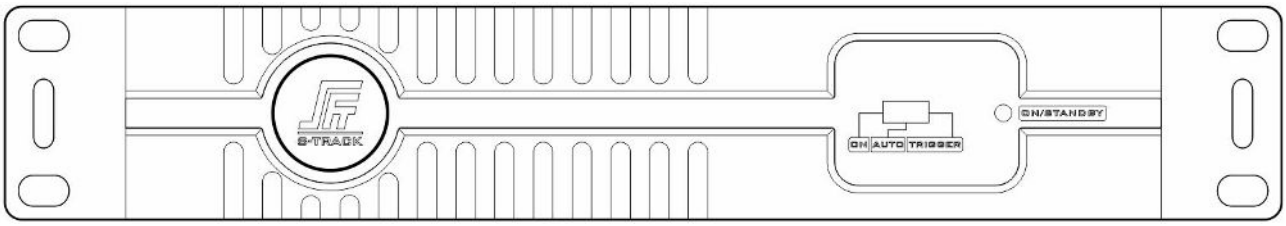
S-TRACK



WHALE XD2120
Dante Digital Amplifier

User Manual

Preface

The purpose of this section is to ensure that the user is able to use the product correctly through this manual in order to avoid danger in operation or property damage. Before using this product, please read the product manual carefully and keep it for future reference.

Outlined

This manual applies to Dante Digital Amplifier.

This manual describes the functions and use of the various functional modules of the Dante Digital Amplifier, and guides you through the installation and commissioning of the Dante Digital Amplifier.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Note	Provides additional information to emphasize or supplement important points of the main text.
Caution	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

Safety Instructions

Danger

To ensure reliable use of the equipment and the safety of personnel, please observe the following during installation, use and maintenance:

- During the installation and use of the equipment, all electrical safety regulations of the country and the region of use must be strictly observed.
- When installing the equipment, make sure that the input power of the equipment power adapter is 100V-240V, 50/60Hz AC power.
- Keep the working environment well ventilated so that the heat generated by the equipment during operation can be discharged in time to avoid damage to the equipment due to excessive temperature.

- Always unplug the unit's power adapter from the AC power outlet before: A. Removing or reinstalling any part of the equipment; B. Disconnecting or reconnecting any electrical plug or connection of the equipment. Do not operate with electricity.
- There are AC high-voltage parts in the equipment, non-professionals should not disassemble them without permission to avoid the risk of electric shock. Do not repair the equipment privately to avoid aggravating the damage.
- Do not spill any corrosive chemicals or liquids on or near the equipment.
- If the unit emits smoke, odour or noises, turn off the power immediately and unplug the power cord, and contact your dealer or service centre.
- If the appliance is not working properly, contact the shop where you purchased the appliance or the nearest service centre and do not disassemble or modify the appliance in any way. (We cannot be held responsible for problems caused by unapproved modifications or repairs).

Caution

- Do not drop objects on the equipment or vibrate the equipment vigorously, and keep the equipment away from locations with magnetic field interference. Avoid installing the equipment in a place where the surface vibrates or is susceptible to shock (neglecting this may damage the equipment).
- Do not use the equipment in high temperature, low temperature or high humidity environments. Refer to the equipment's data sheet for specific temperature and humidity requirements.
- Use the unit indoors, not in an exposed installation where it may be exposed to rain or extreme humidity.
- When the equipment is not used for a long period of time or in a humid and dewy environment, the main power supply of the equipment should be switched off.
- When cleaning the equipment, please use a sufficiently soft dry cloth or other alternatives to wipe the internal and external surfaces, do not use alkaline detergent to wash, and avoid hard objects to scratch the equipment.
- Please keep all the original packaging materials of the equipment properly, so that in case of problems, use the packaging materials to pack the equipment and send it to the agent or return it to the manufacturer for processing. We will not be responsible for any accidental damage in transit not caused by the original packaging materials.

Note

- Requirements for the quality of installation and commissioning personnel

  Qualifications or experience in the installation and commissioning of audio and video systems and qualifications to perform related work, in addition to the knowledge and operational skills listed below.

  - Basic knowledge and installation skills of audio and video systems and components.

- Basic knowledge and skills in low voltage cabling and wiring of low voltage electronics.
- Basic audio and networking knowledge and skills and the ability to read and understand the contents of this manual.

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Chapter 1 Product Introduction

1.1 Introduction

This Dante Digital Amplifier is a 2-channel digital amplifier designed with Dante Receiver Slot card, which accepts the digital signal from Dante Network and converts to analogue audio signal, as the input source of amplifier. Simply using the “Dante Controller” to route the signal from other source devices which on the same Dante Network. Its space-saving 1/2-rack design allow for quick installation and gives flexibility of mixing and matching with other 1/2-rack products to save valuable equipment rack space.

The powerful class D amplifier in this Dante Digital Amplifier is combined with features such as 12V trigger control, audio sensing, volume gain adjustment, and a buffered line output that enables even more amplification of the same audio signal when needed.

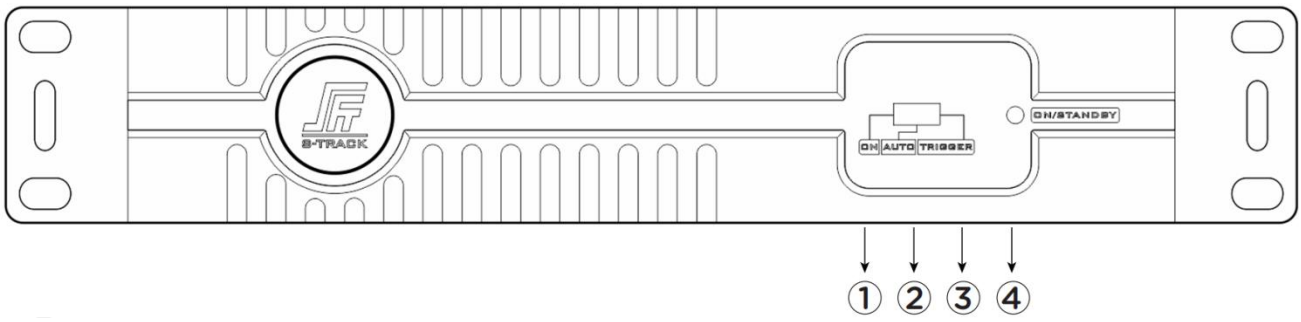
1.2 Product Features

- **Class D amplifier:** The cool running,low-profile,high efficiency design makes the perfect choice for even the most space-conscious system designs;
- **Dante interface:** Receiving digital signal from Dante network,and convert to analog audio signal to the amplifier;
- **120W per channel:** A powerful output are available to provide ample power to even the largest of spaces;
- **Trigger in/out:**Amplifier can be activated by a 12V DC trigger signal,and can activate additional devices at the same time;
- **Multiple Turn-on modes:**
  - Always On: Amplifier is always active and ready for use;
  - Signal-sensing: Amplifier is in a standby mode when no audio signal is present and will turn on when an audio signal is detected;
  - 12V Trigger: Using the 12V trigger allows precise turn on/off when the amplifier is needed,keeping the unit in a power saving standby mode when not in use.
- **Multiple Output modes:**
  - 8Ω-optimized mode for 8Ω stereo output;
  - 4Ω-optimized mode for 4Ω stereo output;
  - Bridged mode-240W output for 70V or 100V (Direct Drive).
- **Switch for High Pass Filter;**

- **Natural cooling without Fan**;
- **Removable speaker connectors:**Allow for quick,secure installation and accommodate cables of up to 12 ga AWG;
- **Thermal Protection:**
  - ✧ All amplifiers are designed with special circuitry to safeguard the Amplifier under a thermal overload condition.Thermal protection mode can only engage when the unit has been run at high volume for extended periods of time without adequate ventilation and/or when speaker impedance are below the minimum levels for the amplifier.If this fault occurs,turnoff the amplifier,and check that the speaker impedance rating is above the minimum rating.Also check for adequate ventilation around the amplifier and make adjustments if necessary.Once the unit has cooled to safe operating temperatures,the amplifier may be powered back on.
- **Protection Circuitry:**
  - ✧ All amplifiers are designed with special circuitry to safeguard the amplifier under a short-circuit condition.A faulty speaker can also cause a short circuit condition.The front panel LED illuminates orange when the amplifier is in short circuit protection.If this fault condition occurs,turn off the amplifier and check speakers for short circuit conditions when appropriate.

Chapter 2 Interface Description

2.1 Front Panel



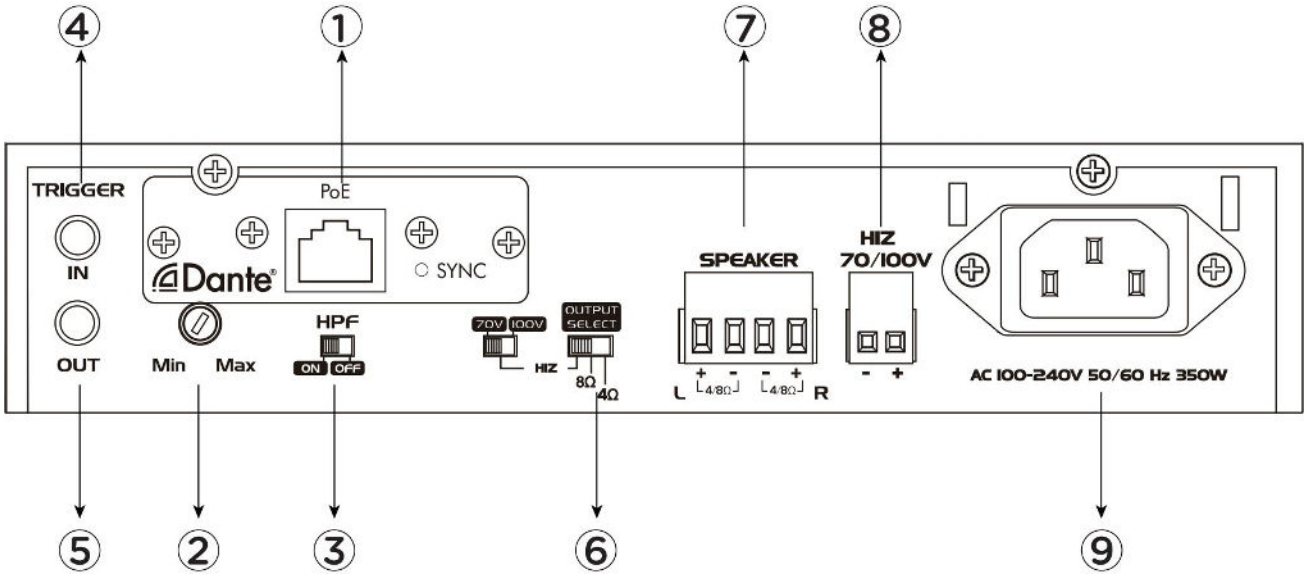
① ON: The unit always Power ON, and will not go to Standby mode;

② AUTO: The unit goes to Standby mode after 15 minutes of no signal sensing;

③ TRIGGER: The unit only power on by providing 12VDC at Trigger In(Rear Panel);

④ LED: GREEN indicates Power On; RED indicates Standby mode.

2.2 Rear Panel



① INPUT: Dante Interface receiver, connecting with Dante network switch.The network LED will illuminate yellow when the unit is connected to the Dante network. The network LED will illuminate green / blink when the unit has an IP address and is communicating to the Dante network. Note: Dante receiver will need the power from the switch with PoE function. Note: In AUTO mode, when receiving the signal from Dante network, the amplifier will be triggered ON;

② Volume: Use this gain knob to adjust volume;

③ HPF: High Pass Filter (80Hz);

④ TRIGGER IN: Apply 12VDC to this connector to active the unit;

⑤ TRIGGER OUT: Provide 12VDC to trigger another device;

⑥ OUTPUT SELECT SWITCH: 4Ω,8Ω and HIZ for 70V/100V;

⑦ SPEAKER: Connect with 4Ω or 8Ω speakers;

⑧ 70V/100V: Connect with Constant-Voltage speakers directly;

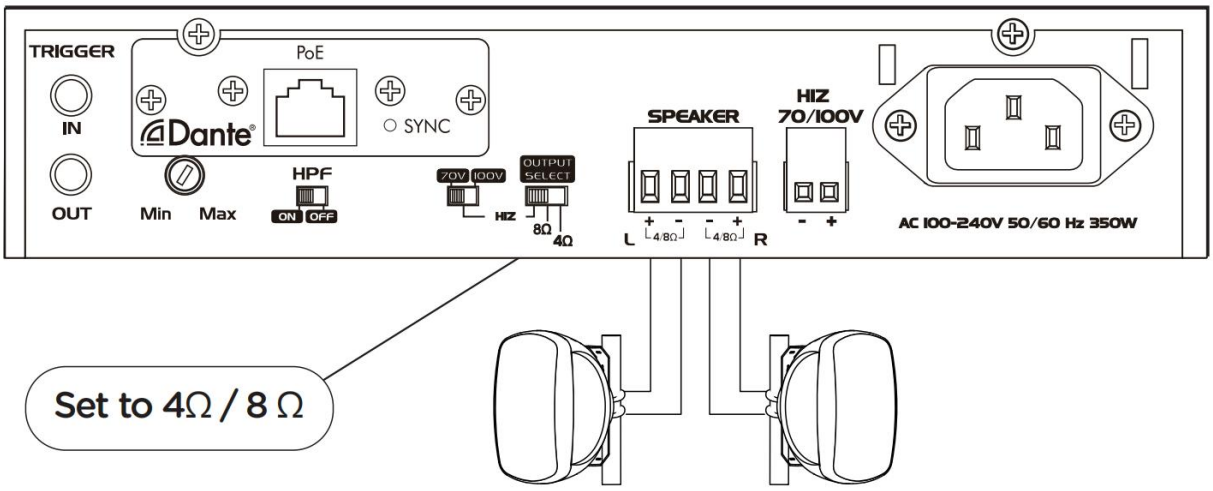
⑨ AC Input: Use a 3-prong grounded IEC cord.The locking connector may be engaged to prevent cords from accidental dislodging in an equipment rack.

Chapter 3 Instructions for Use

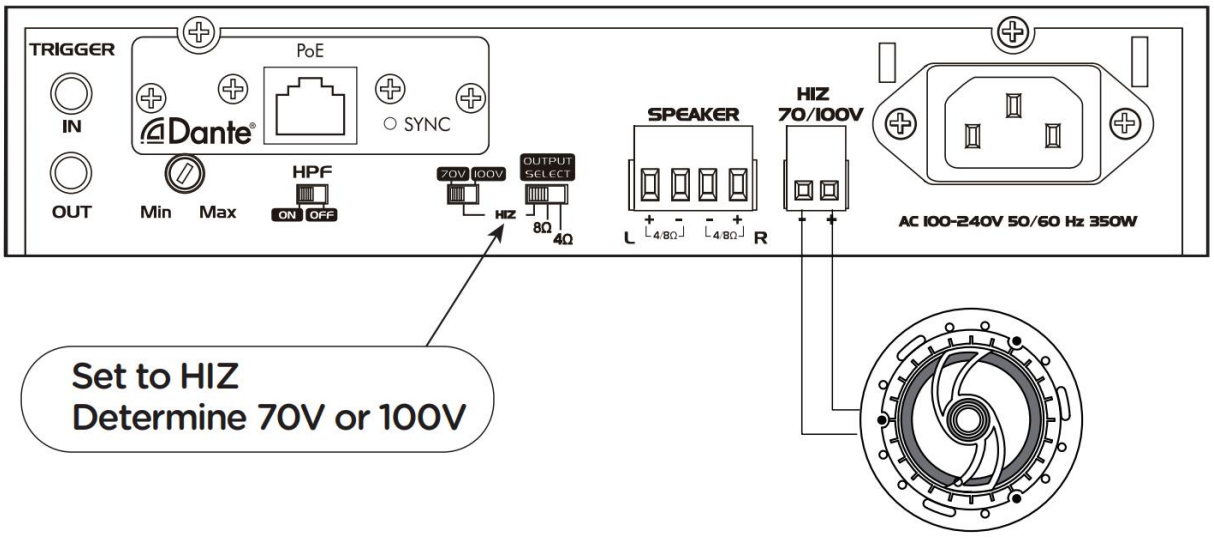
3.1 Device Connection

The Amplifier can be used in a side-by-side configuration using the optional rack mounting kit.This feature makes it easy to add amplification to two controllers or two zones.Simply use Cat5 cable to connect the RJ45 port to an Ethernet switch,and using “Dante controller”to receive the low latency of signal from other devices which already connected on the same Dante network.Note:The Ethernet switch need to have PoE(Power Over Ethernet)enabled.

Stereo mode (4 Ω / 8 Ω)

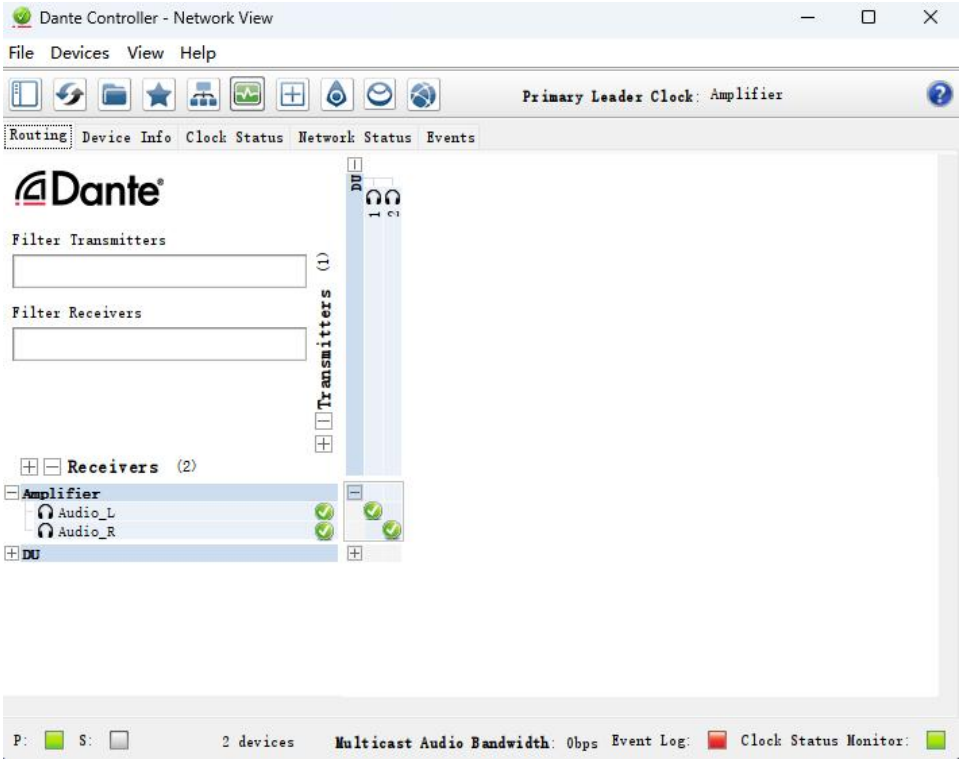


Bridged mode (HIZ 70V / 100V)



3.2 Dante Network Audio Routing

Amplifier is built in Dante interface and compatible with the software “Dante Controller”.



The software “Dante Controller” is free to download from the company of Audinate (the owner of Dante technology).To install the software on the computer,please visit the link: https://www.getdante.com/products/software-essentials/dante-controller.

And the “User Guide” of “Dante Controller” is available on the Audinate websit: https://dev.audinate.com/GA/dante-controller/userguide/webhelp/content/front_page.htm.

Note: 1, Dante can not run in the Wi-Fi wireless connection environment, is dependent on a reliable and secure wired network environment to transmit perfect audio;

2, Dante Controller software corresponds to the platform of Windows 7, Windows 10, Windows 11, macOS, please select the appropriate software version according to your system platform.

Chapter 4 Specification

Amplifier Output Channels	2
Stereo Mode (all channels driven)	120W×2, 8Ω (31V) RMS output (steady - state), per channel @ < 1% THD+N 120W×2, 4Ω (22V) RMS output (steady - stat

	e), per channel @ < 1% THD+N
Bridged output for 70V/100V (switch at “HIZ” position)	240W, 70V @ < 1% THD+N 240W, 100V @ < 1% THD+N
Frequency response	20Hz - 20kHz, ±2dB @ 4Ω load
Signal to Noise	>90dB @ 1W (20Hz - 20KHz)
Input Sensitivity	1.0V (+2.2dBu) @ Max Output 4Ω
Gain value	25dB @ 4Ω
Input Impedance	>10k, Balanced
Maximum input level	12.3V (+24dBu)
Trigger In/Out	DC 12V
High Pass Filter	80Hz (±2dB)
Trigger Connector	3.5mm jack
Output Connectors	4 - pin European terminal (4Ω/8Ω) 2 - pin European terminal (70V/100V)
Dante channel Receivers	2
Transmission Rate	100Mbps
Bit Depth	16/24/32bit
Sampling Rate	44.1KHz, 48KHz, 88.2KHz, 96KHz
Dante interface	RJ45 jack
Dante interface power supply	PoE IEEE 802.3af
Network interface	Standard 100Mbps Ethernet
Receive flows	2 (unicast or multicast)

Latency	from 2ms
Power Requirements	AC 100V～240V, 50Hz/60Hz, 350W
Operating Temperature Range	0～50℃
Operating Humidity Range	Below 90%RH (but no condensation)
Chassis	1/2U
Product Dimensions (W×D×H)	214mm×249.8mm×44mm
Net weight	2kg
Package Dimensions (L×W×H)	330mm×230mm×70mm
Gross Weight	2.5kg

Warranty Regulations

The warranty period of this product is 1 year.

In the warranty period of non-man-made damage caused by the product performance failure can enjoy three packages of service.

Warranty card by the sales unit stamped after the effective. The alteration is invalid!

The following conditions (including, but not limited to, this) are not covered by the three-package service:

1. No warranty card or missing valid invoice or the date has exceeded the validity period of the three packages of services;
2. Not in accordance with the requirements of the product instructions for use, maintenance, management and damage caused;
3. The product model or code on the warranty voucher does not match the physical goods;
4. Damage caused by the dismantling and repair of non-authorised service providers;
5. Normal discolouration, wear and tear and consumption during the use of the product are not covered by the warranty;

The product cannot be used due to the user's own network reasons, please consult customer service staff.

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