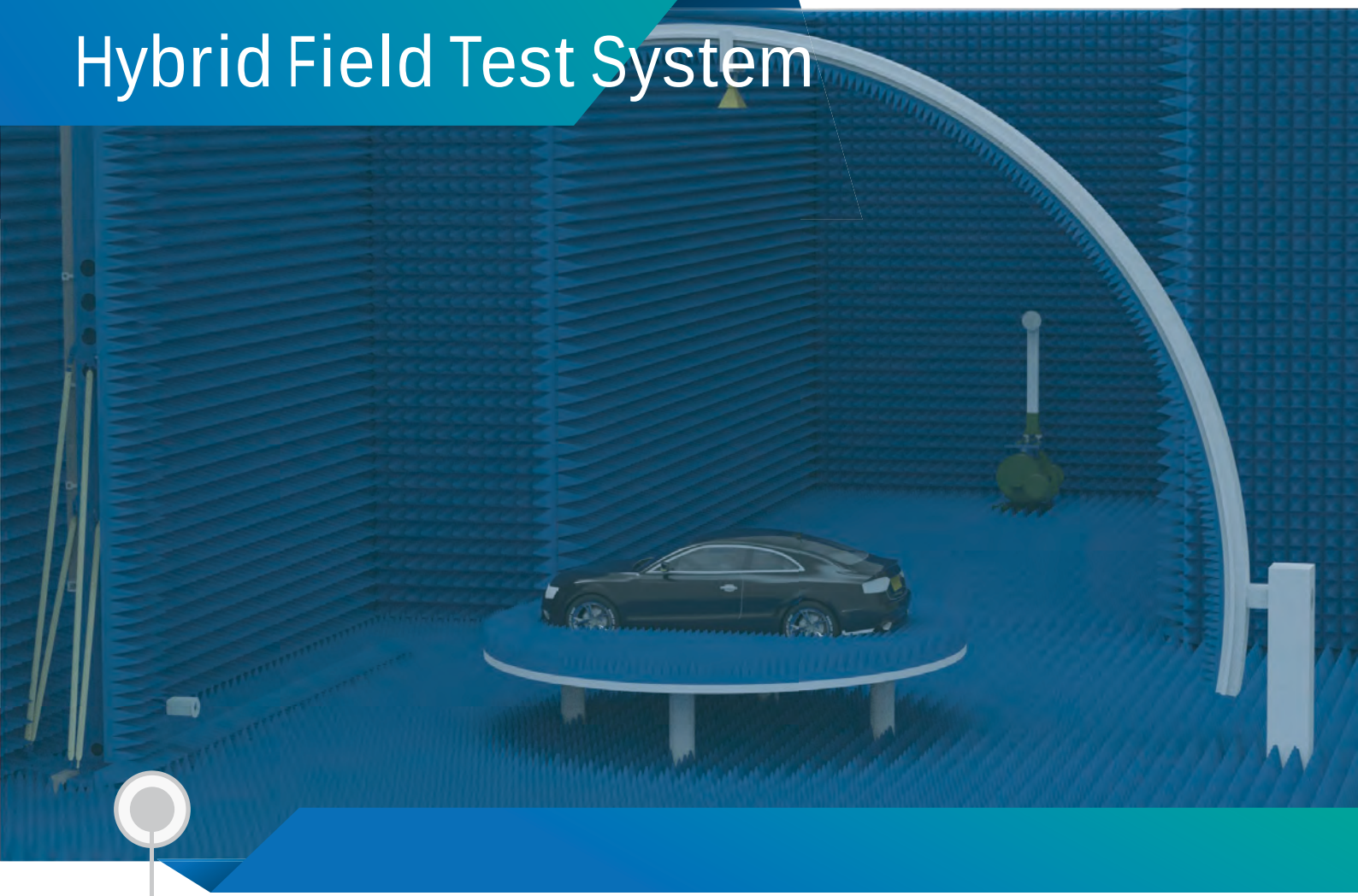
LAMBDA Series
Hybrid Field Test System

LAMBMICROW 蓝谱达



Applications

General Antenna Testing, Metasurface Testing, Phase Array Diagnosis, Radar Testing, etc.

Capabilities

LAMBDA Series Hybrid Field Test System supports Planar Near-Field, Cylindrical Near-Field and Far-Field Testing.

The system test function depends on the specific requirements of the user. Our test system supports the customization of microwave anechoic chamber dimension and operating frequency range.

· Support a variety of passive and active antenna test requirements.

· Fast testing near-field patterns of amplitude and phase, far-field patterns and holographic patterns.

· Easy to upgrade for cylindrical or spherical near-field measurements.

· Support data export files: antenna gain, 2D/3D radiation patterns, beam pointing and cross polarization.

Software

· Near-Field Test System Export 2D/3D radiation patterns.

· Far-Field Test System Fast 2D radiation pattern export.

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LAMBDA Series Hybrid Field Test System

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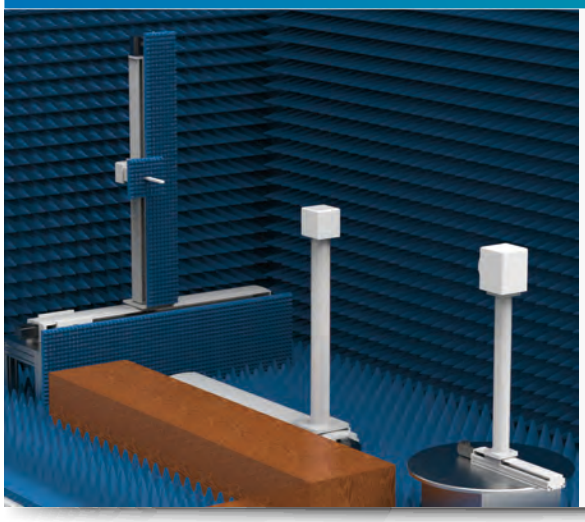
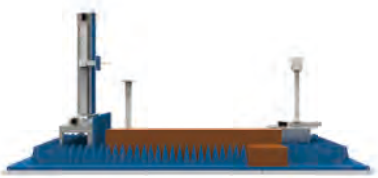
Specifications



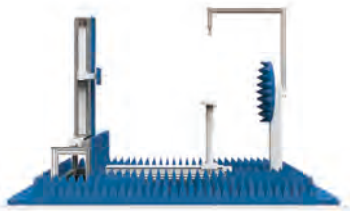
Frequency: 1GHz ~ 110GHz (up to 500GHz upon request)
Drive System: Precision Stepper Motor; Servo Motor; Rack and Pinion
Scan Aera: 0.3m × 0.3m ~1.5m × 1.5m (larger scan area can be customized)
Planarity: 0.05mm ~ 0.125mm RMS (cylindrical near-field available)
Position Repeatability: 0.05mm RMS
Scan Speed (X-Y Axis): X (0.2 ~ 1m/s); Y (0.2 ~ 1m/s)
RF Cables: High Performance Stable Amplitude and Phase Cables (up to 110GHz)
Probe: Standard Rectangular Waveguide Probe (up to 110GHz)
Probe Mount: Custom Bracket - Allows "V" and "H" Polarization
Supply Power: 100 ~ 240V AC Switchable; 50 / 60Hz, 500 Watts
Supported RF Instrument: Keysight, Rohde & Schwarz, Anritsu, Ceyear, etc.

Optional Configuration



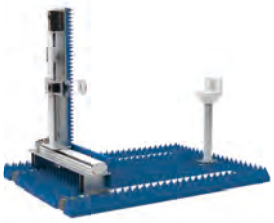
Field-Basic Test System

Field-THz Test System



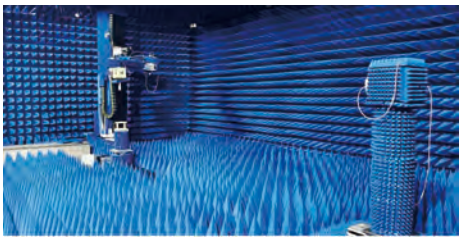
Field-Mix Test System

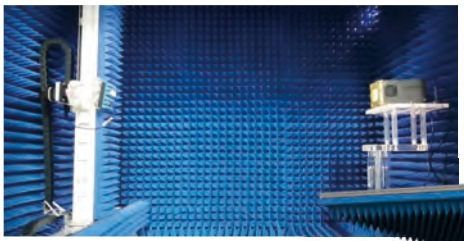
Field-Lite Test System

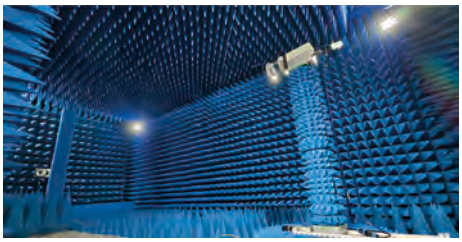


Phased Array Test System

Desktop Test System







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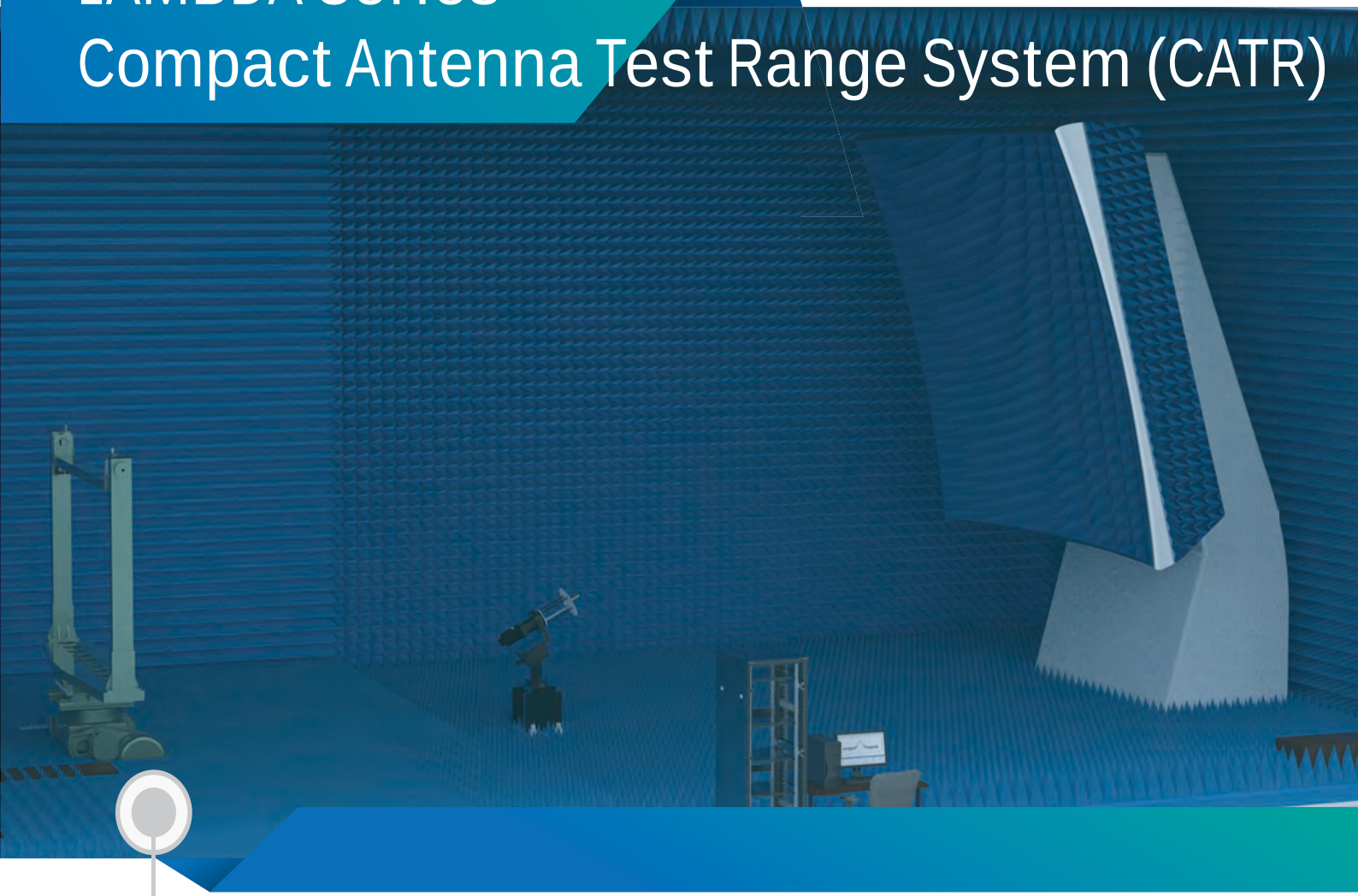
LAMBDA Series
Compact Antenna Test Range System (CATR)



Applications

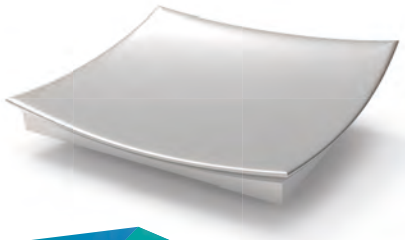
In terms of applications, the setup of LAMBDA CART has a variety of applications including antenna characterization, automotive radar, interference tests, Radar Cross Section and advanced radiation test, provide a larger DUT quiet-zone with fast far-field measurement in a compact room.

Key Facts

· Compact and transportable far-field over-the-air (OTA) test system based on CATR technology.
· Large quiet-zone to accommodate large devices (Quiet-zone: 0.3 ~ 2m, customization available).
· Frequency range (8GHz ~ 110GHz, customization available).
· High-precision high-speed 3D rotating platform system.
· High shielding effectiveness (Typ. > 90 dB).
· Suitable for ETSI and FCC validation, including interference tests, angular calibration and antenna characterization.

Software

· Far-Field Test system
· Data Post-Processing Module

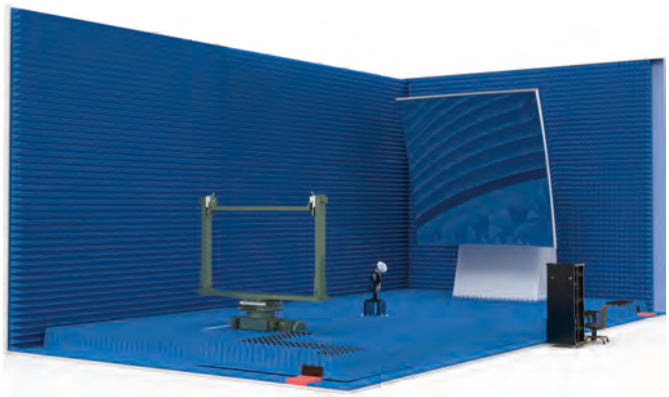


LAMBDA Series Compact Antenna Test Range System (CATR)

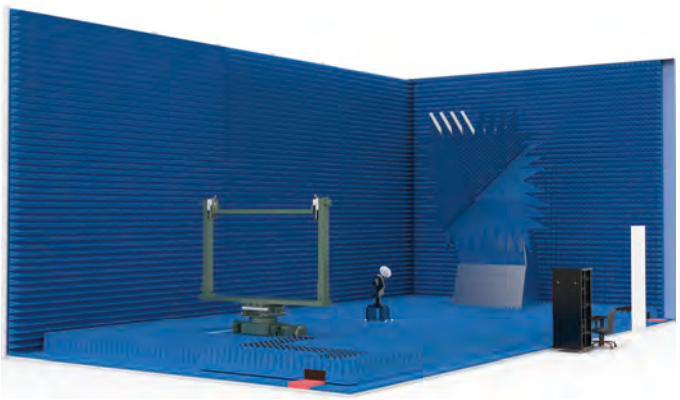
Specifications

Frequency	/	8GHz ~ 110GHz (Support for a customization of frequency range)
Shielding Effectiveness	Chamber	⩾ 90dB (Typ.)
Accuracy (Gain)	/	± 0.5dB
Repeatability (Gain)	/	± 0.3dB
Accuracy (HPBW)	/	⩽ 10%
Angular Resolution	Positioner	0.03°
Pointing Accuracy	Positioner	0.03°
Tilt Angle	Positioner	Azimuth Axis: ± 180°; Elevation Axis: ± 45°
Power Supply	Chamber	100V to 240V (AC), MAX.13A
Temperature Range	Chamber	+20℃ to +35℃
Quiet-Zone	Reflector	Φ30cm / Φ60cm / Φ120cm / Φ150cm (customization available)
	Amplitude taper	⩽ 1.5dB
	Amplitude ripple	⩽ 0.5dB

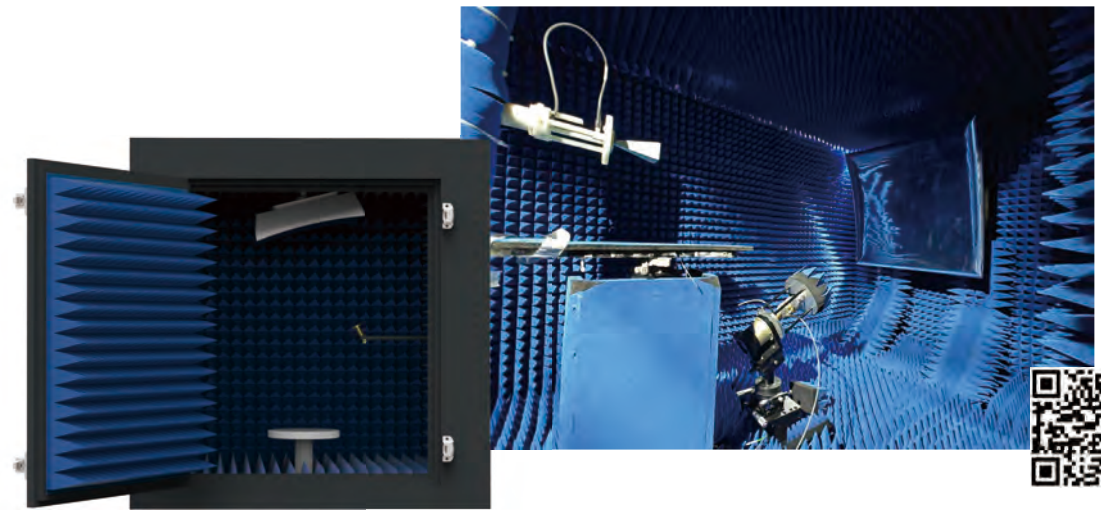
Optional Configuration



Rolled Edge Reflectors



Serrated Edge Reflectors



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LAMBDA Series
Spherical Near-Field Test System

Applications

General Antenna Testing, Mobile Terminal Antenna, Satellite Antenna, etc.

Capabilities

LAMBDA Series Spherical Near-Field Test System has a variety of functions depending on the users' specific requirements. This system supports the customization of microwave anechoic chamber dimension, operating frequency range and test specifications.

· Support a variety of passive and active antenna test specifications.

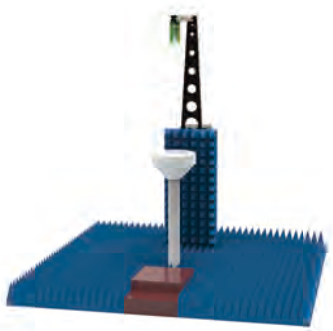
· Fast testing near-field pattens of amplitude and phase, far-field pattens and holographic patterns.

· Support data export files: antenna gain, beam pointing, 3D radiation pattern, cross polarization, axial ratio and efficiency.

Software

· System Operation Software

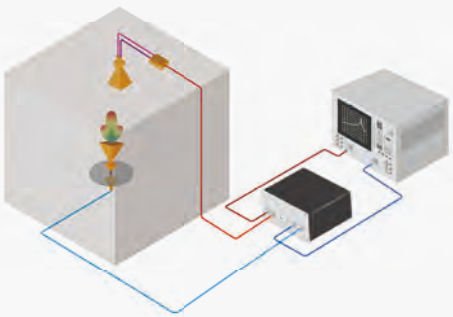
· Data Post-Processing Module



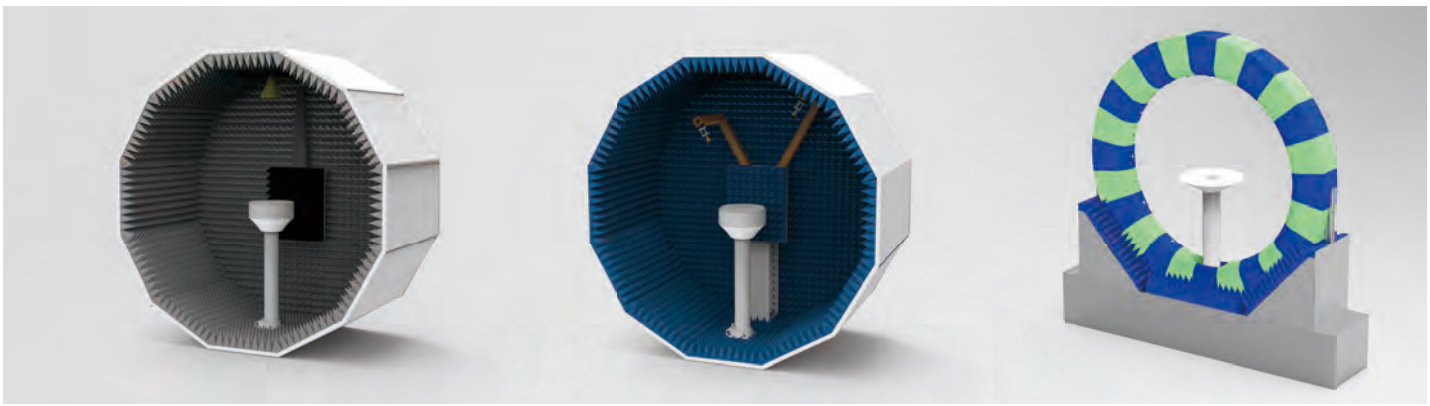
LAMBDA Series Spherical Near-Field Test System

Specifications

Frequency: 0.6GHz ~ 67GHz (up to 110GHz upon request)
Drive System: Precision Stepper Motor; Servo Motor
Max. Size of DUT: 30cm x 30cm, 40cm x 40cm, 60cm x 60cm (Support for Customization)
Max. Weight of DUT: 30kg with Styrofoam Mast (Support for Customization)
RF Cables: High Performance Stable Amplitude and Phase Cable (up to 18GHz)
Supply Power: 100 ~ 240VAC Switchable; 50 / 60Hz, 500 Watts
Supported RF Instrument: Keysight, Rohde & Schwarz, Anritsu and Ceyear, etc.



Optional Configuration



Single-probe Test System

Dual-probe Test System

Multi-probe Test System

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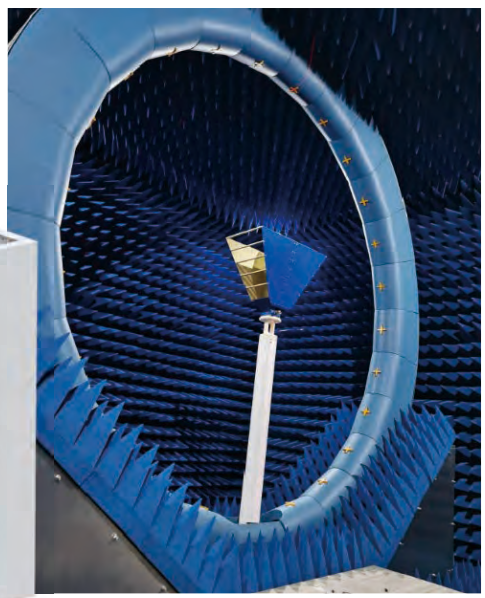

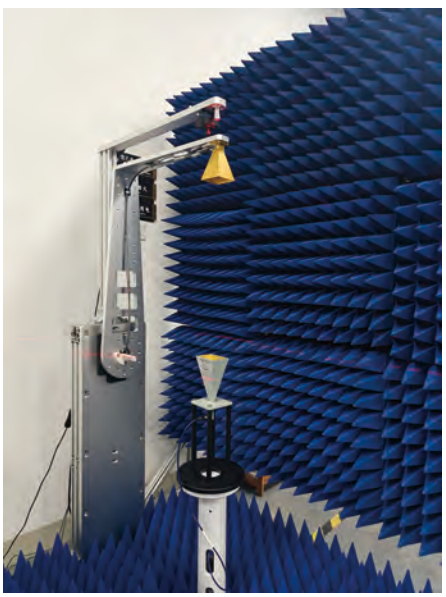

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LAMBDA Series
Reverberation Chambers

Applications

The device under test (DUT) is placed on a turntable. The reflective walls and the turntable in combination with a rotating reflector (mode stirrers) create a Rayleigh faded rich isotropic multipath (RIMP) environment inside the chamber.

Capabilities

· The measurement is done by using a vector network analyzer or a radio communication tester connected to one or serval measurement antennas inside chamber.

· Typical measurements include Antenna Efficiency and MIMO/Diversity gain, Total Radiated Power (TRP), Total Isotropic Sensitivity (TIS) and Data Throughput vs Received Power.

· Can be configured with up to 150MHz - 67 GHz measurement antennas for maximum flexibility and support of your specific needs.

Software

Measurement and analysis software platform.

LAMBDA Series Reverberation Chambers

Scan the QR code and fill in your contact and request.

Specifications

Frequency: 150MHz ~ 67GHz

Shielding: Typ. > 80 dB

Drive System: Precision Stepper Motor; Servo Motor; Rack and Pinion

Planarity: 0.05mm ~ 0.125mm RMS (cylindrical near-field available)

Position Repeatability: 0.05mm RMS

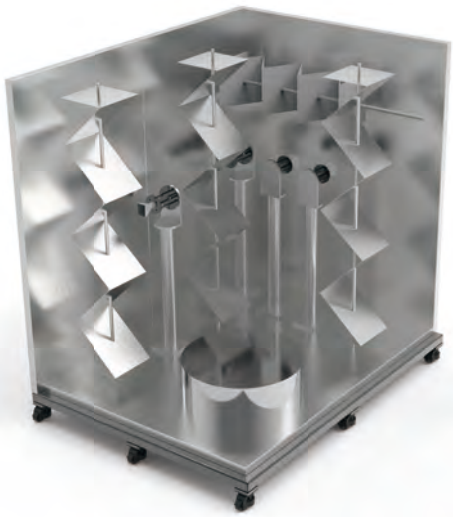
RF Cables: High Performance Stable Amplitude and Phase Cables

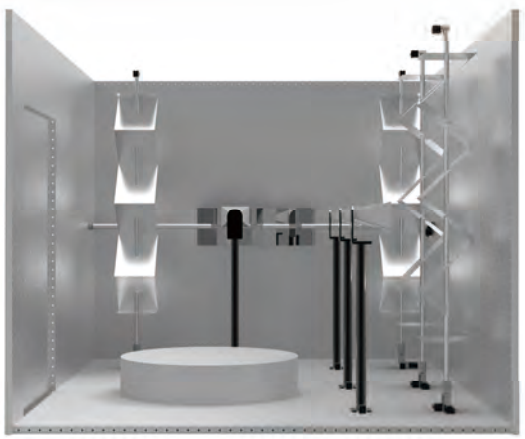
Probe: Standard Rectangular Waveguide Probe (up to 110GHz)

Supply Power: 100 ~ 240V AC Switchable; 50 / 60Hz, 500 Watts

Supported RF Instrument: Keysight, Rohde & Schwarz, Anritsu, Ceyear, etc.

Optional Configuration





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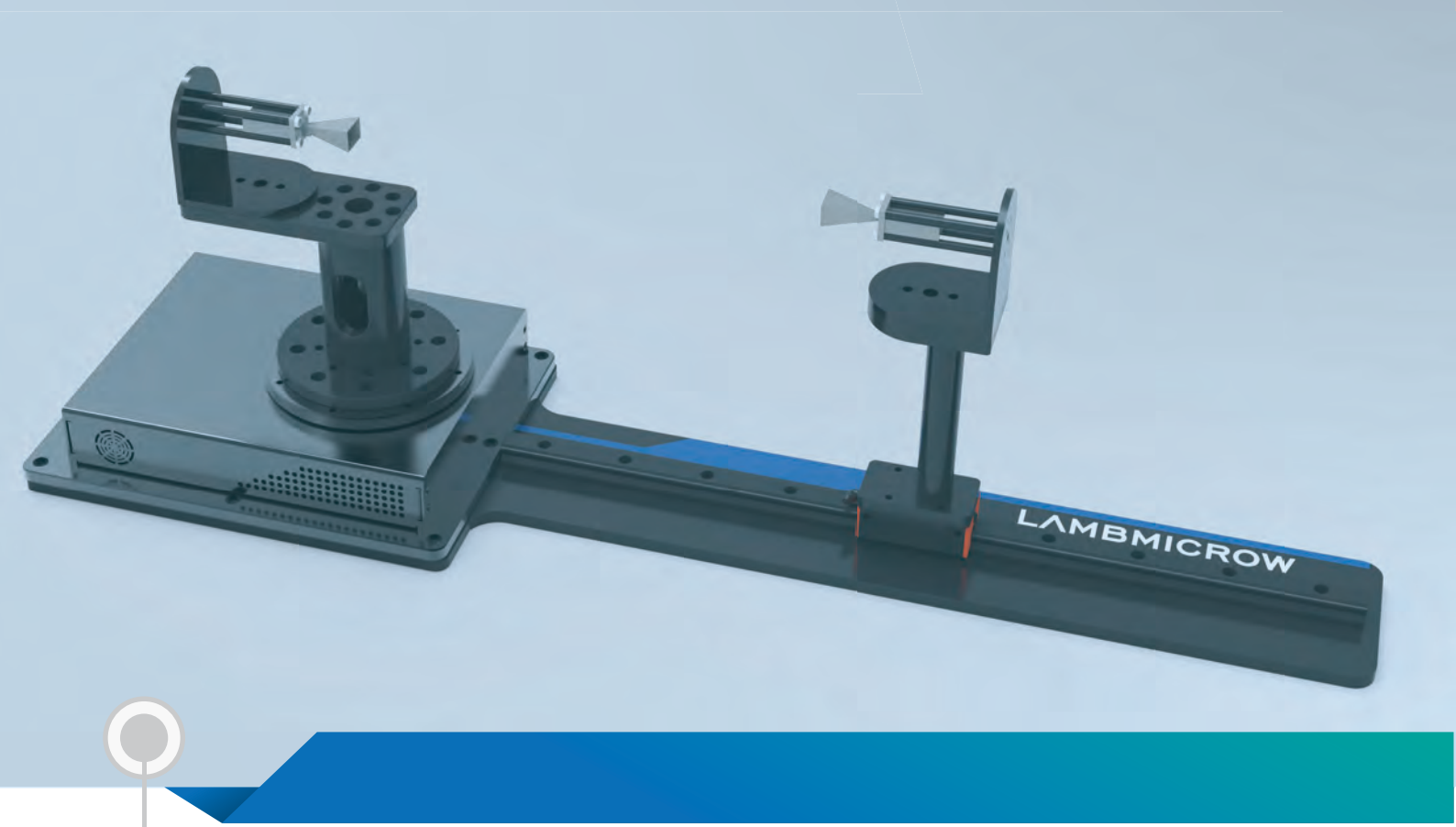
LAMBDA Series
Teaching Solution Antenna Measurement Kit



Applications

Is an innovative measurement system that integrates a 2-port Vector Network Analyzer (VNA) with a far-field antenna measurement system, designed to deliver versatile functionality in a compact unit.This tool is ideal for antenna designers and engineers, offering a seamless solution for both S-parameter and far-field measurements.

Capabilities

· Measurement Parameters: Measures S11 and S21, with results displayed in both Logarithmic and Smith Chart formats for clear impedance and transmission analysis.

· Educational and Laboratory-Friendly: A low-cost VNA suited for antenna laboratory lectures and hands-on laboratory work.

· Amplitude and Phase Measurement: Capable of measuring both amplitude and phase values to capture a comprehensive view of antenna performance.

· Standard Software: Operates with standard VNA software, offering a user-friendly interface for streamlined testing and analysis.

Software

· Multi-Frequency Sweeps: Allows for measurements across multiple frequencies in a single sweep, providing quick, comprehensive results.

· User-Driven Software: The 2D far-field measurement software enables easy input of parameters and direct viewing of results, all within the same interface.

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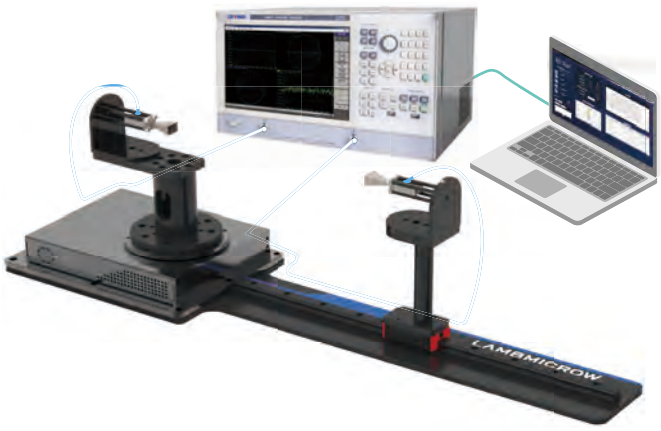
LAMBDA Series Teaching Solution Antenna Measurement Kit

Specifications

Frequency	26.5GHz ~ 40GHz (Support for a customization of frequency range)
Mesaurement Step Rescolution	1°
Rail Range	79 ~116cm(± 2cm)
Maximum Load	0.5kg
Far Field Cuts	E-plane and H-plane
Data Output	Amplitude and Phase Values
Visualisation	Polar and Caresian Plots, exportable to PDF
Antenna Mounting Interface	Custom interfaces for antennas, plus a versatile mount for other antennas
Supported RF Instrument	Keysight, Rohde & Schwarz, Anritsu, Ceyear, etc.

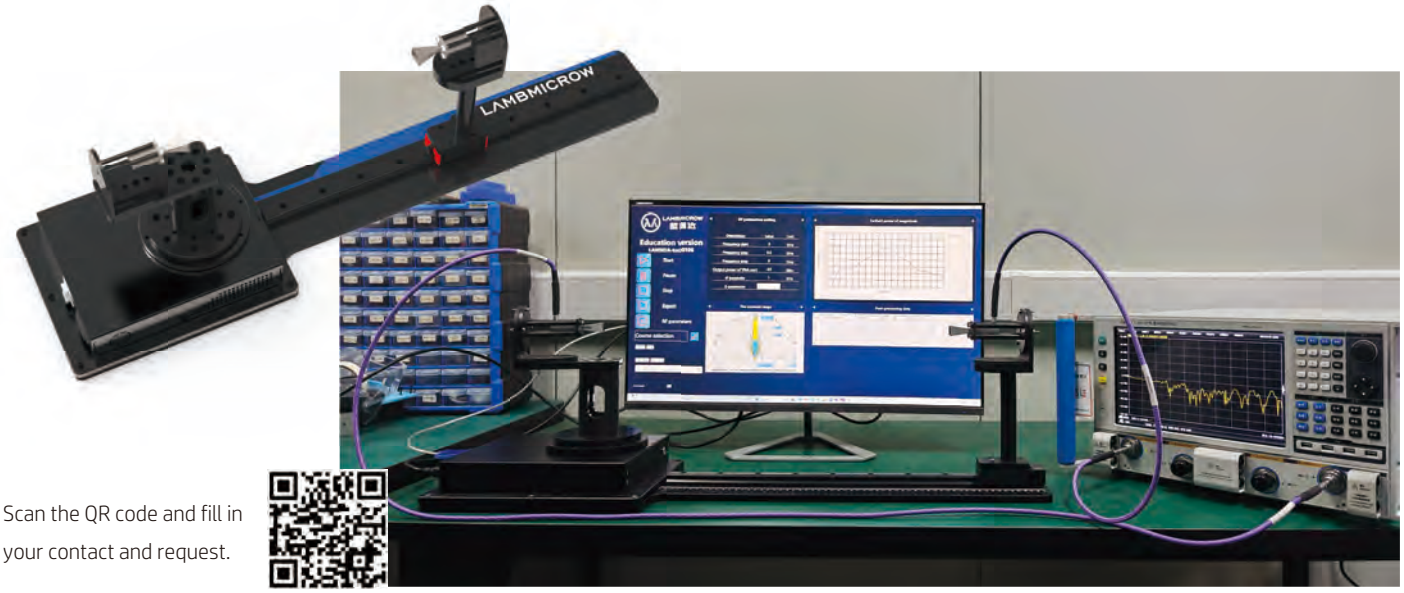
Optional Configuration



Desktop Version

Integrate Version

Teaching Solution Antenna Measurement Kit intergrating with a VNA, a set of antennas and RF cables, rotators and testing software.



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LAMBDA Series Horn&Waveguide

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Applications

LAMBDA series Horn & Waveguide provides a wide of Microwave and Millimetre-wave antenna up to 110GHz, such as Standard Gain Horn Antenna, Broadband Horn Antenna, which can be customized for requirements.

Model Number	Frequency Range	Terminal	Gain(TYP.)	Uswr	Material
LAMBDA32SGAH15N	2.6-3.95GHz	N-K	15dB	≤ 1.5	aluminum
LAMBDA48SGAH15N	3.94-5.99GHz	N-K	15dB	≤ 1.5	aluminum
LAMBDA70SGAH20N	5.38-8.17GHz	N-K	20dB	≤ 1.5	aluminum
LAMBDA100SGAH20S	8.2-12.5GHz	SMA-K	20dB	≤ 1.5	aluminum
LAMBDA140SGAH20S	11.9-18GHz	SMA-K	20dB	≤ 1.5	aluminum
LAMBDA220SGAH20K	17.6-26.7GHz	2.92-K	20dB	≤ 1.5	copper
LAMBDA320SGAH20K	26.3-40GHz	2.92-K	20dB	≤ 1.5	copper
LAMBDA500SGAH25+1.85	40-67GHz	1.85-K	25dB	≤ 1.5	copper
LAMBDA14WOEWPN	1.13-1.73GHz	N-K	/	≤ 2.2	aluminum
LAMBDA22WOEWPN	1.72-2.61GHz	N-K	/	≤ 2.2	aluminum
LAMBDA32WOEWPN	2.6-3.95GHz	N-K	/	≤ 2.2	aluminum
LAMBDA48WOEWPN	3.94-5.99GHz	N-K	/	≤ 2.2	aluminum
LAMBDA70WOEWPN	5.38-8.17GHz	N-K	/	≤ 2.2	aluminum
LAMBDA100WOEWPN	8.2-12.5GHz	SMA-K	/	≤ 2.2	aluminum
LAMBDA140WOEWPN	11.9-18GHz	SMA-K	/	≤ 2.2	aluminum
LAMBDA220WOEWPN	17.6-26.7GHz	2.92-K	/	≤ 2.2	copper
LAMBDA320WOEWPN	26.3-40GHz	2.92-K	/	≤ 2.2	copper
LAMBDA500WOEWPN+1.85	40-67GHz	1.85-K	/	≤ 2.2	copper
LAMBDA0680DRHA10N	0.6-8GHz	N-K	10dB	≤ 2.5	aluminum
LAMBDA80180DRHA20S	8-18GHz	SMA-K	20dB	≤ 2.5	aluminum
LAMBDA180400DRHA20K	18-40GHz	2.92-K	20dB	≤ 2.5	copper

(Available for Customization)

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LAMBDA Series Horn&Waveguide

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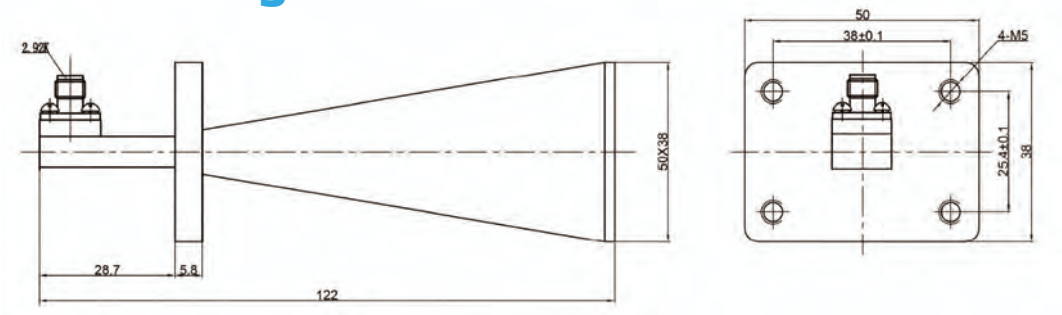
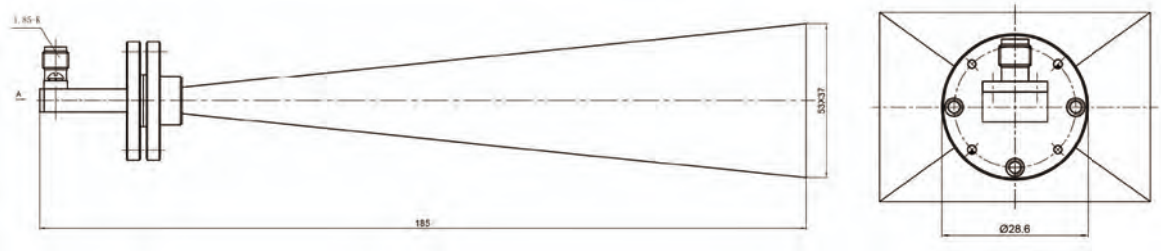
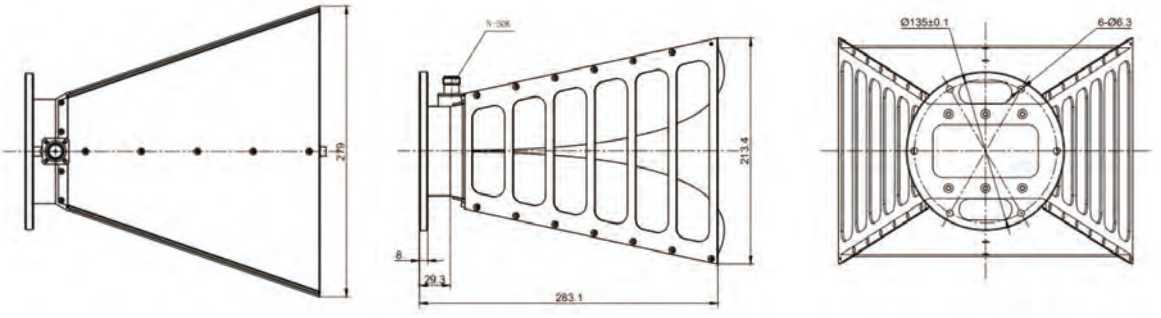
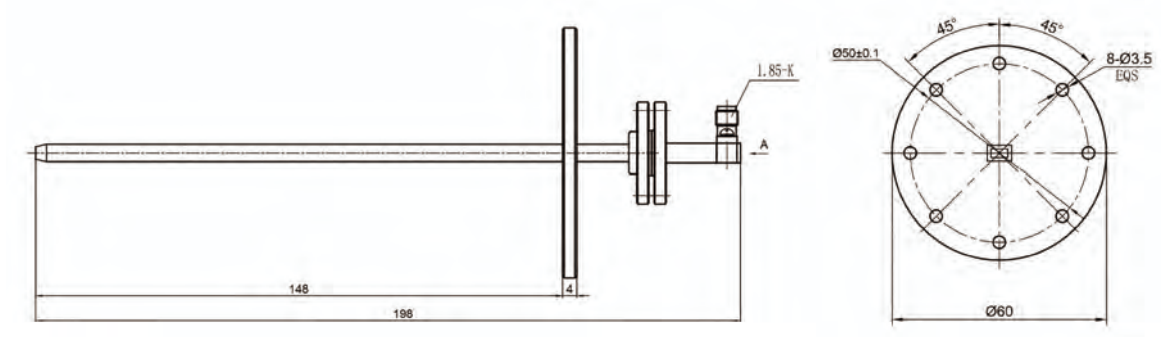
Optional Configuration









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LAMBDA Series
Dielectric Constant Test System

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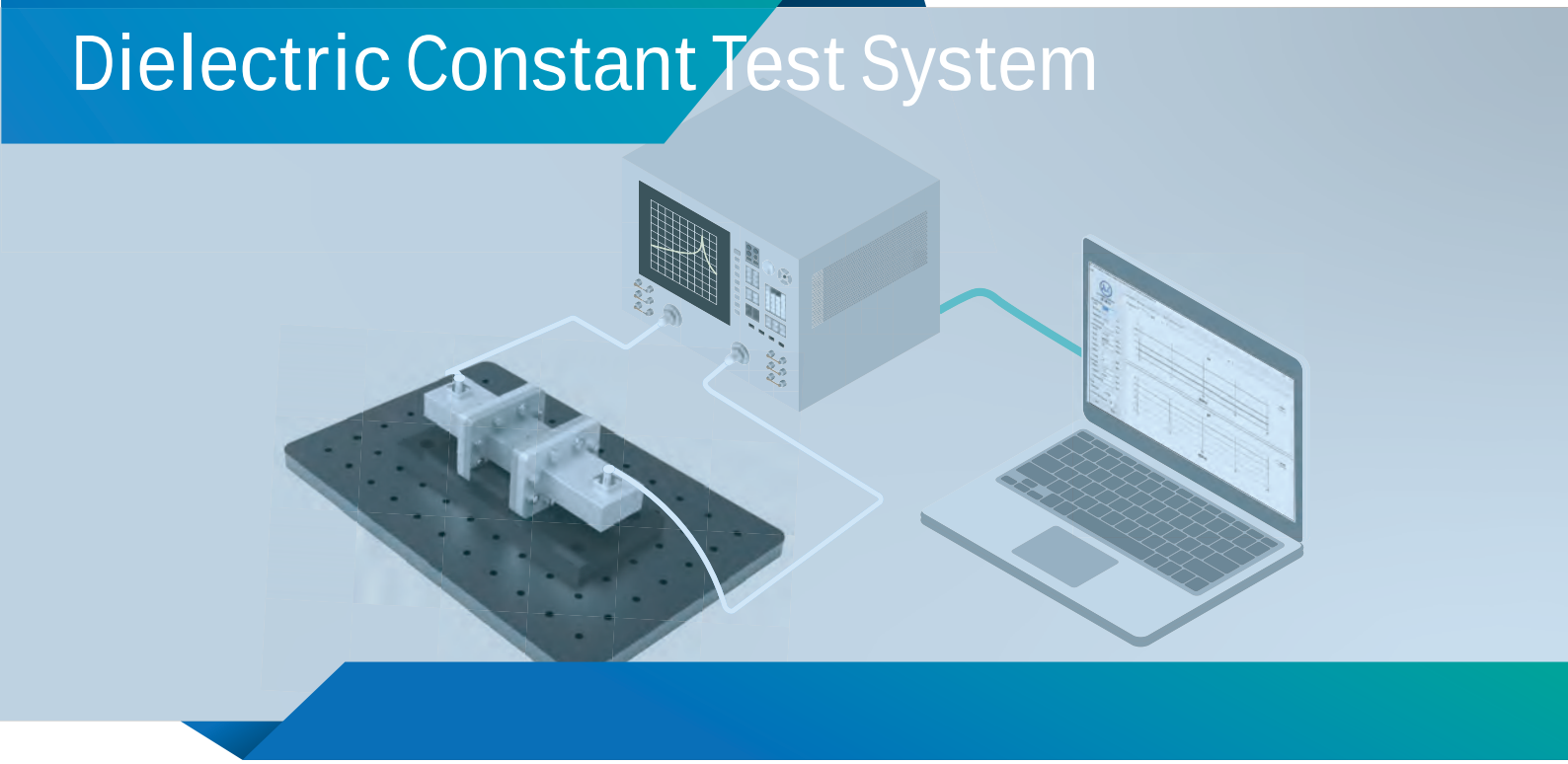
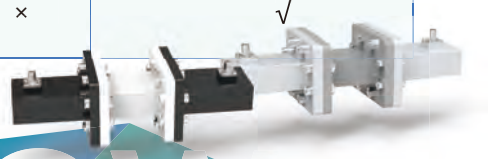


Applications

Material measurement is integral when developing solutions in the millimeter-wave (mmWave) frequency range, it can provide the electrical or magnetic characteristics of the materials, which is proved useful in many research and development fields. PCB, antenna, material science, microwave circuit design, biological research, and automotive engineers along with metrology and research institutes must characterize various materials to better understand their effects on electromagnetic wave propagation to achieve more expected designs, or to test manufacturing processes to control product quality, etc. Similar questions from different applications create a continual demand to accurately measure dielectric and magnetic properties of materials.

The test system is capable of testing material's complex dielectric constant, complex magnetic permeability and other parameters. The system consists of a vector network analyzer, test fixtures, system software, etc. Each method has its application field, which depends on several factors: frequency range, expected values of ε_r and μ_r, required measurement accuracy, material properties (i.e. homogeneous, isotropic), material form (i.e. liquid, powder, solid, paper), sample size restrictions, destructive or nondestructive, contacting or non-contacting, temperature and cost. According to the user's requirements of different frequencies and material types, a variety of different fixtures such as waveguides, waveguide coaxial air lines, resonant cavities, can be customized for testing.

Test System	Permittivity	Permeability	Liquid Testing	Medium to high loss materials
Rectangular Resonant Cavity Dielectric Constant Measurement System	√	×	√	×
Closed Resonant Cavity Dielectric Constant Measurement System	√	×	×	×
Waveguide Transmission Dielectric Constant Measurement System	√	√	×	√
Coaxial Transmission Dielectric Constant Measurement System	√	√	×	√



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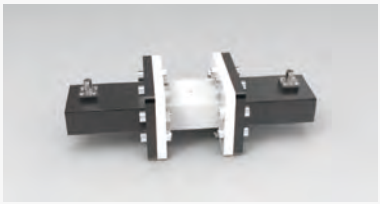
LAMBDA Series Dielectric Constant Test System

Optional Configuration

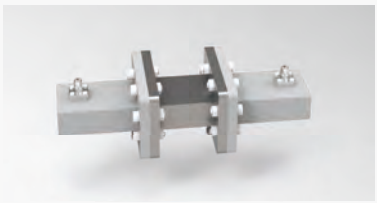


Rectangular Resonant Cavity Dielectric Constant Measurement System

Frequency: 1GHz ~ 8GHz (can be customized)

Range: dielectric constant 2~20; loss tangent 0.0001 ~0.005

Accuracy: dieletric constant 5% ; loss tangent 20%



Waveguide Transmission Dielectric Constant Measurement System

Frequency: 490MHz ~ 40GHz (can be customized)

Range: dielectric constant 1~100; loss tangent 0.1 ~2.0

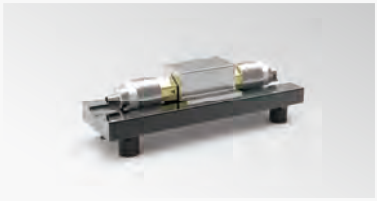
Accuracy: dieletric constant 5% ; loss tangent 10%

Closed Resonant Cavity Dielectric Constant Measurement System

Frequency: 1GHz ~ 15GHz (can be customized)

Range: dielectric constant 1~100; loss tangent 0.00005 ~0.005

Accuracy: dieletric constant 0.2% ~1%; loss tangent 1% ~3%



Coaxial Transmission Dielectric Constant Measurement System

Frequency: 1GHz ~ 8GHz (can be customized)

Range: dielectric constant 2~100; loss tangent 0.1 ~2

Accuracy: dieletric constant 8%; loss tangent 10%

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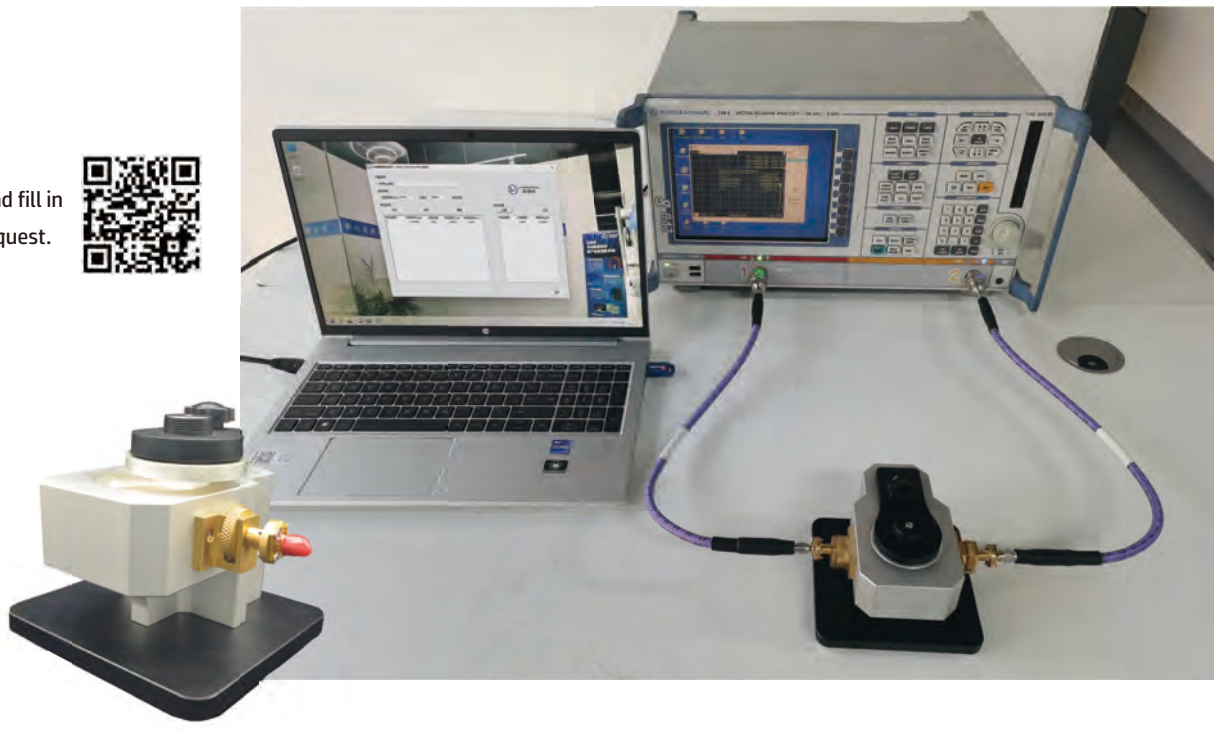

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LAMBDA Series
XRifle Dynamic RIS

Applications

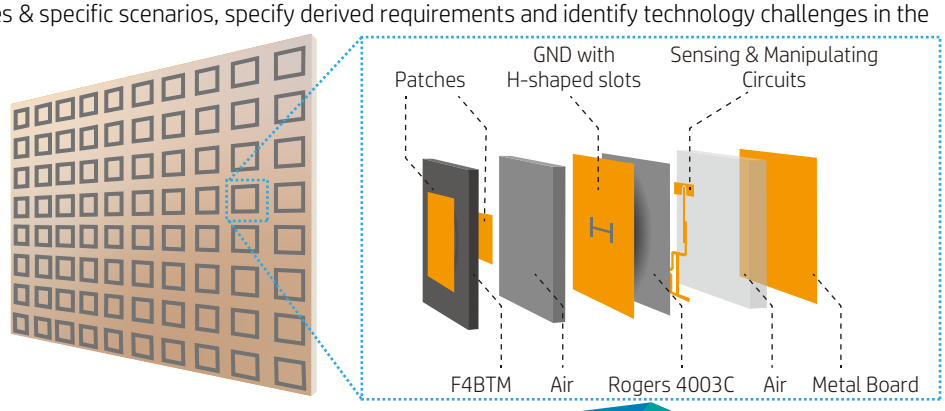
Reconfigurable Intelligent Surfaces (RIS) corresponds to a planar surface composed of unit-cells, whose properties can be controlled dynamically to 'tune' the incident wireless signals through reflection, refraction, focusing, collimation, modulation or absorption. RIS can be potentially deployed for both indoor and outdoor usage, including offices, airports, shopping centres, lamp posts and advertising billboards, and may take any shape or be integrated onto objects. Its characteristics may also result in low energy consumption, making RIS a sustainable technology solution.

RIS can be configured to operate at any part of the radio spectrum, including frequencies from 2.8GHz to 26GHz, and may harness tools from Artificial Intelligence (AI) and Machine Learning (ML) to enable systems operation and optimization.

The scattering, absorption, reflection, and diffraction properties of the entire RIS can thereby be changed with time and controlled by software. An RIS can be utilized to support wireless communications as well as localization, sensing, and wireless power transfer. Can be utilized for improved communication, localization, and sensing.

The RIS can then receive signals from any direction from the halfspace towards which the RIS elements are facing and tuning the pattern of reflection coefficients over the elements to reradiate signals with the desired direction and beam shape.

- The enhancement of various system key-performance-indicators (KPIs).
- The support of new wireless technology applications and capabilities.
- Identify and describe RIS related use cases & specific scenarios, specify derived requirements and identify technology challenges in the following areas:
  - Fixed and Mobile Wireless Access
  - Fronthaul and Backhaul
  - Sensing and Positioning
  - Energy and EMF Exposure Limits
  - Security and Privac



LAMBDA Series XRifle Dynamic RIS

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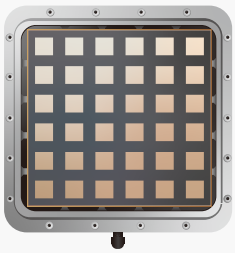
Optional Configuration

RIS 3GHz

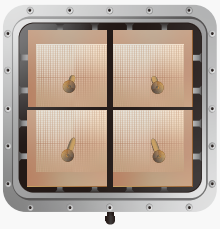
Frequency Range: 2.8~3.2 GHz;
Size of Matrix: 4 x 8
Polarizaqtion: Linear
RIS Size: 550 × 360 mm²
modulation range of metasurface element: -30° ~ +30°
· Phase tuning range 2bit, in-band amplitude tuning range -10dB ~ +15dB.

RIS 3.5GHz

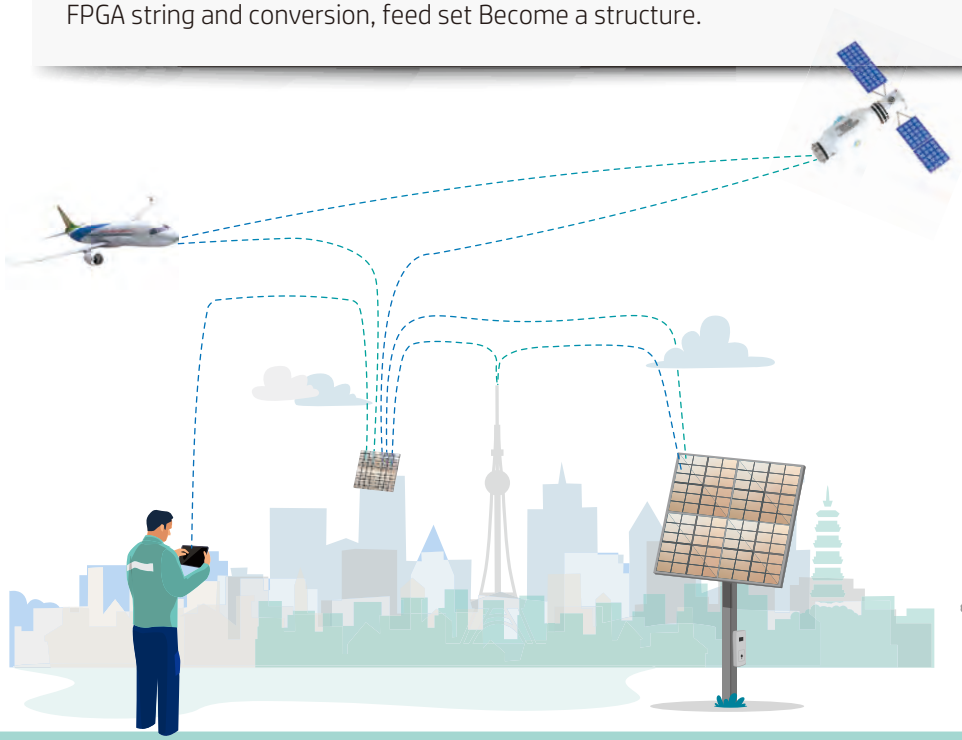


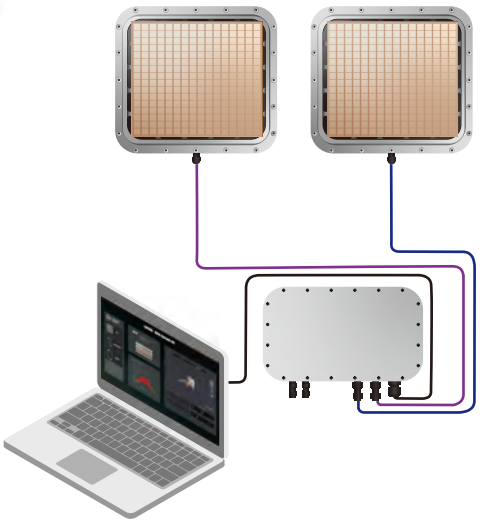
Frequency Range: 3.45~3.55 GHz;
Size of Matrix: 6 x 6
Polarizaqtion: Linear
RIS Size: 280 × 280 mm²
modulation range of metasurface element: 0° ~ +360°
· Individual orders Meta can independently obtain surface electric field information (phase and amplitude information), DOA perception accuracy at ± 60 ° incidence model Error within the perimeter < 1 ° .

RIS 26GHz



Frequency Range: 25.5~26.5 GHz;
Size of Matrix: 30 x 30 x 4
Polarizaqtion: Linear
RIS Size: 217 × 215 mm²
modulation range of metasurface element: -70° ~ +70°
· Phase control capability: 2-bit, control capability: unit independent control, control architecture: single FPGA string and conversion, feed set Become a structure.





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