



fbC2CGhh Capture Card

Half height Dual Port QSFP28 Ethernet Capture Card

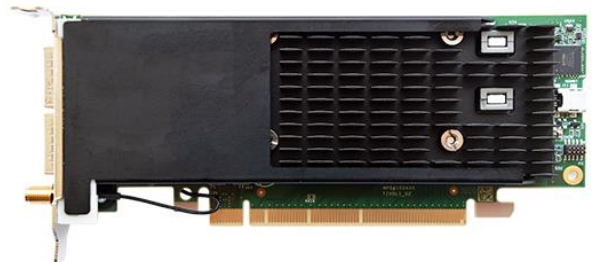
Product Description

The Silicom fbC2CGhh Dual Capture Card offers network connectivity and capture to host memory with zero packet loss and with hardware packet processing. The 2xQSFP28 slots allow link speed support for 2x100GE/40GE/25GE, 8x10GE and 8x25GE.

The fbC2CGhh capture card is based on cutting edge Xilinx FPGA technology in the Kintex UltraScale+ series, providing packet filtering, advanced processing, traffic management, load balancing and host offloading mechanisms.

This high performance hardware platform connects to the network using QSFP28/QSFP+/SFP28 modules and performs packet processing, while delivering a sustained throughput to host memory of up to 107 Gbps, using the standard PCIe connector with full support for standard gen3 x16.

The fbC2CGhh capture card uses a single-slot x16 lane PCIe solution, while only being half height. This makes it suitable for high performance applications with a minimal footprint. NUMA specific memory allocation allows for effective traffic management and load balancing in NUMA environments.



Key Features

- 2 x 100GE/40GE/25GE, 8 x 10GE and 8 x 25GE
- PCIe form-factor: Half height, half length (68.9 x 167.65 mm)
- 8 GB 72-bit Error-correcting code (ECC) DDR4 RAM
- 107 Gbps sustained capture to host
- 16-lane PCIe Gen3
- Precision timestamping
- 3.2 nano second resolution
- Microsecond latency
- fbCAPTURE API
- Hardware filtering and traffic distribution
- Application acceleration and scalability

Technical Specifications

General Technical Specifications	
IEEE standard	IEEE 802.3 10GE, 40GE, 25GE, 100GE
Interfaces	<ul style="list-style-type: none"> Physical interface: 2 x QSFP28 slots 40GE support using QSFP+ 10GE supported through break-out cable assemblies 2 x 25 SFP28 through QSA28 adaptor Supported SFP28 modules (25GE) extra using adaptor: SR, LR Appropriate 4 x 25GE break-out modules Supported QSFP+ modules (10GE/40GE): SR4, LR4, LM4, PSM4/IR4, CDWM4, ER4, ZR4, BiDi, CR4 Appropriate 4 x 10GE break-out modules Ethernet PHY directly embedded in FPGA
PCI bus	<ul style="list-style-type: none"> 16 lanes PCIe Gen3 PCIe compliant
Host interface	64 logical channels that can be connected to DMA or egressed to physical output ports
On Board Memory	<ul style="list-style-type: none"> On board buffering for application robustness 8 GB 72-bit Error-correcting code (ECC) DDR4 RAM
Capture rate	<ul style="list-style-type: none"> Capture rate (micro bursts): Line rate (200 Gbps) Capture rate (sustained): 107 Gbps to host memory
Latency	<ul style="list-style-type: none"> Less than 1 μs to host memory Less than 1 μs from host memory to Tx Non-blocking sending, allowing user applications to operate independently
Time Stamping and Sync	<ul style="list-style-type: none"> Resolution = 3.2 ns Accuracy down to 20 ns Daisy chain PPS between multiple cards supported Via COAX or Card interconnect adapter Strict Host based sync available in driver PPS synchronization via SMA connector
Configuration	<ul style="list-style-type: none"> Dual boot images with automatic fallback to fail-safe image Full configuration and firmware upgrades via supplied tools or fbCAPTURE API
Environment	<ul style="list-style-type: none"> ½ height, ½ length 68.90 x 167.65 mm with bracket Operating temperature: 0 – 55°C, 30 – 130°F Operating humidity: 20 – 80% Hardware compliance: RoHS, CE

	<ul style="list-style-type: none"> • Passive cooling • Active cooling (option can be customized)
Additional Board Support	<ul style="list-style-type: none"> • fbCAPTURE API • PF_RING and nTop suite support • DPDK support • libPCAP support • On-board temperature sensors • On-board multi-color status, Link and Activity LED for ports • HW prepared for direct Card to Card interconnect and second PCIe slot connection

Order Information

P/N	Description
fbC2CGhh-8x10G	10GE, half height bracket mounted, full height spare
fbC2CGhh-2x25G	25GE, half height bracket mounted, full height spare
fbC2CGhh-8x25G	25GE, half height bracket mounted, full height spare
fbC2CGhh-2x40G	40GE, half height bracket mounted, full height spare
fbC2CGhh-2x100G	100GE, max 100Gbps, Limited HW filter capacity, half height bracket mounted, full height spare
fbC2CGhh-8x10GF	10GE, full height bracket mounted, half height spare
fbC2CGhh-8x25GF	10GE, full height bracket mounted, half height spare
fbC2CGhh-2x25GF	25GE, full height bracket mounted, half height spare
fbC2CGhh-2x40GF	40GE, full height bracket mounted, half height spare
fbC2CGhh-2x100GF	100GE, full height bracket mounted, half height spare, Max 100Gbps, Limited HW filter capacity