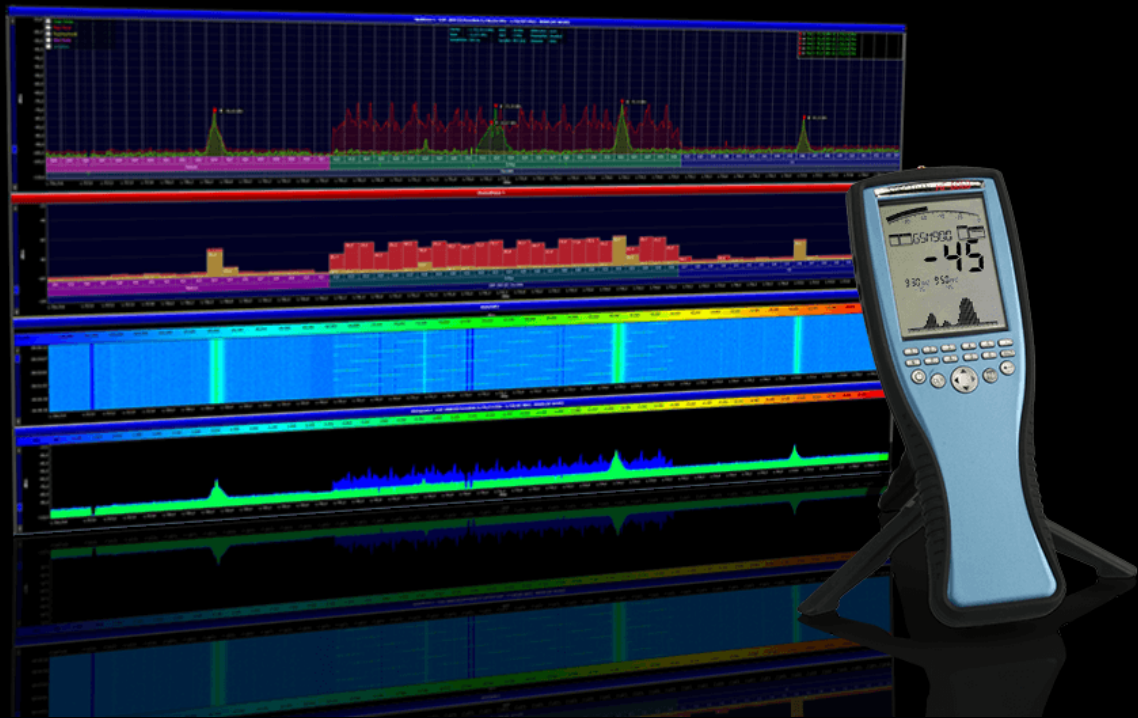


# AARONIA

# SPECTRAN V4 HANDHELD

## 1 MHz to 9,4 GHz

Portable Spectrum Analyser with world record in sensitivity (DANL)



### References:

- EADS, Munich, Germany
- Mercedes Benz, Austria
- Deutsche Bahn, Berlin, Germany
- EnBW Kernkraft GmbH, Germany

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## MADE IN GERMANY

# Specifications

## World record in sensitivity!

### SPECTRAN® HF-60100 V4

- ◆ Up to 100x faster SampleTime as Rev.3
- ◆ Up to 80 dB higher sensitivity as Rev.3
- ◆ 14 Bit Dual-ADC
- ◆ DDC Hardware-Filter
- ◆ 150 MIPS DSP (CPU)
- ◆ Frequency range: 1 MHz (9 kHz with Option 900) to 9,4 GHz
- ◆ Max measurement range: -155 dBm (1 Hz)
- ◆ Max measurement range w. PreAmps: -170 dBm(1 Hz)
- ◆ AbsMax Level: +20 dBm
- ◆ AbsMax Level: +40 dBm(Option)<sup>3</sup>
- ◆ Lowest possible SampleTime: 1 ms
- ◆ Typ. accuracy: +/- 1 dB\*\*
- ◆ Dimensions (L/W/D): (260 x 86 x 23) mm
- ◆ Weight: 420g



### Application examples SPECTRAN® HF-60100 Spectrum Analyzer

#### Analysis and measurement of:

- ◆ WLAN
- ◆ UMTS
- ◆ WiFi
- ◆ active Radar
- ◆ GSM
- ◆ Mobile phones
- ◆ Bluetooth
- ◆ Microwave ovens
- ◆ DECT phones
- ◆ TETRA
- ◆ radio stations
- ◆ TV stations
- ◆ various EMC limits

# The SPECTRAN® HF-60100 V4

## Compact, affordable and sensitive

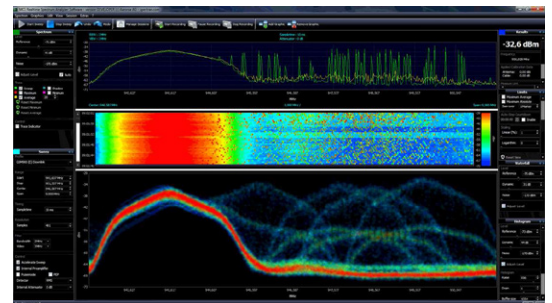
Based on a patented spectrum analyzer method Aaronia can offer a professional RF measurement at a spectacular price level. The SPECTRAN® V4 Analyzer have an extremely compact design and an incredibly high sensitivity (HF-60100 V4 up to -170 dBm (1 Hz) with preamps). Detect sources of interference, find out more about their causes, determine the frequency and intensity of the signal sources, measure limits and boost the functionality by using our high-end PC software. All SPECTRAN® are developed, individually produced and calibrated in Germany at the Aaronia factory. This guarantees highest quality standard.



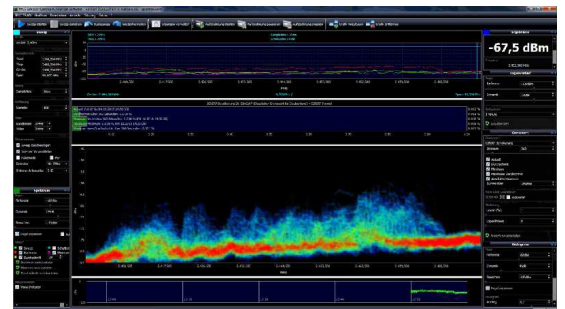
## Free Software

The spectrum analyzer software "MCS" for PC, MAC or Linux shows the real potential of the SPECTRAN®. The software can be used in addition to the Spectrum Analyzer. The connection works in real time, i.e. there is no time difference between signal analysis and representation on the screen.

- ◆ Multi-device capability, remote control of several SPECTRAN®. These can be controlled on a single PC.
- ◆ Works on all major operating systems like Mac OS, Linux and Windows
- ◆ Real-time remote control function with all SPECTRAN® spectrum analyzer via the integrated USB port
- ◆ Unlimited number of limit displays e.g. EN55011, EN55022, etc. including display of ICNIRP limit lines and limit-bar graphs
- ◆ Multi Window Support
- ◆ Powerful undo feature
- ◆ Channel and provider display
- ◆ Custom skins and color settings
- ◆ Reporting and recording function
- ◆ and much more...



GSM Signal



WLAN Signal

## Scope of delivery

- ◆ RF spectrum analyzer SPECTRAN® HF-60100 V4
- ◆ HyperLOG 60100 EMC/directional antenna
- ◆ 1300 mAh power battery with charger
- ◆ Pistol grip with miniature tripod mode
- ◆ SMA tools et
- ◆ SMA adapter
- ◆ 1 m SMA cable
- ◆ USB-cable
- ◆ Protection Rubber
- ◆ Sturdy aluminum-design carrycase (with custom padding!)
- ◆ Exhaustive manual



# Options for SPECTRAN® HF-60100 V4

## Optional modifications to the SPECTRAN® V4 include:

### Option 001: 1 MB memory expansion

This internal memory expansion is a MUST-HAVE particularly when using the data logger, as the standard capacity can quickly become exhausted in this mode. The memory expansion provides space for more than 10,000 logs, while the standard memory will only accommodate approximately 100 of them. Standard memory size is 64K.

*Item-No.: 111/003*

### Option 020: Internal 15 dB low-noise preamplifier

This option provides an internal, super low-noise 15 dB preamplifier, enabling maximum performance particularly when measuring extremely weak signals. It is switched via a TRUE RF switch. There really is no excuse for not ordering this one, considering its very attractive price!

The maximum sensitivity of the V4 series without option 020 is lower by 15 dB.

*Item-No.: 111/004*

### Option 205: 10 GHz peak power meter

A 10 GHz peak power meter. This option augments your SPECTRAN® with a power meter with up to 10 GHz of bandwidth. Furthermore, it allows exact measurement of signal peaks with high crest factor like those occurring in WLAN technology, or extremely short signals, like RADAR bursts. What's more, measurement is performed in REAL TIME and BROADBAND, while at the same time being temperature-compensated. It is also an ideal solution for measurement of cable attenuation or receiver output. Depending on the actual frequency, the power meter provides a sensitivity of up to approx. -50 dBm, while the maximum permissible level is +10 dBm. By adding our 20 dB attenuator (see price list), the maximum measurable signal level can be enhanced to +30 dBm or +50 dBm!

*Item-No.: 111/006*

### Option 015: Audio Signal Tracker

The Option 015 provides an acoustic representation of the signal intensity, similar to a Geiger counter. This allows a fast and convenient localization of the signal source. Perfectly suitable for signal direction finding, finding hidden transmitters or aligning antennas, especially in combination with the Peak Power Meter (Option 20x). As a highlight, the dynamic can be adapted optimally by moving the reference level.

*Item-No.: 111/009*

### Option 900: 9 kHz frequency extension

Extends the start frequency to 9 kHz. The new, usable frequency range with Option 900 is 9 kHz - 9.4 GHz. Perfect for the measurement of conducted emissions according to interference standards such as EN55015, EN61800-3 etc.

*Item-No.: 111/008*

### Option 022: 40 dB low-noise preamplifier 1 MHz-10 GHz

This option provides an external, super low-noise 40 dB preamplifier, enabling maximum performance particularly when measuring extremely weak signals at a EN55011, EN55022 or EN50371 EMC-test. If you use our BicoLOG antenna or our PBS1 Probeset and EMC-Sniffer this amplifier is a MUST HAVE to get the best performance!

The 40 dB preamplifier is already included in the EMC-Bundle1..

*Item-No.: 111/005*

# Recommended accessories

## Heavy Plastic Carrycase PRO

Shock resistant, heavy version with padding. Offers spaces for 2 SPECTRAN® units with all accessories and a HyperLOG 70xx or 60xx antenna. A MUST for the professional user or outdoor usage!



Item-No.: 504/001

## Calibration Certificate

Available for all SPECTRAN® units. With detailed calibration sheet.



Item-No.: 505/002

## 3000mAh LiPo Power-Battery

**Included in delivery!**



Item-No.: 503/007

## DC-Blocker (SMA)

It prevents the RF-input of the SPECTRAN to be destroyed by the DC-voltages of f.e DSL/ISDN lines.



Item-No.: 502/002

## Pistol Grip / miniature tripod

Detachable handle with super-practical miniature tripod mode: this handle is attachable to the backside of the unit and allows optimal handling and even fixed installation of the unit. STRONGLY recommended for PC use!



Item-No.: 503/012

## USB Cable (Special Version)

**Included in delivery!**



Item-No.: 501/001

## Car power adapter

With power-LED. For charging batteries or operating our units in your car, including special plug.



Item-No.: 501/002

## Calibration Resistor (DC-18GHz)

This calibration resistor is necessary for the best possible calibration of the noise floor of the Spectran V4-Analyzer.



Item-No.: 502/006

## Aluminium tripod

Height adjustable, high stability. STRONGLY recommended for PC use! Max. height: 105cm.



Item-No.: 503/011

## 1m / 5m / 10m SMA-Cable

High quality special SMA cable for connecting any HyperLOG®-Antenna or BicoLOG®-Antenna with our RF Spectrum-Analyzer. All versions: SMA plug (male) / SMA plug (male).



Item-No.: 501/006 (1m), 501/001 (5m), 501/010 (10m)

## Protection rubber

**Included in delivery!**



Item-No.: 503/018 (black), 503/019 (yellow)

## 20dB SMA high-end Attenuator

Expands the measurement range to +40dBm.



Item-No.: 502/003

# REFERENCES



## Selected Aaronia Clients

### Government, Military, Aeronautic, 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



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