USB Spectrum Analyzer <u>X</u>-Series

USB controlled Spectrum-Analyser Series - Extremly high Sensitivity (max. -170dBm/Hz)
Wide Frequency Range from 1Hz - 9,4GHz (EMF & RF)

Included in Delivery:

◆ USB-Spectrum-Analyzer in a milled aluminum housing
◆ **PC/MAC/LINUX USB-Analyzer-Software on CD**
◆ OmniLOG 90200 radial isotropic Antenna (only HF V4 X)
◆ International Power Supply incl. Adapterset
◆ Aaronia USB-Cable
◆ Aluminum Transportcase
◆ Cleaning Brush

AARONIA AG
WWW.AARONIA.DE

Made in Germany

Specifications

SPECTRAN® HF-6060 V4 X (10MHz - 6GHz)

- 14Bit Dual-ADC
- DDC Hardware-Filter
- 150 MIPS DSP (CPU)
- Frequency range: 10MHz to 6GHz
- AVG Noise Level (DANL): -135dBm(1Hz)
- AVG Noise Level (DANL) PreAmp: **-150dBm**(1Hz)
- AbsMax Level: +10dBm
- Lowest possible SampleTime: **1mS**
- Typ. accuracy: +/- 2dB
- Standards-conformant exposure limits (ICNIRP, BGV B11, BlmSchV etc.)
- Dimensions (L/W/D): (210x140x25) mm
- Weight: 700gr
- **Warranty: 10 years**

SPECTRAN® HF-6080 V4 X (10MHz - 8GHz)

- 14Bit Dual-ADC
- DDC Hardware-Filter
- 150 MIPS DSP (CPU)
- Frequency range: 10MHz to **8GHz**
- AVG Noise Level (DANL): -145dBm(1Hz)
- AVG Noise Level (DANL) PreAmp: **-160dBm**(1Hz)
- AbsMax Level: +10dBm
- Lowest possible SampleTime: **1mS**
- Typ. accuracy: +/- 2dB
- Standards-conformant exposure limits (ICNIRP, BGV B11, BlmSchV etc.)
- Dimensions (L/W/D): (210x140x25) mm
- Weight: 700gr
- **Warranty: 10 years**

SPECTRAN® HF-60100 V4 X (1MHz - 9,4GHz)

- 14Bit Dual-ADC
- DDC Hardware-Filter
- 150 MIPS DSP (CPU)
- Frequency range: 1MHz to **9,4GHz**
- AVG Noise Level (DANL): -155dBm(1Hz)
- AVG Noise Level (DANL) PreAmp: **-170dBm**(1Hz)
- AbsMax Level: +20dBm
- AbsMax Level: **+40dBm** (Option)
- Lowest possible SampleTime: **1mS**
- Typ. accuracy: +/- 1dB
- Standards-conformant exposure limits (ICNIRP, BGV B11, BlmSchV etc.)
- Dimensions (L/W/D): (210x140x25) mm
- Weight: 700gr
- **Warranty: 10 years**

SPECTRAN® NF-5030 X (1Hz - 1MHz/30MHz)

- Incl. Option 005 (12 Bit DDC Frequency Filter)
- **65 MSPS**
- Frequency range: 1Hz to 1MHz (optional **30MHz**)
- Typ. level range Analog in: **200nV** to 200mV / -150dBm (Hz)
- Typ. accuracy: 3%
- Superfast FFT spectrum analysis
- High-performance DSP (Digital Signal Processor)
- DIN/VDE 0848 Exposure limit calculation!
- True RMS signal strength measurement
- Average (AVG) measurement
- Dimensions (L/W/D): (210x140x25) mm
- Weight: 700gr
- **Warranty: 10 years**

CE

USB 2.0 ready

10 Jahre Garantie

Designed and Conforms to EN61000-4-3 EN55022

Made in Germany

Description

Spectrum Analysis from 1Hz - 9,4GHz

Find radiation sources in your surroundings. Find their respective frequencies and signal strengths, including PC-Software exposure limits display.

Due to the design and the associated shielding (3mm Aluminum housing) the Spectran X Desktop Analyzer is perfectly suitable for EMC measurements.

The highly complex calculations in spectrum analysis incl. exposure limit calculation is being performed by a highend Analysis Software which runs on almost all platforms (Windows, MAC OS, Linux).

Accurate, sensitive, affordable and beautiful exterior - what more could you ask?

Highlights

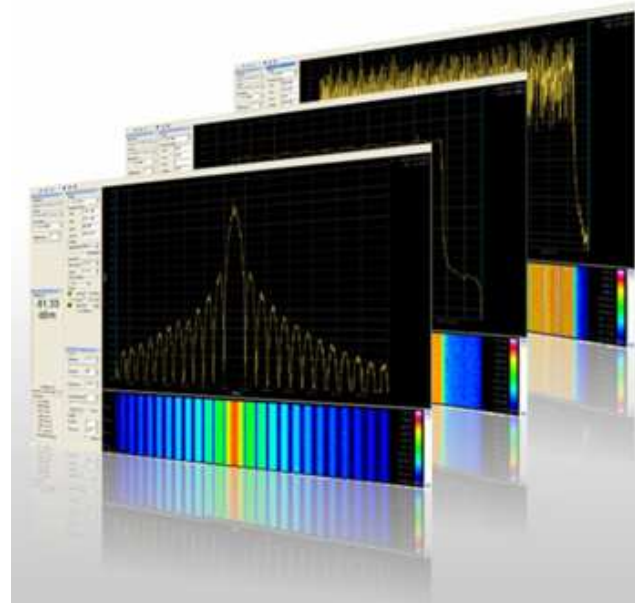Each Spectran X Desktop Spectrum Analyzer combines the following Highlights:

- 100% controlled by USB
- 100% powered by the external power supply
- Incl. OmniLOG 90200 Antenna (perfect to measure GSM or UMTS)
- 50 Ohm SMA input
- Internal speaker (which can be switched off)
- Audio out for the use of PC based FFT analyzer software
- Very good shielding (3mm aluminum housing)
- Highend, milled aluminum housing made of one piece (no cast part)

Professional PC analysis software (included)

The included PC PRO Analyzer Software for the Spectran X Desktop Spectrum Analyzer offers a huge functionality:

- **MULTI-device capability**! Remote control of several SPECTRAN units. These can be controlled and their data displayed at once on a single PC.
- **HIGH-RESOLUTION**!, freely scalable, coloured spectrum display with falloff function..
- **Display of channel identifiers**! for EXACT identification of providers. Channel numbers etc. freely programmable and extensible!
- Up to 10! markers with frequency and level display.
- Intuitive zoom control with very comfortable frequency adjustment.
- High quality "waterfall"-display with TIMECODE. Colour scale freely configurable. Size freely scalable. Optional display of data DIRECTLY ON TOP OF THE GRAPH by pointing with your mouse and CTRL-clik-king!
- **High-resoution SLOT ANALYSER with 3D display!**
- **SUPER-LOGGER**: ALL data can be written to disk continuously. File format is readable by spreadsheet applications, for creating custom reports, etc.
- Freely positionable windows for comfortable entry of frequency, RBW, sweeptime etc. etc.
- **Various pre-defined profiles** for DECT, UMTS, GSM, WLan etc. etc. for instant recall. Incl. optimal parameters and extensive channel information! Freely programmable and extensible!
- Independant main display with SIMULTANEOUS display of dBm, dBµV, V/m, W/m2 and A/m, each with AUTORANGE. Freely transposable and scalable.
- **SUPERB exposure limit display** with various profiles (ICNIRP, Salzburg precautionary values, ECOLOG, etc. etc.). Freely programmable with a virtually infinite amount of display options.
- Functionality to update SPECTRAN measurement device firmwares.
- Filemanager and COMPILER for creation and management of YOUR OWN PROGRAMS for SPECTRAN measurement devices.
- "Rename" option for renaming any of your SPECTRAN units (for example, including location) for better identification
- etc. etc. etc.

The PRO PC-Software for the SPECTRAN X

Included with delivery

- Desktop-Spectrum-Analyzer in a milled aluminum housing
- **PC/MAC/LINUX Analyzer Software on CD**
- OmniLOG 90200 Antenna (only HF V4 X)
- International Power Supply
- Aaronia USB-Cable
- Aluminum Transportcase
- Cleaning Brush

Options & Accessories Desktop Spectrumanalyzer X Series

Option 020: Internal 15dB low-noise preamplifier

This option provides an internal, super low-noise 15dB 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 X series without option 020 is lower by 15dB.

Order/Art.-No.: 177

Option 002: 0,5PPM TCXO timebase

(Only available for Spectran® HF-60100 V4 X).
This highly precise TCXO timebase, which has been especially developed for the SPECTRAN®, offers significantly reduced phase noise (jitter). This will allow the use of far narrower filters (in development), which will in turn vastly enhance sensitivity. To fully exploit the maximum sensitivity of the HF-60100 V4 X, this option is indispensable! Furthermore, the TCXO timebase allows far more accurate frequency measurement and display and is therefore a MUST-HAVE for future applications like time-domain measurements or code-selective measurement of UMTS, all already in development.
The standard accuracy without option 002 is 50ppm.

Order/Art.-No.: 181

Option 022: 40dB low-noise preamplifier DC-1GHz

This option provides an external, super low-noise 40dB 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 40dB preamplifier is already included in the EMC-Bundle1.

Order/Art.-No.: 177-2

Option 010: 30MHz frequency extension

Available for: NF-5030 X.
Our 30MHz frequency extension extends the frequency range of the NF-5030 to the absolute maximum. The new frequency range is 1kHz - 30MHz. Amongst others, it even allows measurement of VDSL2. The higher clock frequency of the DDC provided by this option is a MUST HAVE for technicians and authorities needing ACCURATE assessment of signal sources of up to 30MHz. The maximum frequency of the NF-5030 without option 010 is 1MHz.

Order/Art.-No.: 179-1

DC-Blocker (SMA)

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

Order/Art.-No.: 778

Calibration Resistor (DC-18GHz)

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

Order/Art.-No.: 779

20dB high-end Attenuator

Expands the measurement range to +40dBm. (ONLY SPECTRAN HF-60100 V4 X).

Order/Art.-No.: 775

References

User of Aaronia Antennas and Spectrum Analyzers (Examples)

Government, Military, aeronautic, astronautic

- NATO, Belgien
- Boeing, USA
- Airbus, Hamburg
- Bund (Bundeswehr), Leer
- Bundeswehr (Technische Aufklärung), Hof
- Lufthansa, Hamburg
- DLR (Deutsches Zentrum für Luft- und Raumfahrt, Stuttgart
- Eurocontrol (Flugüberwachung), Belgien
- Australian Government Department of Defence, Australien
- EADS (European Aeronautic Defence & Space Company) GmbH, Ulm
- Institut für Luft- und Raumfahrtmedizin, Köln
- Deutscher Wetterdienst, Tauche
- Polizeipräsidium, Bonn
- Landesamt für Umweltschutz Sachsen-Anhalt, Halle
- Zentrale Polizeitechnische Dienste, NRW
- Bundesamt für Verfassungsschutz, Köln
- BEV (Bundesamt für Eich- und Vermessungswesen)

Research/Development, Science and Universitys

- Deutsches Forschungszentrum für Künstliche Intelligenz, Kaiserslautern
- Universität Freiburg
- Indonesien Institute of Sience, Indonesien
- Max-Planck-Institut für Polymerforschung, Mainz
- Los Alamos National Labratory, USA
- University of Bahrain, Bahrain
- University of Florida, USA
- Universität Erlangen, Erlangen
- Universität Hannover, Hannover
- University of Newcastle, Großbritannien
- Universität Strasbourg, Frankreich
- Universität Frankfurt, Frankfurt
- Uni München – Fakultät für Physik, Garching
- Technische Universität Hamburg, Hamburg
- Max-Planck Institut für Radioastronomie, Bad Münstereifel
- Max-Planck-Institut für Quantenoptik, Garching
- Max-Planck-Institut für Kernphysik, Heidelberg
- Max-Planck-Institut für Eisenforschung, Düsseldorf
- Forschungszentrum Karlsruhe, Karlsruhe

Industry

- Shell Oil Company, USA
- ATI, USA
- Fedex, USA
- Walt Disney, Kalifornien, USA
- Agilent Technologies Co. Ltd., China
- Motorola, Brasilien
- IBM, Schweiz
- Audi AG, Neckarsulm
- BMW, München
- Daimler Chrysler AG, Bremen
- BASF, Ludwigshafen
- Deutsche Bahn, Berlin
- Deutsche Telekom, Weiden
- Siemens AG, Erlangen
- Rohde & Schwarz, München
- Infineon, Österreich
- Philips Technologie GmbH, Aachen
- ThyssenKrupp, Stuttgart
- EnBW, Stuttgart
- RTL Television, Köln
- Pro Sieben – SAT 1, Unterföhring
- Channel 6, Großbritannien
- WDR, Köln
- NDR, Hamburg
- SWR, Baden-Baden
- Bayerischer Rundfunk, München
- Carl-Zeiss-Jena GmbH, Jena
- Anritsu GmbH, Düsseldorf
- Hewlett Packard, Dornach
- Robert Bosch GmbH, Plochingen
- Mercedes Benz, Österreich
- EnBW Kernkraftwerk GmbH, Neckarwestheim
- AMD, Dresden
- Infineon Technologies, Regensburg
- Intel GmbH, Feldkirchen
- Philips Semiconductors, Nürnberg
- Hyundai Europe, Rüsselsheim
- Saarschmiede GmbH, Völklingen
- Wilkinson Sword, Solingen
- IBM Deutschland, Stuttgart
- Vattenfall, Berlin
- Fraport, Frankfurt

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