

MDXE-8x8 Digital Modular Matrix Combined Matrix and Video Wall



Flexible and comprehensive enhanced next generation professional Digital Modular Matrix (DMM+) for Commercial, Education and Residential use



Seamlessly route 8 HD/UHD videoSources to 8 displays & create a Video Wall for HDMI, DVI, HDBaseT, Fibre with 3G-SDI & analogue video

INPUT

New features

OUTPUT

- OSD characters
- Preview card for source
- Real time clock display
- Background image
- Image cropping
- IP camera + split screen
- Add rolling subtitles
- Signal detection

Tech spec

- Resolutions to 4K UHD
- HDCP 1.3 compliant
- RS232 & IR control/passthrough
- HDMI 1.3a compliant
- Supports Deep Colour
- Embedding & de-embedded Audio
- 10.2Gbps, 1080p@60Hz
- Scaled outputs
- POC (remote powering receivers)

Features

- Modular 4 port cards
- Front panel control
- Seamless Switching
- IP Control
- Integrated Web Browser
- EDID management
- Video Wall Processor
- Preview quad output
- HDMI, DVI, HDBT, Fibre, VGA & SDI

Description

The MDXE-8x8 is a professional flexible Digital Modular Matrix (DMM+) capable of selecting between 8 different devices to 8 displays. Seamless switching together with output video scaling provides a professional image selection with the option of creating a multi-display Video Wall.

Connectivity to the matrix is via eighteen slots each capable of accepting 4-way modular input and output cards catering for a wide range of signal formats. Fully HDCP compliant and incorporating enhanced EDID management the MDXE-8x8 matrix is ideal for many multi-channel signal switching and distribution for Commercial, Educational and Residential solutions. Compact 7U 19" rack mounting chassis makes for ease of installation

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MDXE-8x8 Digital Modular Matrix Combined Matrix and Video Wall



DESCRIPTION - GENERAL

The DMM+ range of audio-visual (AV) matrices offer a complete solution for switching and distribution of the most common AV signal types and standard connectivity.

Differing signal types can be accommodated by the use of a modular construction. Removeable horizontal blades can be inserted or exchanged allowing inputs and outputs to be expanded in groups of 4 up to the maximum chassis size available. A variety of different blades are presented including: HDMI, DVI, HDBaseT, 3G-SDI and fibre options together with an analogue card capable of accepting RGBHV, YPrPb, Y/C and PAL/NTSC.

All input signals types are converted to an internal standard format allowing the flexibility of conversion to any output signal format. The conversion in an internal co-timed format provides a seamless switching feature allowing images to be changed without frame rolls or the need to go to black. Each output blade has a individual internal scaler allowing every output image to scale to the native resolution of the connected display for a more professional presentation.

Chassis' are available in sizes of 8x8, 16x16, 36x36, 72x72 through to 144x144. Each chassis is supplied with a quantity of empty slots capable of housing a number of 4 way input/output blades, depending on the maximum size of the matrix. The chassis can be partially populated helping match the installation and budget requirements.

All the matrices encompass comprehensive methods of control including IP, an internal web browser, RS232, remote panel and front panel buttons with LCD display.

The DMM+ range now incorporates the VMX Videowall processor technology which allows a number of output blades to be grouped together to form a multi display video mosaic or wall. This feature is available for the HDBT, DVI, 3G-SDI and fibre output cards.

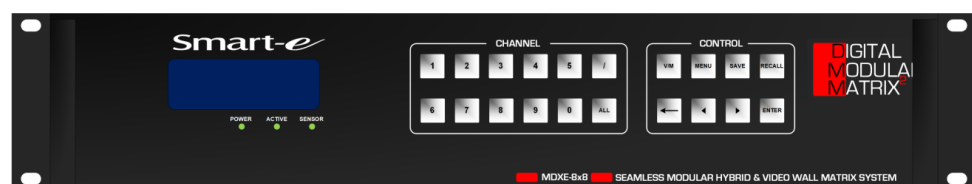
Control signal routing is offered as standard allowing infrared and RS232 signals to be selected independently between the HDBaseT inputs and outputs. The signals can be connected via the blades directly or through the connected appropriate transmitters and receivers.

To aim ease of installation and improve power efficiency and heat dissipation, powering of the transmitters and receivers is achieved through the Cat 6/6A cable. DC power is sent via common mode connection across the 4 differential pairs of the network cabling.

For matrix sizes of 36x36 and larger there is the option of a dual redundant power supply. These are hot swapping, removeable units installed at the rear of the unit and connected by an additional IEC mains lead. Ideal for mission critical applications like command and control centres and disaster recovery vehicles.

Embedded multi-channel audio from the source device is routed along with the video signal but can be swapped with a locally generated signal and inserted via the HDMI or DVI blade. Similarly embedded audio is transmitted inside the output video signal but is also available as a stereo analogue signal on the HDMI and DVI output blades.

A preview card is also available as an output blade option. This features a streamed MPEG signal capable of displaying a composite of up to 4 input images. By using a streamed signal, remote monitoring of the matrix and the source devices is possible, ideal for inaccessible locations and in particular boats and yachts.



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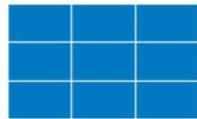
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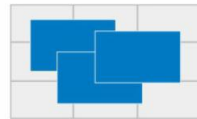
DESCRIPTION - FEATURES

Video image processing

Video processing output blades are available for 1080p (4-way) and 4K30 (2-way) resolutions. The signal source can freely create windows, PIP (Picture in Picture), roaming, and zoom effects on the video wall. Additionally, vertical sync technology guarantees synchronized and smooth display of high-speed moving images across all spliced screens, along with customizable resolutions for individual LED screens.



Full-screen



Overlay



Roaming



Zooming



Single-screen

Seamless switching technology

Utilizing full digital splicing switching technology, this system guarantees seamless switching with no black screens, no flashing, no fragmentation, and no static images. It supports arbitrary switching between 2K and 4K signals and employs a 4:4:4 full frame rate graphics processing algorithm, achieving a delay as low as 0 ms.

Signal source management

The input source image can be partially cropped to create a new video source, allowing for station logo display. Users can overlay images on the signal source or customize text in any language or font. Additionally, there is a setting for outputting a test image.



IP Camera (IPC) decoding

Support for mass IPC signal access allows a single card to decode up to 100 IPC signals simultaneously on the screen. With unified IPC management, users can easily drag IPCs directly from the software interface onto the video wall.

Intelligent banner

Create a large-screen banner by customizing the welcome slogan or uploading images. You can modify the banner's color, font, size, position, and other details, as well as display the real-time clock.

Background image

Upload a local HD image as the background without impacting the number of window layers. There's no data loss when the power is turned off, and it automatically recovers upon power restoration.

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DESCRIPTION - FEATURES



Monitoring alerts

The system monitors the status of each module and can proactively issue alerts and notifications in the event of equipment failure.

Visual operation of multi-terminal
Signal visualization preview: This system enables visualization, movement, and touch-based management across any PC, mobile phone, or tablet, with multiple operation terminals controlled and synchronized simultaneously.



Input signal full preview

Provides a web interface and software for visual preview of all input signal sources and real-time monitoring of spliced large-screen content. Additionally, it supports HDMI echo cards for hardware-based monitoring of the spliced large-screen content via a connected monitor.

Modular hardware architecture

The hardware modularization allows for flexible hybrid plug-in of input and output cards, enabling online maintenance and expansion. It features hot-pluggable fans for easy replacement and includes redundant power supplies for added reliability.



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DESCRIPTION - FEATURES

Multi-device intelligent control

The system is able to send control commands to third-party devices, enabling operations such as switching large screens, raising or lowering curtains, and more.



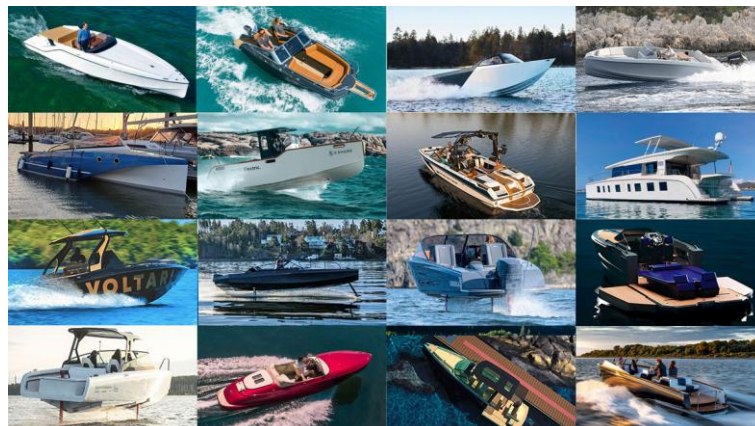
IP Camera decoding - MDXE-IP2-IPC



- Provides 2 x independent RJ45 inputs
- Protocols: RTP, RTSP, RTCP, TCP, UDP, ONVIF
- Others: G711a, G711u, G726 & ADPCM
- Max resolution 4K@30Hz
- Multiple split screen view

IP input card

The MDXE-IP2-IPC blades allow a direct connection to the matrix from various IP sources. The blade is ideal for interfacing to IP cameras in security applications. Video feeds can be viewed as multiple split screens as 1, 4, 9, 16 or 25 separate images as a mosaic.



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DESCRIPTION – FEATURES

Input signal preview - MDXE-PVW



- Provides 2 x independent RJ45 outputs
- Quad screen split image
- Resolutions: 1080p@30Hz or 720p@60Hz

Preview input source

The MDXE-PVW blade allows the monitoring of every input. Each source can be scrolled through prior to selection to the quad preview display. The preview video is available through an IP stream on an Ethernet port



KVM management

A single mouse and keyboard can control multiple computers, with the ability to switch between systems remotely using the keyboard



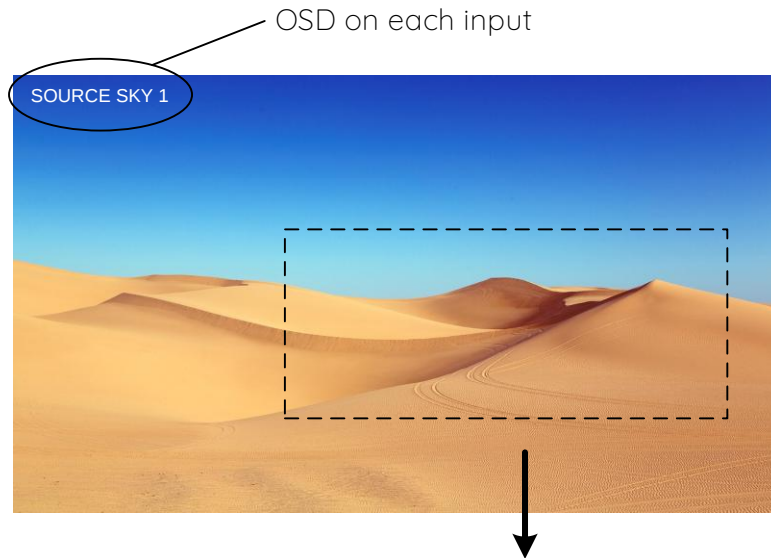
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NEW FOR MDXE RANGE

On Screen Display (OSD) for inputs

Input blade features include the ability to add an onscreen display to each individual input. Characters can be superimposed on the incoming video with the ability to change the text colour and background. The position can also be altered together with the facility to have the text move either forward or backward.



Input Image cropping

Each input video source can be cropped. Any portion of the image can be selected with X.Y co-ordinates and then scaled up to the appropriate resolution.



Output text and image

Each video wall output blade can provide a number of new features expanding the use of the system to other important applications. An additional image can be uploaded and stored locally for each output background. This image is in addition to the number of window layers available. Scrolling text with banner can be added to each output including the ability to adjust the colour, size, speed and direction of the text. Lastly system time and date stamp can be added to the image with position and size adjustable.

Output time
and date
stamp

17:34:04
23/10/2023

Background
image



Rolling subtitles

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TECHNICAL SPECIFICATION

Video - Digital

Connectors

4 x HDMI (Type A) input and outputs
4 x DVI-D
4 x CAT 6 for HDBaseT
4 x HD15S for RGBHV/YPrPb/CV
4 x BNC for 3G-SDI

Signal type

HDMI - TMDS

Standards

HDMI 1.3a. HDCP 1.3

Maximum data rate

2.25Gbps per colour

Maximum pixel clock

340MHz

Resolution range - DTV

Max 1920x1080 @60Hz 36 bit colour depth

Resolution range - PC

Max 1920x1200 @60Hz 24 bit colour depth

Frame rate

24, 25, 30, 50 & 60 Hz

Gain

0 dB

Formats

RGB and YCrCb

Colour space

4:2:2 & 4:2:0

Clock jitter

<0.15T bit

Rise time

<0.3T bit (20-80%)

Fall time

<0.3T bit (20-80%)

Maximum transmission delay

5ns (+/- 1ns)

Signal strength

TMDS +/- 0.4V pk-pk

TMDS signal level

2.9V - 3.3V

Impedance

50R

Maximum DC offset

15mV

Maximum input cable length

15m 24 AWG

Maximum output cable length

15m 24 AWG

Audio - Digital

Standards

Embedded within the HDMI signal, SPDIF

Maximum audio channels

8

Maximum sample rate per channel

192 kHz

Sample size

16-24 bits

Audio - Analogue

Standards

Stereo - unbalanced

Bandwidth

20 - 20 kHz

Power

AC Voltage

100-230 VAC

AC frequency

50/60 Hz

Power consumption

13.5W (max)/1.2W (standby)

Operating temperature

0-40 degrees C

Storage temperature

-20-60 degrees C

Relative humidity

20-90%

Chassis size

2U 19" rack mounting

Chassis dimensions

440x394x88mm

Product weight

8Kg

MTBF

30,000 hours

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TECHNICAL SPECIFICATION

Control - RS232

Connector	D9
Signal type	Full duplex
Signal level	+/- 5V
Baud rate	115200
Data bits	8
Stop bits	1
Parity	None
Pinout	1-RX, 2-0V, 3-TX

Control - Ethernet

Connector	RJ45 female
Protocol	TCP/IP
Control rate	Adaptive 10M/100M full or half duplex

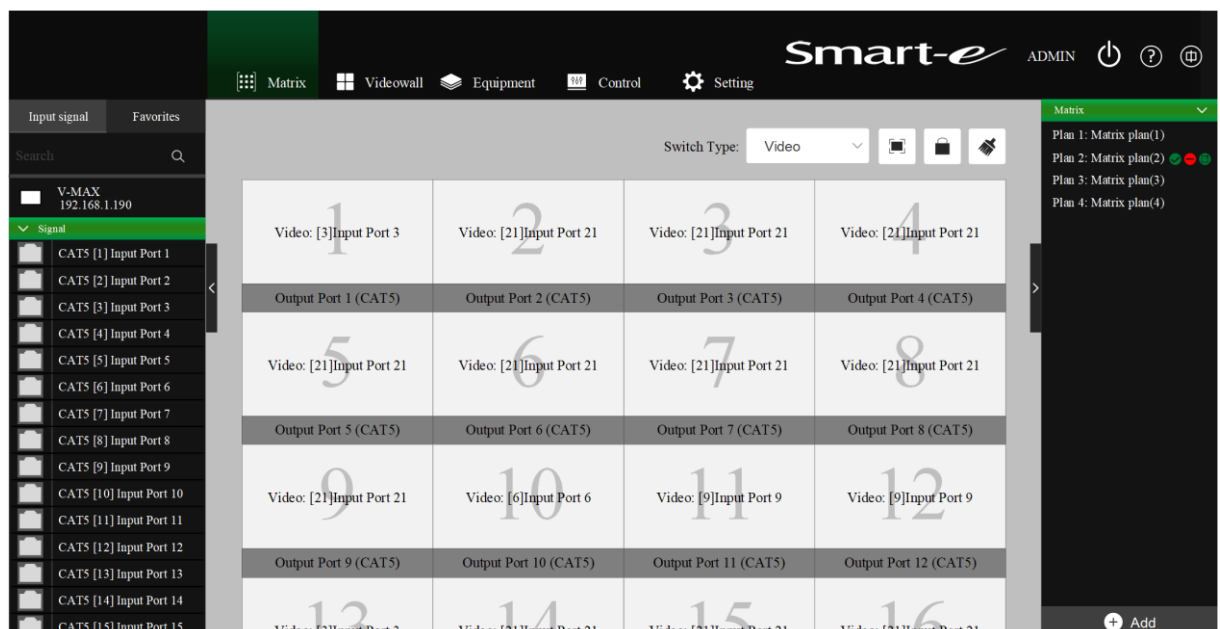
Control - IR

Connector	3.5mm mini-jack socket
Signal type	Full duplex (via 2 connections)
Signal bandwidth	20-60KHz

Cat cable connectivity

Number of cables	1 x Cat 6/6A screened twisted pair cables
Connectors	1 x female screened RJ45 connectors per unit
Termination standard	TIA/EIA T568B
Cable requirements	Solid conductor, 24 AWG or better
Cable recommendations	400 MHz bandwidth STP (shielded twisted pair)
Transmission distance	100m shielded twisted pair CAT 6 or CAT 6A

WEB BROWSER



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SEAMLESS INPUT & OUTPUT BLADES

MDXE-IP4-HDMI



- Provides 4x independent HDMI [Type-A] inputs
- HDMI 1.4, DVI 1.0 & HDCP 1.3 protocol
- Supports EDID editing function
- Maximum input resolution:
- 1920x1200p @ 60Hz 24bit, 1080p @ 60Hz 36bit

MDXE-OP4-HDMI



- Provides 4x independent HDMI [Type-A] outputs
- HDMI 1.4, DVI 1.0 & HDCP 1.3 protocol
- Maximum output resolution:
- HDCP: 1920x1200p @ 60Hz 24bit
- HDTV: 1920x1080p @ 60Hz 36bit (HD1080p60)

MDXE-RX4-HDBT



- Provides 4x independent HDBaseT inputs
- Compatible with HDBaseT protocol
- Supports EDID editing function
- Maximum input resolution:
- 1920x1200p @ 60Hz 24bit, 1080p @ 60Hz 36bit

MDXE-TX4-HDBT



- Provides 4x independent HDBaseT outputs
- Compatible with HDBaseT protocol
- Maximum output resolution:
- HDCP: 1920x1200p @ 60Hz 24bit
- HDTV: 1920x1080p @ 60Hz 36bit (HD1080p60)

MDXE-RX4-FB



- Provides 4x independent SC optical fibre inputs
- Multimode 850nm <300m
- Supports EDID editing function
- Maximum input resolution:
- 1920x1200p @ 60Hz 24bit, 1080p @ 60Hz 36bit

MDXE-TX4-FB



- Provides 4x independent SC optical fibre outputs
- Multimode 850nm <300m
- Maximum output resolution:
- HDCP: 1920x1200p @ 60Hz 24bit
- HDTV: 1920x1080p @ 60Hz 36bit (HD1080p60)

MDXE-IP4-DVI



- Provides 4x independent DVI inputs
- HDMI 1.4, DVI 1.0 & HDCP 1.3 protocol
- Supports EDID editing function
- Maximum input resolution:
- 1920x1200p @ 60Hz 24bit, 1080p @ 60Hz 36bit

MDXE-OP4-DVI



- Provides 4x independent DVI outputs
- HDMI 1.4, DVI 1.0 & HDCP 1.3 protocol
- Maximum output resolution:
- HDCP: 1920x1200p @ 60Hz 24bit
- HDTV: 1920x1080p @ 60Hz 36bit (HD1080p60)

MDXE-IP4-3GSDI



- Provides 4x independent 3G-SDI inputs
- SDI, HD-SDI and 3G-SDI
- Supports EDID editing function
- Maximum input resolution:
- 1920x1200p @ 60Hz 24bit, 1080p @ 60Hz 36bit

MDXE-OP4-3GSDI



- Provides 4x independent 3G-SDI outputs
- SDI, HD-SDI and 3G-SDI
- Maximum output resolution:
- HDCP: 1920x1200p @ 60Hz 24bit
- HDTV: 1920x1080p @ 60Hz 36bit (HD1080p60)

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SEAMLESS INPUT & OUTPUT 4K30 BLADES

MDXE-IP2-HDMI4K



- Provides 2 x independent HDMI [Type-A] inputs
- HDMI 1.4a, DVI 1.0 & HDCP 1.3 protocol
- Supports EDID editing function
- Maximum input resolution:
- 1920x1200p @ 60Hz 24bit, 4K @ 30Hz 24bit

MDXE-OP2-HDMI4K



- Provides 2 x independent HDMI [Type-A] outputs
- HDMI 1.4a, DVI 1.0 & HDCP 1.3 protocol
- Maximum output resolution:
- HDCP: 1920x1200p @ 60Hz 24bit
- HDTV: 4K @ 30Hz 24bit

MDXE-RX2-HDBT4K



- Provides 2x independent HDBaseT inputs
- Compatible with HDBaseT protocol
- Supports EDID editing function
- Maximum input resolution:
- 1920x1200p @ 60Hz 24bit, 4K @ 30Hz 24bit

MDXE-TX2-HDBT4K



- Provides 2x independent HDBaseT outputs
- Compatible with HDBaseT protocol
- Maximum output resolution:
- HDCP: 1920x1200p @ 60Hz 24bit
- HDTV: 4K @ 30Hz 24bit

SPECIAL FUNCTION BLADES

IP Camera decoder

MDXE-IP2-IPC



- Provides 2 x independent RJ45 inputs
- Protocols: RTP, RTSP, RTCP, TCP, UDP, ONVIF
- Others: G711a, G711u, G726 & ADPCM
- Max resolution 4K@30Hz
- Multiple split screen view

Input signal preview

MDXE-PVW



- Provides 1 x independent RJ45 output
- Monitoring of all inputs
- Quad screen split image
- Resolutions: 1080p@30Hz or 720p@60Hz
- Outputs via streaming Ethernet protocol

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VIDEO WALL OUTPUT BLADES

VMXE-OP4-HDMI-L2



- Provides 4 x independent HDMI [Type-A] outputs
- HDMI 1.4, DVI 1.0 & HDCP 1.3 protocol
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 2 separate layers

VMXE-OP2-HDMI-L4



- Provides 2 x independent HDMI [Type-A] outputs
- HDMI 1.4, DVI 1.0 & HDCP 1.3 protocol
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 4 separate layers

VMXE-TX4-HDBT-L2



- Provides 4 x independent HDBaseT outputs
- Compatible with HDBaseT protocol
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 2 layers

VMXE-TX2-HDBT-L4



- Provides 2 x independent HDBaseT outputs
- Compatible with HDBaseT protocol
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 4 layers

VMXE-TX4-MFB-L2



- Provides 4 x independent SC optical fibre o/ps
- Multimode 850nm <300m
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 2 layers

VMXE-TX2-MFB-L4



- Provides 2 x independent SC optical fibre o/ps
- Multimode 850nm <300m
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 4 layers

VMXE-OP4-DVI-L2



- Provides 4 x independent DVI outputs
- HDMI 1.4, DVI 1.0 & HDCP 1.3 protocol
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 2 layers

VMXE-OP2-DVI-L4



- Provides 2 x independent DVI outputs
- HDMI 1.4, DVI 1.0 & HDCP 1.3 protocol
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 4 layers

4K@30Hz VIDEO WALL OUTPUT BLADES

VMXE-TX2-HDBT4K-L2



- Provides 2 x independent HDBaseT outputs
- Compatible with HDBaseT protocol
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 1920x1080p
- Each video wall output provides 2 layers

VMXE-OP2-HDMI4K-L2

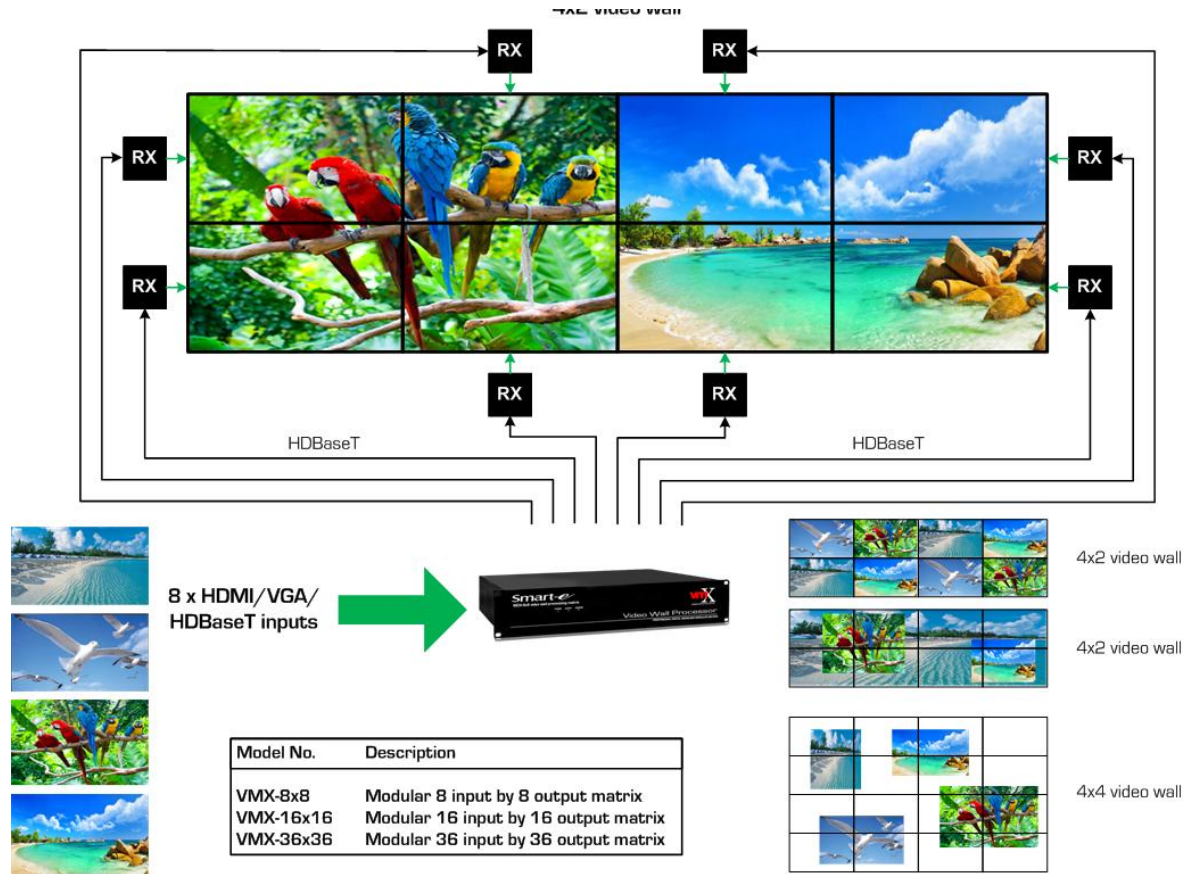


- Provides 2 x independent HDMI [Type-A] outputs
- HDMI 1.4a, DVI 1.0 & HDCP 1.3 protocol
- Maximum output resolution:
- HDCP: 1920x1200p HDTV: 4K @30Hz 24bit
- Each video wall output provides 2 separate layers

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VIDEO WALL APPLICATION DRAWING



MDXE PANEL DRAWINGS



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