

New!



Features

- Complete multiband recording and playback instrument
- 4U 19 inch industrial rack-mount PC server chassis
- Windows® 7 Professional workstation with high performance Intel® Core™ i7 processor
- 16-bit 200 MHz A/Ds
- 16-bit 800 MHz D/As
- Real-time sustained recording rates of up to 1600 MBytes/sec
- Up to 20 terabytes of storage to NTFS RAID disk array
- RAID levels of 0 , 1 , 5 , 6 , 10 and 50
- Pentek SystemFlow® Record/Playback software
- Complete GUI with Signal Viewer analysis tool which includes a virtual oscilloscope and spectrum analyzer
- File headers include time stamping and recording parameters
- DDC decimation and DUC interpolation range from 2 to 65,536
- Up to 80 MHz record and playback signal bandwidths
- IF frequencies to 700 MHz
- Optional GPS time and position stamping

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

General Information

The Pentek RTS 2706 is a turnkey, multi-band recording and playback instrument for recording and reproducing high-bandwidth signals. The RTS 2706 uses 16-bit, 200 MHz A/D converters and provides sustained recording rates up to 1600 MB/sec in four-channel configuration.

The RTS 2706 uses Pentek's high-powered Virtex-6-based Cobalt modules, that provide flexibility in channel count, with optional digital downconversion capabilities. Optional 16-bit, 800 MHz D/A converters with digital upconversion allow real-time reproduction of recorded signals.

A/D sampling rates, DDC decimations and bandwidths, D/A sampling rates and DUC interpolations are among the GUI-selectable system parameters, providing a fully programmable instrument capable of recording and reproducing a wide range of signals.

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

SystemFlow Software

The RTS 2706 includes the System-Flow® Recording Software. SystemFlow 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 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.

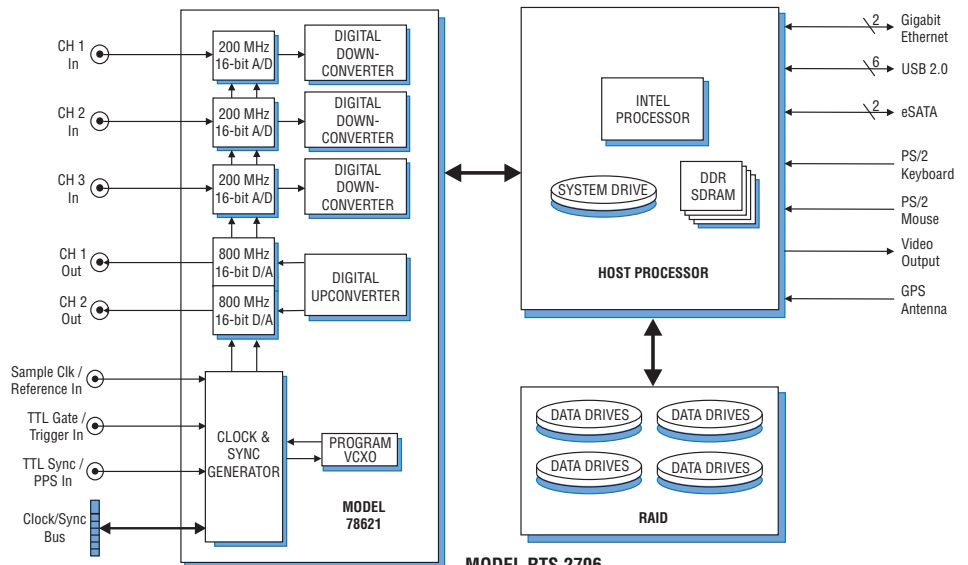
Built on a Windows 7 Professional workstation, the RTS 2706 allows the user to install post processing and analysis tools to operate on the recorded data. The instrument records data to the native NTFS file system, providing immediate access to the recorded data.

Data can be off-loaded via two gigabit Ethernet ports, six 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.

Flexible Architecture

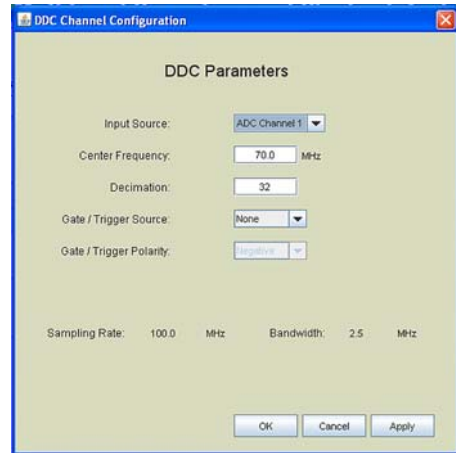
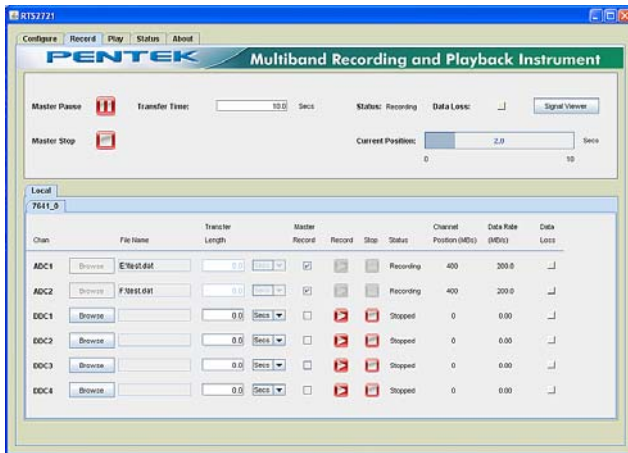
The RTS 2706 is configured in a 4U 19" rack-mountable chassis, with hot-swap data drives, front panel USB ports and I/O connectors on the rear panel. Systems are scalable to accommodate multiple chassis to increase channel counts and aggregate data rates. All recorder chassis are connected via Ethernet and can be controlled from a single GUI either locally or from a remote PC.

Multiple RAID levels, including 0, 1, 5, 6, 10 and 50, provide a choice for the required level of redundancy. Up to 20 hot-swap SATA drives are optionally available, allowing up to 20 Terabytes of real-time data storage space in a single 4U chassis.



(One possible configuration shown, contact Pentek for alternate configurations)

SystemFlow Graphical User Interface

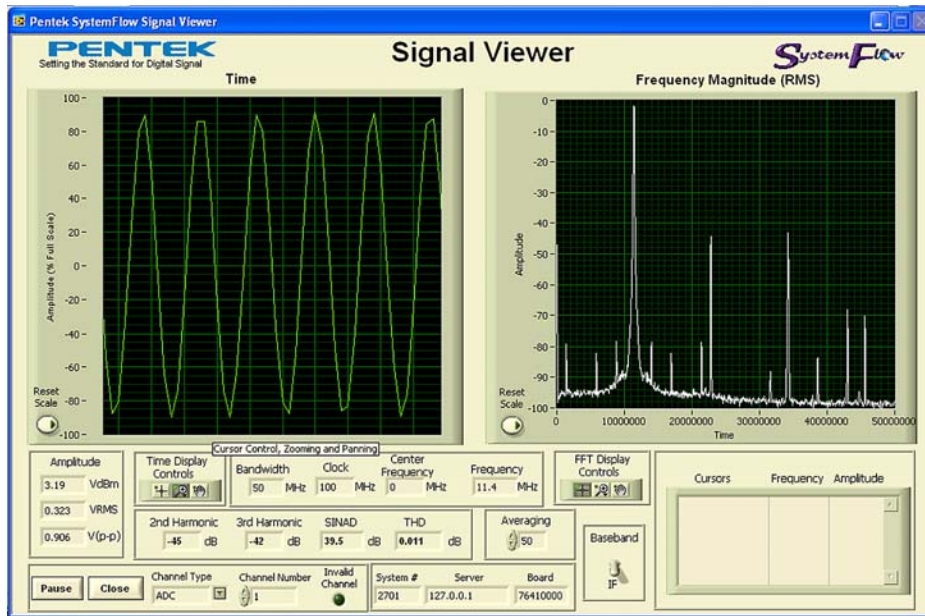


SystemFlow Recorder Interface

The RTS 2706 GUI provides the user with a control interface for the recording instrument. 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 signals recorded on disk.

SystemFlow Hardware Configuration Interface

The RTS 2706 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.



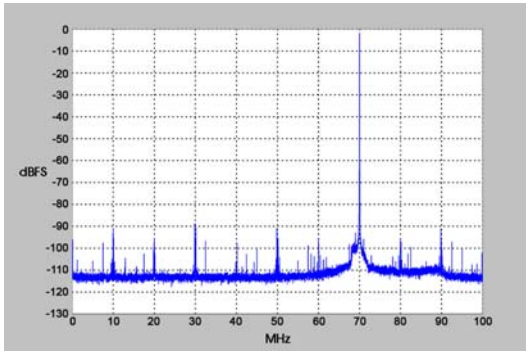
SystemFlow Signal Viewer

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.

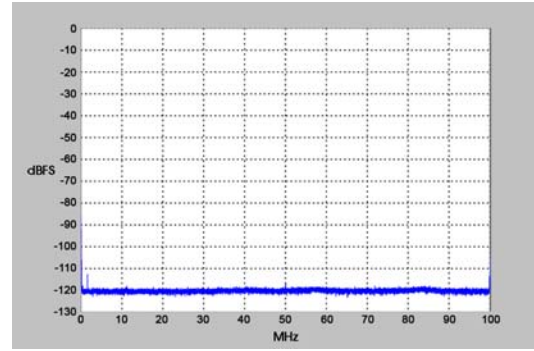
A/D Performance

Spurious Free Dynamic Range



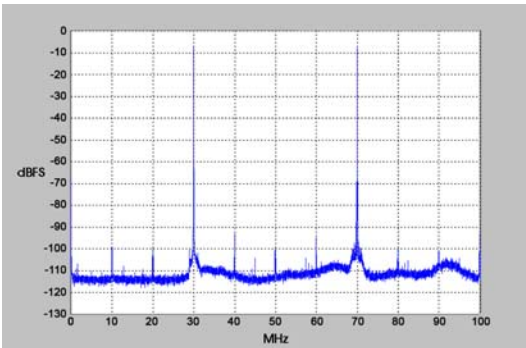
$f_{in} = 70 \text{ MHz}$, $f_s = 200 \text{ MHz}$, Internal Clock

Spurious Pick-up



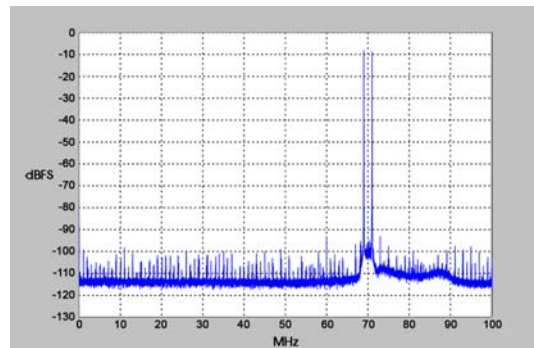
$f_s = 200 \text{ MHz}$, Internal Clock

Two-Tone SFDR



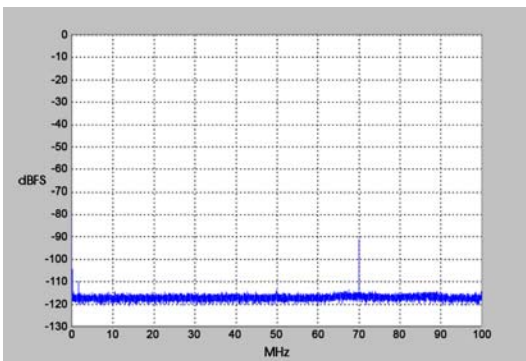
$f_1 = 30 \text{ MHz}$, $f_2 = 70 \text{ MHz}$, $f_s = 200 \text{ MHz}$

Two-Tone SFDR



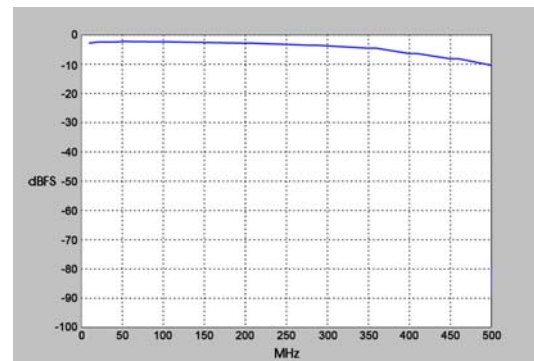
$f_1 = 69 \text{ MHz}$, $f_2 = 71 \text{ MHz}$, $f_s = 200 \text{ MHz}$

Adjacent Channel Crosstalk



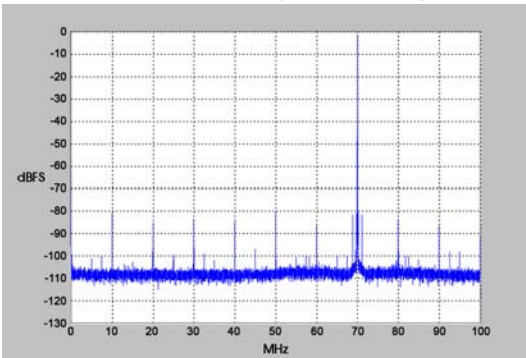
$f_{in \text{ Ch2}} = 70 \text{ MHz}$, $f_s = 200 \text{ MHz}$, Ch 1 shown

Input Frequency Response



$f_s = 200 \text{ MHz}$, Internal Clock

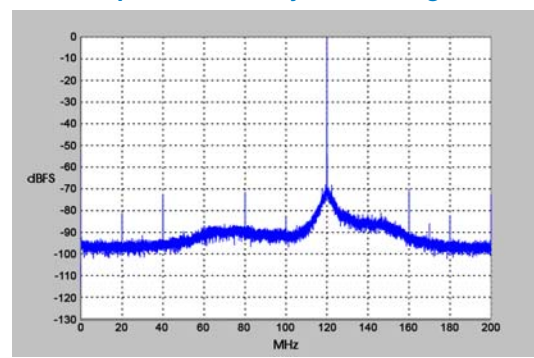
Spurious Free Dynamic Range



$f_{out} = 70 \text{ MHz}$, $f_s = 200 \text{ MHz}$, Internal Clock

D/A Performance

Spurious Free Dynamic Range



$f_{out} = 120 \text{ MHz}$, $f_s = 400 \text{ MHz}$, External Clock

Specifications

PC Workstation (standard configuration)

Operating System: Windows® 7 Professional

Processor: Intel® Core™ i7 processor

Clock Speed: 1.8 GHz or greater

SDRAM: 2 GB

RAID

Storage: 2-20 TB

Number of Drives: 1-20

Supported Levels: 0, 1, 5, 6, 10 and 50

Analog Recording Input / Output

Analog Signal Inputs

Input Type: Transformer-coupled, front panel female SSMC connectors

Transformer Type: Coil Craft WBC4-6TLB

Full Scale Input: +8 dBm into 50 ohms

3 dB Passband: 300 kHz to 700 MHz

A/D Converters

Type: Texas Instruments ADS5485

Sampling Rate: 10 MHz to 200 MHz

Resolution: 16 bits

Digital Downconverter

Type: Virtex-6 installed DDC IP Core

Decimation: 2 to 65,536

Bandwidth: Up to 80 MHz

Analog Signal Outputs

Output Type: Transformer-coupled, front panel female SSMC connectors

Full Scale Output: +4 dBm into 50 ohms

3 dB Passband: 60 kHz to 300 MHz

Digital Upconverter and D/As

Type: TI DAC5688 and Pentek-installed interpolation IP core

Interpolation: 2 to 65,536

Input Bandwidth: Up to 80 MHz

Output IF: DC to 160 MHz

Output Signal: Analog, real or quadrature

Sampling Rate: 320 MHz max., 500 MHz max. with upconversion disabled

Resolution: 16 bits

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

External Clocks

Type: Front panel female SSMC connector, sine wave, 0 to +10 dBm, AC-coupled, 50 ohms, 10 to 200 MHz

Multi-Recorder Sync/Gate Bus: 26-pin connector, dual clock/sync/gate input/output LVDS buses; one sync/gate input TTL signal

Physical and Environmental

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

Weight: 60-85 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.

Model RTS 2706 Options

Recording Options

Option 201	One Channel Recording
Option 202	Two Channel Recording
Option 203	Three Channel Recording
Option 204	Four Channel Recording
Option 208	Eight Channel Recording

Playback Options

Option 221	One Channel Playback
Option 222	Two Channel Playback
Option 224	Four Channel Playback
Option 228	Eight Channel Playback

Storage Options

Option 240	2 TB Storage
Option 241	4 TB Storage
Option 242	6 TB Storage
Option 243	8 TB Storage
Option 244	12 TB Storage
Option 245	16 TB Storage
Option 246	20 TB Storage

General Options

Option 260	Digital Downconversion and Upconversion
Option 261	GPS Time & Position Stamping

Contact Pentek for compatible Option combinations