

# PowerCage FOX HDMI

FIBER OPTIC EXTENDER FOR HDMI,  
AUDIO, AND RS-232



FOX Tx HDMI

FOX Rx HDMI

The PowerCage FOX HDMI Fiber Optic Extender is a modular transmitter and receiver set designed for the PowerCage 1600 enclosure that provides long haul transmission of HDCP-compliant HDMI, stereo audio, and RS-232 control signals over fiber optic cabling. The transmission capabilities and extensive feature set of the PowerCage FOX HDMI make it ideal for a wide range of applications requiring long distance delivery of high resolution content with the highest quality.

- ▶ Extends HDMI, stereo audio, and RS-232 control signals very long distances over fiber optic cabling
- ▶ HDCP compliant
- ▶ Provides pixel-for-pixel performance with signals up to 1920x1200, including HDTV 1080p/60
- ▶ Integrates easily into a wide range of 4K and UHD environments
- ▶ Key Minder® continuously verifies HDCP compliance for quick, reliable switching
- ▶ EDID Minder® automatically manages EDID communication between connected devices
- ▶ Audio embedding
- ▶ HDMI audio de-embedding with analog stereo outputs
- ▶ Modular, hot-swappable boards designed for the PowerCage 1600 enclosure
- ▶ Available as 850 nm multimode and 1310 nm singlemode models
- ▶ Alarm notification for fiber link loss
- ▶ RS-232 control
- ▶ Compatible with Extron FOX Matrix Switchers for signal distribution systems up to 1000x1000 and larger



**Extron Electronics**  
INTERFACING, SWITCHING AND CONTROL

## DESCRIPTION

The Extron **PowerCage FOX HDMI** Fiber Optic Extender is a modular transmitter and receiver set designed for the PowerCage 1600 enclosure that provides long haul transmission of HDCP-compliant HDMI, stereo audio, and RS-232 control signals over fiber optic cabling. Engineered for reliability and exceptional high resolution image performance, the PowerCage® extender uses Extron all-digital technology to deliver perfect pixel-for-pixel transmission of HDMI computer video up to WUXGA 1920x1200 resolution, including HDTV 1080p/60. The PowerCage FOX HDMI includes many integrator-friendly features such as Key Minder®, EDID Minder®, Auto Input Memory, audio embedding/de-embedding, audio gain and attenuation, internal test patterns, and real-time system monitoring.

As part of the extensive FOX Series of fiber optic products from Extron, the PowerCage FOX HDMI is compatible with the complete line of FOX Series HDMI, DVI Plus, DVI, VGA, and VGA/YUV extenders. It can be used for simple point-to-point applications or in combination with FOX Series matrix switchers for support of enterprise installations.

## FEATURES

- ▶ Extends HDMI, stereo audio, and RS-232 control signals very long distances over fiber optic cabling
- ▶ HDCP compliant
- ▶ All digital technology provides pixel-for-pixel performance up to 1920x1200, including HDTV 1080p/60
- ▶ Integrates easily into a wide range of 4K and UHD environments
- ▶ Key Minder® continuously verifies HDCP compliance for quick, reliable switching
- ▶ EDID Minder® automatically manages EDID communication between connected devices
- ▶ Modular, hot-swappable boards designed for the PowerCage 1600 enclosure, part # 60-978-01
- ▶ Audio embedding
- ▶ Audio gain and attenuation adjustment capability
- ▶ Audio muting capability
- ▶ HDMI audio de-embedding with analog stereo outputs
- ▶ Available as 850 nm multimode and 1310 nm singlemode models
- ▶ Alarm notification for fiber link loss
- ▶ RS-232 control
- ▶ Compatible with Extron FOX Matrix Switchers for signal distribution systems up to 1000x1000 and larger

## SPECIFICATIONS

**NOTE:** The optional PowerCage FOX boards 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 SPECIFICATIONS

#### PowerCage FOX boards, interconnection between transmitter and receiver

<b>Number/type</b>	1 singlemode or 1 multimode fiber optic input and output per FOX board, up to 8 double space boards per PowerCage enclosure
<b>Operating distance</b>	
Singlemode	30 km (18.75 miles) with singlemode (SM) cables with a SM board
Multimode	300 m (985') with 62.5 µm OM1 multimode (MM) cable and a MM board 1 km (3280') with 50 µm OM2 multimode (MM) cable and a MM board 2 km (6561') with 50 µm OM3/OM4 2000 MHz bandwidth laser optimized MM cable and a MM board
<b>Optical loss budget</b>	
Singlemode	13 dB, maximum
Multimode	7 dB, maximum
<b>Maximum channel data rate</b>	4.25 Gbps

### VIDEO — POWERCAGE FOX TX/RX HDMI

<b>Maximum pixel clock</b>	165 MHz
<b>Maximum resolution</b>	1920x1200 or 1080p @ 60 Hz, 8-bit color
<b>Formats</b>	RGB, YCbCr, xvYCC digital video
<b>Standards</b>	DVI 1.0, HDMI, HDCP 1.1, CEA-861E

### VIDEO INPUT — POWERCAGE FOX TX HDMI

<b>Number/signal type</b>	1 single link HDMI
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### VIDEO OUTPUT — POWERCAGE FOX RX HDMI

<b>Number/signal type</b>	1 single link HDMI
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### AUDIO INPUT — POWERCAGE FOX TX HDMI

<b>Number/signal type</b>	1 stereo, unbalanced or 2 mono, unbalanced 1 stereo, de-embedded from HDMI (2-ch, PCM only)
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### AUDIO OUTPUT — POWERCAGE FOX RX HDMI

<b>Audio delay</b>	1.5 frames
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### GENERAL

<b>Power consumption</b>	Individual FOX boards 6.02 watts	
<b>Power input requirements for boards</b>	12 VDC, 1.0 A, supplied by the PowerCage enclosure	
<b>Regulatory compliance</b>		
Safety	CE, c-UL, FDA Class 1, UL	
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI	
Environmental	Complies with the appropriate requirements of RoHS, WEEE.	
<b>Model</b>	<b>Version Description</b>	<b>Part number</b>
PowerCage FOX Tx HDMI MM	Multimode - Transmitter	70-889-11
PowerCage FOX Rx HDMI MM	Multimode - Receiver	70-889-21
PowerCage FOX Tx HDMI SM	Singlemode - Transmitter	70-889-12
PowerCage FOX Rx HDMI SM	Singlemode - Receiver	70-889-22

For complete specifications, please go to [www.extron.com](http://www.extron.com)  
Specifications are subject to change without notice.

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#### UNITED STATES

+800.633.9876  
Inside USA/Canada  
+1.714.491.1500

#### EUROPE

+800.3987.6673  
Inside Europe  
+31.33.453.4040

#### ASIA

+800.7339.8766  
Inside Asia  
+65.6383.4400

#### MIDDLE EAST

+971.4.299.1800