

ULTRA-WIDEBAND

RF RECORDER

24/7 AUTOMATIC TRIGGER & SIGNAL DETECTION

Monitor and record RF data in real-time with up to 20 GHz real-time bandwidth



Highlights:

- 9 kHz to 20 GHz frequency range
- Up to 20 GHz real-time bandwidth
- 24/7 continuous-recording capability


AARONIA AG
WWW.AARONIA.DE



Gewerbegebiet Aaronia AG II, DE-54597 Strickscheid
Tel.: +49(0)6556-9019-355 Fax: +49(0)6556-93034
www.aaronia.com E-Mail: mail@aaronia.de



MADE IN GERMANY

Highlights

- ✓ 9 kHz to 20 GHz frequency range
- ✓ World record: Scalable system with up to 20 GHz real-time bandwidth
- ✓ 24/7 continuous recording capability
- ✓ Simultaneous monitoring of different frequencies
- ✓ Several inputs or single input via combiner
- ✓ Includes fully-featured RTSA Suite Pro PC software package
- ✓ Customized software features available upon request
- ✓ Compact size (2 rack units in 19" rack)
- ✓ Different casing options (19" rack, 19" outdoor rack, tower)
- ✓ Made in Germany



Gewerbegebiet Aaronia AG II, DE-54597 Strickscheid
Tel.: +49(0)6556-9019-355 Fax: +49(0)6556-93034
www.aaronia.com E-Mail: mail@aaronia.de



MADE IN GERMANY

Introduction

Ultra-wideband monitoring and recording system

Over the last few years, the amount of data to be saved and written has increasingly become larger and faster. The progress in scientific research and advanced technologies has in turn resulted in receivers working with wider bandwidths and higher sample rates.

Many areas benefit from recorded signals, both in the lab and in the field. By recording data during tests or experiments, samples can later be analyzed, reviewed, and replayed. Recorded signals also help proving spectrum abuse, or collecting other valuable information.

There is an ongoing need within the industry to build and rigorously qualify critical wideband radar and EW systems ready for deployment in the field. At the same time, demands have risen, from wider bandwidth signals to longer signal captures.

The industry standard in real-time bandwidth

Aaronia now offers a new series of ultra-wideband recorders for analyzing and recording both narrowband and wideband signals of up to 20 GHz. Highly flexible as both a recorder and analyzer, the UWB-R includes signals of different center frequencies and bandwidths. The device reduces the cost of wideband signal capture, recording, and analysis, while increasing the likelihood of capturing wideband signal transients.

Within its frequency domain, the instrument measures and reacts to signals in real-time, and offers in-depth signal analysis with the RTSA Suite Pro software. Together, these features give the system the necessary edge over many other high-end signal analyzers on the market.

Features

- **9 kHz to 20 GHz 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
- **Scalable system**
Multiple input sources can be added to the same recorder in order to record different center frequencies, bandwidths, etc.
- **Triggered recording**
Recordings can be manually initiated and stopped via the client interface or through TCP/IP commands
- **Long recording time**
With the UWB-R, you can record days and up to weeks of data, depending on bandwidth and the selected storage option

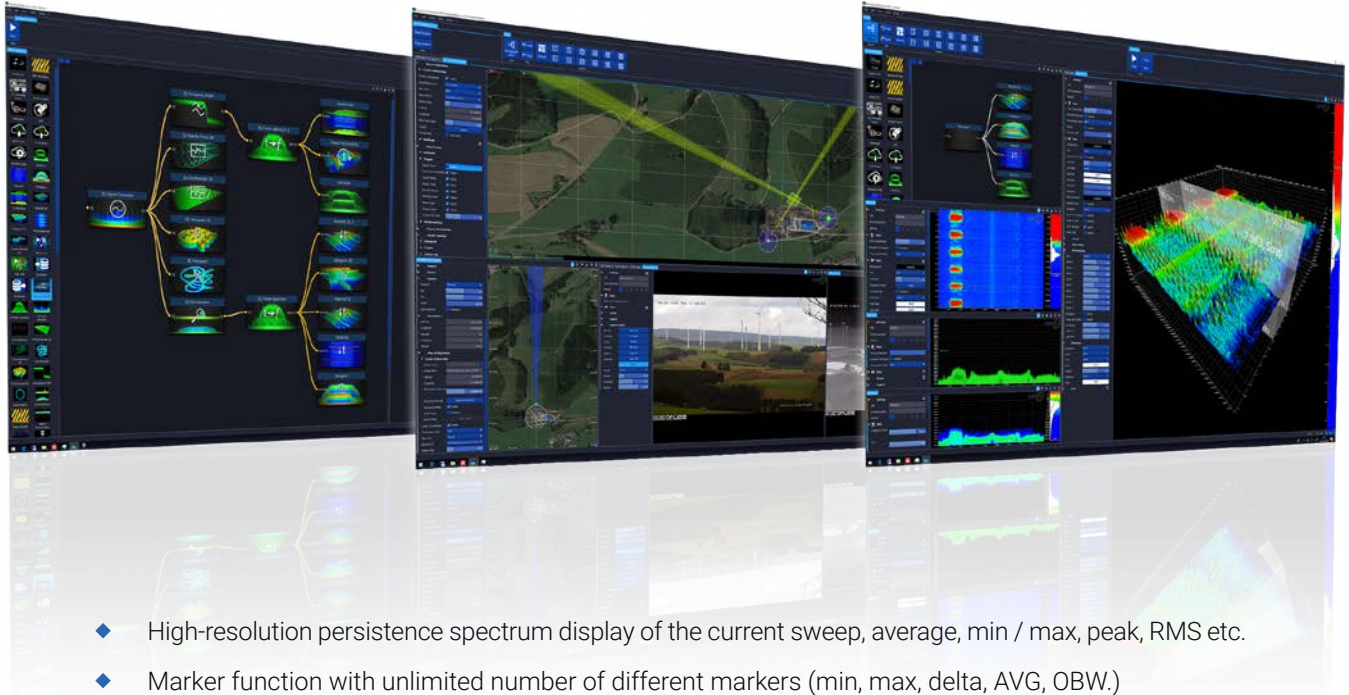


Multi-Receiver-Stitching in the RTSA Suite Software

RTSA Suite Pro

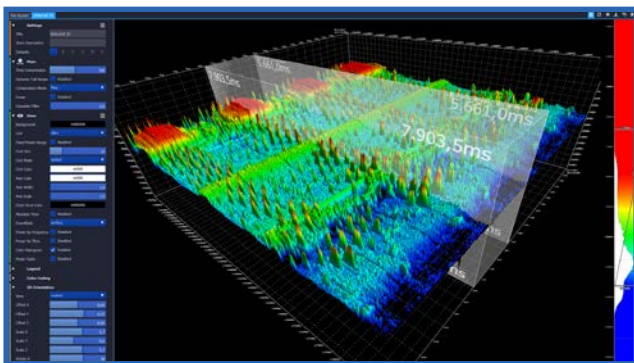
The world's fastest real-time analyzer software

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



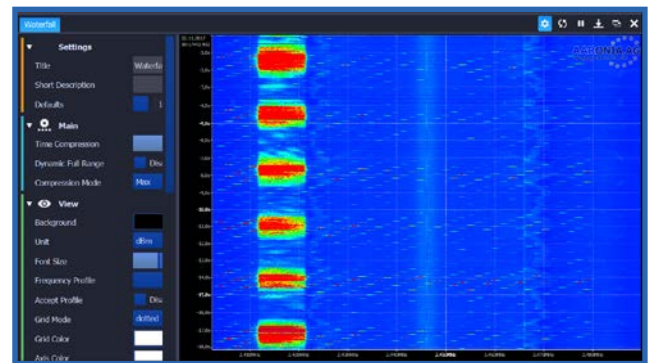
- ◆ High-resolution persistence spectrum display of the current sweep, average, min / max, peak, RMS etc.
- ◆ Marker function with unlimited number of different markers (min, max, delta, AVG, OBW.)
- ◆ Intuitive drag and drop zoom, shortcuts etc.

3D View and Histogram View



- ◆ The RF Command Center is able to display several views at once (Spectrum, 3D Waterfall, Histogram etc.)
- ◆ The window size can be adjusted freely, therefore tapping the potential of each full HD display

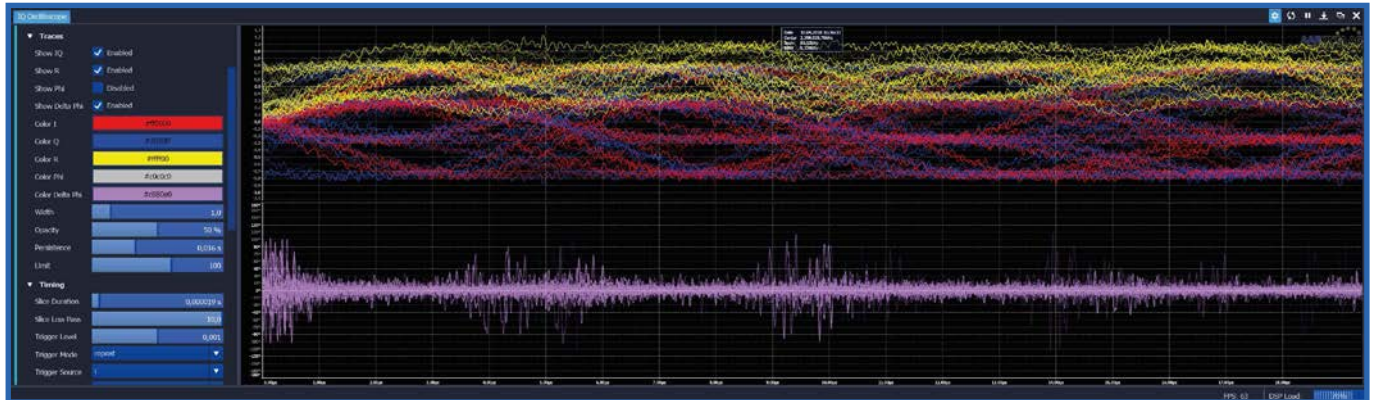
Waterfall View



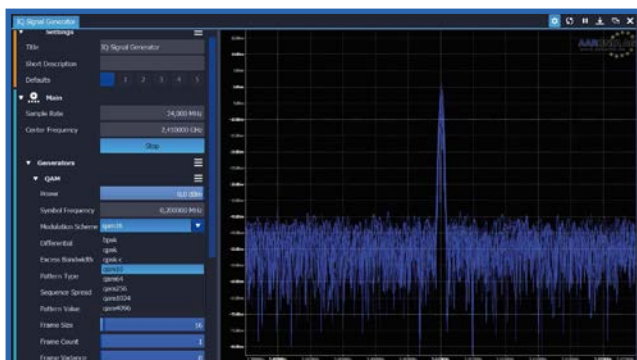
- ◆ Spectrogram / Waterfall view for the identification of frequency hops, measuring of pulse rate, analysis of time-variant spectra and the tuning of a VCO

RTSA Suite Pro

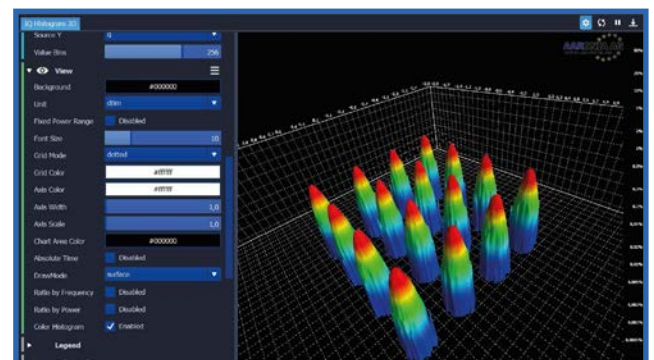
IQ Oscilloscope



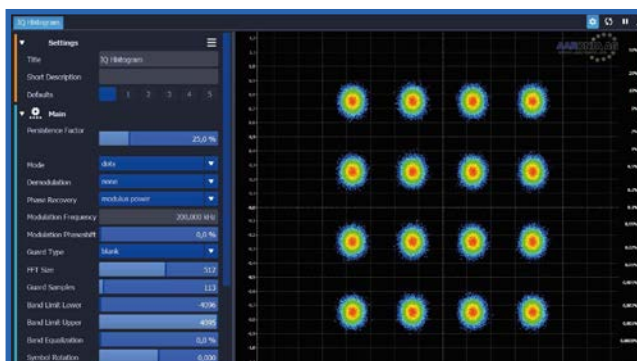
IQ Signal Generator



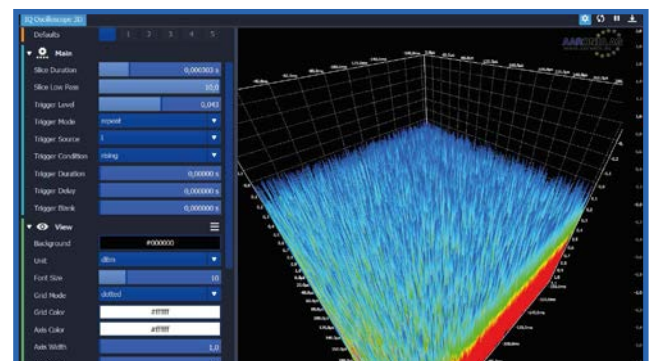
IQ Histogram 3D



IQ Histogram



IQ Oscilloscope 3D



UWB-R Version & Configuration

10Rx Rackmount



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

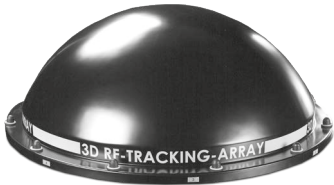
Main Specifications	
Frequency Range	9 kHz to 6 / 20 GHz
Real-time Bandwidth	1,75 GHz, expandable up to 20 GHz
Event Duration	<1 μ s
Optional Outdoor Version	Available
Internal PC	None, external only
Hard-Drive Capacity	Up to 80 TB
DANL	-150 dBm / typ. (-168 dBm opt.)
RF Inputs	10x SMA (optional single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

Operating Specifications	
Power Consumption	approx. 240 W
Operating Temperature	0° to +40° C
Storage Temperature	-20° to +60° C
Dimensions	485 x 380 x 87 mm (2 RU)
Weight	13 kg
RF Output	10x SMA Ports (female)
Warranty	2 years

Accessories

IsoLOG 3D (9 kHz - 40 GHz)

3D direction finding antenna array. Perfect for spectrum monitoring and signal tracking. Specific control software for the Aaronia RF Command Center included.



HyperLOG Antenna

Directional, ultra-broadband antenna with extremely wide frequency range (380 MHz to 35 GHz). High and constant gain of typ. 5 dBi (actively up to 45 dBi).



MDF Antenna (9 kHz - 400 MHz)

Magnetic tracking antenna for the analyzer's low frequency range. Covers 9 kHz to 400 MHz. Active and passive antenna options with high sensitivity.



PowerLOG Antenna

Directional, broadband horn antenna with very wide frequency range (700 MHz to 18 GHz). Very high gain of up to 18 dBi.



External Pre-Amplifier

External battery-powered pre-amplifier with full range of 1 Hz to 30 GHz, and up to 40 dB gain. Perfect for reaching extremely high sensitivity of up to -170 dBm / Hz.



OmniLOG 30800 (300 MHz - 8 GHz)

Omnidirectional broadband antenna with extremely wide frequency range (300 MHz to 8 GHz). Small and light-weight.



Biconical Antenna (20 MHz - 3 GHz)

Broadband biconical antenna for EMC pre-compliance tests. Perfect for in-house compliance testing of various EMC standards. High bandwidth and gain of up to 41 dBi (active).



Near-Field Probe Set (DC to 9 GHz)

Passive or active near-field probe set PBS1 or PBS2. Consists of five probes (4x H-Field, 1x E-Field), 40 dB pre-amplifier (only PBS2). Perfect for EMC near-field tests.



1 m / 5 m / 10 m SMA Cable

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



DC Blocker (SMA)

Prevents the SPECTRAN's RF input from DC overvoltage, e.g. during emission testing.



20 dB Attenuator (DC – 18 GHz)

Expands the measurement range to +33 dBm.



REFERENCES



Selected List of Aaronia Clients

Government, Military, Aero- and Astronautic

- NATO, Belgium
- Department of Defense (DoD), USA
- Department of Defence, Australia
- Airbus, Germany
- Boeing, USA
- German Armed Forces, Germany
- NASA, USA
- Lockheed Martin, USA
- Lufthansa, Germany
- German Aerospace Center (DLR), Germany
- Eurocontrol, Belgium
- EADS, Germany
- Drug Enforcement Administration (DEA), USA
- Federal Bureau of Investigation (FBI), USA
- Federal Criminal Police Office (BKA), Germany
- Federal Police, Germany
- Ministry of Defence, Netherlands

Research/Development, Science and Universities

- MIT - Physics Department, USA
- California State University, USA
- Indonesian Institute of Science (LIPI), Indonesia
- Los Alamos National Laboratory (LANL), 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

- 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 (Energie Baden-Württemberg), Germany
- CNN, USA
- Duracell, USA
- German Telekom, Germany
- Bank of Canada, Canada
- NBC News, USA
- Sony, Germany
- Anritsu, Germany
- Hewlett-Packard, Germany
- 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



Aaronia AG, Gewerbegebiet Aaronia AG, DE-54597 Strickscheid, Germany
Phone: +49(0)6556-9019-355 | Fax: +49(0)6556-93034
Email: mail@aaronia.de | URL: www.aaronia.com