



Making sure of a healthy environment

## **Narda EMF Monitors**

Improving safety in electromagnetic fields



## 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 more than 95% 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 9001/2008 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.

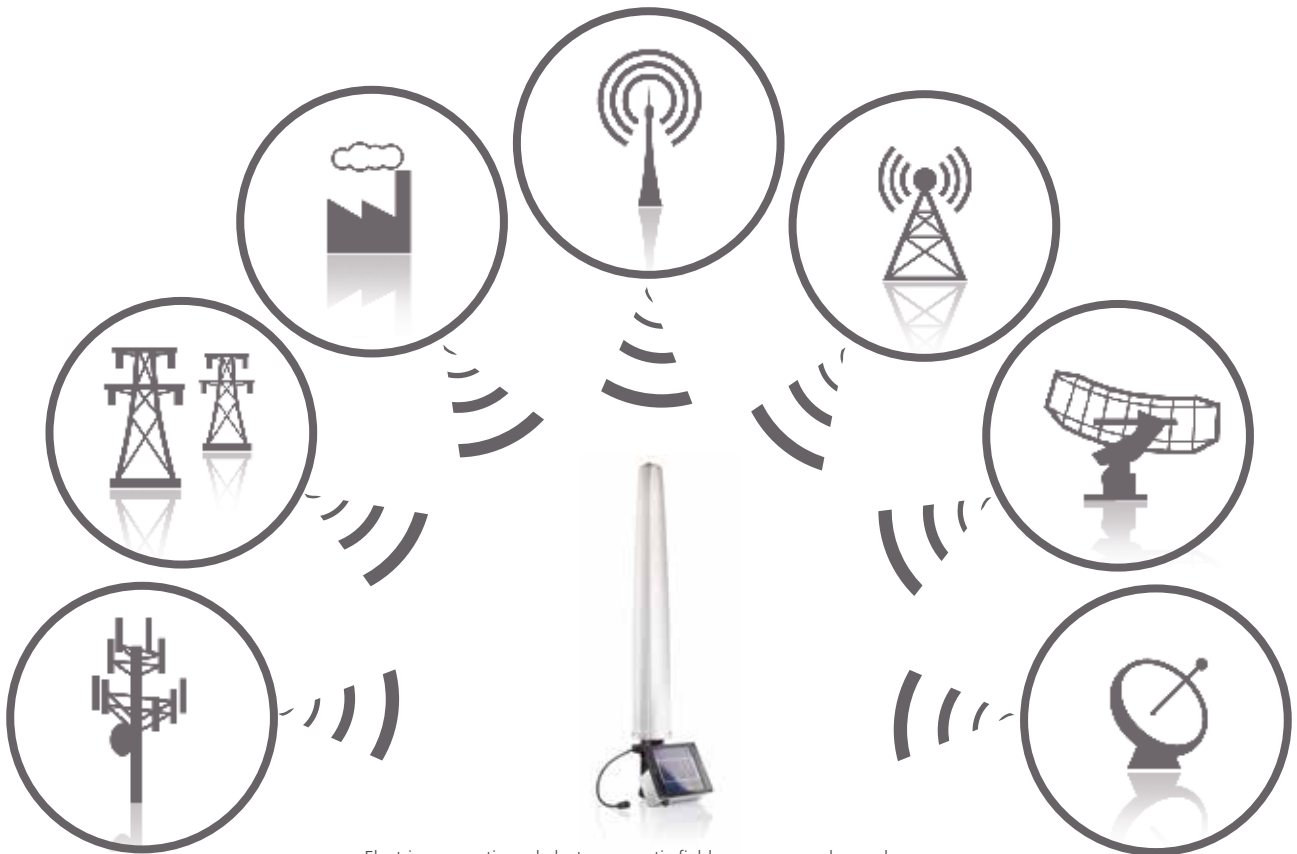
### Guideline values and monitoring

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 populace 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.

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.



## 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.



← 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) 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

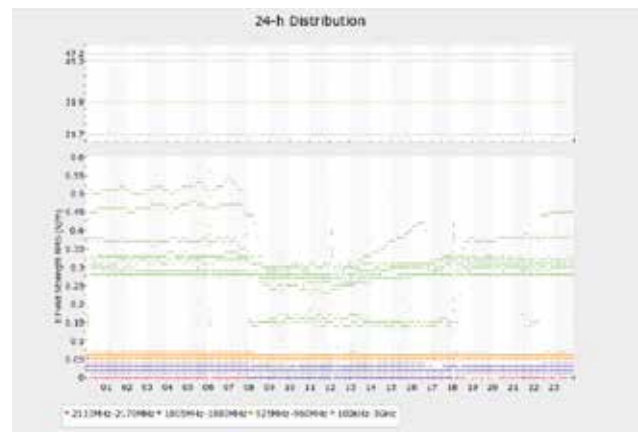
Narda has the longest and widest experience in EMF monitoring, with systems adopted by the authorities of several countries around the world. This exclusive record of applications include systems covering the territory of an entire country.

#### 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 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 Observatory 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



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 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.



**AMB-Series:** Minimum outlay, maximum result  
Its broadband application is the optimum solution for combining tight budgets and technical superiority.

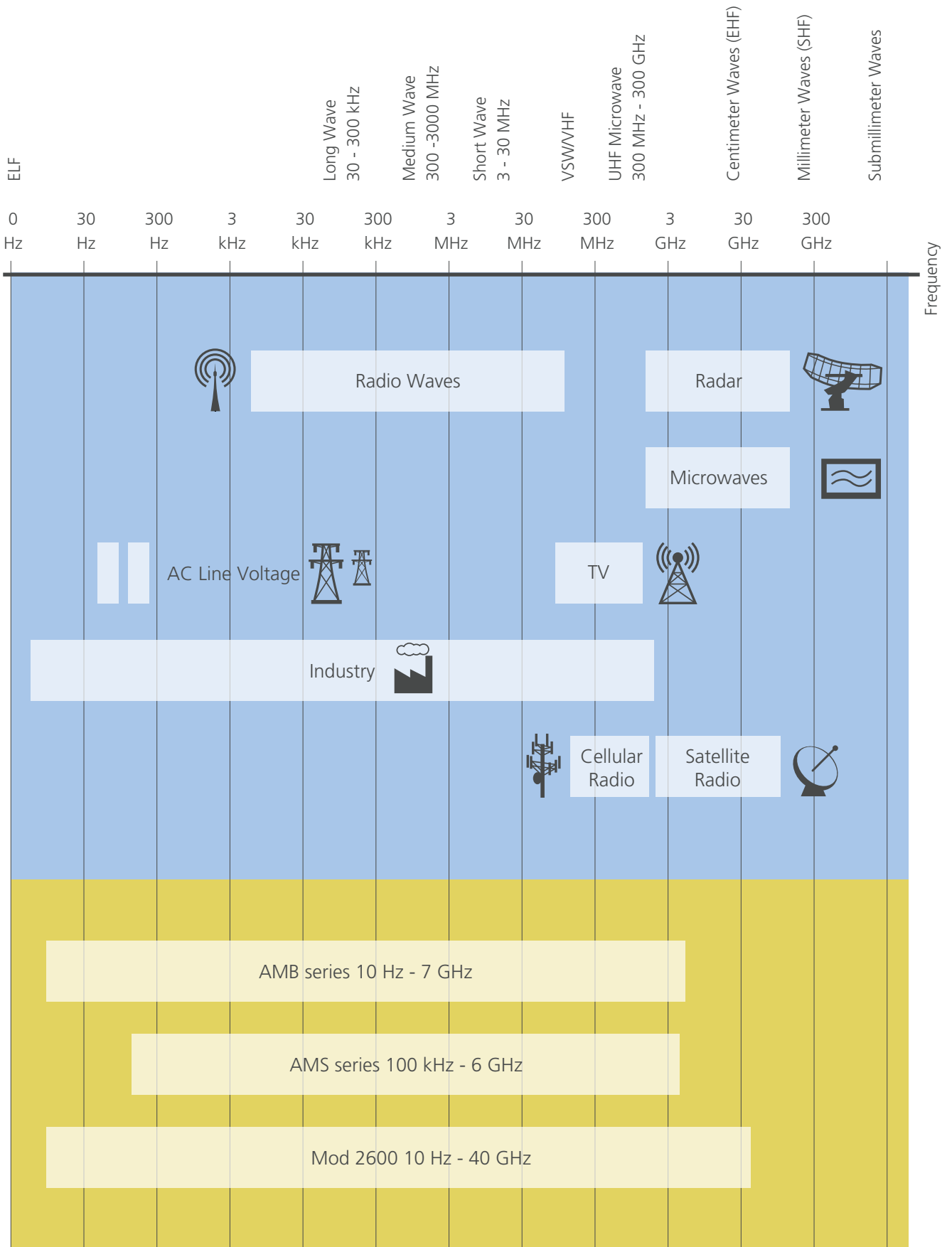
- Frequency range: 10 Hz - 7 GHz
- ITU-T K.83 compliant
- Simultaneous monitoring of electric and magnetic fields
- Quad-band probes for separating mobile networks as well as wideband measurements
- Solar panel provides independent power supply
- Tried and tested with more than 3500 stations in operation
- Built in modem for data transfer
- Dimensions: 112 mm max dia. x 780 mm length



**AMS-Series:** In-depth monitoring and analysis of critical sites

The AMS Series combines a tried and tested measurement method with selective frequency range by using a three axis isotropic antenna.

- Frequency range: 100 kHz - 6 GHz
- ITU-T K.83 compliant
- Built in spectrum analyzer for monitoring user defined frequency bands
- Data transfer via mobile modem
- Solar panel ensures unlimited power supply
- Low weight and compact size for easy location changes
- Robust design for use both indoors and outdoors
- Dimensions: approx. 760 mm x 60 mm x 60 mm



See the corresponding data sheets for further details and technical specifications.



## Leaders in EMF Measurement

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