



Features

- Designed to operate under conditions of shock and vibration
- Portable system measuring 16.9" W x 9.5" D x 13.4" H
- Lightweight: approximately 30 pounds
- Rugged aluminum alloy chassis
- Shock- and vibration-resistant SSDs perform well in vehicles, ships and aircraft
- 500 MHz 12-bit A/Ds or 400 MHz 14-bit A/Ds
- 800 MHz 16-bit D/A
- 200 MHz recording and playback signal bandwidths
- Recording and playback of IF signals up to 700 MHz
- SFDR > 70 dBFS
- Real-time aggregate recording rates up to 2.4 GB/sec
- Up to of 7.6 TB storage with hot-swappable SSD drives
- NTFS file format
- SystemFlow® GUI with Signal Viewer analysis tool
- File headers include time stamping and recording parameters
- Ideal for communications, radar, wireless, SIGINT, telecom and satcom
- Optional GPS time and position stamping
- Complete high-performance Windows® workstation

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

General Information

The Talon® RTR 2727 is a turnkey, multi-band recording and playback system that allows the user to record and reproduce high-bandwidth signals with a lightweight, portable and rugged package. The RTR 2727 provides aggregate recording rates of up to 2.4 GB/sec in a two-channel system and is ideal for the user who requires both portability and solid performance in a compact recording system.

The RTR 2727 is supplied in a small footprint portable package measuring only 16.9" W x 9.5" D x 13.4" H and weighing just 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 a high-performance SATA RAID controller.

At the heart of the RTR 2727 are Pentek Cobalt® Series Virtex-6 software radio boards featuring A/D and D/A converters, DDCs (Digital Downconverters), DUCs (Digital Upconverters), and complementary FPGA IP cores. This architecture allows the system engineer to take full advantage of the latest technology in a turnkey system.

Optional GPS time and position stamping allows the user to record this critical signal information.

SystemFlow Software

Included in this system is the Pentek SystemFlow recording software. SystemFlow features a Windows-based GUI (Graphical User Interface) that provides a simple means to configure and control the system.

Custom configurations can be stored as profiles and later loaded when needed,

allowing the user to select preconfigured settings with a single click.

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 a virtual spectrum analyzer.

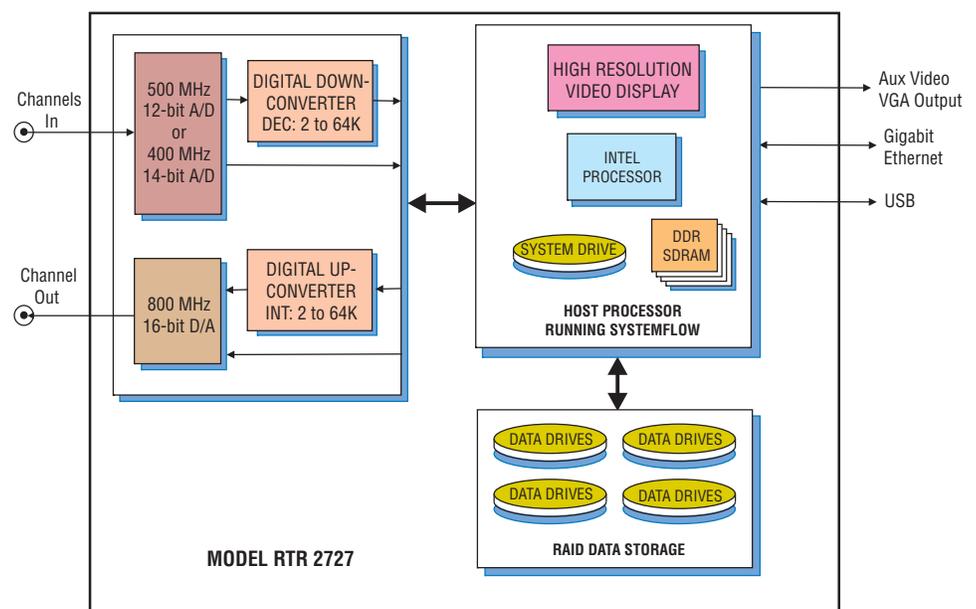
Built on a Windows 7 Professional workstation, the RTR 2727 allows the user to install post-processing and analysis tools to operate on the recorded data. The RTR 2727 records data to the native NTFS file system, providing immediate access to the recorded data.

Data can be off-loaded through two 1 Gb Ethernet ports, eight USB 2.0 ports or two eSATA ports. Additionally, data can be copied to optical disk, using the 8X double layer DVD±R/RW drive.

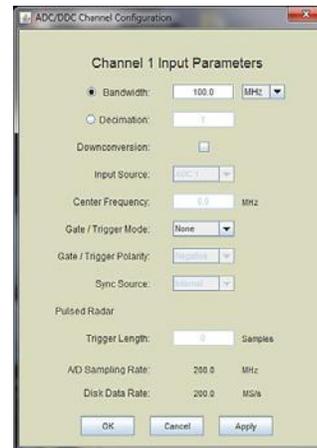
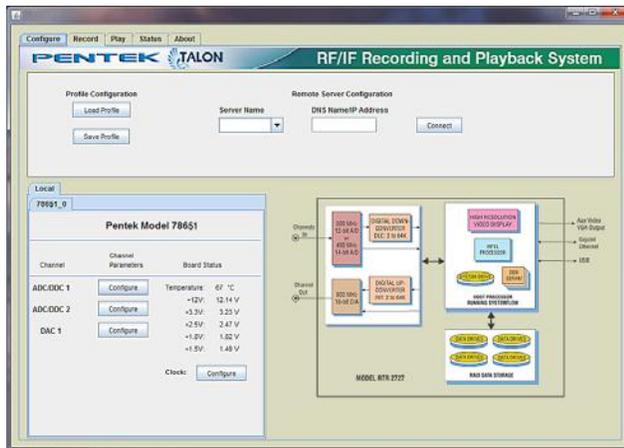
Rugged & Flexible Architecture

The RTR 2727 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 2727 is designed to operate reliably 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 0,1,5, and 6 provide a choice for the required level of redundancy. ➤



► SystemView Graphical User Interface

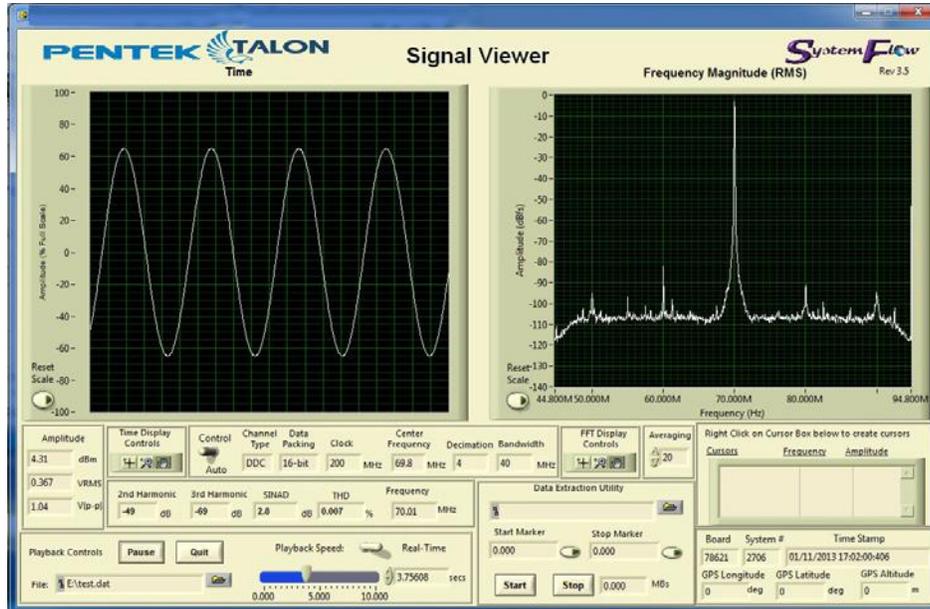


SystemFlow Recorder Interface

The RTR 2727 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, playback 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 recorded signals on disk.

SystemFlow Hardware Configuration Interface

The RTR 2727's Configure screens provide a simple and intuitive means for setting up the system parameters. The DDC configuration screen shown here, allows user entries for input source, center 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. ►

Specifications

PC Workstation (standard configuration)

Operating System: 64-bit Windows 7 Professional

Processor: Intel Core i7 processor

Clock Speed: 2.0 GHz or higher

Operating System Drive: 128 GB SSD

SDRAM: 8 GB

Monitor: Built-in 17" high-resolution LCD
1440 x 900 pixels, 200 nits

RAID

Total Storage: 1.9, 3.8 or 7.6 TB

Supported RAID Levels: 0, 1, 5, and 6

Drive Bays: Hot-swap, removable, rear panel

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

USB 3.0 Ports: Two on left side

1 Gb Ethernet Port: Two on left side

eSATA 3 Ports: Two on left side

Aux Video Output: 15-pin VGA on left side

Analog Recording Inputs

Analog Signal Inputs

Quantity: 1 or 2

Input Type: Transformer-coupled, female SSMC connectors

Transformer Type: Coil Craft WBC4-6TLB

Full Scale Input: +5 dBm into 50 ohms

3 dB Passband: 300 kHz to 700 MHz

A/D Converters

Type: Texas Instruments ADS5463 or ADS5474 (Option -014)

Sampling Rate (f_s): 20 MHz to 500 MHz or 20 MHz to 400 MHz (Option -014)

Resolution: 12 bits or 14 bits (Option -014)

A/D Record Bandwidth: $f_s/2 =$ Nyquist bandwidth

Anti-Aliasing Filters: External, user-supplied

Digital Downconverter

Type: Virtex-6 FPGA Pentek DDC IP Core

Decimation (D): 2 to 65,536

DDC Usable Bandwidth: $0.4 \cdot f_s / D$

Bandwidth Range: 5 kHz to 160 MHz at $f_s = 400$ MHz

Analog Playback Output

Analog Signal Outputs

Quantity: 1

Output Type: Transformer-coupled, female SSMC connectors

Full Scale Output: +4 dBm into 50 ohms

3 dB Passband: 300 kHz to 700 MHz

Digital Upconverter and D/A

Output Signal: Analog, real or quadrature

Type: TI DAC5688 and Pentek-installed interpolation IP core

Interpolation: 2 to 65,536

Input Data Rate to DAC5688: 250 MS/sec max.

Output Sampling Rate: 800 MHz, max.

Output IF: 250 MHz, max.

D/A Resolution: 16 bits

Bandwidth Range: Matches recording bandwidths

Clock Sources: Selectable from onboard programmable VCXO, external or LVDS clocks

External Clock

Type: Female SSMC connector, sine wave, 0 to +12 dBm, AC-coupled, 50 ohms, accepts 10 to 500 MHz divider input clock or PLL system reference

Internal Clock

Type: Programmable VCXO from 10 to 810 MHz

Physical and Environmental

Dimensions: 16.9" W x 9.5" D x 13.4" H

Weight: 30 lb, approximately

Power: 90 to 265 VAC, 50 - 60 Hz

Operating Temp: 5° to +45° 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.

Model RTR 2727 Ordering Information and Options

Channel Configurations

Option -201	1-channel recording
Option -202	2-channel recording
Option -204	4-channel recording
Option -221	1-channel playback
Option -222	2-channel playback

Storage Options

Option -405	1.9 TB SSD storage capacity	2.0 GB/sec
Option -410	3.8 TB SSD storage capacity	2.4 GB/sec
Option -415	7.6 TB SSD storage capacity	2.4 GB/sec

Max. Data Rate

General Options (append to all options)

Option -014	400 MHz, 14-bit A/D
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

Specifications subject to change without notice