The use of millimeter wave devices in applications such as collision avoidance radar and wireless gigabit communications creates significant challenges when performing antenna radiation measurements.

The μ-Lab from MVG-Orbit/FR is a portable system for the collection of far-field and spherical near-field electromagnetic data of millimeter die chips and miniature antenna assemblies. The extra-wide doors on this compact anechoic chamber enable easy access and mounting of the antenna under test (AUT). MVG-Orbit/FR’s 959 Spectrum software complements the μ-Lab for complete data acquisition and analysis of EM radiation patterns. The u-Lab can be used in conjunction with the Keysight Technologies PNA and PNA-X microwave network analyzers.

The positioning subsystem consists of a lightweight precision gantry arm mounted on an azimuth positioner. The near-field probe, mounted on the gantry arm, can be rotated to change polarization. The gantry arm assembly rotates in azimuth to cover all the longitudinal cuts on the measurement sphere. The AUT remains fixed on a stationary disk while the probe rotates in elevation and azimuth to cover the measurement sphere.

Measurement bands are reconfigurable to allow wide bandwidth operation. The system is designed for simple manual changeover. Measurements can be set up for single or batch testing. Analysis and plotting can be included in the batch test. The μ-Lab provides a compact, portable measurement test capability for a wide variety of antennas.

With the MVG-Orbit/FR uLab and Keysight microwave network analyzers you can perform comprehensive spherical near-field and far-field antenna radiation pattern measurements on your millimeter wave devices.
Antenna Measurements for mm-wave Devices

Technology
- Near-field/Spherical
- Far-field/Spherical

Dynamic range
> 60 dB at 50-110 GHz.

Frequency bands
- 50-110 GHz
- Others on request

Max. size of DUT
- On centered support column: as large as a standard laptop
- On offset column for chip measurements: 5 cm x 5 cm (chipset)

Measurement capabilities
- Gain
- Directivity
- Sidelobe levels: user-defined criteria
- Null depth: search for user-defined null level (e.g., -3, -10, etc.)
- Time domain response capacity
- Dynamic density control: real time speed adjustments
- Beam width: user-defined beamwidth analysis (1 dB, 3 dB, etc.)
- Pass/fail criteria: user defined specification levels
- Capabilities up to 2 millimeter wave bands (V and W), others upon request

System Components

<table>
<thead>
<tr>
<th>Keysight Technologies</th>
<th>MVG-Orbit/FR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNA</td>
<td>u-Lab</td>
</tr>
<tr>
<td>N5222A, 080, 417 microwave network analyzer</td>
<td>Millimeter wave antenna measurement system</td>
</tr>
</tbody>
</table>

To learn how this solution can address your specific needs please contact Keysight’s solutions partner, MVG-Orbit/FR
www.keysight.com/find/mvg

Keysight and its Solutions Partners work together to help customers meet their unique challenges, in design, manufacturing, installation or support. To learn more about the program, our partners and solutions go to
www.keysight.com/find/solutionspartner

MVG-Orbit/FR designs, manufactures & installs antenna test & measurement systems.
www.mvg-world.com

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