

Talon RTR 2735A

1-, 10-, 40-Gigabit Ethernet rugged portable recorder

Portability and performance in a compact recorder

- Records gigabit, 10-gigabit or 40-gigabit Ethernet streams
- Up to of 122 TB of SSD storage
- TCP and UDP protocols
- Aggregate recording rates to 4.0 GB/sec



The Talon® RTR 2735A can accommodate multiple Ethernet data 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.

The RTR 2735A can accommodate gigabit, 10-gigabit and 40-gigabit Ethernet interfaces. Using highly-optimized disk storage technology, the system achieves aggregate recording rates up to 4.0 GB/sec.

Rear panel SFP+ or RJ45 connectors can accommodate multi-mode or single-mode fibre interfaces. Optional GPS time and position stamping allows the user to mark the beginning of a recording in the recording file's header.

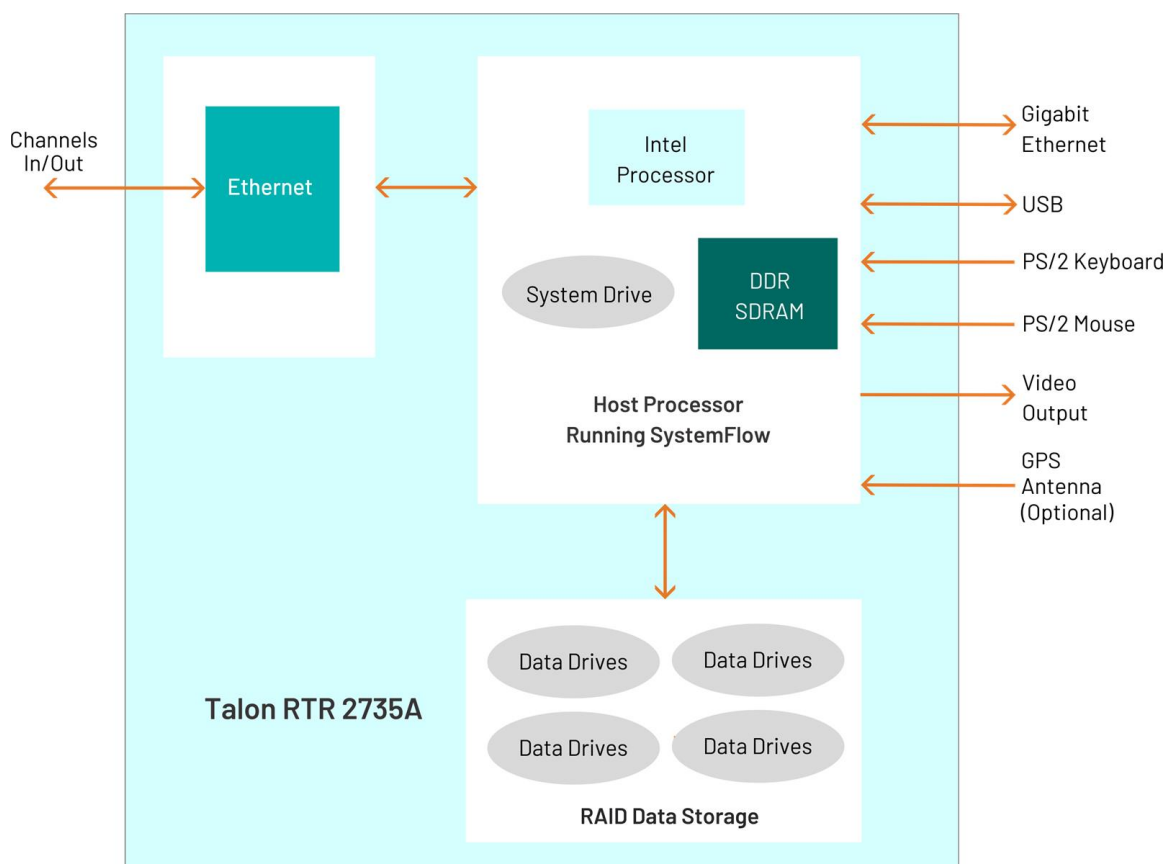
RUGGED AND FLEXIBLE ARCHITECTURE

The RTR 2735A is configured in a portable, lightweight chassis with hot-swap SSDs, front panel USB ports, and I/O connections on the side panel. It is built on an extremely rugged, 100% aluminum alloy unit, reinforced with shock-absorbing rubber corners and an impact-resistant protective glass. Using shock- and vibration-resistant SSDs, the RTR 2735A is designed to reliably operate as a portable field instrument.

The hot-swappable SSDs provide storage capacities of up to 7.6 TB. Drives can be easily removed or exchanged during or after a mission to retrieve recorded data. Multiple RAID levels, including 0, 5 and 6, provide a choice for the required level of redundancy.

FEATURES

- Designed to operate under conditions of shock and vibration
- Portable system measuring 16" W x 6.9" D x 13" H
- Lightweight: approximately 25 pounds
- Shock- and vibration-resistant, SSDs perform well in vehicles, ships and aircraft
- Records gigabit, 10-gigabit or 40-gigabit Ethernet streams
- TCP and UDP protocols
- Optional optical interfaces
- Aggregate recording rates to 4.0 GB/sec
- Windows® workstation with high-performance Intel® processor
- Up to 122 terabytes of SSD storage to NTFS RAID solid state disk array
- Multiple RAID levels, including 0, 5, and 6
- 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



SYSTEMFLOW SOFTWARE

All Talon recorders include the Mercury SystemFlow[®] recording software. SystemFlow software enables 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.
- 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. Additional high-level libraries, like Python, are available upon request.

The SystemFlow GUI and API can be run from a remote connection over Gigabit Ethernet. Recorders can be set up to run autonomously by implementing scripts using the API interface.

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

SYSTEMFLOW SIMULATOR

To learn more about SystemFlow software, contact Mercury at techsales@mercy.com. The SystemFlow Simulator allows you to learn how to use a Talon recorder's SystemFlow software interface before you acquire a recorder or while you are waiting for delivery of a recorder.

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 Talon analog signal recorder.

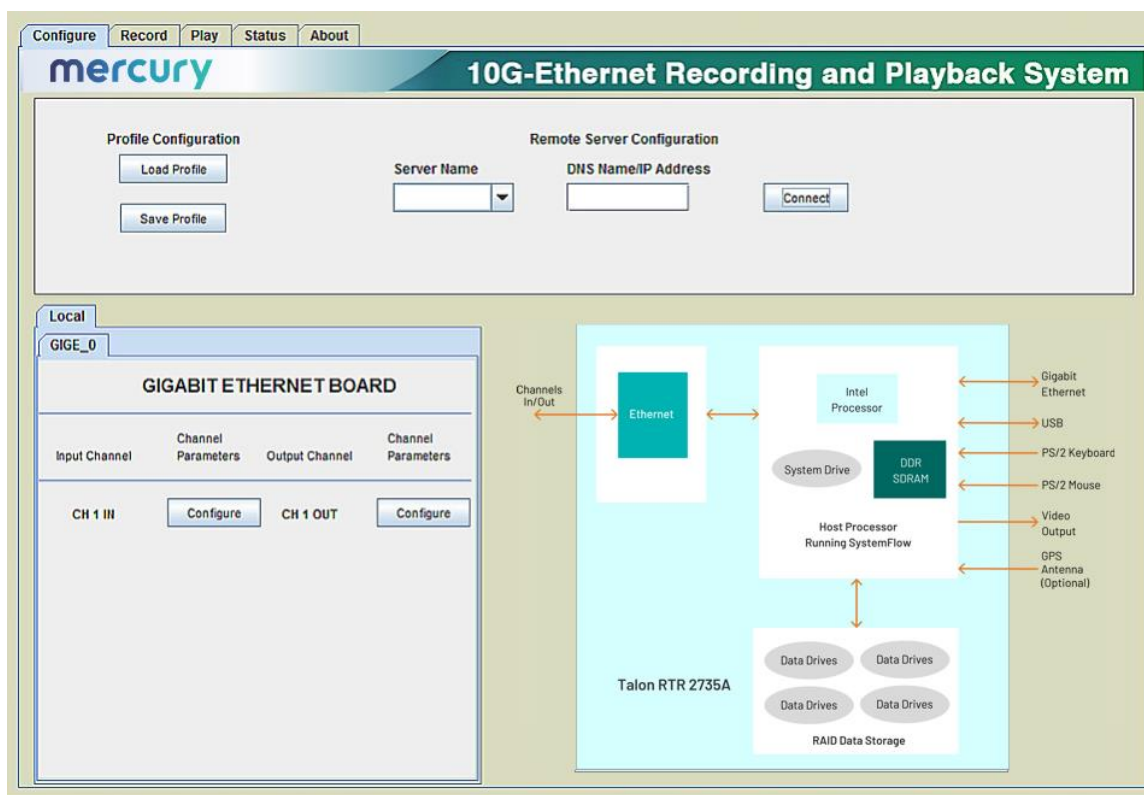
Features

- Provides real-time recording system simulation
- Allows engineers to write and test their application (built using the SystemFlow API) before receiving the recorder hardware
- Demonstrates SystemFlow signal and file viewer tool
- 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

SYSTEMFLOW MAIN INTERFACE

The RTR 2735A 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 UDP or TCP protocol, client or server connection, the IP address and port number. All parameters contain limit-checking and integrated help.

Input Channel 1 Parameters

Protocol:

Client/Server:

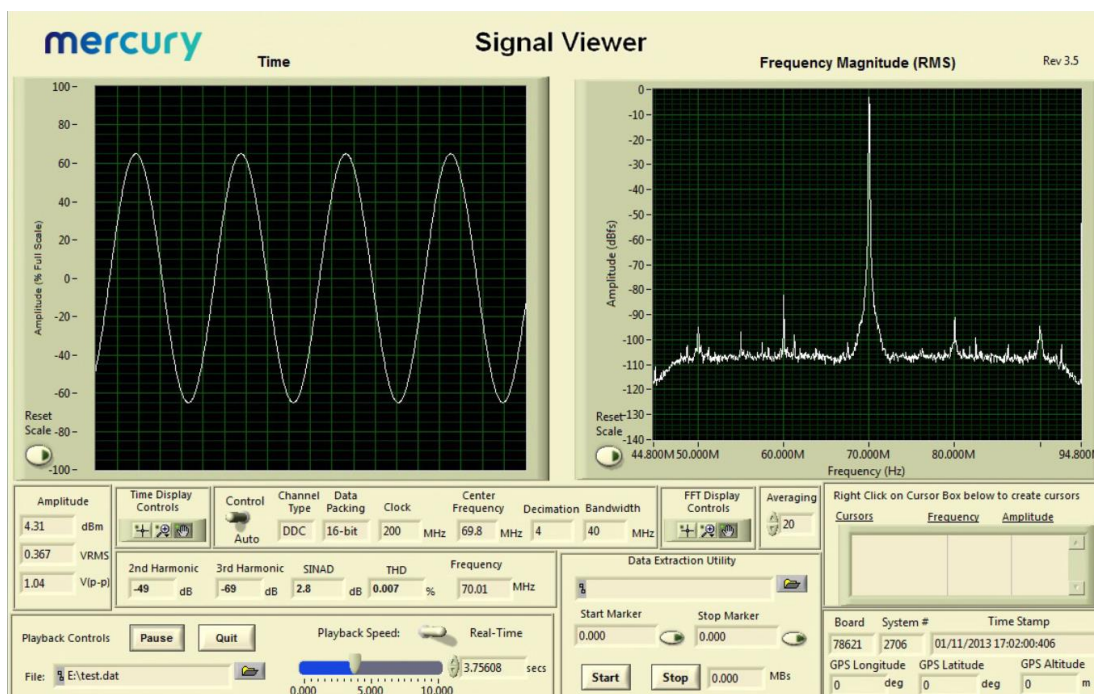
IP Address:

Port Number:

SIGNAL VIEWER

The SystemFlow Signal Viewer includes a spectrogram, 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 2735A 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. In addition to C, support is also provided for high level languages such as Python and C#. 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)

```


SPECIFICATIONS

PC Workstation

Operating System: Windows®

Processor: Intel Core i7 processor or better

Operating System Drive: 250 GB SSD

Monitor: Built-in 17.3" high-resolution LCD, 1920 x 1080 pixels,
16:9 aspect ratio, anti-glare surface Brightness: 300 cd/m2;
Contrast ratio: 400:1 typical

SDRAM: (standard) 8 GB

- Option -309: 16 GB
- Option -310: 32 GB
- Option -311: 64 GB

RAID

- Storage: 3.8 to 61.4 TB
- Supported RAID Levels: (standard) 0
 - Option -285: RAID 5
 - Option -286: RAID 6

Drive Type: Solid-state drives

Drive Bays: Hot-swap, removable, side panel

USB 2.0 Ports: Four on left side, two on front panel

USB 3.0 Ports: Two on left side

1 Gb Ethernet Ports: Two on left side

Aux Video Output: 15-pin VGA on left side

Optional DC Power supply

Voltage: 18 to 36 VDC

Input Current: 42 to 26 A (39 A at 24 VDC)

Inrush Current: 100 A at 24 VDC

Temperature Range: Oper.: 0° to 50° C, Store: -0° to 80° C

Efficiency: >80% typical at 24 V full load

Power Good Signal: On delay 100 to 500 msec

OverPower Protection: 110% to 160%

Remote Control: On/Off

Safety: Meets UL, TUV, CB specifications

Physical and Environmental

Size: 16.0" W x 6.9" D x 13.0" H

Weight: 30 lb maximum

Operating Temp: 0° to +50° C

Storage Temp: -40° to +85° C

Relative Humidity: 5 to 95%, non-condensing

Operating Shock: 30 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

Non-operating Vibration: 5 to 500 Hz: 2.06g RMS

Power Requirements: 100 to 240 VAC, 50 to 60 Hz, 500 W max.

ORDERING INFORMATION

Interface Options

Option -101	Gigabit Ethernet
Option -102	10-gigabit Ethernet
Option -103	40-gigabit Ethernet

Channel Configurations

Option -201	1- Ethernet port
Option -202	2- Ethernet ports
Option -204	4- Ethernet ports
Option -208	8- Ethernet ports

Interfaces

Option -280	SFP+ connectors
Option -281	Multi-mode optical, LC connectors
Option -282	Single-mode optical, LC connectors
Option -283	OSFP connectors
Option -284	RJ45 connector

RAID Configurations

Standard	RAID 0 configuration
Option -285	RAID 5 configuration
Option -286	RAID 6 configuration

Memory Options

Standard	8 GB system memory
Option -309	16 GB system memory
Option -310	32 GB system memory
Option -311	64 GB system memory

Storage Options

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 -460	61 TB SSD storage capacity
Option -485	122.8 TB SSD storage capacity

General Options (append to all options)

Option -261	GPS time and position stamping
Option -264	IRIG-B time stamping
Option -625	Removable operating system drive

Contact Mercury for compatible option combinations. Storage and general options may change, so contact Mercury for the latest information.

LIFETIME SUPPORT FOR TALON PRODUCTS

Mercury offers worldwide customers shorter development time, reliable, rugged solutions for a variety of environments, reduced costs, and mature software development tools. We offer free lifetime support from our engineering staff, which customers can depend on through phone and email, as well as software updates. Take advantage of our 40 years of experience in delivering high-performance radar, communications, SIGINT, EW, and data acquisition MIL-Aero solutions worldwide.

**Corporate Headquarters**

50 Minuteman Road
Andover, MA 01810 USA
+1 978.967.1401 tel
+1 866.627.6951 tel
+1 978.256.3599 fax

International Headquarters

Mercury International
Avenue Eugène-Lance, 38
PO Box 584
CH-1212 Grand-Lancy 1
Geneva, Switzerland
+41 22 884 5100 tel

Learn more

Visit: mrcy.com/go/MP2735A

For technical details, contact:
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