Digital audio processor

4 input 8 output
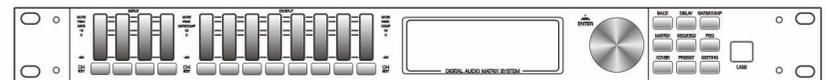
3 input 6 output
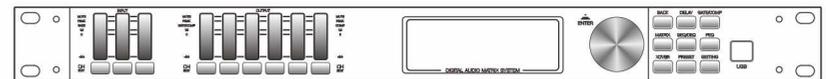
2 input 4 output
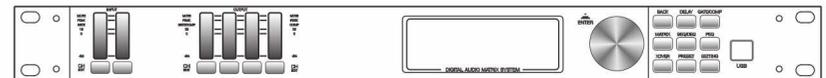
Professional audio equipment

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

CAUTIOUS
ELECTRIC SHOCK HAZARD

Caution: Electric shock hazard, do not open

Warning: To reduce the risk of fire or electric shock, do not place this device in rain or wet areas

1. Read this note.
2. Retain this note.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use the equipment near 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,stove or other heat-generating equipment.
9. Only use accessories specified by the manufacturer.
10. Should consult qualified service personnel for maintenance.

CATALOGUE

01/ BRIEF INTRODUCTION

PRODUCT OVERVIEW

This is a high-performance digital DSP processor, supporting multiple analog signal routing, users can connect the machine through USB 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-A5 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 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 118dB signal-to-noise ratio, which effectively inhibits the background noise of the digital audio processing circuit.

COMPOSITION OF PRODUCT
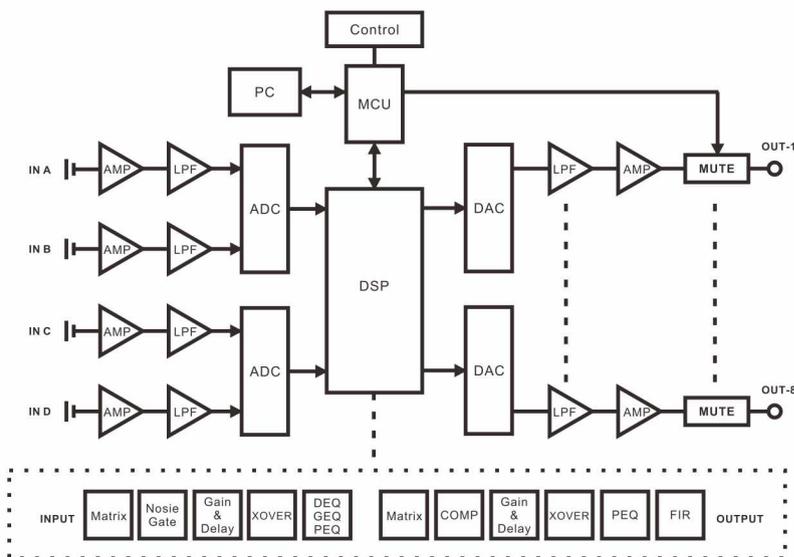
FUNCTIONAL CHARACTERISTICS

◆ 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, marshalling, channel replication, noise/signal generator
◆ Support RS232 serial port protocol external control
◆ Can be connected to PC host software via USB or RJ45 LAN for control

02/ PRODUCT FRONT INTRODUCTION
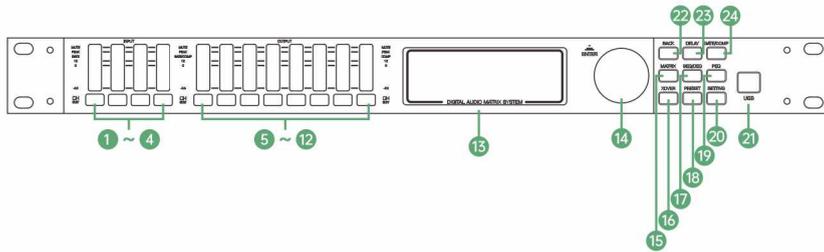
OPERATION EXAMPLE

A. 【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

B. 【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

C. 【Channel silence】
Long press [Channel key] under the main screen for 2 seconds, and the silent indicator will light up, indicating that the current channel is in the silent state

D. 【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 Loading...OK" appear on the screen

FUNCTION OF THE KEY

1 ~ 4   A to D Input channels
*Defined based on the actual product version

5 ~ 12   1 to 8 Output channels
*Defined according to the actual product version

13   LCD screen
14   **ENTER** Control knob
15   **MATRIX**
16   **XOVER**
17   **GEQ/DEQ**
18   **PRESET**
19   **PEQ**
20   **SETTING**
21   **USB**
22   **BACK**
23   **DELAY**
24   **GATE / COMP**

03/ LEVEL INDICATOR
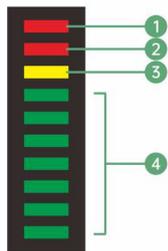
1   Channel mute indicator

2   Signal distortion indicator light

3   Function trigger indication
Input channel 【GATE】
Output channel 【COMP】

4   Signal level lamp
-24dBu~+12dBu

04/ PRODUCT BACK INTRODUCTION
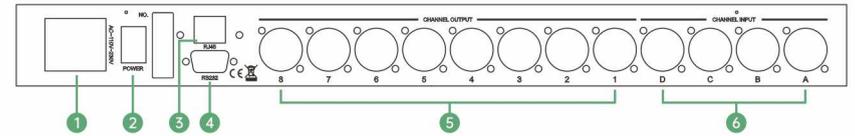
1   Electrical connection AC110V~220V
2   Power switch
3   RJ45 connector
4   RS232 connector
5   Output channel
6   Input channel

05/ PRODUCT WIRING DIAGRAM EXAMPLE

Mixer

Network interface

Power amplifier

Power amplifier

Power amplifier

Power amplifier

Power cord

Front speaker

Rear speaker

Subwoofer

Central control host
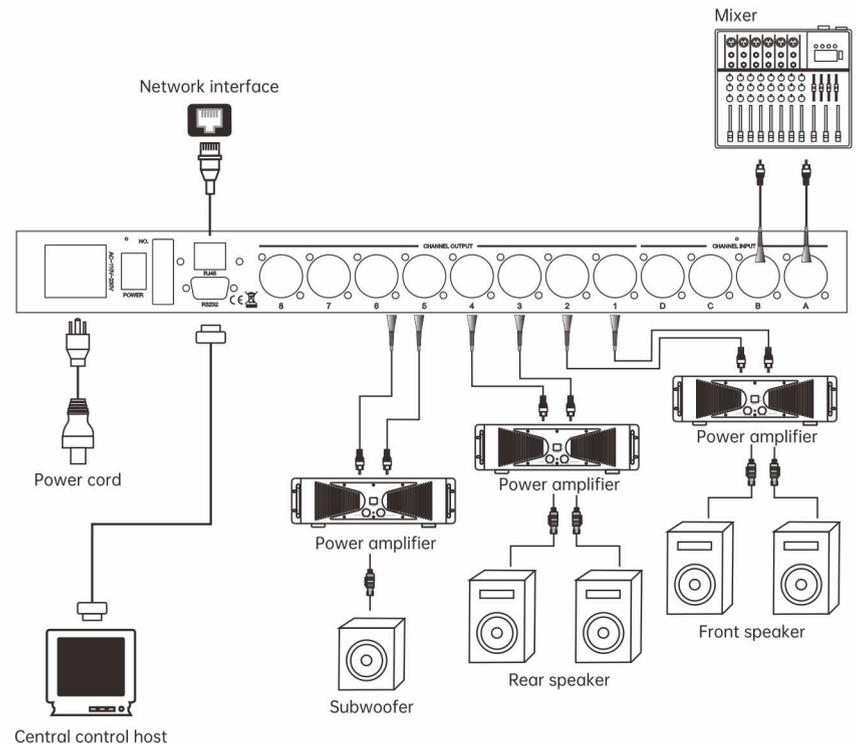
06/ PRODUCT PC CONNECTION DEBUGGING METHOD

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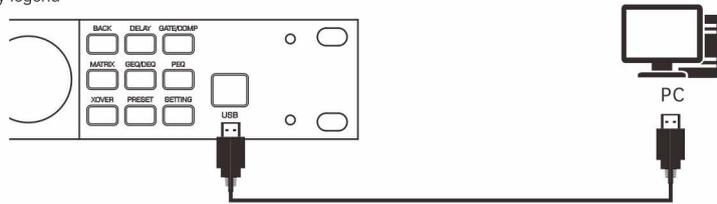
Use the USB-B cable to connect to the USB interface of the front panel of the product, and insert the other end into the USB interface of the computer for communication. The computer can run the installed DSP upper computer software to connect and debug the machine

## RJ45 NETWORK PORT LAN CONNECTION METHOD

Explanatory legend
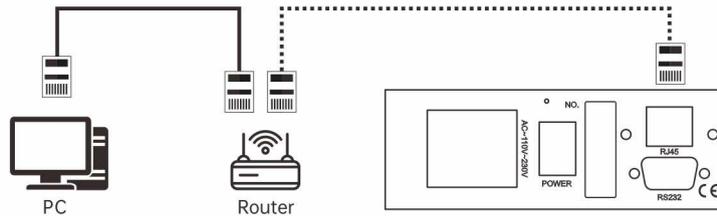
1. Connect to the RJ45 port at the back of the machine through the network cable, and connect the other end to the PC or LAN router. After the machine is started, press the "SETTING" key to enter the network information page to view the current IP address and device ID

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

07/ RS232 CENTRAL CONTROL CONNECTION LEGEND

Explanatory legend
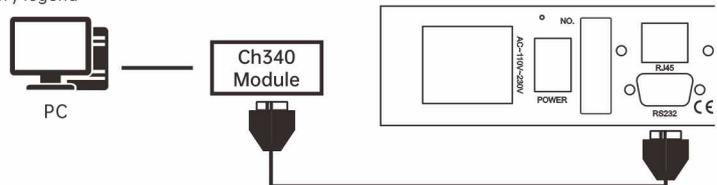
CENTRAL CONTROL PROTOCOL

Port setting

Baud rate: 115200
Data bits: 8
Stop bit: 1
Parity check: Without
Flow control: Without

Control item

Volume :0x01 (0x7F volume plus, 0x00 volume minus)
Mute :0x02 (0x7F mute, 0x00 unmute)
Delayed :0x03 (0x7F delay plus, 0x00 delay minus)

Channel

IN1 0x00	OUT10x04
IN2 0x01	OUT20x05
IN30x02	OUT30x06
IN40x03	OUT40x07
	OUT50x08
	OUT60x09
	OUT70x0A
	OUT80x0B

Protocol format

Protocol header(0xC5 0x66 0x36) + channel + control item + quantitative value
Example :
Control input channel 1 volume plus
0xC5 0x66 0x36 0x00 0x01 0x7F
Control input channel 2 mute
0xC5 0x66 0x36 0x01 0x02 0x7F
Control output channel 1 delay minus
0xC5 0x66 0x36 0x04 0x03 0x00

08/ SPECIFICATION PARAMETER

PRODUCT SPECIFICATION PARAMETER

Frequency response(20Hz-20kHz@+4dBu) :	+0/-0.3dB
Total harmonic distortion(20Hz-20kHz@+4dBu) :	
	<0.003%
Signal-to-noise ratio:	110dB A weighting
Ground noise:	<-90dBu
Dynamic range(20Hz-20kHz, 0dB):	>116 dB
Maximum gain (input to output):	48dB
Maximum delay (input to output) :	750ms
Channel separation (@1kHz between channels) : >80dB	
Common-mode rejection ratio:	60Hz>100dB@
	+20dBu
Input impedance (balanced/unbalanced):	
	Bal:20K / Unbal:10K
Output impedance (balanced/unbalanced) :	
	Bal:100ohm /Unbal:50ohm
Maximum input level:	+20dBu

Maximum output level:	+20dBu
Input gain range (adjustable):	-80dB ~ +12dB
Output gain range (adjustable):	-80dB ~ +12dB
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