CONDUANT

Big River™

Cobra PXIe High Speed Recorder

- *New generation data recorder based on Conduant's StreamStor® technology*
- *Modular architecture using PXI Express chassis and system controller*
- *Peer-to-Peer data recording from PCI Express sources*
- *Sustained recording and playback at up to 5GB/s (40Gb/s)*
- *Chained optical recording capability over 17 GB/s*
- *On-board 8GB RAM buffer*
- *Standalone operation via Ethernet or PCIe host system command/control*
- *Scalable SSD M.2 NVME PCIe data storage*
- *Cabled 8 lane PCIe Gen3 interface*
- *Up to 24 lanes of Fiber Optic IO (standard rate: 12.5 Gbps per lane)*
- *Multi-source PCI Express recording Capability to support multiple A/D*
- *Multiple optical IO protocols available including Interlaken, Serial FPDP, Aurora, etc.*

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Cobra PXIe
High Speed Recorder

OVERVIEW

The Cobra PXIe High Speed Recorder is a unique solution for high speed data recording and playback. The system utilizes the PXI Express system architecture to provide a modular, flexible solution that can be customized to nearly any requirement. The main recording engine (Cobra) is a PXIe board with high speed RAM and a high performance Xilinx FPGA. This board manages the data movement to and from storage devices and also provides optical fiber channels for high speed data input or output. The Cobra board can be used alone or in concert with additional Cobra boards to reach data streaming performance of over 17 GB/s.

A typical system configuration will include an Intel processor based controller, one or more Cobra boards and SSD based storage boards. The PXI Express backplane allows numerous configurations and combinations of storage and recorder boards to match nearly any requirement.

PEER-TO-PEER PCI EXPRESS

The StreamStor architecture provides the capability to move data on the PCI Express fabric using Peer-To-Peer techniques. This allows direct hardware data streaming from A/D or other PCI Express sources to or from the data storage without being impaired by system bottlenecks. The system can also accept data from multiple PCI Express sources simultaneously.

COMMAND / CONTROL

The system can operate independently from a host computer with command/control performed over a network connection. Control can also be automated from a software application using the StreamStor® software API from a network connected computer. A cabled PCI Express option provides connectivity to a host computer for command/control and/or high-speed data access. The cabled PCI Express option provides a 64 Gbps link that can be optionally extended to support long distance links using a PCI Express fiber optic cable.

SOLID STATE STORAGE

The standard storage devices used are M.2 NVME PCI Express Solid State Drives. These devices are installed up to 4 devices per PXI Express slot with up to 2TB per device. Use of solid state drives provides consistent performance even with high levels of shock and vibration. Standard configurations support up to 48TB of storage in a 4U 22” deep chassis.

HIGH SPEED SERIAL (OPTICAL)

The Xilinx FPGA on the Cobra board optionally includes up to 24 channels (48 fibers) of high speed optical and can be configured to support many different high speed serial protocols. The protocols possible over these interfaces include Interlaken, SerialFPDP and Aurora. Other interfaces can be added according to customer requirements.

The optical interfaces can also be used to extend the recorder performance. An Interlaken recorder capable of up to to 150 Gbps using 4 recorders and a 12 x 12.5 Gbps interface is one example of such a system.

The 24 channels can be customized to customer requirements by bonding channels to create higher speed channels or used independently to record large numbers of slower channels. The Xilinx FPGA also allows Conduant the flexibility to customize an implementation for a particular protocol.

TRIGGER / SYNC CAPABILITY

The Cobra hardware is connected to the PXI Express backplane instrumentation signals and also has front panel signal connectors. These signal sources can be customized to customer requirements to provide capabilities unique to a customer application for triggers, event marking, etc.

Software API

The included software development kit (SDK) includes support for .NET development environments. This includes languages such as C#, Visual Basic, and C++ CLI. The SDK also includes a complete “C” based interface to provide an interface usable by nearly any programming language. This include programming environments such as LabVIEW and MATLAB.

The SDK includes support for features such as wrap mode (circular buffer) for very long duration recording, playback looping and multiple recordings (file) management. Additional features are added regularly and the software can be customized to unique requirements as needed.

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Specifications	
Maximum data rate	5 GB/s (40 Gbps) sustained 17.7 GB/s (150 Gbps) with optical chain (4x5)
Maximum capacity	48TB (24 Devices) Extended capacity avail. with additional chassis
Internal Drive Interfaces	PCI Express NVME
Drive type	M.2 PCIe SSD (NGFF)
External data interfaces	Serial Optical x24
External interface protocols	Interlaken,SerialFPDP, Aurora
Control interfaces	Cabled PCI Express, Ethernet
Dimensions	20”(D) x 17”(W) x 1.75”(H) - 1U
Weight	TBD
Operating Temperature	5 to 50C
Shock / Vibration	TBD
Options	Rack Mount, 3U Expanded Storage
Power	AC 100-240V 50-60Hz

Warranty

Conduant hardware products are backed by a limited one year warranty. All software includes a 90 day warranty. Maintenance and priority support is available on a yearly subscription basis. Please contact your Conduant sales representative for more details.

Customer Support

Customer support is provided through a comprehensive web portal at www.conduant.com/support. Private logins and trouble ticket management are provided along with technical downloads, knowledge base and other support tools.

Please contact your Conduant sales representative for more details about the ***Cobra PXIe High Speed Recorder.***

ALL SPECIFICATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE

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