

Selective and broadband low frequency field analysis

- ▲ New solution for isotropic measurements in the 9 kHz – 30 MHz range
- ▲ Electric Fields from 0.02 to 1000 V/m
- ▲ Magnetic Fields from 0.6 mA/m to 300 A/m
- ▲ Built-in Frequency Spectrum Analysis
- ▲ Built-in rechargeable battery
- ▲ Optical Fibre connection to PC



EHP-200

EHP200 E&H FIELD ANALYZER

The E-H fields analyser model EHP-200 has been designed for accurate isotropic measurements of both electric and magnetic fields in the 9 kHz - 30 MHz frequency range, with no or minimum perturbation of the fields to be measured.

The field sensors and the electronic measuring circuitry are accommodated into robust housing, only 92 x 92 x 109 mm in size.

Separate 3_axis and total values (peak and average) are measured with exceptional flatness and linearity of ± 0.3 dB. Results are expressed in V/m, A/m, μ T, mW/cm², W/m².

The EHP-200 features built-in spectrum analysis with maximum BW resolution of 1 kHz for detailed measurements of E and H field intensity vs. frequency, with dynamic range of 80 dB. The built-in rechargeable Li-Ion battery provides up to 8 hours of continuous operation.

The EHP-200 is controlled by the PC or by the display unit 8053-Display through the optical fibre link, and measurements are displayed in real time. An auxiliary input is available for measuring the frequency spectrum of external signals.

APPLICATIONS

Broadcasting Surveillance

The EHP-200 is particularly useful in measuring the actual fields generated by long, medium and short wave broadcast transmitters, to ensure safety around the sites of large antennas, to control the transmitted power in the actual radiation direction, to test the functionality of the transmitting antennas and to identify the borders between near and far field regions.

Wave impedance

As a unique feature, the PC program calculates the field wave impedance by dividing the total value of the E-field by that of the H-field. This method is particularly suitable for evaluating the non-linear, scattered near-field region of large broadcast antenna systems.

Fields generated by Metal detectors and RFID's

Fields generated by a number of devices using RF to detect the presence of metals, to identify objects, anti-theft systems etc. can now be accurately and easily measured.



EHP-200 CONTROL SOFTWARE

For Windows™ Operating Systems

All measuring functions are user-programmable: Resolution Bandwidth Filter, centre frequency and frequency span, preamplifier, measuring units, etc.

The Marker function is used to measure the frequency and amplitude. It features Highest, Next and Previous Peak functions, while the Marker Centre function sets the display centre frequency at the current marker frequency value.

The Marker also features the Delta Peak function for relative measurements.

The Wide Band field value is calculated with reference to the measured frequency span.

To immediately evaluate the measured levels, Limit Lines can be created and displayed on the graphical window.

The measured data can be saved as either text or bitmap, and the limits can also be saved and recalled.

THE 8053-DISPLAY UNIT

The EHP-200 can also be easily operated through the accessory 8053-Display Unit, with the following limitations:

- no spectrum display
- no wave impedance computing
- min. frequency start of: 50 kHz

Span setting:

- min. span: 300 kHz
- start <500 kHz: max. span = 500 kHz
- start >500 kHz: max. stop = 30 MHz

The following functions are available:

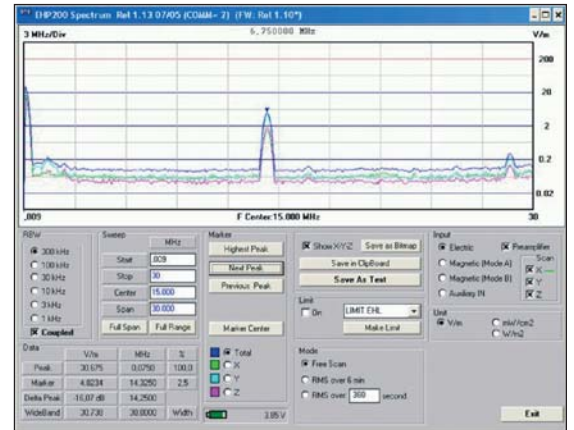
Field selection (E, H), 3-axis display, Min-Max-RMS, Logger, Alarms.

By the Data logger mode of the 8053-Display Unit, the User can record the measurements and save them in a file in the memory of the 8053-Display Unit.

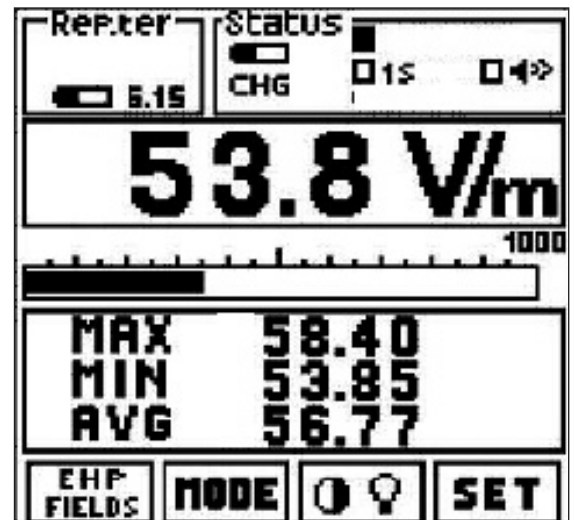
All collected data files are progressively numbered and contain:

- Time duration
- Logger settings
- Date and time when the measurement began
- Average value
- Value of each single item of data stored
- User's comment.

In order not to have an influence on the field to be measured, the communication between the EHP-200 Analyser and the 8053-Display Unit is made through a rugged optical fibre cable.



*Blue Line: total field; Green Line: X-axis;
Cyan Line: Y-axis; Magenta Line: Z-axis*



The 8053-Display

TECHNICAL SPECIFICATIONS

EHP-200 E&H FIELD ANALYSER					
RF Specifications	Electric Field	Magnetic Field Mode A	Magnetic Field Mode B	AUX Input	
Frequency Range	9 kHz / 30 MHz	9 kHz / 3 MHz	300 kHz / 30 MHz	9 kHz/30 MHz	
Measurement Range	@ 10 kHz RBW @ preamp. ON	0.1 / 1000 V/m 0.02 / 200 V/m	0.03 / 300 A/m 6 mA/m / 60 A/m	3 mA/m / 30 A/m 0,6 mA/m / 6 A/m	-80/0 dBm -94/-14 dBm
Dynamic range	> 80 dB				
Sensitivity	@ 10 kHz RBW @ preamp. ON	0,1 V/m 0,02 V/m	30 mA/m 6 mA/m	3 mA/m 0,6 mA/m	-80 dBm -94 dBm
Resolution	0.01 V/m	1 mA/m	0.1 mA/m	0.01 dB	
Flatness	±0.5 dB@20 V/m 0.1/27 MHz	±0.8dB@166A/m 0.15/3 MHz	±0.8dB@53mA/m 0.3 / 27 MHz	±0.4dB@-20 dBm	
Anisotropy	±0.8 dB @ 1 MHz				
Linearity	0.5 dB @ 1 MHz from Full Scale to -60 dB FS				
Typical accuracy @ 1MHz	±0.8 dB @ 20 V/m	±0.8 dB @ 53 mA/m	±0.8 dB @ 53 mA/m	±0.3dB@-10 dBm	
Frequency span width	6 kHz to 30 MHz				
Resolution bandwidth	1 kHz - 3 kHz - 10 kHz - 30 kHz - 100 kHz - 300 kHz				
Rejection to E- Field	---	> 20 dB	> 20 dB	---	
Rejection to H- Field	> 20 dB	---	---	---	
Calibration	Internal EEPROM				
Temperature error	0.02 dB/°C				
General Specifications					
Preamplifier	14 dB, selectable ON/OFF				
Reading Units	V/m, A/m, mT, mW/cm ² , W/m ²				
Optical link	Optical Fibre, max. length 80m				
Internal battery	3.7 V – 3.6 Ah Li-Ion, rechargeable				
Battery operation	> 8 hours (recharging time: approx. 8 hours)				
External supply	10 ÷ 15 VDC, 500 mA				
Firmware update	Via optical fibre				
Operating temperature	-10 °C to 50 °C				
Storage temperature	-20 °C to 70 °C				
Dimensions and weight	92 X 92 X 109 mm -- 550g				

8053-Display Unit Specifications		
Functional Specifications	Electric Field	Magnetic Field
Display	Backlight LCD, 72 x 72 mm, 128 x 128 pixels	
Interfaces	Optical Fibre; RS-232	
Internal memory	32700 measurements	
Functions	RMS/AVG, 30 s up to 30 min.; alarm 0-100 % f.sc.	
Data logger modes	Sampling (1, 10 to 900 s); data change; over limit; manual;	
Clock	Internal real time clock	
Internal battery	Rechargeable NiMH batteries (5 x 1,2 V)	
External DC supply	10 / 15 V, about 500 mA	
Operational and Storage temperature	Operating -10 °C / 40 °C	Storage -20 °C / 70 °C
Size and Weight	108 x 240 x 50 mm	1.07 kg

Optional accessories	
FO-8053/10	Optical Fibre cable, 10 m
FO-8053/20	Optical Fibre cable, 20 m
FO-8053/40	Optical Fibre cable, 40 m
FO-8053/80	Optical Fibre cable, 80 m
TR-02A	Wooden Tripod 1 ÷ 2 m with soft carrying bag
TT-01	Telescopic mast (120 – 420 cm) with carrying bag
8053-Display	Display Unit
Kit EHP-200 Palm	incl. RS232 adapter and SD-RAM with PMM application SW

Standard accessories supplied with EHP-200:

- FO-8053/10 Optical fibre cable, 10 m;
- 8053-SC Soft carrying bag (can also hold the 8053 Display)
- 8053-BC Battery Charger
- 8053-OC Optical to RS232 converter
- Plastic pole, 50 cm
- Mini tripod
- EHP-200 PC software
- Operating Manual, Test & Calibration Certificates
- 8053-SC Soft carrying bag (can also hold the 8053 Display)

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