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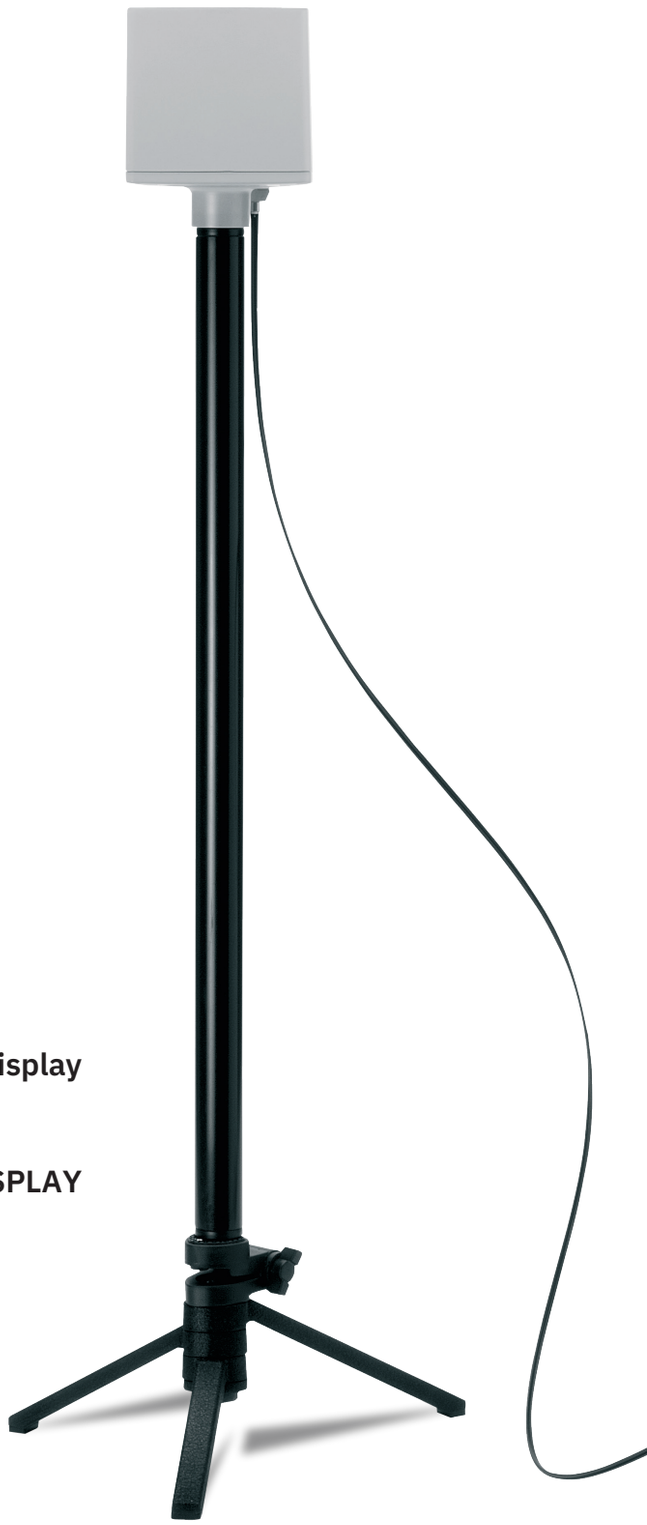
ELECTRIC AND MAGNETIC FIELD ANALYZER

EHP-200A / EHP-200AC

Selective and broadband high frequency field analysis



- Powerful receiver for selective and wideband measurements in all 3 spatial directions
- Isotropic measurements
  in the 9 kHz to 30 MHz range EHP-200A
  in the 3 kHz to 30 MHz range EHP-200AC
- Electric Fields
  from 0.02 to 1000 V/m
- Magnetic Fields
  from 0.6 mA/m to 300 A/m EHP-200A
  from 6 mA/m to 1000 A/m EHP-200AC
- Built-in Frequency Spectrum Analysis
- Built-in rechargeable Li-Ion battery
- Optical interface for remote control and result display avoids distortion of the field under test
- Control and display using a PC or the 8053 DISPLAY Broadband Field Meter

E&H FIELD ANALYZER

The E-H field analyzer EHP-200 was designed for accurate isotropic measurements of both electric and magnetic fields in the 3 kHz - 30 MHz frequency range, with no or minimum perturbation of the fields to be measured.
Field sensors and electronic measuring circuitry are fitted into robust housing,only 92 x 92 x 109 mm in size. Separate 3 axis and total values (actual and average) are measured with exceptional flatness and linearity of 0.5 dB. Results are expressed in V/m, A/m, µT, mW/cm2, mG, W/m2, Ohm, % (percentage of the selected limit). When the auxiliary input is selected measurement results are expressed in mV or dBm.
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 12 hours of continuous operation.
The EHP-200 is controlled by the PC through the optical fibre link, and measurements are displayed in real time. Additional input is available to measure the frequency spectrum of external signals.

APPLICATIONS

Safety in occupational environments

According to several safety regulations worker exposure should not exceed specified limits.
Emission from several industrial machines operating in the high frequency range could be potentially dangerous to the operator.
In the near field region near that kind of apparatus accurate measurements of both electric and magnetic fields should be taken to demonstrate compliance to safety standards.
EHP-200, equipped with both electric and magnetic field sensors within a small housing, is the ideal solution to perform accurate measurements and spectrum analysis.

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 power transmitted in the radiation direction, to test transmitting antenna functions and identify borders between near and far field regions.

Wave impedance

As a unique feature, the PC program calculates 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 measured easily and accurately.

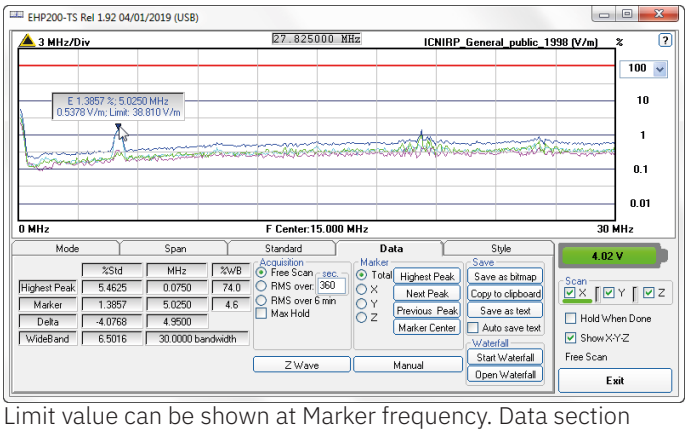
EHP200-TS APPLICATION SOFTWARE

The developed EHP200-TS software allows the user to control analyzers such as EHP-200 through a personal computer. The optical cable coming from the analyzer (Max lenght: 40m) can be easily connected to the PC by the provided optical to USB converter USB-OC. If longer distance is required the optional 8053-OC optical to RS232 converter can be used for optical fibre length up to 80m.
A user friendly graphical interface includes commands to set all parameters.

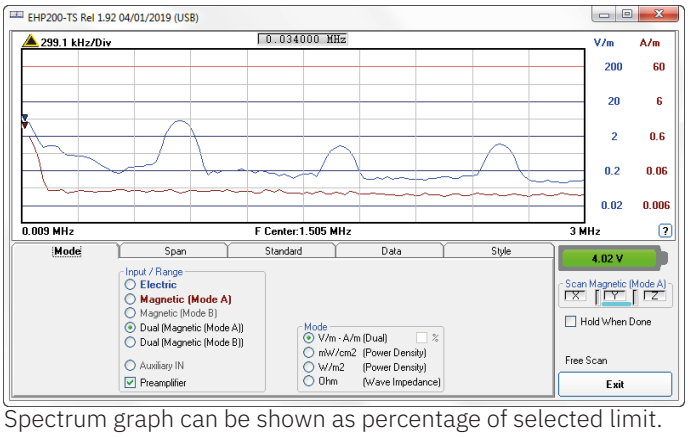
For intuitive operation, controls are grouped in five selectable sections while the spectrum measurement is continuously displayed and updated. Both electric and magnetic field spectrum measurements can be displayed on the same graph.
Sweep, Mode, Limit and Appearance sections are used to set all measurement and display parameters while Data section, with the Marker controls, shows numerical results like field strength and frequency at the marker and highest peak positions.
A wideband measurement is displayed too, including all contributions within the spectrum shown.
Several units, as well as percentage of limit, can be selected to display measurement results which, along with user comments, can be saved as either bitmap or text files to be easily imported in other software applications like spreadsheets or word processor.

Following the so called precautionary principle, many countries adopted their own reference limits. Besides having ICNIRP limits already available, EHP200-TS allows the user to create and save custom limits which may reflect local regulations as well as user specific needs.

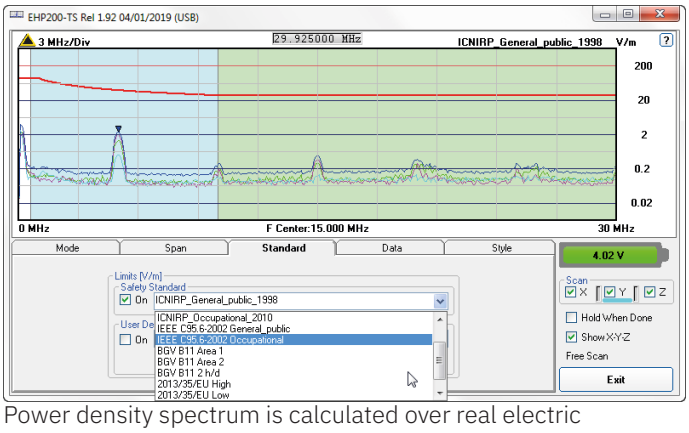
All values of the selected limit are always included, for reference, in any.bmp or .txt saved file. Availability of lightweight devices equipped with Windows™ operating system like Ultra Mobile PC and similar, makes EHP200-TS software the ideal solution to perform accurate on-site spectrum analysis with minimum effort and light equipment.



Limit value can be shown at Marker frequency. Data section shows numerical results. It includes Marker controls and Save buttons



Spectrum graph can be shown as percentage of selected limit. Mode section allows to select different acquisition modes as well as range, unit and linear or logarithmic frequency scale.



Power density spectrum is calculated over real electric and magnetic field measurement and therefore applicable to both far and near field conditions.

Technical specifications of the EHP-200A				
	Electric Field	**Magnetic Field Mode A**	**Magnetic Field Mode B**	**AUX Input**
Frequency range	9 kHz to 30 MHz	9 kHz to 3 MHz	300 kHz to 30 MHz	9 kHz to 30 MHz
Measurement range @10kHz RBW with preamplifier ON	0.1 to 1000 V/m 0.02 to 200 V/m	30 mA/m to 300 A/m 6 mA/m to 60 A/m	3 mA/m to 30 A/m 0,6 mA/m to 60 A/m	-80 to 0 dBm -94 to -14 dBm
Resolution	0.01 V/m	1 mA/m	0,1 mA/m	0.01 dB
Sensitivity @10kHz RBW with preamplifier 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
Flatness	0.5 dB 100 kHz to 27 MHz @ 20 V/m	0.8 dB 150 kHz to 3 MHz @ 166 mA/m	0.8 dB 300 kHz to 27 MHz @ 53 mA/m	0.4 dB 9 kHz to 30 MHz @ -20dBm

Technical specifications of the EHP-200AC				
	Electric Field	**Magnetic Field Mode A**	**Magnetic Field Mode B**	**AUX Input**
Frequency range	3 kHz to 30 MHz	3 kHz to 300 kHz	30 kHz to 30 MHz	3 kHz to 30 MHz
Measurement range @10kHz RBW with preamplifier ON	0.1 to 1000 V/m 0.02 to 200 V/m	0.1 A/m to 1 kA/m 20 mA/m to 200 A/m	30 mA/m to 300 A/m 6 mA/m to 60 A/m	-80 to 0 dBm -94 to -14 dBm
Resolution	0.01 V/m	1 mA/m	0.1 mA/m	0.01 dB
Sensitivity @10kHz RBW with preamplifier ON	0.1 V/m 0.02 V/m	0.1 A/m 20 mA/m	30 mA/m 6 mA/m	-80 dBm -94 dBm
Flatness	0.5 dB 100 kHz to 27 MHz @ 20 V/m	0.8 dB 5 kHz to 300 kHz @ 1 A/m	0.8 dB 30 kHz to 10 MHz @ 166 mA/m	0.4 dB 9 kHz to 30 MHz @ -20dBm

General specifications				
	Electric Field	**Magnetic Field Mode A**	**Magnetic Field Mode B**	**AUX Input**
EHP-200A Anisotropicity @1MHz EHP-200AC Anisotropicity @ 300kHz	0.8 dB			---
Rejection to E fields	---	>20 dB		---
Rejection to H fields	>20 dB	---		---
EHP-200A Linearity @1MHz EHP-200AC Linearity @300kHz	0.5 dB from FS to -60 dBFS (FS=Full Span)			
Dynamic range	>80			
SPAN	0 to FULL SPAN			
RBW	1 kHz, 3 kHz, 10 kHz, 30 kHz, 100 kHz, 300 kHz			
Measurement range	> 94 dB			
Calibration	internal E2PROM			
Temperature error	0.02 dB/°C			
Dimensions	92 x 92 x 109 mm			
Weight	550 g			
Preamplifier	selectable ON/OFF, 14dB			
Units	V/m, A/m, uT, mW/cm2, W/m2			
Internal battery	3.7 V - 5.55 Ah Li-Ion, rechargeable			
Operation	> 12 hours			
Recharging time	< 8 hours			
External supply	10 to 15 Vdc, I = approx. 560 mA			
Optical fiber connection	up to 40 m (USB-OC) up to 80 m (8053-OC)			
Firmware updating	through the optical link via EHP200-TS			
Self test	automatic at power on			
Operating temperature	-10°C to +50°C			
Storage temperature	-20°C to +70°C			
Enviromental protection	IP42			

ORDERING INFORMATION

Basic Unit	Part Number
EHP-200A	650.000.201
EHP-200AC	650.000.267
Standard Accessories	
- Soft carrying case - AC/DC battery charger with international plug adapters - FO-8053/10 optical fiber - FO-10USB optical fiber - USB-OC Optical converter - Plastic rod support - Small tripod - Software media EHP-200TS - Operating Manual - Certificate of calibration	
The following accessories can be ordered separately	**Part Number**
8053-CA, car adapter	650.000.058
8053-Display, broadband field meter	620.000.057
FO-8053/20 Cable, fiber optic 20 m	650.000.055
FO-8053/40 Cable, fiber optic 40 m	650.000.052
FO-8053/80 Cable, fiber optic 80 m	650.000.128
FO-20USB Cable, fiber optic 20 m	655.000.178
FO-40USB Cable, fiber optic 40 m	650.000.182
TR-02A, wooden tripod 1-2m with soft carrying bag	650.000.005
TT-01, telescopic mast (120-420 cm) with carrying bag	650.000.005
8053-CC, rigid case	650.000.059
8053-OC, Optical RS232 converter	650.000.062
8053-OC-PS, Power Supply	650.000.179

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