

Description

The Foxy fiber-optic extender allows Camera Link connections to span distances well beyond the typical limit of 10 meters. Using one duplex LC-style fiber-optic cable, the transmitter and receiver modules can be separated by hundreds or thousands of meters.

No user programming or special considerations are required. The extender's operation is completely automatic and absolutely transparent to the camera and frame grabber.

Foxy supports Base mode at 66.5 MHz with no exceptions. It is fully Camera Link compatible and employs genuine National Semiconductor Channel-Link components for the camera and frame grabber interfaces.

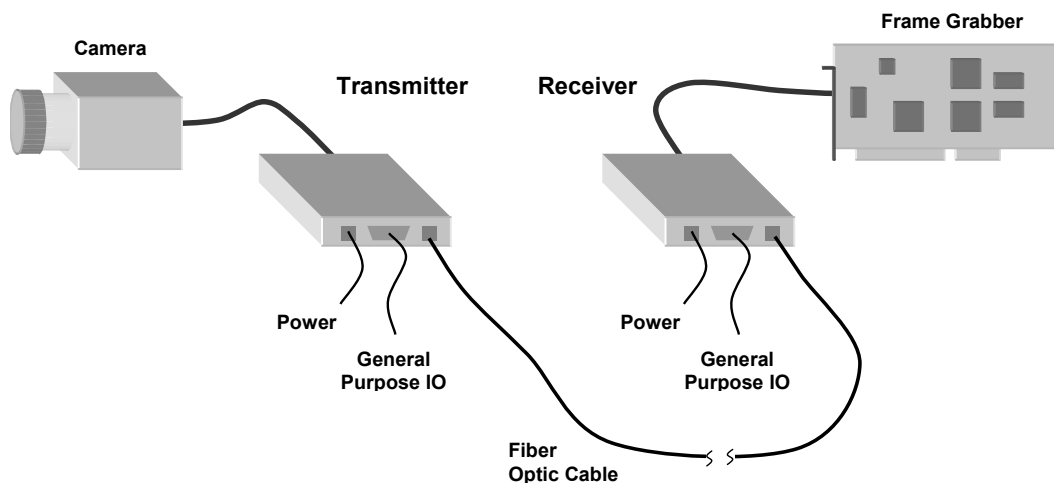
Bi-directional general purpose I/O are provided in addition to the Camera Link connection. These can be used, for example, to control attendant equipment (e.g. illuminator, motorized lens) or to extend a PC serial port.

The transmitter and receiver modules are housed in rugged aluminum enclosures and each requires less than 4 Watts. The LC fiber-optic cable is detachable at both ends.

Specifications

Camera Link Interface	
Compatibility	Full Base Mode
Max. speed	66.5 MHz
Fiber-Optic Interface	
Cable	one LC Duplex
Type	multi-mode, 62.5 or 50 um
Max. length	500 meters*
Power Supply	
Input voltage	9-18 VDC
Max. current	0.4 Amp
Connector	3-pin, locking
General Purpose I/O	
Inputs	2, opto-isolated
Outputs	2, opto-isolated
Power supply	3.3 VDC
Connector	15-pin D, male
Operating Conditions	
Temperature	0-70 deg. C
Humidity	0-90%, non-condensing
Construction	
Enclosure	aluminum extrusion
Weight	1 lbs., 0.45 kg

* Standard length. Longer lengths available.



Usage Instructions

Foxy is easy to install and use. No programming or configuration is required.

Step 1: Connect the transmitter to the camera with a Camera Link compatible cable. Secure the cable's jack screws.

Step 2: Connect the receiver to the frame grabber with a Camera Link compatible cable. Secure the cable's jack screws.

Step 3: Connect the modules with a duplex LC-style fiber-optic cable. The fiber-optic cable connects to optical transceivers within the modules. Note that the cable attaches with an audible click.

Step 4: Connect the power supplies to the extender modules.

Step 5: Power-on the system. Either module may be powered-on first. Once both are on they will automatically synchronize. Synchronization does not depend on Camera Link activity. Thus, the modules will synchronize without an active camera or frame grabber, or with either disconnected.

LED Indicators

Each module has four LED status indicators.

TX OK This indicates that the module is transmitting an optical signal.

RX OK This indicates that the module is receiving an optical signal and is properly synchronized with the other module. Note that the modules will synchronize without a frame grabber or camera attached.

CAM SYNC On the transmitter this indicates the presence of a Camera Link clock.

On the receiver this indicates that camera data is being received.

POWER This indicates the module is powered-on.

Troubleshooting

The LEDs are helpful in diagnosing various problems.

TX OK does not illuminate: Ensure that the optical transceiver is properly installed. The transceiver can be removed by disconnecting the fiber-optic cable, lowering the transceiver's bail latch, and then pulling the transceiver out of the module.

RX OK does not illuminate: Ensure that the other module is powered and that the fiber-optic cable is properly attached. Check for kinks or sharp bends in the fiber-optic cable. Check for dirt on the ends of the fiber and inside the optical transceivers.

Transmitter's TX OK and RX OK illuminate but transmitter's CAM SYNC does not: Check the camera's Camera Link cable. Ensure that the camera is powered and in the proper mode of operation, and that the frame grabber is supplying the proper control signals to the camera.

All LEDs except the receiver's CAM SYNC LED illuminate: Cycle power to the Extender modules.

Precautions

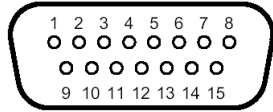
Exercise electro-static discharge precautions when handling the extender.

Power-off equipment before making or breaking connections.

The modules are identical in appearance. Make sure to connect the transmitter to the camera and the receiver to the frame grabber.

Handle the optical elements carefully. Do not kink or tightly bend the optical cable. Keep dirt off the ends of the fiber and out of the optical transceivers.

General Purpose I/O Connector



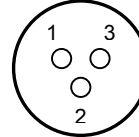
(view looking into module)

Pin Functions	
1	Vin
2	-
3	+3.3Vout
4	-
5	GPIN_ANODE
6	GPIN0
7	GPOUT0
8	Vopto
9	GND
10,11,12	-
13	GPIN1
14	GPOUT1
15	GNDopto
Mating Connector	
15-pin D, female	

The +3.3Vout connection is an output from the modules (100 mA max.). Note that the Vin and GND connections are available on both the General Purpose I/O and Power connectors.

Do not connect to the unused pins.

Power Connector



(view looking into module)

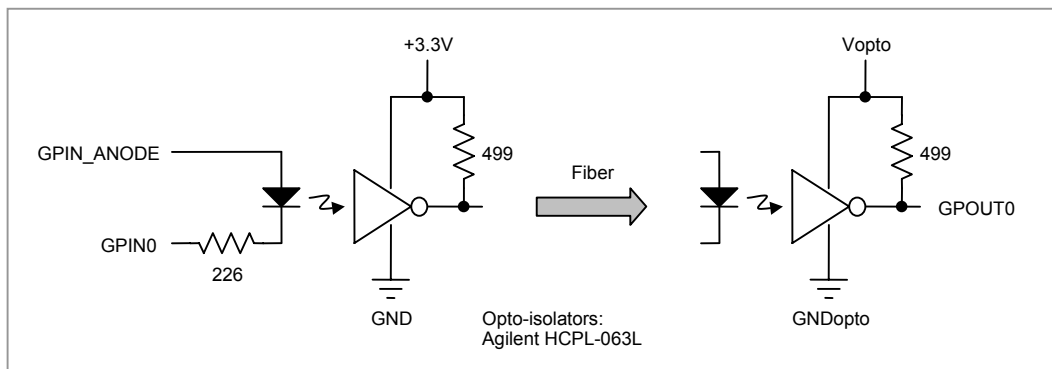
Pin Functions	
1	-
2	GND
3	Vin
Mating Connector	
Switchcraft TA3F	

General Purpose I/O Usage

The figure below illustrates one channel of the GP I/O circuit. There are four channels total, two in each direction.

The opto-isolated interface allows electrical isolation between the module and the user's equipment. However, if isolation is not required, the output stage (GPOUTx) can be powered by connecting Vopto to +3.3Vout and GNDopto to GND. Similarly, GPINx can be asserted by connecting GPIN_ANODE to +3.3V and GPINx to GND.

The GP interface can be modified to allow GPOUTx to signal the state of a Camera Link CC bit. Contact Stride for more information.



Dimensions

(1/2 scale)

