

**OKAYO**

# INFRARED

Portable Sound System



**GPA-500IR SERIES**

**INFRARED PORTABLE SOUND SYSTEM**

**【 USER MANUAL 】**

## PREFACE

Thank you for the purchase of Infrared Portable Sound System GPA-500IR series. Please take a look at this manual carefully before your first operation, to secure the best performance and application.

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## GPA-500IR FAMILY PRODUCTS

### GPA-500IR1

One-channel  
Infrared Portable Amplifier



### GPA-500IR2

Dual-channel  
Infrared Portable Amplifier



### GPA-500IU1

One-channel  
Infrared Portable Amplifier  
with Audio Player Inbuilt



### GPA-500IU2

Dual-channel  
Infrared Portable Amplifier  
with Audio Player Inbuilt



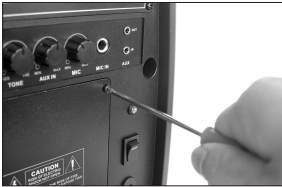
# GPA-500IR ILLUSTRATION

## GPA-500IR System Features



- 1. Sensor power indicator
- 2. Dual-channel sensor module (IRS-10)
- 3. Infrared receiver module (IR-502)
- 4. 5" Driver
- 5. F sockets for external sensor
- 6. Master controls
- 7. Battery door
- 8. Charging indicator
- 9. Power switch
- 10. DC input
- 11. Stand mount
- 12. One-channel infrared receiver module (IR-501)
- 13. Digital audio player (UM-501)

## Battery Replacement



Unscrew the battery door



Take out the battery



Connect the new battery with power lead  
Red lead: Anode (+)  
Black lead: Cathode (-)

# GPA-500IR WITH TRIPOD AND WALL BRACKETS OPTION

## Tripod and Wall Brackets

1.



Matching with  
universal microphone  
stand

2.



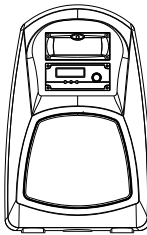
Matching with  
tripod ST-35

3.



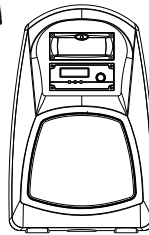
Matching with  
wall brackets SP-500

1.



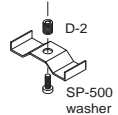
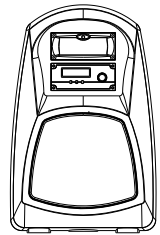
mic stand

2.



D-2  
ST-35

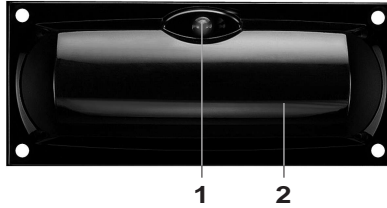
3.



D-2  
SP-500  
washer

## INFRARED SENSOR ILLUSTRATION

### IRS-10 Infrared Sensor Module

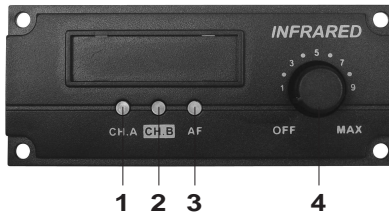


1. Infrared sensor indicator: LED lights red when in receipt of infrared signal
2. Infrared sensor

## INFRARED RECEIVER ILLUSTRATION

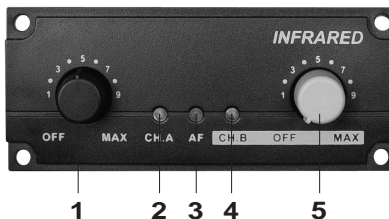
OPTION

### IR-501 One-channel Infrared Receiver Module



1. CH.A: LED lights red when power is on; LED lights green when receiving signal
2. CH.B: LED lights green when receiving signal
3. AF: LED lights amber when sound outputs
4. Volume control and power switch (sensor)

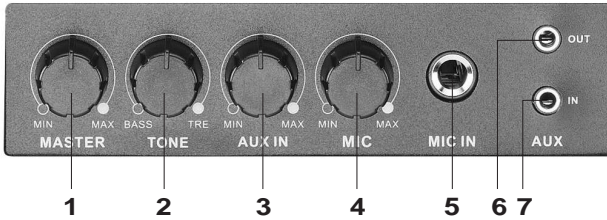
### IR-502 Dual-channel Infrared Receiver Module



1. CH.A volume control and CH.A power on
2. CH.A: LED lights red when power is on; LED lights green when receiving signal
3. AF: LED lights amber when sound comes out
4. CH.B: LED lights red when power is on; LED lights green when receiving signal
5. CH.B volume control and CH.B power on

# MASTER CONTROLS ILLUSTRATION

## Master Controls

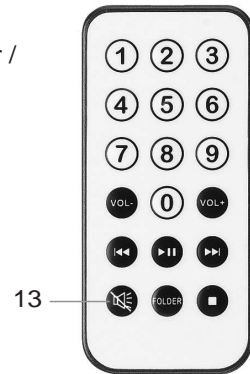


1. MASTER: control audio volume of infrared receiver, wired microphone and auxiliary input
2. TONE: bass and treble control
3. AUX IN: auxiliary input control
4. MIC: wired microphone volume control
5. MIC IN: wired microphone input (Ø 6.3mm)
6. AUX OUT (Ø 3.5mm): connect with an extra amplifier
7. AUX IN (Ø 3.5mm): connect with an external audio source, ex. iPod or laptop

## UM-501 Digital Audio Player



1. POWER: turn on the UM-501 player
2. LCD: to show the folder number / track number / time duration / music source / playing mode / status displayed
3. REPEAT: set the track repeatedly
4. PREV / : back to the previous track / folder
5. NEXT / : reverse to the next track / folder
6. STOP / : stop playing music
7. PLAY / : play / pause
8. SD slot: insert SD memory card
9. USB port: connect with the USB source
10. VOL- / : volume down
11. VOL+ / : volume up
12. FLODER / : to select the different folder from the current playing music source
13. MUTE / : sound mute



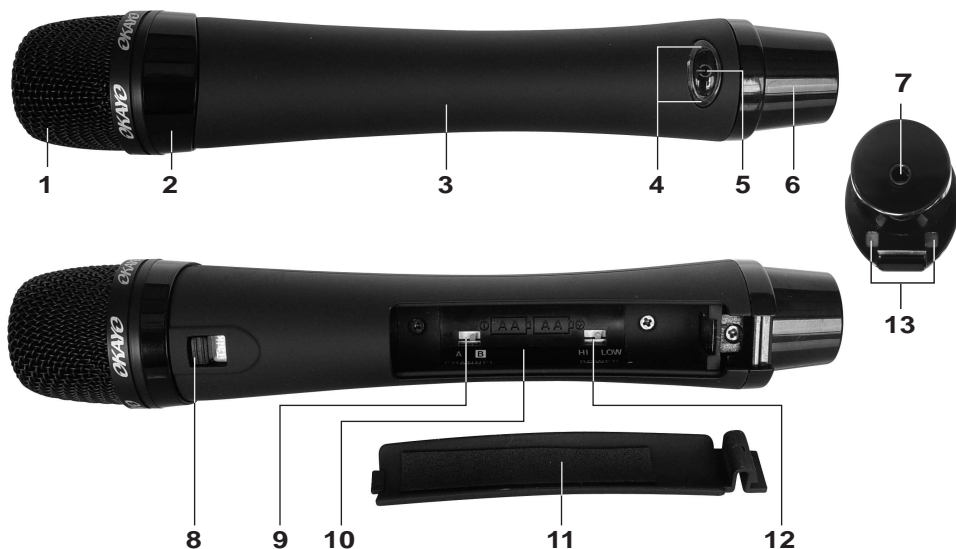
**UM-501**  
Remote Control

### ■ Operation Indication of UM-501

1. To connect your USB music source with UM-501, GPA-500IU starts playing mp3 file automatically. The LCD shows the current folder / track number / playing duration.
2. When both of USB and SD card are connected with UM-501, USB source is the priority for UM-501 to play. When disconnecting both of USB and SD card, UM-501P stops playing music and records the last playing folder / track number; to insert the same USB or SD card again, UM-501 starts playing from the previous recorded track.
3. To disconnect the USB or SD card after pressing STOP (1), UM-501 does not record the last playing folder / track number; to insert the same USB or SD card again, UM-501 starts playing the USB or SD cards from the beginning.
4. To take out the SD card, please push the card gently in advance, and then the card should eject automatically; to pull out SD card appropriately would cause the damage on SD card and also the music player.
5. Press button FOLDER (12) in advance to active the folder selection function. To select different folder by pressing NEXT (5), PREV. (4), and then press PLAY (7) to complete the folder selection.

## INFRARED HANDHELD MICROPHONE ILLUSTRATION

### EJ-501TI Infrared Handheld Microphone



- |                        |                                |
|------------------------|--------------------------------|
| 1. Mesh head           | 8. Talk/Mute switch            |
| 2. Top emitter         | 9. A/B channel switch          |
| 3. Main body           | 10. Battery case               |
| 4. Power indicator     | 11. Battery door               |
| 5. Power switch button | 12. Hi/Low output power switch |
| 6. Bottom emitter      | 13. Charging contact           |
| 7. 3.5mm Mic/Aux input |                                |

### Battery installation of EJ-501TI



Pull the battery door to the direction of the mesh head. Place 2 pcs AA 1.2V (Ni-MH 2500 mAh) batteries into the battery case; batteries should be placed by the correct direction of (+) and (-) .

After correct battery installation, close and lock the battery door well.


# INFRARED HANDHELD MICROPHONE ILLUSTRATION

## Correctly hand EJ-501TI

Please avoid your hand covering the top emitter and bottom emitter



## Operation Indication of EJ-501TI

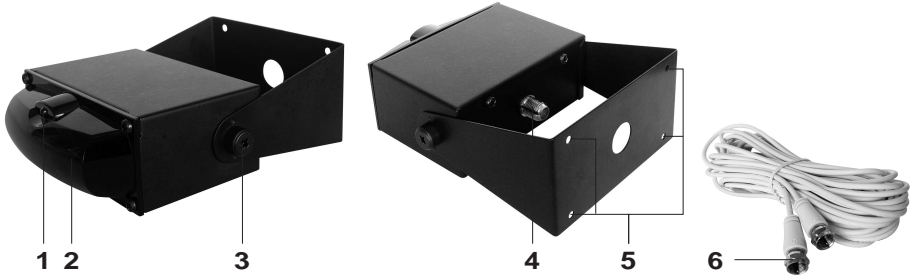
1. Select a channel by A/B Channel Switch (9)
  - \* A CH -> Channel A (2.3 MHz)
  - \* B CH -> Channel B (2.8 MHz)
2. Select output power by HI/LOW Selector (12)
  - \* HI -> Distance can reach to 20 M; power consumption around 300 mA
  - \* LOW -> Distance can reach to 15 M; power consumption around 200 mA
3. After battery installation and close the battery door, press the power switch button (5) for 1 second, and then the power indicator (4) lights up to show the device being on.
  - \* Lights green: power sufficient
  - \* Lights red: power insufficient; please prepare new batteries or recharging procedure
4. Switch the button (8) to the Talk status when you intend to amplifier your speech; switch the button (8) to the Mute status when you are temperately not using the microphone.
5. Press the power switch button  (5) for 4~5 seconds to turn the device off.
6. Insufficient power influences the signal transmission. We recommend you using the capacity 2500 mAh rechargeable batteries and dual-slot charger HDC-502 as the best solution.



## CAUTION !

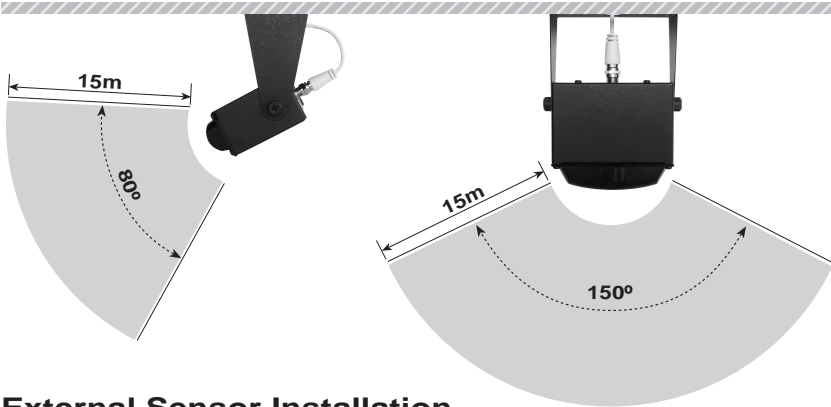
- ※ Only Ni-MH rechargeable batteries are allowed to be charged. It may cause leakage or explosion when charging un-rechargeable batteries.
- ※ Please take out batteries if the unit isn't in use for a long time to avoid battery leakage.

## IRS-20 External Sensor

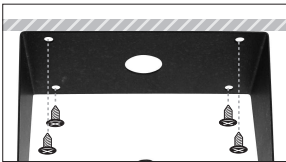


- 1. Sensor power indicator
- 2. Infrared sensor
- 3. Screws for angle adjustment
- 4. F socket for extension cable
- 5. Screws for wall fixed
- 6. Extension cable to connect with GPA-500IR

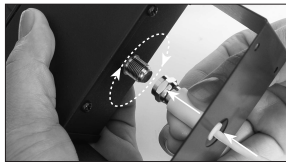
## Single Reception Range



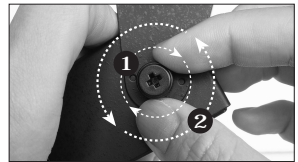
## External Sensor Installation



Screwed the four corners to fix on the wall or ceiling



Connect the external cable with F socket clockwise

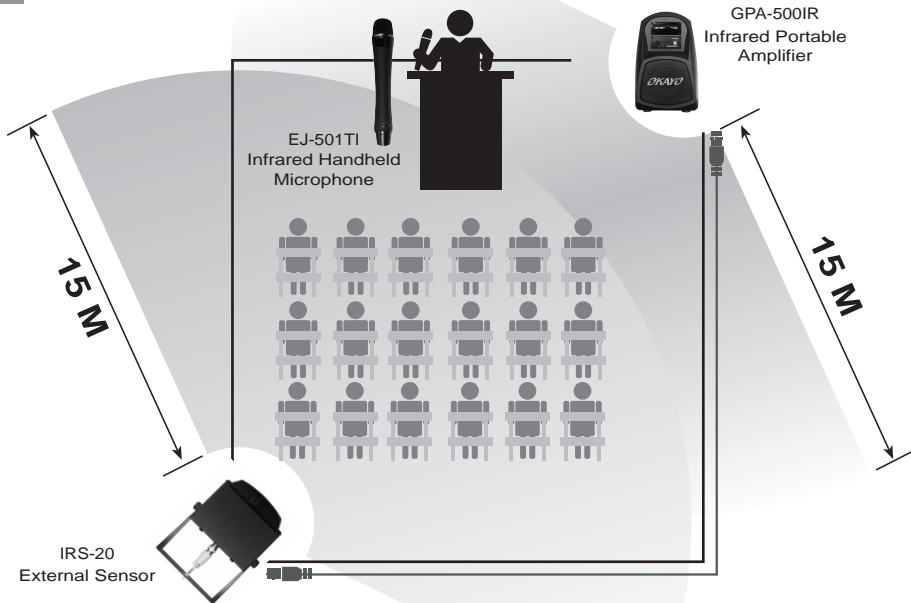


Anticlockwise direction ② to unscrew and adjust your preferred angle; clockwise ① to screw tightly and fix the position

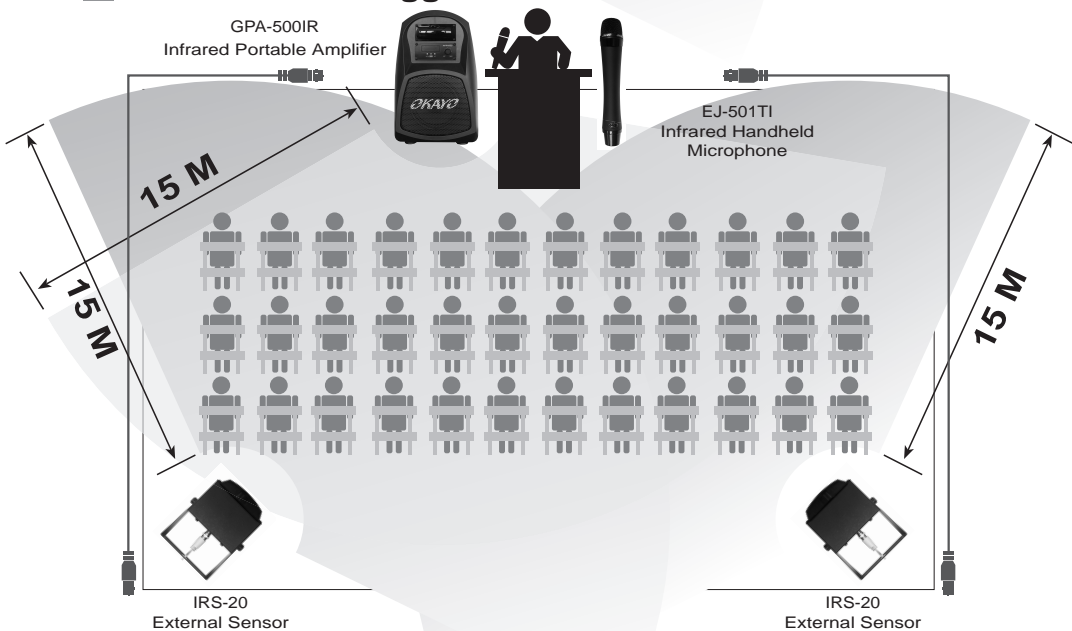
# EXTERNAL SENSOR ILLUSTRATION

OPTION

## Allocation in a Middle-size Classroom



## Allocation in a Bigger Classroom



## TROUBLESHOOTING

### No Power ON Indication

Check the battery with sufficient power and in a correct position.

### No Sound Outputs

Check the Infrared Portable Amplifier and Infrared Handhold Microphone are at the same channel.

Check the volume of Infrared Portable Amplifier is on.

Check the Infrared Handhold Microphone is switched to the "Talk" status.

## CAUTION

1. Avoid rainfall or humid circumstance which may cause the unit broken or electric shock.
2. Avoid the unit to be stroke and dropped.
3. Do NOT use the unorigianl power supply.

### **Avoid Heat, Humidity**

Do NOT put the unit in the sunshine for a long time, or any other hot, humid environments and places with flame. Stay away from any occasions which the above might occur. Choose cooler places to store the unit.

### **Charge BEFORE You Start Using for the First Time**

After unpacking the unit for the first time, please charge the unit for about 8 hours. This is absolutely necessary as the built-in rechargeable batteries might have been discharged naturally due to long shipment and storage time, even though it has been fully charged in the factory prior to shipment. To secure a longer life for batteries, please DO execute this IMPORTANT process.

### **Charge Fully**

Ensure batteries are fully charged BEFORE you store it for a long period. To maintain a longer battery life and better performance, make sure you charge the batteries regularly every month.

- ※ Notice : when you need to use the unit again after a long period of stock, make sure you charge it fully for at least 8 hours BEFORE any operation.
- ※ Notice : please also charge this unit every time after operation to gain a longer battery life.
  
- This unit has DOD (depth of discharge) protection design. After the Power Switch LED flashes red which means there isn't enough electricity (when operating via the batteries' power), this unit will turn off automatically to secure battery from deep-discharging damage. At this moment please immediately recharge your unit, do not continue operation.

## MAINTENANCE GUIDELINES

- This unit has protection circuit against overcharge. After the batteries finish charging, the unit will stop charging automatically. You can still operate during charging.

### **Replacing Batteries**

Make sure the substitute battery is with same specifications. Using incorrect batteries may lead to explosion or malfunction

**Remove the batteries in the transmitters if for a long while you are not going to use it.**

### **Transmitter's Battery Terminals**

Before operation, ensure battery contacts are clean and free of corrosion. If corrosion occurs, please replace it or contact your place of purchase if service is required.

## SPECIFICATIONS

### GPA-500IR Infrared Portable Amplifier

|                        |                                  |
|------------------------|----------------------------------|
| Wave length            | 850 nm                           |
| Channel                | 2 (CH.A: 2.3 MHz; CH.B: 2.8 MHz) |
| Receiver system        | TRF (Tuned Radio Frequency)      |
| Max deviation          | 50 kHz                           |
| Tone                   | 32.768 kHz                       |
| Dynamic range          | 110 dB                           |
| Distortion             | < 1%                             |
| Frequency response     | 70 Hz ~ 10 kHz (receiver)        |
| Operation temperature  | -10°C ~ +50°C                    |
| Input connector        | F type                           |
| Reception range        | 20 meters (Hi) / 15 meters (Low) |
| Output power           | 30 Watts (RMS) @ 4               |
| Driver                 | 5" full range                    |
| S/N ratio              | > 70 dB                          |
| Receiver module        | IR-501 or IR-502                 |
| Inputs (stereo)        | Mic (6.3mm), Aux (3.5mm)         |
| Outputs (stereo)       | Aux (3.5mm)                      |
| Controls               | Master, Tone, Mic, Aux           |
| Frequency response     | 50Hz ~ 15kHz                     |
| Power supply           | 100 ~ 240 VAC / 18 VDC, 2.7 A    |
| Battery                | 12 V, 2.9 A (Lead-Acid)          |
| Operation time         | 3 ~ 4 hours                      |
| Charging time          | 4 ~ 6 hours                      |
| Dimensions (D x W x H) | 260 x 210 x 290 (mm)             |
| Weight                 | 4.10 kg                          |

### IR-501 / IR-502 Infrared Receiver Module

| Module                 | IR-501                             | IR-502 |
|------------------------|------------------------------------|--------|
| Volume control knob    | 1                                  | 2      |
| Channels               | 2 (CH.A : 2.3 MHz; CH.B : 2.8 MHz) |        |
| Power supply           | 12 VDC                             |        |
| Current consumption    | 200 mA                             |        |
| Dimensions (D x W x H) | 128 x 88 x 37 (mm)                 |        |
| Weight                 | 100 g                              |        |

## SPECIFICATIONS

### IRS-10 / IRS-20 Infrared Sensor

| Module                 | IRS-10                             | IRS-20            |
|------------------------|------------------------------------|-------------------|
| Power supply           | 12 VDC                             | 24 VDC            |
| Current consumption    | 25 mA                              | 15 mA             |
| Dimensions (D x W x H) | 143 x 88 x 38 mm                   | 133 x 103 x 48 mm |
| Weight                 | 85 g                               | 250 g             |
| Extended cable         | ---                                | 10 meters         |
| Reception angle        | 80° (Vertical) / 150° (Horizontal) |                   |
| Reception range        | 15 meters                          |                   |

### EJ-501TI Infrared Handheld Transmitter

|                         |  |
|-------------------------|--|
| Wave length             | 850 nm   |
| Battery power capacity  | Green -> sufficient power<br>Red -> low power                              |
| Carrier frequency range | CH.A: 2.3 MHz<br>CH.B: 2.8 MHz   |
| Controls                | Talk, Mute   |
| Modulation              | FM   |
| Output power            | Hi: 20 meters (face to face)<br>Low: 15 meters (face to face)              |
| Battery                 | two AA Ni-MH rechargeable batteries (2500 mAh) or Alkaline                 |
| Battery life            | 8 hours (2500 mAh, power set "Hi")<br>11 hours (2500 mAh, power set "Low") |
| Aux input level         | 200 mV (RMS)   |
| Aux input impedance     | 10k  |
| S/N ratio               | > 70 dB  |
| Distortion              | < 1%   |
| Frequency response      | 70 Hz ~ 10 kHz ( $\pm 3$ dB)   |
| Operation temperature   | -10°C ~ +50°C Max deviation: $\pm 50$ kHz                                  |
| Dimensions (Dia x L)    | 38 x 198 (mm)  |
| Weight                  | 140 g (including batteries)  |

## SPECIFICATIONS

### UM-501 Digital Audio Player

|                    |   |
|--------------------|---|
| Frequency response | 20 Hz ~ 20 kHz                                    |
| Power supply       | DC 12V  |
| Display status     | LCD screen  |
| Output level       | 1 V $\pm$ 2 dB                                    |
| Decoder format     | MPEG layer 3 audio decoder                        |
| S/N ratio          | > 60 dB   |
| T.H.D.             | < 1 %   |
| Remote range       | > 5 meters  |
| Controls           | PLAY, STOP, REPEAT, NEXT, PREV,<br>VOLUME, FOLDER |
| Interface          | USB port, SD/MMC card insert                      |

***OKAYO***

Sound & Communication

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