Press Release

For immediate release

SignalShark XT – More Power. Less System. Full Control in the Field

- ***High-performance computing in the measurement device****: Powerful data processing right where the data is generated*
- ***True open platform****: No limitations due to proprietary software – full control over applications and workflows*
- ***See more, understand more****: Analysis, classification, and localization of complex signals combined in a single system*
- ***Reduced complexity****: A single device replaces an entire measurement and IT infrastructure in the field*

Pfullingen, May 19, 2026 – Narda Safety Test Solutions is expanding its SignalShark series with an extremely powerful variant of the highly efficient RF receiver and direction finder. With the new SignalShark XT, the measurement technology experts from Pfullingen have successfully combined an integrated high-performance computer with their modern, true "open platform" concept. For integrators, KRITIS, and security agencies—but especially for the entire defense sector—this breakthrough offers users unprecedented flexibility. For the first time, SignalShark XT users can run computationally intensive third-party software directly on the compact precision measurement instrument without relying on an external PC during field operations.

An increasing number of wireless services and highly dynamic signals—such as drones, 5G, and IoT—are causing the radio spectrum to become increasingly dense and complex. Given this, sensor technology must continue to capture changes seamlessly in real time, while increasingly sophisticated software must process ever-larger volumes of data simultaneously, leading to continuously rising demands on the devices' computing power and analytical depth. Now, Narda STS is meeting all these rapidly growing needs across various markets with its powerful and flexible SignalShark XT, which is particularly well-suited for demanding field applications.

For particularly demanding applications

Ideal scenarios for the new SignalShark XT include deployments within large distributed monitoring networks and TDOA-based localization of signal sources, sensor fusion—such as for stationary border surveillance—as well as, in addition to container solutions, all operations on platforms such as vehicles or masts.

Current situation

In common system architectures, receivers and analyzers are still operated in the field, while more computationally intensive software—such as for signal classification, decoding, and demodulation, or high-throughput IQ data processing—runs on a separate laptop. This means additional hardware, an additional external power requirement, more interfaces and cabling, as well as a significantly higher susceptibility to errors. These negative side effects already result in higher system complexity, additional effort, extra costs, and a greater probability of failure for applications serving law enforcement and public safety (BOS), the operators of critical infrastructure, or system integrators.

In military operations, however, where extremely high computing power is an absolute necessity alongside reliability and robustness, each of these parameters can be “decisive for the outcome of a war” and determine the success or failure of entire missions. Hardly any other field places such high demands on equipment that is equally precise and high-performing as it is robust, compact, and easy to operate quickly and without errors during crisis operations.

Field Deployment – Key Advantages at a Glance

The greatest advantages of the SignalShark XT for field deployment stem from the conceptual reduction of system complexity. The mere fact that no external laptop is required saves space and costs and eliminates the need for a separate operating system that must be maintained, an external power supply, and measures for weather protection. With fewer system components and, consequently, fewer interfaces and connections—which also means lower susceptibility to errors, including reduced cybersecurity risks—the measurement instrument is easier to set up and is ready for safe operation much more quickly. Designed for large-scale and automated frequency monitoring solutions, the SignalShark XT ultimately proves to be exceptionally efficient and scalable.

Clear Advantages in the Defense Sector

The CPU, which is approximately four times more powerful, combined with the Open Platform and the SignalShark XT’s higher level of system integration, also has an extremely positive impact in many ways within the defense sector. Narda STS has tailored the entire concept to the specific requirements of field operations. The compact device does not need to be connected to other systems via radio. It works even during radio silence. Thus, the reduced system complexity generally leads to lower electromagnetic visibility (electromagnetic signature) during crisis operations.

The device is designed and optimized from the outset—not every soldier in the field is a trained RF expert—to be reliably operational in no time at all, without the operator having to frantically adjust any measurement parameters “in the heat of battle.”

Example: SignalShark Outdoor XT

When using the SignalShark Outdoor XT in the field, thanks to its on-board high-performance computer, there is no longer any need to set up a separate mast on site. Previously, the receiver had to be connected to this mast in addition to the direction-finding antenna (ADFA) or a monitoring antenna. Furthermore, connections for the PC and modem—including switches for cabling and perhaps the two antennas—would have to be set up in a kind of shelter. Not to mention the complex power supply required for the entire setup.

This process is far too time-consuming. In combat situations, such a station—for example, to record the enemy’s communications—is set up for a maximum of four to five hours before the unit must relocate. Otherwise, the risk of detection and subsequent destruction is far too great.

In these situations, where rapid deployment is required, the full flexibility and agility of a SignalShark Outdoor XT really shine through. Already integrated into a compact system, the device is fully installed and ready for use within approximately 10–15 minutes to carry out the most demanding and complex operations. After this short period, the unit can then withdraw from the direct line of fire, as the SignalShark XT can operate autonomously or be remotely controlled from a safe distance.

High-performance computing integrated directly into the measurement instrument for the first time

For the first time, the new SignalShark XT features a powerful octa-core CPU system with 16 GB of RAM, a 512 GB SSD, and 2.5 Gbit Ethernet. With approximately four times the computing power compared to the standard version, tasks such as the simultaneous signal decoding and demodulation of 100 FM channels (instead of 16 as with the standard version), AI-based signal classification, and offline direction finding—e.g., to locate a swarm of drones—can now be easily accomplished.

Also now possible with the new SignalShark XT are so-called machine learning and reinforcement learning AI applications, which achieve excellent results in signal classification when, for example, the user in the field does not have all the necessary decoders available. Bottom line, the SignalShark XT enables specific, tailor-made standalone solutions that in the past required large, complex, and complicated systems. SCPI remote control and VITA-49-compliant IQ streaming round out the new system's integration potential.

Combination of a "true open platform" and a high-performance computer

With the SignalShark XT, Narda engineers have successfully combined an integrated high-performance computer with their modern concept of a "true open spectrum analyzer." A new alliance that represents a unique selling point in the industry in this form. Beyond the increased computing power, Narda STS has achieved improved frequency accuracy of 0.2 ppm and IQ streaming with 40 MHz (instead of the previous ~20 MHz) bandwidth with the new measuring instrument.

Available in the SignalShark Handheld XT, SignalShark Remote Unit XT, DF Receiver Module XT, and SignalShark Outdoor XT models, the newest member of the SignalShark series is based on Windows 11 LTSC 2024 and offers a "true open platform," i.e., a fully open platform. This means that users are not limited to pre-installed functions or proprietary software. Instead, they can install, run, and use custom third-party software or their own Python-based scripts—even extremely computationally intensive applications—with complete flexibility, provided they have the necessary rights and licenses.

Conclusion and Outlook

The increased computing power, memory architecture, and modern operating system, combined with its "true open platform," enable the SignalShark XT to implement new algorithms, AI applications, or decoders directly on the device in the future without requiring a hardware upgrade. Thanks to this high degree of flexibility, the developers from Pfullingen have created a future-proof platform that offers significant investment security, particularly in the core areas of spectrum management, regulation, and defense.

The key technological challenges—the critical tasks that Narda engineers had to solve for the XT variant—were the power supply and cooling of such a high-performance integrated CPU.

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[Image 01]

Image 1: The new SignalShark XT features a high-performance computer for the first time. With approximately four times the computing power of the standard version, it is now possible to effortlessly perform tasks such as signal decoding and demodulation of 100 FM channels simultaneously, as well as offline direction finding, e.g., for locating drones.

[Image 02]

Image 2: The robust die-cast aluminum housing (IP65 protection class) of the SignalShark XT Outdoor model protects the sensitive technology from dust, dirt, and water. A Windows 10 computer integrated into the outdoor unit enables extensive preprocessing and analysis directly within the device, which minimizes the data load for remote transmission.

[Image 03]

Image 3: For installations requiring permanent mounting, Narda offers a rackmount version. As a 19" rack-mount or stand-alone solution, the SignalShark XT can thus be easily and quickly integrated into vehicles, data centers, and other infrastructures. A sophisticated airflow design in the remote unit ensures optimal cooling, even in tight rack installations: air enters at the front and is expelled as warm air at the rear.

[Image 04]

Image 4: As a mobile handheld version with a user-friendly touchscreen, the SignalShark XT is the ideal, portable solution for field operations and inspections, especially "on the last mile"—lightweight, portable, and designed to withstand the harsh demands of outdoor use.

Narda Safety Test Solutions GmbH is an internationally active manufacturer of measurement technology for electromagnetic fields and radio signals. The company develops solutions for **spectrum monitoring, interference detection, direction finding, and signal intelligence,** as well as for the standards-compliant assessment of electromagnetic fields (EMF).
In the field of **spectrum monitoring and safety-critical applications,** Narda positions itself as a specialized provider for demanding operational scenarios. The systems enable the

detection, analysis, and localization of radio signals in real time and are used by regulatory authorities, security organizations, and in applications such as **event security, critical infrastructure protection, border protection, and electronic warfare (EW)**. The goal is to deliver reliable results quickly, even in complex and heavily congested frequency environments.

In the field of **EMF Safety & Environmental Monitoring**, Narda is one of the established global market leaders. The solutions support the **measurement and evaluation of electromagnetic fields in accordance with international standards** such as ICNIRP or FCC and help ensure the protection of people in the workplace as well as compliance with legal limits.

The portfolio is complemented by measurement technology for **electromagnetic compatibility (EMC)** under the PMM brand.

Narda develops and manufactures at locations in Germany and Italy and is represented worldwide through a network of sales partners. Calibration laboratories accredited to **ISO/IEC 17025** and a quality management system compliant with **ISO 9001** ensure the high accuracy and reliability of the systems.

With a focus on precise measurement results, practical solutions, and specialized applications, Narda helps make electromagnetic environments transparent, safe, and manageable.

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