The Extron FOX AV Fiber Optic Extender is a transmitter and receiver set for long haul transmission of standard definition video, audio, and RS-232 control signals over a single fiber. Engineered for reliability and exceptional image performance, it uses Extron’s exclusive all digital technology, and also includes a host of features for enhancing A/V system integration.
The Extron FOX AV Fiber Optic Extender is a transmitter and receiver set for long haul transmission of standard definition video, audio, and RS-232 control signals over a single fiber. Engineered for reliability and exceptional video performance, it uses Extron’s exclusive all digital technology, to deliver perfect pixel-for-pixel transmission of video signals. Designed specifically for A/V systems, the FOX AV also includes a host of integrator-friendly features such as picture and audio adjustments, daisy-chain capability, Auto Input Format Detection, rack-mount capability, and real-time system monitoring.

The FOX AV is ideal for a wide range of applications requiring long distance transmission of video content with the highest quality. Because transmission of content is inherently secure and immune to outside interference, fiber applications are favored in government, military, and medical environments. The FOX AV transmitter and receiver feature industry standard LC-type connectivity.

The FOX AV MM supports multimode fiber at 850 nm, which is typically used within buildings or facilities with moderate-range transmission distances up to 500 m (1,640 feet). The FOX AV SM supports singlemode as well as multimode fiber at 1310 nm. Singlemode fiber offers long-range transmission capability over extreme distances of up to 30 km (18.75 miles). It is used in very large facilities such as airports and stadiums, as well as connecting over very long distances between facilities such as university campuses.

Offering convenient integration into A/V systems, the FOX AV transmitter accepts, digitizes, and transmits component video, S-video, or composite video signals, along with unbalanced or balanced stereo audio and RS-232 control signals. With Auto Input Format Detection, the transmitter detects the incoming video signal format, and then automatically reconfigures itself to transmit the signal. The FOX AV receiver features video format conversion for component video, S-video, or composite video output. Several receivers may be daisy-chained to support applications with displays at multiple locations.

At the FOX AV transmitter, both transmitter and receiver can be controlled and configured through RS-232. With a second fiber link installed, functions for both units can be controlled at either location. Since the units are typically situated far apart, this capability adds considerable versatility, enabling verification of fiber link status between the units as well as the presence of video and audio input signals at the transmitter. The FOX AV transmitter and receiver are housed in compact 1U, quarter rack width enclosures for convenient installation in many environments.

**DESCRIPTION**

The Extron FOX AV Fiber Optic Extender is a transmitter and receiver set for long haul transmission of standard definition video, audio, and RS-232 control signals over a single fiber. Engineered for reliability and exceptional video performance, it uses Extron’s exclusive all digital technology, to deliver perfect pixel-for-pixel transmission of video signals. Designed specifically for A/V systems, the FOX AV also includes a host of integrator-friendly features such as picture and audio adjustments, daisy-chain capability, Auto Input Format Detection, rack-mount capability, and real-time system monitoring.

**FEATURES**

- Extends standard definition video, stereo audio, and RS-232 control signals very long distances over a single fiber
- Accepts component video, S-video, and composite video signals
- All digital technology provides pixel-for-pixel performance – The FOX AV delivers pixel-for-pixel transmission of video signals to ensure optimal image quality.
- Auto Input Format Detection – The FOX AV transmitter can be set to detect the incoming video signal format, automatically reconfiguring itself to transmit the signal. This feature can reduce the number of required outputs for a matrix switcher, lowering system cost while improving manageability.
- Industry standard LC connectors provide reliable physical connectivity and precise fiber core alignment
- Picture and audio adjustments – Several picture adjustments are available including color, tint, contrast, and brightness. Audio adjustments include input gain and attenuation, and output level. Both audio and video can be muted.
- Selectable output formats – At the FOX AV receiver, incoming video signals can be transcoded to component video, S-video, or composite video.
- Daisy-chain capability – Several FOX AV receivers can be daisy-chained so that displays in multiple locations can be served from a single transmitter.
- Available as an 850 nm multimode model for moderate-range transmissions, and a 1310 nm singlemode model for extreme distances up to 30 km (18.75 miles)
- Second fiber link enables bi-directional RS-232 pass-through, control from either location, and real-time system monitoring
- Audio gain & attenuation adjustment and muting capability
- RS-232 serial control at transmitter and receiver – The FOX AV transmitter and receiver feature front and rear panel RS-232 serial ports for control and configuration. The second fiber link allows for control of both units at either location, as well as remote verification of fiber link status and the presence of input video and audio signals.
- Real-time status LED indicators for troubleshooting and monitoring – LEDs on the transmitter and receiver front panels verify the presence of video and audio signals at the transmitter as well as active fiber links between the units. Requires second fiber link.
- Rack-mountable 1U, quarter rack width metal enclosures
- Energy-efficient external universal power supply included – Provides worldwide compatibility, low power consumption, and reduced operating costs.
## SPECIFICATIONS

### THD + Noise
- Frequency response: 20 Hz to 20 kHz, ±0.5 dB
- THD + Noise: 0.15% @ 1 kHz at nominal level

### Audio Bits per Sample
- 18 bits per channel, 2 channels (L, R)

### Sampling Rate
- 48 kHz

### Optical Fiber Interconnection between Transmitter and Receiver
| Number/type | 1 or 2 fiber optic |
| Connectors  | 2 LC connectors |

### Operating Distance
- Singlemode: 30 km (18.75 miles) with singlemode (SM) cables with a FOX Tx/Rx AV SM
- Multimode: 500 m (1640') with 62.5 µm multimode (MM) cables with a FOX Tx/Rx AV MM

### Nominal Peak Wavelength
- Multimode: 850 nm for FOX Tx/Rx AV MM, 1310 nm for FOX Tx/Rx AV SM

### Data Rate
- 2.125 Gbps

### Transmission Power
- Singlemode: -5 dBm, typical
- Multimode: -5 dBm, typical

### Maximum Receiver Sensitivity
- Singlemode: -18 dBm, typical
- Multimode: -12 dBm, typical

### Optical Loss Budget
- Multimode: -12 dBm, typical
- Singlemode: -18 dBm, typical

### Maximum Receiver Sensitivity
- Multimode: -5 dBm, typical
- Singlemode: -19 dBm, unbalanced at 1% THD+N

### Maximum Level
- Multimode: +17 dBV (unbalanced) at 1% THD+N

### S/N
- >80 dB at maximum output (unweighted)

### CMRR
- >+350 mV, maximum, with input at 0 offset

### Audio Input — Transmitter
| Number/signal type | 1 stereo, balanced/unbalanced or 2 mono, balanced/unbalanced |
| Connectors          | (1) 3.5 mm captive screw connector. 5 pole                  |
| Impedance           | 50 ohms unbalanced, 100 ohms balanced                      |
| Nominal level       | +4 dBu (1.23 Vrms), -10 dBV (316 mVrms)                    |
| Maximum level (Hi-Z)| >+19 dBm, unbalanced at 1% THD+N                           |
| Audio delay         | 1.5 frames                                                 |

### Audio Output — Receiver
| Number/signal type | 1 stereo, balanced/unbalanced or 2 mono, balanced/unbalanced |
| Connectors          | (1) 3.5 mm captive screw connector. 5 pole                  |
| Impedance           | 50 ohms unbalanced, 100 ohms balanced                      |
| Nominal level       | +4 dBu (1.23 Vrms), -10 dBV (316 mVrms)                    |
| Maximum level (Hi-Z)| >+19 dBm, unbalanced at 1% THD+N                           |
| Audio loss          | 75 ohms                                                    |

### Video Delay
- 1.5 frames

### Video Input — Transmitters
| Number/signal type | 1 component (Y, R-Y, B-Y), S-video, composite video |
| Connectors         | 1 x 3 female BNC or 1 female 4-pin mini DIN for S-video |
| Nominal level      | 1.5 Vp-p for Y of component video and S-video, and for composite video |
|                    | 0.7 Vp-p for R-Y, B-Y of component video |
|                    | 0.3 Vp-p for C of S-video |

### Minimum/Maximum Levels
- Analog: 0.3 V to 1.5 Vp-p with no offset

### Impedance
- -30 dB for Y/VID, B-Y/C, R-Y @ 5 MHz

### Return Loss
- 75 ohms

### Input Coupling
- AC

### Video Output — Receivers
| Number/signal type | 1 component (Y, R-Y, B-Y) video, S-video, composite video |
| Connectors         | 1 x 3 female BNC or 1 female 4-pin mini DIN for S-video |
| Nominal level      | 1.5 Vp-p for Y of component video and S-video, and for composite video |
|                    | 0.7 Vp-p for R-Y, B-Y of component video |
|                    | 0.3 Vp-p for C of S-video |

### Minimum/Maximum Levels
- Analog: 0.3 V to 1.5 Vp-p

### Impedance
- 75 ohms @ 5 MHz

### Return Loss
- >-40 dB @ 5 MHz

### DC Offset
- +350 mV, maximum, with input at 0 offset

### Audio Input — Transmitters
| Number/signal type | 1 stereo, balanced/unbalanced or 2 mono, balanced/unbalanced |
| Connectors          | (1) 3.5 mm captive screw connector. 5 pole                  |
| Impedance           | 50 ohms unbalanced, 100 ohms balanced                      |
| Nominal level       | +4 dBu (1.23 Vrms), -10 dBV (316 mVrms)                    |
| Maximum level (Hi-Z)| >+19 dBm, unbalanced at 1% THD+N                           |
| Audio delay         | 1.5 frames                                                 |

### Audio Output — Receiver
| Number/signal type | 1 stereo, balanced/unbalanced or 2 mono, balanced/unbalanced |
| Connectors          | (1) 3.5 mm captive screw connector. 5 pole                  |
| Impedance           | 50 ohms unbalanced, 100 ohms balanced                      |
| Nominal level       | +4 dBu (1.23 Vrms), -10 dBV (316 mVrms)                    |
| Maximum level (Hi-Z)| >+19 dBm, unbalanced at 1% THD+N                           |
| Audio loss          | 75 ohms                                                    |

### Video Gain
- Unity

### Standards
- NTSC 4.43, PAL, SECAM, autodetected

### Decoder Type
- Adaptive 2D, digital comb filter

### Video Loss Budget
- Singlemode: 13 dB, maximum
- Multimode: 7 dB, maximum

### Video Input
- NTSC 3.58, PAL (follows vertical rate)

### Video Output
- NTSC 3.58, 4.43, PAL, SECAM, autodetected

### Video Connectors
- 1 x 3 female BNC or 1 female 4-pin mini DIN for S-video

### Video Input Levels
- 1.0 Vp-p for Y of component video and S-video, and for composite video
- 0.7 Vp-p for R-Y, B-Y of component video
- 0.3 Vp-p for C of S-video

### Video Output Levels
- Analog: 0.3 Vp-p for C of S-video
- 0.7 Vp-p for R-Y, B-Y of component video
- Composite Video: 0.3 Vp-p for C of S-video

### Video SMPTE Levels
- 1.5 frames

### Power Input Requirements
- 12 VDC, 0.6 A

### Cooling
- Connection, vents on left side and top

### Mounting
- Yes, with optional rack shelf kit

### Enclosure
- Metal

### Enclosure Dimensions
- 1.7" H x 4.5" W x 6.0" D (43 cm H x 10.9 cm W x 15.2 cm D) (Depth excludes connectors)

### Shipping Weight
- 3 lbs (2 kg) per unit, 6 lbs (3 kg) per pair

### Regulatory Compliance
- CE, C-tick, FCC Class A, ICES, VCCI

### General
- External Power Supply: 100 VAC to 240 VAC, 50-60 Hz, external, to 12 VDC, 1 A, regulated

### Power Supply
- 12 VDC, 0.6 A

### Coolness
- Connection, vents on left side and top

### Mounting
- Yes, with optional rack shelf kit

### Enclosure
- Metal

### Enclosure Dimensions
- Yes, with optional rack shelf kit

### Enclosure
- Metal

### Enclosure Dimensions
- 1.7" H x 4.5" W x 6.0" D (43 cm H x 10.9 cm W x 15.2 cm D) (Depth excludes connectors)

### Shipping Weight
- 3 lbs (2 kg) per unit, 6 lbs (3 kg) per pair

### Regulatory Compliance
- CE, C-tick, FCC Class A, ICES, VCCI

### Model
- 60-941-11

### Version Description
- FOX Tx AV MM Multimode - Transmitter

### Reference
- For complete specifications, please go to www.extron.com

### Note
- Specifications are subject to change without notice.

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**NOTE:** The FOX AV transmitter and receiver are class 1 laser products. They meet the safety regulations of EC-009825, FDA 21 CFR 1040.10, and FDA 21 CFR 1040.11.

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

<table>
<thead>
<tr>
<th>Model</th>
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<td>Singlemode - Receiver</td>
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