



NHT 3DL

The new landmark meter for electromagnetic safety



MICR  RAD
Percipere Aestimare et Inquirere

NHT 3DL



The new reference meter for the European directive 2013/35/EU

NHT 3DL is a brand-new electromagnetic field analyzer equipped with the most advanced technology.

Powerful, light, compact, fully non-magnetic with over 24 hours of operating autonomy and virtually unlimited memory.

It incorporates an operator interface based on a high resolution color touch screen display.

The user interface can be remotely controlled via Wi-Fi and displayed on Windows operating systems (PC, tablet) as well as on Android devices (smartphone).

In compliance with the 2013/35/EU directive, our device performs the weighted peak measurement (WP10) in real time. It is equipped with a section for complex signal analysis composed of an FFT analyzer and a complete oscilloscope equipped with triggers and markers.

While in broadband mode, **NHT 3DL** can demodulate and rebuild pulse radar signals with a Tau up to 500 ns.

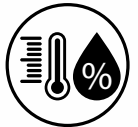


Remote connection on Android OS smartphones

Wi-Fi



Temperature Humidity



650 g



Touch Screen



Over 24 hours of autonomy



SD Card





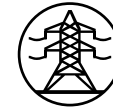
Application Sectors



NHT 3DL has been designed to measure electromagnetic fields in compliance with all the main international standards and regulations.

This device is able to adapt to future regulatory requirements using its completely reprogrammable system and structure.

NHT 3DL is ready for the 5G challenge, for the automotive/railway electric traction industry, the medical diagnostics field and wherever regulated industrial activities exist.



Energy



5G

Telecommunications/
5G Ready



Diagnostic Medicine



Welding



Static Magnetic Field



Electric Traction



Radar

All-in-One



Series 33 with electric and magnetic fields selective probe



Simultaneous view of the electric and magnetic fields (combined mode menu)

FFT component tracing of electric and magnetic fields (example: frequency 50 Hz)

Series 10 with magnetic field probe



Instantaneous R.M.S. value

Axial components

Graphic data logger of the WP10 index

Peak, average, maximum values

WP10 weighted index

1 MHz FFT in 4 bands
1/10/100/1,000 kHz
1,000 points per band



$$WP_{10} = \left| \sum_{i=1\text{Hz}}^{1\text{MHz}} \frac{A_i}{EL_i} \cos(2\pi f_i t + \theta_i + \varphi_i) \right| \leq 1$$

Series Ø with RF electric field probe



Graphic data logger of the instant R.M.S. value

Time statistics

Oscilloscope mode (time domain)

Series ER with Radar probe



Graphic data logger with instant peak value

Time statistics

Oscilloscope mode (time domain)

Spectrum Analyzer, Oscilloscope and Radar Pulse Detector



The **NHT 3DL** has been specifically designed to provide on board measurements of electromagnetic field characteristics in both time and frequency domains.

The bandwidth in both modes is 1 MHz.

Thanks to this solution it is possible to analyze and store complex waveforms with transitory/pulse features.

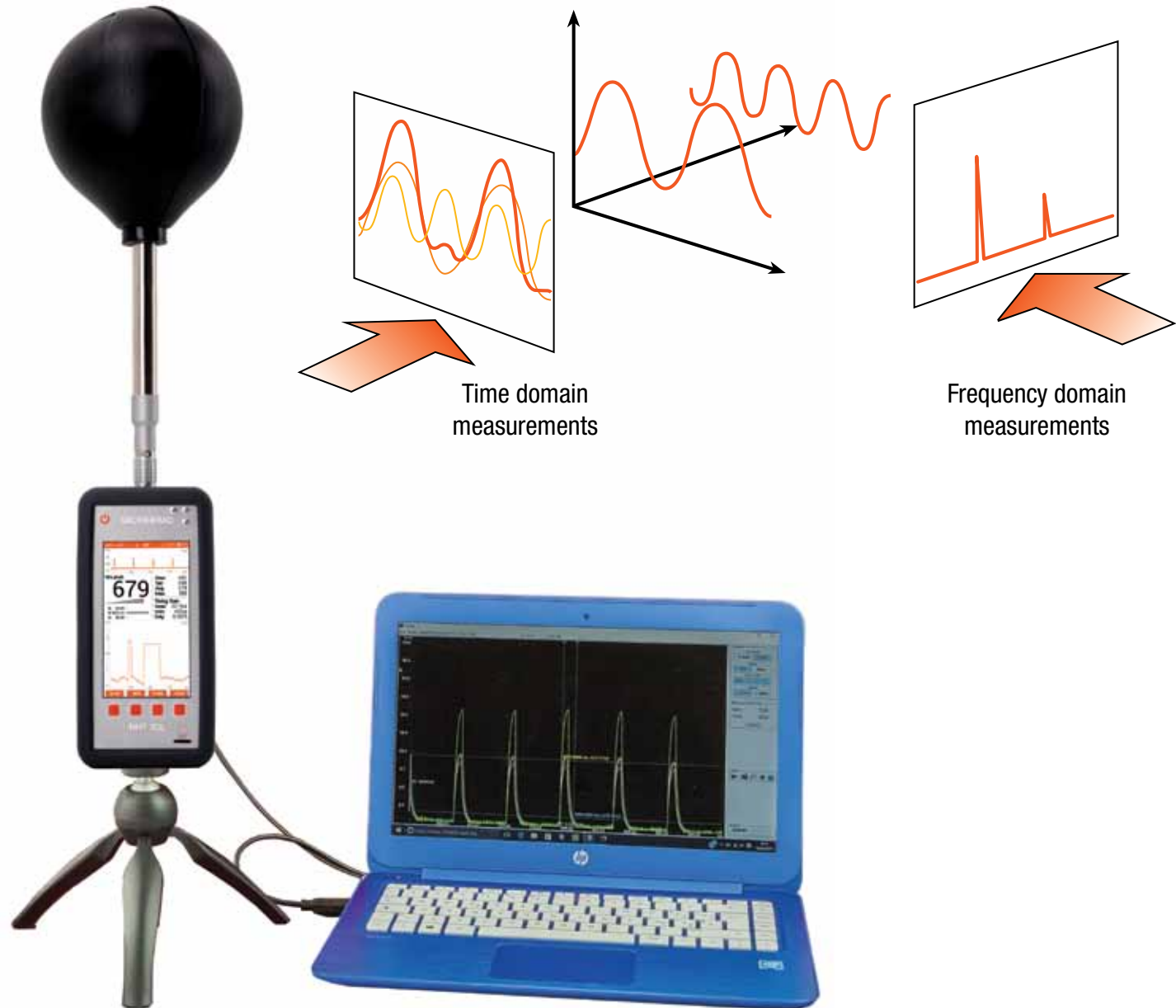
In the FFT Analysis mode, the device covers the 1 MHz band in four decades, 1/10/100/1,000 kHz with 1,000 points resolution per decade and automatic peak search markers.

In the Oscilloscope mode, it displays high-definition time frames with manual trigger function and Amplitude/Time marker.

In the broadband operating mode with RF probes from 100 kHz to 40 GHz, it demodulates the pulse signal base band up to 500 ns, with automatic measurement of Tau, PRF and Duty Cycle values.

This mode has been specifically designed for the Radar sources recognition and measurement.

NHT 3DL can be completely remotely controlled via fiber optic or wireless (Wi-Fi) connections.



Key Features

FREQUENCY	
Frequency range	Selective mode: DC – 1 MHz Wide Band mode: 100 kHz – 40 GHz
OPERATOR INTERFACE	
Graphic display	4.3" TFT, 272 x 480 pixel, 262K color
Backlight	LED, automatic or manual intensity adjustment, readable in the sun
Input devices	Resistive touch screen and keypad
MEASUREMENT FUNCTIONS	
Measurement units	V/m, kV/m, A/m, W/m ² , mW/cm ² , uW/cm ² , uT, mT, Gauss, % (depending on the probe)
Display measurement range	From 0,00001 to 999'999 (depending on the probe and on the selected unit)
Refresh period	4 times per second
Result types	r.m.s. instantaneous and peak, isotropic and individual Cartesian components
Time average	r.m.s. value on a moving window selectable from 1 sec to 24 hours
Space average	Single acquisitions average value
Weighted indexes	Weighted peak calculated according to the limit levels set by the guidelines Icnirp'98 for the population, Icnirp'10 for the working environments, and by the directive 2013/35/EU for the lower, upper, localized levels; main international standards
Max Hold	Display of the r.m.s. instantaneous value and of the maximum weighted index value
Combined mode	Simultaneous display of electric and magnetic field values (<i>Series 33</i> probes)
Time measurement	Minimum (up to 500 ns) and maximum pulse width measurement and duty cycle calculation
GRAPHIC FUNCTIONS	
Data Logger	Time diagram of the measured values, selectable among: r.m.s. instantaneous or peak, time average, weighted index, value of a component of the FFT at a certain selectable frequency. The window length can be set from 1 to 60 minutes
FFT (selective mode)	FFT with 1000 graphic points in the selected span (1 / 10 / 100 / 1000 kHz)
Oscilloscope	High resolution diagram of the signal in the time domain
Marker	Markers useful to highlight and to measure the values within the graphs
Trigger	Possibility to update the graphic diagram, in the oscilloscope mode, when certain conditions for exceeding a threshold occur, referring to the instantaneous r.m.s. field, peak field or weighted index

ACQUISITIONS	
Single/continuous acquisitions	Saving of all the data presented by the instrument, with a settable interval, between one memorization and the next, from 0.25 to 60 seconds
High resolution recording	High resolution signal recording for offline PC analysis
Timer	Setting the start time and/or duration of the acquisitions
Notes	Possibility to add text notes to each acquisition
Acquisition memory	Removable micro SD; with the provided memory over 2M of measurements in acquisition mode or over 200 seconds in high resolution mode are stored
INTERFACES	
USB interface	Micro USB connector for PC interfacing
Probe input	Plug-and-play connector, self-recognition of the probe
GENERAL SPECIFICATIONS	
Battery	LiPo rechargeable
Operation time	> 24 hours (backlight and external accessories off)
Charging time	3 hours
Battery level indication	Percentage indicator
Integrated sensors	Humidity (accuracy $\pm 2\%$) and temperature (accuracy $\pm 0.2^\circ\text{C}$)
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)	170 x 85 x 31 mm (without probe)
Weight	650 g (including battery without probe)
Country of origin	Italy
ACCESSORIES	
Included accessories	Power charger, protective silicone shell, USB cable, application software and user manual
Optional accessories	GPS sensor, Wi-Fi module, Fiber optic module, Power Bank module, ISO 9001 ÷ 2015 Standard IEEE 1309-2013 or ISO 17025 accredited certificate, tripod and rigid case



MICR RAD

Percipere Aestimare et Inquirere

Piazza delle Azalee, 13/14
05018 Orvieto (TR) - Italy

Tel: +39 0763.393291
Fax: +39 0763.394423

info@microrad.it
www.microrad.it



Technical information may be subject to change without notice