



## AU-A50

Integrated 2 Channel Zone Amplifier

**/// OPERATION MANUAL**

**SAFETY PRECAUTIONS**

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

**REVISION HISTORY**

| VERSION NO. | DATE DD/MM/YY | SUMMARY OF CHANGE   |
|-------------|---------------|---------------------|
| VR0         | 16/06/15      | Preliminary Release |
|             |               |                     |

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## **1. INTRODUCTION**

The 2-Channel Zone Amplifier can accept analog and digital audio from 3.5Ø line in, L/R RCA, optical and coaxial inputs and output synchronously to L/R speaker and CAT5e/6/7 Audio Receiver. Suitable for any musical events use, sound addition, sound amplifying and AV extension. With audio sampling rate supports up to 96kHz and I/O data rate supports up to 24-bit, it provides a high standard of quality sound presentation and can amplifier sound up to -80dB. The system also support RS-232 and LAN control.

## **2. APPLICATIONS**

- Public Speech
- Show even audio set up
- Home theater/Entertainment

## **3. PACKAGE CONTENTS**

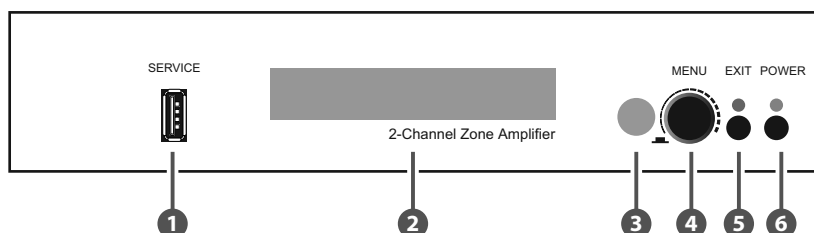
- 1 x 2-Channel Zone Amplifier
- 1 x Remote Control CR-139
- 1 x 24V/2.7A DC Power Adaptor
- 1 x Power Cable
- 1 x Rack Ears Set
- Operational Manual

## **4. SYSTEM REQUIREMENTS**

Input audio source equipment such as PC, CD player, MP3 with output speakers and connection cables.

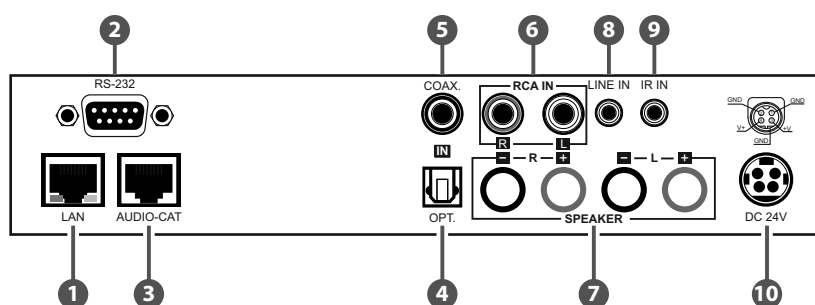
## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Front Panel



- ❶ **Service:** Connect with USB flash driver for firmware update only.
- ❷ **OLED:** Display current input source selection and volume setting.
- ❸ **IR Window:** Accept IR signal from the remote control included in the package.
- ❹ **MENU:** This button has two usage, one for volume control and the other for menu selection. Turn the wheel to adjust the output sound volume before entering into menu selection or press it to enter into the menu selection then turn the wheel to rotate from the selection and press it again to enter or to confirm the selection.
- ❺ **EXIT:** Press this button to exit from the menu selection. When outside the menu selection press this button to mute the output sound, the LED will illuminate. Press it again to unmute.
- ❻ **POWER:** Press this button to turn on the device and the LED will illuminate in blue, press it again to switch to standby mode and the LED will turn red.

## 6.2 Rear Panel



- 1 LAN:** Connect from PC/Laptop with RJ-45 cable for Telnet/WebGUI controls.
- 2 RS-232:** Connect from PC/Laptop with D-Sub 9pin cable for RS-232 controls.
- 3 AUDIO-CAT:** Connect from audio Transmitter over CAT5e/6/7 extender for audio transmitting up to 300m. It is suggested to use the audio Transmitter with in the family line to ensure the transmission of 300m with sampling rate of 48kHz. When the audio Transmitter obtain RS-232 function it can also control the Zone Amplifier.
- 4 OPT. IN:** Connect from source equipment such as Set-top-box or PS3 or any other source with optical output for audio signal sending.
- 5 COAX. IN:** Connect from source equipment such as Set-top-box or PS3 or any other source with coaxial output for audio signal sending.
- 6 RCA IN:** Connect from audio source equipment with RCA jack for stereo audio input.
- 7 SPEAKER:** Connect from speakers with wired cable for stereo audio output.
- 8 LINE IN:** Connect from audio device with 3.5mm jack for stereo audio signal input.
- 9 IR IN:** Connect the IR Extender for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the equipment to be controlled. This IR accepts the IR signal from the package included remote control only.

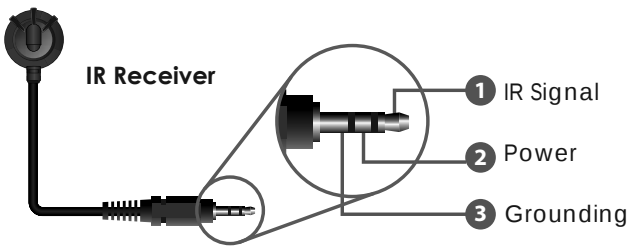
- 10 **DC 24V:** Plug the 24V DC power supply into the unit and connect the adaptor to an AC outlet.

6.3 RS-232 Pin Assignment

| Amplifier |            |   | Remote Control |            |
|-----------|------------|---|----------------|------------|
| PIN       | Assignment |   | PIN            | Assignment |
| 1         | NC         |   | 1              | NC         |
| 2         | Tx         |   | 2              | Rx         |
| 3         | Rx         | ▶ | 3              | Tx         |
| 4         | NC         |   | 4              | NC         |
| 5         | GND        |   | 5              | GND        |
| 6         | NC         | ◀ | 6              | NC         |
| 7         | NC         |   | 7              | NC         |
| 8         | NC         |   | 8              | NC         |
| 9         | NC         |   | 9              | NC         |

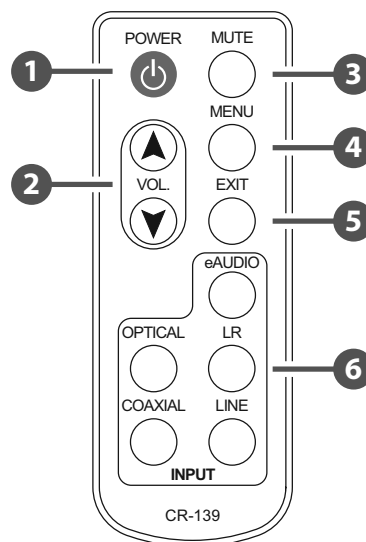
Baud Rate: 115200bps  
Data bit: 8 bits  
Parity: None  
Flow Control: None  
Stop Bit: 1

6.4 IR Cable Pin Assignment



## 6.5 Remote Control

- ❶ **Power:** Press this button to turn on the device or to set it to standby mode.
- ❷ **Vol +/-:** Press these buttons to adjust the volume.
- ❸ **MUTE:** Press this button to mute the output audio sound. Press it again to unmute.
- ❹ **MENU:** Press this button to enter into the menu selection
- ❺ **EXIT:** Press this button to exit the selection.
- ❻ **Audio selection:** Press one of these hot key to select audio input source.



## 6.6 OLED Menu

|                  |                  |
|------------------|------------------|
|                  | Audio In         |
|                  | Display Set      |
| Function Select  | IP Config        |
|                  | Reset to Default |
|                  | Line IN          |
|                  | RCA IN           |
| Audio Select     | Optical          |
|                  | Coaxial          |
|                  | eAudio           |
|                  | TimeOut 5s       |
| Display Setting  | TimeOut 10s      |
|                  | TimeOut 15s      |
|                  | IP Config        |
| IP Configuration | SN               |
|                  | GW               |
| Reset to Default | OK?              |

## 6.7 Telnet & RS-232 Command

| Command   | Description                                            | Parameter                                                 |
|-----------|--------------------------------------------------------|-----------------------------------------------------------|
| ?         | DISPLAY LIST OF COMMANDS, CODE ENTRY IS CASE SENSITIVE |                                                           |
| HELP      | DISPLAY LIST OF COMMANDS, CODE ENTRY IS CASE SENSITIVE |                                                           |
| PWR       | POWER CONTROL                                          | 0:OFF 1:ON                                                |
| SOURCE    | AUDIO IN SELECT                                        | S:STATUS 0:LINE IN 1:RCA IN 2:OPT. 3:COAX. 4:eAUDIO       |
| VOL       | OUTPUT VOLUME SETTING                                  | S:SHOWVOL +: +0.5dB ++: +2dB -: -0.5dB --: -2dB or 0~80dB |
| MUTE      | OUTPUT VOLUME MUTE CONTROL.                            | S:STATUS 0:UN-MUTE 1:MUTE                                 |
| FADEFAULT | FACTORY DEFAULT SETTING                                |                                                           |
| REBOOT    | REBOOT THE UNIT                                        |                                                           |
| SIPMODE   | SET THE IP MODE                                        | 0:STATIC IP 1:DHCP                                        |
| IPCONFIG  | PRINT THE IP CONFIGURATION TO THE SCREEN               |                                                           |
| SHOWMAC   | PRINT THE MAC ADDRESS TO THE SCREEN                    |                                                           |
| SHOWTPORT | PRINT THE TELNET COMMUNICATION PORT TO THE SCREEN      |                                                           |
| SHOWHPORT | PRINT THE HTTP COMMUNICATION PORT TO THE SCREEN        |                                                           |
| SIPADD    | SET THE IP ADDRESS                                     |                                                           |

| Command     | Description                       | Parameter      |
|-------------|-----------------------------------|----------------|
| SNETMASK    | SET THE NET MASK ADDRESS          |                |
| SGATEWAY    | SET THE GATEWAY ADDRESS           |                |
| SHTTPPORT   | SET THE HTTP COMMUNICATION PORT   | [1-65535] [80] |
| STELNETPORT | SET THE TELNET COMMUNICATION PORT | [1-65535] [23] |

Baud Rate: 115200bps

Data Bit: 8 bits

Parity: None

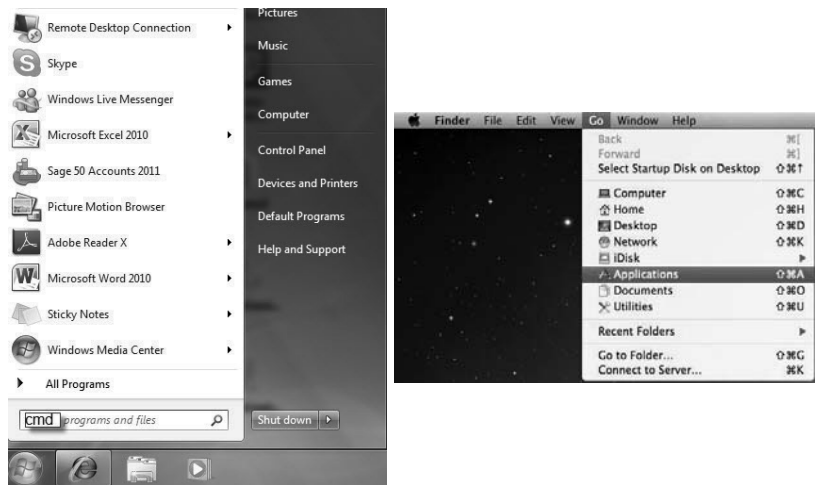
Stop Bit: 1

Flow Control: None

## 6.8 Telnet Control

To access the telnet control under MS windows, click 'Start' menu and type "cmd" in the search field then press enter.

Under Mac OS X, go to Go → Application → Utilities → Terminal  
See below for reference.



Once in the command line interface (CLI) type "telnet", then the IP address, and hit enter.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>telnet 192.168.5.80 23
```

Press "Help" or "?" then hit enter to bring up all available commands.

#### Command List

```
-----  
HELP  
PWR  
SOURCE  
VOL  
MUTE  
FADEFAULT  
REBOOT  
SIPMODE  
IPCONFIG  
SHOWMAC  
SHOWTPORT  
SHOWHPORT  
SIPADD  
SNETMASK  
SGATEWAY  
SHTTTPORT  
STELNETPORT
```

**Note:** Any commands will not be executed unless followed by a carriage return. Commands are case-insensitive. If the IP is changed then the IP Address required for Telnet access will also change accordingly.

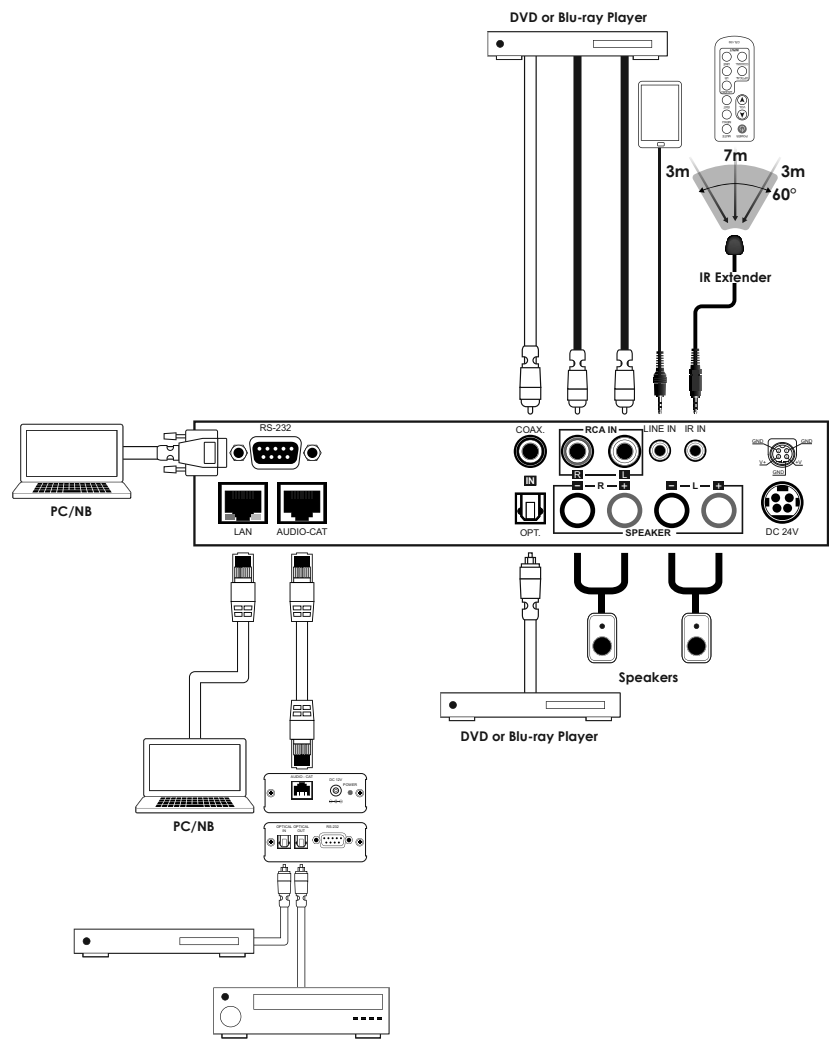
## 6.9 WebGUI Control

On a PC/Laptop that is connected to an active network system, open a web browser and type device's IP address (available from LCM monitor) on the web address entry bar. The browser will display the device's control page.

The image displays a web-based control interface for a device, organized into three main sections: Control, Network, and Audio.

- Control Section:** Features a 'Power' toggle switch currently set to 'ON'.
- Network Section:** Includes a 'DHCP' checkbox which is checked. Below it are input fields for 'IP' (192.168.5.121), 'Netmask' (255.255.255.0), 'Gateway' (192.168.5.254), 'HTTP port' (80), and 'Telnet port' (23). A 'Save Changes' button is located at the bottom of this section.
- Audio Section:** Features a 'Source' dropdown menu set to 'OPTICAL'. Below it is a 'Volume' slider set to -20 dB. A 'Mute' toggle switch is currently set to 'OFF'. A 'Reset to Default' button is located at the bottom of this section.

7. CONNECTION DIAGRAM

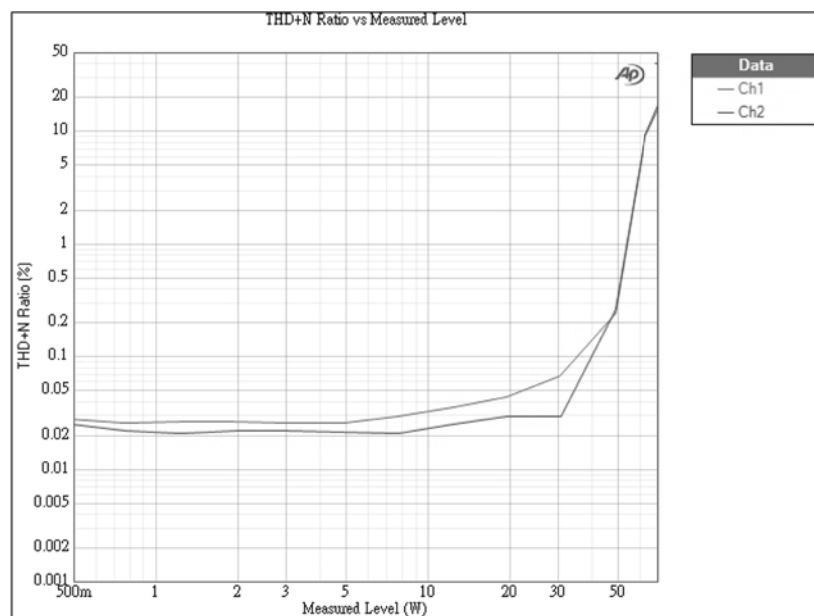


## 8. SPECIFICATIONS

|                                  |                                                                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Input ports</b>               | 1 x Optical, 1 x Coaxial, 1 x 3.5Ø Line in, 1 x R/L RCA, 1 x D-Sub 9pin (RS-232), 1 x RJ-45 (LAN), 1 x Service, 1 x IR, 1 x AUDIO-CAT |
| <b>Output ports</b>              | 1 x Power Rated Output Amplifier L/R                                                                                                  |
| <b>Digital Audio</b>             | LPCM 2CH                                                                                                                              |
| <b>Audio Sampling Rate</b>       | Up to 96kHz                                                                                                                           |
| <b>Stereo Input/Output Level</b> | 2 Vrms ± 0.2                                                                                                                          |
| <b>ESD Protection</b>            | Human body model:<br>±8kV (air-gap discharge)                                                                                         |
| <b>Power Supply</b>              | 24V/ 2.7A DC (US/EU standards, CE/ FCC/UL certified)                                                                                  |
| <b>Dimensions</b>                | 215mm(W) x 144mm(D) x 42mm(H)/<br>Jacks Excluded<br><br>215mm(W) x 174mm(D) x 47mm(H)/<br>Jacks Included                              |
| <b>Weight</b>                    | 1060 g                                                                                                                                |
| <b>Chassis Material</b>          | Aluminum                                                                                                                              |
| <b>Silkscreen Color</b>          | Black                                                                                                                                 |
| <b>Operating Temperature</b>     | Operating from 0°C ~ 40°C                                                                                                             |
| <b>Storage Temperature</b>       | -20°C ~ 60°C / -4 °F ~ 140 °F                                                                                                         |
| <b>Relative Humidity</b>         | 20 ~ 90% RH (non-condensing)                                                                                                          |
| <b>Power Consumption</b>         | 52W                                                                                                                                   |

**Amplifier Performance:**

- 2 X 45 W @4 $\Omega$  < 0.5% THD+N
- 2 X 25 W @8 $\Omega$  < 0.5% THD+N
- Frequency Response <+/- 1dB
- SNR > 70dB @ 20hz-20Khz A weighted
- THD+N @1W <0.05% @ 1KHz
- THD+N @1W <0.1% @ 20Hz-20KHz
- Crosstalk@1W <-70dB @ 20Hz-20KHz



## 5. FEATURES

- Supports Digital to Analog audio Conversion (DAC) and Analog to
- Digital audio Conversion(ADC)
- Supports input sampling rate up to 96kHz and output at 48kHz
- Supports 2 Passive speaker with  $4\Omega \sim 8\Omega$  each
- Speaker each output channel supports 45W/4 $\Omega$
- Hi-Efficient 2 x 45W class D amplify > 80% efficient
- Synchronous output sound on both digital and analog
- Supports distances up to 300 meters through CAT5e/6/7 cables
- Supports RS-232, IR remote and on-panel controls
- Sound supports up to -80dB with volume up moderation at power ON



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