

Toolkit for analysis of SigPro recorded IQ spectrum and signal recordings**Overview**

ERISYS ZoomOut™ is an enterprise level, EW professional software suite that provides an integrated set of software tools for RF spectrum and signal **recording, analysis, signal creation, and playback**. This powerful software suite can help solve today's most difficult and challenging Electronic Warfare and RF communication issues.

ZoomOut™ is typically used with the ERISYS **SigPro** series of RF IQ recording, analysis, and playback equipment, the **SigPro-2000B, SigPro-4000B, SigPro-FEDS** and/or **SigPro-Hypervault**. The **SigPro** system provides **ZoomOut™** with direct access to all recorded IQ information on the **SigPro** system, no matter how large the files immediately following the completion of the data capture. This provides users with unmatched speed of time-to-answer. The **ZoomOut™** software can also be used on a stand-alone basis on PC or Laptop computer using a Windows operating system.

The **ZoomOut™ – Basic** software module provides a powerful integrated set of signal analysis tools and is the core element of the ZoomOut™ software family. Two optional additional software tools are available, **ZoomOut™ – Radar** and **ZoomOut™ – Power Tools**. These provide additional signal analysis tools that are useful for specific applications (See their individual data sheets).

Highlights

ZoomOut™ – Basic is used for recorded data and provides a powerful toolset for RF spectrum analysis. These include:

- **Visualization** - Visualize an entire capture in a single frame, providing a “big picture” view to see trends and patterns. This visualization is available within **seconds** of completing a capture!
- **Analysis** – Analyze signals to sample level. Examine details in both the **time** and **frequency** domains. Multiple windows can provide simultaneous macro and detailed views and precisely **measure signal parameters**. Precisely compare different signals within a capture, for example, comparing in detail the stimulus and response of a unit-under-test.
- **Extract and Store** signals-of-interest for **detailed analysis, demodulation**, and/or creating **signal libraries**. Data can be converted to several popular file formats. **Interpolation, decimation**, and **filtering** can be performed to allow signals from different sources to be combined to create complex dynamic test scenarios.

Key Capabilities

Some of the capabilities that **ZoomOut™ – Basic** provides include:

- Full Capture Visualization and One Frame Analysis
- Spectrum Analysis with Occupied Channel Statistics

Key Capabilities (Continued)

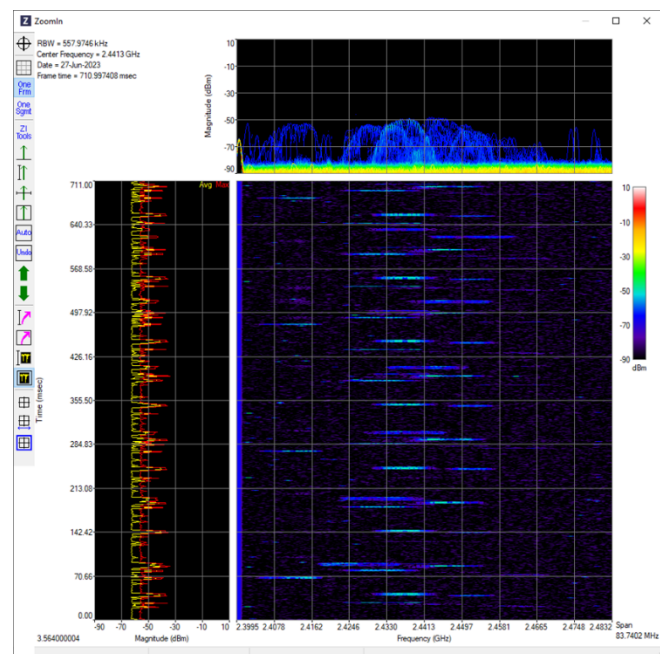
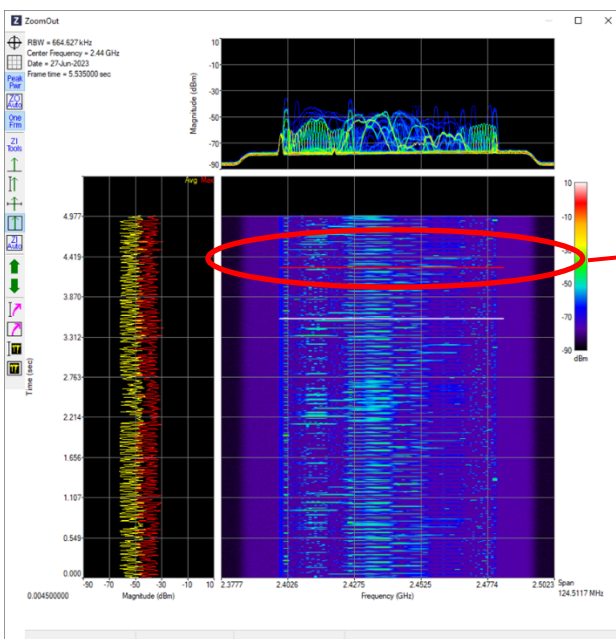
- Time Domain Viewing
- Export with Time, Frequency, and Span Adjustments
- Markers & Measurements

Full Capture Visualization and One Frame Analysis

ZoomOut™ can view an entire capture, no matter how long or large an IBW, in a single frame, within seconds of the completion of a recording. This is made possible using ERISYS Patent Pending techniques and elimination of the need to transfer large IQ files before analysis. Users can interactively scroll through a recording and “Zoom In” to examine any signals of interest in seconds with a few clicks of a mouse.

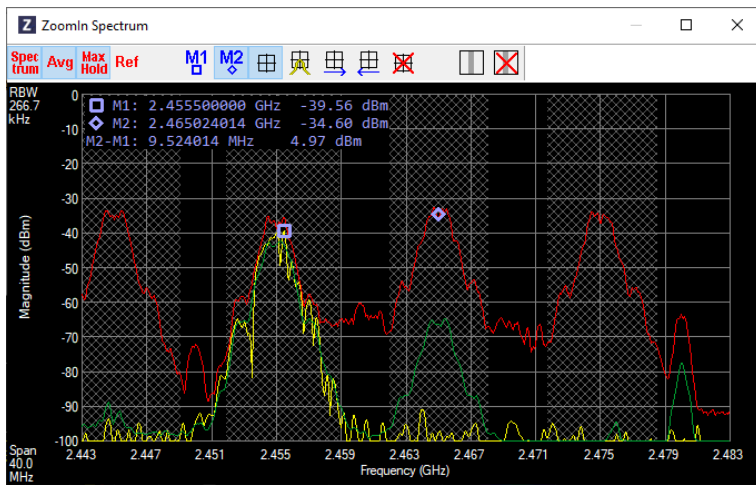
ZoomOut™ display of 5 second IQ recording, available within seconds.

ZoomOut™ display of 700 ms portion of recording. Can easily filter on both time and frequency range.



Spectrum Analysis with Automatic Occupied Channel Statistics

To aid in locating signals of interest, **ZoomOut™** can channelize recorded IQ spectrum information. This can be particularly useful when desiring to find active communication channels for further scrutiny.

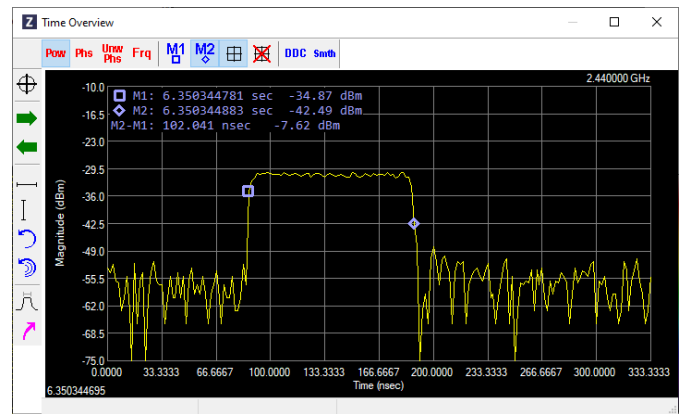


ZoomIn can calculate the Live Power, Max Power, and Occupied BW for bands of interest within a capture.

Center Freq	Span	Live Power	Max Power	Occupied BW
2.446087479 GHz	6.037736 MHz	-82.0 dBm	-32.1 dBm	5.797 MHz
2.455418525 GHz	6.998285 MHz	-35.6 dBm	-34.0 dBm	3.788 MHz
2.465058319 GHz	6.106346 MHz	-58.1 dBm	-31.0 dBm	5.905 MHz
2.475144082 GHz	6.792453 MHz	-86.4 dBm	-32.4 dBm	6.502 MHz

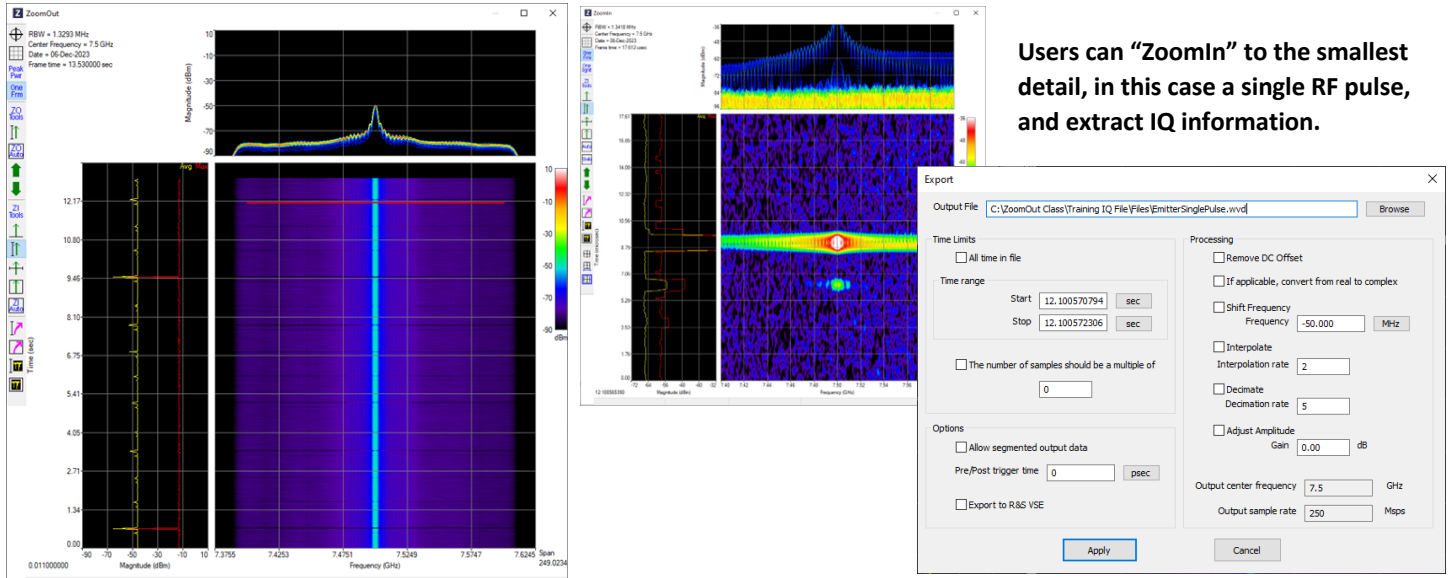
Time Domain Viewing

ZoomOut™ can display signals within an IQ capture in a variety of ways including power/magnitude, phase (wrapped), and phase (unwrapped) vs time. Markers can be used in all views to precisely measure signal characteristics.



Export with Time, Frequency, and Span Adjustments

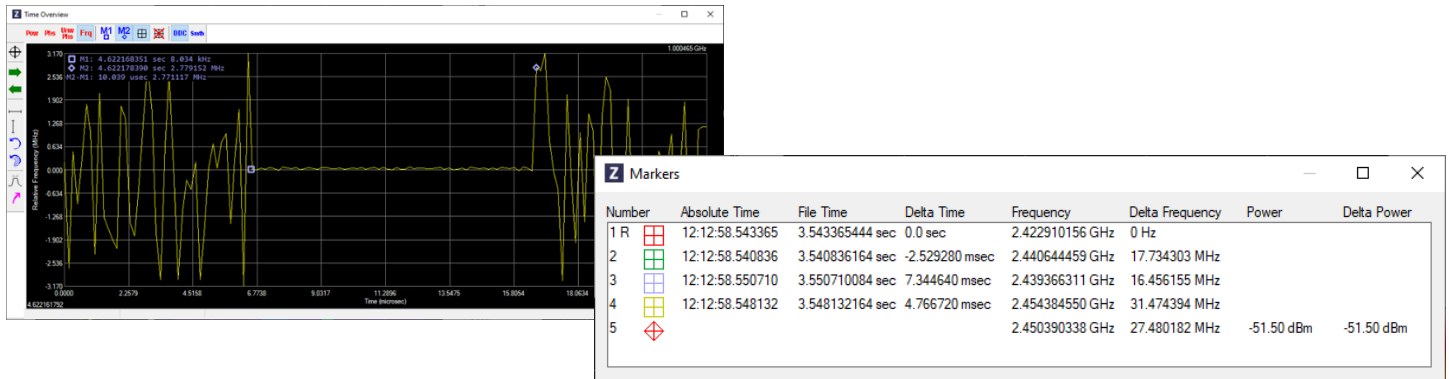
With a few mouse clicks, ZoomOut™ can extract segments of very large IQ captures containing the IQ information for Signals of Interest. This is particularly valuable in that it can dramatically reduce extracted IQ file sizes. Files can be exported in several common formats including R&S (.iq.tar & .vwd), XDAT (.xdat), MATLAB (.mat), and Keysight (.bin).



Users can “ZoomIn” to the smallest detail, in this case a single RF pulse, and extract IQ information.

Markers and Measurements

ZoomOut™ has a wide variety of options for placing markers and precisely measuring signal parameters. Markers “carry over” between views to aid in maintaining synchronization.



We can help solve 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 RF Spectrum Analysis and generation.