



SDR-8200 / SDR-7200

UHF PLL-Synthesized Dual / Single Channel
True Diversity Wireless Microphone System

SQ-7100 / SQ-6100 / SM-7100

OPERATION MANUAL



GREEN PRODUCT



CHIAYO ELECTRONICS CO., LTD.

Web site: <http://www.chiayo.com.tw> E-mail: sales@chiayo.com.tw

OFFICE: 30, LANE 27, SEC.4, JEN-AI ROAD, TAIPEI, TAIWAN / TEL: 886-2-2741-5741 FAX: 886-2-2752-5242

FACTORY: 88, CHUNG HSIAO STREET 2, CHIAYI, TAIWAN. / TEL: 886-5-271-1000 FAX: 886-5-276-7611

Thank you for choosing Chiayo wireless microphone system !

Our products are designed to last and for user friendly operation. Each system consists of :

- a receiver,
- a handheld or bodypack transmitter and,
- comes completely with all necessary accessories.

Each system has 100 factory preprogrammed frequencies and is ready for immediate use after switch-on. However, all frequency settings can be changed to suit your individual needs, if required.

There are two types of transmitter versions :

The **Handheld** transmitter is a complete wireless microphone by itself. It can only accept dynamic or condenser microphone capsule modules specially designed by Chiayo.

The **Beltpack** transmitter can accept a wide range of inputs including Uni- and Omni-directional lavalier microphone, headset microphone, guitar / instrument input or other line input audio sources.

For more details, please take a few moments to read this operating manual to have a thorough understanding of the function and operation of both transmitter and receiver.

With the introduction of this series, Chiayo offers musicians, PA and sound professionals a high-quality and reliable state-of-the-art RF transmission link between transmitters and receivers. Followings are brief description of various technologies used and features available in these systems.

Important Remarks !

Never attempt to open the electronic devices by yourself ! This must only be done by authorized personnel and is all the more important for units connected to AC outlets.

If devices are opened by customers in breach of this remark, the warranty will be null and void.

Always disconnect the devices from the AC mains by removing the plug when you wish to change connections or move the devices to a different place.

Keep the devices away from central heating radiators and electric heaters. Never expose them to direct sunlight.

Use the devices in dry rooms only.

Use a damp cloth for cleaning the devices. Do not use any cleansing agents or solvents.

Tips to obtain the best results for a wireless microphone system

1. For transmitter, please use only fresh alkaline battery. Do not use general purpose (carbon zinc) battery.
2. Transmitter and receiver should be as close as possible, but not less than 1m.
3. Position the receiver so that it has the least possible obstruction between it and the transmitter. Line of sight is best.
4. If external antenna is used, low loss RF shielded cable should be used and the length of the cable should not exceed 3m.
5. The receiver antenna should be kept as far away as possible from any metal surface.
6. A receiver can not receive signals from two transmitters at the same time.
7. Turn off the transmitter when not in use. Remove the battery if the transmitter is not to be used for a period of time.
8. If the volume Control of the receiver is set too high, it may over-drive the input of the mixer, causing distortion. Conversely, if the receiver output is set too low, the overall signal to noise ratio of the system may be reduced. Adjust the output level of the receiver such that highest sound pressure level going into the microphone causes no input overload in the mixer, and yet permits the mixer level controls to operate in their normal range (not too high or too low). This provides the optimum signal to noise for the entire system.

Simple DIY trouble shooting:

Case study 1: Transmitter is on, Receiver is on, but no RF signal received.

1-1. Transmitter and Receiver are having different frequencies . If this is the case, please change either Transmitter and Receiver to the correct frequency or frequency group. For PLL series, if the frequency group is correct, the channel could be wrongly selected on either side. Please verify and select to the correct channel.

1-2 Transmitter is faulty

When step 1 is verified to be correct, then either Transmitter or Receiver is faulty. To prove this transmitter is faulty, please use another functional transmitter (if any) of the same model and same frequency to switch on the receiver, If this transmitter of the same frequency could trigger on the receiver , then this proves that the other transmitter is faulty. Send it back to Chiayo's authorized agent for service.

1-3 Receiver is faulty

When steps 1 & 2 failed to bring any result, then the receiver could be faulty. To verify, please use another functional receiver (if any) of the same model and same frequency to double check and send it back to Chiayo's authorized agent for service.

Case study 2: Transmitter could not be switched on.

2-1 Battery is weak or wrongly installed. If it is not the case, please check according to 1-2 above .

Case study 3: Strong interference signal received.

3-1 If interference could not be solved by adjusting the squelch (SQ) control to maximum, please stop using this particular frequency (for a crystal locked system) and change to another set of a different frequency. For a PLL system, please switch over to another interference free channel.

Operating the Guitar System

- 1.Refer to Fig.6 below, connect the AC power adaptor to the DC IN connector on the back of the receiver. Plug the adaptor into an AC wall socket. Push to switch on the receiver. The LCD on the receiver will glow.
- 2.Raise the antennas and point away from each other at a 45° angle from the vertical to achieve optimum reception.
- 3.Connect the receiver's Unbalanced 1/4" PHONE JACK AUDIO OUT connector to the amplifier input, using a standard guitar cable.
- 4.Connect a Guitar cable to your Guitar and Adjust the volume control of your Guitar to desired level in order to match wireless output to that of a wired system.
- 5.Plug the other end of the Guitar cable to the beltpack transmitter's input connector. Press the power on / off switch to switch on the transmitter. The transmitter's red LED will flash and the receiver's red DIVERSITY A/B lights will glow.
- 6.Slide the transmitter's AUDIO ON / OFF switch to ON position.
- 7.Play your Guitar. Proper operation is indicated by :
Steady glow of the receiver's DIVERSITY A / B lights and RF indicator.
flickering of the receiver's AF indicator lights when the audio goes into the mike.
8. During the pause of the presentation, slide the Audio ON / OFF switch to OFF position.
- 9.When the performance is over, turn off the amplifier and turn off the transmitter power.

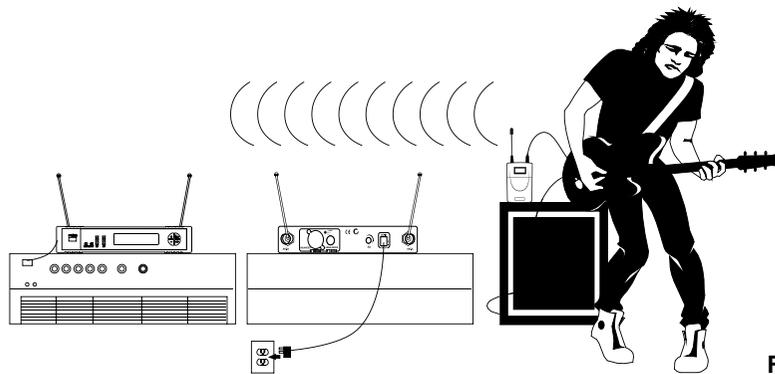


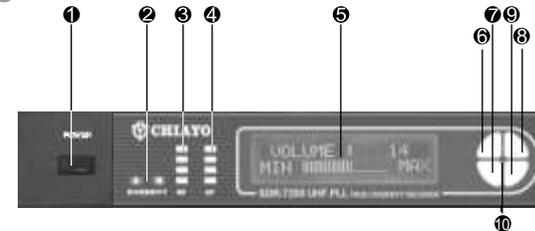
Fig.6

System Overview :

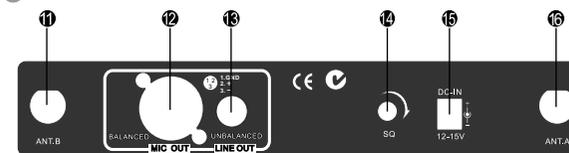
Models	SDR-7200	SDR-8200
Frequency Band	UHF	
No. of Channel	100	
No. of Receiver	1	2
Receiving mode	TRUE DIVERSITY	
Display	WHITE IN BLUE LCD	
Rack size	1/2 19" RACK	19" RACK
Power supply	12V / 800 mA AC adaptor	12V / 800 mA AC adaptor or switching power
Rack mount oiece	MP-50 (optional)	—
Handheld Transmitter	SQ-6100 SQ-7100	
Bodypack Transmitter	SM-7100	
Battery used	AA * 2 pcs (Alkaline recommended)	

Parts and functions of SDR-7200 receiver

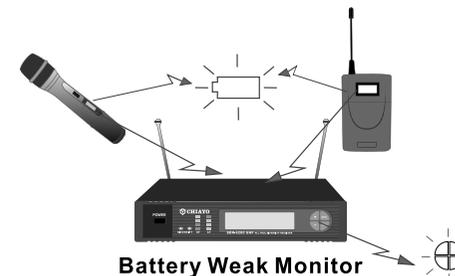
● Front



● Rear



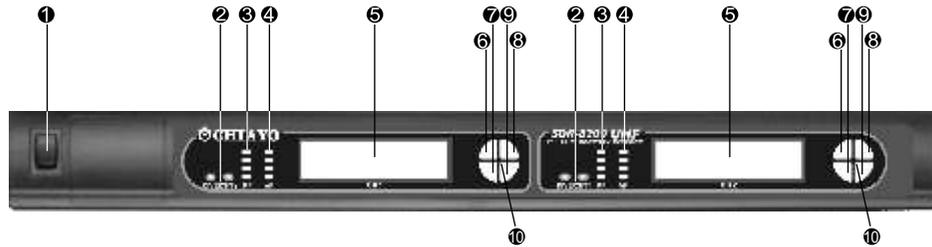
- 1.Power switch
- 2.Diversity AB indicator
- 3.RF indicator
- 4.AF indicator
- 5.LCD
- 6.UP button
- 7.DOWN button
- 8.MENU
- 9.SET
- 10.Mic-battery weak indicator
- 11.Antenna B (TNC socket)
- 12.Unbalanced AF out
- 13.Balanced AF out
- 14.Squelch control
- 15.DC in
- 16.Antenna A(TNC socket)



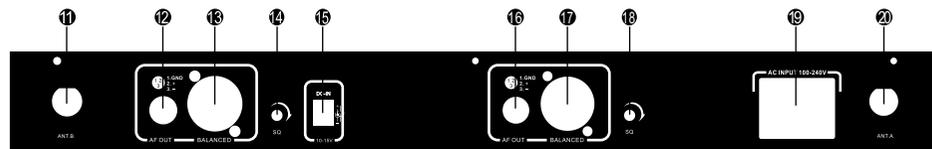
Battery Weak Monitor

Parts and functions of SDR-8200 receiver

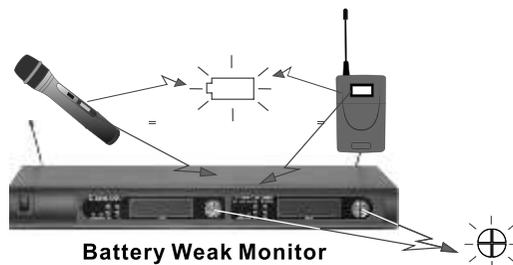
● Front



● Rear



- | | | |
|------------------|--------------------------------|----------------------------|
| 1. Power switch | 8. MENU | 15. DC in |
| 2. Diversity A/B | 9. SET | 16. CH1 Unbalanced AF out |
| 3. RF indicator | 10. Mic-battery weak indicator | 17. CH1 Balanced AF out |
| 4. AF indicator | 11. Antenna B (TNC socket) | 18. CH1 Squelch control |
| 5. LCD | 12. CH2 Unbalanced AF out | 19. AC in |
| 6. UP button | 13. CH2 Balanced AF out | 20. Antenna A (TNC socket) |
| 7. DOWN button | 14. CH2 Squelch control | |



- Slide the transmitter's AUDIO ON / OFF switch to ON position.
- Speak in the normal conversational voice. Proper operation is indicated by :
Steady glow of the receiver's DIVERSITY A / B lights and RF indicator.
Flickering of the receiver's AF indicator light when you speak into the mike.
- During the pause of presentation, slide the Audio ON / OFF switch to OFF position.
- When the presentation is over, turn off the sound system and turn off the transmitter power.

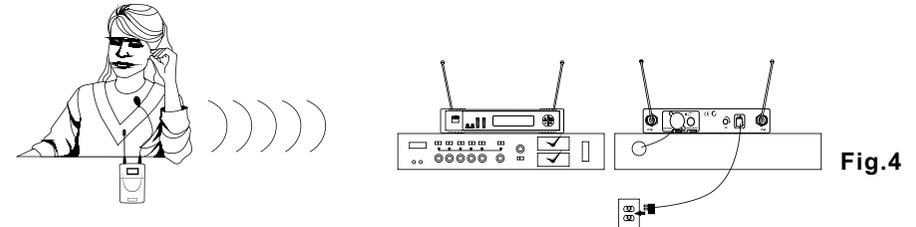


Fig.4

Operating the Headset System

- Refer to Fig.5 below, insert the cable into the cable restraint, connect the AC power adaptor to the DC IN connector on the back of the receiver. Plug the adaptor into an AC wall socket. Push to switch on the receiver. The LCD on the receiver will glow.
- Raise the antennas and point away from each other at a 45° angle from vertical to achieve optimum reception.
- Connect the receiver's Balanced or Unbalanced AUDIO OUT connector to the mixer input using an XLR to XLR audio cable or 1/4" to 1/4" phone plug cable. Set the receiver's output to match the sound system's input.
- Adjust headband and place the headset on head, and keep it approximately 1/2" from side of the mouth.
- Plug the connector (mini XLR or phone plug) of the headset microphone into the belt-pack transmitter connector input. Press the power on / off switch to switch on the transmitter. The transmitter's red LED will flash and the receiver's red DIVERSITY A/B lights will glow.
- Slide the transmitter's AUDIO ON / OFF switch to ON position.
- Speak in normal conversational voice. Proper operation is indicated by :
Steady glow of the receiver's DIVERSITY A / B lights and RF indicator.
Flickering of the receiver's AF indicator light when you speak into the mike.
- During the pause of the presentation, slide the Audio ON / OFF switch to OFF position.
- When the presentation is over, turn off the sound system and turn off the transmitter power.

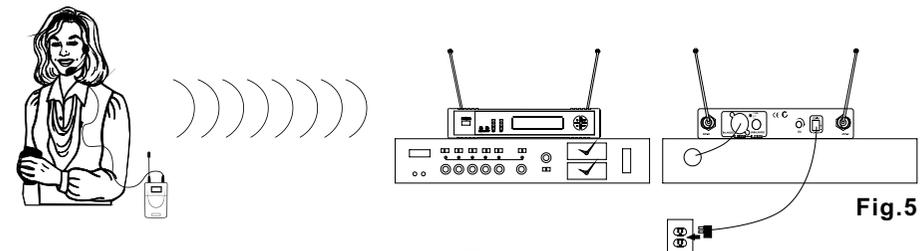


Fig.5

Operating the Handheld Microphone System.

1. Refer to Fig.3.below, connect the AC power adaptor to the DC IN connector on the back of the receiver. Plug the adaptor into an AC wall socket. Push to switch on the receiver power on / off switch. The display LCD on the receiver will glow.
- 2.Raise the antennas and point away from each other at a 45° angle from vertical to achieve optimum reception.
- 3.Connect the receiver's Balanced or Unbalanced AUDIO OUT connector to the mixer input using an XLR to XLR audio cable or 1/4" to 1/4" phone plug cable. Select the receiver's output to match the sound system's input.
- 4.Press the transmitter's PWR ON / OFF to switch ON the transmitter. The transmitter's red LED will give a flash to indicate the battery power is ok. If the Red LED stays constant glow, it indicates battery is weak and a change of battery is necessary. The receiver's Diversity A / B and RF indicator will glow to indicate RF signals have been received.
5. Talk or sing into the microphone. Normal operation is indicated by :
 - Steady glow of the receiver's DIVERSITY A / B lights and RF indicator.
 - Flickering of the receiver's AF indicator light when you speak into the mike.
- 6.When the performance is over, turn off the sound system and press the PWR switch to OFF the handheld microphone.



Operating the Lavalier System

- 1.Refer to Fig.4.Below, connect the AC power adaptor to the DC IN connector on the back of the receiver. Plug the adaptor into an AC wall socket. Push to switch on the receiver. The LCD on the receiver will glow.
- 2.Raise the antennas and point away from each other at a 45° angle from vertical to achieve optimum reception.
- 3.Connect the receiver's Balanced or Unbalanced AUDIO OUT connector to the mixer input using an XLR to XLR audio cable or 1/4" to 1/4" phone plug cable. Set the receiver's output to match the sound system's input.
- 4.Press the lavalier microphone into the mounting clip and attach it to your garment. Do not cover the microphone with your clothing, and keep it approximately 8 to 12 inches below your chin.
- 5.Plug the connector (mini XLR or phone plug) of the lavalier microphone into the beltpack transmitter connector input. Press the power on / off switch to switch on the transmitter. The transmitter's red LED will flash and the receiver's RF LED bar will glow to indicate that signals have been received.

Making changes to various settings in SDR-7200 / SDR-8200

1. Make changes to CHANNEL / FREQUENCY

This can only be done at the Main page display.

CHANNEL : 001
FREQ: 700.000MHZ

Press SET for about 3 seconds, the cursor at channel number will flash to allow a change. Press + (UP) to increase the channel number (from 0 to 100) and press - (DOWN) to decrease the channel number. As the channel changes, the corresponding frequency will also be changed !

After selecting the desired channel (frequency), idle it for about 5 seconds and the setting will be automatically saved into the memory.

2. Make changes to VOLUME

VOLUME : 14
MIN |||||..... MAX

Volume setting can be made at any page display by pressing the UP and DOWN buttons. (The changes will not be saved and stored in memory!)

3. Make changes to SQUELCH LEVEL

Press MENU until this page appears.

SQUELCH SETUP
LEVEL:01

Press SET for approx. 3 seconds to enter the set mode and the cursor will flash to allow changes. Press UP to increase the Squelch level (from 01 to 10) and press DOWN to decrease the squelch level

After selecting the desired squelch level, idle it for about 5 seconds and the setting will be automatically saved into the memory.

4. AUTO SCAN function

Press MENU button until the AUTO SCANNING page appear.

AUTO SCANNING
CHANNEL : 001

Press SET for about 3 seconds to start the auto scan function. The receiver will scan out the next cleaner channel. It takes a couple of minutes to perform the scan function. After the next cleaner channel(frequency) has been selected, idle it for about 5 seconds and the setting will be automatically saved into the memory.

RECEIVER INSTALLATION

For best operation, the receiver should be at least 1m above the ground and at least 1m away from a wall or metal surface to minimize reflections. The transmitter should also be at least 1m away from a wall or metal surface to minimize reflections. The transmitter should also be at least 1m away from the receiver, as shown in Fig.1.

Keep antennas away from noise source such as motors, automobiles, neon light as well as large metal objects.

RACK MOUNTING

SDR-7200 are 1/2 19" casing and specially designed (optional) 19" rack mount adapters (MP-50) are available for your installation purposes. Installation instructions are as Fig.2.

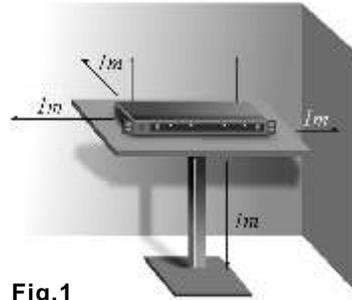


Fig.1

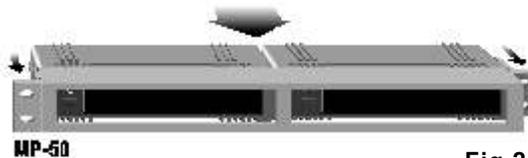


Fig.2

Operation

Chiayo Transmitters and Receivers have factory preset to allow immediate usage after switch-on.

However, please note that the transmitter Sensitivity function is dependent on application such as close proximity singing or tripod mouth speech. To avoid overmodulation and distortion, please check whether the preset sensitivity level is suitable for your particular application. For close proximity singing purposes, please select lowest sensitivity level whereas for tripod mount speech purposes, please select a higher sensitivity level.

If you have made changes to the setting, after making proper selection on Transmitter and Receiver settings the system is ready for operation. However, both antennas of the receiver must be installed to assure a good reception.

First switch on the receiver by pressing the Power On / Off switch. The LCD display will show the information last stored.

Switch on the matching transmitter with the correct matching frequency. The LCD display will show the information last stored.

The LED RF indicator on the receiver front panel will light up indicating RF signal has been received. If this is not the case, please check and verify the frequency setting on both transmitter and receiver. When transmitter is moving around, the Diversity A B switch will light on alternately to indicate the stronger reception on either A or B antenna.

When voice is spoken into the microphone, the LED AF indicator on the receiver front panel will light on and flashes according to the intensity of the AF signal.

There are two different audio outputs at the rear side of the receiver: Balanced (Microphone level) and Unbalanced (LINE level). Please select the matching output to match the input of the connecting Mixer or Amplifier.

Making changes to various settings in SM-7100

1. Making changes to CHANNEL / FREQUENCY:

Use UP or DOWN button to go to the CHANNEL /FREQUENCY page.



The cursor will flash to allow changes to be made. Pressing UP or DOWN button will increase or decrease the channel number. The corresponding frequency will change accordingly. When a desired channel(frequency) is being selected, it will be automatically saved and stored in the memory.

Remark : When changing transmitter frequencies, user should take care not to cause interference to other channels / users.

2. Making changes to Battery selection:

Use UP or DOWN button to go to the Battery selection page.



Press SET for about 2 seconds to activate the cursor. Press UP or DOWN button to move the cursor to either NiMH (rechargeable battery) or AKLN (Alkaline battery) position.

When the desired option has been selected, press SET for about 2 seconds to save and store the data in the memory.

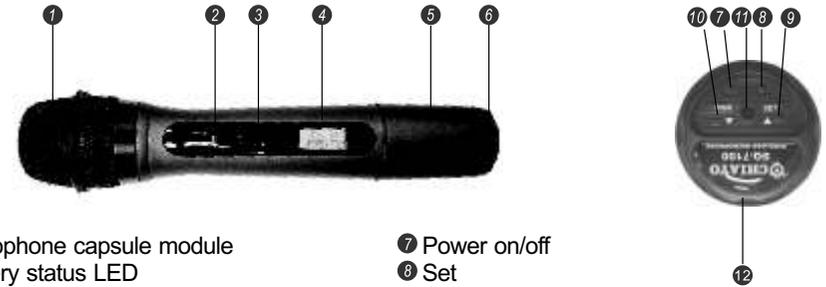
Remark : "NiMH" must be selected when rechargeable battery is being used. Never select "AKLN" (Alkaline) when transmitter is intended for charging as Alkaline battery can not be charged ! Wrong selection of battery will cause battery sensing electronics to display wrong information and mislead charging status.

3. Input Level Gain Control Adjustment

Low impedance (Lo-Z) " MT" & high impedance (Hi-Z) " GT" gain controls are situated inside the transmitter. Gain controls are adjustment ports that enable you to use microphones of differing output levels and Guitar or instruments with Hi-Z output. To adjust microphone (Lo-Z) input levels, turn the "MT" control and to adjust the Guitar or instrument (Hi-Z) input, adjust the "GT" gain control to set the transmitter's desired audio input level.

UHF Handheld Transmitter SQ-7100

Parts and functions



- | | |
|--|-----------------|
| ① Microphone capsule module | ⑦ Power on/off |
| ② Battery status LED | ⑧ Set |
| ③ Audio mute switch | ⑨ Up |
| ④ LCD | ⑩ Down |
| ⑤ Battery compartment | ⑪ Charging port |
| ⑥ Rotating protective cap for controls (also serves as color identification cap) | ⑫ Name plate |

Changing the capsule

First unscrew the metal grill from the housing, take out the capsule and then replace it with a new one. Either dynamic or condenser type can be chosen to fit your requirement for any application.



Battery Installation

SQ-7100 microphone requires 2 pieces of " AA " size batteries to operate. Please insert the batteries according to the correct polarity as indicated.



Caution

Many batteries are known to have leakage problem of conductive and corrosive liquid. Please remove the batteries if they are not to be used for a long period.

Due to various unstandardized sizes (diameters) of " AA " batteries, this battery compartment is designed to accommodate the most common Alkaline batteries only.

Making changes to various settings in SQ-7100

1. Making changes to Channel:

Use UP or DOWN button to go to the CHANNEL/ FREQUENCY page.



The cursor will flash to allow changes to be made. Pressing UP or DOWN button will increase or decrease the channel number. The corresponding frequency will change accordingly. When a desired channel is selected, it will be automatically saved and stored in the memory.

2. Making changes to Battery selection:

Use UP or DOWN button to go to the Battery selection page.



Press UP or DOWN button to move the cursor to either NiMH (rechargeable battery) or AKLN (Alkaline battery) position.

When the desired battery has been selected, it will be automatically saved and stored in the memory.

Remark : "NiMH" must be selected when rechargeable battery is being used. Never select "AKLN" (Alkaline) when transmitter is intended for charging as Alkaline battery can not be charged ! Wrong selection of battery will cause battery sensing electronics to display wrong information and mislead charging status.

3. Making changes to Sensitivity Level:

Use UP or DOWN button to go to the SENS SET page.



Press UP or DOWN button to increase or decrease the Sensitivity Level of the transmitter. The MAX level is 4 and the MIN level is 1.

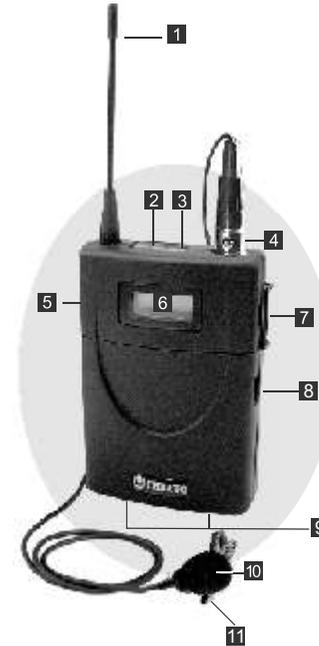
When a desired sensitivity level has been selected for your application, it will be automatically saved and stored in the Memory.

Remark : When selecting Sensitivity level, please keep in mind that Level 1 is for close proximity singing purposes whereas Level 4 is for use of transmitter on tripod mount for speech purposes. When Level 4 setting is used for close proximity singing, high SPL input will result in undesirable distortion in the output.

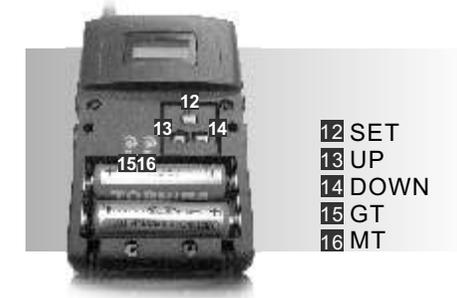
After performing setting changes, you could turn the protective cover 180° in either direction to block the buttons from being accidentally adjusted.

UHF Beltpack Transmitter SM-7100

Parts and functions



- 1 Antenna
- 2 Battery weak indicator
- 3 Audio mute switch
- 4 Mini-XLR connector
- 5 Power ON / OFF switch
- 6 LCD display
- 7 Charging port
- 8 Cover release button
- 9 Charging contacts
- 10 Lavalier microphone
- 11 Mic clip



- 12 SET
- 13 UP
- 14 DOWN
- 15 GT
- 16 MT

Battery Installation

SM-7100 uses 2 pieces of " AA " size batteries (Alkaline battery is recommended). To install or remove the batteries, press the release buttons at the edges of the transmitter to open or close the cover as illustrated below.

