

## Specifications

### FOX3 Matrix 160x

#### TRUE 4K specification

Max. 4K Capabilities		
Resolution and Refresh Rate	Chroma Sampling	Max. Bit Depth per Color
4096 x 2160 at 60 Hz <sup>1</sup>	4:4:4	8 bit
3840 x 2160 at 60 Hz <sup>1</sup>		
4096 x 2160 at 30 Hz <sup>1</sup>		10 bit
3840 x 2160 at 30 Hz <sup>1</sup>		
4096 x 2160 at 60 Hz <sup>2</sup>	4:2:2	12 bit
3840 x 2160 at 60 Hz <sup>2</sup>		
4096 x 2160 at 30 Hz <sup>2</sup>	4:4:4	
3840 x 2160 at 30 Hz <sup>2</sup>		

Frame rate<sup>3</sup> ..... 24, 25, 30, 50, or 60 fps  
 Chroma sampling<sup>3</sup> ..... 4:4:4, 4:2:2  
 Color bit depth<sup>2,3</sup> ..... 8, 10, or 12 bits per color  
 Signal type ..... HDMI 2.0, HDCP 2.3  
 Max. video data rate ..... 18.0 Gbps

**NOTE:** <sup>1</sup>Supports lossless 4K video over one fiber or uncompressed 4K video over two fibers.  
<sup>2</sup>Supports 12-bit color bit depth for uncompressed 4K video over two fibers. When using a FOX3 SR scaling receiver, the scaler must be in bypass mode to pass 4K video with a 12-bit color bit depth.  
<sup>3</sup>Subject to the maximum data rate limit. Use our calculator at [www.extron.com/8Kdata rate](http://www.extron.com/8Kdata rate) to determine video parameters supported by this data rate.

**NOTE:** This product contains Class 1 laser. It meets the safety regulation of IEC 60825-1, FDA 21 CFR 1040.10, and FDA 21 CFR 1040.11.

#### Optical specifications

Number/type ..... 8 singlemode or 8 multimode SFPs per board  
 Connectors ..... 16 LC connectors per I/O board  
 Signal type ..... 8 to 160 fiber optic signals  
 Routing ..... 8 x 8 up to 160 x 160 unidirectional matrix or  
 4 x 4 up to 80 x 80 bidirectional matrix  
 Operating distance  
 Singlemode ..... 20 km (12.4 miles) with singlemode (SM) cables  
 Multimode ..... 500 m (1640 feet) with 50 µm OM4 4700 MHz bandwidth laser optimized multimode cables

**NOTE:** The system works with OM1, OM2, and OM3 fiber at reduced distances.

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**NOTE:** Operating distance is approximate. These are typical distances. The maximum distance may be greater than these typical numbers depending on factors such as fiber type, fiber bandwidth, connector splicing, losses, modal or chromatic dispersion, environmental factors, and kinks.

Nominal peak wavelength .....	850 nm for multimode (MM), 1310 nm for singlemode (SM)
Transmission power	
Singlemode .....	-5.2 dBm, typical
Multimode .....	-3.3 dBm, typical
Maximum receiver sensitivity	
Singlemode .....	-12.6 dBm, typical
Multimode .....	-13.0 dBm, typical
Optical loss budget	
Singlemode .....	+7.4 dB, maximum
Multimode .....	+9.7 dB, maximum
Maximum channel data rate.....	10 Gbps

### Audio input/output board

Number/signal type.....	4 analog stereo inputs, balanced/unbalanced 4 analog stereo outputs, balanced/unbalanced
Connectors.....	(8) 3.5 mm captive screw connector, 5 pole
Source formats .....	2 channel LPCM
Impedance.....	≥10 k ohms unbalanced, ≥20 k ohms balanced
Nominal level.....	+4 dBu (1.23 Vrms), -10 dBV (316 mVrms)
Maximum level.....	+21 dBu balanced, +15 dBu unbalanced
Gain range.....	Adjustable, -18 dB to +24 dB, 1 dB steps
Gain.....	Unbalanced output: -6 dB; balanced output 0 dB (default)
Frequency response .....	20 Hz to 20 kHz, ±0.5 dB
THD + Noise.....	<0.1% @ 20 Hz to 20 kHz at nominal level
S/N.....	>90 dB at maximum output (unweighted)
CMRR.....	65 dB @ 20 Hz to 20 kHz
Output impedance.....	50 ohms unbalanced, 100 ohms balanced (analog only)
Maximum level (Hi-Z).....	+21 dBu balanced, +15 dBu unbalanced
Gain error.....	± 0.5 dB channel to channel
Volume control range .....	-100 dB to 0 dB (0-100 in 1 dB steps)
Crosstalk .....	≤-80 dB @ 1 kHz, fully loaded
Stereo channel separation.....	>80 dB @ 1 kHz
Bit depth.....	16, 20, 24
Sampling rate.....	48 kHz

**NOTE:** 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

### AT ports — Dante audio transport

Transmission type .....	Dante/AES-67, software selectable
Connectors.....	2 RJ-45 to Dante interface
Inputs .....	Up to 32 stereo channels
Outputs .....	Up to 32 stereo channels
Audio format .....	24 bit uncompressed at 48 kHz sampling rate
Latency.....	Deterministic, based on user selections: 0.25 ms, 0.5 ms, 1.0 ms (default), 2.0 ms, 5.0 ms

### EXP port

Transmission type .....	Proprietary
Connector.....	1 RJ-45
Inputs .....	8 stereo channels Rx

## Specifications • FOX3 Matrix 160x (Continued)

Outputs .....	8 stereo channels Tx
Audio format .....	Uncompressed, 24-bit, 48 kHz
EXP cable .....	Shielded CAT6 up to 10 meters

### Communications

USB configuration port	
Number/type .....	1 front panel mini USB B, female
Standard .....	Ethernet over USB
Serial control port.....	1 RS-232, 3.5 mm captive screw connector, 3-pole, female, rear panel
Baud rate and protocol.....	300 to 115200 baud (default: 9600), 8 data bits, 1 stop bit, no parity
Serial control pin configuration.	Captive screw: 1 = Tx, 2 = Rx, 3 = GND
Ethernet control	
Ethernet port .....	1 RJ-45 connector, female
Ethernet data rate.....	10/100/1000Base-T, half/full duplex with autodetect
Protocols.....	ARP, ICMP (ping), DHCP, DNS, HTTPS, SFTP, SSH, TCP/IP, UDP/IP
Default settings.....	Link speed and duplex level = autodetected IP address = 192.168.254.254 Subnet mask = 255.255.255.0 Gateway = 0.0.0.0 DHCP = off
Web server .....	Up to 200 simultaneous sessions 7.0 MB non-volatile memory
Program control.....	Extron Product Configuration Software Extron Simple Instruction Set (SIS™)

### General

Power supply .....	Internal, 2* (positive-negative), primary and redundant, hot-swappable Input: 100-240 VAC, 50-60 Hz *A redundant power supply is standard.
Power consumption.....	Enclosure without boards: 73 watts Enclosure fully loaded with 20 MM boards: 486 watts Enclosure fully loaded with 20 SM boards: 559 watts Each MM board: 20.1 watts Each SM board: 23.1 watts
Temperature/humidity .....	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling .....	Fan, right to left (as viewed from front panel)
Thermal dissipation, full load .....	MM: 1658 BTU/hr SM: 1905 BTU/hr
Mounting	
Rack mount.....	Yes
Enclosure type .....	Metal
Enclosure dimensions .....	14.0" H x 17.0" W x 20.0" D (8U high, full rack wide) (35.6 cm H x 43.2 cm W x 50.8 cm D) (Depth excludes connectors and handles. Width excludes rack ears.)
Product weight (fully loaded) .....	85 lbs (39 kg)
Regulatory compliance.....	CE, c-UL, C-tick, FCC Class A, ICES, UL, VCCI Complies with the appropriate requirements of RoHS, WEEE.
Product warranty .....	3 years parts and labor

**NOTE:** All nominal levels are at ±10%.

**NOTE:** Specifications are subject to change without notice.

**NOTE:** Shipping weights and dimensions are available at [www.extron.com](http://www.extron.com).