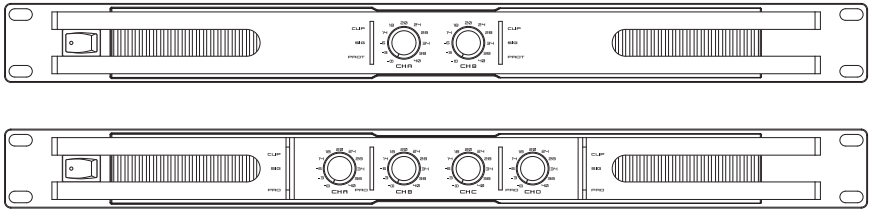
SWITCHING POWER PROFESSIONAL AMPLIFIER

User's Manual

ADH150.2 / ADH150.4
ADH300.2 / ADH300.4
ADH500.2 / ADH500.4



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IMPORTANT!

Please read this manual carefully before operating this unit for the first time.

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SAFETY RELATED SYMBOLS

The symbol is used to indicate that some hazardous live terminals are involved within this apparatus, even under the normal operating conditions.

The symbol is used in the service documentation to indicate that specific component shall be only replaced by the component specified in that Documentation for safety reasons.

⏚ Protective grounding terminal.

~ Alternating current /voltage.

ϟ Hazardous live terminal .

ON: Denotes the apparatus turns on.

OFF: Denotes the apparatus turns off, because of using the single pole switch, be sure to unplug the AC power to prevent any electric shock before you proceed your service.

WARNING: Describes precautions that should be observed to prevent the danger of injury or death to the user.

Disposing of this product should not be placed in municipal waste and should be separate collection.

CAUTION: Describes precautions that should be observed to prevent danger of the apparatus.

WARNING

- **Power Supply**

Ensure the source voltage matches the voltage of the power supply before turning ON the apparatus.

Unplug this apparatus during lightning storms or when unused for long periods of time.

- **External Connection**

The external wiring connected to the output hazardous live terminals requires installation by an instructed person, or the use of ready-made leads or cords.

- **Do not Remove any Cover**

There are maybe some areas with high voltages inside, to reduce the risk of electric shock, do not remove any cover if the power supply is connected.

The cover should be removed by the qualified personnel only.

No user serviceable parts inside.

- **Fuse**

To prevent a fire, make sure to use fuses with specified standard (current, voltage, type). Do not use a different fuse or short circuit the fuse holder.

Before replacing the fuse, turn OFF the apparatus and disconnected the power source.

- **Protective Grounding**

Make sure to connect the protective grounding to prevent any electric shock before turning ON the apparatus.

Never cut off the internal or external protective grounding wire or disconnect the wiring of protective grounding terminal.

- **Operating Conditions**

This apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on this apparatus.

DANTE

Settings

NOTE: Most settings cannot be changed while Dante Virtual Soundcard is running,or when an ASIO application is connected.

NOTE: The device name and audio interface(sample rate and bit depth) must be set in Dante Controller ,While Dante Virtual Soundcard is running.

To change settings:

1.Completely quit out of any audio applications that are using the Dante Virtual Soundcard.
2.Stop Dante Virtual Soundcard
3.Change your Dante Virtual Soundcard settings.
4.Restart Dante Virtual Soundcard
5.Restart your audio application/s.

Click Settings on Dante Virtual Soundcard Control Panel and set up paremeters as below:

NOTE: Computer with poor scheduling performance will need to use higher settings of Buffer Size and Asio Latency.

Click Start to start the Dante Virtual Soundcard.When the button shows Stop, it indicates that the Dante Virtual Soundcard is currently running. The icon shows Start, illustrating the Dante Virtual Soundcard is currently stopped. Click the button to toggle the running state of Dante.

DANTE

• Dante Virtual Soundcard

1.Starting the Dante Virtual Soundcard Control Panel(Windows)
By default , Dante Virtual Soundcard will be installed in:C:\Program Files\Audinate\
Dane Virtual Soundcard\In 64-bit Windows ,it will appear under C:\Program Files(x86)

Dante Virtual Soundcard Control Panel can be started in one of two ways:

One: using the Start menu:Start>Programs>Audinate>Dante Virtual Soundcard>Dante Virtual Soundcard; or Windows 8: Windows key>Dante Virtual Soundcard

Two: navigate to the directory where it is installed,and double-click the Dante Virtual Soundcard icon: dvs_gui.exe

The first time you start the Dante Virtual Soundcard Control Panel,you will be presented with the Licensing screen.

Once you have obtained a License ID,it can be entered in the Licensing tab. The Activate button is not enabled until a correctly formatted License ID has been entered into the dialog box.
NOTE:Eusure that your computer has access to the Internet during this step.

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Do not use this apparatus near water. Install in accordance with the manufacture-r's instructions. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not block any ventilation openings.

No naked flame sources, such as lighted candles, should be placed on the apparatus.

IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions.
- Follow all instructions.
- Keep these instructions.
- Heed all warnings.
- Only use attachments/accessories specified by the manufacturer.

• Power Cord and Plug

Do not defeat the safety purpose of the polarized or grounding type plug.

A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

• Cleaning

When the apparatus needs a cleaning, you can blow off dust from the apparatus with a blower or clean with rag etc.

Don't use solvents such as benzol, alcohol, or other fluids with very strong volatility and flammability for cleaning the apparatus body. Clean only with dry cloth.

• Servicing

Refer all servicing to qualified personnel. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so .

Servicing is required when the apparatus has been damaged in any way , such as power supply cord or plug is damaged , liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture , does not operate normally, or has been dropped.

The mains plug is used as the disconnect device, the disconnect device shall remain readily operable.

INTRODUCTION

AH150.2/AH150.4/AH300.2/AH300.4/AH500.2/AH500.4 is a class-D installation amplifier. It is suitable for both 70/100V line installations (selectable through dip-switches). Each channel has its own volume control and LED indicators (signal, clip and protection). The input and output connections are made through euroblocks. Its 1HU rack 19" size is very appropriate for many types of installations, taking advantage of its multichannel design.

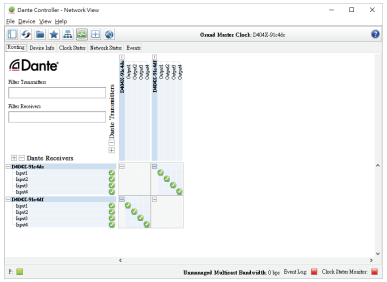
Features:

*High current switching power allowing high power output with low noise and low distortion
*Substantial protection circuitry like thermal, short circuit, power on/off muting and Therefore protection
*Built-in limiter
*Euroblock input and output
*front mounted gain controls for easy access
*Signal, Clip protect, and Power LED indicators to monitor performance.
*Amplifier Disable/Prior/Failure Status
*2-channel or 4-channel installation amplifier.
*70/100V line operation.
*Power output (70/100V): 2X150W/4X150W/2X300W/4X300W/2X500W/4X500W
*1 HU rack 19" size.
*Switching power, class-D amplifier.

DANTE

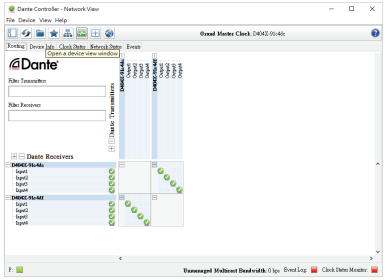
Click [+] between different devices to show Tx channels and Rx channels, and click any grid between Tx channels and Rx channels to change the connected state of the two channels .

NOTE: There is no sense to click any grid between Tx channels and Rx channels of the same device.

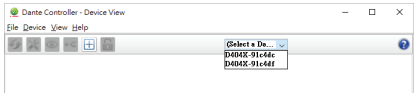


Next , configure audio interface and device name of Dante Virtual Soundcard using Dante Controller. By default, the device name of Dante Virtual Soundcard is user name of your computer.

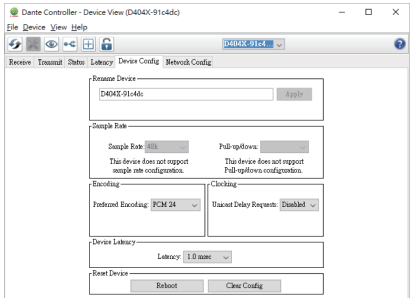
Click Device button on Menu bar , you will be presented with the Device view.



Select the device name of Dante Virtual Soundcard on the screen.



Click Device Config to display the configuration of Dante Virtual Soundcard and then change the setting of Dante Virtual Soundcard.



6)Acknowledge/accept any Windows security warnings that are displayed.
7)click Launch to start the software application or click Close to finish installing.

- Audio Applications for recording and playback
  Please refer to 'operating_instructions_for_recording_and_playback.doc' file.

Configuration

Starting the Dante Controller

By default ,Dante Controller will be installed in:C:\Program Files\Audinate\Dane controller\In 64-bit Windows ,it will appear under C:\Program Files (x86)

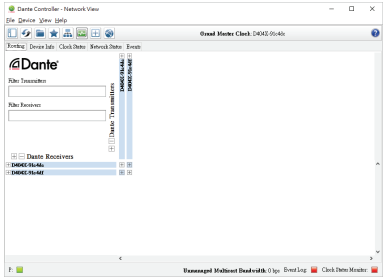
The Dante Controller can be started in several ways :

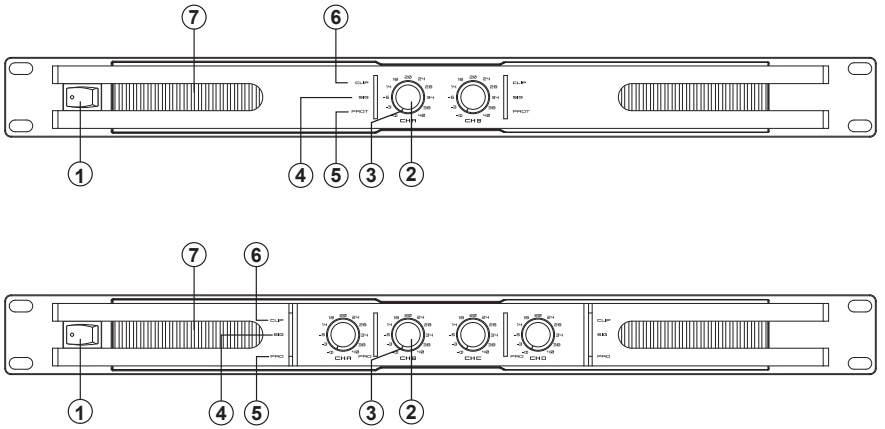
One : using the Start menu: Start>Programs>Audinate>Dante Controller>Dante Controller

Two : navigate to the directory where it is installed, and double-click the Dante Controller.

Routing:

When Dante Controller is started , it always displays the Routing Tab within the Network View. In this view the network is shown in the form of grid. Devixes with Tx channels are displayed along the top row of the grid, and those with Rx channels are displayed along the left-hand column of the grid. Initially a collapsed view is presented ; individual channels cannot be seen.





① **Power Switch**

It switches ON/OFF the unit main power.

② **Level Control**

These volume controls allow you to adjust the volume level.

③ **Power/Prior LED**

The Green LED light up when the amplifier power on.
The Red LED light up when the amplifier input priority.

④ **Signal LED**

These green LEDs light up when the respective channel's output signal pass through.

⑤ **Protection LED**

In normal operation, the LED will not illume; If the LED turns red, it means the unit is in heat protection without sound output. The speaker system is actually disconnected from the amplifier outputs when this LED is red, the temperature must be reduced by good ventilation and the signal level decreased etc. if the problem is resolved. the protection output systems will deactivate automatically, and normal amplifier operation is resumed.

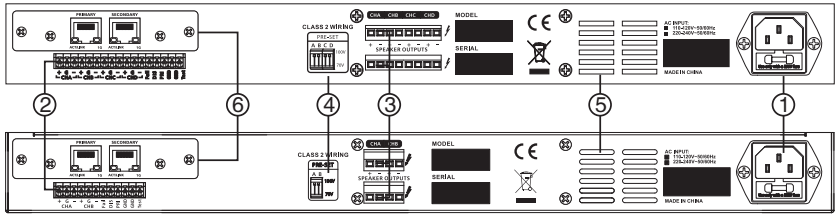
⑥ **Clip LED**

This red LED lights up when the input signal is too strong. it is time to reduce input level until clip LED turn off.

⑦ **Air Intake Vents**

AH150.2/AH150.4/AH300.2/AH300.4/AH500.2/AH500.4 employ a variable speed internal cooling fan to intake the air through front grill to keep it running cool even under extreme operating conditions. Please keep these vents clear and free from obstruction at all times to insure proper cooling.

REAR PANEL



① **AC Input**

Use it to connect your AH150.2/AH150.4/AH300.2/AH300.4/AH500.2/AH500.4 to the supplied AC cord.

② **Euroblock input**

CH A +:CHA balanced signal input+ or unbalanced signal input

CH A G:CHA signal GND

CH A - :CHA balanced signal input- or unbalanced signal not connect

CH B , CH C and CH D are the same

Fail:Failure Status output:

Failure Status with +5V high level;

disabled/protection/inactive are all with output low level

DIS: Amplifier disabled ,input control PIN

While Amplifier is operating disabled with +5V high level, linked to GND, the amplifier will be shutdown and with all protection LEDS lighting, at this moment failure status from+5V high level(normal state) turn into low level (amplifier disabled or not connected)

Using this amplifier disabled function and than connect speaker output, and amplifier start again after finishing connection

PRI: Input Priority Control PIN

When PRI connect to GND directly, TEST input has priority , at this moment VR RED LEDS lighting

GND: signal GND and control GND

TEST: Input Priority test/alarm signal

When PRI connect to GND directly, Test/alarm signal will reach the top priority level.

③ **Euroblock Output**

Connect the amplifier to your speakers using these Euroblock.

④ **Operation mode switch**

Select the operation mode (70V or 100V) on each channel moving the dip-switches to the desired position.

⑤ **Exhaust Vents**

Air is drawn from front grilles,flowing through the unit and heat sink,and then exhausted via the rear vents. Do not block or impede the air flow through these vents and keep the vents areas free of foreign materials.

⑥ see attached DANTE file descriptiom

DANTE

Dante Virtual Soundcard

Dante Virtual Soundcard is a software application that turns your PC or Mac into a Dante-enabled device, allowing Dante audio traffic to be transmitted and received using the standard Ethernet port. No additional hardware is required.

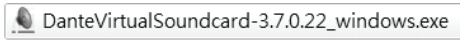
NOTE: The Dante Virtual Soundcard does not support virtual machines-it must be installed on a computer with a standard Windows or Mac OS X operating system.

Installing Dante Virtual Soundcard

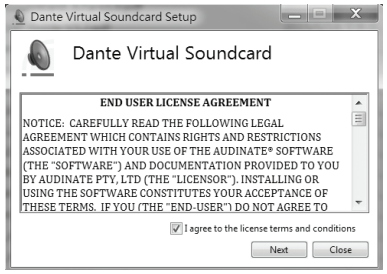
NOTE: Before installing,please turn on Firewall.

1)Ensure you are logged on to your PC as an administrator.

2)Double-click the icon for the Dante Virtual Soundcard.



3)Read the license text,and if you accept the terms of the agreement,click the "I Agree ..."checkbox. If you do not accept the terms ,click Close to terminate the installation.



4)The Network Throttling Management screen is displayed. Audinate advises that you let Dante Virtual Soundcard manage network throttling(the default option).

5)Click Install.

DANTE

Softwares to be intalled

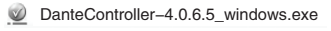
- Dante Controller

  Dante Controller is a software application provided by Audinate which allows users to configure and route audio around Dante networks .It is available for Windows and OS X.

  Installing Dante Controller

  NOTE: Before installing,please turn on Firewall.

  1)Double-click the icon for Dante Controller.exe

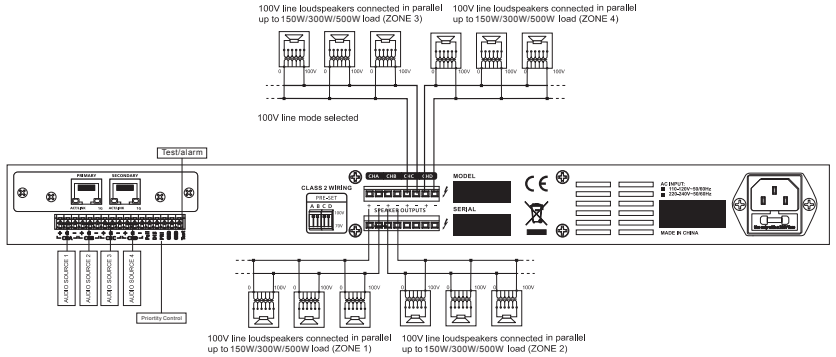
  2)Read the license text,and if you accept the terms of the agreement ,click the 'I Agree ...'check- box. If you don't accept the terms,click Close to termina te the installation.

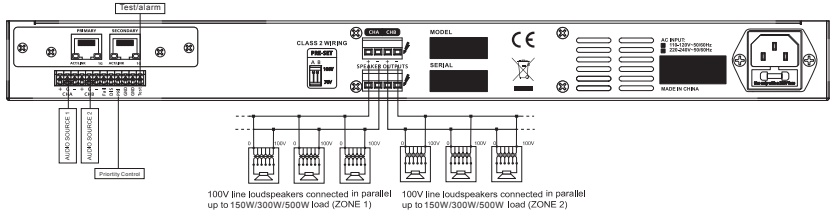
  3)Acknowledge/accept any Windows security warning that are displayed.

  4)Click Launch to start Dante Controller or Click Close to finish installing.

APPLICATIONS

This is a connection example. Thanks to it 4-channel/2-channel design, it is possible to separate 4 or 2 zones with different audio sources or to use the same audio on all zones.

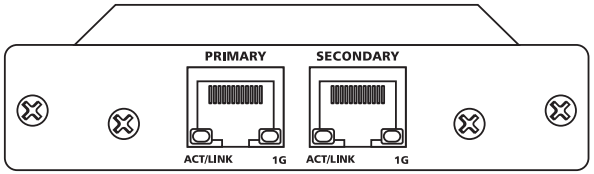




TECHNICAL SPECIFICATIONS

		2*150W	4*150W	2*300W	4*300W	2*500W	4*500W
Output Power (100V line)	one channel drive	150W	150W*2	300W	300W*2	480W	480W*2
	all channel drive	135W*2	135W*4	270W*2	270W*4	400W*2	400W*4
Output Power (70V line)	one channel drive	150W	150W*2	300W	300W*2	480W	480W*2
	all channel drive	135W*2	135W*4	270W*2	270W*4	400W*2	400W*4
Input sensitivity		0.9–1.1V (0+/–1dBV)					
Input Impedance		20kΩ (balanced) 10kΩ (unbalanced)					
Frequency response		100 Hz – 15 kHz					
Voltage gain (100V)		40 dB					
THD+N		<0.1%					
S/N rate		>95 dB					
Crosstalk		>70dB					
Damping factor		>200					
Power output circuitry		Switching power, Class–D					
Power supply		AC 110–240V, 50/60 Hz					
Protections		Short circuit, open circuit, thermal, ultrasonic and RF					
Connectors		INPUT & OUTPUT: Euroblock					
Controls		Front: AC switch, Input level control for each channel Rear: 70V/100V selector					
Indicators		SIGNAL: green LED CLIP: red LED POWER: green LED PROTECTION: red LED PRIOR:green/red LED					
Dimensions (WxHxD)		483x44x360 (mm)					
Weight		4.7 kg	5.4 kg	5.1 kg	6.2 kg	5.1 kg	6.3 kg

DANTE



1. Feature summary

- On-board microprocessor to handle local control and management functions
- Redundant network connections via switch
- Bit depths:32 per sample
- Up to 2*2,4*4 channels at 48kHz
- Up to 2*2,4*4 simultaneous audio streams
- Hardware audio metering
- High-quality,low jitter on-board clock
- Up to 2000 sample audio buffering per channel
- Standard RGMII/MII interface for Ethernet PHY or switch chip
- Software is upgradable over network

2. Temperature Charateristics

- Operating temperature range : 0°X to 40°X Celsius
- Recommended storage temperature: -20°X to +60°X Celsius

3. Electrical Characteristics

- Power Supply: 5V
- Power Consumption: < 2W

4. Minimum System Requirement

The tables below list the minimum system specification for your computer to be able to use Dante Controller

disclaimer : It is possible that your computer may meet the requirements below, but suffer from some other individual performance limitation related to its particular hardware.Please seek the advice of your computer support administrator.

Component	Recommended Minimum Requirement
Processor	1GHz or better,Dual core CPU
Memory	1 Gigabyte of RAM
network	A Gigabit(1000 Mbps) Ethernet network interface is required for channel conuts above 32x32@48kHz. Wireless LAN(WiFi) Ethernet interfaces are not supported.
Operating System(Windows)	Windows 7 (SP1 and above),8 and 8.1.NOTE:both UTF-8 and Unicode are supported EXCEPT for host or device names ; the DNS standard does not support Unicode for these
Storage /Disk	As is the case with any application of this type,higher transfer rates are required for recording and playing back large numbers of audio tracks to and from disk . Disk speeds of 7200rpm and above are recommended for more than 16 channels of record/playback from disk.