Features

- Housed in a small chasis measuring 5.25"H x 8.5"W x 14"D
- Weighs 17 lb (7.7 kg)
- Shock and vibration-resistant SSDs perform well in vehicles, ships and aircraft
- Complete Serial FPDP record and playback system
- Up to four I/O channels
- Removable SSDs
- Up to 30 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 1.6 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, 5 and 6
- 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

General Information

Optimized for SWaP (size, weight and power) the Pentek Talon® RTR Small Form Factor (SFF) product line provides the performance and storage capacity previously only possible in much larger rackmountable chassis. Measuring 5.25" H x 8.5" W x 14" D and weighing only 17 pounds (7.7 kg), this small package can hold up to 30.6 TB of SSD storage.

Configured as a complete turnkey system capable of recording and playing back multiple Serial FPDP data streams, it is ideal for capturing any type of streaming sources such as live transfers from sensors or data from other computers. It 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 2556 can be populated with up to four 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.

Eight front panel data drives can be easily removed along with a front panel removable OS drive to allow all non-volatile memory to be removed from the system in seconds.

SystemFlow Software

The RTR 2556 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 2556 allows the user to install post-processing and analysis tools to operate on the recorded data.

The RTR 2556 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 2556 performs well in ground, shipborne and airborne environments. Configurable with hot-swappable SSDs, the RTR 2556 can provide storage capacities of up to 30.6 TB in a rugged chassis. Drives can be easily removed or exchanged during or after a mission to retrieve recorded data.

The RTR 2556 is configured 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. Multiple RAID levels, including 0, 5, and 6 provide a choice for the required level of redundancy. ▶
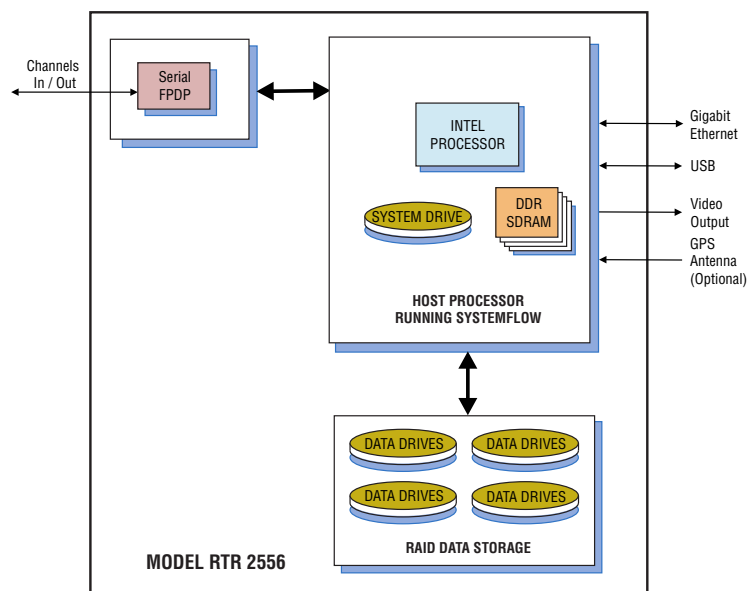
➤ SystemFlow Graphical User Interface
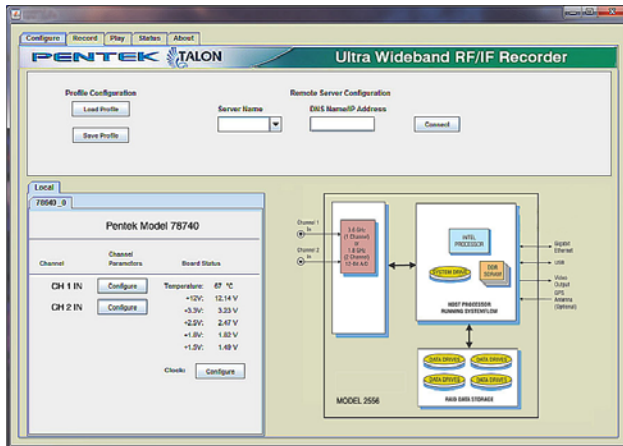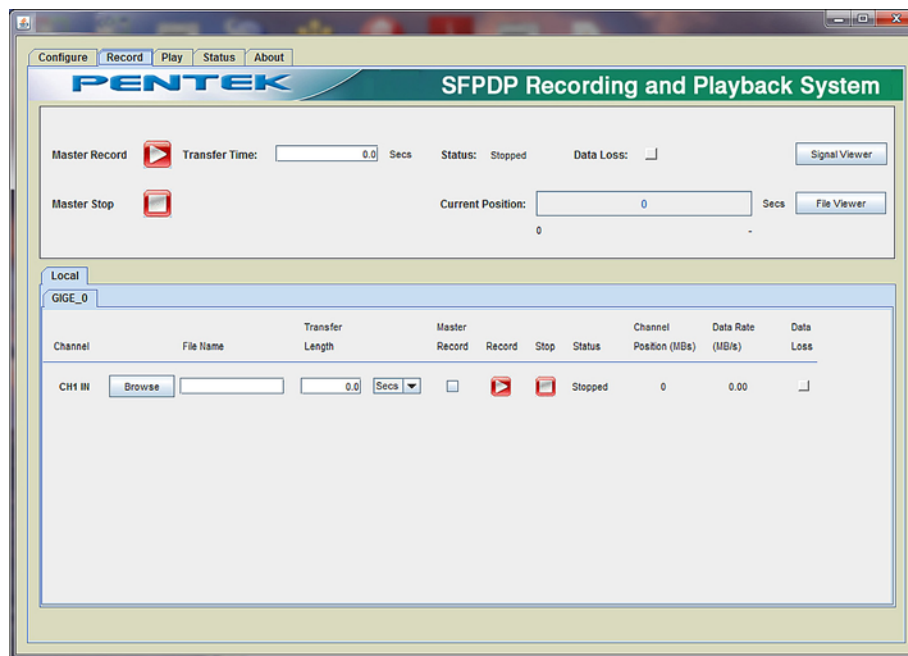

SystemFlow Main Interface

The RTR 2556 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. ➤

➤ SystemFlow API

SystemFlow includes a complete API (Application Programming Interface) supporting control and status queries of all operations of the RTR 2556 from a custom application.

High-level C-language function calls and the supporting device drivers allow users to incorporate the RTR 2556 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 (standard configuration)
Operating System: Windows workstation
Processor: Intel i7 7700K (7th Gen) quad core processor
Clock Speed: 4.2 GHz
Operating System Drive: 250 GB SSD
SDRAM: 8 standard, 16 or 32 GB optional
RAID
    Total Storage: 3.8 TB – 30.6 TB
    Supported RAID Levels: 0, 5 and 6
    Drive Bays: Hot-swap, removable, front panel

Rear Panel I/O
    Four USB 3.0 ports
    Two Gigabit RJ45 ports
    Two HDMI and One DVI ports
    Audio and PS2 ports
    USB 3.0 Type-C port
    Two Wi-Fi antenna ports
Front Panel I/O
    Two USB 2.0 ports
    Power and recessed RESET buttons
    LED indicators for power and HDD access

Physical and Environmental
Size: 5.25″ H x 8.5″ W x 14.0″ D
Weight: 17 lb (7.7 kg)
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
Power Requirements: 100 to 240 VAC, 50 to 60 Hz, 150 W max.

Model RTR 2556 Ordering Information and Options

Storage Options

Option -410	3.8 TB SSD storage capacity
Option -415	7.6 TB SSD storage capacity
Option -420	15.3 TB SSD storage capacity
Option -430	30.6 TB SSD storage capacity

Serial FPDP Interface

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

Additional Options

Option -261	GPS Time and Position Stamping
Option -285	Raid 5 Configuration
Option -286	Raid 6 Configuration
Option -309	16 GB System Memory
Option -310	32 GB System Memory
Option -630	6 to 30 VDC Power Supply

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

Specifications are subject to change without notice