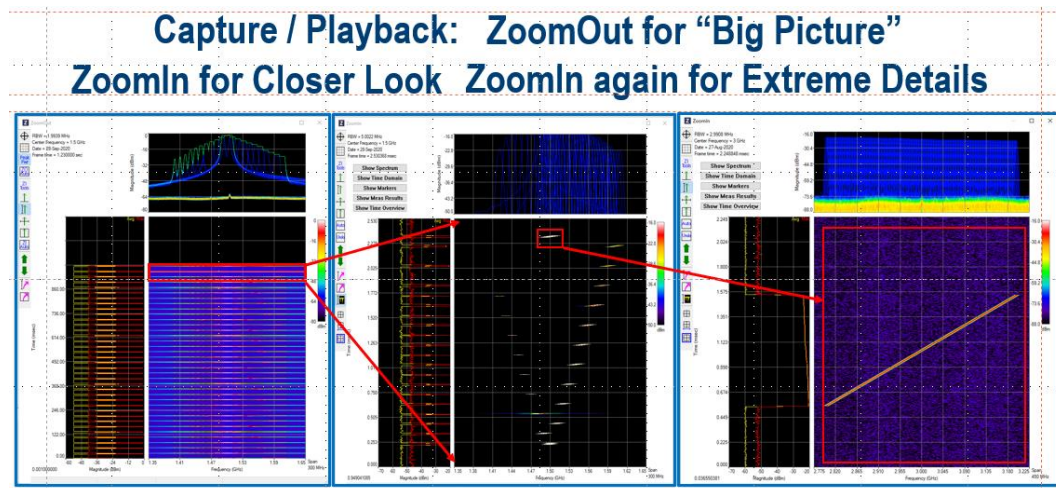


ZoomOut

See the Big Picture

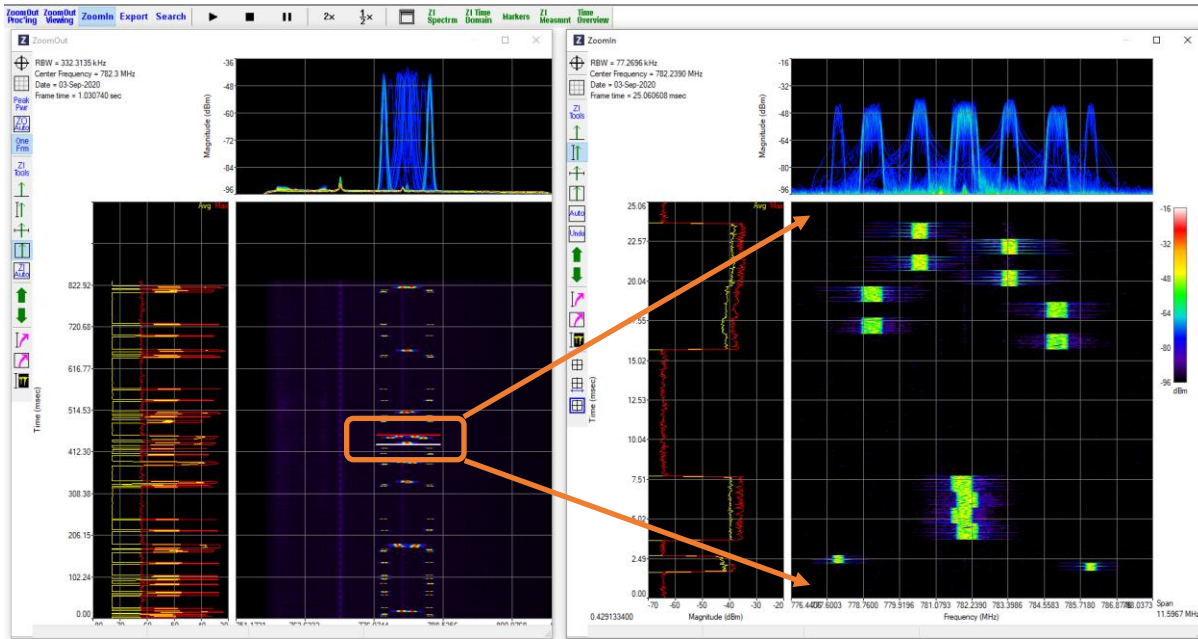
Introducing ZoomOut. Providing the user with the distinct advantage of zooming in on details while never losing track of the big picture. ZoomOut answers the problem of perspective by uniquely providing the ability to see large RF data files while “zoomed out” for the big picture while simultaneously “zooming in” to provide the detailed view thereby unlocking the hidden data in large files at a single glance.

Identifying critical signal information in an increasingly congested RF spectrum represents a challenge to anyone interested in understanding and controlling their spectrum. ZoomOut addresses this challenge by empowering the user with the ability to visualize Large RF Captures resulting in huge data files and quickly identify the important signal information. Once any important detail is identified the user can simply adjust the “Zoom In” window to see detailed information that would be otherwise missed by other solutions. ZoomOut provides both a macro and detailed view at the same time.



ZoomOut is signal analysis software designed for viewing and analyzing very large RF signal files. Two main viewing windows provide both a macro view and a detailed view of the signals to be analyzed. As spectrum density grows, understanding what is in your environment at any given time has become increasingly difficult to achieve.

ZoomOut Software, by Erisys, brings into existence a complete RF Spectrum recording solution that provides control of the RF front end, the data storage system, and the visual playback of the spectrum with the ability to quickly find and export the critical signals of interest for further analysis.



ZoomOut

ZoomIn

ZoomOut Window

Utilizes patent pending visualization technology to display a complete capture in a single frame enabling users to identify key signals and their trends/patterns. Users can select an area of interest for detailed analysis in the ZoomIn Window.

Key Features

- An integrated solution for RF spectrum recording and analysis
- Left window Zooms to see large data files within a single image/frame
- Each window is sizeable and can be located on the same or different monitor

ZoomOut Optional Modules

- **Communication Signal Analysis**
- **Radar & EW Pulse Analysis**
- **R&S Control Module:**
- **R&S PDW Command Streaming**

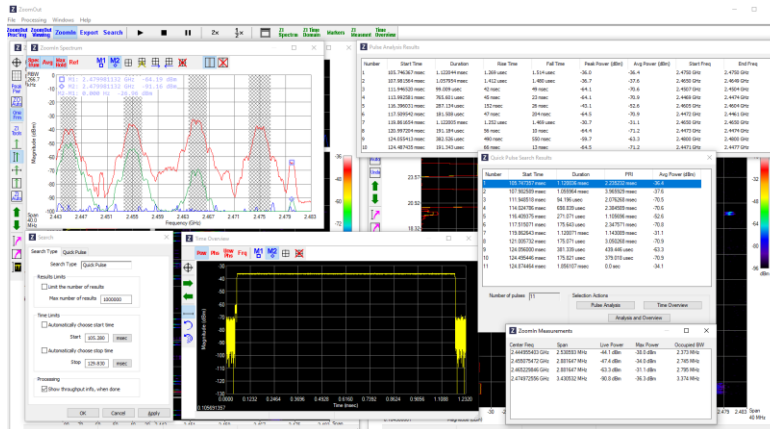
ZoomIn Window

Utilizes IQ data for detailed analyses of the timeline selected by user in the ZoomOut window. ZoomIn details can be extracted and exported for specialized analysis tool.

Optional ZoomOut Module

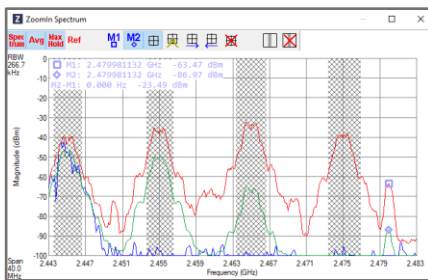
ZoomOut-CM

- Communication Signal Analysis Module:**



Option adds the following analysis windows to the ZoomOut Basic Analysis Table

ZoomIn Spectrum:

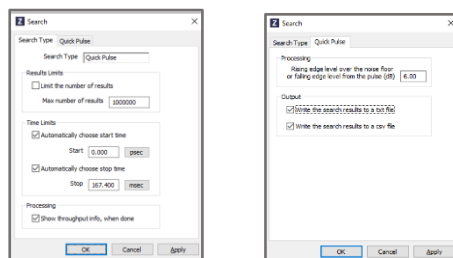


Center Freq	Span	Live Power	Max Power	Occupied BW
2.445092624 GHz	3.087479 MHz	-40.4 dBm	-37.9 dBm	2.676 MHz
2.455109777 GHz	2.950257 MHz	-43.2 dBm	-34.0 dBm	2.778 MHz
2.465024014 GHz	3.293310 MHz	-58.8 dBm	-31.0 dBm	3.194 MHz
2.475178388 GHz	3.567753 MHz	-90.2 dBm	-36.3 dBm	3.484 MHz

Provides a Traditional Spectrum Display of IQ data played in the ZoomIn window. Up to four spectrum traces can be displayed - normal trace, MAX Hold trace, average trace, and reference trace. Two markers (M2, M1) can be placed on a single trace or placed between two traces to make absolute/delta frequency/amplitude measurements.

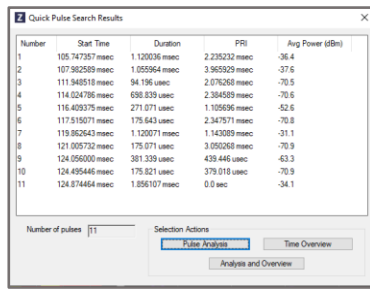
Up to eight measurement regions/bands can be added to Spectrum displays. The following RF measurements can be made within each region/band - Center Frequency, Span, Live running power, Max Power, and Occupied Bandwidth

Quick Pulse Search Function:



The search function can be used to search for RF Pulses/Bursts within a specified start/stop I/Q file time. User can graphically or manually set start/stop search time within I/Q file and set rising/falling edge threshold detection level.

Quick Pulse Search Results:

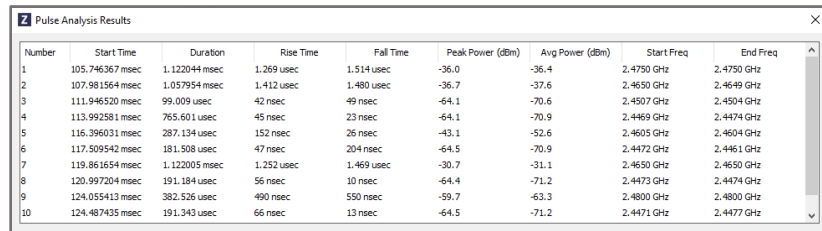


Number	Start Time	Duration	PRI	Avg Power (dBm)
1	105.747357 msec	1.120036 msec	2.235232 msec	-36.4
2	107.982589 msec	1.055964 msec	3.965929 msec	-37.6
3	111.946518 msec	94.196 usec	2.076268 msec	-70.5
4	114.024786 msec	698.839 usec	2.384089 msec	-70.5
5	116.409375 msec	271.071 usec	1.105698 msec	-52.6
6	117.515071 msec	179.643 usec	2.347571 msec	-70.8
7	119.862643 msec	1.120071 msec	1.143089 msec	-31.1
8	121.005732 msec	175.071 usec	3.000268 msec	-70.9
9	124.056000 msec	381.339 usec	439.446 usec	-63.3
10	124.495446 msec	179.621 usec	379.018 usec	-70.9
11	124.874464 msec	1.895107 msec	0.0 sec	-34.1

The Quick Pulse search results are displayed in table format and saved to file in csv/txt format. Burst/Pulse Measurements Included: Start Time, Duration, PRI – time between bursts, and Average Burst Power. The action buttons enable additional/detailed analysis in the Pulse Analysis and Time Overview windows

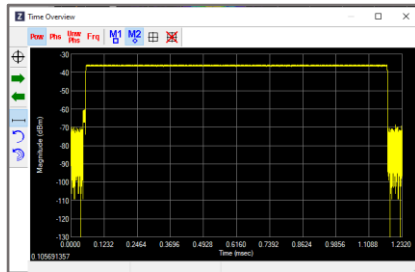
Quick Pulse Analysis PDW Table

User can select which bursts from the QS Pulse Results Table will be included in the creation of Detailed Pulse Analysis Table. Burst Measurements included: Start Time, Duration, Rise/Fall Time, Peak/Average Power, Start/End Frequencies.



Number	Start Time	Duration	Rise Time	Fall Time	Peak Power (dBm)	Avg Power (dBm)	Start Freq	End Freq
1	105.746367 msec	1.122044 msec	1.269 usec	1.514 usec	-36.0	-36.4	2.4750 GHz	2.4750 GHz
2	107.981564 msec	1.057954 msec	1.412 usec	1.480 usec	-36.7	-37.6	2.4650 GHz	2.4649 GHz
3	111.946520 msec	99.009 usec	42 nsec	49 nsec	-64.1	-70.6	2.4507 GHz	2.4504 GHz
4	113.992581 msec	765.601 usec	45 nsec	23 nsec	-64.1	-70.9	2.4469 GHz	2.4474 GHz
5	116.396031 msec	287.134 usec	152 nsec	26 nsec	-43.1	-52.6	2.4605 GHz	2.4604 GHz
6	117.509542 msec	181.508 usec	47 nsec	204 nsec	-64.5	-70.9	2.4472 GHz	2.4461 GHz
7	119.861654 msec	1.122005 msec	1.252 usec	1.469 usec	-30.7	-31.1	2.4650 GHz	2.4650 GHz
8	120.997204 msec	191.184 usec	56 nsec	10 nsec	-64.4	-71.2	2.4473 GHz	2.4474 GHz
9	124.055413 msec	382.526 usec	490 nsec	550 nsec	-59.7	-63.3	2.4800 GHz	2.4800 GHz
10	124.487435 msec	191.343 usec	66 nsec	13 nsec	-64.5	-71.2	2.4471 GHz	2.4477 GHz

Time Overview:

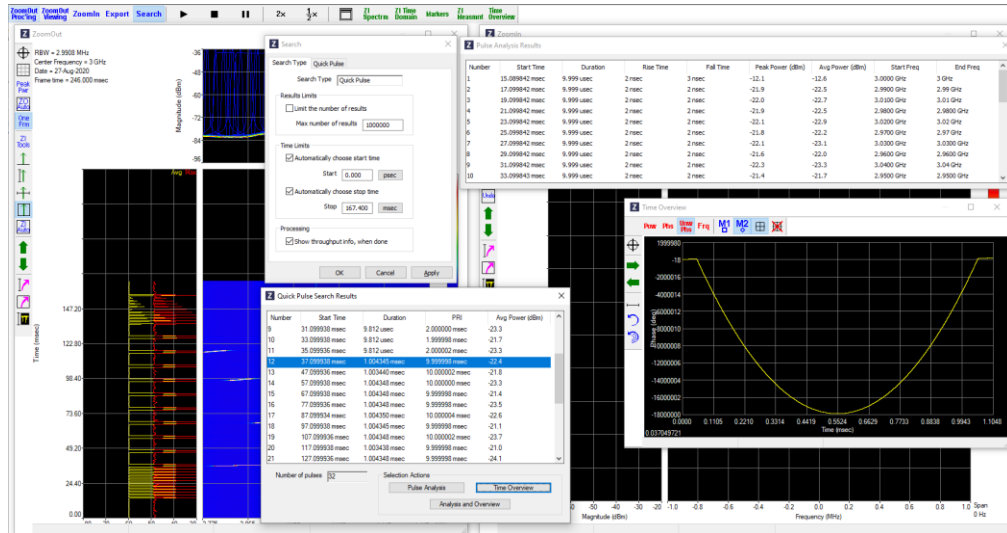


Provides Power / Phase – wrapped and unwrapped / Frequency Deviation verses time trace relative to user specified start/stop time using graphical UI tools or manual data entry.

Optional ZoomOut Module

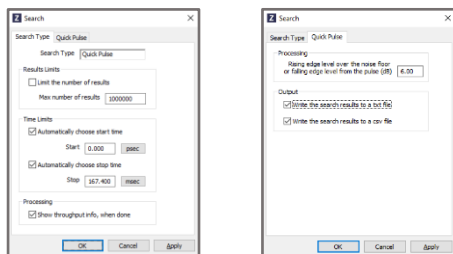
ZoomOut-Radar

- **Radar & EW Pulse Analysis Module:**



Option adds the following analysis windows to the ZoomOut Basic Analysis Table

Quick Pulse Search Function:



The search function can be used to search for RF Pulses/Bursts within a specified start/stop I/Q file time. User can graphically or manually set start/stop search time within I/Q file and set rising/falling edge threshold detection level.

Quick Pulse Search Results:

Number	Start Time	Duration	PRI	Avg Power (dBm)
1	15.089938 msec	9.849 usec	2.010000 msec	-12.6
2	17.099938 msec	9.810 usec	1.999980 msec	-22.5
3	19.099936 msec	9.815 usec	2.000000 msec	-22.7
4	21.099936 msec	9.813 usec	2.000000 msec	-22.5
5	23.099936 msec	9.812 usec	2.000000 msec	-22.9
6	25.099936 msec	9.813 usec	2.000000 msec	-22.2
7	27.099936 msec	9.812 usec	2.000000 msec	-23.1
8	29.099936 msec	9.812 usec	2.000002 msec	-22.0
9	31.099938 msec	9.812 usec	2.000000 msec	-23.3
10	33.099938 msec	9.812 usec	1.999980 msec	-21.7
11	35.099936 msec	9.812 usec	2.000002 msec	-23.3
12	37.099938 msec	1.004345 msec	9.999980 msec	-22.4
13	47.099936 msec	1.003440 msec	10.000002 msec	-21.8

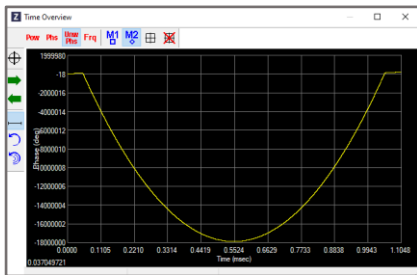
The Quick Pulse search results are displayed in table format and saved to file in csv/txt format. Burst/Pulse Measurements Included: Start Time, Duration, PRI – time between bursts, and Average Burst Power. The action buttons enable additional/detailed analysis in the Pulse Analysis and Time Overview windows

Quick Pulse Analysis PDW Table

User can select which bursts from the QS Pulse Results Table will be included in the creation of Detailed Pulse Analysis Table. Burst Measurements included: Start Time, Duration, Rise/Fall Time, Peak/Average Power, Start/End Frequencies.

Number	Start Time	Duration	Rise Time	Fall Time	Peak Power (dBm)	Avg Power (dBm)	Start Freq	End Freq
1	15.099842 msec	9.999 usec	2 nsec	3 nsec	-12.1	-12.6	3.0000 GHz	3 GHz
2	17.099842 msec	9.999 usec	2 nsec	2 nsec	-21.9	-22.5	2.9900 GHz	2.99 GHz
3	19.099842 msec	9.999 usec	2 nsec	2 nsec	-22.0	-22.7	3.0100 GHz	3.01 GHz
4	21.099842 msec	9.999 usec	2 nsec	2 nsec	-21.9	-22.5	2.9800 GHz	2.9800 GHz
5	23.099842 msec	9.999 usec	2 nsec	2 nsec	-22.1	-22.9	3.0200 GHz	3.02 GHz
6	25.099842 msec	9.999 usec	2 nsec	2 nsec	-21.8	-22.2	2.9700 GHz	2.97 GHz
7	27.099842 msec	9.999 usec	2 nsec	2 nsec	-22.1	-23.1	3.0300 GHz	3.0300 GHz
8	29.099842 msec	9.999 usec	2 nsec	2 nsec	-21.6	-22.0	2.9600 GHz	2.9600 GHz
9	31.099842 msec	9.999 usec	2 nsec	2 nsec	-22.3	-23.3	3.0400 GHz	3.04 GHz
10	33.099843 msec	9.999 usec	2 nsec	2 nsec	-21.4	-21.7	2.9500 GHz	2.9500 GHz

Time Overview:



Provides Power / Phase – wrapped and unwrapped / Frequency Deviation verses time trace relative to user specified start/stop time using graphical UI tools or manual data entry.

Optional ZoomOut Module

SigPro-1000

- **Erisys SigPro-1000:**

Signal Analysis and Instrument Control Processing System.

System includes RYZEN 12 Core advanced processor, WIN10 OS, 40Ge & 1Ge ethernet interfaces, multiply USB 3.2 interfaces, and supports dual monitor operation and 4TB NVMe SSD storage . System can be upgraded to 15TB NVMe SSD with option SSD 15TB and real time hardware acceleration can be added with option FPGA.

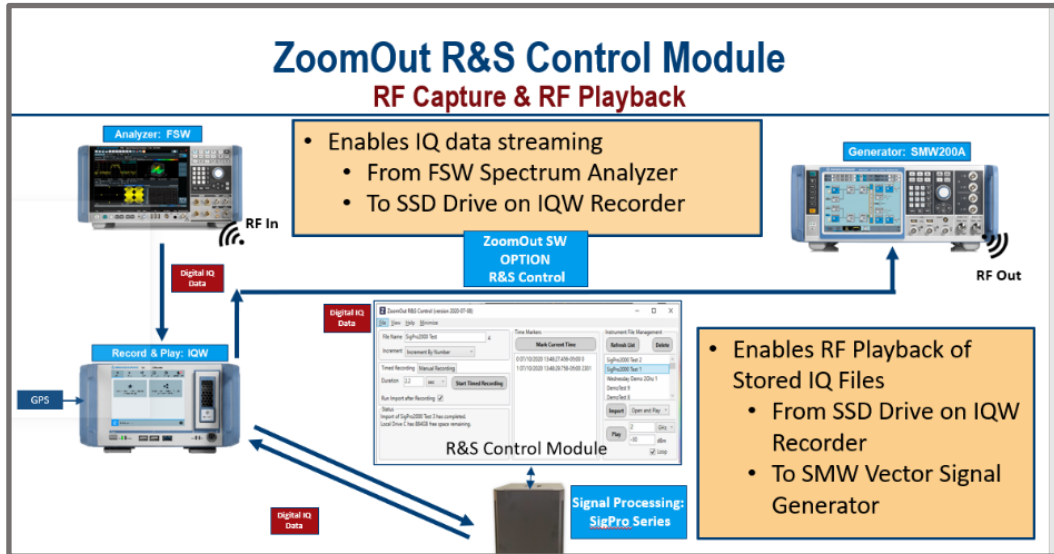
- | | | |
|------------------------------|---|-------------|
| ○ Erisys SigPro-1000: | Signal Analysis and Instrument Control System | \$10,995.00 |
| ○ Opt SSD 15TB: | NVMe SSD 15TB | \$6000 |
| ○ FPGA: | Hardware Accelerator | \$10,000 |



Optional ZoomOut Module

ZoomOut-RS

Rohde & Schwarz Control Module enables IQ data streaming via the R&S IQW IQ Data Recorder connected to a R&S FSW Spectrum Analyzer for IQ data capture and a R&S SMW Signal Generator to add RF Playback of captured IQ waveforms..



The R&S Controls module adds the following features to the ZoomOut Analysis application.

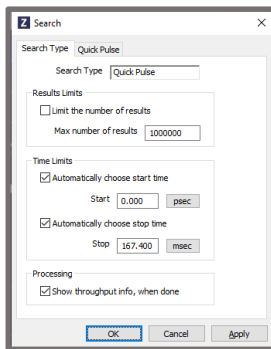
1. Transfers IQ data with up to 512Mhz RT BW between IQW and FSM.
2. Automatically Import IQW files into ZoomOut for analysis
3. Transfer recordings between IQW and SigPro-1000 instrument controller/Signal Processing unit.
4. Play/Stream IQW stored files to SMW for RF Playback
5. Provides virtual front-panel display for all R&S IQW, FSW, and SMW for setup/remote control
6. View/monitor the FSW's realtime spectrum display during setup and data streaming

Optional ZoomOut Module

ZoomOut-RS-PDW

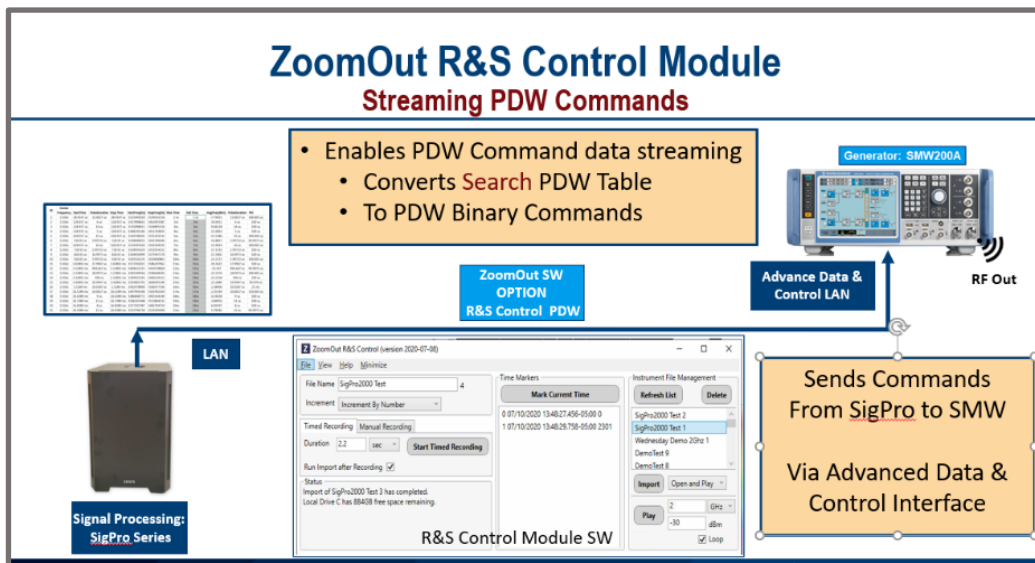
Enables the Rohde & Schwarz (R&S) Control Module to stream PDW commands from the **Erisys SigPro-1000** to a R&S SMW signal generator. This module converts the PDW Table created with the ZoomOut Search function to PDW Commands which are transferred to SMW via the SMW's advanced data and control interface.

Search Function



PDW Table

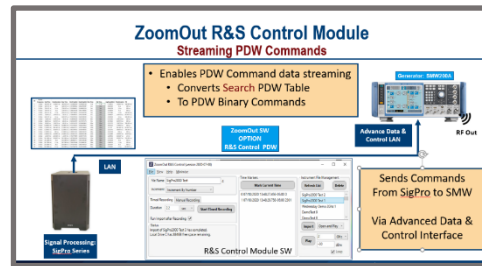
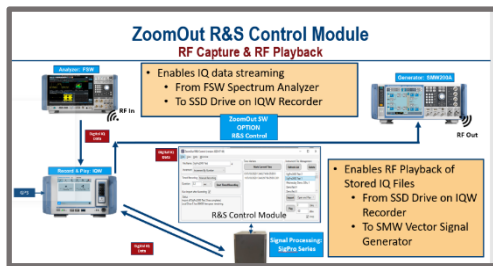
Number	Start Time	Duration	Rise Time	Fall Time	Peak Power (dBm)	Avg Power (dBm)	Start Freq	End Freq
1	15.089842 msec	9.999 usec	2 nsec	3 nsec	-12.1	-12.6	3.0000 GHz	3 GHz
2	17.099842 msec	9.999 usec	2 nsec	2 nsec	-21.9	-22.5	2.9900 GHz	2.99 GHz
3	19.099842 msec	9.999 usec	2 nsec	2 nsec	-22.0	-22.7	3.0100 GHz	3.01 GHz
4	21.099842 msec	9.999 usec	2 nsec	2 nsec	-21.9	-22.5	2.9800 GHz	2.9800 GHz
5	23.099842 msec	9.999 usec	2 nsec	2 nsec	-22.1	-22.9	3.0200 GHz	3.02 GHz
6	25.099842 msec	9.999 usec	2 nsec	2 nsec	-21.8	-22.2	2.9700 GHz	2.97 GHz
7	27.099842 msec	9.999 usec	2 nsec	2 nsec	-22.1	-23.1	3.0300 GHz	3.0300 GHz
8	29.099842 msec	9.999 usec	2 nsec	2 nsec	-21.6	-22.0	2.9600 GHz	2.9600 GHz
9	31.099842 msec	9.999 usec	2 nsec	2 nsec	-22.3	-23.3	3.0400 GHz	3.04 GHz
10	33.099843 msec	9.999 usec	2 nsec	2 nsec	-21.4	-21.7	2.9500 GHz	2.9500 GHz



Optional ZoomOut Module

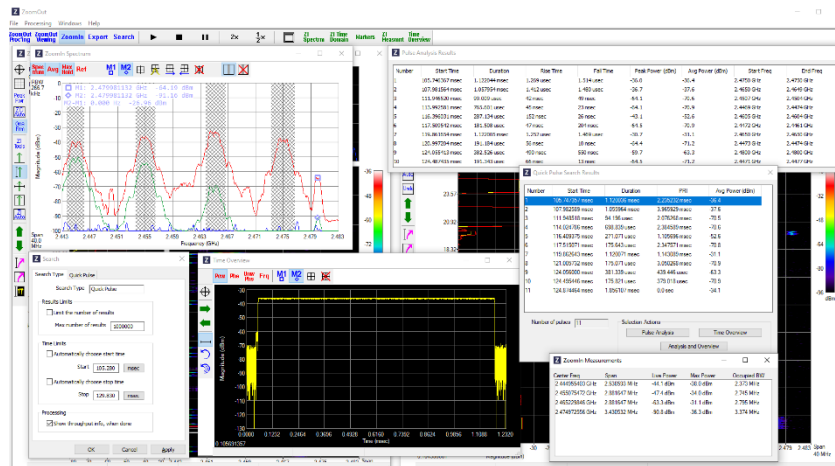
ZoomOut-RS-Plus

ZoomOut-Plus bundles the ZoomOut-RS and ZoomOut-RS-PWD SW modules into a single line item purchase and a bundled discount of \$1000.



ZoomOut-Basic-Plus

ZoomOut-Basic Plus bundles the ZoomOut-Basic, ZoomOut-CM, and ZoomOut-Radar SW modules into a single line item and a bundled discount of \$1500.



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