

+ STARLAB

The Scalable, Trusted
Platform for What's Next
in Antenna Testing



The New StarLab Portfolio

For over a decade, StarLab has supported hundreds of companies and research laboratories worldwide, recognized for its compact footprint, measurement reliability, and intuitive operation.

From satellite antenna development to IoT and 5G testing, it has helped accelerate innovation across industries without compromise.

As testing requirements evolve, with higher frequencies, more integrated devices, and tighter links between hardware and software, a new approach is needed.

Introducing the StarLab Portfolio Suite: a fully integrated line of OTA and passive test systems, built to meet today's demands and adapt to tomorrow's challenges.

- + Covers testing needs from basic validation to defense-grade R&D
- + Offers modular software bundles tailored to your workflow
- + Supports flexible, scalable configurations to grow with your needs

Choose the right system for your requirements — and move faster with confidence!

Tailored Solutions for Your Measurement Needs

Each system in the StarLab Portfolio Suite offers specific capabilities to match your goals



Affordable OTA Testing Made Easy

The entry level OTA system with essential passive functionalities. OTA Non-signaling Uplink signal test available as optional.



All-in-One OTA & Passive

OTA-friendly system delivered with advanced OTA software pack. Allow for essential passive testing and optional advanced passive capabilities. All OTA signaling test protocols available. OTA Non-signaling Uplink signal test and API available as optional.



Versatile Platform for R&D

Covers 650 MHz–18 GHz with interleaved probes. Includes Passive Advanced, and gives access to cylindrical config, and full OTA support. API & OTA Non-signaling uplink included to the Developer-Mode and downlink available. Academic version available.

MAIN FEATURES

Technology

- Near-field/Spherical
- Near-field/Cylindrical

Measurement capabilities

- Gain
- Directivity
- Beamwidth
- Cross polar discrimination
- Sidelobe levels
- 3D radiation pattern
- Radiation pattern in any polarization (linear or circular)
- Antenna efficiency
- TRP, TIS, EIRP and EIS

SYSTEM CONFIGURATIONS

Equipment

- Arch with probe array, AUT positioner
- Control unit
- Power and control unit
- Tx and Rx amplification units
- Instrumentation rack
- Uninterruptible power supply
- Vector network analyzer

Add-ons

- Shielded anechoic chamber (OTA testing)
- Linearpositioner for linear array antenna measurements (cylindrical testing)

OTA Equipment

- Radio communication tester
- Active switching unit
- Transfer switching unit

Max size of DUT

- 45 max diameter
- Up to 400 cm L x 45 cm W - for cylindrical set-up (only on Pro and Pro+)

Max. weight of DUT (centered load)

- 10 kg on polystyrene mast
- 50 kg on ultra-rigid mast
- 80 kg for cylindrical mode

Accessories

- Reference horns
- PC
- Ultra-rigid mast
- Laptop support interface
- Hand and head phantom
- Reference antennas
- Rail system for cylindrical mode

Services

- Installation
- Training
- Warranty
- Post warranty service plans

■ Included □ Optional ○ Required



Test Power Without Compromise

Frequency range extended to 40 GHz with interleaved probes.
Gives access to cylindrical config, and full OTA support. API & OTA
Non-signaling uplink included to the Developer-Mode and downlink available. Academic version available.



The Ultimate Test System

Covers up to 50 GHz.
Available in Wideband or Passive Special versions. Suitable for passive and OTA testing. API & OTA
Non-signaling uplink included to the Developer-Mode and downlink available. US Defense-grade option. Academic version available. Rentable.

+ System Overview



Cutting-edge Probes

Up to 3 different types of probes to cover frequency bands from 650 MHz - 50 GHz
Low directional, dual-polarized



High Accuracy Reference Antennas

For reference measurements



High Precision Unlimited Sampling

The mechanical rotation of the arch in elevation allows for unlimited sampling of the DUT



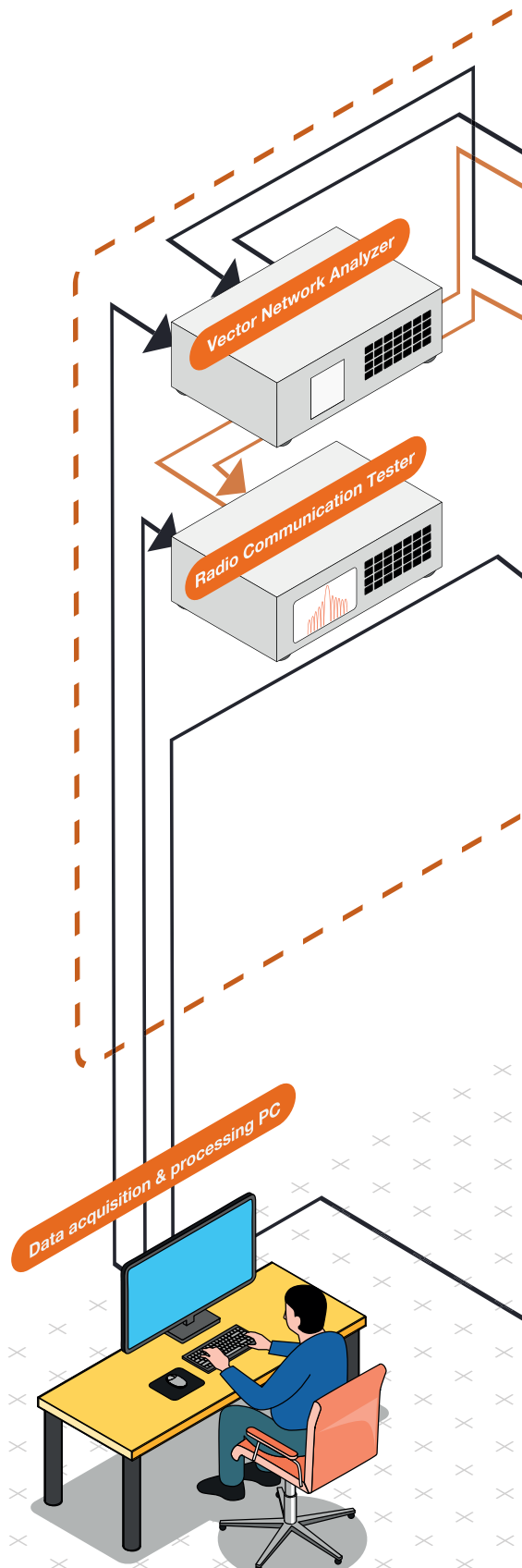
Sturdy Transparent Positioner

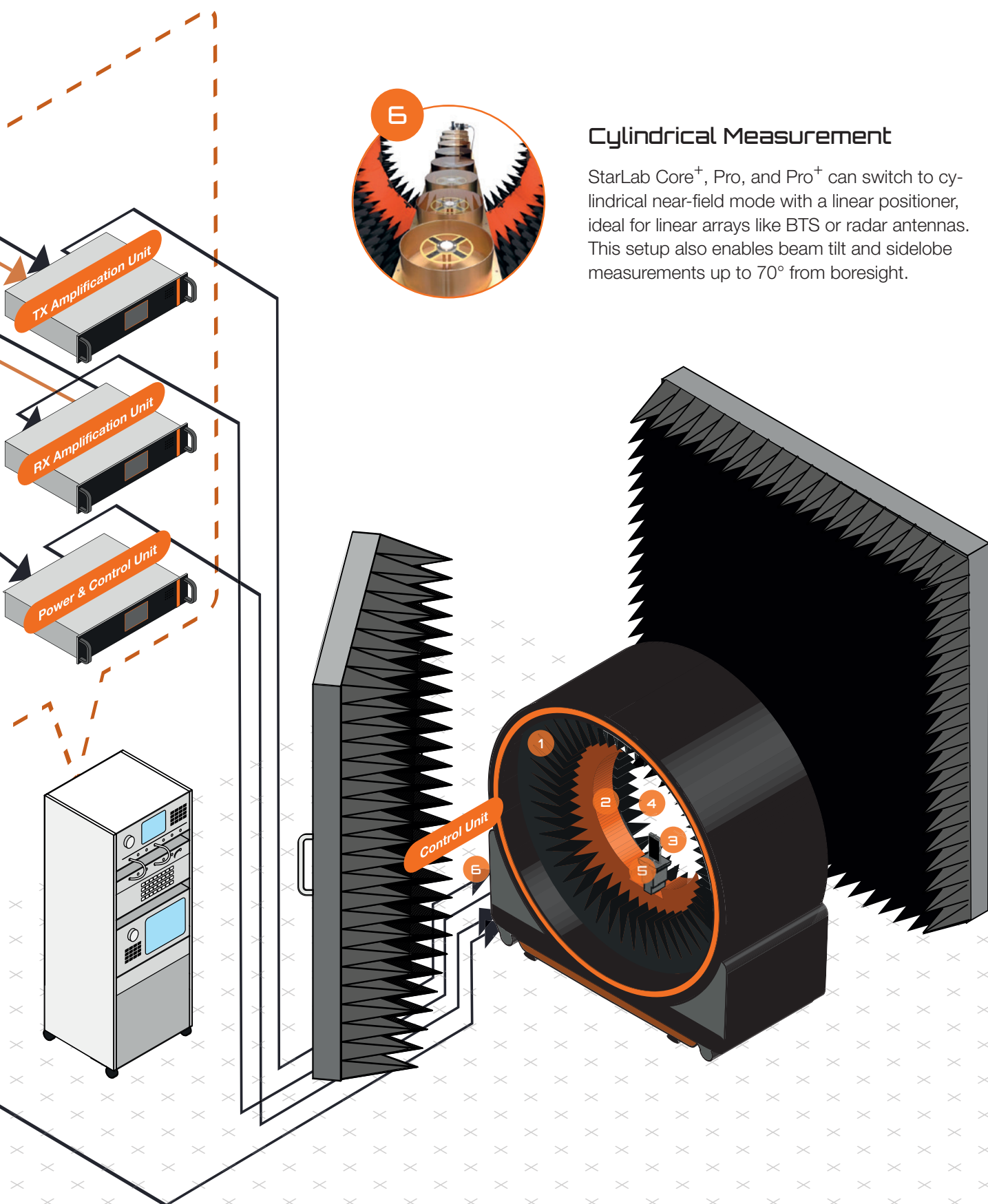
Rigid microwave transparent mast or high precision metallic mast



Accurate Stabilizers

Fine level adjustment on PRO+ and ULTRA models for accurate positioning in the test environment





Cylindrical Measurement

StarLab Core⁺, Pro, and Pro⁺ can switch to cylindrical near-field mode with a linear positioner, ideal for linear arrays like BTS or radar antennas. This setup also enables beam tilt and sidelobe measurements up to 70° from boresight.

StarLab

Extended Portfolio



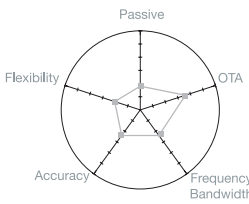
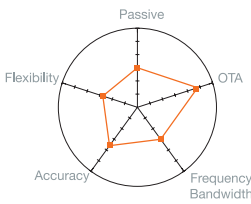
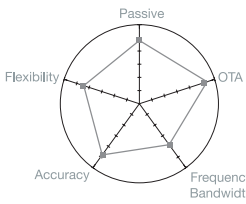
StarLab Core



StarLab Core⁺



StarLab PRO

	Applications	Affordable OTA Testing Made Easy	All-in-One OTA & Passive Testing up to 11 GHz	Versatile Platform for R&D Below 18 GHz
Software	Included	Passive-Essential, OTA-Mobile Cellular - Essential (LTE)	Passive-Essential, OTA-Mobile Cellular - Advanced (NR)	Passive-Advanced Developer-Mode (OTA Non-signaling uplink & API)
	Optional	OTA-IOT-Essential	Passive-Advanced OTA-IoT (Essential & Advanced)	Full OTA (Essential & Advanced)
	Developer-Mode (optional)	OTA Non-signaling UL	OTA Non-signaling UL & API	OTA Non-signaling DL
Functional Specifications	Frequency	650 MHz - 8 GHz	650 MHz – 11* GHz (*) 10 GHz for passive, 11 GHz for OTA	650 MHz - 18 GHz
	Number of Probes	Half arch: Single array 8x Low Frequency probes Total: 8 Probes	Full arch: Single probe array 15x Low Frequency (650 MHz - 11 GHz) Total: 15 Probes	Full arch: Interleaved 15x Low Frequency (650MHz - 11GHz) + 14x High Frequency (11 GHz - 18 GHz) Total: 29 Probes
	Probe Angle	22.5 deg	22.5 deg	22.5 deg
	Cylindrical	Not available	Available	Available
	Absorbers	Non-rubberized absorbers	Rubberized absorbers	Rubberized absorbers
	Optional			





StarLab PRO⁺



StarLab ULTRA^{Wideband} StarLab ULTRA^{Passive}

40 GHz Test Power Without Compromise	The Ultimate Test System for Defense and Innovation	
Passive-Advanced Developer Mode (OTA Non-signaling uplink & API)	Passive - Advanced, OTA-Mobile Cellular - Advanced Insight, Developer Mode (OTA Non-signaling uplink & API)	Passive - Advanced, Insight, Developer Mode (OTA Non-signaling uplink & API)
Full OTA (Essential & Advanced)	OTA IoT (Essential & Advanced)	No OTA
OTA Non-signaling DL	OTA Non-signaling DL	OTA Non-signaling DL
650 MHz - 40 GHz	650 MHz - 50 GHz	18 GHz - 50 GHz
Full arch: Interleaved 14x Low Frequency (650 MHz - 11 GHz) + 15x UHF (11 GHz - 40 GHz) Total: 29 Probes	Full arch: Half-Half H1 : 7x Low Frequency (650 MHz - 11 GHz) + 7x High Frequency (11 GHz - 18 GHz) H2 : 15x UHF (18 GHz - 50 GHz) Total: 29 Probes	Full arch: Single probe array 29x UHF (18 GHz - 50 GHz) Total: 29 Probes
22.5 deg	22.5 deg for LF & HF 11.25 deg for UHF	11.25 deg
Available	Not available	
Rubberized absorbers	Rubberized absorbers	
On the fly measurement	Logo on Styrofoam CAP in the chamber or absorber wall / On the fly measurement / US Defense-grade / Rentable	



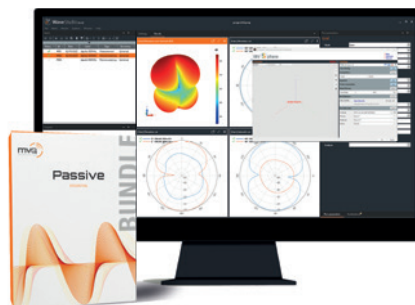
+ Software Bundles

A modular suite designed to address the specific requirements of passive, OTA Mobile Cellular, IoT, and cylindrical testing.

PASSIVE MEASUREMENTS

Passive Essential

The essential package for passive antenna measurements. It includes basic data acquisition with WaveStudio Passive and fundamental computation with MV-Sphere Basic.



Passive Advanced

An enhanced version of Passive Core with expanded computation and analysis tools. It includes MV-Sphere Advanced for improved spherical Near-Field to Far-Field (NF-to-FF) transformation, plus advanced features:

+ Computation tools:

- **MV-Holography** computes the field on a planar surface (planar back-propagation) from FF or SWC data
- **MV-Iterative** extrapolates a spherical field measurement in the truncated region (area in which data is not measured) to estimate the field over the full spherical measurement grid.
- **MV-Phase** determines the phase center of an antenna using 3D FF data
- **MV-Translate & Rotate** allows the Spherical FF data to be translated and rotated within the coordinate system

+ Analysis tool

- **Antenna Analyzer** is advanced analysis tool to extract most of antenna factors & radiation patterns from WS FF dataset

OTA MEASUREMENTS



OTA Mobile Cellular Essential

The essential package for cellular testing, covering all legacy 2G-4G standards, including TDSCDMA, LTE Unlicensed and License Assisted Access LAA. It includes a legacy Radio Com Tester driver.

OTA Mobile Cellular Advanced

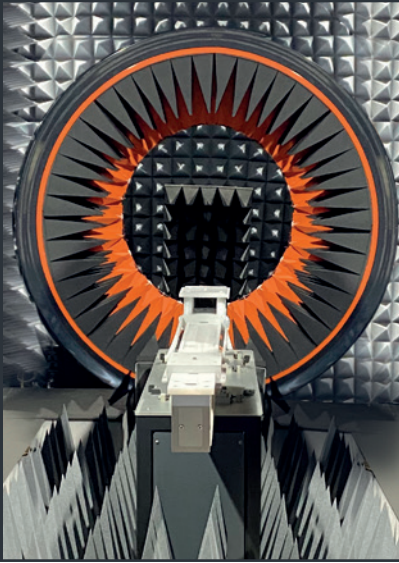
An advanced version of Mobile Cellular Essential with full 5G support. It adds NR Standalone (SA) and NR Non-Standalone (NSA) modes (LTE/NR anchored) and includes an advanced Radio Com Tester (single-box/one-box type) driver.

OTA IoT Essential

The essential package for IoT connectivity testing, covering all legacy WLAN and Bluetooth standards. It supports 802.11 a/b/g/n/ac/ax, Bluetooth, BLE (including test mode, advertising channels, and signaling), and includes a legacy Radio Com Tester driver.

OTA IoT Advanced

An extended version of IoT Core with additional capabilities. It introduces support for the latest WLAN 802.11 be standard, Standalone GNSS (GPS, etc.), and an advanced Radio Com Tester (single-box/one-box type) driver.



Cylindrical Mode

An add-on bundle that unlocks StarLab's cylindrical scanning capability, enabling passive antenna measurements and precise 3D characterization of long linear arrays—up to 4 meters in length.

By overcoming the 45 cm DUT size limitation of spherical mode, Cylindrical Mode transforms StarLab's compact circular design into a powerful asset for evaluating large, linear antennas. A dedicated rail setup supports the DUT during measurement, enabling smooth and accurate cylindrical scanning.

This expansion enhances StarLab's versatility for advanced passive measurements — without compromising accuracy and with minimal impact on system footprint.

<DEVELOPER/> MODE

StarLab PRO and ULTRA Developer-Mode give you full control over system operations with both OTA Non-signaling (ONS) and API integration. Enables custom scripting and automation for advanced test scenarios.



ONS (OTA Non-Signaling)

Direct hardware control for custom OTA test scenarios via Python scripting in WaveStudio. Enables automated measurements of uplink/downlink signals.

Software and Hardware API Remote Control

Supports external scripting for automation and custom application integration for the control over MVG systems (Arch API) and software (Remote WaveStudio API).

+ Software Compatibility Matrix

Discover which StarLab systems support which software bundles and advanced features.

		Passive		Cylindrical Mode
		Essential	Advanced	
	StarLab Core	✓	✗	✗
	StarLab Core ⁺	✓	○	✓
	StarLab PRO	✓	✓	○
	StarLab PRO ⁺	✓	✓	○
	StarLab ULTRA Wideband	✓	✓	✗
	StarLab ULTRA Passive	✓	✓	✗

	OTA Mobile Cellular		OTA IoT		<Developer/> Mode		
							
	Essential	Advanced	Essential	Advanced	API	OTA NS [*] UL	ONS DL ^{**}
	✓	✗	○	✗	✗	○	✗
	✓	✓	○	○	○	○	✗
	○	○	○	○	✓	✓	○
	○	○	○	○	✓	✓	○
	✓	✓	○	○	✓	✓	○
	✗	✗	✗	✗	✓	✓	○
[*] OTA Non-signaling uplink ^{**} OTA Non-signaling downlink ✓ Included ○ Optional ✗ Unavailable							



System Specification

Measurement Time (10 frequencies)

AUT size 15 cm - 2.4 GHz	3 min
AUT size 15 cm - 7.2 GHz	10 min
AUT size 45 cm - 2.4 GHz	10 min
Typical dynamic range	50 - 60 dB

Radiation Pattern Accuracy

		10 dBi AUT	20 dBi AUT	30 dBi AUT
Peak gain accuracy	0.65 - 1 GHz	$<\pm 2.0$ dB	-	-
	1 - 8 GHz	$<\pm 1.0$ dB	$<\pm 0.9$ dB	-
-10 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 2.1$ dB	-	-
	1 - 8 GHz	$<\pm 1.1$ dB	$<\pm 0.9$ dB	-
-20 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 5.0$ dB	-	-
	1 - 8 GHz	$<\pm 2.9$ dB	$<\pm 1.1$ dB	-
-30 dB sidelobe accuracy	0.65 - 1 GHz	-	-	-
	1 - 8 GHz	-	$<\pm 3.0$ dB	-
Peak gain repeatability	$<\pm 0.5$ dB			
Probe network	0.65 - 8 GHz	8 probes		

Mechanical Characteristics

External dimensions of StarLab	1.9 x 1.1 x 2.0 m (L x W x H)
Probe array internal diameter	0.9 m
Optional anechoic chamber size	2.4 x 2.4 x 2.4 m
Angle between probes in the same frequency band	22.50°

DUT MAX. WEIGHT

Polystyrene mast	10 kg
Ultra rigid mast	50 kg
Linear antenna	Not available



System Specification

Measurement Time (10 frequencies)

AUT size 15 cm - 2.4 GHz	1 min
AUT size 15 cm - 11 GHz	8 min
AUT size 45 cm - 2.4 GHz	5 min
Typical dynamic range	60 - 70 dB

Radiation Pattern Accuracy

		10 dBi AUT	20 dBi AUT	30 dBi AUT
Peak gain accuracy	0.65 - 1 GHz	$<\pm 1.5$ dB	-	-
	1 - 11 GHz	$<\pm 0.8$ dB	$<\pm 0.7$ dB	-
-10 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 1.6$ dB	-	-
	1 - 11 GHz	$<\pm 0.9$ dB	$<\pm 0.6$ dB	-
-20 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 4.5$ dB	-	-
	1 - 11 GHz	$<\pm 2.7$ dB	$<\pm 0.9$ dB	-
-30 dB sidelobe accuracy	0.65 - 1 GHz	-	-	-
	1 - 11 GHz	-	$<\pm 2.7$ dB	-
Peak gain repeatability	$<\pm 0.3$ dB			
Probe network	0.65 - 11 GHz 15 probes			

Mechanical Characteristics

External dimensions of StarLab	1.9 x 1.1 x 2.0 m (L x W x H)
Probe array internal diameter	0.9 m
Optional anechoic chamber size	2.4 x 2.4 x 2.4 m
Angle between probes in the same frequency band	22.50°

DUT MAX. WEIGHT

Polystyrene Mast	10 kg
Ultra rigid mast	50 kg



System Specification

Measurement Time (10 frequencies)

AUT size 15 cm - 2.4 GHz	1 min
AUT size 15 cm - 18 GHz	18 min
AUT size 45 cm - 2.4 GHz	5 min
Typical dynamic range	60-70 dB

Radiation Pattern Accuracy

		10 dBi AUT	20 dBi AUT	30 dBi AUT
Peak gain accuracy	0.65 - 1 GHz	$<\pm 1.5$ dB	-	-
	1 - 18 GHz	$<\pm 0.8$ dB	$<\pm 0.7$ dB	$<\pm 0.6$ dB
-10 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 1.6$ dB	-	-
	1 - 18 GHz	$<\pm 0.9$ dB	$<\pm 0.6$ dB	$<\pm 0.4$ dB
-20 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 4.5$ dB	-	-
	1 - 18 GHz	$<\pm 2.7$ dB	$<\pm 0.9$ dB	$<\pm 0.6$ dB
-30 dB sidelobe accuracy	0.65 - 1 GHz	-	-	-
	1 - 18 GHz	-	$<\pm 2.7$ dB	$<\pm 1.0$ dB
Peak gain repeatability	$<\pm 0.3$ dB			
Probe network	0.65 - 11 GHz	15 Probes		
	11 - 18 GHz	14 Probes		

Mechanical Characteristics

External dimensions of StarLab	1.9 x 1.1 x 2.0 m (L x W x H)
Probe array internal diameter	0.9 m
Optional anechoic chamber size	2.4 x 2.4 x 2.4 m
Angle between probes in the same frequency band	22.50°

DUT MAX. WEIGHT

Polystyrene mast	10 kg
Ultra rigid mast	50 kg

Linear Antenna Measurement Characteristics

Geometry	Cylindrical	
Standard rail length	6 m	9 m
Linear array antenna max. length	2.5 m	4 m
Linear array antenna max. weight	80 kg	



System Specification

Measurement Time (10 frequencies)

AUT size 15 cm - 2.4 GHz	1 min
AUT size 15 cm - 40 GHz	45 min
AUT size 45 cm - 2.4 GHz	5 min
Typical dynamic range	60 - 70 dB

Radiation Pattern Accuracy

		10 dBi AUT	20 dBi AUT	30 dBi AUT
Peak gain accuracy	0.65 - 1 GHz	$<\pm 1.5$ dB	-	-
	1 - 11 GHz	$<\pm 0.8$ dB	$<\pm 0.7$ dB	-
	11 - 40 GHz	$<\pm 0.9$ dB	$<\pm 0.7$ dB	$<\pm 0.6$ dB
-10 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 1.6$ dB	-	-
	1 - 11 GHz	$<\pm 0.9$ dB	-	-
	11 - 40 GHz	$<\pm 1.0$ dB	$<\pm 0.6$ dB	$<\pm 0.4$ dB
-20 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 4.5$ dB	-	-
	1 - 11 GHz	$<\pm 2.7$ dB	$<\pm 0.9$ dB	-
	11 - 40 GHz	$<\pm 3.2$ dB	$<\pm 1.0$ dB	$<\pm 0.6$ dB
-30 dB sidelobe accuracy	0.65 - 1 GHz	-	-	-
	1 - 11 GHz	-	$<\pm 2.7$ dB	-
	11 - 40 GHz	-	$<\pm 3.2$ dB	$<\pm 1.0$ dB
Peak gain repeatability	$<\pm 0.3$ dB			
Probe network	0.65 - 11 GHz	14 Probes		
	11 - 40 GHz	15 Probes		

Mechanical Characteristics

External dimensions of StarLab	1.9 x 1.1 x 2.0 m (L x W x H)
Probe array internal diameter	0.9 m
Optional anechoic chamber size	2.4 x 2.4 x 2.4 m
Angle between probes in the same frequency band	22.50°

DUT MAX. WEIGHT

Polystyrene mast	10 kg
Ultra rigid mast	50 kg

Linear Antenna Measurement Characteristics

Geometry	Cylindrical	
Standard rail length	6 m	9 m
Linear array antenna max. length	2.5 m	4 m
Linear array antenna max. weight	80 kg	

StarLab ULTRA

Wideband

650 MHz - 50 GHz



System Specification

Measurement Time (10 frequencies)*	
AUT size 15 cm - 2.4 GHz	1.5 min
AUT size 15 cm - 50 GHz	1.5 h
AUT size 45 cm - 2.4 GHz	8 min
Typical dynamic range	50 - 70 dB

Radiation Pattern Accuracy

		10 dBi AUT	20 dBi AUT	30 dBi AUT
Peak gain accuracy	0.65 - 1 GHz	$<\pm 1.5$ dB	-	-
	1 - 18 GHz	$<\pm 0.9$ dB	$<\pm 0.7$ dB	-
	18 - 50 GHz	$<\pm 0.9$ dB	$<\pm 0.7$ dB	$<\pm 0.6$ dB
-10 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 1.6$ dB	-	-
	1 - 18 GHz	$<\pm 0.9$ dB	$<\pm 0.6$ dB	-
	18 - 50 GHz	$<\pm 0.9$ dB	$<\pm 0.6$ dB	$<\pm 0.4$ dB
-20 dB sidelobe accuracy	0.65 - 1 GHz	$<\pm 4.5$ dB	-	-
	1 - 18 GHz	$<\pm 2.7$ dB	$<\pm 0.9$ dB	-
	18 - 50 GHz	$<\pm 2.9$ dB	$<\pm 1.0$ dB	$<\pm 0.6$ dB
-30 dB sidelobe accuracy	0.65 - 1 GHz	-	-	-
	1 - 18 GHz	-	$<\pm 3.2$ dB	$<\pm 1.0$ dB
	18 - 50 GHz	-	$<\pm 2.9$ dB	$<\pm 1.0$ dB
Peak gain repeatability	$<\pm 0.3$ dB			
Probe network	0.65 - 11 GHz	7 probes		
	11 - 18 GHz	7 probes		
	18 - 50 GHz	15 probes		

Mechanical Characteristics

External dimensions of StarLab	1.9 x 1.1 x 2.0 m (L x W x H)
Probe array internal diameter	0.9 m
Optional anechoic chamber size	2.4 x 2.4 x 2.4 m
Angle between probes in the same frequency band	22.50°

DUT MAX. WEIGHT

Polystyrene mast	10 kg
Ultra rigid mast	50 kg

*Measurement time can vary by VNA model & IFBW setup

StarLab ULTRA

Passive Special

18 GHz - 50 GHz



System Specification

Measurement Time (10 frequencies)*

AUT size 15 cm - 18 GHz	4 min
AUT size 15 cm - 50 GHz	1.5 h
AUT size 45 cm - 18 GHz	40 min
Typical dynamic range	50 dB

Radiation Pattern Accuracy

		10 dBi AUT	20 dBi AUT	30 dBi AUT
Peak gain accuracy	18 - 50 GHz	$<\pm 0.9$ dB	$<\pm 0.7$ dB	$<\pm 0.6$ dB
-10 dB sidelobe accuracy	18 - 50 GHz	$<\pm 0.9$ dB	$<\pm 0.6$ dB	$<\pm 0.4$ dB
-20 dB sidelobe accuracy	18 - 50 GHz	$<\pm 2.9$ dB	$<\pm 1.0$ dB	$<\pm 0.6$ dB
-30 dB sidelobe accuracy	18 - 50 GHz	-	$<\pm 2.9$ dB	$<\pm 1.0$ dB
Peak gain repeatability	$<\pm 0.3$ dB			
Probe network	18 - 50 GHz 29 probes			

Mechanical Characteristics

External dimensions of StarLab	1.9 x 1.1 x 2.0 m (L x W x H)
Probe array internal diameter	0.9 m
Optional anechoic chamber size	2.4 x 2.4 x 2.4 m
Angle between probes in the same frequency band	11.25°

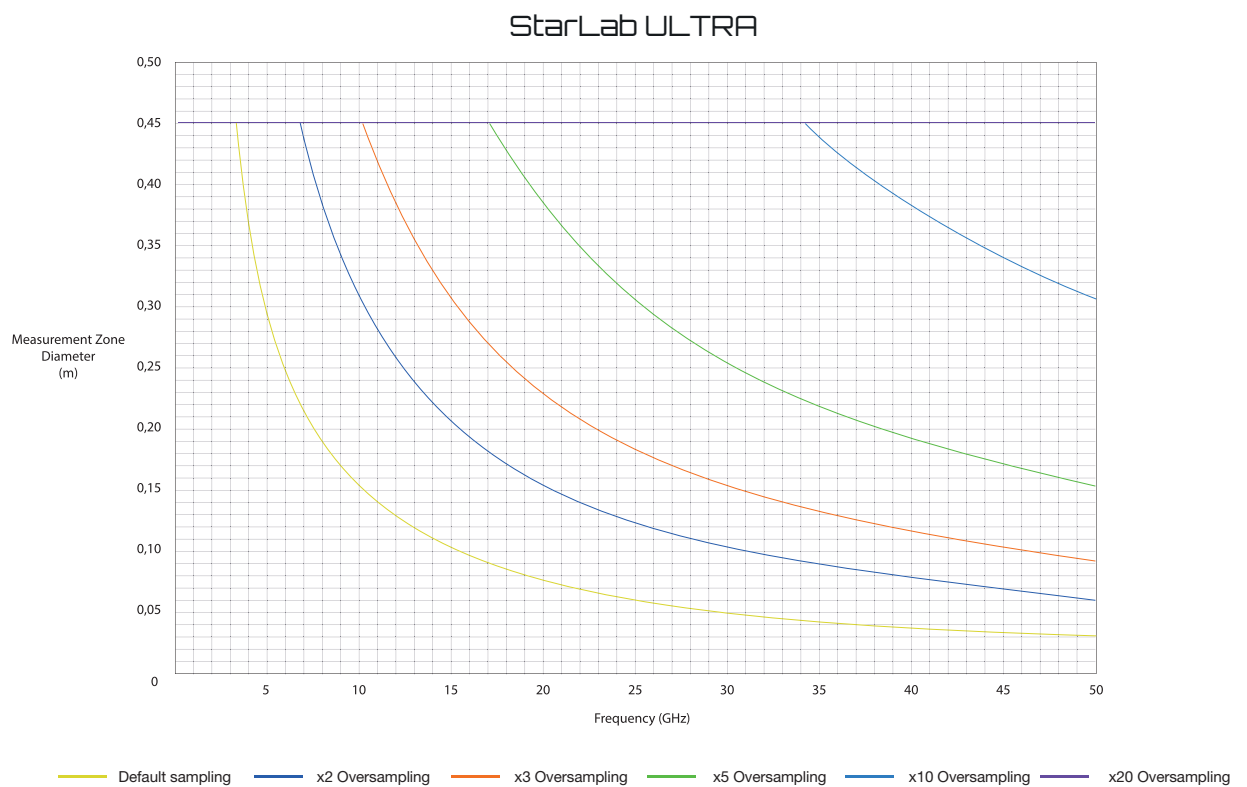
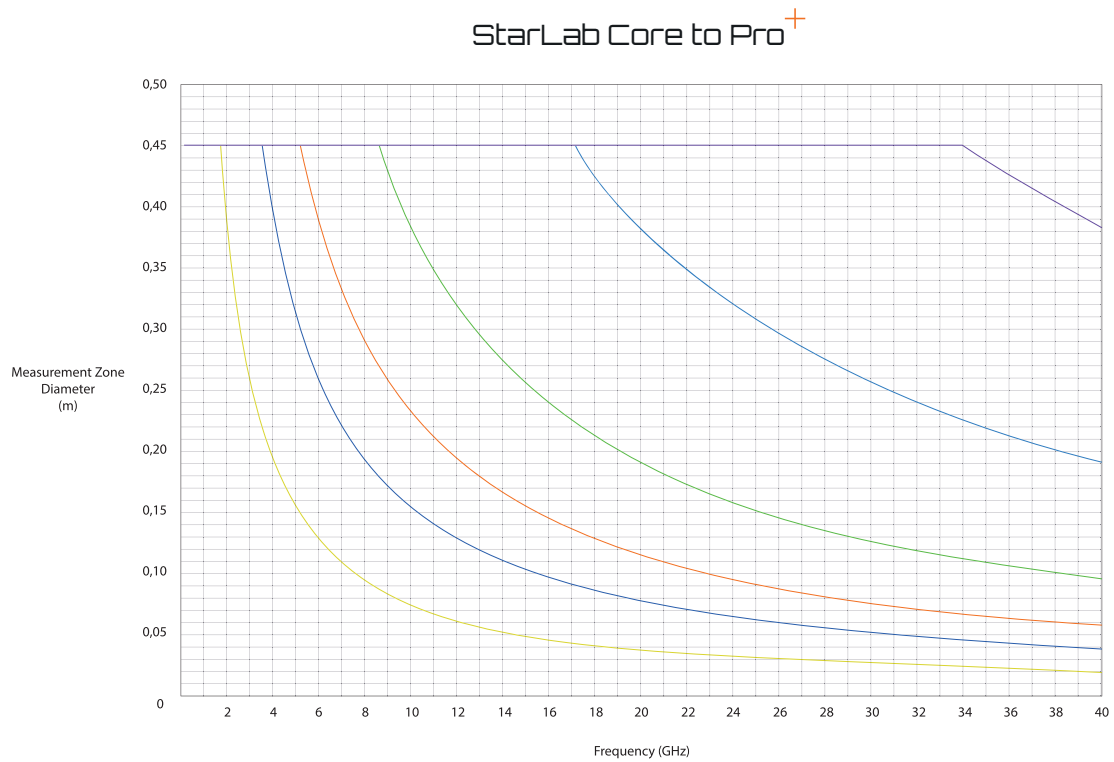
DUT MAX. WEIGHT

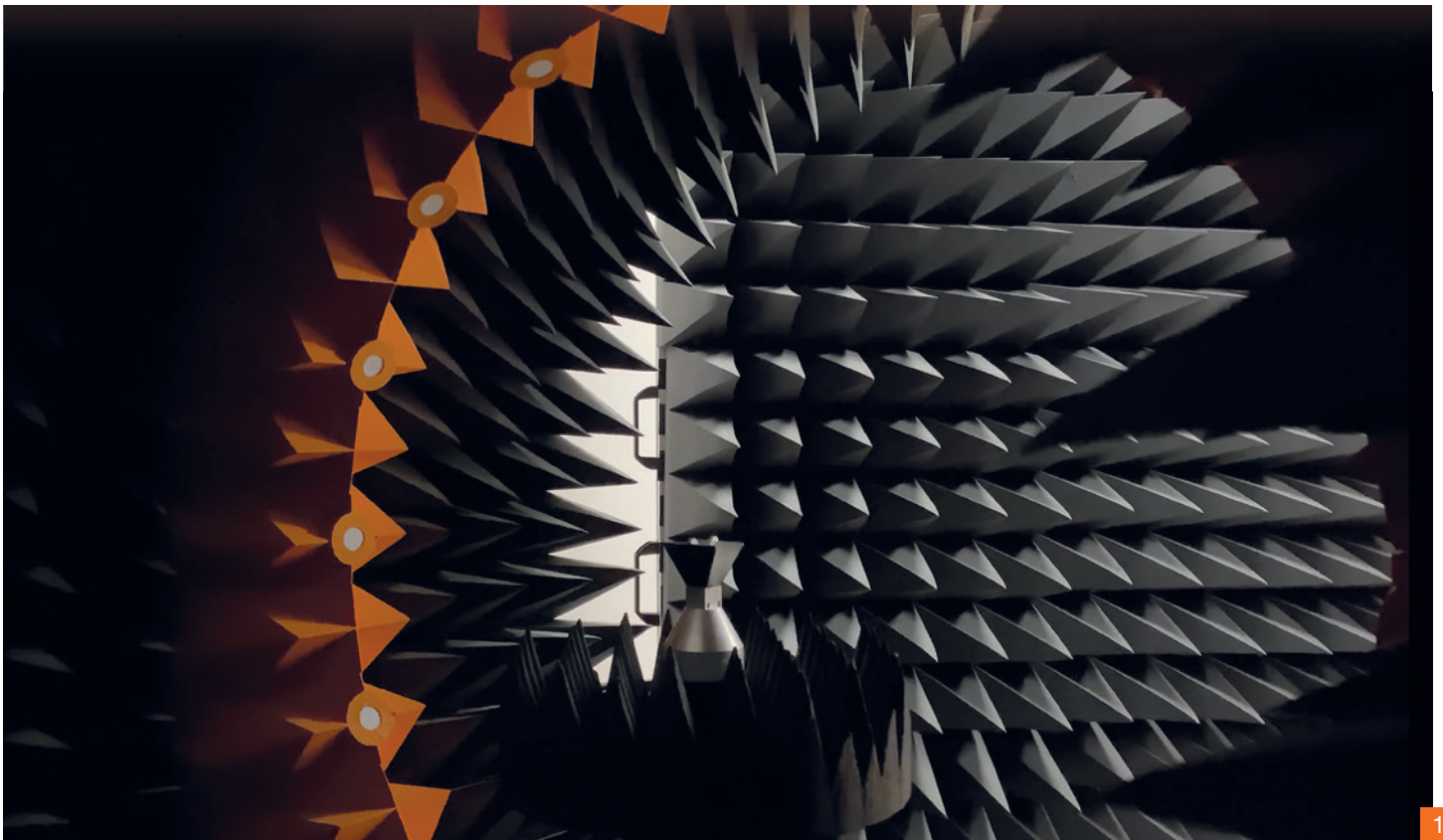
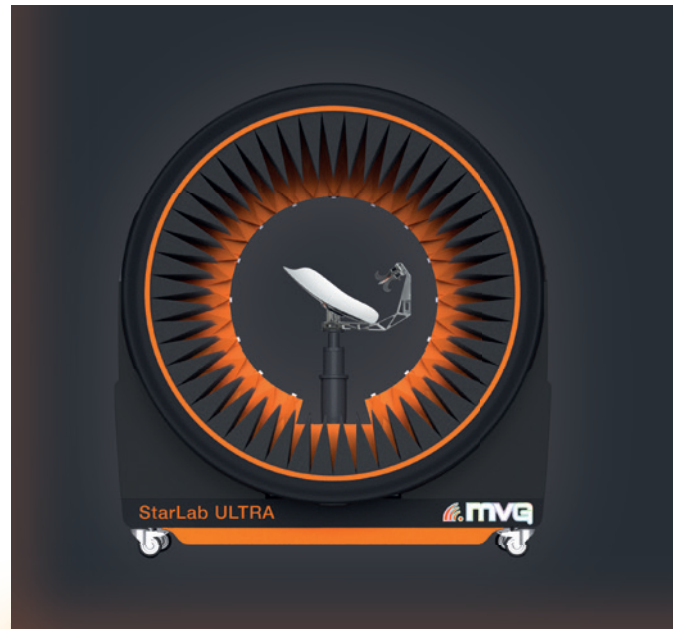
Polystyrene mast	10 kg
Ultra rigid mast	50 kg

*Measurement time can vary by VNA model & IFBW setup

+ Measurement Zone Capabilities

OUT size vs. frequency comparison





Testing Connectivity for a Wireless World

The Microwave Vision Group offers cutting-edge technologies for the visualization of electromagnetic waves. With advanced test solutions for antenna characterization, radar signature evaluation and electromagnetic measurements, we support company R&D teams in their drive to innovate and boost product development.



For more information:
<https://www.mvg-world.com>

Contact us:
www.mvg-world.com/en/contact

