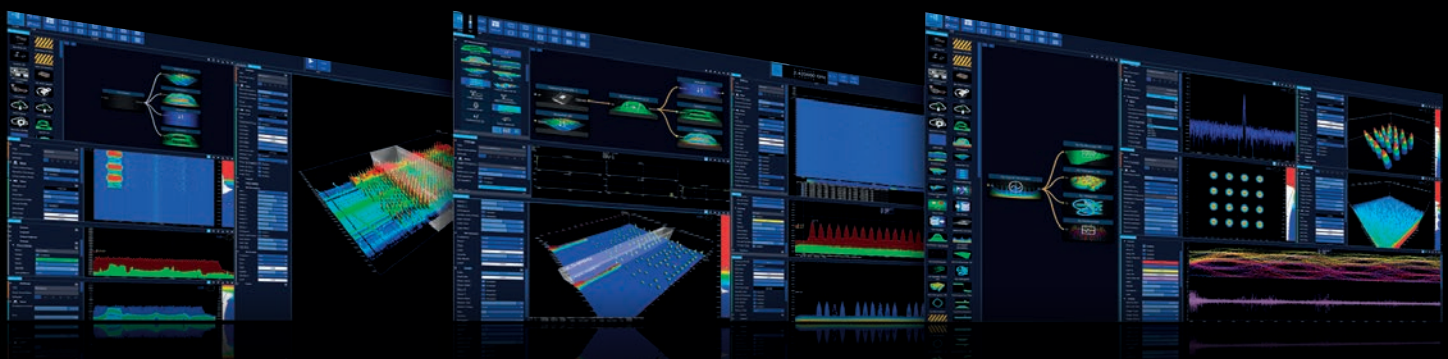
SPECTRAN® V6

BEYOND REALTIME

REALTIME SPECTRUM ANALYZER ECO

7.25 GHz USB Real-Time Spectrum Analyzer & Vector Signal Generator



- ✔ Frequency range: 9 kHz to 6 | 7.25 GHz
- ✔ 3 Variants*: 1 Rx | 2 Rx | 1 Rx & 1 Tx
- ✔ Bandwidth Rx: 44 MHz or 2x44 MHz (dual LO)
- ✔ Bandwidth Tx: 44 MHz (via USB3 stream)
- ✔ SweepSpeed: 500 GHz/s | 3 THz/s
- ✔ ADC Resolution: 16-Bit
- ✔ DAC Resolution: 14-Bit
- ✔ Noise Figure: -170dBm/Hz (4dB NF)

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MADE IN GERMANY

Highlights

- ✔ Frequency range: 9kHz to 6 | 7.25 GHz
- ✔ Power: Via USB (10W)
- ✔ Scans 6GHz in less than 2ms (3THz/s option)
- ✔ Dual Receiver Technology (2x44MHz RTBW)
- ✔ Unlimited, continuous, true 24/7 I/Q Streaming
- ✔ I/Q vector signal generator (44 MHz)
- ✔ Extraordinary dynamic range with a 16-Bit ADC at 2GSPS
- ✔ Sample rate of 500 MSPS (16-Bit Dual 256 MSPS I/Q-Data)
- ✔ FPGA: 930 GMAC/s
- ✔ FFT rate: 960 Million FFT-points/s (120 Million FFTs/s)
- ✔ Stackable accessories
- ✔ Compact and lightweight

Included software:

- ✔ “RTSA-Suite PRO” spectrum analysis software with regular updates
- ✔ Fully remote controllable via platform independent HTTP based API
- ✔ Native C++ SDK for Windows and Linux
- ✔ Community plugins for GNU Radio, SDRAngel, SDR++ and many more
- ✔ Made in Germany

Introduction

Fast, compact and powerful

Aaronia presents the SPECTRAN® V6 ECO, a real-time, high-performance, spectrum analyzer and monitoring receiver designed to capture even the shortest signal transmissions. Its scanning speed and recording time are unrivaled. The analyzer scans 6GHz in 2ms (3THz/s), making it the world's fastest USB spectrum analyzer.

Perfect for any RF problem

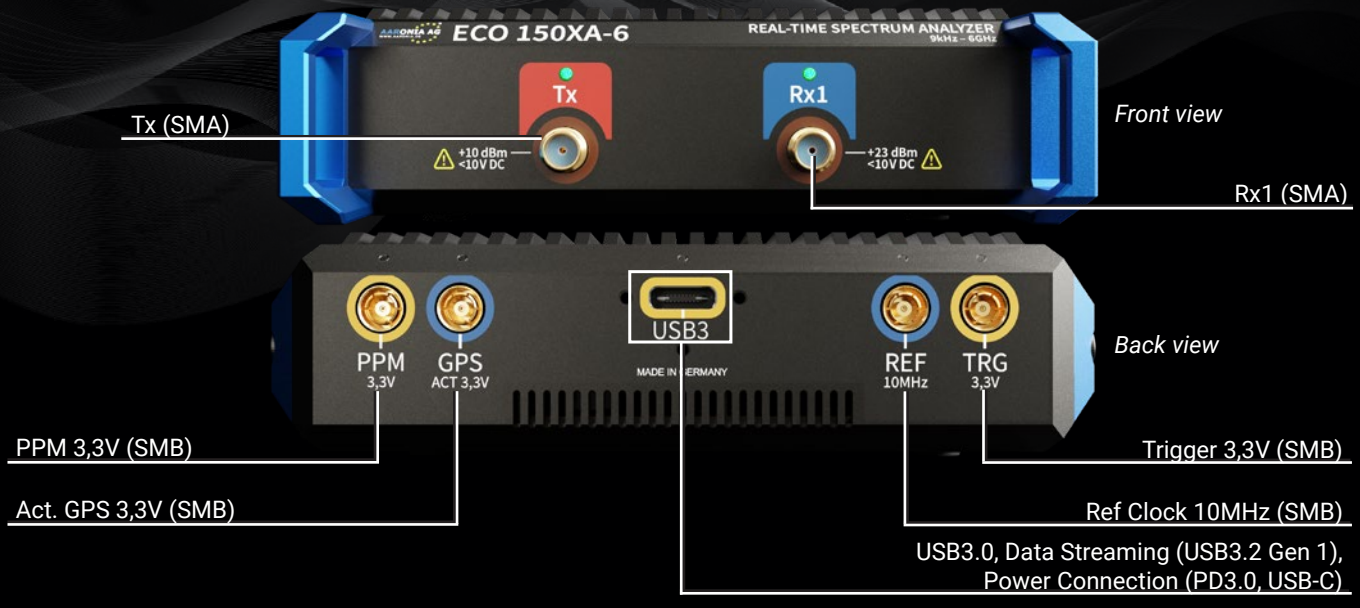
This spectrum analyzer enables you to conquer almost any challenge. Whether it's spectrum monitoring, RF and microwave measurements, Interference hunting, EMC testing or Wi-Fi and wireless network measurements, the SPECTRAN® V6 ECO is the ideal spectrum analyzer for making reliable and fast measurements.

Compact and lightweight

The V6 ECO is ideal for measurements in both the field and in the lab. The included analysis software, RTSA-Suite PRO, transforms the V6 ECO into a fully-featured benchtop spectrum analyzer. The V6 ECO offers a solution for almost every application.

Made in Germany

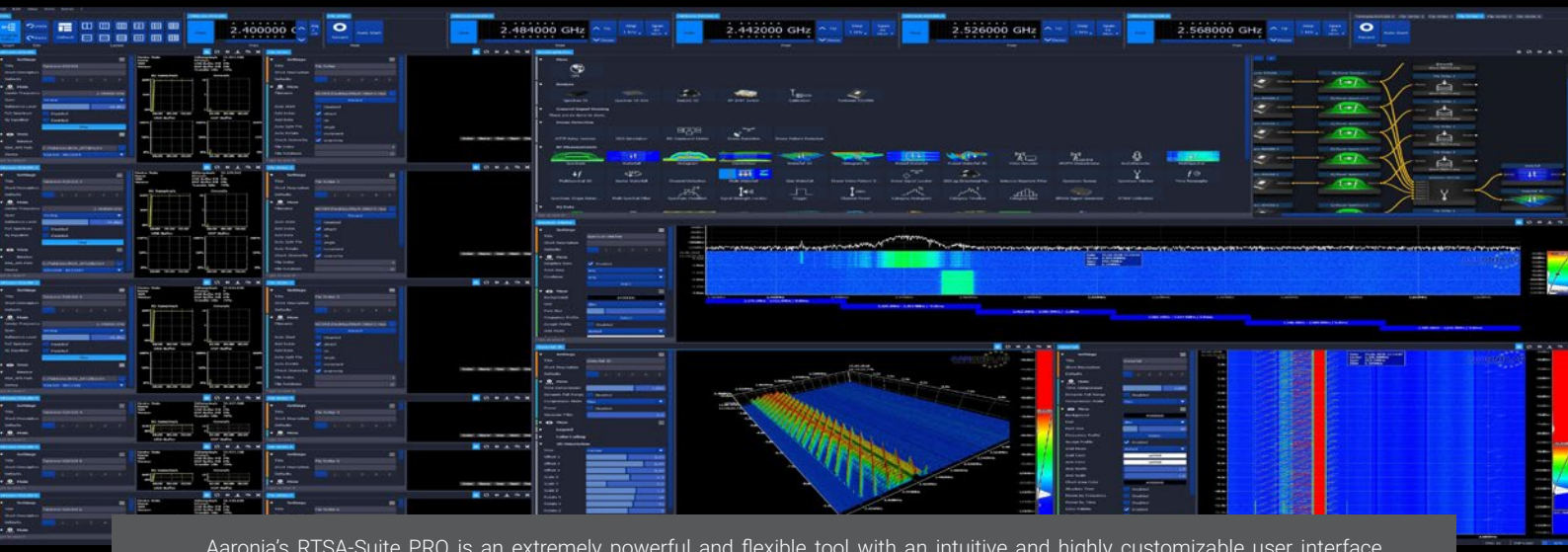
The SPECTRAN® V6 ECO spectrum analyzer and vector signal generator is designed and assembled in Germany, guaranteeing the highest quality standards.



- Real-Time USB IQ-streaming
- Ultrawide frequency range from 9 kHz up to 7.25 GHz
- Compact size: 210 x 115 x 30 mm
- Stackable
- Included PC software
- Tough, high quality aluminum case
- 50 Ohm RF connector(s) (SMA)

RTSA-Suite PRO

World's most powerful RTSA software with endless possibilities!



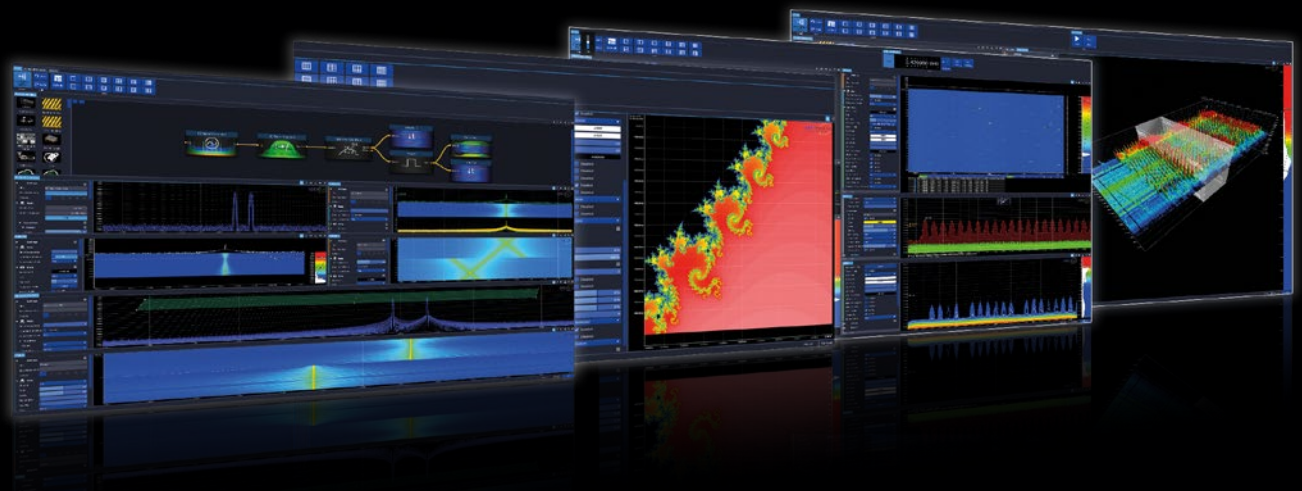
Aaronia's RTSA-Suite PRO is an extremely powerful and flexible tool with an intuitive and highly customizable user interface. Our node-based software enables users to identify, capture, demodulate and track any signal, and offers a multitude of ways to graphically display the signal detection.

RTSA-Suite PRO – Layout

An amazing block solution offers a convenient configuration to match any requirement!

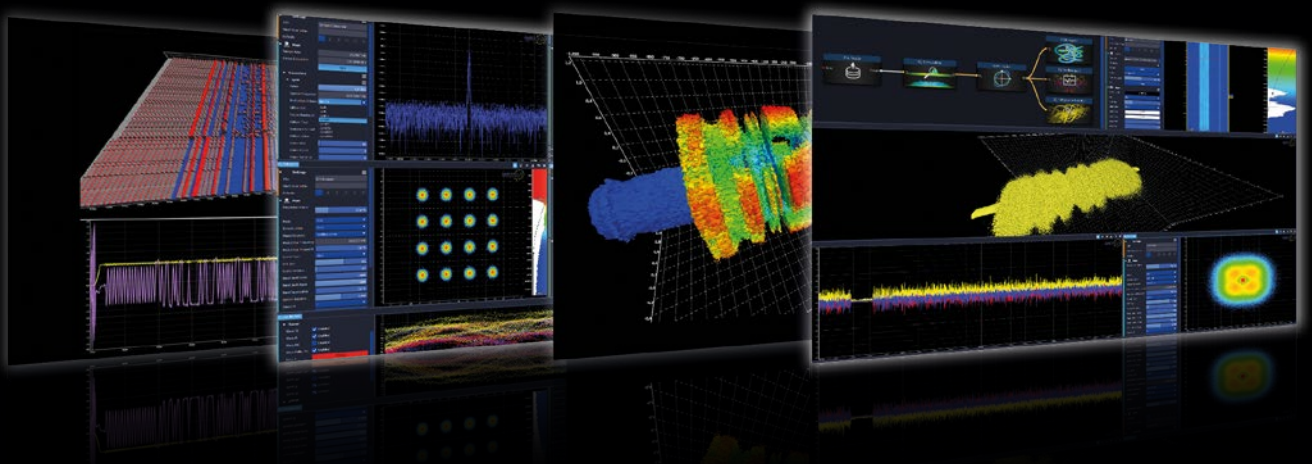
Multiple 2D/3D Spectrum Analysis

Trigger Block *Powerful Script Block* *Various Demodulations* *3D/4D Waterfall*



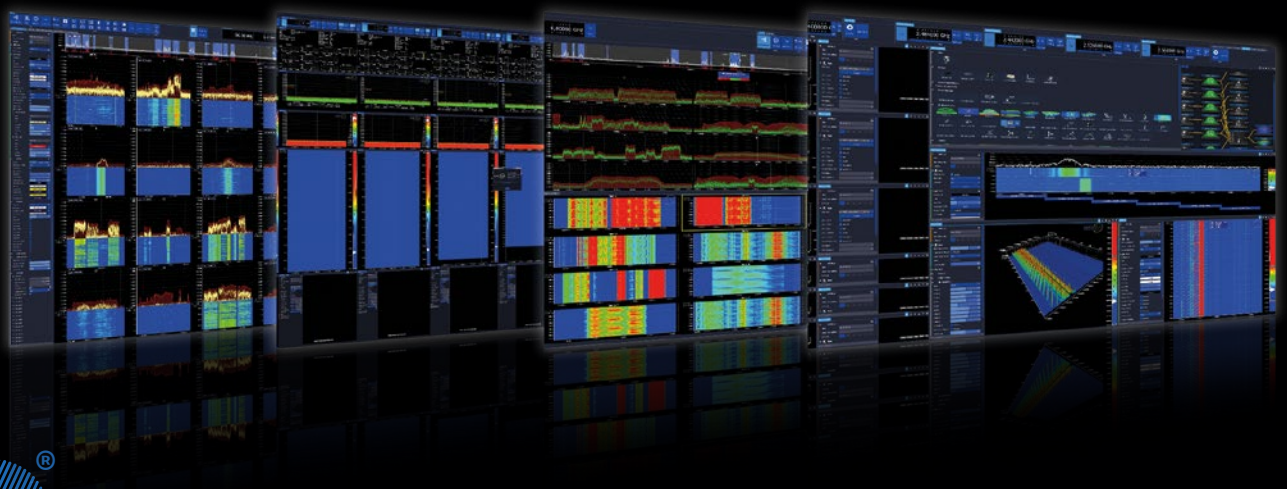
2D/3D IQ Streaming and Decoding

DECT Decoding *Software IQ Generator* *3D IQ Display* *DAB IQ Demodulation*



Multi Unit Stitching and Multi Frequency Monitoring

Multi Frequency Monitoring *Multi Waterfall* *V6 full Frequency Monitoring* *Multi-Unit Stitching*



WORLD of SPECTRAN® V6 ECO

Model	RTBW	Speed	I/Os
V6 ECO 100XA-6	44 MHz	500 GHz/s	1 Rx
V6 ECO 150XA-6	44 MHz each	500 GHz/s (optional 3THz/s)	1 Rx, 1 Tx
V6 ECO 200XA-6	2x 44 MHz (dual LO)	500 GHz/s (optional 3THz/s)	2 Rx

All models are available in OEM housings with e.g. reduced size and weight

Options	Comment
Ultra fast tictoc LO	**3 THz/s** sweep speed
Ultra Low Noise Preamp	**Additional 20 dB of gain** (Add 2 for 2 inputs)
WiFi6E Extention 7.25 GHz	Extended frequency band including WiFi6E for Rx / Tx (>6 GHz Tx is reduced to +0 dBm)
PowerMeter (integrated in Rx1)	1 MHz to 8 GHz
OCXO Timebase	5 ppb, anti shock OCXO (no crystal, vibration resistant)
Internal GPS	Incl. spoofing detection and active GPS antenna with SMB cable, GPS disciplined Oscillator (200ppt | optional, additional software key required)

Accessories

RF over Fiber (Rx/Tx) Set

Converts an RF signal into a laser signal for lossless streaming of data over long distances through a fiber optic cable.

Splitter/Combiner

External, 4 or 6-way, low-loss, splitter/combiner can stitch multiple V6 units together to expand its real-time bandwidth.

26800 mAh Power Pack

External Power Pack with 26800 mAh capacity. Extends the battery runtime by up to 4-5 hours. Strongly recommended for outdoor operation. Stackable.

MDF Antennas (9 kHz – 400 MHz)

The MDF antennas provide a very high accuracy over a wide frequency range.
This feature allows the use as a highly accurate field strength meter in conjunction with power meter or spectrum analyzer.

BicoLOG Antennas (20MHz – 3GHz)

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

IsoLOG 3D Mobile (9 kHz – 8 GHz)

Compact and lightweight, battery-powered 3 axis antenna with isotropic reception behaviour.
Contains loop and dipole antenna elements and multiple amplifier stages.

Analyzer Specifications

Specifications	SPECTRAN® V6 ECO
Frequency range	9kHz to 6 | 7.25 GHz
Real-time bandwidth Rx	up to 88 (2 x 44) MHz via 1x USB
Real-time bandwidth Tx	44 MHz (device dependent)
Max. power Rx	+23 dBm
Max. power Tx	+10 dBm
DANL (internal pre-amp on)	Typ. -170 dBm/Hz
Amplitude accuracy (typ.)	Typ. +/- 0,5 dB (compensated by FIR filter)
USB streaming connection	1x USB3
Frequency reference accuracy	0,5 ppm (5 ppb via OCXO option)
RBW (resolution bandwidth)	62 mHz to 200 MHz
Measurement units	Over 20 (e.g. dBm, dBµV, V/m, A/m, W/m², dBµV/m, W/cm²)
Detector	Min, Max, AVG, Peak, QPeak
Attenuator range	50 dB / 70 dB (0,5 dB steps)
Traces	Over 20 (e.g. ACT, AVG, MAX, MIN, QPEAK)
Measurement modes	True IQ or Power/Frequency data
Trigger	Cursor, Measurement, Density
ADC	2GSPS 16 Bit
DAC	2GSPS 14 Bit
GPS	GPS/QZSS, GLONASS, BeiDou and Galileo (concurrent reception)
GPS synchronisation	+/- 10ns timestamping in each data packet
External Frequency Reference Input	typ. 10MHz, 3,5VRMS into 50 Ohm (SMB-connector)
DSP processing	930 GMACs
SDRAM	2 GB
RF connectors	SMA (Rx,Tx), SMB (Trigger, Refclock, GPS, PPM). All 50 Ohms.
Temperature range (operation)	0 °C to +50 °C (extended -40 to +75 °C)
Dimensions	210 x 115 x 30 mm
Power	USB 3.2 Gen 1 Type-C PD 3.0
Power consumption	Typical 10 W
Country of origin	Germany
Recommended calibration interval	2 years

REFERENCES

Selected 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
- Indonesian Institute of Sciences, Indonesia
- Los Alamos National Laboratory, 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 Athens, 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, 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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