

New!

# Model RTR 2728A

# 1 GS/sec RF/IF Rugged Portable Recorder



### 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
- Shock- and vibration-resistant SSDs perform well in vehicles, ships and aircraft
- 1 GHz 12-bit A/D
- 1 GHz 16-bit D/A
- 400 MHz recording and playback signal bandwidths
- Recording and playback of IF signals up to 2 GHz
- Real-time aggregate recording rates 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

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

### General Information

The Talon® RTR 2728A 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 2728A provides recording rates of up to 4.0 GB/sec and is ideal for the user who requires portability and solid performance in a compact recording system.

The RTR 2728A 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.

At the heart of the RTR 2728A are Pentek Cobalt® Series Virtex-6 software radio boards featuring A/D and D/A converters. 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. It also includes a C-callable API that allows users to easily integrate the Talon recorder into a larger 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 2728A allows the user to install post-processing and analysis tools to operate on the recorded data. The RTR 2728A records data to the native NTFS file format, providing immediate access to the recorded data.

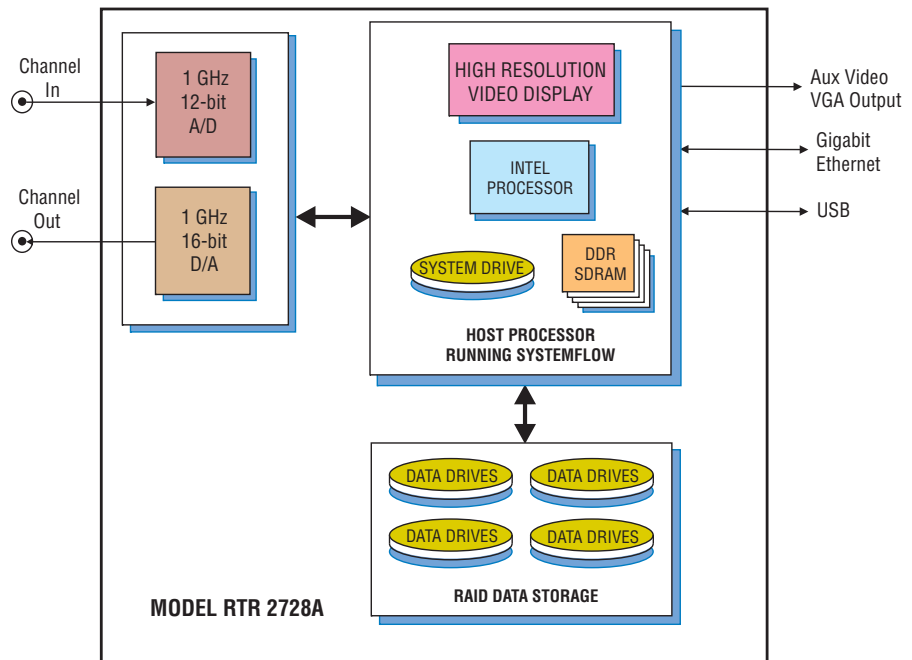
Data can be off-loaded via gigabit Ethernet, USB 2.0 and USB 3.0 ports. Additionally, data can be copied to optical disk, using the 8X double layer DVD±R/RW drive.

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

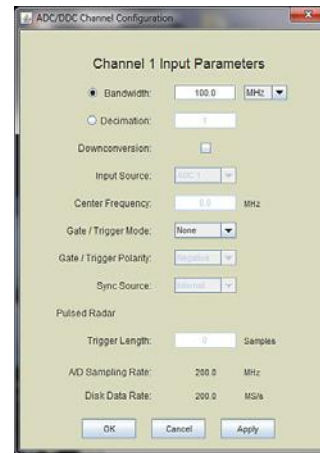
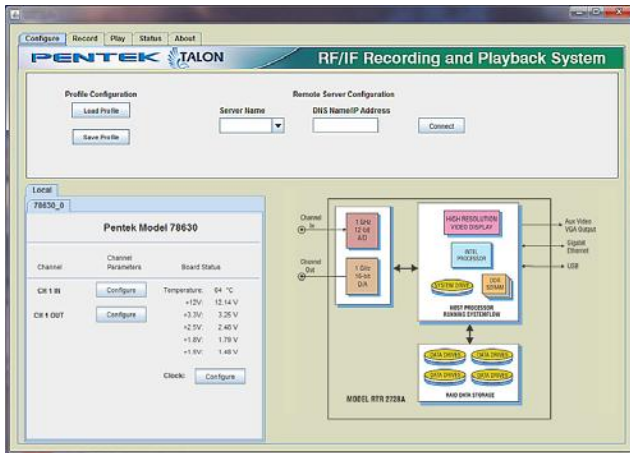
### Rugged Chassis with SSD Storage

The RTR 2728A 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. ➤



► SystemView Graphical User Interface

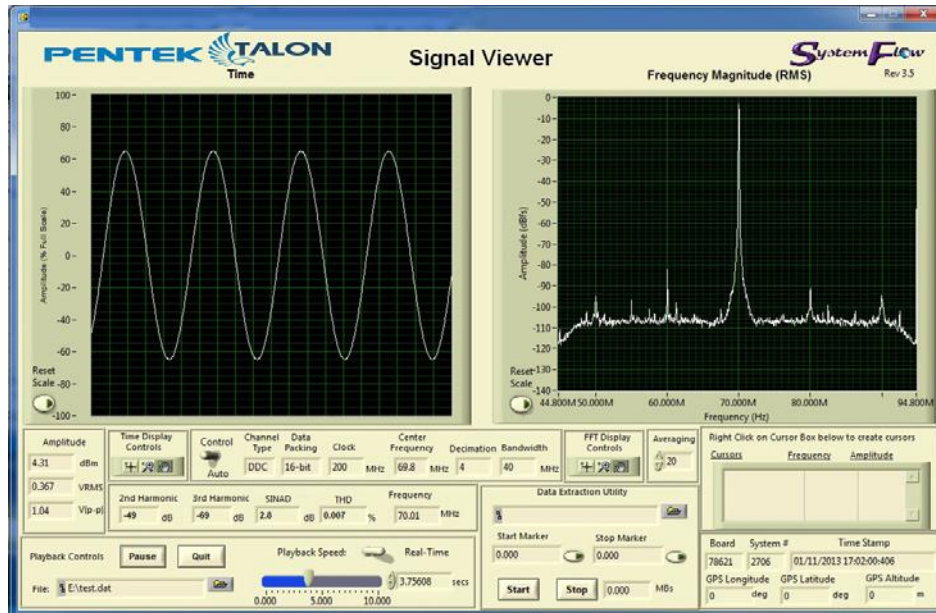


SystemFlow Recorder Interface

The RTR 2728A 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 2728A’s Configure screens provide a simple and intuitive means for setting up the system parameters. The ADC configuration screen shown here, allows user entries for gate/trigger mode, gate/trigger polarity, and sync source. 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. This 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:** 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<sup>2</sup>; Contrast ratio: 400:1 typical  
**RAID**  
**Total Storage:** 1.9, 3.8, 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 Input**

**Connector:** Transformer-coupled, female SSMC  
**Transformer Type:** Macom ETC1-1-13TR  
**Full Scale Input:** +10 dBm into 50 ohms  
**3 dB Passband:** 5 MHz to 2 GHz

**A/D Converter**

**Type:** Texas Instruments ADS5400  
**Sampling Rate ( $f_s$ ):** 100 MHz to 1 GHz  
**Resolution:** 12 bits  
**A/D Record Bandwidth:**  $f_s/2$  = Nyquist bandwidth  
**Anti-Aliasing Filters:** External, user-supplied

**Analog Signal Output**

**Connector:** Transformer-coupled, female SSMC  
**Full Scale Output:** +4 dBm into 50 ohms  
**3 dB Passband:** 300 kHz to 700 MHz

**D/A Converter**

**Type:** TI DAC5681Z  
**Interpolation:** 1x, 2x or 4x  
**Input Data Rate to DAC5681Z:** 500 MS/sec max.  
**Output Sampling Rate:** 1 GHz, max.  
**Output IF:** 700 MHz, max.  
**D/A Resolution:** 16 bits

**Clock Sources:** Selectable from onboard programmable VCXO or external clock

**External Clock**

**Type:** Female SSMC connector, sine wave, 0 to +10 dBm, AC-coupled, 50 ohms, accepts 100 MHz to 1 GHz input clock or 10 MHz system reference

**Internal Clock**

**Type:** Programmable VCXO  
**VCXO Frequency Ranges:** 100 to 945 MHz, 970 MHz to 1 GHz

**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 2728A Ordering Information and Options**

**Channel Configurations**

**Option -201** 1-channel recording  
**Option -202** 2-channel recording  
**Option -221** 1-channel playback  
**Option -222** 2-channel playback

**Option -405** 1.9 TB SSD storage capacity  
**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

**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 Options** Storage and Channel-count Options may change, contact Pentek for the latest information

Specifications subject to change without notice