



Rev 1.7
02.08.2011

Low cost handheld RF spectrum analyzer SPECTRAN® HF-2025E measures up to 2,5GHz

RF measurement device for the novice at an unbeatable price



HF-4040 Rev.3



HF-4040 Rev.3

"Unbeatable price.."

"Particularly Aaronia's very powerful (especially considering their price) SPECTRAN handheld spectrum analysers caused much excitement."
(Markt&Technik 20/2005)

References / examples of proof:

- ◆ West Virginia University, USA
- ◆ University Strasbourg, France
- ◆ Athen University, Greece
- ◆ Universität München, Germany
- ◆ Wilkinson Sword, Solingen, Germany
- ◆ WDR, Köln, Germany

Specifications

SPECTRAN® HF-2025E Rev.3

- ◆ Frequency range: 700MHz to 2,5GHz*
- ◆ Typ. level range: -80dBm to 0dBm*
- ◆ Lowest possible SampleTime: 100mS
- ◆ Typ. accuracy: +/- 4dB*
- ◆ Filter bandwidth (RBW) Min: 1MHz
- ◆ Filter bandwidth (RBW) Max: 50MHz
- ◆ High performance DSP (Digital Signal Processor)
- ◆ USB 2.0 interface
- ◆ 50 Ohm SMA RF input (F)
- ◆ Direct RF spectrum display
- ◆ Frequency and signal strength display
- ◆ High resolution multifunction display
- ◆ Exposure limit calculation according to DIN/VDE 0848
- ◆ AM demodulation
- ◆ DECT & TimeSlot Analyser
- ◆ REALTIME PEAK power detector (option)
- ◆ Advanced HOLD function
- ◆ Switchable PULS mode
- ◆ Main display in dBm, V/m, A/m or dB μ V (switchable)
- ◆ ADDITIONAL display in W/m² with AUTORANGE (pW, μ W etc.)
- ◆ Incl. battery pack and charger
- ◆ Incl. HyperLOG 7025 EMC antenna
- ◆ Incl. elegant aluminum carrycase
- ◆ Dimensions (L/W/D): (260x86x23) mm
- ◆ Weight: 420gr
- ◆ **Warranty: 10 years**



Application examples Spectran® HF-2025E Spectrum Analyzer

Analysis and measurement of:

- ◆ GSM900
- ◆ DECT
- ◆ GSM1800
- ◆ UMTS
- ◆ WLAN
- ◆ Microwave oven
- ◆ WiFi

Description



Conforming to standards and exact

RF Measurement 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.

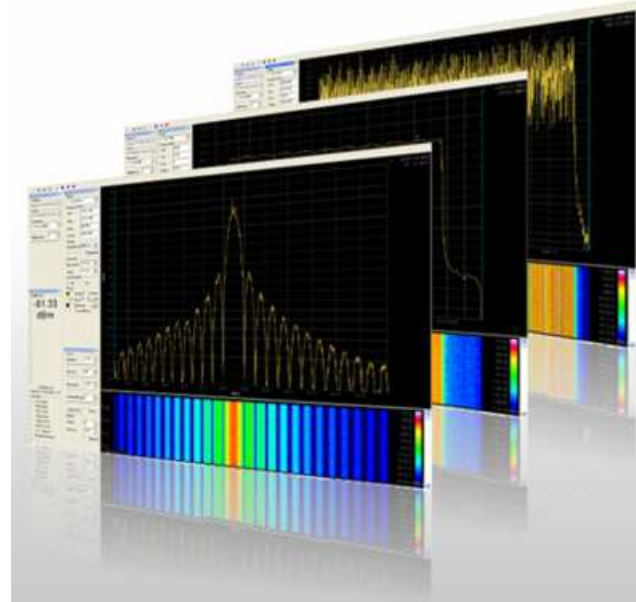
The highly complex calculations in spectrum analysis incl. exposure limit calculation is being performed, unnoticed in the background, by a high-performance DSP (digital signal processor). This ultra-fast processor even allows REAL-TIME display in all EMF (LF) versions of the SPECTRAN® series.

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

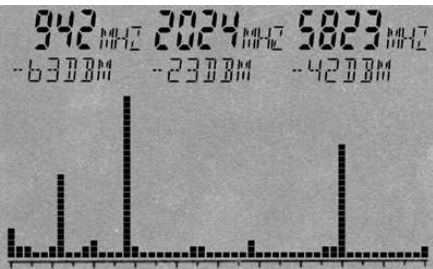
Professional PC analysis software (free download)

The professional PC analysis software demonstrates SPECTRAN's vast capabilities. This software can be used in addition to SPECTRAN and offers an incredible amount of features. All this for FREE. Just download it from our homepage, and your PC turns into a real spectrum analyser with a huge display:

- ◆ **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-clicking!
- ◆ **High-resolution 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, sweep time 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!
- ◆ Independent 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.
- ◆ Freely programmable key assignments and labels for SPECTRAN measurement devices.
- ◆ 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.



AMAZING: The PROFESSIONAL PC software for SPECTRAN. Get to know SPECTRAN's real capabilities!



RF spectrum display and automatic triple multi-marker display on the digital screen of SPECTRAN® (Screenshot)



Well visible: "Frequency hopping" of a DECT portable phone between 1890 and 1900 MHz (Screenshot)

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 percent!), 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-bandwidth (depending on frequency). Hence, even the novice can perform exposure limit calculations ACCORDING TO STANDARDS without having to use complex tables and calculators.



The included Transportcase

北京格网通信技术有限公司

地址：北京市海淀区花园路2号牡丹创业楼411室
电话：010-8223 7606 传真：010-8223 7609
网址：www.bjmesh.com

邮编：100191

Spectrum ANALYSIS

The perfect analysis:

Professional RF 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® screenshots on the left). The height of the individual bars represents the corresponding signal strength. For the 3 strongest signal sources, SPECTRAN® automatically displays the exact 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.

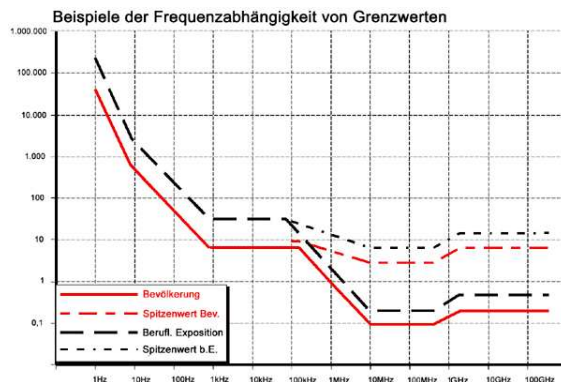
In the RF spectrum shown, a frequency range of approx. 100MHz to 7GHz from left to right is being analysed (full sweep). During analysis, the Auto Marker feature has determined - fully automatic - three main signal sources:

Signal#1=942MHz (GSM communications) at -63dBm

Signal#2=2024MHz (UMTS) at -23dBm

Signal#3=5832MHz (802.11a WLAN) at -42dBm

Thanks to its DIRECT frequency display of the individual signal sources, a doubtless mapping of measurement results to the corresponding radiation sources is possible.



Graphic display of frequency-dependant exposure limits.



SPECTRAN® displays exposure limits both as percentage as well as a bargraph display.

INCLUDED WITH DELIVERY

- ◆ RF spectrum analyzer SPECTRAN HF-2025E
- ◆ HyperLOG 7025 EMC/directional antenna
- ◆ 1300mAh power battery with charger
- ◆ Pistol grip with miniature tripod mode
- ◆ SMA toolset
- ◆ SMA adapter
- ◆ 1m SMA cable
- ◆ Sturdy aluminum-design carrycase (with custom padding!)
- ◆ Exhaustive manual with lots of basic information, hints and exposure limit tables