Superlux®
Just Play It

99 FIC
99 Channel
true diversity

User Manual

UT6 series

UHF wireless microphone system

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1. Preface

Thank you for choosing the Superlux UT6 series UHF wirelss microphone. This remarkable component has been engineered to provide superb sound pick-up with stable transmission and receiption, as well as providing outstanding ease of operation.
As this product is provided with a wide selections of microphones and connection possibilities, we recommend that before you begin hookup and operation that you review the contents of this manual before proceeding.

2. Unpacking

1 x dual plug cable
1 x power supply
1 x user manual
1 x warranty card
1 x UT6 receiver
2 x antenna (under UT6 receiver)
Optional headworn microphone
Optional UT2 beltpack transmitter
Optional UT4 handheld transmitter

Your package

There are combinations of products for various demands. There are 2 type of transmitter in this UT6 system, handheld of beltpack. User can include both in this package, but only one transmitter can operate at the same time.
For handheld user, there are 4 types of capsules to choose, 2 dynamics, 1 true condenser, and 1 electret condenser.
For beltpack user, there are 7 microphones and 1 cable to choose.
Your package can be any combination. Please verify the contents with your dealer. Future upgrade with more components can be easily made by contacting your dealer.

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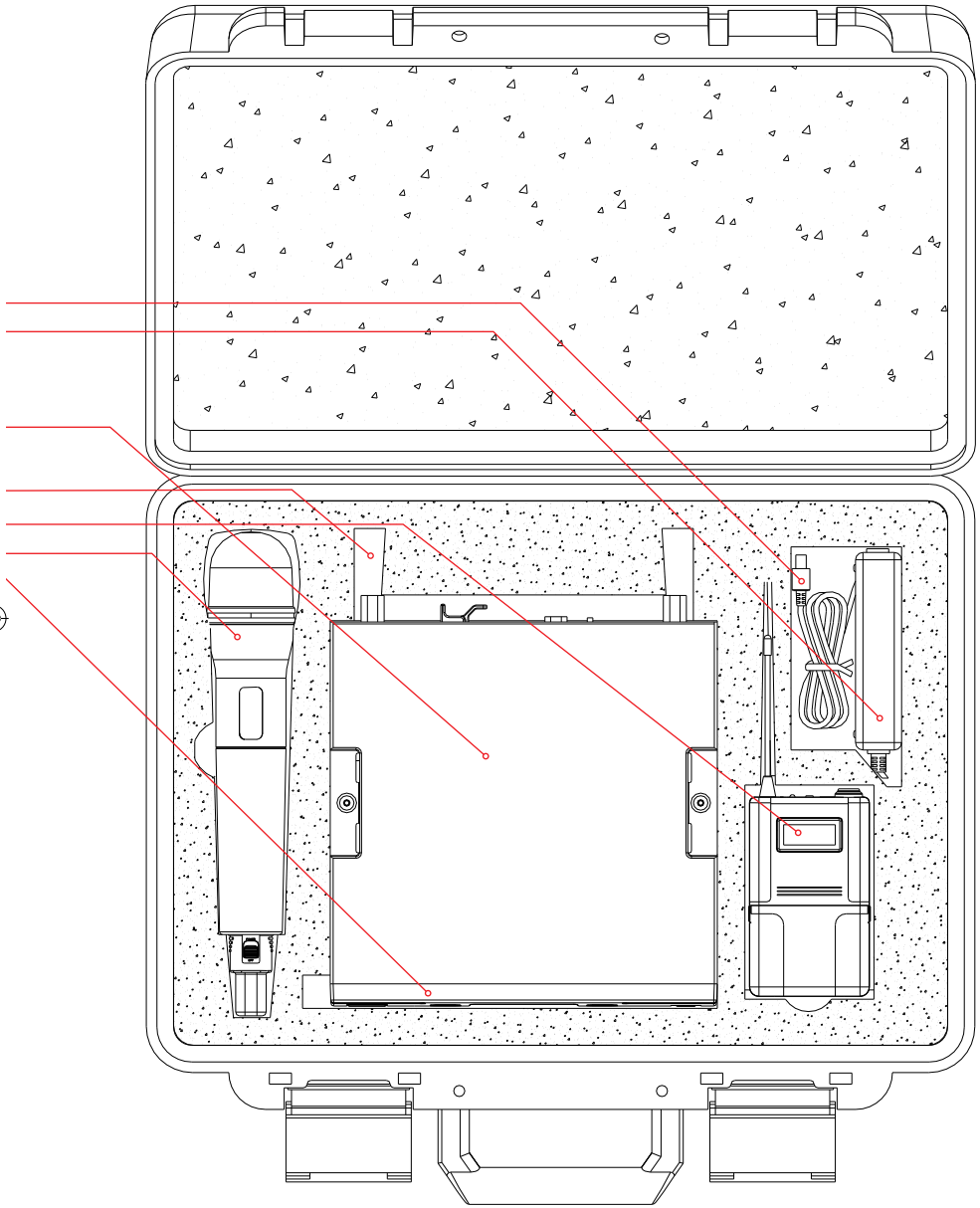

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3. Receiver Introduction

Front view

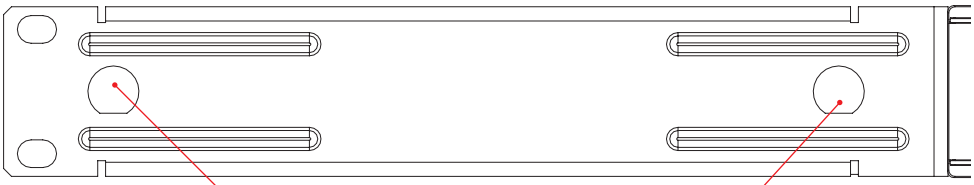

Illustration 1

① Front panel antenna A socket: for optional antenna extension from rear panel.

② Front panel antenna B socket: for optional antenna extension from rear panel.

Rear view

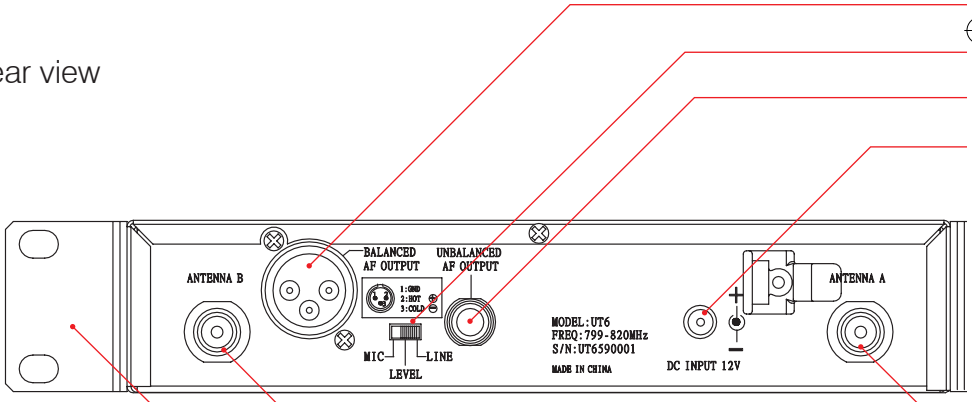

Illustration 2

⑥ Antenna B socket

⑤ Rack mount side panel (optional)

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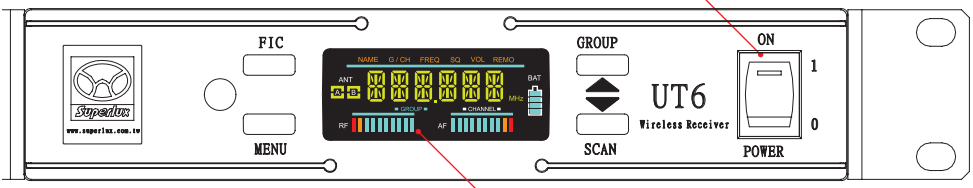
Power switch: LED indicator lighted when power-on. ④



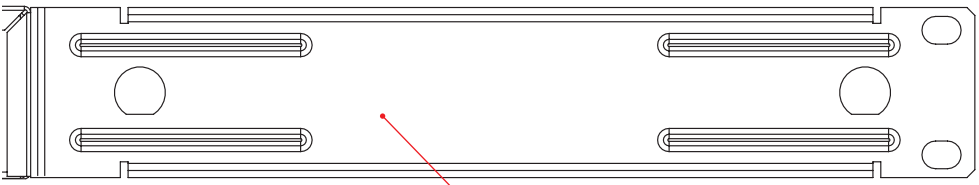
③ Color LCD display panel

⑦ Balanced audio output, XLR-3M, microphone level

⑧ Un-balanced audio level switch: Switch between “MIC” or “LINE” level for un-balanced output socket.

⑨ Un-balanced audio output socket: 6.3mm phone jack, level switchable

⑩ DC power socket: 12VDC power source, center positive.



⑫ Rack mount side panel, 1/2 space width (optional)

⑪ Antenna A socket

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4. Receiver Connections

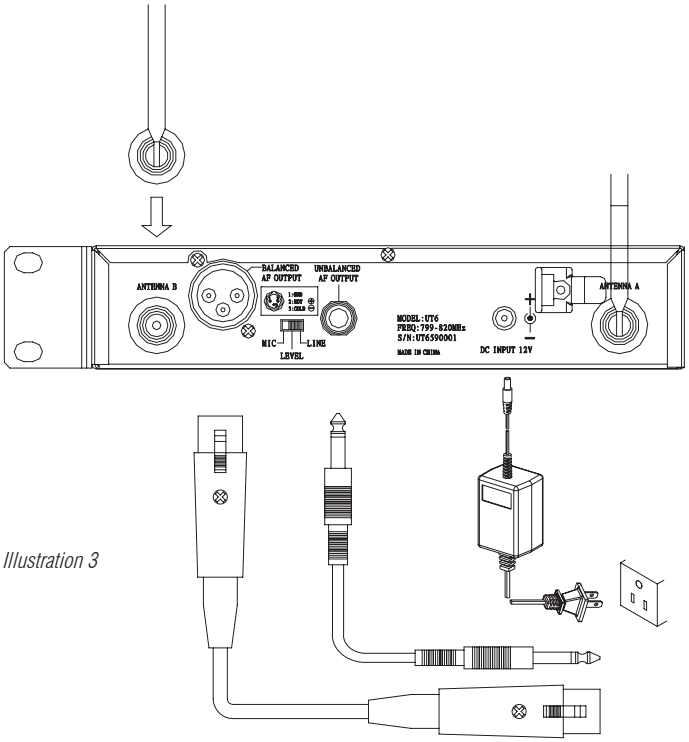

Illustration 3

4.1 Connect both antenna to rear panel socket ⑥ and ⑪ as illustration 3.

4.2 Connect power adapter output to receiver ⑩ and plug into power line (Caution: check power source specification, make sure the power adapter matches the source spec.

4.3 Audio connections:

4.3.1 Level switch ⑧, when un-balanced output socket is connected to mixers or amplifiers' line level input, switch the output level to "LINE" position. When connected to mixers or amplifiers' mic level input, switch the output level to "MIC" position. Mis-match level setting, will result distortion or high noise. When used with guitar, keep the level at "LINE" position.

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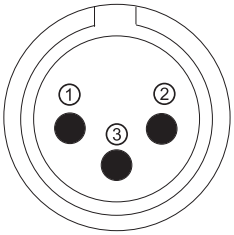

① Ground

② Signal +

③ Signal –

Illustration 4

4.3.2 Un-balanced connection: When receiver and mixer are positioned at short distance, 6.3mm phone type plugs can be used with un-balanced connection.

4.3.3 Balanced connection: When receiver is located at a remote location from mixer, balanced XLR cable shall be used. Pin 2 hot at receiver output.

4.3.4 When electric guitar is in used, connect PHONE output to guitar amp input and level switch to “LINE”.

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5. Receiver Operation

5.1 Set mixer/amplifier input level to minimum or mute the channel. Turn on the receiver, the indicator shall be lighted to show the operation status.

5.2 Power up the matched channel transmitter, the RF level indication shall be lighted.

5.3 Adjust the mixer/amplifier level to optimum and test the microphone/transmitter with normal talking or instrument playing. The AF level indicators shall show the AF signal.

Notes:

If audio signal doesn't show or go through the mixer/amplifier, check the signal chain, connections, level settings...

Wireless microphone level controlled only on mixer/amplfier, the only setting of the receiver is "MIC/LINE" position.

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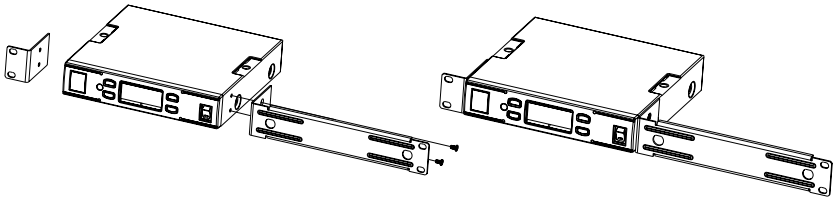
6. Receiver Installation

6.1 Single receiver half width space rack mouting

6.1.1 Mount the rack mouting kit with receiver according to illustration 5.

Illustration 5



6.2 Dual receivers, full width space rack mouting

6.2.1 Unscrew the 4 screws according to the illustration 6.

6.2.2 Mount the connection plate with previous 4 screws to interlock the 2 receivers.

6.2.3 Mount the rack brackets to both ends as illustration.

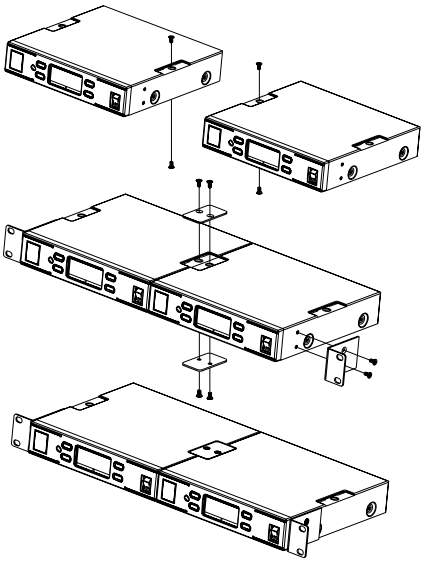


Illustration 6

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6.3 After the rack mount kit was properly installed, the receiver(s) can be mounted into EIA standard rack for 1 space height, as illustrated.

6.4 For best receiption, receiver shall be located at least 1 meter above ground. Transmitter shall be at least 1 meter away and keep away from noise as illustration.

Illustration 7

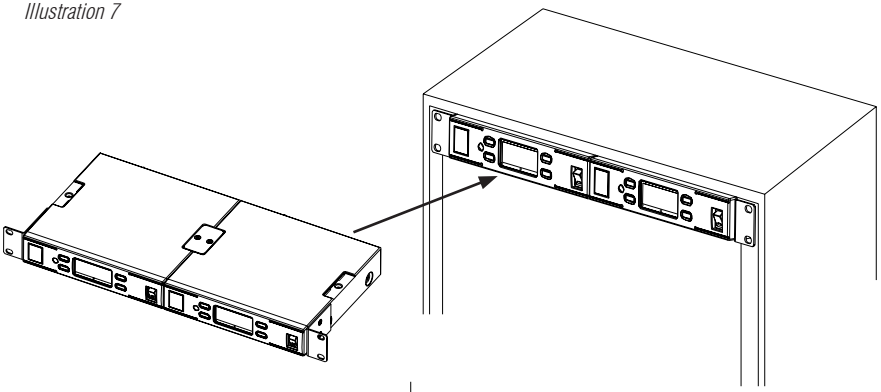
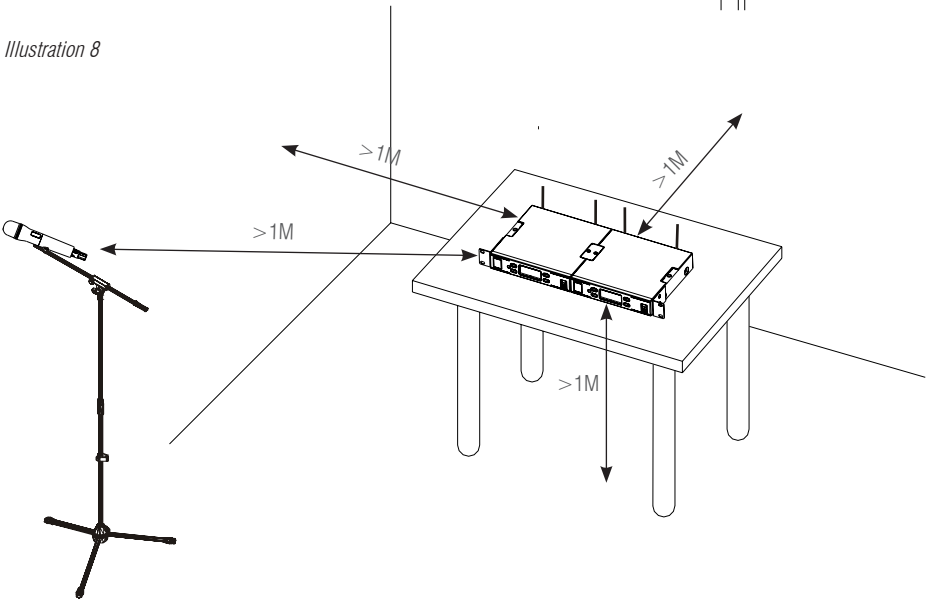


Illustration 8



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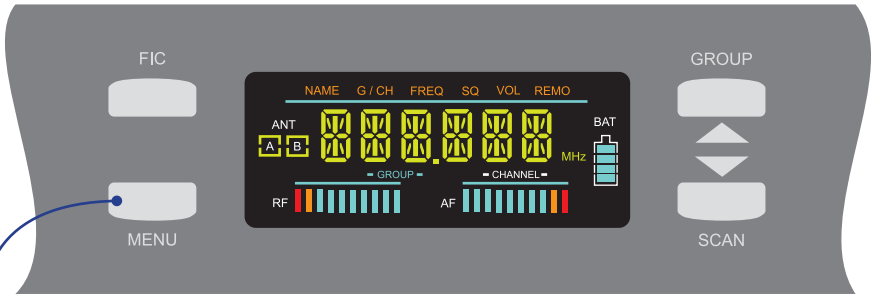
7. LCD operation

7.1 LCD layout and buttons



7.2 Menu Function

Menu: To access function menu
By pressing this button, user can go through selections of function:

7.2.1: Locking and unlocking

a. To lock in order to prevent mis-operating, press MENU and hold for more than 3 seconds until LCD shows “LOCK”. At this time, all buttons except “FIC” will be disable. Receiver operation are now locked.

b. To unlock, press MENU and hold for more than 3 seconds until LCD shows “UNLOCK”. Receiver are now unlocked.

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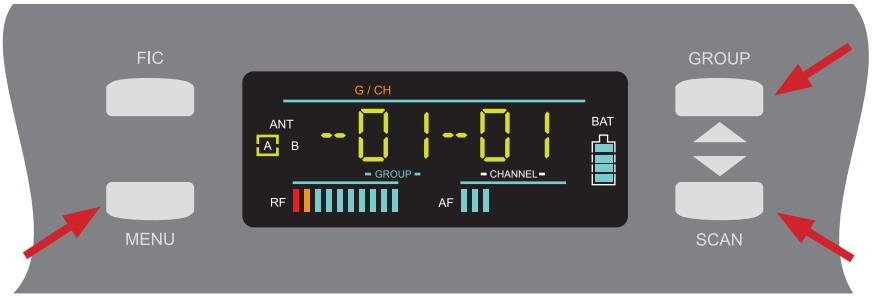
7.2.2 G/CH: Displaying group and channel setting and changing.



A: GROUP setting steps:

B: Group setting detail:

a. Press MENU key, select G/CH, LCD displaying 2 double digit number as GROUP and CHANNEL connected with a dash line.

b. Press GROUP ▲ key once, GROUP double digit flashes indicating ready for setting. Pressing again, GROUP number will cycle through all selections and CHANNEL number will show the first in the GROUP. Pressing and hold GROUP ▲ will keep cycling until release. To stop digits flashing and confirm GROUP setting, simply press MENU or SCAN ▼ .

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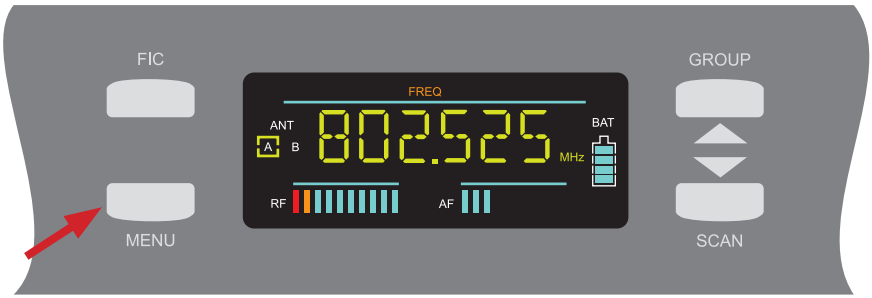
C: CHANNEL setting steps:

D: Channel setting

a. Press MENU to select G/CH functon. Press SCAN ▼ key once, CHANNEL double digit flashes indicating ready for setting.

b. Pressing SCAN ▼ again, receiver start to scan channels and stop at the first available channel. If all channels in the group are taken and the receiver keep on scanning, user shall go the another group. Pressing SCAN once or holding, receiver will keep on scanning until SCAN key released. To stop double digit flashing and confirm channel setting, press MENU again to complete.

7.2.3 FREQ: Displaying frequency in use



A, Steps:

B, Operations:

a. Press MENU to select FREQ.

b. This function only display frequency, and user cannot change the frequency.

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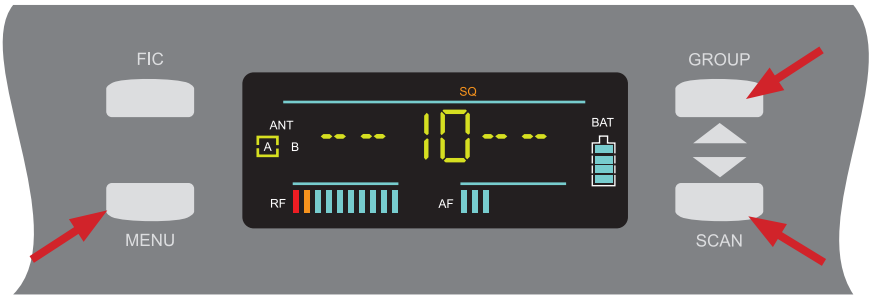
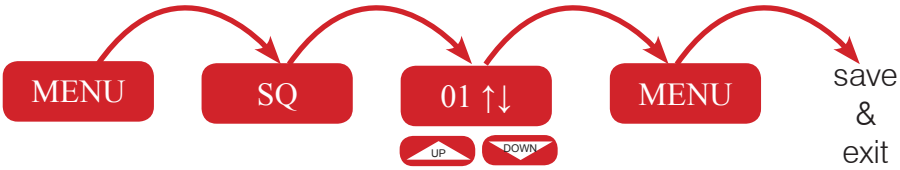
7.2.4 SQ: Squelch setting and change



A: SQ setting steps:



B: SQ setting detail

a. SQuelch range from 01 to 99.
b. Pressing UP ▲ or DOWN ▼ to change value.
c. Press MENU to confirm store and exit.
d. The higher value, the lower receiption sensitivity.

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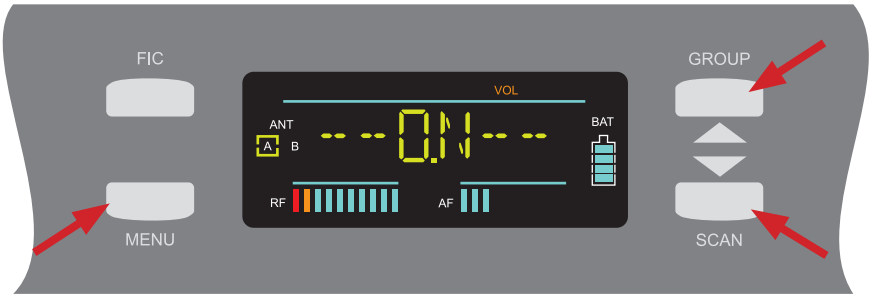
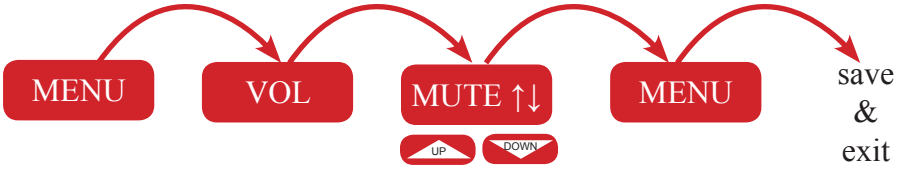
7.2.5 VOL: Display Volume ON or MUTE.



A: VOL setting steps:



B: VOL setting detail

a. Pressing UP ▲ or DOWN ▼ to change from ON to MUTE and cycling.

b. Press MENU to confirm store and exit.

C: Cautions

a. When receiver in muted, AF, ANT A, ANT B level bars will not display.

b. To varify if the receiver is muted, press MENU until VOL selected.

c. If MUTE is displayed, indicating receiver is muted. If ON is displayed, indicating receiver sending AF signal.

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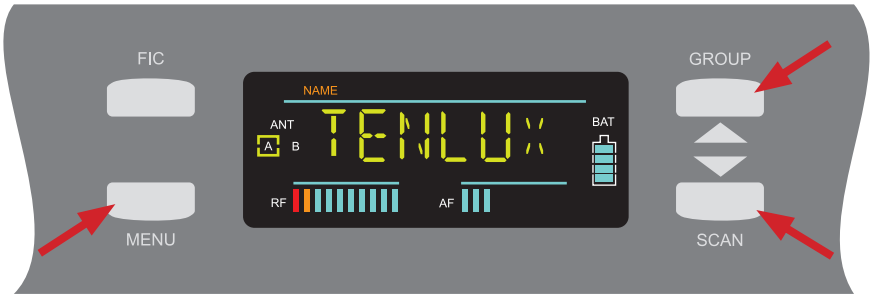
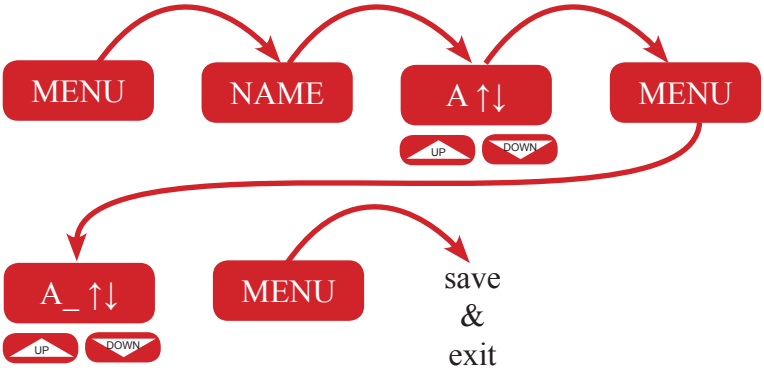
7.2.6 NAME: Displaying and naming receiver



A: NAME setting steps:



B: NAME setting detail

a. NAME up to 6 characters, alphabets upper case, numbers, +, -, *, /, and space.
b. Pressing UP ▲ or DOWN ▼ to edit the flashing digit.
c. Once the desired character is shown, press MENU to accept and go to the next digit.
d. Repeat step b to c until all 6 digits are set, press MENU will save the NAME and exit.

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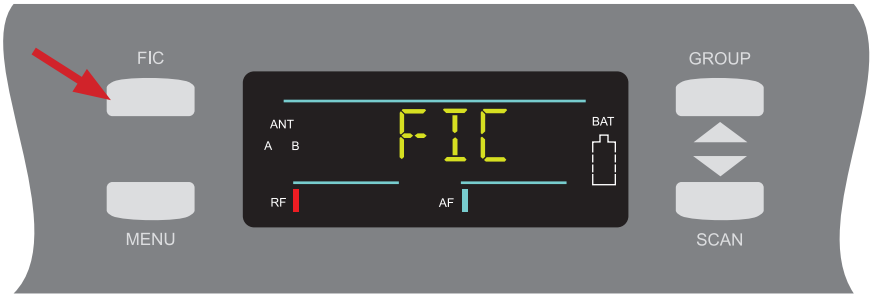
7.3 FIC function, Frequency IR Control



A: FIC setting steps:

B: FIC setting detail

a. When the function is set at G/CH mode, press FIC key momentaryly will activating FIC operation and LCD will display “FIC”.

b. Put microphone with FIC window facing receiver within 30 cm as illustration.

c. As soon as microphone channel was sync with receiver, FIC operation completed and LCD resume.

d. When FIC operation is activated, if no microphone channel was sync with receiver within 10 seconds, FIC operation will abort.

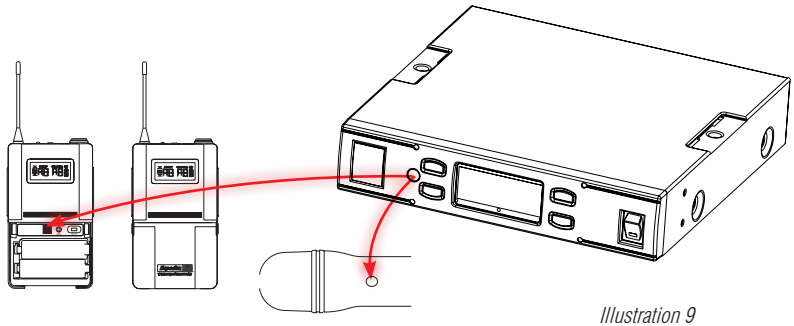


Illustration 9

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8, Receiver Cautions

8.1 DC supplier shall be no less than 12VDC to operate normally, and shall not exceed 15VDC in order not to damage the receiver. Power capacity shall be at least 1A and regulated.

8.2 Please use supplied antenna to ensure receiption performance.

8.3 Antenna socket provide 8VDC output, please do not short circuit.

Receiver Accessories

RK1 Rack mount kit, for sigle receiver mounting onto standard 19" width rack.

RK2 Rack mount kit, for dual receivers mounting onto standard 19" width rack.

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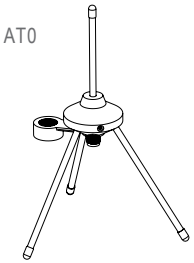
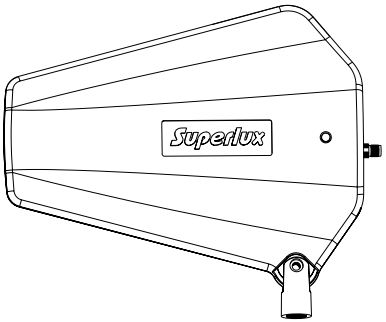
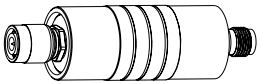
AT0 Dipple 1/4λ antenna, omni directional receiption provides improved signal captures than the standard antennas.



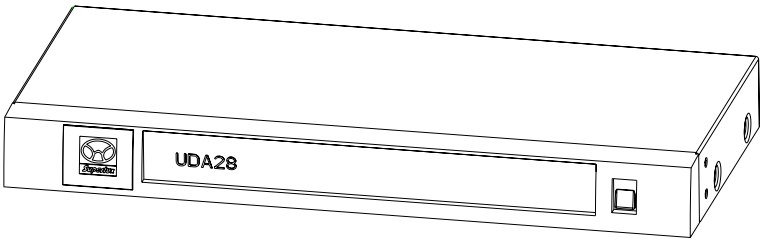
AT1 Active logrithm directional antenna provides 6dB antenna gain, and 13dB amplifier gain.



AT2 Antenna amplifier.13dB gain for 620～960MHz band.



UDA28 Antenna distribution amplifer. Distributes 1 pair of antenna to 4 receivers. Works with AT0, AT1, and AT2.



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10. Handheld wireless microphone

10.1 Introduction

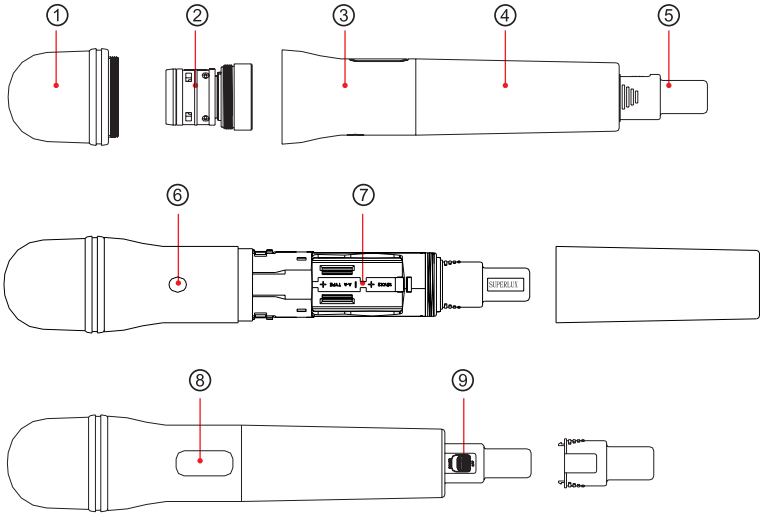

Illustration 10

1. Mesh grill: Protecting capsule, and function as pop filter.
2. Capsule: Sound pick up element
3. Upper tube: To hold capsule, grill, transmitter PCB and battery holder.
4. Lower tube: Protecting battery holder and battery.
5. Color coded cover: Protect switch and preventing from mis-operation.
6. FIC window: FIC communcation, auto channel setting.
7. Battery holder: To hold 2 x AA batteries
8. LCD display: To show G/CH, battery capacity, and error info.
9. Power switch: Set to “ON” when in use, set to “OFF” when not in use and save power.

UTC Color ID cap 8 colors in a pack for UT4.

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10.2 Inserting batteries

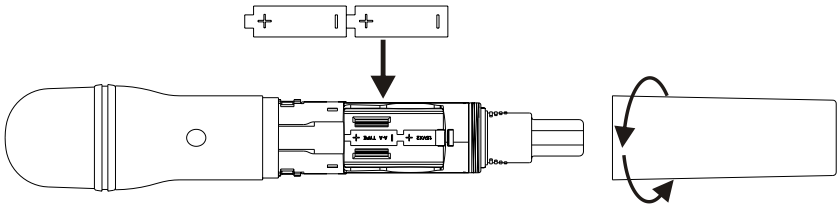

Illustration 11

10.2.1 Un screw lower tube ④ to open battery holder.
10.2.2 Insert 2 x AA batteries, positive toward grill into battery holder ⑦
10.2.3 Screw lower tube back to place as illustration.

p.s. *When microphone not in use, switch off the power. If not in use for a pro-long period, please remove batteries to prevent leaking damage. If re-chargeable batteries were in use, remove them and charge them accordingly.*

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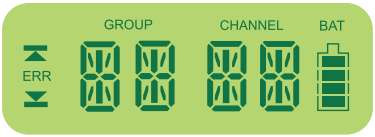
10.3 LCD

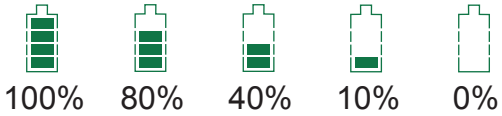


10.3.1 GROUP CHANNEL to display operating at pre-defined channel.

10.3.2 CHANNEL to display operating at user defined frequency (through PC setting)

10.3.3 Battery capacity, when reaching 10%, it is time to change new batteries. If battery is too low, LCD will disply PoFF and switch off to prevent over discharge.

10.3.4 Power off: When switch set to OFF, LCD display “PoFF” to indicating powering down and automatically switch off. No furthur message on LCD.



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10.4 Color coded cover

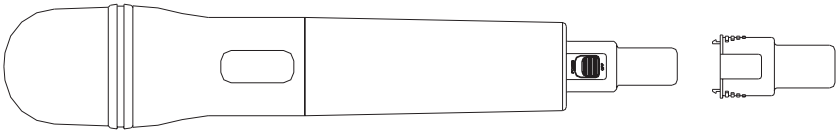

Illustration 12

10.4.1 When the openning of the cover facing the same direction as the power switch, the switch can be operated freely.

10.4.2 For professional application, to prevent accidentally power switch operation, the cover can be removed and change direction to cover the power switch as illustration.

10.4.3 When multiple microphones are in use, optional multiple color covers can be deployed for easier identification.

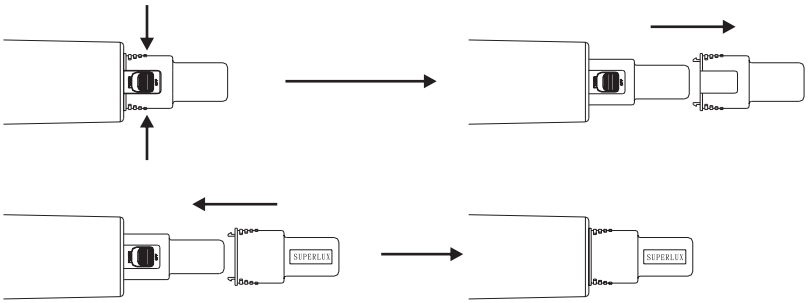

Illustration 13

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11. Bodypack wireless transmitter

11.1 Introduction

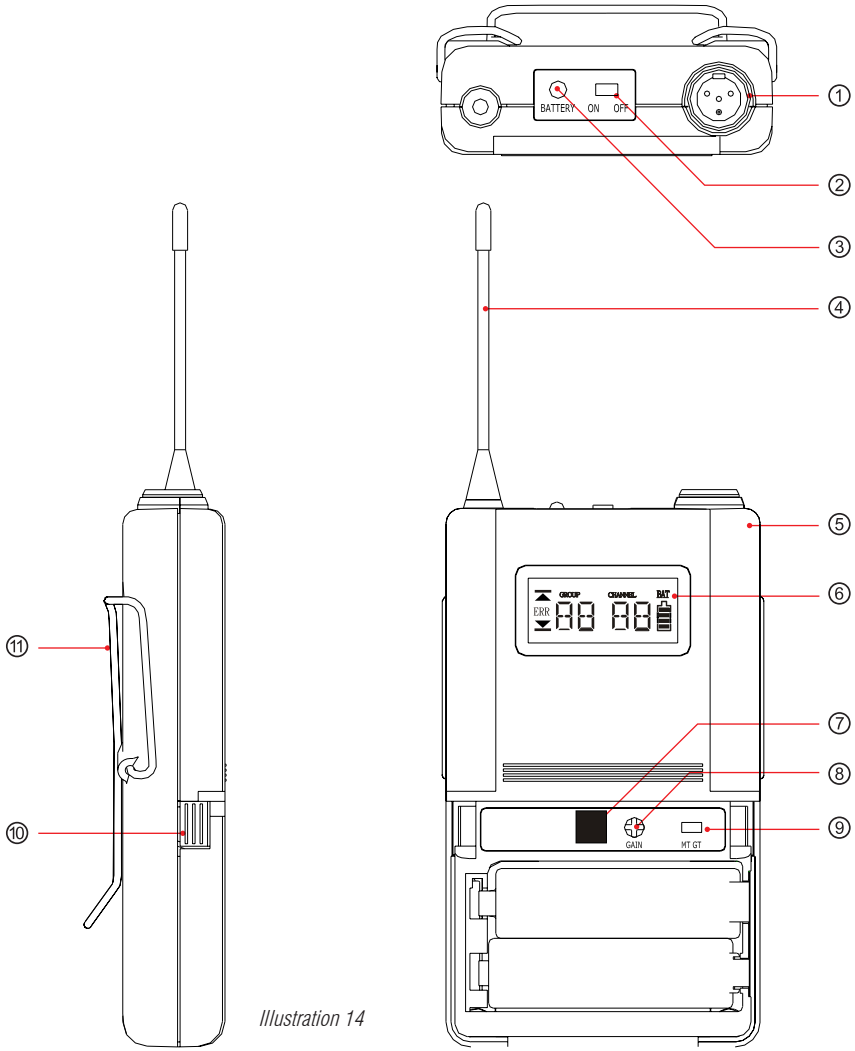

Illustration 14

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1: Audio input socket: For various microphone inputs (Refer to Wiring illustration for 5 variations).

2. Power switch: Set to “ON” when in use, set to “OFF” when not in use and save power.

3. Power indicator: Indicating battery capacity. At the moment powe switch set to “ON”, indicator flash to indicate battery is good; If indicator did not flash, indicating batteries were drained or not inserted properlly. If indicator lighted, indicating batteries low and shall be changed.

4: Antenna: 1/4λ transmitting antenna

5: Main housing: Housing PCB and parts.

6: LCD

7: FIC window: FIC communication and auto channel setting.

8: Gain adjust: Adjusting input level.

9: GT/MT switch: When electric guitar or line source in use, set to “GT”. When condenser microphone, wired microphone in use, set to “MT”. Adjust input level when set at “MT”.

10: Battery cover: To cover 2 x AA batteries

11: Belt clip: Professional clip to ensure reliable stage performance as illustrated.

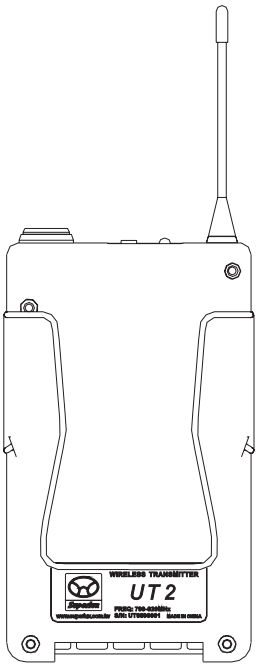

Illustration 15

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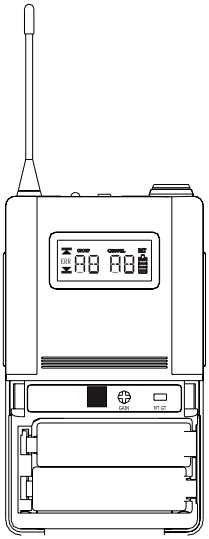
11.2 Operating



11.2.1 Press both side latches of battery cover and open. GT/MT switch and gain adjustment can be operated.

11.2.2 Switch on the transmitter, the battery indicator shall flash to indicating batteries is still good. If indicator did not flash, indicating batteries drained or not properlly inserted. If indciator maintain lighted, batteries are low and shall be changed.

11.2.3 Set gain adjustment at optimum position (switch to GT when use with electric guitar, and this adjustment provide limit trimming.).

11.2.4 Plug in the connector as indicated direction, and locking by screwing the holding ring.

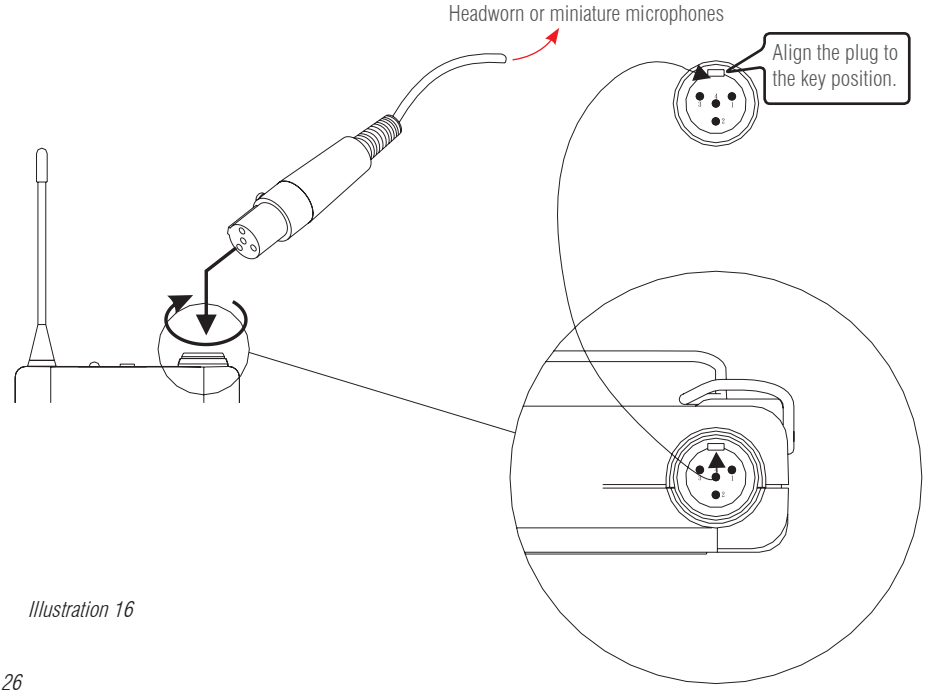


Illustration 16

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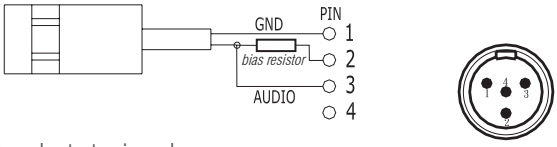
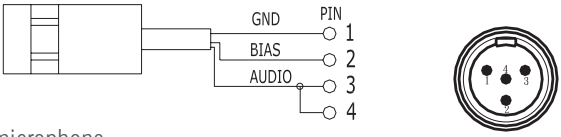
11.3 Wiring for audio input

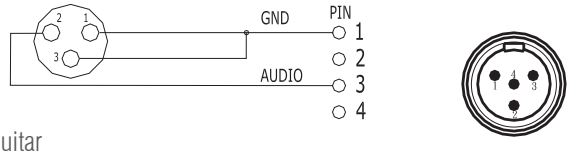
11.3.1 Wiring 2-conductor electret microphone



11.3.2 Wiring 3-conductor electret microphone



11.3.3 Wiring dynamic microphone



11.3.4 Wiring electric guitar

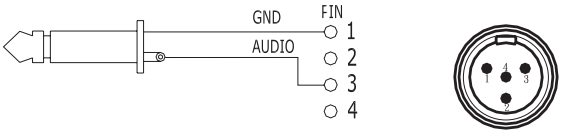


Illustration 17

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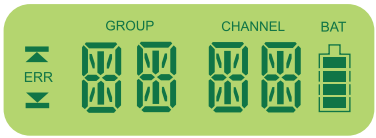
11.4 LCD

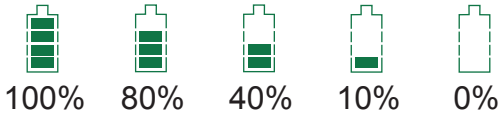


11.4.1 GROUP CHANNEL to display operating at pre-defined channel.

11.4.2 CHANNEL to display operating at user defined frequency (through PC setting)

11.4.3 Battery capacity, when reaching 10%, it is time to change new batteries. If battery is too low, LCD will disply PoFF and switch off to prevent over discharge.

11.4.4 Powering off: When switch set to OFF, LCD display “PoFF” to indicating powering down and automatically switch off. No futhure message on LCD.



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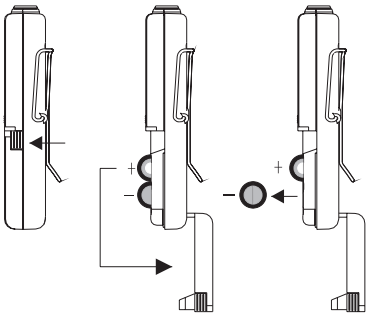
11.5 Changing batteries

11.5.1 Press both side latches of battery cover and open it.

11.5.2 Remove the batteries as illustration.

11.5.3 Inserting 2 x AA batteries as indicated polarity into battery holder as illustration.

11.5.4 Latch the battery cover in position.



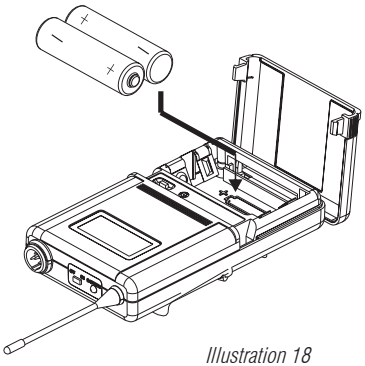


Illustration 18

Note: When microphone not in use, switch off the power. If not in use for a pro-long period, please remove batteries to prevent leaking damage. If re-chargeable batteries were in use, remove them and charge them accordingly.

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12. Technical Specifications

12.1 Receiver

Frequency Range	Refer to the frequency table
Carrier Mode	PLL synthesized
Channels	99
Space between chennels	125KHz
Frequency Width	24MHz
Carrier stability	±5ppm≤10KHz
Image interference ratio	＞70dB
Audio frequency response	50Hz～18KHz
Signal to noise ratio	＞105dB
T.H.D.	≤0.5%@1KHz
Maximum output	Balanced -14dBV/100Ω, Unbalanced -4dBV/5KΩ
Function display	LCD
DC power input	12～18V, 0.5A
AC power adapter	100～240VAC, AC/DC converter, 1.25A

12.2 Handheld Transmitter

Frequency Range	Refer to the frequency table
Carrier Mode	PLL synthesized
Channels	99
Space between chennels	125KHz
Frequency Width	24MHz
Carrier stability	±0.005%
Maximum deviation	±48KHz
Harmonic radiation	＜-60dBc
Transmittion power	20mW
Frequency setting	Infrared control by receiver
Dynamic range	＞110dB
Function display	LCD
Power consumption	≤100mA@3V
Power source	2 x UM3, (LR6, AA) batteries

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12.3 Beltpack Transmitter

Frequency Range	Refer to the frequency table
Carrier Mode	PLL synthesized
Channels	99
Space between chennels	125KHz
Frequency Width	24MHz
Carrier stability	±0.005%
Maximum deviation	±48KHz
Harmonic radiation	<-60dBc
Transmittion power	20mW
Frequency setting	Infrared control by receiver
Dynamic range	>110dB
Function display	LCD
Power consumption	≤100mA@3V
Power source	2 x UM3, (LR6, AA) batteries

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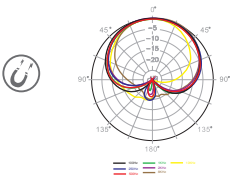
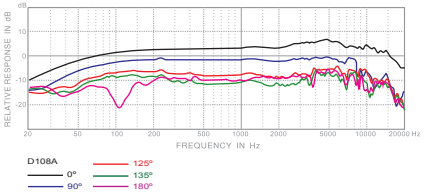
Capsules for handheld

D108A





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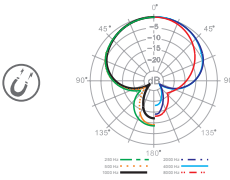
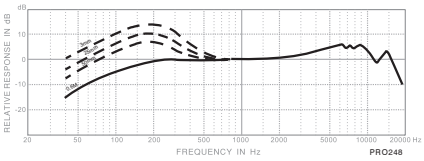
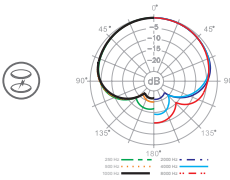
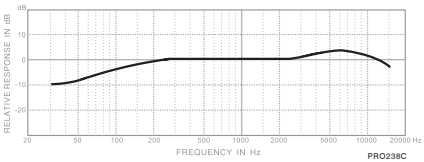




PRO238C





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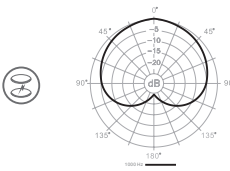
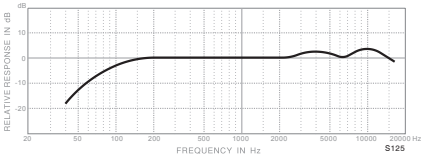
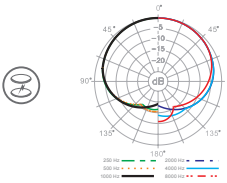
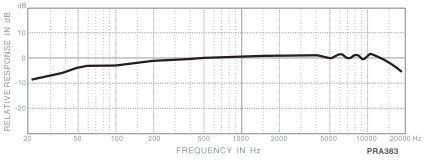




Microphones for beltpack

PRA383





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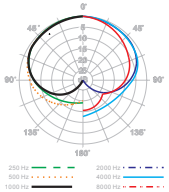
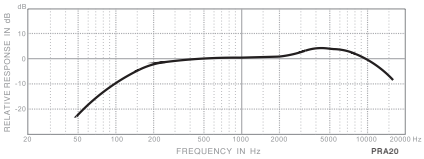
Microphones for beltpack

PRA20





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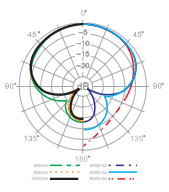

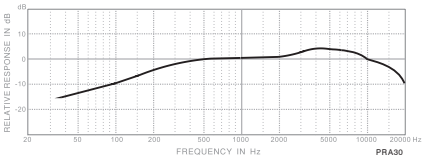

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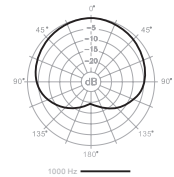

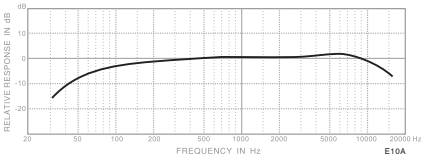

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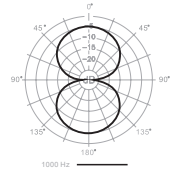

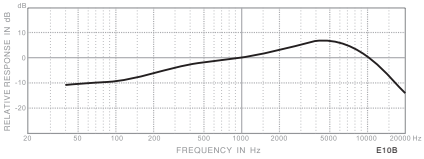

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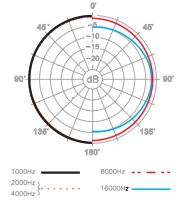
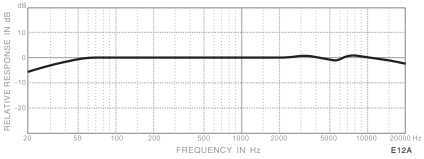
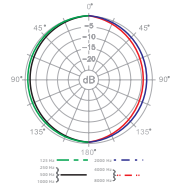
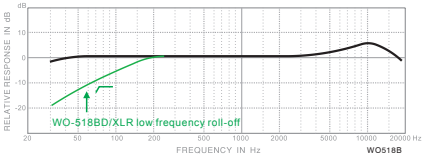




WO518





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Knowing your microphone

Superlux provides variety selection of microphones for professionals and amatures. To know your microphone is the first step to successful result.

Type of transducer

Condenser

Extremely light weight diaphragm, very sensitive to sound. Very small versions available for hiding applications. High performance condenser microphones are regarded as standard equipment of recording studios for extreme detail capturing. Operates with power, such as phantom or battery.

Dynamics

Durable and simple structure, operates in all kinds of environments. A good dynamic microphone is capable to operate at very high sound pressure level without distortion. Due to structure limit, dynamics cannot be built as small as condenser, but dynamics doesn't require power to operate.

Powering microphone

Condenser microphones work with power. Professional wired microphone standard is 48VDC phantom power. Some microphones work with lower voltage as low as 1.5VDC, such as battery power model. CMH8CH/BH/AH work with 48VDC phantom only. Please make sure your sound system provide adaquate power to the microphone.

Wireless system supplies proper power to the capsule. User do not need to consider the power issue.

About Frequency Response

Flat

Suitable for working at controlled environment, or for acoustic measurements. Although people persuit flatness, but for none-professionals, it is a challenge to makes it works as expectation.

Variable response

Incorporating switchable filters to elliminates interference, such as sub-sonic filter to cut air-conditioner and floor vibrations. And allows full flat when used in controlled environment.

Popular curve response

Based on years of practical experience of pro users. There are curves to be build for various applications, so that it is very simple to use the microphone for the purpose. Limiting bandwidth, and emphasing are typical skill.

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Directivity

Select or set the directivity of your microphone for stereo recording, for various music instrument, vocal, speech, and environmental sound pick-up. Pair of spaced omni for A/B stereo, pair of near coincident cardioid for ORTF, and pair of coincident figure-8 at 90° setting for Blumlein stereo.

Omni

Equal sensitivity to all direction, so that the microphone doesn't need to pointing toward the sound source. Low handling and wind noise. Welcome by news gathering, and music recording applications.

Cardioid

Picks up most signal on axis. Rejects side and picks up least to the back. Suitable for live sound re-inforcement. Apparent proximity effect and most singer likes to take this bass boost advantages which is not good for speech.

Super Cardioid

Narrower than cardioid pattern. Suitable for multiple microphone setup. Least sensitive angle pointing toward side to rear where most stage monitors are located. Same proximity effect as cardioid microphone.

Figure 8, bi-directional

Equal sensitive to both ends, and rejects the sides. Good to noisy environment to reject distant noise and low frequency. Also a good choice for stereo recordings, such as Blumlein. Typical pressure gradient characteristic.

Shotgun

Based on interference tube theory, to achieve highest axial signal pick-up and rejects off-axis sound as much as possible. Due to poor wind noise rejection, suitable wind screen shall be used at outdoor.

CMH8CH polar variation

Double diaphragm structure with cardioid acoustic nature, CMH8CH can be set at OMNI, Cardioid, and Figure-8 polar mode.

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Distance to source

Close miking or distant miking sound very differently. Vocal recording or live performance practice close miking mostly. Suitable proximity effect is one desired target, and lower feedback problem is another factor for live sound application.

While distant miking is common practice for recording, especially stereo pair recording with large group of performers, such as orchestra or choir.

Distant miking generally picks up less bass section with pressure gradient type of microphone (cardioid, figure-8, shotgun...) due to acoustic nature and lack of proximity effects.

Rich bass with distant miking can be recorded with pressure type of microphone (Omni), which performs the same frequency response with close or distant pick-up.

Mounting the microphone

Pressure gradient microphone is very sensitive to vibration. Suitable shock mount for high performance microphone is necessary for extreme low noise recording. Sturdy stand can set the microphone excatly at the sweet spot and keep it there. Choose heavy duty microphone stand for studio condenser microphone which weights much more than handle microphone.

Superlux provides wide range of microphone stands for various demands. Big Foot Willie is specially developed for large condenser microphones that able to support 2 large microphones with stereo bracket for single point stereo recording.

Extension foot on all the 'E' versions serve to mount heavy studio microphone in limit space live sound applications.

Maintainence

Condenser microphone shall be kept in low humidity environment for best sound performance. Store the condenser microphones in air-conditioned room or dehumidifier to keep away form moisture. Clean air is another important factor. Keep away from smoking environment to avoid tar residuals

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