Model RTR 2756

Serial FPDP Rugged Rackmount Recorder

TALON
RTR RUGGED RECORDER

SystemFlow

Features

- Designed to operate under conditions of shock and vibration
- Complete Serial FPDP record and playback system
- Up to eight I/O channels in a single 4U 19-inch rugged rackmount PC server chassis
- Removable SSDs
- Up to 46 terabytes of storage to NTFS RAID disk array
- Copper, single-mode and multi-mode fiber interfaces available
- Real-time aggregate recording rates of up to 3.2 GB/sec
- Supports Flow Control, CRC, and Copy/Loop Mode as a receiver and transmitter
- Supports 1.0625, 2.125, 2.5, 3.125 and 4.25 GBaud link rates
- RAID levels of 0 ,1, 5 , 6, 10 and 50
- Optional N+1 redundant power supply
- SystemFlow® GUI virtual instrumentation panel for fast, intuitive operation
- C-callable API for integration of recorder into application
- File headers include time stamping and recording parameters
- Optional GPS time and position stamping
- Windows® 7 Professional workstation with high-performance Intel® Core™ i7 processor

Contact factory for options, for number and type of channels, recording rates, and disk capacity.

General Information

The Talon® RTR 2756 is a complete turn-key recording system capable of recording and playing back multiple Serial FPDP data streams. It is ideal for capturing any type of streaming sources including live transfers from sensors or data from other computers and is fully compatible with the VITA 17.1 specification. Using highly-optimized disk storage technology, the system achieves aggregate recording rates up to 3.2 GB/sec.

The RTR 2756 can be populated with up to eight SFP connectors supporting Serial FPDP over copper, single-mode, or multi-mode fiber, to accommodate all popular Serial FPDP interfaces. It is capable of both receiving and transmitting data over these links and supports real-time data storage to disk.

Programmable modes include flow control in both receive and transmit directions, CRC support, and copy/loop modes. The system is capable of handling 1.0625, 2.125, 2.5, 3.125 and 4.25 GBaud link rates supporting data transfer rates of up to 425 MB/sec per Serial FPDP link.

Optional GPS time and position stamping allows the user to mark the beginning of a recording in the recording file's header.

SystemFlow Software

The RTR 2756 includes the SystemFlow Recording Software. SystemFlow features a Windows-based GUI (Graphical User Interface) that provides a simple and intuitive means to configure and control the system.

Custom configurations can be stored as profiles and later loaded as needed, allowing the user to select preconfigured settings with a single click.

Built on a server-class Windows 7 Professional workstation, the RTR 2756 allows the user to install post-processing and analysis tools to operate on the recorded data.

The RTR 2756 records data to the native NTFS file system, providing immediate access to the recorded data.

Data can be off-loaded via two gigabit Ethernet ports or six USB 2.0 ports. Additionally, data can be copied to optical disk, using the 8X double layer DVD±R/RW drive.

Rugged and Flexible Architecture

Because SSDs operate reliably under conditions of shock and vibration, the RTR 2756 performs well in ground, shipborne and airborne environments. Configurable with hot-swappable SSDs, the RTR 2756 can provide storage capacities of up to 46 TB in a rugged chassis. Drives can be easily removed or exchanged during or after a mission to retrieve recorded data.

The RTR 2756 is configured in a 4U 19" rack-mountable chassis, with hot-swap data drives, front-panel USB ports and I/O connectors on the rear panel.

Systems are scalable to accommodate multiple chassis to increase channel counts and aggregate data rates. All recorder chassis are connected via Ethernet and can be controlled from a single GUI either locally or from a remote PC

Multiple RAID levels, including 0, 1, 5, 6, 10 and 50 provide a choice for the required level on redundancy. Redundant power supplies are optionally available to provide a robust and reliable high-performance recording system. ➤
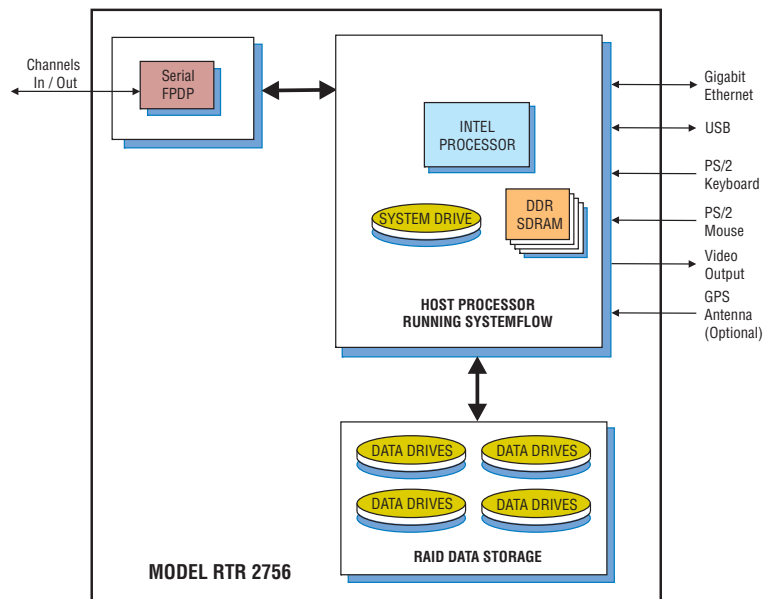
➤ SystemFlow Graphical User Interface
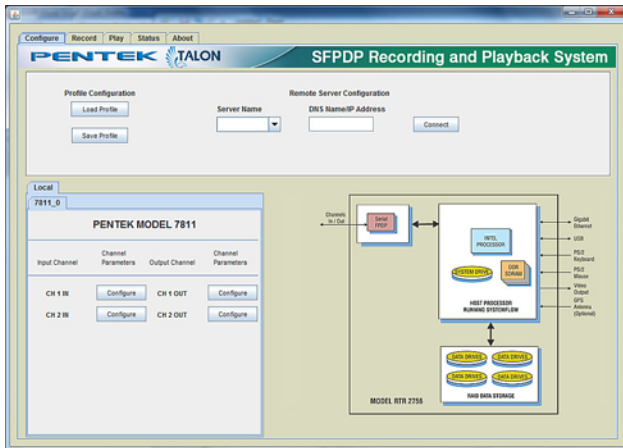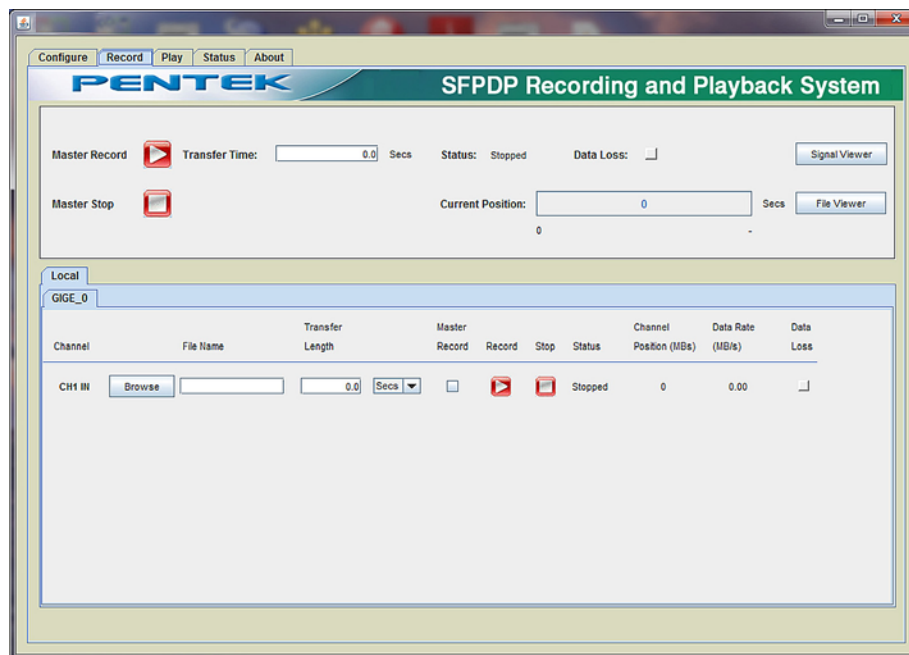

SystemFlow Main Interface

The RTR 2756 GUI shows a block diagram of the system and provides the user with a control interface for the recording system. It includes Configure, Record, Playback, and Status screens, each with intuitive controls and indicators. The user can easily move between screens to configure parameters, control and monitor a recording, and play back a recorded stream.

SystemFlow Hardware Configuration Interface

The Configure screen presents operational system parameters including temperature and voltages. Parameters are entered for each input or output channel specifying the flow control settings and the recognition of a CRC in the data stream. Each channel can also be set up to utilize Serial FPDP's copy/loop mode. All parameters contain limit-checking and integrated help to provide an easier-to-use out-of-the-box experience.

SystemFlow Record Interface

The Record screen allows you to browse a folder and enter a file name for the recording. The length of the recording for each channel can be specified in megabytes or in seconds. Intuitive buttons for Record, Pause and Stop simplify operation. Status indicators for each channel display the mode, the number of recorded bytes, and the average data rate. A Data Loss indicator alerts the user to any problem, such as a disk full condition.

By checking the Master Record boxes, any combination of channels in the lower screen can be grouped for synchronous recording via the upper Master Record screen. The recording time can be specified, and monitoring functions inform the operator of recording progress. ➤

PENTEK

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▶ SystemFlow API

SystemFlow includes a complete API (Application Programming Interface) supporting control and status queries of all operations of the RTR 2756 from a custom application.

High-level C-language function calls and the supporting device drivers allow users to incorporate the RTR 2756 as a high-performance server front end to a larger system. This is supported using a socket interface through the Ethernet port, either to a local host or through an internet link for remote, stand-alone acquisition. Recorded NTFS files can be easily retrieved through the same connection.

Specifications

PC Workstation

Operating System: Windows 7 Professional
Processor: Intel Core i7 processor
Clock Speed: 2.0 GHz or greater
SDRAM: 6 GB
RAID
  Storage: 3.8, 7.6, 15.3, 30.7 or 46.0 TB
  Supported Levels: 0, 1, 5, 6, 10 and 50

Serial FPDP Interface

Copper - Option 280
  Cable: 100-ohm shielded twin-ax
  Connector Type: SFP+
  Max. Cable Length: 20 m
Multi-mode Fiber Optical - Option 281
  Cable: Multi-mode fiber, 850 nm
  Connector Type: LC
  Max. Cable Length: Up to 300 m
Single-mode Fiber Optical - Option 282
  Cable: Single-mode fiber
  Connector Type: LC
  Max. Cable Length: Up to 10 km

Physical and Environmental

Dimensions & Weights
  All options except 085: 19" W x 21" D x 7" (4U) H
  Weight: 50 lb, approx.
  Option 085: 19" W x 26" D x 7" (4U) H
  Weight: 65-90 lb
Operating Temp: 0° to +50° C
Storage Temp: –40° to +85° C
Relative Humidity: 5 to 95%, non-condensing
Operating Shock: 15 g max. (11 msec, half sine wave)
Operating Vibration: 10 to 20 Hz: 0.02 inch peak, 20 to 500 Hz; 1.4 g peak acceleration

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Model RTR 2756 Ordering Information and Options

Channel Configurations

Option -204	4-channel recording
Option -208	8-channel recording

Storage Options / Max. Data Rate

		Max. Data Rate
Option -410	3.8 TB SSD storage capacity	3.2 GB/sec
Option -415	7.6 TB SSD storage capacity	3.2 GB/sec
Option -420	15.3 TB SSD storage capacity	3.2 GB/sec
Option -430	30.7 TB SSD storage capacity	3.2 GB/sec
Option -440	46.0 TB SSD storage capacity	3.2 GB/sec

Note: Options -430 and -440 require 26-inch deep chassis

Serial FPDP Interface (append to all options)

Option -280	Copper, SFP+ connectors
Option -281	Multi-mode optical, LC connectors, 4 ports
Option -282	Single-mode optical, LC connectors, 4 ports

General Options (append to all options)

Option -261	GPS time & position stamping
Option -264	IRIG-B time stamping

Contact Pentek for compatible Option combinations
Storage and Channel-count Options may change, contact Pentek for the latest information

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Specifications are subject to change without notice