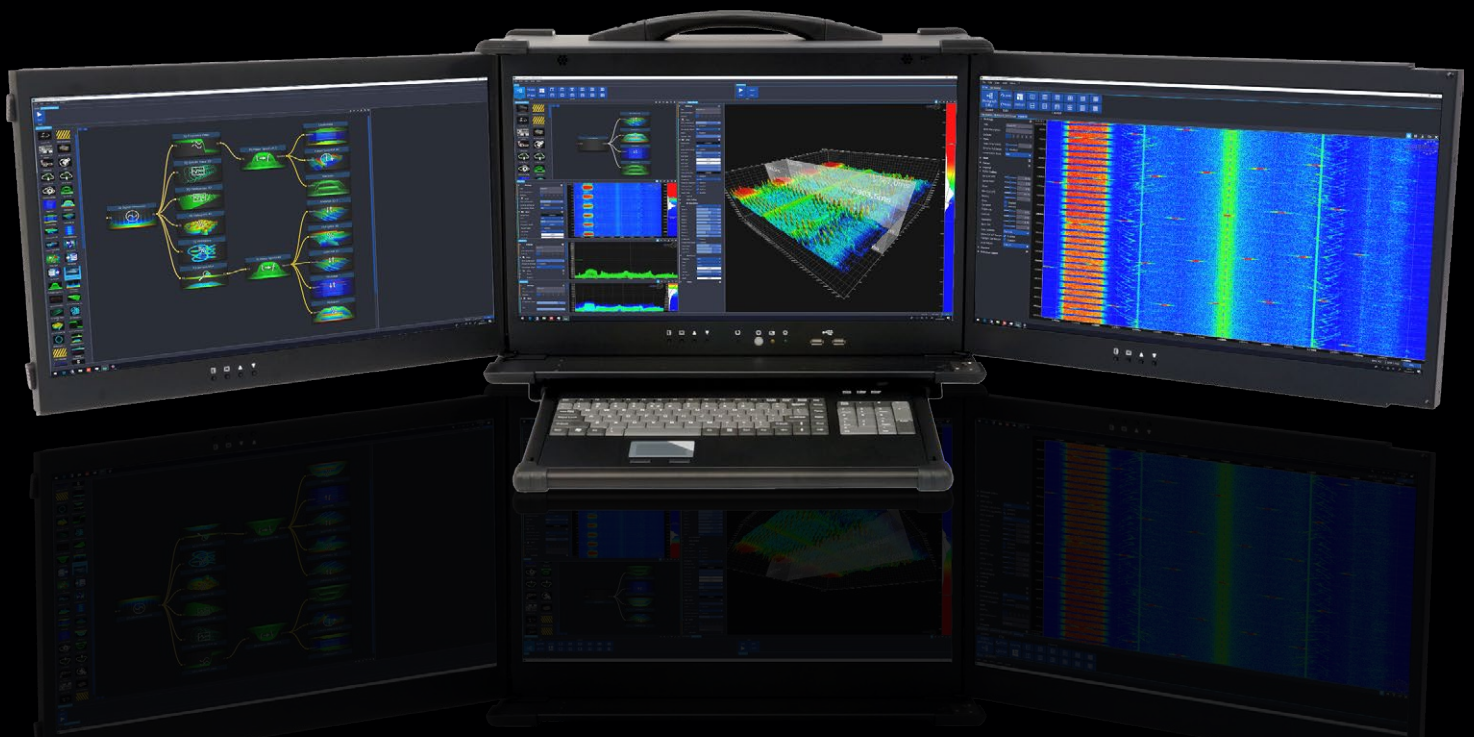


RF Command Center (9kHz to 20GHz)

The most powerful SPECTRAN V5 version, three FullHD screens, up to 40 TB SSD



The ultimate RF-Battlestation

Real-time bandwidth of up to 350MHz

Up to 2x internal V5 receivers

Highlights

- ✓ Scans 20GHz in less than 20mS (1000GHz / sec.)
- ✓ Fully customizable, cascable system (up to 2 independent Analyzers)
- ✓ Real-time capture bandwidth up to 350MHz
- ✓ POI below 1QS
- ✓ Unlimited recording time
- ✓ Wide measuring range to 20GHz
- ✓ Sample rate / second: > 5 million
- ✓ 500 MSPS (14 Bit Dual 256MSPS I/Q)
- ✓ Up to 40TB ultra-fast SSD recording storage
- ✓ 3x Widescreen Displays (Full HD), creates a resolution of 5760 x 1080
- ✓ Intel i7 with 16GB RAM, nVidia Power (gapless streaming and playback)
- ✓ Made in Germany



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MADE IN GERMANY

Introduction

Pure RF Performance

The SPECTRAN V5 RF Command Center is the culmination of Aaronia's efforts in building its Spectrum Analyzer Battleship: It scans 20GHz in less than 20 milliseconds, which is an astonishing speed of 1000GHz per second.

This high-end spectrum analyzer offers the RF performance you need with all measurement details available at the same time.

Perfect for any RF-Problem

The setup is completely customizable and thanks to its cascaded system docks up to 2 independent analyzers.

The three large full HD widescreen monitors display and capture the bandwidth of up to 175MHz in real time (or 350MHz with two internal analyzers), with a POI below 1uS! And with up to 40TB ultra-fast SSD drives, you basically have unlimited recording time, as only 1GB is needed per minute.

Hardware

The command center has a wide measuring range of up to 20GHz, with over five million samples per second. The 14 bit dual 256 MSPS I/Q generates 500 MSPS.

The hardware side of the computer also features the best available setup, as the SPECTRAN V5 RF Command Center runs on the newest generation Intel i7 with 16 gigabyte DDR4 RAM and an nVidia GeForce GTX graphics card, which enables gapless streaming and playback.

Made in Germany

And last but not least, the Command Center is made in Germany, ensuring quality on the highest level.



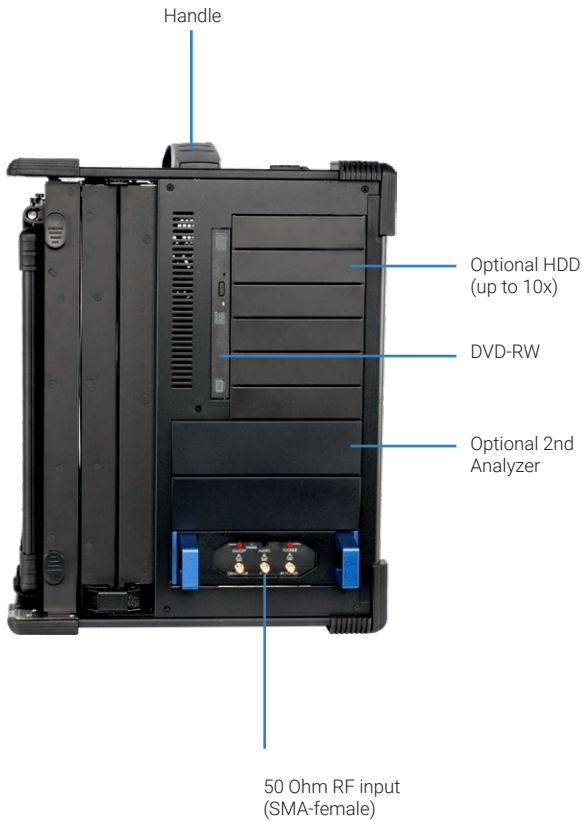
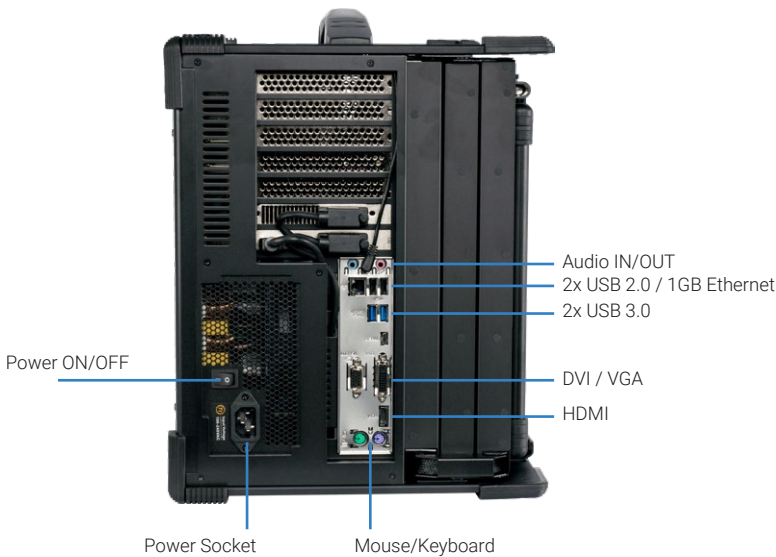
The Command Center in action.

Hardware

- ◆ Ultra wide measurement range from 9kHz to 20GHz
- ◆ Sunlight readable displays
- ◆ Expandable hard disk (up to 40TB)
- ◆ Fully featured PC and Spectrum Analyzer in one
- ◆ Intel i7 processor, 16GB RAM and 2TB SSD



- ◆ Incl. rollcase
- ◆ 21,5" Widescreen FullHD screens
- ◆ 50 Ohm RF input
- ◆ Fully featured PC and Spectrum Analyzer in one
- ◆ Intel i7 processor, 16GB RAM and 2TB SSD



RF-Measurements

The RF Command Center offers a huge variety of helpful functions for spectrum analysis

Measurement at the highest level

- Various trigger functions and unlimited number of markers
- Different views: Spectrum / persistence Spectrum, Spectrogram / Waterfall, 3D Waterfall, Histogram
- Multi Window feature supports several views at the same time, e.g. Spectrum & Waterfall & Histogram
- Unlimited storage of measurements, HDD can be expanded up to 60TB for gapless recording of up to 750 hours
- Comfortable reference level and color settings
- Reporting and recording function
- Storage of personal sessions

and much more ...

Scope of delivery

The RF Command Center comes with an extensive scope of delivery, depending on the special needs of users, the delivery can be extended to various additional products (see "Accessories" on Page 9).

- RF Command Center incl. Option 020 (internal 20dB preamp)
- Padded Carrying case with wheels to manage RF Command Center with ease
- OmniLOG 70600 omnidirectional antenna (700MHz to 6GHz)
- Pre-installed Spectrum Analysis Software RTSA Suite
- Power supply

Applications

- Technical surveillance countermeasures (TSCM)
- Security surveys for eavesdropping detection
- Interference hunting
- Spectrum monitoring and enforcement
- Maintenance, installation and repair in the factory / field
- VIP monitoring
- Conference monitoring
- EMC/EMI testing
- Seeing weak signals masked by stronger ones
- Discovery of rare, short duration events
- Capturing spread-spectrum and frequency-hopping signals
- Investigating misuse of the crowded RF spectrum

Options

Optional modifications to the RF Command Center:

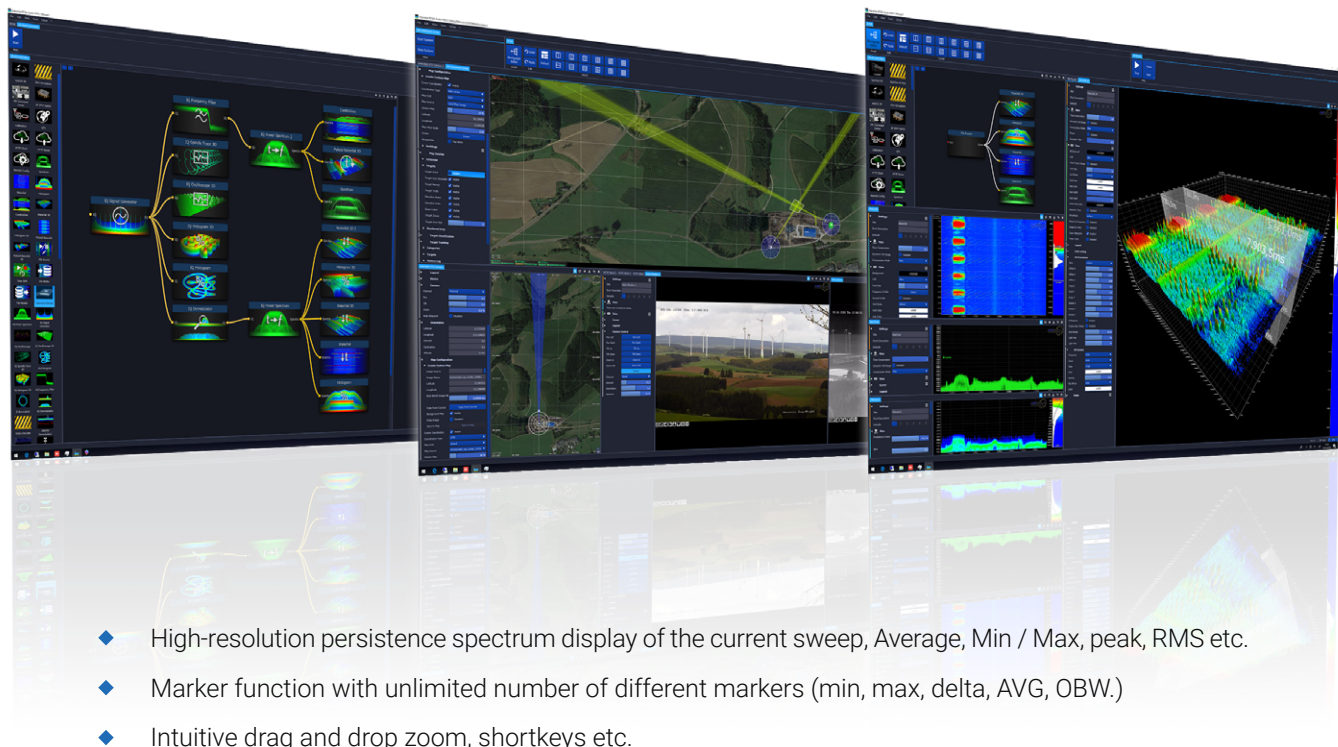
Option 002: 5ppb (0,005ppm) OCXO Timebase
This highly precise OCXO timebase, which has been especially developed for the SPECTRAN®, offers significantly reduced phase noise (jitter). This will allow the use of far narrower filters, which will in turn vastly enhance sensitivity. To fully exploit the maximum sensitivity this option is indispensable! Furthermore, the OCXO timebase allows far more accurate frequency measurement and display.

Option 160: Expands the real-time Bandwidth from 88MHz to 160 or 175MHz.

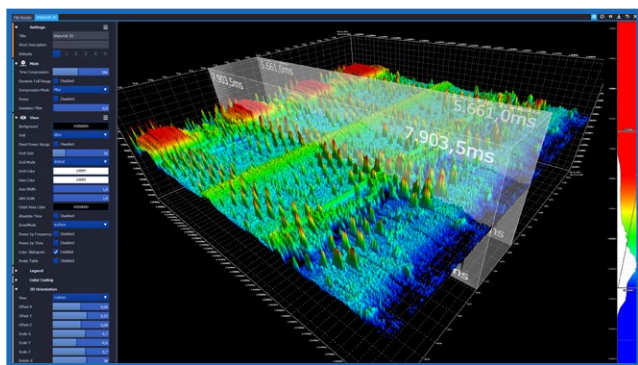
RTSA Suite Pro

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.

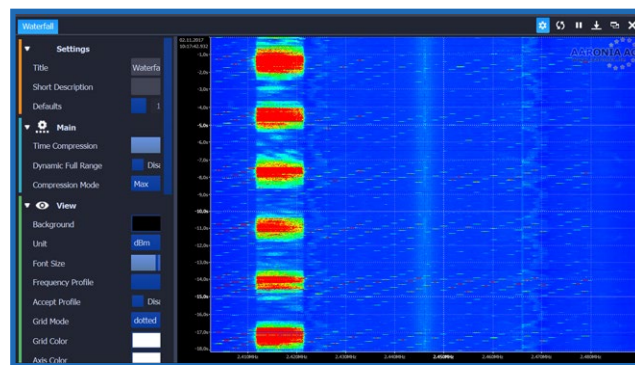


3D View and Histogram View



- ◆ The RF Command Center displays several views at once (Spectrum, 3D Waterfall, Histogram, etc.)
- ◆ The window size can be adjusted freely, therefore a full utilization of each FULL HD display is possible

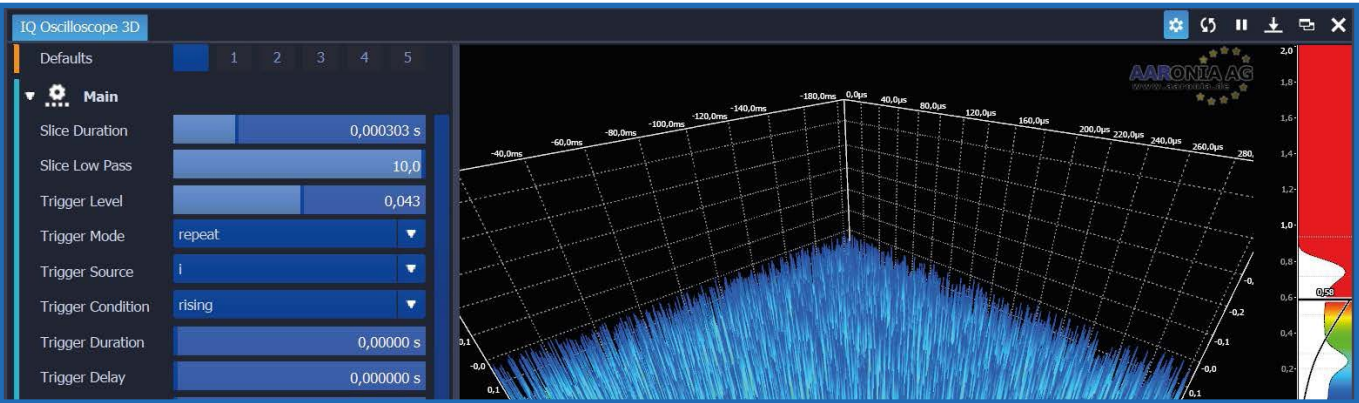
Waterfall View



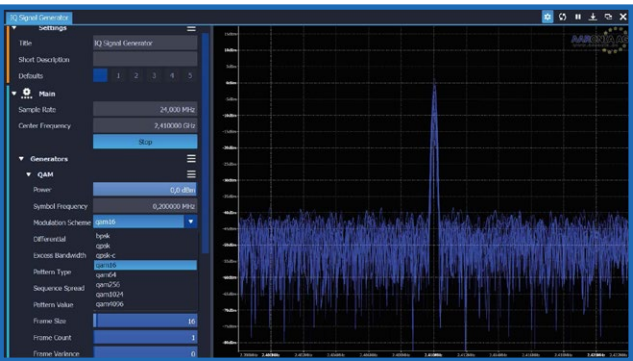
- ◆ Spectrogram / Waterfall View for the identification of frequency hops, measurements of pulse rate, analysis of time variant spectra and the tuning of a VCO

RTSA Suite Pro

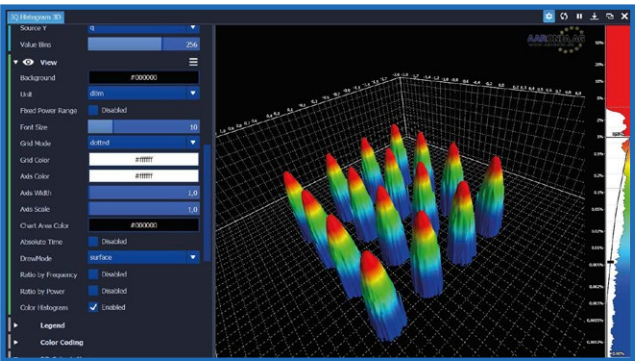
IQ Oscilloscope



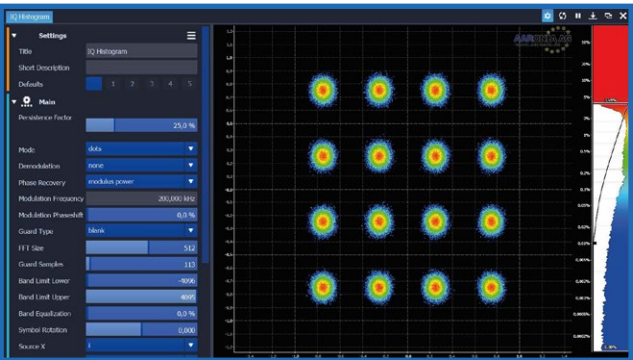
IQ Signal Generator



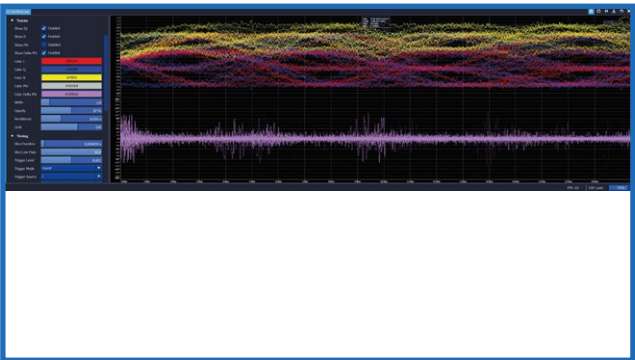
IQ Histogram 3D



IQ Histogram



IQ Oscilloscope 3D



Specifications (Analyzer)

Main Specifications	
Frequency Range	9kHz to 20GHz
Real-Time Bandwidth	88MHz (Optional: 160/175MHz)
Min. Event Duration	<1µS
Max. Power at RF input	+20dBm (+33dBm*)
Displayed Average Noise Level (internal pre-amp on)	typ. -150dBm/Hz
Displayed Average Noise Level (with external pre-amp)	max. -170dBm/Hz
Amplitude accuracy (typ.)	typ. +/- 1,5dB
RF Input	50 Ohm (SMA-connector)
Frequency reference accuracy	0,5ppm (optional 5ppb with Option 002)
RBW (resolution bandwidth)	1Hz to 3MHz
VBW (video bandwidth)	1Hz to 3MHz
Demodulator	AM, FM
Measurement Units	dBm, dBµV, V/m, A/m, W/m², dBµV/m, W/cm²
Detector	45dB (0,5dB steps)
Traces	ACT, AVG, MAX, MIN
Reference range	-200dBm to 100dBm
Measurement modes	I/Q, Power/Frequency Data
ADC	500MSPS 14Bit
GPS	Inbuilt GPS
FPGA	240K ECP3
DSP	600MHz

Specifications (PC)

Main Specifications	
CPU	Newest Gen. Intel i7
RAM	16 GB DDR4
HDD	120GB SSD (OS), 2TB HDD (storage), optional expandable
Operation System	Windows 7
Display	3x 21,5" Full-HD 1080p, sunlight readable, anti reflection tempered strengthen glass
Graphics Card	GeForce GTX
Speaker	Built-in, 2x 3W speakers
Keypad	104-key industrial keyboard with integrated numeric keypad and touchpad
Connectors	2x USB 3.0, 2x USB 2.0, Mouse, Keypad, DVI, VGA, HDMI, Power socket
Mainboard	Name-Brand ATX Mainboard
Case	Padded Carrying case with wheels
Weight Case	7kg
Temperature (Operation)	0 °C to 50 °C
Temperature (Storage)	-20 °C to +60 °C
Dimensions	536 x 394 x 300mm
Weight	30 kg
Relative Humidity	10% - 90%
Power Supply	Silent 580W, 100-240V, 50-60Hz
Power Consumption	typ. < 90W
Country of Origin	Germany

Accessories

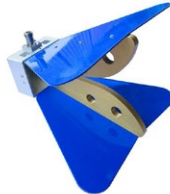
IsoLOG 3D (9kHz - 40GHz)

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



PowerLOG Antennas

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



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).



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).



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.



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.



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.



IsoLOG 3D Mobile (9kHz - 6GHz)

Very light and small isotropic antenna which is compatible to any spectrum analyzer.



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).



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 Science, 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 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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