Agilent Technologies Introduces Highest-Performing 67 GHz Vector Network Analyzer

Analyzer Features Industry's First Four-Port 110 GHz Single-Sweep Solution for Millimeter-Wave Measurements

SANTA CLARA, Calif., Sept. 28, 2010 -- Agilent Technologies Inc. (NYSE: A) today announced the world's highest performing 67 GHz PNA-X Series vector network analyzer (VNA). The new N5247A 67 GHz PNA-X allows engineers, working up to 67 GHz, to benefit from Agilent's single-connection, multiple-measurement, PNA-X platform. This level of performance makes it possible for the N5247A PNA-X to be used in the widest range of microwave applications, including active device characterization and tests; device modeling; high-speed digital; and material research.

Agilent will demonstrate the 67 GHz PNA-X, along with other Agilent products and services for wireless communication; radar; RF technologies; high-frequency semiconductors; electromagnetic; commercial and military RF; microwave; and mm-wave electronics and applications, at the European Microwave Week 2010, Sept. 26 - Oct. 1, Paris, CNIT La Défense, Booth 62/46.

The N5247A PNA-X delivers +10 dBm output power; 110 dB system dynamic range; and a 0.1 dB receiver compression point of +11 dBm specified at 67 GHz. These specifications are 8 dB more output power and 7 dB more dynamic range than any other VNA in the industry. This unmatched performance enables the N5247A PNA-X to provide the world's most accurate linear and nonlinear active component characterization in a single instrument.

Like all Agilent PNA-X models, the N5247A features clean internal dual sources, a built-in combiner and path switches. These features enable a unique single-connection solution for S-parameters, noise figure and intermodulation distortion (IMD) measurements. It also makes it possible to perform many other measurements that are required for testing active devices up to 67 GHz. This includes pulse; gain compression; harmonics and spectrum for amplifiers; mixers; and frequency converters.

Traditionally, similar tasks have required multiple test instruments. By integrating the capabilities of a full rack of equipment into a single instrument, the 67 GHz PNA-X reduces equipment count by 50 percent and decreases test time by a factor of four to 20 times. A single contact solution for on-wafer tests eliminates the need for multiple probe contacts and operator intervention, enabling the most accurate characterization and reliable wire-bonding.

A key feature of the N5247A PNA-X is its ability to be expanded from a 10 MHz to a 2- or 4-port 110 GHz single-sweep mm-wave solution. The solution provides power leveling, true differential, and frequency converter measurement capabilities. As the industry's first 4-port, 110 GHz single-sweep solution, the N5247A can characterize mixers/converters and differential devices with continuous measurements over the entire operating frequency range. Providing superior performance and reduced cost of ownership, the 110 GHz PNA-X mm-wave solution offers a direct replacement for the industry-standard 8510XF broadband 110 GHz system.

"Agilent is committed to offering the industry's most integrated, high-performance, high-frequency network analyzer with quality as the top priority," said Gregg Peters, vice president and general manager of Agilent's Component Test Division. "The new 67 GHz PNA-X delivers on this goal and enables today's engineers and engineering managers to meet both their budgetary constraints and measurement needs."

Agilent also is releasing new features for its award-winning nonlinear vector network analysis (NVNA) software that runs on the PNA-X platform. The NVNA measures X-parameters*, a new category of nonlinear network parameters for deterministic, high-frequency design, that can be used to characterize both a components' linear and nonlinear behavior. New X-parameter measurements include:

- Two-tone X-parameter measurements -- for measuring amplitude and phase of all mixing products that occur around the fundamental frequency and the harmonics when two large signals are applied to a DUT. This provides a richer characterization of a device's nonlinear behavior and captures bandwidth dependencies.

- Multi-tone waveform measurement and analysis -- evaluates device behavior with multiple-large signal stimuli. Now an arbitrary number of large signal stimuli can now be applied to a device to simulate conditions comparable to a variety of modulation stimuli. This helps engineers predict behavior of a device or system under conditions similar to complex modulations.

- Three-port device characterization -- characterizes the nonlinear behavior of mixer and converters and provides an accurate three-port X-parameter model that can be imported directly into Agilent's Advanced Design System (ADS).

- Fundamental only X-parameters -- extracts device behavior and capture RF power level, DC bias, source and load dependencies in measurements at the fundamental frequency. Calibration and phase references are not required, which helps reduce costs and simplifies configuration. This is particularly valuable for high-frequency and bandwidth-limited device applications.

Data generated from these new X-parameter measurements also can be imported into Agilent's ADS, Genesys, and SystemVue for accurate simulation and design.