
# diyAudio LA408 Professional 4 input 8 output Processor Supports Instruction Manual



Contents



diyAudio

## diyAudio LA408 Professional 4 input 8 output Processor Supports


## Introduction

Thank you for purchasing our products, please read this manual to familiarize yourself with the products.
Note: This manual provides the relevant information of all models of the same series. Because the configuration of different models is different, the actual configuration of the product you purchase may be different from the description of this manual. If there is any difference, please refer to the actual product you purchased.

## CRITICAL SAFETY NOTE

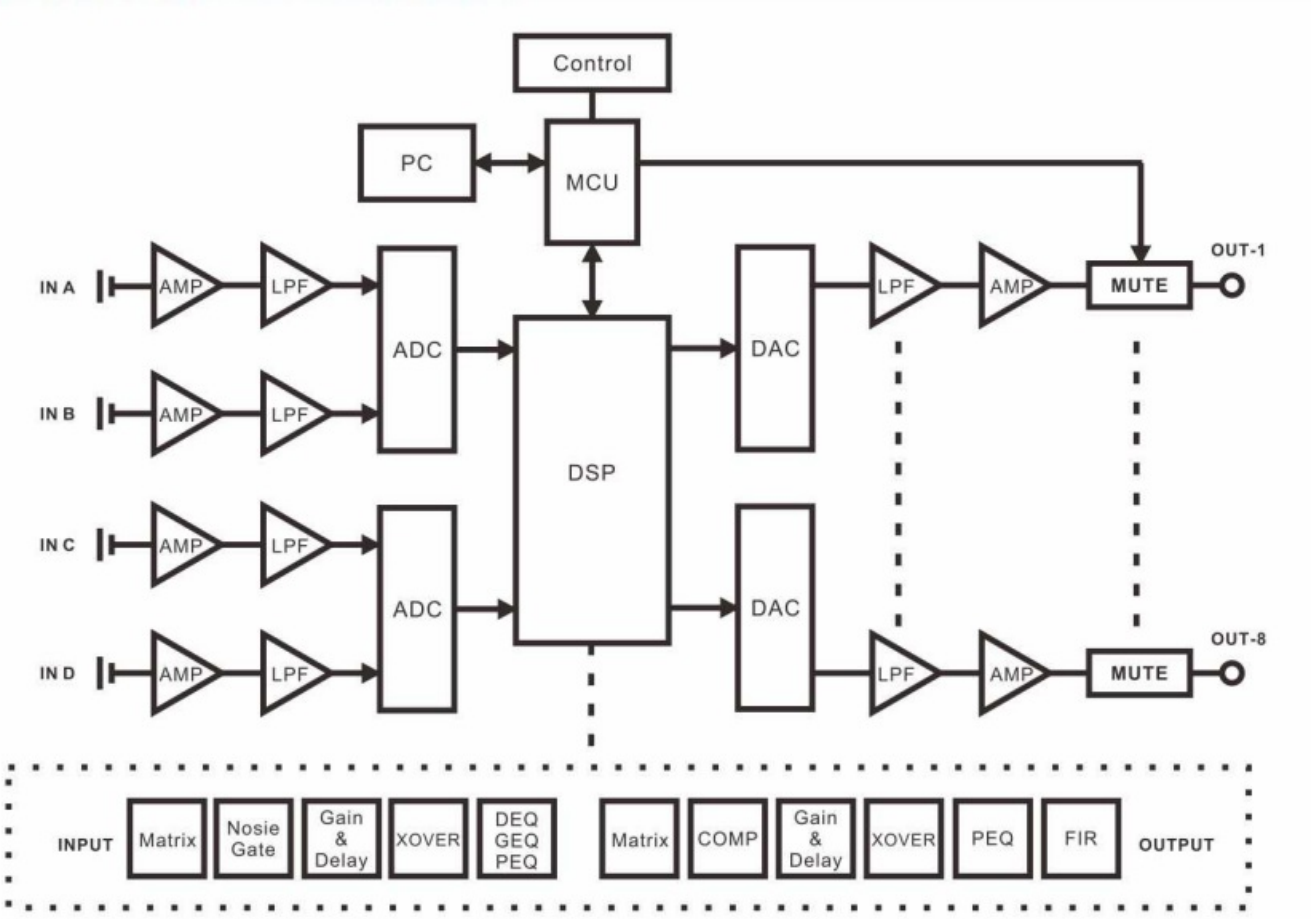

1. Read this note.
2. Retain this note.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use the equipment near the water.
6. Do not wipe with a damp cloth.
7. Do not cover any vents.
   Install according to manufacturer's instructions.
8. Do not install equipment near any heat source, such as radiators, heat fans. stoves or other heat-generating equipment.
9. Only use accessories specified by the manufacturer.
10. Should consult qualified service personnel for maintenance.

## BRIEF INTRODUCTION

### PRODUCT OVERVIEW

This is a high-performance digital DSP processor, supporting multiple analog signal routing, users can connect the machine through USS or Intranet IP and other ways to control the upper computer, simple and friendly PC software interface is more intuitive, easy to understand the way presented to the user operation.
The CPU uses the ADSP-21571 digital audio processing chip from ADI Corporation of the United States. a dual-core SHARC+DSP processor based on Arm Cortex-AS high-performance floating-point core architecture and supports 64-bit floating-point optimization FIR and IIR algorithms. The A/D part uses AK5552 analog-to-digital conversion chip, which supports a 32-bit 768Khz sampling rate and differential filter circuit input design, effectively ensuring the high resolution and noise filtering of the input signal, and has a professional-grade llBdB signal-to-noise ratio, which effectively inhibits the background noise of the digital audio processing circuit.

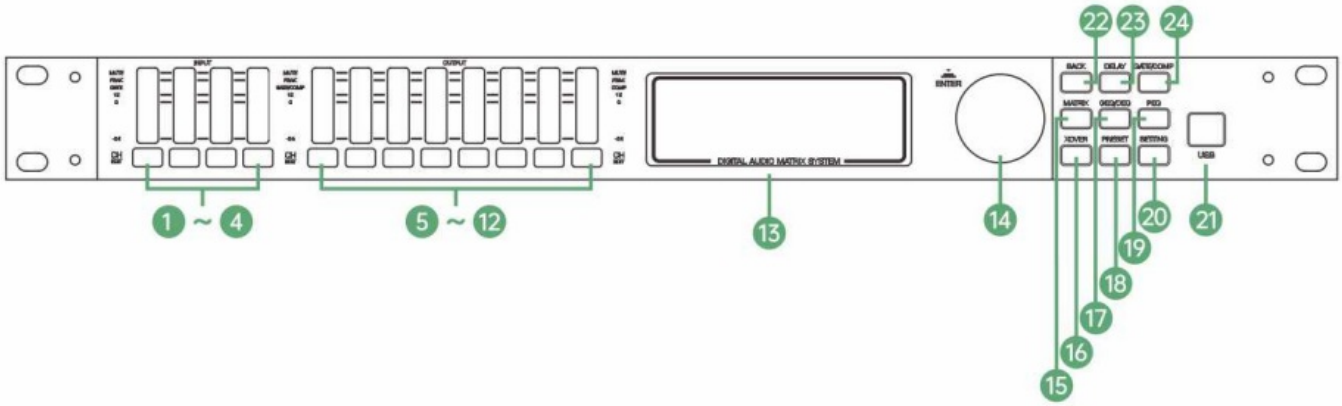
### COMPOSITION OF PRODUCT




## FUNCTIONAL CHARACTERISTICS

- Maximum support 4 input, 8 output
- 15-segment parametric equalizer
- 31-segment graphic equalizer
- 5-segment dynamic equalizer
- 512-order FIR filter
- Support includes: gain/phase/mute, channel level indication, delay, pressure limiter, noise gate, channel routing, FIR filter, marshaling, channel replication, noise/signal generator
- Support RS232 serial port protocol external control
- Can be connected to PC host software via USS or RJ45 LAN for control

## PRODUCT FRONT INTRODUCTION



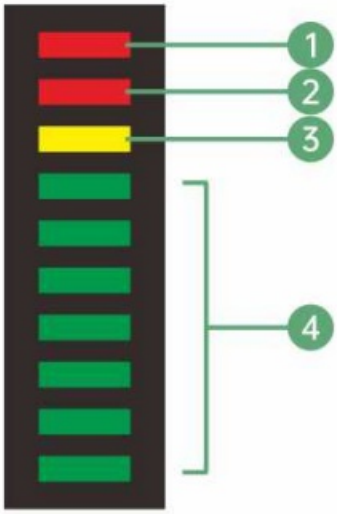

**OPERATION EXAMPLE**

- [Channel delay regulation] Press the [DELAY] button, select the corresponding [Channel (A-D)] or [Channel (1-8)] on the left to ENTER the parameter adjustment screen, and operate the [Enter] control knob to modify the parameter
- [Modifying channel routing] Press the [MATRIX] button, select the corresponding channel [(A-D)] or [channel {1-8)] on the left to ENTER the parameter adjustment interface, press the control knob [Enter] under the selected channel to enter the editing state, and press the corresponding channel key to perform routing links
- [Channel silence] long press [Channel key] under the main up, screen indicating for 2 that seconds, the current and the channel silent is in indicator the silent will light state
- [Restore factory Settings] Connect the power cable to the machine, hold down the [ENTER] + [BACK] key on the panel, power on and start up Just let go until the words “Factory Boot Looding .0K” appear on the screen

**FUNCTION OF THE KEY**

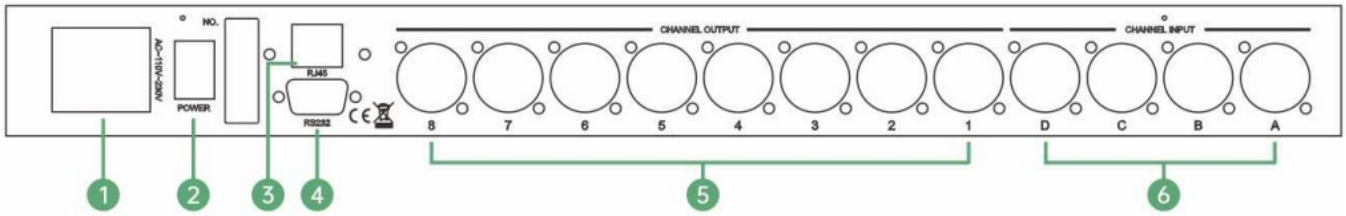
- A to D Input channels
  Defined based on the actual product version
- 1 to 8 Output channels
- Defined according to the actual product version
  LCD screen
- ENTER Control knob
- MATRIX
  C XOVER
- GEQ/DEQ
- PRESET
- PEQ
- SETTING
- USB
- BACK
- DELAY
- GATE/ COMP

## LEVEL INDICATOR



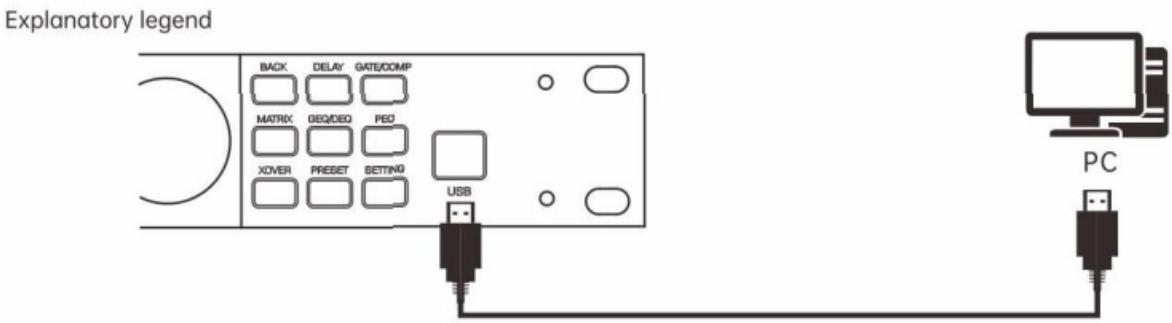

1. Channel mute indicator
2. Signal distortion indicator light
3. Function trigger indication
   Input channel [GA TEI
   Output channel [COMP)
4. Signal level lamp -24dBu~+12dBu

## PRODUCT BACK INTRODUCTION



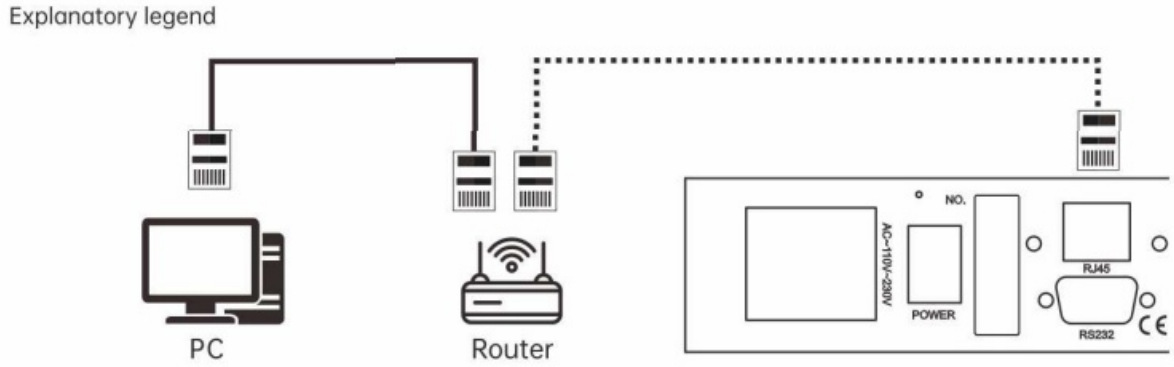

1. Electrical connection AC110V-220V
2. Power switch
3. RJ45 connector
4. RS232 connector
5. Output channel
6. Input channel

## PRODUCT WIRING DIAGRAM EXAMPLE



Use the USB-B cable to connect to the USB interface of the front panel of the product, and insert the other end into the USB interface of the computer for communication. The computer can run the installed DSP upper computer software to connect and debug the machine

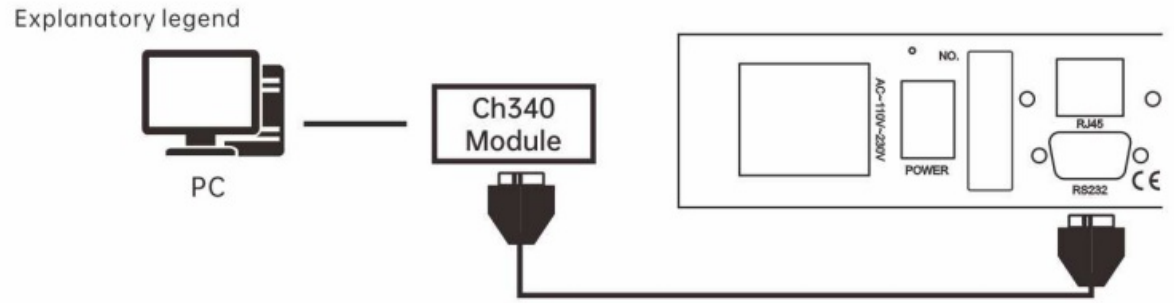
**PRODUCT PC CONNECTION DEBUGGING METHOD**




1. Connect to the RJ45 port at the bock of the machine through the network coble, and connect the other end to the PC or LAN router. After the machine is started, press the “SETTING” key to enter the network information page to view the current IP address and device ID
2. Run DSP debugging software, click Settings – Network, enter the corresponding IP address and device ID on the page, and click Settings. Return to the main interface and click the “Connect” button in the upper right corner to complete the connection

   * In case of failure to connect, it is necessary to check the network cable connection, whether the router works normally, and whether the computer NIC driver is correctly set and installed

**RS232 CENTRAL CONTROL CONNECTION LEGEND**




**CENTRAL CONTROL PROTOCOL**

**Port setting**

- Baud rate: 115200
- Data bits: 8

**Control item**

- Volume :Ox01 (Ox7F volume plus, OxOO volume minus)
- Mute :Ox02 (Ox7F mute, OxOO unmute)
- Stop bit: 1 Delayed :Ox03 (Ox7F delay plus, OxOO delay minus)

- Parity check: Without
- Flow control: Without

**Channel**

- IN1 OxOO OUT10x04
- IN2 Ox01 OUT20x05
- IN30x02 OUT30x06
- IN40x03 OUT40x07
- OUT50x08
- OUT60x09
- OUT70x0A
- OUT80x0B

**Protocol format**

- Protocol header(OxCS Ox66 Ox36) + channel + control item + quantitative value

**Example :**

- Control input channel 1 volume plus
- Oxes Ox66 Ox36 OxOO Ox01 Ox7F
- Control input channel 2 mute
- Oxes Ox66 Ox36 Ox01 Ox02 Ox7F
- Control output channel 1 delay minus
- Oxes Ox66 Ox36 Ox04 Ox03 OxOO

## SPECIFICATION PARAMETER

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- Frequency response(20Hz-20kHz@+4dBu) : +0/-0.3dB Maximum output level: +20dBu
- Total harmonic distortion(20Hz-20kHz@+4dBu) : <0.003%
- Input gain range (adjustable): -BOdB ~ +12dB
- Output gain range (adjustable): -80dB ~ +12dB
- Signal-to-noise ratio: 110dB A weighting
- Ground noise: <-90dBu
- Dynamic range(20Hz-20kHz, OdB): >116 dB
- Maximum gain (input to output): 48dB
- Maximum delay (input to output) : 750ms
- Channel separation (@lkHz between channels): >BOdB
- Common-mode rejection ratio: 60Hz>100dB@ +20dBu
- Input impedance (balanced/unbalanced):
- Bal:20K / Unbal:lOK

- Output impedance (balanced/unbalanced) :
- Bal:lOOohm /Unbal:50ohm
- Maximum input level: +20dBu
- A/D chip: AK5552
- A/D Sampling rate: 768kHz
- A/D converter bit wide: 32bit
- D/A chip: AD1955
- D/A Sampling rate: 192kHz
- D/ A converter bit wide: 24bit
- DSP chip: ADSP-21571
- DSP master frequency: 500Mhz
- DSP bit width: 32/40/64-bit floating point
- Dual-core SHARC+ ARMCortex-A5TM core

## Documents / Resources

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|---|---|
|  | diyAudio LA408 Professional 4 input 8 output Processor Supports [pdf] Instruction Manual LA408 Professional 4 input 8 output Processor Supports, LA408, Professional 4 input 8 output Processor Supports, 4 input 8 output Processor Supports, output Processor Supports, Processo r Supports, Supports |

## References

- User Manual