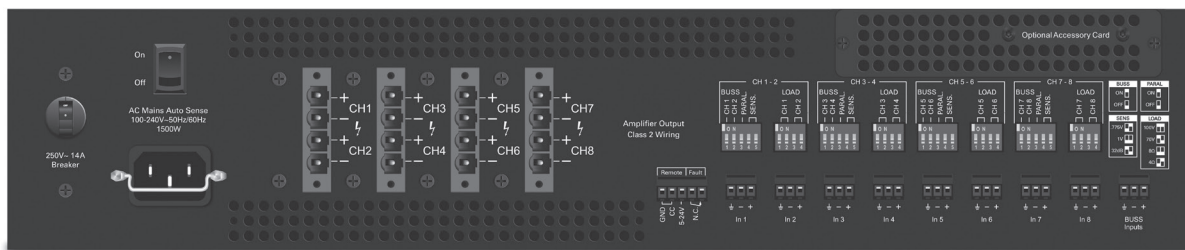




# HPA2408

## Multi-Impedance High Power Amplifier



# HPA Series

## Owner's Manual

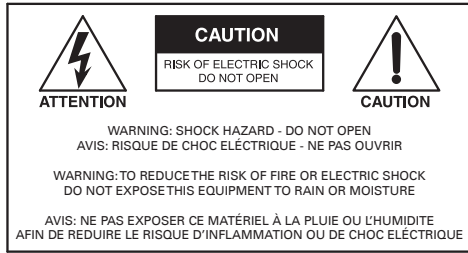
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### Important Safety Instructions



The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this device near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other device that produce heat.
9. 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.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the device.
11. Only use attachments / accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the device. When a cart is used, use caution when moving the cart / device combination to avoid injury from tip-over.



13. Unplug this device during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the device 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 device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
16. **WARNING:** To reduce the risk of fire or electric shock, this device should not be exposed to rain or moisture and objects filled with liquids, such as a vase, should not be placed on this device.
17. To completely disconnect this equipment from the mains, disconnect the power supply cord plug from the receptacle.
18. The mains plug of the power supply cord shall remain readily operable.
19. Protective earthing terminal. The apparatus should be connected to a mains socket with a protective earthing connection.

# HPA Series

## Owner's Manual



### WARNING - When The Device Is In Use

- WARNING: For the terminals marked with symbol of ⚡ may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the used of ready-made leads or cords.
- WARNING: The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.
- WARNING: The mains plug is used as disconnect device, the disconnect device shall remain readily operable.
- To prevent electric shock, do not remove the product cover as there are high voltage components inside. Refer all servicing to AtlasIED.
- Should any of the following irregularities occur during use, immediately switch off the power, disconnect the power cord from the AC outlet and contact AtlasIED. Do not to attempt to continue operation with the product as this may cause fire or electric shock:
  - Smoke or strange smell coming from the unit.
  - If the product falls or the case is damaged.
  - If water or any metallic objects falls into the product.
  - If the power supply cord is damaged in any way.
  - If the unit is malfunctioning.
- Do not insert or drop metallic objects or flammable materials into the ventilation holes of the product's cover, as this may result in electric shock or fire.
- Do not place any containers with liquid or metallic objects on the top of the product. If any liquid spills into the unit, fire or electric shock may result.
- Never operate this product or touch the power supply cord during an electrical storm, electric shock may result.
- Never exceed the power rating on the product when connecting equipment. Fire and/or property damage may result.
- Operate the product only with the voltage specified on the unit. Fire and/or electric shock may result if a higher voltage is used.
- Do not modify, kink, or cut the power cord. Do not place the power cord in close proximity to heaters and do not place heavy objects on the power cord, including the product itself, doing so may result in fire or electrical shock.
- Ensure that the safety ground terminal is connected to a proper ground. Never connect the ground to a gas pipe as a catastrophic disaster may result.
- Be sure the installation of the product is stable, avoid slanted surfaces as the product may fall and cause injury or property damage.



### CAUTION - When Installing The Product

- Plugging in or unplugging the power cord with wet hands may result in electric shock.
- Never move the unit with the power cord plugged into the wall, as damage to the power cord may result.
- When unplugging the cord from the wall, grasp the plug, NOT the cord.
- Never install this product in humid or dusty locations, nor in direct sunlight, near sources of heat, or in areas where sooty smoke or steam are present. Fire and electric shock may result.
- Keep all sides of the unit at least 3 1/2" away from objects that may obstruct air flow to prevent the unit's internal temperature rise.



### CAUTION - When The Product Is In Use

- Never place heavy objects on the product, causing it to fall and/or break, resulting in personal injury and property damage. In addition, the product itself may fall and cause injury and property damage.
- Contact AtlasIED for instructions on cleaning the inside of the unit. Large accumulations of dust inside the unit may result in heat buildup and fire.
- Ensure that the power supply plug is securely plugged into the wall outlet. Never allow dust to accumulate on the power plug or inside the wall outlet.
- When cleaning the unit or the unit is not to be operated for an extended period, unplug the power cord from the wall.

# HPA Series

## Owner's Manual

### Introduction

Thank you for purchasing the AtlasIED HPA Series amplifier. The AtlasIED high power amplifier, "HPA" Series, is designed for use in either commercial 25V / 70V / 100V distributed systems or low impedance 8 or 4 ohm applications that require amplifiers to handle multiple impedance loads. The HPA2408 is compact and lightweight in comparison to other models delivering similar performance. The HPA2408 features Generation II Class D Output topology that provides high efficiency amplification with the sound quality of a Class AB amplifier. The HPA2408 is designed for global use featuring a wide range voltage power supply and remains stable during fluctuating power conditions. The combination of the power supply and the highly efficient output stage collectively deliver exceptional dynamic high output voltage and current to virtually any loudspeaker load while not requiring a tremendous amount of AC power.

The HPA Series features front panel stepped level controls with a security cover, remote turn on, balanced line inputs with sensitivity settings, fault reporting and an accessory card slots for an optional Dante™ eight-channel digital audio interface. Cooling is not an issue because of the unique output stage low resistance direct couple thermal transfer design. HPA also is energy efficient and meets most low energy savings requirements for amplifiers of this size.

Whether the application is a large distributed constant voltage sound system or a high SPL sound reinforcement system, the AtlasIED HPA Series is the answer for high power / cost effective reliable amplification requirements.

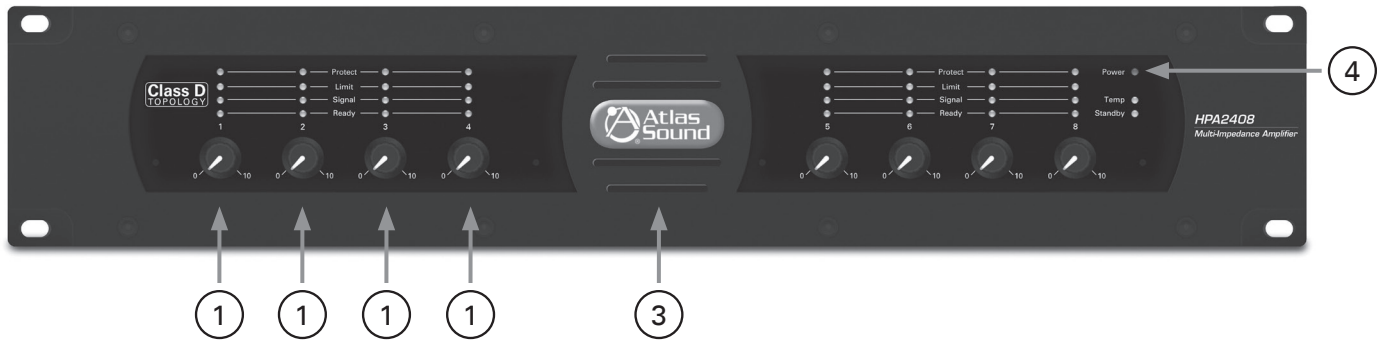
### Key Features

- Power configurations - Each HPA2408 amplifier channel can be assigned to any load combination configuration
  - 8 x 300 Watt 70V
  - 8 x 300 Watt 100V
  - 8 x 200 Watt 25V
  - 8 x 300 Watt 8 Ω
  - 8 x 300 Watt 4 Ω
- Each channel load can be independent of the others
- Only requires a 15A AC mains source for 120V operation
- Remote turn on
- Accessory card slots for optional Dante™ digital network audio card
- Fault reporting
- Detented attenuators with security covers
- Stereo or parallel operating modes
- Selectable input sensitivity
- BUSS input with individual channel assignments
- Multistage fan cooling
- Removable air filters
- Wide range AC Mains power supply 100V - 240V

# HPA Series

## Owner's Manual

### Front Panel



#### 1. Channel Level Controls

Each channel of the HPA amplifier has an independent detented level control. When any of the potentiometers is turned down (left or fully counter clockwise) no signal will come out of the corresponding amp channel. When the potentiometer is turned up (right or fully clockwise) the amp will be set for maximum level.

#### 2. Level Control Security Cover

The HPA Series comes with two tamper-proof level control security covers. There are two screws that hold each security cover in place covering the four level controls on each side.



#### 3. Ventilation

The HPA2408 amplifier features a multistage fan assist cooling system that draws cool air in from the rear of the amp and exhausts the hot air out the front panel. There are 3 removable filters that can be secured to the rear vent areas where applications require them. See Rear Panel section #11.

#### 4. Status Indicators

- A. **Power** - When AC mains power is applied to the amplifier and the AC Mains Power Switch is in the "ON" position this LED will illuminate blue indicating the amplifier is active and ready for use.
- B. **Standby** - The Standby LED is a bi-color LED giving status of the amplifier power supply.
  - Illuminated amber - The HPA Amplifier is in Energy Save Mode and is not ready for use. The rear panel remote activation control port has to be triggered by applying 5-24DC Voltage or shorting the Contact Closure (CC) and ground (GND) pins together to activate the amplifier to ready status. **Note:** The HPA Amp is shipped with a shunt across the CC and GND contacts to activate the amp from Standby Mode. For the amplifier to be active or On, the Remote Turn On jumper must be in place and the amplifier switch must be in the "On" position. If the Standby LED is not illuminated and the front panel blue LED Power On is illuminated, the amplifier is active and ready to use. Refer to Remote Turn On for more information.
  - Illuminated red - If the Standby LED is illuminating red, the AC Mains voltage applied to the HPA Amplifier is out of the safe operating range. The HPA Amplifier cannot be turned on until the AC Mains voltage is between 95-258V~. Refer to AC Mains Input for more information. If the Standby LED is not illuminated and the front panel blue LED Power On is illuminated, the amplifier is active and ready to use.
- C. **Temp** - This LED represents the temperature condition of the amplifier. This LED will illuminate yellow once the thermal protection level of any of the amplifier channels or the power supply is reached causing the unit to power off. **Note:** Also refer to the Protect LED.

# HPA Series

## Owner's Manual

### Front Panel

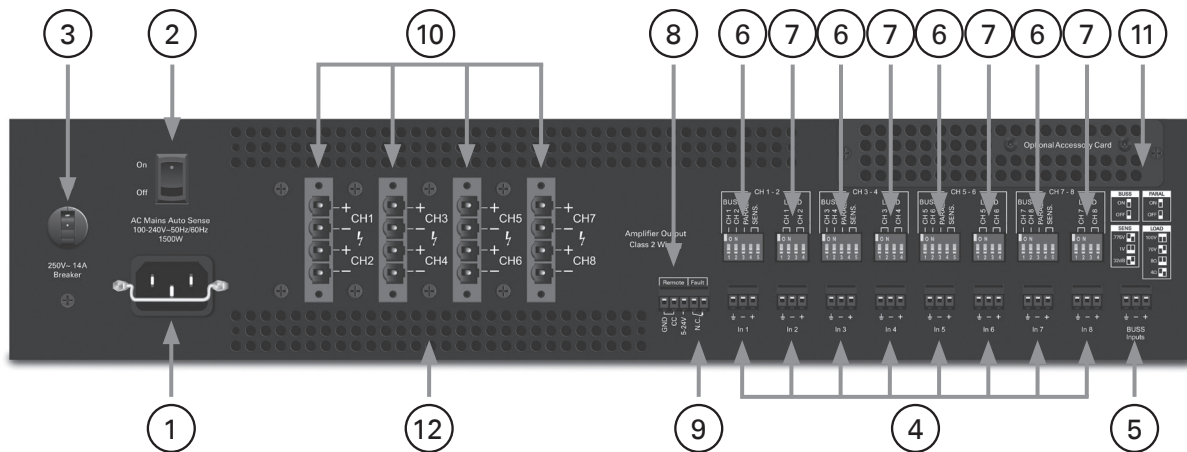
- D. Ready** - The Ready LED will illuminate green when the amplifier channels are stable and ready for use.
- E. Signal** - The Signal LED will illuminate green when the amplifier output signal produces at least 1-watt output.
- F. Limit** - The Limit LED will illuminate yellow when the maximum amplifier output level is achieved.
- G. Protect** - The Protect LED will illuminate red during one the following four conditions. No output will occur while this LED is illuminated. This condition will be reset after the protect condition has been corrected.
  1. Shorted loudspeaker output.
  2. Power Supply - If the amplifier exceeds its safe operating temperature, both output channels will be muted with both Protect LEDs illuminated to show the amp is in Protect Mode. The power supply will remain in protect Mode until the temperature returns to a safe operating temperature. **Note:** The Temp LED will also illuminate during this condition.
  3. Current Overdrive, if the amplifier channels are driving too low of a loudspeaker load.
  4. Failure of amp channel, if DC is present at the output the respective amp channel will go into protect mode.



# HPA Series

## Owner's Manual

### Rear Panel



#### 1. AC Mains Input

The HPA2408 feature a global, power factor corrected, wide range AC Mains power supply that operates from 100V-240V 50/60Hz power sources. It has an IEC-600320-C14 receptacle with retainer clip and is provided with a removable 1.8 meter 14 gauge NEMA 5-15 power cord. Insert the IEC connector of the power cord into the IEC receptacle of the HPA Series amplifier making sure it is properly secured using the retainer clip. For non North American applications, refer to local electrical code requirements to select the proper mating power cord.

#### 2. Amplifier Switch

The amplifier switch turns the amplifier power supply from Standby mode to Active On mode. Up is "On" and down is "Off". When on and AC is present the front panel Power LED will illuminate blue. **Note:** In order for the amplifier to go from Standby mode to Active mode, the amplifier switch must be in the Up (On) position, with either the Contact Closure in place or DC voltage (5-24VDC) present. The unit is always connected to the mains whether the switch is in the "On" or "Off" position.

#### 3. AC Mains Breaker

If the current drawn from the amplifier is greater than the rating of the AC Mains circuit breaker, the breaker will trip thus shutting the amplifier "Off." Turn the amplifier levels to minimum and reset the breaker to the up position to reset the breaker.

#### 4. Balanced Input

Balanced line level signals connect to the (+) (-) and (G) terminals. **Note:** If connecting an unbalanced line level input, tie (short) the (G) and (-) terminals together.

#### 5. BUSS Balanced Input

The BUSS input allows for a common Balanced input signal to be applied to a particular input or all of the inputs via one input connector. Each channel can be assigned to the signal BUSS via a switch. Balanced line level signals connect to the (+) (-) and (G) terminals. If connecting an unbalanced line level input, tie (short) the (G) and (-) terminals together. **Note:** If the BUSS is assigned to a channel, it will sum with that individual input, allowing for both signals to pass. A common application for this would be to apply a global announcement page to all inputs, while keeping control over that zone with specific content.



# HPA Series

## Owner's Manual

### Rear Panel

#### 6. DIP Switches for Input Sensitivity, Select 2-Channel or Parallel Mode, Assign BUSS

The HPA2408's 8 channels are controlled in groups of paired channels, 1 & 2, 3 & 4, 5 & 6, 7 & 8. Each pair of channels has a switch to assign the amplifier's channel gain (input sensitivity) and the input's wiring mode of parallel or 2-channel amplifier load configuration. The input BUSS can be assigned to each channel individually.

**Note:** DIP Switch 1 controls CH 1 & 2. DIP Switch 3 controls CH 3 & 4 and so on...

- DIP SW position 1 - Assigns CH 1 / 3 / 5 / 7 to BUSS input
- DIP SW position 2 - Assigns CH 2 / 4 / 6 / 8 to BUSS input
- DIP SW position 3 - Parallel (up) mode internally combines Inputs 1 & 2 so only one connection is needed to feed Outputs 1 & 2. **Note:** In parallel mode both amplifier output channels have separate level controls.
- DIP SW position 3 - Stereo (down) mode routes Input 1 to Output 1 and Input 2 to Output 2.
- DIP SW position 4 & 5 - Input sensitivity, 0.775V, 1V, 32dB. **Note:** The same setting effects both channels

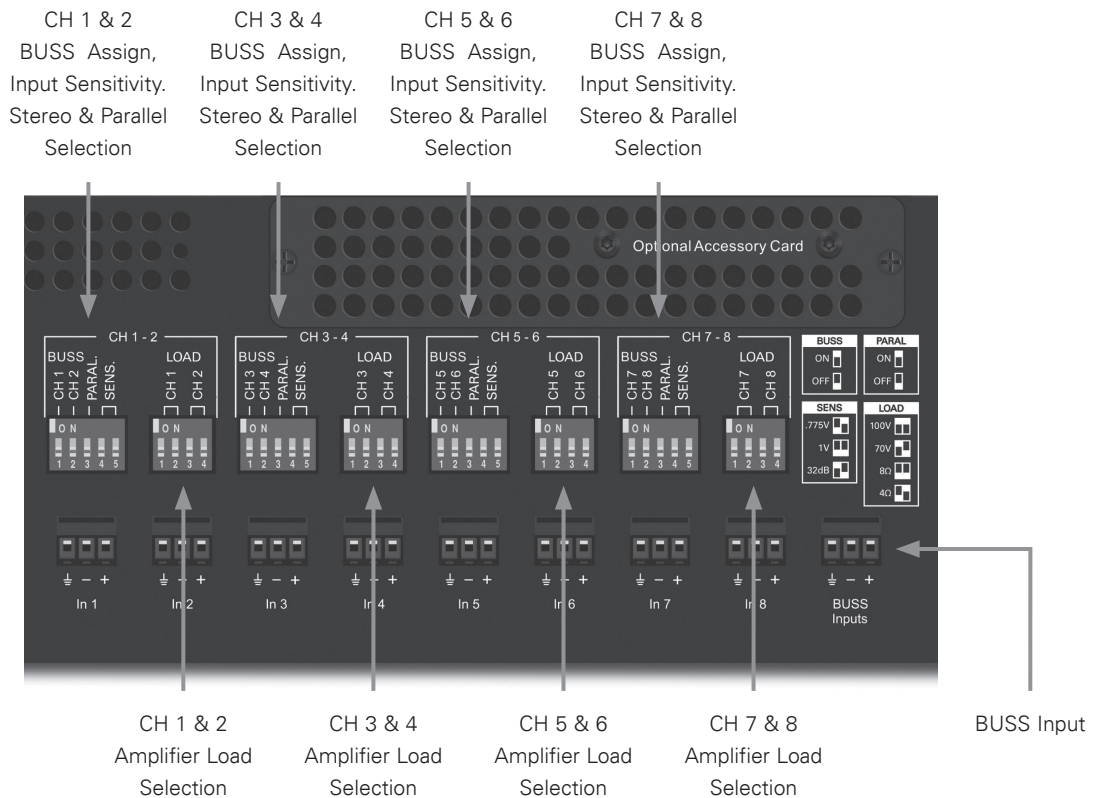
#### 7. DIP Switches for Amplifier Load Configuration - IMPORTANT!

Each Channel can have different speaker loads applied. It is important to assign the load setting via this DIP switch. This not only protects the amplifier but provides maximum performance.

**Note:** DIP Switch 2 controls CH 1 & 2. DIP Switch 4 controls CH 3 & 4 and so on...

**Note:** Failure to choose the proper setting to the load applied may cause the amp to go into Protect mode.

- DIP SW position 1 & 2 - Load selection for CH 1 / 3 / 5 / 7 to be 4Ω, 8Ω, 70V, or 100V operation
- DIP SW position 3 & 4 - Load selection for CH 2 / 4 / 6 / 8 to be 4Ω, 8Ω, 70V, or 100V operation



# HPA Series

## Owner's Manual

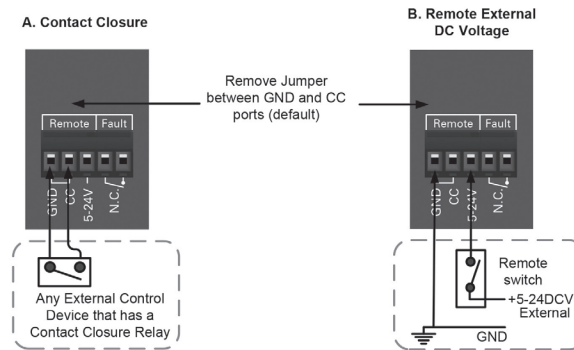
### Rear Panel

#### 8. Remote Turn ON Terminals

The HPA amplifier can be turned on or activated from a remote location. **Note:** In order for the amplifier to go from Standby mode to Active mode, the amplifier switch must be in the Up (On) position, with either the Contact Closure in place or DC voltage (5-24VDC) present. One of these two must be active to turn on the amplifier's power supply. If not, the Standby LED will illuminate amber. Factory shipping default includes a shunt applied across the Ground and CC terminals.

- A. **Contact Closure** - Using a latching contact switch short the Ground and CC ports together.
- B. **DC Voltage** - Apply 5V - 24V DC to these ports.

#### Remote Activation

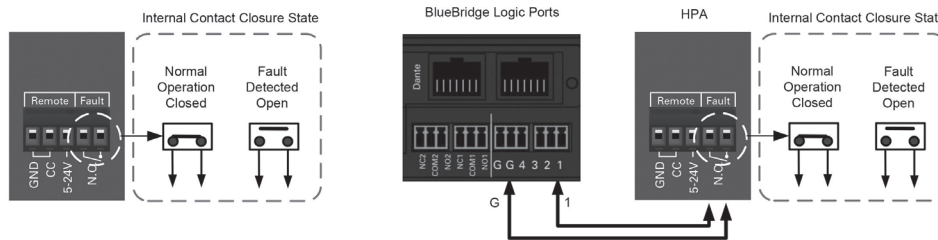


#### 9. Fault Reporting Terminals

The HPA incorporates a fault reporting system to inform a system administrator if there is something wrong with the amplifier that needs to be attended to by a system technician. The ports are shorted together (NC, Normally Closed) when the amplifier is operating properly. The ports open up under the following conditions indicating there is an issue with the amplifier.

- A. Shorted loudspeaker output.
- B. Thermal, the temperature of the amplifier channel exceeds its safe operation.
- C. Current Overdrive, if an amplifier channel is driving too low of a loudspeaker impedance.
- D. Failure of an amp channel, if DC is present at the speaker output.

#### Fault Reporting



This example shows the HPA Remote Fault connected to a BlueBridge® Logic port to create an AMP Status Indicator on a Touchscreen.

# HPA Series

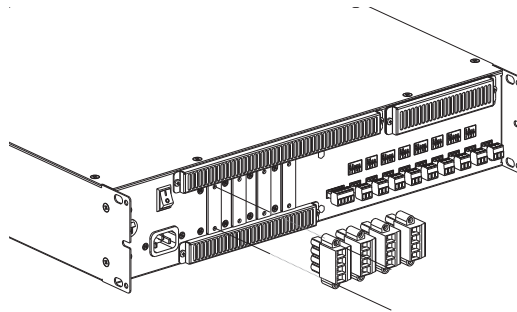
## Owner's Manual

### Rear Panel

#### 10. Loudspeaker Connections

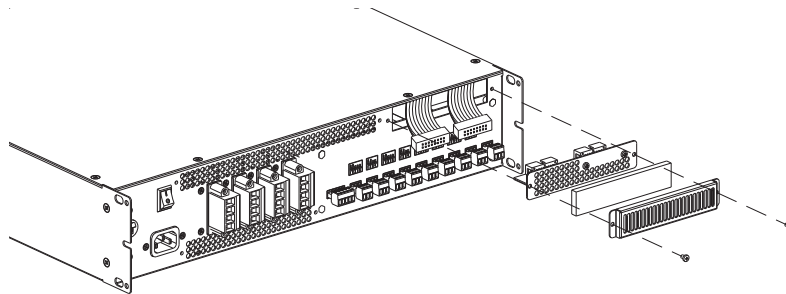
The HPA Series amplifiers ship with a protective plate covering the loudspeaker terminal pins. This is required by safety approval agencies due to the high voltage levels produced. Remove this cover and install the Euro Block type connector to connect loudspeakers to the amplifier. Any connections to the Euro Block type connector are to be made by a qualified electrical technician. **Note:** Make sure the amplifier is unplugged from the AC mains source before starting the process due to the potential high voltage electrical shock.

Discard the cover after it is removed and the loudspeaker terminal is installed. The removable Euro block connector is a 4 position, 7.62mm pitch design and is connected to the chassis by the 2 incorporated screws. It is recommended to use 14-18-gauge wire or larger for connection to the loudspeaker. The terminals can accept wire sizes of 6 - 18 gauge Class 2 wiring. Properly preparing the wire is critical to ensure a secure connection for safety and audio quality. First strip the wire back 0.250" (5mm). We do not recommend tinning (soldering the wire). Insert the wire into the terminal block slot and secure by tightening the screws firmly. Failure to do so, could cause shock or damage the amplifier.



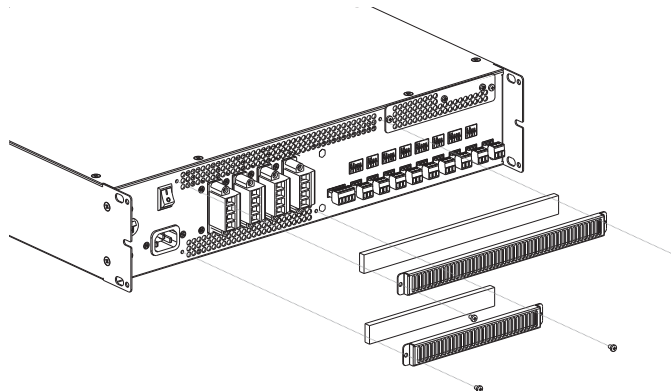
#### 11. Accessory Card Slot

The accessory card slot is for optional input cards such as the HPA-DAC8 (8 Channel Digital Audio Input Card). Contact AtlasIED for a full list of accessory cards. **Note:** Accessory card installation must be done by a qualified technician.



#### 12. Air Inlet and Filters

The rear air inlet has a removable filter grill that is connected to the main chassis via magnets. Filters are to remain clean at all times to assure proper air flow for amplifier cooling.



# HPA Series

## Owner's Manual

### Placement of the Amp

Turn off all equipment before making connections. Install the amplifier in a standard-width 19" rack. It can be mounted above or below anything that does not generate excessive heat. Although the unit's chassis is shielded against radio frequency and electromagnetic interference, extremely high fields of RF and EMI should be avoided.

**Ventilation** - The appliance should be situated so that its location or position does not interfere with proper ventilation. For example, the HPA amplifier should not be situated in a sealed cabinet or on a shelf with obstacles on it that may impede the flow of air through the ventilation openings. It is recommended that it be rack mounted into an equipment rack.

**Heat** - The HPA amplifier should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce excessive heat. Ambient temperatures should not exceed 95° F (35°C) when equipment is in use.

### Cabling

The HPA amplifier can be used with either balanced or unbalanced sources, and the outputs can be used with either balanced or unbalanced loads, provided the proper cabling is used. A balanced line is defined as two-conductor shielded cable with the two center conductors carrying the same signal but of opposite polarity when referenced to ground.

An unbalanced line is generally a single-conductor shielded cable with the center conductor carrying the signal and the shield at ground potential.

**Balanced Input** - AtlasIED recommends using either 20 or 22-gauge two-conductor wire with shield for low level signals. Maintain the proper polarity, + to +, - to - and shield to ground. **Note:** The ground center pin of the Phoenix connector is common for both channels.

**Loudspeaker Outputs** - Use 2 conductor unshielded wire of the appropriate gauge. Contact AtlasIED technical support at 1-800-876-3333 with questions regarding wire gauge. The number of loudspeakers connected and their tap settings will be required for technical support to properly recommend wire.

### Selecting the AC Mains Source

The HPA2408 is power consumption friendly compared to other multi channels amplifiers. The HPA2408 features Generation II Class D Output topology that provides high efficiency amplification. The power supply is a global use wide range voltage power supply. The combination of the power supply and the highly efficient output stage collectively deliver exceptional dynamic high output voltage and current to virtually any loudspeaker load while not requiring a tremendous amount of AC power. In the specifications there are charts showing the power consumption under various test conditions. For audio applications such as music, paging, or pink noise sound masking, the HPA2408 only requires a 15A dedicated power source. If the amplifier will be driven into its maximum capability, it is always good practice to provide 20A service for additional headroom to prevent AC mains breaker power tripping. The HPA2408 is protected by an internal 15A AC mains breaker and is rated for 15A continuous current draw or 50A current peaks. Both are within the 18.75A power consumption specifications for audio applications.

#### Why choose 240V over 120V?

It is a good idea to provide an AC Mains voltage of 208-240V with a product that requires high amount of AC Mains current. Ohm's law states that when voltage is high the current is lower. An amplifier that requires 30A of current at 120V only requires 15A of current at 240V.

One major advantage is the cost savings in the wire required to provide the current from the electrical panel to the receptacle. The minimum wire gauge needed to deliver 30A is 10AWG. For longer distances of 50ft - 150ft, 8AWG should be used. For 240V, only 15A is required and the wire gauge needed for that is only 14AWG. The cost between 14AWG & 8AWG is significant. Both methods only need 3 conductor. 208V - 240V in the USA requires a dual breaker. The cost of a dual breaker is similar in cost to a 120V 30A breaker.

A second advantage is with less current draw or demand there is less voltage sag in the AC Mains line. With less AC Mains voltage sag the amplifier will be able to produce more dynamic audio power when required.

Either 120V or 240V will work equally well, but keep in mind for a 120V service, using the proper wire gauge is very important to get the maximum performance out of the amplifier.

# HPA Series

## Owner's Manual

### Connecting the HPA Amplifier to AC Mains

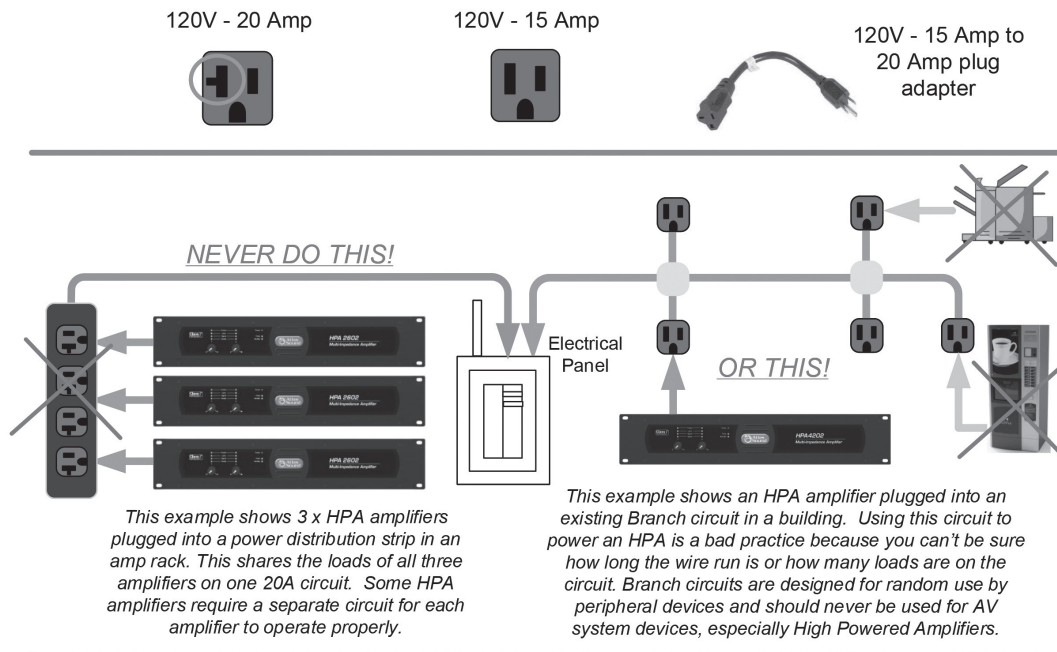
#### Do Not Do!

1. Never plug an HPA Series amplifier into a circuit without knowing what other products are connected to the same circuit.
2. Never plug an HPA Series amplifier into a power strip. Always connect directly to a dedicated circuit wall receptacle. Power strips are not designed to deliver high amounts of continuous or peak current.
3. Never plug an HPA Series amplifier into an extension cord.

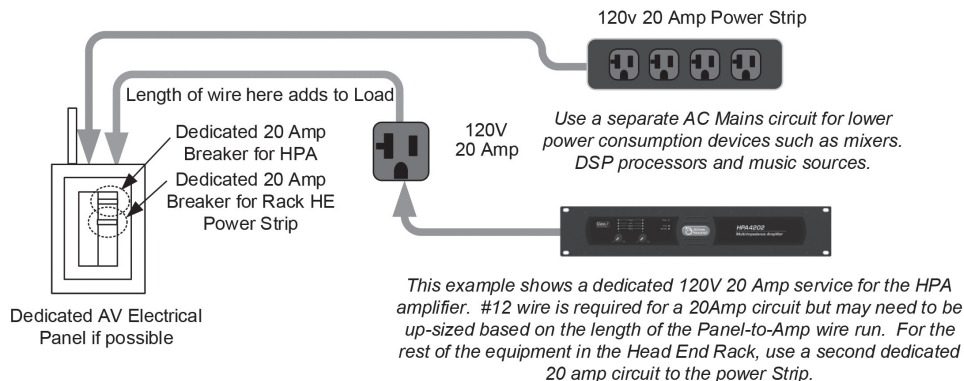
#### Best Practices

1. Each HPA Series amplifier should have its own dedicated AC Mains line.
2. Consider using a 208V-240V AC mains power source.

### HPA2408 POWER AMPS REQUIRE SPECIAL ATTENTION TO AC POWER



### **BEST PRACTICE**



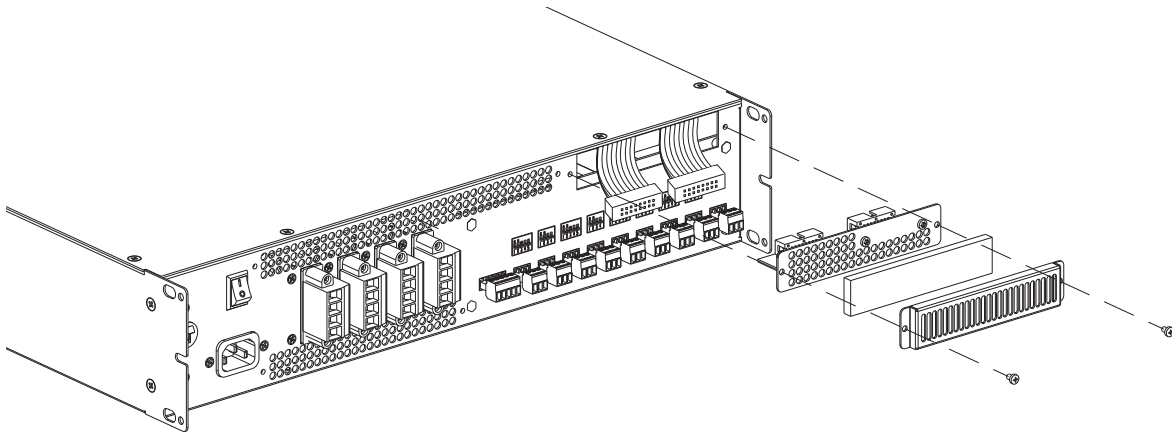
# HPA Series

## Owner's Manual

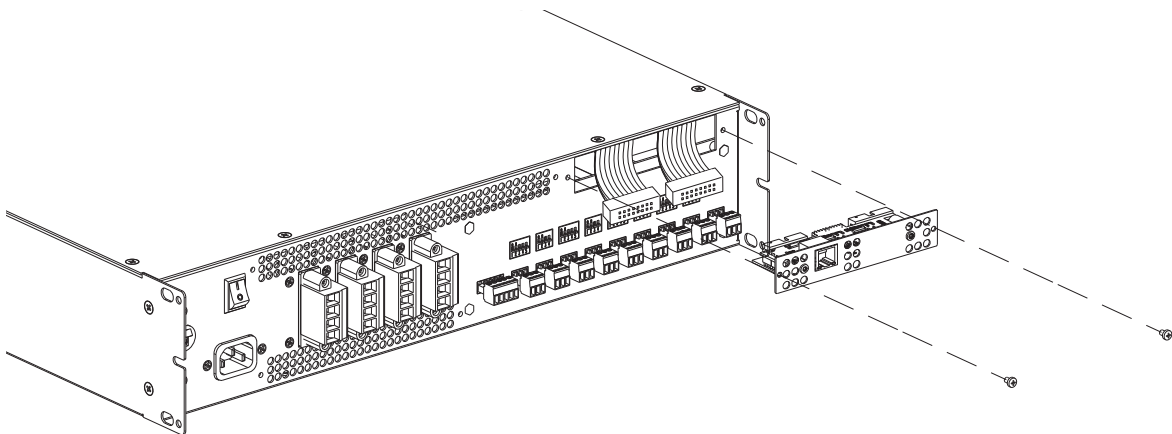
### HPA Amplifier Dante™ Accessory Card Installation

The HPA amplifier series allows for an optional HPA-DAC8 8-Channel Dante™ receiver card to be installed into the HPA amplifier. Contact AtlasIED for a list of accessory cards. **Note:** Accessory card installation must be done by a qualified technician.

1. Remove the HPA amplifier from the AC mains source.
2. Remove the two screws (M3 x 8mm Pan Head Black) holding the HPA accessory blank panel. Be careful and do not lose the screws.
3. Remove the ribbon cable from the cover plate PCB connector.
4. Connect the accessory card to the ribbon cable by carefully aligning the ribbon cable connector to the mating PCB connector. If aligned correctly the cable will mate easily.
5. Carefully guide the accessory card into the slot without forcing the PCB or cable.
6. After the card is inserted and the accessory panel is flush to the chassis, align the two screw holes and secure them together by using the M3 x 8mm screws.



Remove Accessory Card Plate, Filters, and PCB



Install the HPA Accessory Card

# HPA Series

## Owner's Manual

<b>System</b>	
Type	Power Amplifier, 8 Channel
Power Supply Type	Switch Mode
Amp Topology	Class D - Gen 2 Design
Number of Fixed Inputs	8
Accessory Inputs	8
DSP Internal	No
Network	No
Optional Card Slot	Yes
<b>Output Power (Note 1)</b>	
100V x 8 CH	8 x 300W
70.7V x 8 CH	8 x 300W
25V x 8 CH	8 x 200W
8Ω x 8 CH	8 x 300W
4Ω x 8 CH	8 x 300W
2Ω x 8 CH	NA
<b>Factory Default Settings (As Shipped)</b>	
Amplifier Configuration	8 CH
Level Controls	Front Panel
Control Ports (Rear Panel)	Remote Turn On / Off, Enable On, BUSS Input Off
Input Sensitivity	0.775 / 0dBu
Load Configuration	70V
<b>Inputs</b>	
Input Quantity	8-Balanced Inputs, Expandable to 16 via Accessory Card
Input Type	Balanced Line
Input Connectors Type	3.5mm Euro Block
Input Impedance	20KΩ (Balanced) 10KΩ (Unbalanced)
Input Sensitivity	775mV / 1.0V / 32dB (Selectable)
Maximum Input Level dBu & Vrms	24dBu, 12V (Accessory Slot Refer to Accessory Card Specifications)
Accessory Slot	8 Input Dante™ Digital Card (HPA-DAC8 Optional)
<b>Level Control</b>	
Front Panel	Rotary Detented Attenuators with Security Cover
<b>Status Indicators</b>	
Power	Blue
Standby	Amber
AC Mains Out of Safe Operating Range	Red
Temp	Yellow
Ready	Green
Signal	Green
Output Limit	Yellow
Output Protect	Red
Bridge	NA
<b>GPIO Ports (Rear Panel)</b>	
Number of Ports	Qty 5
Type of Connector	Euro Block 3.5mm
Functions	Remote Turn On via Contact Closure
Functions	Remote Turn On via DC Voltage 5-24V
Functions	Fault Report

# HPA Series

## Owner's Manual

<b>Configuration Settings (Rear Panel)</b>			
Input Sensitivity	0.775V, 1V, 32dB per CH		
Parallel Inputs	Yes (Y Input)		
Bridge	NA		
<b>Output Terminals (Speaker)</b>			
Output Connectors Type	Removable Euro Block, 7.62mm Pitch, Locking		
Output Connectors Number of Terminals	Qty 4, 4 Position		
Wire Size	6-18 Gauge (Class 2 Wire)		
Current Rating	42A RMS per Terminal		
<b>Electrical Specifications (General)</b>			
Total Harmonic Distortion 1 kHz and 1 dB Below Rated Power	≤0.15%		
Signal to Noise Ratio	>70dB Below Rated Output (A-Weighted)		
Frequency Response	20Hz - 20kHz (+0/-1.5dB)		
Input Impedance Balanced (Nominal)	100Ω Balanced Line to Line		
Input Sensitivity	0.775V / 1.0V / 32dB (Selectable)		
Slew Rate	>8V/μs		
Damping Factor (20Hz to 400Hz)	>100		
Gain	775mv @ 8Ω = 36dB, 70V= 39dB		
Crosstalk CH1-2 & CH 2-1	>60dB		
Max Voltage Per Output 8Ω	49V		
Max Current per Output 4Ω	8.9A		
Protection	Soft Start, Input RF, DC, Short Circuit, Current Overload, Clip Limit, AC Mains Under / Over Voltage Shut Off, Peak Current Limit, Over Temp		
<b>AC Power Requirements</b>			
Operating Voltage Auto Switch, 50/60Hz	100V - 240V		
Minimum Power-Up Voltage	95V		
Maximum Operating Voltage	258V		
AC Mains Source Breaker Required	120V 15A Minimum (Dedicated to Achieve Full Power All 8 Channels Driven), 220V - 240V 10A		
Amplifier Internal AC Breaker	15A Continuous, 30A Peak		
Mains Connector	IEC C14 Lockable Receptacle		
Power Cord (Ships With)	IEC C13 Plug / 14AWG 1.8m Cord / NEMA 5-15 Plug		
<b>Power Consumption &amp; Current Draw @ 120V AC Mains</b>			
	<b>Amps</b>	<b>Watts</b>	<b>BTU / hr (Note 4)</b>
Standby Mode	0.263A	2.7W	9.2 BTU
Idle Active	1.250A	81.0W	276.3 BTU
Average Power 4Ω, All CH Driven, Note 3	3.3A	255W	870.0 BTU
Average Power 70.7V, All CH Driven, Note 3	3.3A	240W	818.9 BTU
Pink Noise Power 4Ω, All CH Driven, Note 4	10.2A	852W	2907 BTU
Pink Noise Power 70.7V, All CH Driven, Note 4	11.2A	854W	2913 BTU
Burst Power 4Ω, All CH Driven, Note 5	24.6A	2558W	8728 BTU
Burst Power 70.7V, All CH Driven, Note 5	20.4A	1980W	6756 BTU
Max Music Power 4Ω, All CH Driven, Note 6	20.2A	1958W	6680 BTU
Max Music Power 70.7V, All CH Driven, Note 6	17.9A	1860W	6346 BTU
Max Sine Wave Power 4Ω, All CH Driven, Note 7	26.8A	2741W	9352 BTU
Max Sine Wave Power 70.7V, All CH Driven, Note 7	24.0A	2502W	8537 BTU



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Cooling	
Cooling System	Fan Assist (Activated by Temperature)
Air Inlet Filter	Yes, Rear, Washable, Qty 3
Cooling Air Flow Direction	Rear to Front
Dimensions and Weight	
Rack Mount Requirements	2 RU, 19"
Dimensions - Unit	19" W x 3.5" H x 15" D (483mm x 89mm x 381mm)
Dimensions - Shipping	23" W x 6.5" H x 22" D (584mm x 165mm x 558mm)
Weight - Unit	21.4 lbs. (9.7kg)
Weight - Shipping	28.4 lbs. (12.9kg)
Agency Approvals	
North America Agency	ETL
Testing Standard North America	62368-1
FCC Class A (Conducted & Radiated Emissions)	Part 15 of the FCC Rules
CE	Yes (Includes RoHS & WEEE)
Optional Accessories	
HPA-DAC8 - Dante™ Digital Audio Interface	8 Channel Receive (Only)- Field Installable
Package Contents	
HPA2408	Qty 1
Input / Output Connectors	Qty 9 x 3 Position, and Qty 1 x 5 Position 3.5mm Euro Block / Qty 4 x 4 Position 7.62mm Locking Euro Blocks
Front Panel Level Security Covers	Qty 2
Power Cord	Qty 1
Manual	Qty 1

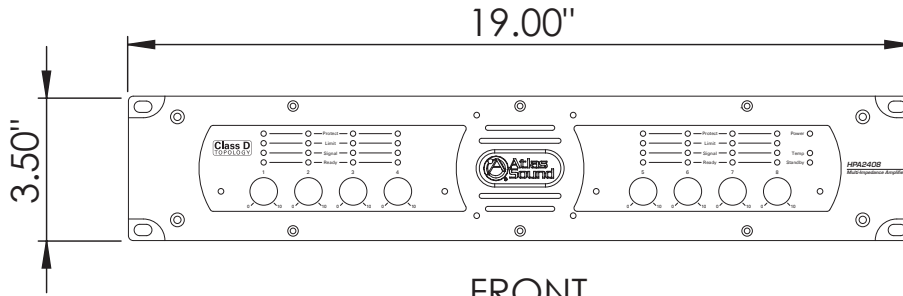
### Notes:

1. Power Level - Test is defined as follows: 1kHz sine wave signal burst of 20 cycles (20mS) at 1% THD+N, followed by 480 cycles of a 1kHz sine wave at 10% of the max power. Other power measurements available upon request. All power tests are done at 120V.
2. Power measured with optional Ethernet card connected. Without optional Ethernet card connected deduct 0.2W.
3. Average power draw is defined as Pink Noise input signal applied to achieve 1/4 of the 4Ω or 70.7V power rating.
4. Max pink noise power current draw is defined as Pink Noise applied as the signal source to the amplifier to achieve 100% of the 4Ω or 70.7V power rating. Using Pink Noise for testing amplifiers is a strenuous test that provides a consistent signal across the entire audio spectrum. Pink noise also provides a 6db Crest factor signal that injects a balance of RMS and peak signals providing realistic amp draw data for audio application
5. Max burst power draw is defined as follows: 1 kHz sine wave signal burst of 20 cycles (40mS) at 100% of the 4Ω or 70.7V power rating., followed by 480 cycles of a 1 kHz sine wave at 10% of the max power repeated. Note: The amp draw /watt data is the peak power consumed and not steady state amp draw. This complies the UL 62368-1 standard and testing for maximum peak amp draw for a 120v 15A AC mains.
6. Max music power draw is defined as dynamic input signal applied to achieve the maximum rated power into a 4Ω or 70.7V load. This test also represents realistic current draw data for audio applications. The current draw data is the maximum peak amp / watt and not steady state amp draw. This complies the UL 62368-1 standard and testing for maximum peak amp draw for a 120V 15A AC mains. Note When specifying this amp for power consumption, we recommend using the Max Music Power Amps / Watt rating data.
7. Max sine wave power draw is defined as 1 KHz input signal applied to achieve the maximum power output before clip into a 4Ω or 70.7V load. This data should be used as a reference of the maximum the current the amplifier can draw. The amount of time used to test was subject to exceeding the units circuit breaker provides this data thermal trip point. **Note:** The HPA2408 is designed and to be specified for paging and music program application. Steady state sine wave signals over 3 seconds should not be applied and may drip a 15A 120V AC Mains breaker.

# HPA Series

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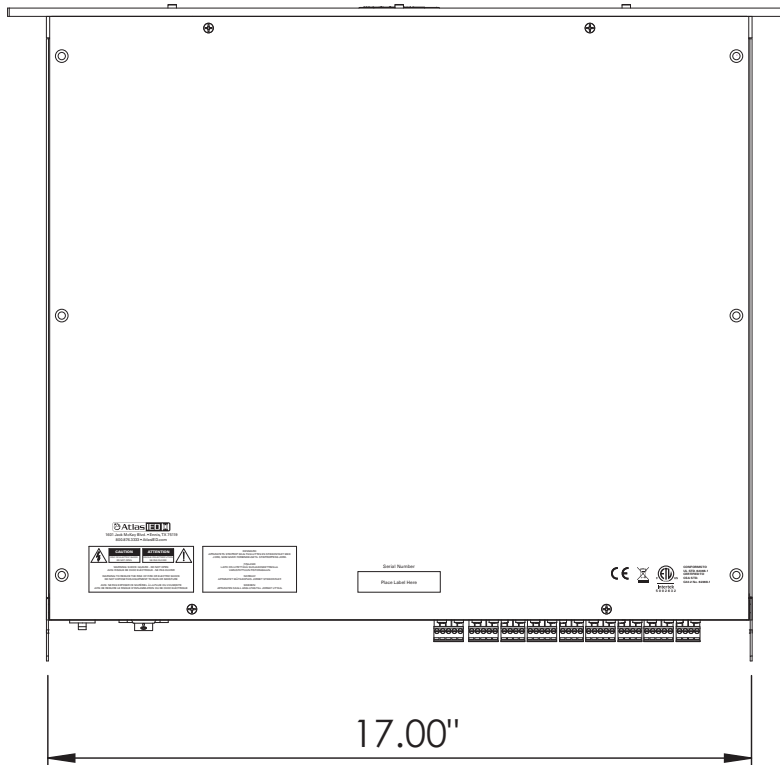
### Dimensional Drawings



FRONT



SIDE





## Limited Warranty

All products manufactured by AtlasIED are warranted to the original dealer / installer, industrial or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. This warranty shall extend from the date of purchase for a period of three years on all AtlasIED products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty. AtlasIED will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our returns policy set forth below. When products returned to AtlasIED do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any nonwarranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PREVENTS THE LIMITATION OF CONSEQUENTIAL DAMAGES FOR PERSONAL INJURY, ATLASIED SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING OUT OF THE INSTALLATION, USE OR INABILITY TO USE THE PRODUCTS. THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

AtlasIED does not assume, or does it authorize any other person to assume or extend on its behalf, any other warranty, obligation, or liability. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

## Service

Should your HPA2408 Multi-Impedance Amplifier require service, please contact the AtlasIED warranty department through the online warranty claim process.

### Online Warranty Claim Processes

1. Warranty submissions are accepted at: [https://www.atlasied.com/warranty\\_statement](https://www.atlasied.com/warranty_statement) where the type of return Warranty or Stock return can be selected.
2. Once selected, you will be prompted to enter your login credentials. If you do not have a login, register on the site. If already logged-in, navigate to this page by selecting "Support" and then "Warranty & Returns" from the top menu.
3. In order to file a Warranty Claim, you will need:
  - A. A copy of the invoice / receipt of the purchased item
  - B. Date of Purchase
  - C. The product name or SKU
  - D. The serial number for the item (if no serial number exists, enter N/A)
  - E. A brief description of the fault for the claim
4. Once all required fields are completed, select the "Submit Button." You will receive 2 emails:
  1. One with a confirmation of the submission
  2. One with a case# for your reference should you need to contact us.

Please allow 2-3 business days for a response with a Return Authorization (RA) number and further instructions.

AtlasIED Tech Support can be reached at 1-800-876-3333 or [atlasied.com/support](http://atlasied.com/support).

Visit our website at [www.AtlasIED.com](http://www.AtlasIED.com) to see other AtlasIED products.

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1601 JACK MCKAY BLVD.  
ENNIS, TEXAS 75119 U.S.A.

TELEPHONE: (800) 876-3333  
SUPPORT@ATLASIED.COM

**AtlasIED.com**