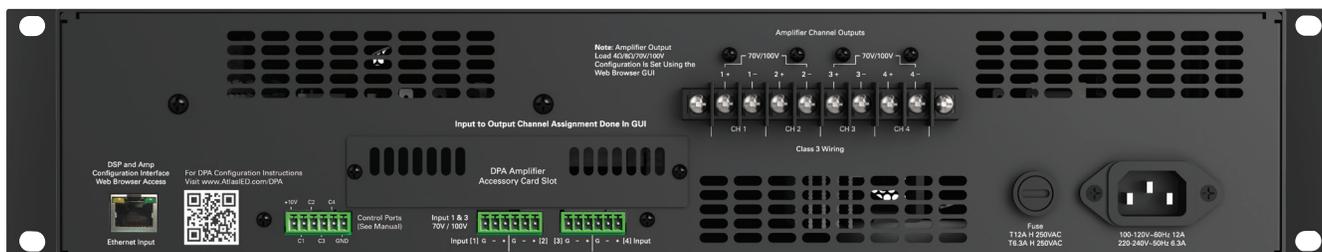# DPA2402

Multi-Channel Network Amplifier

DPA2402 Front

DPA2402 Back

Features

- Configuration Levels
  - 2 x 1200-Watt 70V/100V (Factory Default)
  - 4 x 500-Watt @ 4Ω
  - 1 x 1200-Watt 70V/100V & 2 x 500-Watt @ 4Ω
- No Computer Required to Operate
- Networkable
- Configurable DSP Via GUI
- PC Based DPA Site Manager Software With LAN IP Auto-Discovery Fault Reporting, Input & Output Status, Standby Status and Amplifier Remote Activation Via a Scheduler Timer
- On-Board Web Browser GUI For Remote Monitoring of Status & Levels
- User Page With Assignable Level Control, Post Contractor Settings, Password Protected
- Mute Assignments Triggered Via Audio Signal or Contact Closure
- Audio Sense Auto Power Down (APD)
- DSP Parameters Per Output, Parametric EQ, Hi & Lo Cut Filters, Delay, Limiter
- Four (4) Balanced Inputs, Expandable to Eight (8) Via Accessory Card
- Optional Accessory Card Slot for a DPA-DAC4 4-Channel Dante™ Rreceiver or a DPA-AMIX (2) Mic / Line, (2) AUX Input Card
- PC, iOS®, & Android® Controllable
- Assignable Level Controls, Onboard GUI (Security Password Protected) or by Front Panel Pots with Tamper Deterring Covers
- Four (4) GPIO Control Ports Assignable in GUI for Mute or Remote Level
- Controllable From Third-Party Controllers

Applications

The flexible DSP, remote web monitoring, and control of the higher power DPA2402 amplifiers makes them the perfect choice for large scale corporate, presentation rooms, training facilities, conference centers, Hotels, and retail background / foreground music applications.

General Description

The AtlasIED DPA2402 features a combination of flexibility, performance and control to provide high value features for applications that require more than just great sound. The network based DPA2402 is a DSP controlled 4-channel amplifier that can be configured in three different amplification arrangements to meet the design requirements of any installation.

The unit is factory preconfigured in a two-channel 70V mode. If the design requires four channels of low impedance amplification, the amplifier can be configured as 4-channel model with either 4Ω or 8Ω load impedances. Many system designs require both low and high impedance amplification. This unit can be configured to deliver 70V/100V for a paging/background system on a single channel plus two additional 4Ω or 8Ω amplifier channels for a foreground stereo application.

The DPA2402 comes standard with four balanced line inputs and an accessory slot for an optional DPA-DAC4 4-channel Dante™ receiver card or a DPA-AMIX (2) mic / line, (2) AUX input card, giving the DPA2402 a total of eight (8) inputs. All inputs can be mixed and routed to any of the four amplifier channels. All four amplifier channels have an assortment of DSP tools including level controls, EQ's, limiters, high & low pass filters, and delay to provide flexibility for a range of applications.

The output level can be assigned to either the front panel potentiometers or to the onboard GUI. Wired remote level control can be configured to allow simple control for the end user. Each unit also features GUI based input and output level metering along with assignable mute functions that are triggered via an audio signal or contact closure. Access to the DSP settings is accomplished via computer, tablet or mobile device using a web browser. All settings can be password protected.

The unit also includes a PC based site manager software that automatically searches within a specific network for all DPA amplifiers on the network. It will list them and allow a single click access to any unit. The DPA Site Manager software can do a variety of functions besides locating IP addresses such as; fault reporting, input & output status, standby status and remote activation via a scheduler timer.

The flexibility of the DPA Series amplifiers and comprehensive assortment of local or network control configurations make them an ideal choice in today's sophisticated commercial audio market.

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System	
Type	2400-Watt 4-Channel Configurable Network Digital Commercial Power Amplifier
Power Supply Type (Linear or Switch mode)	Switch Mode with Power Factor Correction (PFC), Universal Power Supply
Amp Topology	Class AB Hybrid-BASH
Number of Fixed Inputs	4
Accessory Inputs	4
DSP Internal	Yes
Network (Ethernet or Wireless)	Ethernet
Optional Card Slot	Yes x 1

Output Power	
100V x 2 CH	1200W
70V X 2 CH (Factory Default)	1200W
4Ω x 4 CH	500W
8Ω x 4 CH	300W
100V x 1 + 4Ω x 2 CH	1200W/600W
70V x 1 + 4Ω x 2 CH	1200W/600W

Factory Default Settings (As Shipped)	
Amplifier Configuration	2 CH 70V Mode (CH 1/2 = 70V, CH 3/4 = 70V)
Level Controls	Front Panel Assigned, CH 1 & 3 Levels Active
Control Ports (Rear Panel)	Remote Level, C1 Assigned to CH 1/2 70V, C3 Assigned to CH 3/4 70V
I/O Matrix	Input 1 Routed to Output CH 1/2, Input 3 Routed to Output CH 3/4
Auto Power Down (APD)	Disabled

Inputs	
Input Quantity	4-Balanced Inputs, Expandable to 8 via Acccessory Card
Input Type (Line Balanced or Unbalanced)	Balanced
Input Impedance, Ω	40kΩ
Input Sensitivity	750mV Balanced, 0dBu
Input Connectors Type	3.5mm Euro Block
Accessory Slot	Two Options - 4 Input Dante™ Digital Card (DPA-DAC4) or 4 Input Analog Mic/Line Analog (DPA-AMIX)

Level Control	
Front Panel Manual (Enable-Disable in GUI)	Removable Knobs and Security Cover
GUI Control	PC (Requires Ethernet Cable), iPhone®, Android® using a standard web browser

Status Indicators	
Power	Blue Indicator
Standby (Remote Turn ON)	Blinking Blue Indicator, Front Panel Only
Output Signal	Green
LED Bar Meter	GUI Only
Output Limit/Protect	Red
4/8 ohm (2 CH Operation)	Yellow, CH 1/2 & CH 3/4
70V / 100V Operation	Yellow, CH 1/2 & CH 3/4
Output Mute Status	Flashing Red

DSP Type & Tools	
IO Routing	Matrix Mixer
Hi & Low Pass Filters per Channel	One Per Output, Adjustable Slopes (6, 12, 18, 24dB per octave) and Frequencies
EQ Parametric, Number of Bands per Channels	5 Parametric Filters Per Output
Delay	60mS Per Output
Limiter	Each Output up to 12dB of Assignable Limiting
DSP Frequency Type	48k, 24bit

Control Ports (Rear Panel)	
GPIO Port	QTY 4, Remote Level & Mute Functions, Assignable, PHX Connector
Ethernet	GUI Access, RJ45

Output Terminals (Speaker)	
Output Connectors Type	Screw Terminal Barrier Strip with Cover
Output Connectors Number of Terminals	8
Output Connectors Fixed or Removable	Fixed
Wire Size	18-10 AWG When Using Yellow Spade Lug .250 Terminal, QTY 8 Included (Class 3 Wire required)
Terminal Spacing	.300" (7.62mm)
Current Rating	25A per Terminal

Electrical Specifications (General)	
Total Harmonic Distortion 1 kHz and 1 dB Below Rated Power	0.03%
Signal to Noise Ratio	>100dB Below Rated Output (A-weighted)
Frequency Response	20Hz - 20kHz (DSP Filters Set to Flat)
Damping Factor (20Hz to 400Hz)	78.46 (78)
Crosstalk CH1-2 & CH 2-1	73dB
Max Output Peak Voltage 8Ω Per CH	55V
Max Output Peak Current 4Ω Per CH	11.5A
Slew Rate	>6V/µS
Protection	Hi/Low Input Voltage, Thermal, Short, Over Current

AC Power Requirements	
Operating Voltage	110V-120V & 220V -230V 50/60Hz, Auto Sense
Minimum Power-Up Voltage	90V
Maximum Operating Voltage	264V
Mains Interface	IEC 15A Receptical
Power Cord (Included)	1.5m, IEC C13 to NEMA 5-15P Plug, 16AWG

Power Consumption and Current Draw			
Sleep Mode	94mA	2.2W	8 BTU
Standby APD Mode (Note 2)	199mA	19W	65 BTU
Idle Active Mode (Note 2)	246mA	26W	88 BTU
Average Power 4 Ohm All Channels Driven (Note 3)	3.2A	375W	426 BTU
Average Power 70V, All Channels Driven (Note 3)	3.5A	415W	446 BTU
Max Power 4 Ohm, All Channels Driven (Note 4)	10.2A	1189W	775 BTU
Max Power 70V, All Channels Driven (Note 4)	9.5A	1245W	1818 BTU

Cooling	
Cooling System	Idle: Convection, In Use: Signal Sense Variable Speed Fan Assist
Cooling Air Flow Direction	Rear to Front

Dimensions and Weight	
Rack Mount Requirements	2 RU, 19"
Dimensions - Unit	W 19" x H 3.47" x D 14.5" (483mm x 89mm x 368mm)
Dimensions - Shipping	W 24.5" x H 5.0 " x D 18.7' (623mm x 127mm x 475mm)
Weight - Unit	20.8 lbs. (9.53kg)
Weight - Shipping	26 lbs (11.8kg)

Agency Approvals	
North America Agency	TUV
Testing Standard North America	60065
FCC Class A (Conducted & Radiated Emissions)	Part 15 of the FCC Rules
CE	Yes (Includes RoHS & WEEE)

| Optional Accessories	
DPA Site Manager Software	
AA-YSUM	Passive Summing of Stereo Signals
WPD-VC10K	Potentiometer on Wall Plate for Remote Level Control
DPA-DAC4	4-Channel Dante™ Receiver
DPA-AMIX	Analog 4-Channel Mic/Line/Aux Input Card

NOTES:
1. Power level measurment is define as follows: 1Hz 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 are available upon requests.
2. Power measurement with Ethernet connected. Without Ethernet connected deduct .2W.
3. Average Power is defined as Pink Noise input signal applied to achieve 1/4 of the 4 Ohm or 70.7V power rating.
4. Max Power is defined as 1 KHz input signal applied to achieve the maxium power output before clipping into a 4 Ohm or 70.7V load.

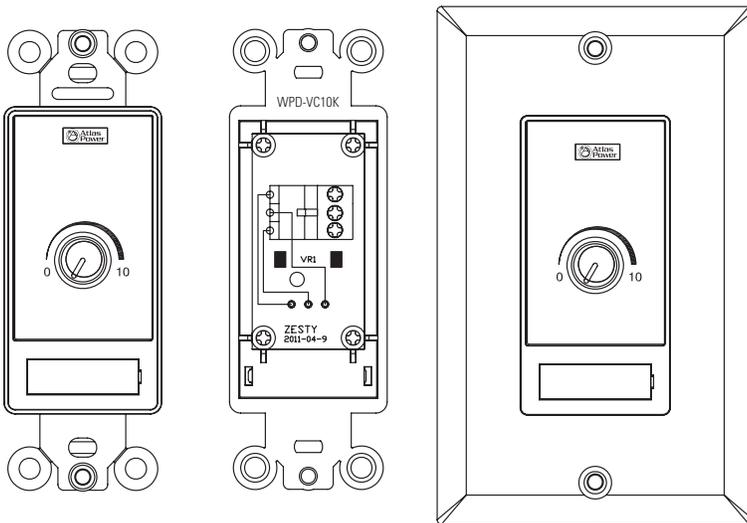Dimensional Drawings

Optional Accessories

DPA-DAC4 - Dante™ 4-Channel Receiver Card
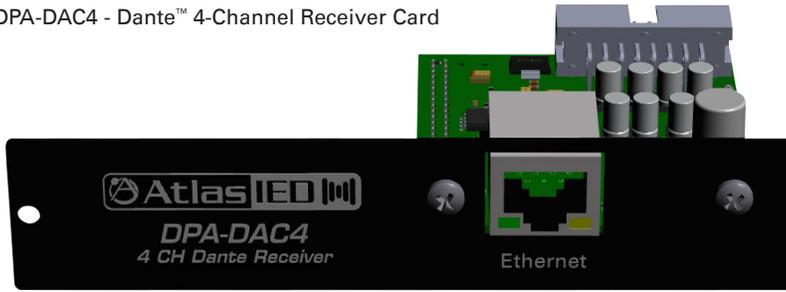
DPA-AMIX - 4-Channel Mic / Line AUX Mixer Amp Card

WPD-VC10K: Potentiometer on Wall Plater for Remote Level Control

AA-YSUM: Stereo Signal Passive Summing Cable

Architect and Engineer Specifications

The power amplifier shall be a 4-channel switch mode power amplifier with efficient BASH Hybrid topology output circuitry with a Global Switch Mode PFC power supply. The amplifier shall be configurable as 4-channel low impedance 4Ω or 8Ω mode, 2-channel high impedance 70V/100V mode, or 2-channel low impedance 4Ω or 8Ω and 1-channel high impedance 70V/100V mode. The amplifier shall be factory shipped pre-configured in a two-channel 70V/100V mode. The I/O Router shall be configured as follows: Input 1 routed to Outputs 1 and 2 and Input 3 routed to Outputs 3 and 4 and will not require a computer or network to use in default mode.

The performance specifications shall match or exceed the following: 70V/100V x 2CH = 1200W; 4Ω x 4CH = 500W; 8Ω x 4CH = 300W, (ref. specification Notes 1-4 above); Input Sensitivity 750mV Balanced, 0dBU; Input Impedance Balanced 40K Ohms; Max Input Level channels 1-4, +14dBU, 7dBU inputs 5-8 with Dante™; THD 1% at rated output, .2% Typical; Frequency Response -3dB 20Hz – 20kHz (DSP set to flat); Signal to Noise Ratio -100dB Below Rated Output –A Weighted; Crosstalk >70dB @1kHz; Protection circuits =Thermal, Short, Signal Limiter; Sleep Mode (Ethernet Active) 2.2W, 8BTU; Standby/ADP mode 19W 65BTU; Max Power All CH driven 70.7V/100V (default mode) = 1245W, 1818BTU. Dimensions: 2 x RU, 19" W x 3.5" H x 14.5" D. Weight 20.8 lbs.

The power amplifier shall have a front panel power switch and three states of idle power, Idle Active Mode, Sleep Mode, and Standby Auto Power Down (APD) Mode. Each mode shall have an LED indicator on the front panel illustrating the power status. When in Sleep Mode, the Ethernet shall remain active for access to the amplifiers on board GUI.

The amplifier shall include convection cooling with dynamic fan assist for extreme conditions. If the unit is not being used or in Standby mode, the fan shall not be needed for cooling and shall remain Off until the unit is in heavy use. As heat is generated in the amplifier during use, the fan shall activate at a low speed and increases as needed to keep the amplifier at safe operating temperature. The amplifier's air flow shall be from rear to front.

The front panel controls shall consist of four (4) volume controls that can be removed and replaced with included security covers. Above each volume control, LED indicators for Signal and Limit/Protect/Mute shall provide the amplifier output operating condition. The 4-channel output operating mode shall be displayed to the right of the output indicators using multicolor LEDs. These indicators illustrate if Channels 1/2 and 3/4 are low impedance 4Ω or 8Ω individually configured or combined making a 70V/100V output. Amplifier operation mode settings shall be completed using the internal DSP GUI.

On the rear panel, the amplifier shall have an IEC AC receptacle that operates from 110V - 120V & 220V - 240V and shall automatically sense the AC Mains voltage and change voltage settings. A removable AC Mains fuse shall be provided for protection.

The rear-mounted Input connectors for inputs 1 - 4 shall be individually removable 3-way 3.5mm Phoenix type connectors that accept balanced line input signals (+) (–) and (GND) pins and will support unbalanced signals by connecting the (–) and (GND) pins together. The amplifier configuration and I/O Routing shall be done in the GUI. Any Input shall be capable of being routed to any Output.

The rear-mounted Output connector shall be a screw terminal block type for connecting speakers to the amplifier. The recommended wire to use shall be Class 3 rated,14-gauge wire or lower for speaker wiring. Amplifier output channel configurations shall be done in the amplifier GUI. The amplifier shall be shipped with two speaker output terminal covers for safety. Included in the carton with the amplifier shall be eight (8) spade crimp terminals that accept 12-gauge wire and four (4) security cover screws (M3 x 8mm). Terminal block screws shall be M4. The amplifier shall be pre-configured at the factory for two-channel 70V / 100V mode.

The amplifier shall have one (1) rear mounted Accessory Card Slot to add accessory modules. Accessory modules shall make available four (4) additional inputs (for a total of 8) that can be routed to any of the four output channels. Optional accessory cards shall be a Four-Channel Dante™ Digital Audio Input Card and a Four-Channel Analog Mic / Line, Auxiliary Input Card.

The amplifier shall have a rear-mounted Ethernet Connector to connect to a Local Area Network (LAN), computer, or router/switch using a standard RJ45 cable to access the amplifier's DSP and control settings.

When network enabled, the amplifier shall have a GUI Home page with Input and Output active meters, Output Configuration indicators, with Tab selections to navigate to User PC Control page, Amplifier Setup page, Mobil Control page, IP Configuration page where you can label I/O, Update page for Firmware upload, and About page. All four amplifier channels shall have an assortment of DSP tools with navigation icons to the following individual GUI pages: Amplifier Configuration, Mute, Link & Ports Assign, I/O Router Assign, Hi & Lo Pass Filters, 5-Band Parametric EQ, Output Level, Delay, and Limiter.

The amplifier shall have 4 (QTY) rear-mounted Control Ports to allow assigned / configured Remote Level or Mute functions to be activated by external contact closure relay or controlled by voltage. Each Control Port pin shall be assigned to one function such as Mute or Level, but not both. Control Port assignment shall be done in the GUI "Mute, Link, Port Assignment Page". The factory default assignments for the Amplifier Control Ports shall be as follows: C1 Controls CH 1/2 70V / 100V Output Remote Level, C2 Not Assigned, C3 Controls CH 3/ 4 70V / 100V Output Remote Level, C4 Not Assigned. The Control Ports shall provide +10V and GND connections for Remote Level controls using 10kΩ linear taper pots.

The amplifier shall have Site Manager software to do a variety of functions including locating DPA amplifiers' IP addresses; fault reporting, input & output status, standby status and remote activation via a scheduler timer.

The amplifier shall be an AtlasIED DAP2402.