

Features

- Records gigabit, 10-gigabit or 40-gigabit Ethernet streams
- TCP and UDP protocols
- Optical interfaces available
- Aggregate recording rates to 4.0 GB/sec
- Up to 122 terabytes of storage to NTFS RAID solid state disk array
- Multiple RAID levels of 0, 1, 5, and 6
- 4U short 19-inch rugged rackmount PC server chassis
- Designed to operate under conditions of shock and vibration
- Removable shock- and vibration-resistant SSDs perform well in vehicles, ships and aircraft
- Windows® workstation with high-performance Intel® processor
- SystemFlow® GUI with signal viewer analysis tool
- C-callable API for integration of recorder into applications
- File headers include time stamping and recording parameters
- Optional GPS time and position stamping
- Optional 18–36 VDC power supply



General Information

The Talon® RTR 2755 is a complete turnkey recording and playback system for storing 1-, 10-, and 40-gigabit Ethernet streams. It is ideal for capturing any type of streaming sources including live transfers from sensors or data from other computers and supports both TCP and UDP protocols. Using highly-optimized disk storage technology, the system guarantees loss-free performance at aggregate recording rates up to 4.0 GB/sec.

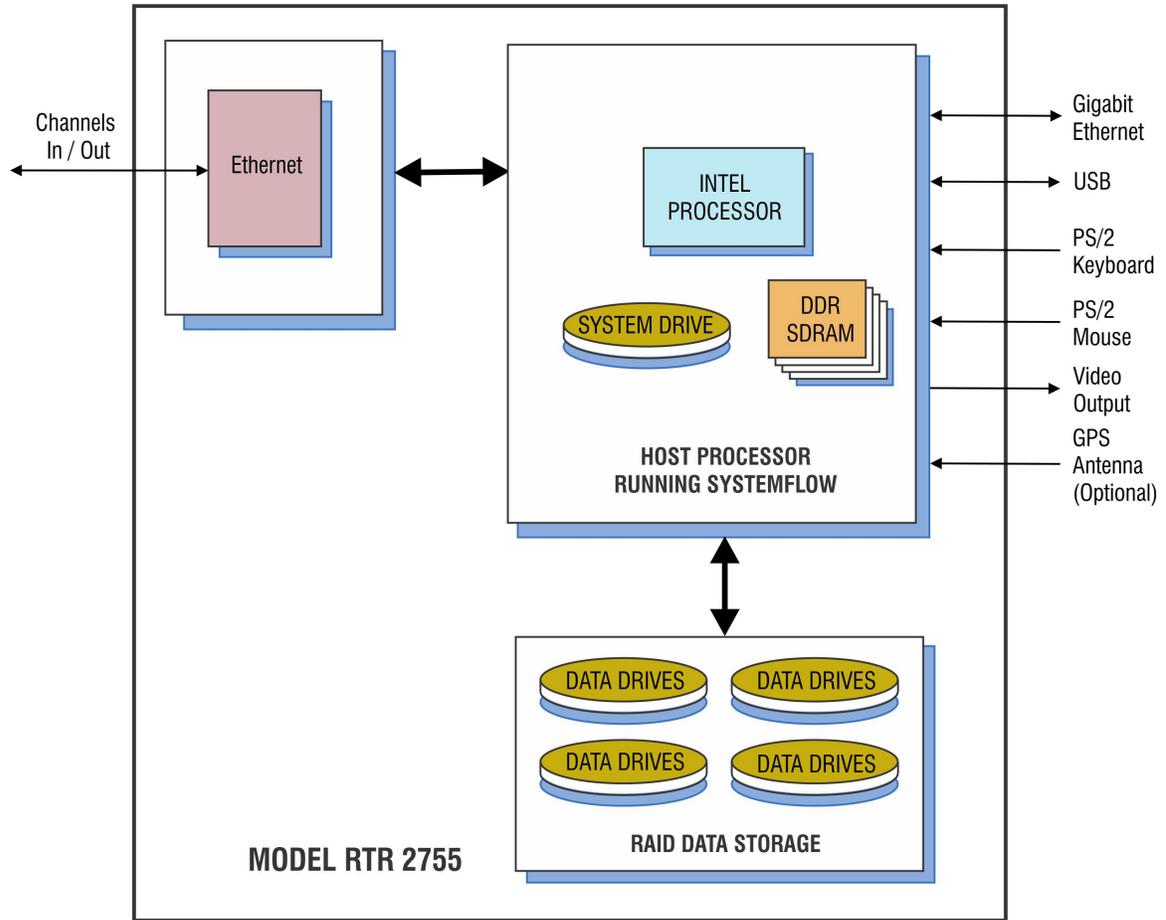
Two rear panel SFP+ LC connectors for 850 nm multi-mode or single-mode fibre cables, or CX4 connectors for twinax cables accommodate all popular interfaces. Optional GPS time and position stamping accurately identifies each record in the file header.

Rugged and Flexible Architecture

Because SSDs operate reliably under conditions of shock and vibration, the RTR 2755 performs well in ground, shipborne and airborne environments. The hot-swappable SSDs provide storage capacity of up to 122 TB. The drives can be easily removed or exchanged during or after a mission to retrieve recorded data.

The RTR 2755 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, and 6, provide a choice for the required level of redundancy.

2755 Block Diagram



SystemFlow Software

All Talon recorders include the Pentek SystemFlow® recording software. SystemFlow software provides three ways for users to configure and control a Talon recorder:

- The SystemFlow GUI provides a point-and-click user interface. 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.
- The [SystemFlow API](#) provides a set of C-callable libraries that allow engineers to develop their own user interface to configure and control their Talon recorder.
- The [SystemFlow Telnet](#) interface provides a simple set of commands to configure and control the recorder. This eliminates the need for any software development and is most suitable for unmanned operation.

SystemFlow software allows the recorder to be set up to run autonomously by implementing scripts using the API or telnet interface. All three interfaces can be run from a remote connection over Gigabit Ethernet.

A simple header that holds the recording parameters is added to the beginning of the file. An optional GPS receiver allows the user to precisely timestamp files and optionally track the recorder's position throughout a mission. The system records all data to the native NTFS file system, allowing for quick and easy access to the data from any computer.

Click below to view a video about SystemFlow.



SystemFlow Simulator

To learn more about the SystemFlow Software, you can [download and install the free SystemFlow Simulator](#) to your desktop or laptop PC. The [SystemFlow Simulator](#) allows you to learn how to use the Talon recording system's SystemFlow software interface before you acquire a recorder or while you are waiting for delivery of a Talon recording system.

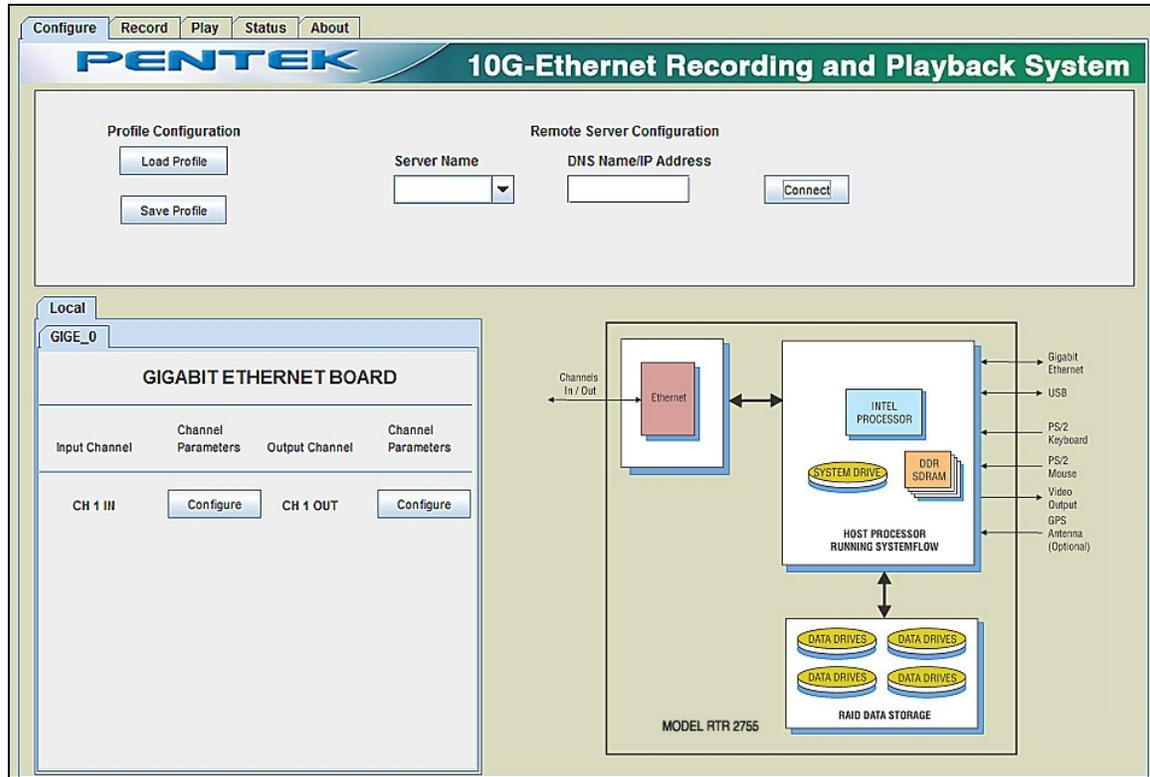
The Simulator can simulate the operating environment of all the different Talon recorder models. The Simulator also demonstrates the [SystemFlow Signal Viewer](#) by playing recorded signals to simulate the appearance of live signals being digitized and recorded by a Pentek analog signal recorder.

Features

- Provides real-time recording system simulation
- Demonstrates SystemFlow signal & file viewer tools
- Capable of simulating all Talon analog and digital recording systems
- Full Talon SystemFlow GUI
- Simulator can be used to develop Talon system profiles for use in the final system
- Can be used with the [SystemFlow API](#) to develop and test custom user interface

SystemFlow GUI

The RTR 2755 GUI provides the user with a control interface for the recording system. It includes Configuration, Record, Playback and Status screens, each with intuitive controls and indicators. The user can easily move between screens to set configuration parameters, control and monitor a recording, and play back a recorded signal. The [signal viewer](#), integrated into the recording GUI, allows the user to monitor real-time signals or signals recorded on disk.



Setting System Parameters

Parameters are entered for each input or output channel specifying UDP or TCP protocol, client or server connection, the IP address and port number. All parameters contain limit-checking and integrated help to provide an easier-to-use out-of-the-box experience.

Input Channel 1 Parameters

Protocol:

Client/Server:

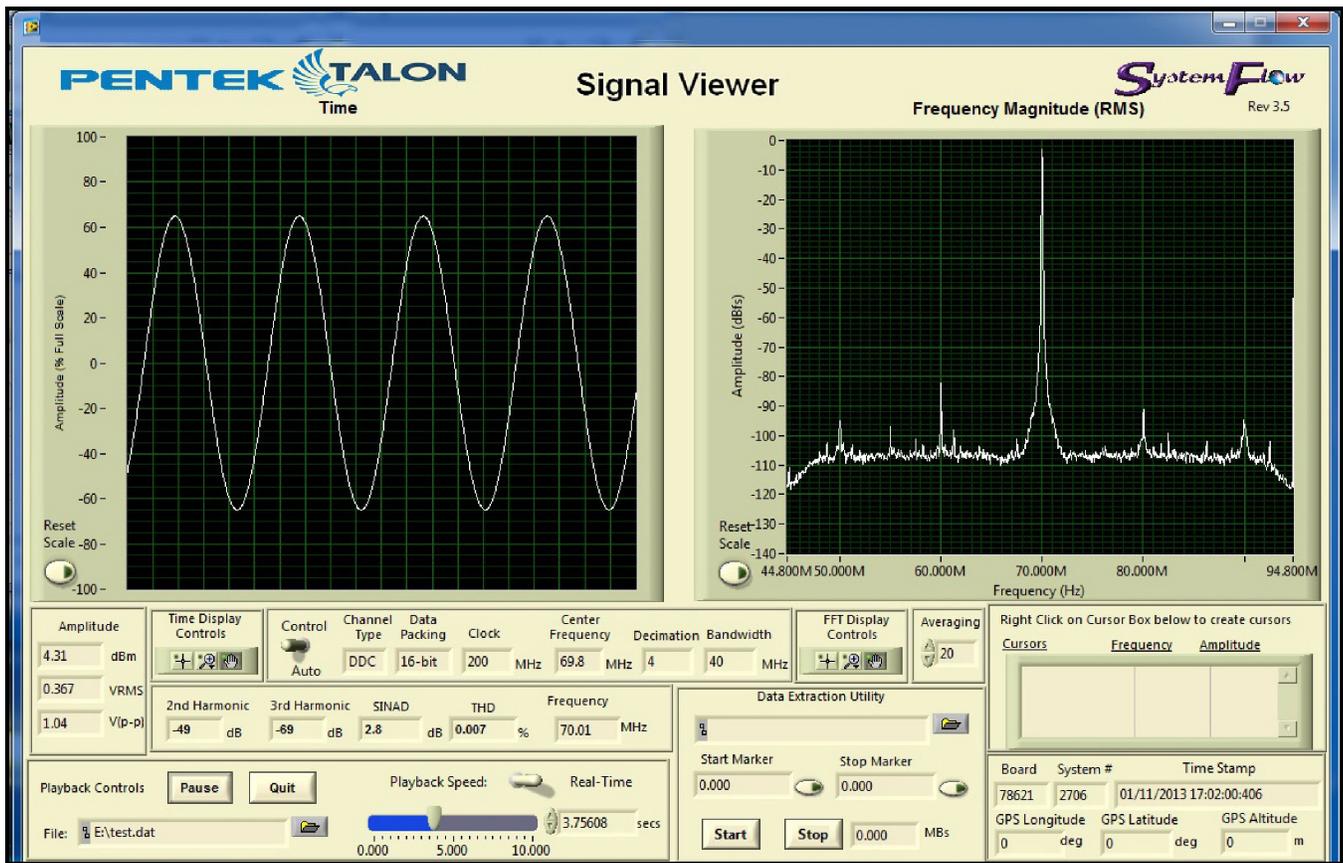
IP Address:

Port Number:

Signal Viewer

The SystemFlow Signal Viewer includes a virtual oscilloscope and spectrum analyzer for signal monitoring in both the time and frequency domains. It is extremely useful for previewing live inputs prior to recording, and for monitoring signals as they are being recorded to help ensure successful recording sessions. The viewer can also be used to inspect and analyze the recorded files after the recording is complete.

Advanced signal analysis capabilities include automatic calculators for signal amplitude and frequency, second and third harmonic components, THD (total harmonic distortion), and SINAD (signal to noise and distortion). With time and frequency zoom, panning modes, and dual, annotated cursors to mark and measure points of interest, the SystemFlow Signal Viewer can often eliminate the need for a separate oscilloscope or spectrum analyzer in the field.



SystemFlow API

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

High-level C-language function calls and the supporting device drivers allow users to incorporate the RTR 2755 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, standalone acquisition. Recorded NTFS files can be easily retrieved through the same connection.

Below is an example of controlling recording via the SystemFlow API.

```

728     }
729     //transfer until end of disk
730     else if (transferType == TRANSFER_END_OF_DISK)
731     {
732         recordParams->transferTime    = 0;           // must set to 0
733         recordParams->transferLength  = 0;           // must set to 0
734     }
735
736     //////////////////////////////////////////////////////////////////// Start the record ////////////////////////////////////////////////////////////////////
737     SetConsoleTextAttribute (hConsole, FOREGROUND_GREEN | FOREGROUND_INTENSITY );
738     printf("\nCase 6: RTS_Record\n");
739     SetConsoleTextAttribute (hConsole, wOldColorAttrs);
740
741     //trigger immediately
742     if(recordParams->trigger == RTS_TRIGGER_IMMEDIATELY)
743     {
744         //send record command
745         if ((error = RTS_Record(++msgNum,
746                               serverInfo,
747                               recordParams,
748                               recordChanId,
749                               fileName[0])) != RTS_SUCCESS)
750         {
751             printf("Record Error # 0x%lx.\n", error);
752             exitHandler(error);
753             goto freeMem;
754         }
755
756         Sleep(500);
757     }
758
759     //wait for SW trigger
760     else if(recordParams->trigger == RTS_WAIT_FOR_SW_TRIGGER)
761     {
762         //send record command which set up record and start DMA
763         if ((error = RTS_Record(++msgNum,
764                               serverInfo,
765                               recordParams,
766                               recordChanId,
767                               fileName[0])) != RTS_SUCCESS)

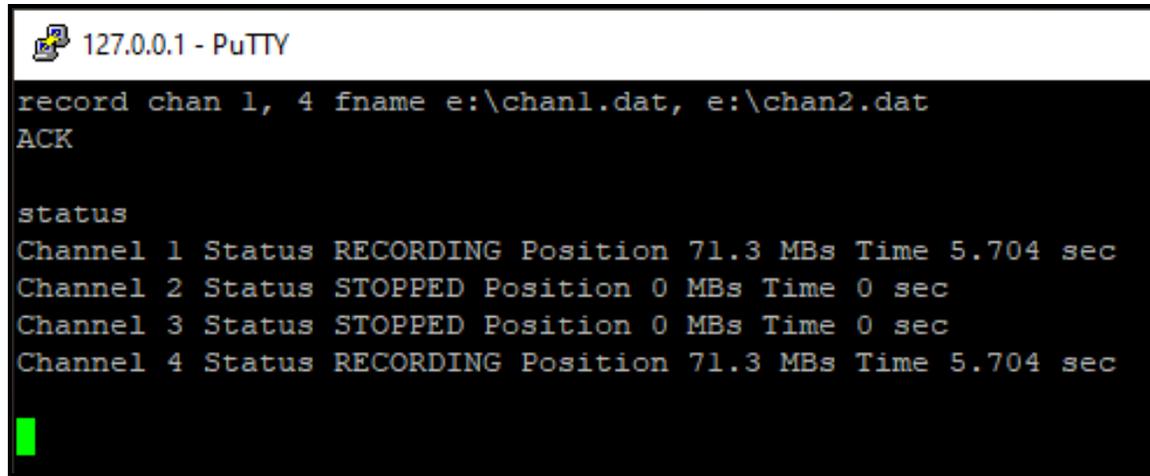
```

SystemFlow Telnet

The Talon telnet facility is an optional feature that can be requested when ordering one of Pentek's Talon recording systems. The Talon telnet facility allows you to control a Talon recorder from a remote computer. You also can use the Talon recorder's SystemFlow [Signal Viewer](#) to remotely monitor real-time data.

Pentek's [Telnet Facility for Talon Recording Systems User's Guide](#) provides instructions for setting up telnet access and describes all the supported commands.

Below is an example of use of the "record" command:



```
127.0.0.1 - PuTTY
record chan 1, 4 fname e:\chan1.dat, e:\chan2.dat
ACK

status
Channel 1 Status RECORDING Position 71.3 MBs Time 5.704 sec
Channel 2 Status STOPPED Position 0 MBs Time 0 sec
Channel 3 Status STOPPED Position 0 MBs Time 0 sec
Channel 4 Status RECORDING Position 71.3 MBs Time 5.704 sec
```

Specifications

PC Workstation (standard configuration)

Operating System: Windows

Processor: Intel Core i7 processor

SDRAM: 8 GB standard, optionally up to 64 GB

RAID

Storage: Up to 122.8 TB SSDs

Drive Type: Solid-state drive

Supported RAID Levels: 0, 1, 5 and 6

Ethernet Interface

Option 280: SFP+

Quantity: 2 ports

Connector Type: SFP+

Option 281: Multi-mode Fibre Optical

Quantity: 2 ports

Cable: Multi-mode fibre, 850 nm

Connector Type: LC

Max. Cable Length: Up to 300 m

Option 282: Single-mode Fibre Optical

Quantity: 2 ports

Cable: Single-mode fibre, 1310 nm

Connector Type: LC

Max Cable Length: Up to 10 km

Physical and Environmental

Dimensions

4U Short Chassis: 19" W x 21" D x 7" H

Weight: 50 lb. approx.

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,
500 W max.

Ordering Information

Click [here](#) for more information.

Interface Options	
Option -101	Gigabit Ethernet
Option -102	10-Gigabit Ethernet
Option -103	40-Gigabit Ethernet
Channel Configuration	
Option -201	1- Ethernet port
Option -202	2- Ethernet ports
Option -204	4- Ethernet ports

Option -208	8- Ethernet ports
Note: Option -208 available only with Option -101	
Interfaces	
Option -280	SFP+ connectors
Option -281	multi-mode optical, LC connectors
Option -282	Single-mode optical, LC connectors
Option -284	RJ45 Connector
RAID	
Option -285	RAID 5 configuration
Option -286	RAID 6 configuration
Memory	
Option -309	16 GB system memory
Option -310	32 GB system memory
Option -311	64 GB system memory
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	30.7 TB SSD storage capacity
Option -440	46 TB SSD storage capacity
Option -460	61.4 TB SSD storage capacity
Option -485	122.8 TB SSD storage capacity
Note: Options -430, 460 and 485 require a 26-inch deep chassis	
General Options (append to all options)	
Option -261	GPS time and position stamping
Option -264	IRIG-B time stamping
Option -625	Front-panel removable OS drive
Option -680	28 VDC power supply
Contact Pentek for compatible Option combinations. Storage and General Options may change, contact Pentek for latest information.	

Pricing and Availability

To learn more about our products or to discuss your specific application please contact [your local representative](#) or Pentek directly:

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