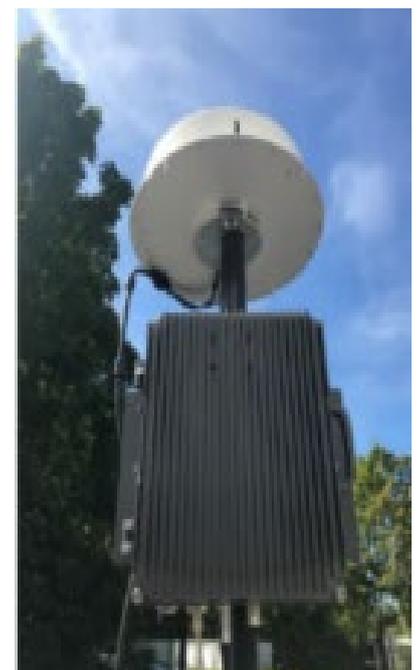# SignalShark – The open platform

The Narda SignalShark is a platform in many respects.

The same excellent technical performance from the core measuring device, but perfectly adapted to its environment, just like a chameleon. Here ideal for handheld use with its rechargeable batteries and a touchscreen, there ready for 24/7 operation attached to a mast with its waterproof casing and PoE (power over Ethernet). Yet, naturally, with the same operation or remote control procedures and display of measurement results.

The SignalShark is available in these variants:

› Handheld Spectrum Analyzer/Receiver
› Remote device
› Outdoor version

SignalShark as a software platform

There are two further technical features that make SignalShark into more than just a hardware platform. It's a software platform too, with its integrated Windows computer and open interfaces.

Windows 10

Windows 10, or Windows 10 LTSB to be precise, is hiding inside SignalShark. Generally, if you only want to use the SignalShark as a measuring device, you will not really notice Windows at first. There's no need to log in; you can get straight to making measurements without any long waits or the need to make any kind of entries. And it's just as easy to switch off: simply press the on/off switch and the application closes and Windows shuts down. If you use the device in this way, you won't have access to Windows as it is password protected.

But, that doesn't mean that you can't benefit from having an integrated Windows computer. If you connect peripheral devices like a mouse, keyboard, printer, or external drive to one of the USB ports, these will work after just a few seconds, without any need to intervene in the system. The drivers install automatically and the accessory is ready to use immediately. And the Display Port output means that you can connect an external monitor or a projector. You can now use all the advantages of the huge range of Windows PC accessories to the full. And, if you cannot or do not want to use the built in Ethernet interface but would rather use wireless communication, you can simply connect a customary WiFi or LTE modem to one of the USB host connectors.

By the way, LTSB stands for Long Term Servicing Branch, which is a special version of Windows 10 intended specifically for companies and freed from many of the "features" such as Cortana, Microsoft Store or Edge. LTSB is also not subject to the update compulsion of the regular Windows version. Any relevant updates to Windows 10 LTSB are thoroughly tested by Narda and rolled out as a package with the next SignalShark firmware update. In other words, a stable, tested environment. To make

sure that you never miss an update, register under https://www.narda-sts.com/de/meta/newsticker/

New worlds for administrators

However, if you are an experienced user, the Administrator password supplied with the SignalShark will open up a whole new world of possibilities. You will be able to install your own software on the Windows operating system. What you previously ran on a separate PC and which was remote controlled via Ethernet or USB now runs directly on the SignalShark. Remote control is suddenly local control. The SignalShark application runs in the background, and your own software takes control. This application software sends the remote control commands internally to the SignalShark application, which responds with spectrums, I/Q streams, and so on. In many cases, this saves you using an external computer to evaluate the results, and all the cabling that this requires. It can also significantly reduce the rate of the data that is transmitted during remote monitoring, for example. It is no longer necessary to transmit the unassessed spectrum or the raw I/Q data, as the evaluation can take place in the instrument itself. The now "smart" receiver only gives notification when there is something wrong in the frequency range being monitored. And, you can make full use of the huge software portfolio available for Windows.

Documentation as a video

What about documenting a measurement? A picture speaks a thousand words, but a video can tell the whole story. Why not install a screen recorder application such as Snagit or OBS Studio on the SignalShark? Simply use these programs to record your screen and along with this, use the SignalShark's built in microphone to record your own voice commentary. In no time, you have produced a video for yourself or your colleagues and clients. And, of course, you can play it back on the SignalShark, too.

What if you want to remotely control the SignalShark and still use the SignalShark's graphical user interface (GUI)? Remote Desktop is the first choice if you are running it within your own network. Remote Desktop is a standard Windows tool, and it is also available for Android, iOS, and so on. It therefore does not depend on the platform, and every IT department uses it all the time.

Convenient remote maintenance tools

Even more convenient are the remote maintenance tools such as TeamViewer, or AnyDesk. These have the great advantage that they work over the Internet, so you don't have to set up your own VPN like you need to when using Remote Desktop. Additionally, the host screen remains active when using remote maintenance tools, so you can operate the SignalShark on the instrument itself or from a remote location at the same time.

Digital demodulation software

The use of digital demodulation software, such as Decodio Red, has also been successfully tested already on the SignalShark. You can find an overview of the demodulation and monitoring solutions that have been tested so far under:

https://www.narda-sts.com/de/produkte/signalshark-remote-analyzer/

A driver is needed for the communication between the user-specific application software and the SignalShark application. These drivers are already included for the above mentioned solutions. To make it as easy as possible to compile such a

driver, Narda has used industry standards wherever possible. As a result, the platform has become an open platform.

The remote control commands have been kept in SCPI and are documented in great detail with examples.

The I/Q data are provided in the Vita49 format, which is the standard format used for further processing of I/Q data. The data includes integrated, high precision timestamps to enable it to be used in TDOA systems. The saved measurement values are recorded in HDF5 (Hierarchical Data Format), which can be imported directly into applications such as Matlab, LabView, GNU-Radio and others. Everything is set up so that communications with application software are as smooth as possible.
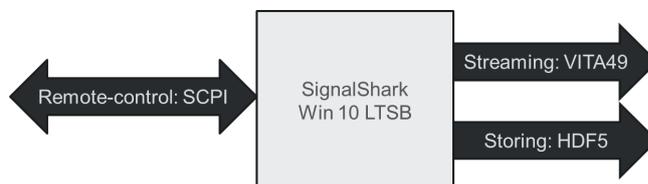
More information about SignalShark

SignalShark 3310	

www.narda-sts.com/signalshark

Command Reference Guide	

www.narda-sts.com/signalshark3320

SignalShark 3310	

www.narda-sts.com/signalshark

SignalShark 3320 Remote Unit	

www.narda-sts.com/signalshark3320