

TRIASYS

TECHNOLOGIES

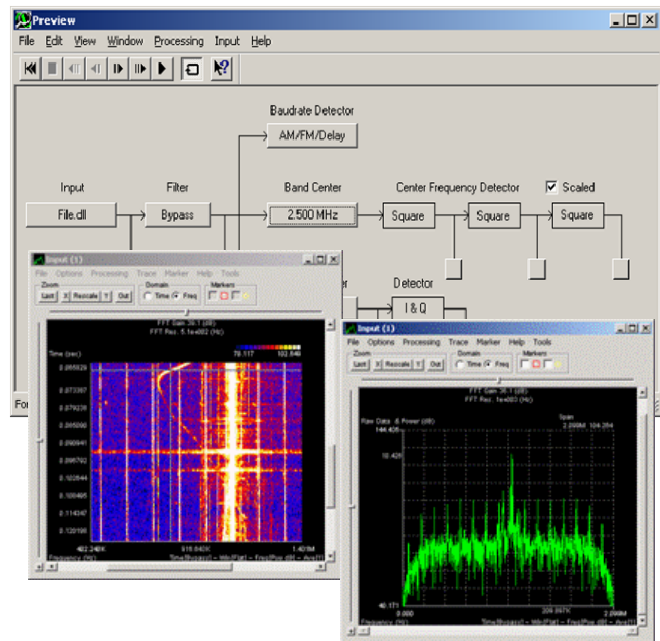
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### Signal Analysis Solution For Windows and Linux Platforms

Easy To Use Signal Analysis Capabilities  
Now Windows 7 Compatible With Interleaving, FEC,  
Higher Order Formats and V.35 Type LRS patterns!

#### Key Features

- Analysis and Breakdown of unknown signals
- Analysis of Carrier, Modulation Rate, and Modulation Type
- Bit Stream Analysis, Including Bit Frame Detection
- Forward Error Correction, Encoding/Decoding
- Special Formats, Non-Standard Bit Framing
- Bit To Text Display Capability for Teleprinter Signals
- Interference, Distortion and Multipath Analysis
- Demodulation with Adaptive Equalization
- Powerful Bit Processing Capabilities
- Interleaving and De-multiplexing
- Simulation of Modulation Signals
- Higher Order Special Format Compatibility with 7500TR Real Time Demodulator



TriaSys Technologies' SignalWorks® 4.0 package of signal processing tools features highly specialized algorithms that are fully implemented and integrated for advanced signals analysis. SignalWorks requires no programming or scripting. Coupled with input digitizing, the SignalWorks package offers signal analysts a friendly alternative to the digital oscilloscope, spectrum analyzer, demodulators, and other specialized signal analysis hardware.

With SignalWorks the ability to analyze randomized signals for overhead removal, justification and control bits, with de-multiplexing capability along with interleaving and tributary definition. SignalWorks® High Order Special Format processing is compatible with the 7500TR real time PCM Communications Demodulator, and facilitates integrated analysis and processing of non-standard bit framing with overhead, justification, and control bit identification and removal.

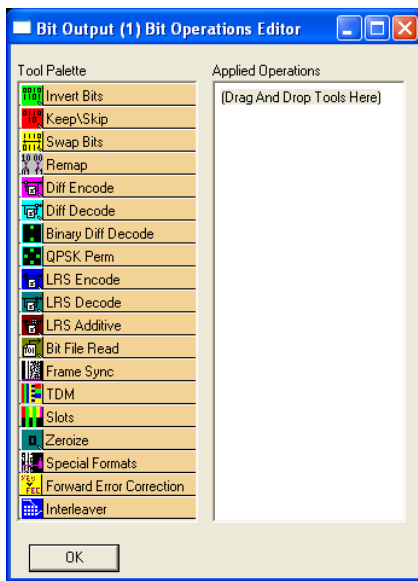
SignalWorks 4.0 now has comprehensive Forward Error Correction (FEC) encoding/decoding capabilities including Reed Solomon and Viterbi Convolutional codes. Reed Solomon block coding is fully programmable using any size block codes. Viterbi Convolutional encoding and decoding is also fully configurable including the code generating polynomial, punctured codes; and includes all standard rates such as 1/3, 2/3, 3/4, and 7/8.

#### Powerful Graphics and User Interfaces:

- Time- (oscilloscope) and frequency- (spectrum analyzer) domain displays of raw, intermediate, and processed signal data
- Graphical selection of filters by click and drag in a spectrum/waterfall display – saves time and eliminates errors
- Intuitive GUIs make processing control an easy task for the analyst
- Display data in point, line, and falling raster modes

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### THE SIGNALWORKS® SUITE OF SIGNAL ANALYSIS TOOLS, FOR WINDOWS AND LINUX WORKSTATIONS



#### Features:

- Input modules to retrieve data files, or collect signals directly from the TriaSys Technologies' SigDig™ or other compatible digitizing hardware
- Processing modules to support PSK, QAM, FSK, MSK, and GMSK digital modulation types
- Blind channel equalization and blind error rate analysis

#### Bit Ops Features:

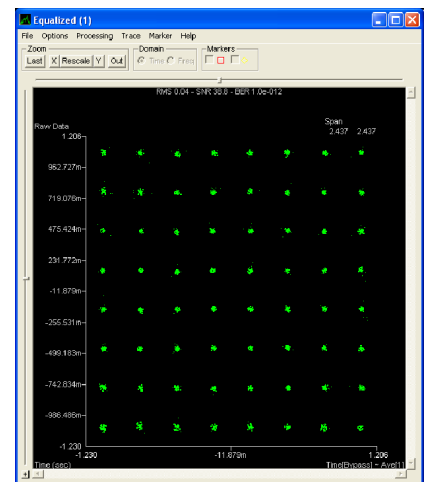
- FEC Error correction and generation
- Self Synchronous LRS Encoding and Decoding including V.35 type formats
- Synchronous LRS Encoding and Decoding (LRS Additive)
- Interleaver / De-Interleaver function
- SignalWorks® Higher Order Special Format processing is compatible with the 7500TR real time PCM Communications Demodulator
- Automatic SS LRS (PRN) Search Algorithm
- Bit Manipulation, Removal, Insertion and Synchronization
- Automatic frame detection function for determining bit frame structures and length
- Encoding modules to generate complex signals
- Bit Ops Feature is available in Demod and SignalGen Apps

#### The SignalWorks Suite consists of Three Apps:

1. Preview, is a 'first look' at input signals, general signal survey
2. Demod, is for signal demodulation, equalization and bit break down analysis
3. SignalGen, is for signal generation and bit manipulation

#### SignalWorks Applications:

- Analyze unknown signal break down: carrier, symbol rate, modulation type, bit encoding, bit framing breakout audio or text
- Test Special Format file for use in 7500TR, Real Time Demodulator
- Signal channel analysis: fading, interference, non-linearity, channel assessment
- Modem link analysis: bit error rate, performance degradation causes
- Modulation signal analysis
- RF Environment surveys



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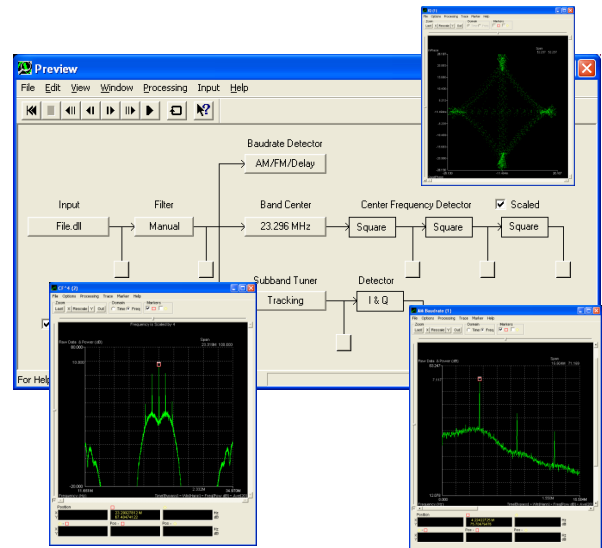
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### PREVIEW

#### a 'first look' at input signals

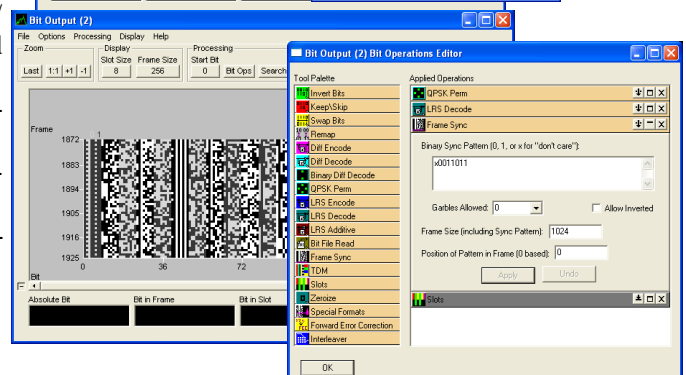
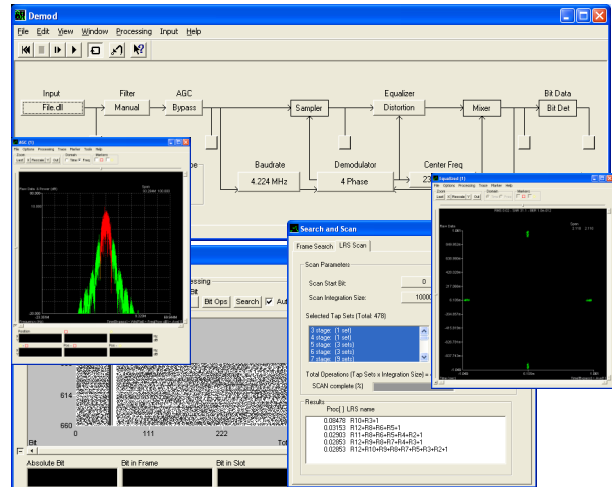
- Filtering: set-up arbitrary center frequency, bandwidth, and roll-off characteristics
- Center frequency detection: select among second, fourth, or eighth order detection algorithms
- Baud rate detection: select among AM, FM, or delay line algorithms
- Sub-band tuning: select arbitrary sub-band tuning, with center frequency tracking mode
- Signal displays: choose time and frequency domain, raw, intermediate, and processed signal data as point, line, and raster modes
- Parameter search engine called Auto Detect\*, this feature searches the signal for the most likely parameter in a signal such as: center frequency, modulation type and symbol rate, then displays a list of likely candidates for the user to select from



### DEMODO

#### Signal demodulation and equalization

- Demodulation: select among PSK, FSK, MSK, GMSK and up to high-order 1024\* QAM, formats.
- Equalization: choose from line canceling, dispersion- direction, or decision directed algorithms; switch algorithms manually or automatically
- Filtering: set-up arbitrary center frequency, bandwidth, and roll-off characteristics; update manually or automatically throughout processing
- Signal displays: choose time and frequency domain displays / raw, intermediate, and processed signal data / point, line and raster modes
- Bit-level operations for analysis: select among decoding, re-mapping, frame sync, etc.
- User programmable real-time text decode display for tele-printer signals
- Outputs: specify bit output format, including A-law encoded .wav

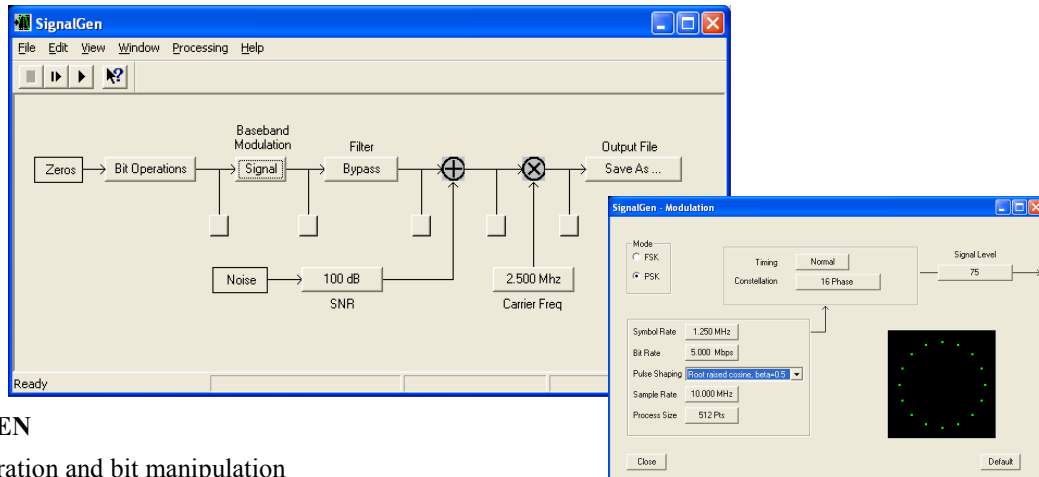


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### SIGNALGEN

Signal generation and bit manipulation

- Signal source: use bit file or pseudo-random noise generator (LRS) data source to drive built-in modulators
- Signal simulation: specify arbitrary baseband sample rate and modulation rate with raised cosine or root-raised cosine pulse shaping
- Bit-level operations for generation: select among encoding and remapping
- Modulation: choose from built-in CW, PSK, QAM, FSK, MSK, GMSK modulators
- Noise: add noise with arbitrary SNR
- Channel characterization: specify center frequency, bandwidth, group delay, and roll-off of channel filter
- Outputs: store modulated signal in output file
- Signal displays: choose time and frequency domain; raw, intermediate, and processed signal data; point, line, and raster modes; bit-level display

### System Requirements:

Pentium-class CPU or better, 1 GB RAM. Software performance is directly related to CPU performance  
Windows 7, Vista, XP, 2000, Linux (with Crossover)  
CD-ROM Drive, 1024 x 768 or better screen resolution

### Ordering Information:

Model Numbers\*  
SW 1024 QAM AD  
SW 1024 QAM  
SW 64 QAM AD  
SW 64 QAM

Other configurations may be available consult sales representative

\*Some features may not be available for export, Subject to ITAR Regulations

### To Inquire or Order

For a demonstration, further information, or to contact a representative, please call 978.244.1060, or visit our website at [www.triasys.us](http://www.triasys.us).

### Training

- Training is available for user and advanced user Product Formerly a Signami / Signami DCS Product  
\*Some features may not be available for export, Subject to ITAR Regulations

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The specifications provided in this sheet reflect current delivery revisions and are subject to change without notice.