FOX3 DisplayPort Extenders

FIBER OPTIC EXTENDERS FOR DISPLAYPORT VIDEO

FOX3 SYSTEMS

Secure Delivery of DisplayPort Video, USB, Audio, and Control over Fiber Optic Cable

- Extends DisplayPort video, USB, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Supports mathematically lossless 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over one fiber
- Supports uncompressed 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over two fibers
- Supported DisplayPort specification features include data rates up to 21.6 Gbps, Deep Color up to 10-bit, and 4:4:4 chroma sampling
- Device class filtering on USB HID port restricts the range of device types to HID
- 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 on FOX3 T/SR 321 models

Extron

FOX3 DisplayPort Extenders

FOX3 DisplayPort Extenders provide long haul transmission of DisplayPort video, USB, stereo audio, control, IR, and 3D sync signals over fiber optic cabling. Engineered for exceptional high resolution image performance, they deliver perfect pixel-for-pixel, uncompressed images up to 4K/60 @ 4:4:4 over two fibers or mathematically lossless 4K/60 @ 4:4:4 over one fiber. The USB port supports USB 2.0 to 1.0 devices, while the USB HID port applies device class filtering to restrict the device types to HID. Designed specifically for AV and KVM systems, FOX3 DisplayPort Extenders also include many integrator-friendly features such as EDID Minder®, audio embedding, Ethernet monitoring and control, audio gain and attenuation, and real-time system monitoring.

18 Gbps
4K/60 4:4:4

Extron FOX3 extenders support input and output signals up to 4K/60 with full 4:4:4 color sampling, delivering the highest quality images for video and computer sources. It integrates easily into a wide range of 4K environments.

VECTOR 4K
SCALING

Extron Vector 4K is the latest generation of Extron scaling technologies engineered for critical quality4K image processing, together with a full suite of integration features for pro AV applications.

EVERLAST
POWER SUPPLIES

Everlast power supplies are designed and engineered by Extron for continuous, dependable operation in mission-critical environments.

DoDIN APL
APPROVED PRODUCT

Extron DoDIN Approved Products are available as DISA Unified Capabilities APL versions upon request. Please contact you Extron Sales Representative for availability and pricing.

Extron FOX3 Systems industry-leading family of fiber optic matrix switchers and extenders provide secure AV and KVM switching and distribution. They are available with advanced features such as SmartGlide™ KVM Switching, Hotkey Switching, and audio breakaway.

Enterprise Wide KVM Signal Distribution Systems

FOX3 Series DisplayPort Extenders are compatible with the complete line of FOX3 Matrix Switchers. Extron FOX3 Matrix Switchers are available in standard sizes up to 840x840 as well as custom designs up to 2000x2000 and larger. From point-to-point extension to fully non-blocking matrix applications up to 2000x2000 and beyond, FOX3 Systems securely deliver unrivaled performance and reliability to satisfy even the most discerning users.

Designed for Secure Systems

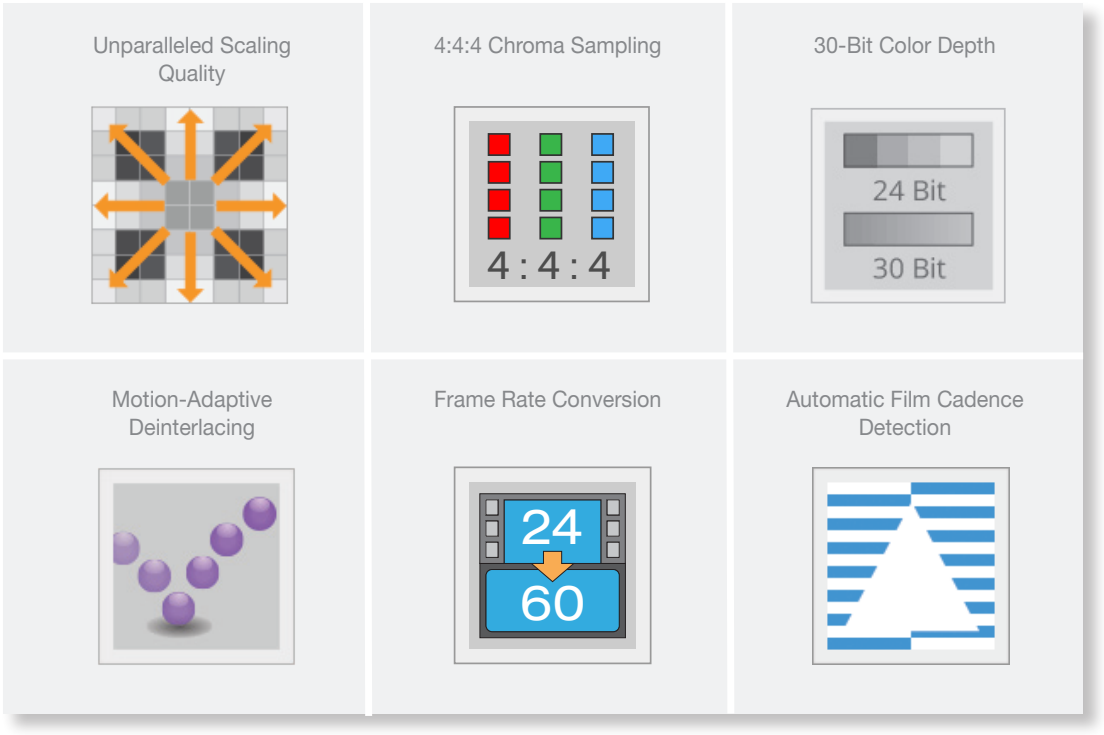
FOX3 Systems use two methods to ensure sensitive data is properly segregated and protected - Priority Switching and Secure Partitioning. Priority Switching assigns a security level to each input and output. An output can only be tied to an input at the same security level or lower, preventing unauthorized access to sensitive data. Priority Switching is useful in systems with multiple security classification levels.

Secure Partitioning enables the matrix switcher to be divided into smaller sub-switchers for segregating sources and destinations into partitions. Sources can only be routed to destinations within the same partition. Any attempt to tie an input and output in different partitions is prohibited, returning an error code. Secure Partitioning is useful for separating secure and unclassified data.

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 scaling 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.



FOX3 T 321

Fiber Optic Transmitter for DisplayPort, USB, Audio, and Control

Unique Features

- Transmits DisplayPort video, USB, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Supports mathematically lossless 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over one fiber
- Supports uncompressed 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over two fibers
- Supported DisplayPort specification features include data rates up to 21.6 Gbps, Deep Color up to 10-bit, and 4:4:4 chroma sampling

Model	Version Description	Part Number
FOX3 T 321 MM	Lossless 4K/60 Transmitter	60-1777-11
FOX3 T 321 SM	Lossless 4K/60 Transmitter	60-1777-12
FOX3 T 321 MM	Uncompressed 4K/60 Transmitter	60-1777-13
FOX3 T 321 SM	Uncompressed 4K/60 Transmitter	60-1777-14

FOX3 T 331

Fiber Optic Transmitter for DisplayPort, USB HID, Audio, and Control

Unique Features

- Transmits DisplayPort video, USB HID, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Supports mathematically lossless 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over one fiber
- Supports uncompressed 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over two fibers
- Supported DisplayPort specification features include data rates up to 21.6 Gbps, Deep Color up to 10-bit, and 4:4:4 chroma sampling

Model	Version Description	Part Number
FOX3 T 331 MM	Lossless 4K/60 Transmitter	70-1778-11
FOX3 T 331 SM	Lossless 4K/60 Transmitter	70-1778-12
FOX3 T 331 MM	Uncompressed 4K/60 Transmitter	70-1778-13
FOX3 T 331 SM	Uncompressed 4K/60 Transmitter	70-1778-14

FOX3 T 211

Fiber Optic Transmitter for DisplayPort, Audio, and Control

Unique Features

- Transmits DisplayPort video, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Supported DisplayPort specification features include data rates up to 21.6 Gbps, Deep Color up to 10-bit, and 4:4:4 chroma sampling
- Buffered DisplayPort input loop-through

Model	Version Description	Part Number
FOX3 T 211 MM	Lossless 4K/60 Transmitter - Multimode	60-2090-11
FOX3 T 211 SM	Lossless 4K/60 Transmitter - Singlemode	60-2090-12

FOX3 SR 321

Fiber Optic Scaling Receiver for DisplayPort, USB, Audio, and Control

Unique Features

- Receives fiber optic signals from FOX3 Series transmitters and provides scaled DisplayPort video, USB, stereo audio, and RS-232 control signals over fiber optic cabling
- High-performance scaler provides selectable output resolutions up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling
- Supports mathematically lossless 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over one fiber
- Supports uncompressed 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over two fibers

Model	Version Description	Part Number
FOX3 SR 321 MM	Lossless 4K/60 Scaling Receiver	60-1777-21
FOX3 SR 321 SM	Lossless 4K/60 Scaling Receiver	60-1777-22
FOX3 SR 321 MM	Uncompressed 4K/60 Scaling Receiver	60-1777-23
FOX3 SR 321 SM	Uncompressed 4K/60 Scaling Receiver	60-1777-24

FOX3 SR 331

Fiber Optic Scaling Receiver for DisplayPort, USB HID, Audio, and Control

Unique Features

- Receives fiber optic signals from FOX3 Series transmitters and provides scaled DisplayPort video, USB HID, stereo audio, and RS-232 control signals over fiber optic cabling
- High-performance scaler provides selectable output resolutions up to 4096x2160 at 60 Hz with 4:4:4 chroma sampling
- Supports mathematically lossless 4K video up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling over one fiber

Model	Version Description	Part Number
FOX3 SR 331 MM	Lossless 4K/60 Scaling Receiver	70-1778-21
FOX3 SR 331 SM	Lossless 4K/60 Scaling Receiver	70-1778-22
FOX3 SR 331 MM	Uncompressed 4K/60 Scaling Receiver	70-1778-23
FOX3 SR 331 SM	Uncompressed 4K/60 Scaling Receiver	70-1778-24

FOX3 SR 211

Fiber Optic Scaling Receiver for DisplayPort, Audio, and Control

Unique Features

- Receives DisplayPort video, stereo audio, RS-232 control, IR control, and 3D sync signals over fiber optic cabling
- Supported DisplayPort specification features include data rates up to 21.6 Gbps, Deep Color up to 10-bit, and 4:4:4 chroma sampling

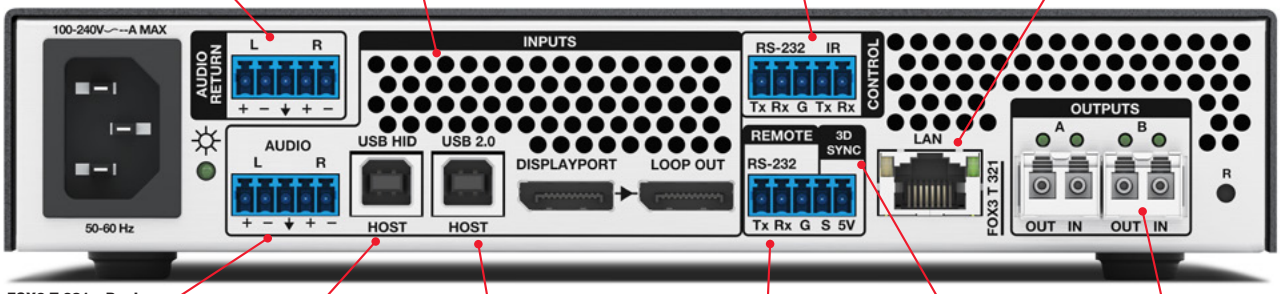
Model	Version Description	Part Number
FOX3 SR 211 MM	Lossless 4K/60 Scaling Receiver - Multimode	60-2090-21
FOX3 SR 211 SM	Lossless 4K/60 Scaling Receiver - Singlemode	60-2090-22

Audio Return Channel
Supports a remote audio source located at the receiver

DisplayPort Input with Loop-Out
Supports data rates up to 21.6 Gbps, Deep Color up to 10-bit, and 4:4:4 chroma sampling

RS-232 and IR Control
RS-232 and IR control signals inserted onto the fiber

Ethernet Monitoring and Control
Enables control using a standard LAN connection



FOX3 T 321 - Back

Audio Embedding
Analog stereo audio signals are converted to digital DisplayPort audio

USB HID Host Port - FOX3 SR 321 and FOX3 SR 331 only
Device class filtering restricts the range of device types to HID

USB 2.0 Host Port - FOX3 T 321 only
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

RS-232 Remote
Enables control and configuration of the transmitter

TTL 3D Sync
TTL 3D Sync signal inserted onto the fiber

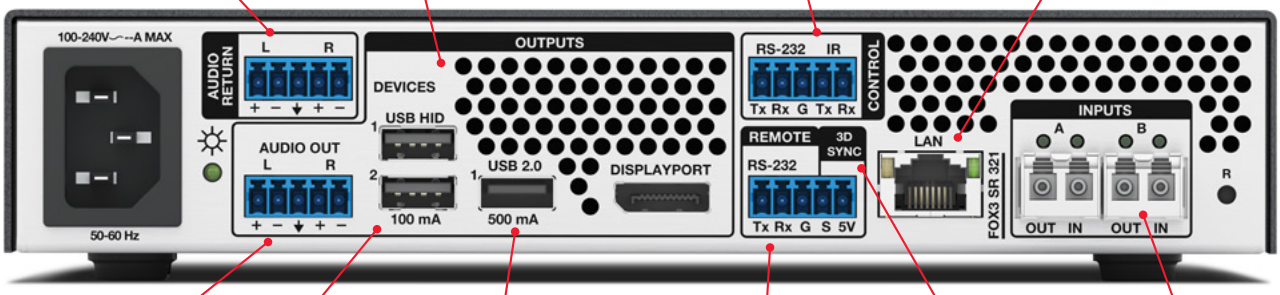
Fiber Optic Input and Output
Sends DisplayPort video, USB, stereo audio, RS-232, IR, and 3D sync signals over fiber

Audio Return Channel
Stereo audio sent over the fiber to the transmitter

Scaled DisplayPort Output
High performance scaler provides selectable output resolutions up to 4096x2160 at 60 Hz with a 4:4:4 chroma sampling.

RS-232 and IR Control
RS-232 and IR control signals received over the fiber

Ethernet Monitoring and Control
Enables control using a standard LAN connection



FOX3 SR 321 - Back

Audio De-embedding
DisplayPort audio output converted to analog stereo audio signals

USB HID Host Port - FOX3 SR 321 and FOX3 SR 331 only
Enables local keyboard and mouse connections

USB 2.0 Device Port - FOX3 SR 321 only
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

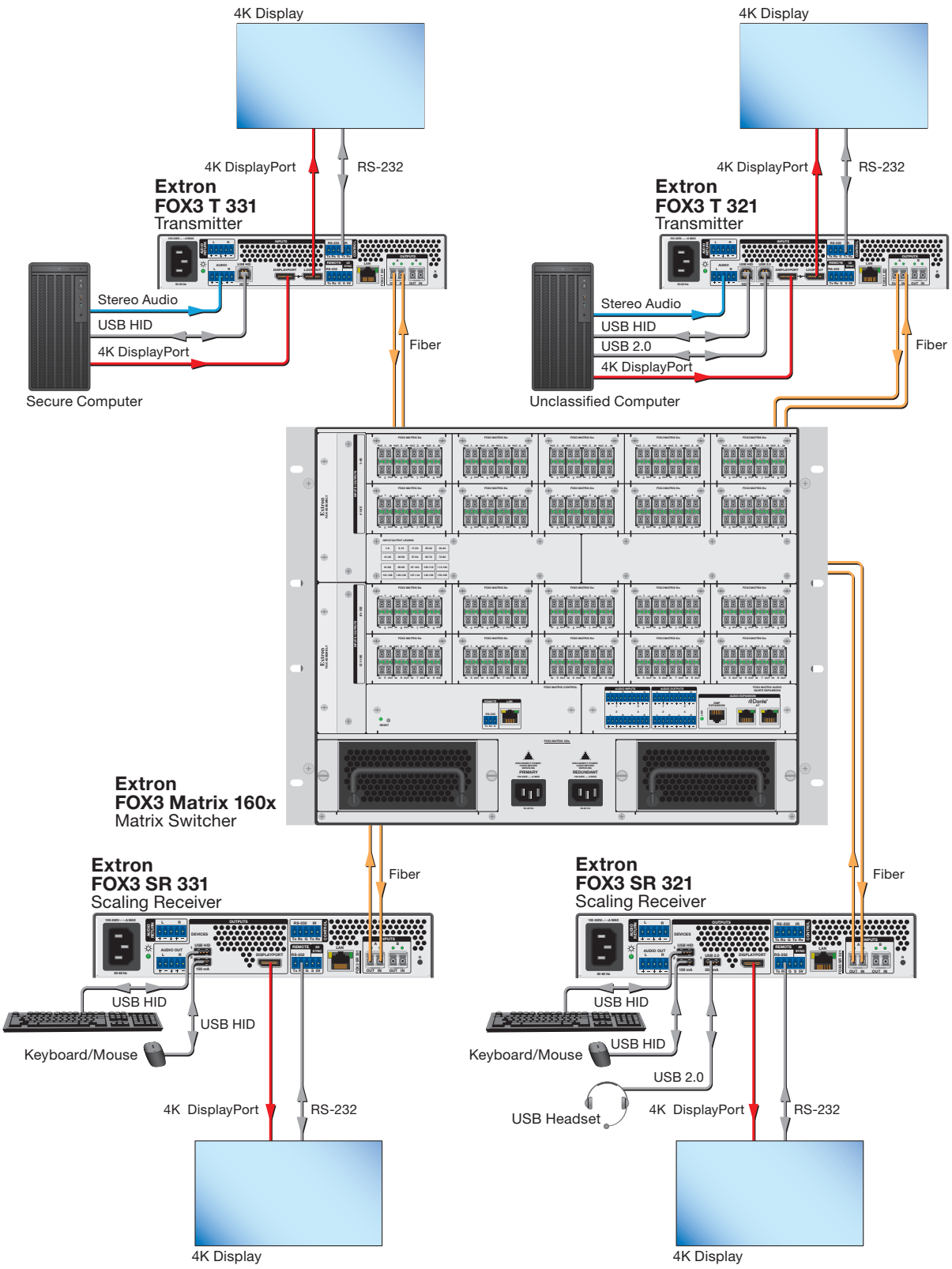
RS-232 Remote
Enables control and configuration of the receiver

TTL 3D Sync
TTL 3D Sync signal inserted onto the fiber

Fiber Optic Input and Output
Receives DisplayPort video, USB, stereo audio, RS-232, IR, and 3D sync signals over fiber

Secure Command Center

A secure command center monitors and processes information from both unclassified and classified sources. FOX3 T 331 transmitters and FOX3 SR 331 scaling receivers limit USB signals to HID devices and are ideal for secure computer connections. The FOX3 T 321 and FOX3 SR 321 are used for unclassified signals and enable full access to USB 2.0 devices.



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]	4:4:4	10 bit
4096 x 2160 at 60 Hz[2] 3840 x 2160 at 60 Hz[2]	4:2:2	10 bit
4096 x 2160 at 30 Hz[2] 3840 x 2160 at 30 Hz[2]	4:4:4	10 bit

Frame rate[3]	24, 25, 30, 50, or 60 fps
Chroma sampling[3]	4:4:4, 4:2:2
Color bit depth[2,3]	8 or 10 bits per color
Signal Type	DP 1.2a
Max. video data rate	21.6 Gbps (5.4 Gbps per lane)

NOTE: [1]Supports lossless 4K video over one fiber or uncompressed 4K video over two fibers. [2]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. [3]Subject to the maximum data rate limit. Use our calculator at www.extron.com/8Kdatarate 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 FIBER INTERCONNECTION BETWEEN TRANSMITTER AND RECEIVER	
Nominal peak wavelength	850 nm for multimode, 1310 nm for singlemode
Optical loss budget	
Singlemode	+7.4 dB, maximum
Multimode	+9.7 dB, maximum
VIDEO INPUT AND LOOP OUT — FOX3 T 321/331/211	
Number/signal type	1 DisplayPort input 1 DisplayPort loop out
VIDEO OUTPUT — FOX3 SR 321/331/211	
Number/signal type	1 single link DisplayPort
AUDIO INPUT — FOX3 T 321/331/211	
Number/signal type	1 digital audio, de-embedded from DisplayPort or 1 analog stereo, balanced/unbalanced
AUDIO OUTPUT — FOX3 SR 321/331/211	
Number/signal type	1 digital audio, de-embedded from DisplayPort (2-CH, PCM only) or 1 analog stereo, balanced/unbalanced
Supported formats	
DisplayPort	2 CH LPCM
Analog	Analog stereo audio
Audio delay	Compressed or uncompressed = 2-3 frames Compressed = 0.5 frame, Uncompressed = 2 lines (in bypass mode) (FOX3 SR 211 only)

AUDIO RETURN INPUT — FOX3 SR 321/331/211	
Number/signal type	1 analog stereo, balanced/unbalanced
Gain range	Adjustable, - 18 dB to +24 dB, 1 dB steps, adjustable
AUDIO RETURN OUTPUT — FOX3 T 321/331/211	
Number/signal type	1 analog stereo, balanced/unbalanced
COMMUNICATIONS	
USB configuration port	
Number/type	1 front panel mini USB B, female
Standard	Ethernet over USB
USB standards	USB 2.0, low speed
Serial host control port	
Control	1 RS-232, 3.5 mm captive screw connector, 5-pole (3 pins are used), rear panel
Pass-through	1 RS-232, 3.5 mm captive screw connector, 5-pole (3 pins are used), rear panel
IR control port	(1) 3.5 mm captive screw connector, 5 pole (connector is shared with RS-232 pass thru) TTL level (0 to 5V) modulated infrared control from 30 kHz to 56 kHz
Ethernet control	
Ethernet port	1 RJ-45 connector, female
Ethernet data rate	10/100/1000Base-T, half/full duplex with autodetect
USB EXTENSION (USB)	
USB standards	USB 2.0, USB 1.1, USB 1.0 compatible
USB data rates	Low speed (1.5 Mbps), full speed (12 Mbps), high speed (480Mbps)
USB HOST — FOX3 T 321/331	
Number/signal type	1 USB HID 1 USB 2.0 (FOX3 T 321 only)
USB HUB — FOX3 SR 321/331	
Number/signal type	(1) 2-port USB HID hub (1) 1-port USB 2.0 hub (FOX3 SR 321 only)
Connectors	
FOX3 SR 321	3 USB type A, female (2 USB HID and 1 USB 2.0)
FOX3 SR 331	2 USB type A, female (2 USB HID)
GENERAL	
Power supply	Internal Input: 100-240 VAC, 50-60 Hz
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
Everlast power supply warranty	7 years parts and labor

NOTE: All nominal levels are at ±10%.

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

Extron

www.extron.com | Follow us on:

01-2026
68-3875-01
REV. A3
Letter - English - NP