

KRONOS

High Speed Data Recorder



General Description

The Kronos High Speed Data Recorder (HSDR) is an affordable platform for synchronous capture of large blocks of data at very high speeds. The base system can record up to 10 lanes of serial data (2.5 Gbps/lane) into ten SATA 2.0 compliant Solid State (SSD) or Conventional storage drives. SATA multiplexors provide access to all ten drives by any standard computer (Windows, Mac or Linux) through two SATA 2.0 interfaces on the Kronos Recorder. Both the record rate and the storage space are scalable through additional modules if a higher record rate or a larger storage space is required.

The Kronos HSDR is controlled externally by a single board computer via a USB connection.

The architecture allows for easy analysis of recorded data which can be useful in test scenarios by connecting the HSDR to a real system (to perform a “sniffer” function) and then making the recorded data available for non-real-time debugging or analysis.

Benefits

- High speed recording of multiple serial paths (2.4 Gbps per path).
- High capacity storage (limited only by drive size, baseline configuration supports 10 drives).
- Synchronous capture to 62.5 nSec across record paths.
- Standard FAT32 file system for easy access to recorded data.
- FPGA based architecture allows customized designs with remote update capability
- Scripting tools provided for data examination and manipulation.

Applications

- Radar I/Q recorder for algorithm development
- High speed sensor data acquisition (optical, RF, radar, SAR, sonar, etc.)
- Broadband baseband signal recorder for integrity checks and vector generation (test / debug support).

- Multiple path high definition video recording (e.g. VCR function).

Kronos High Speed Data Recorder Features

- Ten sFPDP (VITA 17.1) lanes (2 Tx/Rx, 8 Rx only)
- Ten SATA 2.0 lanes to drives for record/playback
- Two SATA 2.0 lanes to single board computer
- Built-in SATA multiplexor – allows computer access to any drive without removing from recorder.
- USB control interface to command and status recorder.
- Timestamps embedded into data stream for packet re-assembly

Kronos HSDR Configuration Features

- Compact PCI compatible
- Standalone mode (no cPCI required)
- USB command, control and status
- Mini SAS connector for standard SATA connections
- High Speed Serial Interface for connection to various physical layer options
 - sFPDP, Fibre Channel, SATA, SAS
- Air cooled and conduction cooled options



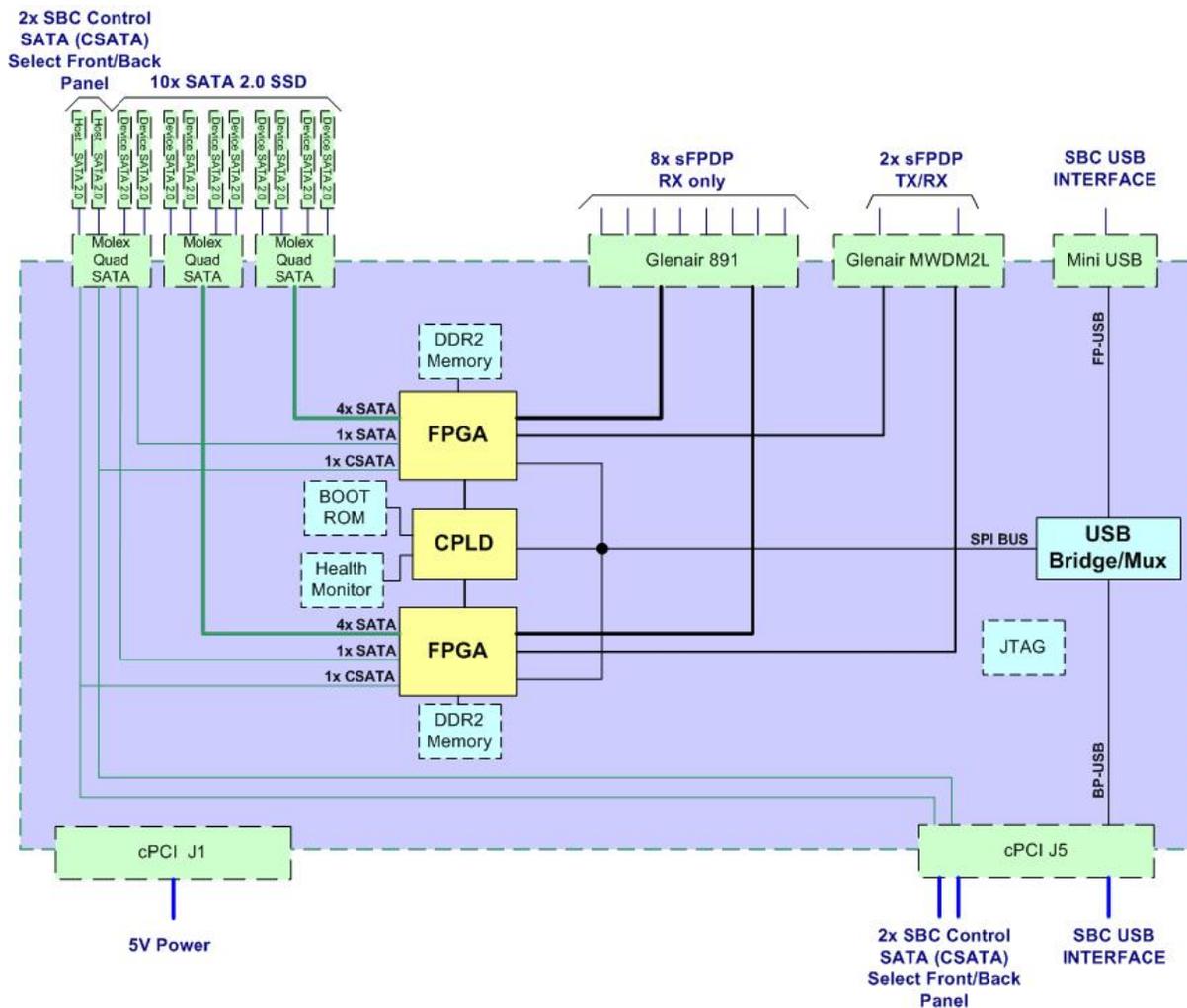
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Kronos Block Diagram



Kronos Baseline Specifications

Description	Specification
Record Rate*	10 x 2.4 Gbps = 24 Gbps
Power	15W
Input Serial Data Format	VITA 17.1 (sFPDP)
Output Serial Data Format	SATA 2.0
Storage Format	FAT32
Path to Path Synchronization	< 100 nSec

*Rate/Storage Space dependent on capabilities of attached drives