DNA2404

Digital Network 4-CH Power Amplifier DNA2404CL/DNA2404DL/DNA2404CH/DNA2404DH

Features

- Supports Dante™ or CobraNet® Digital Audio Inputs (Depending on Model)
- Compatible with IED GLOBALCOM® Systems and 3rd Party Dante™ or CobraNet® Devices
- Provides Redundant Ethernet Ports
- 7-Band Parametric EQ and a High-Pass and Low-Pass Filter per Channel
- Output Audio Monitoring
- Four 600-Watt Amplifier Output cChannels
- 70.7-Volt or 100-Volt Output Models Available
- LED Indicators for Power, Audio Signals and Faults
- Built-in Supervision of Amplifier Cards and Loudspeaker Lines
- Fault Reports and Amplifier Status Available Over Ethernet Using Standard SNMP Protocol
- Supports Independent Background Music for All Channels with Automatic Ducking When Paging Audio is Present (CobraNet® Versions Only)
- Two Inputs for Ambient Noise Sensors for Each Amplifier Output Channel
- ETL Safety Listed - DNA2404CL(DL) Are Also Listed to UL1711 Which is Required for UL2572 Mass Notification Systems
- Can be Used on Class A, B or AB Loudspeaker Circuits

General Description

The DNA2404 series of amplifiers are an integral part of the IED GLOBALCOM® Communications System, allowing a few audio zones to be added where necessary when a full 16-zone T9160 amplifier frame is not required. The amplifiers feature either CobraNet® or Dante™ digital audio input and four channels of 600 watt amplification. The DNA2404 amplifiers are controlled with network commands for selecting input routing and configuring EQ, output levels, ambient noise level compensation, and sound masking (CobraNet® versions only). Amplifiers are controlled through the GLOBALCOM® System Management Center.

The internal amplifier cards are Class D (switching mode) dual channel 600W amplifiers into the rated loads (70.7-Volts or 100-Volts).

Class D operation, combined with an integral switching mode power supply, offers many advantages, and the unique IED design makes full use of these benefits. They include higher efficiency, increased reliability, improved performance, and lower operating cost. Switching mode operation combined with high voltage power MOSFET devices make it possible to eliminate the heavy, costly, bulky transformers. IED's design is stable under all load conditions (phase angles of 0 to 360 degrees). The amplifier card has 34dB of gain from its analog input to the loudspeaker output. Attenuation is handled ahead of the power amplifier by DSP controls through software.

Inputs are provided for connecting up to eight (8) 540S ambient noise sensors (2 sensors for each output channel). This allows the output of each channel to be automatically adjusted in real time based on the measured ambient noise level in the zone.

The power amplifier has built-in voltage limiting to protect the loudspeakers being driven. In addition, a temperature sensor on the heatsink will annunciate a trouble condition if an amplifier becomes too hot.

The DNA2404 series amplifiers feature LED indicators for power, audio signals and fault status. A Form C relay is also included that will indicate that a fault is present.

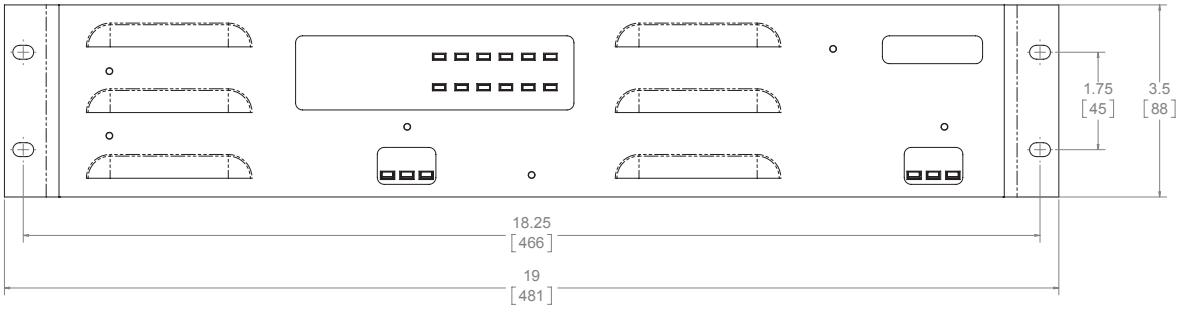
The DNA2404 amplifiers provide 600-watts per channel in either 70.7-volt or 100-volt transformer-distributed loudspeaker systems. Models DNA2404CL and DNA2404CH utilize CobraNet® for digital audio while models DNA2404DL and DNA2404DH utilize Dante™ for digital audio transmissions. Models DNA2404CL and DNA2404DL operate from a 120 VAC power source and the DNA2404CH and DNA2404DH models operate from a 240 VAC power source.

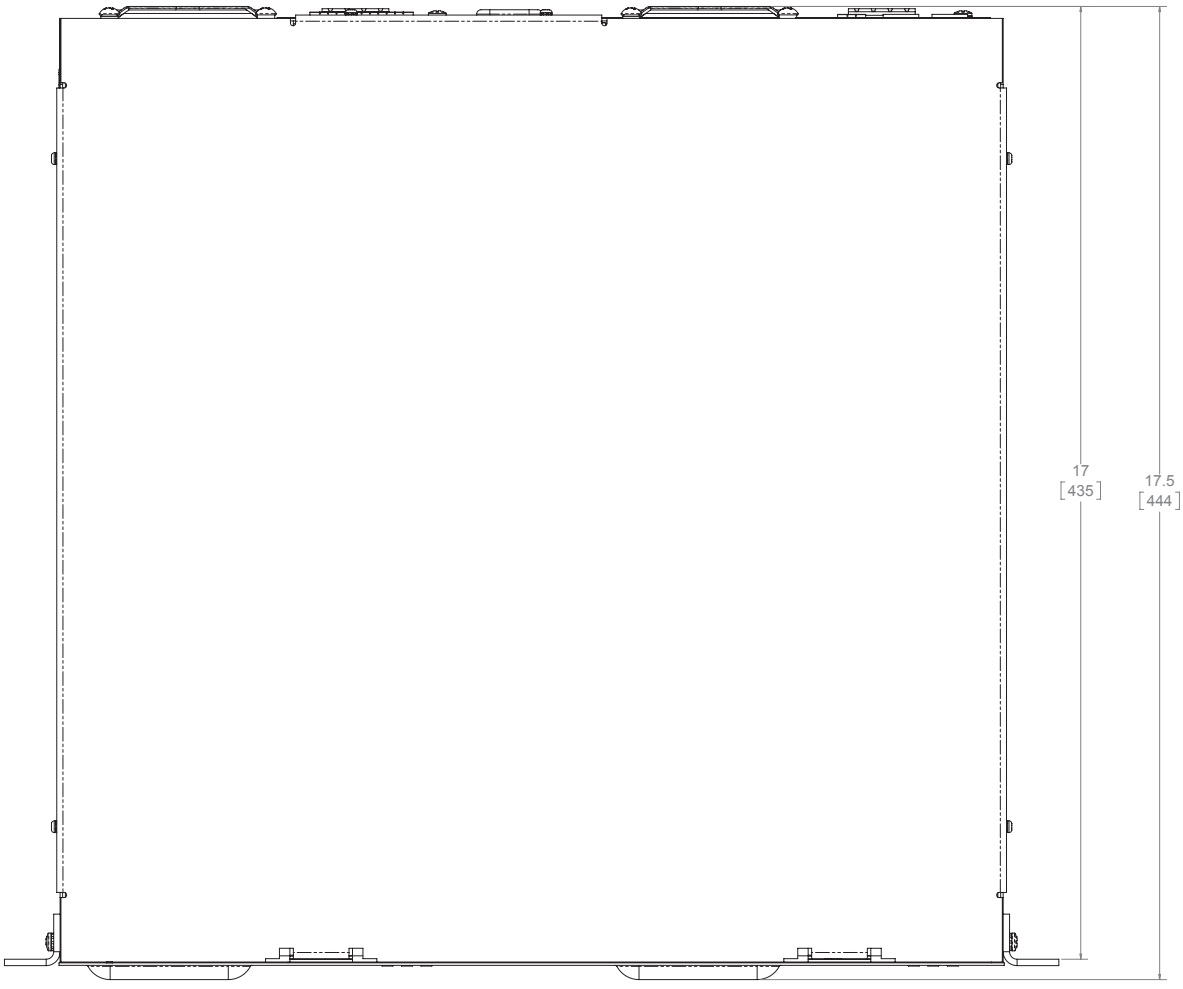
Models DNA2404CL and DNA2404CH can be used in conjunction with a GLOBALCOM® Announcement Controller for sound masking applications. The sound masking functionality can be enabled and controlled on a per channel basis. Each of the four (4) output channels has eighteen (18) bands of dedicated 1/3 octave filter sets. Sound masking can be layered on top of background music (BGM) and / or paging allowing for a complete paging, masking, BGM solution.

System	
Type	Digital Network 4-CH Power Amplifier DNA2404CL / DNA2404DL / DNA2404CH / DNA2404DH
Capacities	
Max. Number of Audio Inputs via CobraNet®	4 BGM / 4 Program
Max. Number of Audio Inputs via Dante™	4 (1 per Amp Channel)
Number of Amplifier Outputs	4
Connectors	
Ethernet	Control and Digital Audio (100 Mbps), Qty 2
Speaker	4-pin Phoenix (2CH per Block), Qty 2
Fault Relay	3-pin Phoenix, 3.81mm Spacing, Qty 1
Ambient Sensors	3-pin Phoenix, 3.81mm Spacing, Qty 8
AC Power DNA2404CL / DNA2404DL (120VAC)	Volex 17504
AC Power DNA2404CH / DNA2404DH (240VAC)	Volex 17850
Controls and Indicators	
AC Power	Rear Panel Switch
Power On	Green LED, Qty 2, 1 per Internal Card
Audio Present / Clipping	Green / Yellow LED, Qty 4, 1 per Channel
Card Fault	Yellow LED, Qty 2, 1 per Internal Card
Temperature Fault	Yellow LED, Qty 2, 1 per Internal Card
Ground Fault	Yellow LED, Qty 4, 1 per Channel
Fan Fault	Yellow LED, Qty 2, 1 per Fan
AC Power Requirements	
DNA2404CL / DL Quiescent Power	95 Watts
Full Power (All Channels Driven)	1100 Watts Max
1/8 Speech / Voice Announcement (All Channels Driven)	250 Watts
Power Factor	0.76
DNA2404CH / DH Quiescent Power	104 Watts
Full Power (All Channels Driven)	1200 Watts Max
1/8 Speech / Voice Announcement (All Channels Driven)	275 Watts
Power Factor	0.70
Electrical, Analog *CL & DL models at 120VAC CH & DH models at 240VAC*	
Power Output (per Channel) DNA2404CL / DNA2404DL	70.7 V (25 ohm Load Continuous 200 Watt) (8 ohm Load - Pulse 600 Watt)
Power Output (per Channel) DNA2404CH / DNA2404DH	100 V (50 ohm Load Continuous 200 Watt) (16 ohm Load - Pulse 600 Watt)
Efficiency	
Power Output = 600 W	80%
1/8 Power Output = 75 W	64%
Output Clipping Level DNA2404CL / DL	70 V RMS
Output Clipping Level DNA2404CH / DH	100 V RMS
Frequency Response PO = 50 W, 20 Hz - 20 kHz	±1dB
Power Bandwidth	20Hz - 20kHz, ±3dB
Signal-to-Noise Ratio Unweighted, 20Hz - 20kHz Ref	> 85dB
Total Harmonic Distortion, THD	< 0.2% @ 2kHz
PO = 200 W Output Impedance, ZO DNA2404CL / DL	0.67 ohms
PO = 200 W Output Impedance, ZO DNA2404CH / DH	0.6 ohms
Output Loading 20Hz - 20kHz	Stable for any load 0Ω to ∞

Fault Relay	
Nominal Switching Capacity	1A 30 V DC, 0.3A 125 V AC (Resistive Load)
Max. Switching Power	30 W (DC), 37.5 V A (AC) (Resistive Load)
Max. Switching Voltage	110 V DC @ 0.27A, 125 V AC @ 0.3A
Mechanical *Note: For Proper Fan Operation Add a Minimum of 2" (51mm) Clearance*	
Dimensions - with Rack-Mount Ears (HxWxD)	3.5" x 19" x 17" (89mm x 483mm x 432mm)
Shipping Dimensions (HxWxD)	8" x 21" x 21" (203mm x 533mm x 533mm)
Unit Weight - lbs	19.2lb (8.7kg)
Shipping Weight - lbs	24.5lb (11.1kg)
Mount	Rack-Mount Ears
Environmental Specifications	
Operating Temperature Range	+32°F – +104°F (0°C – +40°C)
Storage Temperature Range	–40°F – +158°F (–40°C – +70°C)
Compliance	
DNA2404CL / DNA2404DL	FCC Part15, UL60065, CAN/CSA C22.2 No. 60065, IEC 60065, EN 60065, CB Certificate, UL1711 Listed, Made in America - BAA Compliant
DNA2404CH / DNA2404DH	FCC Part15, UL60065, CAN/CSA C22.2 No. 60065, IEC 60065, EN 60065, CB Certificate, Made in America - BAA Compliant

Dimensional Drawings





Architect and Engineer Specifications

The DNA2404 Series of amplifiers are an integral part of the AtlasIED GLOBALCOM™ Communications System. The 4-channel amplifier shall provide 4-600Watt at 70.7V channels or 100V channels and provide digital audio connections via a Dante™ or CobraNet® audio distribution depending on the models.

The integrated NIC (Network Interface Card) shall include dual ports for redundant network connections. The system shall detect a failure in any of the amplifier channels and report the failure to the GLOBALCOM™ System Console via Ethernet using standard SNMP protocol.

The integrated digital signal processor shall provide processing to include level control of individual circuits, up to 7 bands of parametric equalization, high pass filter, low pass filters signal delay of up to 25 ms on each channel. Ambient analysis control shall be achieved via an integrated ambient noise collector for each channel. Ambient analysis and control shall be accomplished via an adjustment of signal levels via external noise sensing and / or computer commands. Up to 2 sensors shall be connected to each channel. Ambient control of amplifier channels shall be in real time. All setup, monitoring, configuration, testing and control shall be under software control.

Front panel indicators include audio signal presence, clipping, card fault, temperature fault, ground fault and fan fault.

The rear panel is to include dual ethernet connectors (100Mbps), dual 4-pin Phoenix™ style connectors for speaker line connection, eight (8) 3-pin Phoenix™ style ambient noise sensor connections, power connectors and Fault Relay (NO/NC) to trigger an optional redundant back up amplifier switch model AtlasIED 1544BAS.

The Power Amplifier shall be capable of live or delayed paging, pre-recorded message playback, and muting of individual amplifier channels, zones, and zone groups in any combination when used with optional GCK software deployment.

Amplifier is able to function on Class A, B or AB Loudspeaker Circuits.

The Power Amplifier shall require 2 rack units of vertical space in a 19-inch rack.

AtlasIED DNA2404CL and DNA2404DL models comply with UL60065, CAN/CSA C22.2 No. 60065, IEC 60065, EN 60065, CB Certificate, and UL1711.

AtlasIED DNA2404CH and DNA2404DH models comply with UL60065, CAN/CSA C22.2 No. 60065, IEC 60065, EN 60065 and CB Certificate.

The DNA2404 Series of amplifiers are made in America, and are BAA Compliant.