MUSIC ALL

DDA-150DT

150W Class D Amplifier with DSP and routable Dante®

User Manual

VER 2.1

Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Table of Contents

1. Introduction

This product is designed as a two-channel amplifier using class D amplifier technology. It can be used for powering low impedance (4Ω/8Ω) stereo systems with a maximum power of 2x 75 Watt, while bridging to a constant voltage (100V and 70V) is possible with a maximum output power of 150 Watt. It features Dante® 2CH digital inputs and outputs, and balanced or unbalanced line level analog inputs and outputs.
This amplifier can be controlled via RS-232, LAN and Web GUI. It also features built-in DSP, auto-standby and maximum durability. It is suitable for a vast range of AV installations.

2. Features

- ☆ Dante® 2CH digital audio IN, routable in the software
- ☆ Dante® 2CH digital audio OUT, routable in the software
- ☆ Built-in audio DSP processor
- ☆ Switching between Lo-Z and Hi-Z can be achieved to adapt to various types of speaker installations.
  In Lo-Z output mode, bridge mode 150 Watt or two-channel 2x 75 Watt 4Ω/8Ω can be selected.
  In Hi-Z output mode, constant voltage 70V/100V can be selected.
- ☆ Independent input gain, output EQ and volume control
- ☆ 48KHz sampling rate, 24bit independent A/D and D/A converters
- ☆ 5-12V trigger input
- ☆ Auto standby
- ☆ Flexible control via RS-232, LAN and Web GUI
- ☆ Half rack design/one rack design

3. Package Contents

1x Amplifier
3x 5pin-3.81mm Phoenix Connector (male)
2x 4pin-5.08mm Phoenix Connector (male)
6x Mounting Ear
24x Machine Screw
1x AC (100-240V) Power Cord (1.5 meters)
1x User Manual

4. Specifications

Technical	
Input	2x Dante® Network audio input 2x LINE balanced/unbalanced stereo 2Vrms input
Output	2x Dante® Network audio output 1x Constant voltage 70V/100V speaker output 2x LINE balanced/unbalanced stereo output
Input Sensitivity	2Vrms
Output Power	DC power supply: 2x 75W@4Ω/8Ω; 1x 150W@8Ω/16Ω; 1x 150W@70V/100V
Maximum Voltage Gain	27 - 30dB SE/39 - 42dB BTL
Amplifier Type	Class D
Frequency Response	20Hz - 20kHz @ ±1dB
Signal to Noise Ratio	87dB, 20Hz - 10kHz
THD+N	THD+N (1KHz@1W) 0.04%
Control	RS-232, Web GUI
Audio Formats	LINE IN [Analog audio, Balanced/unbalanced 2CH, Max input level 2Vrms] LINE OUT [Analog audio, Balanced/unbalanced 2CH, Max output level 2Vrms] Dante® [Digital audio 2x2 in/out, PCM 2CH 44.1K-96KHz 16/24Bit] AMP OUT [Analog audio, Balanced 2CH, Max output level 24.5Vrms] 70V/100V AMP OUT [Analog audio, Max output level 70V/100Vrms]
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge) , ±4kV (Contact discharge)

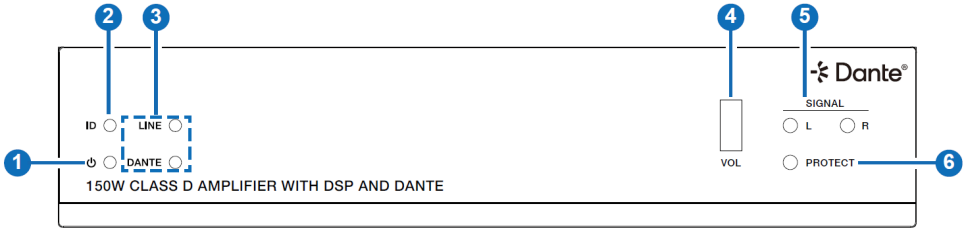
Connection
1x DANTE [RJ45 connector, 2CH Dante® input/output] 1x LINE IN [5pin-3.81mm phoenix connector, balanced/unbalanced 2CH] 1x LINE OUT [5pin-3.81mm phoenix connector, balanced/unbalanced 2CH] 1x 4/8Ω AMP OUT [MSTB 2.5-GF-5.08, 4pin-5.08mm locking phoenix, 2CH amplifier output] 1x 70V/100V AMP OUT [MSTB 2.5-GF-5.08, 4pin-5.08mm locking phoenix, constant voltage speaker output] 1x RS-232/TRG [5pin-3.81mm phoenix connector] [TRG: 5-12V trigger input to turn on/off the amplifier] 1x LAN [RJ45 connector]

Mechanical	
Housing	Front panel: Aluminum; Rear case: Metal Enclosure
Color	Black
Dimensions	240mm [W]×210mm [D]×44mm [H]
Weight	1.88Kg
Power Supply	DC Input: AC100 - 240V 50/60Hz

Power Consumption	70W (Test with a sine wave of a quarter - cycle.)
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Operating Humidity	20%~80% (relative humidity, non-condensing)
Storage Humidity	10%~90% (relative humidity, non-condensing)

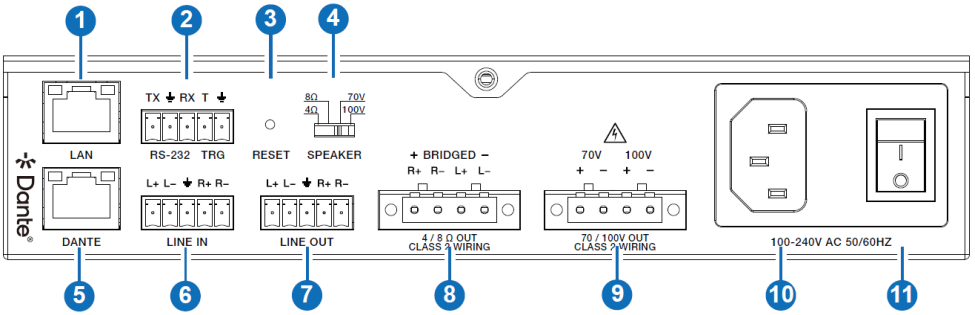
5. Operation Controls and Functions

5.1 Front Panel



No.	Name	Function Description
1	Power LED	▪ Steady on: The unit is working normally. ▪ Slow flash at 4Hz: The Web GUI operation is in standby mode. ▪ Fast flash at 1Hz: There is no signal input, and the unit will enter the standby mode within the set duration.
2	ID (show me) LED	This LED indicates the presence of the product. It can be controlled through Web GUI or API command. For example, when selecting the “On” option for “DANTE Identification” on the System page of the Web GUI, the ID (show me) LED on the front panel will flash, so that you can find the corresponding machine in the system.
3	LINE/DANTE LED	Input signal source indicators. When the DANTE or LINE IN port detects signal input, the corresponding green DANTE/LINE LED will be on.
4	VOL LED	The main audio volume of the system is displayed in five green segments, with each segment corresponding to 20% of the volume. 50% of the main audio volume is displayed by default after system initialization. **Note:** The audio volume can be controlled through Web GUI or API command.
5	SIGNAL L/R LEDs	The corresponding L/R channel signal LED will be on when the left/right channel of the the speaker output port outputs signals.
6	PROTECT LED	When the speaker output port outputs audio signals normally, if the left and right channels of the output are short-circuited, then the PROTECT LED will blink, and the product will enter the protected mode. In other cases, the LED is off.

5.2 Rear Panel



No.	Name	Function Description
1	LAN port	Connect to a PC for Web access. The default IP address is 192.168.0.200.
2	RS-232/TRG port	RS-232: Serial control port, used for RS-232 signal pass-through or controlling this product via RS-232 commands. TRG: Trigger signal input port, effective at rising edge voltage and falling edge voltage. When the input trigger is detected, the amplifier will enter the protected mode (mute the audio). For details, please refer to the input trigger settings on the System page of DSP Web GUI.
3	RESET button	Press and hold this button for 5 seconds to restore to factory default settings.
4	SPEAKER switch	Speaker type switch, used to switch among Lo-Z (4Ω/8Ω), Hi-Z 70V and Hi-Z 100V.
5	DANTE port	Dante® audio input and output port, using dynamic IP by default.
6	LINE IN port	2CH balanced/unbalanced stereo audio input port, with a maximum input level of 2Vrms.
7	LINE OUT port	2CH balanced/unbalanced stereo audio output port, with a maximum output level of 2Vrms.
8	4/8Ω OUT port	4/8Ω speaker output port. When this port is connected to a 4/8Ω speaker and the SPEAKER switch is dialed to 4/8Ω, the audio will be output from this port normally. Besides, there are two connection methods for this port, as shown below. **Bridge mode:** Connect the BRIDGED “+” and “-” pins to a speaker with a maximum output power of 150W. **Two-channel mode:** Respectively connect the “R+” and “L+” pins or “R-” and “L-” pins to two speakers with a maximum output power of 2x 75W.
9	70/100V OUT port	70/100V speaker output port. When this port is connected to a 70/100V speaker and the SPEAKER switch is dialed to 70/100V, the audio will be output from this port normally.
10	Power port	100-240V AC 50/60Hz power input port.
11	Power switch	Press the power switch to turn on/off the power supply.

6. DSP Web GUI User Guide

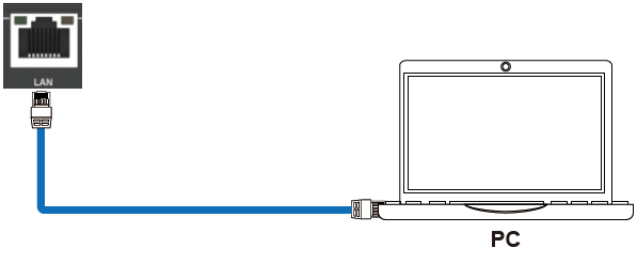
There is a built-in DSP Web GUI for the amplifier. The operation method is shown as below:

Step 1: Get the current IP Address.

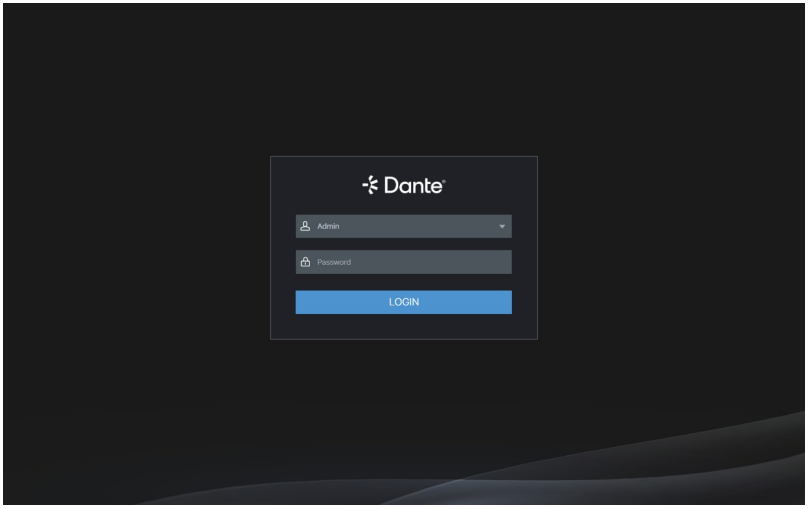
The default IP address is 192.168.0.200 (when the system is not connected to a router). You can get the current IP address via RS-232 control command. Send the ASCII command “r ip addr” through a Serial Command tool, then you’ll get the current IP address (The IP address is variable, depending on what the specific machine returns).

For the details of RS-232 control, please refer to “8. RS-232 Control Command”.

Step 2: Connect the LAN port of the amplifier to a PC with an UTP cable (as shown in the following figure), and set the IP address of the PC to be in the same network segment with the amplifier.



Step 3: Input the current IP address of amplifier into your browser on the PC to enter the Login interface of the DSP Web GUI.

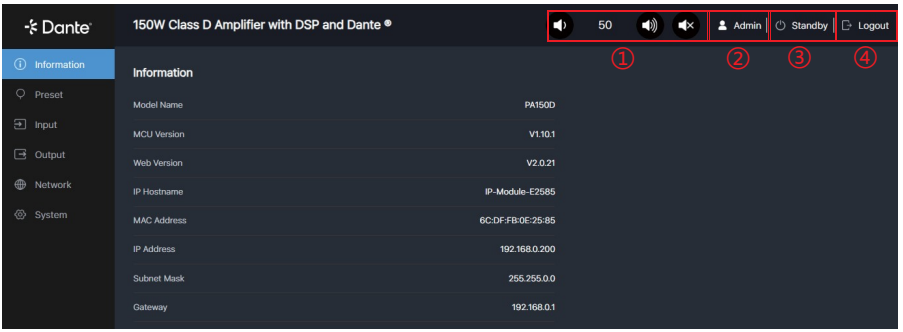


The default usernames and passwords are as below:

Username	Password
Admin	1234
User	1234

Step 4: Select the username “Admin” and input the password “1234”, then click the “LOGIN” button to enter the Information page of the Admin interface.

■ Information Page



The Information page provides basic information, including Model Name, MCU Version, Web Version, IP Hostname and Network configuration information.
In addition, you can do the following operations in the upper right corner of each page.

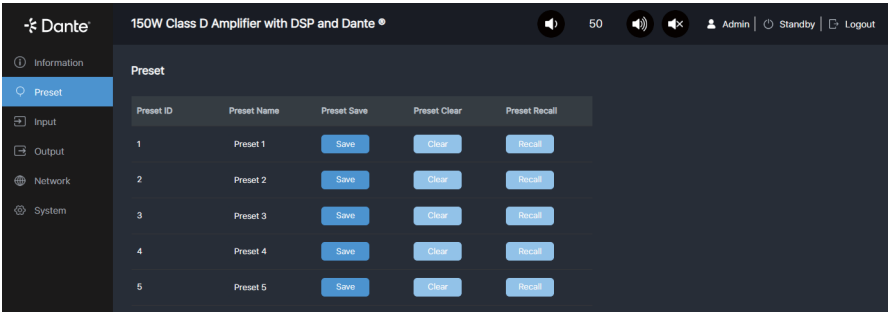
① Display and set the audio volume of Master Out. Click the volume icons to increase/ decrease the audio volume of Master Out, or click the mute icon to mute/unmute the audio of Master Out. When muted, the mute icon displays red.

② Display the current username (User or Admin).

③ Click the power icon to power on the audio bridge or set it in standby mode.

④ Click the logout icon to logout and return to the login interface.

■ Preset Page



You can set up to 5 preset scenes on the Preset page.

① **Preset Name:** You can name the preset scene. (Chinese name is not supported.)

② **Preset Save:** Click the Save button to save the scene.

③ **Preset Clear:** Click the Clear button to clear the saved scene.

④ **Preset Recall:** Click the Recall button to recall the saved scene.

■ Input Page

Audio Matrix

① **Inputs:** The product features four audio input channels (Dante In CH1/Dante In CH2/Line In Left/Line In Right) and supports two groups of audio mixing (Mixer 1/2). Therefore, there are six audio signal sources for audio output channels (Dante Out CH1/Dante Out CH2/Line Out Left/Line Out Right/Speaker Out Left/Speaker Out Right). One audio source can be selected by one or multiple output channels clicking the corresponding grids.

② **Outputs:** The product features six audio output channels (Dante Out CH1/Dante Out CH2/ Line Out Left/Line Out Right/Speaker Out Left/Speaker Out Right). Only one audio source can be selected for each audio output channel to perform one-to-one switching.

③ **Mixer 1/2:** Two groups of audio mixing (Mixer 1/2) are composed of four input channels. You can respectively set the audio volume of Dante In CH1/Dante In CH2/Line In Left/Line In Right to adjust the audio of Mixer 1/2, then click the corresponding grid to select one or multiple output channels to output the mixing audio.

④ **Legend:** The blue grid indicates that the corresponding input/output channel is selected; The grey grid indicates that the corresponding input/output channel is not selected.

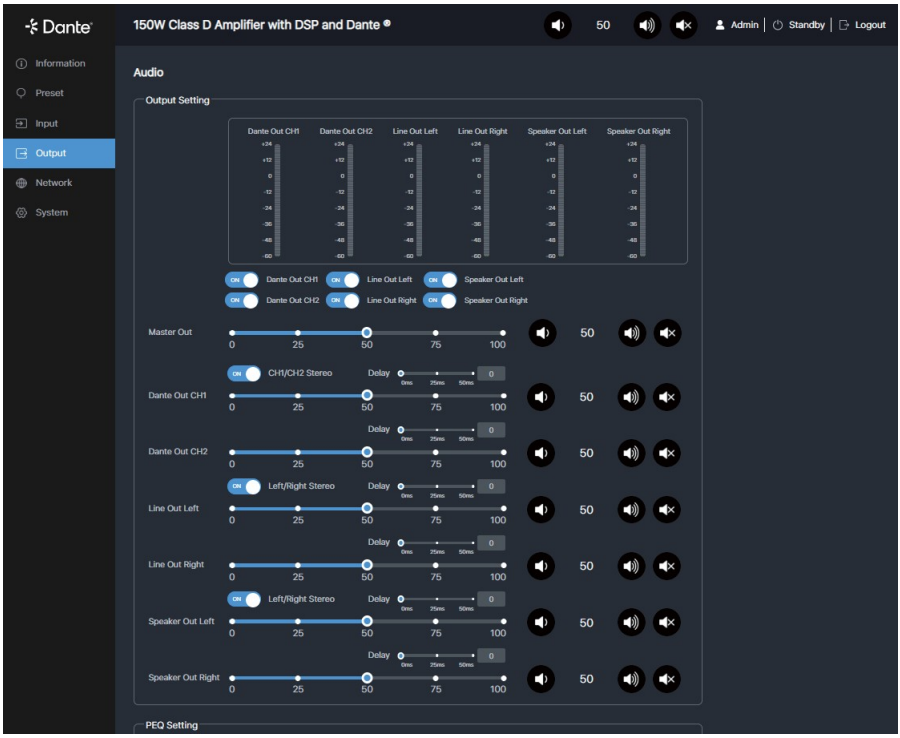
Input Setting

① **VU Meter:** The meter displays the real-time audio input level of six audio inputs (Dante In CH1/Dante In CH2/Line In Left/Line In Right/Mixer 1/Mixer 2).

② **Dante In CH1/Dante In CH2:** You can respectively drag the slider to set the volume, or click the mute icon to mute/unmute the input audio for Dante In CH1/Dante In CH2. Besides, you can click the CH1/CH2 Stereo switch to turn on/off the stereo mode. When the CH1/CH2 Stereo switch is turned on, the two volume sliders of Dante In CH1 and Dante In CH2 will be linked together, that is, dragging any slider can adjust the volume of both audio channels simultaneously.

③ **Line In Left/Line In Right:** You can respectively drag the slider to set the volume, or click the mute icon to mute/unmute the input audio for Line In Left/Line In Right. Besides, you can click the Left/Right Stereo switch to turn on/off the stereo mode. When the Left/Right Stereo switch is turned on, the two volume sliders of Line In Left and Line In Right will be linked together, that is, dragging any slider can adjust the volume of both audio channels simultaneously.

■ Output Page



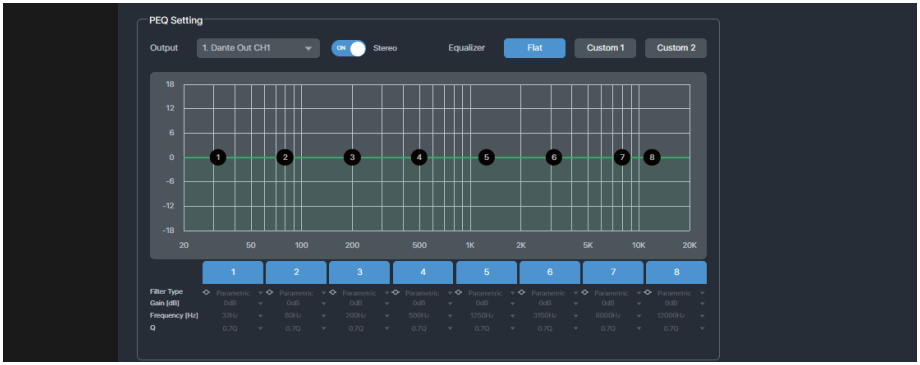
Output Setting

① **VU Meter:** The meter displays the real-time audio output level of six audio outputs (Dante Out CH1/Dante Out CH2/Line Out Left/Line Out Right/Speaker Out Left/Speaker Out Right).

② **Master Out:** You can respectively set the output volume or mute/unmute the output audio for Dante Out CH1/Dante Out CH2/Line Out Left/Line Out Right/Speaker Out Left/Speaker Out Right, or synchronously set several/all of them together when turning on corresponding options.

③ **Dante Out CH1/Dante Out CH2:** You can respectively drag the slider to set the volume, or drag the slider to set the delay time, or click the mute icon to mute/unmute the output audio for Dante Out CH1/Dante Out CH2. Besides, you can click the CH1/CH2 Stereo switch to turn on/off the stereo mode. When the stereo switch is turned on, the two volume sliders of Dante Out CH1 and Dante Out CH2 will be linked together, that is, dragging any slider can adjust the volume of both audio channels simultaneously.
Note: When the stereo mode is turned on, the CH1 and CH2 channels will not delay synchronously.

④ **Line Out Left/Line Out Right/Speaker Out Left/Speaker Out Right:** You can respectively drag the slider to set the volume, or drag the slider to set the delay time, or click the mute icon to mute/unmute the output audio for Line Out Left/Line Out Right/Speaker Out Left/Speaker Out Right. Besides, you can click the Left/Right Stereo switch to turn on/off the stereo mode. When the stereo switch is turned on, the two volume sliders of Line/Speaker Out Left and Line/Speaker Out Right will be linked together, that is, dragging any slider can adjust the volume of both audio channels simultaneously.
Note: When the stereo mode is turned on, the left and right channels will not delay synchronously.



PEQ Setting

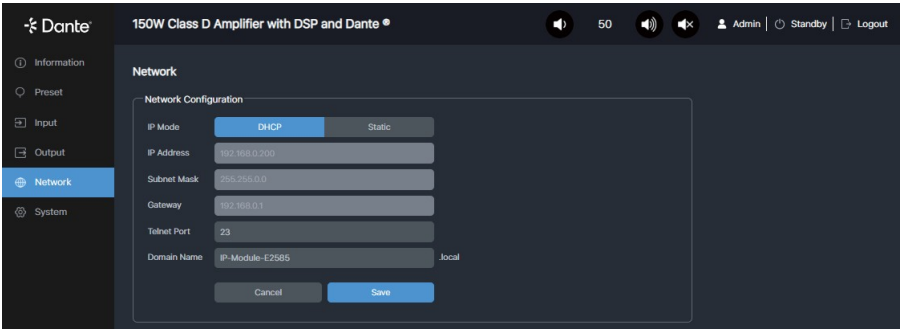
① **Output:** Click the drop-down list to select the output channel.

② **Stereo:** Click the switch to turn on/off the stereo mode.

③ **Equalizer:** Click the buttons to set the equalizer.
Flat: Set all EQ to 0db.
Custom1: Set EQ for custom 1.
Custom2: Set EQ for custom 2.

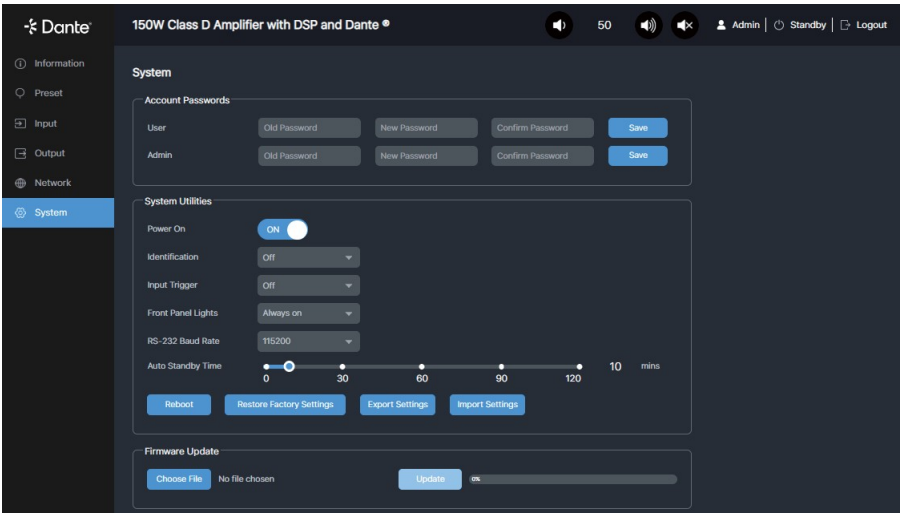
④ **1/2/3/4/5/6/7/8:** 8 band buttons of PEQ. Blue grid indicates that the corresponding band is selected, and then you can set the parameters for it as following.
Filter Type: Click the drop-down icon, then select the filter type (Parametric/Lowpass/Highpass/Low Shelf/High Shelf).
Gain [dB]: Click the drop-down icon, then drag the slider to set the gain value.
Frequency [Hz]: Click the drop-down icon, then drag the slider to set the frequency.
Q: Click the drop-down icon, then drag the slider to set the Q value.

■ Network Page



Network Configuration: Select to set the IP Mode (DHCP/Static). When Static is selected, you can manually set the IP Address, Subnet Mask and Gateway as required, then click "Save" to take effect. When DHCP is selected, the system will search and fill the IP Address with the one assigned by the router automatically.
In addition, you can set the Telnet Port and Domain Name.
Note: The Domain Name "IP-Module-E2585.local" can be used to login the DSP Web GUI. After setting up, click "Save" to take effect, or you can click "Cancel" to cancel the setting.

■ System Page



Account Passwords: You can modify the login password for User and Admin.
After setting up, click "Save" to take effect.

System Utilities

① **Power On:** Click "ON/OFF" to power on/off the amplifier.

② **Identification:** Click the drop-down list to set the display status of the ID LED on the front panel of the amplifier.

③ **Input Trigger:** Click the drop-down list to set the input trigger mode.

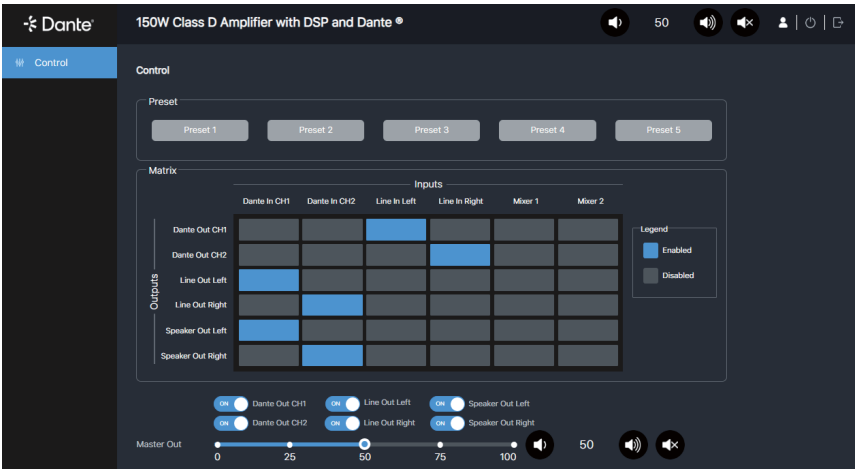
④ **Front Panel Lights:** Click the drop-down list to set the display status of the VOL, LINE and DANTE LEDs on the front panel of the amplifier.

⑤ **RS-232 Baud Rate:** Click the drop-down list to set the RS-232 baud rate.

⑥ **Auto Standby Time:** Drag the slider to set the auto standby time.
Note: When the standby time is set to "0", the auto standby function is turned off.
⑦ **Reboot:** Click this button to reboot the device.
⑧ **Restore Factory Settings:** Click this button to restore the amplifier to factory settings.
⑨ **Export Settings:** Click this button to export configuration files.
⑩ **Import Settings:** Click this button to import configuration files.
Firmware Update: You can update the firmware. Click "Choose File" to select the update file, then click "Update" to start update. When the progress bar reaches 100%, the update is complete.

In the Login interface, select the username "User" and input the password "1234", then click the "LOGIN" button to enter the User page.

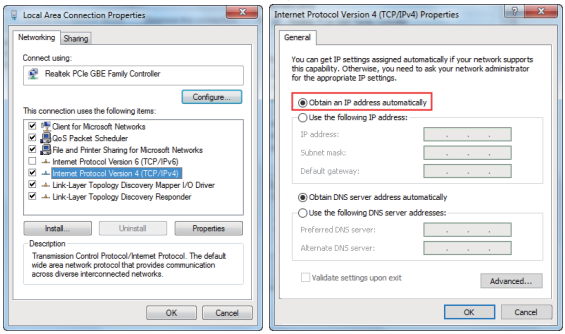
■ **User Page**



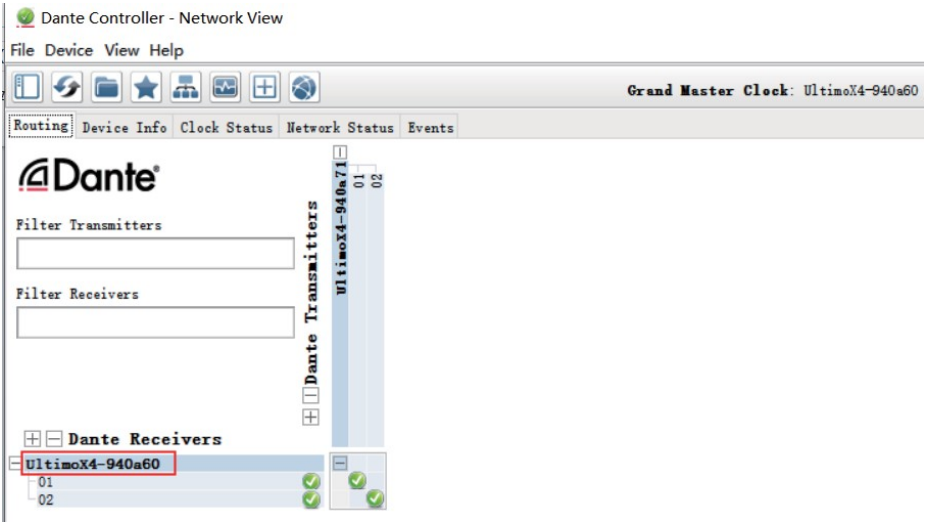
You can do the following operations on the User page:
① **Preset:** Recall the preset application scenes.
② **Matrix:** Set the audio matrix in the same way as the audio page of Admin account.
③ **Master Out:** Set the audio volume or mute/unmute the audio for Master Out. You can respectively turn on/off the switch of Dante Out CH1/Dante Out CH2/Line Out Left/Line Out Right/Speaker Out Left/Speaker Out Right.

7. Dante® Web GUI User Guide

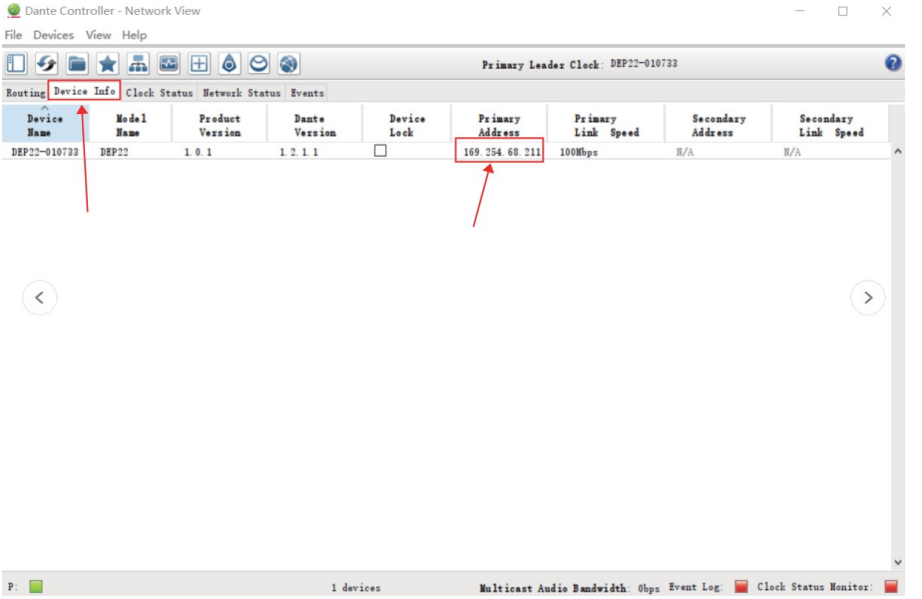
There is a built-in Dante® Web GUI for the amplifier. The operation method is shown as below:
Step 1: Connect the DANTE port of the amplifier to the Ethernet Switch.
Step 2: Connect the PC to the same Ethernet Switch, and set the Network connection setting of PC to be "Obtain an IP address Automatically".



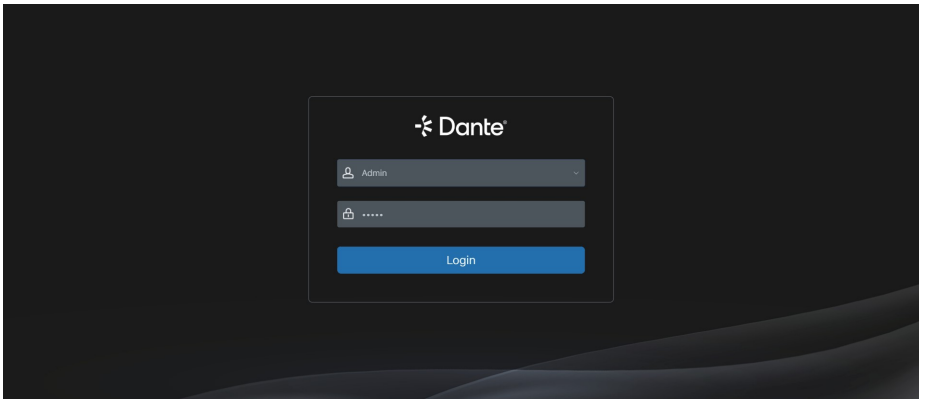
Step 3: Open the Dante® Controller software on the PC, and find the Dante® device on the Routing page, as shown in the figure below.



Step 4: Click the Device Info tab to check the IP address of the Dante® device.



Step 5: Input the IP address of Dante® device into your browser on the PC to enter the login interface of the Dante® Web GUI.

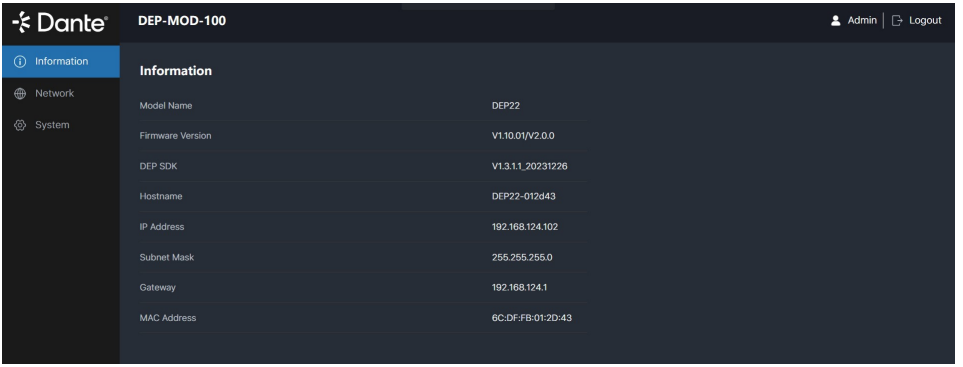


The default usernames and passwords are as below:

Username	Password
Admin	1234
User	1234

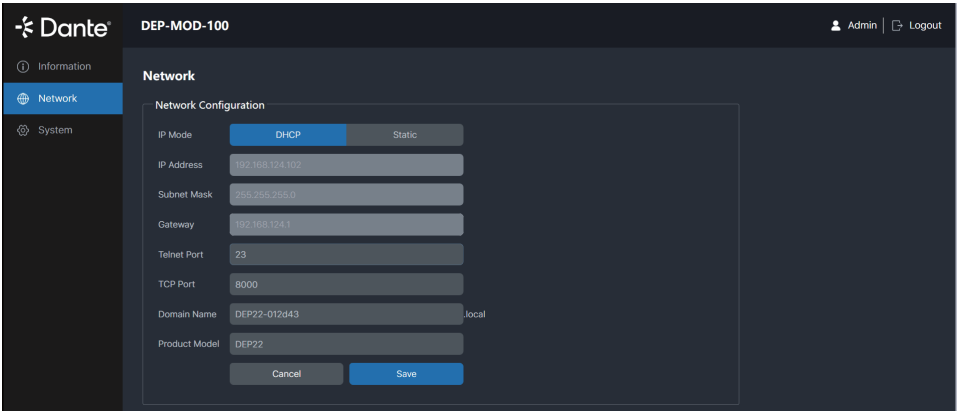
Step 6: Select the default username “Admin” and input the password “1234”, then click the “Login” button to enter the Information page of Dante® Web GUI.

■ Information Page



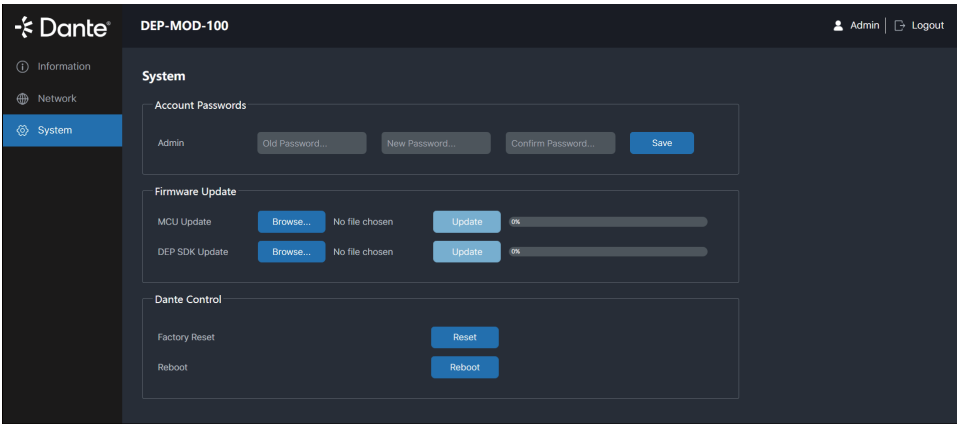
The Information page provides basic information, including the Model Name, Firmware Version, DEP SDK, Hostname and Network configuration information.

■ Network Page



Network Configuration: Select to set the IP Mode (DHCP/Static). When Static is selected, you can manually set the IP Address, Subnet Mask and Gateway as required, then click "Save" to take effect. When DHCP is selected, the system will search and fill the IP Address with the one assigned by the router automatically.
In addition, you can set the Telnet Port, TCP Port, Domain Name and Product Name.
Note: The Domain Name "DEP22-012d43.local" can be used to login to the Dante® Web GUI.
After setting up, click "Save" to take effect, or you can click "Cancel" to cancel the setting.

■ System Page



You can do the following operations on the System page:

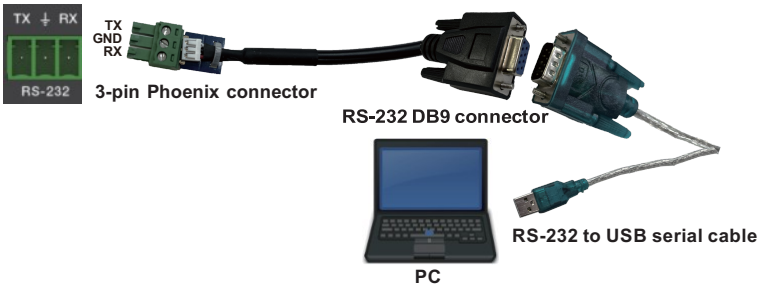
① **Account Passwords:** You can modify the login password for Admin. After inputting the old password, new password and confirm password, click "Save" to take effect.

② **Firmware Update:** You can update the firmware and DEP SDK software. Click "Browse" to select the update file, and then click "Update". When the progress bar reaches 100%, the update is complete.

③ **Dante Control:** Click "Reset" to restore to factory settings. Click "Reboot" to reboot the device.

8. RS-232 Control Command

The product also supports RS-232 command control. Connect the RS-232 port of the product to a PC with a 3-pin phoenix connector cable and an RS-232 to USB cable. The connection method is as follows.



Then open a Serial Command tool on PC to send ASCII commands to control the product. The ASCII command list about the product is shown as below.

ASCII Command				
Serial port protocol: Baud rate: 115200 (default), Data bits: 8bit, Stop bits:1, Parity bit: none TCP/IP protocol port: 8000				
x - Parameter 1, y - Parameter 2				
Command Code	**Function Description**	**Example**	**Feedback**	**Default Setting**
System Setting				
?	Get the list of all commands	?	List all API commands	
help	Get the list of all commands	help	List all API commands	
r type	Get device model	r type	PA150D	
r status	Get device current status	r status	Please refer to the note at the end of the list.	
r fw version	Get Firmware version	r fw version	MCU 1.1.0 Web 1.1.0	
s power on	Power on the device	s power on	Power on System Initializing... Initialization Finished! MCU 1.1.0 Web 1.1.0	
s power off	Power off the device	s power off	Power off	
r power	Get current power state	r power	power on /power off	
s reboot	Reboot the device	s reboot	Reboot… System Initializing... Initialization Finished! MCU 1.1.0 Web 1.1.0	
s reset	Reset system settings to default (Should type "Yes" to confirm, "No" to discard)	s reset	Sure to Reset System Settings To Default? Type "Yes" after next prompt to confirm…	
s reset all	Reset system and network settings to default (Should type "Yes" to confirm, "No" to discard)	s reset all	Sure to Reset System and Network Settings To Default? Type "Yes" after next prompt to confirm…	
s auto stb x	Set system auto standby time x=0: auto standby off x=[1-120]: auto standby time (mins)	s auto stb 10	Set auto standby time: 10mins	10
r auto stb	Get system auto standby time	r auto stb	Auto standby time: 10mins	

Command Code	Function Description	Example	Feedback	Default Setting
s lcd on/off/15/30/60	Set volume LCD always on or auto turn off in power on state or turn on 15s/30s/60s	s lcd on s lcd off s lcd on 15	Set LCD light always on Set LCD light always off Set LCD light on 15s	on
r lcd	Get volume LCD on/off status	r lcd	LCD light always on	
s idled on/off/15/30/60	Set ID LED on or auto turn off in power on state or turn on 15s/30s/60s	s idled on s idled on 15	Set ID LED light always on Set ID LED light on 15s	off
r idled	Get id LED on/off status	r idled	ID LCD light always on	
s trigger on/off x	Set trigger on/off with trigger level:x x=0: Low Level (0V) Mute Output x=1: High Level (5-12V) Mute Output	s trigger on 1 s trigger off	Set trigger on with high level Set trigger off	off
r trigger	Get trigger on/off status	r trigger	Trigger on with high level	
s rsb x	Set serial port baud rate to xbps x=(115200, 57600, 38400, 19200, 9600, 4800)	s rsb 115200	Set baud rate to 115200	115200
r rsb	Get serial port baud rate	r rsb	Baud rate 115200	
s fan x auto/on/off	Set fan:x auto or always on or always off x=[0-2] 0:All, 1:Fan1, 2:Fan2	s fan 0 on	Set fan 1 on Set fan 2 on	auto
r fan	Get fan status	r fan	Fan 1 on Fan 2 on	
Input Setting				
s input x stereo on/off	Set input:x stereo mode on/off x=[0-2] 0:All, 1:Dante In, 2:Line In	s input 1 stereo on	Set dante in stereo mode on	on
r input x stereo	Get input:x stereo mode on/off status x=[0-2] 0:All, 1:Dante In, 2:Line In	r input 1 stereo	Dante in stereo mode on	
s input x gain y	Set input:x gain to y x=[0-4] 0:All, 1:Dante In CH1, 2:Dante In CH2, 3:Line In Left, 4:Line In Right y=[-12~12]dB Input gain value, Step=0.1dB	s input 1 gain 10.0	Set dante in ch1 gain: 10.0dB	0
r input x gain	Get input:x gain value x=[0-4] 0:All, 1:Dante In CH1, 2:Dante In CH2, 3:Line In Left, 4:Line In Right	r input 1 gain	Dante in ch1 gain: 10.0dB	
s input x gain+ s input x gain+y	Increase input:x gain by y x=[0-4] 0:All, 1:Dante In CH1, 2:Dante In CH2, 3:Line In Left, 4:Line In Right y=[0.1-24]:Steps, y can be empty(Step=1dB)	s input 1 gain+ s input 1 gain+5	Increase dante in ch1 gain: 1.0dB Increase dante in ch1 gain: 6.0dB	
s input x gain- s input x gain-y	Decrease input:x gain by y x=[0-4] 0:All, 1:Dante In CH1, 2:Dante In CH2, 3:Line In Left, 4:Line In Right y=[0.1-24]:Steps, y can be empty(Step=1dB)	s input 1 gain- s input 1 gain-5	Decrease dante in ch1 gain: 6.0dB Decrease dante in ch1 gain: 1.0dB	
s input x mute on/off	Set input:x mute on/off x=[0-4] 0:All, 1:Dante In CH1, 2:Dante In CH2, 3:Line In Left, 4:Line In Right	s input 1 mute on	Set dante in ch1 mute on	off

Command Code	Function Description	Example	Feedback	Default Setting
r input x mute	Get input:x mute on/off x=[0-4] 0:All, 1:Dante In CH1, 2:Dante In CH2, 3:Line In Left, 4:Line In Right	r input 1 mute	Dante in ch1 mute on	
Output Setting				
s master member <abcdef>	Set master output member (a/b/c/d/e/f=0-1) a=0: Exclude Dante Out CH1 a=1: Include Dante Out CH1 b=0: Exclude Dante Out CH2 b=1: Include Dante Out CH2 c=0: Exclude Line Out Left c=1: Include Line Out Left d=0: Exclude Line Out Right d=1: Include Line Out Right e=0: Exclude Speaker Out Left e=1: Include Speaker Out Left f=0: Exclude Speaker Out Right f=1: Include Speaker Out Right	s master member <111111>	Set master member: 111111	111111
r master member	Get master output member	r master member	111111	
s master vol x s vol x	Set master output volume to x x=[0-100] volume value	s master vol 50 s vol 50	Set master volume: 50	50
r master vol r vol	Get master output volume	r master vol r vol	50	
s master vol+ s vol+ s master vol+y s vol+y	Increase master output volume Increase master output volume by y y=[1-100]:Steps, y can be empty(Step=1dB)	s master vol+ s vol+ s master vol+5 s vol+5	Increase master volume: 51 Increase master volume: 51 Increase master volume: 55 Increase master volume: 55	
s master vol- s vol- s master vol-y s vol-y	Decrease master output volume Decrease master output volume by y. y=[1-100]:Steps, y can be empty(Step=1dB)	s master vol- s vol- s master vol-5 s vol-5	Decrease master volume: 49 Decrease master volume: 49 Decrease master volume: 45 Decrease master volume: 45	
s master mute on/off s mute on/off	Set master output mute on/off	s master mute on s mute on	Set master mute on	Off
r master mute r mute	Get master output mute on/off status	r master mute r mute	Mute on	
s output x stereo on/off	Set output:x stereo mode on/off x=[0-3] 0:All, 1:Dante Out, 2:Line Out, 3:Speaker Out	s output 3 stereo on	Set speaker out stereo mode on	On
r output x stereo	Get output:x stereo mode on/off status x=[0-3] 0:All, 1:Dante Out, 2:Line Out, 3:Speaker Out	r output 3 stereo	Speaker out stereo mode on	
s output x vol y	Set output:x volume to y x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right y=[0-100] volume value	s output 5 vol 50	Set speaker out left volume: 50	50

Command Code	Function Description	Example	Feedback	Default Setting
r output x vol	Get output:x volume value x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right	r output 5 vol	Speaker out left volume: 50	
s output x vol+ s output x vol+y	Increase output:x volume by y x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right y=[1-100]:Steps, y can be empty(Step=1dB)	s output 5 vol+ s output 5 vol+5	Increase speaker out left volume: 51 Increase speaker out left volume: 55	
s output x vol- s output x vol-y	Decrease output:x volume by y x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right y=[1-100]:Steps, y can be empty(Step=1dB)	s output 5 vol- s output 5 vol-5	Decrease speaker out left volume: 49 Decrease speaker out left volume: 45	
s output x mute on/off	Set output:x mute on/off x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right	s output 5 mute on	Set speaker out left mute on	Off
r output x mute	Get output:x mute on/off status x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right	r output 5 mute	Speaker out left mute on	
s output x delay y	Set output:x delay:y x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right y=[0-50]: Delay Time, Millisecond	s output 5 delay 50	Set speaker out left delay: 50ms	0
r output x delay	Get output:x delay value x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right	r output 5 delay	Speaker out left delay: 50ms	
s output x eq stereo on/off	Set output:x GEQ stereo mode (same GEQ settings) on/off x=[0-3] 0:All, 1:Dante Out, 2:Line Out, 3:Speaker Out	s output 3 eq stereo on	Set speaker out GEQ stereo mode on	On
r output x eq stereo	Get output:x GEQ stereo mode (same GEQ settings) on/off status x=[0-3] 0:All, 1:Dante Out, 2:Line Out, 3:Speaker Out	r output 3 eq stereo	Speaker out GEQ stereo mode on	

Command Code	Function Description	Example	Feedback	Default Setting
s output x eq y typ t frq z val aa q bb	Set output:x EQ index:y type t to frequency z gain aa Q bb x=[0-7] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right, 7:All Outputs y=[0-8]: EQ index 0:All t=[1-5]: 1:Parametric, 2:High Shelf, 3:Low Shelf, 4:Lowpass, 5:Highpass z=[20-20000]: Frequncy value (Step=1Hz) aa=[-15~15]: Gain value (Step=0.1dB) bb=[0.02~16]: Q value (Step=0.01)	s output 1 eq 0 typ 1 frq 200 val -15 q 0.02	Output: Dante Out CH1 Band: all Type: Parametric Freq: 200Hz Gain: -15.0dB Q: 0.02	
s output x eq y active on/off	Set output:x EQ index:y active on or off x=[0-7] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right, 7:All Outputs y=[0-8]: EQ index 0:All	s output 1 eq 1 active on	Dante Out CH1 EQ 1 active on	
r output x eq	Get output:x EQ index:y value x=[0-7] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right, 7:All Outputs	r output 1 eq	Dante Out CH1 EQ: Band Type Freq Gain Q OnOff 1 Parametric 32Hz 0.0dB 5.00 off 2 Parametric 32Hz 0.0dB 5.00 off 3 Parametric 32Hz 0.0dB 5.00 off 4 Parametric 32Hz 0.0dB 5.00 off 5 Parametric 32Hz 0.0dB 5.00 off 6 Parametric 32Hz 0.0dB 5.00 off 7 Parametric 32Hz 0.0dB 5.00 off 8 Parametric 32Hz 0.0dB 5.00 off	
s output x eq preset y	Set output:x EQ to preset:y x=[0-7] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right, 7:All Outputs y=[1-3] 1:Flat, 2:Custom1, 3:Custom2	s output 5 eq preset 1	Set speaker out left EQ: Flat	1
r output x eq preset	Get output:x EQ preset x=[0-7] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right, 7:All Outputs	r output 5 eq preset	Speaker out left EQ: Flat	
s output x eq clear	Set output:x EQ clear x=[0-7] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right, 7:All Outputs	s output 5 eq clear	Clear speaker out left EQ	

Command Code	Function Description	Example	Feedback	Default Setting
Matrix Setting				
s output x from y	Set output:x from y x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right y=[0-6] 0:None, 1:Dante In CH1, 2:Dante In CH2, 3:Line In Left, 4:Line In Right, 5:Mixer 1, 6:Mixer 2	s output 5 from 1	Set speaker out left from: dante in ch1	1
r output x from	Get output:x source from x=[0-6] 0:All, 1:Dante Out CH1, 2:Dante Out CH2, 3:Line Out Left, 4:Line Out Right, 5:Speaker Out Left, 6:Speaker Out Right	r output 5 from	Speaker out left from: dante in ch1	
s mixer x from <y1 y2 y3 y4>	Set mixer:x from y1 y2 y3 y4 x=[0-2] 0:All, 1:Mixer 1, 2:Mixer 2 y1=[-48~0]dB for Dante In CH1 y2=[-48~0]dB for Dante In CH2 y3=[-48~0]dB for Line In Left y4=[-48~0]dB for Line In Right y1/y2/y3/y4 can be off(Step=1dB)	s mixer 1 from <-14 -14 -14 -14> s mixer 2 from <-14 off -14 off>	Set mixer 1 from <-14 -14 -14 -14> Set mixer 2 from <-14 off -14 off>	
r mixer x from	Get mixer:x source from x=[0-2] 0:All, 1:Mixer 1, 2:Mixer 2	r mixer 0 from	Mixer 1 from <-14 -14 -14 -14> Mixer 2 from <-14 off -14 off>	
Preset Setting				
s preset save x	Save the current unit's settings to the specified preset:x All settings except network setting. x=[1-5]: Preset 1 - Preset 5	s preset save 1	Save to preset 1	
s preset recall x	Recall a specified preset:x into unit All settings except network setting. x=[1-5]: Preset 1 - Preset 5	s preset recall 1	Recall preset 1	
s preset clear x	Clear a specified preset:x All settings except network setting. x=[1-5]: Preset 1 - Preset 5	s preset clear 1	Clear preset 1	
s preset x name y	Set preset:x name to y x=[1-5]: Preset 1 - Preset 5 y: Preset name, max 16 characters	s preset 1 name MeetingRoom 1	Set preset 1 name: MeetingRoom 1	
r preset x name	Get preset:x name x=[1-5]: Preset 1 - Preset 5	r preset 1 name	Preset 1 name: MeetingRoom 1	
Network Setting				
r ipconfig	Get the Current IP Configuration	r ipconfig	IP Mode: DHCP IP: 192.168.62.106 Subnet Mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 MAC: 6C:DF:FB:0C:B3:8E (Static: 169.254.100.200 255.255.0.0 169.254.100.1)	

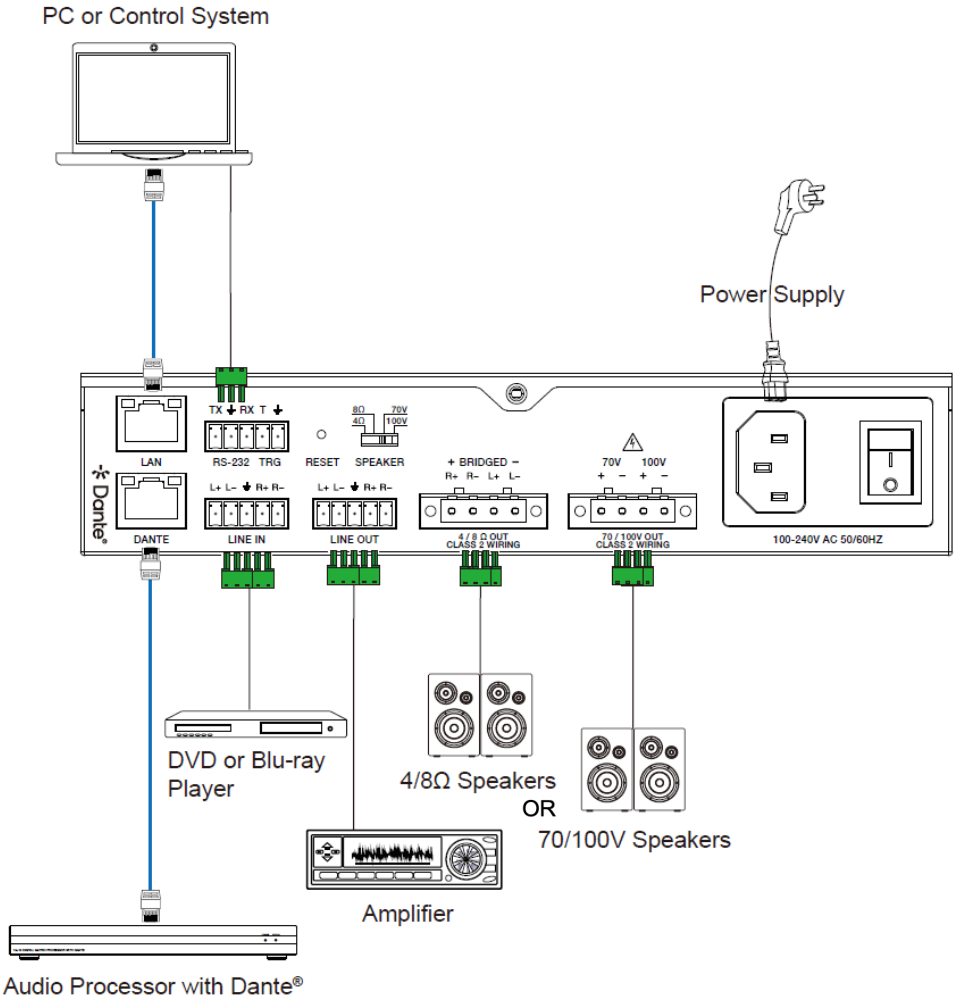
Command Code	Function Description	Example	Feedback	Default Setting
r mac addr	Get network MAC address	r mac addr	MAC: 6C:DF:FB:0C:B3:8E	
s ip mode x	Set network IP mode to static IP or DHCP x=[0-1] 0.Static, 1.DHCP	s ip mode 0	IP mode: Static (Please use "s net reboot!" command or repower device to apply new config!)	1
r ip mode	Get network IP mode	r ip mode	IP mode: DHCP	
s ip addr xxx.xxx.xxx.xxx	Set network IP address	s ip addr 192.168.1.100	IP address: 192.168.0.100 (Please use "s net reboot!" command or repower device to apply new config!) DHCP on, Device can't config static address, set DHCP off first.	
r ip addr	Get network IP address	r ip addr	IP: 192.168.0.100	
s subnet xxx.xxx.xxx.xxx	Set network subnet mask	s subnet 255.255.255.0	Subnet Mask: 255.255.255.0 (Please use "s net reboot!" command or repower device to apply new config!) DHCP on, Device can't config subnet mask, set DHCP off first.	
r subnet	Get network subnet mask	r subnet	Subnet Mask: 255.255.255.0	
s gateway xxx.xxx.xxx.xxx	Set network gateway	s gateway 192.168.1.1	Gateway: 192.168.1.1 (Please use "s net reboot!" command or repower device to apply new config!) DHCP on, Device can't config gateway, set DHCP off first.	
r gateway	Get network gateway	r gateway	Gateway: 192.168.1.1	
s tcp/ip port x	Set network TCP/IP port (x=1~65535)	s tcp/ip port 8000	TCP/IP port: 8000	8000
r tcp/ip port	Get network TCP/IP port	r tcp/ip port	TCP/IP port: 8000	
s telnet port x	Set network telnet port (x=1~65535)	s telnet port 23	Telnet port: 23	23
r telnet port	Get network telnet port	r telnet port	Telnet port: 23	
s net reboot	Reboot network modules	s net reboot	Search for IP, Please wait ...! IP Mode: DHCP IP: 192.168.62.106 Subnet Mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 MAC: 6C:DF:FB:0C:B3:8E (Static: 169.254.100.200 255.255.0.0 169.254.100.1)	

Command Code	Function Description	Example	Feedback	Default Setting
Password Setting				
s admin password x	Set admin login password (x=[16 characters max])	s admin password 1234	admin password: 1234	1234
r admin password	Get admin login password	r admin password	admin password: 1234	
s user password x	Set user login password (x=[16 characters max])	s user password 1234	user password: 1234	1234
r user password	Get user login password	r user password	user password: 1234	

Note: The feedback of the command of "r status" is as following.

```
==========================================================================================
Status Info 150W Class D Amplifier
MCU v1.1.0 Web v1.1.0

Power   Volmue_LCD   ID_LED   Trigger   Fan_1   Fan_2   Speaker   Baud
On      On           Off      Low       On      On      4Ω        115200

Input   Name          Stereo   Gain(dB)   Mute
01      Dante_In_CH1  On       0          Off
02      Dante_In_CH2  On       0          Off
03      Line_In_Left  On       0          Off
04      Line_In_Right On       0          Off

Input   Name     Dante_In_CH1   Dante_In_CH2   Line_In_Left   Line_In_Right
05      Mixer_1  -14dB          -14dB          -14dB          -14dB
06      Mixer_2  -14dB          Off            -14dB          Off

Output   Name              FromIn   Stereo   Volume   Mute   Delay(ms)
01       Dante_Out_CH1     05       On       50       Off    0
02       Dante_Out_CH2     06       On       50       Off    0
03       Line_Out_Left     01       On       50       Off    0
04       Line_Out_Right    02       On       50       Off    0
05       Speaker_Out_Left  01       Off      50       Off    0
06       Speaker_Out_Right 03       Off      50       Off    0

TCP/IP  Telnet   MAC
8000    0023     6C:DF:FB:0C:B3:8E

DHCP     IP               Gateway          SubnetMask
On       192.168.062.111  192.168.062.001  255.255.000.000
(Static: 192.168.000.100  192.168.000.001  255.255.000.000)
==========================================================================================
```

9. Connection Diagram



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