

VectorStar Microwave VNA Establishes New Performance Benchmark for S-Parameter Measurements on RF/Microwave/Millimeter Wave Devices

— MS4640A VNA Delivers Best-in-Class Frequency Coverage, Dynamic Range, and Measurement Speed —

Morgan Hill, CA – For Immediate Release – Anritsu Company re-establishes itself as the leader in Vector Network Analyzer (VNA) technology with the introduction of the VectorStar™ premium series of microwave VNAs. The MS4640A delivers best-in-class frequency coverage of 70 kHz to 70 GHz, dynamic range of 103 dB @ 67 GHz, and measurement speed of 20 μs/point to establish a new performance benchmark for S-parameter measurements on RF, microwave, and millimeter wave devices.

The VectorStar MS4640A family offers three standard frequency ranges that go to 20 GHz, 40 GHz, and 70 GHz. This high-performance 2-port engine is designed to add future capabilities, and is compatible with existing 4-port and broadband mmW systems for 70 kHz to 110 GHz measurements, or waveguide banded measurements up to 500 GHz. VectorStar brings unprecedented performance to traditional VNA markets, including aerospace/defense, satellite, commercial microwave communications, materials measurement, and advanced research.

For true broadband applications such as device modeling, the 70 kHz low-end provides seven octaves of additional information below the traditional 10 MHz cut-off of conventional microwave VNAs. This improves the error-prone task of dc-approximation, providing better device models and circuit simulation. The result is designs that work as predicted the first time, eliminating long and costly fabrication cycles. The low-end frequency also improves stability as it eliminates coupler roll-off below 1 GHz, a necessary evil of competitive VNAs.

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VectorStar's 100 dB dynamic range at 70 GHz creates accuracy never before seen in a microwave VNA. Supplementing the wide dynamic range is the MS4640A's excellent receiver compression level. The VNA's receiver has a +10 dBm 0.1 dB compression level at 70 GHz. With the new Precision AutoCal for 70 kHz to 40 GHz or 70 GHz calibrations, residual directivity of 42 dB can be achieved at 70 GHz, and up to 50 dB at 20 GHz. This type of unmatched performance allows devices to be more tightly specified with greater confidence.

Today's engineering environments, from R&D through to manufacturing, require fast measurement speed. VectorStar's 20 μ s/point real measurement speed without any restrictions, such as un-synthesized, unleveled, no display, or CW frequency conditions typically found in traditional VNAs, allows the MS4640A to acquire the data necessary for the best device characterizations over multiple physical and environmental conditions, drive levels, or frequency ranges.

Innovative New Platform

VectorStar MS4640A achieves outstanding performance because it features a completely new VNA platform that uses an innovative architecture. For applications from 70 kHz to 2.5 GHz, a mixer-based receiver with bridges for directional devices is used. Above 2.5 GHz, a harmonic-sampling receiver is incorporated, with the traditional couplers for directional devices. Since the couplers are not taxed by extending to low frequencies, raw directivity is not traded for frequency coverage, resulting in superior stability.

Non-Linear Transmission Line (NLTL) technology, also known as Shockline technology, is used for the receiver, resulting in uncompromising performance to 70 GHz and beyond. This monolithic sampling technology, along with the usage of a higher LO frequency, provides extraordinary conversion flatness, isolation, and dynamic range.

The digital and mainframe architectures behind VectorStar take advantage of the latest off-the-shelf technology. This strategy allows the platform to remain current, and helps it handle the fast-changing pace of digital standards and operating systems.

The MS4640A is built on a Windows XP Pro OS, and offers a 26 cm touch-screen LCD display with USB 2.0, Ethernet, and GPIB connectivity. The VNA has enough memory and graphics capability to offer 16 independent channels, with 16 traces each, 13 markers per trace, and up to 25,000 points per channel. For applications such as time domain that require as many points as possible, 100,000 points are available when VectorStar operates in single-channel mode.

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New Precision AutoCal

Solidifying its position as a leader in mmW frequencies, the new 70 kHz to 70 GHz Precision AutoCal exceeds the performance of previously available e-calibrators. This type of performance has been achieved because the new AutoCal is designed with advanced software algorithms and new switching hardware, and references an LRL calibration up to 70 GHz. Anritsu's 70 GHz switching technology provides the lowest parasitics to produce the lowest losses and best matches to create the most accurate corrected residuals.

Delivery at introduction is set at 12 weeks, but expected to quickly reach 4-6 weeks.

About Anritsu

Anritsu Company (www.us.anritsu.com) is the American subsidiary of Anritsu Corporation, a global provider of innovative communications test and measurement solutions for more than 110 years. Anritsu provides solutions for existing and next-generation wired and wireless communication systems and operators. Anritsu products include wireless, optical, microwave/RF, and digital instruments as well as operations support systems for R&D, manufacturing, installation, and maintenance. Anritsu also provides precision microwave/RF components, optical devices, and high-speed electrical devices for communication products and systems. With offices throughout the world, Anritsu sells in over 90 countries with approximately 4,000 employees.

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