



The Silicom fbC2XLG card 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 40GE interfacing via its dual QSFP+ slots. With its PCIe Gen3 support, it features unrivaled performance in transfers to and from host systems.

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

ON-BOARD MEMORY

- 8 GB (2 x 4 GB 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

LATENCY

- Less than 3 μ s to host memory
- Less than 3 μ s from host memory to Tx
- Non-blocking sending, allowing user applications to operate independently

TIME STAMPING AND 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: 292 g
- 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 BOARD SUPPORT

- fbCAPTURE API
- On-board temperature sensor
- On-board multi-color status LED
- Link and Activity LED for each port

ORDERING INFORMATION

| | |
|-----------|-----------------|
| fbC2XLG | Passive cooling |
| fbC2XLG-A | Active cooling |

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Dedication to Performance