



MXnet

NETWORKED VIDEO ECOSYSTEM

A COMPLETE GUIDE TO AVPRO EDGE'S
NETWORKED VIDEO ECOSYSTEM



AV Pro edge

Networked AV is a 4K video, audio and control signals distribution system over standard Ethernet network. MXNet embodies what integrators like about AVPro Edge; Stability, engineering, foundation in HDMI testing and troubleshooting, and marries it alongside a network switch and category cable for limitless installations. This way you can connect any HDMI device and switch it between any counted displays, allowing for full flexibility and interoperability between any HDMI sources and displays. This is the ideal set up for residential and commercial applications, like large homes, sports bars, digital signage, control rooms, etc.

This Audio Video signal travels bi-directionally throughout the entire system, giving integrators the ability to also send USB signals simultaneously alongside the audio/video. The HDMI signal runs from point A to B; at the same time, the USB signal is sent from B to A.

FEATURES

- Built-in Scaling
- Quick Signal Switching
- Dolby Atmos Downmixing
- DTX-HD/DTS-X Downmixing
- Dolby Vision, HLG, HDR Support
- EDID Control
- Control Drivers
- USB Extension
- Specific profile for NetGear Switches
- 4K60 (4:2:0) / 4K30 (4:4:4) support
- Easy Configure, no IT knowledge required
- Fiber or Copper infrastructure Support
- No Cost Web GUI for set up and control
- Specialized Control4 Support
- CEC power on/off commands built-in
- Flash feature for quick troubleshooting and finding of units
- OLED display on each encoder and decoder displaying IP address
- RS-232 Control passthrough and routing
- IR Control passthrough and routing
- Control Processor works with 3rd party switch support

THE MXNet ECOSYSTEM

Building a MX Net installation is simple, by combining these 5 separate products integrators can deliver the next level video distribution experience you come to expect from AVPro. Here is a breakdown of the entire family of products...

THE ENCODERS: AC-MXNET-1G-E

This encoding/transmitting device is where the signal starts, connect this to any HDMI source and it will encode the audio/video signal into data that can be transferred throughout a network switch. This device is connected directly to the MX Net Switch (AC-MXNET-SW48) or any compatible network switch via category cable or fiber optics.

AC-MXNET-1G-AVDM-E

This encoding/transmitting device is the audio processing and downmixing cousin to our standard-issue AC-MXNET-1G-E Encoder. This Encoder was specifically designed to integrate with multi-zone stereo/mono audio mixing systems. It employs a specialized audio processor chipset that can accept and decode Dolby ATMOS, DTS-HD, and other lossless audio formats - and output those signals as stereo through the provided balanced stereo terminal block.

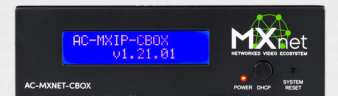


THE DECODER: AC-MXNET-1G-D

This decoding/receiving device is where the signal is decoded, converting back to an HDMI signal that is displayed on any connecting monitor, TV or projector. This device is also connected to the MX Net Switch (AC-MXNET-SW48) or any compatible network switch via category cable or fiber optics. Once connected the switch can route the signal from any of the connected AC-MXNET-1G-E units, switching between these devices happens very quickly, making sure the attention of the audience is never lost.

THE CONTROL PROCESSOR: AC-MXNET-CBOX

This device is needed for every MX Net install, this is where the logic is stored and commands are processed. Connect this device to your network switch and it does all the work for you. Our engineers have set this control processor up so that no previous IT experience is necessary, building it to be set up by Audio Video installers. This is also where your dynamic video walls are being processed, dynamic means in an instant you can change your 2x2 or 3x3 video wall from one signal being displayed over multiple displays to each display receiving and displaying it's own source.



THE 48 PORT NETWORK SWITCH: AC-MXNET-SW48

The backbone of your MX Net audio video distribution system is the network switch, built to work directly with the MX Net family of A/V distribution. Ready to handle networked audio, video and control, sending receiving signals from the AC-MXNET-1G-E and routing them to the AC-MXNET-1G-D's connected. Expanding beyond the 47 ports is a breeze with built-in cascading allowing for unlimited inputs and outputs.

SOURCE TILING AND SWITCHING: AC-MXMV122-UHD

This device allows you to configure any four sources on to a screen, showing all four signals at the same time. The layout is completely customizable, the only limit for source layout is the integrators imagination. Once you have selected your layout you can connect the AC-MXNET-1G-D and distribute this multiview signal to any of the connected displays.



STATIC VIDEO WALLS: AC-FRESCO-CAP4

You already know that the MX Net family is able to process video walls without an external device, but teaming up the Fresco line with the MX Net solutions allows you to place static video walls anywhere in your set up without having to use four AC-MXNET-1G-D units. Teaming up one unit with a Fresco 4 allows you to display a 4K video wall on any four displays.

BENEFITS OF USING MXNET

QUICK SWITCHING

MX Net comes with quick switching technology allowing end-users to move from one source to another rapidly.

USB/KVM EXTENSION

Not only does MX Net allow users to send high-quality audio video, but it also allows users to send a bi-directional USB signal. This means a teacher can control their laptop via an interactive/smartboard that is 150 meters away—keeping the laptop physically secure while working remotely.

DOLBY AUDIO & DTS BITSTREAM DOWNMIXING

AVPro Edge has a close partnership with Dolby and DTS, allowing us to offer beyond 8 Channel audio downmixing. This feature is handy when there is a need to distribute high-end audio signals, but not every room or audio zone is equipped to handle a surround soundtrack. The main benefit here is the ability to turn these high-end formats into a separate stereo signal, and at the same time, fully retain the multi-channel formats through the HDMI connection.



A/V LOGIC FOR NETWORK SWITCH

We don't expect audio video integrators to get a master's in IP overnight, and they shouldn't need to! With the MX Net set up processes, we removed the IP elements, allowing AV integrators to configure their set up just as they would with a 4K A/V Matrix Switcher.

MXNet MENTOR

The MX Net Mentor software allows you to set up your installation, name all your endpoints, analyze the signals, and receive a preview of what is on screen. It will help you troubleshoot, help manage your signals, and set EDIDs.

DATA WINDOW

Each encoder and decoder device comes with its own OLED screen to see vital information that helps users work smarter, not harder. The Data Window displays the IP address and the MAC address, or you can modify the name using MXNet Mentor to display custom names such as AppleTV-4K, Blu-ray, Streamer, etc. Need to locate one transmitter in a sea of transmitters? No problem, just set the flash.



UNLIMITED VIDEO WALLS

With MX Net, you can set up and run an unlimited number of video walls in all sorts of configurations. Many AV over IP systems will limit the number of video walls present in a system because of the added processing it takes for each wall. AVPro Edge's engineers designed the MX Net system to bypass this limitation. Two main features of our video wall include panel rotation, rotating panels 90 or 180 degrees for outside the box layouts, and Gen Lock, where each TV is generated simultaneously, so each frame is displayed at exactly the same time, making sure your image is always synced.

UNMATCHED PICTURE QUALITY

Installing ultra-engaging systems with eye-catching features will put you ahead of your competition and keep word of mouth positive, increasing the total number of installs while increasing the company's bottom line.

DOLBY VISION/HDR

MX Net's engineers spared no brain power when programing our encoding methods—designing a data flow that kept our latency extremely low and allowed for the processing of HDR and Dolby Vision metadata. With the MX Net system, you can process Dolby Vision and HDR throughout a whole system, delivering billions of beautiful colors to every display and video wall that is a part of the installation.



Be the integrator that delivers the latest technologies and builds systems ready to stand the test of time. This drive to deliver the best will make potential customers notice your company above others, keeping your install pipeline full.

JPEG 2000

JPEG 2000 is the obvious and essential video encoding choice when picture quality is critical. JPEG 2000 supports progressive decoding and delivers both lossy and lossless compression within a code stream. JPEG 2000 supports GEN LOCK so that the frames of a video source are synced to all Decoders resulting in tear-free video walls. JPEG 2000 enables the handling of color-space information, 10bit color, and supports interactivity in networked applications.

- Picture quality progressively improves as more data bits arrive
- Preserves the transparency in images
- Enables the handling of color-space information and metadata:
 - 10 bit color (reduces banding)
 - HDR and Dolby Vision®
- Supports interactivity in networked applications
- Same source frame synced to all decoders

CONSTRUCT, CONFIGURE, CREATE AND CONTROL WITH MXNet MENTOR

The MXNet system comes with the MXNet Mentor software, walking users through each step of the way. Even if this is your first time installing a MXNet system, you will breeze through the entire process:



CONSTRUCT

Build the system by auto finding each Encoder and Decoder unit, replicating the physical system in a digital space, receiving each MAC address, magically auto assigning the IP address and multicast channel, and plugging in Encoders and Decoders.

CONFIGURE

Assign custom names with descriptions, such as location. You can set EDID for each channel, set scaling on each of the outputs. The Extensive Diagnosis includes link quality, link speed (critical), and the ability to check the signal's quality using green, yellow, red codes.

CREATE

Use Mentor to build customized video walls. One unique way of setting up a video wall with MX Net is by taking 4 displays that are exactly the same, rotating each one 45 degrees so they are parallel side by side, this layout creates a perfect 16:9 aspect ratio. You can also use a mixed bag of panels, and it will automatically crop, set bezels and scale for the screen, retaining Dolby Vision, HDR and HDR 10+ metadata.

CONTROL

Auto-matrix allows you to switch your system between any of the connected encoders and decoders. Extend KVM, IR, RS-232, as well as encapsulate your own RS-232. You can do RS-232 over IP; we call this serial passthrough. We also have serial routing where you plug in a control system then the Mentor software allows you to select what receiver signals you want the control system processor to receive. The same process with IR, we have I-Pass and IR. CEC power on and off, with over 50 of the most common signals included, ensuring any TV can be powered on or off; this would be CEC over IP. Control becomes even easier when you have a built-in screen preview to view each source inside the Mentor software, updating every 15 seconds.

PROPRIETARY HARDWARE FEATURES

Turn off all lights on our decoder unit, so you don't see flashing lights behind the TV, visually see the IP address, MAC address, or whatever you renamed the encoder or decoder in the Mentor software directly on the unit. With MX Net, these are standard features built specifically for the professional integrator. Now you control if any lights on the device are on or what information displays on the data window.

By delivering features like this, you can tell a significant amount of thought was put into developing this product. Making set up easier and quicker, and we all know time is money.

AUTO SET UP ENCODERS AND DECODERS

With most AV over IP methods, the user is tasked with setting up each encoder, decoder, control computer, and switch separately. With MX Net, all the heavy lifting has been done. All you need to do is make sure you follow the correct Switch Guide when connecting your encoders and decoders. When you open up the MX Net Mentor Software, it will configure each one automatically—no more wasting countless hours with set up! Finish the installation correctly and quickly with the help of MX Net's built-in tools. Now, you have time to get to the next job, increasing the number of installs your techs can do in the same amount of time.





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