

# Antenna Measurement Using Multi-Probe Scanning

Keysight Technologies and Microwave Vision Group

## Accelerate your antenna design process with multiprobe scanning

Three dimensional spherical or cylindrical antenna measurements can be time consuming and costly. With a single probe antenna measurement system the device-under-test (DUT) must be rotated in front of the probe, 360° in elevation and azimuth. Multi-probe scanning allows you to reduce your antenna measurement time and optimize your antenna designs quickly with more rapid prototyping and fewer design iterations.

The StarLab multi-probe array from Microwave Vision Group (MVG) comprises a circular array of wide band (from 0.8 to 18 GHz) probes that are evenly spaced along the circumference of a support structure. The DUT is placed at the center of the support structure and measurements are made by electronically scanning the probe array in elevation and by rotating the DUT 180° in azimuth. By electronically scanning the multi-probe array the number of mechanical movements is minimized reducing significantly the time required to make your antenna measurements.

Minimizing mechanical movements improves accuracy and repeatability and extends the lifetime of the system. Depending upon the requirement of the antenna, the system can be used with spherical or cylindrical geometries. By adding a linear scanner (up to a 6 meter rail), it can be converted to a cylindrical near-field measurement system for base transceiver station antenna measurements. A full three-dimensional antenna measurement can be performed very rapidly when compared to a conventional single probe system.



- Reduce the time to make antenna measurements
- Multi-probe scanning for efficient antenna measurement
- Three-dimensional spherical and cylindrical antenna measurements
- Electronic scanning reduces the number of mechanical movements
- Use with Keysight vector network analyzers or 8960 wireless test set
- Accelerate your antenna designs with more rapid prototyping

## Antenna Measurement Using Multi-Probe Scanning

StarLab is designed specifically for testing antennas in wireless applications. It is a compact, transportable system for design and production use. The system can measure antennas up to 45 cm. If needed, one of the two cylinders of absorbers can be removed, allowing it to pass through a standard double door.

The system can be used for both active and passive measurements. For passive measurements StarLab is used in conjunction with a vector network analyzer such as the Keysight ENA, PNA-L, PNA or PNA-X Series. For active measurements of wireless communications devices. StarLab can be used with the Keysight 8960 one-box wireless communications test set. StarLab can perform both TIS and TRP measurements according to the OTA CTIA specifications.

A StarLab multi-probe scanning system when used with Keysight instrumentation allows you to reduce your antenna measurement time and accelerate your antenna design process.

### System Components

#### Keysight Technologies

E5071C	ENA Series network analyzers, 5 Hz to 20 GHz
N5230C	PNA-L network analyzer
N522xA	PNA Series network analyzers
N524xA	PNA-X Series network analyzers
N5250C	PNA Millimeter-wave network analyzer
E5515E	8960 Series 10 wireless communications test set

Other options are available

#### Microwave Vision Group

StarLab 6 GHz
StarLab 18 GHz
Additional linear scanner option
Additional compact shielded chamber for OTA performance measurement
Additional accessories: masts, phantoms, reference antennas and CTIA
Ripple test
Antenna set

To learn how this solution can address your specific needs please contact

Keysight's solutions partner,  
Microwave Vision Group  
[www.keysight.com/find/mvg](http://www.keysight.com/find/mvg)



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MVG, the Microwave Vision Group (SATIMO, ORBIT/FR, & AEMI) designs, manufactures & installs antenna test & measurement systems.

[www.mvg-world.com](http://www.mvg-world.com)

For information on Keysight Technologies' products, applications and services, go to

[www.keysight.com](http://www.keysight.com)

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