Gauss Meter & EMC spectrum analyzer
Series SPECTRAN® 50xx
Spectrum Analyzer at multi-meter price!

References / examples of proof:
- BOEING, USA
- NATO, Belgium
- Rohde & Schwarz, Belgium
- Shell Oil Company, USA
- ATI, USA
- Australian Government Department of Defence, Edingburgh, Australia
- Daimler Chrysler AG, Bremen, Germany
- BMW, München, Germany
- Eurocontrol (Flugüberwachung), Belgium
- DLR (Deutsches Zentrum für Luft- und Raumfahrt), Köln, Germany
- ThyssenKrupp, Stuttgart, Germany
- Siemens AG, Konstanz & Erlangen, Germany
- PHILIPS, Netherlands

Product of the year 2009
Our 3D magnetic-field measurement coil with homogeneous centre won the first price of Europe’s biggest electronic newspaper “Elektronik” at the category passive components. This coil is installed in each NF-Spectran unit.
Specifications

**SPECTRAN® NF-5010 (1Hz to 1MHz)**

- 1024 points BFT (FFT)
- Frequency range: 1Hz to **1MHz**
- Typ. level range E-Field: 1V/m to 5kV/m
- Typ. level range H-Field: 1nT to **100μT**
- Typ. precision: 3%
- Superfast FFT spectrum analysis
- High-performance DSP (Digital Signal Processor)
- 3D magnetic field measurement
- Frequency and signal strength display
- High-resolution multi-function display
- DIN/VDE 0848 Exposure limit calculation
- Simultaneous M-Display X, Y, Z axes
- True RMS signal strength measurement
- Average (AVG) measurement
- Internal data logger
- Internet Flash Software-Updates
- USB 2.0 Interface
- Dimensions (L/W/D): (260x86x23) mm
- Weight: 420gr
- **Warranty: 10 years**

**SPECTRAN® NF-5030 (1Hz to 1MHz / 20MHz / 30MHz)**

- Vastly expanded range
- Measurement range up to **DIN/VDE 0848**
- **65 MSPS** (Option 005)
- Lots of options
- NEW: 30MHz Option
- Frequency range: 1Hz to **1MHz / 30MHz**
- Typ. level range E-Field: 0,1V/m to **20kV/m**
- Typ. level range H-Field: 0,1nT to 2mT
- Typ. level range DDC H-Field: **1pT** to 2mT
- Typ. level range DDC Analog in: **200nV** to 200mV / -150dBm (Hz)
- Typ. accuracy: 3%
- Superfast FFT spectrum analysis
- High-performance DSP (Digital Signal Processor)
- 3D magnetic field measurement
- Frequency and signal strength display
- High-resolution multi-function display
- DIN/VDE 0848 Exposure limit calculation
- Simultaneous M-Display X, Y, Z axes
- True RMS signal strength measurement
- Average (AVG) measurement
- Internal data logger
- Internet Flash Software-Updates
- USB 2.0 Interface
- Dimensions (L/W/D): (260x86x23) mm
- Weight: 420gr
- **Warranty: 10 years**

**Application Examples Spectran NF-50xx Spectrum Analyzer**

Analysis and measurement of:

- traction power
- power lines
- power cables
- lamps
- power supplies
- transformer
- DSL
- ADSL
- VDSL
- various home appliances, industry and office up to 30MHz
Real ANALYSIS:

Measurement of electric and magnetic fields in this price range has never been this PROFESSIONAL.

Find radiation sources in your surroundings. Find their respective frequencies and signal strengths, including direct display of exposure limits. This used to be impossible in this price category, professional units often costing several thousand euros and being excessively complicated in handling.

The highly complex calculations in spectrum analysis incl. exposure limit calculation is being performed, unnoticed in the background, by a high-performance DSP (digital signal processor). This ultra-fast processor even allows, depending on the settings, REAL-TIME display with a NF-5030 (could you ask for more?). Simply amazing!

Fast, handy, cost-effective, beautiful exterior and PRECISION - what more could you ask?

Spectrum ANALYSIS

Real ANALYSIS:

Professional EMF measurement devices use a frequency dependant measurement approach, the so-called spectrum analysis. In a certain frequency range, the individuals signals and their respective strengths are being broken down, for example into a "bargraph" display (see SPECTRAN® screenshot on the right). The height of the individual bars represents the corresponding signal strength.

For the 3 strongest signal sources, SPECTRAN® can automatically displays the frequency and signal level, thanks to its "Auto Marker" feature. Of course, you can also setup the filter width and the frequency range to be analysed as you like.

In the EMF (LF) spectrum shown here, a frequency range of approx. 20Hz to 60Hz from left to right is being analysed. During analysis, the Auto Marker feature has determined - fully automatic - two main signal sources:

Signal#1=30Hz at 45µT
Signal#2=50 (mains power) at 75µT

CONFORMING TO STANDARDS

Real ANALYSIS:

SPECTRAN® measurement devices with data logger allow long-term recordings of measurement results over a freely adjustable period of time. This is particularly indispensable for serious evaluation of exposure by appliances and machinery which have a changing power consumption or radiation strength over time. Examples for these include railroads, power lines and plants, but also home appliances and their respective power cables, and various high-frequency transmission facilities like mobile phone transmission towers, mobile phones, radar etc. Depending on the time of day, considerable variation of exposure can occur (see attached graphics). Without long-term recordings, MASSIVE misinterpretation of total exposure can occur. With long-term data logging using SPECTRAN®, the daily variation of exposure can be recorded and analysed. Thus, the actual total exposure can be evaluated precisely.

With this functionality, you can even discover sporadic EMC problems which would otherwise be very hard to detect.

LONG-TERM MEASUREMENT (Data logging feature)

SPECTRAN® measurement devices with data logger allow long-term recordings of measurement results over a freely adjustable period of time. This is particularly indispensable for serious evaluation of exposure by appliances and machinery which have a changing power consumption or radiation strength over time. Examples for these include railroads, power lines and plants, but also home appliances and their respective power cables, and various high-frequency transmission facilities like mobile phone transmission towers, mobile phones, radar etc. Depending on the time of day, considerable variation of exposure can occur (see attached graphics). Without long-term recordings, MASSIVE misinterpretation of total exposure can occur. With long-term data logging using SPECTRAN®, the daily variation of exposure can be recorded and analysed. Thus, the actual total exposure can be evaluated precisely.

With this functionality, you can even discover sporadic EMC problems which would otherwise be very hard to detect.
EXPOSURE LIMITS

At the push of a button:
Exposure limit calculation used to be a complex and awkward procedure even for the professional, as most of the time, a chaotic mixture of an abundance of different frequencies, modulations and signal strengths is present.
The indispensable, highly complex calculation of frequency-dependant exposure limits can ONLY be performed CONFORMING TO STANDARDS by a spectrum analyser with high-performance software. Not a problem for SPECTRAN® units: They can calculate even several authoritative exposure limits, precautionary limits and recommendations (simply selectable via a button) and display these as a practical bargraph display (including convergence display in per cent!), while the measurement is running.
The attached SPECTRAN® screenshot demonstrates how it works: At the push of a button, the ICNIRP exposure limit has been chosen among the various available exposure limits. SPECTRAN® now automatically calculates convergence or excess of this limit. For achieving this, often thousands of complex calculations have to be performed per second, and a steady scan of the entire frequency range needs to be performed. A true nightmare for every processor. In our test case, the graphic display shows an approximation towards the ICNIRP limit by 6,06%. If you use a NF-5030 you can even cover the total ICNIRP-banwidth (depending on frequency). Hence, even the novice can perform exposure limit calculations ACCORDING TO STANDARDS without having to use complex tables and calculators.

The new standard: 3D MEASUREMENT

Mismeasurement caused by wrongly adjusting the measurement device in space or troublesome and complex 3D calculations with a calculator are a problem of the past from now on, thanks to SPECTRAN® EMF (LF) measurement devices. All SPECTRAN® EMF measurement devices can measure magnetic fields directly in 3D! Starting with the SPECTRAN® NF-1010E, field strengths of the individual X, Y and Z axes can even be shown seperately. This has become possible thanks to the newest development from the Aaronia laboratories: Our high-tech REAL 3D miniature sensor coil. Consisting of a specially crafted nylon base with 3 independant windings made of ultra-thin, 0,05 mm! wire, it impresses with its extremely high sensitivity. It allows measurement of magnetic fields in all 3 spacial dimensions. The signal processor (DSP) of the SPECTRAN® performs the resulting highly complex calculations. You receive 3D measurement results which can otherwise only be achieved by using highly professional equipment.

INCLUDED WITH DELIVERY

- LF spectrum analyser SPECTRAN NF-50xx
- Sturdy aluminum-design carrycase (with custom padding!)
- 1300mAh Aaronia power battery with charger
- Exhaustive manual with lots of basic information, hints and exposure limit tables
<table>
<thead>
<tr>
<th>Specifications base unit</th>
<th>NF-1010</th>
<th>NF-1010E</th>
<th>NF-3010</th>
<th>NF-3020</th>
<th>NF-5010</th>
<th>NF-5030</th>
<th>NF-XFR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency Range (min)</strong></td>
<td>10Hz</td>
<td>10Hz</td>
<td>10Hz</td>
<td>10Hz</td>
<td>1Hz</td>
<td>1Hz</td>
<td>1Hz</td>
</tr>
<tr>
<td><strong>Frequency Range (max)</strong></td>
<td>2kHz</td>
<td>10kHz</td>
<td>10kHz</td>
<td>40kHz</td>
<td>1MHz</td>
<td>30MHz²</td>
<td>30MHz²</td>
</tr>
<tr>
<td><strong>Electric field [V/m] (min) (typical)</strong></td>
<td>1V/m</td>
<td>1V/m</td>
<td>1V/m</td>
<td>1V/m</td>
<td>1V/m</td>
<td>0,1V/m³</td>
<td>see opt. PBS2</td>
</tr>
<tr>
<td><strong>Electric field [V/m] (max) (typical)</strong></td>
<td>2.000V/m</td>
<td>2.000V/m</td>
<td>5.000V/m</td>
<td>5.000V/m</td>
<td>5.000V/m</td>
<td>20kV/m</td>
<td>see opt. PBS2</td>
</tr>
<tr>
<td><strong>Magnetic field [Tesla] (min) (typical)</strong></td>
<td>10nT</td>
<td>10nT</td>
<td>1nT</td>
<td>1nT</td>
<td>1nT</td>
<td>1pT³</td>
<td>see opt. PBS2</td>
</tr>
<tr>
<td><strong>Magnetic field [Tesla] (max) (typical)</strong></td>
<td>100µT</td>
<td>100µT</td>
<td>100µT</td>
<td>100µT</td>
<td>100µT</td>
<td>2mT³</td>
<td>see opt. PBS2</td>
</tr>
<tr>
<td><strong>Magnetic field [Gauss] (min) (typical)</strong></td>
<td>100µG</td>
<td>100µG</td>
<td>10µG</td>
<td>10µG</td>
<td>10µG</td>
<td>10G³</td>
<td>see opt. PBS2</td>
</tr>
<tr>
<td><strong>Magnetic field [Gauss] (max) (typical)</strong></td>
<td>1G</td>
<td>1G</td>
<td>1G</td>
<td>1G</td>
<td>1G</td>
<td>20G³</td>
<td>see opt. PBS2</td>
</tr>
<tr>
<td><strong>Analog input [V] (min) typical</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2µV</td>
<td>2µV</td>
<td>200nV³</td>
</tr>
<tr>
<td><strong>Analog input [V] (max) typical</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>200mV</td>
<td>200mV</td>
<td>2V³</td>
</tr>
<tr>
<td><strong>RBW (resolution bandwidth) (min)</strong></td>
<td>1Hz</td>
<td>1Hz</td>
<td>1Hz</td>
<td>1Hz</td>
<td>1Hz</td>
<td>0,3Hz</td>
<td>0,3Hz</td>
</tr>
<tr>
<td><strong>RBW (resolution bandwidth) (max)</strong></td>
<td>1kHz</td>
<td>3kHz</td>
<td>30kHz</td>
<td>100kHz</td>
<td>300kHz</td>
<td>1MHz</td>
<td>1MHz</td>
</tr>
<tr>
<td><strong>Demodulator</strong></td>
<td>-</td>
<td>-</td>
<td>AM</td>
<td>AM</td>
<td>AM/FM</td>
<td>AM/FM</td>
<td>AM/FM</td>
</tr>
<tr>
<td><strong>Units (additional units via PC software)</strong></td>
<td>V/m, T, G</td>
<td>V/m, T, G</td>
<td>V/m, T, G</td>
<td>V/m, T, G, A/m</td>
<td>V/m, T, G, A/m</td>
<td>V, V/m, T, G, A/m</td>
<td>V, dBV</td>
</tr>
<tr>
<td><strong>Detector</strong></td>
<td>RMS</td>
<td>RMS</td>
<td>RMS/MinMax</td>
<td>RMS/MinMax</td>
<td>RMS/MinMax</td>
<td>RMS/MinMax</td>
<td>RMS/MinMax</td>
</tr>
<tr>
<td><strong>Internal Datalogger (size). Expandable to 1MB (option 001)</strong></td>
<td>-</td>
<td>-</td>
<td>64K</td>
<td>64K</td>
<td>64K</td>
<td>64K</td>
<td>harddisk</td>
</tr>
<tr>
<td><strong>FFT resolution (points)</strong></td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>1024</td>
<td>1024</td>
<td>1024</td>
</tr>
<tr>
<td><strong>Lowest Sample Time</strong></td>
<td>50mS</td>
<td>50mS</td>
<td>50mS</td>
<td>50mS</td>
<td>10mS</td>
<td>10mS</td>
<td>10mS</td>
</tr>
<tr>
<td><strong>Accuracy (typical)</strong></td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Highlights</strong></td>
<td> </td>
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<tr>
<td><strong>Real-time remote control via USB</strong></td>
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<tr>
<td><strong>Integrated electric (E) &amp; isotropic magnetic (H) sensor/antenna</strong></td>
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<tr>
<td><strong>3D, 2D or 1D mode switchable (only magnetic field sensor)</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>Calibration setup (selected antenna)</strong></td>
<td> </td>
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</tr>
<tr>
<td><strong>Exposure limit calculation according to ICNIRP, BGV B11, BlnSchV etc.</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td><strong>Extended full ICNIRP range</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Suitable for Pre-Compliance test</strong></td>
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<tr>
<td><strong>Real-time limit calculation with simultaneous percentage display</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>Vector power measurement (l/Q) and True RMS</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>Enhanced DFT spectrum analysis</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>Simultaneously displays frequency and signal strength</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>Up to 3 marker (showing both frequency and field strength)</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>unlimited</td>
</tr>
<tr>
<td><strong>Jog Dial controlled manual marker readout</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>key &amp; touchpad</td>
</tr>
<tr>
<td><strong>Linear or logarithmic spectrum display (log10, log100, log1000)</strong></td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>unlimited</td>
</tr>
<tr>
<td><strong>Automatic reference level adjustment (switchable)</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>Hold function</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>unlimited</td>
</tr>
<tr>
<td><strong>Free of charge firmware update (via Internet)</strong></td>
<td>-</td>
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<td>-</td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>Supports programming of custom P-Code &amp; C++ based custom software</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>High performance DSP (Digital Signal Processor)</strong></td>
<td> </td>
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<td> </td>
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<td> </td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>Large, high resolution multifunctional LCD (95mm)</strong></td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td>14&quot; TFT</td>
</tr>
<tr>
<td>** Spectrum display (51x25 pixel)**</td>
<td> </td>
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<td> </td>
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<td> </td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>High resolution 50 segment bargraph (trend display)</strong></td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td>Analyzer sw</td>
</tr>
<tr>
<td><strong>Enhanced, much sharper Aaronia LCD display (3d generation)</strong></td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td>14&quot; TFT</td>
</tr>
<tr>
<td><strong>Integrated battery charger (supports our optional LiPo battery)</strong></td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td> </td>
<td>XFR charger</td>
</tr>
<tr>
<td><strong>Internal speaker</strong></td>
<td>Piezo</td>
<td>Piezo</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Please continue on next page
### Connectors / Interface

<table>
<thead>
<tr>
<th>Function</th>
<th>NF-1010</th>
<th>NF-1010E</th>
<th>NF-3010</th>
<th>NF-3020</th>
<th>NF-5010</th>
<th>NF-5030</th>
<th>NF-XFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA input (f) with high impedance</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>USB 1.1/2.0</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Audio output (2.5mm jack)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Charger plug (max. 15V)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Jog Dial (easy usage of menu, marker and volume control)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>1/4” tripod connector</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Included in Delivery

- Integrated electric (E) & isotropic magnetic (H) sensor/antenna
- SPECTRAN 1300mAh rechargeable battery (integrated)
- Battery charger and power supply incl. international adapter set
- Aluminum carrying case with foam protection
- Detailed English manual (on CD)
- Analyzer Software for MAC-OS, Linux and Windows (on CD)
- SMA tool

### Available Options (extra charge)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>NF-1010</th>
<th>NF-1010E</th>
<th>NF-3010</th>
<th>NF-3020</th>
<th>NF-5010</th>
<th>NF-5030</th>
<th>NF-XFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>1MB memory expansion</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>005</td>
<td>12Bit DDC for ultra high sensitivity</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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### Optional Accessories

- USB Cable (Special Version)                  | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- 3000mAh Lithium Polymer (LiPo) Power-Battery | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- Car Power Adapter (operate or charge via cigarette lighter) | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- Outdoor Rubber Protection (perfect for outdoor usage) | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- Pistol Grip / Miniature Tripod              | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- Aluminum Tripod (big version)               | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- DC-Blocker (protects the input against DC voltage) | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- 20dB Attenuator (offers a higher maximum voltage up to 2V) | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- PBS1 Near Field Probe Set (passive)         | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- PBS2 Near Field Probe Set (active, incl. UBBV2 preamplifier) | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- ADP1 Active Differential Probe (conductive measurement) | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- GEO10 Vibrationsensor (4Hz-1kHz)            | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- GEO14 Vibrationsensor (10Hz-1kHz)           | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- Calibration Certificate                    | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |
- Heavy Plastic Carrying Case                | ✔       | ✔        | ✔       | ✔       | ✔       | ✔       | ✔      |

1. Preliminary specifications dated 01.07.2011. Range, sensitivity and accuracy can change depending on frequency, setup, antenna and used parameters. Precision data is based on Aaronia's calibration-reference under specific test conditions. Unless otherwise stated, these specifications are according to the following reference conditions: Ambient temperature 22±3°C, relative air humidity 40% to 60%, continuous wave signal (CW), RMS detection.

2. Option 006 offers a range of 100g-6G (10xT-600xT). You can "zero" the static field sensor (Option 006) by using our "Zero Gauss" chamber.

3. Option 010 offers a range of 100µG-6G (10nT-600µT). You can "zero" the static field sensor (Option 006) by using our "Zero Gauss" chamber.

4. Specifications subject to change without further notice, errors excepted. Subject to our most current terms and conditions.
Available Options for Spectran NF-50xx series

**Option 001: 1MB memory expansion**

Available for: NF-5010, NF-5030. This 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.

Order/Art.-No.: 180

**Option 005: 12Bit Dual DDC frequency filter**

Available for: NF-5030 (inclusive at NF-XFR). This cutting edge 12Bit DDC frequency filter allows extremely fast, crisp and accurate frequency filtering, while at the same time drastically enhancing the sensitivity. As an example, magnetic fields can (depending on their frequency) still be measured down to 1pT (0.001nT), compared to 0.1nT without the option. Option 005 is therefore a MUST-HAVE for professional measurement, especially considering its attractive price.

Order/Art.-No.: 186

**Option 006: 3D sensor for static magnetic fields**

Available for: NF-5030. This top-grade geomagnetic field sensor provides the ability to conduct geophysical assessments and measurement of geomagnetic field anomalies. However, it can also be used to turn the instrument into a Gaussmeter, measuring the difference between field strengths (static fields) of permanent magnets. Thanks to its ISOTROPIC (3D) construction, measurements can be performed in all three spacial dimensions AT ONCE (or seperately). Sensitivity is about 10nT-600µT.

Order/Art.-No.: 188

**Option 008: 20MHz frequency extension**

Available for: NF-5030 (inclusive at NF-XFR). This 20MHz frequency extension option vastly enhances the frequency range of the NF-5030. Amongst others, it brings the ADSL and 13.56MHz RFID frequency bands in range. What's more, we are already developing a PC-based analysis software for decoding RFID. The maximum frequency range of the NF-5030 without option 008 is 1MHz.

Order/Art.-No.: 179

**Option 009: 24Bit resolution for 3D static magnetic field sensor**

Available for: NF-5030. Option 006 provides a significantly higher resolution for the optional 3D magnetic field sensor for measurement of static magnetic fields (option 006); it is ABSOLUTELY mandatory for geomagnetic surveys. The standard resolution of the NF-5030 without option 009 is 14Bit.

Order/Art.-No.: 178

**Option 010: 30MHz frequency extension**

Available for: NF-5030. 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
**Recommended accessories for Aaronia Spectrum Analyzer**

### 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!

*Order/Art.-No.: 243*

![Heavy Plastic Carrycase PRO](image)

### 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 (esp. for directional measurement) and even fixed installation of the unit. STRONGLY recommended for PC use!

*Order/Art.-No.: 280*

![Pistol grip / miniature tripod](image)

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

*Order/Art.-No.: 281*

![Aluminum tripod](image)

### Calibration Certificate
Available for all SPECTRAN® units. With detailed calibration sheet.

*Order/Art.-No.: 786*

![Calibration Certificate](image)

### 3000mAh LiPo Power-Battery
Offers a MUCH higher runtime of your SPECTRAN (up to 400%). Strongly recommended for autonomic measurement! The 1300mAh standard-battery will be replaced.

*Order/Art.-No.: 254*

![3000mAh LiPo Power-Battery](image)

### USB Cable (Special Version)
To connect your Spectran to the PC. Special version with high performance EMC-ferrite. STRONGLY recommended for PC use!

*Order/Art.-No.: 774*

![USB Cable (Special Version)](image)

### Car power adapter for mobile use
With power-LED. For charging batteries or operating our units in your car, including special plug.

*Order/Art.-No.: 260*

![Car power adapter for mobile use](image)

### Protection rubber
Protect and personalize your SPECTRAN with a sturdy rubber case and keep it scratch-n-dent free. Allows full access to all functions.

*Order/Art.-No.: 290*

![Protection rubber](image)

### 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*

![DC-Blocker (SMA)](image)
## Frequency Overview SPECTRAN Spectrum Analyzer

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## Frequency Overview HyperLOG and BicoLOG Antennas and Probes

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### Frequency Overview

- **UHF**
- **SHF**
- **EHF**
References

User of Aaronia Antennas and Spectrum Analyzers (Examples)

Government, Military, aeronautic, astronomic

- 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)

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

Research/Development, Science and Universities

- Deutsches Forschungszentrum für Künstliche Intelligenz, Kaiserslautern
- Universität Freiburg
- Indonesien Institute of Sience, Indonesien
- Max-Planck-Institut für Polymerforschung, Mainz
- Los Alamos National Laboratory, USA
- University of Bahrain, Bahrain
- University of Florida, USA
- Universität Erlangen, Erlangen
- University 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
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