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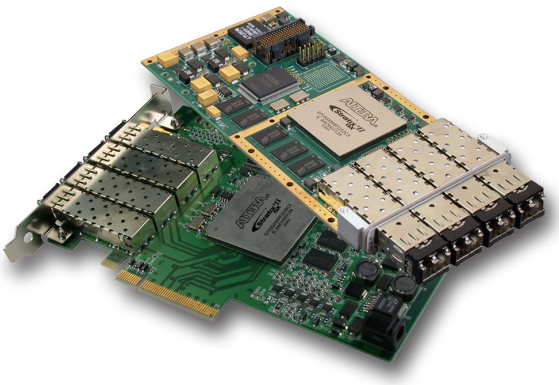
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Find the *Curtiss-Wright / Systran SL240* at our website: *Click HERE*

FibreXtreme PCIe and XMC

Multi-channel Serial FPDP Data Links

CURTISSWRIGHTDS.COM



Key Features

- 1, 2 or 4 full speed channels
- PCIe and XMC x 8 form factors
- Compatible with x 16 and x 32 PCIe slots
- 4 x independent data streams to host
- 256 Mbytes of on-board DDR2 SDRAM
- Supports 1.0625 Gb/s, 2.5 Gb/s and 5.0 Gb/s serial data rates
- ANSI/VITA 17.1-2003 sFPDP protocol
- Support for front and rear I/O options
- Up to 494 MB/s sustained data rate simultaneously on each channel
- Extends FPDP connections up to 50 km
- Various levels of error detection and status reporting

Applications

- Digital signal processing
- Radar and sonar
- Medical imaging
- Range and telemetry systems
- Video production

Overview

Based on the technology pioneered in the original Simplex Link series, FibreXtreme SL100/SL240/SL500 multi-channel Serial FPDP (sFPDP) boards blast data up to a sustained 494 MB/s on each of the four channels.

FibreXtreme sFPDP boards support up to a 5.0 Gb/s serial data link which utilizes a highly specialized communications protocol optimized for maximum data throughput. Data transfers occur without the CPU overhead and non-deterministic latencies associated with many layers of complex communication protocols. The SL100/SL240/SL500 on-board Direct Memory Access (DMA) engine is optimized for maximum data throughput without processor intervention. DMA and register byte swapping provide additional system flexibility.

Standard Architecture

sFPDP technology (ANSI/VITA 17.1-2003) is the industry standard for high-speed serial communication in today's advanced sensor-to-DSP systems. It's field-tested technology produces real-world results!

PCI Express® Host Interface

The multi-channel SL100/SL240/SL500 PCI Express (PCIe) bus interface cards are available in PCIe and XMC form factors. This allows a computer-processor based host to initialize and configure the sFPDP interface as a source and/or destination for data. The SL100/SL240/SL500 register set and the driver API provide extreme flexibility in data control and topology configuration. The included applications allow for benchmark testing, board configuration and user interface for board status and control.

Design Characteristics

With support for 5.0 Gb/s transmission rates between interconnected subsystems separated by as much as 50 km and low-latency performance to match, SL100/SL240/SL500 sFPDP technology is ideal for many of today's high-throughput DSP applications like that shown in the diagram below.

SL100/SL240/SL500 boards employ hardware-based insertion of data into fixed frames with flow control to keep the data connection open and operating at full speed. There is no need for complex communication protocols that cause data latency and reduce system performance as they establish and arbitrate the connection.

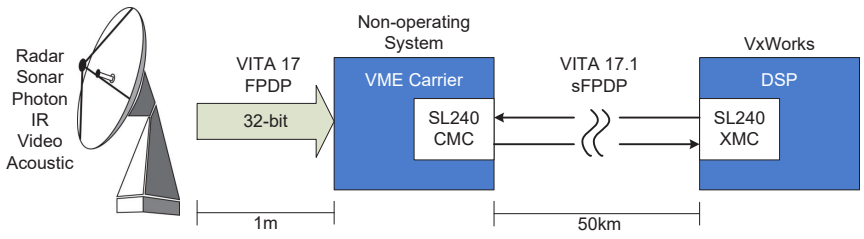


Figure 1: Typical FibreXtreme application

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Operating System Support

The multi-channel SL100/SL240/SL500 boards offer flexibility in software support with drivers for today's popular operating systems. With support for Windows®, Linux® and VxWorks®, you can choose the best OS solution for your data streaming application.

Extending FPDP

FPDP (ANSI/VITA 17-1998) was specifically invented to address the high-speed connection between the Analog-to-Digital Converter (ADC) of a sensor subsystem and the parallel connection made via ribbon cable across the VME front panel. It provides the simplicity, bandwidth, and reliability necessary to support these types of DSP systems.

However, FPDP has one major limitation, the ADC must be located within the one meter maximum cable length of the DSP. For many reasons, it is often desirable to locate the ADC as close as possible to the sensing unit, which may be located more than one meter from the DSP system(s). FibreXtreme boards extend the reach of FPDP while retaining its simplicity, bandwidth, and reliability.

Streaming Data Recorder

Curtiss-Wright's comprehensive family of COTS data recorders, such as the Multi-Channel Synchronized Recorder (MCSR) provide the capability to record and playback multiple sFPDP data links in real-time.

Multiple chassis can be combined to increase the number of sFPDP data links or to increase the total amount of storage. Hardware and software provided with the multiple chassis recorders makes the system appear and operate as a single recorder.

Rugged COTS Products for Harsh Environments

The opportunities for high-bandwidth, streaming data links are not limited to commercial computing applications. Many mission-critical, operational systems that are routinely exposed to extreme environmental conditions can also benefit from the sustained, flexible communication connection provided by our SL100/SL240/SL500 Series.

TABLE 1 SL100/SL240/SL500 environmental specifications

PARAMETER		COMMERCIAL	RUGGED	
			AIR-COOLED	CONDUCTION-COOLED
Temperature	Operational	0 to +50°C	-10 to +71°C	-40 to +71°C
	Non-operational	-40 to +85°C	-40 to +85°C	-40 to +85°C
Humidity	Operational	10 to 85% non-condensing	0 to 95% non-condensing	0 to 95% non-condensing
	Non-operational	0 to 90% non-condensing		
Vibration	Sine	N/A	10 g peak 10 Hz to 2k Hz	10 g peak 10 Hz to 2k Hz
	Random		› .04 g^2/Hz › 10 Hz to 1k Hz › -6 dB/octave › 1k Hz to 2k Hz	› .1 g^2/Hz › 10 Hz to 1k Hz › -6 dB/octave › 1k Hz to 2k Hz
Altitude	Operational	8,000 ft @ 32ºC	› 25,000 ft steady @ 32ºC › Rapid decompression to 40,000 ft	› 25,000 ft steady @ 32ºC › Rapid decompression to 40,000 ft
	Non-operational	25,000 ft	25,000 ft	25,000 ft
Shock		N/A	› 20 g peak › ½ sine wave › 11 ms duration	› 30 g peak › ½ sine wave › 11 ms duration

Ordering Information

Please contact factory.

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