

MXnet NETWORKED VIDEO ECOSYSTEM

AC-MXNET-1G-DANTE-E | ENCODER MXNET 1G ENCODER/TRANSMITTER DEVICE WITH DANTE

The MXNet Ecosystem is an AV over IP platform of products that uses traditional networking infrastructure to route video and audio signals through large scale systems with unlimited numbers of sources and displays, all switching independently and seamlessly. Designed and developed by AVPro Edge to be truly “plug and play”, MXNet provides the complete end-to-end solution for stability, interoperability, and easy deployment of the entire ecosystem.



OVERVIEW

AC-MXNET-1G-DANTE-E is a Dante audio-compatible encoder for the AVPro Edge MXNET 1G Ecosystem, identical to the AC-MXNET-1G-E in baseline configuration and technical profile. System design versatility is enhanced with Audinate engineering science onboard for lossless, ADC-DAC two-channel audio processing, enabling the AC-MXNET-1G-DANTE-E to function uniquely as a Dante encoder and decoder, simultaneously if required, as a result of Dante’s unique bidirectional signal capabilities.

AVPro Edge employs Dante’s Ultimo chipset, with an ADC-DAC process that is 100% lossless while utilizing sampling rates from 44.1kHz to as high as 96kHz, in 16-, 24- or 32-bit word lengths, for high quality, near-zero latency distribution of voice and music signaling. Transfer distance matches Ethernet at 100 meters (328 ft) with results dependent on cable quality, termination precision, and the degree of noise within the cable routing environment.

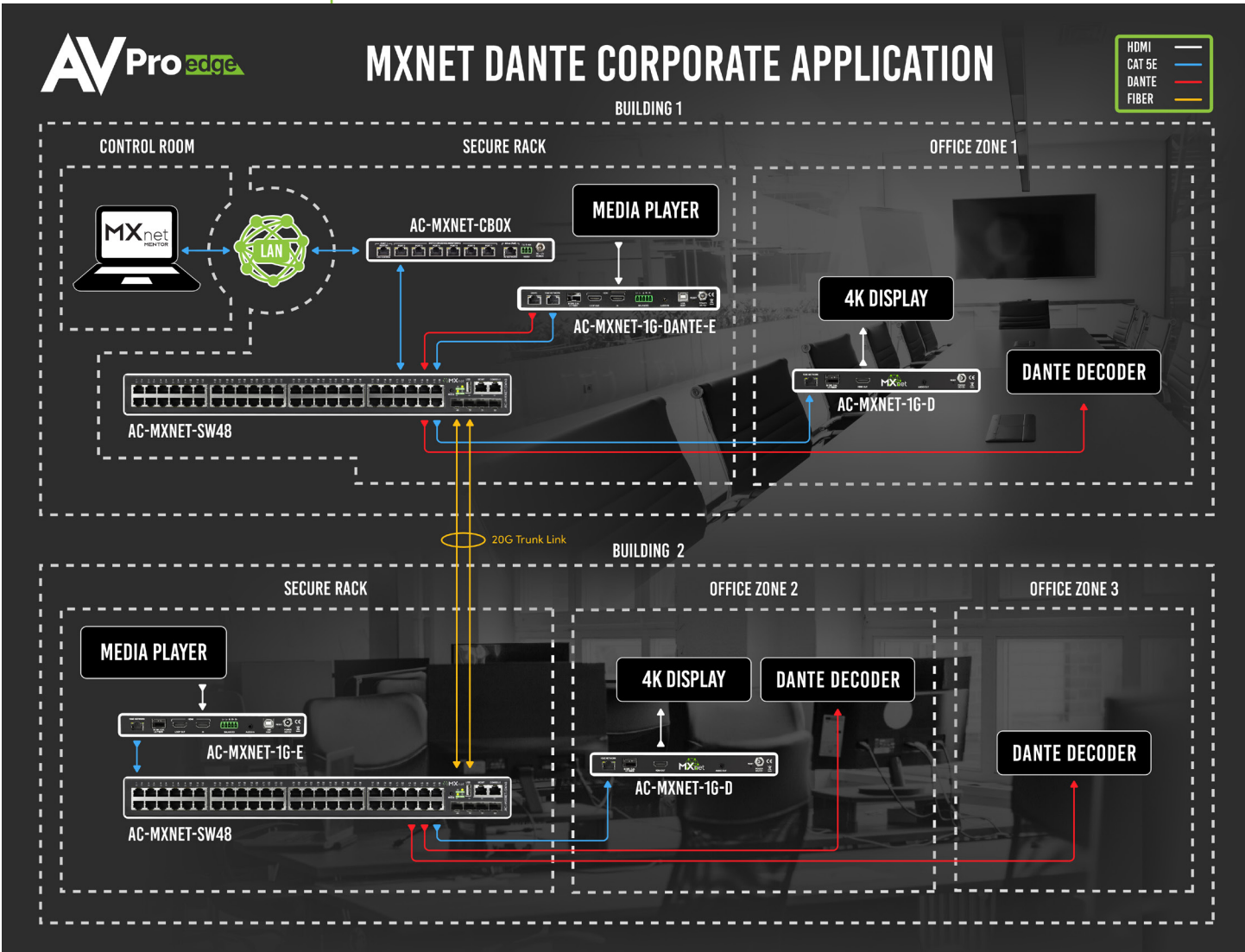
NOTE: The chassis of the AC-MXNET-1G-DANTE-E is necessarily ‘wider’ (when viewing the unit face straightaway) to accommodate the Dante Ultimo chipset and support circuitry. Thermally, the inclusion of these added components to the main PCB modulates the internal static operating temperature of the unit in slight to moderate increments. To convect air flow properly (and for warranty compliance), the AC-MXNET-1G-DANTE-E must only be installed vertically in the AVPro Edge AC-EZRACK-15.

FEATURES

Dante Encoding	<ul style="list-style-type: none"> • Independent Dante encoding through audio input port • 2CH audio support • Encoder recognized inside Dante Controller
1 Gigabit Ethernet Network Port, Supports PoE (1G maximum data rate)	<ul style="list-style-type: none"> • 8-pin RJ-45 female connector, 1000BASE-T copper Ethernet port • Supports standard PoE power, IEEE 802.3AF (15.4W), maximum power consumption of 6.5 watts • 10/100/1000Mbps auto-negotiation, MDI/MDI-X cable mode auto-negotiation • Maximum distance 100m (330ft) over Cat5e and higher • Compatible with all MXNet network switches or point-to-point applications with MXNet decoder • Optional DC 12V local power supply
Bidirectional SFP Port Fiber Optic Connector (SFP transceiver modules sold separately)	<ul style="list-style-type: none"> • Supports single mode or multimode SFP modules for extremely long cable runs • Recommended standard single mode fiber: LC to LC 1310nm, up to 40km (24.85 miles) • Recommended standard multimode fiber: LC to LC 850nm, up to 550m (1804 feet) • Compatible with most SFP transceiver modules available on the US market

HDMI Input Port	<ul style="list-style-type: none"> • 19-pin HDMI® Type A female connector • Source device input for HDMI connection
HDMI Output Loop Out Port	<ul style="list-style-type: none"> • 19-pin HDMI Type A female connector • Sends HDMI signal pass-through from locally connected input source • Copy EDID functionality in conjunction with front panel button <i>EDID COPY FROM LOOP OUT</i>
Audio Input Port	<ul style="list-style-type: none"> • 3.5mm stereo jack (TRS) audio input port • Auto-detects input once directly connected, will override HDMI input audio stream
Audio Output Port (de-embedded audio)	<ul style="list-style-type: none"> • 5-pin terminal block connector • Extracts balanced analog 2-channel PCM audio
USB Host Port	<ul style="list-style-type: none"> • USB 2.0 Type B female connector • USB extension for connection to a computer or other USB 2.0 devices • Supports KVM routing and hosting
Mini-OLED Data Window <i>*Exclusive and Proprietary Feature from AVPro Edge!</i>	<ul style="list-style-type: none"> • Built-in front panel mini-OLED screen • Displays encoder's custom name or MAC address (if no custom name is assigned) and IP address • Toggle options allow screen on, off, or flashing for visibility
IR Input Ports for I-PASS and IR-EYE	<ul style="list-style-type: none"> • (2x) 3.5mm stereo jack (TRS) IR receiver ports • I-PASS port sends IR signals via a direct connection from a control processor to the IR output of the desired endpoint(s) • IR-EYE port supports use of an IR eye to capture IR signals from a control system processor or third-party remote to send IR signals to the IR output of the desired endpoint(s)
IR Output Port	<ul style="list-style-type: none"> • 3.5mm mono jack (TS) IR transmitter port • Sends encapsulated/virtualized IR signals upstream via the MXNet API
RS-232 Port	<ul style="list-style-type: none"> • 3-pin terminal block connector port • Sends encapsulated/virtualized RS-232 (serial pass-through) over IP via the MXNet API • Supports serial routing with direct connection to a control system processor
Integrated Metal Chassis Device Casing	<ul style="list-style-type: none"> • Chip-top heatsink specifically designed to efficiently disperse heat • Entire internal frame functions as one giant heatsink • Eliminates the need for internal cooling fans
Unlimited and Expandable End Points with Auto-device Discovery	<ul style="list-style-type: none"> • Unlimited number of sources, displays, USB devices, and video walls • Once all MXNet Ecosystem devices are properly connected and powered on, Mentor auto-detects each endpoint device and replicates the physical MXNet Ecosystem in a digital space • A Link-local IP address is self-assigned to each encoder by factory default • The MAC address and multicast channel are pre-assigned to each encoder
Custom Video Walls	<ul style="list-style-type: none"> • Supports unlimited number of video walls, each up to 64 panels • Layouts include standard arrays (2x2, 3x3, 1x2, etc.) and mosaic-style (artistic) with overlapping displays of various sizes • Panels may be rotated 180 or 270 degrees • JPEG 2000 supports GEN LOCK for tear-free video wall images

<p>JPEG 2000 Video Encoding</p>	<ul style="list-style-type: none"> • Progressive decoding delivers both lossy and lossless compression within a code stream • Supports GEN LOCK, frames of a video source are synced to all decoders for tear-free video walls • Bit rate errors are minimized by packetizing data into smaller blocks for higher quality image fidelity • Content-specific flexible data rates from 200Mbps to 850Mbps, allows managing bandwidth usage • Utilized by DCI for motion pictures, live HD broadcasting, and DICOM® for medical imaging communications
<p>Built-in Scaling / Output Resolution Settings</p>	<ul style="list-style-type: none"> • Select video resolutions from 720p 50Hz to 4K 30Hz • Downscale one or multiple decoders to lower-resolution sink devices while maintaining high-quality video to other zones • Interlaced formats are converted to progressive when output scaling is enabled (Note: scaler usage will affect switching times, often reducing switching times in most cases)
<p>Fast Switching Times</p>	<ul style="list-style-type: none"> • Switching times range between 4-7 seconds for pass-through content of the same format, or 5-10 seconds between content of different formats • Switching times of 2 seconds achievable with proper scaling and formats • Ultra-low, nearly zero latency
<p>Oversee HDR Metadata</p>	<ul style="list-style-type: none"> • Select HDR metadata to always be enabled, disabled, or native pass-through with scaling enabled

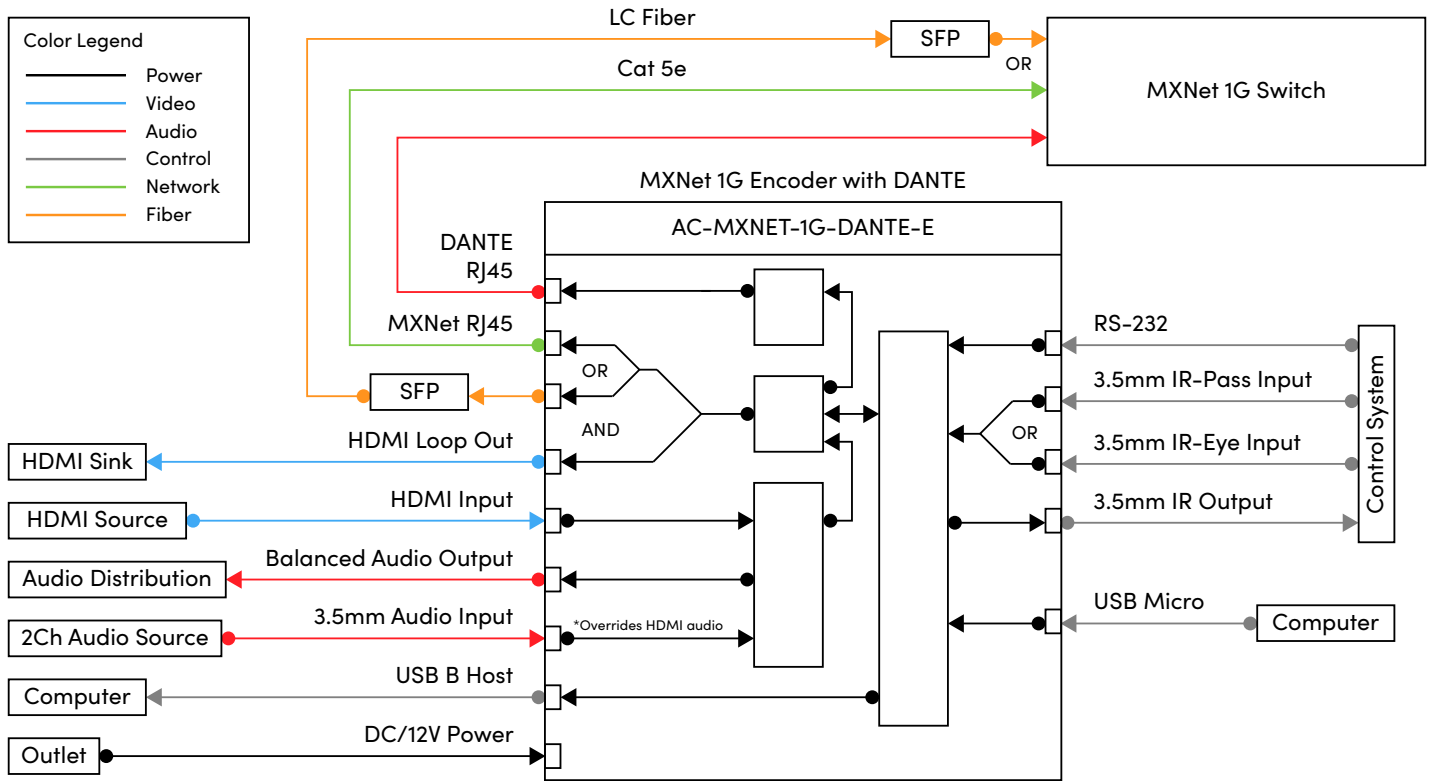


SPECIFICATIONS

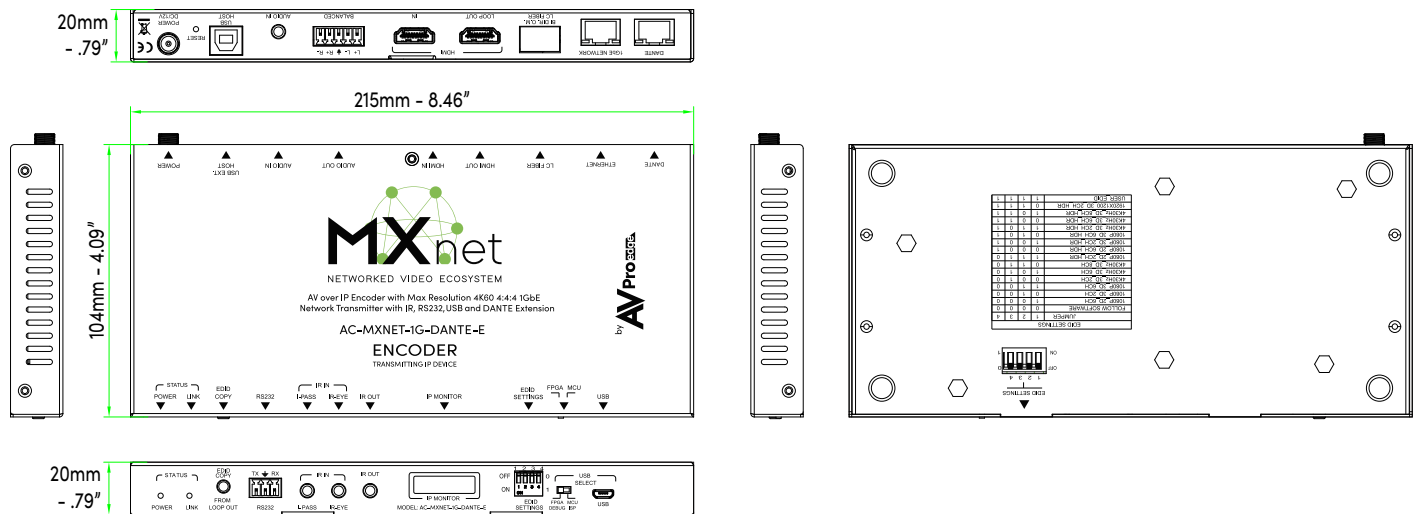
ENCODING:	
Video Codec	Video Codec Proprietary Codec based on M-JPEG
Audio Codec	Proprietary Codec
Latency	16ms@60Hz
Streaming Protocols	TCP, UDP, IP, IGMP, V2
Copy Protection	HDCP 2.2 and earlier
VIDEO:	
Signal Type	DVI 1.0, HDMI 2.0b
Video Resolution	4K@30Hz 4:4:4, 4K@60Hz 4:2:0
HDR Format	HDR 10, HLG, DV
Chroma Subsampling	444, 422, 420
Bit Depth per Color	1080P (16Bit), 4k (10, 12 Bit)
AUDIO:	
Audio Format	PCM 2, 5.1, 7.1 Channel, Dolby Digital 5.1 Channel, Dolby Digital Plus, DTS 5.1 Channel, DTS-ES, DTS-HD High Resolution
Audio Format (HDMI Loopout)	PCM 2, 5.1, 7.1 Channel, Dolby Digital 5.1 Channel, Dolby Digital Plus, DTS 5.1 Channel, DTS-ES, DTS-HD High Resolution, Dolby MAT 8CH
Embedded Audio	Stereo Analog Audio
De-Embedded Audio	Balanced Analog Audio
De-Embedded Audio Output Voltage	Balanced or unbalanced 1.5 Vrms (4.2 Vp-p) @ 0 dBFS
De-Embedded Audio Frequency Response	20-20 kHz
COMMUNICATION/CONTROL OF EXTERNAL DEVICES:	
USB	HID-Compliant
Serial/RS-232	Bi-directional Device Control / Monitoring
IR	Bi-directional Device Control / Extension
HDMI	HDCP 2.2, EDID Management (Encoder), CEC (Decoder)
PORTS:	
Ethernet	(2) × female RJ-45, one 1GbE POE port for AV and control signal streams, another is for HDMI audio Dante streams
SFP	(1) × SFP Slot
HDMI	(2) × HDMI Type A 19-pin, female, one HDMI input, one HDMI loop out
Audio	(1) × 5 Pin Terminal Block, Balanced L/R Audio out (1) × 3.5 mm mini stereo jack, Audio in
IR	(3) × 3.5mm mini-stereo jack, one IR-Pass, one IR-EYE, one IR-out
RS232	(1) × 3-Pin Terminal Block
USB	(1) × USB 2.0 Type-B for USB extension and KVM, (1) × USB Micro Type-B for MXNET service
DISTANCE:	
Ethernet	100 Meters/ 330 Feet over CAT5e and above
SFP and Fiber	1000BASE-SX SFP Transceiver Module (MMF, 850nm, 550m, LC, DOM) 1000BASE-LX/LH SFP 1310nm 10km Transceiver Module
ENVIRONMENTAL:	
Operating Temperature	23 to 125°F (-5 to 51°C)
Storage Temperature	-4 to 140°F (-20 to 60°C)
Operating Humidity	5-90% RH (No Condensation)
Cooling	Fanless Cooling
Acoustic Noise Level	0dB
COMPLIANCE:	
Regulatory	CE/FCC/UL
POWER:	
Max Power Consumption	6.5W
PoE (Power over Ethernet)	IEEE 802.3af (15.4W)
Power Supply Unit	Input: AC 120-240V-50/60Hz 0.8A Output: DC 12V 2A
DIMENSIONS:	
Mounting	Rack and Furniture mount support
Dimensions (Unit Only Width/Depth/Height)	mm: 215 X 104x 20 inch: 8.46 X 4.09 X 0.79
Dimensions (Packaged Width/Depth/Height)	mm: 310 X 180x 54 inch: 12.2 X 7.09 X 2.13"
Weight (Unit)	1.29 LBS/0.59 KG
Weight (Packaged)	1.73 LBS/0.785 KG
Product Warranty	10 Years

Specifications subject to change without notice. Mass & dimensions are approximate. *4K60 4:4:4/4k60 4:2:2 Uses ICT Compression

WIRING DIAGRAM



CAD DIAGRAM



MXNet 1G Encoder with Dante: AC-MXNET-1G-DANTE-E