ERISYS Signal Analysis Software

Data Sheet

R&S Control

Software suite for control of R&S FSW spectrum analyzers and SMW200A signal generators

Overview

R&S Control is a control module that is part of the ERISYS **ZoomOut™** Spectrum capture, analysis and synthesis system. It provides **single-point** control for integrated ERISYS RF recording, analysis and playback systems (SigPro series devices) and Spectrum analyzers and/or Signal Generators manufactured by **Rohde & Schwarz (R&S)**. Depending on the system configuration, multiple **R&S FSW** Spectrum Analyzers and/or **SMW** Signal Generators can be controlled. **R&S Control** allows all devices in the system to be automatically configured and controlled from a single user screen. This greatly simplifies system operation while reducing setup and re-configuration time. **R&S Control** is the control element for the **R&S IRAPS**® system.

Typical Integrated System Configuration That Uses R&S Control

R&S Control is used to provide single point control of an entire RF Spectrum capture, recording, analysis, test spectrum creation and RF transmission system that uses the ERISYS **SigPro** system in conjunction with **R&S FSW** spectrum analyzers and **SMW2000A** signal generators. A typical configuration is shown on the next page.

The **FSW** Spectrum Analyzers receive spectrum of interest, up to 1 GHz IBW, and convert this to high quality digital form. The ERISYS **SigPro-2000B** or **SigPro-4000B** spectrum recording and analysis system records the streaming IQ information from each **FSW** and stores it on up to 120 TB of high-speed SSD storage. The streaming IQ data is also processed in real-time to facilitate rapid analysis. If additional real time signal processing is desired an optional ERISYS **FPGA Enhanced Development System** (**SigPro-FEDS**) can be added. If additional IQ signal storage is needed an optional **SigPro-Hypervault** high speed IQ storage and playback unit can be added which increased IQ storage up to an additional 240TB. All intra-system IQ information is transmitted using high data rate Fiber Optic links. For signal generation the processed signal IQ files are converted to RF by the **SMW200A** Signal Generators.
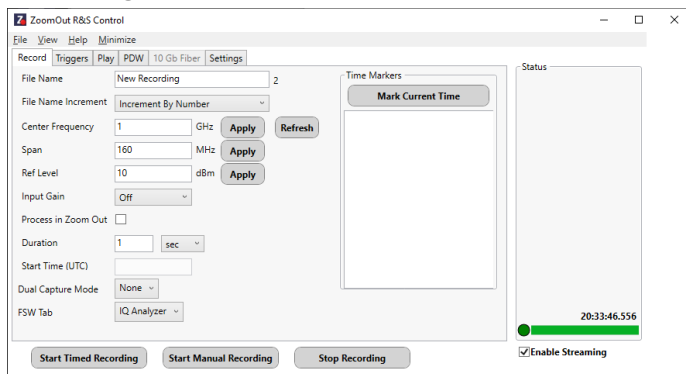
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R&S Control

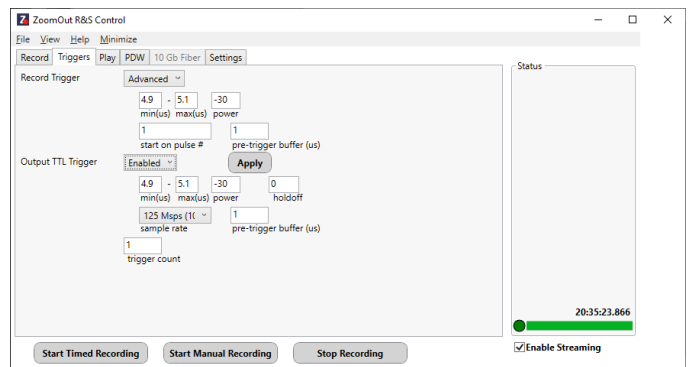A typical signal recording, analysis and playback system consists of:

- ERISYS SigPro-4000B or SigPro2000B
- Optional ERISYS SigPro-FEDS (for additional FPGA signal processing)
- Optional ERISYS SigPro-HyperVault (for additional IQ storage)
- One or more R&SFSW spectrum analyzers
- One or more R&S SMW signal generators
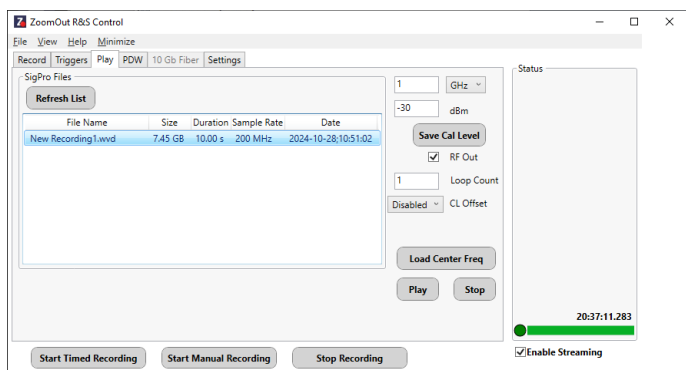- ERISYS ZoomOut software with R&S Control
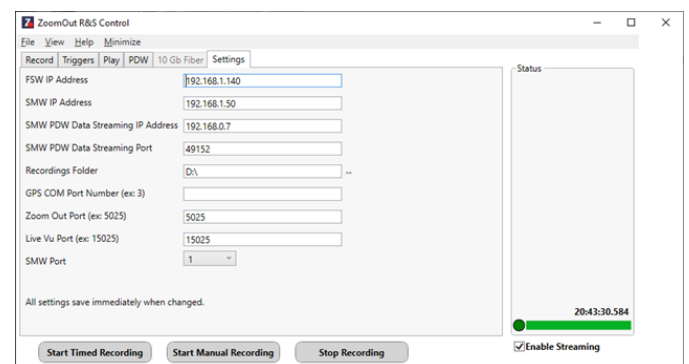
Typical R&S Control Windows

### Recording window

Trigger window

Playback window

Settings window

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R&S Control optional software modules:

- **LiveVu** - **LiveVu** provides a **real-time** display of the spectrum as it is being recorded by the ERISYS **SigPro** System. Multiple real-time channels can be displayed.
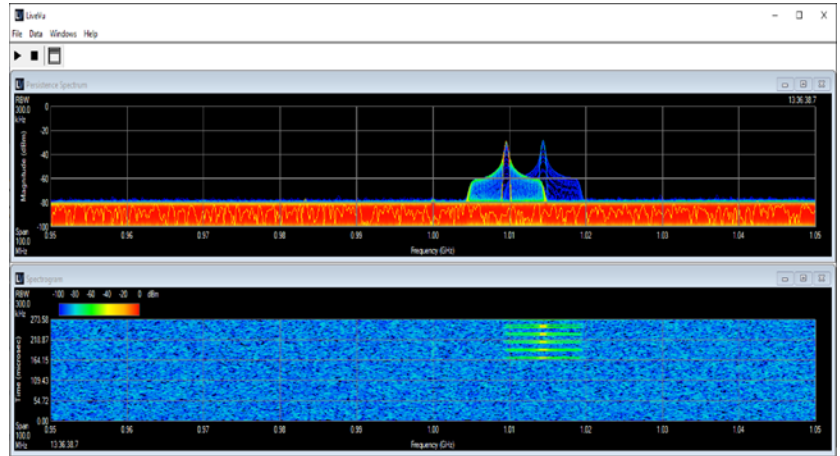
- **Advanced Triggering** – Advanced Triggering can start a recording based on observing, in real time, RF pulses that match specified duration and power. The software can also provide precisely timed TTL output triggers to external systems. Triggering can also be tied to GPS/IRIG timing. **Advanced Triggering** can be used with live streaming IQ information from an attached FSW Spectrum Analyzer, or it can be used post-recording on recorded IQ files. **Advanced Triggering** requires a trigger board in the **SigPro-4000B** and additional FPGA firmware. Typical applications include:
  - **Start or stop recording IQ information from a FSW Spectrum Analyzer** when a signal is observed, in real time, within the streaming IQ information that matches specified parameters.
  - **Start or stop transmitting from a SMW200A** when a signal is observed, in real time, within the streaming IQ information that matches specified parameters.
  - **Create blanking signals** when high RF power signals are found within a streaming IQ file, typically to protect external devices from high power signals that may damage sensitive instruments.
  - **Create marker files** to record the precise time of arrival for pulses matching specified pulse width and amplitude.

- **PDW Conversion and Streaming (to R&S SMW)** - RF waveforms that are transmitted by the system can be stored in standard **Pulse Descriptor Word (PDW)** format. Normally used with one or more **SMW** signal generators. A typical use case for this capability would be to allow organizations that have existing signal libraries in PDW form to be used with the **SigPro** system for **Threat Generator** applications.
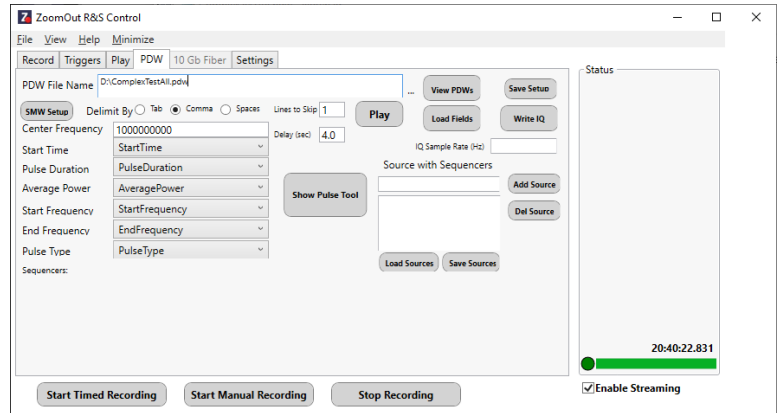
- **Frequency Mask Trigger** – This combination hardware and software module is similar in purpose and function to **Advanced Triggering**, except that the trigger signals can be much more complex frequency-power masks. Tools are provided to allow users to easily define mask parameters using sample signals that have been extracted from IQ recordings or are available from other sources. The **SigPro** system can automatically, in real time, monitor the streaming IQ data and if signals are detected that meet the mask criteria the system can automatically perform specific actions including starting or stopping recordings, starting or stopping transmissions, issuing blanking pulses and/or creating log files.
  - **Frequency Mask Trigger** is a more sophisticated version of the basic pulse width and pulse power trigger capability supported by **R&S Control - Advanced Triggering**.
  - **Frequency Mask Trigger** can operate on real-time streaming signal information and can be used with stored IQ data.

We can help you solve your most difficult 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 Sales@erisys.com.