

Full 4K Matrix Switcher with Mixed DisplayPort and HDMI Input Ports



Part No: 9131 0064

MX2-24x24-DH-12DPi-A-R is a member of the Lightware MX2 DH standalone matrix switcher series, supporting uncompromised 4K UHD resolution at 60Hz with RGB 4:4:4 colorspace and with down-conversion capabilities to 4:2:2. The DisplayPort inputs on the MX2 DH series routers allow connecting DisplayPort 1.2 video sources directly, without the need of adapters or dongles.

These devices are fully HDMI 2.0 compatible with DisplayPort input signals transformed to HDMI for signal management. Input signals that do not fit in the HDMI 2.0 bandwidth of 18GHz can be converted to 4:2:2 while maintaining bit depth, thus allowing for HDR transmission. The switchers have outstanding port density making them particularly suitable for fix-install applications and for future-proof operation centers, for installations where a huge number of HDMI 2.0 compliant input and output ports are required.

All MX2 DH devices support 3D, Dolby TrueHD and DTS-HD Master Audio and also HDR and Dolby Vision. Proprietary Lightware technologies like Pixel Accurate Reclocking and Advanced EDID Management are included and can be controlled via the built-in website.

MX2-24x24-DH-12DPi-A-R allows embedding audio to, and de-embedding audio from the signal stream at dedicated analog audio I/O ports.

Crosspoint switching functions are available via keys on the front panel. MX2-24x24-DH-12DPi-A-R is an R-type model, with a dual redundant power source, with two, independent, rugged power connectors and reinforced RS-232 and Ethernet ports.

Features

- DisplayPort 1.2 and HDMI 2.0 compliant
- DisplayPort input signals are converted to HDMI signals via the built-in chipset on each port
- Maximum resolution on HDMI input is 4K@60Hz with 4:4:4 sampling pattern and 8 bit per component
- Maximum resolution on DP input is 4K@60Hz with 4:4:4 sampling pattern and 10 bit per component
- Fully non-blocking switching architecture with zero frame delay
- 18 Gbps bandwidth video crosspoint
- Supports conversion from 4K/UHD at 60Hz 4:4:4 to 4K/UHD at 60 Hz YCbCr 4:2:2 (when HDMI input is used)
- Supports conversion from 4K/UHD at 60Hz 4:4:4 10bit to 4K/UHD at 60 Hz YCbCr 4:2:2 10 bit (when DP input is used)
- HDCP 2.2 and HDCP 1.4 compliant with cross conversion capabilities
- Pixel Accurate Reclocking on each input
- Advanced EDID Management
- Built-in website, RS-232, Ethernet and USB control options
- LCD, push buttons and rotary switch for front panel control
- Front to back cooling airflow
- HDR and Dolby Vision support
- Analog audio embedding from and de-embedding to analog audio inputs and outputs
- Power redundancy features and reinforced connectors

Technical Limitations of Matrices with DisplayPort connectors

The matrix is recognized by the connected DisplayPort source as a DP-to-HDMI converter, and video input signals of 3840x2160 4:4:4 RGB 10 bit are converted to 3840x2160 4:2:2 YCbCr 10 bit or 3840x2160 4:4:4 RGB 8 bit on the DisplayPort input.

Furthermore, it's important to note that DP Multi-Stream (MST), Dual-mode DisplayPort (DP++), Adaptive-Sync and FreeSync™ are not supported, and neither is HDR on DisplayPort outputs.

Specification

Speed	18 Gbps per port
Resolution	Up to 4096x2160@60Hz at RGB or YCbCr 4:4:4 (up to 600MHz pixel clock)
Dimensions	4RU height, 442 W x 277.5 D x 177.8 H mm
Mounting	Rack mountable, removable rack ears

Connectors

Power	2x Neutrik Powercon True1, 110/220V
Video inputs	12x DisplayPort 1.2 and 12 x HDMI 2.0
Video outputs	24 x HDMI 2.0
Audio inputs	12x 5-pole Phoenix
Audio outputs	8x 5-pole Phoenix*
Serial control	D-sub 9-pole
Ethernet	Ethercon
USB	Mini USB B

Please see the below table for the comparison of the MX2 DH matrix switcher series:

	Product	Inputs			Outputs			Front panel I/O buttons	Front panel LCD menu	Redundant power supply
		HDMI	DP	Audio	HDMI	DP	Audio			
MIXED HDMI / DP	MX2-8x8-DH-4DPi-A	4x	4x	✗	8x	✗	2x	✓	✓	✗
	MX2-8x8-DH-8DPi-A	✗	8x	4xD	8x	✗	4xH	✓	✓	✗
	MX2-16x16-DH-8DPi-A-R	8x	8x	8xH	16x	✗	4xH+4xA	✓	✓	✓ (PowerCON)
	MX2-24x24-DH-12DPi-A-R	12x	12x	8xH+4xD	24x	✗	8xH	✓	✓	✓ (PowerCON)
	MX2-24x24-DH-12DPi-R	12x	12x	✗	24x	✗	✗	✓	✓	✓ (PowerCON)
	MX2-32x32-DH-16DPi-A-R	16x	16x	8xH+4xD	32	✗	8xH+8xA	✓	✓	✓ (PowerCON)
	MX2-48x48-DH-24DPi-A-R	24x	24x	8xH+8xD	24x	24x	8xH+24xD	✓	✓	✓ (PowerCON)
DP	MX2-8x8-DH-8DPi-A	✗	8x	4xD	✗	8x	8xD	✓	✓	✗
	MX2-24x24-DH-24DPi-A-R	✗	24x	8xD	✗	24x	24xD	✓	✓	✓ (PowerCON)
	MX2-48x48-DH-48DPi-A-R	✗	48x	16xD	✗	48x	48xD	✓	✓	✓ (PowerCON)

H: next to HDMI **A:** independent audio out **D:** next to DP