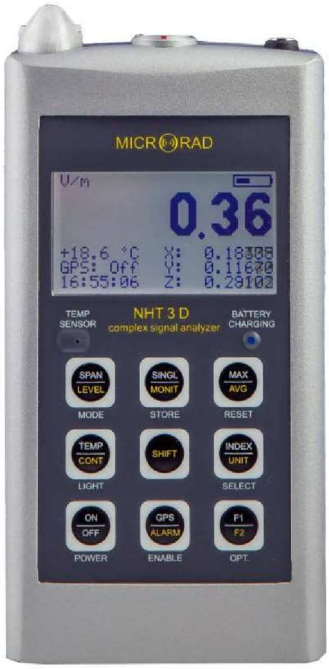
NHT 3D

Analyzer for Complex Signal: DC-40 GHz

Key features:



- Selective measurements for magnetic induction (H) and electric fields with any form factor
- Interchangeable probes
- Frequency range
  - Selective Mode: 0Hz - 400 KHz
  - Broadband Mode: 100kHz - 40GHz
- Time domain analysis (oscilloscope mode with automatic and manual trigger)
- Frequency domain analysis and FFT spectral analysis in real time up to 65.536 samples
- Dynamic Range >100 dB without range changing
- Selectable indexes available on the meter:
  - WP10 – Weighted Peak (Icnirp 2010 Health Physics 99:818-836-2010)
  - IB50 (Time domain Analysis CEI EN 62233)
- Selectable indexes via software:
  - WP10 – Weighted Peak (Icnirp 2010 Health Physics 99:818-836-2010)
  - II98 (Icnirp 1998 Health Physics 74:494-522-1998)
  - IB50 (Time domain Analysis CEI EN 62233)
  - IRSS (Frequency domain Analysis CEI EN 62233)

- Calculation and display of RMS, IRMS, Max, Min, Instant, Fmax
- Display screen which indicates safety threshold limits according to current safety standards in the public or the professional environment
- GPS receiver and temperature sensor available on board
- Power supply: Li-ion battery with over24 hours of operation time
- Transflective backlit screen
- Fiber optic communication (up to 40mt)
- Firmware updating directly by user

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Description:

NHT 3D is a high-performance handheld analyzer designed for measurement of electric and magnetic fields which are characterized by complex form factors in the frequency range DC÷400 kHz in selective mode, and 0÷40GHz in wide band mode.

Thanks to the interchangeability of the probes it is possible to configure the instrument for measurements in different environments and in full compliance with industry standards.

The Waves software provides a quick view of the main indexes and the trend of the field in the time and frequency domains through repeated acquisitions generating up to 65.536 samples. These acquisitions may be triggered manually or automatically.

The “Monitoring” operating mode function allows for the signals to be recorded to the non-volatile internal memory of the instrument from the probe. Thanks to this feature it is possible to download the data to a PC and extract the relevant information such as signal amplitude / frequency and indexes acquired during the monitoring.

This feature together with the instrument’s battery autonomy allows the user to perform monitoring tasks for over 24hours.

Main Areas of Application:

- **Energy**
- **Telecommunication (TLC)**
- **Medical**
- **Railway**
- **Automotive**
- **Military**

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Main reference standards:

NHT 3D can be used with probes which conform to the following standards / directives:

- *DIRECTIVE 2013/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 June 2013on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) (20th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) and repealing Directive 2004/40/EC*

- *CEI EN 50500 "Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure"*

- *CEI EN 62233 "Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure"*

- *CEI EN 62311 "Assessment of electronic and electrical equipment related to the restrictions for the electromagnetic fields (0 Hz - 300 GHz)"*

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Waves software

The Waves software allows the user to analyze the recorded data in both time domain and frequency domain as well as providing the user with real time processing and post processing capabilities.

During the real-time processing the oscilloscope function captures the signal in automatic or manual mode using a special trigger. The signals displayed can then be controlled or managed by way of a pan / zoom control.

The measurements are more easily interpreted by the use of a marker function which simultaneously provides the value of the level and frequency / time.

The same concept applies in the frequency domain where the user can insert the various masks of the curves required by the safety standards for the purpose of comparison.

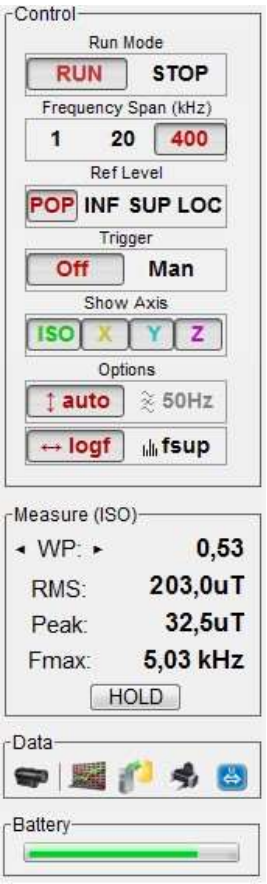
The Waves software allows the selection of four indexes: the weighted peak WP10, the index IB50, II98 and IRSS.

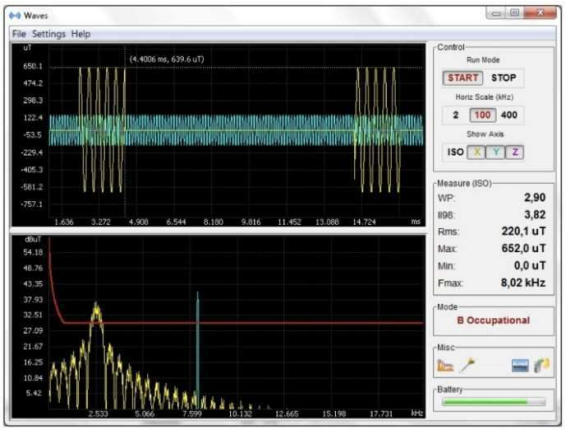
The readings always reported include: the average RMS, the RMS average normalized with respect to the frequency limit predominant (IRMS), the maximum and minimum value, the frequency with the highest spectral content (Fmax).

A special command provides the user with the possibility to filter spectral content in the frequency domain, eliminating that contents which have a value of less than 10% which is indicated below the red threshold line. This function is specifically requested by CEI EN 50500.

All information displayed can be exported either as images or as tabulated data.

The Waves software application can be installed on systems running Microsoft Windows XP, Windows Vista, Windows 7, 8, and 10 both 32 and 64 bit.





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Technical specifications:

FREQUENCIES	
Frequency range	Selective mode: DC – 400 kHz Wide band mode: 100 kHz – 40GHz
DISPLAY	
Type	Transflective LCD monochrome backlit
Size	2.8” 128 x 64 pixel
SAMPLING	
Rate	Up to 2 Msps
MEASUREMENT FUNCTIONS	
Measurement units	V/m, A/m, W/m^2, mW/cm^2, uT, mT (depending on the probe)
Display range	from 0,00001 to 999’999
Result types	Instantaneous ISO (short term r.m.s.) and Cartesian components; MAX of ISO instantaneous value
Time average	AVG: r.m.s. value in moving window selectable from 1s to 192min 24H moving average available for monitoring using software
Space Average	SPT: single storing average value
Normative mask weighted indexes	WP, Ib
Indexes on sw Waves	RMS, Peak, WP, Ib, II98, IRSS, IRMS, Fmax
Max Hold	Selectable on instrument and/or software
STORAGE MEMORY	
Single acquisition	1’024 non-volatile values
Monitoring	29 non-volatile sequences
Sampling buffer	65’536 memory points
INTERFACES	
Optical interfaces	Serial, full duplex, 10 Mbps
Probe interface	Plug-and-play auto detection, LEMO™ connector
GPS	
Integrated receiver	Sensibility -163dBm, 48 channels, L1 C/A code, update rate 4Hz
GENERAL CHARACTERISTICS	
Recommended calibration interval	24 months
Battery	Li-Ion rechargeable
Operation time	> 24 ore (backlight and GPS off).
Charging time	3 hours
Operating temperature	-10 °C to +50 °C
Storage temperature	-20 °C to +70°C
Humidity	5 to 95%, non-condensing
Size (h x w x d)	183 x 92 x 47 mm (without probe)
Weight	700 g (including batteries without probe)
Country of origin	Italy

NHT 3D

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NHT 3D kit: NHT 3D Meter

Optical / USB Adapter

Fiber Optic Cable (10mt)

AC/DC Power Supply

Calibration certificate ISO 9001÷2008
Standard IEEE 1309-2013

User Manual

Optional accessories:

Rigid Case

Wooden Tripod (1-2 m), including travelling case

Accredit Calibration certificate ISO 17025