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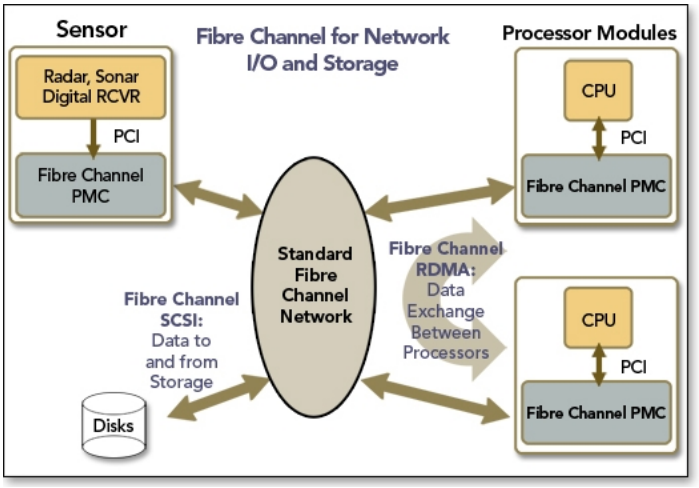
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Fibre Channel

FCA2540-XMC-FF-G Data Sheet: Dual Channel 8 Gbit/sec Fibre Channel XMC with 8-lane PCIe

FCA2540 XMC

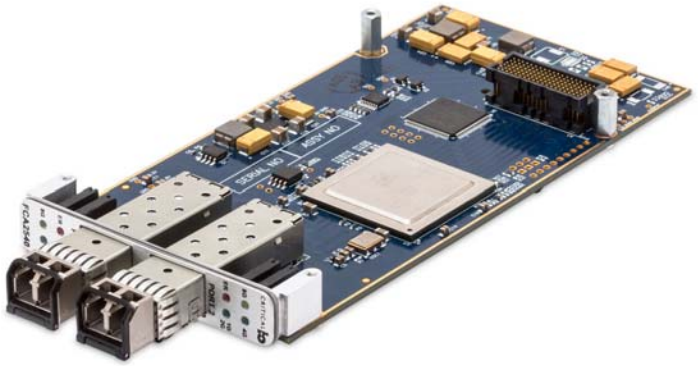
The FCA2540 XMC is the 7th generation of Fibre Channel interfaces from Critical I/O. Critical I/O's Fibre Channel interfaces allow system designers to easily integrate Fibre Channel into storage and networking I/O (processor to processor) applications. Critical I/O Fibre Channel products employ a Silicon Stack architecture which completely offloads all protocol processing into dedicated silicon, unlike FPGA-based Fibre Channel products which push the upper layer protocol processing (e.g. FC-SCSI) back onto the host ("software stack"). With industry-leading software capability, a Silicon Stack architecture, and support for industry standard protocols such as SCSI and RDMA, Critical I/O Fibre Channel solutions enable high sustained throughput, ultra-low host processor overhead and very low latency.



Fibre Channel for Storage & Networking Applications

High Performance / Low Host Overhead

Transfer 3200 MBytes/sec per second of data over a Fibre Channel network with minimal host CPU loading and ultra-low latency with the FCA2540 Fibre Channel XMC. The FCA2540 offers two independent channels of 8 Gbps Fibre Channel in a XMC with 8-lane PCI-Express. Each channel is capable of 1600 MBytes/sec and an overall sustained transfer rate of 3200 MBytes/sec. The Critical I/O Fibre Channel Accelerator product family also provides simultaneous support for a multitude of protocols (both networking & storage).



FCA2540-XMC-FF-G Features:

- **8/4/2 Gbps dual channel (auto negotiation)**
- **XMC with 8-lane PCI-Express host interface**
- **1600 MBytes/sec (full-duplex) max rate per channel**
- **10 usec latency**
- **Hardware BIT (Built in Test)**
- **Low power consumption**
- **Optical front panel connectors (SFP+ transceivers)**
- **Comprehensive software library & driver support**
- **Commercial and rugged versions available**

Network Features:

- **FC-RDMA protocol support**
- **FC-FCLP support (messaging)**
- **FC-ASM support**
- **FC-AV support**
- **FC-IP support**

Storage Features:

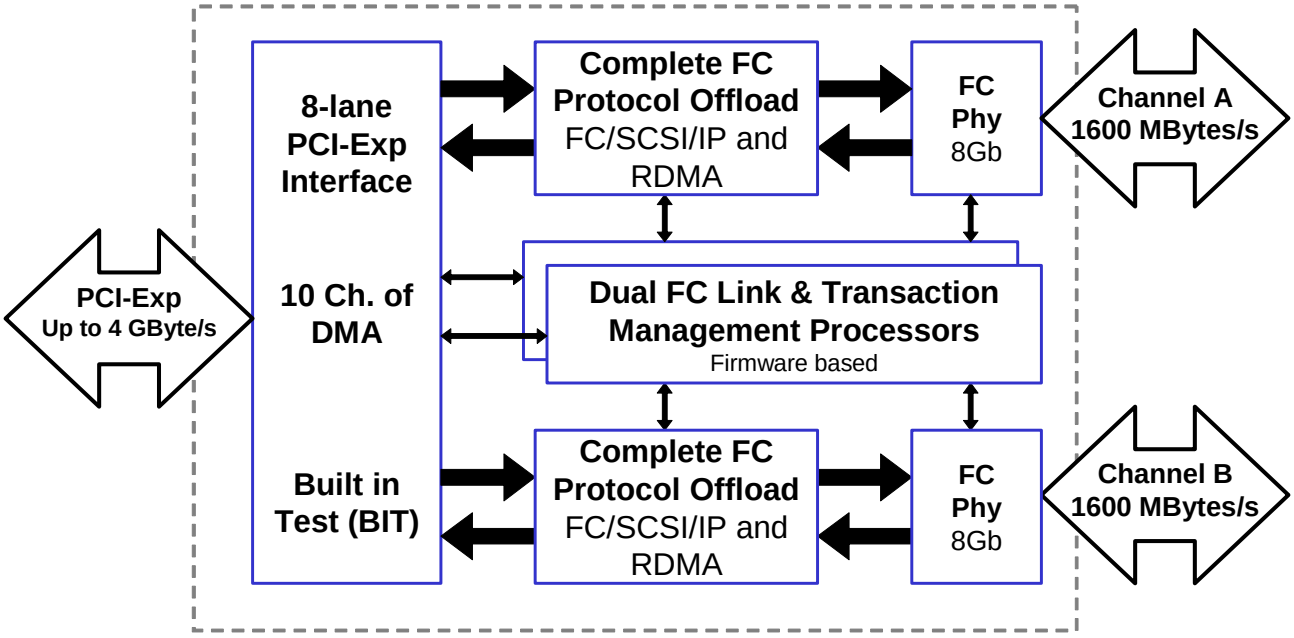
- **SCSI-FCP protocol support**
- **Initiator & target support**

Extensive Software Support & Capability

Critical I/O supplies the hardware, drivers, libraries, and protocol support you'll need for rapid system development without wasting time debugging drivers. The FCA2540 hardware is accompanied by an extensive offering of software library and driver software products with support for real-time OS platforms (as well as mainstream OS platforms) running on a variety of embedded processors (PowerPC, Intel, DSP, etc.)

FCA2540 XMC Technical Specifications

Controller Architecture	Highly integrated, low power, single chip dual channel Fibre Channel controller
Fibre Channel Rates	8/4/2 Gbps/channel auto negotiation (1Gb FC rate supported by model# FCA2540LS-XMC-FF-G)
Data Transfer Rate	1600 MBytes/sec (per channel, full-duplex) 3200 MBytes/sec sustained data rate (aggregate for interface)
Fibre Channel Topology	FC-AL, FC-AL2, point to point, switched fabric (FL_Port and F_Port)
Protocol Support	SCSI-FCP, FC-AE-RDMA; FC-AE-FCLP; FC-AE-ASM; FC-AE-AV; FC-IP
Host Bus Interface	PCI-Express 2.0 (8 lanes 2.5Gb/s; 4 lanes 5Gb/s capable)
Ports	Two optical front panel ports
Connectors	Two optical multimode SFF+ transceivers, LC-style small form factor
Form Factor	XMC, VITA 42.0, VITA 42.3
Power Requirements	+12VDC at 1.0A (max) or +5VDC at 2.2A (max) **standard configurations** (special factory configuration : +3.3VDC at 3.3A)
Power Consumption	6.5 Watts (typical)
Temperature	Operating: 0C to +55C; Storage: -40C to +85C
Humidity	Operating: 10-90%, non-condensing; Storage: 5-95%, non-condensing
Supported Host Processors	Intel, PowerPC, DSP, etc.
Software Support	OS Drivers: VxWorks & Linux; (Windows & Integrity drivers available, contact Critical I/O)
Model Number	FCA2540-XMC-FF-G (alternative model# FCA2540LS-XMC-FF-G for 1 Gb FC support)
Model Description	Dual Channel Fibre Channel XMC, 8/4/2 Gbit/sec, dual optical LC SFF+ (LC), commercial temp air-cooled hardware, RoHS LEAD FREE



Block Diagram: *The FCA2540 XMC provides two independent 8 Gb Fibre Channel ports in an XMC form factor with 8- lane PCI-Express. Each channel employs a full silicon stack offload of the complete protocol stack delivering 1600 MBytes/sec on each channel and 3200 MBytes/sec overall sustained throughput with minimal host overhead and ultra-low latencey.*

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