

24/7 Automatic-Trigger & Signal-Detection

Ultra Wide Band Recorder

Monitor and Record RF-Data in Real-Time with up to 20GHz Real-Time Bandwidth



9kHz to 20GHz Frequency Range

Up to 20GHz Real-Time Bandwidth

24/7 Continuous-Recording Capability

Highlights

- ✓ 9kHz up to 20GHz frequency range
- ✓ World record with up to 20GHz real-time bandwidth
- ✓ 24/7 continuous recording-capability
- ✓ Monitor different frequencies at the same time
- ✓ Several inputs or single input via combiner
- ✓ Including fully-featured software-package
- ✓ Customized software features on request
- ✓ Scalable system (up to 20GHz RTBW)
- ✓ Small form factor (2 height units as 19" Rack)
- ✓ Different housing variants (19" Rack, Tower, Outdoor 19" Rack)
- ✓ Fully featured RTSA Suite PRO PC software included
- ✓ Made in Germany



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MADE IN GERMANY

Introduction

Ultra-Wideband Monitoring and Recording System

The progress in scientific research, new technology and other factors are leading to receivers getting wider bandwidths and higher sample rates. This in turn means that the amount of data needing to be saved is becoming larger and must be written faster.

Recording signals is important in many application areas, both in the lab and in the field. By recording data during tests or experiments, you can review the data later on. Recorded signals can help to prove misuse of the spectrum or gather other valuable information. Industry-wide there is a need to build and rigorously qualify critical wideband radar and EW systems that will be deployed in the field. At the same time, the demands in the field have gotten greater, from wider bandwidth signals to longer signal captures.

Class-leading real-time bandwidth

Aaronia now offers the new series of Ultra-Wideband Recorders for analyzing and recording both narrowband and wideband signals with the capability of up to 20 GHz. As highly flexible recorder & Analyzer, the Aaronia UWBR can monitor and record narrowband and wideband signals of different center frequencies and bandwidths.

The UWBR reduces the cost of wideband signal capture, record, and analysis while increasing the likelihood of capturing wideband signal transients. The instrument can trigger on and measure signals in the frequency domain in real time while offering in-depth signal analysis with the RTSA Suite PRO analysis software. Together these features provide a significant improvement over many other high-end signal analyzers on the market.

Features

- 9kHz up to 20GHz Frequency Range, covers most commonly used communication and radar bands
- 24/7 Continuous Recording-Capability, enables long recordings during extensive field and lab testing.
- Monitoring of different channels (several inputs) or ultra-wideband channel at the same time
- The system is scalable. You can add multiple input sources to the same recorder to record different center frequencies, bandwidths, etc.
- Triggered recording. Recordings can be initiated and stopped manually from the client interface or through TCP/IP commands.
- Long recording time. With the UWBR, you can record days and up to weeks of data depending on bandwidth and the selected storage option.



Multi-Receiver-Stitching in the RTSA Suite Software

RTSA Suite Pro

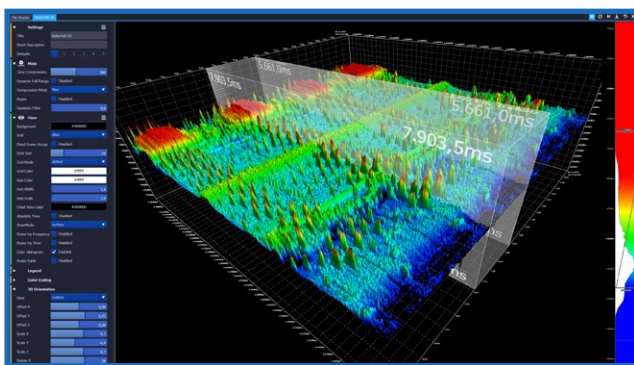
The world's fastest real-time analyzer software.

Aaronia's "RTSA Suite Pro" is an extremely powerful and flexible software, with an intuitive and highly customizable user interface. The node-based software allows the user to identify, capture, demodulate and track any signal, and offers a multitude of ways to graphically display the signal detection.



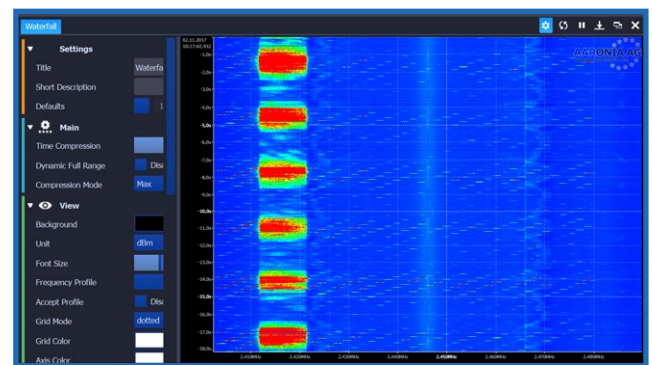
- ◆ High-resolution persistence spectrum display of the current sweep, Average, Min / Max, peak, RMS etc.
- ◆ Marker function with unlimited number of different markers (min, max, delta, AVG, OBW.)
- ◆ Intuitive drag and drop zoom, shortcuts etc.

3D View and Histogramm View



- ◆ The UWB offers several views (Spectrum, 3D Waterfall, Histogram and more)
- ◆ The different views are fully customizable and can be easily arranged with the drag-and-drop system

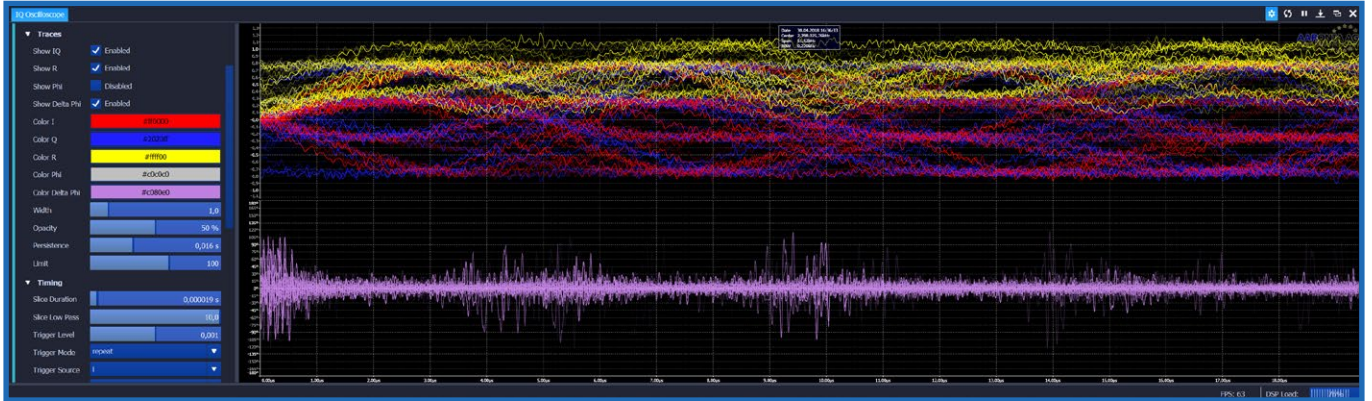
Waterfall View



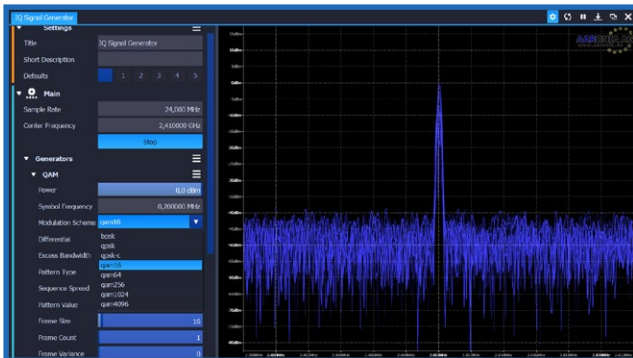
- ◆ Spectrogram / Waterfall View for the identification of frequency hops, measurements of pulse rate, analysis of time variant spectra and the tuning of a VCO

RTSA Suite Pro

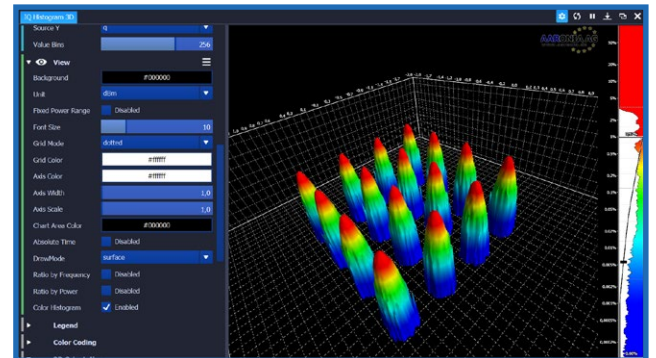
IQ Oscilloscope



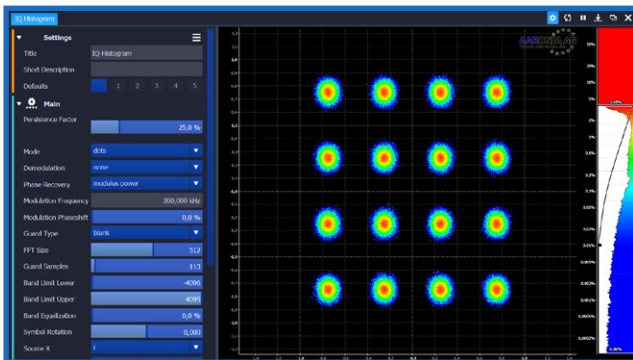
IQ Signal Generator



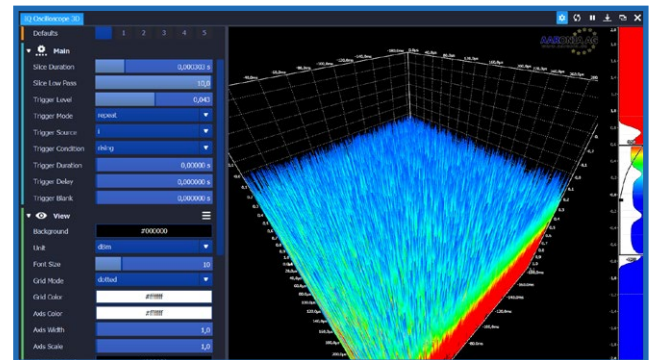
IQ Histogram 3D



IQ Histogram



IQ Oscilloscope 3D



UWB-R Versions & Configurations

10Rx Rackmount



Frequency range: **9kHz to 6/20 GHz**
 RTBW: 1,75GHz (Standard), **up to 20GHz**

Main Specifications	
Frequency Range	9kHz to 6/20GHz
Real-Time Bandwidth	1,75GHz, expandable up to 20GHz
Event Duration	<1µS
Optional Outdoor Version	Available
Internal PC	None, external only
Hard-Drive Capacity	Up to 80TB
DANL	-150dBm/typ. (-168dBm opt.)
RF Inputs	10xSMA (optional single input)

Mechanical & Environmental	
Power consumption	approx. 240W
Operating temperature	0 to +40°C
Storage temperature	-20 to +60°C
Dimensions	485 x 380 x 87mm (2HU)
Weight	13kg
RF Output	10x SMA Ports (female)
Warranty	2 years

8Rx Tower



Frequency range: **9kHz to 6/20 GHz**
 RTBW: 1,4GHz

Main Specifications	
Frequency Range	9kHz to 6/20GHz
Real-Time Bandwidth	1,4GHz
Event Duration	<1µS
Optional Outdoor Version	No
Internal PC	Yes (Intel i7)
Hard-Drive Capacity	1TB, expandable up to 4TB
DANL	-150dBm/typ. (-168dBm opt.)
RF Inputs	8xSMA (optional single input)

Mechanical & Environmental	
Power consumption	approx. 250W
Operating temperature	0 to +40°C
Storage temperature	-20 to +60°C
Dimensions	380 x 420 x 520mm
Weight	45kg
RF Output	8x SMA Ports (female)
Warranty	2 years

Accessories

IsoLOG 3D (9kHz - 40GHz)

3D directional finding antenna Array. Perfect for Spectrum monitoring and signal tracking. Comes with specified control software for RF Command Center.



HyperLOG Antennas

Directional, Ultra Broadband Antennas with extremely wide frequency range from 380MHz to 35GHz. High and constant gain of typ. 5dBi (active up to 45dBi).



MDF Antennas (9kHz - 400MHz)

Magnetic Tracking Antennas for the low frequency range of the Analyzer. Covers 9kHz to 400MHz. Active and Passive Antennas with high sensitivity.



PowerLOG Antennas

Directional, Broadband Horn Antennas with very wide frequency range from 700MHz to 18GHz. Very high gain up to 18dBi.



External Pre-Amplifier

External Battery-Powered Preamplifier with full range of 1Hz to 30GHz & up to 40dB gain. Perfect to reach extremely high sensitivity up to -170dBm/Hz.



OmniLOG 30800 (300MHz - 8GHz)

Omnidirectional Broadband Antenna with extremely wide frequency range from 300MHz to 8GHz. Small and lightweight.



Biconical Antennas (20MHz - 3GHz)

Broadband Biconical Antennas for EMC Pre-compliance Tests. Perfect for in-house compliance testing of various EMC standards. High bandwidth and gain up to 41dBi (active).



Near field probe set (DC to 9GHz)

Passive or active Near-Field Probeset PBS1 or PBS2. Consisting of 5 Probes (4xH-Field, 1xE-Field), 40dB Preamplifier (only PBS2). Perfect for EMC near field tests.



1m / 5m / 10m SMA-Cable

High quality SMA cable for connecting any HyperLOG or MDF Antenna with the Analyzer. Available as 1m, 5m and 10m Cable. All versions: SMA plug (male) / SMA plug (male).



DC-Blocker (SMA)

It prevents the RF-input of the SPECTRAN from being destroyed by the DC-voltages, e.g. while doing conducted emission testing.



20dB Attenuator (DC - 18GHz)

Expands the measurement range to +33dBm.



References



Cross-Section of Aaronia Clients

Government, Military, Aeronautic, Astronautic

- NATO, Belgium
- Department of Defense, USA
- Department of Defense, Australia
- Airbus, Germany
- Boeing, USA
- Bundeswehr, Germany
- NASA, USA
- Lockheed Martin, USA
- Lufthansa, Germany
- DLR, Germany
- Eurocontrol, Belgium
- EADS, Germany
- DEA, USA
- FBI, USA
- BKA, Germany
- Federal Police, Germany
- Ministry of Defense, Netherlands

Research/Development, Science and Universities

- MIT - Physics Department, USA
- California State University, USA
- Indonesien Institute of Sience, Indonesia
- Los Alamos National Labratory, USA
- University of Bahrain, Bahrain
- University of Florida, USA
- University of Victoria, Canada
- University of Newcastle, United Kingdom
- University of Durham, United Kingdom
- University Strasbourg, France
- University of Sydney, Australia
- University of Athen, Greece
- University of Munich, Germany
- Technical University of Hamburg, Germany
- Max-Planck Inst. for Radio Astronomy, Germany
- Max-Planck-Inst. for Nuclear Physics, Germany
- Research Centre Karlsruhe, Germany

Industry

- APPLE, USA
- IBM, Switzerland
- Intel, Germany
- Shell Oil Company, USA
- ATI, USA
- Microsoft, USA
- Motorola, Brazil
- Audi, Germany
- BMW, Germany
- Daimler, Germany
- Volkswagen, Germany
- BASF, Germany
- Siemens AG, Germany
- Rohde & Schwarz, Germany
- Infineon, Austria
- Philips, Germany
- ThyssenKrupp, Germany
- EnBW, Germany
- CNN, USA
- Duracell, USA
- German Telekom, Germany
- Bank of Canada, Canada
- NBC News, USA
- Sony, Germany
- Anritsu, Germany
- Hewlett Packard, Germany
- Robert Bosch, Germany
- Mercedes Benz, Austria
- Osram, Germany
- DEKRA, Germany
- AMD, Germany
- Keysight, China
- Infineon Technologies, Germany
- Philips Semiconductors, Germany
- Hyundai Europe, Germany
- VIAVI, Korea
- Wilkinson Sword, Germany
- IBM Deutschland, Germany
- Nokia-Siemens Networks, Germany



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