visual engineering
LIGHTWARE

Expertise at Work:

Rental & Staging

We have always based our product developments relying heavily on feedback from the real players in the industry: system integrators, designers, engineers, installers and technicians working at various segments of the AV idustry. Probably the most demanding of any AV application is the dynamic, live operation environment of Rental and Staging, where products have to endure the most wear and tear, and where there must be no room left for fail in operation.

Discover the various technologies and products with features and services we specifically designed for the world of Rental and Staging.

Technologies
for Setup and Operation

Open Application Programming Interface (API)

An API is a set of protocols, commands, functions and objects that programmers can use to create software or interact with an external system. The Lightware API is an open environment protocol, where every bit of data is openly available for higher level management, control and monitoring systems. Therefore, any Lightware device can easily integrate into a third party system.

The Lightware Advantage For Collaboration Space Installers

Analytics and Diagnostics
Cable diagnostics and a built-in video frame detector provide feedback about the exact pixel count and clock frequency.

Open API
Open-source API technology at the core makes these Lightware products easy to integrate into third party systems.

Convenient Adjustments and Updates
Device configuration can be adjusted via the **built-in website**, and firmware update is available through Ethernet.

The protocols within the Lightware API offer the following features and services built-in, free of charge:

- **Complex controlling and monitoring**
  Connected devices are controlled and monitored from input port switching to the hexadecimal-formatted message sending.

- **Protocol browsing**
  Live protocol browsing within the free Lightware Device Controller (LDC) software

- **All-in-one commands**
  Changing the same property at all ports by sending only one command (e.g. changing the I/O crosspoint).

- **Transparent Ethernet**
  Direct connection to remote Ethernet devices

- **Command injection**
  Use the Command Injection mode to extend RS-232 serial data via Ethernet link

- **Subscription**
  Getting a change message automatically if a parameter is changed in the background

- **TPS (HDBaseT™) Cable Diagnostic Tools**
  Monitoring and identifying potential twisted pair cable issues

- **Hotplug monitoring**
  Monitoring the status of the connected devices, cables, and signals of each I/O port: signal present, +5V present, hotplug detection

- **Video signal parameters querying and changing**
  Timing, frequencies, scan mode, HDCP encryption, color space, audio sample rate, and many more

- **Advanced audio**
  Configurable analog audio parameters: volume, gain, balance, treble, bass settings

R-type HDMI 2.0 Standalone Matrix Switchers

MX2-16x16-HDMI20-R ↗	**MX2-16x16-HDMI20-Audio-R** ↗
MX2-24x24-HDMI20-R ↗	**MX2-24x24-HDMI20-Audio-R** ↗

Products Designed for
Rental &
Staging

Neutrik Powercon True1

Features:

- Max resolution 4K@60Hz with RGB 4:4:4 color space, 18 Gbps bandwidth
- Supports conversion from 4K UHD at 60Hz 4:4:4 to 4K UHD at 60 Hz YCbCr 4:2:2
- HDMI 2.0, HDMI1.x and DVI 1.0 compliant
- HDCP 2.2 and HDCP 1.4 compliant with cross conversion capabilities
- Fully non-blocking switching architecture with zero frame delay
- Built-in website, RS-232, Ethernet and USB control options
- Front to back cooling airflow
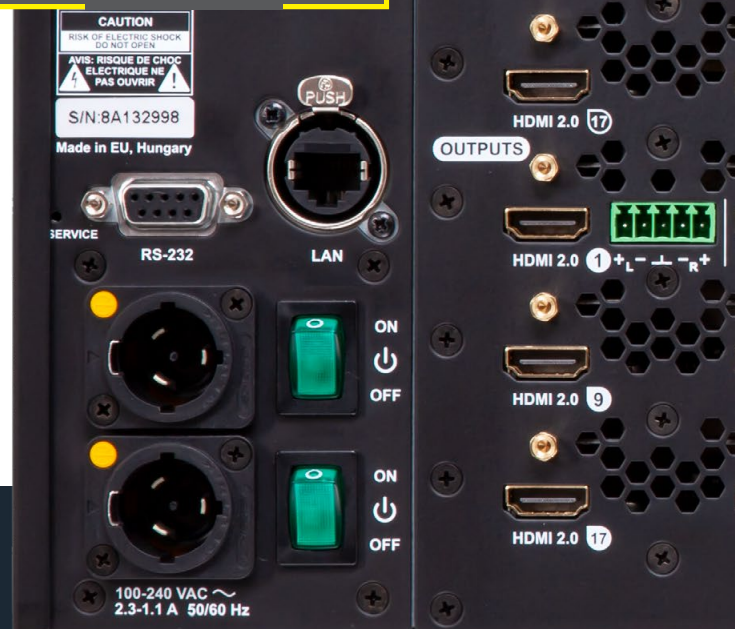- HDR and Dolby Vision support

Variants with analog audio only:

- Analog audio embedding and de-embedding and digital-to-analog conversion of stereo LPCM

Rental and Staging Features:

Redundant power supply with 2x rugged AC mains connector and control ports

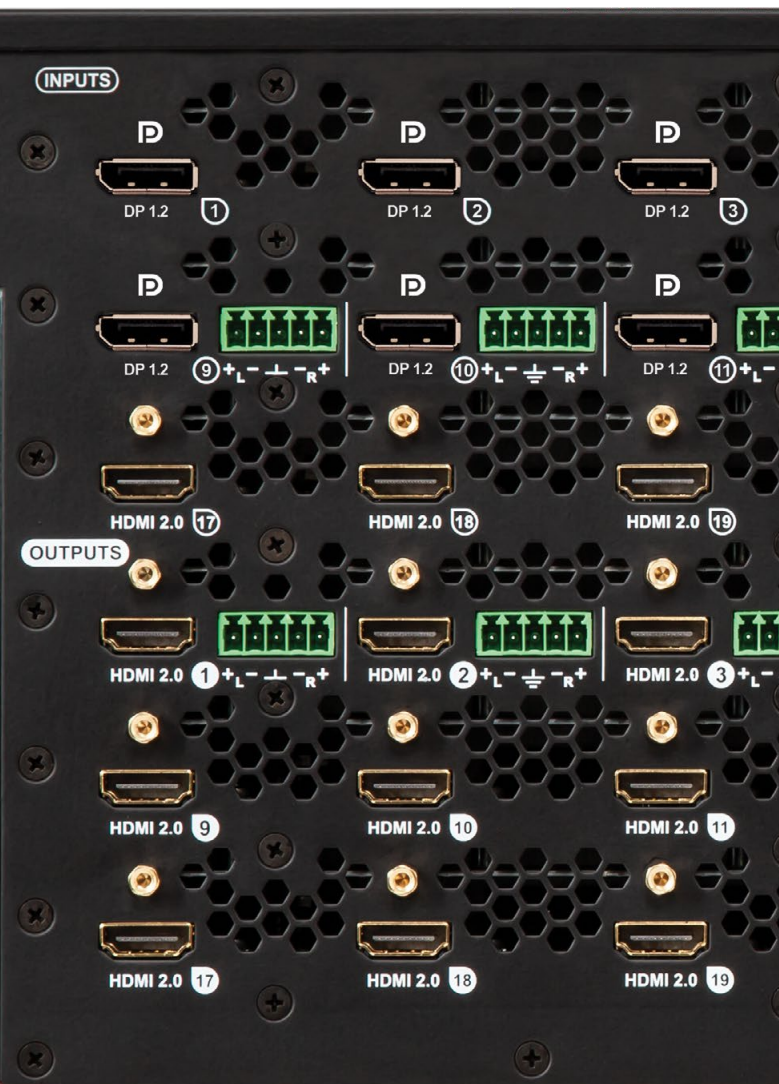# R-type Full 4K Standalone Matrix Switchers with DisplayPort and HDMI Input Ports

MX2-16x16-DH-8DPi-A coming soon!

MX2-24x24-DH-12DPi-A

DisplayPort

Features:

- DisplayPort 1.2 and HDMI 2.0 compliant
- Max resolution 4K@60Hz with RGB 4:4:4 color space, 24bit color depth
- Supports conversion from 4K UHD at 60Hz 4:4:4 to 4K UHD at 60 Hz YCbCr 4:2:2
- HDMI 2.0, HDMI1.x and DVI 1.0 compliant
- HDCP 2.2 and HDCP 1.4 compliant with cross conversion capabilities
- Fully non-blocking switching architecture with zero frame delay
- Built-in website, RS-232, Ethernet and USB control options
- Front to back cooling airflow
- HDR and Dolby Vision support
- Analog audio embedding and de-embedding and digital-to-analog conversion of stereo LPCM

Rental and Staging Features: coming soon!

- Redundant power supply with 2x rugged AC mains connector and control ports

HDMI 2.0 Fiber Optical Extenders with Various Connector Sets

HDMI20-OPTC-TX220-FOX	HDMI20-OPTC-RX220-FOX
HDMI20-OPTC-TX220-NTQ	HDMI20-OPTC-RX220-NTQ
HDMI20-OPTC-TX220-PCN	HDMI20-OPTC-RX220-PCN

Features:

- Max resolution up to 4k@60Hz with RGB 4:4:4 colorspace
- Full 4K UHD and Gigabit Ethernet signals transfer over a single fiber
- HDMI 2.0, HDMI 1.x and DVI 1.0 compliant
- HDR and Dolby Vision support
- TX HDMI input1 + input2 can function as main/backup video input
- RX output1 + output2a can operate as mirrored HDMI 2.0 outputs
- 4K @ 60Hz signal splitting to two HDMI output ports

Rental and Staging Features:

- Easy-to-read graphic LCD and jog dial control button on TX
- Rugged chassis, M10 mounting threads on top and side, safety hookup loops on front
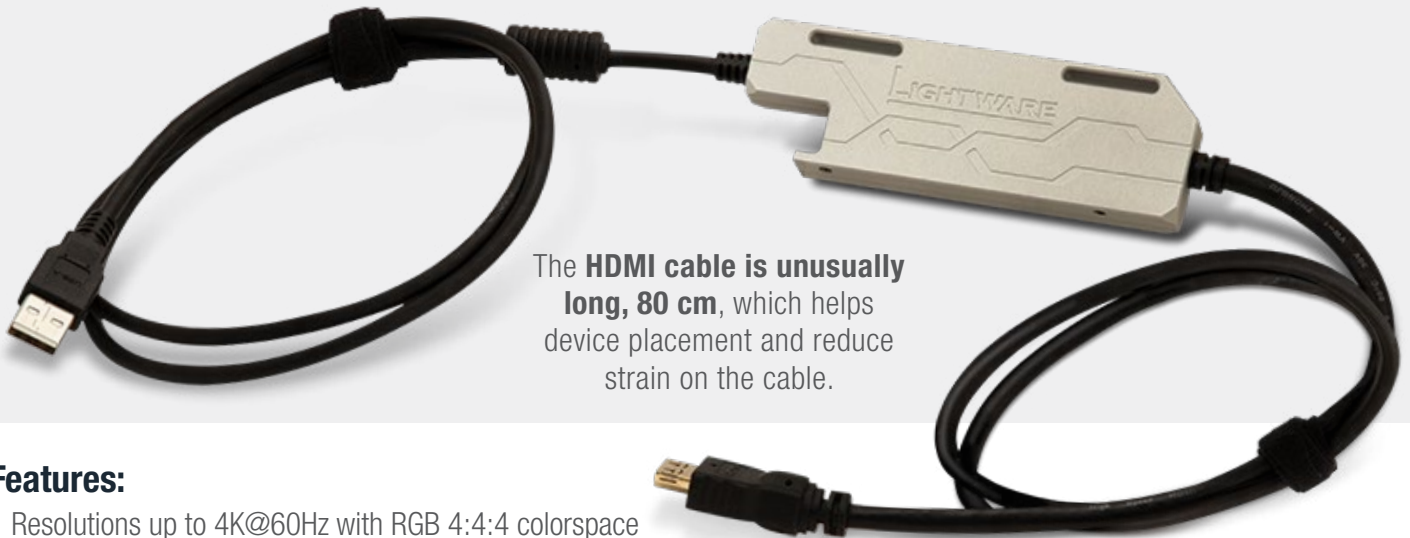- Dark mode: feedback LEDs can be turned off during the show on RX

HDMI 2.0 Fiber Optical Extenders

HDMI20-OPTJ-TX90 ↗

HDMI20-OPTJ-RX90 ↗

The **HDMI cable is unusually long, 80 cm**, which helps device placement and reduce strain on the cable.

Features:

- Resolutions up to 4K@60Hz with RGB 4:4:4 colorspace
- HDMI 2.0, HDCP 2.2, HDCP 1.4 compliant and CEC, EDID transparent with 36-bit deep color support
- HDR and Dolby Vision support
- Zero frame latency, no compression
- One MultiMode fiber extending 4K signals to up to 600 m, FullHD signals to 2500 m
- Supports all HDMI audio formats: Dolby TrueHD and DTS-HD Master Audio
- SC optical fiber connector
- Rack tray accessory with built-in power source encloses up to 16 units

Rental and Staging Features:

- Port saver, easily exchangeable, fixed pigtail Micro USB and 80 cm long HDMI cables
- Solid aluminum housing for safety, security and efficient cooling
- Mounting loops for Velcro belts to affix the unit to basically anywhere

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Rack-mountable PowerTray for up to 16x HDMI20-OPTJ-TX/RX90 Optical Extenders

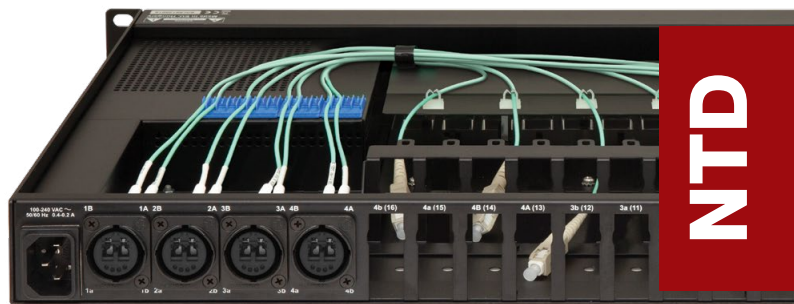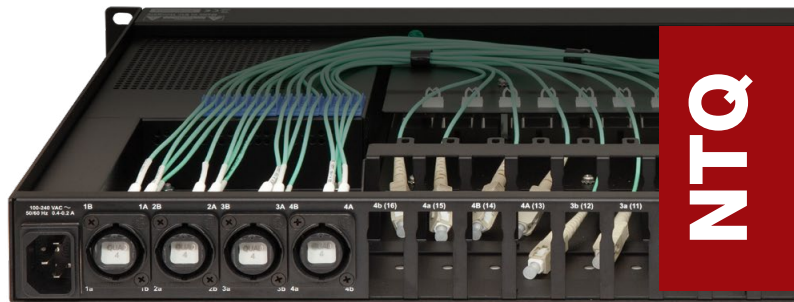**OPTJ Power Tray NTD** ↗   **OPTJ Power Tray NTQ** ↗   **OPTJ Power Tray SC** ↗

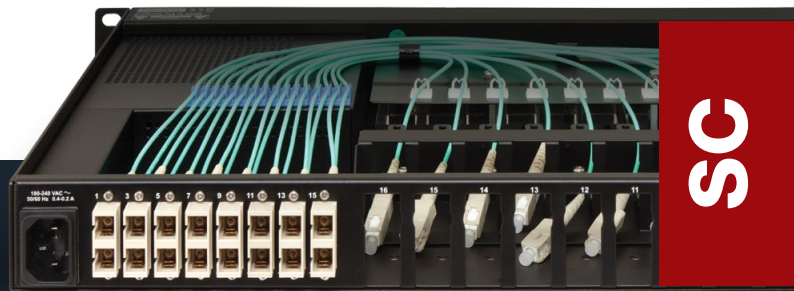## Keep and Power your OPTJ Extenders Together in a Rack Cage

Features:

- Universal full range AC input with standard C14 socket
- Protections: Short circuit / Overload
- TX and RX units can mix in any number and combination in the tray
- 4x Neutrik OpticalCON Quad/Duo or 8x SC Duplex connectors
- Status LED lights on the units are mirrored to the front panel of power tray
- +1 status LED for 5V DC power feedback
- USB power protection: if a USB port fails the rest of the units keep on working
- Uniquely designed optical and USB cable management
- Numbered internal optical cables for easy identification and installation

NTD

NTQ

SC

Combine an MX2-8x8-HDMI20-Audio-L matrix with a fully populated rack tray to create a Full 4K HDMI 2.0 optical matrix.

+16x