

Multi-probe Spherical Near-field Antenna Measurement System
for Heavy DUTs and High Accuracy Applications



■ Cutting-edge Technologies for Wireless Connectivity

In the quest to connect the world, satellites, aircraft, ships, automobiles, telephones and many other devices or machines are being equipped with new intelligence. The wireless connectivity of the resulting applications relies on accurate and precise antennas, antennas that need to be measured, certified, and/or qualified for the purposes they will serve.

Broader Internet Coverage and Faster Wireless Connectivity

With the surge in complexity and speed of communications, and the necessity to meet increasing demands, technology is being propelled toward uncharted frontiers.

With 5G comes massive MIMO, LEO satellite constellations, V2X communication, and more. These technologies open new communication channels via higher frequency bands and will bring us closer to worldwide connectivity, broader internet coverage, and the desired faster communications.

NewSpace, Telecom, and other contenders in the race to deliver viable connectivity on a global scale are aware of the pressing time-to-market, and are seeking areas in which processes can be made faster and more cost-efficient. Antenna testing and validation has been identified as one such key area of efficiency. Nonetheless, the communication stream quality of the new connecting devices relies heavily on the capacity of the antennas to transmit and receive data. So, how are manufacturers balancing both requirements? And as we progress to 5G and higher frequencies, how will they test the performance of the upcoming technologies accurately, but also quickly and cost-effectively to meet market demands?



Tailored to your application-specific needs,
the SG Evo brings unrivaled speed
and accuracy

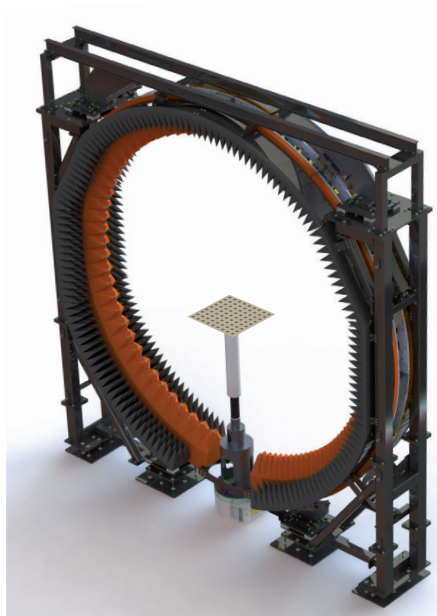
MVG continues to match engineering teams world-wide with the cutting-edge measurement technology needed to test new developments. Whether for satcom, telecom, aerospace or other applications, MVG multi-probe systems are primed to test and validate antennas in any stage of development, from R&D through full system integration and production.

The SG Evo is a multi-probe array test system for the spherical near-field measurement and OTA testing of antennas. It is designed to measure large and heavy antennas such as 5G massive mimo BTS, satellite and ground terminal antennas. SG Evo provides fast and accurate antenna performance test results in record time.

Innovation in the SG Evo boosts the speed and accuracy of original MVG SG systems: the SG Evo incorporates oversampling positioning within the arch, eliminating the need to tilt the device under test (DUT) when oversampling and consequently avoiding gravitational deflections of the DUT and azimuth positioner, even when testing heavy DUTs. Additionally, the SG Evo can be configured with multiple parallel receivers, dramatically reducing measurement time, especially when testing a large number of frequencies or devices with many potential antenna beam states.

The modular design scheme of the SG Evo also allows for flexibility in its build: the size of the probe array arch can be decided in accordance with the typical size and weight of the DUT; and the sets of probes can be selected according to the frequencies to be measured – from 400 MHz to 50 GHz*.

With these key features in addition to legacy MVG test technology, SG Evo performs highly accurate tests and measurements at rates 10 to 100 times faster than traditional methods.



Key Features

Rotating arch mechanism

- Highly accurate measurements by minimizing movements of the DUT
- Unlimited oversampling

Frequency range

- 400 MHz – 50 GHz*
Customizable with a selection of seven types of precision probes covering the 400 MHz - 50 GHz range

Multi-probe array combined with multiple signal receivers

- With this option, take the full benefit of your multi-probe array configuration; reach extremely fast measurement speeds at least from 10 to 100 times faster than in a Compact Antenna Test Range (CATR)

Optimized real estate

- Multi-probe near-field measurement technology requires a smaller footprint than far-field ranges or CATR

Extensive measurement capabilities

- OTA testing or antenna measurement
- Principle cuts, 2D and 3D patterns
- Functional testing
- Antenna parameters: radiation pattern (omni, toroid, narrow beam, multi-beam), beam peak, beam width, front to back ratio, cross polar discrimination, side lobe levels, gain, directivity, efficiency, TRP, TIS, EIRP and EIS

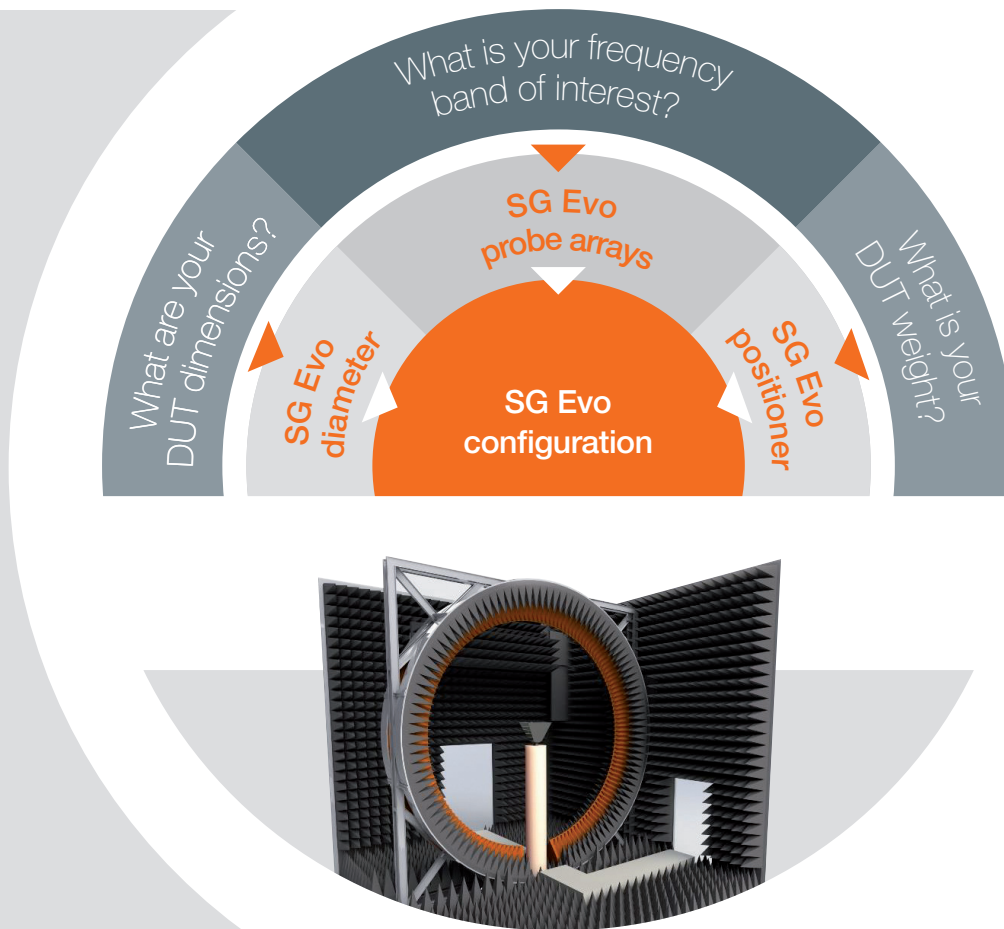
Seven probes that can be interleaved**

PRODUCT REFERENCE	FREQUENCY BAND	APERTURE SIZE
DP 70-450 	0.07 GHz - 0.45 GHz	247 mm x 247 mm
DP 200-6000 	0.2 GHz - 6.0 GHz	63 mm x 63 mm
DP 400-6000 	0.4 GHz - 6.0 GHz	63 mm x 63 mm
DP 6000-10000 	6.0 GHz - 10.0 GHz	63 mm x 63 mm
DP 200-10000 	0.2 GHz - 10.0 GHz	63 mm x 63 mm
DP 6000-18000 	6.0 GHz - 18 GHz	22 mm x 22 mm
DP 18000-50000 	18 GHz - 50 GHz	Ø 48 mm

* The frequency range can be extended upon request, from 70 MHz to 50 GHz, please contact us

** Interleaved arrays are considered one array.

Build your SG Evo



Ordering Information

Follow the information below to order your SG Evo. Our multi-probe system part numbers include the system model name and the probe array part numbers, according to the following scheme: **Model-{Array1}-{Array2}-...**

Array part numbers are composed of the following fields

[Distance] - [Probes] - [Number of Probes] - [Distance between probes] according to these rules:

FIELD	DEFINITION
[DISTANCE]	Internal diameter in mm
[PROBES]	The probe model or list of probe models (if probes are interleaved) comprising the array, and separated by "/" if necessary. See page 4
[NUMBER OF PROBES]	The number of each probe model separated by "/" if necessary
[DISTANCE BETWEEN PROBES]	The angle between probes in degrees

Sample ordering code:

SG Evo -{[3200]-[DP400-6000/DP18000-50000]-[34/68]-[5/2.5]}

MVG - Testing Connectivity for a Wireless World

The Microwave Vision Group offers cutting-edge technologies for the visualization of electromagnetic waves. Enhancing the speed and accuracy of wireless connectivity testing, as well as the performance and reliability of anechoic and EMC technologies, our systems are integral to meeting the testing challenges of a fully connected world.



WORLDWIDE GROUP, LOCAL SUPPORT

Our teams, in offices around the world, guide and support you from purchase, through design, to delivery and installation. Because we are local, we can assure speed and attention in project follow through. This includes customer support and maintenance once the system is in place.

For the exact addresses and up-to-date contact information:

www.mvg-world.com/en/contact



For more information:
mvg-world.com

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