SPECTRAN®

EMF Spectrum Analyzer

Exclusive North American Distributor: Kaltman Creations LLC
651 Amberton Crossing, Suwanee, Georgia 30024 USA Tel:678-714-2000 www.RFAnalyzers.com

SPECIFICATIONS base unit*	GENERAL		PROFESSIONAL		ENGINEERING	
	NF-1010*	NF-1010E*	NF-3010*	NF-3020*	NF-5010*	NF-5030*
Frequency range Min	10Hz	10Hz	10Hz	10Hz	**1Hz**	**1Hz**
Frequency range Max	10kHz	100kHz	400kHz	400kHz	**1MHz**	**30MHz****
Range electrical field [**V/m**] (typical) Min (1D)	1V/m	1V/m	0,1V/m	0,1V/m	0,1V/m	0,1V/m
Range electrical field [**V/m**] (typical) Max (1D)	2kV/m	2kV/m	5kV/m	5kV/m	5kV/m	**20kV/m**
Range magnetic field [**Tesla**] (typical) Min (3D!)	10nT	10nT	1nT	1nT	1nT	**1pT****
Range magnetic field [**Tesla**] (typical) Max (3D!)	100µT	100µT	100µT	100µT	100µT	**2mT**
Range magnetic field [**Gauss**] (typical) Max (3D!)	100µG	100µG	10µG	10µG	10µG	**10nG****
Range magnetic field [**Gauss**] (typical) Max (3D!)	1G	1G	1G	1G	1G	**20G**
Filter bandwidth Min	5Hz	5Hz	5Hz	5Hz	1Hz	1Hz
Filter bandwidth Max	10kHz	100kHz	300kHz	300kHz	**1MHz**	**1MHz**
Accuracy Base unit (typical)	5%	5%	5%	3%	3%	3%
Vector power measurement (I/Q) and **True RMS**	-	-	✓	✓	✓	✓
FEATURES						
Standards conformant exp. limits (ICNIRP, BGV B11, BImSchV etc.)	-	✓	✓	✓	✓	✓
Extended full ICNIRP range	-	-	-	-	-	✓
Isotropic (3D) AC magnetic field measurement	✓	✓	✓	✓	✓	✓
ADVANCED HOLD mode (HOLD function)	-	✓	✓	✓	✓	✓
INTERNAL data logger (long-term measurements)	-	-	✓	✓	✓	✓
FLASH memory including firmware update (over the Internet)	-	16K	64K	64K	64K	64K
"Clear text" signal identification with direct frequency display	-	✓	✓	✓	✓	✓
Integrated battery charging circuitry	-	✓	✓	✓	✓	✓
Internal speaker	Piezo	Piezo	✓	✓	✓	✓
Audio demodulation	AM	AM	AM	AM	AM&**FM**	AM&**FM**
DISPLAY						
Fast FFT or DFT spectrum analyses	-	✓	✓	✓	✓	✓
Limit calculation with simultaneous percentage display	✓	✓	✓	✓	✓	✓
X, Y, Z Axis display or 3D Vectorproduct (only M.-Field)	-	✓	✓	✓	✓	✓
Main display in V/m, Tesla, Gauss or A/m (switchable)	-	✓	✓	✓	✓	✓
High-resolution 50 segment bargraph (trend display)	✓	✓	✓	✓	✓	✓
3fold marker display (ex. 3x field strength & frequency at once)	-	✓	✓	✓	✓	✓
INTERFACES / CONNECTORS						
Fast USB 2.0 Interface (PC connection)	-	✓	✓	✓	✓	✓
Audio output	✓	✓	✓	✓	✓	✓
DC input (max 15V) for external power supply	✓	✓	✓	✓	✓	✓
External ultra sensetive signal input (SMA input) with max. 0.2V	-	-	✓	✓	✓	✓
Jog Dial (Multi-functional dial) for "one-hand operation"	-	-	✓	✓	✓	✓
OPTIONS (extra charge)						
Option 001 (1MB memory expansion)	-	-	-	-	✓	✓
Option 005 (**12Bit DDC** / offers **ultra high sensetivity** up to 1pT)	-	-	-	-	-	✓
Option 006 (Measure 3D **static magnetic fields**)*	-	-	-	-	-	✓
Option 010 (Expanded **frequency range up to 30MHz** e.g. RFID)	-	-	-	-	-	✓
Option 009 (**Ultra high 24Bit resolution** on static magnetic fields)	-	-	-	-	-	✓
INCLUDED ACCESSORIES in addition to the base unit						
Aaronia 7.2V high-performance battery (1300mAh) + charger	-	✓	✓	✓	✓	✓
Aluminum design transport case incl. padding inlays	Option	✓	✓	✓	✓	✓
Professional PC analysis software (Windows, downloadable)	-	✓	✓	✓	✓	✓

* Preliminary specifications as of 05.12.2008. The NF series is available with latest Beta-Firmware. ALL options are available for this series too. The Beta-Firmware is in continuous development. Some functionality may still be limited and not fully to specifications (Beta-Status). By regularly checking our homepage for updates, you can always keep your measurement device up-to-date. As soon as version 1.0 of the firmware is released, all functionality and features will be fully available.
Option 006 range: 100µG-6G, you can "zero" this sensor by using our optional "Zero Gauss" chamber.
Range, sensetivity and accuracy can change depending on frequency, sensor and used parameters. Precision values are based on Aaronia calibration-reference under specific test conditions. Unless otherwise stated, these specifications apply for the reference condition: ambient temperature 22±3°C, relative air humidity 40% to 60%, continuous wave signal (CW), RMS detection.
** Standard: 1MHz. Only with option 010 up to 30MHz. / Standard: 0,1nT. Only with option 005 up to 1pT.

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SPECIFICATIONS base unit*	GENERAL		PROFESSIONAL		ENGINEERING		
	HF-2025	HF-2025E Rev.3	HF-4040 Rev.3	HF-4060 Rev.3	HF-6060 V4	HF-6080 V4	HF-60100 V4
Frequency range Min	700MHz	700MHz	100MHz	100MHz	10MHz	10MHz	**1MHz**
Frequency range Max	2.5GHz	2.5GHz	2.5GHz	4GHz	**6GHz**	**8GHz**	**9.4GHz***
Optional PEAK **Power-Meter** (Maximum usable frequency)***	-	-	2.5GHz	4GHz	**6GHz**	**8GHz**	**10GHz**
AVG Noise Level(1Hz)*	-80dBm	-80dBm	-90dBm	-90dBm	-135dBm	-145dBm	-155dBm
NEW AVG Noise Level(1Hz)* **with PreAmp***	-	-	-	-	**-150dBm**	**-160dBm**	**-170dBm**
Maximum Level	+0dBm	+0dBm	+0dBm	+0dBm	+10dBm	+10dBm	**+40dBm****
Filter bandwith (**RBW**) **Min**	1MHz	1MHz	100kHz	100kHz	10kHz	**3kHz**	**1kHz**
Filter bandwith (**RBW**) **Max**	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz
NEW **EMC-Filter** (RBW) 9kHz, 120kHz, 5MHz; 20MHz; 40MHz	-	-	-	-	✓	✓	✓
Accuracy Base unit (typical)	+/-4dB	+/-4dB	+/-3dB	+/-3dB	+/-2dB	+/-2dB	**+/-1dB**
Vector power measurement (I/Q) and **True RMS**	-	-	✓	✓	✓	✓	✓
Lowest possible **SampleTime**	100mS	100mS	100mS	100mS	**1mS**	**1mS**	**1mS**
FEATURES							
Standards-conformant exposure limits (ICNIRP, BGV B11, BImSchV etc.)	-	✓	✓	✓	✓	✓	✓
Extended **full ICNIRP range**	-	-	-	-	-	-	✓
Fast ZERO-SPAN sweep	-	-	✓	✓	✓	✓	✓
PULSE mode	✓	✓	✓	✓	✓	✓	✓
ADVANCED HOLD mode (HOLD function)	-	-	✓	✓	✓	✓	✓
INTERNAL **Data Logger** (long-term measurements)	-	-	✓	✓	✓	✓	✓
TIME-SLOT-Analyzer	-	✓	✓	✓	✓	✓	✓
Internal speaker	Piezo	Piezo	Piezo	✓	✓	✓	✓
Configurable antenna and cable calibration data	-	✓	✓	✓	✓	✓	✓
Audio demodulation	AM	AM	AM	AM&**FM**	AM&**FM**	AM&**FM**	AM&**FM**
DISPLAY							
DIRECT RF spectrum display	✓	✓	✓	✓	✓	✓	✓
Exposure limits display with simultaneous percentage display	-	✓	✓	✓	✓	✓	✓
Main display in dBm, V/m, A/m or dBμV (switchable)	-	✓	✓	✓	✓	✓	✓
ADDITIONAL display in W/m² with AUTORANGE (**p**W, **μ**W etc.)	-	✓	✓	✓	✓	✓	✓
High-resolution bargraph (trend display)	-	✓	✓	✓	✓	✓	✓
3fold marker display (ex. 3x power & frequency **at once**)	-	✓	✓	✓	✓	✓	✓
INTERFACES / CONNECTORS							
Fast USB 2.0 Interface (PC connection)	✓	✓	✓	✓	✓	✓	✓
Audio output (2.5mm MONO)	✓	✓	✓	✓	✓	✓	✓
DC input (max. 15V) for external power supply	✓	✓	✓	✓	✓	✓	✓
50 Ohm SMA RF input (F)	✓	✓	✓	✓	✓	✓	✓
Jog Dial (multi-function dial) for “one-hand operation”	-	✓	✓	✓	✓	✓	✓
OPTIONS (extra charge)							
Option 001 (1MB **memory expansion**)	-	-	-	✓	✓	✓	✓
NEW **Option 002** (high sensitiv 0.5ppm **TCXO timebase**)	-	-	-	-	-	-	✓
NEW **Option 020** (internal, switchable **15dB PreAmplifier**)	-	-	-	-	✓	✓	✓
Option 20x (REALTIME broad band **Power-Meter**)	-	2,5GHz	4GHz	6GHz	6GHz	8GHz	10GHz
INCLUDED ACCESSORIES in addition to the base unit							
Miniature SMA rod antenna	✓	✓	✓	✓	✓	✓	✓
HyperLOG EMV directional LogPer antenna (model)	**7025**	**7025**	**7040**	**7060**	**7060**	**6080**	**60100**
Aaronia 7.2V high-performance battery (1300mAh) + charger	✓	✓	✓	✓	✓	✓	✓
Professional PC analysis software (Windows, downloadable)	✓	✓	✓	✓	✓	✓	✓
Aluminum design transport case	✓	✓	✓	✓	✓	✓	✓

* **Further REALTIME spectrum analysers up to 18GHz are already in development. Please contact us for further details!** Preliminary specifications as of 05.12.2008. The V4 series is available with latest Beta-Firmware. All options are available for this series too. The Beta-Firmware is in continuous development. Some functionality may still be limited and not fully to specifications (Beta-Status). By regularly checking our homepage for updates, you can always keep your measurement device up-to-date. As soon as V1.0 of the firmware is released, all functionality and features will be fully available.Range, sensetivity and accuracy can change depending on frequency, antenna and used parameters. Precision values are based on Aaronia calibration-reference under specific test conditions. Unless otherwise stated, these specifications apply for the reference condition: ambient temperature 22±3°C, relative air humidity 40% to 60%, continuous wave signal (CW), RMS detection. V4 Noise Level @5,555GHz. Maximum sensitivity of Rev.3 units: -90dBm @2,2GHz.

** Internal: +20dBm. External (with optional 20dB precision attenuator): +40dBm

*** Depending on frequency the optional PEAK power meter offers sensetivity up to -50dBm and max. +10dBm input power with an extremely fast response time.

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SPECTRAN® - Our affordable EMC / environmental measurement devices

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