# Multifunctional DSP digital amplifier



Manual D4100-D4150

# Content

Content	错误!	未定义书签。
Chapter 1 Introduction	错误!	未定义书签。
Chapter 2 Technical Parameters	错误!	未定义书签。
Chapter 3 Functional Structure	错误!	未定义书签。
3.1 Display Panel Description		9
Chapter 4 Introduction to host computer software		
Chapter 5 Software Installation		14
5.1 Operating Environment		14
Chapter 6 Software Interface Description		
6.1 Initial interface		16
6.2 Menu Bar		19
6.2.1 Document		19
6.2.2 Equipment		19
6.2.3 Connect		20
6.2.4 Save		21
6.2.5 System		21
6.3 Scan Button		
6.4 Setting Button		
6.5 Joint Adjustment Button		22
6.6 Device List		23
6.7 Local IP Address		24
6.8 Function Module Control Keys		24
6.9 Functional Module Interface		25
6.10 Input And Output Channel List		25
Chapter 7 Function Interface Introduction	错误!	未定义书签。
7.1 Input Module Main Interface		
7.2 Test Signal Function		
7.3 Input Noise Gate		27
7.4 Input Equalizer(EQ)		
7.4.1 Function Buttons		
7.4.2 Multi-channel EQ Curve Display	••••••	
7.4.3 EQ Controls		
7.4.4 EQ Parameter Adjustment Items		
7.4.5 EQ Save Button		
7.5 Matrix Mixing		
7.6 Output Balance		
7.7 Output Delay		
7.8 Output Compressor		
7.9 Output Limiter		
7.10 Output Module		

Output Channels	35
Channel Joint Debugging	36
Device List	37
Add Device	38
Device Management	38
Channel Name Management	39
Channel Copy	40
Save	41
Firmware Upgrade	42
Dante Instructions For Use	43
FIR Instructions For Use	44
	Output Channels Channel Joint Debugging Device List Add Device Device Management Channel Name Management Channel Copy Save Firmware Upgrade Dante Instructions For Use FIR Instructions For Use

#### Chapter 1 Introduce

The device is a multifunctional network DSP digital amplifier that can remotely monitor the amplifier status in real time, and set various DSP functions such as compressor, limiter, noise gate, parametric equalizer, matrix routing, delay, etc. in real time. The concise software interface provides customers with a simple setting and operation experience, and a variety of connection methods make it well configurable and expandable, suitable for various usage environments.

### Applications

- Performing Arts CenterTheater
- ●Stadium
- ●Hotel
- ●Conference Center ●Shopping Center
- ●Retail Stores ●Dining Room

#### Features

- ◆ DANTE network audio is optional
- ◆ Network TCP/IP control, can realize multiple devices management
- $\blacklozenge$  Remote power on and off
- ◆ Adopt 4.3-inch IPS capacitive touch screen
- ◆ Built-in DSP digital processor
- ◆ Support multiple connection methods: USB, TCP/IP, RS232, RS485
- ◆ Real-time remote monitoring of the working status of the amplifier
- $igodoldsymbol{$  The amplifier can be identified by software on site
- ◆ Support free switching of bridge and matrix modes
- ◆ Input sensitivity can be adjusted in three gears: 0dBu/6dBu/12dBu, software or color LCD screen setting
- ◆ Standard Fir function, support 4×2048 Taps

# Chapter 2 Technical Parameters

Model	D4100	D4150	
Channel	4	4	
Power (Stereo)	4*1000W@8 Ω	4*1500W@8 Ω	
	4*1600W@4 Ω	4*2300W@4 Ω	
Power (bridge)	2*3200W@8 Ω	4*4600W@8 Ω	
Minimum output	Per char	nnel 4 Ω	
impedance			
Input Interface	Balance	4*XLR	
Output Interface	4*Sp	oken	
Maximum Input Level	20dBu	/7.75V	
	12dBu: 32dB (39.8times)	12dBu: 32dB (39.8times)	
Sensitivity	6dBu: 38dB (78.5times)	6dBu: 38dB (78.5times)	
	0dBu: 44dB (158.5times)	0dBu: 44dB (158.5times)	
SNR	100dB@12dBu、1kHz		
Frequency Response	$20$ Hz ~ $20$ kHz ( $\pm 0.5$ dB) @1W, 8 $\Omega$		
THD+N	<1%@1W, Full power		
Sampling Frequency	48k/2	24bit	
Dante (Optional)	4 Chann	el Dante	
Display	4.3inch Capacit	ive touch screen	
	Audio limiter, high temperature, DC, hi	gh frequency, short circuit, back EMF,	
Protect	peak current limiter, inrush current limi	ter, power on delay, power circuit	
	breaker protection, power supply overve	oltage/undervoltage protection	
PC Software	Software can control media matrix, aud	io processing, DSP amplifier, active	
	DSP module		
Power Supply	Voltage Input 100V/	240VAC 50Hz/60Hz	
Product Size (W*D*H)	483mm*401mm*90mm	483mm*481mm*90mm	
Package Size (W*D*H)	565mm*545mm*160mm	565mm*545mm*160mm	
N.W.	10kg	13kg	

Chapter 3 Functional Structure





# D4100









# 3.1 Display Panel Description



Main interface

	Sensitivity adjustment
	Device 1.DEFAAHDU 192.168.0.104
Input	Source Sensitivity -25.0 -25.0 -25.0 -25.0 -25.0 -20.0dE
Output	IN A 0 dBu 6 dBu 12 dBu $\begin{bmatrix} 10 \\ - \end{bmatrix} \begin{bmatrix} 15 \\ 10$
Channel	IN B 0 dBu 6 dBu 12 dBu 10 10 10 10 10 10 10 10 10 10 10 10 10
ganging	IN C 0 dBu 6 dBu 12 dBu -20 - 20 - 20 - 20 - 20 - 20 - 20 - 20
Presets	IN D 0 dBu 6 dBu 12 dBu -30404040404050
IP	Test signals
settings	
Work-in foemation	-60 -50 -40 -30 -20 -10 0 -37.0dB MUTE MUTE MUTE MUTE MUTE MUTE
	Test signal

Support pink noise, white noise, sine wave



#### Input source selection support ANA,AES,Dante

# Input Source Change



# Working mode settings



# Support channel joint debugging

	GPA4M 1. De	efault 169.254.241.89	٢
Input	01:Default Pres	02:	- <b>30.</b> 4 dB
Output	03:	04:	- 0
Channel	05:	06:	10 20
Proceto	07:	08:	
ID	09:	10:	40 - 50
settings	11:	12:	- 60
Work-in formation	LOAD	Next	MUTE

Archive interface

	GPA4M 1. De	fault 169.254.241.89	٩
Input	Current IP Setting	Dante IP Setting	-30_4 dB
Output Channel ganging	IP address: 169 . 254 . 241 . 89 Subnet Mask: 255 . 255 . 0 . 0	IP address: 0.0.0.0 Subnet Mask: 0.0.0.0	- 0 10 20 30
IP settings Work-in formation	Gateway: 0.0.0.0 Setting	Gateway:	40 50 60 MUTE

# Device control IP settings

Dante IP settings

GPA4M	1. Default 169. 254. 241. 89
Input Device : GPA4	Software: v1. 7. 5
Channel Language: Eng	STANDBY         Date         2023.09.15
Presets Screen : 1 n	OFF         Date         : 2024.06.03
Saver : OFF	

Screen saver mode

# Freely switch screen saver mode



<u>Screen saver interface 1</u>

	1	OUT 1	OUT 2	OUT 3	OUT 4
$\odot$	Temp .	44. 8	44.8	41. 3	41.3
W	Power	0.0	0.0	0.0	0.0
$\heartsuit$	Voltage	0.0	0. 0	0.0	0.0
(A)	Current	5. 7	5. 7	5.8	5.8
	mpedance	3.0	3. 0	2.9	3.0

Screen saver interface 2

### Chapter 4 Introduction to host computer software

Equipment management software is software that allows users to quickly interact with the parameters of one or more machines. It can store the configuration parameters of the machine in disk files, providing a very convenient means for presetting scene configurations and parameter switching and restoration for multiple machines or different usage locations. This product has high execution efficiency and a clear interface structure. The UI of this product uses a self-developed control library and can be customized and modified according to customer needs, enhancing the user experience.

# Chapter 5 Software Installation

#### **Operating Environment**

The software is suitable for WIN7/WIN8/WIN10 and any x86/x64 Windows operating system with Microsoft .NET Framework 4.0 runtime library.

#### 5.2 Software Installation

This software is a green version. The green version does not require the installation of the main program. The folder contains the following files or folders, none of which can be missing. The green version does not include the Microsoft .NET Framework 4.0 runtime library. If necessary, please go to the Microsoft official website to download and install it.



#### 5.3 Software operation

Operation steps: Double-click the executable file on the



folder Mconsole, Enter the software theme interface as shown in Figure 1.1.

Note: Some connection methods do not support multiple host computers running at the same time. Please keep only one software running on each PC.



14 / 45



# Chapter 6 Software interface description

Pic 1.2

As shown in Figure 1.2, the modules in the red text position in the main interface of the software are as follows:

- (1) Menu bar
- (2) Scan button
- (3) Settings button
- (4) Joint debugging button
- (5) Device list
- (6) Module button
- (7) Home monitoring area
- (8) Home function interface
- (9) Input and output channel list
- (10) Local IP address

# 6.1 Initial interface

# **Device Setup**



Pic1.3

① As shown in Pic 1.3, click , ① The

device can be switched between POWER ON and STANDBY. Green is POWER ON and yellow is STANDBY.



, The display screen and

status light of the connected device can flash, and you can quickly find the

# **Device Information**

As shown in Figure 1.4, the device name, group, and IP can be modified. The modification method is in the upper left corner of the initial interface. Change it in Device-Device Management according to actual needs.

②The device model and LINK ID cannot be changed. LINK ID is the corresponding ID when the host computer is



connected to multiple devices.

connected device from the "amplifier device pile"



selecting the hard switch, the machine will switch directly to the selected state after starting up.

(4) Click the button in the frame to quickly switch the routing status. There are 4 options: stereo, mono, bridge, and matrix.



### Input Settings

	INPUT SETTING									
-2	6.0		IN A		IN B		IN C		IN D	
-	0	CLIP	$\odot$		$\odot$		$\odot$		$\odot$	
Ξ	-10 -20	GAIN	7.1		1.3		1.7		4.9	
-	-30	MUTE								
1 - 1	-40 -50	PHASE	+		+		+		+	
-	-60	SOURCE	Analog	•	Analog	•	Analog	•	Analog	Ţ
	×	SENS LV	12dBu	•	12dBu	•	12dBu	•	12dBu	•





2)When the input is overloaded, the indicator light will light up, the effect is as follows

LIMIT	ON	ON
	8	

GAIN	7.1	1.3
MUTE	<b>•</b> >	<b>•</b> >
PHASE	+	+

③Gain, mute, and phase can be quickly set.

SOURCE	Analog	Analog 🔹
SENS LV	Analog Sine Wave Pink Noise	12dBu 🔹
	White Noise Dante AES	IN A I
		LINE

(4)Multiple input sources available.

	- 1-
SENS LV	0dBu ▼
	0dBu
	6dBu
	12dBu

⑤Support OdBu, 6dBu, 12dBu three-level sensitivity switching

# Amplifier Status

			A	MP STATU	IS				
	OUT1	OUT2	OUT3	OUT4	OUT1	OUT2	OUT3	OUT4	
LIMIT	ON	ON	ON	ON	$\odot$	$\odot$	$\odot$	$\odot$	
	Fixed-R	Fixed-R	Fixed-R	Fixed-R	44.73	44.73	41.57	41.57	]℃
POWER	1500.00	1500.00	1500.00	1500.00	99.33	0.00	0.00	0.00	] w
VOLTAGE	109.54	109.54	109.54	109.54	17.42	0.00	0.00	0.00	] v [
CURRENT	13.69	13.69	13.69	13.69	5.70	5.73	5.81	5.79	] A
IMPEDANCE	8 -	8 -	8 -	8 -	3.06	3.09	2.99	3.01	] Ω



# As pic 1.6,

IMPED	ANCE [	8	• 8	- I	limit	ŧ,	ON	ON	You	can choose	accor	ding t	o your
needs.	When	the	limiter	is	in	the	start-up	state,	the	overload	light	will	light
up.	L OUT	2											

6.2Menu Bar

#### 6.2.1Document



Pic 2.2 "File" menu

As Pic 2.2 "File" menu:

1. New, the software can create a model for each device in this menu when the device is not connected.

2. Add a new device, add a simulated device, and the simulated device will not affect the existing device.

3. Open, open an existing device management project from the computer disk.

4. Save, save the current device management project to the computer disk.

5. Save as, save the current device management project as a file.

6.2.2equipment



#### Pic 2.3 "Devices" menu

As Pic 2.3 "Devices" menu

1. Device management, view or modify the upper and lower computer software information, device name and device IP address, etc.

2. Channel management, set the name of each input and output channel.

3. Channel copy, copy the parameters of the same type of channel.

#### 6.2.3connect

Connection
Port
Connect
Disconnect
Connect All
Disconnect All
Port Setting

Pic2.5 Connect menu

- As Pic 2.5 "Connection" menu:
- 1. Connect port, set the connection mode, port number and baud rate.
- 2. Connect device, connect and download device parameters.
- 3. Disconnect device, disconnect the connected device.
- 4. Connect all devices, connect and download device parameters of all devices in the device list.
- 5. Disconnect all devices, disconnect all connected devices in the device list.

#### 6.2.4 Archive



Machine equipment archive operation

1. Save, select the saved gear, save all the current parameters of the machine to the machine archive

2. Call, call the existing archive in the machine archive

3. Delete, delete the existing archive, the default file cannot be deleted or overwritten

4. Clear, delete all archives in the machine

5. Set as startup file, select a certain archive, set it as startup file, and automatically call the archive parameters every time the machine is powered on

6. Import archive, import a single archive file from the computer

7. Export archive, export all parameters of the current state to the computer, and generate a single archive file

8. Import archive package, import multiple archive package files from the computer

9. Export archive package, package multiple archives in the machine archive into one archive package and export it to the computer to generate an archive package file

#### 6.2.5 System



<sup>21 / 45</sup> 

#### Pic2.6 System menu

As Pic 2.6 "System" menu:

- 1. Language, multi-language switching.
- 2. About, current host computer and device version information.
- 3. Firmware upgrade, upgrade the device firmware.

#### 6.3 Scan button

As pic 2.7, the progress display box, click the "Scan" button to directly scan all devices in the currently set connection mode and display the scanning progress



Pic 2.7 Progress display box

#### 6.4 Setting Button

Set the connection mode of the scanning device, click the "Set" button, and the port connection interface shown in Figure 2.8 will pop up. Select the corresponding mode, set the corresponding parameters and confirm. If the device port changes, click the "Refresh" button in the lower left corner to update the port list immediately.

COM	USB TC	P
Port	COM4	•
Baud	115200 bps	•
efresh	Ok	( Cance

Pic2.8 Port connection interface

#### 6.5 Joint adjustment button

To set parameters for multiple devices at the same time, click the "Joint Adjustment" button, and the network joint adjustment interface as shown in Figure 2.9 will pop up. Select the devices that need to be set at the same time in the left frame, move to the combination group in the middle frame, and then select the group setting parameters on the far right. Finally, press the "OK" button to make the group function take effect. You can also use the same operation to correct the network group settings.



Pic2.9 Network joint debugging interface

6.6 Device List

Scan Set	
Device	•
1. GPA4M	4) ti 🗙
	M.VOL -18.8 V
169.254.241.89	GPA4M

When the software scans or manually adds a simulated device, the corresponding device will be automatically added to the device list, making it convenient for users to interact with the required devices and operate multiple devices at the same time.

#### 6.7 Local IP address



When the software is opened, it will automatically obtain the IP address of the network connection corresponding to the network adapter that is currently in effect on the computer system and display it in the lower left corner of the software, making it easier to manage the device IP address.

#### 6.8 Function module control keys



To facilitate the interaction of different parameters of the device, the software is divided into multiple modules in functional order. If the user wants to operate the corresponding module, he can use the module control key to open, close, and position the module interface. Double-click to open/close, and single-click to position.

#### 6.9 Functional module interface



Each function module is opened and closed by the control key, and the function page and detailed parameters are displayed. Detailed settings can be made, and single or multiple functions can be operated freely. You can drag left and right to switch different function pages.

#### 6.10 Input and output channel list

It can display the level, gain, input mode, channel name and other information of each channel, control the corresponding channel gain and DSP function switch, and turn on the input and output channel grouping and joint debugging function to achieve more powerful operation convenience.



## Chapter 7 Functional Interface Introduction

#### 7.1 Input module main interface



Double-click the module button Pop-up Pic 3.1 Channel Input Module

			I	nput								X
					IN	A	IN	B	IN	I C	IN	D
					7	.8	4	.6	1	.7	4.	.9
					—	15		15	-	15	— 1	15
					_	10	_	10		10	_	10
					_	0	_	0	_	0	_	0
	IN A	IN B	IN C	IN D	_	-10	_	-10		-10	-	-10
					_	-20	_	-20	_	-20	_	-20
SOURCE	Analog 🝷	Analog 🔻	Analog 🔹	Analog 🝷	_	-30	_	-30	_	-30	_	-30
				[]	_	-40	_	-40	_	-40	-	-40
SENS LV	12dBu ▼	12dBu 🔹	12dBu ▼	12dBu 🔻	-	-50	Ξ	-50	_	-50	_	-50
Test Cignal	Catting	Catting	Catting	Catting	—	-60	—	-60	-	-60	—	-60
Test Signal	Setting	Setting	setting	Setting	+		+		+		+	

Pic 3.1 Channel Input Module

As Pic 3.1, you can operate the polarity, mute, and input source sensitivity of the corresponding input channel;

In the sensitivity setting, you can choose OdBu, 6dB, and 12dBu

#### 7.2Test signal function

	In A	In B							
SOURCE	Analog 👻	Analog 🔹							
SENS LV	Analog Sine Wave Pink Noise White Noise	OdBu 🔻							
Test Signa	al Setting	Setting							

Select sine wave, pink noise, or white noise in the input source, and then set the corresponding parameters in the test signal setting according to your requirements to test the channel.

In the test signal generation setting, the three test signals can set the gain value of the corresponding test signal. The switch button on the right side of each test signal can control whether the test signal is effective. Green means on, and red means off. In addition, the frequency of the sine wave can be set.



#### 7.3 Input Noise Gate



Double-click the module button

The pic 5.1 pops up the input noise gate

setting module.



Pic 5.1 Input noise gate setting module

As Pic 5.1, Click the noise gate switch in the upper right corner Noise Gate ON The noise

gate function of the channel input signal can be turned on or off. Green means on, red means off, and the attack time, release time, and attack level are the parameters corresponding

to the noise gate function. You can drag the slider to adjust them.

**724** Enter the corresponding value in. in the value box

When the noise gate function is turned on, the points in the left graph Drag diagonally to adjust the value.

#### 7.4 (EQ) Input Equalizer (EQ)



, The following pic 6.1 pops up the input Double-click the module button equalizer setting module. The button can be used to enlarge this module. The interface will be clearer after enlargement.



Pic 6.1 Input Equalizer Setting Module

#### 7.4.1 Function buttons

As Pic 6.1, the functions of the top buttons are: Phase curve: displays the phase curve of the current channel. Show Control Points: Show or hide all balance control points. Full bypass: simultaneously turn on or off all EQs of the current channel EQ Archive: Save the current equalizer settings parameters to the computer and retrieve and overwrite existing equalizer parameters.

Copy: Copy the current equalizer parameter values and paste them into other input channels.

Paste: Used in combination with the copy button, it can paste the equalizer parameter values copied by the copy function into the current channel.

Reset: Reset the equalizer parameters to the default parameter values.



#### 7.4.2 Multi channel EQ curve display



As pic 6.1, the EQ curve display switch for each channel is located on the left. Once turned on, the corresponding channel curve will be drawn in the EQ curve chart.

### 7.4.3 EQ Control



, Display all EQ controls

and their detailed values, which can be used to locate the position of the controls. Combined with the EQ parameter adjustment items below, the parameter values of each EQ can be accurately adjusted.

#### 7.4.4 EQ

EQ 29	Туре	Freq(Hz)	Q	Gain(dB)
ON	PEQ 🔻	11813	1.00	5.0

#### 7.4.5 EQ Archive button

As	pic	6.1,	clicking	the	EQ	save	button	will	bring	up	pic	6.2	EQ	save
----	-----	------	----------	-----	----	------	--------	------	-------	----	-----	-----	----	------

EQ Preset	
1	Save
2	
3	Kecall
4	Delete
5	
6	Rename
□ 7	
8	
9	
□ 10	
11	
□ 12	
13	
14	
□ 15	
16	
17	
18	
19	
20	
21	
22	
23	

#### Pic 6.2

Select the item corresponding to the gear list on the left, and then click the function button on the right to achieve the functions of saving, calling, deleting, and renaming equalizer setting parameters.

#### 7.5 Matrix mixing



Double click on the module button Pop up pic 9.1 Matrix Mixing Setting Module.



Pic 9.1 Matrix Mixing Setting Module

In the above pic, there are corresponding output channels on the left side and input channels on the upper side. The numerical box with values is the input output channel mixing key. When the mixing key is on (double-click the numerical box to switch states), the input channel and output channel signals achieve mixing function.

The right side of the figure contains the gain, reset button, and clear button for matrix mixing. Click on the value box on the left, then drag the sliding block for matrix mixing gain or enter a value in the value box to adjust the gain value in this matrix block; Clicking the reset button will reset the matrix mixing function to its initial one-on-one state; Clicking the clear button will clear all matrix mixing functions, and there is no corresponding relationship between the input and output of the device.

#### 7.6 Output equalizer



Double click on the module button Pop up the module interface of the input equalizer setting module in pic 6.1, with the same functions and operating methods as the 7.5 input equalizer.

#### 7.7 output delay

Double click on the module button DELAY setting module in pic 7.1

, Pop up the module interface of the input delay



Pic 7.1 Input Delay Setting Module

As pic 7.1, the delay control content for all input channels is listed. Drag the left sliding bar Can intuitively adjust the delay value of the corresponding channel, or in the numerical box 6.55 ms Enter the corresponding value in the middle, with the delay function switch on the right side, red indicating off, green indicating on, and the reset button on the far right side The default value of channel delay can be directly reset.

#### 7.8 Output compressor



Double click on the module button

, Pop up pic 12.1 Output Compressor Setting Module



12.1 Output Compressor Setting Module

#### 7.9 Output limiter



Double click on the module button

, Pop up pic 13.1 Output Limiter Setting Module



Pic 13.1 Output limiter setting module



Double click on the module button Pop up pic 14.1 Output Setting Module.



Pic 14.1 Output Setting Module

As above pic, the polarity and mute settings of the corresponding output channel can be controlled

#### 7.11 Input channel

In A

name

As shown in the input and output channel list on the software homepage in pic 2.1, the left



part is the input channel as shown in pic 15.1.

Pic 15.1 Input channel

(1) The content from top to bottom in the input channel interface includes: channel

≥ + ≥ •

Input module ANALOG, Channel gain, function buttons

12

and joint debugging situation

(2) The channel name, input mode, and channel grouping can only be viewed without editing function. In the channel gain function, you can see the level status of the input channel



- ③ In the function buttons, the top to bottom buttons are: mute<sup>I</sup>, Polarity<sup>I</sup>, Noise gate<sup>I</sup>, Equalizer bypass<sup>I</sup>, If the mute button is red, it is in the mute state, while if other buttons are green, they are in the active state
- (4) The display of channel group debugging shows the default four channel debugging groups, and when the corresponding number box background color turns yellow 2, This indicates that this channel has been added to the second group for joint debugging. The button bar



in the middle of the exit channel  $\square$ ,  $\square$ , To correspond to the main switch of this function

button for all input and output channels, it will directly operate on all input channels simultaneously.

#### 7.12 Output channel

As shown in the input and output channel list on the software homepage in pic 2.1, the right



section shows the input channels as shown pic16.1.

Pic 16.1 Output channel

(1) The content from top to bottom in the output channel interface includes: channel



name Out 2 Channel gain, function buttons (Channel grouping and joint debugging



(2) The channel name, digital output status, and channel grouping can only be viewed without editing function; In the channel gain function, you can see the level status



of the output channel signal **1** . The other two parts (gain value box and gain slider)

are used to adjust the gain value of this channel.

- ③ In the function buttons, the top to bottom buttons are: mute<sup>IM</sup>、 Equalizer bypass<sup>II</sup>、 delay<sup>ID</sup>、 compressor<sup>IC</sup>、 Limiter<sup>ID</sup>、 Polarity<sup>IF</sup>, If the mute button is red, it is in the mute state, while if other buttons are green, they are in the active state.
- (4) The display of channel group debugging shows the default four channel debugging groups, and when the corresponding number box background color turns yellow 2, This indicates that this channel has been added to the second group for joint debugging.

#### 7.13 Channel joint debugging

Click on the debugging button between the input and output channels on the software

homepage in Figure 2. 100, The channel joint debugging interface shown in Figure 17.1 pops up.

Channel joint debug	ging			×
In A In B		Group 1	Please select the pa debugged	rameters to be
		ft cm 0.55 m 2.27 n	✓ GAIN ✓ PHASE ✓ PEQ ✓ NG	
	*			
	Confirm	CI	ose	

Pic 17.1 Channel joint debugging interface

As pic, there are three lists from left to right: channel list, group list, and parameter list: The channel list has listed all the channels that can be debugged. You can select

the corresponding channel and click the add button Move to group list.

There are already 2 groups in the group list. Select the corresponding group directly. If you add a channel to the channel list, it will be directly assigned to the selected group. To remove it, select the channel you want to remove and click the remove button below the

add button KIt can be removed from the channel list.

The parameter list refers to the parameters that can be adjusted during group debugging in the group list. If checked, it indicates that when several channels in the same group adjust parameters, other channels will make the same adjustments simultaneously.

#### 7.14 Device List

The device list on the software homepage in pic 2.1 is shown in pic 18.1.

1. Device1	🔹 🕩 🖬 🗶
	M.VOL 0.0
USB	Factory
2. Device2	🕩 1-7 🗙
	M.VOL 0.0
USB	Factory

#### Pic 18.1 Device list

As pic <1>Number the connected devices; Device1 For device name; Factory The factory name

(cannot be modified by the user); If the connection method is TCP, if there is an empty space on the left side of the factory name after connection, the network IP address of this device will be displayed; If it is in USB mode, display USB; If connected via serial port, the specific COM port used will be displayed;

From left to right, it can be divided into mute button, status refresh button, and remove device button. The mute button can directly control the mute of all input and output channels of the entire device. The status button can instantly refresh the device's

status. If the device is online, the leftmost button The position will turn green, The remove button can directly remove this device from the software.

If you need to debug different devices, you can click to select the target device, and the function interface will be updated to the device function page.

#### 7.15Add device

Click on the menu bar "File" - "Add Device" in the main interface of the software in Figure 2.1, and the "Add Device" interface will pop up as shown in Figure 19.1. Select the virtual device model that needs to be added to the device list. Note: Virtual devices will not connect to real devices.



Pic 19.1 Add Device Interface

#### 7.16 device management

Click on the menu bar "Devices" - "Device Management" in the main interface of the software 38/45

Device Manage	
GPA4M - GPA4M	•
Software Info	Device Info
Software version 2.8.25 Date 2024-05-06 Firmware version 1.3.11 Date 2024-06-03 Hardware version 0.0.0.0	Device Name GPA4M Device Group OK
Device IP Info	Device locking
IP: 169.254.241.89 Mask: 255.255.0.0 Gateway 0.0.0.0 MAC: 5C:53:10:21:F1:59	Password only supports 4 digits         New password:
ок	Close

in Figure 2.1, and the device management interface shown in pic 20.1 will pop up.

Pic20.1 Device Management Interface

As above pic, in the top device list, you can select the device information content displayed on the target device management interface. The device management interface is divided into four parts or less:

(1) Software information: Display the version number and date information of the current device's upper and lower computers.

(2) Device Information: Display the current device name, device group, and factory name information. To display the factory name, you need to press the hidden shortcut keys CTRL+ALT+F12. The "Device Name" and "Factory Name" can be entered as new names and saved by clicking the button.

③ Device IP Information: If the current device is connected through network information, the IP address, gateway, and MAC address of the device will be displayed here. The IP and gateway can enter new information and click the OK button to save and restart the device network module. The newly entered network information wil

#### 7.17 Channel name management

Click on the menu bar "Device" - "Channel Management" in the main interface of the software in pic 2.1, and a channel name management interface will pop up as shown in pic 21.1

Channels Names			×
	Input		Output
In A In B In C In D	IN A IN B IN C IN D	Out1 Out2 Out3 Out4	OUT1 OUT2 OUT3 OUT4
	ок	Ca	incel

Pic21.1 Channel name management

As above pic, after entering the new name of the corresponding channel, click the OK button to immediately save and update the name of the channel. Please note that the length limit for channel names is 5 English letters and numbers.

#### 7.18 Channel copy

Click on the menu bar "Device" - "Channel Copy" in the main interface of the software in pic 2.1, and a channel copy interface will pop up as shown in pic 22.1.



#### Pic22.1 channel copy

As above pic, channel copying involves selecting channel parameters from a source device and copying them to the target channels of other target devices. The input and output channels cannot be copied from each other. The left side represents the corresponding channel, and the right side represents the copied parameters. The "Input" and "Output" buttons at the top of the interface can switch between the copied channel types.

#### 7.19 Archive

Click on the menu bar "Save" on the main interface of the software in Figure 2.1, and the save interface shown in Figure 23.1 will pop up.



#### Pic23.1 Archive interface

As above pic, the left side of the save interface is the gear, where "O automatic gear" is the system gear and cannot be used directly; "1 (default)" is the default file of the device, which can only be called and cannot be deleted or overwritten. After calling, all device parameters will be restored to the factory default parameters; Other gears can be freely saved, called, deleted, and other operations.

The function buttons on the right side of the archive interface are as follows:

① Save: Save the existing device parameters to the corresponding selected archive.

2 Call: Retrieve the selected archive into the parameters of the current device.

③ Delete: Delete the selected archive parameters.

(4) Clear: Clears all non system archived archive parameter records.

(5) Set as startup file: Set the selected file to automatically call the archive for work when the device starts up next time.

(6) Import Archive: Import a single device parameter file from the computer system, directly overwriting existing parameter data.

⑦ Export Archive: Save the parameters of the current device to the computer system and produce a single device parameter archive file

(8) Import Archive Package: Import parameter packages from multiple archives in the computer system

(9) Export Archive Package: Export the parameters of all files in the device archive to the computer system, and produce multiple archived parameter package files.

#### 7.20 Firmware update

Click on the menu bar "System" - "Firmware Upgrade" in the main interface of the software in Figure 2.1, and the firmware upgrade interface shown in Figure 24.1 will pop up.

Firmware Update		×
Update File		UPDATE

Pic24.1 Firmware upgrade interface

When there is an update to the lower computer system of the device, after obtaining the upgrade file, you can open the firmware upgrade interface as shown in the above figure. Select the corresponding upgrade file in the "Upgrade File" column, click "Start Upgrade" in the upper right corner, and the system will automatically transfer the upgrade file to the lower

computer for upgrade operation, and display the operation log in the progress box below. After the upgrade is completed, the lower machine will automatically restart or manually restart the machine to complete the upgrade.

#### 7.21 Dante Instructions



Enter settings on the main interface or in the ribbon INPUT

mode

INPUT SETTING	Input		
		IN A 8.8	IN B 4.6
$\begin{array}{c} -10 \\ -10 \\ -20 \\ -20 \end{array} $ GAIN 8.8 4.6			
	IN B IN C IN D	10 20	10 20
	Analog  Analog  Analog	30 30	
Pink Noice White Noise Dante	12dBu     ▼       Sine Wave       Pink Noise       White Noise	50 50	50 
LINE AES OUT2	Setting AES Setting	+	+

- (1) There are two ways to connect DANTE. The first is to connect to a local area network that already has other Dante devices, and the second is to connect through a virtual sound card (DVS). Both connection methods require wired connections through a switch or router.
- ② Regardless of the connection method used, routing configuration needs to be done through the official Dante Controller computer software provided. The Dante Controller software can be downloaded for free on the official website at <a href="http://www.audionate.com">www.audionate.com</a>.

As shown in the figure, click to select the route. Here, channel 1 of device 80d97c is selected as the audio source to be transmitted to channel 2 of device 80c8e0 for audio output

#### 7.22 FIR instructions



In the main interface ribbon Enter the FIR function interface. Click on Design to enter the FIR design

interface .





	THEODE	
	IMPORT	Import FIR preset document to the current channel
	EXPORT	Export the current channel FIR document
		Full bypass function, when enabled, channel EQ will be in
Setting area	BYPASS	a straight line, with a default red status of on. When
		using FIR, it needs to be manually closed
	STORE	Store FIR parameters in the device
	Taps	The number of Taps in the current channel
	Ms	The delay of the current channel
	Name	Current channel FIR preset document name
01 1		
Channel area		After clicking, display the corresponding channel's FIR
	1, 2, 3, 4	curve, supporting multiple curves to be displayed
(2)		simultaneously
	Design	Design interface switch button
Interface	Magnitude	Display amplitude curve on the interface
	Phase	Interface display phase curve
area(3)	72dB	Display content with amplitude accuracy within 72dB
C C	144dB	Display content with amplitude accuracy within 144dB
		Amplitude accuracy, the numerical value used for
Display area	-108 $+36$	reference when currently displayed as an amplitude curve
Dispidy died		Phase accuracy the numerical value used for reference
	-180° ~+180°	when currently displayed as a phase curve
	$20$ Hz $^{2}$ 20 KHz	frequency hand
	$\sim$	high pass
	$\leq$	frequency band
		Low pass
	—	straightness
Design area		Starting frequency setting high pass on the left and low
(5)	Freq(Hz)	pass on the right
Ŭ	Num.Taps	Taps number, a total of 8 orders. Optional $256^{\sim}2048$
	ALT. (dB)	Depth, can only be used when in the Kaiser window
	Windows Type	Window type selection
	STORE	Save, set parameters and click to save to the device channel

### FIR is mainly divided into 5 regions