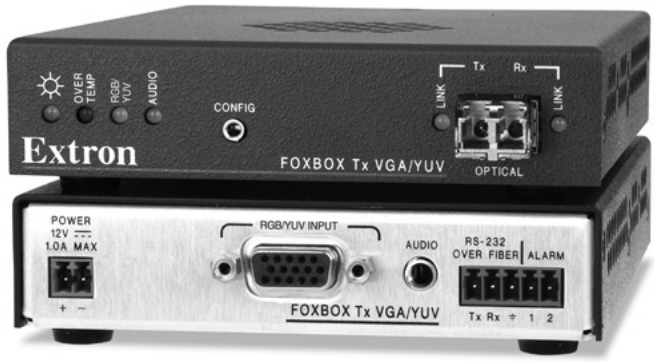
FOXBOX Tx VGA/YUV

FIBER OPTIC EXTENDER FOR VGA OR YUV, AUDIO, AND RS-232

- **Extends VGA or HD component video, stereo audio, and RS-232 control signals very long distances over a single fiber**
- **All-digital technology for high performance signal transmission**
- **Pixel-for-pixel image quality, up to 1600x1200, including HDTV 1080p/60**
- **Daisy-chain capability**
- **Available as 850 nm multimode and 1310 nm singlemode models**
- **Real-time status LED indicators for troubleshooting and monitoring**
- **Auto Input Memory**
- **Low profile, mountable enclosure**



The Extron FOXBOX Tx VGA/YUV Fiber Optic Extender is a transmitter for long haul transmission of high resolution VGA or HD component video, 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 technology, and also includes a host of features for enhancing A/V system integration.

DESCRIPTION

The Extron **FOXBOX Tx VGA/YUV** Fiber Optic Extender is a transmitter for long haul transmission of high resolution VGA or HD component video, 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 technology to deliver perfect pixel-for-pixel transmission of computer-video images up to UXGA (1600x1200) resolution and HDTV up to 1080p/60. The FOXBOX Tx VGA/YUV also includes a host of integrator-friendly features such as image adjustments and calibration, Auto Input Memory, RS-232 control, and real-time system monitoring. A compact, low profile enclosure allows for discreet installation, and multiple FOXBOX receivers can be daisy-chained from the FOXBOX Tx VGA/YUV.

The FOXBOX Tx VGA/YUV 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 FOXBOX Tx VGA/YUV features industry standard LC-type connectivity.

The FOXBOX Tx VGA/YUV MM supports multimode fiber at 850 nm, which is typically used within buildings or facilities with moderate-range transmission distances up to 300 meters (985 feet). The FOXBOX Tx VGA/YUV 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 for connecting over very long distances between facilities such as university campuses.

The FOXBOX Tx VGA/YUV accepts, digitizes, and transmits RGBHV, RGBS or HD component video, along with unbalanced stereo audio and RS-232 control signals. It also provides controls for optimizing video and audio signals.

The FOXBOX Tx VGA/YUV transmitter and a compatible FOX Series receiver can be controlled and configured using the RS-232 port on the transmitter. 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 adjustment and calibration of video and audio at the receiver. It also allows for verification of fiber link status between the units as well as the presence of video and audio input signals at the transmitter.

Analog RGB/HDTV-to-DVI Conversion

The FOXBOX Tx VGA/YUV transmitter is compatible with the FOXBOX VGA and FOX 500 receivers. It can also be paired with the FOXBOX DVI or FOX 500 DVI receiver to provide ultra-long distance conversion of analog RGB or HD component video signals to DVI-D.

FEATURES

- **Extends VGA or HD component video, stereo audio, and RS-232 control signals very long distances over a single fiber**
- **All-digital technology provides pixel-for-pixel performance with signals up to 1600x1200, including HDTV 1080p/60** – The FOXBOX Tx VGA/YUV delivers pixel-for-pixel transmission of video signals to ensure optimal image quality at resolutions up to UXGA (1600x1200), including HDTV 1080p/60. Signal resolutions higher than UXGA can be accommodated, but will not be sampled at a 1:1 pixel ratio.
- **Compatible with HD component video, bi-level or tri-level sync**
- **Daisy-chain capability** – Several FOXBOX receivers can be daisy-chained so that displays in multiple locations can be served from one FOXBOX Tx VGA/YUV 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 bidirectional RS-232 pass-through, control from transmitter or receiver location, and real-time system monitoring**
- **Industry standard LC connectors provide reliable physical connectivity and precise fiber core alignment**
- **Real-time status LED indicators for troubleshooting and monitoring** – LEDs on the front panel verify the presence of RGB/YUV and audio signals at the FOXBOX Tx VGA/YUV transmitter as well as active fiber links with the receiver. Requires second fiber link.
- **Auto Input Memory** – When activated, the FOXBOX Tx VGA/YUV automatically stores size, position, and detail settings based on the incoming signal. When the same signal is detected again, these image settings are automatically recalled from memory.
- **30 user memory presets** – In addition to Auto Input Memory, 30 user memory presets are available for saving and recall of size, position, and detail information for multiple incoming sources. The ability to save and recall presets is useful in switcher-based environments.
- **Audio gain & attenuation adjustment and muting capability**
- **RS-232 control**
- **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.
- **Compatible with PowerCage™ FOX, FOX 500, and FOXBOX Series HDMI, DVI Plus, DVI and VGA receivers**
- **1" (2.5 cm) high, quarter rack width metal enclosure** – With a low profile enclosure, the FOXBOX Tx VGA/YUV can be discreetly installed.
- **Energy-efficient external universal power supply included** – Provides worldwide power compatibility.

SPECIFICATIONS

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.

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 FOXBOX SM
Multimode	300 m (985') with 62.5 µm multimode (MM) cables with a FOXBOX MM 1 km (3280') with 50 µm multimode (MM) cables with a FOXBOX MM 2 km (6561') with 50 µm 2000 MHz bandwidth laser optimized multimode cable with a FOXBOX 4G MM

NOTE: Operating distance is approximate. These are typical maximum distances that may vary 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 FOXBOX MM, 1310 nm for FOXBOX SM
Data rate	4.25 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	
Singlemode	13 dB, maximum
Multimode	7 dB, maximum

VIDEO

Signal type	VGA-UXGA RGBHV, RGBS, component video
Gain	Unity
Pixel data bit depth	8 bits per channel, 3 channels (R, G, B; or YUV)
Maximum resolution	1600x1200 or 1080p @ 60 Hz, digitized pixel for pixel; higher resolutions up to 2048x1120, undersampled

VIDEO INPUT

Number/signal type	1 VGA-UXGA RGBHV, RGBS, component video (bi- or tri-level YUV, 480p, 576p, 720p, 1080i, 1080p)
Connectors	1 female 15-pin HD
Nominal level	1 Vp-p for Y of component video 0.7 Vp-p for RGB and for R-Y and B-Y of component video
Minimum/maximum levels	Analog: 0.3 V to 0.75 Vp-p with no offset, terminated
Impedance	75 ohms
Horizontal frequency	24 kHz to 100 kHz
Vertical frequency	40 Hz to 120 Hz
Return loss	<-40 dB @ 5 MHz

VIDEO OUTPUT — See FOXBOX Rx VGA or FOX 500 Rx specifications

SYNC

Input type	RGBHV, RGBS, component video (bi- or tri-level sync)
Output type	Via FOXBOX VGA or FOX 500 Rx: RGBHV, component video (bi- or tri-level)
Input level	2.5 V to 5.0 Vp-p
Output level	TTL: 5.0 Vp-p, unterminated, on HV, for RGBHV, RGBS 0.3 Vp-p for component video (bi-level sync, unterminated) or for Gs (SOG), terminated 0.6 Vp-p for component video (tri-level sync)
Input impedance	10k ohms
Output impedance	75 ohms
Polarity	Positive or negative (follows input or can be set by user)

AUDIO

Gain	
Range	Adjustable, -18 dB to +10 dB
Default	Unbalanced 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

Number/signal type	1 unbalanced stereo or 2 unbalanced mono
Connectors	(1) 3.5 mm mini stereo jack
Impedance	18k ohms unbalanced, DC coupled
Nominal level	-10 dBV (316 mVrms)
Maximum level	+8.9 dBV, (unbalanced) at 1% THD+N

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

AUDIO OUTPUT — see FOXBOX receivers' audio output specifications

CONTROL/REMOTE

Serial control ports on each unit (transmitter and receiver)	
Control	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)
Baud rate and protocol	
Control	9600 baud, 8 data bits, 1 stop bit, no parity
Pass-through	9600 to 115,200 baud
Program control	Extron control/configuration program for Windows® Extron Simple Instruction Set™ (SIS™)

GENERAL

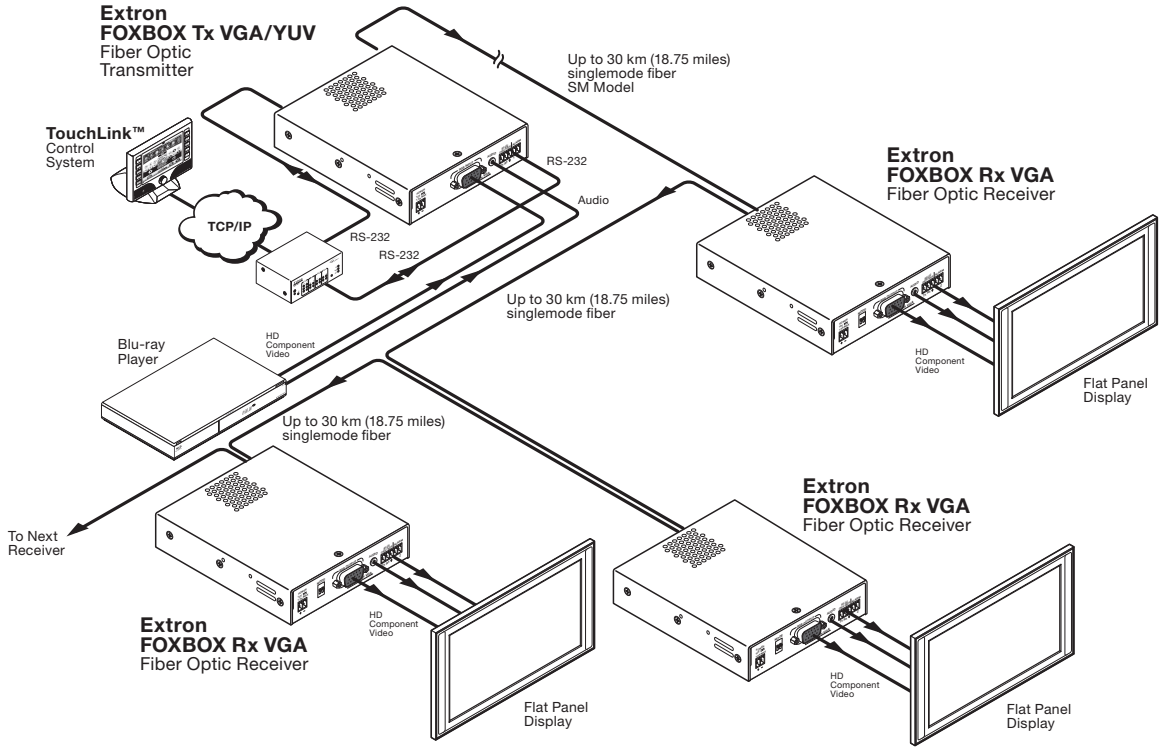
External power supply	100 VAC to 240 VAC, 50-60 Hz, external; to 12 VDC, 1 A, regulated
Power input requirements	12 VDC, 0.6 A
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Convection, vents on top and side panels
Mounting	
Rack mount	Yes, with optional rack shelf
Furniture mount	Yes, with optional under desk mounting kit
Enclosure type	Metal
Enclosure dimensions	1.0" H x 4.3" W x 6.0" D (quarter rack wide) (2.5 cm H x 10.9 cm W x 15.2 cm D) (Depth excludes connectors.)
Product weight	0.7 lbs (0.3 kg) per unit, 1.4 lbs (0.6 kg) per pair
Shipping weight	3 lbs (2 kg) per unit, 6 lbs (3 kg) per pair
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, FDA Class 1, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

Model	Version Description	Part number
FOXBOX Tx VGA/YUV MM	Multimode - Transmitter	60-1058-11
FOXBOX Tx VGA/YUV SM	Singlemode - Transmitter	60-1058-12

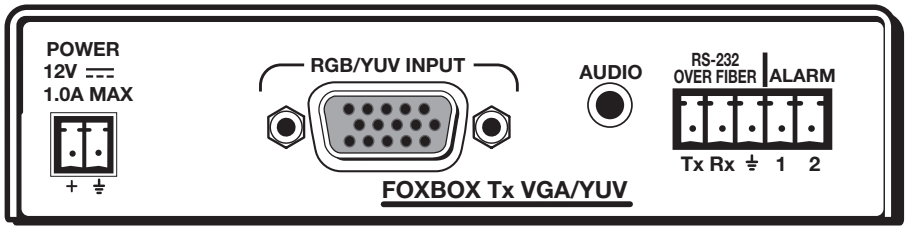
For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

APPLICATION DIAGRAM



PANEL DRAWING

Front



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