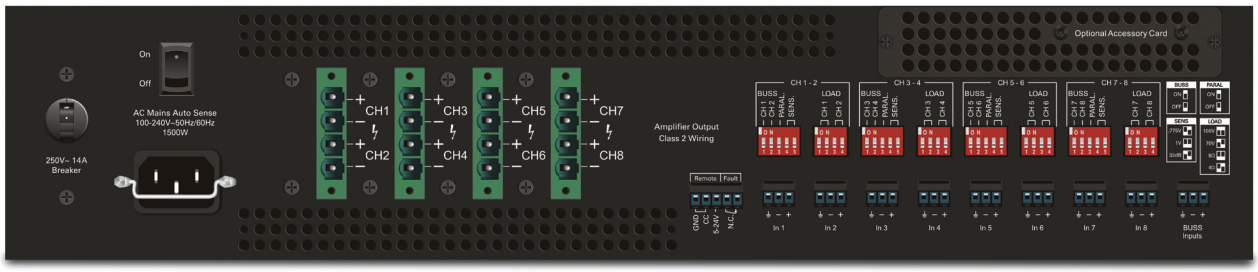
HPA2408

Multi-Impedance High Power Amplifier



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 8Ω
  - 8 x 300 Watt 4Ω
- Each Channel Load can be Independent of the Others
- Only Requires a 15A AC Mains Source for 120V Operation
- Remote Turn On
- Accessory Card Slot 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 High Efficiency Fan Cooling
- Removable Air Filters
- Wide Range AC Mains Power Supply 100V-240V~

Applications

The HPA2408 can be used for most audio applications, whether for commercially installed 70V/100V distributed systems, or professional high performance sound reinforcement applications. The HPA series will provide efficient, stable, and reliable power making them the perfect choice for night clubs, house of worship systems, portable sound systems, convention centers, sports venues, hotels, and retail centers.

General Description

The AtlasIED high power amplifier, "HPA" Series, is designed for use in either commercial 25V / 70V / 100V distributed systems or low impedance 8Ω or 4Ω 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 with 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 an amplifier 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.

System	
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
Output Power (Note 1)	
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
Factory Default Settings (As Shipped)	
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
Inputs	
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)
Level Control	
Front Panel	Rotary Detented Attenuators with Security Cover
Status Indicators	
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
GPIO Ports (Rear Panel)	
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

Configuration Settings (Rear Panel)	
Input Sensitivity	0.775V, 1V, 32dB per CH
Parallel Inputs	Yes (Y Input)
Bridge	NA
Output Terminals (Speaker)	
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
Electrical Specifications (General)	
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
AC Power Requirements	
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

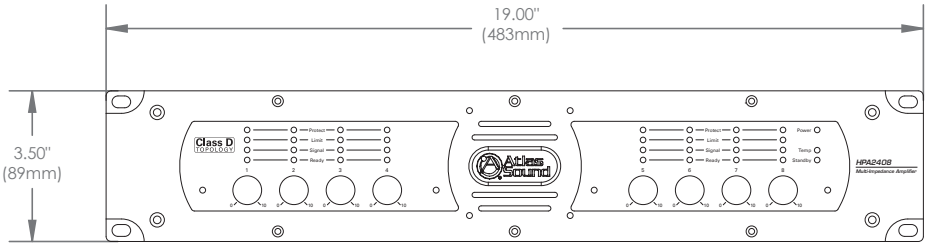
Power Consumption & Current Draw @ 120V AC Mains	Amps	Watts	BTU / hr (Note 4)
Standby Mode	0.263A	2.7W	9.2 BTU
Idle Active	1.250A	81.0W	276.3 BTU
Average Power 4Ω, All CH Driven, Note 3	3.3A	255W	870.0 BTU
Average Power 70.7V, All CH Driven, Note 3	3.3A	240W	818.9 BTU
Pink Noise Power 4Ω, All CH Driven, 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

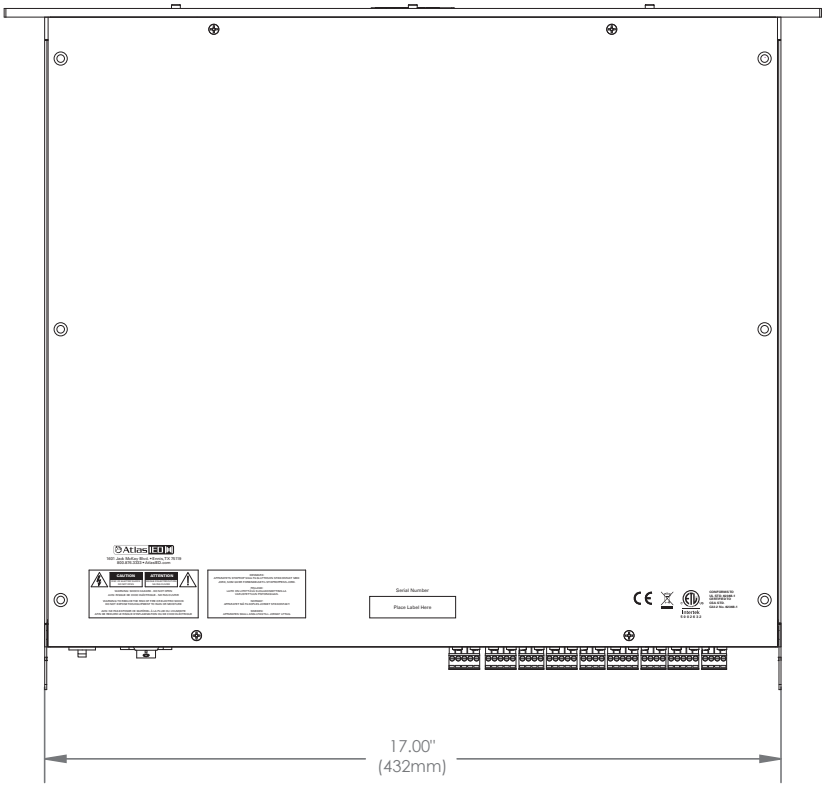
Cooling	
Cooling System	Fan Assist (Activated by Temperature)
Air Inlet Filter	Yes, Rear, Washable, Qty 3
Cooling Air Flow Direction	Rear to Front
Dimensions and Weight	
Rack Mount Requirements	2 RU, 19"
Dimensions - Unit	19" W x 3.5" H x 15" D (483mm x 89mm x 381mm)
Dimensions - Shipping	23" W x 6.5" 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

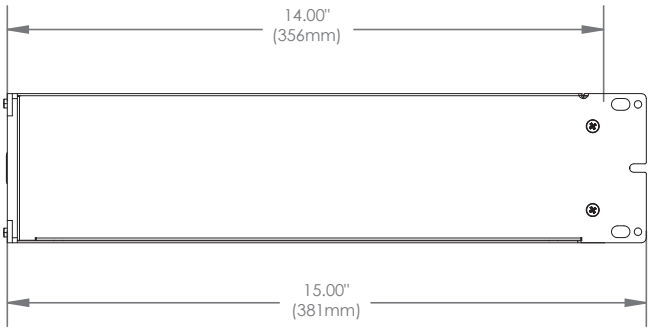
Notes:

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.

Dimensional Drawings







Optional Accessories

HPA-DAC8 - Dante™ Eight-Channel Receiver Card

Architect & Engineer Specifications

The power amplifier shall be an Eight-channel multi-impedance amplifier capable of driving 100V, 70.7V, 25V, 8Ω, and 4Ω load conditions. The amplifier shall have multiple internal circuits to protect itself and connected speakers from Input RF, output DC, output short circuits, current overload, clipping, AC mains under or over voltage, peak current limit, and thermal overload. A variable speed fan shall provide rear to front airflow for dynamic cooling. The universal switch mode 50/60Hz power supply operating range shall be 100V-240V. The AC Mains inlet shall be C14 IEC Locking Receptacle and ship with a IEC 14-guage 1.8m cord with a fixed NEMA 5-15 male plug. The HPA2408 shall meet Energy Star 1W Standby Mode Standards. Power ratings shall equal or exceed 300W x 8 @ 100V, 70.7V, 8Ω and 4Ω loads, and 200W x 8 @25V load. Each balanced Line input channel shall have a selectable input sensitivity of 0.775V, 1.0V, or 32dB, and frequency response shall be 20Hz-20kHz (+0/-1.5dB) with a Signal to Noise Ratio of >85dB below rated output (A-Weighted). Front panel indicators shall include ready, signal present, limiter, and protection LEDs. Front panel level controls shall be stepped attenuators with security covers included. Input terminations shall be removable 3.5mm Phoenix style connectors and loudspeaker outputs shall be a removable 4-position Phoenix style connector capable of accepting up to 8 AWG wire. A switch on the rear panel shall provide selection of stereo, parallel or bridge modes of operation. Rear panel 5 position Phoenix style GPIO ports shall provide Remote Turn On and Fault Reporting for each channel. The amplifier shall have one (1) rear mounted Accessory Card slot. This slot shall be for an HPA-DAC8, a eight-channel Dante™ Digital Audio Receiver Input Card. Dimensions shall be 2 RU, 3.5" x 19" x 15" (89mm x483mm x 381mm) and the amplifier shall weigh 21.4 lbs. (9.7kg). The amplifier shall be AtlasIED HPA2408.