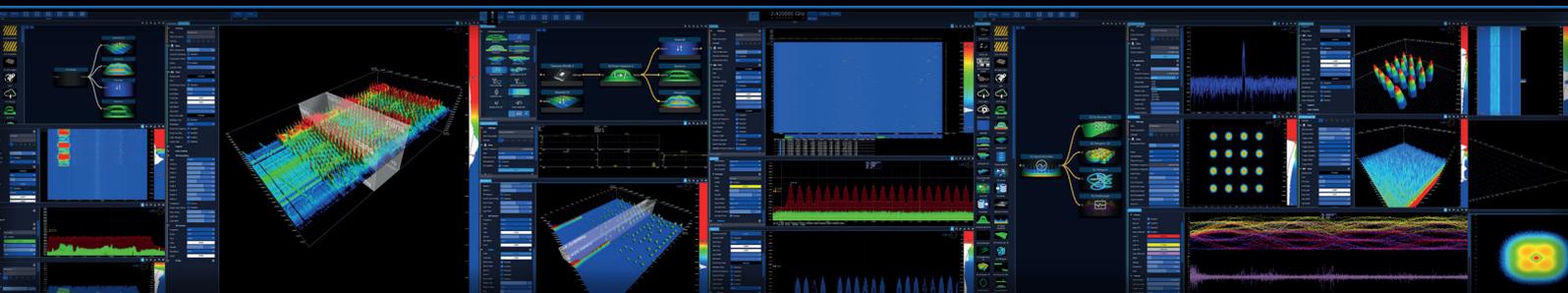


SPECTRAN V6[®]

— BEYOND REALTIME —



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



- ✓ RF Frequency range of 10 MHz up to 8 GHz
- ✓ Continuous 245 MHz true I/Q streaming
- ✓ Simultaneous measurement of multiple bands
- ✓ Dual USB 3.0 streaming
- ✓ RTSA-Suite PRO software
- ✓ 120 MHz Vector Signal Generator

Highlights

- ✓ World's first dual USB true I/Q streaming – up to **784 MBytes/s**
- ✓ Scans 6 GHz in less than 5 ms (1 THz/s)
- ✓ Unlimited continuous true I/Q streaming over up to 2 x USB 3.0
- ✓ Instantaneous bandwidth (complex I/Q) of up to 245MHz
- ✓ I/Q vector signal generator bandwidth of up to 245 MHz
- ✓ FFT-based POI up to 97 ns
- ✓ I/Q-based POI up to 10 ns
- ✓ Extraordinary dynamic range from a 16-bit ADC at 2GSPS
- ✓ Radio Frequency range of 10 MHz to 8 GHz
- ✓ Sample rate: 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)
- ✓ Full MATLAB support
- ✓ Fully automatic pulse classification (decodes Wifi, BT, GSM, DECT, QPSK, QAM etc.)
- ✓ Stackable accessories
- ✓ Extremely compact and lightweight
- ✓ Including “RTSA-Suite PRO” spectrum analysis software with regular updates
- ✓ Made in Germany



Introduction

Fast, compact and powerful

Aaronia presents the SPECTRAN® V6 X, a real-time high-performance spectrum analyzer and monitoring receiver designed to capture even shortest signal transmissions. Its scanning speed and recording time are unrivalled. The analyzer scans 6 GHz in less than 5 ms, making it world's fastest USB spectrum analyzer.

Perfect for any RF problem

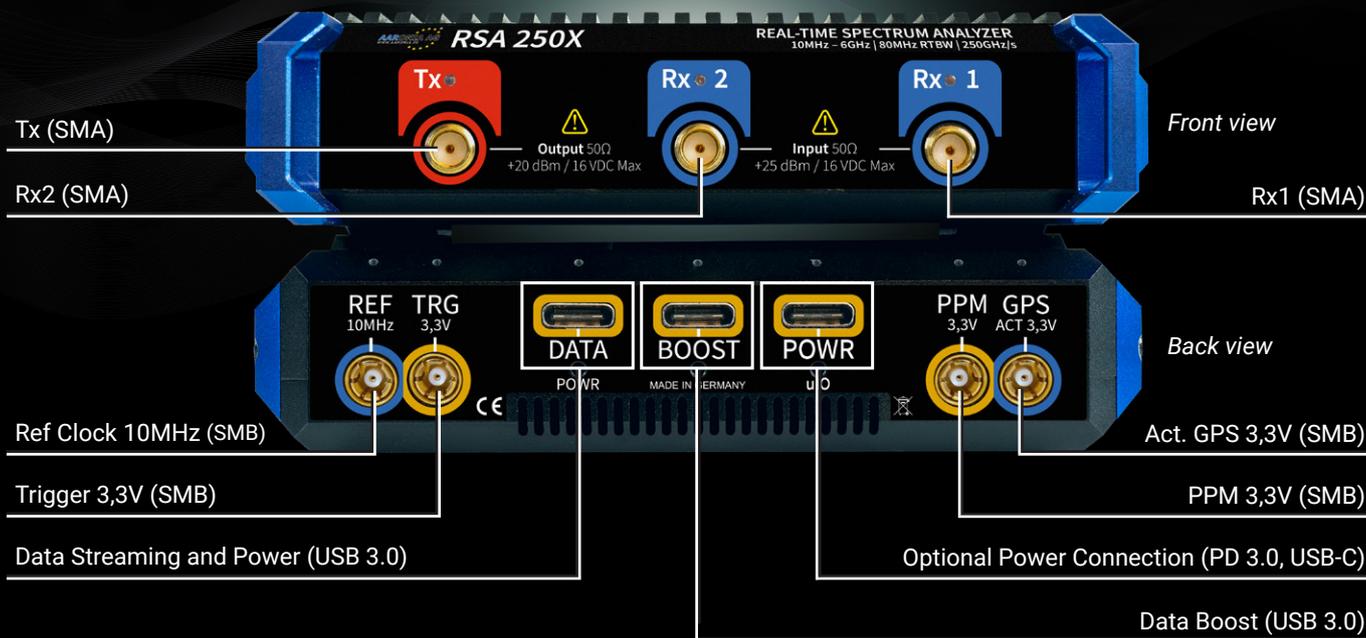
This spectrum analyzer enables you to master any challenge. Whether it is for spectrum monitoring, RF and microwave measurements, Interference hunting, EMC testing or Wi-Fi and wireless network measurements, the SPECTRAN® V6 X is the ideal spectrum analyzer for making reliable and fast measurements.

Compact and lightweight

A weight of just 850 g makes the V6 X ideal for measurements in the field, yet it can also be used in the lab. The included PC analysis software RTSA-Suite PRO transforms the V6 X into a fully-featured benchtop spectrum analyzer. The V6 X offers a solution for almost every application.

Made in Germany

The SPECTRAN® V6 X spectrum analyzer and vector signal generator is developed and assembled in Germany, guaranteeing the highest quality standard.

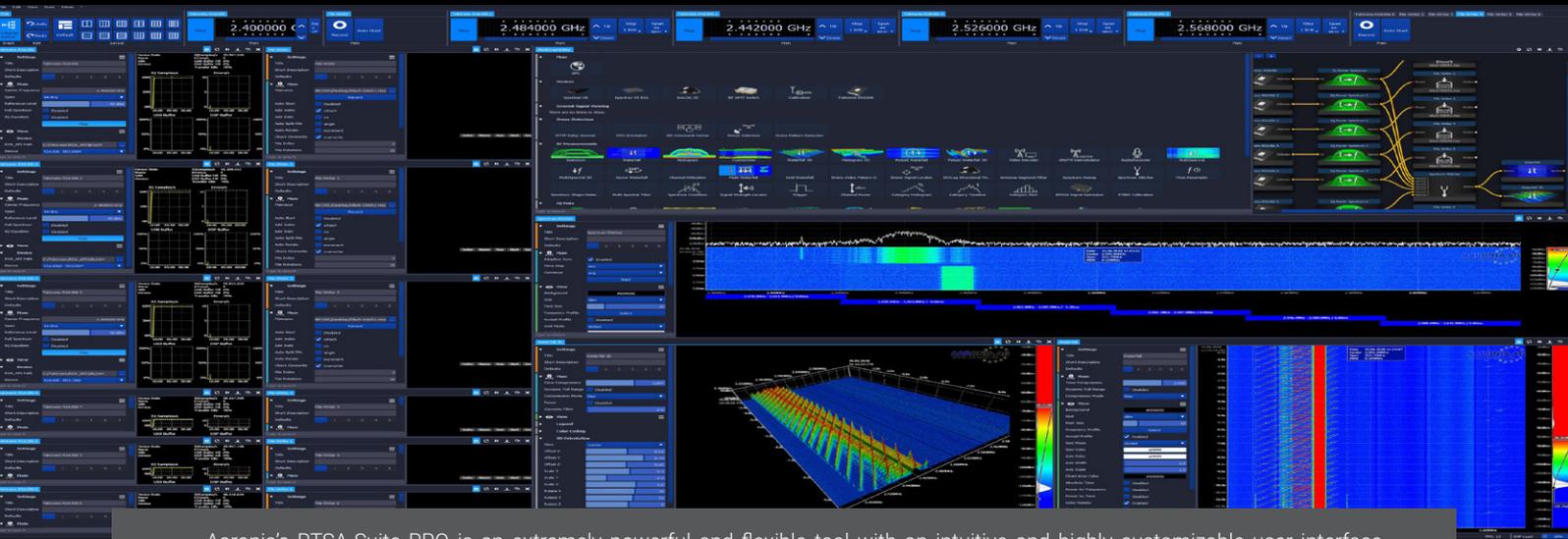


- ✓ Real-Time USB IQ-streaming
- ✓ Ultrawide frequency range from 10 MHz up to 6 GHz
- ✓ Compact size: 210 x 115 x 30 mm
- ✓ Weighs only 850 g
- ✓ Included PC software
- ✓ Tough, high quality aluminum case
- ✓ 50 Ohm RF input and output (SMA)
- ✓ Stackable



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!



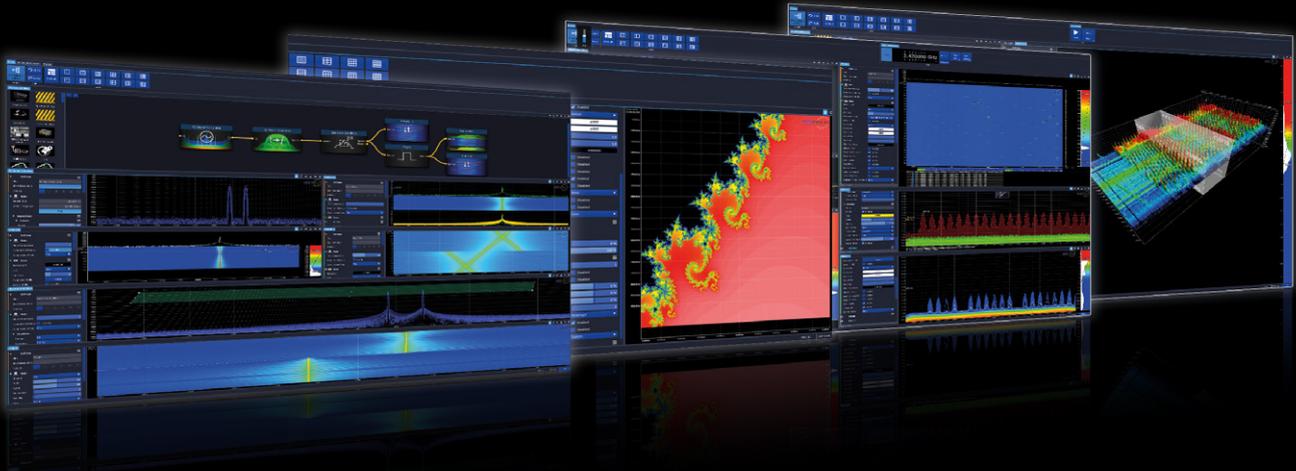
Multiple 2D/3D Spectrum Analysis

Trigger Block

Powerful Script Block

Various Demodulations

3D/4D Waterfall



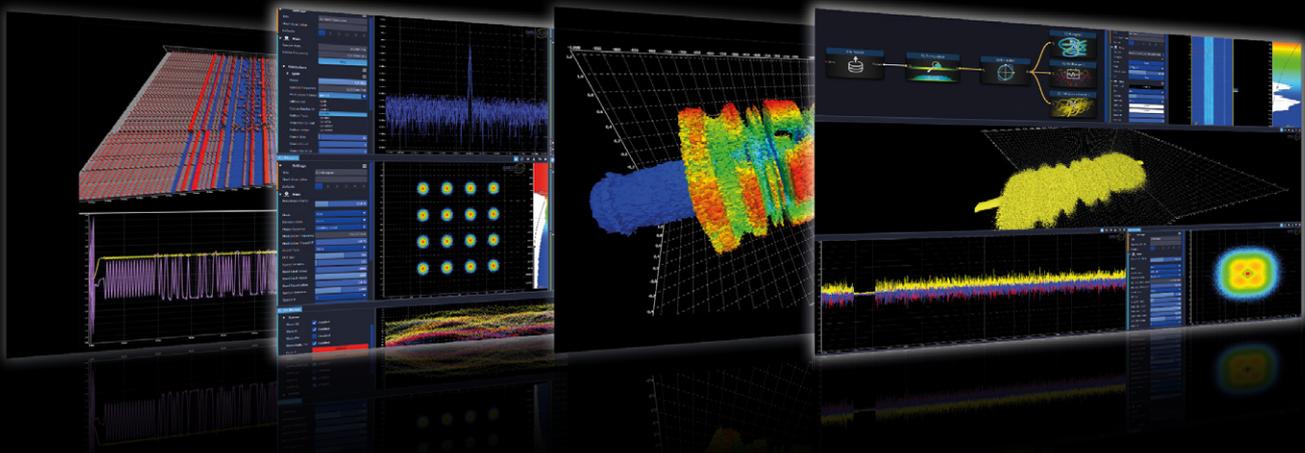
2D/3D IQ Streaming & Decoding

DECT Decoding

Software IQ Generator

3D IQ Display

DAB IQ Demodulation



Multi Unit Stitching / Multi Frequency Monitoring

Multi Frequency Monitoring

Multi Waterfall

V6 full Frequency Monitoring

Multi-Unit Stitching



WORLD of SPECTRAN® V6 X

| Model | RTBW | Speed | I/Os |
|-------------|-----------------------------|----------------|------------------|
| V6-RSA250X | 80 MHz (opt. 120 MHz) I/Q | 300/440 GHz/s | 1 Rx (opt. 1 Tx) |
| V6-RSA500X | 80 MHz (opt. 120 MHz) I/Q | 300/440 GHz/s | 1 Rx & 1 Tx |
| V6-RSA2000X | 160 MHz (opt. 245 MHz*) I/Q | 730/1100 GHz/s | 2 Rx & 1 Tx |

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

| Options | Comment |
|------------------------|---|
| 120 MHz I/Q RTBW | V6-RSA250X & V6-RSA500X only |
| 245 MHz I/Q RTBW | V6-RSA2000X only |
| 120 MHz Tx | V6-RSA250X only |
| Ultra Low Noise Preamp | Additional 20 dB of gain (Add 2 for V6-RSA2000X) |
| OCXO Timebase | 5 ppb , ultra high vibration resistance (± 0.1 ppb/g) |
| Internal GPS | Incl. spoofing detection and active GPS antenna with SMB cable |

* There are export restrictions for spectrum analyzers from 160MHz real-time bandwidth.

Accessories

RF over Fiber (Rx/Tx)

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



HyperLOG Antennas

Directional, ultra broadband LPDA antennas with wide frequency range from 380 MHz to 6 GHz. High and constant gain of typ. 5 dBi (active up to 45 dBi).



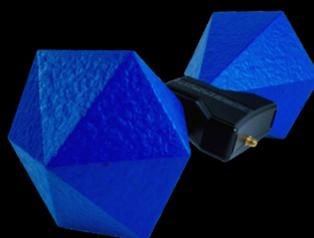
4-way Splitter/Combiner

External 4-way low-loss splitter/combiner (e.g. stitch multiple V6 units to expand the real-time bandwidth), stackable.



BicoLOG 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 41 dBi (active).



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.



IsoLOG 3D Mobile (9 kHz – 8 GHz)

Very light and small isotropic antenna. Compact form factor. Battery-powered multiple amplifier stages. Remote USB or manual control.



Analyzer Specifications

| Specifications | SPECTRAN® V6 X |
|------------------------------------|--|
| Frequency range | 10 MHz to 6 GHz (1 Hz to 26 GHz in development) |
| Real-time bandwidth Rx | Up to 245 MHz I/Q – via 2 x USB |
| Real-time bandwidth Tx | 120 MHz I/Q |
| POI | Up to 97 ns (FFT-based), 10ns (direct I/Q-based) |
| Max. power Rx | +23 dBm |
| Max. power Tx | +20 dBm |
| DANL (internal pre-amp on) | Typ. -170 dBm/Hz |
| Amplitude accuracy (typ.) | Typ. +/- 0,5 dB (compensated by FIR filter) |
| USB streaming connection | One or two USB 3.0 (USB 3.1 Gen1; USB 3.2 Gen1) |
| USB bandwidth (2 x USB 3.0) | Up to 784 MBytes/s sustained throughput to PC |
| 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 | Dual 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) |
| FPGA | XC7A200T-2 |
| 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 |
| Weight | 850 g |
| Power | USB 3.2 Gen 1 Type-C PD 3.0 |
| Power consumption | Typical 15 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

