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

## AoIP Encoder

Specifier Note:

*The Crestron DM-NAX-16AIN is an Audio-over-IP (AoIP) encoder that provides 16 local stereo audio inputs to a DM NAX Crestron multiroom audio distribution network. It provides 8 digital inputs comprised of 4 SPDIF TOSLINK® connectors and 4 SPDIF coaxial connectors. Each digital input supports 2-channel PCM audio. The DM-NAX-16AIN also provides 8 analog stereo inputs. Inputs 1-4 offer balanced 5‑pin terminal block connectors in parallel with unbalanced RCA connectors, and inputs 5-8 offer RCA connectors.*

### Basis of Design

#### Crestron DM-NAX-16AIN

Specifier Note:

DM-NAX-16AIN
https://www.crestron.com/Products/Audio/Multiroom-Audio/Multiroom-Audio-Systems/DM-NAX-16AIN

### Device Definition

#### Encoder that provides pathway for legacy audio devices on to the following network types:

##### Proprietary Audio over IP (AoIP) communicating with devices from same manufacturer

##### AES67

##### Dante

#### 1 RU form factor

#### 16 stereo inputs on to AoIP network

##### Eight (8) SPDIF (4 TOSLINK® and 4 Coaxial) digital audio inputs, 8 stereo unbalanced analog RCA inputs, and 4 stereo balanced analog Phoenix connector inputs in parallel with RCA inputs 1-4

##### Adjustable level compensation for each local input

#### Built in network switch

##### Can be configured to share network traffic (courtesy port or daisy-chaining)

##### Can be configured to isolate AoIP traffic between ports

##### Connects directly to a managed network to route to devices that manufacturer’s proprietary communications protocols, or AES67 compatible devices

#### 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

#### Physical Form factor

##### Chassis: Metal, black and silver finish, vented sides

##### Mounting: 1 RU rack-mountable

##### Dimensions

###### Height: 1.73 in. (32 mm)

###### Width: 19 in. (483 mm); 17.28 in. (439 mm) without rack ears

###### Depth: 14.46 in. (368 mm)

##### Weight: 7.39 lb. (3.35 kg)

##### Environmental Operating Conditions

###### Temperature: 32° to 104° F (0° to 40° C)

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

###### Heat Dissipation: 70 BTU/hr

### Functions

#### Audio

##### ±10 dB Source Compensation per input

##### Source Signal Detect Input Monitoring

##### 0.002% Total Harmonic Distortion (THD)

##### Signal-to-noise ratio 110 dB digital, 108 dB analog in

##### Frequency response 20 Hz to 20 kHZ (±0.6 dB)

##### Supported Sample Rates

###### Coaxial: Up to 192 kHz

###### Optical: 192 kHz

#### Communications

##### Signal transmission up to 230 feet.

##### Ethernet communications supporting the following:

###### AES67-based AoIP standard that supports:

Device control and configuration via proprietary programming software, C#, and / or RESTful API

Interoperability with HDBaseT-based AVoIP systems via AES67 communication

Interoperability with Dante systems via Dante Controller software

IGMP Snooping and Querying

###### 100/1000 Mbps

###### Auto-switching, auto-negotiating, auto-discovery

###### Full/half duplex

###### DHCP

##### USB for configuration and management

### Connectors

#### The network encoder shall include the following connectors:

##### (8) RCA Female Stereo unbalanced analog audio inputs comprising (4) unbalanced stereo line-level audio inputs

###### Input impedance 10k Ohms

###### 2 Vrms Max Input Voltage

##### (4) 5-pin phoenix balanced audio input connectors in parallel with unbalanced analog audio inputs

###### Input Impedance 10k Ohms

###### 2 Vrms Max Input Voltage

##### (8) Digital SPDIF inputs consisting of:

###### (4) JIS F05 TOSLINK connectors

###### (4) RCA Female Coaxial connectors, input impedance 75 Ohms

##### Two (2) 8-wire RJ45 female 100Base-T/1000BaseTX ethernet ports with support for characteristics outlined in section 2.1.3.2.2 to feature the following configuration options:

###### Sharing of network traffic between ports to support auxiliary network device or another AoIP encoder via daisy-chain

###### Isolation of AoIP and control network traffic

##### One (1) IEC 60320 C14 power inlet supporting characteristics outlined in section 2.1.6:

##### One (1) USB Type A connector with support for characteristic outlined in 2.1.3.2.3:

### Controls and Indicators

#### PWR: (1) LED. Amber indicates that the device is booting. White indicates that the device is switched on with audio passing. Red indicates that the device is in standby mode. Off indicates that there is no power from the power supply.

#### LAN: (1) LED. White indicates that the device is switched on and has a valid IP address. Off indicates that the device is not connected to a network, or the IP address is invalid.

#### NAX: (1) LED. White indicates that any audio-over-IP traffic is passing in or out of the device (if any audio-over-IP streams are transmitting out of, or being received by the unit, then the NAX LED will illuminate white). Off indicates that no audio-over-IP traffic is passing in or out of the device.

#### SOURCE 1-16: (16) LEDs. White indicates signal presence on the specified input/source. Red indicates there is a clipping on an analog input or a bitstream issue on a digital input. Off indicates that there is no signal detected on the specified input/source.

#### SETUP: (1) LED. Blinking red indicates that a network reset, or factory restore has been initiated via the adjacent SETUP button.

### Power

#### Power supply:

##### AC power source with the following characteristics:

###### 100-240 V at 50/60 Hz

#### Power Consumption: 20 W

### Compliance

#### FCC Part 15 Class B digital device, CE, ETL listed

#### Regulatory Model M201845005

# 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-16AIN