

PCIe4 DVa FOX

PCIe x4 digital video ("A" series) fiberoptic interface for Camera Link



Description

The PCIe4 DVa FOX is a PCIe x4 fiberoptic interface that provides uncompressed image capture for Camera Link cameras up to 100 kilometers from the host computer (depending on transceivers). The board accepts up to four SFP transceivers to support multiple base-mode cameras, and pairs with one or more RCX C-Link extenders for Camera Link over fiber.

The board fits in a 4-, 8-, or 16-lane PCIe slot. Images of any resolution are captured and displayed, in real time, via DMA to the host computer; speed, resolution, and buffers are limited only by host bandwidth and memory. Optional 1 GB DDR2 provides snapshot recording and frame buffering.

Line and frame triggering are supported over camera control lines, while onboard UART provides serial control. External triggering and timecode input (IRIG-B) are enabled by the provided Berg or the optional Lemo connector.

Provided with the board are drivers for supported operating systems and a software development kit that includes C language libraries, examples, utilities, image capture and display GUI, camera configuration files, and Camera Link standard DLL for camera control.

Features

- Fiberoptic interface fits in a 4-, 8-, or 16-lane PCIe slot
- Supports up to four base-mode Camera Link cameras via one or more EDT extenders (RCX C-Link)
- Provides up to four SFP transceiver receptacles to accept a wide range of SFP transceiver types (including duplex LC, CWDM, and bidirectional)
- Provides frame storage and buffering via optional 1 GB DDR2
- Captures and displays images in real time, via DMA to host computer
- Allows remote operation – up to 100 km from host, depending on transceivers
- Provides electrical isolation of camera from host
- Provides onboard region-of-interest control
- Supports line and frame triggering over camera control lines
- Offers optional timecode input (IRIG-B) for precise timestamping
- Supports data rates up to 640 MB/s in medium mode

Applications

- Astronomy / biology / microscopy
- Aerial mapping / traffic systems
- Commercial film / multimedia
- Medical and nuclear imaging
- Remote scientific monitoring
- Manufacturing / inspection
- Machine vision / robotics
- Security / surveillance
- Scanning / archiving

Specifications

Memory	FIFO DDR2 (SODIMM) – in development	Up to several lines of data 0 or optional 1 GB																
Data Rates	Per transceiver Aggregate	Up to 240 MB/s Up to 640 MB/s (or maximum supported by host)																
Data Format (I/O)	Camera Link input; timecode input (IRIG-B)																	
Camera Link Compliance (with RCX C-Link module)	Modes Pixel clock rate Serial CC1 - CC4	Base (single through quad) or medium – common configurations 20–80 MHz Via API or serial DLL (9600 to 115,200 baud) Discretely programmable for steady-state, trigger, and timed pulse																
EU Compliance	CE RoHS WEEE	Contact EDT Contact EDT Contact EDT																
PCI Express Compliance	PCIe version Direct memory access (DMA) Number of lanes	PCIe 1.1 Yes 4																
Laser Safety	Class 1 (for EDT-supplied transceivers; for third-party transceivers, consult the manufacturer's specifications)																	
Noise	0 dB																	
Transceiver Receptacles	When ordering, specify how many transceiver receptacles you will need (1 / 2 / 3 / 4). Transceivers themselves are ordered separately.																	
Transceivers	Transceivers – up to four – must be SFP (duplex LC, CWDM, or bidirectional) and are ordered separately from a third party or EDT. EDT provides duplex LC SFP transceivers for the following wavelengths and cables:																	
	<table border="1"> <thead> <tr> <th>Wavelength</th> <th>Cable</th> <th>Range at 1.25 Gb/s</th> <th>Range at 2.5 Gb/s</th> </tr> </thead> <tbody> <tr> <td>850 nm</td> <td>62-μ MMF</td> <td>300 meters</td> <td>150 meters</td> </tr> <tr> <td>850 nm</td> <td>50-μ MMF</td> <td>500 meters</td> <td>250 meters</td> </tr> <tr> <td>1310 nm</td> <td>9-μ SMF</td> <td>10 kilometers</td> <td>5 kilometers</td> </tr> </tbody> </table>	Wavelength	Cable	Range at 1.25 Gb/s	Range at 2.5 Gb/s	850 nm	62- μ MMF	300 meters	150 meters	850 nm	50- μ MMF	500 meters	250 meters	1310 nm	9- μ SMF	10 kilometers	5 kilometers	
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	For longer ranges (10 to 100+ kilometers): CWDM and bidirectional SFP transceivers are available in various wavelengths; contact EDT.																	
Triggering	CC lines supported via fiber, or externally via connector (opto-coupled Berg or optional 7-pin Lemo – mate to FGG.OB.307.CLAD.56)																	
Connectors	In addition to transceivers (above), connectors include: One opto-coupled Berg One optional 7-pin Lemo	For external triggering, IRIG-B timecode input, or both For external triggering, IRIG-B timecode input, or both																
Cabling	Cabling is purchased separately; consult EDT for options. Fiber connection polish	Standard physical contact (PC)																
Physical	Weight Dimensions	3.5 oz. typical (without transceivers) 4.8 x 4.8 x 0.7 in.																
Environmental	Temperature (operating / non-operating) Humidity (operating / non-operating)	10° to 40° C / -40° to 60° C 20% to 80% non-condensing at 40° C / 95% non-condensing at 40° C																
System and Software	System must have a PCIe bus (4, 8, or 16 lanes). Software is included for Windows and Linux; for versions, see edt.com.																	

Ordering Options

- Transceiver receptacles: Specify 1, 2, 3, or 4.
- Transceivers: Specify how many you are ordering from EDT (0, 1, 2, 3, or 4) and what type [see options above]
- Connector: **Berg (included)** / Lemo (optional), for external triggering, IRIG-B input, or both

Bold is default. Ask about custom options.