High-frequency EMR-Meters 1/2

The high-frequency (HF) meters offered feature **several technical innovations**, some of them patented. They all come equipped with a **directional measuring antenna**; this antenna helps you to locate the source of high-frequency (HF) radiation, whether it is a cell phone tower, a base station of a DECT- standard cordless telephone, a wireless LAN or some other source of continuous or pulsed microwave radiation. Which leads right to the most valuable asset of this series of high-frequency meters: with these meters you can measure **continuous radiowaves and microwaves** as well as **pulsed microwave radiation** (as used e. g. by GSM, DECT, Bluetooth, W-LAN and TETRA), and also **"noise-like" signals** as used by 3G (UMTS) mobile standards; in addition the "professional series" meters HF58B-r and HF59B do allow accurate measuring of **radar pulses**.

For some meters an **isotropic antenna** is available as an option (HFE-meters); this isotropic antenna allows the measuring of fields from as low as 27 megahertz. All meters cover the frequency range from 800 megahertz to 2500 megahertz, the professional series meters can be used up to 3300 megahertz, with additional tolerance. All high-frequency meters measure True-RMS; this means the power (power flux density) of the HF-signal is measured directly, and not calculated from another physical value measured. This direct measurement of the power eliminates a possible source of error. The tolerances are given for each meter, so one can actually calculate the measuring error and the high and low tolerance limits. Results of measurement are displayed in microwatts per square meter; recommended exposure limits as suggested by the "**Standard of building biology: methods of testing**" are included in the manual.

All meters are equipped with an **audio signal feature**. The volume of this sound signal is proportional to the field-strength measured. All meters (except HF32D) are also equipped with an audio-analysis feature, which is proportional to the low-frequency modulation of the high-frequency signal. This feature helps to identify the form of the momentarily dominating high-frequency signal, which helps to locate the different sources of microwave radiation. All meters are shipped with an extensive manual in English and German. The manual includes a detailed description of the measuring process, well explained with graphics and pictures.

If you are interested in one of the meters send us an e-mail to contact@emrshieldingsolutions.com.au. We will advise you which meter is best used for your area of interest, and you can even get an e-mail copy of a manual to decide which meter is the best one for your specifi c application.

High-frequency EMR-Meters 2/2

	General analysis			Professional analysis		
HF-Analyser	**HF32D**	**HF35C**	**HF38B**	**HF58B**	**HF58B-*r***	**HF59B**
Frequency range						
800 MHz - 2,500 MHz (=2.5 GHz)	✓	✓				
800 MHz - 2,500 MHz (up to 3,300 MHz with additional tolerance)			✓	✓	✓	
27 MHz* - 2,500 MHz (up to 3,300 MHz with additional tolerance)						✓
* for basic instrument, with active isotropic antenna UBB27 (optional); included is a logarithmic periodic antenna from 800 MHz						
Measurement ranges (33 dB per range)						
10 - 19,990 µW/m²			✓	✓	✓	✓
1 - 1,999 µW/m² (~ -50dBm minimum resolution)	✓	✓				
0.1 - 199,9 µW/m² (~ -60dBm minimum resolution)		✓	✓	✓	✓	✓
0.01 - 19,99 µW/m² (~ -70dBm minimum resolution)			✓	✓	✓	✓
Guide Value ("no abnormity") for sleeping places (SBM): pulsed 0.1 µW/m² continous 1 µW/m²						
Accuarcy						
Basic accuracy incl. tolerance for linearity (800 MHz - 2,500 MHz, incl. tolerance for antenna curve waviness)	+/- 6 dB	+/- 6 dB	+/- 6 dB	+/- 4,5 dB	+/- 4,5 dB	+/- 3 dB
Zero-offset and rollover	+/- 9 digits	+/- 9 digits	+/- 7 digits	+/- 5 digits	+/- 5 digits	+/- 5 digits
Yagi-Antenna, logarithmic-periodic: 800 MHz - 2.5 GHz (- 3.3 GHz with add. tolerance); use either mounted to the instrument or with the included antenna cable. Patent pending AZ 103 07 085.0)	✓	✓	✓	✓	✓	✓
Active, quasi-isotropic ultra-broadband antenna UBB27 (from 27 MHz)						option
LC-Display, 3,5-digits in µW/m²	✓	✓	✓	✓	✓	✓
Features for acoustic analysis						
Tone signal proportional to fieldstrength (piezo-buzzer)	✓	✓	✓	✓	✓	✓
Tone signal proportional to frequency for audio-analysis of demodulated pulsed radiation		✓	✓	✓	✓	✓
Volume control (for speaker / earphones)		✓	✓	✓	✓	✓
Display of total broadband HF-power-density (patent pending AZ 103 17 805.8)						
Peak value (pat. pend.)	✓	✓	✓	✓	✓	✓
Average value (patent DE19809784)		✓	✓	✓	✓	✓
Peak hold (HF58B / HF59B: with reset button, variable droop rate)			✓	✓	✓	✓
Display of only the pulsed portion of the signal (amplitude-modulated fraction)				✓	✓	✓
for average - / peak - / peak hold - value (switchable, as for the total value)				✓	✓	✓
RADAR / UMTS - optimization						
Ultrahigh video-bandwidth of 2 MHz, for precise response to RADAR-bursts down to 0.25 microseconds minimum pulse-width and for UMTS-FDD (3G) (max. -1 dB)					✓	✓
Extremely short response time in peak hold mode					✓	✓
Band blocking filter ("trap") to determine dominating frequencies (externally mounted)						
Variable Trap VF2 (20 dB blocking), VF4 (40 dB blocking)		opt.	opt.	opt.	opt.	opt.
Signal output						
DC-output for logging purposes				✓	✓	✓
Audio output (modulated AC-signal) for PC / earphones / spectrumanalyser				✓	✓	✓
Additional, *normalised* AC-output (mod. signal) for spectrumanalyser / FFT-Analyser					✓	✓
Power supply (Battery or NiMH-accumulator incl.)						
9-volt AMg-E-block battery	✓	✓	✓			
9-Volt NiMH-high-power-accupack (8 x AAA-cells, easily accessable)				✓	✓	✓
AC-adaptor (for charging accumulator or as external power supply)				✓	✓	✓
Up to 100 mA power supplied at Antenna-input socket (e.g. for active antennas)		✓	✓	✓	✓	✓
Life expectancy for battery or accumulator	10-12h	6-7h	6-7h	7-8h	7-8h	7-8h
Transportation case						
Plastic case (ca. 27 x 18 x 6 cm) with burled foam padding for HF32D / HF35C incl. antenna	opt.	opt.				
Plastic case (ca. 33 x 27 x 16 cm) specifically cut foam for measurement instruments (all types) incl. antenna			opt.	opt.	opt.	opt.
Sturdy aluminium case (brushed aluminium, ca. 52 x 40 x 21 cm) with flexible compartments	opt.	opt.	opt.	opt.	opt.	opt.

High-frequency EMR-Meters 1/1

HFR-4

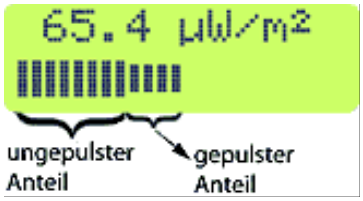
The HFR-4 is a brand new development; this meter allows for measuring signals from **1 MHz frequency to 11 GHz frequency.**

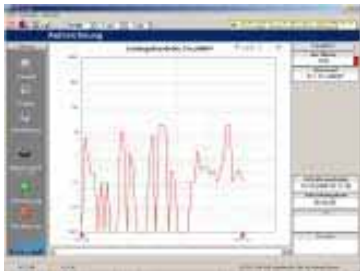
The meter comes with **two antennas included**: large antenna for frequencies from 800 Mhz to 2.4 GHz; smaller antenna for measuring of frequencies from 2.4 GHz to 11 GHz.

Developed using state of the art German technology; development of meter supported by University scientists; meter functions independently certified; function for audio analysis of signal included.

Technical data

- **Frequency range:** 1 MHz to 6 GHz (with limited accuracy from 1 MHz to 11 GHz).
- **Power flux density / measurement range:** 0.1 microwatts per square meter to 10,000 microwatts per square meter (or 6 mV/m to 2000 mV/m).
- **Accuracy of meter / error margin:** +/- 3 dB.
- **Functions:** Signal: peak, peak hold, mean; adjustable speaker volume; values given in microwatt per square meter or in mV/m (selectable).
- **Weight:** 300 gramms.
- **Dimensions:** 85 mm x 117 mm x 55 mm (millimeters).
- **Power:** 9-V battery, or recharchable battery; 2 high-power rechargeable batteries plus charging unit included!





Low-frequency EMF-Meters 1/2

The low-frequency electric and magnetic field meters that we offer set new standards for value in this class. All meters are **combined electric and magnetic field meters** (only exception: the ETC-meter) and offer the advantage of not only measuring the magnetic field, but also the electric field. Low-frequency electric fields are being reported more and more frequently in private homes and office buildings. This is due to the extensive use of plasterboards (made of gypsum) and flake boards (made of wood chips) as materials for walls in building construction. Walls made of these materials pose little or no resistance to the propagation of low-frequency electric fields, and Building Biologists now recommend measuring of those fields.

The entry-level meters offer **great product quality and good accuracy at a fair price**. The high end meters offered are ideal instruments for the professional user; they offer an extremely wide frequency response and an extended measurement range. Results of measurement are given in volts per meter (electric field) and nanotesla (magnetic field). A conversion table from nanotesla to milligauss is included. Recommended exposure limits as suggested by the "**Standard of building biology: methods of testing**" are included in the manual. All meters come equipped with an audio signal feature. The volume of this audio signal is proportional to the field-strength measured. All meters are shipped with an extensive manual. The manual includes a detailed description of the measuring process, well explained with graphics and pictures.

If you are interested in one of the meters send us an e-mail to contact@emrshieldingsolutions.com.au. We can advise you which meter is best used for your area of interest, and you can even get an e-mail copy of a manual to help decide which meter is the best one for your specifi c application.

Low-frequency EMF-Meters 2/2

	Specifications										Features						
	Eff. Range 1- 2000 nT/Vm	Eff. Range 0,1-200,0 nT/Vm	Tolerance +/-2 %,+/-20 digits	Tolerance +/-2%, +/-14 digits	Tolerance +/-2%, +/-7 digits	16 Hz to 2 kHz (-2 dB)	16 Hz to 30 kHz (-2 dB)	5 Hz to 100 kHz (-2 dB)	5 Hz to 100 kHz (-1 dB)	5 Hz to 400 kHz (-1 dB)	16,7 Hz / 50Hz / 2kHz filter	Auto-power-off	Offset-testing-feature	AC / DC Output	Capacity-check for battery	Rechargeable battery, AC-adaptor, charge-control	
ME 3030B	X		X			X						X					General Analysis
ME 3830B	X			X				X				X					General Analysis
ME 3840B	X			X				X			X	X					Professional Analysis
ME 3551A	X	X		X			X					X	X	X	X	X	Professional Analysis
ME 3851A	X	X			X				X		X	X	X	X	X	X	Professional Analysis
ME 3951A	X	X			X					X	X	X	X	X	X	X	Professional Analysis
ETC 3951A*	X*	X*			X					X	X	X	X	X	X	X	Professional Analysis
EMT 3951A**	X	X			X					X	X	X	X	X	X	X	Professional Analysis

* ETC 3951A: Instrument for measuring electrical LF-fields with genuine TCO-sensor incl. certificate of calibration

** EMT 3951A: Like ETC, plus additional internal sensor for magnetic fields (1 axis)

Accessories for ME 3851A to EMT3951A:

Certificate of calibration

Additional display unit for convenient measurement

Plastic case with foam interior (only for ME meters ending with ..51A)

TCO-light: "slip-on" - sensor with TCO-diameter (including bag)

Digital instrument for "Body voltage" measurement: **VC840 TRMS**,
according to SBM Building Biology standard, incl. accessories