fbC2XLG Capture Card
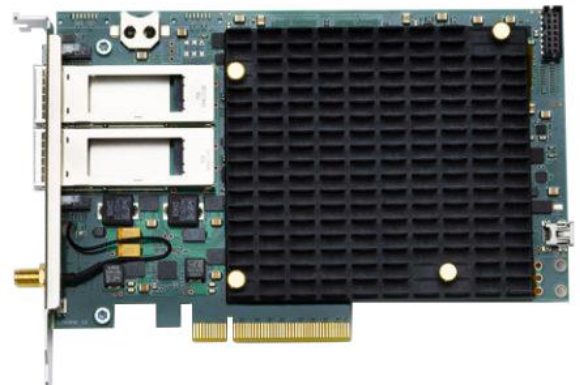
Dual Port QSFP+ 40 Gigabit PCI Express Capture Card

Product Description

The Silicom fbC2XLG Capture card 40 Gigabit Ethernet with fbCAPTURE API is a cutting edge packet capture and processing PCIe device. It performs at full line rate with zero packet loss with a wide variety of functions. It allows for pure data capture, processing, inline applications and special purpose function. Based on powerful FPGA Hardware technology, fbC2XLG is a high performance OEM hardware platform intended for 40 Gigabit Ethernet interfacing via its dual QSFP+ slots. With its PCIe Gen3 support, it features unrivaled performance in transfers to and from host systems.

The fbC2XLG is part of the fbCAPTURE family which provides a powerful and flexible Software API, as well as standard libpcap integration.

Through the integration of fbCAPTURE API, applications gain support for all fbCAPTURE cards, covering Ethernet speeds from 1GE to 100GE.

Key Features

- 40 Gbit/s Ethernet, IEEE 802.3
- 2 x QSFP+ ports
- Capture at full line rate on all interfaces
- Precision timestamping
- 3.2 nano second resolution
- Micro second latency
- PCIe Gen3, 8 lanes
- fbCAPTURE API
- Hardware filtering and distribution
- Application acceleration and scalability
- 64 logical channels to DMA or egress via Tx

Technical Specifications

Network Interface:	
IEEE standard:	IEEE 802.3 40 Gbit/s Ethernet
Physical interface:	2 x QSFP+ ports
Data rate:	2 x 40 Gbit/s
Supported QSFP+ modules:	40GBASE-SR4 (850 nm) 40GBASE-LR4 (1310 nm) 40GBASE-ER4 40GBASE-QSFP+ Direct Attach Cable Ethernet PHY directly embedded in FPGA for full packet control Daisy chain between multiple cards supported
Host Interface:	
Physical bus connector:	8-lane PCIe
PCIe bus type:	1-8 lane PCIe Gen1/Gen2/Gen3
PCIe compliant	64 logical channels that can be connected to DMA or egressed to physical output ports
General Technical Specifications	
On Board Memory	8 GB (2x4GB 64 bit DDR3)
Performance:	
Capture rate (card internal):	Full line rate
Capture rate (bursts):	Full line rate
Capture rate (sustained):	55 Gbps
Transmission rate (inline host DMA):	40 Gbps
Transmission rate (inline bypass):	68 Gbps
Transmission rate (daisy chain):	Full line rate

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Latency:	Less than 3 µs to host memory Less than 3 µs from host memory to Tx Non-blocking sending, allowing user applications to operate independently
Time Stamping & Sync:	Resolution of 3.2 ns Accuracy down to 20 ns Optional external synchronization via PPS Customization for PTP IEEE 1588-2008 RJ45 Master/slave time sync between multiple cards
Configuration:	Dual boot images with automatic fallback to fail-safe image Full firmware upgrades via supplied tools or fbCAPTURE API
Environment:	
Physical dimensions:	Half length, standard height
PCIe:	111 x 169 mm
Weight:	292g
Operational power consumption:	Less than 39W
Operating temperature:	0° – 55°C, 30 – 130°F
Operating humidity:	20° – 80%
Hardware compliance:	RoHS, CE
Passive cooling:	No on-board fan required
Additional Card Support:	
Additional Card Support	fbCAPTURE API On-board temperature sensor On-board multi-color status LED Link and Activity LED for each port

Order Information

P/N	Description	Notes
fbC2XLG	Dual QSFP+ port card supporting 2x40GE, PCIe Gen3 x8 lanes	RoHS Compliant

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