

New!

# Model RTS 2711

# Dual-channel 500 Megasamples-per-second Real-time Data Recorder Instrument



### Features

- Complete dual channel recording system
- 19 inch 4U industrial rack-mount PC server chassis
- Complete high performance Windows® workstation
- Two 12-bit 500 MHz A/Ds, retaining 8-bit samples for full-rate recording
- Real-time aggregate sustained recording rates up to 1 GB/sec
- 4 terabytes of storage to NTFS RAID disk array
- Hot swap SATA drives
- RAID levels 0, 1, 5, 6, 10 and 50
- Windows SystemFlow® Recording software
- Complete GUI with Signal Viewer analysis tool which includes a virtual oscilloscope and spectrum analyzer
- File headers include time stamping and recording parameters
- Digitizes two analog inputs each at sampling rates to 500 megasamples per second
- Ideal for communications, radar, wireless, SIGINT, telecom and satcom

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

### General Information

The Pentek RTS 2711 is a turnkey recording instrument that allows the user to record and analyze two high-bandwidth signals. The RTS 2711 provides sustained, aggregate recording rates of up to 1 GB/sec forming a powerful dual-channel 4U rack-mount recording system.

The front end of the RTS 2711 consists of two Pentek Model 7858 PCIe modules equipped with 500 MHz 12-bit A/D converters. The RTS 2711 retains the eight most significant bits of each A/D sample to record two signals at 500 megasamples per second.

A total of 4 TB of RAID storage is provided, allowing sustained 2 TB recordings at 500 megasamples per second simultaneously on each of two channels for over one hour.

### SystemFlow Software

Included with this instrument is Pentek's SystemFlow Recording Software. A software API allows users to integrate control of the RTS instrument into larger system applications.

The RTS 2711 features a Windows-based GUI (graphical user interface) that provides a simple means to configure and control the instrument. Custom configurations can be stored as profiles and later retrieved for easy selection of 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.

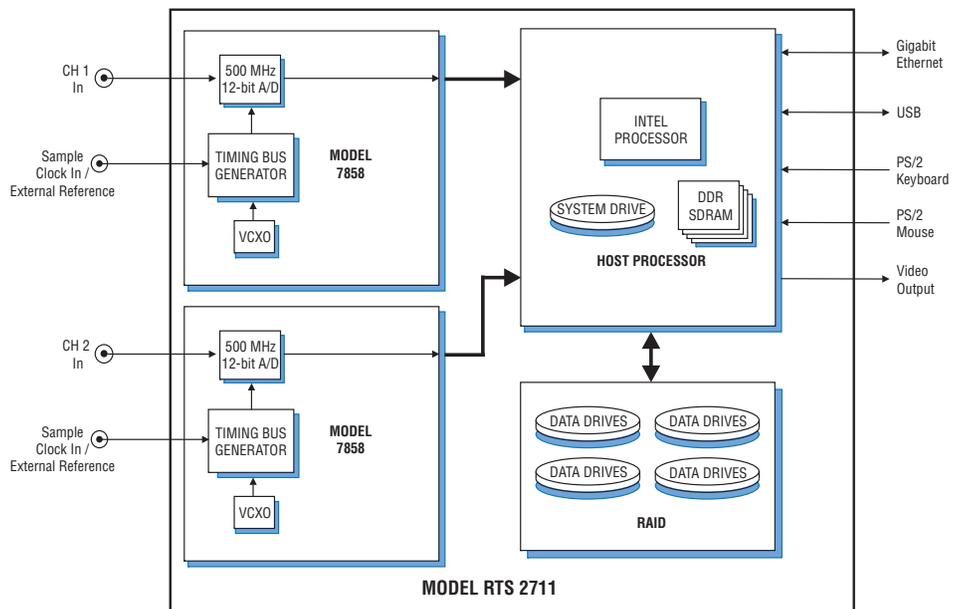
Built on a Windows XP Professional workstation, users can install post-processing and analysis tools to operate on the recorded data. The RTS 2711 records data to the native NTFS file system, providing immediate access to the recorded data.

Recorded data can be offloaded from the RTS 2711 via gigabit Ethernet or USB 2.0 ports. Additionally, data can be copied to disk using the 8X double-layer DVD ±R/RW drive on the front panel.

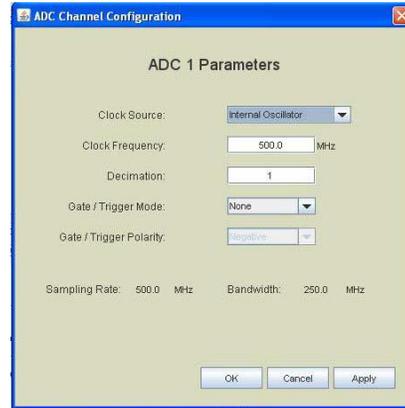
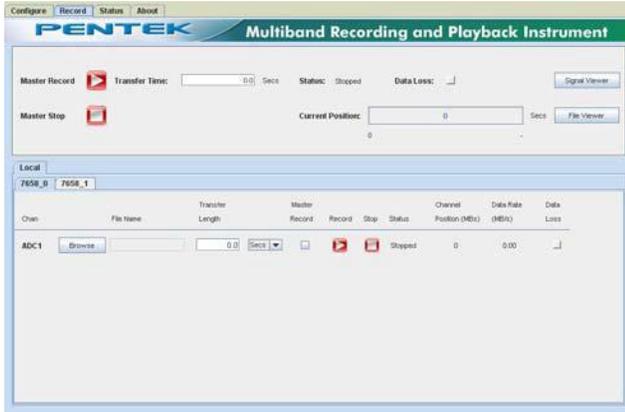
### Flexible Architecture

Pentek's RTS 2711 provides a flexible architecture that can be easily customized to meet user needs. Multiple RAID levels, including 0, 1, 5, 6, 10 and 50 provide a choice for the required level of redundancy. The total drive capacity is 4 TB using 16 drives which are organized as two 8-drive, 2-TB arrays, one for each A/D channel.

Channels can easily be added to a recording system by adding more RTS 2711 chassis. The SystemFlow software provides the capability of configuring and controlling multiple RTS 2711's, enabling scalable channel count and drive capacity ➤



SystemFlow Graphical User Interface

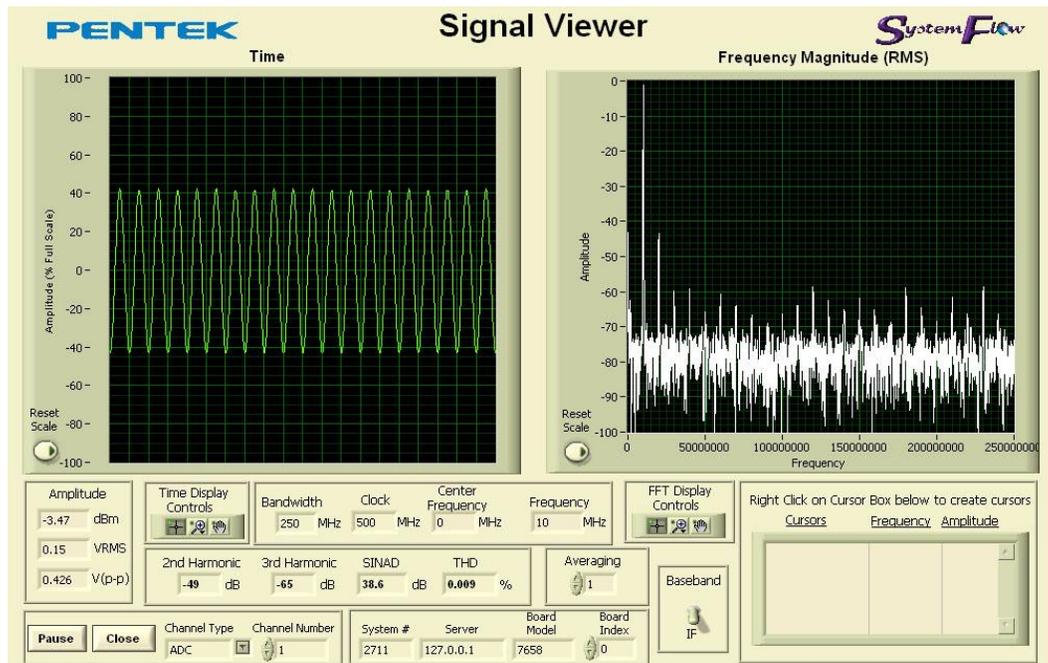


SystemFlow Recorder Interface

The RTS 2711 GUI provides the user with a control interface for the recording instrument. It includes Configuration, Record, and Status screens, each with intuitive controls and indicators. The user can easily move between screens to set configuration parameters. The signal viewer, integrated into the recording GUI, allows the user to monitor real-time signals or analyze recorded signals on disk.

SystemFlow Hardware Configuration Interface

The RTS 2711's configuration screens provide a simple and intuitive means for setting up the system parameters. The ADC configuration screen shown here, provides entries for clock selection, decimation and triggering. 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.

### Clocking and Synchronization

The RTS 2711 contains two Model 7858 PCIe modules, each providing one A/D converter and a 500 MHz oscillator used as the A/D sample clock for each module. By connecting an external 10 MHz reference clock to both REF IN SMC connectors (one on each module), the two 500 MHz oscillators can be phase-locked to the reference and to each other.

A synchronization cable connected between the two 7858 modules ensures synchronous gating and triggering operations between the two A/D channels.

### Specifications

#### PC Workstation

**Operating System:** Windows XP Pro  
**Processor:** Intel Dual Xeon processor  
**Speed:** 1.8 GHz or greater  
**SDRAM:** DDR3, 2 GB  
**System Drive:** 500 GB SATA II  
**USB 2.0 Ports:** Two on front panel, two on rear panel  
**Ethernet:** Two rear panel RJ-45 GigE ports  
**Optical Drive:** DVD/CD R/W  
**Mouse/Keyboard:** Two PS/2 rear panel connectors

#### RAID Arrays

**Number of RAID Arrays:** 2  
**Number of Drives:** 16 total (eight drives per array)  
**Disk Drive Type:** SATA II  
**Drive Access:** Hot swap, removable via front panel  
**Storage:** 4 TB total (2 TB per array)  
**Supported Levels:** 0, 1, 5, 6, 10 and 50  
**Recording Rate per A/D Channel:** 500 MB/sec max  
**Aggregate Recording Rate:** 1 GB/sec (two A/D channels)  
**Recording File Format:** NTFS

#### Analog Recording Inputs

##### Analog Signal Inputs

**Quantity:** 2

**Full Scale Input:** +8 dBm into 50 ohms

**3 dB Passband:** 250 kHz to 750 MHz

**Connectors:** Two rear panel SMC connectors

**Input Impedance:** 50 ohms, transformer-coupled

**Transformer Type:** Coil Craft WBC1-1TLB

##### A/D Converters

**Type:** Texas Instruments ADS5463

**Sampling Rate:** 20 MHz to 500 MHz

**Resolution:** 12 bits with 8 bits retained for recording

##### Clock Inputs

**Internal A/D Clock:** Two internal 500 MHz oscillators

##### External Reference Clock

**Operation:** Phase-locks both 500 MHz oscillators

**Frequency:** 10 MHz

**Connectors:** Two rear panel SMC connectors

**Input Level:** Sine wave, 0 to +10 dBm

**Input Impedance:** 50 ohms, transformer-coupled

##### Physical and Environmental

**Chassis:** 4U, standard rackmount

**Size:** 19" W x 26" D x 7" H

**Weight:** 80 lb

**Operating Temp:** 0° to 50° C

**Storage Temp:** -40° to 100° C

**Relative Humidity:** 5 to 95%, non-cond.

Specifications are subject to change without notice