

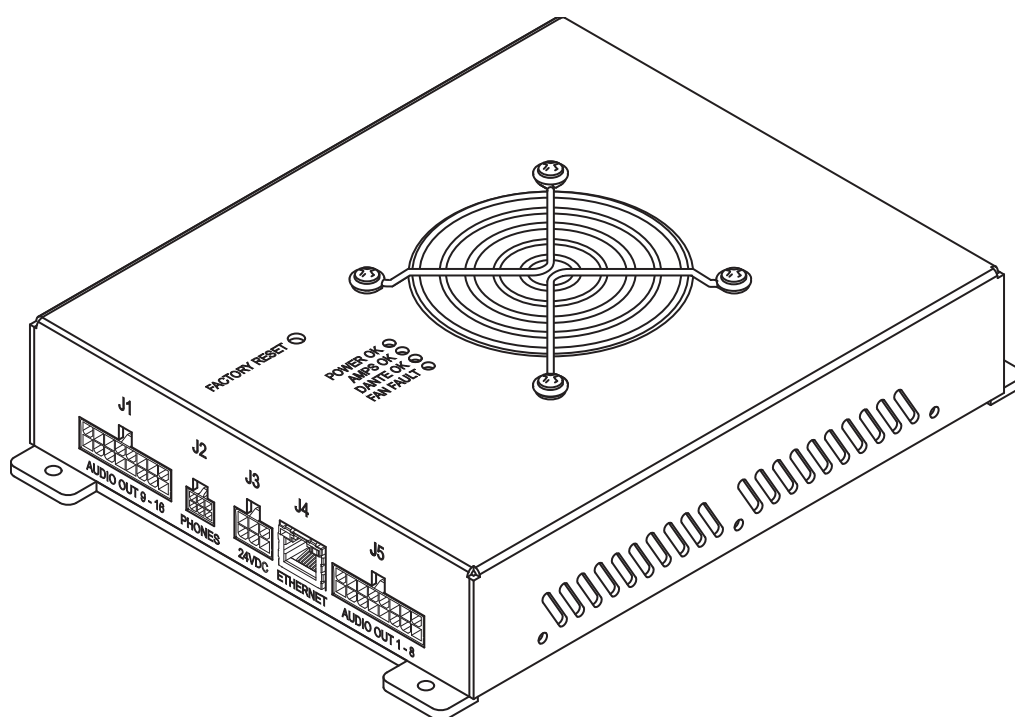
# Axon DTH1620 Themed Attraction Amplifier

**QSC**

User Manual

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Model: DTH1620



TD-001622-01-A



# EXPLANATION OF SYMBOLS

The term “**WARNING!**” indicates instructions regarding personal safety. If the instructions are not followed the result may be bodily injury or death.

The term “**CAUTION!**” indicates instructions regarding possible damage to physical equipment. If these instructions are not followed, it may result in damage to the equipment that may not be covered under the warranty.

The term “**IMPORTANT!**” indicates instructions or information that are vital to the successful completion of the procedure.

The term “**NOTE**” is used to indicate additional useful information.



The intent of the lightning flash with arrowhead symbol in a triangle is to alert the user to the presence of un-insulated «dangerous» voltage within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to humans.



The intent of the exclamation point within an equilateral triangle is to alert the user to the presence of important safety, and operating and maintenance instructions in this manual.



## IMPORTANT SAFETY INSTRUCTIONS



**WARNING!** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

**Elevated Operating Ambient Temperature** – If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than room ambient. Consideration should be given to ensure that the maximum operating temperature range -10°C to 50°C (14°F to 122°F ) is not exceeded. **Reduced Air Flow** – Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation opening. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. To reduce the risk of electrical shock, the power cord shall be connected to a mains socket outlet with a protective earthing connection.
10. 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.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
12. Only use attachments/accessories specified by the manufacturer.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. 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.
15. The appliance coupler, or the AC Mains plug, is the AC mains disconnect device and shall remain readily operable after installation.
16. Adhere to all applicable, local codes.
17. Consult a licensed, professional engineer when any doubt or questions arise regarding a physical equipment installation.
18. Do not use any aerosol spray, cleaner, disinfectant or fumigant on, near or into the apparatus. Clean only with a dry cloth.
19. Do not unplug the unit by pulling on the cord, use the plug.
20. Do not submerge the apparatus in water or liquids.
21. Keep ventilation opening free of dust or other matter.

## Maintenance and Repair

**WARNING!** Advanced technology, e.g., the use of modern materials and powerful electronics, requires specially adapted maintenance and repair methods. To avoid a danger of subsequent damage to the apparatus, injuries to persons and/or the creation of additional safety hazards, all maintenance or repair work on the apparatus should be performed only by a QSC authorized service station or an authorized QSC International Distributor. QSC is not responsible for any injury, harm or related damages arising from any failure of the customer, owner or user of the apparatus to facilitate those repairs. In the event of malfunction, contact QSC Customer Support for assistance.

## FCC Statement



**NOTE:** This equipment has been tested and found to comply with the limits for a Class A or Class B digital device when ferrite clamps are installed on the output cables, pursuant to Part 15 of the FCC Rules. To meet Class A or Class B emission requirements two Ferrite 0431176451 clamps are required to be on the customer-supplied output cables connected to J1 and J5. Place the ferrite clamps as close to connectors J1 and J5 as possible.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Environmental

Life cycle 10 years / Storage temperature -20 ° C to + 70 ° C / Relative humidity 5 - 85% RH

Service life - 10 years. Storage conditions: temperature from -20 ° C to + 70 ° C, humidity 5% - 85%.



If you wish to discard electronic equipment, please contact your dealer or supplier for further information.

## RoHS Statement

The QSC DTH1620 Series Amplifier is in compliance with “China RoHS” directives. The following chart is provided for product use in China and its territories:

QSC DTH1620 and DTH1620 Series Amplifiers						
有毒有害物质或元素 (Toxic or hazardous Substances and Elements)						
部件名称 (Part Name)	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(vi))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路板组件 (PCB Assemblies)	X	0	0	0	0	0
机壳装配件 (Chassis Assemblies)	X	0	0	0	0	0
0: 表明这些有毒或有害物质在部件使用的同类材料中的含量是在 SJ/T11363_2006 极限的要求之下。 (0: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363_2006.) X: 表明这些有毒或有害物质在部件使用的同类材料中至少有一种含量是在 SJ/T11363_2006 极限的要求之上。 (X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363_2006.)						

# 海拔和热带条件

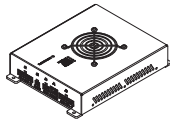
	仅适用于海拔2000m 以下地区安全使用	Only suitable for safe use in areas below 2000m above sea level
	仅适用于非热带气候条件下地区安全使用	Only suitable for safe use in non-tropical climates

## Warranty

For a copy of the QSC Limited Warranty, visit the QSC website at [www.qsc.com](http://www.qsc.com)

## What's in the Box

One DTH1620 Amplifier



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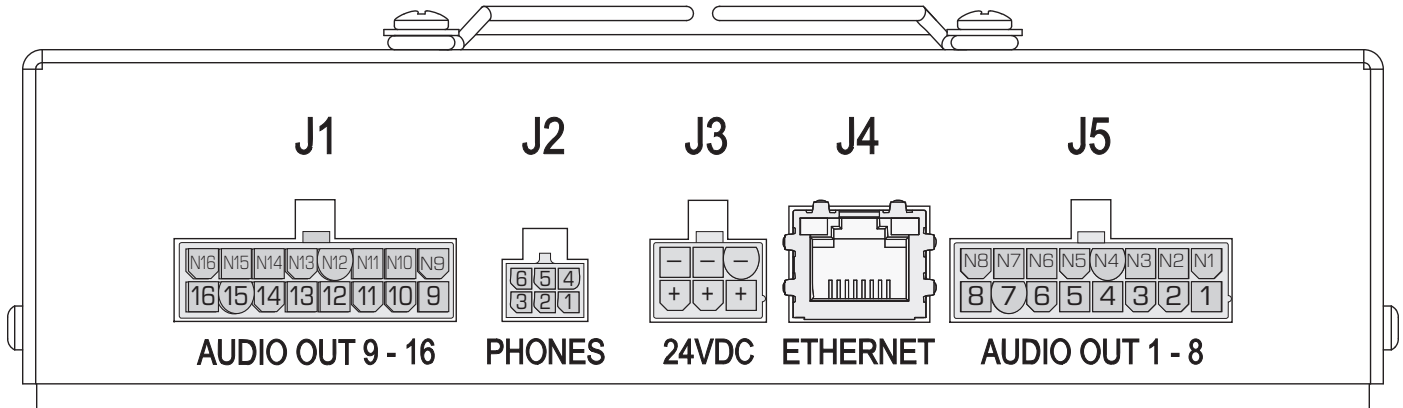
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# Introduction

The Attero Tech by QSC DTH1620 is a 16ch x 20 W Dante/AES67 amplifier designed for themed entertainment and immersive theater applications. It features a ruggedized design and compact form factor that enables cost-effective network audio amplification support for individual rides or attractions. The DTH1620 supports traditional passive speaker drivers as well as haptic transducers for specialized audio applications that require high-channel density at low output power.

## Features

### Amplifier Connector Panel



— Figure 1 — Connector Panel

#### Connectors J1 & J5

##### Audio Output

- J5: 1–8 Positive, analog audio, output channels  
J5: N1–N8 Negative leads for positive pins 1–8
- J1: 9–16 Positive, analog audio, output channels  
J1: N9–N16 Negative leads for positive pins 9–16
- Each channel can drive a  $\geq 13$  ohm haptic transducer or 8 ohm loudspeaker

#### Connector J2

##### Headphone audio – from channel 16

1. Right headphone audio out
2. Volume control pot, ground side

3. Volume control pot, +3.3 V side
4. Left headphone audio out
5. Headphone audio return
6. Volume control pot, wiper

#### Connector J3

##### Power Input

- + 24 VDC
- – Ground

#### Connector J4

- Ethernet/Dante network to and from the unit
- RJ45, Cat 5e or Cat 6 cable.

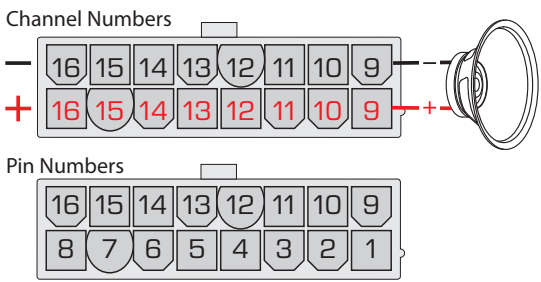
**NOTE:** Connectors, Terminals and wiring are not included.

# Connector Pin-Outs

## Audio Output — J1

Pin	Channel +	Pin	Channel-
1	9 Out+	9	9 Out-
2	10 Out+	10	10 Out-
3	11 Out+	11	11 Out-
4	12 Out+	12	12 Out-
5	13 Out+	13	13 Out-
6	14 Out+	14	14 Out-
7	15 Out+	15	15 Out-
8	16 Out+	16	16 Out-

— Table 1 —

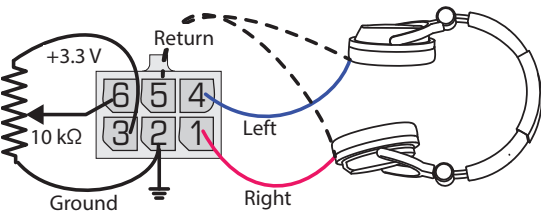


## Headphone Interface — J2

[Refer to Get/Set Headphone Limit on page 14](#)

Pin	Description
1	Headphone R
2	Volume Ground Reference (Potentiometer Low)
3	Volume Reference Voltage (Potentiometer High) 3.3V
4	Headphone L
5	Headphone Return
6	Volume Select Voltage (Potentiometer Wiper)
Volume is set to minimum when there is no potentiometer connected	

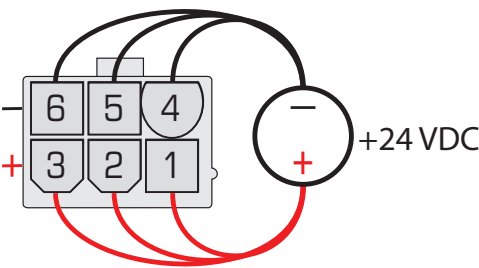
— Table 2 —



## Input Power Interface — J3

Pin	Description
1	
2	+24 VDC
3	
4	
5	Ground
6	

— Table 3 —

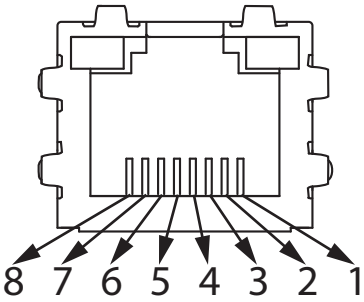




Network Interface – J4

Pin	Description
1	DATA_A+
2	DATA_A-
3	DATA_B+
4	DATA_C+
5	DATA_C-
6	DATA_B-
7	DATA_D+
8	DATA_D-

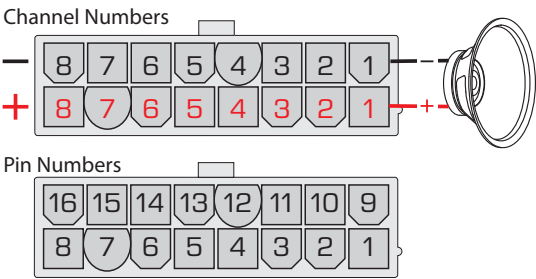
— Table 4 —



Audio Output – J5

Pin	Channel +	Pin	Channel -
1	1 Out+	9	1 Out-
2	2 Out+	10	2 Out-
3	3 Out+	11	3 Out-
4	4 Out+	12	4 Out-
5	5 Out+	13	5 Out-
6	6 Out+	14	6 Out-
7	7 Out+	15	7 Out-
8	8 Out+	16	8 Out-

— Table 5 —

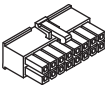


Connector Cabling

All wiring requirements for this amplifier are specified by the customer based on their specific use case. The cable requirements listed here would allow the unit to function in most applications.

Connectors J1 and J5

- Loudspeaker P wire – 18 AWG, Copper, stranded, (you may want different color for each channel output)
- Loudspeaker N wire – 18 AWG, Copper, stranded, (same color as associated channel P wire but with white stripe)
- Mating connector – Molex PN: 0039012160
- Connector contacts – 18-24 AWG, Tin, Molex PN: 0039000038



Connector J2

- Wire – 22AWG, Copper, stranded
- Mating connector – TE Connectivity PN: 794617-6
- Connector contacts – 20-24 AWG, Tin, TE Connectivity PN: 794606-1)



Connector J3

- 24VDC supply wire – 16 AWG, Copper, stranded, red
- 24VDC ground wire – 16 AWG, Copper, stranded, black
- Mating connector – Molex PN: 0039012060
- Connector contacts – 16 AWG, Tin, Molex PN: 0039000038



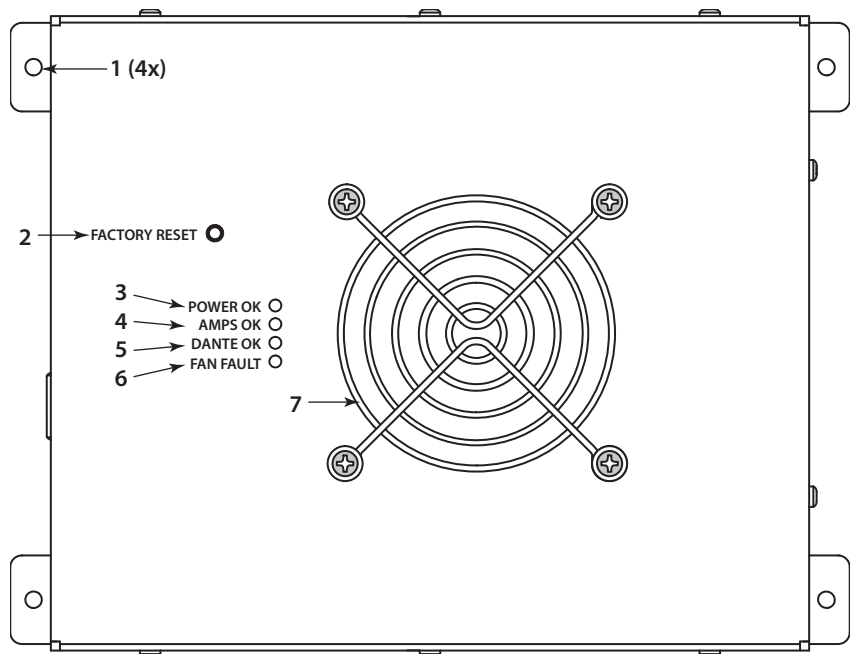
Connector J4

- RJ45, Cat 5e or Cat 6 cable

## Amplifier Top View

Refer to Figure 2

1. Four 0.177" (4.5 mm) mounting holes
2. **FACTORY RESET** – Insert a non-conductive tool into the 0.188" (4.78 mm) **FACTORY RESET** hole then press and hold the reset button for at least 3 seconds. This resets all network settings (IP Address, host name, etc.) back to the factory values.
3. **POWER OK** – Green = OK
4. **AMPS OK** – Green = OK
5. **DANTE OK** – Green = OK
6. **FAN FAULT** – Red = Fault
7. **Cooling Fan** – System controlled on/off and speed.

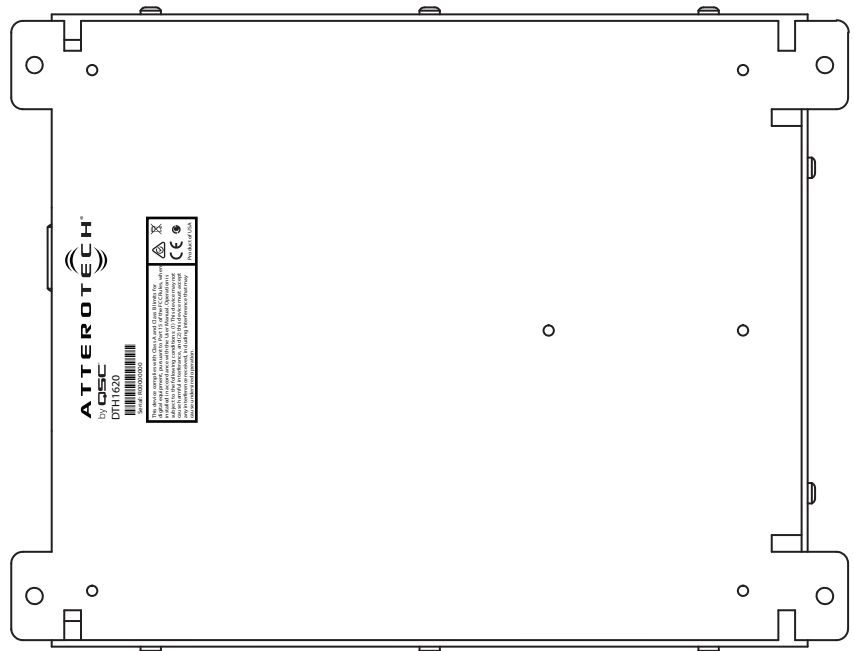


— Figure 2 —

## Amplifier Bottom View

Refer to Figure 3

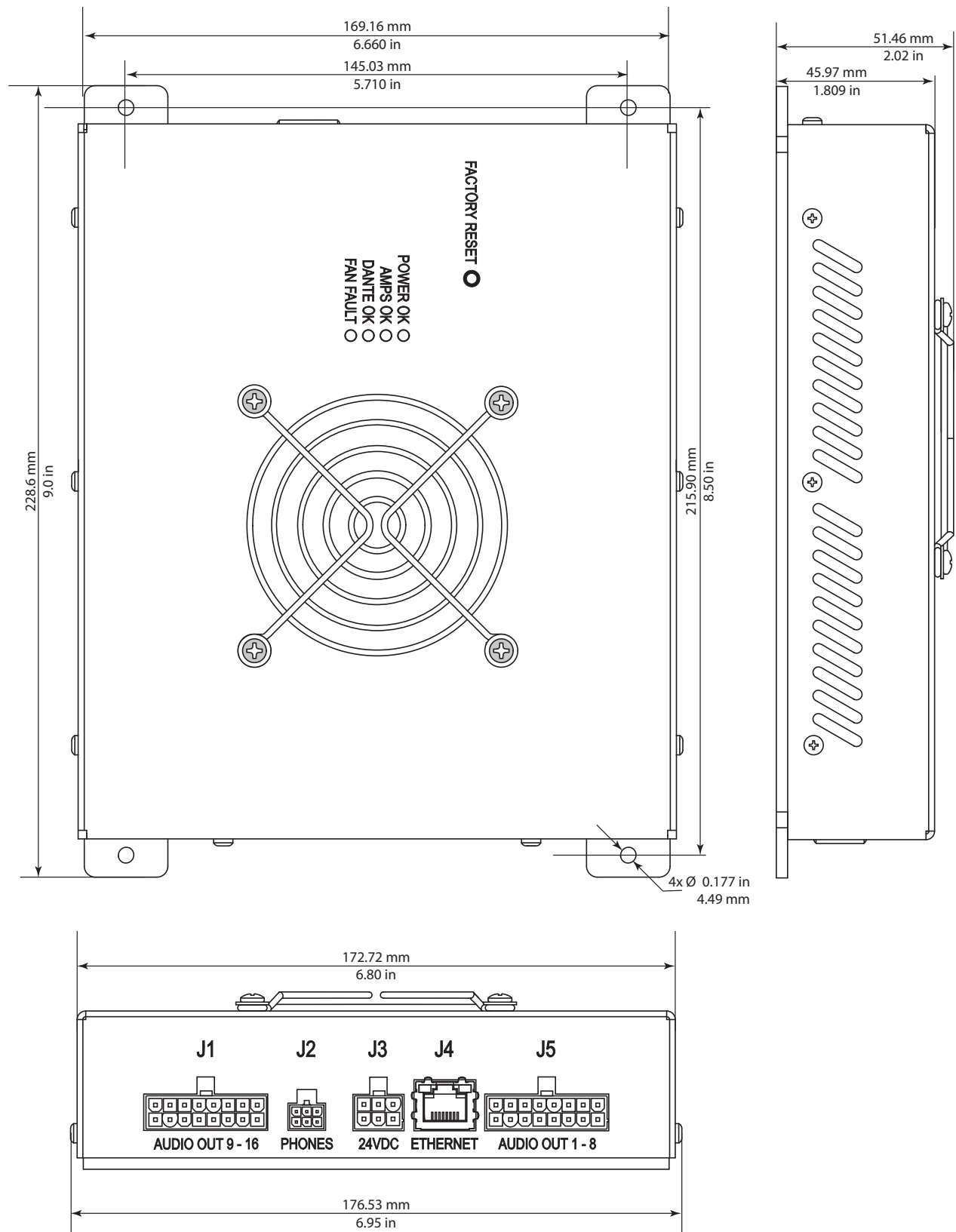
The serial number information for the unit is found on a label on the bottom side of the amplifier.



— Figure 3 —

# Installation

## Dimensions



— Figure 4 —

## Mounting

The Axon DTH1620 can be mounted in any orientation with a flat surface that meets the dimensional requirements described under “Dimensions” on page 11, is not exposed to rain, condensing humidity, excessive heat or cold, and is strong enough to hold the amplifier, weighing 2 lb, 6 oz, during the intended operational scenarios and shall not block any ventilation holes. In addition, the mounting location must have enough space to allow cable connections without stressing the connections,

1. Use the dimensions to locate and mark four spots on the mounting surface.
2. If necessary, drill four holes at the marked spots. The drill must be smaller than 0.177 inches (4.49 mm). and the appropriate size for the selected mounting hardware.
3. Use appropriate hardware for the mounting-surface material to secure the amplifier in the selected location.
4. Connect and secure the cables to allow for appropriate stress relief.

## Selecting a Power Supply for Your Installation

The DTH1620 amplifier draws about 15 W when idle. For operational head room, use 20 W as the idle power. When all channels have equal power, a safe formula for computing the required current capability of the power supply is:

$$I_s = ((P_c * N_c * \text{Eff}) + P_i) / V_s$$

Where:

$I_s$  = Required power supply current capability

$P_c$  = Power per channel (maximum of 20 W per channel)

$N_c$  = Number of channels (maximum of 16)

$\text{Eff}$  = Efficiency factor = 1.25 (80%)

$P_i$  = Idle power of amplifier (20 W)

$V_s$  = Supply voltage (24 VDC)

Example: We want all 16 channels to be simultaneously 5W capable.

$$I_s = ((5 \text{ W} * 16 \text{ channels} * 1.25 \text{ efficient factor}) + 20 \text{ W}) / 24 \text{ V}$$

$$I_s = ((5 * 16 * 1.25) + 20) / 24$$

$$I_s = 5 \text{ A}$$

If all channels have different power output requirements then simply add the output power for all channels.

$$I_s = ((S_p * \text{Eff}) + P_i) / V_s$$

$S_p$  = Sum of Power for all channels i.e. ( $P_1 + P_2 + P_3 + \dots P_{16}$ )

# Axon DTH1620 Command Protocol

The DTH1620 uses DHCP by default to obtain an IP address. A static IP address can be set using the Dante Controller. UDP port 49494 is used for sending the command.

The following commands are available for the DTH1620. Version 1.2

## DTH1620 Command Set

Description	Command	Param 1	Param 2
Identify Device	ID	Mode (0 = off, 1 = on)	-
Find Unit	FU	-	-
Version Info	VERSION	-	-
Bootloader Version Info	BVERSION		
Retrieve current settings	QUERY	-	-
Reset to factory defaults	DEFAULTS	-	-
Get Headphone Volume Limit	GHPLIMIT	-	-
Set Headphone			
Volume Limit	SHPLIMIT	-103 to 24 dB	-
Get Output Mute	GOM	Channel ID (0, 1 to 16)	-
Set Output Mute	SOM	Channel ID (0, 1 to 16)	Mode (0 = unmuted, 1 = muted)
Get Output Master Mute	GOMM	-	-
Set Output Master Mute	SOMM	Mode (0 = unmuted, 1 = muted)	-
Get Output Volumes	GOV	Channel ID (0, 1 to 16)	-
Set Output Volumes	SOV	Channel ID (1 to 16)	Gain (-103 to 24)
Get Output Master Volume	GOMV	-	-
Set Output Master Volume	SOMV	Gain (-103 to 24)	-
Get Unit Status	GSTAT	-	-
Get Metering Data	GSM	-	-
Get Channel Name	GCN	Channel ID (1 to 16)	-
Get Device Lock	GDEVICELOCK	-	-
Set Fan	SFAN	Fan enable (0 or 1)	-
Get Fan	GFAN	-	-

— Table 7 — DTH1620 Command Set

### Identify Device / Find Unit

The intended use of these commands is to locate a device by flashing the device's non-fault LED's. When the Identify Device command is sent, with the mode set to on (ID 1<CR>), the non-fault LEDs flash on and off until another Identify Device command is sent with the mode set to off (ID 0<CR>), or the device is reset or power cycled.

The Find Unit command flashes the non-fault LEDs for five seconds then automatically turn off.

Description of Command	Example Command	Example Response	Description of Response
Identify Device (ON)	ID 1<CR>	ACK ID 1<CR>	Identify Device mode active
Identify Device (OFF)	ID 0<CR>	ACK ID 0<CR>	Identify Device mode inactive
Flash Identify LED for 5 seconds	FU<CR>	ACK FU<CR>	Find Unit mode activated.

— Table 8 — Identify/Find Unit Syntax Example

## Version / Bootloader Version

The VERSION command returns the firmware version of the device. BVERSION will return the version of the bootloader.

Description of Command	Example Command	Example Response	Description of Response
Recall firmware version	VERSION<CR>	ACK VERSION 1.0<CR>	Firmware version is 1.0
Recall bootloader version	BVERSION<CR>	ACK BVERSION 1.0<CR>	Bootloader version is 1.0

— Table 9 — Version Recall Syntax Example

## Query

A QUERY command allows the control system to retrieve the temperature sensor data and current Identify state.

Description of Command	Example Command	Example Response	Description of Response
Query for device state	QUERY<CR>	ACK QUERY TEMP 21.0 21.3 ID 0<CR>	Temperature sensor 1 = 21.0C Temperature sensor 2 = 21.3C ID is off. <sup>1</sup>
1. The values are space delimited			

— Table 10 — Query Syntax Example

## Defaults

The DEFAULTS command forces the system to return to factory settings:

- Headphone limit is set to 0 dB.
- Master and Channel volumes are set to 0 dB.
- Master and Output mutes are disabled (unmuted).
- All subscribed Dante streams are unsubscribed (no streams selected)
- If a static IP had been selected, it is reset and DHCP is re-enabled.

Description of Command	Example Command	Example Response	Description of Response
Restore factory defaults	DEFAULTS<CR>	ACK DEFAULTS<CR>	

— Table 11 — Default Settings Syntax Example

## Get/Set Headphone Limit

[“Headphone Interface - J2” on page 8](#)

This set of commands gets and sets the headphone volume limit. Valid settings are -103 dB to 24 dB. The headphone volume is optionally controlled by a 10 kΩ potentiometer connected between pins 2 and 6 of connector J2. This command sets the upper limit of the volume setting and can be used to adjust for the maximum volume for a given style of headset.

Description of Command	Example Command	Example Response	Description of Response
Get the headphone volume limit	GHPLIMIT<CR>	ACK GHPLIMIT 0<CR>	Headphone is currently limited to 0 dB max.
Set the headphone volume limit	SHPLIMIT 1<CR>	ACK SHPLIMIT 1<CR>	Set Headphone limit to 1 dB.

— Table 12 — Get/Set Headphone Volume Limit Syntax Example

## Get/Set Output Mute

This set of commands gets and sets the output mute status for each output channel (parameter 1 is 1...16) or for all output channels (parameter 1 is 0).

Description of Command	Example Command	Example Response	Description of Response
Get mute setting for output channel 14	GOM 14<CR>	ACK GOM 14 ON<CR>	
Unmute output channel 14	SOM 14 0<CR>	ACK SOM 14 0<CR>	
Get mute settings for all output channels	GOM 0<CR>	ACK GOM 0 0xFFFF<CR>	
Unmute output channels 1..4, mute output channels 5..16	SOM 0 0xFFFF0<CR>	ACK SOM 0 0xFFFF0<CR>	

— Table 13 — Get/Set Output Mute Syntax Example

## Get/Set Output Master Mute

This set of commands gets and sets the output master mute status. The master mute mutes all channels simultaneously. Clearing Master Mute will only clear the master mute state; it will not clear an individual channel's mute state.

Description of Command	Example Command	Example Response	Description of Response
Get Master Mute setting	GOMM<CR>	ACK GOMM ON<CR>	
Set Master Mute	SOMM 0<CR>	ACK SOMM 0<CR>	

— Table 14 — Get/Set Output Master Mute Syntax Example

## Get/Set Output Volume

This set of commands gets and sets the volumes for each output channel (parameter 1 is 1...16) or for all output channels (parameter 1 is 0) range is +24 dB to -103 dB. The total output volume is a combination of the individual channel and Master volume up to the 20W maximum for the channel.

Description of Command	Example Command	Example Response	Description of Response
Get volume setting for output channel 9	GOV 9<CR>	ACK GOV 9 -30<CR>	
Set volume setting for output channel 9	SOV 9 0<CR>	ACK SOV 9 0<CR>	
Get volume settings for all output channels	GOV 0<CR>	ACK GOV 0 -2 -3 0 ... -1<CR> <sup>2</sup>	

2. 16 values space delimited following the 1nd param.

— Table 15 — Get/Set Output Volume Syntax Example

## Get/Set Output Master Volume

This set of commands gets and sets the Output Master Volume. Range is +24 dB to -103 dB. The Master volume is applied after the individual channel volume settings. For a direct pass through of channel volumes, the Master Volume should be set to 0 db. The total output volume is a combination of the individual channel and Master volume up to the 20 W maximum for the channel.

Description of Command	Example Command	Example Response	Description of Response
Get Master Volume setting	GOMV<CR>	ACK GOMV -3<CR>	
Set Master volume setting.	SOMV 9 0<CR>	ACK SOMV -3<CR>	

— Table 16 — Get/Set Master Output Volume Syntax Example

## Status

The GSTAT command allows the control system to get a snapshot of the settings of the device. The command takes no parameters.

Description of Command	Example Command	Example Response	Description of Response
Get current device status	GSTAT<CR>	ACK GSTAT<CR> followed by the binary structure below	See below

— Table 17 — Status Syntax Example

### Get Status Response Structure

typedef struct

```
{
    int8_t  channelVolumes[16]; // value between -103 - 24
    uint8_t channelMutes[16];   // 0 = unmuted, 1 = muted
    int8_t  masterVolume;       // value between -103 - 24
    uint8_t masterMute;          // 0 = unmuted, 1 = muted
    int8_t  hpVolumeLimit;       // value between -103 - 24
    uint8_t fanEnable;           // 0 = Off, 1 = On
    uint8_t identifyMode;        // 0 = Identify Off, 1 = Identify On
    uint8_t danteLockState;      // 0 = unlocked, 1 = locked
} tamp16d_status_t;
```

The data shall be placed such that array index 0 is channel 1 for all channel data.

The entire structure is 38 bytes.

### Get Metering Data

This command gets all metering data for all Dante channels. The response contains 64 hexadecimal formatted values.

- Values 1 through 16 represent metering levels for Dante RX channels 1 through 16.
- Values 17 through 64 are placeholder values of 0xFD, representing invalid channels.

The metering values are the following:

- 0x00 = Clip
- 0x01 = 0 dB
- ...
- 0xFD = -126 dB or invalid channel
- 0xFE = Mute

Values between 0x01 (0 dB) and 0xFD (-126 dB) represent increments of -0.5 dB.

Note that these values are from the Brooklyn II and represent metering from the Dante perspective. For example, a value of 0xFE (Mute) indicates that the corresponding Dante channel is muted on the Brooklyn II. This does not reflect the Amplifier's Master or per channel mute state.

Description of Command	Example Command	Example Response	Description of Response
Get metering data	GSM<CR>	ACK GSM 0xFE 0xFE ... 0xFD<CR> <sup>3</sup>	

3. Note values space delimited following the 1st param.

— Table 18 — Get Metering Data Example



## Get Channel Name

This command gets the name of the Dante channel corresponding to a channel.

Valid values are 1–16.

Description of Command	Example Command	Example Response
Get Channel Name	GCN 3<CR>	ACK GCN 3 Lobby<CR>

— Table 19 — Get Channel Name Syntax Example

## Get Device Lock

This command returns the status of the Dante Device lock.

Description of Command	Example Command	Example Response
Get Device Lock	GDEVICELOCK<CR>	ACK GDEVICELOCK UNLOCKED<CR>

— Table 20 — Get Device Lock Syntax Example

## Get/Set Fan

These commands get the Fan Enable status or sets the Fan Enable. If the Fan Enable is active and the Fan does not function then the Fan LED will turn on RED. If the Fan is disabled and the internal temperature reaches 85 Degrees Celsius, the Fan LED will turn RED.

Description of Command	Example Command	Example Response	Description of Response
Get Fan setting	GFAN<CR>	ACK GFAN ON<CR>	
Set Fan setting.	SFAN 1<CR>	ACK SFAN 1<CR>	

— Table 21 — Get/Set Fan Enable Syntax Example

# Specifications

Specification Description	Test Result	Additional Info
Frequency Response (8 ohm) 1W	+0.5dB, -1.5dB	
Frequency Response (8 ohm) 20W	+0.5dB, -1.5dB	
Frequency Response (16 ohm) 1W	+1.0dB, -0.5dB	
Frequency Response (16 ohm) 10W	+1.0dB, -0.5dB	
Noise (20Hz - 20KHz) into 8Ω	-73dBu	
Noise (20Hz - 20KHz) into 16Ω	-72dBu	
Signal to Noise (20Hz - 20KHz) 20W 8Ω	97dB	
Signal to Noise (20Hz - 20KHz) 1W 8Ω	84dB	
DBFS for 1W into 8 ohms	-18.500dBFS	
DBFS for 20W into 8 ohms	-5.500dBFS	
DBFS for 1W into 16 ohms	-15.700dBFS	
DBFS for 10W into 16 ohms	-5.600dBFS	
Output Circuitry	Class D	
THD+N @ 1W into 8 ohms @ 1KHz	<0.1%	THD+N, one channel driven
THD+N @ 20W into 8 ohms @ 1KHz	<0.2%	THD+N, one channel driven
THD+N @ 1W into 16 ohms @ 1KHz	<0.1%	THD+N, one channel driven
THD+N @ 10W into 16 ohms @ 1KHz	<0.1%	THD+N, one channel driven
Maximum Digital Input Level	0dBFS	
Cooling	Fan With Thermal Speed Control	
Input Connectors		
+24VDC	Molex 6-pin	
Output Connectors		
Speaker	Molex 16-pin	
Headphone/Volume Control	Molex 6-pin	
Ethernet Connector	RJ-45 With Link and Activity LED indicators	
Top Panel Indicators	Power OK, Amps OK, Dante OK Fan Fault	
Operating Mode	Low Impedance 8 ohm/16 ohm only	
Amplifier Control (Network)	Control and Status Via the Network, see manual for API details	
Amplifier Volume Control (Remote)	10K Linear Potentiometer	
Dimensions	9" (229mm) D x 6.66" (169) W x 2.02" (51mm) H	
Net Weight	2.4 lbs. (1.1kg)	
Shipping Weight	2.842 lbs (1.29 kg)	
Power Requirements	+24VDC @ 3A, all channels 1/8 power +24VDC @ 17.5A, all channels full power	
Carton Contents	DTH1620 Amplifier	



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