Siglent elevates portable RF testing with the SHN900A Series Handheld Vector Network Analyzer

May 20, 2024

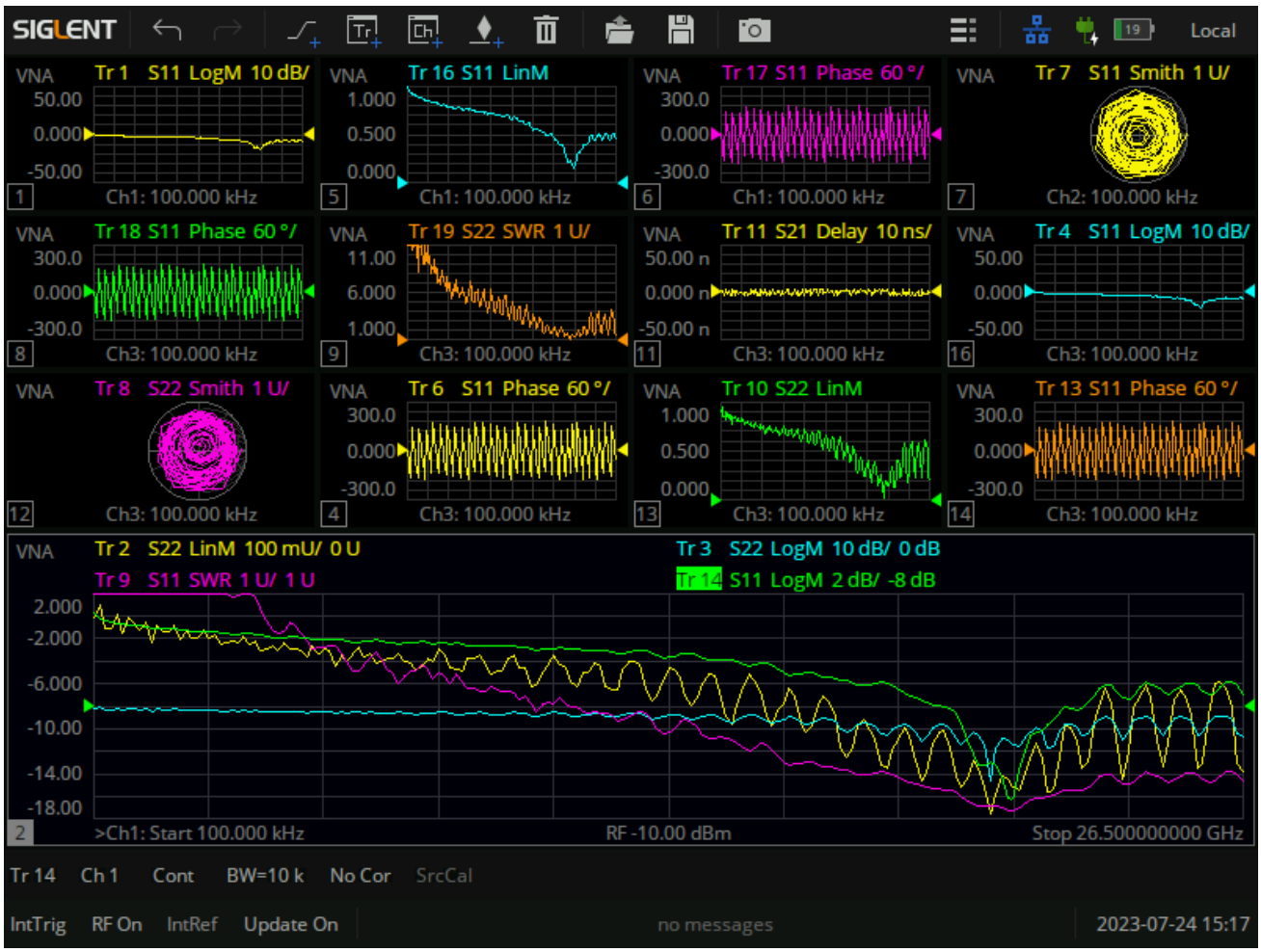
On May 21st, 2024, Siglent is releasing our new SHN900A series handheld vector network analyzer, with frequency range as high as 26.5GHz. It integrates vector network analysis, time domain analysis, spectrum analysis, and cable and antenna analysis into a complete RF test solution. It is specially designed for portable and flexible testing, and can be widely used in field testing, R&D, production, maintenance and communication, antenna, base stations, materials, and automotive electronics.

The SHN900A combines the performance of a benchtop VNA with flexibility and capability of a portable test solution with a 4-hour Lithium-Ion battery pack included. This extends our portable RF solutions that includes the SHA850A series instruments to a higher frequency range and more complex RF devices. The SHN900A includes full 2 port network analysis, bias tees, pulse, and TDR measurements to cover additional field and lab RF test applications.

Measurement Capability

With a dynamic range of up to 110 dB, the SHN900A is well equipped for applications like cavity filters. The low trace noise (0.0005 dB rms, 0.015 deg rms) greatly improves the test accuracy and meets the engineer's needs for precise measurements. The SHN900A is a full 2 port vector network platform that supports the simultaneous measurement of S-parameters (S11, S12, S21, S22) as well as the differential S-parameters (Sdd11, Sdc11, Scd11, Scc11). The SHN900A also supports all standard display formats such

as Smith Chart, Polar Chart, SWR, phase, log mag, and more. The high dynamic range, low noise and the flexible measurement and display settings enable the test engineer to confidently characterize RF components and systems in the field.

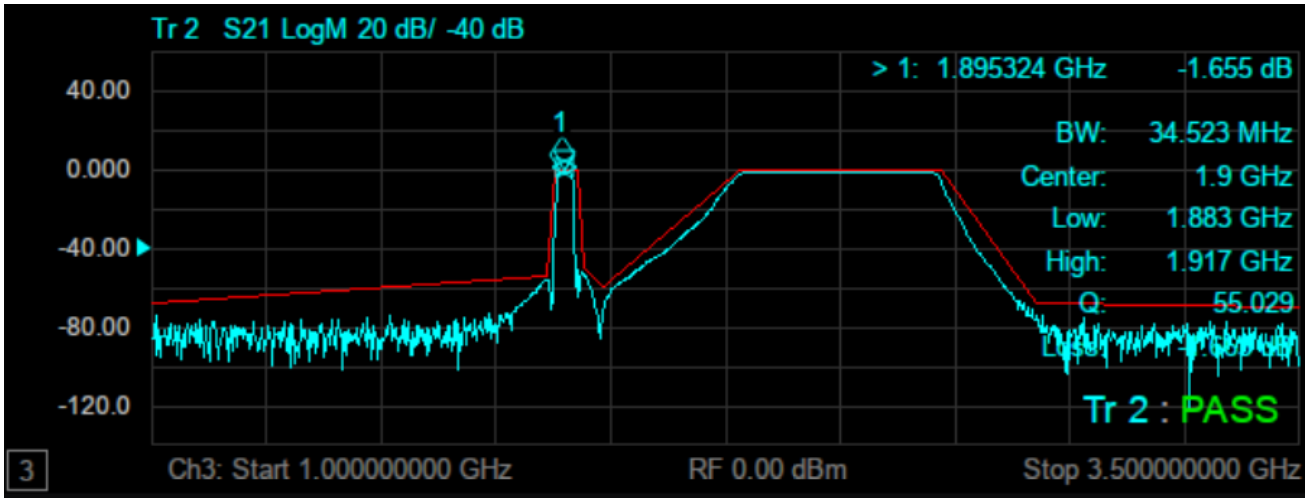


The accuracy of every network analyzer is closely related to its calibration. The SHN900A supports calibration methods including SOLT, SOLR, TRL, Response, and Enhanced Response. It is compatible with a variety of calibration sets, supports user-defined calibration kits, and facilitates the testing of devices with different interface types. The SHN900A also supports our SEM5000A line of E-calibration modules for an automated, complete 2 port cal to 26.5 GHz from a single connection. The SHN900A adds impedance conversion, fixture simulation, adapter removal/insertion, and port extension for advanced calibration requirements.

Wide Range of Standard Functions

The Cable and Antenna Test (CAT) mode of the SHN900A assesses and diagnoses the electrical performance of RF and microwave transmission systems. It is well-suited for tasks like installing and maintaining antenna systems, conducting distance-to-fault (DTF) measurements on cables, measuring single-port cable loss, and assessing antenna matching. Capabilities such as segmented sweep and frequency offset mode enhance analysis precision, efficiency, and flexibility for components testing.

The SHN900A also includes standard pass/fail limit testing, pulse measurements, memory, and hold capabilities for device verification. These features simplify measurements for technicians working on devices in vehicle, in the field, or on the line for quick visual verification by the technicians on site.



Useful optional Enhancements

The spectrum analysis mode (SHN900-SA) facilitates measurement of parameters like channel power, adjacent channel power ratio (ACPR), and occupied bandwidth. This enables the technician in the field to verify RF signals and make sure all is in specification.

The Marker → SA function allows a quick change from VNA to spectrum analyzer mode and look at the specific marker frequency point in both modes providing a convenient method to streamline signal search and analysis.

Time Domain Analysis (TDA) supports various functions such as time-domain transformation, windowing, and gating, aiding in device characterization from both time and frequency domain perspectives. Time Domain Reflectometry (TDR) offers many enhancements and includes TDA, so you only have to choose one option. This includes reflection and transmission analysis and eye diagram simulation with jitter injection for assessing signal transmission effects.

The SHN900A series also works with our TDR Probes providing probe capabilities out to 26 GHz for characterizing communication channels.

With a variety of modes and capabilities built in standard on the SHN900A series analyzers, this portable RF test platform is easier to configure than many of the competitive solutions. With only 3 software options to consider (TDA, TDR, and SA), the SHN900A provides value and capability in every configuration and every application.

Usability for the field

The SHN900A is built for straight forward, on-the-go measurements. Its quick-access buttons and intuitive setup structure streamline testing procedures, facilitating swift, error-free standardized measurements. Engineers can easily manage windows, channels, and traces enhancing usability and meeting diverse test needs efficiently. Despite its high integration, the SHN900A features a spacious 8.4-inch touchscreen within a rugged yet lightweight chassis, weighing about 7 lbs. for easy portability. This SHN900A also comes with a standard carry bag and AC charging cable.

Additional built-in features for field testing include standard bias tees and bias source as well as GPS tracking. The bias tee feature conveniently supplies DC bias to external objects being measured either through the RF port or an external connection. With an external antenna attached, the instrument links to GPS signals and displays latitude, longitude, altitude, and time on the display for positional verification of on-site measurements.

[Click to learn more about SHN900A.](#)

North American Headquarters

SIGLENT Technologies NA
6557 Cochran Rd Solon, Ohio 44139
Tel: 440-398-5800
Toll Free:877-515-5551
Fax: 440-399-1211
info@siglent.com
www.siglentamerica.com/

European Sales Offices

SIGLENT TECHNOLOGIES GERMANY GmbH
Staetzlinger Str. 70
86165 Augsburg, Germany
Tel: +49(0)-821-666 0 111 0
Fax: +49(0)-821-666 0 111 22
info-eu@siglent.com
www.siglenteu.com

Asian Headquarters

SIGLENT TECHNOLOGIES CO., LTD.
Blog No.4 & No.5, Antongda Industrial Zone,
3rd Liuxian Road, Bao'an District,
Shenzhen, 518101, China.
Tel:+ 86 755 3661 5186
Fax:+ 86 755 3359 1582
sales@siglent.com
www.siglent.com/ens