

Powerful RF signal analysis toolkit for SigPro recorded spectrum in IQ form

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 SigPro-Hypervault**. The ERISYS hardware provides **ZoomOut™** with direct access to real time streaming IQ information during recording as well as immediate high-speed access to all recorded IQ information on the **SigPro** system, no matter how large the files. 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™ – Power Tools Module** is an optional software module for **ERISYS ZoomOut™ – Basic** software package, providing additional analysis tools.

Highlights

ZoomOut™ – Power Tools Module is used for recorded data and provides additional signal analysis tools. These include:

- **Analysis** – Additional analysis tools include ZoomOut™ 3D Spectrum, and ZoomIn 3D Spectrum.
- **Digital Down Conversion (DDC)** – Isolate signals in close frequency and time proximity. Extract IQ information for individual analysis. It is very useful to isolate low power signals that are near high power signals.
- **Data Reduction** – Segmented Memory Concatenation can be used to eliminate “dead time” between pulses, reducing file sizes by several orders of magnitude. Software includes Segmented Memory Data Read, Write, and OneFrame Analysis to re-create and analyze concatenated without loss of information.
- **Export** – Convert signals in IQ form to formats for export to R&S® VSE and MATLAB®. Simply “draw a box around a signal of interest and export to VSE or MATLAB® including SCPI commands to perform the desired analysis, returning the results to **ZoomOut™**. Can be used very effectively without a detailed knowledge of VSE or MATLAB®.

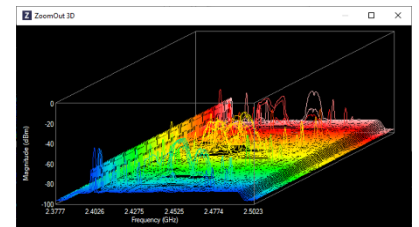
Key Capabilities

Some of the key capabilities provide by the **ZoomOut™ – Power Tools Module** include:

- ZoomOut™ 3D Spectrum
- ZoomIn 3D Spectrum
- Digital Downconversion & Smoothing
- Export to VSE or MatLab®
- Data Reduction using Segmented Memory Concatenation
- Segmented Memory Data Read, Write, and OneFrame Analysis
- One Segment ZoomIn
- Spectral Mask Search

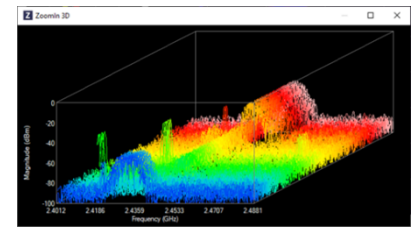
ZoomOut™ 3D Spectrum – ZoomOut™ - Power Tools Module

ZoomOut™ 3D Spectrum feature provides users with a 3D view of RF spectrum data. Users can customize the display to provide the optimum visualization of signals over time to aid in identifying patterns, trends and locating signals of interest for more detailed analysis.



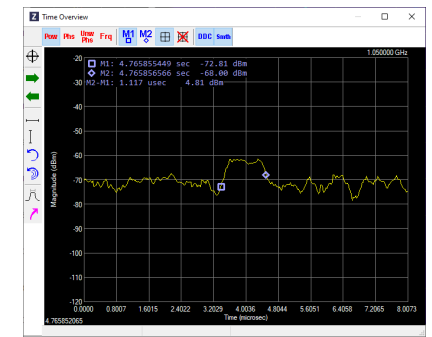
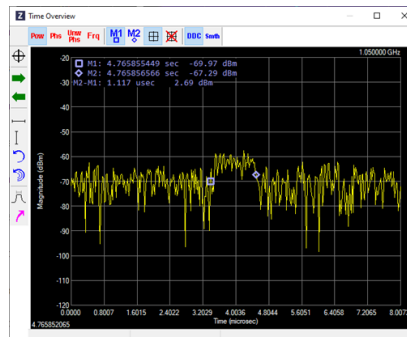
ZoomIn 3D Spectrum – ZoomOut™ - Power Tools Module

The ZoomIn 3D Spectrum feature, like the ZoomOut™ 3D spectrum feature provides 3D view of the RF spectrum. The feature is accessed differently within the ZoomOut™ software and for some types of signals can provide additional insight.



Digital Downconversion & Smoothing – ZoomOut™ - Power Tools Module

The Digital Downconversion and Smoothing feature provides additional digital signal processing gain and is very useful for locating signals of interest that are very close to the noise floor, or in some cases beneath the noise floor. Smoothing provides a “moving average” of the data points which can also be useful in separating signals of interest from background noise.



Spectrum with Decimation of 3 and Smoothing 15

Export to VSE or MatLab® - ZoomOut™ - Power Tools Module

This feature is used to export spectrum IQ information to R&S® signal generators (.WVD), R&S® VSE analysis software (.IQ.TAR), and MATLAB® (.MAT). The IQ information for signals of interest can be extracted from very large IQ captures, filtered in time and frequency simply by “drawing a box” around the desired signal.

Data Reduction using Segmented Memory Concatenation – ZoomOut™ - Power Tools Module

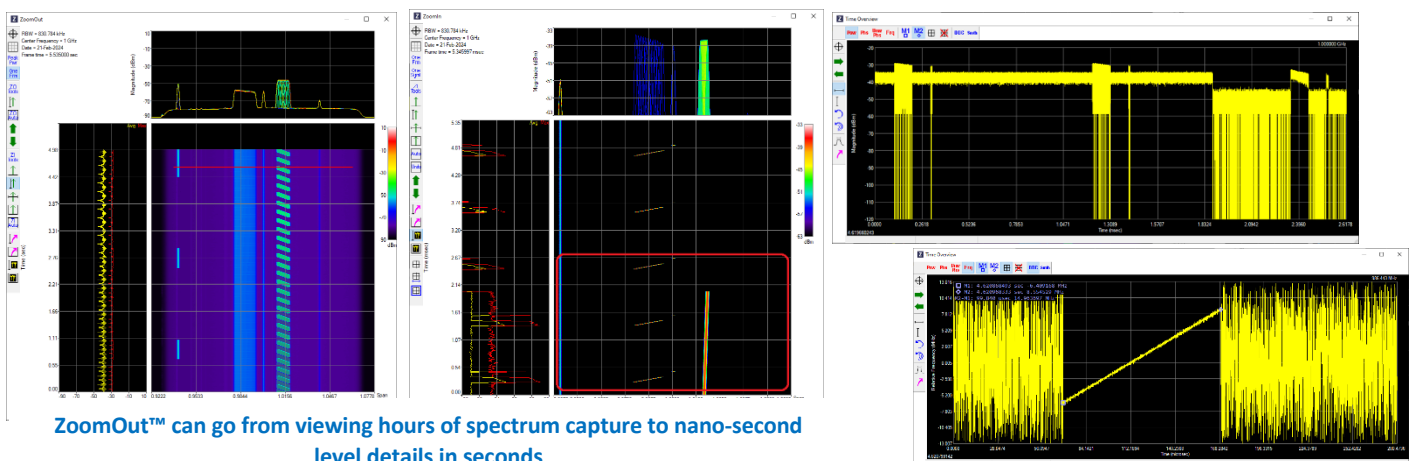
This feature is used with pulse signals to reduce IQ file size, often by several orders of magnitude, without loss of signal information. This is done by isolating each individual RF pulse and deleting the “dead time” between pulses from the IQ information. Subsequent analysis can be done as if all the IQ information was present. This feature is very useful for transferring time and frequency channelized IQ information with significantly reduced file sizes.

Segmented Memory Data Read, Write, and OneFrame Analysis – ZoomOut™ - Power Tools Module

This feature allows IQ files containing pulse signals that have been compressed using Segmented Memory Concatenation to be processed as if the file was the original signal. The software “reconstructs” the original IQ file for analysis without the IQ information for the “dead time” between pulses.

One Segment ZoomIn – ZoomOut™ - Power Tools Module

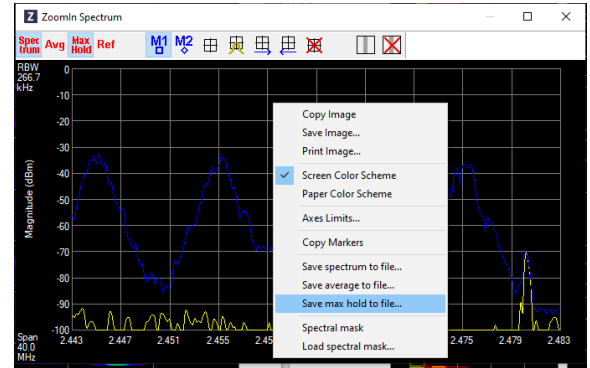
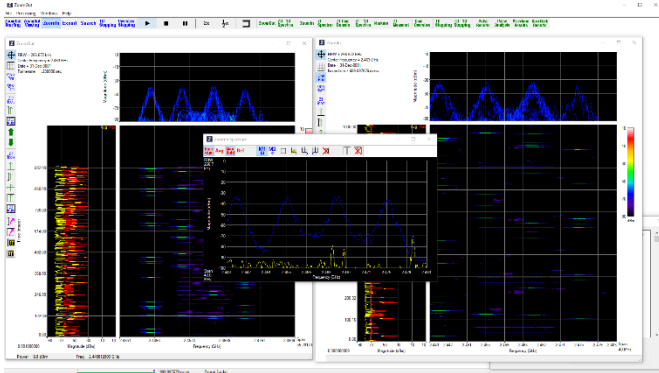
This feature is used to locate and isolate signal of interest within an IQ capture that overlap in time and frequency. It is a very powerful tool for the analysis of specific signals of interest that are embedded within a complex spectrum capture that may contain hundreds or thousands of signals.



ZoomOut™ can go from viewing hours of spectrum capture to nano-second level details in seconds

Spectral Mask Search – ZoomOut™ - Power Tools Module

This tool is used to find signals of interest within very large IQ spectrum captures easily and quickly. A sample of the signal of interest is used to create a unique power vs. frequency spectral mask. This signal “fingerprint” is then used to search the IQ capture file for occurrences. The results can be provided in several ways to simplify further analysis.



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.