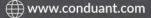## Product Features

- Data recording and playback based on Conduant StreamStor® technology
- Modular architecture using PXI Express chassis and system controller
- Supports up to 8 recorders in each chassis
- Peer-to-Peer recording from PCI Express sources
- Sustained data rates up to 5 GB/s (40 Gbps) per recorder
- Chained optical data rates up to 20 GB/s (160 Gbps)
- On-board 8 GB RAM buffer per recorder
- Standalone operation via Ethernet or PCIe host system command/control
- Scalable SSD NVMe PCIe data storage
- Cabled 8 lane PCIe Gen3 interface
- Up to 24 lanes of fiber IO (rates to 16 Gbps per lane) per recorder
- Multiple optical IO protocols available including Xilinx Aurora, ODI, Interlaken, Serial FPDP, etc.

Specifications

Maximum Data Rate	5 GB/s (40 Gbps) sustained 20 GB/s (160 Gbps) with optical chain (4x5)	
Maximum Capacity	128 TB (48 devices) Capacity varies with SSD availability. Extended capacity versions also available.	
Internal Drive Interfaces	PCI Express NVMe	
Drive Type	M.2 PCIe SSD (NGFF)	
External Data Interfaces	Serial Optical x24	
External Interface Protocols	ODI, Interlaken, Serial FPDP, Xilinx Aurora	
Control Interfaces	Cabled PCI Express, Ethernet	
Dimensions	**18-slot chassis option** 444.4mm (W) x 194.8mm (H) x 466mm (D) (with feet installed) 444.4mm (W) x 177.8mm (H) x 466mm (D) (with feet removed) 4U x 1 rack width	**10-slot chassis option** 322.5mm (W) x 194.8mm (H) x 552.5mm (D) (with feet installed) 322.5mm (W) x 177.8mm (H) x 552.5mm (D) (with feet removed)
Weight	TBD	
Operating Temperature	5° to 50°C	
Shock/Vibration	TBD	
Options	Rack mount rails, narrow chassis	
Power	AC 100-240V 50-60Hz	

Modular & Flexible

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, also known as the HSS-8324, can be used alone or in concert with additional Cobra boards to reach data streaming performance of 20 GB/s (160 Gbps).

A typical system configuration will include an Intel processor based controller, one or more Cobra boards, and one or more SSD based storage boards. The PXI Express backplane allows numerous configurations and combinations of storage and recorder boards to match nearly any requirement. Extended systems can also employ an additional chassis to provide additional storage capacity if desired.

Peer-to-Peer PCI Express

Conduant's 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 on 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 in the Cobra system are M.2 NVMe PCI Express solid state drives. These devices are installed with up to 4 per PXI Express slot. These drives are available in capacities up to 3.8 TB with even higher capacities expected in the future. The use of solid state drives provides consistent performance even with high levels of shock and vibration. Current standard configurations support up to 128 TB of storage in a 4U 22" deep chassis. Check with your Conduant sales representative for the latest available storage offerings compatible with the Cobra system.

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 ODI (Optical Data Interface), Interlaken, Serial FPDP, and Xilinx Aurora. Other interfaces can be added according to customer requirements.

The optical interfaces can also be used to extend the recorder performance. For example, an ODI recorder is capable of 160 Gbps using 4 recorders and a 12 x 14.1 Gbps interface. The optical interface provides a high speed data path that is daisy chained to each recorder so that the speed capability is aggregated across the cooperating recorders.

The 24 optical fibers can be tailored 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 adapted to customer requirements to provide unique capabilities required for a customer application—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 facilitate software development using many additional programming languages. This includes programming environments such as Python, LabVIEW, and MATLAB. Support for software development in various Linux distributions is also available. Contact Conduant for the latest information.

The SDK includes support for connecting over a network using the optional cabled PCI Express for high speed download. Other features such as playback looping and multiple recording (file) management are also provided. Additional features are added regularly and the software can be customized as needed.

Industry Partnerships

Conduant is proud to provide support and expertise for the Cobra High Speed Recorder as a Xilinx Alliance Member and Keysight Solutions Partner.

XILINX
ALLIANCE PROGRAM
MEMBER

KEYSIGHT
TECHNOLOGIES
Solutions Partner

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.