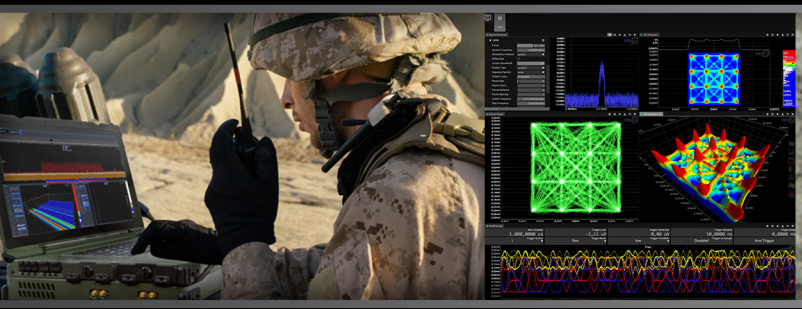
SPECTRAN V6

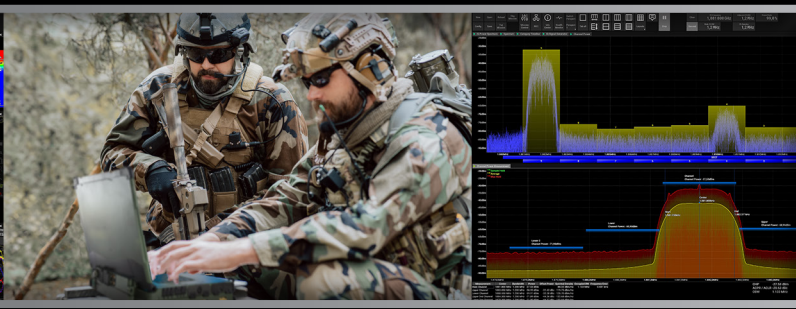
BEYOND REALTIME

Rugged Realtime Spectrum Analyzer/Signal Generator | 245 MHz RTBW

MIL

Powerful military outdoor real-time spectrum analyzer perfect for I/Q based measurement





- ✔ Rugged outdoor spectrum analyzer
- ✔ Certified per MIL-STD-810G and IP65
- ✔ Radio monitoring and enforcement
- ✔ RF Frequency range of 10 MHz to 6 GHz
- ✔ Dual instantaneous receiver bandwidth
- ✔ Simult. measurement of multiple bands

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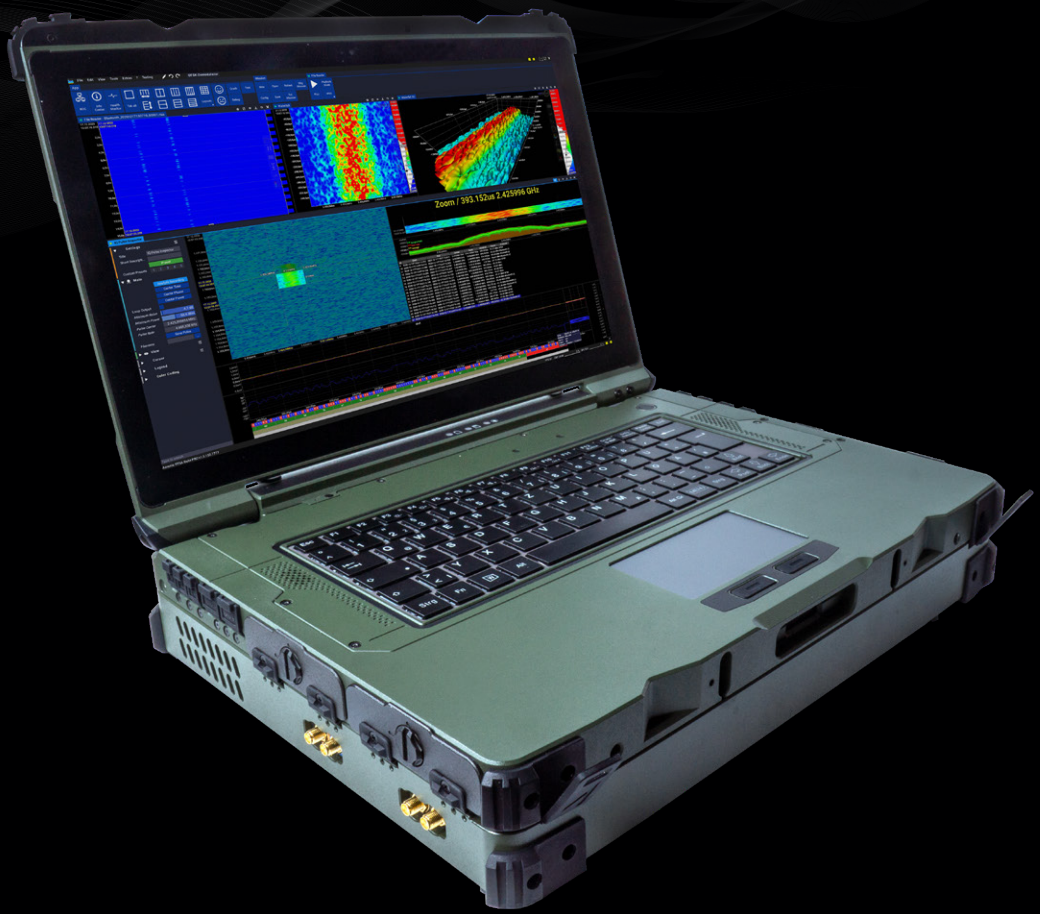
Highlights

- ✔ Ultra-stable outdoor spectrum analyzer (IP65, operates in the range of - 20°C to + 60°C)
- ✔ Scans 6 GHz in less than 5 ms (1 THz/s)
- ✔ Dual instantaneous receiver bandwidth
- ✔ Realtime capture bandwidth of up to 245 MHz
- ✔ 120 MHz vector signal generator onboard (opt. 245 MHz)
- ✔ 1TB SSD system hard disk
- ✔ Up to 8 TB HighSpeed SSD recording storage
- ✔ Virtually unlimited recording time (with auto-rotate function)
- ✔ Sample rate: 500 MSPS (16 Bit Dual 256 MSPS I/Q-Data)
- ✔ FFT rate: 960 Million FFT-points/s (120 Million FFTs/s)
- ✔ FFT-based POI as short as 97ns
- ✔ I/Q-based POI as short as 10ns
- ✔ Very bright, sunlight-readable and glare-free 15.6" widescreen display (Full HD: 1920 x 1080) with LED backlighting
- ✔ Intel® Xeon® processor E-2176 (up to 4.4 GHz) with 64 GB RAM and dedicated NVIDIA GTX 1050 graphics card with 4GB
- ✔ Pre-installed and pre-configured RTSA Suite PRO software
- ✔ Made in Germany



Introduction

Built to capture, analyze, store and playback even the shortest signal transmissions

The SPECTRAN® MIL is a military-grade, real-time, portable spectrum analyzer capable of capturing even the shortest signal transmissions. Both its scanning speed and recording time are unmatched: The analyzer scans 6 GHz in less than 5 ms, making it one of the world's fastest monitoring receivers.

Operation and Software

The pre-installed RTSA-Suite PRO software is designed to fully utilize the power of the SPECTRAN® V6 MIL.

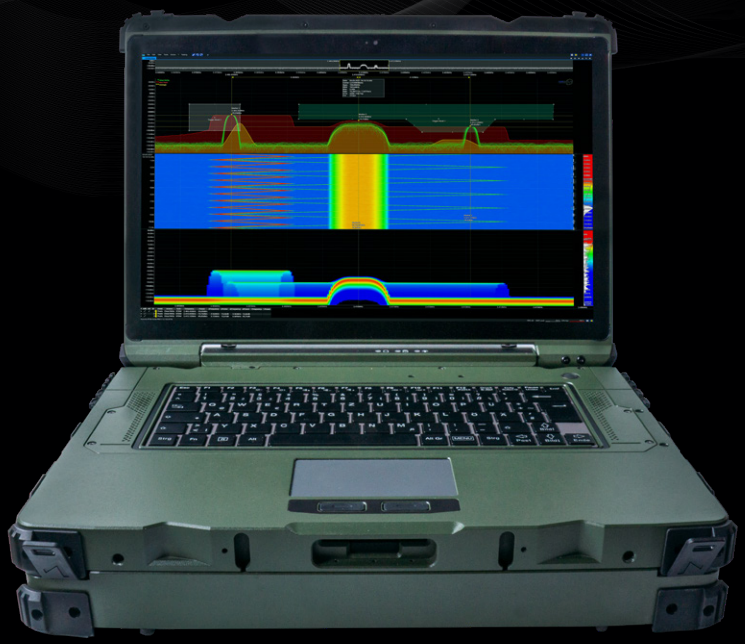
Our user-friendly software detects unknown or illegal transmissions across a wide frequency range. The SPECTRAN® V6 MIL can store several hours of real-time recordings and also offers an auto-rotate function for virtually unlimited recording time. Once recorded, the entire measurement data can be converted into the software.

Perfect for Signal Analysis

Helpful features, such as a 3D spectrogram view displaying the signal in a unique manner, allow for a deep-dive analysis of the real-time measurement or recorded data.

Military Grade

Our spectrum analyzer enables you to master any challenge in any conditions. It provides a powerful, extremely impact-resistant outdoor notebook as well as a high-end spectrum analyzer – all packed into one compact device. The V6 MIL has been independently tested in accordance with MIL-STD-810G, MIL-STD-461F, and IP65 certification standards. Rain, snow, ice or sand? No problem for the Spectran® V6 MIL.



- All-in-one solution: Fully featured outdoor laptop and spectrum analyzer
- Frequency range from 10 MHz up to 8 GHz
- Intel® Xeon® processor with 64 GB RAM and 1 TB SSD system hard disk and 2 TB recording storage, expandable (up to 8 TB SSD)
- 15,6“ widescreen display (Full HD resolution, 1920 x 1080), sunreadable, anti-glare
- Dedicated nVidia GTX 1050 with 4 GB
- 2x Rx input, 1x Tx output (depend on MIL version)
- 2 Hot-swap batterys
- Sealed connectors and caps

Hardware and Versions

The V6 MIL is offered in 3 versions depending on requirements

Unrivaled Performance

Our powerful and ultra-rugged military-grade outdoor spectrum analyzer boasts unprecedented performance from an Intel® Xeon® processor and 64 GB RAM, fast SSD hard drive, and an ultra-low-noise level of up to -170 dBm (Hz) DANL (preamplifier on). This makes the SPECTRAN® V6 MIL not only robust, but also extremely powerful at the same time.

Fields of application:

- Technical Surveillance Countermeasures (TSCM)
- Security surveys to detect and prevent eavesdropping attacks
- Interference detection
- Radio monitoring and enforcement
- Maintenance, installation and repair both in the factory and on site
- VIP monitoring
- Conference monitoring
- EMC / EMI testing
- Detection of weak signals masked by stronger signals
- Detection of rare, short-lived events
- and much more...

Scope of delivery

- SPECTRAN® V6 MIL
- Pre-installed RTSA-Suite PRO software
- 2 x Li-ion Polymer 10.8V/6900 mAh Akkus
- Battery charger / power supply
- English manual (On USB)

Options

Some Options for upgrading the SPECTRAN® V6 MIL:

Option 0002: 5 ppb (0,005 ppm) OCXO Time Base

Option 0020: Ultra Low Noise Pre-Amp

Additional 20 dB of gain.

Option 0245: 245 MHz realtime bandwidth*

This additional feature expands the real-time bandwidth from 160 MHz to 245 MHz. (MIL ENTERPRISE)*

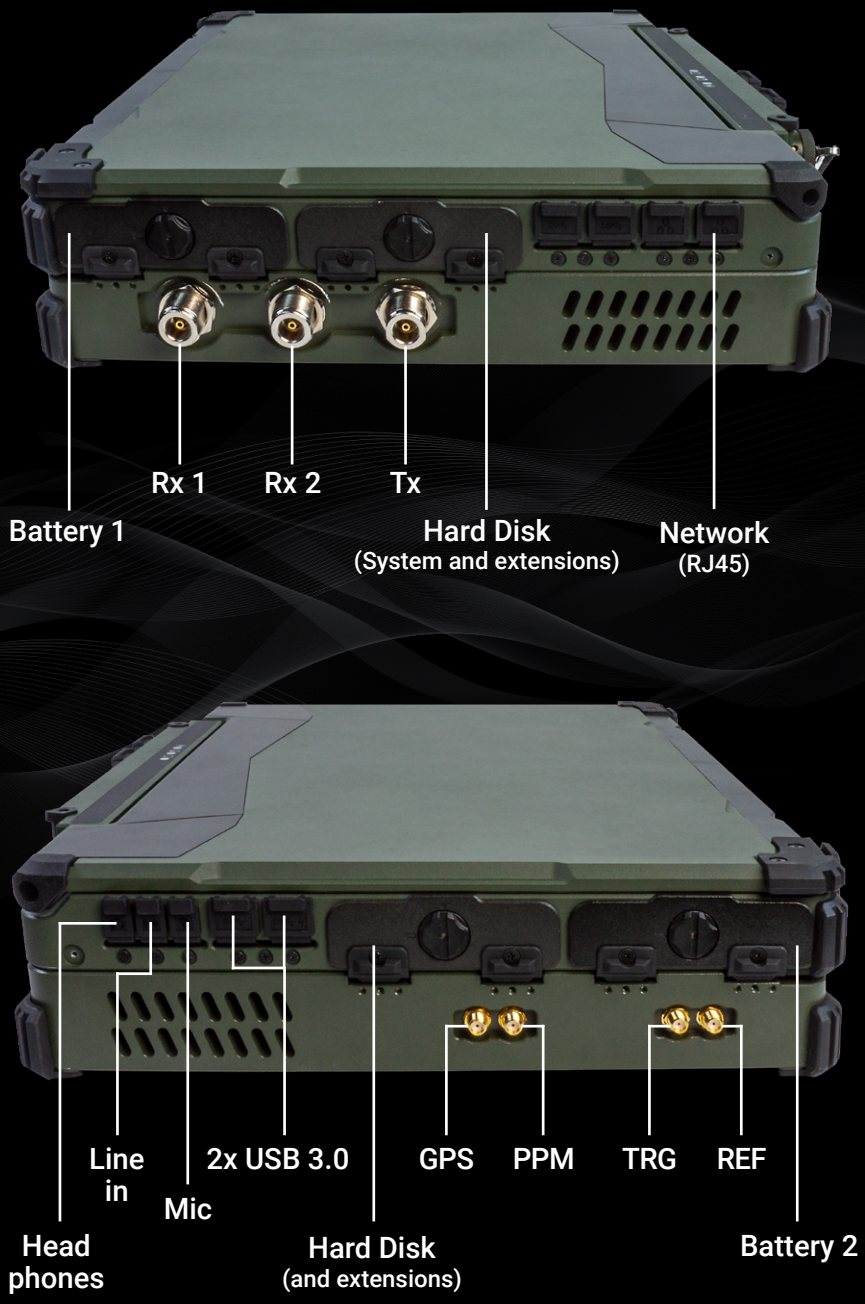
* There are export restrictions for spectrum analyzers from 160MHz real-time bandwidth.

SPECTRAN V6 MIL Versions

V6 MIL Versions	V6 MIL	V6 MIL PRO	V6 MIL ENTERPRISE
Connectors	1 x Rx	1 x Rx 1 x Tx	2 x Rx 1x Tx
Realtime bandwidth	80 MHz Rx	120 MHz Rx 120 MHz Tx	160 MHz Rx (opt. 245 MHz) 120 MHz Tx
SSD recording storage	2 TB (expandable)	2 TB (expandable)	8 TB

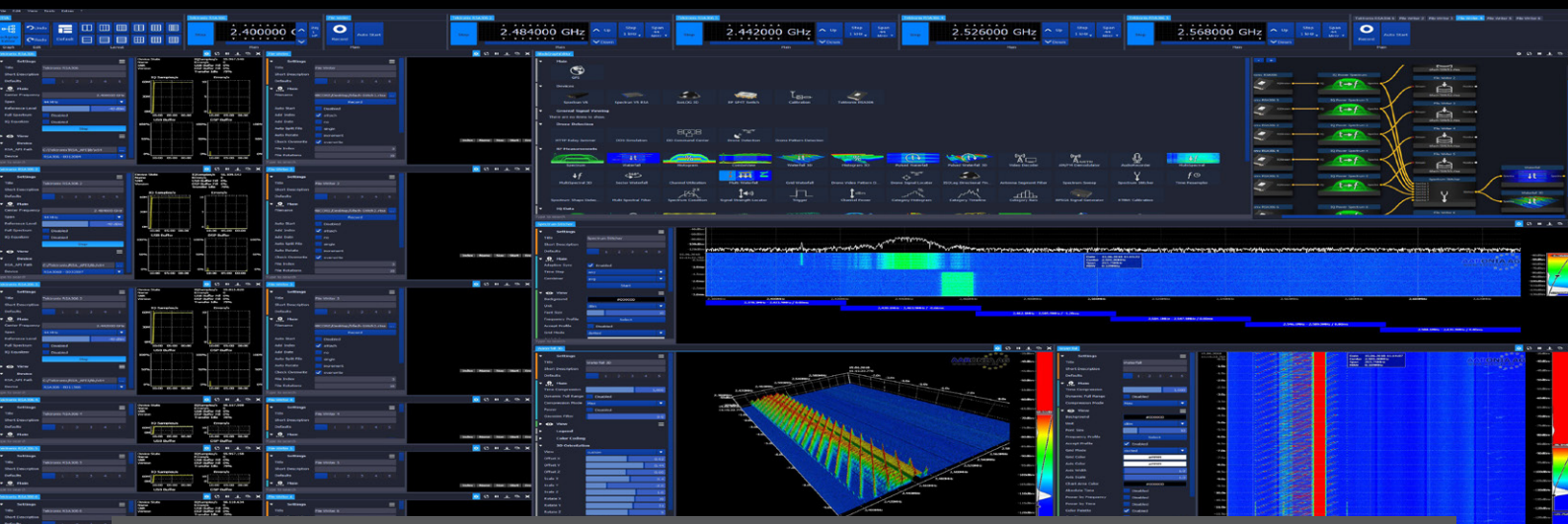
Hardware

Slots and connectors overview



RTSA-Suite PRO Software

World's most powerful RTSA software with endless possibilities!



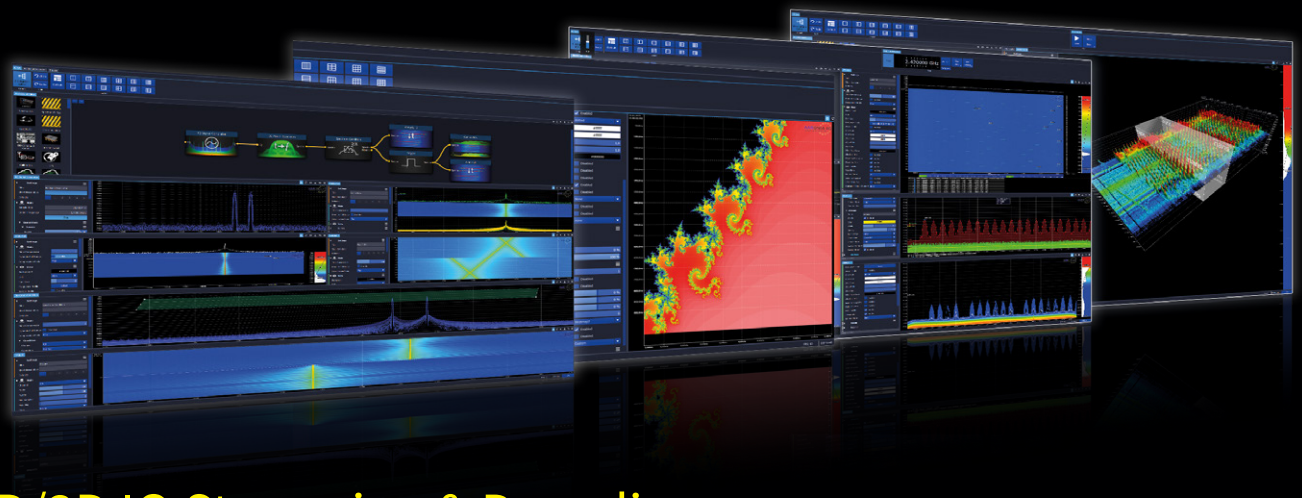
Aaronia's RTSA-Suite PRO is an extremely powerful and flexible tool with an intuitive and highly customizable user interface. Our node-based software enables users to identify, capture, demodulate and track any signal, and offers a multitude of ways to graphically display the signal detection.

RTSA-Suite PRO – Layout

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

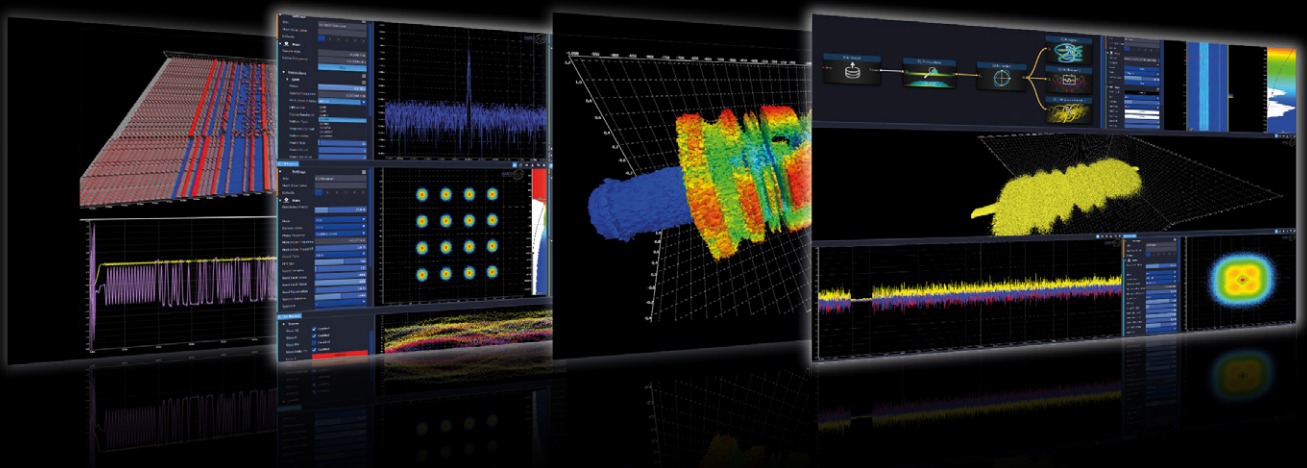
Multiple 2D/3D Spectrum Analysis

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



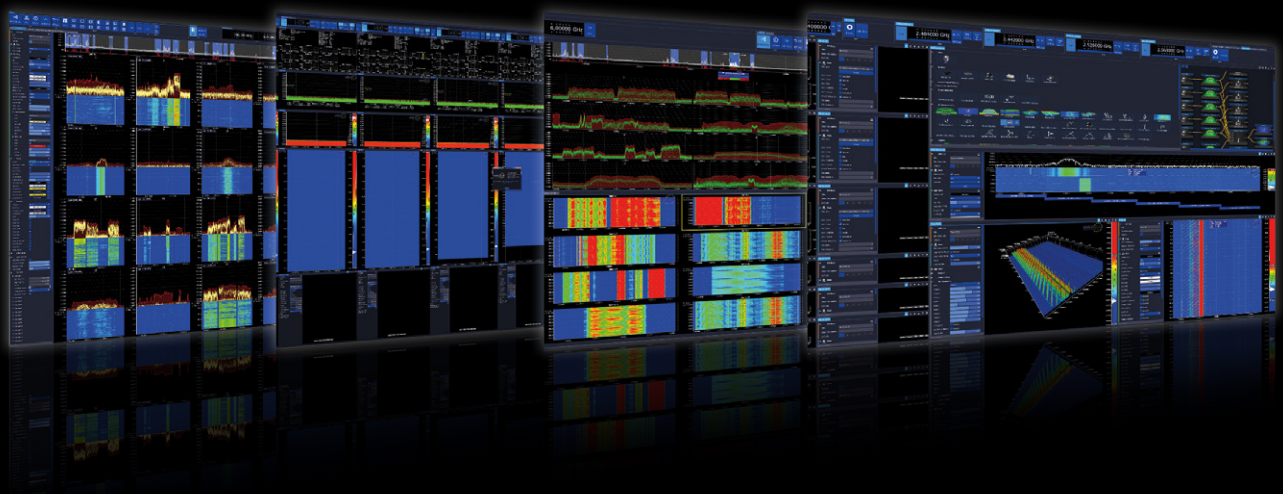
2D/3D IQ Streaming & Decoding

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*



Specifications (V6 Analyzer)

Specifications	
Frequency range	10 MHz to 6 GHz (1 Hz to 26 GHz in development)
Realtime bandwidth Rx	80 MHz / 120 MHz / 160 MHz (opt. 245 MHz I/Q rate)
Realtime bandwidth Tx	120 MHz I/Q gapless streaming (opt. 245 MHz)
POI (with 245 MHz option)	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)
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
External Frequenc Reference Input	typ. 10MHz, 3,5VRMS into 50 Ohm (SMB-connector)
FPGA	XC7A200T-2
DSP processing	930 GMACs
SDRAM	2 GB
RF connectors	N (female) 2x Rx, 1x Tx (depending on MIL version)
Recommended calibration interval	2 years

Specifications (V6 MIL)

Specifications	
CPU	Intel® Xeon® E-2176M 2,7 GHz, 12 MB Intel® Smart Cache, up to 4,4 GHz
RAM	64 GB RAM
SSD	1 TB NMVe (m.2) system hard disk 2 TB recording storage, expandable (up to 8 TB)
Operation System	Windows 10 Pro
Display	15,6“ Full HD 1920 x 1080, sunlight readable, anti-glare
Graphics Card	Dedicated nVidia GTX 1050 with 4 GB
Battery	2x Li-ion polymer 10.8V/6900 mAh batteries Standard power supply 230 V, opt. vehicle adapter
Keypad	German Layout
Connectors	2x USB 3.1 Gen.2 (1x 1.5 A fast charge) 1x Microphone 1x Audio output 1x Line-in 1x GLAN RJ45 1x MIL DC-In 1x VGA 1x Displayport 1.2 2x Seriell DB9 (COM 1-2)
Certification	CE, FFC, WEE, Reach, IP65 (with opened I/O ports), MIL-STD-810G
Operating Temperature	-20° to +60° C
Storage Temperature	-40° to +70° C
Dimensions	392 x 300 x 42.5 mm (with rubber corners)
Housing	milled anti-corrosive aluminum
Colour	military green (NATO olive / RAL6031HR), black
Weight	9,5 kg
Relative Humidity	95% relative humidity, non-condensing
Power Supply	AC input: 100 - 240 V, 50 - 60 Hz DC output: 19 V, 4,74 A max.
Power Consumption	typ. < 90 W
Country of Origin	Germany

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

Gewerbegebiet Aaronia AG II
Dorfstraße 10a
54597 Strickscheid, Germany

Phone: +49 6556 900310
Fax: +49 6556 900319
eMail: mail@aaronia.de

MADE IN GERMANY