New!

Model RTR 2729A

3.6 GS/sec Ultra Wideband RF/IF Rugged Portable Recorder



TALON RTR RUGGED RECORDER

SystemFlow

Features

- Designed to operate under conditions of shock and vibration
- Portable system measuring 16.0" W x 6.9" D x 13.0" H
- Lightweight, just less than 30 pounds
- Sample rates up to 3.6 GHz in single-channel mode
- Sample rates up to 1.8 GHz in dual-channel mode
- 12-bit A/D, with 16- and 8-bit packing modes
- Capable of recording RF/IF frequencies to 1.75 GHz in single-channel mode
- Capable of recording RF/IF frequencies to 2.8 GHz in dual-channel mode
- Real-time sustained recording rates of up to 4.0 GB/sec
- Windows® 7 Professional workstation with-high performance Intel® Core™ i7 processor
- Up to 30.7 terabytes of SSD storage to NTFS RAID solid state disk array
- SystemFlow® GUI with signal viewer analysis tool
- 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 2729A is a turnkey system that allows users to record very high-bandwidth signals in a lightweight and rugged portable package. Equipped with a 3.6 GHz 12-bit A/D converter and user-programmable DDC (digital downconverter) the RTR 2729A is capable of capturing RF/IF signals with bandwidths as high as 360 MHz continuously for over four hours.

The RTR 2729A is supplied in a small-footprint portable package measuring only 16.0" W x 6.9" D x 13.0" H and weighing just less than 30 pounds. With measurements similar to a small briefcase, this portable workstation includes an Intel Core i7 processor, a high-resolution 17" LCD monitor and up to 30.7 TB of SSD storage.

The RTR 2729A uses a high-powered Pentek Virtex-7-based Onyx® board that includes a PCIe Gen. 3 engine to provide data streaming for the high-speed A/D converter. Coupled with a high-performance PCIe Gen. 3 SATA III RAID controller, the RTR 2729A is capable of streaming contiguous data to disk in real-time at rates up to 4.0 GB/sec.

The RTR 2729A can operate as a single-channel 3.6 GHz or a two-channel 1.8 GHz recorder. The channel mode operation, sample rate, DDC settings, packing modes and trigger settings are controllable via the built-in SystemFlow GUI (Graphical User Interface).

An optional GPS receiver and timing card can be added to the system to provide precise time and position stamping of the recorded data.

SystemFlow Software

The RTR 2729A includes Pentek's SystemFlow recording software. SystemFlow features a Windows-based GUI (Graphical User Interface) that provides a simple means to configure and control the system. It also includes a C-callable API that allows users to easily integrate the Talon recorder into a larger system.

The GUI provides a very simple interface for system setup. This includes pull-down selections for a handful of parameters, a checkbox to enable/disable the DDC and a data-entry field for the sample rate. Once set up, the GUI provides the ability to save profiles that can be reloaded at the click of a button.

SystemFlow also includes signal viewing and analysis tools that allow the user to monitor the signal prior to, during, and after a recording session. These tools include a virtual oscilloscope and spectrum analyzer.

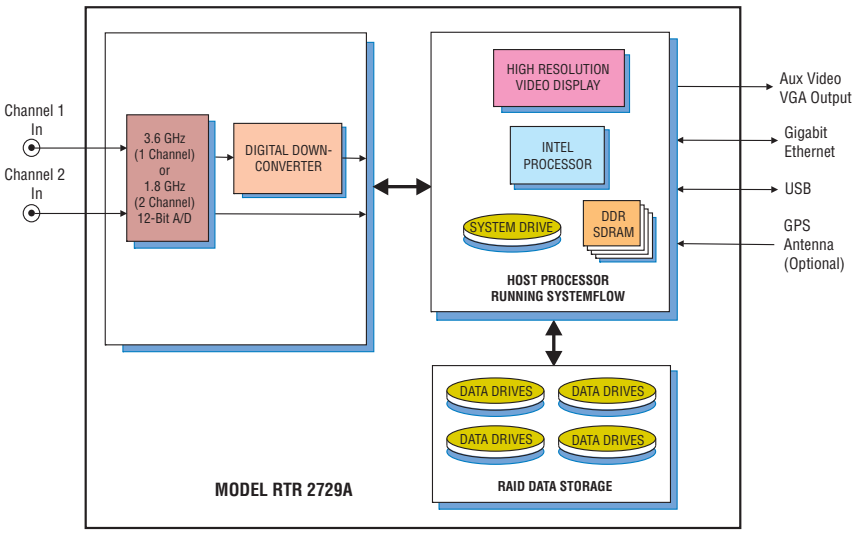
Built on a Windows 7 Professional workstation, the RTR 2729A allows the user to install post-processing and analysis tools to operate on the recorded data. The RTR 2729A records data to the native NTFS file system for immediate access to the data.

Data can be off-loaded via gigabit Ethernet, USB 2.0 and USB 3.0 ports. Additionally, data can be copied to optical disk, using the 8X double layer DVD±R/RW drive.

Option -625 replaces the DVD±R/RW drive with a removable operating system drive; an external DVD drive can be used.

Rugged Chassis with SSD Storage

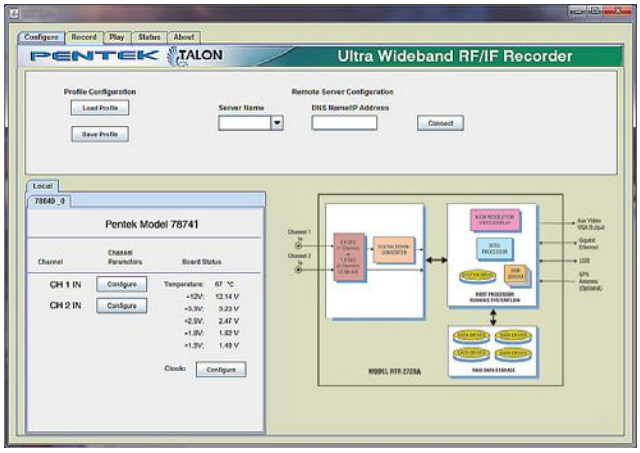
The RTR 2729A is configured with hot-swappable SSDs, front panel USB ports, and I/O connectors on the side panel. It is built in an extremely rugged steel and aluminum chassis and is tested for shock and vibration. The SSDs provide storage capacities of up to 30.7 TB. Drives can be easily removed or exchanged during or after a mission to retrieve recorded data. Multiple RAID levels, including 0, 1, 5, and 6, provide a choice for the required level of redundancy. ➤

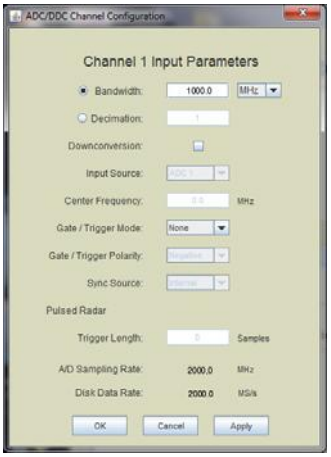


PENTEK

Pentek, Inc. One Park Way ◆ Upper Saddle River ◆ New Jersey 07458
Tel: 201·818·5900 ◆ Fax: 201·818·5904 ◆ Email: info@pentek.com
www.pentek.com

➤ SystemFlow Graphical User Interface



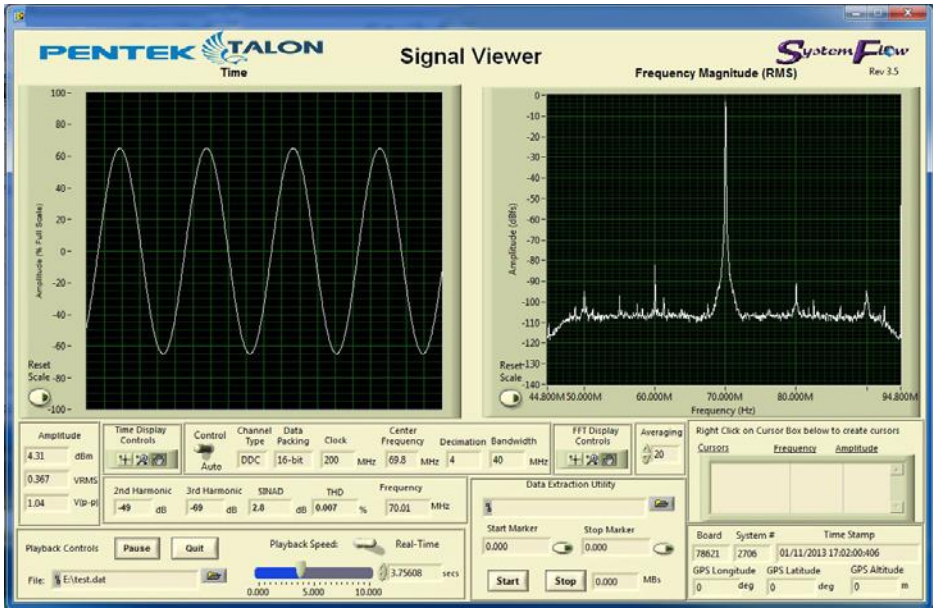


SystemFlow Recorder Interface

The RTR 2729A 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 set configuration parameters, control and monitor a recording, play back a recorded signal and monitor board temperature and voltage levels. The signal viewer, integrated into the recording GUI, allows the user to monitor real-time signals or signals recorded on disk.

SystemFlow Hardware Configuration Interface

The RTR 2729A Configure screens provide a simple and intuitive means for setting up the system parameters. The configuration screen shown here, allows user entries for input source, sampling frequency, decimation, as well as gate and trigger information. All parameters contain limit-checking and integrated help to provide an easier-to-use out-of-the-box experience.



SystemFlow 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. ➤

Model RTR 2729A — 3.6 GS/sec Ultra Wideband RF/IF Rugged Portable Recorder

➤ Specifications

PC Workstation (standard configuration)

Operating System: 64-bit Windows 7 Professional
Processor: Intel Core i7 processor
Clock Speed: 3.0 GHz or higher
Operating System Drive: 128 GB SSD
SDRAM: 8 GB
Monitor: Built-in 17.3" high-resolution LCD,
1920 x 1080 pixels, 16:9 aspect ratio, anti-glare surface
Brightness: 300 cd/m^2; Contrast ratio: 400:1 typical
RAID
Total Storage: 7.6, 15.3 or 30.7 TB
Supported RAID Levels: 0, 1, 5 and 6
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

Analog Signal Inputs

Connectors: Two side panel SSMC connectors, In 1 & In 2
Input Type: Single-ended, non-inverting
Full Scale Input: +4 dBm into 50 ohms
Coupling: Transformer-coupled
Input Transformers
Bandwidth: 4.5 kHz to 3.0 GHz

A/D Converters
Type: Texas Instruments ADC12D1800
Sampling Rate
Single-channel mode: 500 MHz to 3.6 GHz
Dual-channel mode: 150 MHz to 1.8 GHz
Resolution: 12 bits
Maximum Usable Input Frequency
Single-channel mode: 1.75 GHz
Dual-channel mode: 2.8 GHz
Anti-Aliasing Filters: External, user-supplied

Digital Downconverters
Modes: One or two channels, programmable
Supported Sample Rate (f_s):
One-channel mode: 3.6 GHz
Two-channel mode: 1.8 GHz
Decimation Range (D):
One-channel mode: 8x, 16x, 32x, bypass
Two-channel mode: 4x, 8x, 16x, bypass
DDC Usable Bandwidth: $0.4*f_s/D$
Sampling Clock Source: Internal fixed-frequency or programmable oscillator (selectable by option); in single-channel mode, the sample rate is 2x the clock frequency; in dual-channel mode, the sample rate equals the clock frequency
Frequency Reference: Accepts external 10 MHz reference at 0 to +4 dBm to phase-lock the clock oscillator
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 max.
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: 2.06 g RMS
Power Requirements: 100 to 240 VAC, 50 to 60 Hz, 500 W max.

Model RTR 2729A Ordering Information and Options

Sample Clock Options

Option -910	**User-Programmable Sample Clock** Dual-channel mode sample clock range 150 MHz – 945 MHz 970 MHz – 1134 MHz 1213 MHz – 1417.5 MHz Single-channel mode sample clock range 500 MHz – 1890 MHz 1940 MHz – 2268 MHz 2426 MHz – 2835 MHz
Option -911	**Fixed-frequency clock** 1.5 / 3.0 GHz sample clock
Option -912	**Fixed-frequency clock** 1.6 / 3.2 GHz sample clock
Option -915	**Fixed-frequency clock** 1.8 / 3.6 GHz sample clock

Sample rates are set up for dual-channel mode first and single-channel mode second: e.g. 1.5 / 3.0 is 1.5 in dual-channel mode and 3.0 in single-channel mode.
Custom fixed-frequency sample clocks available upon request.

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

General Options (append to all options)

Option -261	GPS time & position stamping
Option -264	IRIG-B time stamping
Option -625	Removable operating system drive
Option -681	18 to 36 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

PENTEK
Pentek, Inc. One Park Way ◆ Upper Saddle River ◆ New Jersey 07458
Tel: 201·818·5900 ◆ Fax: 201·818·5904 ◆ Email: info@pentek.com
www.pentek.com