



UHF-PLL

Wireless Microphone System



EJ-701DR-PLUS Single-channel Diversity Receiver

EJ-702DR-PLUS Dual-channel Receiver

[User Manual]

Preface

Thank you for the purchase of Wireless Microphone System EJ-701DR-PLUS and EJ-702DR-PLUS. This manual will give comprehensive instructions and operation. Please read it over before your use to perform this unit well.

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Notice:
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC INFORMATION
The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:
The 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:

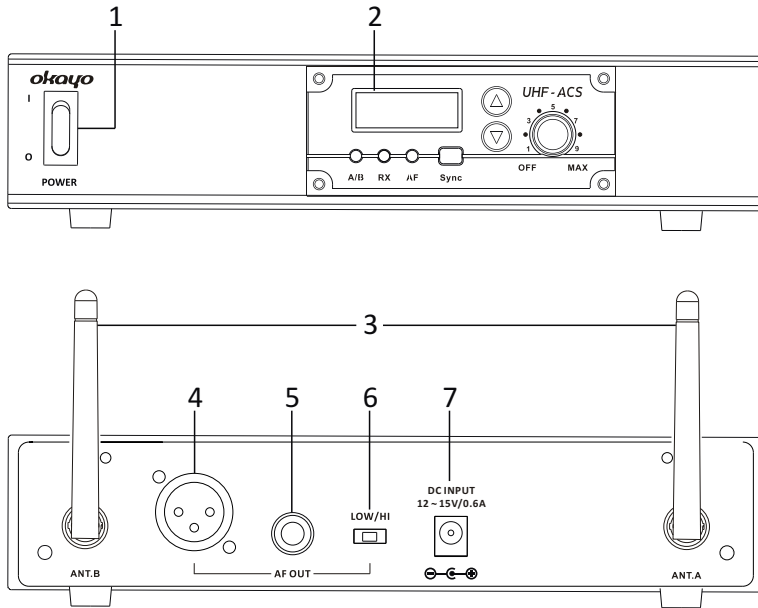
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

IMPORTANT NOTE:
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.

Consumer Alert
Most users do not need a license to operate this wireless microphone system.
Nevertheless, operating this microphone system without a license is subject to certain restrictions:
The system may not cause harmful interference; it must operate at a low power level (not in excess of 50 milliwatts); and it has no protection from interference received from any other device.
Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change.
For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit the FCC's wireless microphone Web site at <http://www.fcc.gov/cgb/wirelessmicrophones>.

Illustration

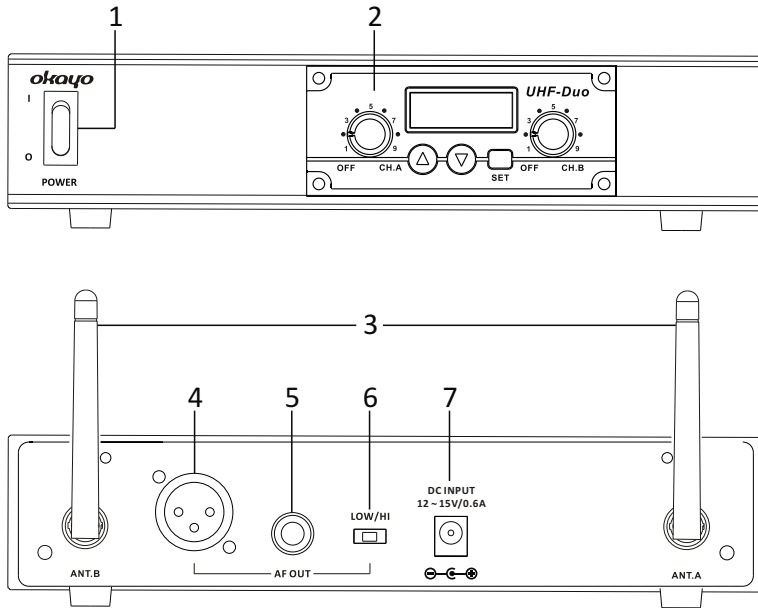
EJ-701DR-PLUS Single-channel Diversity Receiver



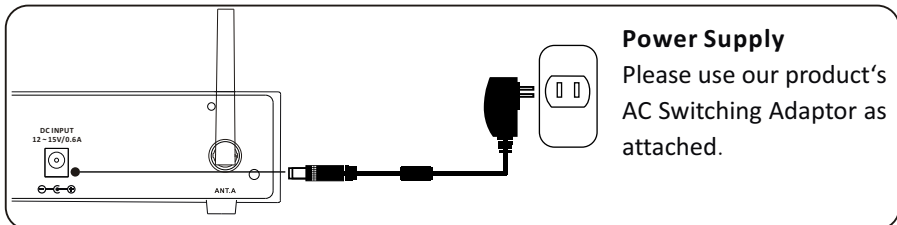
1. Power Switch
2. DR-501A Wireless Receiver Module
3. Antennas
4. Balanced AF XLR Output
5. Unbalanced AF Output (6.3 mm jack)
6. AF Impedance Selection (for 5)
7. DC Power Socket

Illustration

EJ-702DR-PLUS Dual-channel Receiver



1. Power Switch
2. DR-500 Wireless Receiver Module
3. Antennas
4. Balanced AF XLR Output
5. Unbalanced AF Output (6.3 mm jack)
6. AF Impedance Selection (for 5)
7. DC Power Socket

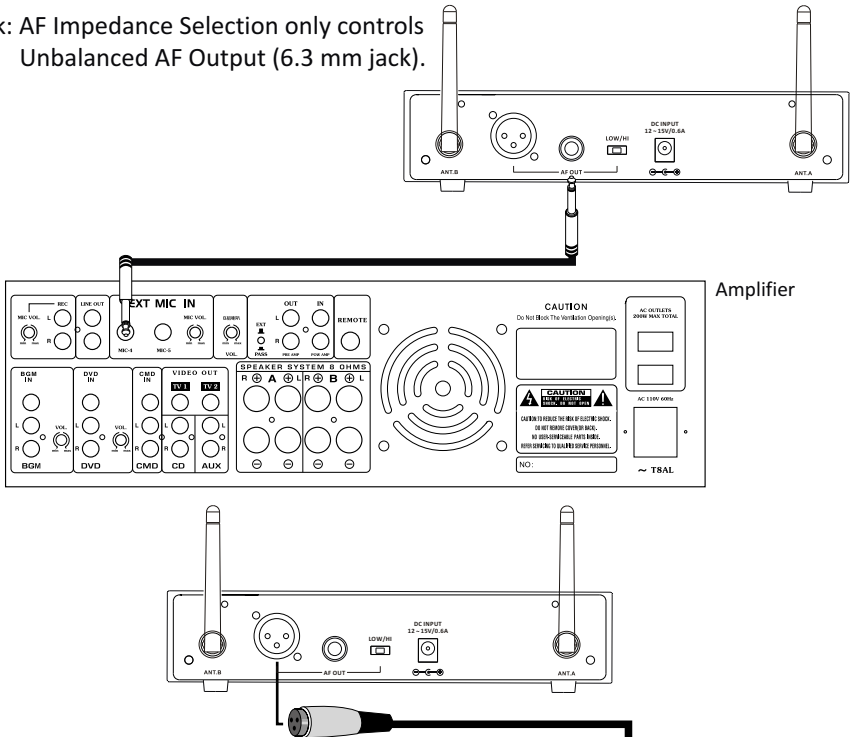


Setup Procedure

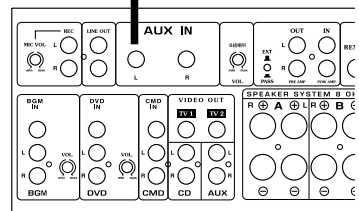
Signal Connections

1. Connect 6.3 mm mic jack from “Unbalanced AF Output” to amplifier’s “MIC IN” and set “impedance” at “LOW”. Or connect 6.3 mm mic jack from “unbalanced AF Output” to amplifier’s “LINE IN” and set “impedance” at “HI”. (The same way can be applied in EJ-701DR-PLUS / EJ-702DR-PLUS.)

Remark: AF Impedance Selection only controls Unbalanced AF Output (6.3 mm jack).

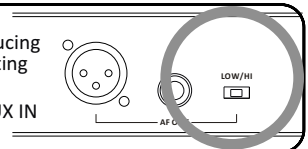


2. If using XLR mic jack, connect it from “Balanced AF Output” to amplifier’s “AUX IN”.

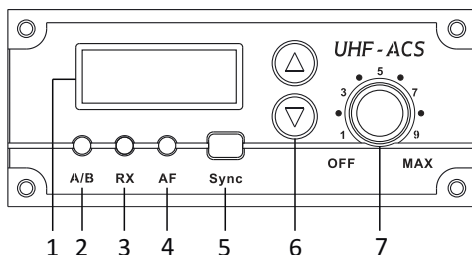


AF Impedance Selection (HI / LOW Control)

- ※ In order to prevent from the impedance from being too high thus producing unexpected noise, please set “impedance” at “LOW” if you are connecting a mic jack to a “low input” in the subordinate device.
- ※ If your subordinate device is with general input socket (e.g., LINE IN, AUX IN, etc), please set “impedance” at “HI” to avoid too low-volume output.



Wireless Receiver Module DR-501A



1. LCD Window
2. Antenna A and B indicator
3. RF signal indicator
4. AF signal indicator
5. Synchronization button
6. Channel up / down adjustment
7. Receiver power on / off control and volume adjustment

Operation and Setting

Turn “Receiver power on/off control” knob (7) clockwise until a click occurs. A text of “**Sync**” will appear on LCD window for about 2 seconds and it follows a channel number. The turning-on is successful. To turn it off, just turn the control counterclockwise until a click occurs. A text of “**OFF**” will appear on LCD window and will disappear after 2 to 3 seconds.

How SYNC works

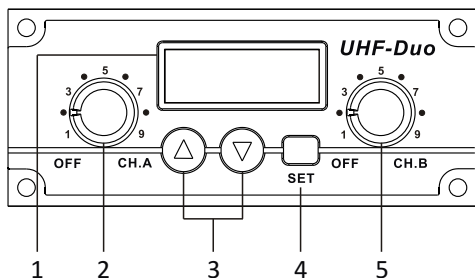
“**Sync**” function can find a clean channel and assign it to transmitter in the range, about 3 M. Just turn on your microphone or transmitter first and press SYNC button, in few seconds the progress will be done. During synchronization, the RF indicator will blink.

Change channel manually

Press and hold “Up or Down” button (6) for 1 second until channel number is blinking. Select a desired number through “Up or Down” button (6). A selected channel number will be confirmed in 1 second if no more adjustment made to it.

- * Please complete channel setup in one receiver first and then a second one when you have more than 1 receiver.
- * Be sure to give different channel number to each receiver.

Wireless Receiver Module DR-500



1. LCD Window
(Display Channel Number / Reception Strength)
2. Channel A
Power Switch and Volume Control
3. Up / Down Frequency Selector
4. Frequency Set Key
5. Channel B
Power Switch and Volume Control

Operation and Setting

Switch on/Switch off

1. Turn “Channel A / B” knob (2) / (5) clockwise until a click occurs, then LCD window will be on and a text of “On” will appear on LCD window. After 1 ~ 2 seconds, the LCD window will show a channel number and signal strength, it means the receiver module switched-on successfully.
2. Vice versa, turn “Channel A / B” knob (2) / (5) counterclockwise until a click occurs, then LCD window will show a text of “OFF” for about 2 ~ 3 seconds. LCD window will be off after this procedure, switched-off successfully.

Setting and Selection of Channels



Press and hold “SET” key (4) to enter the mode of selecting the channels

1. While both Channel A and Channel B are available, the channel number of Channel A shown on LCD window starts to blink. Press “Up” or “Down” Frequency Selector keys (3) to look for your preferred channel number. Press “SET” key (4) again to confirm the channel setting.
2. While only Channel A or Channel B is available, switch the channel number of Channel A or Channel B directly.
3. If you don't press any key for more than 10 seconds, it will leave the channel-switching mode with channel number kept.
4. Channel A and Channel B cannot be set with the same channel number.



Searching for Available Channels

1. Press “Up” and “Down” Frequency Selector keys (3) simultaneously for more than 1 second, and then LCD window will show a text of **SCAN** without blinking. Channel A and Channel B will be switched to available channels automatically. If there is no any channel available, the channel numbers will still remain the same.

Wireless Receiver Module DR-500

2. Press “Up” Frequency Selector key (3) for more than 1 second, and then LCD window will show  , Channel A would be switched to available channel automatically. If there is no channel available, the channel value would be kept the same.
3. Press “Down” Frequency Selector key (3) for more than 1 second, and then LCD window will show  , Channel B would be switched to available channel automatically. If there is no channel available, the channel value would be kept the same.
4. Using two DR-500 wireless receiver modules simultaneously:
 - Press “Up” and “Down” Frequency Selector keys (3) simultaneously on DR-500 module 1 for more than 1 second, you could find two available channels.
 - Switch on two Transmitters used for Wireless Receiver Module 1 and adjust the channel number accordingly.
 - Press “Up” Frequency Selector key (3) on Wireless Receiver Module 2 for more than 1 second, you could find available channel for Channel A.
 - Switch on the third Transmitter used for Wireless Receiver Module 2 and adjust the channel number accordingly.
 - Press “Down” Frequency Selector key (3) on Wireless Receiver Module 2 for more than 1 second, you could find available channel for Channel B.
 - Switch on the fourth Transmitter. Finalize the process of four channels used simultaneously.

Setting of Group Number and SQ Value

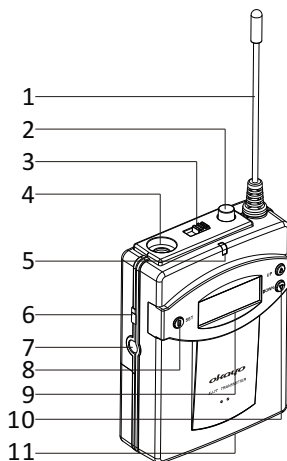
1. Press “Set” key (4) and then switch on Channel A or Channel B to enter Group setting, and then LCD window would show  (number will keep blinking).
2. Press “Up” or “Down” Frequency Selector keys (3) to look for your preferred group number.
3. Press “SET” key (4) to confirm the group setting or wait for 5 seconds to confirm it automatically and then enter setting mode of SQ value.
4. Under setting mode of SQ value, LCD window will show  (number will keep blinking).
5. Press “Up” or “Down” Frequency Selector keys (3) to choose SQ value, the value will not be set in circulation.
6. Press “SET” key (4) again to confirm the group setting or wait for 5 seconds to confirm it automatically and then back to normal switching-on mode.

CAUTION!

- Please keep the distance between the Transmitter and the Receiver more than 2 M.
- Please keep the distance between the Transmitter and the Transmitter more than 0.5 M.

Wireless Bodypack Transmitter EJ-7T+/EJ-7XT+

1. Antenna
2. Mute Control
3. Power Switch
4. 3.5 mm push-in (EJ-7T+) or Mini-XLR (EJ-7XT+) Microphone Input
5. LED Power Indicator
6. Sensitivity Selection
7. AUX In (3.5 mm)
8. Frequency Set
9. LCD Window
10. Turn Up / Down Frequencies Keys
11. Recharge Jack



Operation and Setting


Turn-on

Turn on the “Power Switch” (3), the LCD window will show “On” and the Backlight & “LED Power Indicator” (5) will be light on. After 1 second, the LCD window will show channel number and battery life indicator.

Turn-off

Turn off the “Power Switch” (3), the LCD window will show “OFF” with backlight on, and then turn off.

Setting of Channel

After turning on the unit, the current channel  is shown on the LCD window. Press “Frequency Set” key (8) for 2 seconds to until the channel number starts to blink, and then press “Up” or “Down” key (10) to select the channel from 1-96. Press “Frequency Set” key (8) again to confirm the setting of channel or it will return back to the original channel number after 10 seconds without pressing “Frequency Set” key (8).

※The transmitter and the receiver should be set on the same channel.

Display of Channel

Press “Up” or “Down” key (10) or press “Up” and “Down” keys (10) simultaneously to show current frequency value on the LCD window. The LCD window will go back to normal after releasing fingers from keys.

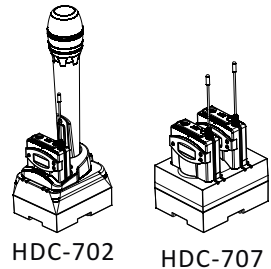
Wireless Bodypack Transmitter EJ-7T+/EJ-7XT+

Frequency Pairing

1. After turning on the unit, the frequency pairing will be run once within 10 minutes. The LED Power Indicator will be light on in blue for three times and the backlight of LCD window will be on as well while frequency pairing successfully. While changing to a new channel, the LED Power Indicator will be light on in blue constantly.
2. Press "Frequency Set" key (8) for less than 2 seconds to enable frequency pairing function again. During the process of frequency pairing, the LED Power Indicator will be light on in blue blinkingly together with channel number **CH01** blinkingly shown on LCD window. If frequency pairing successfully, new channel number will be shown on LCD window unblinkingly and the LED Power Indicator will be light on in blue constantly. If frequency pairing unsuccessfully after turning-on for 20 seconds, it will back to the original channel number with LED Power Indicator light on in blue constantly and the original channel number remained without blinking.

※ Notice: This function is available while only working with DR-501A.

- ※ The performance of signal transmission is highly involved with battery energy. Batteries with 1600 mAh (or above) in capacity are recommended. The optional charger HDC-702 / 707 is an economy solution for your daily use.



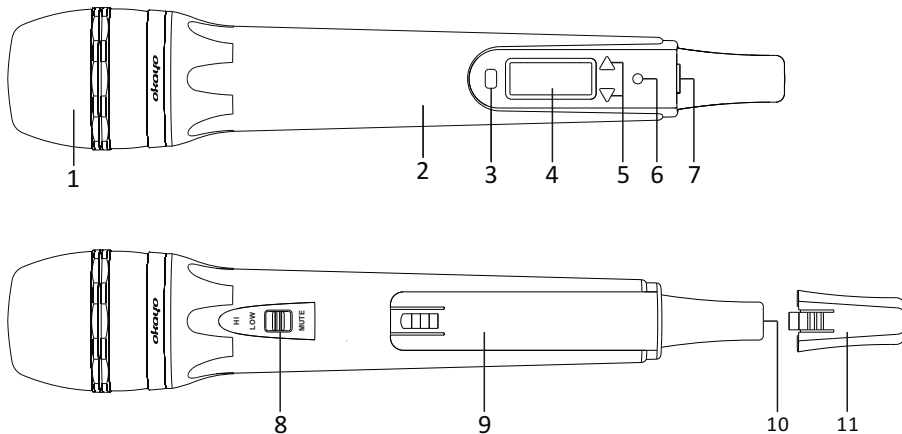
HDC-702

HDC-707

CAUTION!!

- ※ **DO NOT attempt to charge Alkaline battery. It will lead to battery leakage or even explosion!**
- ※ **Take out batteries when the devices won't be operated in a long time.**

Wireless Handheld Mic EJ-701TS+/EJ-701TM+



1. Mesh head
2. Handheld tube
3. Setup button
4. LCD window
(channel, frequency, battery energy)
5. Up / Down button
6. Power indicator
7. Power ON / OFF button
8. HI / Low / Mute
sensitivity selector
9. Battery door
10. Charging port
11. Button cap

※ The differences between EJ-701TS+ and EJ-701TM+ are mesh head and cartridge only.

Put Batteries in Microphone



1. Take off button cap (11) and pull off battery door (9).
2. Insert batteries correctly. (two AA 1.2 V Ni-MH rechargeable batteries or 1.5 V Alkaline batteries) Put the button cap (11) back.
3. This action ensures the battery door is locked and to prevent from falling off. Insert 2 pcs of 1.5 V AA alkaline batteries or 1.2 V AA rechargeable batteries into the battery case, and then close the battery door (9) tightly.

CAUTION !

※ **DO NOT use larger capacity battery.**
(e.g. the Ni-MH battery with over 2300 mAh might be stuck in battery room and can't be taken out!)

Wireless Handheld Mic EJ-701TS+/EJ-701TM+

Operation and Setting

Turn-on / Turn-off

1. Press “Power Switch” key (7) for 1 second to turn on the unit. The LCD window will show “On” first and then show channel number and battery life indicator after 1~2 seconds. The LED Power Indicator will be light on in blue as well.
2. Under any situation, the unit can be turned off if pressing “Power Switch” key (7) for more than 2 seconds.

Setting of Channel

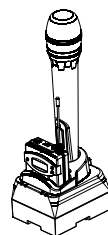
After turning on the unit, the current channel **CH.01** is shown on the LCD window. Press “Frequency Set” key (3) for more than 2 seconds until the channel number **CH.01** starts to blink, and then press “Up” or “Down” key (5) to select the channel from 1-96. Press “Frequency Set” key (3) again to confirm the setting of channel number or it will return back to the original channel number after 10 seconds without pressing any key.

Frequency Pairing

1. After turning on the unit, the frequency pairing will be run automatically once.
2. The LED Power Indicator will be light on blinking in blue for three times and then constantly while frequency pairing successfully.
3. Press “Frequency Set” key for less than 2 seconds to enable frequency pairing function again. If frequency pairing unsuccessfully after turning-on for 20 seconds, it will back to the original channel number with LED Power Indicator light on in blue constantly and the original channel number remained without blinking.
4. The distance for frequency pairing should be less than 3 meters.

※ Notice: This function is available while only working with DR-501A.

※ The performance of signal transmission is highly involved with battery energy. Batteries with 1600 mAh (or above) in capacity are recommended. The optional charger HDC-702 is an economy solution for you daily use.



HDC-702

CAUTION!!

- ※ **DO NOT attempt to charge Alkaline battery. It will lead to battery leakage or even explosion!**
- ※ **Take out batteries when the devices won't be operated in a long time.**

Instructions for using transmitter/receiver system with hearing loop amplifier

If you wish to use handheld microphone EJ-701TM+ and bodypack transmitter EJ-7XT+ at the same time, it's important to set the system in a specific order. The sensitivity for EJ-701TM+ is deliberately low compared to EJ-7XT+, to enable use of the microphone in front of a speaker without setting off feedback. To connect the receiver and the transmitters with a hearing loop amplifier, please follow instructions.

Set the system:

Handheld microphone EJ-701TM+

1. Set sensitivity on EJ-701TM+ to "HI".
2. Set level/volume on corresponding receiver to max.
3. Adjust the input signal on the loop amplifier until the "IN" indicator lits up.
The input signal is now sufficient to activate the AGC. Do not adjust more than necessary, as it might distort the signal.
4. Adjust the output signal (loop current) on the loop amplifier according to standard (0dB at peaks)
5. The chain: transmitter receiver loop amplifier input loop amplifier output is now adjusted to EJ-701TM+.

Bodypack transmitter EJ-7XT+

6. Set sensitivity switch on EJ-7XT+ to "LOW".
7. Set level/volume in corresponding receiver to vertical position (12 o'clock).
8. If the level in the loop is perceived as low, adjust level on the receiver. If still not sufficient, change sensitivity switch on transmitter to "MID".

Important Notes

Avoiding heat and humidity

- Keep the device away from any heat source and in a location with good ventilation. Do not leave it under sunlight or close to heater.
- DON'T operate the device in the rain or in humid circumstance to prevent failure.
- Prevent the device from dropping.
- Apply factory recommended power supply to this system only. It is dangerous and risky when employing a unqualified power.

Replacing batteries

- Make sure the substitute batteries are with same specifications.
- Using incorrect batteries might lead to explosion or malfunction.

Remove battery from transmitter when you won't use it for a long while.

Charging contacts

- Clean charging contacts regularly to ensure good connection with charger. When any corrosion occurs, contact your dealer to change it if you can't repair it.

Troubleshooting

Failed to Power On

- Be sure batteries are allocated and put in correct direction.
- Be sure power adapter is plugged well.

No Sound Output

- Be sure volume control on transmitter and receiver are turned properly.
- Be sure Mute button is not on.
- Be sure transmitter and receiver stay at same channel.
- Check if there is huge air interference nearby.

Acoustic feedback is overlarge

- Adjust the volume of microphone and receiver module properly.

Failing to charge

- Make sure the charger is connected with power supply correctly.
- Make sure battery contacts are clean and free of corrosion.
- Change batteries if the device still can't be charged.

Frequencies Combination

Frequency: 514-544 MHz

1. Use 4 channels at the same time. Please keep the distance between the transmitter and the receiver more than 2 M.
(1) 16 , 21 , 78 , 82 (2) 15 , 33 , 80 , 87 (3) 14 , 23 , 43 , 53 (4) 34 , 45 , 67 , 69
2. Use 8 channels at the same time. Please keep the distance between the transmitter and the receiver more than 8 M.
(1) 04 , 16 , 21 , 36 , 37 , 52 , 78 , 82 (2) 14 , 22 , 23 , 29 , 43 , 53 , 61 , 69

Frequency: 520-544 MHz

1. Use 4 channels at the same time. Please keep the distance between the transmitter and the receiver more than 2 M.
(1) 01 , 02 , 04 , 05 (2) 06 , 07 , 08 , 10 (3) 09 , 11 , 12 , 13 (4) 15 , 16 , 17 , 18
(5) 19 , 21 , 22 , 25 (6) 26 , 27 , 28 , 29 (7) 35 , 36 , 37 , 39 (8) 62 , 63 , 64 , 65
2. Use 8 channels at the same time. Please keep the distance between the transmitter and the receiver more than 8 M.
(1) 01 , 02 , 04 , 05 , 06 , 13 , 16 , 19 (2) 35 , 36 , 37 , 38 , 39 , 41 , 44 , 46
3. Use 12 channels at the same time. Please keep the distance between the transmitter and the receiver more than 10 M.
(1) 01 , 02 , 04 , 05 , 06 , 13 , 16 , 19 , 20 (2) 35 , 36 , 37 , 38 , 39 , 41 , 44 , 46 , 47

Frequency: 640-664 MHz

1. Use 4 channels at the same time. Please keep the distance between the transmitter and the receiver more than 2 M.
(1) 01 , 02 , 08 , 10 (2) 09 , 10 , 15 , 31 (3) 01 , 03 , 08 , 21 (4) 01 , 02 , 04 , 06
2. Use 8 channels at the same time. Please keep the distance between the transmitter and the receiver more than 8 M.
(1) 01 , 02 , 04 , 06 , 09 , 10 , 15 , 31

Frequency: 794-806 MHz

1. Use 4 channels at the same time. Please keep the distance between the transmitter and the receiver more than 2 M.
(1) 08 , 16 , 26 , 35 (2) 02 , 04 , 08 , 16 (3) 22 , 33 , 45 , 48 (4) 12 , 26 , 48 , 94
(5) 12 , 26 , 48 , 92
2. Use 8 channels at the same time. Please keep the distance between the transmitter and the receiver more than 8 M.
(1) 08 , 16 , 22 , 26 , 33 , 35 , 45 , 48

Frequency: 863-865 MHz

1. Use 4 channels at the same time. Please keep the distance between the transmitter and the receiver more than 2 M.
(1) 01 , 04 , 11 , 16 (2) 01 , 02 , 04 , 13

Remark: 1. The setting of SQ value is all set as SQ0.

2. The higher value of SQ setting; the shorter distance between the transmitter and the receiver.

3. The distance between the transmitter and another transmitter should be more than 50 cm.

Specifications

Wireless Receiver

Receiver	EJ-701DR-PLUS	EJ-702DR-PLUS
Receiver Module	DR-501A	DR-500
LCD window	Channel, Frequency	Channel, Reception Strength
Channel adjustment	select through UP and DOWN	Frequency Set, UP and DOWN
Carrier frequency	514 ~ 865 MHz (country dependant)	
Channels	16 ~ 96 (frequency dependant)	
Output level	XLR : 1V / 600 Ω (@AF input 300 mV)	
	Hi : 730 mV / 2k Ω (@AF input 300 mV)	
	Low : 80 mV / 2k Ω (@AF input 300 mV)	
Audio output	Φ 6.3 mm MIC-out (mixer), XLR-balanced	
Ambient temperature	-10° C ~ +60° C	
Power supply	AC switching power adapter 100 ~ 240 V, 12 ~ 15 V / 0.6 A	
Frequency modulation	24 MHz (max.)	
Dynamic range	110 dB	
T.H.D.	< 0.5 %	
Pre-emphasis	50 μ s	
Silent mode	Tone key and noise lock dual-squelch	
Frequency response	70 Hz ~ 17 kHz	
Wireless coverage	70 ~ 100 M	60 ~ 90 M
Dimensions (DxWxH)	210 x 215 x 44 mm	
Weight	1.2 kg	

Specifications

Wireless Bodypack Transmitter EJ-7T+/EJ-7XT+

Transmitter	EJ-7T+	EJ-7XT+
Input jack	3.5 mm push-in	Mini-XLR Microphone Input
Microphone capsule	Condenser	
Antenna	Flexible antenna	
RF output	10 mW	
Spurious emission	Less than 250 nW	
Audio input	Ø3.5 mm Mic in, Aux in	
AF controls	Mute switch, Hi / Mid / Low switch	
Power requirements	2 x 1.2 V (Ni-MH 1600 mAh) AA type rechargeable batteries	
	2 x 1.5 V AA Alkaline disposable batteries	
Power supply	8 hours typical in Ni-MH rechargeable batteries	
	14 hours typical in Alkaline disposable	
Dimensions (DxWxH)	26 x 64 x 88 mm	
Weight	170 g (battery included)	

Wireless Handheld Mic EJ-701TS+ / EJ-701TM+

Microphone	EJ-701TS+	EJ-701TM+
Microphone capsule	Dynamic capsule	Condenser capsule
Antenna	Built-in antenna	
RF output	10 mW	
Spurious emission	Less than 250 nW	
AF controls	Hi / Low / Mute switch	
Power requirements	2 x 1.2 V (Ni-MH 1600 mAh) AA type rechargeable batteries	
	2 x 1.5 V AA Alkaline disposable batteries	
Power supply	8 hours typical in Ni-HM rechargeable batteries	
	14 hours typical in Alkaline disposable	
Dimensions (ØxL)	26 (dia.) x 264 mm	
Weight	237 g (battery included)	



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