

QFX QuadBox

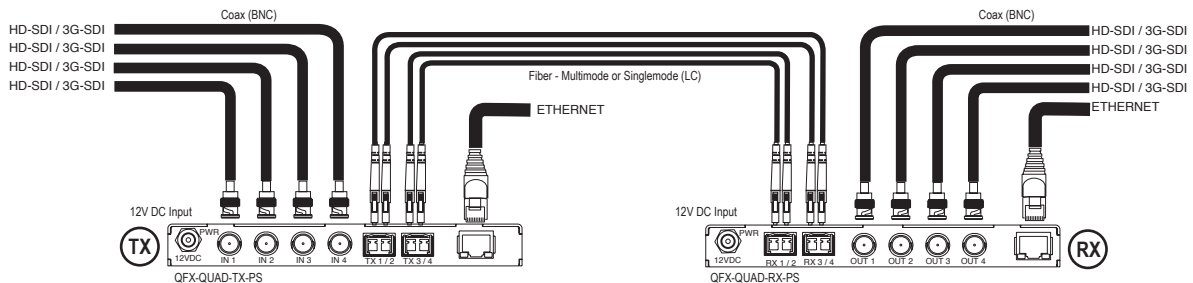
Fiber Extender Series

As part of the newly developed QFX Fiber Extender Series, QuStream's **QFX QuadBox™** modules are copper to fiber conversion modules providing increased port density and total routing system cost savings. The **QFX QuadBox** modules support up to four SD-SDI, HD-SDI or 3G-SDI signals utilizing 2.97Gbps optical transport per fiber port. Using two SFP duplex small form factor pluggable modules, these units offer broadcast quality coax to fiber transmission paths in a single throw-down box or 1RU frame setup. The **QFX QuadBox** is compliant with SMPTE 259M, 292M, 372M, and 424M ensuring highly flexible and reliable media conversion for any application. Each **QFX QuadBox** module allows high definition video with or without embedded audio and data, as well as DVB/ASI. And because the **QFX QuadBox** Series is based on fiber transport, you can be assured that each signal is immune to video pathological signals over the entire length of the fiber interconnect. Either singlemode or multimode cabling is supported. When using singlemode, the **QFX QuadBox** can support distances up to 10Km, and up to 600m with multimode fiber cable using industry compliant LC connectors. The **QFX QuadBox** fiber system is the lowest total cost solution for converting copper based signals to fiber-based transmission paths, and works exceptionally well with QuStream's entire line of HD router systems. Each **QFX QuadBox** comes with a built-in Ethernet port and USB port for easy setup and diagnostics. Up to four QFX modules can be loaded in a 1RU frame with support for redundant power. Setup is simple with the supplied GUI interface.



Features

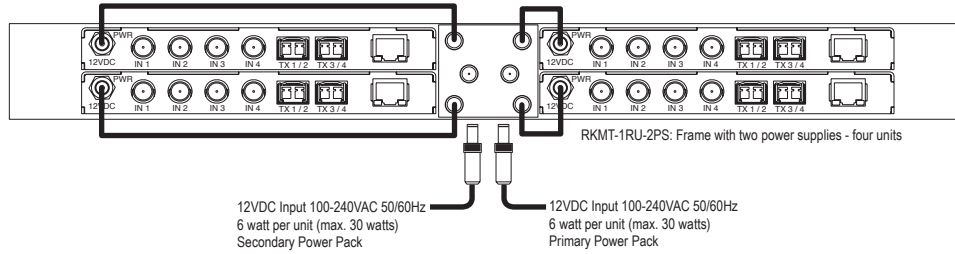
- 4 copper to fiber transmission ports per module
- 1310 nm optical laser transports signals
- Supports both multimode and singlemode cabling
- Supports both 62.5m and 50m multi mode
- 4 independent channels allows for HD-SDI, 3G-SDI, or Dual-Link HD-SDI
- Software setting for relocking or by-pass mode
- Extend copper cabling up to 80m from module
- Install four units in a 1RU space for 16 I/O channels
- Ethernet port for network capabilities
- USB 2.0 for local setup and diagnostics
- Supports SMPTE 259M-C, 292M, 372M, and 424M
- Up to 2.97Gb/s per port
- 12VDC, 90-240VAC 60/50Hz power brick for stand-alone modules
- 90-240 VAC, 60/50Hz redundant power supply for the 1RU frame
- CE, RoHS, and FCC compliant



QFX QuadBOX Modules

- HD-SDI or 3G-SDI Coax to Fiber to Coax Interconnects

QFX QuadBox™ Series Specifications



QFX QuadBox 1RU Frame to support 16 inputs or outputs

Media Extender Specifications

Electrical	
Input Type	BNC 75 Ohm
Number of Inputs	4 BNC
Output Type	SFP 1310nm (fiber transport) Duplex Transmitter
Number of Outputs	4 (two duplex SFP fiber modules)
Signal Formats	SMPTE 259M, 292M, 372M, 424M
SMPTE 424M Specifications for transport	
Return Loss	>15dB 5MHz to 1.485MHz; >10dB 1.485 to 2.97MHz
Signal Amplitude	800mV (peak to peak)
DC offset	0.0V, +/- 0.5V
Rise/Fall Time	<135ps (20% - 80%)
Overshoot	< 10%
Jitter	<0.2UI (SMPTE 292M), <0.3UI (SMPTE 424M) compliant with SMPTE RP-184
Cable EQ	3G-SDI: Auto to 80m; HD-SDI: Auto to 10km SDI (270Mbps): Auto to 300m

Signal Operations

Polarity All paths non-inverted

Optical

Connector Type	SFP Module, LC
Wavelength	1310nm
Mode	singlemode
Module	small form factor, hot pluggable
Compliance	ITU-T G.957
Data rates	270Mbps up to 2.97Gbs

This optoelectronic fiber module is a class 1 laser product compliant with FDA Radiation Performance Standards, 21 CFR Subchapter J. This component is also class 1 laser compliant according to International Safety Standard IEC-825-1.

Optical Fiber Interconnect (TX to RX) Specifications

Number	up to four fiber optic cable
Connector type	LC simplex
Operating distance	9/125u - 10km (6.25 miles); 50/125u - 400m (1200ft) 62.5/125u - 200m (600ft)

Note: operating distances are approximate. cable loss and other interconnects can affect total light loss between TX and RX extenders.

Optical Fiber Interconnect (TX to RX) Cont.

Data rates supported	270Mbps (SDI/ASI); 1.485Gbps (HD-SDI) 2X - 1.485Gbps (Duellink HD-SDI); (up to two Duallinks per modue) 2.97Gbps (3G-SDI)
Transmitter Power	SM -9dBm min, -3dBm max.
Receiver Sensitivity	SM -20dBm min, -1dBm max.

Dimensions

Receiver/Transmitter:	6.75 (171.45)W x 6.25 (158.75)D x .825 (20.96)H
Rack mount kit:	19.00 (482.6)W x 6.25 (158.75)D x 1.75 (44.45)H
Weight (Transmitter or Receiver)	0.5 lbs/unit
Weight (Rack Mount with PS)	1.6 lbs
Weight (four units in rack mount)	3.65 lbs

Environmental & Miscellaneous Specifications

Operating Temp	-20C to 60C
Storage Temp	-40C to 75C
Relative Humidity	9% to 95% non-condensing
MTBF	> 57,000 Hours
Power Source	90-240VAC, 50/60Hz source
Power to unit	12VDC
Cooling	Convection / Fans in 1RU frame
Rack Mount	yes, with optional 1RU rack frame

Diagnostic Specifications

LED	Power and Optical Links
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Control Specifications

Input connection	USB 2.0/ Ethernet
Program	Windows based GUI with diagnostics

QFX QuadBox™ Configurations

Modules	Notes
Transmitter- 2 coax inputs, 2 fiber outputs	1,2,3
Transmitter- 4 coax inputs, 4 fiber outputs	1,2,3,4
Receiver- 2 fiber inputs, 2 coax outputs	1,2,3
Receiver- 4 fiber inputs, 4 coax outputs	1,2,3,4
Distribution Box- 4 coax inputs, 1 fiber output	1,2,3,4
Distribution Box- 1 fiber input, 4 coax outputs	1,2,3,4
Package System- 16 fiber inputs, 16 coax outputs in 1RU frame	3,4
Package System- 16 coax inputs, 16 fiber outputs in 1RU frame	3,4
1RU frame with power supply for up to 4 modules	

NOTES

- Models available with power supply for stand-alone operation
- Models available w/o power supply for mounting in optional 1RU chassis frame
- Models available to support SD-SDI, HD-SDI and 3G-SDI signal formats up to 3Gbps
- Models available to support SD-SDI and HD-SDI signal formats up to 1.5Gbps