

AC-MXNET-10G-TCVR | TRANSCEIVER MXNET 10G

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.



10G

OVERVIEW

Inarguably, the most versatile product in the AVPro MXNet 10-G SDVoE ecosystem is the AC-MXNET-10G-TCVR, a single SKU, dual-use configurable, advanced modular AV-over-IP encoding / decoding IP streaming solution. Whether deployed as a transmitter (Encoder) or receiver (Decoder), AVPro Edge has cultivated multiple advanced concepts into this A/V tour de force that just a single year ago, seemed implausible. An indispensable design, it is unique and destined to become an instant classic. The new AC-MXNET-10G-TCVR serves as both a gateway and destination point for the next generation 10G lineup of AVover-IP multicast offerings from AVPro Edge.

Audio, Video and Control signals reside on autonomously isolated layers within the SDVoE platform, each independently routable for unparalleled flexibility with flawless distribution over a 10GbE copper, fiber, or hybridblended network. A built-in, segregated, 1GbE Ethernet w/ PoE full gigabit sub-network channel is reserved for highspeed local network connections.

FEATURES

1 Gigabit Ethernet Network Port, Supports PoE (1G maximum data rate)	 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)	 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	 19-pin HDMI® Type A female connector Source device input for HDMI connection
HDMI Output Loop Out Port	 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 EDID COPY FROM LOOP OUT

	• 3.5mm stereo jack (TRS) audio input port
Audio Input Port	 Auto-detects input once directly connected, will override HDMI input audio stream
Audio Output Port (de-embedded audio)	• 5-pin terminal block connector
	 Extracts balanced analog 2-channel PCM audio TOSLINK port actively outputs incoming audio conforming to TOSLINK capabilities
	(up to 5.1 Dolby Digital; Dolby Digital Plus and Dolby Atmos not supported)
USB Host Port	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 *Exclusive and Proprietary Feature from AVPro Edge!	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
	• (2x) 3.5mm stereo jack (TRS) IR receiver ports
IR Input Ports for I-PASS and IR-EYE	 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	• 3.5mm mono jack (TS) IR transmitter port
IR Output Port	Sends encapsulated/virtualized IR signals upstream via the MXNet API
RS-232 Port	• 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	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 number of sources, displays, USB devices, and video walls
Unlimited and Expandable End Points with Auto-device Discovery	 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	• 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
	Retains Dolby Vision and HDR10 metadata pass-through
	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
JPEG 2000 Video Encoding	 Bit rate errors are minimized by packetizing data into smaller blocks for higher quality image fidelity
	• Supports Dolby Vision®, HDR, and accepts 10-bit color and reduces color banding
	 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

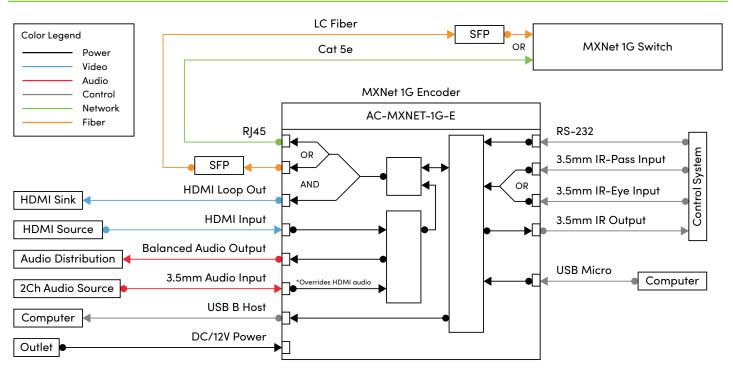
Built–in Scaling / Output Resolution Settings	 Select video resolutions from 720p 50Hz to 4K 60Hz Downscale one or multiple decoders to lower-resolution sink devices while maintaining high-quality video to other zones Interlaced formats are converted to progressive when output scaling is enabled (Note: scaler usage will affect switching times, often reducing switching times in most cases)
Fast Switching Times	 Switching times range between 4-7 seconds for pass-through content of the same format, or 5-10 seconds between content of different formats (such as 1080p 60Hz SDR / 4K 30Hz HDR, depending on the display type) Switching times of 2 seconds achievable with proper scaling and formats Ultra-low, nearly zero latency

Oversee HDR Metadata	 Select video resolutions from 720p 50Hz to 4K 60Hz 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)
MXNet Mentor Web Interface	 Mentor is MXNet's proprietary setup, configuration, and testing web interface that comes pre-installed on every AC-MXNET-CBOX Features simple, yet powerful and advanced tools and settings to provide a complete setup and control solution for every MXNet installation Customizable configurations allow EDIDs, custom names, and descriptions assigned to every encoder Live Diagnostics provide real-time status feedback for HDMI and network cable connections for monitoring link quality and speed View the source video resolution, HDR metadata detection, color bit depth, HDCP version, hot-plug events, and preview source images as thumbnails that update every 10 seconds
Full Control of External Front Panel Lights	 Toggle options allow front panel LEDs and mini-OLED screen stay lit on, continuously flash for quick visibility and troubleshooting when locating devices, or completely off for real-time dark mode
Supports Third-Party Control Systems	 Drivers available for third-party control systems, such as Control4®, Crestron®, Savant, RTI®, ELAN®, Q-SYS™, URC®, etc.

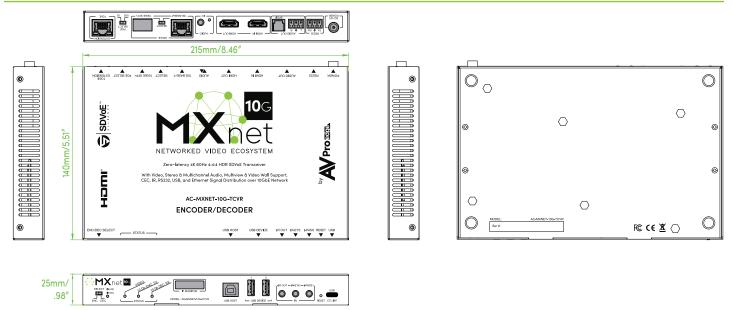
SPECIFICATIONS

VIDEO:	
Signal Type	DVI 1.0, HDMI 2.0b
Video Resolution	4K@60Hz 4:4:4, 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
Embedded Audio	Stereo Analog Audio
De-Embedded Audio	Balanced Analog Audio
PORTS:	
Ethernet	(1) 10G female RJ45 port for SDVoE transmissions, (1) 1G female RJ45 port for Ethernet extension or CBOX control. Both are PoE compatible.
SFP	(1) 10G SFP+ Port used for SDVoE transmissions
HDMI	(1) HDMI input(1) HDMI output
Audio	(1) TOSLINK, (1) x 3 Pin Terminal Block, (1) 3.5mm female stereo jack. It can be audio input or audio output, depending on if TCVR is in Encoder or Decoder mode respectively.
IR	(3) × 3.5mm mini-stereo jack, one IR-Pass, one IR-EYE, one IR-out
RS232	(1) x 3 Pin Terminal Block for MXNet System Control
USB	(1) USB Type-C for MXNet Service, (1) USB Type-B, (2) USB Type-A
DISTANCE:	
Ethernet	100 Meters/ 330 Feet over CAT5e and above
SFP+ and Fiber	10G SFP+ AOC cable up to 3 meters, 10G SFP+ Multimode transceiver over Multimode fiber up to 550 meters, 10G SFP+ Single mode transceiver over Single mode fiber up to 20 Kilometers
ENVIRONMENTAL:	
Operating Temprature	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)
POWER:	
Max Power Consumption	Encoder 11.5W, Decoder 9.816W
PoE (Power over Ethernet)	IEEE 802.3af (15.4W)
Power Supply Unit	Input: AC 120-240V, 50/60Hz, 0.8A Output: DC 12V, 2A
Thermal dissipation	Encoder 39.32 BTU/hr, Decoder 33.56 BTU/hr
DIMENSIONS:	
Mounting	Rack and Furniture mount support
Dimensions (Unit Only Width/Depth/Height)	mm: 215 × 140 × 25 inch: 8.46 × 5.51 × 0.98
Dimensions (Packaged Width/Depth/ Height)	mm: 310 × 180 × 54 inch: 12.2 × 7.09 × 2.13
Weight (Unit)	1.76 lbs./0.8 kg
Weight (Packaged)	2.25 lbs./1.02 kg
Regulatory	CE/FCC/UL
Product Warranty	10 Years
Specifications subject to change v	without notice. Mass & dimensions are approximate

WIRING DIAGRAM



CAD DIAGRAM



MXNet 10G Transceiver: AC-MXNET-10G-TCVR



