fbC2CGg3 Capture Card

Dual QSFP28 port card supporting 2x100G Ethernet, PCIe Gen3 x16 lanes

Product Description

The Silicom Denmark fbC2CGg3 dual port capture card offers 2x100GE network connectivity and line rate capture with zero packet loss and hardware packet processing. The card supports multiple speeds in the same hardware, incl 10/25/40/100 GE. Even support for 50GE can be included.

The fbC2CGg3 dual capture card is based on cutting edge Xilinx FPGA technology, providing packet filtering, advanced processing, traffic management, load balancing and host offloading mechanisms.

This high performance hardware platform connects to 100GE using QSFP28 modules and performs packet processing, while delivering a sustained throughput to host memory of up to 112 Gbps. The use of QSFP28 cages also allows use of QSFP to support 8x10GE, 2x40GE as wells as 2x25GE. The 25GE support is using SFP28 with QSA28 adapter. An 8x25GE solution using breakout cables can be customized.

The card uses a single-slot PCIe solution through a 16-lane PCIe slot to enable effective traffic management and load balancing also in NUMA environments.

This dual port capture card is also available as a cost optimized variant for 8x10GE, 2x40GE, 2x25GE and 2x100GE. On 2x100GE the cost optimized variant has reduced filter capacity. The cost-optimized variant is name as fbC2CGg3-std

The card comes with active cooling, a sturdy PCB and a braced FPGA, avoiding the risks associated with PCB vibration and transport.

Key Features

- 10GE, 40GE, 25GE or 100GE, IEEE 802.3
- 2 x QSFP28 slots supporting QSFP+ and QSFP28
- Up to 112 Gbps bandwidth to host
- Up to 224 Gbps bandwidth to host incl. second PCIe connector cable
- 16 lane PCIe Gen3 (2×8 via bifurcation)
- Precision timestamping
- 3.2 nano second resolution
- Time synchronization via PPS
- Optional PTP IEEE 1588-2008 sync board with RJ45 interface

- Micro second latency
- fbCAPTURE API
- Hardware filtering and distribution
- Application acceleration and scalability

Technical Specifications

Network Interface:	
IEEE standard:	IEEE 802.3 10GE, 40GE, 25GE, 100GE
Physical interface:	2 x QSFP28 port 10GE and 25GE supported through break-out cable assemblies Supported QSFP28 modules (25GE/100GE)
Host Interface:	
Physical bus connector:	16 lane PCIe
PCIe bus type:	16 lanes PCIe Gen3
On Board Memory:	
On Board Memory:	On board buffering for application robustness 16 GB 64 bit DDR4
Performance:	
Capture rate (bursts):	Line rate
Capture rate (sustained):	Line rate
Transmission rate (selective bypass):	Line rate
Transmission rate (daisy chain):	Line rate
Time Stamping & Sync:	
Resolution:	3.2 ns
Accuracy:	down to 20 ns
Daisy chain PPS between multiple cards:	supported
Environment:	
Physical dimensions:	¾ length, standard height

PCIe:	111 x 254 mm
Weight:	320g
Operating temperature:	0 – 55°C, 30 – 130°F
Operating humidity:	20 – 80%
Hardware compliance:	RoHS, CE
General Technical Specifications	
Additional Card Support:	fbCAPTURE API On-board temperature sensor On-board multi-color status LED Link and Activity LED for ports
Card Variants:	All card variants have FPGAs optimized for resource requirements of the varying link types. Available models: Variants supporting multiple speeds can be freely used with these speeds. • **Full functional variant on all speeds, fbC2CGg3, Same HW for all speeds** fbC2CGg3-8×10 for 10GE, fbC2CGg3-2×25 for 25GE, fbC2CGg3-2×40 for 40GE, fbC2CGg3-2×100 for 100GE, Full filters capacity • **Cost optimized variant, fbC2CGg3-std, Same HW for all speeds** fbC2CGg3-std-8×10 for 10GE, fbC2CGg3-std-2×25 for 25GE, fbC2CGg3-std-2×40 for 40GE, fbC2CGg3-std-2×100 for 100GE, limited filters capacity Mixed speed models can can be customized

Order Information

P/N	Description	Notes
fbC2CGg3hl	Dual QSFP28 port card supporting 2x100G Ethernet, half-length, PCIe Gen3 2 x8 lanes	RoHS Compliant

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