VHD3200D
User Guide

VHD 3200D
VERY HIGH DEFINITION AMPLIFIER

The Future of Sound.
Made Perfectly Clear.

At KV2 Audio our vision is to constantly develop technologies that eliminate distortion and loss of information providing a true dynamic representation of the source.

Our aim is to create audio products that absorb you, place you within the performance and deliver a listening experience beyond expectations.

Important Safety Instructions

Before using your VHD3200D Amplifier, be sure to carefully read the applicable items of these operating instructions and the safety suggestions.

1. Read all product instructions.
2. Keep printed instructions, do not throw away.
3. Respect and rewiew all warnings.
4. Follow all instructions.
5. Do not use this unit near water, in unprotected out door areas or in rain or wet conditions.
6. Clean only with dry cloth.
7. Do not block any ventilation openings.
8. Install in accordance with KV2 Audio's recommended installation instructions.
9. Do not install near any heat sources such as heat radiators, heat registers, stoves or other apparatus that produce heat.
10. Do not defeat the safety purpose of the grounding type plug. A grounding type plug has two blades and a third grounding connector. The third connector is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles. The AC mains plug or appliance coupler shall remain readily accessible for operation.
12. Only use accessories specified by KV2 Audio.
13. Unplug this Amplifier during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the Amplifier has been damaged in any way, such as when the power-supply cord or plug has been damaged; liquid has been spilled or objects have fallen into the Vents; rain or moisture has entered the Amplifier; the Amplifier has been dropped; or when for undetermined reasons the Amplifier does not operate normally.
15. Do not remove front or back panels. Removal of the panel will expose hazardous voltages. There are no user serviceable parts inside and removable may void the warranty.
16. An experienced user shall always supervise this professional audio equipment.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE PANELS.
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING: To prevent fire or electric shock, do not expose this equipment to rain or moisture.

SAFETY SUMMARY
To reduce the risk of electric shock, disconnect the Amplifier from the AC mains before installing audio cable. Reconnect the power cord only after making all signal connections. Connect the Amplifier to a two pole, three- wire grounding mains receptacle. The receptacle must be connected to a fuse or circuit breaker. Connection to any other type of receptacle poses a shock hazard and may violate local electrical codes. Do not allow water or any foreign object to get inside the Amplifier. Do not put objects containing liquid on or near the unit. To reduce the risk of overheating the Amplifier, avoid exposing it to direct sunlight. Do not install the unit near heat-emitting appliances, such as a room heater or stove. This Amplifier contains potentially hazardous voltages. Do not attempt to disassemble the unit. The unit contains no user serviceable parts, repairs should be performed only by factory trained service personnel.

Contents

Application

Specifically designed to drive all VHD, ES, SL subwoofer elements as part of the VHD and ES systems in a full rack mount module

• Portable PA
• Fixed installations

Introduction

The VHD3200D is a rack mounted subwoofer amplifier. The unit contains two separate 1600 watt amplifiers with individual power supplies, signal paths and inputs and outputs within a single four rack space chassis. The unit can be used in bridged mode to provide full power for one channel mode. The unit acts as a slave for the VHD2000D, which provides audio and control signal. It can also be used with the EPAK2500/R when used in combination with KV2 Audio ES systems and power the associated ES subwoofer systems.

Although this unit is simple to operate improper use can be dangerous. This is a very highpowered device that can put out high voltages and sizable currents. Always use safe operating techniques with the VHD3200D.

FOR YOUR SAFETY, READ THE IMPORTANT PRECAUTIONS SECTION AS WELL AS THE INPUT, OUTPUT AND POWER CONNECTION SECTIONS OF THIS MANUAL.
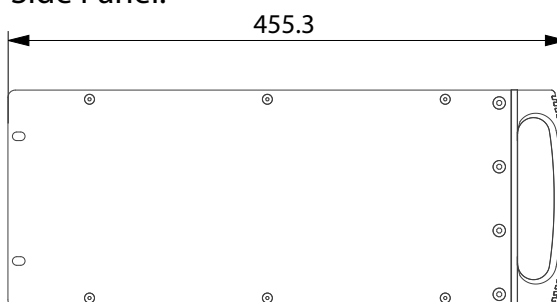
Front Panel:

481.4

177.4

Rear Panel:

431.8

177.4

Side Panel:

455.3
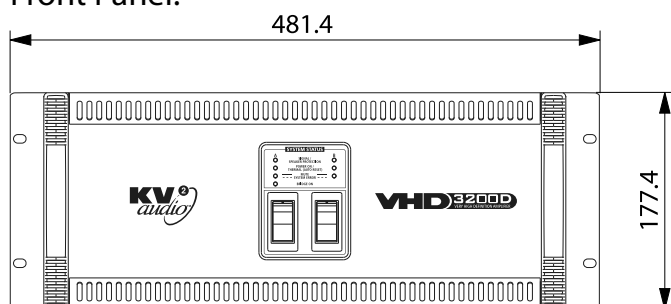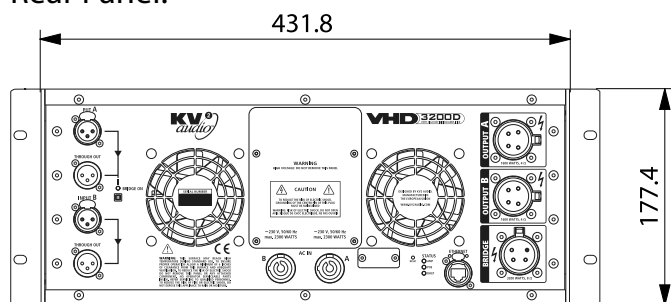
Unpacking

Unpack the VHD3200D and check to see if there is any damage to it. If you find any damage notify your supplier immediately. Only the consignee may institute a claim with the carrier for damage incurred during shipping. Be sure to save the carton and all packing materials for the carrier's inspection.

Should you ever need to ship the unit, only use the original factory packaging. If the shipping carton is unavailable, contact your supplier to obtain a replacement.

The VHD3200D carton should contain:

• VHD3200D amplifier control unit • User's Guide • PowerCon detachable power cable

Rack Mounting

VHD3200D's will mount in standard 19" rack systems. Integral rear mounting rack ears are also provided for additional support, do not rely on fixing and mounting the VHD3200D using just the front panel as support. Use eight screws and washers to mount the amplifier to the equipment rack rails (four for the front and four for the rear). We recommend using a shock mounted rack for touring use to prolong the life of your VHD3200D.

Cooling

The VHD3200D has a comprehensive cooling system featuring chassis-sealed PCB board mounting and shock mounted, speed controlled fans. This means that the cooling system never drives air across PCB boards, connectors or components ensuring prolonged electronic component lifespan and minimizing maintenance cycles.

Air is drawn into the front of the amplifier by the two fans on the rear panel, this passes over the cooling fins of the heat sinks and exhausts through the rear. If the heat sink gets too hot, its sensing circuit will open the output relay, disconnecting the load.

It is important to have an adequate air supply at the front of the amplifier, and enough space around the rear of the amplifier to allow the cooling air to escape. If the unit is rack mounted, do not use doors or covers on the rear of the rack; the exhaust air must flow without restriction. If you are using racks with closed backs, use fans on the rear rack panel to ensure an ample air supply.

IMPORTANT! Please note that for correct full performance of the unit AND ANY WARRANTY COVER, it is important that regular maintenance of the front vents and filters as well as the rear panel fans be inspected and cleaned by removing any dust and debris build-up. Any product failure due to lack of attention in this matter will immediately void any current warranty. (Please refer to notes re ventilation procedures).

AC Requirements

Two PowerCon cables are provided to connect the VHD3200D to a suitable AC power supply.

The PowerCon is a connector without breaking capacity, i.e. the PowerCon should not be connected or disconnected under load or while it is live. Always isolate your AC supply before disconnecting the PowerCon connector.

Your VHD3200D will be supplied pre set to the voltage used in your area. The table below provides typical current draw figures for the VHD3200D.

AC Input	Current draw with amplifier running at Average Power (Each Channel)	Current draw with amplifier running at Peak Power (Each Channel)
250V	5.5A	11A
230V	6A	12A
115V	12A	24A

Remember that if you are connecting both AC cables for the VHD3200D to the same AC power source then you will need to have double the per channel current available.

Front panel
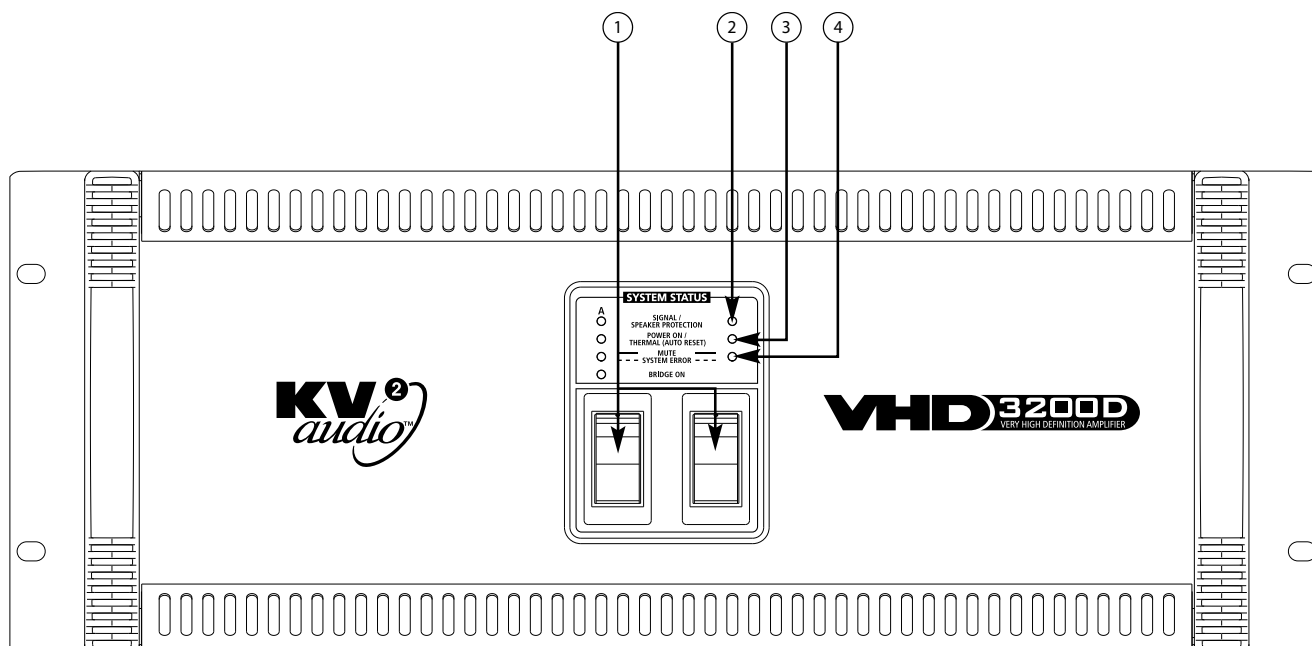
1) AC Mains Switch

The VHD3200D has combination AC mains switch/circuit breakers on the front panel. If either of the switches shut off during normal use, push it back to the ON position once. If it will not stay on you should take the unit to qualified service personnel to have it serviced.

2) Signal / Speaker Protection

Indicator These are dual colour LED's. When green they indicate that signal is present at the Input to that particular channel of the amplifier. When yellow they indicate that the audio speaker protection limiter has been activated for that particular channel of the amplifier.

3) Power ON / Thermal (Autoreset)

These are dual colour LED's. When green they indicate that the Power Switch is ON and that channel of the amplifier is powered up. When red they indicate that that channel has overheated and shut down. The unit will Auto Reset after it cools down to a safe operating temperature.
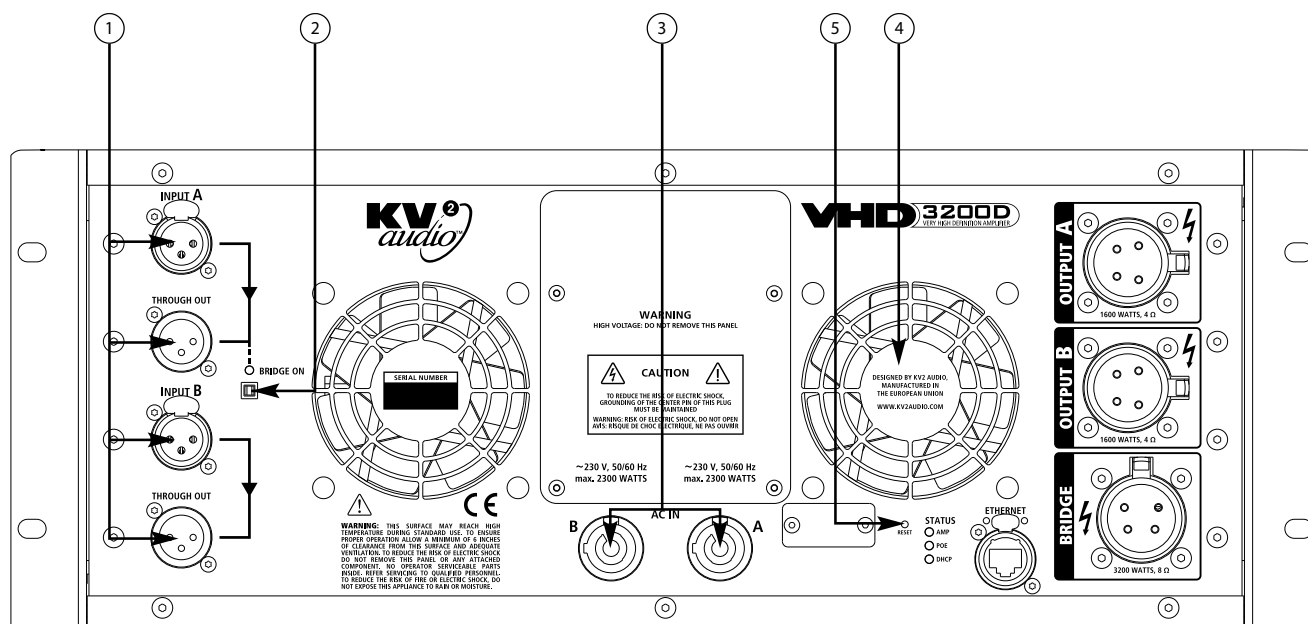
4) Mute / System Error

Red colour LED. When lit, it indicates an activated channel mute. When flashing, it indicates that the amplifier is off, or some problem with the amplifier has occurred, more information can be obtained via Ethernet.

5) Bridge ON

Green colour LED. When lit, it indicates activated bridge mono mode.

Rear panel

1) Main Input A & B / Through Out

These are the input XLR connectors for channel A & B with associated 'Through Output' connectors for sending signal to other devices.

2) Bridge Mode Switch

When operating the VHD3200D in bridge mode, (bridge switch pressed), Input A serves as a bridge mode input, bridge output (9) serves as speaker output. Input B is not active.

3) PowerCon Power Connectors

The VHD3200D Amplifier uses two connectors per two channel. Each connector supplies one channel. One for each channel of the VHD3200D both must be connected to operate both channels of the VHD3200D. They accept standard PowerCon terminated AC Mains cables.

4) Fans

The cooling fans operate continuously while the VHD3200D is on. An internal temperature sensor increases the speed of the fans during high temperature conditions. Air enters through the front grille and exits through the rear. Be sure to allow adequate air flow to the front of the rack in which the VHD3200D is mounted.

Communication

5) Reset

Serves as factory reset button. Resets all setup, including network settings (default settings AutoIP/DHCP). Use a tool with maximum diameter 2mm.

Rear panel
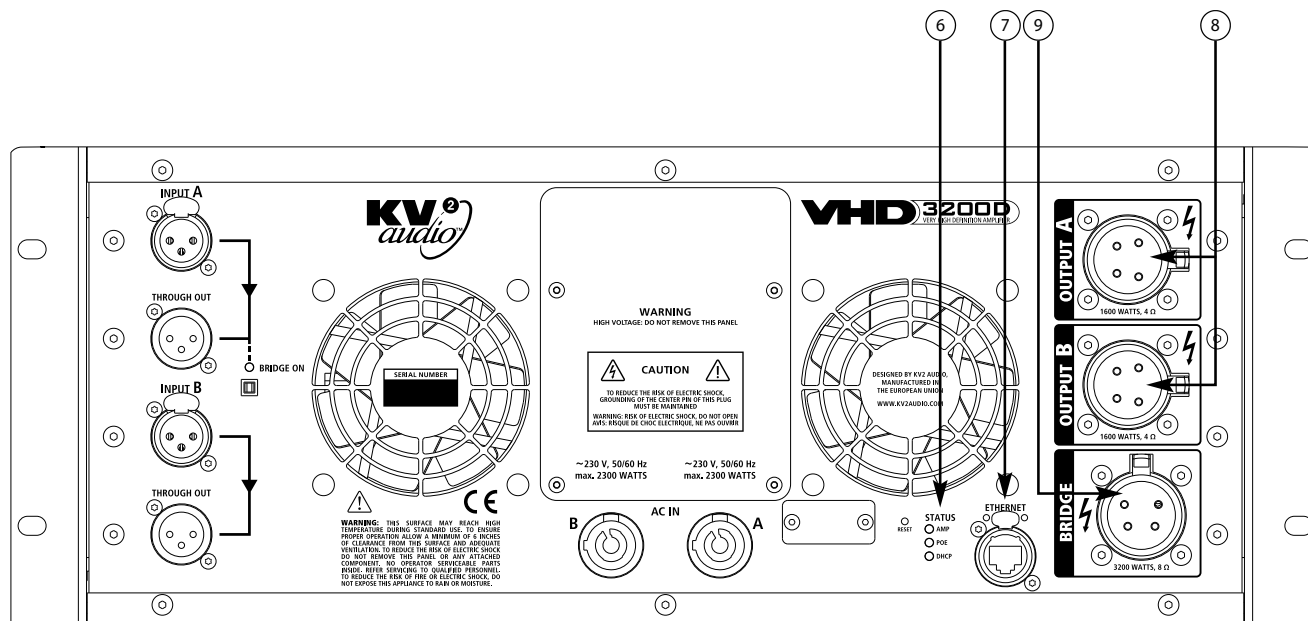
6) Status

LEDs indicates amplifier and amplifier diagnostics status, these are:

AMP

Dual colour LED. When green, it indicates that the power amplifier is powered up and all monitored parameters are OK. When red, it indicates that amplifier is off, or there some problem with amplifier occurs, more information can be obtained via Ethernet.

POE

When green, it indicates that the diagnostics unit is powered via Power over Ethernet device.

DHCP

When green, it indicates that the diagnostics Ethernet IP address is assigned from the DHCP server.

7) Ethernet connector

Serves as an external communication port supporting Ethernet standard, accepts RJ45, T-658B wiring. The VHD3200D provides web-server and SNMP (Simple network management protocol). When the Ethernet cable is connected and devices successfully establish a connection, the green LED is activated. When Ethernet communication is in progress, the orange LED flashes.

8) Speaker AP4 Connectors

One for each channel of the VHD3200D. Accepts a standard AP4 terminated loudspeaker cables. We recommend using 2.5mm/core cables. The minimum recommended output load is 4Ω.

9) Bridge Mode AP4 Connector

Output channel of the VHD3200D when running in Bridge Mono Mode. Do not connect other speakers to speakers outputs A & B in Bridge Mono Mode. The minimum recommended output load is 8Ω, when running in Bridge Mono Mode.

VHD3200D Web-server

The VHD3200D web-server is accessible using a standard web browser on PC or mobile device. The appropriate VHD3200D network address must be set to access web-server. The web-browser device IP address must be set from the same network range and must be connected into the same network.

IP addresses are assigned to networked devices when they are configured for a specific network. The way that they are assigned can be static or dynamic.

The VHD3200D network address may be set several ways:

Auto IP

(Default) Automatic Private IP Addressing, is a method of automatically assigning IP addresses to networked devices. A networked device configured to use Auto IP first makes a request to a DHCP server for an address. If the device does not receive an IP address, which happens when there is no DHCP server on the network or when the DHCP server is not responding, the device assigns itself an address. Auto IP addresses always follow this pattern: **169.254.x.y**, where **x** and **y** are any two numbers between 0 and 255. Unlike DHCP, Auto IP does not require a router or a separate server to assign an IP address. Selected IP address is displayed on display - section NET, or can be obtained using KV2 diagtool software.

DHCP

Dynamic Host Configuration Protocol. A DHCP server enables network devices to request IP addresses and networking parameters automatically from the DHCP server, reducing the need for a network administrator or a user to manually assign IP addresses to all network devices. The Assigned IP address is displayed on display - section NET, or can be obtained using the KV2 diagtool software.
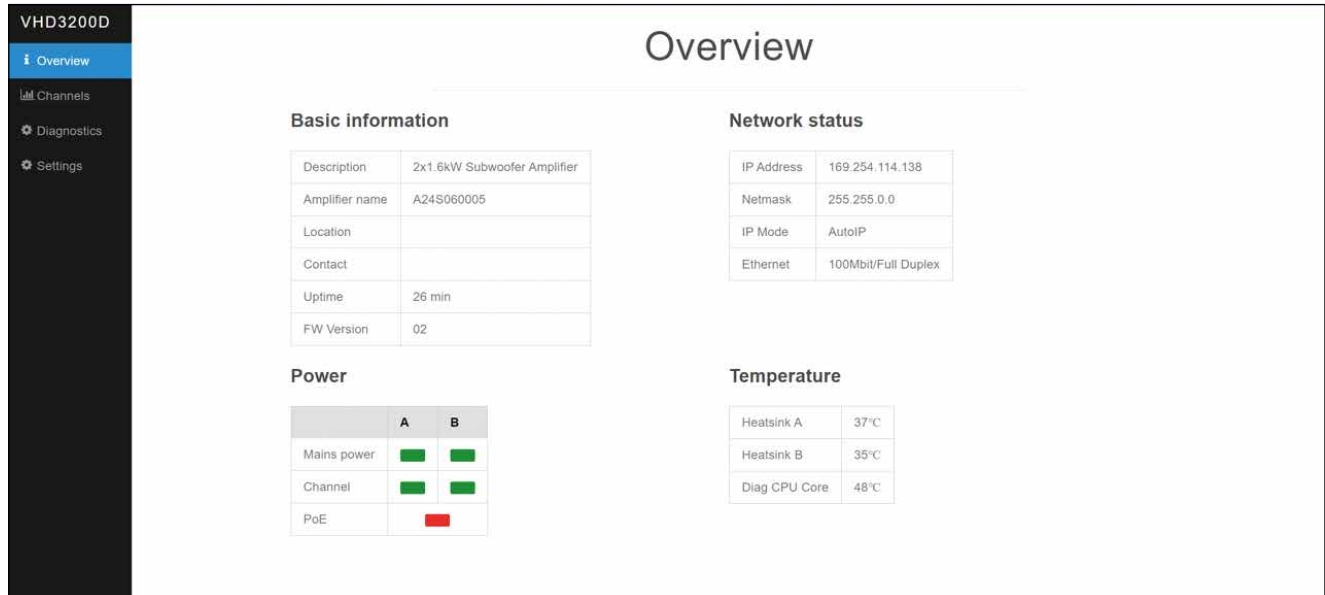It is important to know that a dynamic IP address can change. If a network device with a dynamic IP address suddenly stops responding at its IP address, it is possible that it has obtained a new lease and its address has changed.

Static

A static IP address must be manually assigned to a network device. This address is typed by the person who sets up devices on the network, and it never changes. A static IP address changes when the person who administers the network specifically changes it.

Web-server page

Open the VHD3200D web-server, use the VHD3200D IP address, which is shown on display - section NET, or can be obtained using the KV2 diagtool software.

Overview

Shows the amplifier basic information.

Basic Information

Shows the information assigned by user of the amplifier: Description, Amplifier name, Location, Contact, Uptime and Firmware revision.
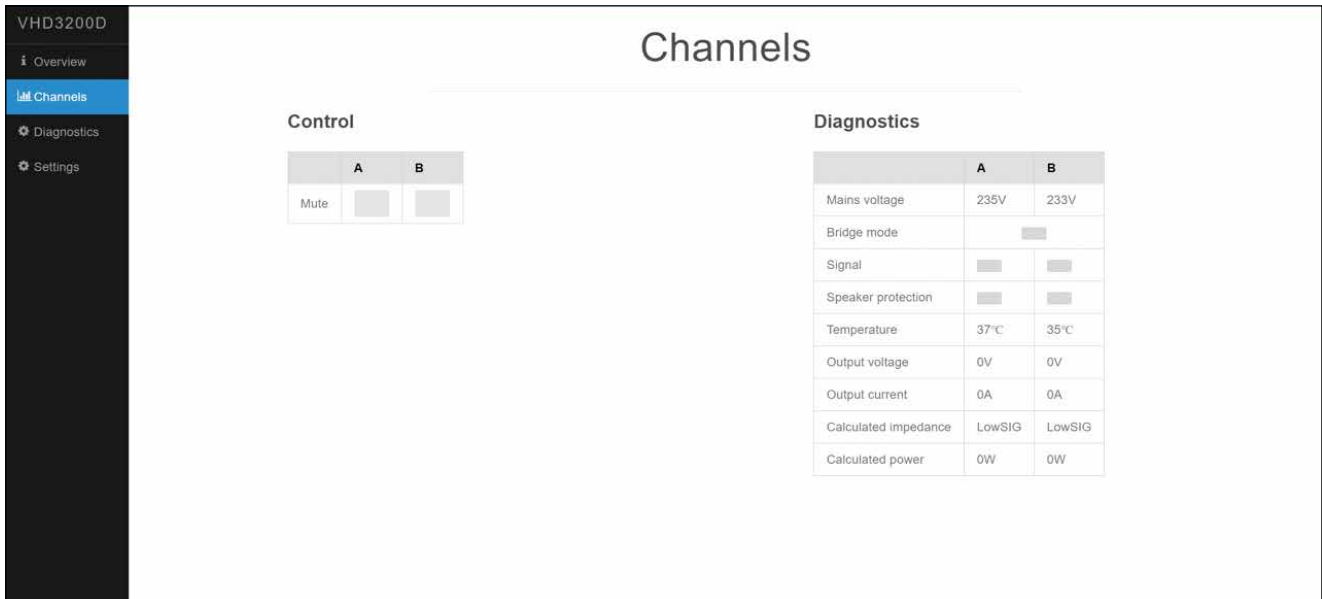
Network status

Shows the amplifier ethernet network address, netmask, mode and status.

Power

Shows the amplifier power sources status: Mains power A & B, Channel A & B power sources, Power over Ethernet (PoE).

Temperature

Shows the amplifier channel A & B heat sinks temperatures and Diagnostic CPU temperature.

Channels

Shows the amplifier control parameters and amplifier diagnostics information.

Control

Mono mode (ON or OFF), Mute (RED = amplifier muted).

Diagnostics

Shows amplifier diagnostics information.

Mains voltage

Signal

Green when input signal is present.

Speaker protection

Orange when speaker protection hits.
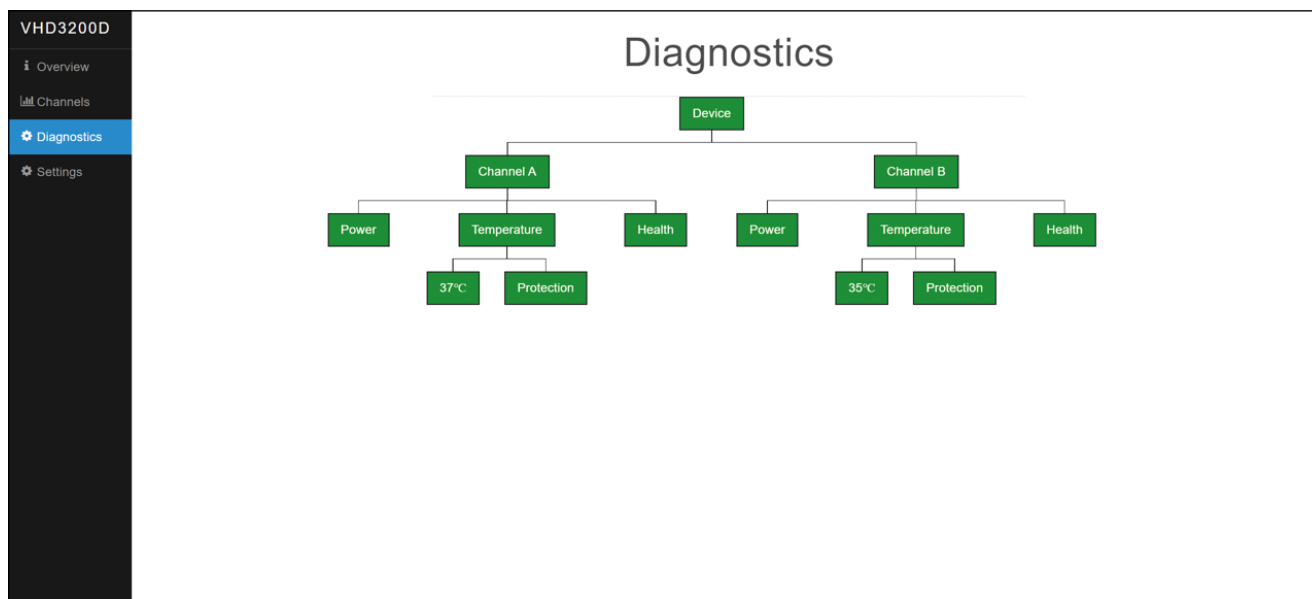
Temperature

Output voltage

Shows the amplifier speaker output voltages.

Output current

Shows the amplifier speaker output currents.

Calculated impedance

Shows the amplifier speaker output connected speaker impedances.

Diagnostics

Shows the VH3200D amplifier and its components diagnostics information. Dual colour - Green = OK / Red = no power or some problem occurs.

Device

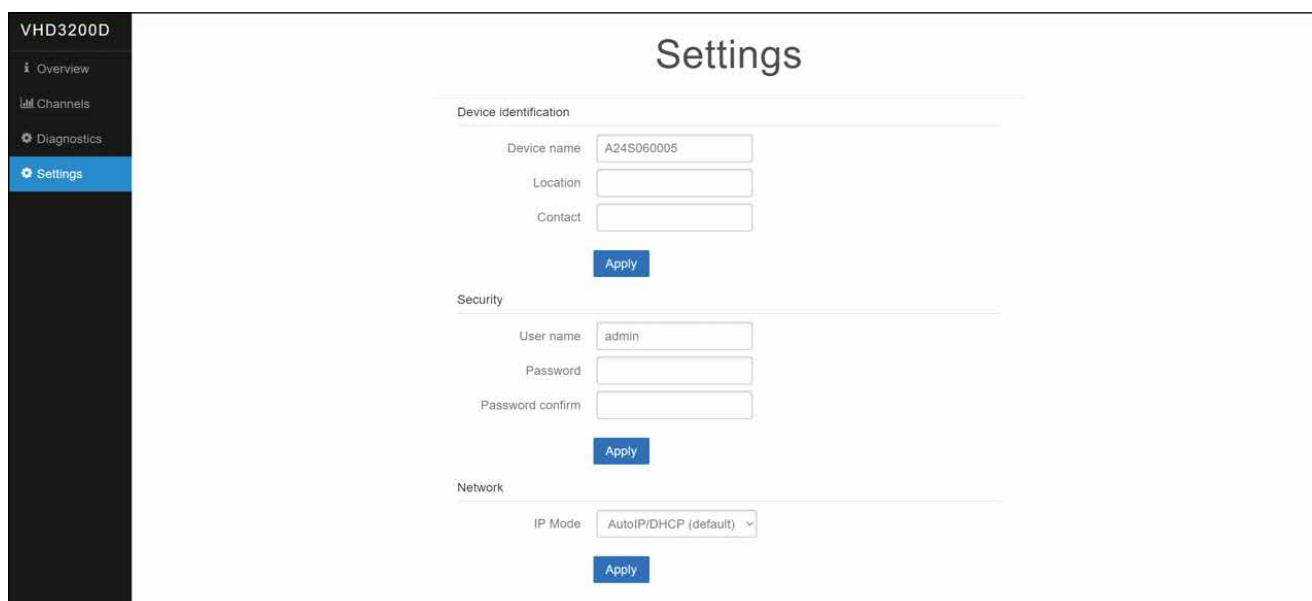Sums VHD3200D diagnostics together.

Channel A & B

Sums amplifier channel diagnostics information: Power source, Temperature, Health (amplifiers A / B working OK with dedicated gain).

Temperature

Displays amplifiers heat sinks A & B temperatures (°C).

Protection

When red they indicate that that channel has overheated and shut down. The unit will Auto Reset after it cools down to a safe operating temperature.

Settings

Shows and sets the device information, web-server password, network address.

Device identification

Shows and sets the device local information, Device name, Location, Contact.

Security

Sets name and password for web-server security (default User name: admin, default Password: admin).

Network

Sets the Ethernet IP mode. AutoIP/DHCP (default). Static (IP address and netmask must be set).

Specifications

Output Channels

Number of Channels	2
Out. Power 4Ω - 1 channel / 2 channels loaded	1600W / 1600W (RMS)
Out. Power 8Ω - bridged	3200W (RMS)

Low Frequency Amplifier Specification

Type	High efficiency, Low frequency, Current-enhancing switch mode
Distortion	< 0.05%
Operating Bandwidth	20Hz to 100Hz

Signal Input

Input Sensitivity	1.0V RMS
Input Impedance	20kΩ (balanced)
Signal Output	Main Through OUT

Speaker Output

Speaker Output	2x AP4 (1x AP4 bridge)

Features

System setup	Limiter / Short protection
Network	Ethernet: SMNP, Webserver

Power

Power Connector	2x Neutrik PowerCon®
Operating Voltage	115V / 230V / 250V
Operating Voltage Range	100 to 120V@60Hz | 205 to 240V@50Hz | 225 to 260V@50Hz
Recommended Amperage	2 x 20A 115V | 2 x 10A 230V| 2 x 10A 250V
Soft Start	YES
Protection	Thermal breaker
Cooling	2x temperature controlled fans

Physical Dimensions

Height	177.4 mm (7.0")
Width	481.4 mm (18.9")
Depth	455.3 mm (17.9")
Weight	35 kg (88lbs)

Warranty

Your VHD3200D is covered against defects in material and workmanship.

Please refer to your supplier for more details.

Service

In the unlikely event that your VHD3200D develops a problem, it must be returned to an authorized distributor, service centre or shipped directly to our factory. Because of the complexity of the design and the risk of electrical shock, all repairs must be attempted only by qualified technical personnel.

If the unit needs to be shipped back to the factory, it must be sent in its original carton. If improperly packed, the unit may be damaged.

To obtain service, contact your nearest KV2 Audio Service Centre, Distributor or Dealer.

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