ERISYS
RF SOLUTIONS

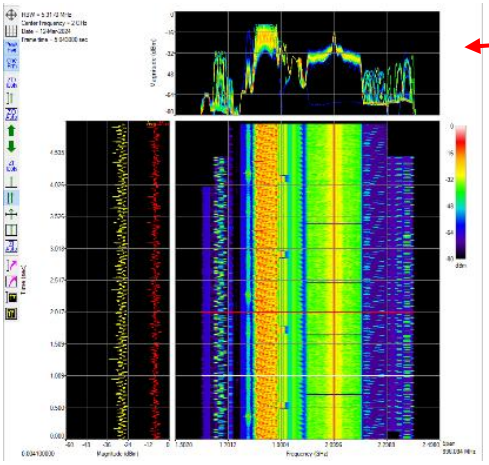
SigPro Recording, Analysis, & Signal Creation System

Data Sheet

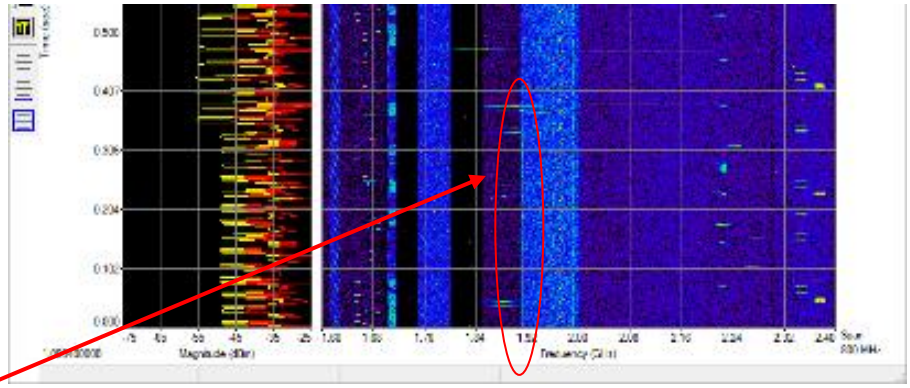
SigPro-4000B

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

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

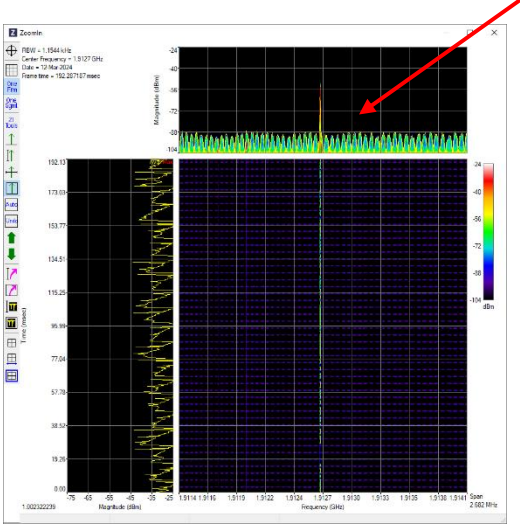


1,000 MHz IBW recording of complex spectrum



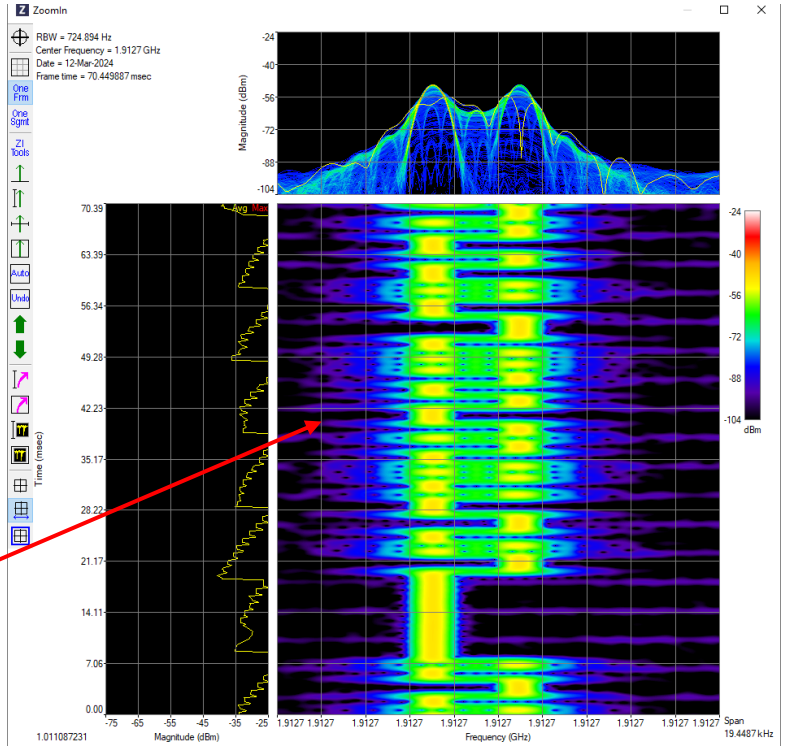
Narrowband signal located within complex spectrum

Narrowband signal of interest at 200 kHz IBW



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

This can be done in seconds!



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Data Sheet SigPro-4000B

The **SigPro-4000B** 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-4000B** 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-4000B, 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.
  - QuadVu - Simultaneously displays up to 4 IQ recordings, time align and frequency shift to create complex long duration test scenarios and compare IQ recordings.
  - CellVu - Analyze modern cell phone signals including LTE and 5G including physical resource block analysis and channel utilization.
- Software compatible with MATLAB.

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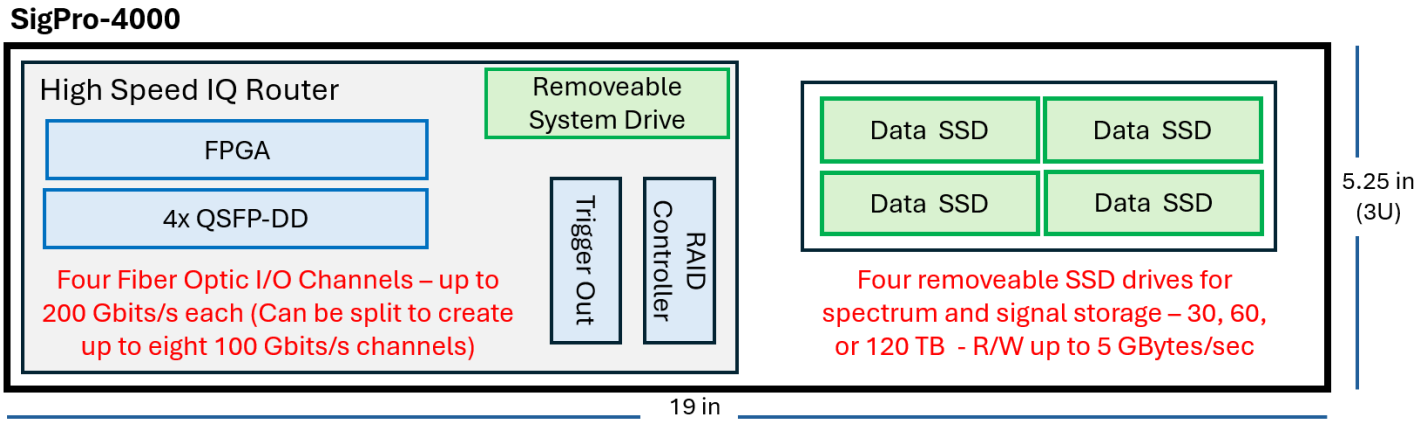
Simplified Block Diagram



The **SigPro-4000B** has a high-performance IQ router/signal processor with a powerful 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 Spectrum Analyzers and Signal Generators) and optional **SigPro-4000B** system modules. These include the ERISYS FPGA Enhanced Development System (**SigPro-FEDS**) with additional FPGA and graphics Processing Unit (GPU) resources), and **SigPro-HyperVault** with additional RAID signal storage. The **SigPro-4000B** is the heart of a powerful modular RF spectrum digital signal processing system for modern EW applications.

Typical Configuration

To maximize flexibility and capability, the **SigPro-4000B** typically uses commercial high performance Spectrum Analyzers and RF Signal Generators (such as **R&S FSW** Spectrum Analyzers and **SMW** Vector

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SigPro-4000B

Signal Generators) to receive and transmit RF signals. RF signal information is converted to digital form by the Spectrum Analyzer and to RF by the Signal Generator with up to 1 GHz IBW of RF Spectrum per channel. The optional ERISYS FPGA Enhanced Development System (**SigPro-FEDS**) provides additional FPGA and GPU resources for real time digital signal processing. The optional **SigPro-HyperVault** can provide up to 240 TB of additional signal storage.

SigPro-4000 Key Specifications

Number of External Instruments	4 – Rx or Tx via QSFP Fiber Optic	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 1.2 GHz	IBW can be individually set for each channel
Minimum Sample Rate	833 picoseconds	Time resolution less than a nanosecond
Signal Storage	Up to 120 TB	4 removable hot-swappable SSD modules
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 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 consultation and on-site demonstration. We have decades of experience with EW oriented RF Spectrum Analysis and signal generation. You can reach us on the web at www.erisys.com or via email at info@erisys.com.

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