New!

Model RTS 2706

8-Channel RF/IF 200 MS/sec Rack-mount Recorder

TALON RTS COMMERCIAL RECORDER

SystemFlow

Features

- Complete multiband recording and playback system
- 4U 19 inch industrial rack-mount PC server chassis
- Windows® 7 Professional workstation with high performance Intel® Core™ i7 processor
- 200 MHz max. 16-bit A/D sampling for recording, 0 to 8 channels
- 1.25 GHz max. 16-bit D/A sampling for playback, 0 to 8 channels
- 80 MHz max. record and playback signal bandwidths
- Capable of record/playback of IF frequencies to 700 MHz
- Real-time sustained recording rates of up to 1600 MB/sec in 4-channel configuration
- Up to 20 terabytes of storage to NTFS RAID disk array
- RAID levels of 0 ,1, 5 , 6, 10 and 50
- SystemFlow® GUI with signal viewer analysis tool
- C-callable API for integration of recorder into application
- File headers include time stamping and recording parameters
- DDC decimation and DUC interpolation range from 2 to 65,536
- Optional GPS time and position stamping

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

General Information

The Talon™ RTS 2706 is a turnkey, multiband recording and playback system 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 system 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 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.

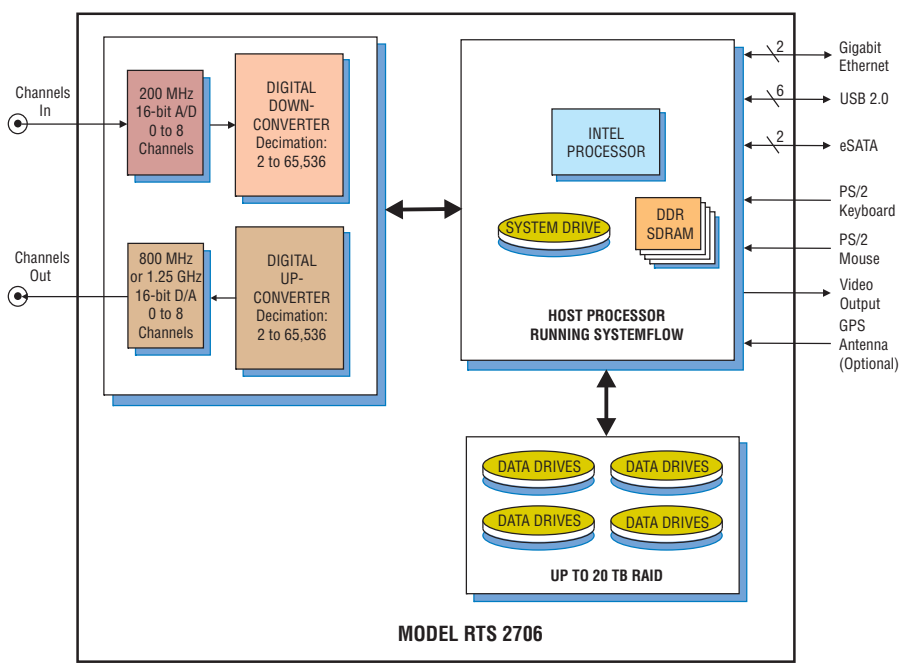
Built on a Windows 7 Professional workstation, the RTS 2706 allows the user to install post processing and analysis tools to operate on the recorded data. The RTS 2706 records data to the native NTFS file system, providing immediate access to the recorded data.

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-swappable 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-swappable SATA drives are optionally available, allowing up to 20 terabytes of real-time data storage space in a single 4U chassis. ➤



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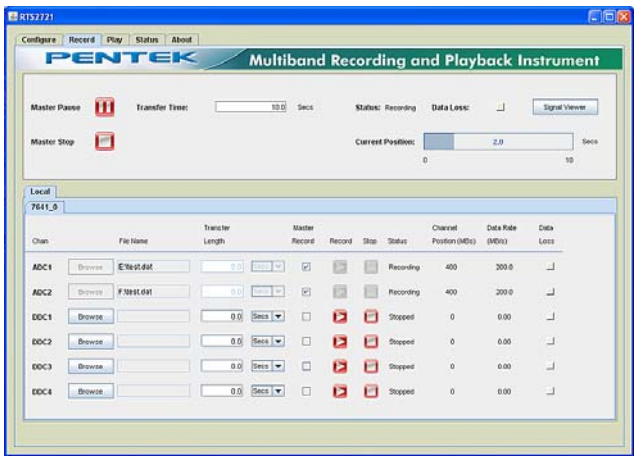
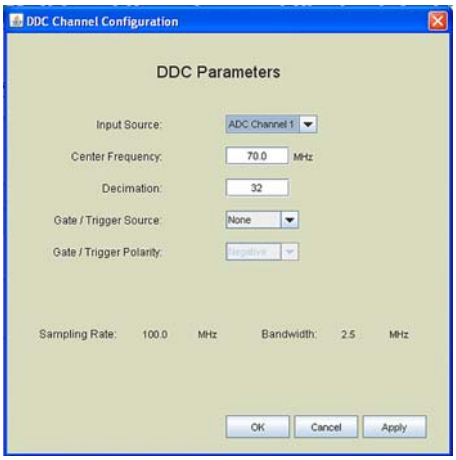
➤ SystemFlow Graphical User Interface



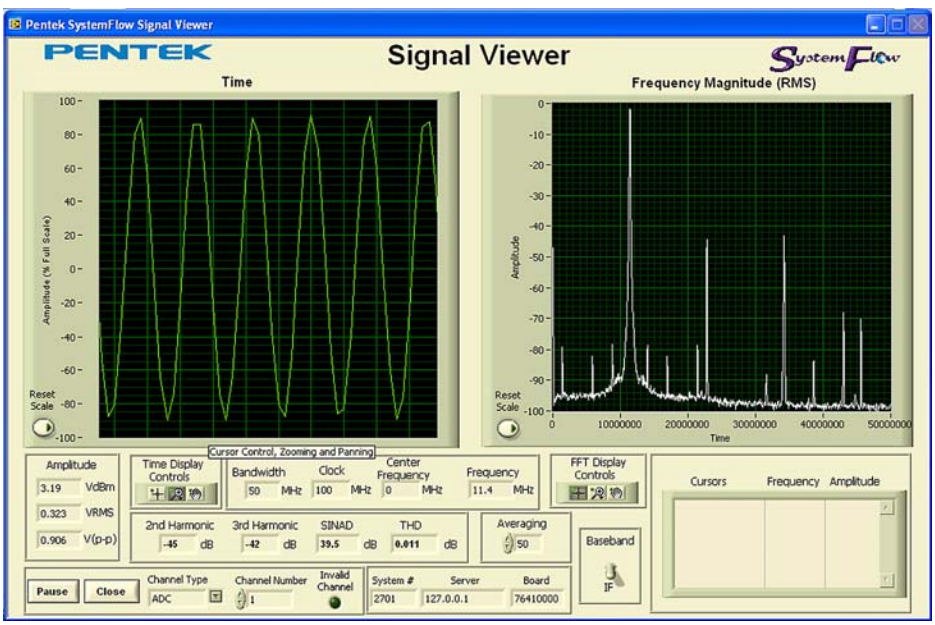
SystemFlow Recorder Interface

The RTS 2706 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 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. ➤

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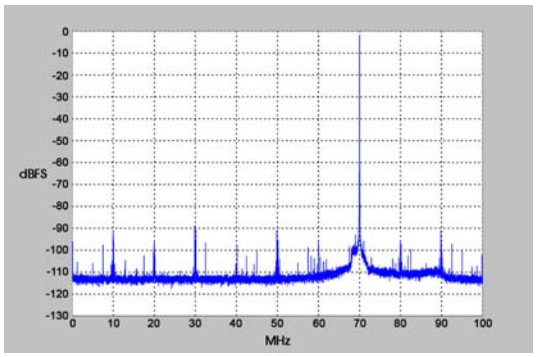
8-Channel RF/IF 200 MS/sec Rack-mount Recorder

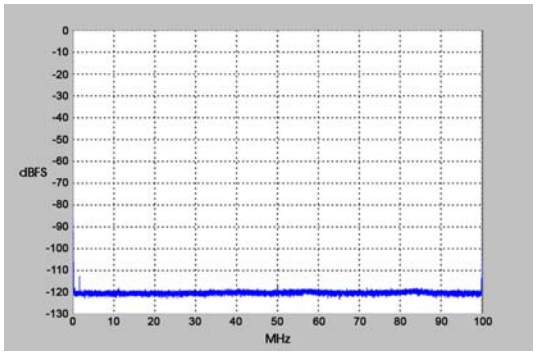
A/D Performance

Spurious Free Dynamic Range



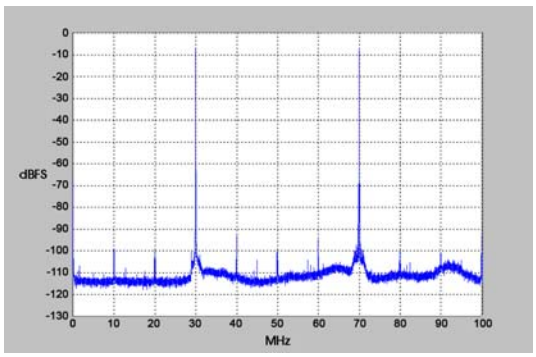
f_{in} = 70 MHz, f_s = 200 MHz, Internal Clock

Spurious Pick-up



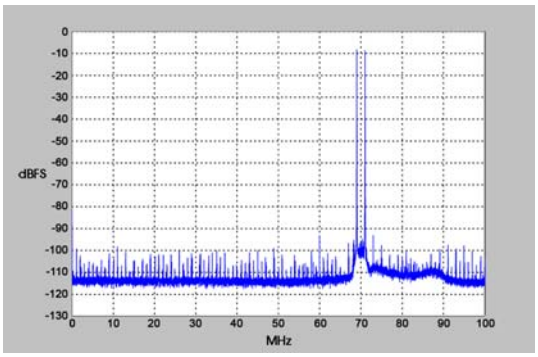
f_s = 200 MHz, Internal Clock

Two-Tone SFDR



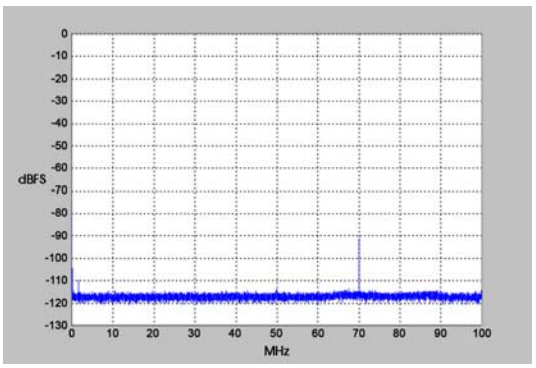
f_1 = 30 MHz, f_2 = 70 MHz, f_s = 200 MHz

Two-Tone SFDR



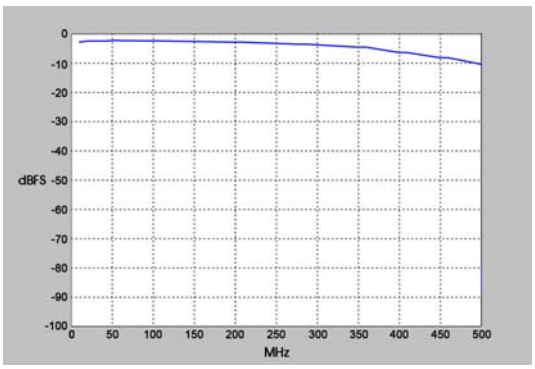
f_1 = 69 MHz, f_2 = 71 MHz, f_s = 200 MHz

Adjacent Channel Crosstalk



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

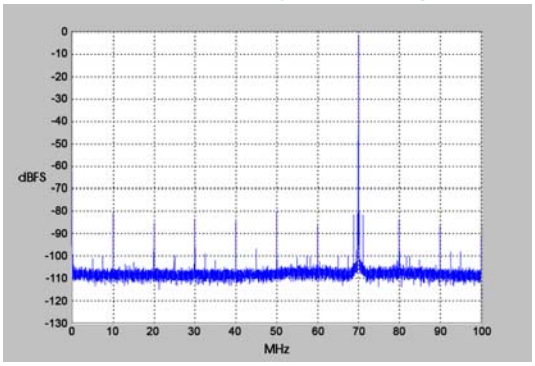
Input Frequency Response



f_s = 200 MHz, Internal Clock

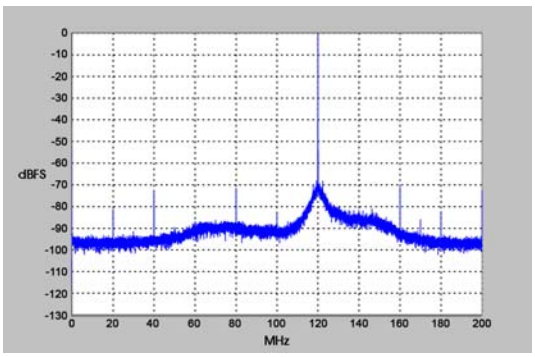
D/A Performance

Spurious Free Dynamic Range



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

Spurious Free Dynamic Range



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

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Model RTS 2706 — 8-Channel RF/IF 200 MS/sec Rack-mount Recorder

➤ Specifications

PC Workstation (standard configuration)

Operating System: Windows 7 Professional
Processor: Intel Core i7 processor
Clock Speed: 2.0 GHz or higher
SDRAM: 6 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 in two stages of 2 to 256
- **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:** 300 kHz to 700 MHz

Digital Upconverter and D/As
- **Type:** TI DAC5688 and Pentek-installed interpolation IP core
- **Interpolation:** 2 to 65,536 in two stages of 2 to 256
- **Input Data Rate:** 250 MHx max.
- **Output IF:** DC to 400 MHz
- **Output Signal:** Analog, real or quadrature
- **Output Sampling Rate:** 800 MHz max. with 2, 4 or 8 interpolation
- **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 +85° C
Relative Humidity: 5 to 95%, non-condensing

Model RTS 2706 Order Information

Recording Options

Option 201	1-Channel recording
Option 202	2-Channel recording
Option 203	3-Channel recording
Option 204	4-Channel recording
Option 208	8-Channel recording

Playback Options

Option 221	1-Channel playback
Option 222	2-Channel playback
Option 224	2-Channel playback
Option 228	8-Channel playback

Storage Options

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

General Options

Option 260	Digital downconversion & upconversion
Option 261	GPS time & position stamping

Contact Pentek for compatible Option combinations

Specifications are subject to change without notice

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