

Curtiss-Wright's New Rugged Fibre Channel PMC Card Features Dual Independent 4.25 Gbps FC Channels

LEESBURG, VA – January 15, 2007, -- Curtiss-Wright Controls Embedded Computing has introduced the **FX400** Dual-Channel (DC), a new dual 4.25 Gbps channel Fibre Channel (FC) PMC card designed for demanding high-bandwidth data communications and storage applications. The card supports both SCSI Fibre Channel Protocol (FCP) and Internet Protocol (IP), including both File System SCSI and Raw Initiator SCSI. This multi-protocol approach enables application software to communicate simultaneously with SCSI and IP-based devices while eliminating the need for the system integrator to interact with the FC interface. The FX400, available in both air cooled and conduction cooled rugged versions, simplifies the integration of high bandwidth FC data communications in PCI, VME and Compact PCI-based embedded systems while reducing slot count.

"The FX400 family represents Curtiss-Wright's 3rd generation of Fibre Channel products, allowing us to maintain and build on our leadership position in this high performance data communications market," said Gorky Chin, Vice President and General Manager of Curtiss-Wright Controls Embedded Computing's Dayton group.

Each of the FX400's dual independent FC paths support transfer rates up to 400 MBps in a single direction. In full duplex mode, the FX400 supports transfer rates up to 800 MBps, or a combined throughput rate of up to 1600 MBps per PMC card. Each of the card's dual channels also supports 1.0625 Gbps, 2.125 Gbps, and 4.25 Gbps rates, and automatically detects and switches to the appropriate rate using Auto-Speed Negotiation. This feature enables the FX400 cards to interoperate with existing FC devices at 1.0625 Gbps and 2.125 Gbps, and provides seamless transition to higher performance 4.25 Gbps devices.

The FX400 uses hot-swappable Small Form-factor Pluggable (SFP) transceiver modules that enable the user to modify the card's media interface configuration as needed. Since the dual channels on the FX400 cards are completely separate functions, changing an SFP transceiver module requires no downtime for the unmodified channel.

Multiple Protocol Support

The FX400's multi-protocol drivers combine the functionality of IP and File System SCSI and Raw Initiator SCSI. This enables application software to simultaneously communicate with a SCSI device using File System SCSI or RI and communicate with other devices using IP.

In addition to the File System SCSI and IP drivers, the FX400 also supports Raw Initiator SCSI, a highly optimized driver that maximizes bandwidth utilization and delivers high-throughput and deterministic low latency performance while eliminating data collisions and latencies caused by time-consuming protocol layers. Although applications generally access the disk through the OS file system, the RI driver bypasses this file system, dramatically improving performance to the storage system.

Fibre Channel Interface Features:

- Dual-FC interfaces
- Q-Logic EP-2422 PCI-to-FC controller ASIC
- 1.0625, 2.125 or 4.25 Gbps Full-Duplex FC data rate
- 200 MBps and 400 MBps and 800 MBps (Full-Duplex) data rate (per channel)

- Auto-Speed Negotiation
- Switched Fabric, Arbitrated Loop, and Point-to-Point support
- Full-Duplex and Dynamic Half-Duplex support
- 4-Gbps FC increases aggregate throughput rates to 1.6 GBps in full-duplex mode.
- 200,000 IOPS delivers high I/O transfer rates for storage applications
- Intelligent interleaved DMA (iIDMA) ensures maximum utilization of all data links.
- Out-of-order frame reassembly (OoOFR) reduces congestion and I/O re-transmissions.
- Supports diagnostic monitoring interface (DMI) for detailed transceiver information.
- T10 cyclic redundancy check (CRC) ensures end-to-end data integrity across SANs.
- Overlapping protection domains for continuous protection on internal data paths.
- Optional error correcting code (ECC) protection for control structures.
- Cisco VSAN frame tagging enables physical ports to be part of multiple logical networks.
- Multi-ID and N Port virtualization allows single port to acquire multiple N_Port IDs.

Host PCI Interface Features:

- 33/66 MHz PCI clock rate
- 66/100/133 MHz PCI-X clock rate
- 32 or 64-bit data path
- 64-bit addressing
- PCI specification 2.3
- PCI –X Revision 1.0a compliant
- 528 MBps burst transfer data rate at 64-bit, 66 MHz
- 1.064 GBps burst transfer data rate at 64-bit, 133 MHz
- Zero-wait-state transfers with cache line streaming
- Fewer than one interrupt per command completion
- Independent DMA channels for receive, transmit and command
- Programmable priority for the DMA channels
- Dual-address cycle capable power management
- 3.3 V PCI

Rugged COTS for harsh environments

To meet a variety of operational requirements, the FX400 is available in commercial, extended temperature and conduction-cooled configurations and can support front panel fiber optic, front panel copper, and rear panel IO physical interfaces.

Software support for the FX400 includes multi-protocol driver software. Software drivers are currently available for VxWorks and Linux Operating Systems.

Availability of the FX400 card is off-the-shelf. For pricing information, please contact the factory.

For editorial information regarding Curtiss-Wright products or services, contact John Wranovics, Public Relations Director, Curtiss-Wright, Tel: (925) 640-6402; Fax: (510) 530-8563; email: jwranovics@curtisswright.com. Web site: www.cwcembedded.com.

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About Curtiss-Wright Controls Embedded Computing

Curtiss-Wright Controls Embedded Computing is the industry's most comprehensive and experienced single source for embedded solutions, ranging from Processing, Subsystems, Data Communication, DSP, and Video & Graphics to the most advanced board level components and fully integrated custom systems. The Embedded Computing group serves the defense, aerospace, commercial and industrial markets and is part of Curtiss-Wright Controls Inc. For more information about Curtiss-Wright visit www.cwembedded.com.

About Curtiss-Wright Controls, Inc.

Headquartered in Charlotte, North Carolina, Curtiss-Wright Controls is the motion control segment of Curtiss-Wright Corporation (NYSE: CW). With manufacturing facilities around the world, Curtiss-Wright Controls is a leading technology-based organization providing niche motion control products, subsystems and services internationally for the aerospace and defense markets. For more information, visit www.cwcontrols.com.

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