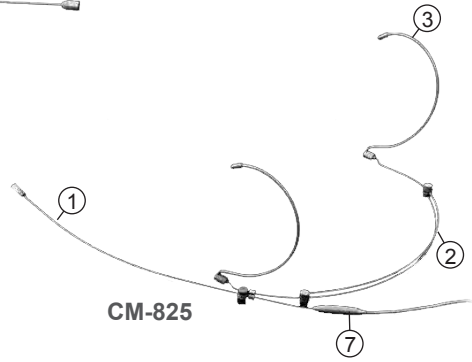
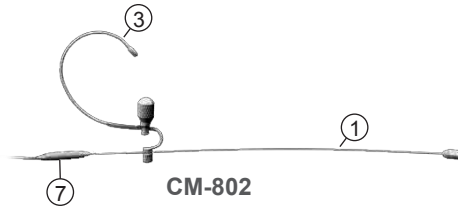
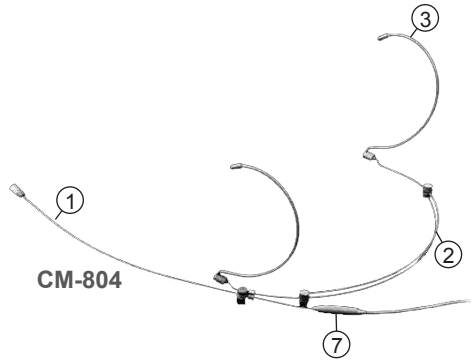


CX-516W



Ear-hook Microphone

- ① Boom
- ② Adjustable Handband
- ③ Adjustable ear hook
- ④ 4 Pin Mini XLR
- ⑤ Cable clip
- ⑥ Windscreen
- ⑦ Detachable Cable



5 PREPARING PROCEDURES & BASIC OPERATION

5-1 Receiver

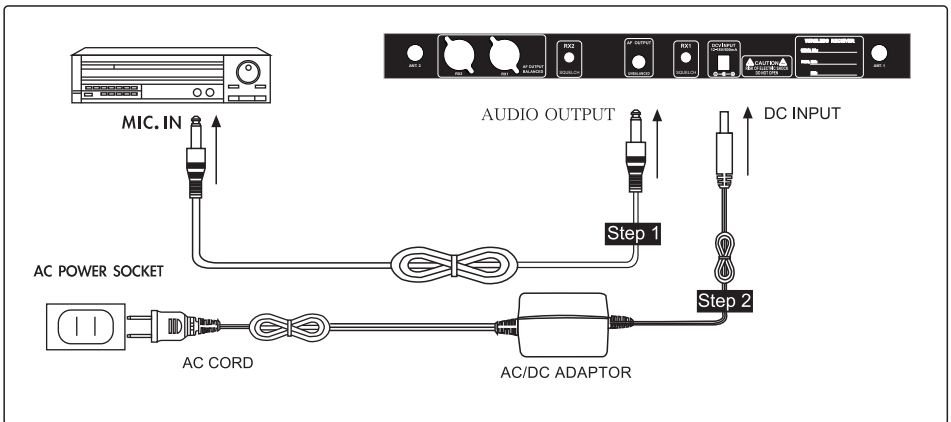
(2) Audio Output Connector

Connect one end of the AF output cable to the AF output socket in the rear panel, then plug another end to the “MIC IN” input socket of a mixer or amplifier. (Step 1 of Figure 1)

It is equipped with balanced XLR output and unbalanced $\varnothing 6.3\text{mm}$ output, choose the proper way for use

(1) Power output connector

Plug in one end of AC/DC adaptor cable to DC input socket in the rear panel of receiver, and plug another end into an AC outlet. (Step 2 of Figure 1)



(Figure 1)

(3) Turn the receiver on by pressing the Power button on the front panel (Figure 2)



(Figure 2)

(4) Adjust the volume control to a proper level. (Figure 3)

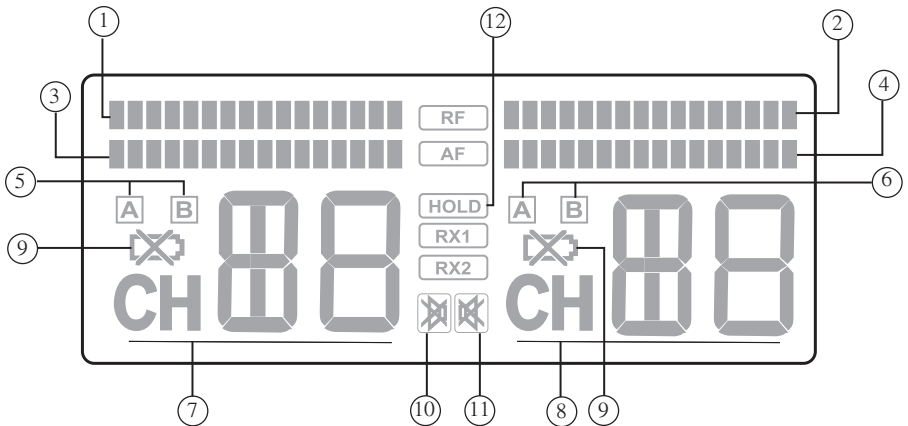


(Figure 3)

(5) LCD Panel

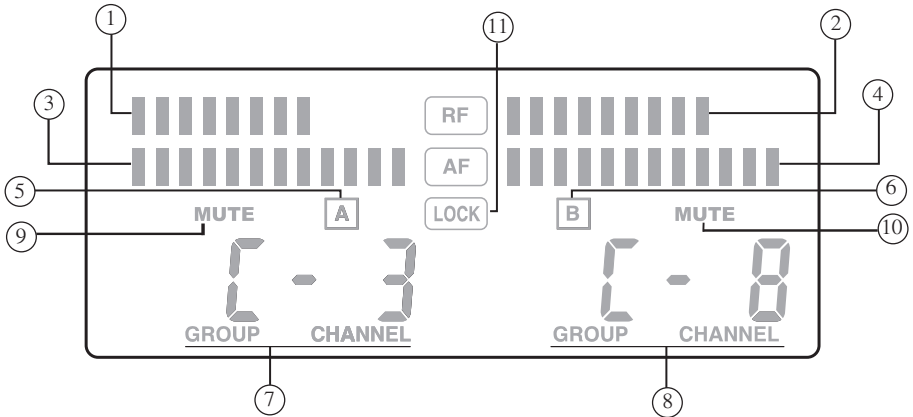
US-902D Pro

- ① RF incoming signal level of RX1
- ② RF incoming signal level of RX2
- ③ AF incoming signal level of RX1
- ④ AF incoming signal level of RX2
- ⑤ Diversity of RX1 (Antenna A or B active)
- ⑥ Diversity of RX2 (Antenna A or B active)
- ⑦ Channel display of RX1
- ⑧ Channel display of RX2
- ⑨ Batt. status of transmitter
- ⑩ Mute status of RX1
- ⑪ Mute status of RX2
- ⑫ Setting lock-on mode



US-903DC Pro

- ① RF incoming signal level of RX1
- ② RF incoming signal level of RX2
- ③ AF incoming signal level of RX1
- ④ AF incoming signal level of RX2
- ⑤ Diversity of RX1 (Antenna A or B active)
- ⑥ Diversity of RX2 (Antenna A or B active)
- ⑦ Group & channel display of RX1
- ⑧ Group & channel display of RX2
- ⑨ Mute status of RX1
- ⑩ Mute status of RX2
- ⑪ Setting lock-on mode

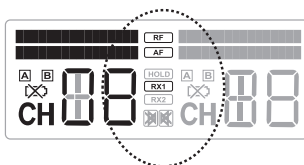


(6) Basic Operation

US-902D Pro

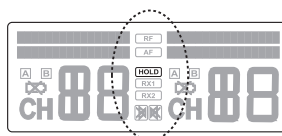
① Selecting channel

Press the ▲Up or ▼Down button till the (RX1) starts flashing, and again press the ▲Up / ▼Down button to select a suitable channel from the pre-set 16 channels. Later the (RX1) stop flashing, the receiver will store the channel automatically meanwhile presenting the channel number. Repeat the action for RX2 .



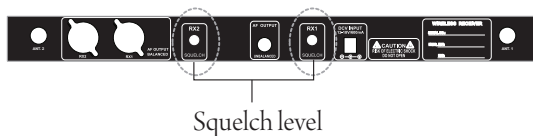
② Setting Lock-On

Hold both ▲Up and ▼Down buttons till the **HOLD** starts flashing simultaneously, the Lock-On mode is done. To release the Lock-On mode hold both ▲Up and ▼Down buttons for 2 secs.



③ Adjusting Squelch level

With the Squelch level control in the rear panel, you can adjust the squelch at a suitable level. If the level is set too high, the reception range will be reduced.



US-903DC Pro

① Selecting group channel:

Step 1 Group set up:

Press "SET" button two sec. till the "SETUP" show up, then "A-1" starts flashing, press the ▲Up or ▼Down button to select a suitable group from the pre-set four group of A,B,C,D. Then, press "SET" to store the group.

Step 2 Channel set up:

Then the channel number is flashing, press the ▲Up or ▼Down button to select a suitable channel from the pre-set 16 channels.

After step **Step 1** & **Step 2**, again press "SET" button the receiver will store the setting automatically.

② Setting Lock-On:

1. Press "SET" button two sec. repeat pressing till "Loc OFF" appears. Press "UP" button to lock-on mode and "DOWN" button to lock-off mode. Re-press "SET" button the lock function will store.
2. To release the Lock-On mode. Press "SET" button two sec. till "LocON" show up, then press "DOWN" button till "LocOFF" appears, press "SET" again then lock-on relieved.

③ Setting procedure is the same between channel A & B.

④ Channel A & B can't be set up in the same group and frequency, the system will evade this problem automatically.

⑤ The lock-on or lock-off is effective either A or B simultaneously.

Using the battery charge of US-903DC Pro

- ① Push the charger's cover and put 4 pcs of rechargeable batteries into the battery tray. Please match the correct polarity (+ and -) (Figure 1), then return the cover for charging the batteries.



(Figure 1)

- ② It is convenient to know the charging status via the LED indicator. The two red LED will flash during the charging and as soon as the batteries is fully charged, the two red LED will light up. (Figure 2)



(Figure 2)

Caution

To avoid battery leakage or explosion

- (1) Remove batteries when the wireless microphones will not be used for a long time.
- (2) When you need to replace the batteries, replace both batteries at the same time with new ones.
- (3) Don't use different type of batteries together!

5-2 Handheld Transmitter

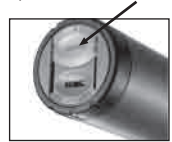
Mh-8800/Mh-8800G

(1) Battery Insertion

- ① Insert 2 pcs 1.5V batteries into the battery tray. (Figure 3)
- ② After putting into the battery, switch on the power switch. (Figure 4)



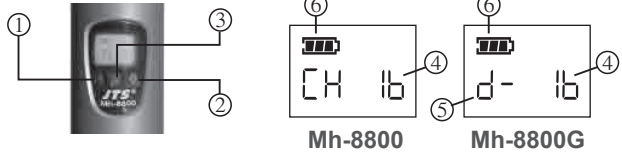
(Figure 3)



(Figure 4)

(2) LCD Operation

- ① Up button
- ② Down button
- ③ Set button
- ④ Channel
- ⑤ Group
- ⑥ Battery indicator



(3) Channel Selection

3.1 Mh-8800

- ① Hold "Set Button" till the SETUP shows, then the channel number will start flashing.
- ② Press ▲Up or ▼Down to select a desired channel from the pre-set 16 channels.
- ③ Press "Set Button" to store the channel.

3.2 Mh-8800G

- ① Hold "Set Button" till the SETUP shows, then the group number will start flashing.
- ② Press ▲Up or ▼Down to select a desired group from the pre-set four group of A. B. C. D.
- ③ Re-press "Set Button", then the channel number begin flashing.
- ④ Press ▲Up or ▼Down to select a desired channel from the pre-set 16 channels.
- ⑤ Press "Set Button" to store the channel.

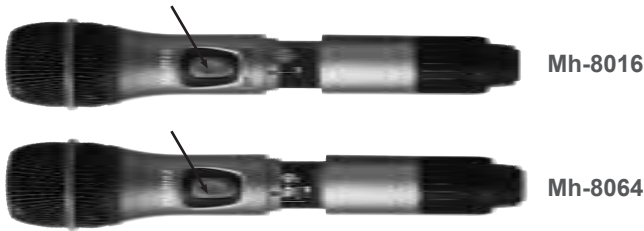
Mh-8016/Mh-8064

(1) Battery Insertion

- ① Insert 2 pcs 1.5V AA batteries into the battery tray. (Figure 1)
- ② After putting into the battery, switch on the power switch. (Figure 2)



(Figure 1)



(Figure 2)

(2) Channel Selecting

2.1 Mh-8016

- ① Screw off the outer body.
- ② Use supplied screwdriver to rotate the “Channel Selection” to select a desired channel from the pre-set 16 channels.

2.2 Mh-8064

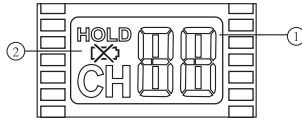
- ① Screw off the outer body.
- ② Use supplied screwdriver to rotate the “Group Setting” and “Channel” selector, to select a desired group and channel from the pre-set four groups of A. B. C. D. and pre-set 16 channels.

5-3 Body-pack Transmitter

PT-920B(PT-920BG) Body-pack transmitter

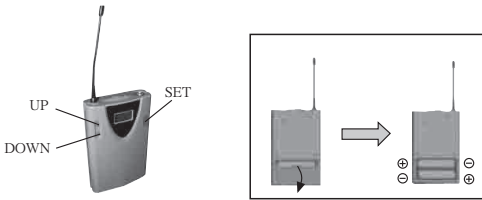
1. LCD panel

- ① Main display
- ② Battery indicator



2. Basic operation

- (1) Slide the battery tray cover in the direction of the arrow to open it, insert two 1.5V batteries according the correct polarity, and return the cover (Figure 3)



(Figure 3)

- (2) Turning the transmitter On.

The On/Off switch is located on the top of the transmitter.

- (3) Channel selecting

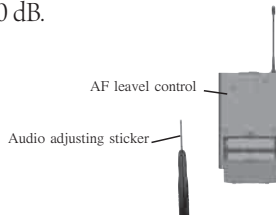
Hold "Set Button" till the SETUP shows, then the channel number will start flashing.

Press ▲Up or ▼Down to select a desired channel from the pre-set 16 channels.

Press "Set Button" to store the channel.

- (4) Sensitivity adjusting

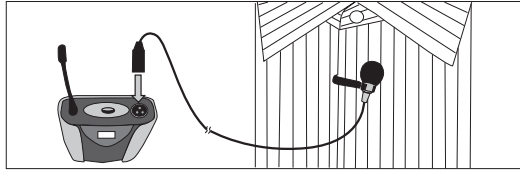
There is a gain control adjuster in the up-left of its back, you can adjust the level in 3 steps from 0 dB to 30 dB.



5-4 Installation of Condenser Microphones

1. Lavalier microphone

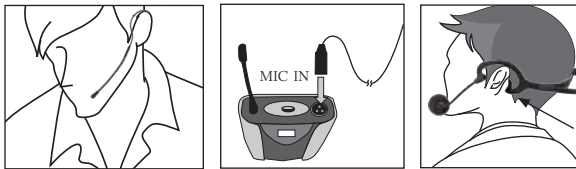
Attach lavalier microphone to a tie, lapel, where is suitable for sound pick-up. Plug the connector into input socket on the body-pack transmitter. (Figure 1)



(Figure 1)

2. Headset microphone

Put the headband behind your head, and fix the temples on your ears as (Figure 2) shows, then adjust the gooseneck to have best miking. Plug the connector into input socket on the body-pack transmitter. (Figure 2)



(Figure 2)

6 SYSTEM OPERATION

Be sure to mute the audio signal of mixer or amplifier before turning on the receiver and transmitter.

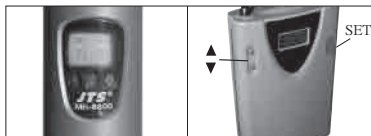
6-1 Power on

Turn AF level on the receiver completely counter-clockwise to the minimum level, and switch on the receiver. As soon as you turn power on of receiver, LCD lights on, meanwhile the RF signal and AF level indicate the transmission status, and receiver is ready for operating.

Always it's a good idea to keep "open space" between transmitter and receiver, that is will improve RF reception.

6-2 Match channel between receiver and transmitter

- (1) Press the ▲Up / ▼Down button to select the receiver's channel that matches transmitter's. (Figure 3)



(Figure 3)

- (3) When 2 or more transmitters and receivers are used in the same location, they must be set up to use different channels. If existing channel is being interfered, please change to another channel with non-interference.

6-3 Wearing the Body-pack transmitter

The carry case allows body-pack transmitter to be attached on performer's belt, place the antenna towards the back of his body. The Velcro tag around the belt and fix it. (Figure 1)



(Figure 1)

7 RECOMMENDATIONS

1. In order to achieve the optimum reception and also extend the operating distance, please leave an “open space” between the receiver and transmitter.
2. Keep the devices away from the metal objects or any interference sources at least 50 cm.
3. To avoid the feed-back effect, don't leave the mic. aiming at the speakers directly.
4. For best sound performance, please hold the middle of the mic. body.
5. Remove batteries from the battery compartment when the transmitter will not be used for a long time.
6. When you need to replace the batteries, please replace both batteries at the same time with new ones.

JTS[®]

US-902D Pro / US-903DC Pro



59508-002-03