FOX 500

FIBER OPTIC EXTENDER FOR RGBHV, AUDIO, & RS-232

- Transmit RGB computer-video, audio, and RS-232 signals over a single fiber
- All-digital, zero compression technology for high performance signal transmission
- Pixel-by-pixel image quality, up to 1600x1200
- 850 nm multimode and 1310 nm singlemode models available
- Dual RGB and stereo audio outputs
- Auto-Image™ setup
- 30 user memory presets
- Buffered input loop-through
- Status LED indicators
- Alarm notification for fiber link loss
- RS-232 control at transmitter and receiver

FOX 500 Tx

FOX 500 Rx

The Extron FOX 500 Fiber Optic Extender is a transmitter and receiver set for long haul transmission of high resolution RGB, audio, and RS-232 control signals over a single fiber. Engineered for reliability and exceptional high resolution image performance, it uses Extron's exclusive all digital, zero compression technology, and also includes a host of features for enhancing A/V system integration.

DESCRIPTION

The Extron **FOX 500** Fiber Optic Extender is a transmitter and receiver set for long haul transmission of high resolution RGB, audio, and RS-232 control signals over a single fiber. Engineered for reliability and exceptional high resolution image performance, it uses Extron's exclusive all digital, zero compression technology, to deliver perfect pixel-by-pixel transmission of computer-video images up to UXGA (1600x1200) resolution. Designed specifically for A/V systems, the FOX 500 also includes a host of integrator-friendly features such as image adjustments and calibration, dual RGB and audio outputs at the receiver, RS-232 control from multiple locations, rack-mount capability, and real-time system monitoring.

The FOX 500 is ideal for a wide range of applications requiring long distance transmission of high resolution 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 500 Tx transmitter and FOX 500 Rx receiver feature industry standard LC-type connectivity.

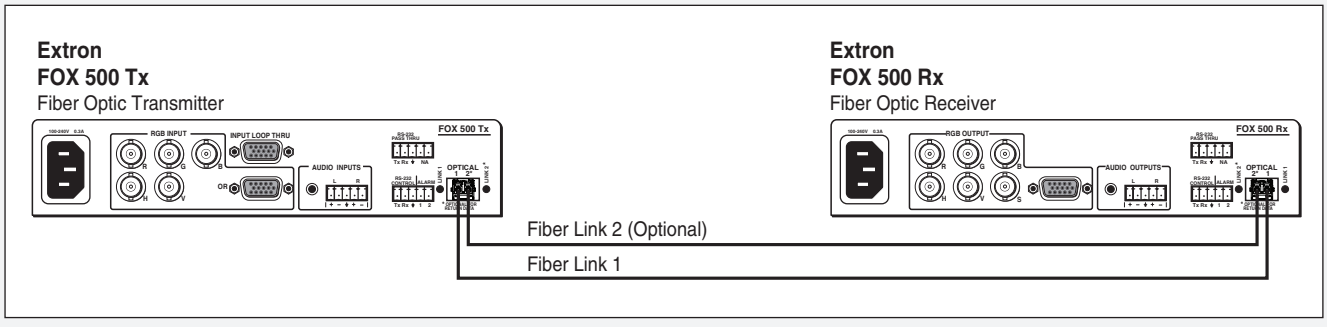
The FOX 500 MM supports multimode fiber at 850 nm, which is typically used within buildings or facilities with moderate-range transmissions up to 150 meters (492 feet). The FOX 500 SM supports singlemode as well as multimode fiber at 1310 nm. Singlemode fiber offers long-range transmission capability 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.

For convenient integration into A/V systems, the FOX 500 Tx accepts, digitizes, and transmits all RGB format signals – RGBHV, RGBS, RGsB, and RsGsBs, along with unbalanced or balanced stereo audio and RS-232 control signals. The FOX 500 Tx also provides controls for optimizing video and audio signals. The FOX 500 Rx features dual RGB and stereo audio outputs which reduces additional A/V equipment requirements, as well as sync format conversion for RGBHV, RGBS, or RGsB output.

FEATURES

- **Extends RGB computer-video, stereo audio, and RS-232 control signals over a single fiber**
- **All digital, zero compression technology for high performance signal transmission** – The FOX 500 delivers uncompressed pixel-by-pixel transmission of video signals to ensure optimal image quality at resolutions up to UXGA (1600x1200).
- **850 nm multimode and 1310 nm singlemode models available**
- **Buffered input loop-through** – A buffered input loop-through on the FOX 500 Tx transmitter enables viewing on a local monitor.
- **Active PC audio to balanced audio interfacing**
- **30 user memory presets**
- **Auto-Image automatically optimizes output** – A press of a button automatically adjusts the sizing, centering, and filtering to optimize the output image. This can save time and effort in fine tuning displayed images. Requires second fiber link.
- **Status LED indicators** – On the transmitter and receiver front panels verify the presence of RGB and audio signals at the transmitter as well as active fiber links between the units. Requires second fiber link.
- **Alarm notification for fiber link loss** – The FOX 500 can be set up to trigger an external control system for immediate notification when a fiber link has been lost. Requires second fiber link.
- **Industry standard LC connectors provide reliable physical connectivity and precise fiber core alignment**
- **RS-232 serial control at transmitter and receiver** – The FOX 500 Tx transmitter and FOX 500 Rx 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 RGB and audio signals.
- **Internal test patterns for calibration and setup** – Three test patterns are available, including grayscale, color bars, and alternating pixels.
- **Front panel security lockout** – This feature locks out all front panel functions except for input selection; all functions however, are available through RS-232 control.
- **Rack-mountable 1U, half rack width metal enclosures**
- **Internal international power supply**

ENHANCE SYSTEM INTEGRATION WITH A SECOND FIBER LINK



The FOX 500 utilizes one fiber link to send RGB, audio, and uni-directional RS-232 signals long distances. However, additional system functionality is available by adding a second fiber link:

- **Bi-directional RS-232 pass-through communication between locations** – Allows for bi-directional communication with remotely located devices.
- **Control transmitter and receiver at either location** – Full control of all system adjustments is available through the transmitter or receiver RS-232 port, including image adjustment, audio adjustment, calibration, and more.
- **Real-time system monitoring for verification of fiber link status and input signal presence** – Front panel LED indicators on the transmitter and receiver verify active fiber link and input signals. The FOX 500 can be set to send RS-232 alarm codes upon loss of fiber link or input signals.

OPTICAL FIBER INTERCONNECTION BETWEEN TRANSMITTER AND RECEIVER

Number/type ..... 1 or 2 fiber optic
NOTE: Only one fiber is required to transmit video, audio, and unidirectional data. A second fiber is required to transmit return data for bidirectional control/communication.
Connectors ..... 2 LC connectors
Operating distance ..... 30 km (18.75 miles) with singlemode (SM) cables with a FOX 500 SM
0.15 km (492') with multimode (MM) cables with a FOX 500 MM
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 FOX 500 MM, 1310 nm for FOX 500 SM
Transmission power
  Singlemode ..... -5 dBm, typical
  Multimode ..... -5 dBm, typical
Maximum receiver sensitivity
  Singlemode ..... -18 dBm, typical
  Multimode ..... -12 dBm, typical
Optical loss budget
  Singlemode ..... 13 dB, maximum
  Multimode ..... 7 dB, maximum

VIDEO

Number/signal type ..... 1 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs input
1 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs loop-through
Gain ..... Unity
Pixel data bit depth ..... 8 bits per channel, 3 channels (R, G, B)
Maximum resolution ..... 1600x1200 @ 60 Hz, digitized pixel by pixel; higher resolutions up to 2048x1120, undersampled

VIDEO INPUT AND LOOP-THROUGH — Transmitter (FOX 500 Tx)

Number/signal type ..... 1 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs input
1 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs loop-through
Connectors ..... 1x5 female BNC or (1) female 15-pin HD for input
(1) female 15-pin HD for loop-through
Nominal level ..... 0.7 Vp-p for RGB
Minimum/maximum levels ..... Analog: 0.3V to 1.5 Vp-p with no offset
Impedance ..... 75 ohms
Horizontal frequency ..... 24 kHz to 100 kHz
Vertical frequency ..... 40 Hz to 120 Hz
Return loss ..... <-40 dB @ 5 MHz
NOTE: These transceivers are class 1 laser products. They meet the safety regulations of IEC-60825, FDA 21, CFR 1040.10, and FDA 21 CFR 1040.11.

VIDEO OUTPUT — Receiver (FOX 500 Rx)

Number/signal type ..... 2 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs (follows input or can be set by user)
Connectors ..... 1 x 6 female BNC and (1) female 15-pin HD
Nominal level ..... 0.7 Vp-p for RGB
Minimum/maximum levels ..... 0.3 V to 1.5 Vp-p
Impedance ..... 75 ohms
Return loss ..... -40 dB @ 5 MHz
DC offset ..... ±5 mV with input at 0 offset

SYNC

Input type ..... Autodetect RGBHV, RGBS, RGsB, RsGsBs
Output type ..... RGBHV, RGBS, RGsB, RsGsBs (follows input or can be set by user)
Input level ..... 2.5 V to 5.0 Vp-p
Output level ..... TTL: 5.0 V p-p, unterminated, in HV or S; or 0.3 V p-p on Gs, terminated
Input impedance ..... 510 ohms
Output impedance ..... 75 ohms
Polarity ..... Positive or negative (follows input or can be set by user)

AUDIO

Number/signal type ..... 2 inputs (mixed): 1 balanced stereo, 1 unbalanced stereo
Gain
  Range ..... Adjustable, -18 dB to +24 dB
  Default ..... Unbalanced output: -6 dB; balanced output: 0 dB
Frequency response ..... 20 Hz to 20 kHz, ±0.5 dB
THD + Noise ..... 0.10% @ 1 kHz at nominal level
S/N ..... >80 dB at maximum output (unweighted)
CMRR ..... >65 dB @ 20 Hz to 20 kHz
Audio bits per sample ..... 18 bits per channel, 2 channels (L, R)
Sampling rate ..... 48 kHz

AUDIO INPUT — Transmitter (FOX 500 Tx)

Number/signal type ..... 2 inputs (mixed): 1 balanced stereo; 1 unbalanced stereo or 2 unbalanced mono
Connectors ..... (1) 3.5 mm captive screw connector, 5 pole
(1) 3.5 mm mini stereo jack
Impedance ..... 18k ohms unbalanced, 20k ohms balanced, DC coupled
Nominal level ..... +4 dBu (1.23 Vrms), -10 dBV (316 mVrms)
Maximum level ..... +18 dBV, (unbalanced) at 1% THD+N
NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

AUDIO OUTPUT — Receiver (FOX 500 Rx)

Number/signal type ..... 2 buffered outputs: 1 balanced stereo; 1 unbalanced stereo or 2 unbalanced mono
Connectors ..... (1) 3.5 mm captive screw connector, 5 pole
(1) 3.5 mm mini stereo jack
Impedance ..... 50 ohms unbalanced, 100 ohms balanced
Nominal level ..... +4 dBu (1.23 Vrms), -10 dBV (316 mVrms)
Maximum level (Hi-Z) ..... >+19 dBu, unbalanced at 1% THD+N
Maximum level (600 ohm) ..... >+15 dBm, unbalanced at 1% THD+N

CONTROL/REMOTE

Serial control ports on each unit (transmitter and receiver)
  Control ..... 1 RS-232, 3.5 mm captive screw connector, 5 pole (3 pins are used) (rear panel)
  1 RS-232, 2.5 mm mini stereo jack (front panel)
  Pass-through ..... 1 RS-232, 3.5 mm captive screw connector, 5 pole (3 pins are used) (rear panel); in parallel with 1 RS-232, 2.5 mm mini stereo jack (front panel)
Baud rate and protocol
  Control ..... 9600 baud
  8 data bits, 1 stop bit, no parity
  Pass-through ..... 9600 to 38400 baud
Serial control pin configurations ..... Captive screw connectors: 1 = Tx, 2 = Rx, 3 = GND
Mini stereo jack: tip = Tx, ring = Rx, sleeve = GND
Program control ..... Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™)

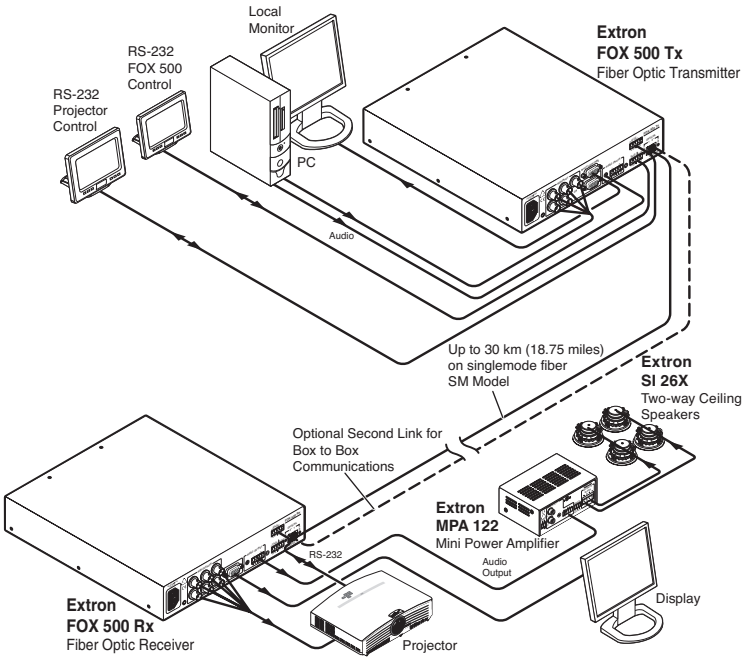
GENERAL

Power ..... 100 VAC to 240 VAC, 50/60 Hz, 11 watts, internal, autoswitchable
Rack mount ..... Yes, with optional 1U rack shelf, part #60-190-01 or 60-604-01 Furniture mountable with optional under desk mounting kit, part #70-077-01
Enclosure type ..... Metal
Enclosure dimensions ..... 1.7" H x 8.7" W x 9.5" D (1U high, half rack wide)
4.3 cm H x 22.1 cm W x 24.1 cm D (Depth excludes connectors and knobs.)
Product weight ..... 4.6 lbs (2.1 kg)
Shipping weight ..... 8 lbs (4 kg) per pair
Vibration ..... ISTA 1A in carton (International Safe Transit Association)
Listings ..... UL, CUL
Compliances ..... CE, FCC Class A, VCCI, AS/NZS, ICES, FDA Class 1
MTBF ..... 30,000 hours
Warranty ..... 3 years parts and labor
NOTE: All nominal levels are at ±10%.

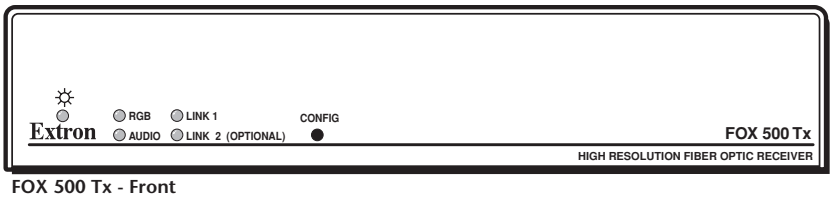
Model	Version Description	Part Number
FOX 500 Tx/Rx MM	850 mm Multimode - pair	60-746-01
FOX 500 Tx MM	850 mm Multimode - transmitter	60-746-11
FOX 500 Rx MM	850 mm Multimode - receiver	60-746-21
FOX 500 Tx/Rx SM	1310 SM Singlemode Multimode - pair	60-746-02
FOX 500 Tx SM	1310 SM Singlemode Multimode - transmitter	60-746-12
FOX 500 Rx SM	1310 SM Singlemode Multimode - receiver	60-746-22

Specifications are subject to change without notice.

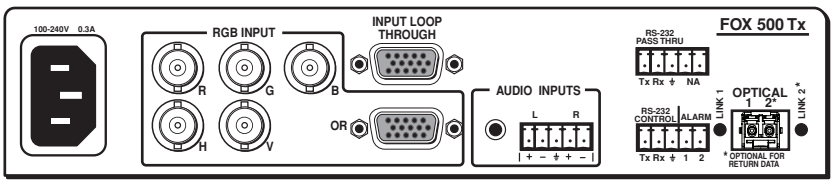
APPLICATION DIAGRAM



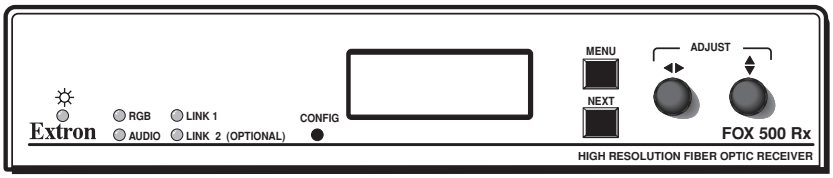
PANEL DRAWINGS



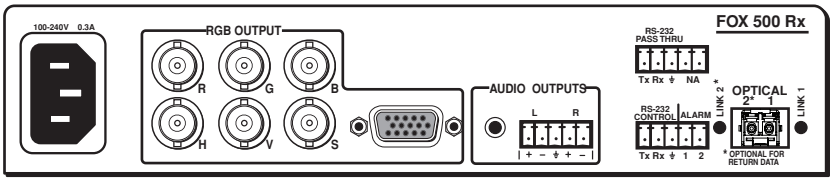
FOX 500 Tx - Front



FOX 500 Tx - Back



FOX 500 Rx - Front



FOX 500 Rx - Back

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