CHIAYO

CHIAYO ELECTRONICS CO., LTD.

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

OFFICE: 30, LANE 27, SEC.4. JEN-AL 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

Printed in Taiwan, Jan 2003 12I357

CHIAYO

QR-4000U (U1~U4) / QR-4000U (S1~S4)
QR-4000V (V1~V4) / QR-4000V (S1~S4)

UH-1000 / VH-1000 / UB-1000 / VB-1000
SQ-916 / SQ-316 / SM-916 / SM-316
SQ-816 / SQ-216 / SM-816PLUS / SM-216

Wireless Microphone System

TÜV CERT
DIN EN ISO 9001
Certificate NO:09 100 89126
通過 ISO 9001品質認證

Operating Manual

FC CE 0682

8、After making a channel change, please make sure that the corresponding change is made on the matching receiver also. To be exact, changes MUST be made at both the transmitter and receiver.

9、Use only brand new Alkaline batteries. Do not use " general purpose " batteries. When batteries are weak, replace the batteries altogether at the same time. Do not mix and use new and old batteries together.

10、Position the receiver such that it has the least possible obstructions between it and the transmitter. Line of sight is best!

11、The transmitter and the receiver should be as close as possible but not less than 1m.

12、A receiver cannot receive signals from two or more transmitters simultaneously.

13、Turn the transmitter off when it is not in use. Remove the batteries if it is not to be used for a period of time.

Multi-channel UHF /VHF Wireless Microphone System

INTRODUCTION

Congratulation and thank you for the purchase of one of these state-of-the-art PLL Synthesized multi-channels frequency agile professional wireless systems.

System Overview：

Models	QR-4000 U			QR-4000 V		
Frequency Band	UHF			VHF		
Receiver Module	UDR-1000M	SDR-916M		VDR-1000M	SDR-216M	
No.of Channel	1000	16		1000	16	
Receiving Mode	Diversity					
No. of Receiver	4					
Power Supply	AC adapter or Switching Power Supply					
Size	19"					
Casing	Metal					
Handheld Transmitter	UH-1000	SQ-816	SQ-916	VH-1000	SQ-216	SQ-316
Beltpack Transmitter	UB-1000	SM-816 Plus	SM-916	VB-1000	SM-216	SM-316
Battery used in Transmitter	AA * 2	AA * 3	9V* 1	AA * 2	AA * 3 pc	9 V * 1 pc

As this is a shared operating manual, please read it thoroughly to familiarize with the function of each part before use.

QR-4000U RECEIVER

Fig.1

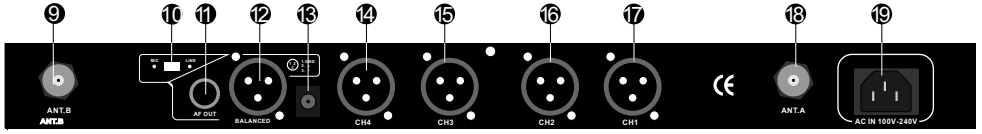


Fig.2

1. Slot for front mount antenna
2. Power switch
3. UP button
4. LCD Display
5. Power switch w / volume control
6. SET
7. DOWN button
8. Slot for front mount antenna
9. Antenna B socket
10. Mic / Line level Switch
11. Unbalanced Out
12. Balanced out (mix out)
13. DC IN jack (for certain market only).
14. Balanced Out
15. Balanced Out
16. Balanced Out
17. Balanced Out
18. Antenna A socket
19. AC IN jack (for certain market only)

QR-4000U RECEIVER

Fig.3

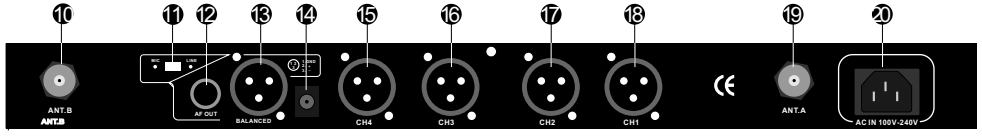


Fig.4

1. Slot for front mount antenna
2. Power switch
3. Channel selector
4. RF indicator
5. Power indicator
6. RF test
7. Power switch w / volume control
8. SQ
9. Slot for front mount antenna
10. Antenna B socket
11. Mic / Line level Switch
12. Unbalanced Out
13. Balanced Out (mix out)
14. DC IN jack (for certain market only).
15. Balanced Out
16. Balanced Out
17. Balanced Out
18. Balanced Out
19. Antenna A socket
20. AC IN jack (for certain market only)

REMARKS

RF Interference
If you encounter receiving interference (from other than an operating TV station), often it can be overcome by adjusting the receiver's squelch control, as described on below.
Please note that wireless frequencies are shared with other radio services. According to FCC requlations, wireless microphone operations are unprotected from interference from other licensed operations in the band. If any interference is received by any Government or non-Government operation, the wireless microphone must cease operation. The above statement is valid in the U.S.A.

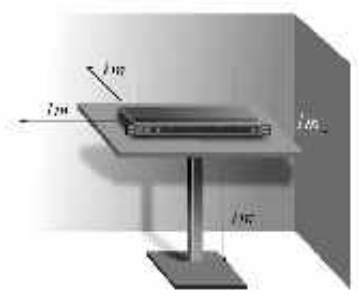
Receiver Squelch setting
The squelch control setting is per LCD display on the front panel of the receiver is preset at the factory, but can be adjusted if you must use the system in a high RF interference area. If there is audio output from the receiver when your transmitter is OFF, adjust the squelch control so the system will receive the signal from your transmitter but squelch or eliminate the unwanted background RF noise. This adjustment can cause a reduction in usable range of the wireless transmitter, so set the control to the lowest position which reliably mutes the unwanted RF signal.

TIPS TO OBTAIN THE BEST RESULTS FOR A WIRELESS MICROPHONE SYSTEM

1、If external antenna is used, low loss RF shielded cable should be used and the length of the cable should not exceed 3m.
2、Do not place the receive antenna within 1 m of another receiver or antenna.
3、The receiver antenna should be kept away from any metal surface.
4、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.
5、Before inserting the batteries, please make sure that they are inserted according to the correct polarity.
6、For PLL frequencies agile version, before operation please make sure that the corresponding receiver MUST have the same frequency group and channel number as the transmitter.
7、Before making any channel change, please switch off the power supply. The synthesized program works in such a way that a change of channel will only take place after a power off and on action. Otherwise, the previously selected frequency will stay unchanged.

RECEIVER INSTALLATION

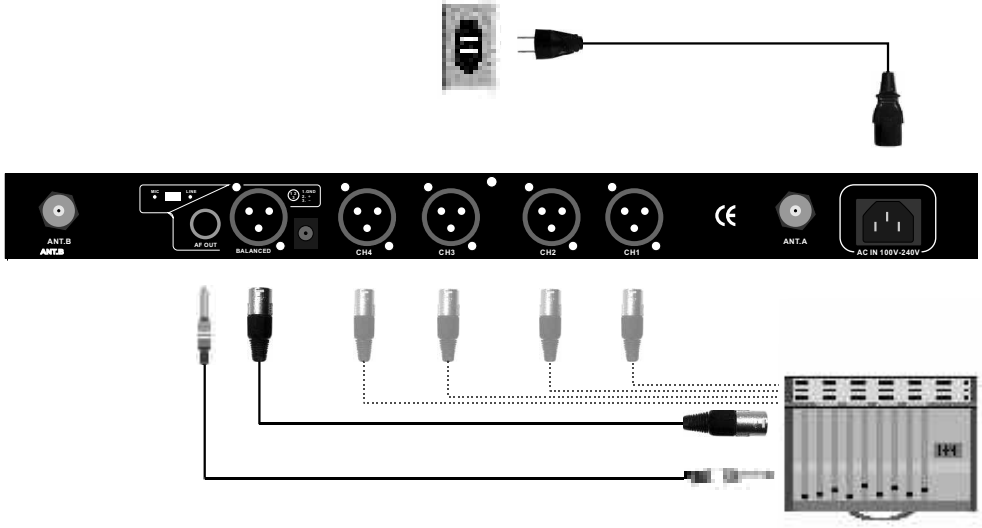
For best operation, the receiver should be placed at least 1m above the ground and 1m away from a wall or metal surfaces to minimize reflections. The transmitter should also be at least 1m away from a wall or metal surface to minimize reflections. The transmitter should also be at least 1m away from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



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

Audio output connection

There are two audio outputs on the back of the Diversity receiver. Mic-level balanced and Line-level unbalanced. Use shielded audio cable for the connection between the receiver and the mixer. If the mixer / amp is a 1/4" phone jack, connect a cable from the 1/4" unbalanced audio output from the receiver to the mixer / amp. If the mixer has an XLR input, connect a cable from the balanced XLR audio output from the receiver to the mixer input. Audio output connection as shown below.



UDR-4000U(U1~U4)with UDR-1000M receiver module installed

To view and roll the various display pages

Turn Power ON of receiver, the following page will appear.

Remark : Transmitter is at OFF status.
After 5 seconds one of the following pages will automatically appear, depending which one was last selected as main page.

801.100 M H	USER	CF : 01-01

Press ▲ will roll to next page

If ▲ or ▼ is not pressed again,this page will stay as main page.

Press ▲ will roll to next page

If ▲ or ▼ is not pressed again,it will automatically return to one of the 3 main pages.

Press ▲ will roll to next page

If ▲ or ▼ is not pressed again,it will automatically return to one of the 3 main pages.

Press ▲ will roll to next page

If ▲ or ▼ is not pressed again,it will automatically return to one of the 3 main pages.

Press ▲ will roll to next page

If ▲ or ▼ is not pressed again,this page will stay as main page.

Operating Instructions

Making changes to the various displays.

Press ▲ or ▼ **until** this page appears.

Remark : Brand name and Model number are factory preset. It is NOT user-changeable.

To change User Name

Press ▲ or ▼ until this page appears.

Remark : Transmitter is ON, then A or B, RF & AF level indicator will light up.
Press **SET** button for 2 seconds to enter the **SET** mode and the cursor will flash.
Press **SET** again each time will move the cursor one position. Use the ▲ or ▼ button to select the character or digit. Press **SET** again will make the change and move the cursor one position forward. After finishing all the changes, press **SET** button for about 3 seconds to save the changes.

To change Frequency

Press ▲ or ▼ until this page appears.

Press **SET** button for 2 seconds to enter the **SET** mode and the following display will appear and the cursor will flash.

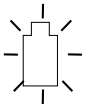
Press **SET** again each time will move the cursor one position. The first two top digits on the left is the Group and the second top two digits to the right is the Channel. There are all together 25 Groups and 40 Channels (25*40=1000) preset frequencies to be chosen. Use the ▲ or ▼ button to select the digit. Press SET again will make the change and move the cursor one position forward. Once either the Group or the Channel has been altered, the frequency will be changed automatically. After finishing all the changes, press **SET** button for about 3 seconds will save the changes.

Battery Symbols and Status


Battery Full


Battery 30%


Battery 60%

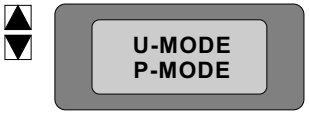

Battery empty

HOW TO SWITCH OFF THE TRANSMITTER

Put the Audio switch to Mute position.
Press the power on / off switch for about 3 seconds till the LCD display disappear to turn off the main power.
Remark : If user only turn off the Audio mute switch at the top but forget to turn off the power on / off switch. The microprocessor is programmed such that auto-shut-off function will be activated after 30 minutes (factory-programmable) when no audio input signal is detected. This is a foolproof feature to save battery life.

USER / PRESET DISPLAY

Press ▲ or ▼ button to go to the display.



Press **SET** for about 3 seconds to enter the **SET** mode. Press the ▲or ▼ button to select the **USER** or the **PRESET** model. **X** is not select, ← is for select. Press **SET** for about 3 seconds to save the change.
When **PRESET** is selected, factory preset data is selected. When **USER** is selected, user could change the frequency as follow :
Programming of **USER** frequencies.
At the **USER / PRESET Display**, press **SET** for about 2 seconds to enter the **SET** mode , then press the ▲ or ▼ button till Edit channel display appear :

Press **SET** each time to move the cursor one position to the desired position and press the ▲ or ▼ button to change the digit. Press **SET** for about 3 seconds to save the change. User is allowed to programe 40 frequencies within the micro range of 25 MHz and this is save in Group 1 of the 25 Groups.
This function is meant for user with extra radio knowledge and it is not advisable for normal user to use this function.

BATTERY SELECTION DISPLAY

Press ▲ or ▼ button to go to the display.

Press **SET** for about 2 seconds to enter the **SET** mode. Press the ▲or ▼ button to select either rechargeable NiMH (Nickel Metal Hydrid) or AKLn (Alkaline or Normal) battery. **X** is not select, ← is for select. After making the selection, press **SET** button for about 3 seconds to save the change.
As Alkaline (or Normal) and Rechargeable (NiMH) batteries have different voltages and behave differently. It is imperative that the correct battery selection should be made to correspond with the actual batteries inserted to ensure the correct battery status display information.

To change Squelch level

Press ▲ or ▼ until this page appears.

Press **SET** button for 2 seconds to enter the **SET** mode and the cursor will flash on only one spot. Use the ▲ or ▼ button to select one of the 8 preset levels. After making the change, press **SET** button for about 3 seconds will save the changes.

To go to User Mode

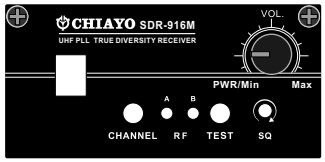
Press ▲ or ▼ until this page appears.

Press **SET** button for 2 seconds to enter the **SET** mode. Use the ▲ or ▼ button to select either **USER** or **PRESET** mode. ← indicates selected. After making the change, press **SET** button for about 3 seconds will save the change.
If **USER MODE** is selected. Use the **MENU** button to search for a new display as follow :

Press **SET** button for 2 seconds to enter the **SET** mode and the cursor will flash. Use the ▲ or ▼ button to select the digit desired. The two digits at the top right corner is Channel. There are 40 possible channels to be entered by user. After selected the channel, make the corresponding change to the frequency. After making all the changes, press **SET** button for about 3 seconds will save the change in Group 25.

Operating instruction of QR-4000 with the 16 channels receiver module

SDR-916M(for USA market)



SDR-916M(for market outside USA)

First turn on the Power of the QR-4000U Receiver Base Unit. Then turn on the individual power of the SDR-916M receiver module. Select the desired channel by pressing the channel tact switch and the corresponding channel on the Transmitter.

When Transmitter is turn on, either A or B will turn on meaning signal is being received. Turn the volume control in clockwise direction will increase the audio output.

What is the **RF** Test function key and how to use it ?

It is the manual scan function key. To test this function key, the transmitter must be shut off. For model with the **RF** test key, pressing down the key is to disable the Pilotone lock function. When A or B signal lights up when this test key is press (the corresponding transmitter must be swiched off.), it means that this particular channel is in used. Select another channel and do the test again until a clean channel is selected.

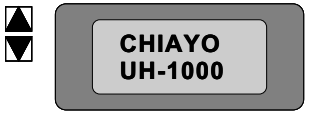
What is the SQ (Squelch) for ?
When a channel is in used and unpleasant interference signal is heard, turn the SQ in clockwise direction will make the receiver less sensitive and thus less susceptible to interference. If this still does not solve the problem, please switch over to the next channel.

Press UP or DOWN button to view the next page
Remark : Selection between rechargeable NiMH and Alkaline batteries.

Operating Instructions
Making changes to the various displays

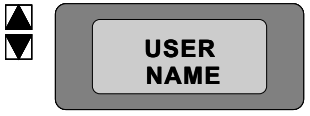
Name Display

Press ▲ or ▼ button to go to the display



This display panel is for Brand and Model number. It is not possible for user to change the setting.

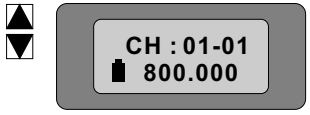
Press ▲ or ▼ button to go to the display



Press **SET** for about 2 seconds to enter the **SET** mode and the cursor will start flashing. Press **SET** separately will move the cursor to the desired position where change is needed. Press the ▲ or ▼ button to select the character or number and press **SET** to make the change and move the cursor one step forward. After finishing all the changes, press **SET** for about 3 seconds will save the changes.

Channel / Frequency Display

Press ▲ or ▼ button to go to the display.



Press **SET** for about 2 seconds to enter the **SET** mode and the cursor will start flashing.. Press **SET** each time to move the cursor one step to the desired position to change the frequency. The first two digits on the left are GROUP (GP) and the two digits on the right are CHANNEL (CH). There are altogether 25 preset Groups and 40 preset Channels available for selection. Press the ▲or ▼ button to select the number. As the GP or CH number is changed, the preset frequency will appear in the second line accordingly. After making the changes, press **SET** button for about 3 seconds will save the changes.

SENSITIVITY DISPLAY

Press ▲ or ▼ button to go to the display.

Press **SET** for about 3 seconds to enter the **SET** mode and the (N) will flash to accept changes. Press the ▲or ▼ button to select the Normal (N) or High (H) level. Press **SET** for about 3 seconds to save the change.
For close-mouth singing or speech application, please select N sensitivity. For tripod-mounted speech application, please select H sensitivity.

LCD Display Multi-channel UHF/VHF Wireless Microphone System.

Transmitter UH-1000 / UB-1000 / VH-1000 / VB-1000

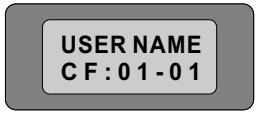
LCD Displays

Both handheld (UH-1000/VH-1000) and beltpack (UB-1000/VB-1000) have the same display pages and operating procedures.
Viewing of the various pages in the LCD display
First press power **ON** switch for about 2 seconds and release the button,the following page will appear:

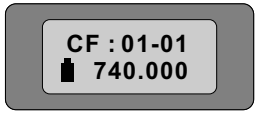
Remark : Brand name and model number is factory fixed and not user-changeable.

Press UP or DOWN button to view the next page

Remark : User or Owner name is user-changeable.



Press UP or DOWN button to view the next page
Remark : GP (Group) & CH (Channel) is user -selectable.

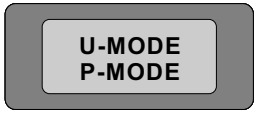


LCD Displays

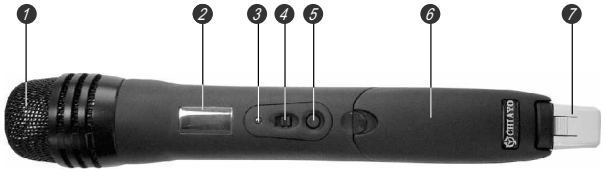
Press UP or DOWN button to view the next page

Remark:Sensitivity Level is user-selectable

Press UP or DOWN button to view the next page
Remark : To choose between **U** mode and **P** mode..



HAND-HELD MICROPHONE(UH-1000 / VH-1000)



UH-1000 / VH-1000

1. Capsule with metal grill
2. LCD display
3. Battery weak / audio mute indicator
4. Audio Mute switch
5. Power ON / OFF switch
6. Battery compartment
7. Color cap

There are three control buttons under the battery compartment cover, just on top of the battery:

BATTERIES

UH-1000 microphone requires 2 pieces of " AA " size batteries to operate. Please insert the batteries according to the correct polarity as indicated.
To open the battery compartment, press and slide down to release the latch of the cover.

UH-1000

CAUTION

Many batteries are known to have leakage problem of conductive and corrosive liquid. Please observe the rule to remove the batteries if they are not to beused for a period of a few days.
Due to various unstandardized sizes (diameters) of " AA " batteries, this battery compartment is designed to accommodate the most commom Alkaline batteries only.

CHANGING OF CAPSULE

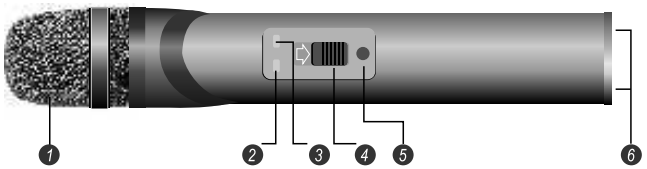
These microphone have a module design. To change or replace a capsule, Open the grill to pull out and plug in the capsule as shown in the following figure.

UH-1000

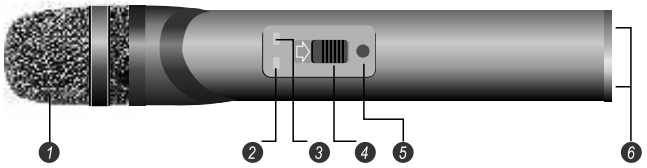
HAND-HELD MICROPHONE(SQ-216/SQ-316/ SQ-816/SQ-916)

1、The microphone is shown in Fig 1.

SQ-216

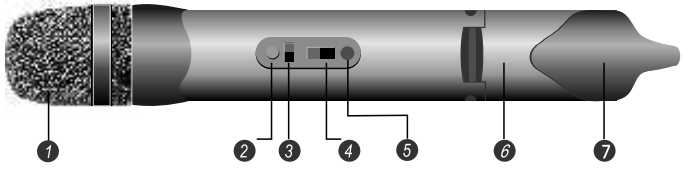


SQ-816



1. Capsule with metal grill
2. Battery Good indicator (Green)
3. Battery Low indicator (Red)
4. Power on / off switch
5. Channel Switch
6. Charging contacts

SQ-316/SQ-916



1. Capsule with metal grill
2. Battery indicator
3. Sensitivity switch
4. Power on / off switch
5. Channel Switch
6. Battery cover
7. Color cap

Fig.1

INSTALLATION OF CABLE RESTRAINT

To prevent contact noise caused by constant tension applied to the connector,, a cable restraint is designed such that tension is totally reduced when it is properly used (see Fig.6).

When the audio cable go through the cable restraint, it could prevent sweat from going diectly into the electronic board via the connector. This is another advantage of the cable restraint.

Fig.6

Sensitivity Level Setting

UH-1000/VH-1000/UB-1000/VB-1000 these microphone have a sensitivity setting per the SET, UP, DOWN buttons as described earlier.SQ-916/SQ-316 have a sensitivity switch for close mouth singing and normal speech, please select level N.(Normal). For tripod-mount application, please select the level H (high).

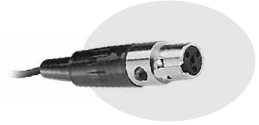
■ Normal Sensitivity

■ High Sensitivity

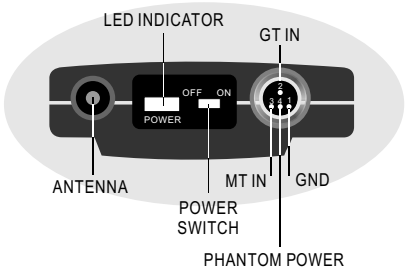
Installation of Lavalier / Headset Microphones or Instrument Inputs.

Depending on customer requirements, Lavalier / Headset microphone or instrument inputs could be connected to the beltpack transmitter via the audio input connector. User is free to choose the various input sources but is advised to take note that connector used must be compatible to each other. The pin configurations for mini XLR connector is as follow.

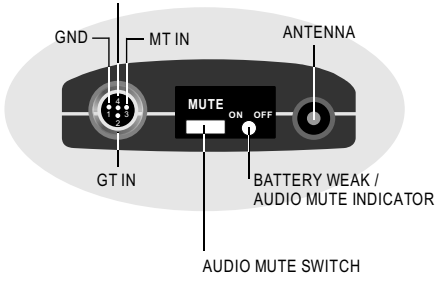
Mini-XLR



SM-916



UB-1000



INSTALLATION OF BATTERIES(SM-216/SM-816Plus)

This transmitter uses 3 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 (Fig.2). When installing the batteries with the cover open toward you, the cover might block your hand. It is thus recommended that while inserting or removing the batteries you should hold the transmitter in such a way that the cover open a way from you. (Fig.3)

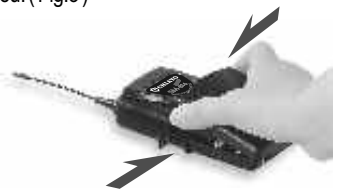


Fig.2

Fig.3

INSTALLATION OF BELT-CLIP(SM-216/SM-816Plus)

This specially designed detachable belt-clip allows the user to wear the transmitter with antenna pointing upward or downward as illustrated. To wear the transmitter with the transmitter pointing upward, install the belt-clip as in Fig.4. To wear the transmitter with the antenna pointing downward, please install the belt-clip as in Fig,5.

Fig.4

Fig.5

INSTALLATION OF BATTERIES(SM-316/SM-916)

This transmitter uses a 9V battery. To insert the battery, first open the battery compartment cover by pressing the cover downward till the door flip open by itself. When installing the battery, please be ware of correct polarity. To put back the cover of the battery compartment, one has to press the cover in upward direction until it locked.(Fig.6/Fig.7)

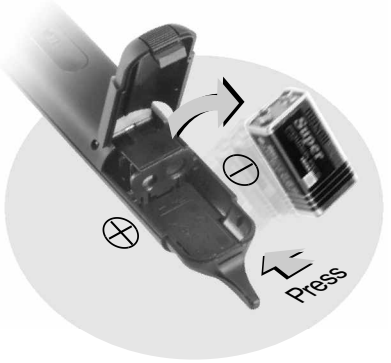
Fig.6

Fig.7

BATTERIES

SQ-216 / SQ-816 This microphone requires 3 pieces of " AA " size battery to operate. Please insert the batteries according to the correct polarity indicated.
To open the battery compartment, press and slide down the cover until it clicks and lockes. Further sliding movement will remove the cover.

SQ-316 / SQ-916 use a 9V battery for power. To change or replace the battery. Please remove the color cap first, then press at the bottom of battery compartment to release the cover as shown in right figure.



CAUTION

The positive (+) pole of battery must face downward Many batteries are known to have leakage problem of conductive and corrosive liquid. Please observe the rule to remove the batteries if they are not to be used for a period of a few days.

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

BELT-PACK TRANSMITTER (UB-1000 / VH-1000)

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

12 SET
13 UP
14 DOWN

INSTALLATION OF BATTERIES

UB-1000 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 (Fig.2). When installing the batteries with the cover open toward you, the cover might block your hand. It is thus recommended that while inserting or removing the batteries please hold the transmitter in such a way that the cover open away from you. (Fig.3)

Fig.2

Fig.3

BELT-PACK TRANSMITTER(SM-216/SM-316/SM-816PLUS/SM-916)

1 Antenna
2 Battery status indicator
3 Power switch
4 Connector
5 Audio input connector
6 Cable restraint
7 Battery compartment
8 Charging points
9 Capsuale
10 Mike clip

SM-816PLUS

SM-916

Channel selection and gain adjust

Channel selector and gain adjust are hidden in the designated cover in the front as shown in picture.
To make channel selection and gain adjust, please press the designated cover and flip it open as shown.
Channel selection can be made by rotating the selector with a small screw driver.
Gain adjust for Lavalier and Headset microphones can be done by adjusting the MT switch, whereas GT switch is for the gain adjust of electric Guitar and other high impedance line level inputs.

Channel selection

To change channel, please open the battery cover and access the rotary switch to select channel with a small screw driver.