

Keysight Launches Phased Array Antenna Control and Calibration Solution for Satellite Communications

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- Solution improves signal pointing accuracy by optimizing the frequency, gain, and phase response of active antenna array elements
- Automated and integrated test system reduces the arduous, lengthy process of calibrating phased arrays from hours or days to a few minutes

SANTA ROSA, Calif.--(BUSINESS WIRE)-- **Keysight Technologies, Inc.** (NYSE: KEYS) introduces the new Phased Array Antenna Control and Calibration solution, a breakthrough over-the-air (OTA) calibration and characterization solution that enables satellite designers developing active electronically scanned arrays for satellite communications applications to rapidly test their designs during early validation.

Modern satellite networks operate at higher frequencies and use active phased array antenna systems which are driving ubiquitous connectivity and sensing requirements of next-generation satellite communication. Phased array antennas use electronic means to steer beams to precise locations to improve overall reliability. Testing these highly integrated systems is a complex and time-consuming task. Designers and manufacturers need fast OTA testing to quickly and efficiently calibrate and verify the performance of phased arrays.

Keysight meets this need with a flexible measurement solution that improves pointing accuracy and sidelobe rejection to reduce interference effects on phased array antennas by optimizing the frequency, gain, and phase response of active antenna array elements.

The following are benefits of the Phased Array Antenna Control and Calibration solution:

- Proprietary phased array calibration algorithms – Enables highly-accurate measurement of gain and phase for

a single phased array element under test in an indirect far field test environment. When combined with fast synchronization of radio frequency (RF) test instruments, antenna positioning system, and phased array control hardware, these algorithms reduce phased array calibration times to minutes.

- Wide variety of verification tests – Includes fast gain and phase calibration, effective isotropic radiated power (EIRP), radiation pattern versus beam scan angle, beam scan and range loss, cross-polarization isolation, gain compression, gain-over-noise temperature (G/T), and modulation distortion (error vector magnitude).
- Integrated solution – Features a single, user-friendly software interface that controls the antenna under test, Keysight's high-performance test instruments, and Keysight's compact antenna test range positioner and temperature control unit.
- Maximizes existing test chambers – Retrofits into existing anechoic chambers with the addition of a PNA-X vector network analyzer and Phased Array Antenna Control and Calibration solution.

The Phased Array Antenna Control and Calibration solution is a part of the Keysight Antenna Measurement Toolset, which provides engineers with a comprehensive set of antenna measurement tools, including the option to provide a wide variety of non-signaling antenna measurements such as frequency response, polar or full spherical antenna patterns, and associated post-processing software for 2D and 3D graphical representation.

Gregg Bell, General Manager of Aerospace and Defense RF Products, Analog Devices, said:

"Phased array is an enabling technology in modern SatCom systems providing critical capability over the parabolic dish. To overcome the potentially longer test times and manufacturing complexity, Keysight offers this rapid test and calibration solution. We are proud to work with a partner that is continuously driving innovation and enabling significant reduction in development and recurring costs for these phased array antenna solutions."

Greg Patschke, General Manager of Keysight's Aerospace / Defense and Government

Solutions Group, said: "The rapid adoption of phased array antenna technology in commercial and military satellite communications is driving the need for automated testing tools that can quickly and accurately calibrate systems for mission success. The new Keysight Phased Array Antenna Control and Calibration reduces the arduous and lengthy process of calibrating complex, active phased array antennas from hours or days to just a few minutes in a lab setting."

Resources

- **Keysight S7601A Antenna Measurement Toolset**

About Keysight Technologies

At Keysight (NYSE: KEYS), we inspire and empower innovators to bring world-changing technologies to life. As an S&P 500 company, we're delivering market-leading design, emulation, and test solutions to help engineers develop

and deploy faster, with less risk, throughout the entire product lifecycle. We're a global innovation partner enabling customers in communications, industrial automation, aerospace and defense, automotive, semiconductor, and general electronics markets to accelerate innovation to connect and secure the world. Learn more at **Keysight Newsroom** and **www.keysight.com**.

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