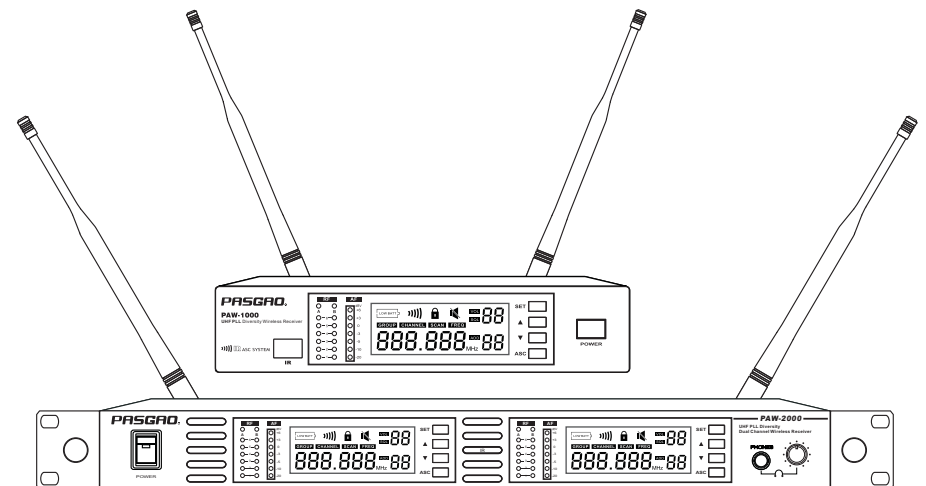


WWW.PASGAO.COM

PAW-1000/2000

**Wireless Microphone Systems
User Guide**



System

Congratulations! Welcome to the PAW-1000/PAW-2000 wireless system. To users who need to build an advanced UHF radio system, PAW-1000/PAW-2000 provides an excellent solution. With 160 frequency bands, PAW-1000/PAW-2000 is applicable for various occasions of radio-cast such as live shows, broadcast, meetings, instrument pickups etc. Touch buttons and liquid crystal displays are equipped within all the components for fast and simple system setup.

Frequency Band Selection

Most countries closely regulate the radio frequencies used in the transmission of wireless information. These regulations state which devices can use which frequencies, and help to limit the amount of RF (radio frequency) interference in all wireless communications.

To be flexible enough to operate worldwide, PAW-1000 /PAW-2000 system offers a number of frequency ranges. You can choose an appropriate one according to the wireless regulation in your area. Available bands are:

UA: 518-548MHz

UB: 630-660MHz

UC: 740-770MHz

UD: 800-822MHz

UE: 838-865MHz

To facilitate system setup and protect against RF interference, each system comes with multiple predefined frequency groups and channels.

When using a single PAW-1000 system, the operating frequency will generally not have to be changed. In an installation with multiple receiver/transmitter systems, each system must operate on a separate channel. The group and channel system provides an optimum frequency spread when using multiple receiver/transmitter systems.

Within a single frequency band, up to 16 individual receiver/transmitter systems may be used in a single installation.

CATALOGUE

System Components.....	3
PAW-1000 Receiver Features.....	4
PAH-2000 Handheld Transmitter.....	5
PAH-1000 Handheld Transmitter.....	6
PAH-720 Handheld Transmitter.....	7
PBT-900 Body Pack Transmitter.....	8
PBT-1000 Body Pack Transmitter.....	9
System Setup.....	10
Rack-Mounting the Receivers.....	11
Specifications.....	13
Tips for Improving System Performance.....	15
Troubleshooting.....	15

Trips for improving System Performance

- Maintain a line of sight between transmitter and antenna.
- Avoid placing the receiver near metal surfaces or any digital equipment (CD players, computes, etc)
- Keep the receiver away from the wall and over 1m to the ground
- Cellular telephones and two-way radio and so on can interfering the transmitting frequencies, maintain a distance from the interfering equipments or any cause interfering.

Troubles Shooting

Issue	Indicator Status	Solution
No sound or faint sound	Transmitter LCD off	Turn on transmitter Make sure the +/- indicator on battery match the transmitter terminals
	Receiver LCD off	Make sure AC adapter is securely plugged into electrical outlet and into DC input connector on rear panel of receiver.
	Receiver RF indicator glows	Turn the receiver up Turn up the Gain adjustment switch in the transmitter Check the power connection of the receiver and amplifier or mixer
	Receiver RF indicator off, transmitter LCD on	Take the receiver away from the metal objects Check whether there is hamper between receiver and transmitter Move the transmitter near the receiver Check the receiver and transmitter whether use the same frequency
	The battery power indicator light on LCD flashes	Change the batteries in transmitter
Distortion or unwanted noise bursts	Receiver display indicators antenna activity	Remove nearby sources of RF interference(CD players, computers , digital effects ,in-ear monitor systems, etc.)
Distortion level increases gradually	Transmitter power indicator light flashing on the LCD	Replace transmitter batteries
Sound level different from cabled guitar or microphone, or when using different guitars		Adjust transmitter again and receiver volume as necessary

PBT-900 Body pack Transmitter

Audio Input Level Maximum
 0 dBV maximum at mic again position
 +10 dBV maximum at 0 dB gain position
 +20 dBV maximum at - 10 dB gain position
 Gain adjustment Range
 30 dB
 Input Impedance
 470 kilohm
 85mm H × 65mm W × 24mm D
 Weight
 85 grams without batteries
 Power Requirement
 Two “AA” size alkaline or rechargeable batteries
 Battery life
 >8 hours (Alkaline)

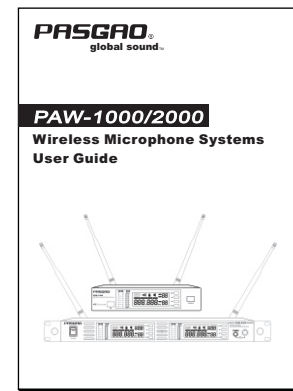
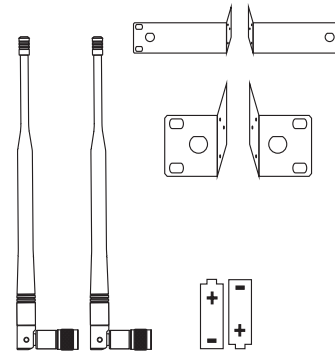
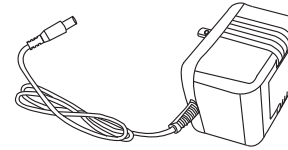
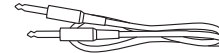
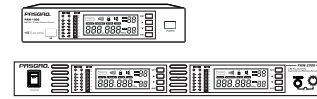
PBT-1000 Body pack Transmitter

Audio Input Level Maximum
 0 dBV maximum at mic again position
 +10 dBV maximum at 0 dB gain position
 +20 dBV maximum at - 10 dB gain position
 Gain adjustment Range
 30 dB
 Input Impedance
 470 kilohm
 90mm H × 65mm W × 24mm D
 Weight
 85 grams without batteries
 Power Requirement
 Two “AA” size alkaline or rechargeable batteries
 Battery life
 >10 hours (Alkaline)

Receiver

Audio Output Level Maximum (ref. +/-30 KHz, 1 KHz)
 XLR connector (into 600 Ω load): -12 dBV
 1/4inch connector (into 3000 Ω load): -18 dBV
 Output Impedance
 XLRconnector 200ohm
 1/4inch connector 1kilohm
 XLR Output
 Impedance balanced
 Pin 1: Ground
 Pin 2: (+)
 Pin 3: (-)
 Sensitivity (intermediate frequency adjustment
 audio noise output <-93 dBm)
 Image Rejection
 > 90 dB
 Dimensions
 44mm H × 212mm W × 160mm D
 Weight
 900 grams
 Power Requirements
 12-18 Vdc at 300 mA , supplied by external
 power supply

System Components

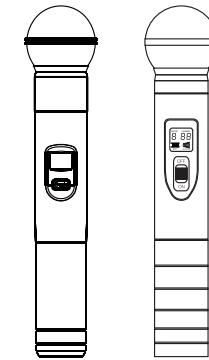


All systems include:

PAW-1000 receiver	PAW-2000 receiver
2 “AA” batteries	4 “AA” batteries
A 1/4” RF connector	A 1/4” RF connector
Power supply	Power supply
Two antennas	Two antennas
PA-D40	PA-D10 Rack
User guide	User guide

Vocalist system includes:

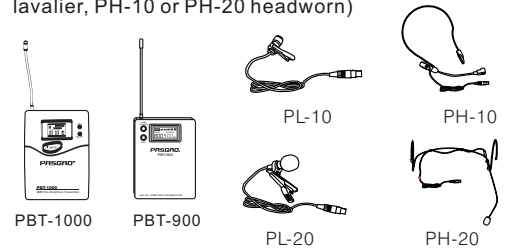
PAH-1000 / PAH-720 handheld transmitter



PAH-1000 PAH-720

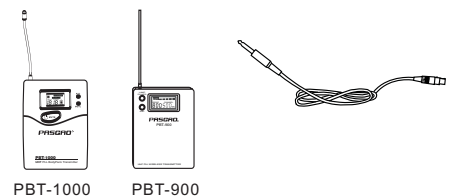
Lavalier/ Headworn system includes:

PBT-1000/PBT-900 bodypack transmitter
 Microphone (choice of PL-10 or PL-20 lavalier, PH-10 or PH-20 headworn)



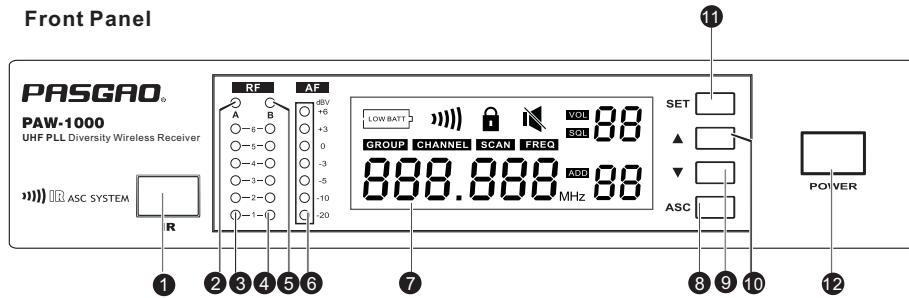
Guitar system includes

bodypack transmitter
 1/4” to mini 3-pin guitar cable



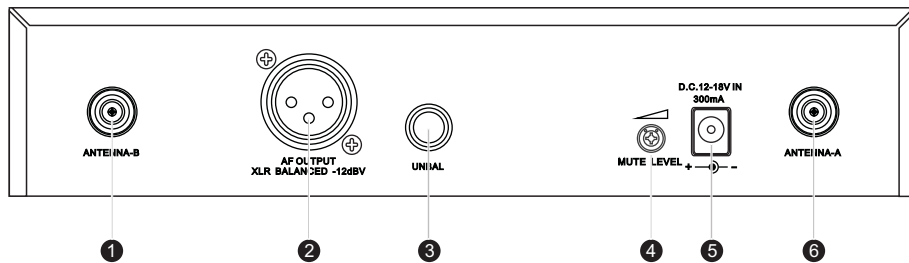
PAW-1000 Receiver Features

Front Panel



- 1 Infrared (IR) window
- 2 Antenna A receiver indicator light
Light glows when Antenna A is on .
- 3 Antenna A RF indicator light
- 4 Antenna B RF indicator light
- 5 Antenna B receiver indicator light
Light glows when Antenna B is on .
- 6 Channel 1 audio indicator light
- 7 Channel 1 LCD panel
Please see “System Setup” on Page 10
- 8 Sync Button
Press to initiate IR connection between receiver and transmitter.
- 9 System menu downward button
Please see “ System Setup” on Page 10
- 10 System menu upward button
Please see “System Setup” on Page 10
- 11 System setup button
Please see “System Setup” on Page 10
- 12 On/Off switch

Rear Panel



- 1 Antenna Jack B
50 ohm
- 2 XLR output socket
- 3 1/4in output socket
- 4 Fine adjustment of mute threshold level
It is the mute enabling threshold value, which is factory setting and usually does not need to be adjusted. If there are any interference signals, this threshold value can be increased by turning the knob clockwise until RF signal lamp goes out.
- 5 DC power adapter socket
- 6 Antenna Jack A
50 ohm.

Specifications

System

Frequency Range and Transmitter Output level

Band	Range	Transmitter RF level
UA	584-607 MHz	13dBm
UB	655-679 MHz	13dBm
UC	740-770 MHz	10dBm
UD	800-822 MHz	10dBm
UE	838-865 MHz	10dBm

Operating Range under Typical Condition

80m (240 ft.)

Note: actual range depends on RF signals absorption, reflection, and interference.

Audio Frequency Response (+/- 3 dB)

60Hz~16KHz

Total Harmonic Distortion

(+/- 30 KHz deviation, 1 KHz tone)

<1%

Dynamic Range

>90 dB (A - weighted)

Operating Temperature Range

-10°C to +50°C

Note: battery characteristics may limit

the range

PAH-720 Handheld Transmitter

Audio Input Level maximum

0 dBV

Dimensions (including the microphone)

243mm × 50mm Diameter

Weight

300 grams

Battery Requirements

2 “AA” alkaline batteries or rechargeable

batteries Battery Life

>10 hours (Alkaline)

PAH-1000 Handheld Transmitter

Audio Input Level maximum

0 dBV

Dimensions (including the microphone)

242mm × 54mm Diameter

Weight

240 grams

Battery Requirements

2 “AA” alkaline batteries or rechargeable

batteries Battery Life

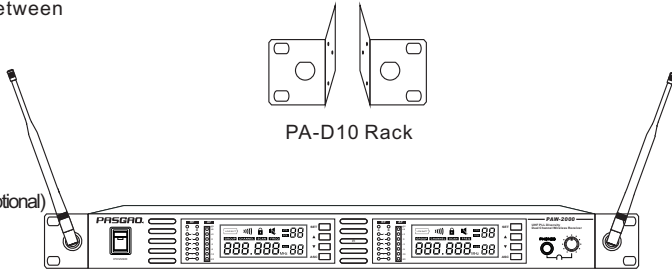
>10 hours (Alkaline)

PAW-2000 Rack-Mounting the Receiver

Maintain a line of sight between transmitter and antenna.

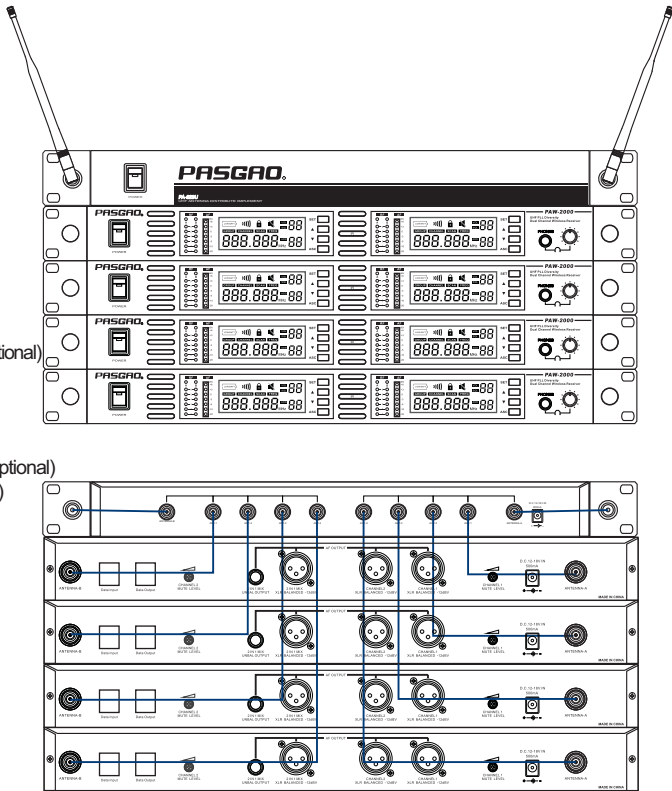
One Receiver
(with PA-D10 Rack)

Two TNC connecting cable (optional)
Two TNC connector (optional)



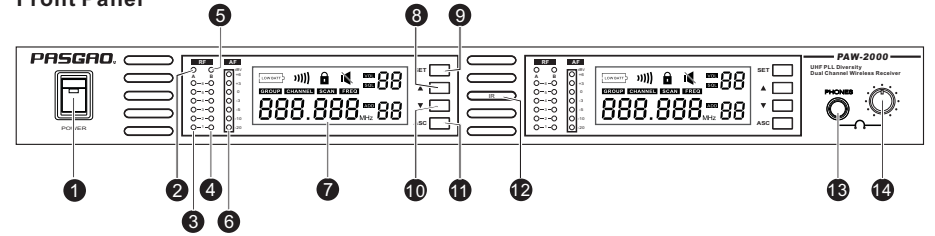
Four receivers
PA-828U antenna distributor (optional)

Ten TNC connecting cable (optional)
Two TNC connector (optional)



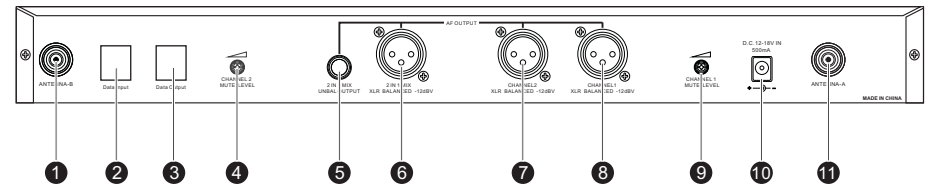
PAW-2000 receiver Features

Front Panel



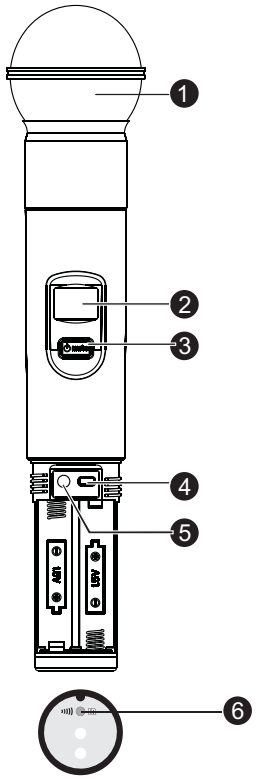
- 1 On/Off switch
- 2 Antenna A receiver indicator light
Light glows when Antenna A is on .
- 3 Antenna A RF indicator light
- 4 Antenna B RF indicator light
- 5 Antenna B receiver indicator light
Light glows when Antenna B is on .
- 6 Channel 1 audio indicator light
- 7 Channel 1 LCD panel
Please see “System Setup” on Page 10
- 8 System menu upward button
Please see “System Setup” on Page 10
- 9 System setup button
Please see “System Setup” on Page 10
- 10 System menu downward button
Please see “System Setup” on Page 10
- 11 Sync Button
Press to initiate IR connection between receiver and transmitter.
- 12 Infrared (IR) window
- 13 Monitor earphone jack
- 14 Monitor volume

Rear Panel



- 1 Antenna jack B
- 2 Data input jack
Connect to computer control
- 3 Data output jack
Connect to computer control
- 4 Channel 2 Fine adjustment of mute threshold level
It is the mute enabling threshold value, which is factory default and usually no need to adjust, if there are any interference signals, this threshold value can be increased by turning the knob clockwise until RF signal lamp goes out.
- 5 1/4inch mix output jack
- 6 XLR mix output jack
- 7 Channel 2 XLR output jack
- 8 Channel 1 XLR output jack
- 9 Channel 1 Fine adjustment of mute threshold level
- 10 DC adapter jack
- 11 Antenna jack A

PAH-1000 Handheld Transmitter

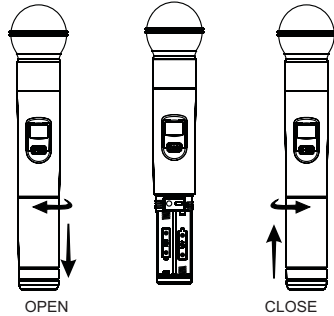


Functions:

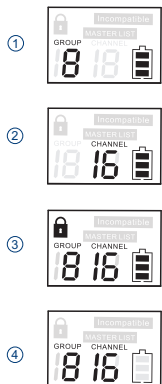
- ① Interchangeable microphone head.
- ② LCD screen
- ③ Power/Mute Control switch
Middle position is Mute.
- ④ Select button
- ⑤ Microphone input sensitivity adjustment
- ⑥ IR Window
This window receives infrared signal so as to keep frequency synchronization.

Battery Replacement

- The life expectancy of two alkaline batteries is about 10 hours.
- When the power indication symbol on the display screen keeps flashing as shown in the left diagram, the batteries should be replaced immediately, as shown in the above.



Handheld Transmitter



Transmitter Status Display

Push the MUTE/⏻ button 2 second, the display will skip to the group and channel selection. Continuously push two times on the MUTE/⏻ button to turn on MUTE/⏻ function, to turn off the MUTE/⏻ function with the same operation.

Manually selecting the group and channel: select

Pushing on the select button until the group and channel display alternately, push the select button while the group on the display to change on the group, push the select button while the channel on display to change the channel.

Transmitter data lock and unlock: select + ⏻

Pushing the mute and select button at the same time can lock and unlock the transmitter data. On the lock working condition, you can not change the setting on the transmitter, but it will not lock the infrared synchronizer.

Battery display: Display the transmitter battery level.

PAW-1000 Rack-Mounting the Receiver

Maintain a line of sight between transmitter and antenna.

One Receiver
(with PA-D40 Rack)



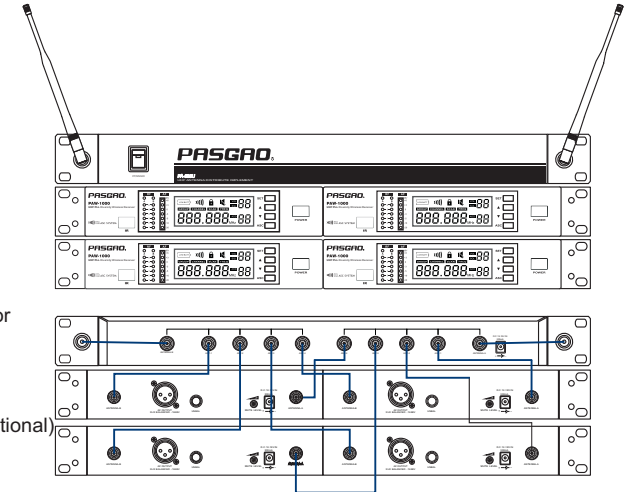
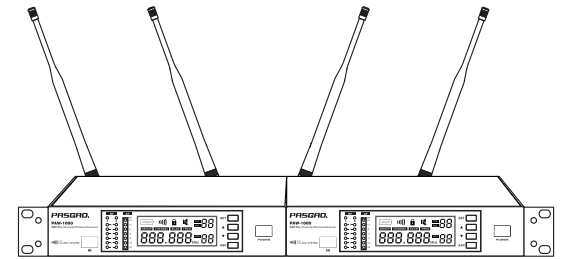
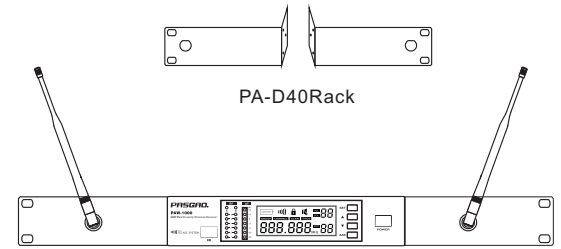
Two TNC connecting cable (optional)
Two TNC connector (optional)

Two Receiver
(with PA-D200 Rack)

Three or Four Receivers
with PA-D200 Rack
PA-828U antenna distributor
(optional)



Ten TNC connecting cable (optional)
Two TNC connector (optional)



Bodypack Transmitter



Transmitter Status Display

Push the MUTE/⏸ button 2 second, the display will skip to the group and channel selection. Continuously push two times on the MUTE/⏸ button to turn on MUTE/⏸ function, to turn off the MUTE/⏸ function with the same operation.

Manually selecting the group and channel: **[select]**

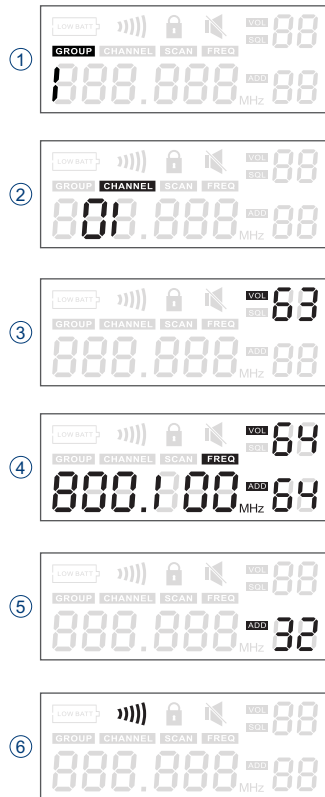
Pushing on the select button until the group and channel display alternately, push the **[select]** button while the group on the display to change on the group, push the **[select]** button while the channel on display to change the channel.

Transmitter data lock and unlock: **[select] + ⏸**

Push the mute and select bottom at the same time can lock and unlock the transmitter data. On the lock working condition, you can not change the setting on the transmitter, but it will not lock the infrared synchronizer.

Battery displayer: Display the transmitter battery level.

System Setup



Receiver Programming

Group and Channel Selection: Press “set” button, “Group” flash, press ▲ or ▼ to choose the appreciate frequency group, as shown on the left ①; press “SET” again, “CHANNEL” flashes, press ▲ or ▼ to choose the appreciate channel, as shown on the left ② shown.

For best results when operating multiple systems, set all systems to a single group: then set each system to a unique channel within that group.

Receiver Volume Setting:

The receiver has electric volume control, as on the normal display, press ▲ or ▼ directly to control the output volume (altogether 64 degrees) as ③ shown on the left.

Normal Display:

RF level, group no, channel no, frequency as left ④.

Automatic Transmitter Setup:

Press “SET” again, “ADD” flashes, press ▲ or ▼ to choose the receiver address as ⑤.

Note: In multiple receivers system, every receiver's address must be different!

Turn off the receiver and open the battery canister, turn the IR window on the receiver IR window, press “ASC” button, and turn on the receiver again.

Turn the Bodypack receiver IR port on the receiver IP window, then press “ASC” button, and then press the “ASC” button on the bodypack transmitter.

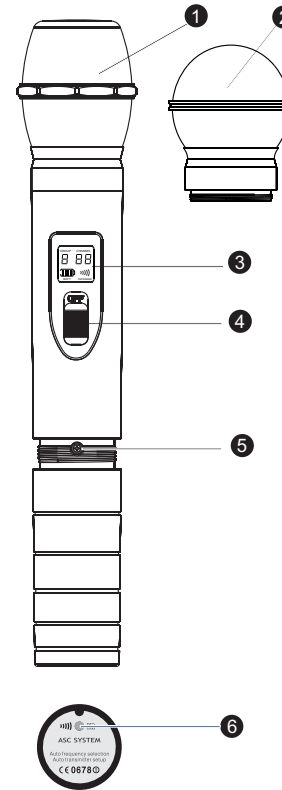
The receiver keep transmitting sync frequencies each time you press the “ASC” button, and the sign “INFRARED” flash as shown ⑥ on the left.

Each time turn on the transmitter and press the “ASC” button within the bodypack transmitter, the transmitter will stars the IR receive system after 25 seconds.

The handheld transmitter lights up when the IR receiver system stars, the whole display within the backpack transmitter flashes (the IR indicator light also flashes at the same time)

Attention: The interval of the receiver and the transmitter should be less than 0.5m as the IR connection is setting; only can turn one transmitter IR window on the receiver at each IR connection when multi-system is using.

PAH-720 Handheld Transmitter

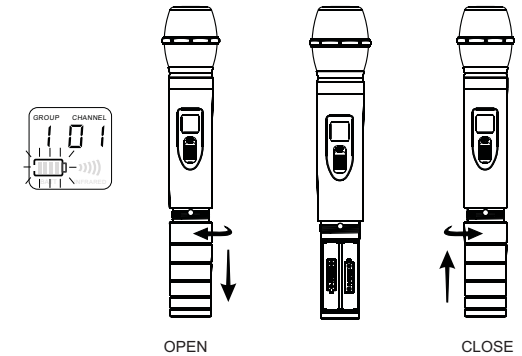


Functions:

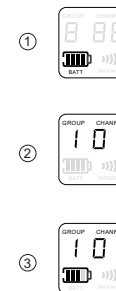
- ① Condensator mic
- ② Dynamic mic
- ③ LCD screen
- ④ Power source controlling switch
- ⑤ Microphone input sensitivity adjustment.
Left turn for output level decrease, right turn for output level increase.
- ⑥ IR port
Receives infrared beam to synchronize frequencies.

Changing Batteries:

Expected life for two alkaline batteries is about 10 hours
As the battery indicator on the screen keeps glowing, the batteries should be changed immediately (as shown below).



Handheld Transmitter



Transmitter Status Display

Battery Status:

The handheld transmitter had five levels as ① shown on the left.

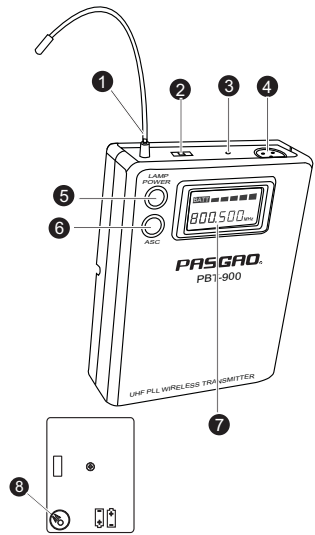
Group and Channel Display:

After the finishing the connection of the receiver and the transmitter, the transmitters receiver keeps displaying the numbers of the group and channel for 5 seconds, as ② shown on the left, then back to the normal status display.

Normal Display:

The transmitters shows battery power and working frequency, as ③ shown on the left.

PBT-900 Bodypack Transmitter

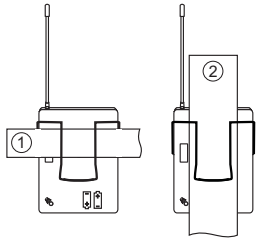


Features:

- ① Antenna
- ② Gain adjustment switch and mute indicator
Two gain settings are available on PBT-900, choose the appropriate setting for your instrument
Mic: microphone
0: Guitar with passive pickups
-10dB: Guitar with active pickups
- ③ Low battery/Infrared transmission LED
red: Power indicator
Flash red: IR transmission in process
- ④ 3-pin Microphone Input Jack
- ⑤ Power/Background Light control button
Press two seconds to turn on the receiver and hold it to turn off, press less than two seconds to control the LCD backlight to turn on or off.
- ⑥ Sync receiver button
Press to initiate IR connection between receiver and transmitter.
- ⑦ LCD panel
- ⑧ IR window
Receive IR signals to synchronize frequencies.

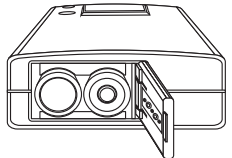
Wearing the Backpack Transmitter:

Clip the transmitter to belt ①, or slide a guitar strap through the transmitter clip ②, as shown
For best results, slide the transmitter until the belt ① is pressed against the base for the clip.



Changing batteries:

Expected life for Two Alkaline batteries is approximately 8 hours.
When the transmitter light glows red, the batteries should be changed immediately, as shown on the left.

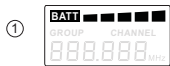


Bodypack Transmitter

Transmitter Status Display

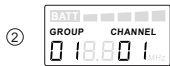
Battery Status:

Six levels within the handheld transmitter shows the power as ① shown on the left.



Group and Channel Display:

After the finishing the connection of the receiver and the transmitter, the handheld transmitter shows the group and channel as receiver as ② shown on the left, then back to the normal status display.

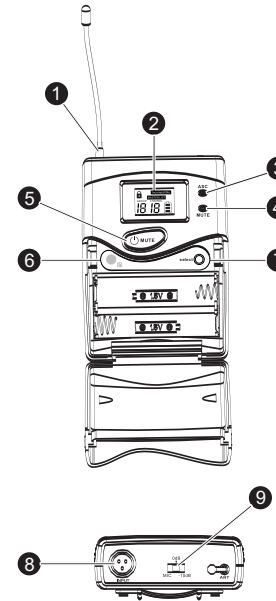


Normal Display:

The handheld transmitter show the battery power, group number and channel as ③ shown on the left.



PBT-1000 Bodypack Transmitter

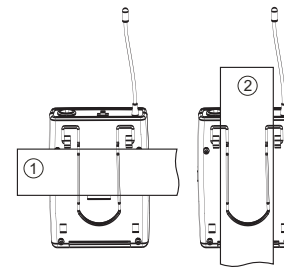


Features:

- ① Antenna
- ② LCD panel
Please see "System Setup" on Page 10.
- ③ Power/ASC indicator
Green light: Power indicator
Flash green: IR transmission in process
Slow flashing green light: Low Battery
- ④ Mute Indicator
Red light on indicate Mute mode
- ⑤ Power/Mute switch
Push for 3 second to turn on/off
- ⑥ IR window
Receive IR signals to synchronize frequencies.
- ⑦ Select button
Please see "System Setup" on Page 10
- ⑧ 3-pin Microphone Input Jack
- ⑨ Gain adjustment switch and mute indicator
Two gain settings are available on PBT-1000, choose the appropriate setting for your instrument
Mic: microphone
0: Guitar with passive pickups
-10dB: Guitar with active pickups

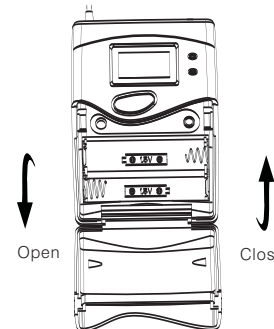
Wearing the Backpack Transmitter:

Clip the transmitter to belt ①, or slide a guitar strap through the transmitter clip ②, as shown
For best results, slide the transmitter until the belt ① is pressed against the base for the clip.



Changing batteries:

Expected life for Two Alkaline batteries is approximately 10 hours.
When the transmitter light glows red, the batteries should be changed immediately, as shown on the left.



Open Close

