

Electromagnetic radiation:

“We have set the standards for measuring equipment for more than 20 years”



Narda Safety Test Solutions CEO Hans-J. Förster: “We consider ourselves to be the world’s leading supplier of measuring devices for EMF safety, RF test and measurement, and EMC.”
(Image: Narda STS)

Businesses on this topic

NARDA Safety Test Solutions GmbH

Whether it’s IoT or Car2Car, Machine2Machine or the rapidly growing 4G/5G mobile networks: RF signal spectrums are getting more and more complex. This article shows what can be done with high-frequency measuring devices.

In our Special Issue of Messtechnik II 2018, we reported on how specialized measuring devices monitor and analyze the signal spectrums of radio channels in a highway tunnel. We spoke to the CEO of Narda Safety Test Solutions, Hans-J. Förster, about the company, developments in measurement technology, and partnerships with higher education establishments.

Herr Förster, how would you describe your company? What is Narda all about?

Let’s use a real experience to answer that: I was standing on a radio tower in England with a well-known customer, who told me how one of our instruments was dropped from exactly

that spot, falling 150 m to the ground. He had forgotten to attach the safety loop. But, the instrument still worked. The display showed the result: Error. His exact words to me: “That’s exactly what I expect from professional equipment. You now have a regular customer: me.” This illustrates that the forces that drive us are a passion for technical challenges and application-oriented products, together with quality and integrity.

Narda describes itself as the world’s leading provider of measuring devices for EMF Safety, RF Test & Measurement and EMC. Can you tell us more about that?

We are always aiming for one of the foremost market positions in all our product categories. For more than 20 years, we have been setting the latest standards for measuring equipment for electromagnetic radiation, and we are looking to do the same for EMC receivers and our more recent RF Test & Measurement business area. We are achieving this above all with clever attention to detailed solutions that offer our customers lasting benefits.

What do you mean by RF Test & Measurement?

For Narda, RF Test & Measurement means test equipment that locates interference signals. In contrast with EMC, this is not about standard-compliant measurement of products with regard to their conducted and radiated interference levels. This is much more about how high frequency signals and interference sources can be captured and analyzed in active operation, both in the laboratory and in the field.

You have concentrated on the challenging field of interference localization. What makes you stand out in this field, and what have been your successes so far?

Narda has set the bar much higher in the field of “last mile interference troubleshooting”. The IDA is a device that has given users, particularly those from among the ranks of regulatory authorities, the means to quickly and easily trace interference emitters on site, and to eliminate the interference. For example: Horizontal Scan, which gives a compass display of incident interference signals, was not available previously in a handheld device. And in our latest development, the SignalShark, we have set new standards for measurement speed, sampling rates, and real-time bandwidth. The result is that our customers have in their hands a measuring device with a POI (Probability of Intercept) that has never previously been achieved in an instrument of this class; the device detects hidden signals with a signal duration of down to 3.2 μ s with 100% probability. So, it can identify and localize fast hopping and radar signals.

Public discussion is dominated by 5G right now. How do you view this latest development, and do you already have any specific applications?

5G is currently in the initial pilot phase, so we won't know the final appearance of the infrastructure until the results have been assessed. Once the acceptance and test regulations have been drafted, there are certain to be new challenges for the manufacturers and operators of 5G systems, as well as for test equipment developers. In the meantime, our test equipment for EMF Safety is already 5G-capable. It has already been used to characterize transmitters in corresponding pilot projects. Narda even has the appropriate measuring equipment already available for the upcoming fields of workplace health and safety and immission protection in connection with the new frequency bands above 25 to 30 GHz.

Your company closely cooperates with universities and higher education in the field of high frequency and microwave technology. Can you tell us more about this?

No manufacturer can research and develop every technology completely in-house. We also use other scientific sources in order to advance what we are developing. An example of this is the 90 GHz probe for our broadband measuring devices, the design of which was based on a research project. Only through this were we able to access this important frequency range and put a marketable product into serial production.

You count on a worldwide network of partners. What advantages does that give your customers?

Our product range is available locally, everywhere. We also give our partners technical training in our products, so they understand the demanding technical measurement requirements of our customers, and can give them competent advice. Customers can pick up the equipment wherever they are, try it out, and sort out any questions in their own language. If there is a problem, there is always a partner close by.

Can you give us a brief overview of your product palette, and the markets that you serve? What is Narda planning for the future?

Our EMF Safety instruments encompass broadband and selective measuring devices, measuring stations and personal monitors. They are used anywhere and everywhere that people are exposed to electric, magnetic, or electromagnetic fields. This applies just as much to welding plant as to antenna installations for radio, TV, and telecommunications and the public sector. Our customers are not just people who work on antenna installations; they include workplace health and safety representatives in industry as well as environmental agencies that monitor limit values for the general public. Our EMV test receivers have above all become the industry and test laboratory benchmark for a full compliance solution that conforms to the standards, and which offer considerable advantages in dynamic range through the receiver sections that are fitted directly on to the antennas.

Our RF Test & Measurement devices are used as handheld direction finders for urgent on-site applications in telecommunications, the military, and regulatory situations, and as fast, real-time spectrum analyzers for research, development and production. We will shortly be releasing an automatic direction-finding antenna that will allow our customers to find signal bearings from a vehicle on the move. We are also on schedule with the completion of the development of a new compact remote real-time analyzer that will be available from January 2019. Our direction-finding devices will allow I/Q streaming according to the VITA49 standard, so that signals can be analyzed, decoded and classified using popular analysis software. The devices will also be script-capable, allowing measurement sequences to be programmed directly on the instrument itself and started at the press of a button.

Portable signal analyzer for 8 kHz to 8 GHz



The SignalShark portable analyzer detects, analyzes, classifies and localizes RF signals between 8 kHz and 8 GHz. (Image: Narda STS)

This is Narda's latest flagship device, the newly developed portable signal analyzer for the detection, analysis, classification and localization of RF signals between 8 kHz and 8 GHz. The SignalShark can fully replace large fixed spectrum analyzers in the laboratory without sacrificing any performance. At the same time, it can be used to precisely and reliably measure signals in the field without the need for an additional notebook or tablet.

With its real-time bandwidth (RTBW) of 40 MHz, it is also capable of monitoring entire communications channels at once in real time without needing to skip back and forth in frequency. Its sweep rate of up to 40 GHz/s ensures rapid signal detection. It combines high sensitivity with a large intermodulation-free dynamic range (High Dynamic Range) and can detect low level signals from among much larger ones. Interview Elektronikpraxis 15.11.2019)

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