Why USB VNAs?

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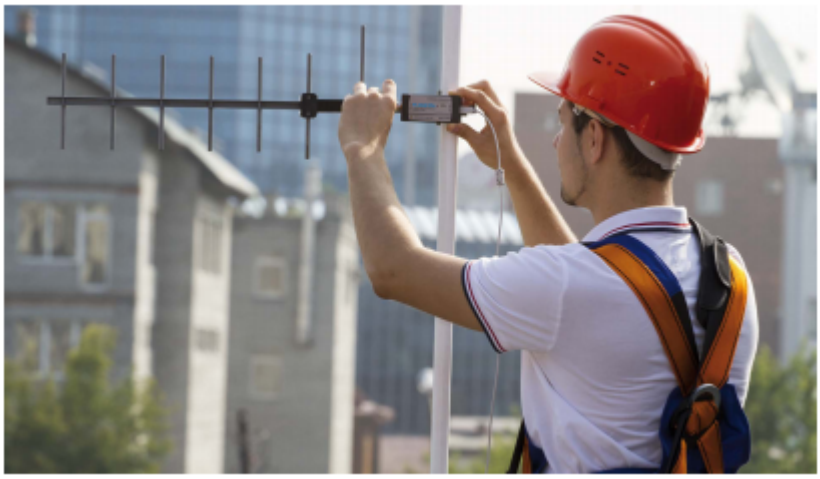
USB VNA is the next generation of advanced RF test & instrumentation. Performance, form factor, security and lower cost of ownership make these analyzers ideal for many RF and microwave applications.

USB VNAs separate the measurement module from the processing module, bringing the measurement results to any external PC using the VNA software. The user can take advantage of the latest OS processing power, bigger display, and more reliable performance of an external PC while simplifying maintenance of the analyzer. USB VNAs are flexible. They can be easily adapted to multiple users and are well-suited for lab, production, field, and secure testing environments.

The biggest advantage of a USB VNA is that it doesn't lock the user into a built-in computer that is already outdated. Normally the development cycle for a new analyzer is around 24 months, so by the time a new model goes into production, the PC is already two years old. If a customer buys this analyzer three years into its life. They are buying a year old computer, which, by today's IT industry standards, is quite outdated. That on-board PC will get even more outdated quickly and is extremely expensive to replace since the replacement can only be done by the analyzer's manufacturer or their authorized service center. Unlike the conventional VNA with USB instruments, the user can easily upgrade the external PC as needed.

A USB VNA has vastly fewer potential points of failure. The most commonly failing part of a conventional VNA is the built-in processing module (on-board computer) and its peripherals - display, control knobs, and buttons. This problem is completely eliminated by outsourcing signal processing to an external PC, which can be easily and inexpensively replaced by the users according to their needs.

Since the performance of a USB VNA is not driven by the location of the PC (internal vs. external to analyzer housing) USB VNAs can perform as well as a conventional VNA.



A defining characteristic of a USB VNA is external data storage. The analyzer measurement module can be easily and independently shared between multiple users and different locations. The parameters of a USB VNA test setup and test results are always stored on an external computer, not inside the VNA measurement module itself. The measurement module can be disconnected from one test setup and moved to another operator's workstation. Because the VNAs generally weigh less than 20 pounds they can be easily moved between environments. The measurement module can also be built into larger systems.

A USB VNA is well-suited to classified applications since test data is processed and stored on an external PC. There is no need for hard drive purging or removal in order to move the USB VNA from a secure area. This reduces maintenance time and improves physical security in classified or controlled installations.

An individual measurement model can be replaced on a temporary basis without interrupting work flow. When the unit is sent out to a laboratory for annual verification/calibration, it can be replaced with a loaner measurement module without the user even noticing the difference.

A USB VNA is much better suited for Automated Test applications than a conventional VNA, which can be quite large and heavy. Even larger VNA measurement modules are housed in a 19" rack-mountable chassis weighing less than 20 pounds, are only 2 or 3U high, and since they can fully support COM/DCOM protocol for automation, can seamlessly integrate into an ATE rack and be operated from the same PC that operates the rest of the equipment in the rack.

If post-processing of test results using additional software is required, it can be easily integrated with the VNA software since both software packages can be run on the same PC for automated and immediate presentation to the user. No additional means of test data transfer from the analyzer to a PC are needed, and these processes can be streamlined even more with automation via a number of programming protocols.

USB instruments are much better suited to customization than conventional instruments as they make it easier to change connector type or position, dimensions, and proportions of the housing to meet application-specific needs.

From a Copper Mountain Technologies' Customer:

"The instrumentation was definitely beneficial in our company's production applications. The unit doesn't take up too much room and the device works with the equipment I already have. The PC interface is useful: I could have a regular computer hooked up to [the device], switch in and out of analyzer mode, or I could just close it up and use it for other work. Because the unit is portable, I can pre-install the software on multiple PCs in the facility, and bring it where it is needed to take measurements."

- Ernest Werbel, Design Engineer, R&D Microwaves in New Jersey