SECTION 27 41 16

INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

GUIDE SPECIFICATION

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Specifier: Please see PART 4 for a listing of products specified in this Guide Specification.

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# GENERAL

NOT USED in this Guide Specification. Specifier shall Specify PART 1 administrative and procedural requirements as needed.

# PRODUCTS

## Network Amplifier

Specifier Note:

*The DM‑NAX‑AMP‑X300 is a high performance, space saving, energy efficient, professional grade Audio‑over‑IP (AoIP) amplifier. Supporting DM NAX, Dante, AES67, and local inputs, all with full DSP capabilities, this multichannel amplifier is suitable for both residential and commercial configurations.*

### Basis of Design

#### Crestron DM-NAX-AMP-X300

Specifier Note:

DM-NAX-AMP-X300
https://www.crestron.com/Products/Audio/Amplifiers/Commercial-Amplifiers/DM-NAX-AMP-X300

### Device Definition

#### Flexible Output AoIP Amplifier that interfaces with the following network types:

##### Proprietary (communicating with devices from same manufacturer)

##### AES67

##### Dante

#### Network AV encoder / decoder functionality

##### Line-level input sources can be sent to another proprietary AoIP or AES67 compatible endpoint on a given network

##### Connect to other proprietary AoIP or AES67 compatible devices on network

#### Supports four (4) mic / line-level analog inputs and four (4) balanced / unbalanced line-level outputs

#### Full DSP capabilities

##### Residential mode enables configuration of layout, speaker protection output limits, and speaker profiles for each zone

##### Commercial mode utilizes mixing matrix functionality in addition to options for EQ and dynamics processing on each individual speaker, line, and network channel

#### Individual zone power control and global standby

#### Lo-Z (4/8 Ω) and Hi-Z (70V or 100V) Output

##### 4-channel amplifier (75 W / channel) that can also be configured for:

###### 3-channel bridged operation (150 W bridged channel, 75 W / single ended channel)

###### 2-channel bridged operation (up to 150 W / channel)

###### 1-channel bridged operation (up to 300 W)

#### ENERGY STAR® Certification

##### No added inrush current during power-up, reducing AC circuit requirements and allowing multiple amplifiers to be connection to a single switch circuit

##### Always On feature allows constant on connection with low power consumption

##### Device automatically enters low-power state after 25 minutes of inactivity

###### Signal detection sensitivity optimization to improve response time to ~ 0.5 sec when triggering device to “ON” state

#### Half-width rack-mountable form factor for individual installation or ganged together with another device in a single rack space

##### High density stackable with amplifiers from same manufacturer, allowing multiple units to be installed without additional ventilation space requirements

#### Protected against overheating, shorted or overloaded speaker lines, excessive input signals, and other faults

##### Upon fault detection, paired outputs mute automatically until fault resolved

##### Device mutes all outputs and shuts down in the event of a prolonged fault

#### Web interface for setup and adjustment

#### Integrates with Control System devices from the same manufacturer when configured with proprietary control and programming software

### Device Architecture

#### Dimensions

##### Height: 1.74 in. (44 mm)

##### Width: 9.38 in. (238 mm)

##### Depth: 11.03 in. (280 mm)

#### Weight: 5.3 lb. (2.4 kg)

#### Environmental Operating Conditions

##### Temperature: 41° to 104° F (5° to 40° C)

##### Humidity: 10% to 90% RH (non-condensing)

##### Heat Dissipation: 130 BTU/hr

### Functions

#### Audio

##### Input Signal Types: Balanced / unbalanced analog line / mic-level and AoIP streams

##### Balanced analog input

###### Maximum signal level: +21 dBu (8.7 Vrms)

###### Impedance: >10 kΩ

###### ƒ Response: 20 Hz to 20 kHz ± 0.5 dB

###### THD+N: < 0.005% @ 1kHz

###### S/N Ratio: 105 dB A-weight

###### Channel Separation: 100 dB @ 1 kHz

##### Mic input

###### Maximum gain: 60 dB

###### Impedance: > 10 kΩ

###### ƒ Response: 20 Hz to 20 kHz ± 0.5 dB

###### THD+N: < 0.005% @ 1 kHz @ 60 dB gain

###### S/N Ratio: 71 dB @ 60 dB gain A-weight

###### Channel Separation: 69 dB @ 60 dB gain @ 1 kHz

##### Balanced Analog Output

###### Maximum signal level: + 21 dBu (8.7 Vrms)

###### Impedance: 200 Ω

###### ƒ Response: 20 Hz to 20 kHz ± 0.5 dB

###### THD+N: 0.005% @ 1 kHz at max output

###### S/N Ratio: 113 dB digital in, 105 dB analog in, 20 Hz -20 kHz, A-weight

###### Channel Separation: 100 dB @ 1 kHz

##### Speaker Output

###### ƒ Response: 20 Hz to 20 kHz ± 0.5 dB at 1 W

###### High-Pass Filter (70 V and 100 V operation only): -3 dB @ 80 Hz, -12 dB / octave

###### THD+N: < 0.1 % at 1 kHz @ -3 dB full rated output power

###### S/N Ratio: > 103 dB, 20 Hz to 20 kHz, balanced

###### Crosstalk: -75 dB at 1 kHz

###### Gain: 29 dB @ 8 Ω

###### Protection: Over current, under voltage, over temperature, DC offset, extreme high frequency

###### Go to Sleep Time: 25 minutes with no signal present (when set to POWER SAVER)

###### Wake Time: 0.5 s typical

Specifier Note:

Please refer to the resources tab of this product’s web page at https://www.crestron.com/Products/Audio/Amplifiers/Commercial-Amplifiers/DM-NAX-AMP-X300 for a table that outlines output power per channel for given mode and number of channels driven.

### Connectors

#### CH1-CH4

##### (2) 4-pin 5.08 mm pitch, 12 A plug with screw locking retainers; Power amplifier output

##### Terminals accept up to 12 AWG (3.31 mm)

##### Note: Output is direct-coupled, not transformer isolated

#### IN1-IN4

##### (4) 3-pin 3.5 mm detachable terminal block; Balanced / unbalanced line or mic-level audio inputs

##### Maximum Input Level: 8.7 Vrms, + 21 dBu

##### Input Impedance: 10 kΩ; Wake threshold is -65 dBu

##### Phantom power available when used as mic-level inputs

#### OUT1-OUT4

##### (4) 3-in 3.5 mm detachable terminal block; Balanced / unbalanced line-level audio outputs

##### Maximum Output Level: 8.7 Vrms, + 21 dBu

#### REMOTE: (1) 2-pin 3.5 mm detachable terminal block; Connect to dry contact closure to place amplifier in standby mode

#### G: (1) 6-32 screw: Chassis ground lug

#### 100-240 V ~ 1.2-0.6 A 50 / 60 Hz: (1) IEC 60320 C14 main power inlet; Mates with removable power cord

#### Ethernet 1: (1) 8-wire RJ45 female; 100Base-T / 1000Base-TX Ethernet port

#### Ethernet 2: (1) 8-wire RJ45 female; 100Base-T / 1000Base-TX Ethernet port

### Controls and Indicators

#### PWR: (1) LED; White indicated amplifier is on and ready for use; Amber indicates the amplifier is booting; Red indicates amplifier is in standby

#### HI-Z: (1) White LED; Indicates when Hi-Z mode is enabled (70 V or 100 V)

#### LAN: (1) White LED; Indicates that the device has a valid IP address

#### AoIP: (1) White LED; Indicates an active AoIP stream

#### FAULT: (4) Red LEDs (one per speaker output); Indicates that the input channel has a fault or is clipping

#### SIGNAL: (4) White LEDs (one per speaker output); Indicates an active input signal

#### LOCKOUT: (1) Red LED; Indicates that rear panel slide switches are being overridden by programmatic or web UI control

#### Lo-Z MODES

##### (2) Slide switches, one switch controlling channels 1 and 2, and one switch controlling channels 3 and 4

##### Selects stereo, summed, or bridged operation:

###### STEREO: The input signal received on each channel is sent to its respective output for use in applications where left and right channel separation is required.

###### SUM: The input signals sent to a channel pair (1 + 2 or 3 + 4) are summed and sent to their respective individual outputs.

###### BRIDGE: The input signals sent to a channel pair (1 + 2 or 3 + 4) are summed and sent to a bridged output (1 + 2 or 3 + 4) for use in high power applications.

#### Operations Mode: (1) Slide Switch; Sets the amplifier for Lo-Z (4 or 8 Ω) or Hi-Z operation (70 V or 100 V)

#### Power Mode: (1) Slide switch; Selects Power Saver or Always On operation

#### SETUP: (1) Red LED and push button; Utilized in some restore procedures

### Power

#### Main Power: 1.2-0.6 A @ 100-240 VAC, 50 / 60 Hz

#### Power Consumption: 75 W (All channels driven at 1/8th power, 8 Ω)

### Compliance

#### Regulatory Model: M1845006

#### UL® Listed for US & Canada, CE, IC, FCC Part 15 Class B digital device

# EXECUTION

NOT USED in this Guide Specification. Specifier shall Specify PART 3 On-Site work as needed.

# APPENDICES

## SPECIFIED PRODUCTS

Specifier Note: This Article includes Crestron products specified in this Guide Specification document. This Article is for reference only and should not be required in actual project manual unless included in an overall system equipment list.

### Crestron DM-NAX-AMP-X300