

FOX3 SYSTEMS



VECTOR 4K
SCALING

18 Gbps
4K/60 4:4:4

Dante®

JITC
CERTIFIED

Setting the New Standard in 4K Fiber Optic Distribution

- ▶ Reliable extension, distribution, and switching of 4K/60 video, audio, USB, and control over fiber optic cabling
- ▶ Advanced audio processing and routing at the matrix with Dante integration, DMP expansion, and local analog audio inputs and outputs
- ▶ Supports mathematically lossless 4K/60 4:4:4 video over one fiber or uncompressed 4K/60 4:4:4 video over two fibers
- ▶ Complete enterprise-level control via Ethernet RS-232 insertion at the matrix and extension of the control signal to remote endpoints over fiber
- ▶ Matrix I/O sizes from 8x8 up to 320x320
- ▶ Advanced 24/7 system monitoring and hot-swappable modular design
- ▶ HDCP 2.3 compliant

Extron

FOX3 SYSTEMS

The Extron **FOX3 Series** is the industry-leading family of high performance matrix switchers and extenders for complete, end-to-end digital distribution and switching of 4K/60 video, stereo audio, USB, control, and 3D sync over fiber optic cable. This enterprise platform supports HDMI 2.0 data rates up to 18 Gbps and is HDCP 2.3 compliant for the secure transmission of uncompressed 4K or mathematically lossless 4K video to any remote location. All FOX3 extenders support native 4K/60 4:4:4 resolutions and Deep Color up to 12-bit. Select models feature built-in USB for KVM applications while Extron-exclusive Vector™ 4K scaling technology ensures the optimal image quality. Delivering exceptional reliability and advanced capabilities, FOX3 Systems meet the demands of any mission-critical environment.



18 Gbps
4K/60 4:4:4

Designed and engineered to the highest standards, the FOX3 matrix switchers work with all FOX3 extenders for secure delivery of video resolutions up to 4K/60 with full 4:4:4 chroma sampling to any location.

JITC
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All FOX3 matrix switchers have successfully completed interoperability and information assurance testing for use in government applications and other mission-critical environments.

Dante®

FOX3 matrix switchers have advanced audio capabilities, including DMP and Dante integration to maintain audio transparency and to provide the scalability required by larger audio systems.



Secure FOX3 Systems are designed for mission-critical applications, including government, military, medical, entertainment, education, and any other environments that require secure distribution of high-quality AV signals. Priority Switching and Secure Partitioning are built into the platform to enable multiple classification levels and protect sensitive information during distribution. In addition, integrated USB signal routing through the matrix switcher simplifies integration in KVM applications while advanced audio capabilities ensure pristine audio and add design flexibility.

4K EXTENSION AND SWITCHING

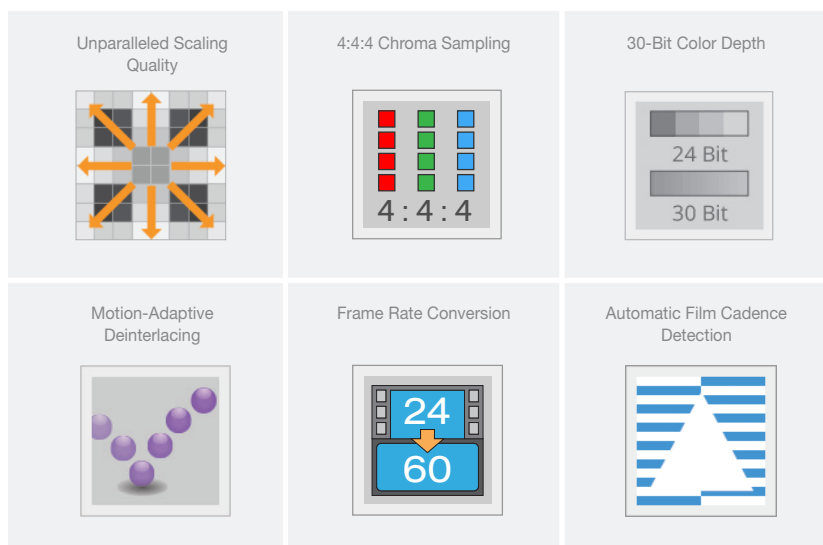
Five FOX3 matrix frames, expandable from 8x8 to 320x320 depending on the selected models, work with all FOX3 extenders to deliver 4K/60 video along with audio, control, USB and 3D sync signals to any remote location. Three HDCP-compliant extender series are available for maximum design flexibility, all supporting HDMI 2.0 data rates up to 18 Gbps and Deep Color up to 12-bit. Select models support built-in USB extension and Extron-exclusive Vector 4K scaling technology.



Extron Vector 4K Scaling Technology

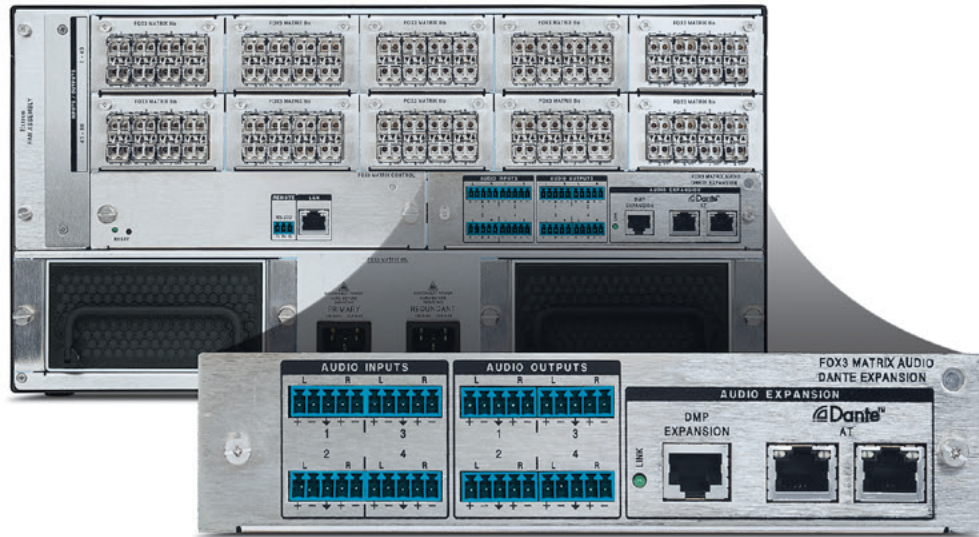
Vector 4K was developed internally by Extron's expert team of signal processing engineers. Extron engineers have crafted patented image processing technologies that set the industry benchmark for visual performance. Features such as bicubic scaling, 30-bit color depth, and 4:4:4 chroma sampling ensure very high image quality while preserving detail present in the original source material.

FOX3 receivers with Vector 4K scaling offer a variety of convenient, user-friendly features. Aspect ratio control and dynamic vector-based test patterns are just a few of the many standard product features that streamline integration and optimize system performance.



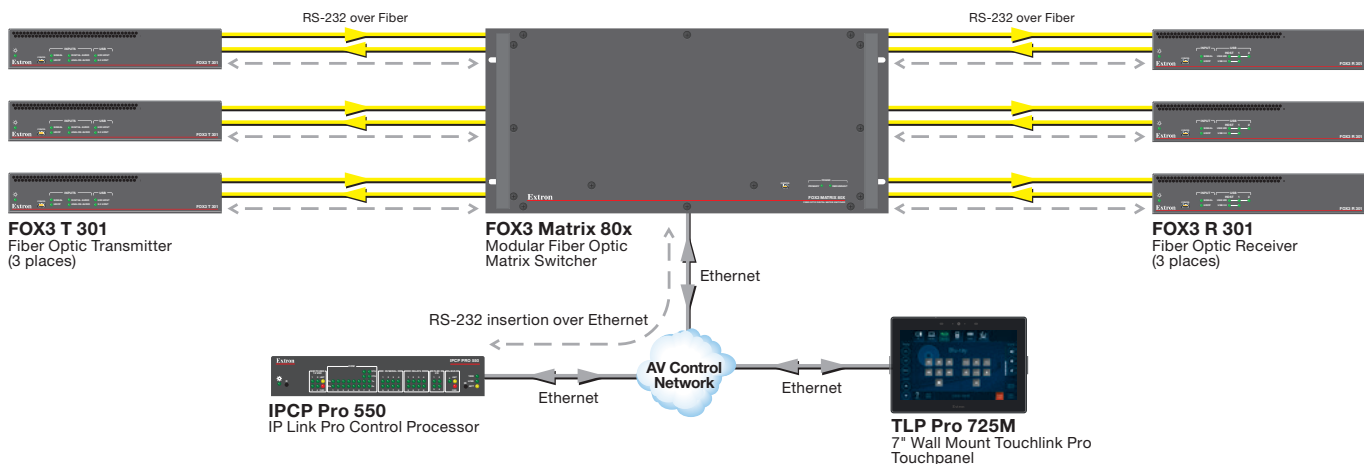
Complete Audio System Integration

The FOX3 Systems provide leading-edge audio functionality, including audio switching and breakaway, embedding/de-embedding, DMP expansion, Dante integration with AES67 support, as well as local analog audio insertion and extraction. The DMP expansion port allows the fiber matrix to be linked to an Extron DMP Plus audio DSP processor using a single shielded CAT 6 cable which provides 16x16 I/O channel transport between the two devices. Native integration with Dante provides bidirectional digital audio transport for up to 32 stereo-channels over a local area network using standard Internet protocols.



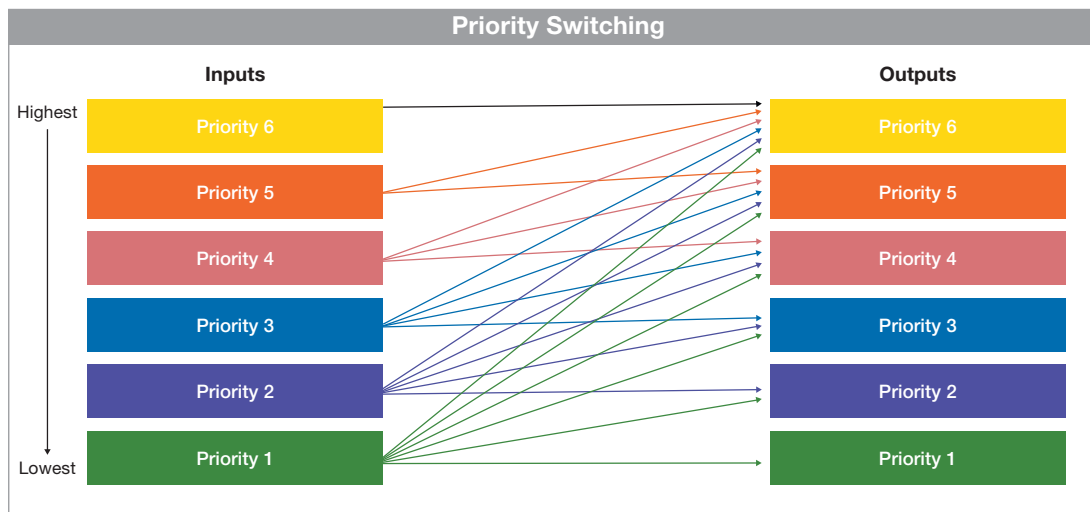
Centralized Configuration and Control

FOX3 matrix switchers offer convenient local and remote system access for configuration, operation, and monitoring through the front panel USB configuration port, rear panel RS-232 serial control port, and Ethernet control port. FOX3 Matrix Switchers also provide the insertion and extraction of RS-232 control data from the Ethernet port to the transmitters and receivers over the fiber optic cable. This allows comprehensive control of endpoint devices without needing additional cabling.



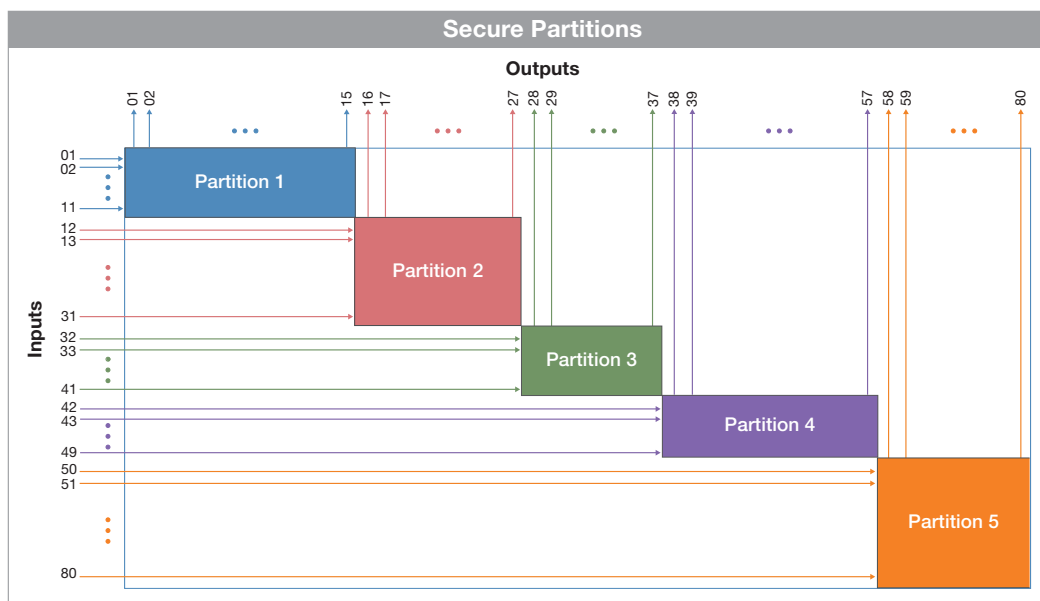
Priority Switching for Multi-Level Classification

All FOX3 matrix switchers provide two methods that can be used to ensure sensitive data is properly segregated and protected – Priority Switching and Secure Partitioning. Priority Switching is useful in systems with multiple security classification levels. Priority Switching assigns a security level from one to six for each input, with six being the highest level. An output can only be tied to an input at the same security level or lower, preventing unauthorized access to sensitive data. For example, an output at security level five can be tied to inputs that are security level five or lower. However, an output at level one, the lowest level, can only be tied to inputs that are also level one.



Secure Partitioning for Segregating Sources and Destinations

FOX3 Systems feature Secure Partitioning to prevent unauthorized access to sensitive information. Secure Partitioning enables the matrix switcher to be divided into smaller sub-switchers for segregating sources and destinations. Sources can only be routed to destinations within the same partition. Any attempt to tie an input and output in different partitions is prohibited. Up to 6 partitions are available. Secure Partitioning is useful for separating secure and unclassified data. Priority Switching can also be applied to each partition for multi-level classification systems.



FEATURES

I/O sizes from 8x8 up to 320x320

Each FOX3 matrix switcher can be populated with I/O boards to support customized system configurations.

Switches 4K/60 video, audio, USB, control, and 3D sync over fiber optic cable

Enables high quality signal switching and long-haul transmission over multimode or singlemode cable.

Supports mathematically lossless 4K video up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling over one fiber

Provides high reliability and maximum performance on economical cable infrastructure.

Supports uncompressed 4K video up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling over two fibers

Delivers pixel-for-pixel transmission of 4K/60 video signals to ensure optimal image quality.

Analog audio insertion and extraction

Local stereo audio inputs can be routed to any audio output. Local stereo audio outputs provide audio from any audio input.

Audio breakaway

Offers the capability to separate an embedded audio signal from its corresponding video signal for independent routing.

64x64 Dante I/O audio networking with Dante Domain Manager and AES67 support

Two integrated Dante ports at the matrix support up to 32 stereo inputs and 32 stereo outputs.

Audio embedding and de-embedding

Any two-channel PCM audio signal can be embedded into any output signal, including the analog return audio signal.

Modular, field-upgradeable, and hot-swappable design

Additional input and output boards may be added at any time for quick and easy upgradability to support system expansion or new technologies.

Secure Partitioning segregates sources and destinations in a secure environment

Priority Switching prevents unauthorized access to sensitive data in a secure environment

RS-232 insertion from the Ethernet control port

Signals can then be transmitted to remote endpoints to allow complete system level device control without additional cabling.

Advanced computer-aided diagnostics

Provides 24/7 self-diagnostics of I/O boards, power supply voltages, fiber links, and overall functional status of the matrix switcher.

Ethernet monitoring and control

Can be proactively monitored and managed over a LAN, WAN, or the Internet, using standard TCP/IP protocols.

Secure Ethernet communication using SSH - Secure Shell protocol

Supports SSH, ensuring communication between the control system and the matrix is encrypted.

Key Minder® continuously verifies HDCP compliance for quick, reliable switching

Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments.

Bidirectional RS-232 insertion for AV device control

Bidirectional RS-232 and IR control pass-through enables a remote device to be controlled without the need for additional cabling. Two fibers are required for bidirectional communications.

HDCP 2.3 compliant

All FOX3 extenders are HDCP 2.3 compliant.

JITC certified

FOX3 systems have successfully completed interoperability and information assurance testing for use in government applications and other mission-critical environments.

EDID Minder® automatically manages EDID communication between connected devices

EDID Minder ensures that all sources power up properly and reliably output content for display.

Internal Extron Everlast™ power supply

Provides worldwide power compatibility, with high demonstrated reliability and low power consumption for reduced operating cost.

Supports USB 2.0 to 1.0 devices and USB 3.0 devices that can operate at USB 2.0 data rates of up to 480 Mbps

Provides USB extension, allowing connection to peripheral devices over the same fiber cable as video and audio.

Device class filtering on USB HID port restricts the range of device types to HID

Device class filtering prevents unauthorized downloading or uploading of content via the USB port in secure environments. The USB HID port is configured at the factory, such that device class filtering cannot be removed or altered in the field.

Peripheral emulation on USB HID port

Offers increased system reliability by emulating a continuous connection between the host and an HID-compliant keyboard and mouse.

Host emulation on the USB HID ports

Offers increased system reliability by emulating a continuous connection between the HID-compliant keyboard and mouse and a host.

HDCP Visual Confirmation

When HDCP encrypted content is transmitted to a non-HDCP-compliant display, a full-screen green signal is sent to the display for immediate visual confirmation that protected content cannot be viewed on that display.

LinkLicense® Support

Extron LinkLicense unlocks features that add convenience, expand system functionality, and enhance the capabilities of Extron products.

OVERVIEW

Compatible with all Extron FOX3 Series extenders

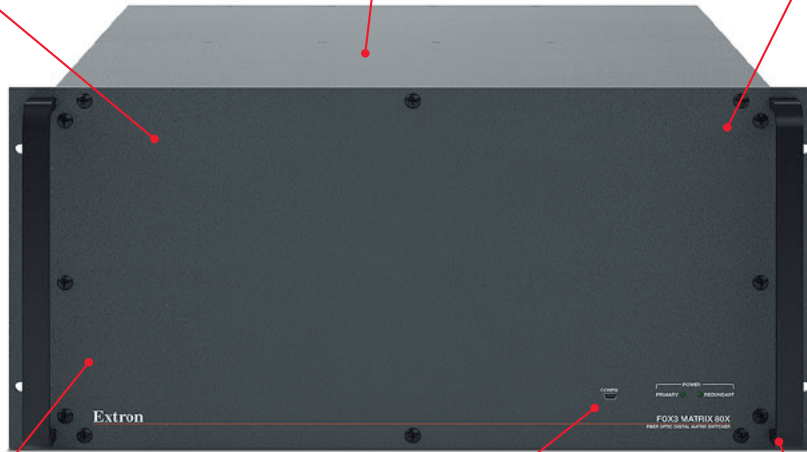
Provides a complete end-to-end fiber optic distribution system

JITC Certified

Successfully completed interoperability and information assurance testing

High speed, digital switching

Switches 4K/60 video, audio, USB, control, and 3D sync over fiber



Rack-mountable full rack width metal enclosure

Easily installs in standard equipment rack

Front panel USB configuration port

Enables easy system set-up without the need to access the rear panel

Primary and redundant power supply status indicators

Easily check power supply status

Ethernet monitoring and control

Enables web-based remote management, monitoring, and control

RS-232 insertion from the Ethernet control port

Provides system level device control to remote locations

Multimode and singlemode I/O boards

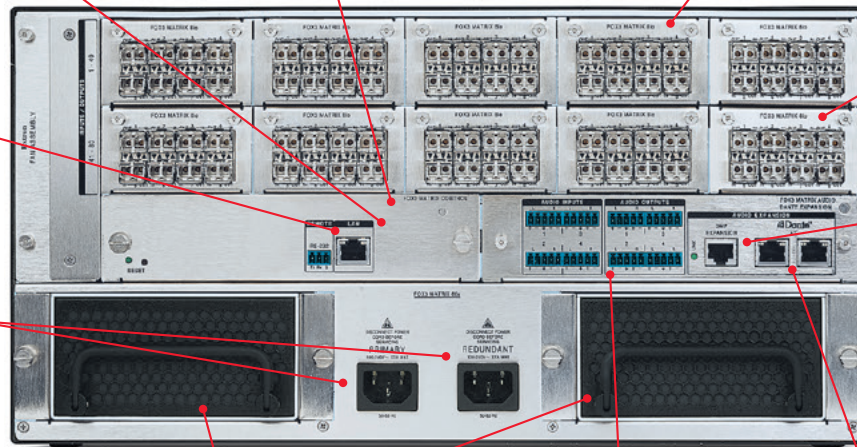
Configurable for short or long-haul transmission

RS-232 and Ethernet control ports

Provides connectivity for an external control system

Two AC power inputs

Continuous connection to primary and redundant power



Audio breakaway

Enables independent routing of two-channel PCM audio

Digital audio expansion port

Provides a connection to an Extron DMP 128 Plus audio DSP processor for audio system scalability

Dual redundant and hot-swappable power supplies

Provides reliability for 24-hour and mission-critical environments

Stereo analog audio I/O ports

Extract or embed analog audio

Two Dante audio ports with AE67 support

Provides digital audio connectivity for 32 stereo inputs and 32 stereo outputs

FOX3 MATRIX SWITCHERS

Common Features

- Switches 4K/60 video, audio, USB, control and 3D sync
- Compatible with all FOX3 transmitters and receivers
- Full audio integration with DMP expansion, local analog audio insertion/extraction, and Dante with AES67 support
- Modular, field-upgradable and hot-swappable design
- RS-232 insertion from the Ethernet control port
- Multimode and Singlemode I/O boards available
- Audio breakaway, embedding/de-embedding
- Ethernet monitoring and control

FOX3 Matrix 24x

Modular Fiber Optic Matrix Switcher from 8x8 to 24x24

Unique Features

- I/O sizes from 8x8 to 24x24
- Optional redundant and hot-swappable power supply
- Rack-mountable 2U, full rack width metal enclosure



Model	Version Description	Part Number
FOX3 Matrix 24x no FPC 8io MM	Configured Matrix - 8x8 Multimode	60-1716-04
FOX3 Matrix 24x no FPC 8io SM	Configured Matrix - 8x8 Singlemode	60-1716-14
FOX3 Matrix 24x no FPC 16io MM	Configured Matrix - 16x16 Multimode	60-1716-05
FOX3 Matrix 24x no FPC 16io SM	Configured Matrix - 16x16 Singlemode	60-1716-15
FOX3 Matrix 24x no FPC 24io MM	Configured Matrix - 24x24 Multimode	60-1716-06
FOX3 Matrix 24x no FPC 24io SM	Configured Matrix - 24x24 Singlemode	60-1716-16
FOX3 24x I/O 88 MM	8x8 I/O Board - Multimode	70-1107-03
FOX3 24x I/O 88 SM	8x8 I/O Board - Singlemode	70-1107-04

FOX3 Matrix 40x

Modular Fiber Optic Matrix Switcher from 8x8 to 40x40

Unique Features

- I/O sizes from 8x8 to 40x40
- Dual redundant and hot-swappable power supplies
- Rack-mountable 4U, full rack width metal enclosure

Model	Version Description	Part Number
FOX3 Matrix 40x no FPC	FOX3 Matrix 40x Frame no FPC	60-1576-02
FOX3 I/O 88 MM	8x8 I/O Board - Multimode	70-1107-01
FOX3 I/O 88 SM	8x8 I/O Board - Singlemode	70-1107-02



FOX3 MATRIX SWITCHERS

FOX3 Matrix 80x

Modular Fiber Optic Matrix Switcher from 8x8 to 80x80

Unique Features

- I/O sizes from 8x8 to 80x80
- Dual redundant and hot-swappable power supplies
- Rack-mountable 5U, full rack width metal enclosure

Model	Version Description	Part Number
FOX3 Matrix 80x no FPC	FOX3 Matrix 80x Frame no FPC	60-1553-02
FOX3 I/O 88 MM	8x8 I/O Board - Multimode	70-1107-01
FOX3 I/O 88 SM	8x8 I/O Board - Singlemode	70-1107-02



FOX3 Matrix 160x

Modular Fiber Optic Matrix Switcher from 8x8 to 160x160

Unique Features

- I/O sizes from 8x8 to 160x160
- Dual redundant and hot-swappable power supplies
- Rack-mountable 8U, full rack width metal enclosure

Model	Version Description	Part Number
FOX3 Matrix 160x no FPC	FOX3 Matrix 160x Frame no FPC	60-1577-02
FOX3 I/O 88 MM	8x8 I/O Board - Multimode	70-1107-01
FOX3 I/O 88 SM	8x8 I/O Board - Singlemode	70-1107-02



FOX3 Matrix 320x

Modular Fiber Optic Matrix Switcher from 8x8 to 320x320

Unique Features

- I/O sizes from 8x8 to 320x320
- Dual redundant and hot-swappable power supplies
- Rack-mountable 12U, full rack width metal enclosure

Model	Version Description	Part Number
FOX3 Matrix 320x no FPC	FOX3 Matrix 320x Frame no FPC	60-1578-02
FOX3 I/O 88 MM	8x8 I/O Board - Multimode	70-1107-01
FOX3 I/O 88 SM	8x8 I/O Board - Singlemode	70-1107-02



FOX3 TRANSMITTERS & RECEIVERS

FOX3 T 301

Fiber Optic Transmitter for HDMI, USB, Audio, Control, and 3D Sync

Unique Features

- Transmits HDMI video, USB, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Supports USB 2.0 to 1.0 devices and USB 3.0 devices that can operate at USB 2.0 data rates of up to 480 Mbps
- Device class filtering on USB HID port restricts the range of device types to HID



Model	Version Description	Part Number
FOX3 T 301 MM	Lossless 4K/60 Transmitter - Multimode	60-1522-11
FOX3 T 301 SM	Lossless 4K/60 Transmitter - Singlemode	60-1522-12
FOX3 T 301 MM	Uncompressed 4K/60 Transmitter - Multimode	60-1522-13
FOX3 T 301 SM	Uncompressed 4K/60 Transmitter - Singlemode	60-1522-14

FOX3 T 311

Fiber Optic Transmitter for HDMI, USB HID, Audio, Control, and 3D Sync

Unique Features

- Transmits HDMI video, USB, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Device class filtering on USB HID port restricts the range of device types to HID



Model	Version Description	Part Number
FOX3 T 311 MM	Lossless 4K/60 Transmitter - Multimode	60-1523-11
FOX3 T 311 SM	Lossless 4K/60 Transmitter - Singlemode	60-1523-12
FOX3 T 311 MM	Uncompressed 4K/60 Transmitter - Multimode	60-1523-13
FOX3 T 311 SM	Uncompressed 4K/60 Transmitter - Singlemode	60-1523-14

FOX3 T 201

Fiber Optic Transmitter for HDMI, Audio, and Control

Unique Features

- Transmits HDMI video, USB, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling

Model	Version Description	Part Number
FOX3 T 201 MM	Lossless 4K/60 Transmitter - Multimode	60-1600-11
FOX3 T 201 SM	Lossless 4K/60 Transmitter - Singlemode	60-1600-12
FOX3 T 201 MM	Uncompressed 4K/60 Transmitter - Multimode	60-1600-13
FOX3 T 201 SM	Uncompressed 4K/60 Transmitter - Singlemode	60-1600-14



FOX3 T 101

Fiber Optic Transmitter for HDMI

Unique Features

- Extends HDMI video and embedded audio signals over fiber optic cabling

Model	Version Description	Part Number
FOX3 T 101 MM	Lossless 4K/60 Transmitter - Multimode	60-1957-11
FOX3 T 101 SM	Lossless 4K/60 Transmitter - Singlemode	60-1957-12



FOX3 TRANSMITTERS & RECEIVERS

FOX3 R 301

Fiber Optic Receiver for HDMI, USB, Audio, Control, and 3D Sync

Unique Features

- Receives HDMI video, USB, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Supports USB 2.0 to 1.0 devices and USB 3.0 devices that can operate at USB 2.0 data rates of up to 480 Mbps
- Device class filtering on USB HID port restricts the range of device types to HID

Model	Version Description	Part Number
FOX3 R 301 MM	Lossless 4K/60 Receiver - Multimode	60-1522-21
FOX3 R 301 SM	Lossless 4K/60 Receiver - Singlemode	60-1522-22
FOX3 R 301 MM	Uncompressed 4K/60 Receiver - Multimode	60-1522-23
FOX3 R 301 SM	Uncompressed 4K/60 Receiver - Singlemode	60-1522-24



FOX3 R 311

Fiber Optic Receiver for HDMI, USB HID, Audio, Control, and 3D Sync

Unique Features

- Receives HDMI video, USB HID, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Device class filtering on USB HID port restricts the range of device types to HID

Model	Version Description	Part Number
FOX3 R 311 MM	Lossless 4K/60 Receiver - Multimode	60-1523-21
FOX3 R 311 SM	Lossless 4K/60 Receiver - Singlemode	60-1523-22
FOX3 R 311 MM	Uncompressed 4K/60 Receiver - Multimode	60-1523-23
FOX3 R 311 SM	Uncompressed 4K/60 Receiver - Singlemode	60-1523-24



FOX3 R 101

Fiber Optic Receiver for HDMI

Unique Features

- Receives HDMI video and embedded audio signals over fiber optic cabling

Model	Version Description	Part Number
FOX3 R 101 MM	Lossless 4K/60 Receiver - Multimode	60-1957-21
FOX3 R 101 SM	Lossless 4K/60 Receiver - Singlemode	60-1957-22



FOX3 SR 201

Fiber Optic Scaling Receiver for HDMI, Audio, and Control

Unique Features

- Receives fiber optic signals from FOX3 Series transmitters and provides scaled HDMI video, stereo audio, RS-232 control, and IR control signals
- High-performance scaler provides selectable output resolutions up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling

Model	Version Description	Part Number
FOX3 SR 201 MM	Lossless 4K/60 Scaling Receiver - Multimode	60-1600-21
FOX3 SR 201 SM	Lossless 4K/60 Scaling Receiver - Singlemode	60-1600-22
FOX3 SR 201 MM	Uncompressed Scaling 4K/60 Receiver - Multimode	60-1600-23
FOX3 SR 201 SM	Uncompressed Scaling 4K/60 Receiver - Singlemode	60-1600-24



FOX3 TRANSMITTERS & RECEIVERS

FOX3 SR 301

Fiber Optic Scaling Receiver for HDMI, USB, Audio, Control, and 3D Sync

Unique Features

- Receives fiber optic signals from FOX3 Series transmitters and provides scaled HDMI video, USB, stereo audio, RS-232 control, IR control, and 3D sync signals
- High-performance scaler provides selectable output resolutions up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling
- Device class filtering on USB HID port restricts the range of device types to HID



Model	Version Description	Part Number
FOX3 SR 301 MM	Lossless 4K/60 Scaling Receiver - Multimode	60-1749-21
FOX3 SR 301 SM	Lossless 4K/60 Scaling Receiver - Singlemode	60-1749-22
FOX3 SR 301 MM	Uncompressed Scaling 4K/60 Receiver - Multimode	60-1749-23
FOX3 SR 301 SM	Uncompressed Scaling 4K/60 Receiver - Singlemode	60-1749-24

FOX3 SR 311

Fiber Optic Scaling Receiver for HDMI, USB HID, Audio, Control, and 3D Sync

Unique Features

- Receives fiber optic signals from FOX3 Series transmitters and provides scaled HDMI video, USB HID, stereo audio, RS-232 control, IR control, and 3D sync signals
- High-performance scaler provides selectable output resolutions up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling
- Device class filtering on USB HID port restricts the range of device types to HID



Model	Version Description	Part Number
FOX3 SR 311 MM	Lossless 4K/60 Scaling Receiver - Multimode	60-1732-21
FOX3 SR 311 SM	Lossless 4K/60 Scaling Receiver - Singlemode	60-1732-22
FOX3 SR 311 MM	Uncompressed Scaling 4K/60 Receiver - Multimode	60-1732-23
FOX3 SR 311 SM	Uncompressed Scaling 4K/60 Receiver - Singlemode	60-1732-24

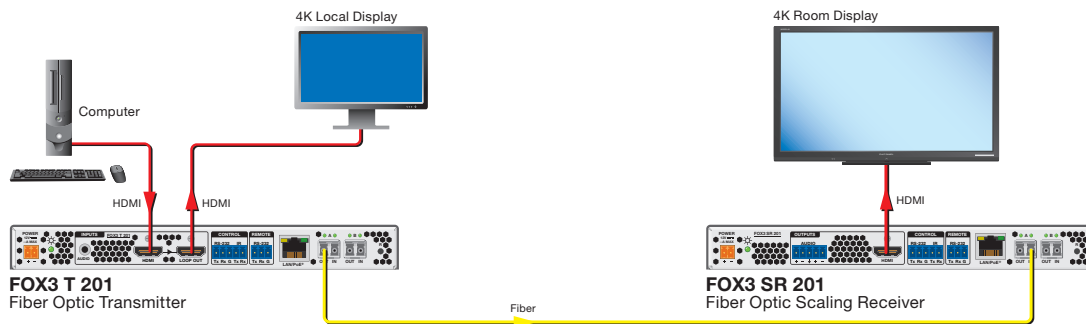
FOX3 Transmitters

	HDMI	Audio & Control	USB	USB HID	3D Sync	HDMI Input Loop-Through	Audio Embedding	Vector 4K Scaling
FOX3 T 101	•					•		
FOX3 T 201	•	•				•	•	
FOX3 T 301	•	•	•	•	•	•	•	
FOX3 T 311	•	•		•	•	•	•	

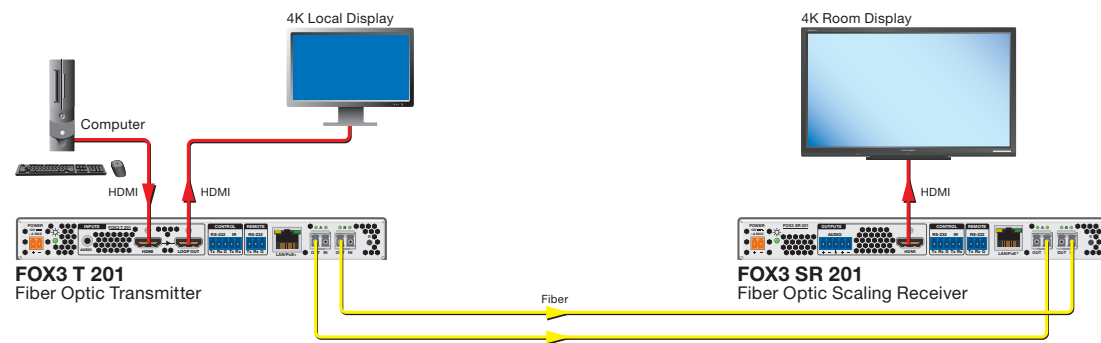
FOX3 Receivers

FOX3 R 101	•							
FOX3 SR 201	•	•						•
FOX3 R 301	•	•	•	•	•			
FOX3 SR 301	•	•	•	•	•			•
FOX3 R 311	•	•		•	•			
FOX3 SR 311	•	•		•	•			•

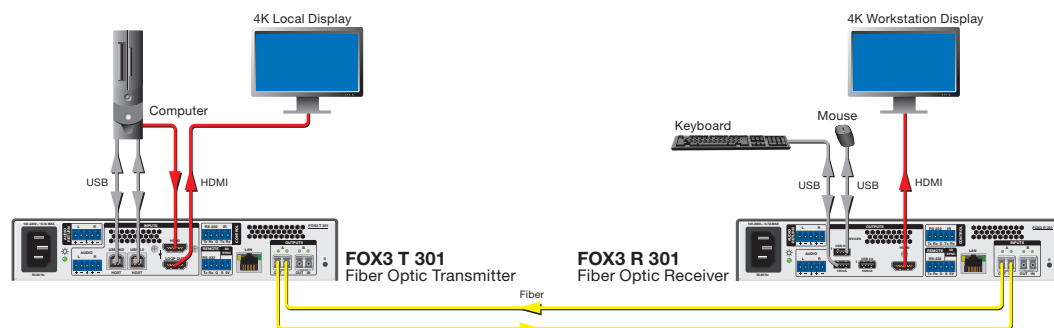
Mathematically Lossless 4K/60 over One Fiber



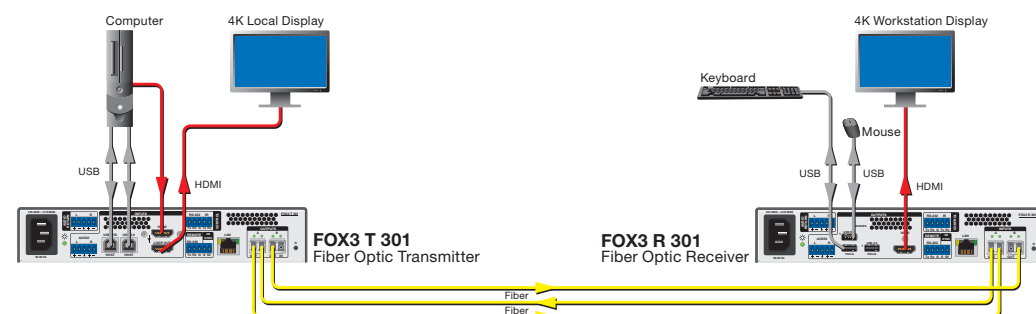
Uncompressed 4K/60 over Two Fibers



Mathematically Lossless 4K/60 with USB



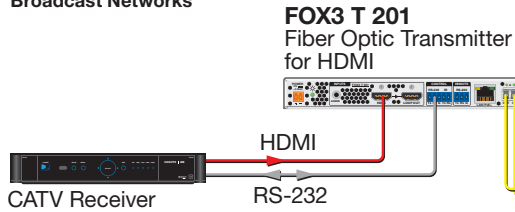
Uncompressed 4K/60 with USB



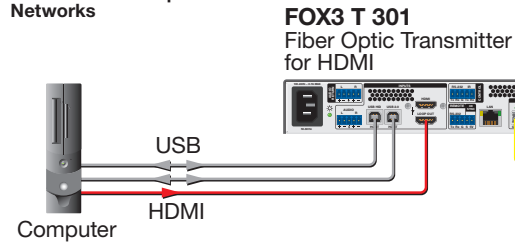
COMMAND CENTER WITH KVM AND MULTIPLE CLASSIFICATIONS

Equipment Room

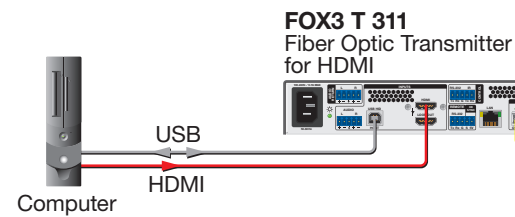
Unclassified Public Broadcast Networks



Unclassified Computer Networks

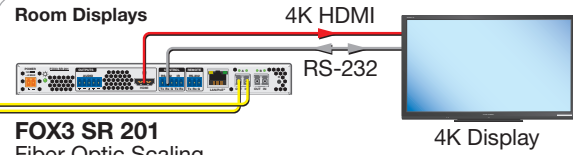


Secure Computer Networks

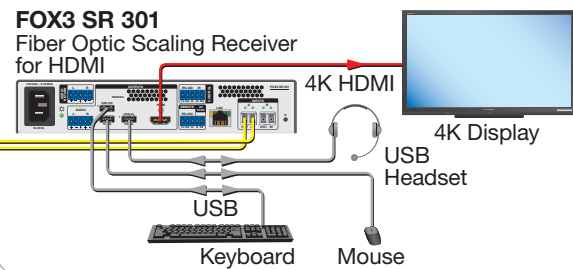


Command Center

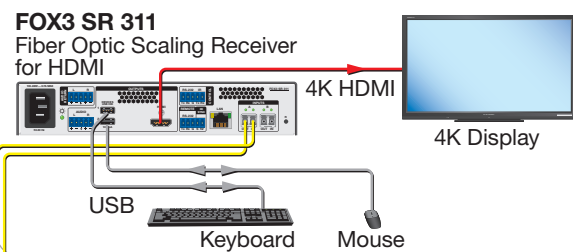
Room Displays



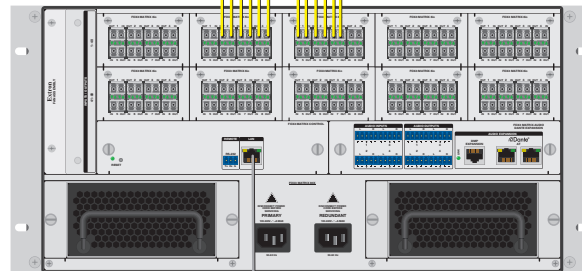
Unclassified Workstations



Secure Workstations



Fiber



FOX3 Matrix 80x
Modular Fiber Optic
Matrix Switcher

Ethernet



IPCP Pro 550
IP Link Pro Control
Processor

Ethernet

AV Control Network

Ethernet



TLP Pro 725M
7" Wall Mount
Touchlink Pro
Touchpanel

SPECIFICATIONS

TRUE 4K SPECIFICATION

Max 4K Capabilities		
Resolution and Refresh Rate	Chroma Sampling	Max Bit Depth per Color
4096 x 2160 at 60 Hz ¹ 3840 x 2160 at 60 Hz ¹	4:4:4	8 bit
4096 x 2160 at 30 Hz ¹ 3840 x 2160 at 30 Hz ¹		10 bit
4096 x 2160 at 60 Hz ² 3840 x 2160 at 60 Hz ²	4:2:0	12 bit
4096 x 2160 at 30 Hz ² 3840 x 2160 at 30 Hz ²	4:4:4	

Frame rate³ 24, 25, 30, 50, or 60 fps

Chroma sampling³ 4:4:4, 4:2:2

Color bit depth^{2,3} 8, 10, or 12 bits per color

Signal type HDMI 2.0, HDCP 2.3

Max. video data rate 18.0 Gbps

NOTE: ¹Supports lossless 4K video over one fiber or uncompressed 4K video over two fibers.

²Supports 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.

³Subject to the maximum data rate limit. Use our calculator at www.extron.com/4Kdata 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	
FOX3 Matrix 24x	8 to 24 fiber optic signals
FOX3 Matrix 40x	8 to 40 fiber optic signals
FOX3 Matrix 80x	8 to 80 fiber optic signals
FOX3 Matrix 160x	8 to 160 fiber optic signals
FOX3 Matrix 320x	8 to 320 fiber optic signals
Routing	
FOX3 Matrix 24x	8 x 8 up to 24 x 24 unidirectional matrix or 4 x 4 up to 12 x 12 bidirectional matrix
FOX3 Matrix 40x	8 x 8 up to 40 x 40 unidirectional matrix or 4 x 4 up to 20 x 20 bidirectional matrix
FOX3 Matrix 80x	8 x 8 up to 80 x 80 unidirectional matrix or 4 x 4 up to 40 x 40 bidirectional matrix
FOX3 Matrix 160x	8 x 8 up to 160 x 160 unidirectional matrix or 4 x 4 up to 80 x 80 bidirectional matrix
FOX3 Matrix 320x	8 x 8 up to 320 x 320 unidirectional matrix or 4 x 4 up to 160 x 160 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.
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

FOX3 Matrix 24x 2 analog stereo inputs, balanced/unbalanced

2 analog stereo outputs, balanced/unbalanced

FOX3 Matrix 40x, 80x, 160x, 320x 4 analog stereo inputs, balanced/unbalanced

4 analog stereo outputs, balanced/unbalanced

Connectors

FOX3 Matrix 24x (4) 3.5 mm captive screw connector, 5 pole

FOX3 Matrix 40x, 80x, 160x, 320x (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

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)

Stereo channel separation >80 dB @ 1 kHz

Bit depth 16, 20, 24

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

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

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

SPECIFICATIONS

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. On the FOX3 Matrix 24x, a redundant power supply is optional.
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)
Mounting	
Rack mount	Yes
Enclosure type	Metal
Enclosure dimensions	
FOX3 Matrix 24x	3.5" H x 17.0" W x 13.0" D (2U high, full rack wide) (8.9 cm H x 43.2 cm W x 33.0 cm D) (Depth excludes connectors and handles. Width excludes rack ears.)
FOX3 Matrix 40x	7.0" H x 17.0" W x 20.0" D (4U high, full rack wide) (17.8 cm H x 43.2 cm W x 50.8 cm D) (Depth excludes connectors and handles. Width excludes rack ears.)
FOX3 Matrix 80x	8.75" H x 17.0" W x 20.0" D (5U high, full rack wide) (22.2 cm H x 43.2 cm W x 50.8 cm D) (Depth excludes connectors and handles. Width excludes rack ears.)
FOX3 Matrix 160x	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.)
FOX3 Matrix 320x	21.0" H x 17.0" W x 20.0" D (12U high, full rack wide) (53.3 cm H x 43.2 cm W x 50.8 cm D) (Depth excludes connectors and handles. Width excludes rack ears.)
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 $\pm 10\%$.	

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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