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narda 
Safety Test Solutions



Making sure of a healthy environment

Narda 24/7 EMF Monitor*





EMF: The invisible radiation that permeates our world

Rapid growth in complex infrastructures is taking place practically everywhere around the globe, primarily in wireless communication and power distribution networks. The result on the one hand is an increase in the equipment emitting electromagnetic radiation. On the other hand, it is more and more necessary for both national and international safety requirements to be met, particularly regarding the people who live and work in the vicinity of such equipment. Regardless of compliance with statutory safety requirements and the use of every technical facility, this has resulted in the general public having a tangible awareness of the possible risks. This feeling often develops into resistance to the implementation of projects involving such equipment, frequently leading to delays in installation as well as lengthy and costly litigation.

Narda gives you confidence

Narda Safety Test Solutions is the global leader in the development and production of equipment for measuring electric, magnetic, and electromagnetic fields. Our competence derives from years of experience in gathering know how in high-frequency and microwave technology, and from owning of all published patents relating to the measurement of these fields. The result of all this is a range of high quality measurement solutions tailored to each application, fully backed up by our management system that covers all areas and implements the requirements of the ISO 9001/2015 and ISO/IEC 17025 standards.



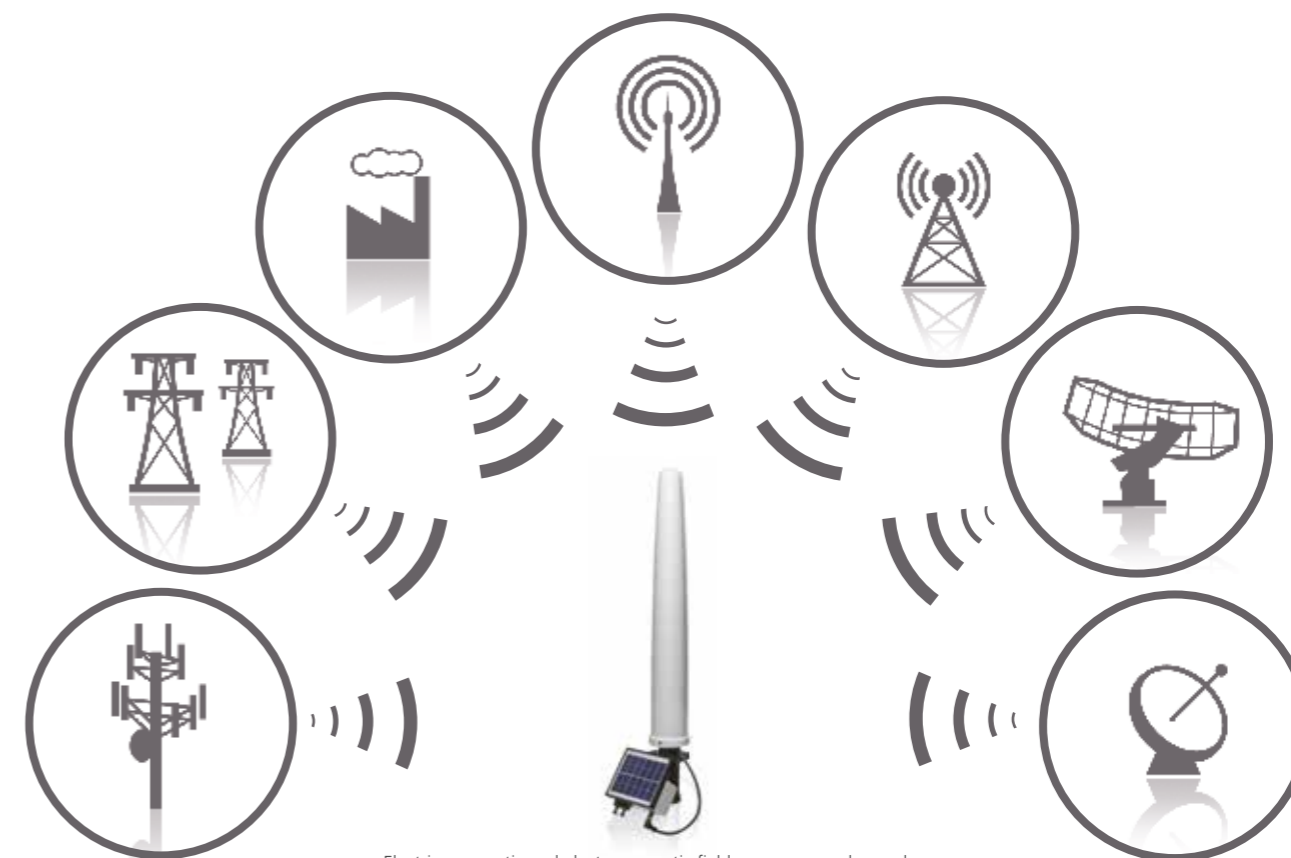
At home, at work, or at play: No matter where you may be, you are surrounded by electric, magnetic, or electromagnetic fields.

Guideline values and monitoring

Among other things, the authorities are charged with the institutional tasks of developing society and fostering growth in the economy. In all of this, though, the health and safety of the population must also be guaranteed. When putting up technical installations that radiate electromagnetic fields, the authorities can provide the public with precise and trustworthy measurement data right from the start. Comprehensive monitoring, evaluation and publication of the relevant data at an early stage in such cases demonstrates transparency and diligence to the general public, resulting in a feeling that the institutions involved can be trusted.

Particularly sensitive locations

These are where people live or normally visit, for example, private homes, workplaces, schools, hospitals, public places, and areas close to power lines and installations. Or also in the field of occupational safety, e.g. leakage measurements in industries such as semiconductor production or EMC halls. Narda EMF Monitors measure the EM field strengths directly on the spot and record the data permanently and securely. The measurement can be read out remotely at any time via the mobile network. Alarms can be sent to selected recipients if preset measurement limits are exceeded. In this way, Narda EMF Monitors achieve effective surveillance tailored to specific requirements, from selective checks through to blanket coverage measurement.



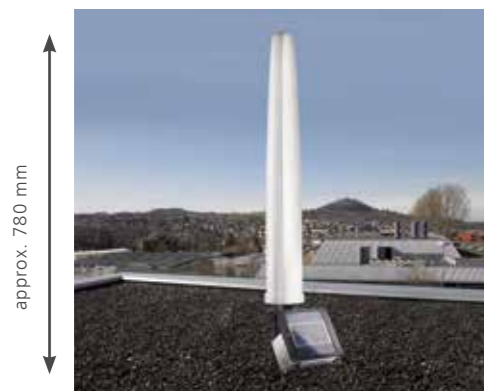
Electric, magnetic and electromagnetic fields occur everywhere where voltages are present or current flows. So not only telecommunications, TV and radio signal transmitters but also industrial plant and medical equipment emit electromagnetic fields. This is sometimes the desired effect, as in telecommunications for transmitting information, and at other times it is an unwanted side effect – from high voltage cables, for example.

* The Narda 24/7 EMF Monitor is also sometimes called the Narda 24/7 RF Monitor or Narda 24/7 EME Monitor



EMF monitoring

An EMF monitoring system is made up from a series of EMF monitors installed wherever the EMF presence needs to be assessed continuously or by long term observation. The EMF monitors store the data and report them using conventional mobile data communications at set time intervals to a central unit, e.g. PC or data server. The system size can range from a single location up to countrywide coverage. Narda EMF Monitors combine all the features that are essential for this purpose: autonomy, outdoor usability, mobility, robustness, and low operating costs.



approx. 780 mm

← Data transfer over mobile network →



Narda EMF Monitors not only ensure effective and reliable monitoring of electromagnetic fields, they also allow fast and easy access to the results via the Internet.

Four valuable approaches to EMF measurements

- **Sensitive locations approach:** Effective and useful monitoring of schools, hospitals, residential and public areas, and workplaces.
- **Anxiety approach:** EMF Monitors are installed wherever people feel they are unsafe.
- **Hot spot approach:** Critical sites identified in previous measurement campaigns are monitored over a predefined time period.
- **New installations approach:** Reduction of the risk that new installations may have an undesirable or uncontrolled impact on the environment.

All-round talents for exact results

Narda EMF Monitors can do more than just record and save measurement values at a specific location. Different models can also recognize which frequency bands and services are responsible for a particular radiation. For example, if several antennas are installed at one location, it is possible to distinguish between the various mobile services (GSM, UMTS, LTE, 5G) as well as between FM TV transmitters or short, medium and long wave broadcasters. It is therefore possible to determine for each individual EMF source whether the corresponding emission limit values are being adhered to, in addition to evaluating the effects on the environment. Narda EMF Monitors provide companies, authorities, and mobile telecoms providers with powerful instruments for performing long term on-site evaluations for their clients.

EMF monitoring systems already realized

Narda has the longest and widest-ranging experience in EMF monitoring, with systems adopted by the authorities of several countries around the world. This exclusive record of applications include systems covering the territory of an entire country.

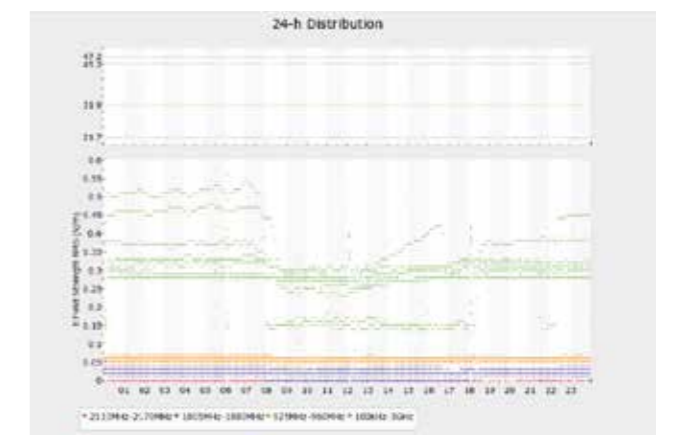
Graph of a 24-hour field strength measurement. The results show a time window of 24 hours as well as the values from several days depending on the time period selected by the user. The frequency range is shown in the lower section.

Complete solutions for remote control and web publishing

Narda offers a complete remote controlled and web-based solution with a simple, intuitive user interface. All results of EMF monitoring can be either kept confidential or made available on the Internet for free public consultation. Narda offers complete solutions with easy to follow user guidance. This includes all the information about the measuring station: Type, address, geographical position, and an image of the station for easy identification. The latest most important measurement results along with the average and maximum values and their comparisons with the fixed threshold values are shown next to this on the same page.

EMF Monitoring Highlights

- ▶ Intuitive user interface
- ▶ Measurement results accessible at any time using a web browser
- ▶ Results can be evaluated statistically
- ▶ Display of statutory limit values
- ▶ Stations selected easily using Google Maps



Complete program for all requirements

Narda EMF Monitors are equipped with exclusive, state-of-the-art sensors having high sensitivity, accuracy and reliability. Their robust, uncluttered construction is perfect for long-term outdoor installation. You can be certain to find the ideal solution for every area of application with Narda. And, you can depend on its reliability, thanks to our decades of experience coupled with cutting edge technology and backed up by our own certified calibration laboratory.



Car mounted solution: Easy installation on the vehicle roof with the help of the magnetic base.



AMB-Series

Minimum outlay, maximum result. Its broadband application is the optimum solution for technical superiority within a tight budget.

- 10 Hz - 60 GHz, broadband with interchangeable flat and shaped frequency response probes compliant with ICNIRP 1998, ICNIRP 2020, FCC 96 326 or SC 6 2015
- ITU-T K.83 compliant
- Simultaneous monitoring of electric and magnetic fields
- Quad-band probes for separating mobile networks as well as broadband measurements
- Solar panel provides independent power supply
- Long battery life and low power consumption, large memory and FTP for extended monitoring periods
- Rugged standalone units suitable for a majority of environments
- Tried and tested with more than 6000 stations in 50 countries in operation
- Dimensions: approx. (H x W x D) 730 x 112 x 112 mm

AMS-8061

In-depth monitoring and analysis of critical sites. The AMS-8061 combines a tried and tested measurement method with selective frequency range by using a three axis isotropic antenna.

- 100 kHz - 6 GHz, frequency selective
- ITU-T K.83 compliant
- Built in spectrum analyzer for monitoring user defined frequency bands
- Solar panel provides independent power supply
- Long battery life and low power consumption, large memory and FTP for extended monitoring periods
- Low weight and compact size for easy location changes
- Robust design suitable for a majority of environments
- Dimensions: approx. (H x W x D) 1480 x 1100 x 715 mm

Shaped Probes

Filters in the area monitor's shaped probes ensure that all services are evaluated according to the standard, e.g. directly compliant with ICNIRP 1998, ICNIRP 2020, FCC 96 326 or SC 6 2015 of their frequencies, which is a patented function unique to these devices. Weighting filters in the sensors simulate the frequency response of the standard and they ensure that the alarm thresholds (user settable) are correct over the entire frequency range.

- 0.5 MHz - 60 GHz, shaped frequency response
- Diode sensors
- Isotropic directional characteristic
- Modular use with Monitors AMB and SMARTS AMC
- Switchable standard



Continuous control with the app for mobile devices and smartwatches



Wall-mounted in action

SMARTS AMC (Area Monitor Compact)

Especially designed for indoor use like semiconductor industry or aircraft hangars to ensure workplace safety standards. The SMARTS AMC supports highly accurate measurements of non-ionizing radiation such as high- and low-frequency fields.

- 100 kHz - 90 GHz, broadband with interchangeable flat and shaped frequency response probes compliant with ICNIRP 1998, ICNIRP 2020, FCC 96 326 or SC 6 2015
- ITU-T K.83 compliant
- Lightweight, robust and compact solution
- Android, iOS, WearOS (smartwatch) and Windows apps
- Very high immunity up to 1200 V/m
- Perfect solution to equip a room with a continuous EMF monitoring system
- Short, middle and long-term monitoring
- Can be integrated with third party monitoring systems
- Wall or ceiling mounting possible
- Dimensions: Ø 86 mm, height 306 mm, wall distance 93 mm

SMARTS II

The SMARTS II area monitor provides continuous detection of RF radiation within a specific area. It covers most of the usable RF spectrum in a single monitor with shaped frequency response that matches the safety standard used to determine compliance.

- 400 MHz - 100 GHz, broadband
- Shaped frequency response matched to your safety standard
- Easy to use, configuration free installation no operator required
- High power true RMS measurement in pulsed fields like radar
- No over estimation by use of thermocouple elements
- Independent of signal polarisation
- Audible, visual, and remote alarms
- Battery or low voltage DC operation
- Adjustable alarm threshold
- Dimensions: approx. (H x W x D) 127 x 206 x 239 mm

SignalShark EMF Monitoring System

In addition to EMF measurements, it also supports spectrum monitoring and direction finding and can therefore be used for a wide range of applications like spectrum management and interference finding.

- 9 kHz - 6 GHz, spectrum analysis
- High sensitivity and dynamic range for detecting weak signals in crowded spectrum environments
- Measures isotropic spectra, enabling flexible channel power calculation and post-processing analysis
- Measurement packages enable the automatic execution of complex measurement sequences
- Flexible configuration of measurement packages based on a Windows 10 system with a Python interface
- Suitable for 3.6 GHz 5G NR mobile system and future enhancements
- Stand-alone operation with LTE modem and DC power supply
- Low power consumption
- Can be set up and put into operation quickly even by untrained personnel
- Designed for repeated and easy assembly in a wide variety of locations
- Dismountable for shipping in 3 cases



Narda is a leading supplier ...

... of measuring equipment in the EMF safety, RF test and measurement and EMC sectors.

The EMF safety product spectrum includes wideband and frequency-selective measuring devices, and monitors for wide area coverage or which can be worn on the body for personal safety. The RF test and measurement sector covers analyzers and instruments for measuring and identifying radio sources. The EMC sector offers instruments for determining the electromagnetic compatibility of devices under the PMM brand. The range of services includes servicing, calibration, accredited calibration, and continuous training programs.

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