

New!



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
- Recording and playback of IF signals up to 700 MHz
- Signal bandwidths to 200 MHz
- 500 MHz 12-bit A/Ds or 400 MHz 14-bit A/Ds
- 800 MHz 16-bit D/A
- SFDR > 70 dBFS
- Real-time aggregate recording rates up to 2.0 GB/sec
- Up to 3.8 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 2.0 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.

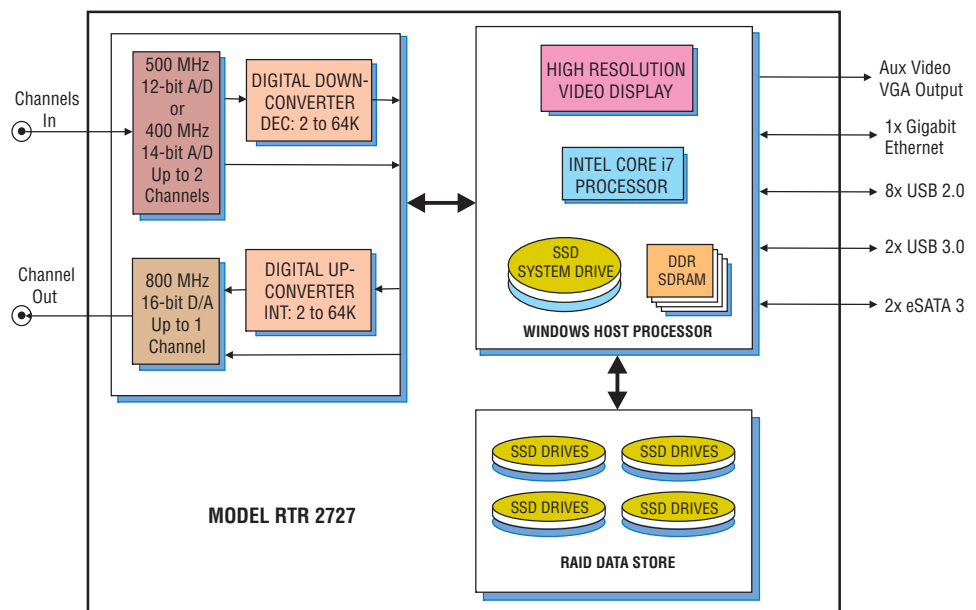
Built on a Windows 7 Professional workstation, the RTR 2727 allows the user to install post-processing and analysis tools to operate on the recorded data. The RTR 2727 records data to the native NTFS file system, providing immediate access to the recorded data.

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.

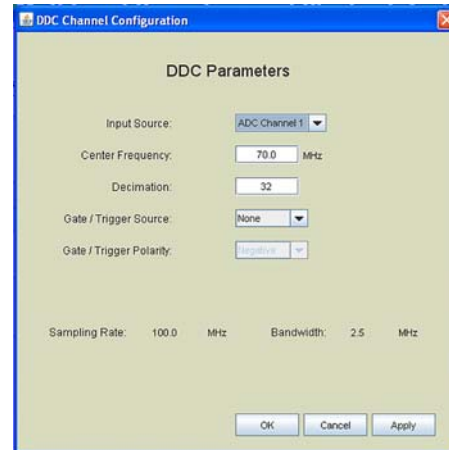
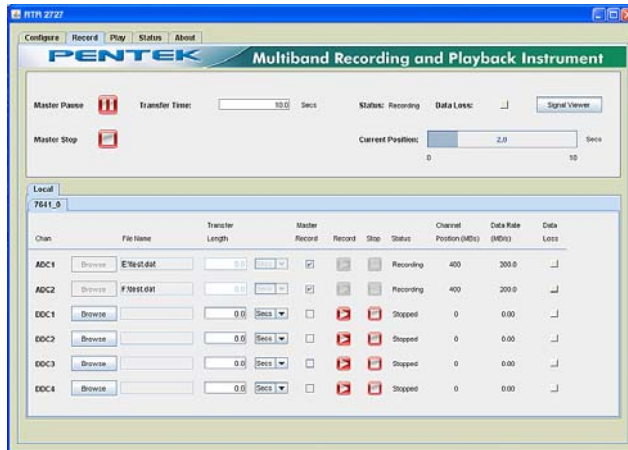
Rugged & Flexible Architecture

The RTR 2727 is configured in a portable, lightweight chassis with eight 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 eight hot-swappable SSDs provide storage capacities of up to 3.8 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

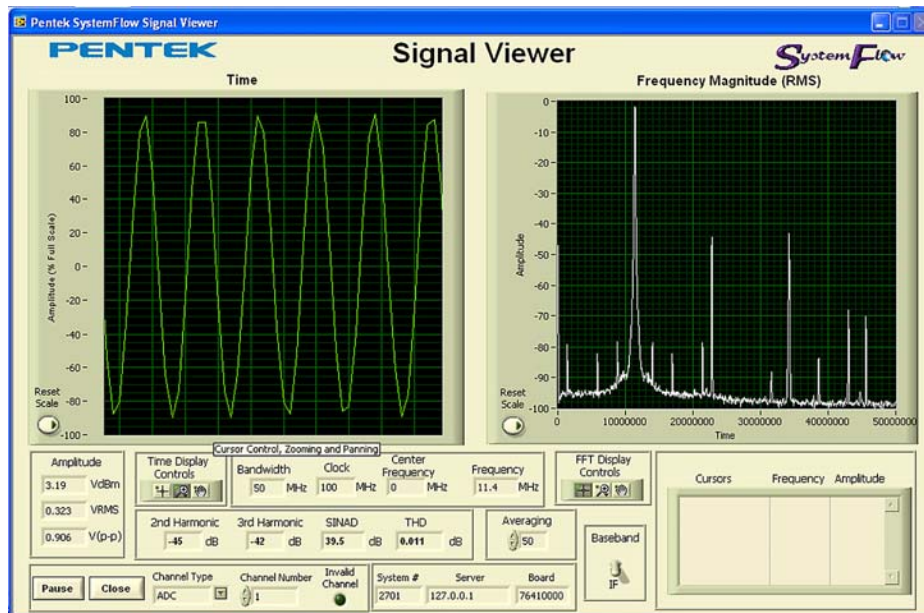


SystemFlow Recorder Interface

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, 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 recorded signals on disk.

SystemFlow Hardware Configuration Interface

The RTR 2727's configuration screens provide a simple and intuitive means for setting up the system parameters. The DDC configuration screen shown here, provides 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 or 3.8 TB

**Number of Drives:** Eight

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

**Drive Bays:** Eight, 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 ADS5485 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 Recording Rate/Channel:**  $2f_s$  bytes/sec, (e.g., 800 MB/sec per channel at  $f_s = 400$  MHz or 1000 MB/sec per channel at  $f_s = 500$  MHz and with Option -244, 3.8 TB SSD storage capacity)

#### Digital Downconverter

**Type:** Virtex-6 installed DDC IP Core

**Decimation (D):** 2 to 65,536

**DDC Bandwidth:**  $0.8 f_s/D$

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

**DDC Recording Rate/Channel:**  $2f_s/D$  bytes/sec

### 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 -221** 1-Channel playback

### Storage Options

**Option -242** 1.9 TB SSD storage capacity; eight 240 GB hot-swappable SSDs  
Up to 1.6 GB/sec aggregate recording rate

**Option -244** 3.8 TB SSD storage capacity; eight 480 GB hot-swappable SSDs  
Up to 2.0 GB/sec aggregate recording rate

### General Options (append to all other options)

**Option -014** 400 MHz, 14-bit A/Ds

**Option -261** GPS time & position stamping

Contact Pentek for other configurations

Specifications subject to change without notice