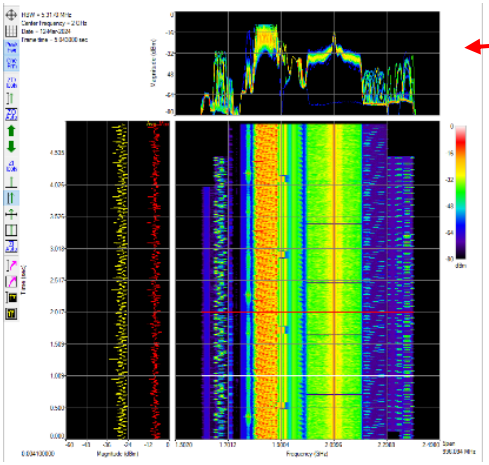
ERISYS
RF SOLUTIONS

Data Sheet SigPro-4000

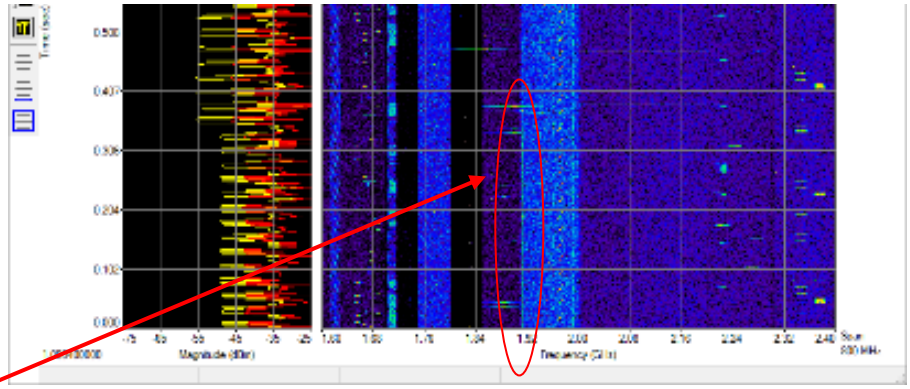
Multi-Channel RF Recording, Analysis, and Signal Creation System

Your key to understanding and controlling today's Complex RF Domain

Locate and analyze signals within a complex spectrum using **SigPro-4000®** and **ZoomOut®** software. Go from **Hours** of broadband recorded spectrum to **nanosecond** level detail in seconds.

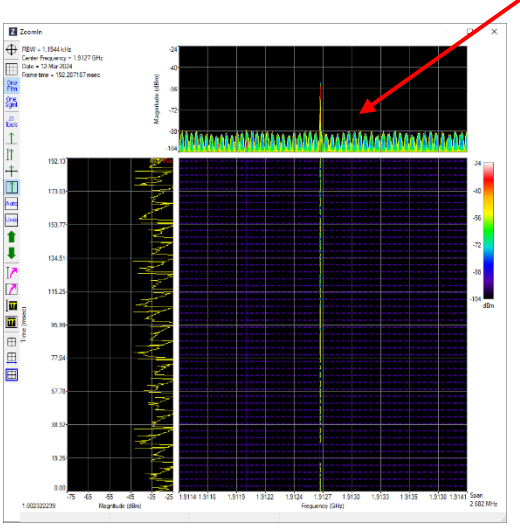


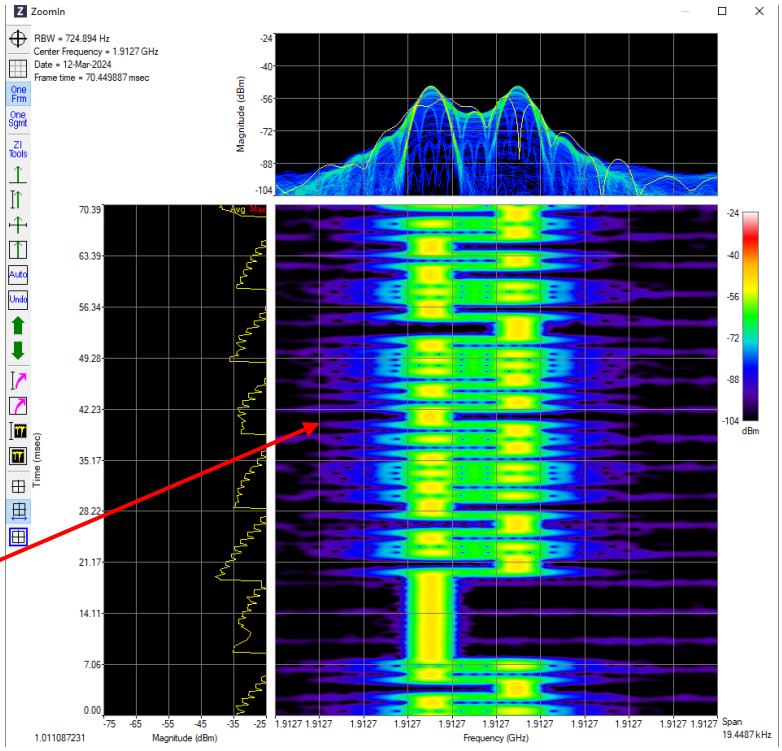
1,000 MHz IBW recording of complex spectrum



Narrowband signal located within complex spectrum

Narrowband signal of interest at 200 kHz IBW resolution





FSK signal at 20 KHz IBW. Modulation details can be easily determined

This can be done in seconds!

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The **SigPro-4000** is an integrated enterprise-class, broadband, multi-channel, digital RF spectrum **recording, signal analysis**, **test scenario creation**, and **RF playback** system. Designed by EW Signal Analysis experts for EW experts. It is a uniquely powerful and professional tool for solving today's most challenging spectrum issues.

- **Record** multiple segments of RF spectrum, up to **1 GHz IBW,** up to **85 GHz** or higher, for hours (using R&S FSW). The SigPro-4000 has up to 120 TB of removeable SSD storage (over 6 hours at 1 GHz IBW). Signal storage can be increased with the addition of optional HyperVault modules (up to 240 TB per module).
- **Analyze** spectrum instantly to nanosecond resolution and kHz RBW.
- **Find and Extract** signals-of-interest including automated signal search tools.
- **Convert** RF signals to Pulse Descriptor Word (PDW) format.
- **Create** signal libraries in PDW and IQ formats.
- **Import** signal libraries in IQ and PDW format to support the creation of complex test scenarios.
- **Create** complex test scenarios from recorded spectrum and signal libraries. Scenarios can have *virtually unlimited complexity and duration.*
- **Transmit** test scenarios at RF up to 44 GHz (using R&S SMW).
- **Simultaneously** record and playback with time synchronization (requires optional additional SigPro-4000, FEDS or HyperVault module).
- **Threat Generation** Can be used as a powerful and flexible Threat Generator.
- **Create Digital Twin** simulations and compare transmitted RF with test unit responses.
- **Control** all components including external FSW and SMWs from a single flexible and user-friendly interface.
- **Powerful Erisys Software:**
  - ZoomOut - Analyze large spectrum recordings in detail, locate signals of interest.
  - RS Control - Intuitively provides control over both Erisys and Rohde & Schwarz equipment.
  - PIQ Compiler - Combine recorded spectrum and signals to create complex test scenarios.
  - Quad Vu - Simultaneously display up to four IQ recordings, time align and frequency shift to create complex long duration test scenarios and compare IQ recordings.
  - Cell Vu - Analyze modern cell phone signals including LTE and 5G including physical resource block analysis and channel utilization.
- **Software is compatible with MATLAB**

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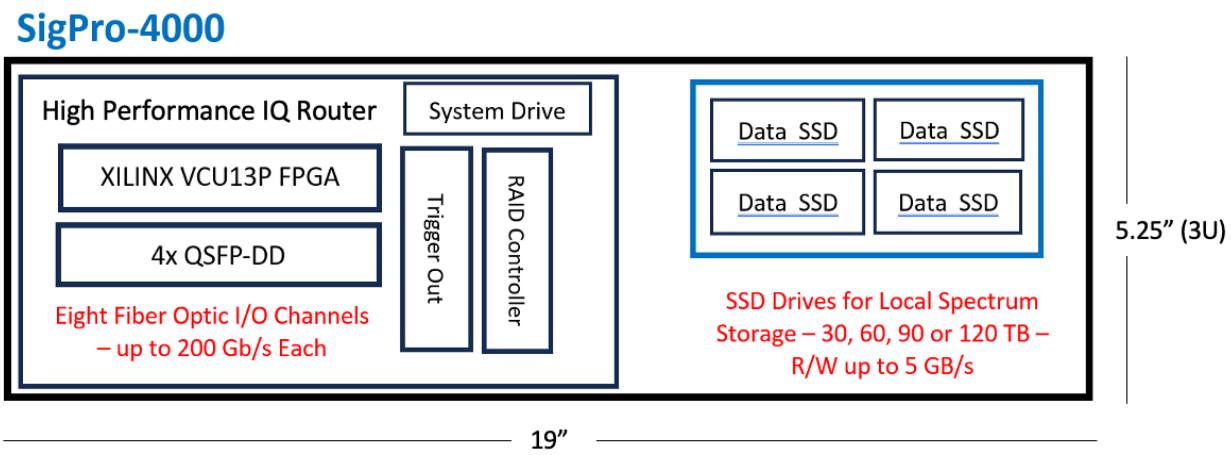
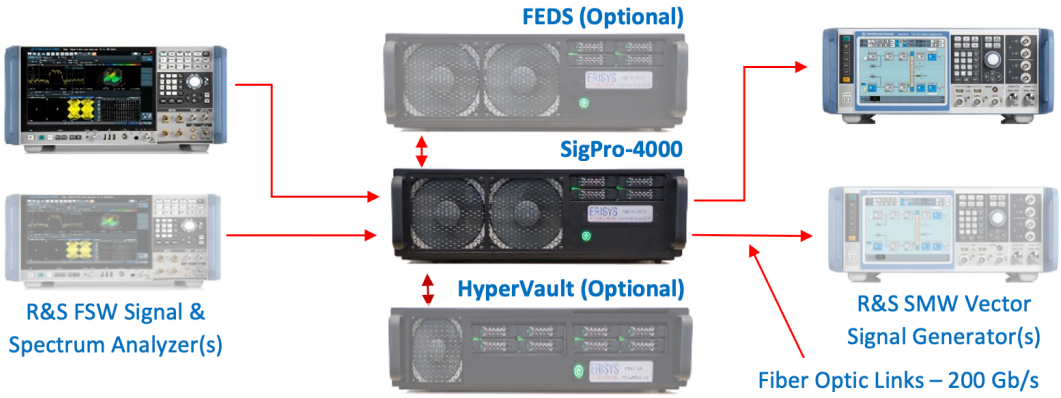
Simplified Block Diagram



The SigPro-4000 includes a high-performance IQ router/signal processor with a powerful XILINX VCU13P Field Programmable Gate Array (FPGA) for real time signal processing. The unit has four fiber optic QSFP-DD ports - up to 200 Gb/s each. These ports are used for high data rate links to external devices (typically R&S FSW and/or SMW devices) and optional SigPro-4000 system modules. These include FEDS digital signal processing modules (with customer accessible FPGA and graphics Processing Unit (GPU) resources), and HyperVault which includes external RAID signal storage modules. The SigPro-4000 is the heart of a powerful modular RF spectrum digital signal processing system for modern EW applications.

Typical Configuration



The SigPro-4000 typically uses an R&S FSW Signal and Spectrum Analyzer and SMW Vector Signal Generator to receive and transmit RF signals. The spectrum and signal information are converted to digital form by the FSW and from digital to RF by the SMW. The SigPro-4000 can record or playback up to 1 GHz IBW of RF Spectrum. The optional ERISYS FPGA Enhanced Development System (FEDS) provides additional FPGA and GPU resources for real time digital signal processing. The HyperVault provides up to 240 TB of additional signal storage.

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SigPro-4000 Key Specifications:

Number of External Instruments	4 – Rx or Tx via QSFP Fiber Optics	Can be increased with optional FEDS and HyperVault modules
External Device Options	R&S FSW R&S SMW	Via QSFP FO
Frequency Coverage	RX: 85 GHz; TX: 44 GHz	Dependent on FSW and SMW
I/O Data Rate (per channel)	Up to 200 Gb/sec	4 Channels
Channel IBW	Configurable; up to 1 GHz	IBW can be individually configured
Signal Storage	Up to 120 TB	4 removable hot-swappable SSD modules up to 30 TB each
Signal Storage Options	15, 30, 60 or 120 TB	Can be increased with optional FEDS and HyperVault modules
Offloading	Not Required for Analysis or Playback	Removable SSD modules, QSFP FO up to 200 GB/s, or 10G or 100G Ethernet

Security	Nothing Stored on non-volatile memory	All sensitive info on removable SSD Drives
Timing	IRIG-B and GPS	Precisely time tag recordings
External Monitors	Up to 2 HDMI monitors can be connected	No Confusing or overlapping windows
Software Options	Turn-key system optimized for modern EW digital signal processing, storage, and replay	• ZoomOut® • RS Control® • PIQ Compiler® • Quad Vu® • Cell Vu® • Compatible with MATLAB®
Size	19” rack 3U (5.25”) 17.25” deep	Rack mount, transport case, or tabletop
Weight	25 lbs	Readily transportable
Power	300W typical	Designed for field use
Source	US Designed and Built	US Sourced Components

We help you solve your previously unsolvable RF spectrum challenges.

For more information, please contact ERISYS RF Solutions for an on-site demonstration and consultation. We have decades of experience with EW oriented RF Spectrum Analysis and signal generation. You can reach via phone at 703-707-0619, us on the web at www.erisys.com, or via email at sales@erisys.com.

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