



LAMBDA Series

Wireless Integrated Electromagnetic Measurement Solution for
“Communication-Sensing-Navigation-Remote Sensing”

1

mmWave Electromagnetic Measurement System

- Frequency: 0.6GHz~110GHz (Customizable up to 500GHz)
- Antenna Test, Phased Array Test, Radar Test

2

Material Electromagnetic Parameter Measurement System

- Frequency: 0.2GHz~40GHz
- Core technology self-developed, high measurement accuracy

3

mmWave Integrated Extension Platform

- Out-of-the-box beamforming testbed
- Easy integration with test instruments for rapid verification



About Us

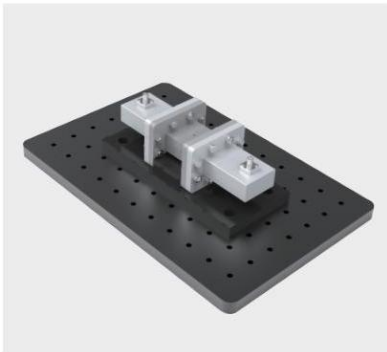
Foshan Lambda Technology Co., Ltd. is an innovative enterprise providing advanced microwave and antenna measurement solutions for fields such as radar, autonomous driving, satellites, mobile communications, and sensors. We have a highly skilled and experienced R&D team dedicated to solving the pain points and difficulties customers face in wireless product development and production, offering cost-effective measurement systems. We have multiple turnkey solutions for microwave antennas, RF devices, and multi-scenario compatible electromagnetic measurement systems covering: portable mmWave measurement systems, multi-probe near-field measurement systems, near-field/far-field hybrid measurement systems, compact antenna test range (CATR) systems, reverberation chamber measurement systems, material electromagnetic parameter measurement systems, mmWave phased array antenna rapid testing, and related customized services. Supported frequency range: 0.6GHz~110GHz (expandable to 500GHz). We provide high-quality product and technical services globally and have supplied equipment and services to many well-known enterprises, universities, and research institutes across the world. Choosing us means choosing fast, stable, and accurate measurement solutions.

LAMBDA Series – Contents



.01 mmWave Electromagnetic Measurement System

- LAMBDA Series Hybrid Field Test System
- LAMBDA Series Spherical Near-Field Test System
- LAMBDA Series Compact Antenna Test Range System (CATR)
- LAMBDA Series Reverberation Chambers
- LAMBDA Series Custom Antenna Test Positioners
- LAMBDA Series RF Microwave Teaching Platform



.02 Material Electromagnetic Parameter Measurement System

- Waveguide Transmission Line Dielectric Measurement System
- Coaxial Transmission Line Dielectric Measurement System
- Separating Waveguide Resonator Dielectric Measurement System
- Separating Medium Resonator Dielectric Measurement System
- Closed Resonator Dielectric Measurement System
- Rectangular Resonator Dielectric Measurement System



.03 mmWave Integrated Extension Platform

- BBox™ Beamformer
- UD Converter
- Reflector RIS
- Dynamic RIS



.04 Microwave Measurement System Accessories

- Tandard gain horn antennas
- Wideband horn antennas
- Omnidirectional antennas
- Planar wave generators



LAMBDA Series Hybrid Field Test System

Applications

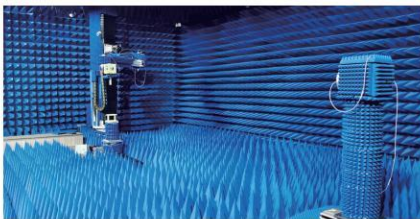
Antenna Test, Phased Array Test, Radar Test, ect.

Product Features

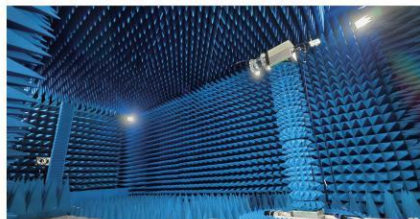
Test system supports planar near-field test, cylindrical

- Rapid test of radiation patterns or holographic patterns
- Test Parameters: Antenna Gain, Main/Side Lobes, Beam Pointing, Cross-Polarization, etc.
- Supports customization of anechoic chamber size and operating frequency range.

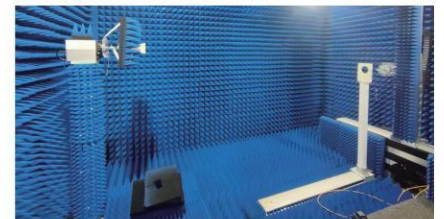
Case Studies



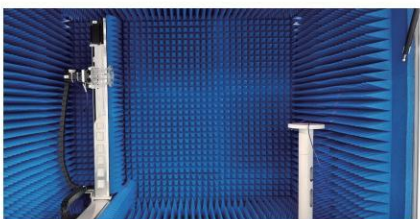
0.6GHz~67GHz Field-Mix Test System



1GHz~40GHz Field-Basic Test System



2GHz~40GHz Field-Basic Test System



18GHz~40GHz Field-Lite Test System



18GHz~40GHz Phased Array Test System



18GHz~40GHz Field-Lite Test System

Technical Specifications

- Frequency: 0.6GHz~110GHz (Customizable up to 500GHz)
- Drive System: Precision Stepper Motor, Servo Motor
- Scan Range: 1cm x 1cm ~ 150cm x 150cm (Larger scan range customizable)
- Planarity: 0.05 mm ~ 0.125 mm
- Position Repeatability: 0.01 mm
- Scan Speed (X-Y Axis): X, 0.2~1m/s; Y, 0.2~1m/s
- RF Cable: High-Performance, Phase- and Amplitude-Stable Cable (0.6~110 GHz, optional)
- Probe: Standard Rectangular Waveguide Probe (0.6~110GHz, Higher bands optional)
- Probe Mount: Custom bracket - allows 'V' and 'H' polarization
- Power: 100~240VAC (Switchable), 50/60 Hz, 500 W
- Supports multi-brand RF instruments: Keysight, Rohde & Schwarz, Anritsu, Ceyear, etc.

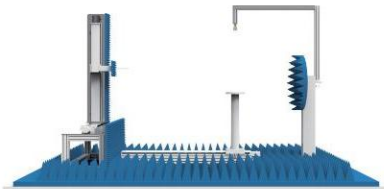
System Configuration

- Custom Anechoic Chamber
- X-Y Stepper/Servo Motor Drive
- Motor System and Controller Kit
- Computing Workstation
- Antenna Measurement Software
- Installation Toolkit
- Optional Accessories: LNA, Power Amplifier, RF Cables
- Test Equipment (VNA, Signal Generator, Spectrum Analyzer)
- Standard Horns and Probes



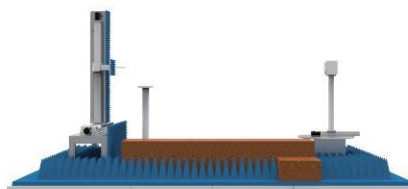
Software System

- Near-Field Test Software, Far-Field Test Software



Field-Mix Test System

Supports far-field, planar near-field, cylindrical near-field, and spherical near-field tests. For research/testing of various antenna types.



Field-Basic Test System

Supports far-field and planar near-field tests. For research/testing of common antennas.



Field-THz Test System

Supports THz band near-field and far-field tests. For research/testing of THz antenna arrays.



Field-Lite Test System

Supports far-field and near-field tests. For directional radiation antenna beam scanning research/testing.



Phased Array Test System

Supports far-field, near-field, multi-channel tests. For multi-channel array research/testing, enabling multi-channel amplitude/phase adjustment.



Desktop Test System

Supports near-field testing of elevation/-multi-azimuth beam antennas. For research/testing of high-gain antennas.



LAMBDA Series Spherical Near-Field Test System

Applications

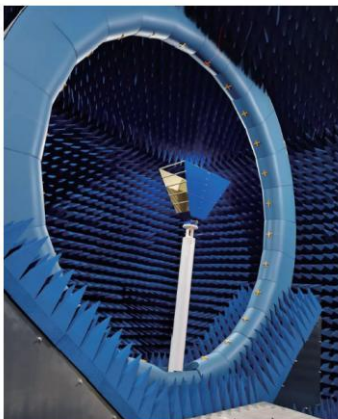
Antenna Test, Phased Array Test, Radar Test, etc.

Product Features

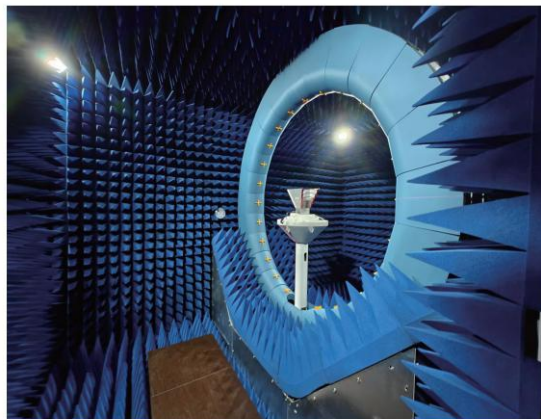
Spherical field test system supports spherical near-field and far-field testing.

- Supports passive and active testing of various antennas.
- Rapid amplitude and phase measurements for generating far-field patterns via near-field scanning.
- Test Parameters: Antenna Gain, Main/Side Lobes, Beam Pointing, Cross-Polarization, etc.
- Supports customization of anechoic chamber size and operating frequency range.

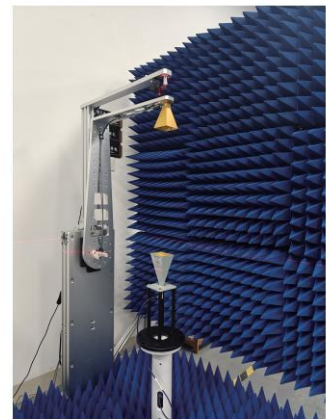
Case Studies



0.6GHz~8GHz
Multi-Probe Measurement System



0.6GHz~8GHz
Multi-Probe Measurement System



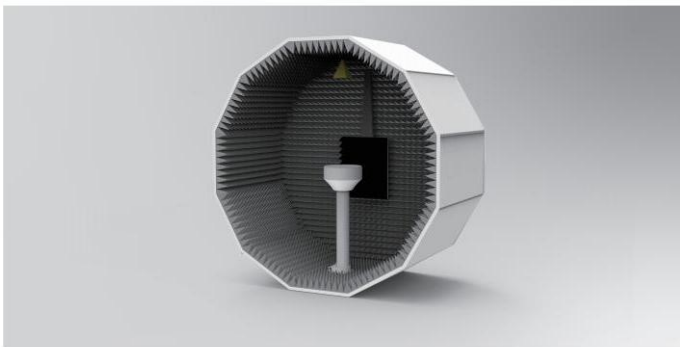
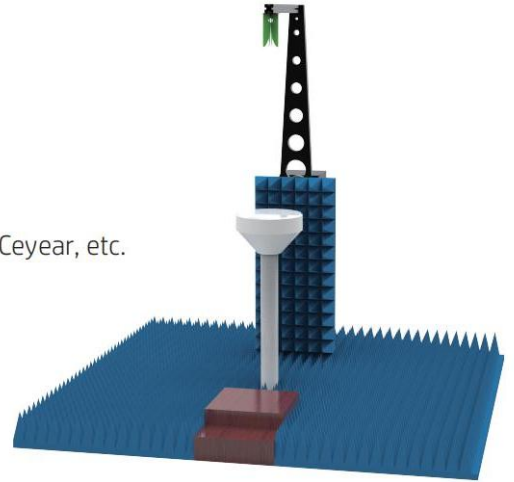
18GHz~50GHz
Single-Probe Measurement System

Technical Specifications

- Frequency: 0.6GHz~67GHz (Higher bands customizable)
- Drive System: Precision Stepper Motor, Servo Motor
- Oversampling: Uniform sampling
- Max. DUT Size: 45cm x 45cm (Customizable)
- Max. DUT Weight: 10KG (incl. foam positioner fixture, customizable)
- RF Cable: High-Performance Stability Cable (0.6~18GHz, Optional)
- Power: 100~240VAC (Switchable); 50/60 Hz, 500 W
- Supports multi-brand RF instruments: Keysight, Rohde & Schwarz, Anritsu, Ceyear, etc.

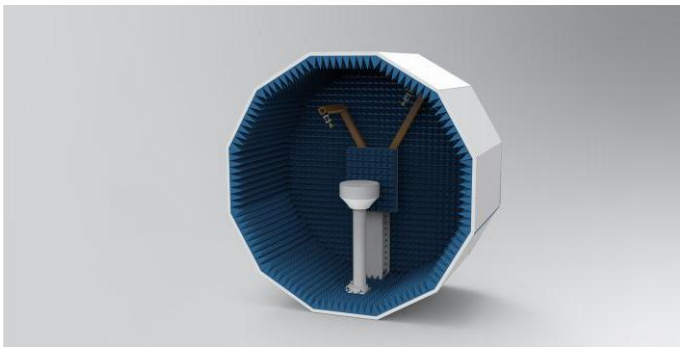
Software System

- Spherical Near-Field Test Software
- Outputs 3D radiation patterns via spherical scanning.



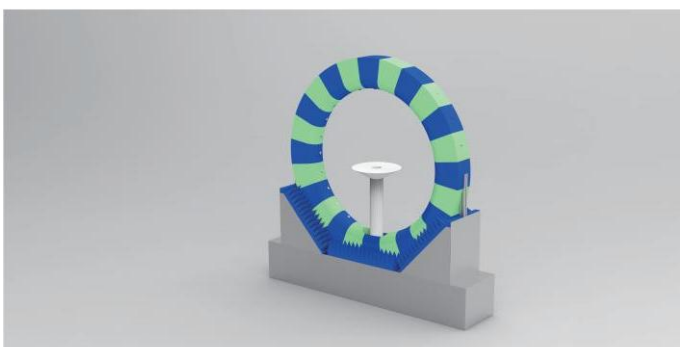
Single-Probe Measurement System

- Freq. Band: 1GHz~67GHz (Higher bands customizable)
- Supports far-field test, spherical near-field test
- Supports size customization



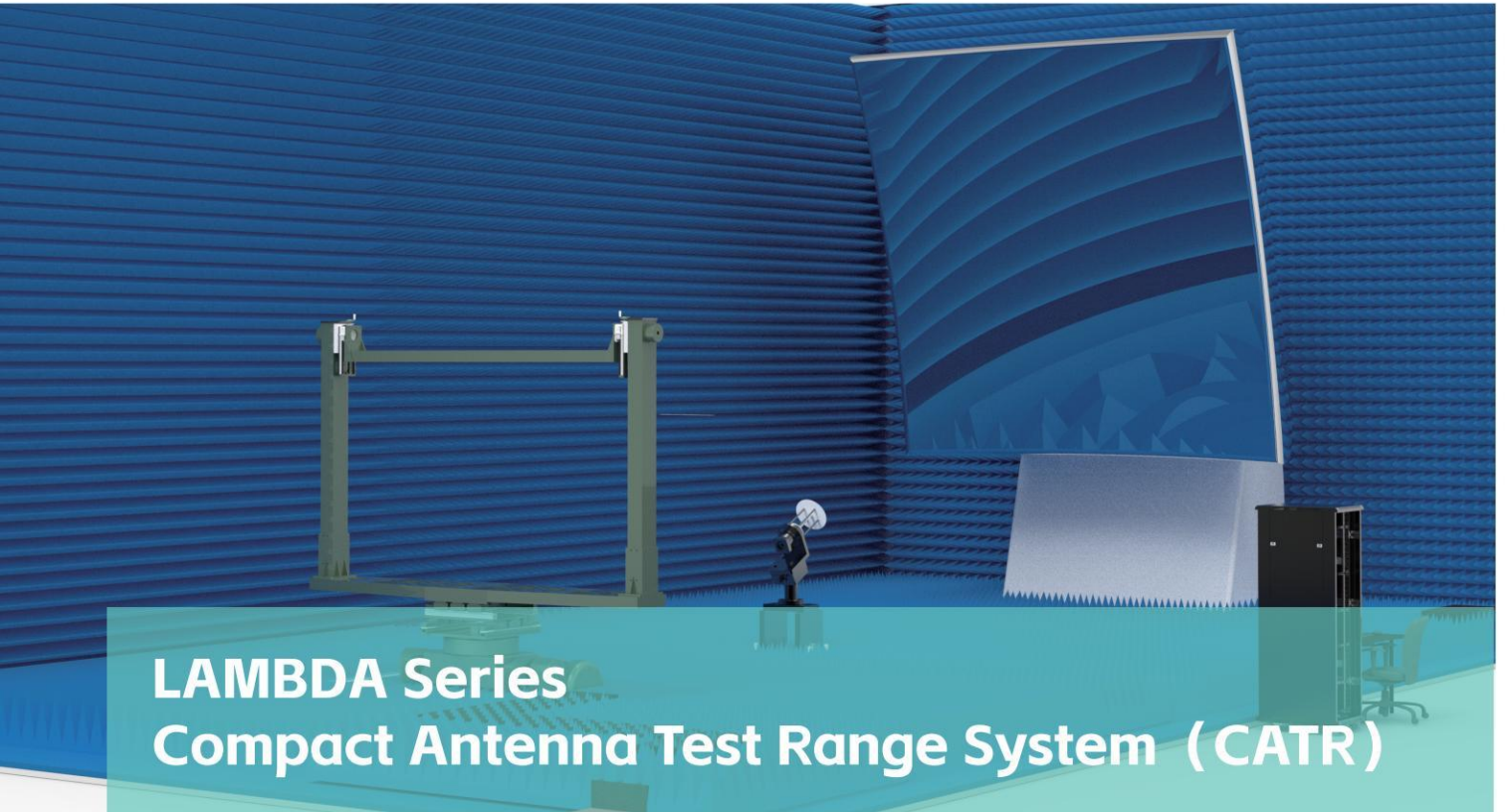
Dual-Probe Measurement System

- Freq. Band: 1GHz~67GHz (Higher bands customizable)
- Supports spherical near-field test
- Supports size customization



Multi-Probe Measurement System

- Freq. Band: 0.4GHz~8GHz, 8GHz~18GHz
- Supports spherical near-field test
- Supports size customization



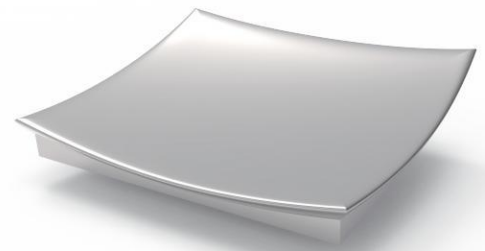
LAMBDA Series Compact Antenna Test Range System (CATR)

Applications

CATR has multiple applications, including antenna characterization, automotive radar, interference testing, Radar Cross Section (RCS), and other radiation tests.

Product Features

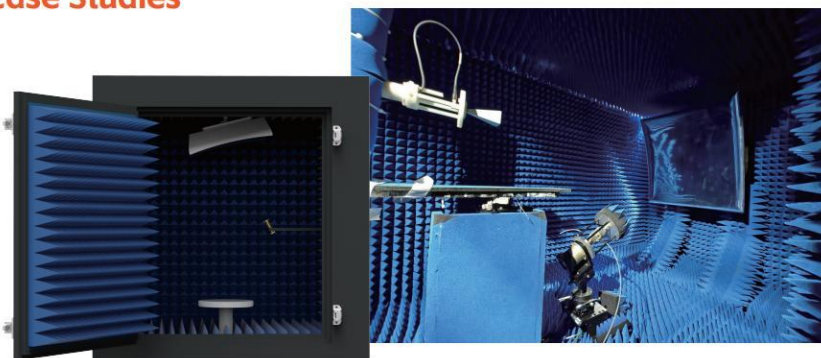
- CATR-based Over-the-Air (OTA) test system
- Large quiet zone (QZ) accommodates large devices (QZ: 0.3-2m, larger sizes customizable)
- Optional frequency range (8GHz-110 GHz, customizable)
- High-speed 3D positioner system
- High shielding effectiveness (Typ. > 90 dB)
- Suitable for ETSI/FCC standards, including OTA, angle calibration.



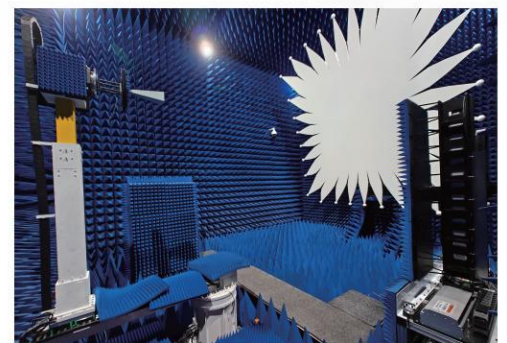
Software System

Compact Range Test Software

Case Studies



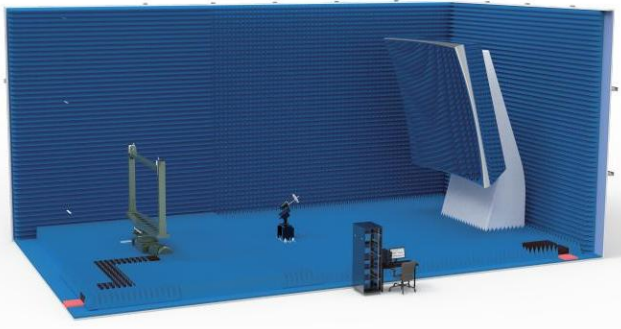
18GHz~40GHz CATR



1GHz~40GHz CATR

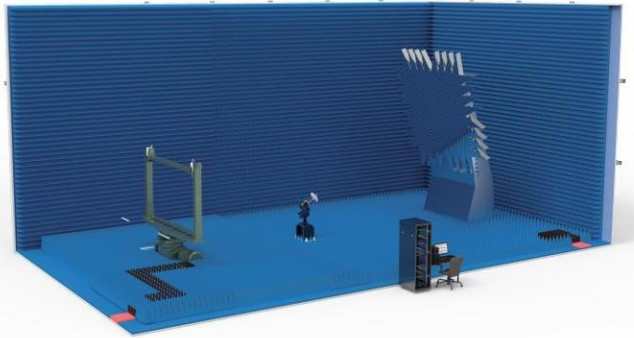
Technical Specifications

| | | |
|----------------------|------------------|---|
| Frequency | Chamber | 8GHz ~ 110GHz (customizable) |
| Shielding Eff. | Chamber | ≥ 90 dB (Typ.) |
| Accuracy (Gain) | Chamber | ± 0.5 dB |
| Repeatability (Gain) | Chamber | ± 0.3 dB |
| Accuracy (HPBW) | Chamber | $\leq 10\%$ |
| Angular Res. | Positioner | 0.03° |
| Pointing Acc. | Positioner | 0.03° |
| Tilt Angle | Positioner | Azimuth Axis: $\pm 180^\circ$; Elevation Axis: $\pm 45^\circ$ |
| Power Supply | Chamber | 100 ~ 240V AC, MAX.13A |
| Temp. Range | Chamber | $+20^\circ\text{C} \sim +35^\circ\text{C}$ |
| Reflector | Reflector | $\Phi 30\text{cm} / \Phi 60\text{cm} / \Phi 120\text{cm} / \Phi 150\text{cm}$ |
| | Amplitude taper | ≤ 1.5 dB |
| | Amplitude ripple | ≤ 0.5 dB |



Rolled Edge Reflector Measurement System

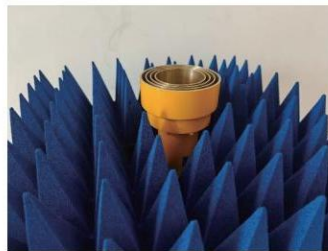
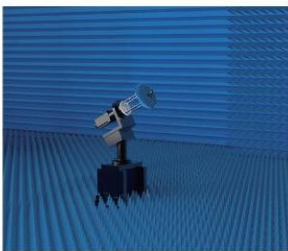
- Freq. Band: 1GHz~67GHz (Higher bands customizable)
- Supports far-field test
- Supports size customization



Serrated Edge Reflector Measurement System

- Freq. Band: 1GHz~67GHz (Higher bands customizable)
- Supports far-field test
- Supports size customization

System Configuration





LAMBDA Series Reverberation Chambers

Applications

Primarily for testing spurious radiation, TRP, TIS, etc., of large wireless products like base stations, smart appliances, industrial robots. Suitable for R&D, production, inspection, and certification stages.

Product Features

- Flexible system configuration to meet various standard requirements
- Efficient test software for reverberation chamber calibration and testing needs
- Advantages: small footprint, high efficiency, high sensitivity, wide dynamic range, broad frequency band
- Optional frequency range (0.4GHz~18 GHz, customizable)

Software System

Reverberation Chamber Test Software

Case Studies



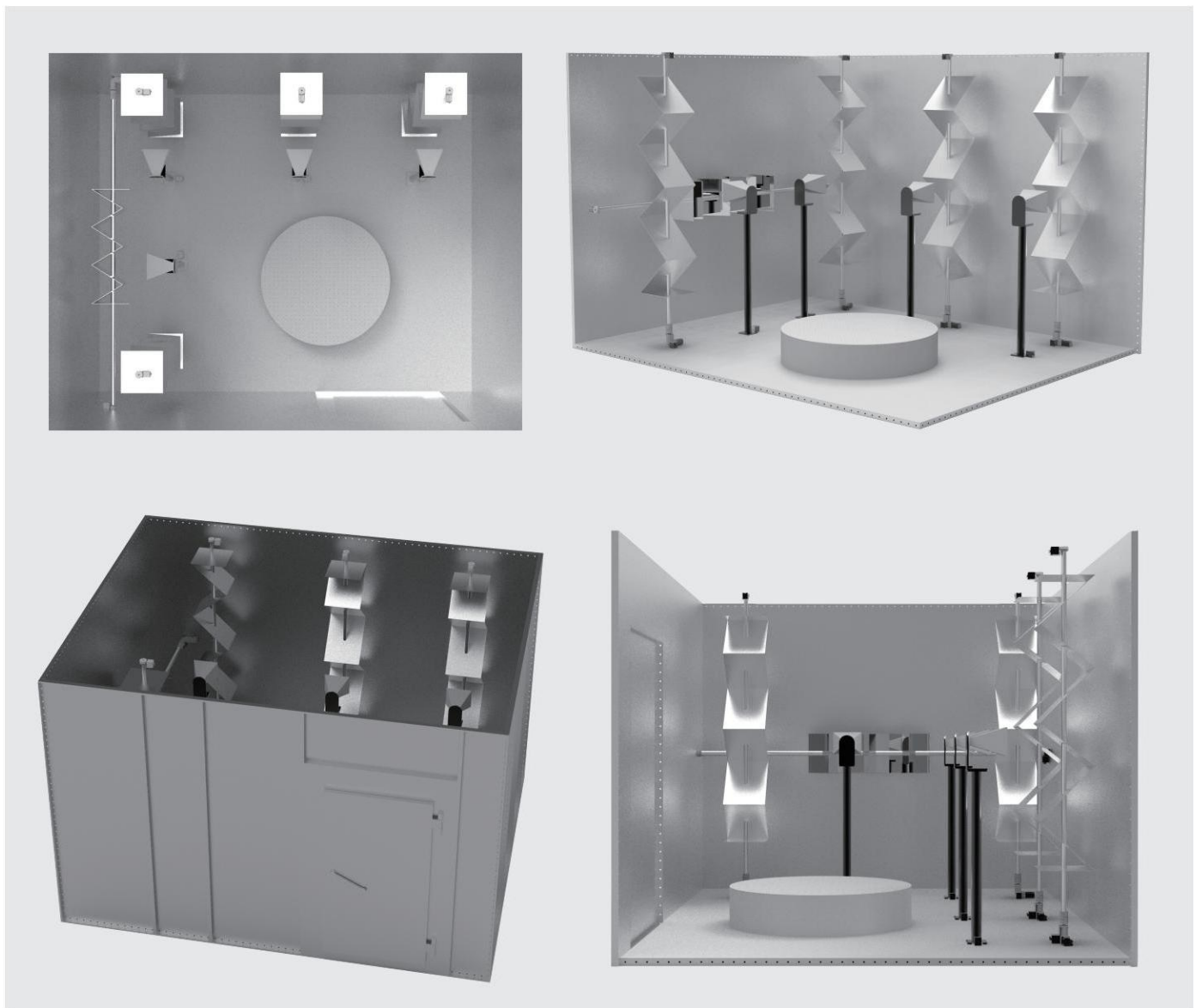
18GHz~40GHz Reverberation Chambers

Technical Specifications

| | | |
|----------------------|------------|------------------------------|
| Frequency | Chamber | 8GHz ~ 110GHz (customizable) |
| Shielding Eff. | Chamber | ≥ 90 dB (Typ.) |
| Accuracy (Gain) | Chamber | ± 0.3 dB |
| Repeatability (Gain) | Chamber | ± 0.1 dB |
| TRP Meas. Speed | Positioner | ≤ 3 min / 频点 |
| Max. DUT Volume | DUT | 0.65m ³ |
| Max. DUT Weight | DUT | 150KG |

Optional

- Supports size customization





LAMBDA Series Custom Antenna Test Positioners

Applications

Custom antenna test positioner setups have various applications, e.g., measurement system upgrades, test range conversion, indoor/outdoor test control.

The equipment is mobile, compact, fast, precise, and automated; simulates various antenna attitudes like roll, pitch, yaw. Customized and configured per test requirements to meet diverse testing needs.

Product Features

- Customized based on requirements analysis
- Easy integration with existing equipment for rapid testing
- Flexible, not limited by site constraints
- Includes antenna fixtures, plug-and-play
- Configured with software

Software System

Near-Field Test Software, Far-Field Test Software



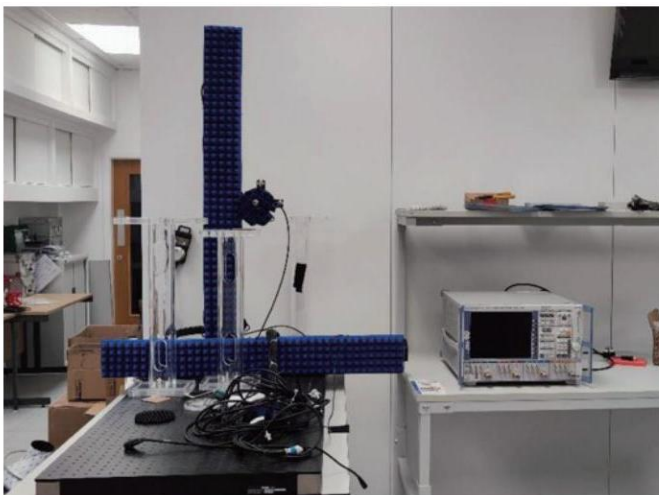
Case Studies



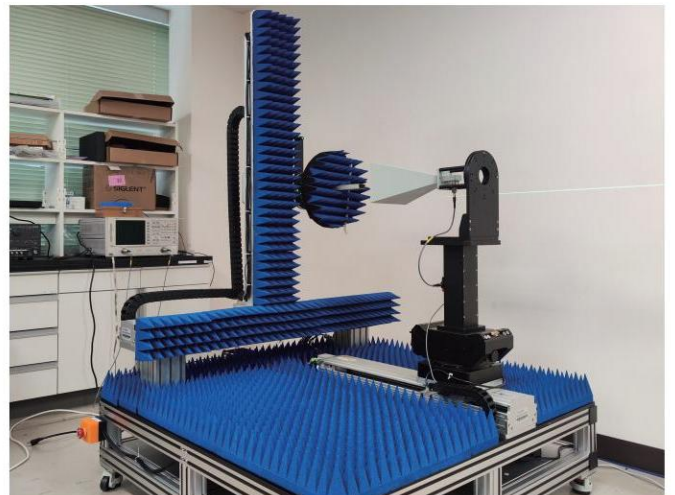
7GHz~20GHz metasurface test system



40GHz~67GHz metasurface test system



67GHz~170GHz 3D scanning antenna test system



5GHz~26GHz 3D scanning antenna test system



260GHz~400GHz THz topological test system



1GHz~20GHz 3D scanning antenna test system

LAMBDA Series - mmWave Electromagnetic Measurement System



Applications

Teaching Function: Antenna test principles, antenna test system instruction.

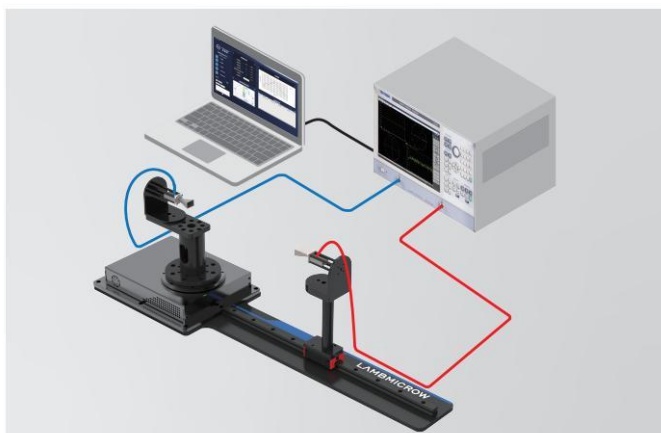
Lab Function: VNA calibration/use lab, antenna (far-field) tech lab, system setup lab, VSWR test lab, input impedance test lab, radiation pattern test lab, gain test lab, polarization test lab, etc.

Product Features

- Integration of antenna test technology and teaching labs; intuitive, clear, enhances learning interest.
- Provides small antenna samples, configured with small positioner, for real-time understanding of antenna signal transmission.
- Complete kit design, out-of-the-box, easy for labs and teaching.
- Integrated software interface, simple and easy to understand.

Software System

Microwave Teaching Platform Test Software

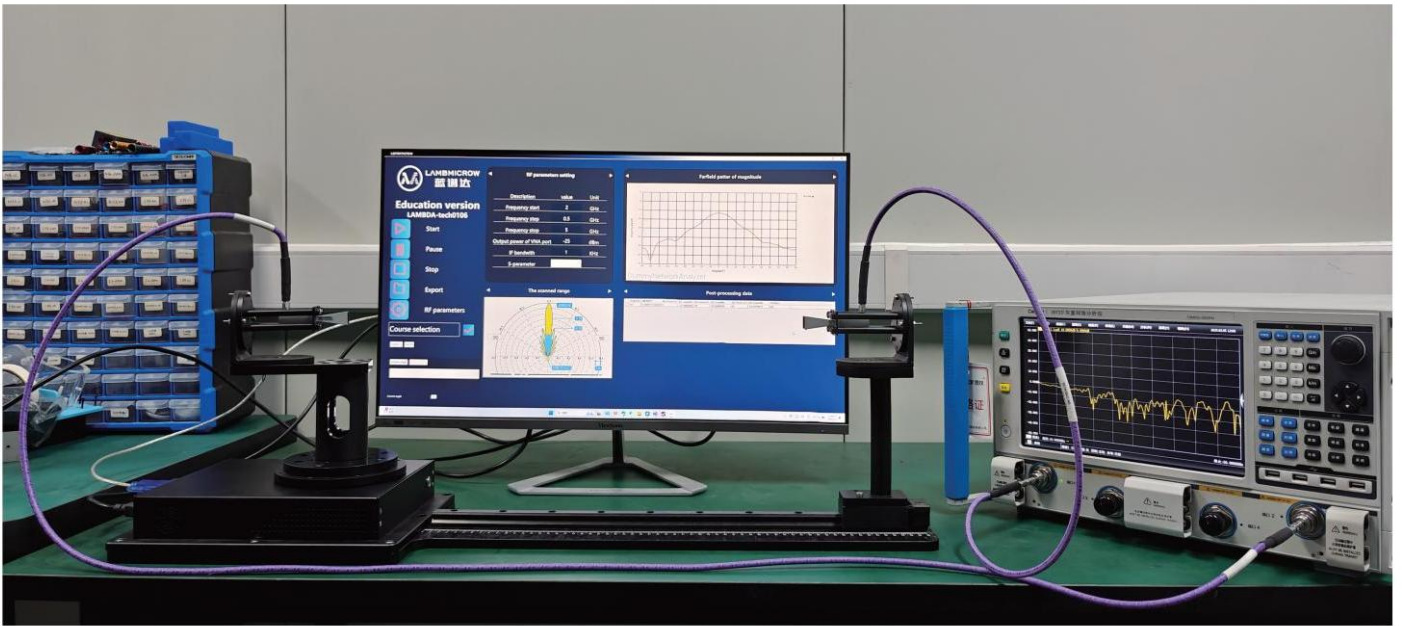


Desktop Microwave Teaching Platform



Integrated Microwave Teaching Platform

Picture of Device



Sub-6GHz Antenna Testing Application Experiment

- Freq. Band: 1GHz~6GHz
- Teaching of antenna principles and testing systems
- Use of vector network analyzers
- Antenna standing wave ratio (SWR) testing experiments
- Radiation pattern testing and interpretation of gain data



Multi-beam Amplitude and Phase Modulation Antenna Testing Application Experiment

- Freq. Band: 26.5GHz~29.5GHz
- RF fundamental knowledge and skills
- Electromagnetic wave interference
- Beamforming and beam steering, antenna verification
- Receiver gain and phase alignment



Terahertz Antenna Testing Application Experiment

- Freq. Band: 67GHz~110GHz
- Terahertz antenna far-field testing verification
- Application of frequency extension modules

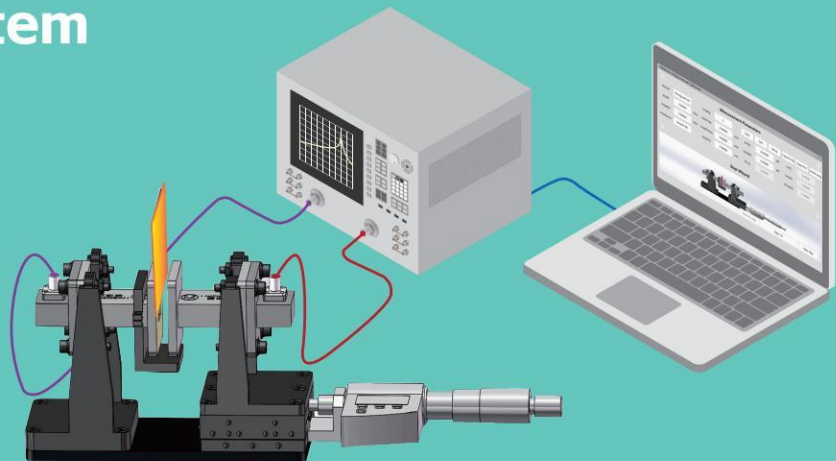


LAMBDA Series Material Electromagnetic Parameter Measurement System

The material electromagnetic parameter measurement system can test material dielectric constant, complex permeability, etc.

The system consists of a Vector Network Analyzer (VNA), test fixture, measurement software, etc.

Different solutions are provided based on user requirements for frequency and material type.



Operating Environment

- Temperature: $25 \pm 5^\circ\text{C}$ (High-temp system customizable)
- Relative Humidity: $\leq 65\%$
- No electromagnetic interference or mechanical vibration affecting system operation

Required Test Equipment

- Vector Network Analyzer (VNA): Provides S-parameter testing
- Coaxial Cable: Recommend stable amplitude/phase cables with $50\ \Omega$ impedance, typically used for VNA calibration
- Sample Measurement Tools: Micrometer, Vernier caliper

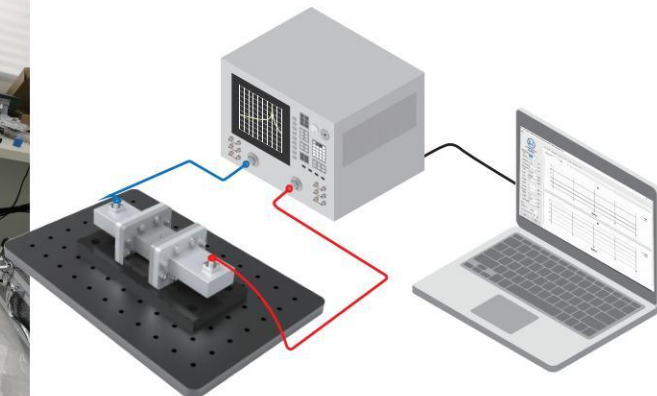
Test Precautions

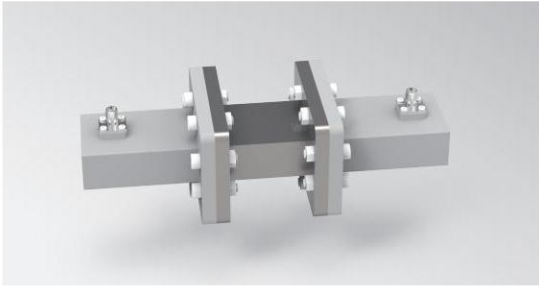
- DUT samples must be precision-machined according to standard fixture dimensions
- To prevent ESD damage, use anti-static mats, foot straps, and wrist straps. Anti-static voltage should not exceed 500V.
- Select connectors/cables matching test conditions; inspect them before operation.

Case Studies



2.6GHz~40GHz Waveguide Transmission Line System





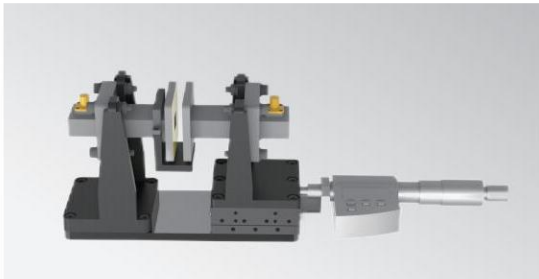
Waveguide Transmission Line Dielectric Measurement System

Test Freq.: 490MHz~40GHz, customizable
Test Range: Dielectric constant 1~100; Dielectric loss 0.1~2.0
Test Accuracy: Dielectric constant 5%; Loss 10%
DUT Requirement: Rectangular samples must be fully embedded within the waveguide section



Coaxial Transmission Line Dielectric Measurement System

Test Freq.: 200MHz~18GHz, customizable
Test Range: Dielectric constant 2~100; Dielectric loss: 0.1~2
Test Accuracy: Dielectric constant 8%; Loss 10%
DUT Requirement: Toroidal solid samples must be fully embedded within the coaxial line



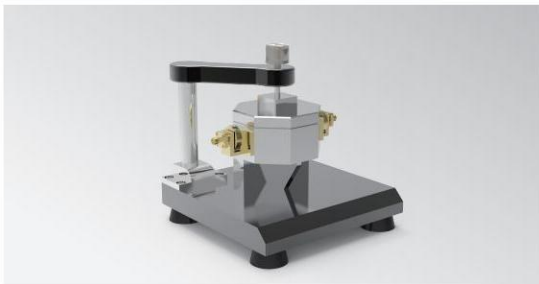
Separating Waveguide Resonator Dielectric Measurement System

Test Freq.: 10GHz, customizable
Test Range: Dielectric constant 1~100; Dielectric loss 0.0001~0.1
Test Accuracy: Dielectric constant 1%; Loss 3%
DUT Requirement: Slice samples must be larger than 4 by 4cm², flat and thickness is between 100um to 4mm



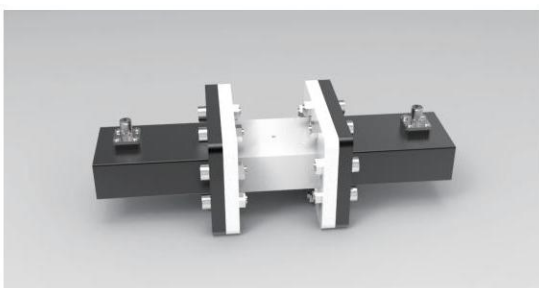
Separating Medium Resonator Dielectric Measurement System

Test Freq.: 10GHz, customizable
Test Range: Dielectric constant 1~100; Dielectric loss 0.001~0.0001
Test Accuracy: Dielectric constant 0.5%
DUT Requirement: Slice samples must be parallel to the ground, less than the height of the cavity size



Closed Resonator Dielectric Measurement System

Test Freq.: 5GHz, customizable
Test Range: Dielectric constant 1~100; Dielectric loss 0.00005~0.005
Test Accuracy: Dielectric constant 0.2%~1%; Loss 1%~3%
DUT Requirement: Circular/square samples must be 0.2~0.8 times the cavity size



Rectangular Resonator Dielectric Measurement System

Test Freq.: 1GHz~8GHz, customizable
Test Range: Dielectric constant 2~20; Dielectric loss 0.0001~0.005
Test Accuracy: Dielectric constant 5%; Loss 20%
DUT Requirement: Cylindrical or prismatic samples must pass through holes in the top/bottom surfaces of the cavity

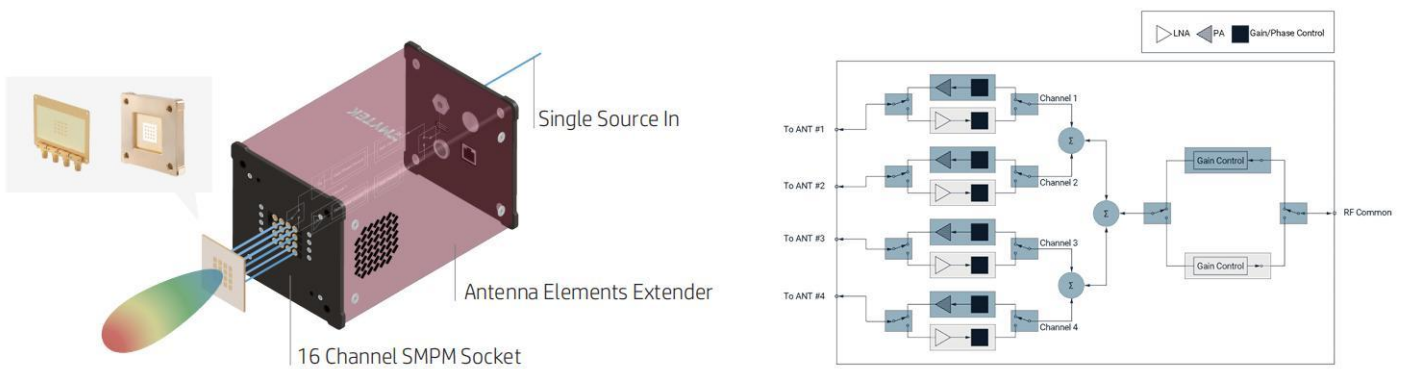
MMWAVE INTEGRATED EXTENSION PLATFORM

· BBOX™ BEAMFORMER · UD CONVERTER · RIS

BBox™ Beamformer

Beamforming is critical for mmWave applications. The BBox™ series provides an out-of-the-box beamforming platform. Using the GUI (TMXLAB Kit, TLK), users can easily change beam angles and modify signal gain to perform multiple beamforming experiments.

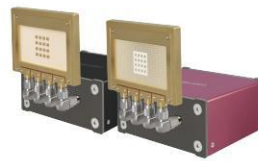
- Independent control of each channel's switch, gain, and phase
- Rapid maximum gain / boresight setting
- Provides secondary development (API) functions



BBox™ Beamformer Specifications



BBoard 5G



BBox Lite 5G

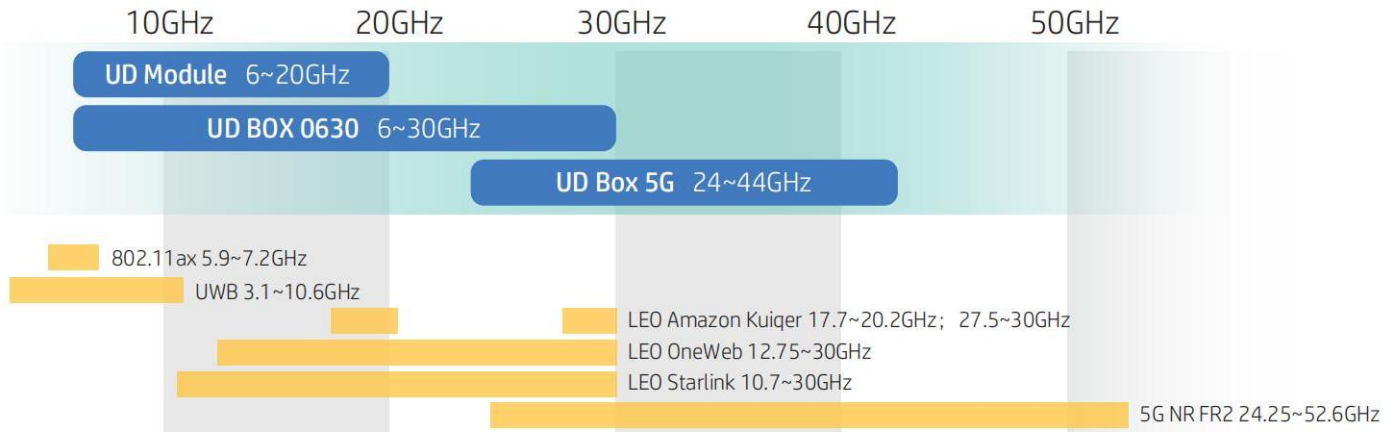


BBox One 5G

| Freq. Band | 26.5~29.5 GHz / 37~40 GHz | 26.5~29.5 GHz / 37~40 GHz | 26.5~29.5 GHz / 37~40 GHz |
|-------------------|---------------------------|---------------------------|---------------------------|
| RF Channels | 1 x 4 | 1 x 4 | 4 x 4 |
| Antenna | 1x 4 Patch Array | 1 x 4 Patch Array | 4 x 4 / 8 x 8 Patch Array |
| Beam Scan Dir. | 1D | 1D / 2D | 1D / 2D |
| Phase Shift Range | 360° / 5° step | 360° / 5° step | 360° / 5° step |
| Gain Range | 15 dB / 0.5 dB step | 15 dB / 0.5 dB step | 15 dB / 0.5 dB step |
| Dimensions | 107 x 100 x 39 mm | 124 x 102 x 104 mm | 156 x 82 x 82 mm |

· Supports Tx/Rx half-duplex (TDD), each channel includes PA, LNA, Phase Shifter. Includes amplitude/phase control GUI, beamforming algorithm API library.

UD Converter Parameters



UD Board

- Operating Freq.: 23~30GHz
- Dimensions: 105.3 x 65.6 x 23.4 mm
- Freq. Range: IF 2.6~5.8 GHz; RF 23~30 GHz; LO 4.75 ~6.75 GHz
- Conversion Loss: Tx 11.5 dB Gain typ. ; Rx 8 dB Gain typ.
- Unidirectional, requires external LO. Suitable for teaching, basic R&D.



UD Module

- Operating Freq.: 6~20 GHz
- Dimensions: 222 x 177 x 51 mm
- Freq. Range: IF 1~10 GHz; RF 6~20 GHz
- Conversion Loss: 10 dB(typ.)
- Integrated up/down conversion, built-in LO. Selectable IF/RF filters. Suitable for Wi-Fi 6/7, UWB, LEO applications.



UD Box 5G

- Operating Freq.: 24~44 GHz
- Dimensions: 143 x 152 x 65 mm
- Freq. Range: IF 0.01~14 GHz; RF 24~44 GHz
- Conversion Loss: 13 dB(typ.)
- Optional single-channel or dual-channel
- 10 MHz output, 100 MHz input/output sync signal
- Integrated up/down conversion, built-in LO. Suitable for 5G and satellite applications.



UD Box 0630

- Operating Freq.: 6~30 GHz
- Dimensions: 142.8 x 152 x 65 mm
- Freq. Range: IF 1~8 GHz; RF 6~30 GHz
- Conversion Loss: 10 dB(typ.)
- 10 MHz output, 100 MHz input/output sync signal
- Integrated up/down conversion, built-in LO. Suitable for defense radar, UWB, satellite applications.



LAMBDA Series - mmWave Integrated Extension Platform

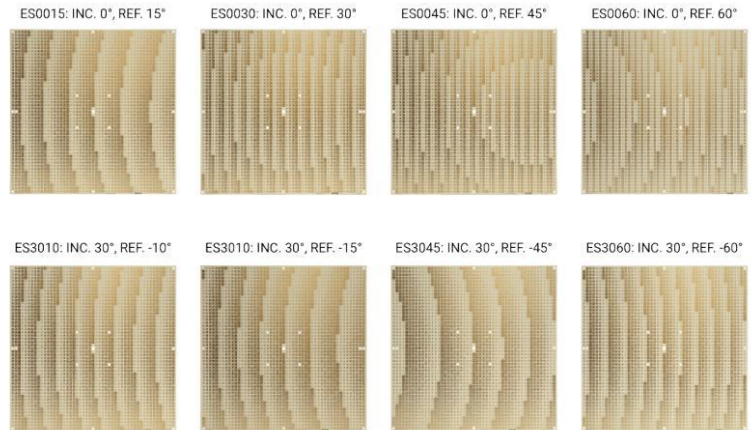
Reflector RIS

Operating Freq.: 26~30GHz

Dimensions: 280 x 280 x 1.6 mm

Distance from Tx: >2m

- Low installation cost, no extra power or maintenance
- Instantly extend and design FR2 n257/n261 coverage
- Covers most application reflection angles
- Gain extends mmWave signal coverage
- Reflectors with different angles can be used together



Dynamic RIS

3GHz RIS

Operating Freq.: 2.8~3.2 GHz

No. of Elements: 4 x 8

Dimensions: 550 x 360 mm²

Scan Angle Range: -30° to +30°

- Single-pol, Vertical-Rx / Horizontal-Tx; UDP protocol; 64-ch control board & voltage source; Phase element control, amplifier array control.



3.5GHz RIS

Operating Freq.: 3.45~3.55 GHz

No. of Elements: 6 x 6

Dimensions: 280 x 280 mm²

Phase Shift Range: 0° to +360° (continuous)

- Single-linear polarization, V/H; Independent element control; UDP protocol; 64-ch DAC amplifier driver board.



4.7GHz RIS

Operating Freq.: 4.2~5.2 GHz

No. of Elements: 16 x 16

Dimensions: 510 x 510mm²

Scan Angle Range: -60° to +60°

- Single-linear polarization, V/H; Independent element control; UDP protocol; 64-ch DAC amplifier driver board.



28GHz RIS

Operating Freq.: 26~30GHz

No. of Elements: 32 x 32

Dimensions: 267 x 267mm²

Scan Angle Range: -60° to +60°

- Single-linear polarization, V/H; Independent element control; UDP protocol; 64-ch DAC amplifier driver board.

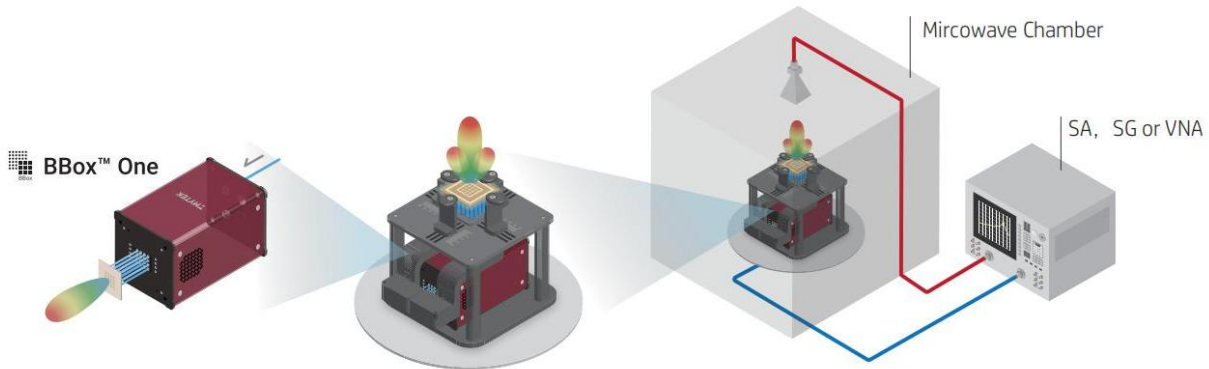


mmWave Phased Array Antenna Test Solution

Upgrade anechoic chambers for mmWave phased array antenna testing. Optimize mmWave phased array measurements through software and hardware integration without changing the overall system.

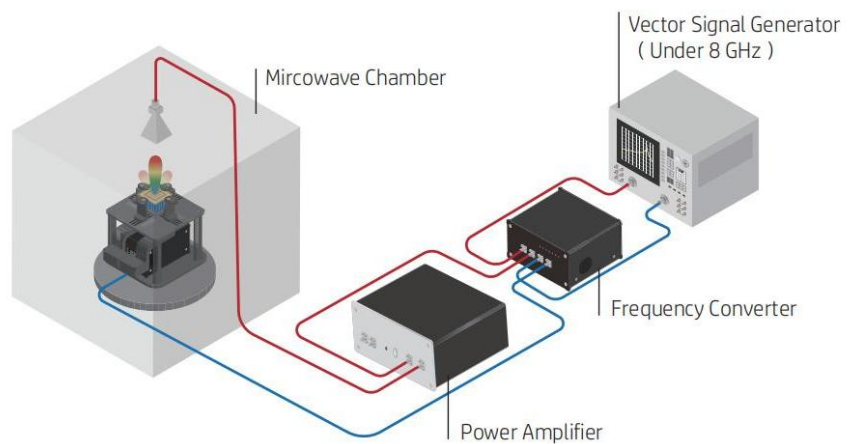
Solution Features

- Provides 16 amp/phase adjustable RF channels (expandable)
- Flexible configuration for phased array antennas and beamforming experiments
- Includes specialized phased array test fixtures for rapid integration with BBox



Sub-6GHz to mmWave Extension

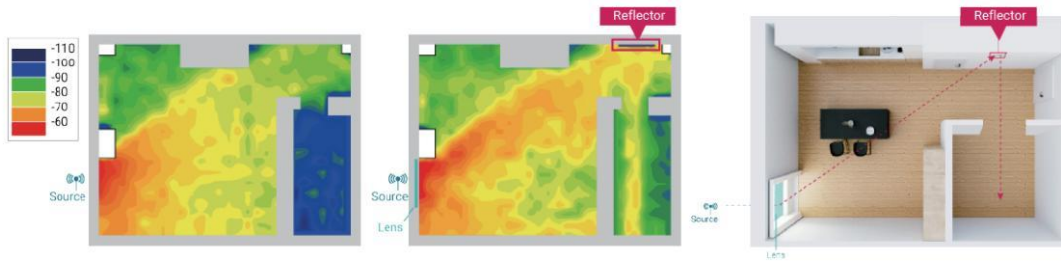
Use low-frequency signal generators with high-performance up/down converters for rapid frequency conversion. Add BBox beamformer's amplitude/phase control modules to quickly test mmWave phased array antennas. Supports Sub-6GHz to mmWave extension without changing existing instruments, meeting production and lab test needs.



Solution Features

- Configured with 16-channel BBox beamformer, tests multi-channel array antennas
- Configured with dual-channel up/down converters, providing wider frequency range up to 40GHz
- Configured with 1-40GHz Power Amplifiers and LNAs to enhance Tx/Rx signals
- Flexible frequency bands allow for more options in product design
- Easy configuration, channel switches can be added for different frequency bands
- Integrates anechoic chamber functions, extends frequency measurement range

LAMBDA Series - mmWave Integrated Extension Platform

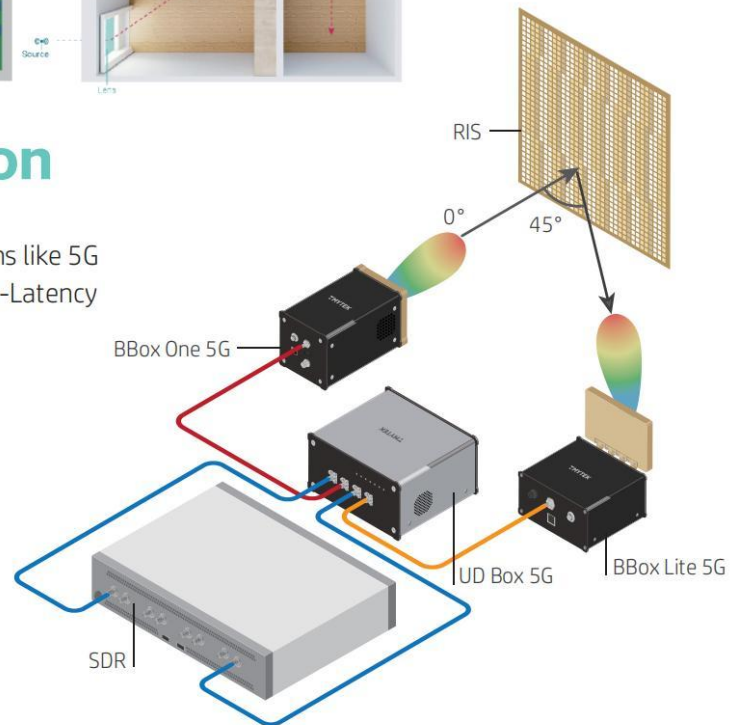


mmWave RIS Test Solution

5G mmWave technology enables future network applications like 5G enhanced Mobile Broadband (eMBB) and Ultra-Reliable Low-Latency Communication (URLLC).

Solution Features

- Custom EM signal distribution
- Complete coverage of signal dead zones
- Creation of signal secure zones, etc.

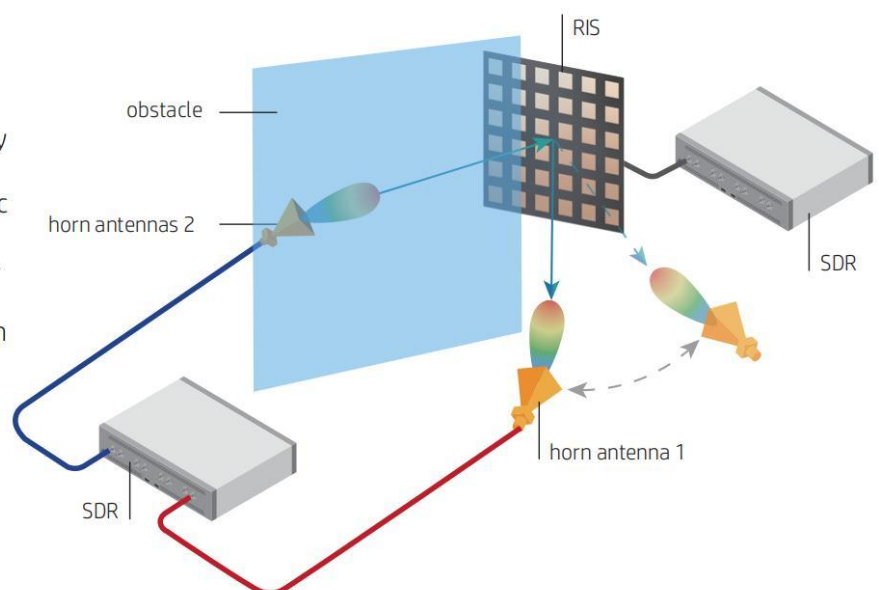


Experiment on Integrated Sensing and Communication Metasurface-Assisted ISAC Application

This device is a programmable metasurface that integrates electromagnetic sensing and fine-grained control capabilities. It offers a solution characterized by high energy efficiency, high spectrum efficiency, and low hardware complexity to address communication challenges such as blind zone coverage, service for edge users, and deteriorating channel environments, thereby improving communication service quality.

Solution Features

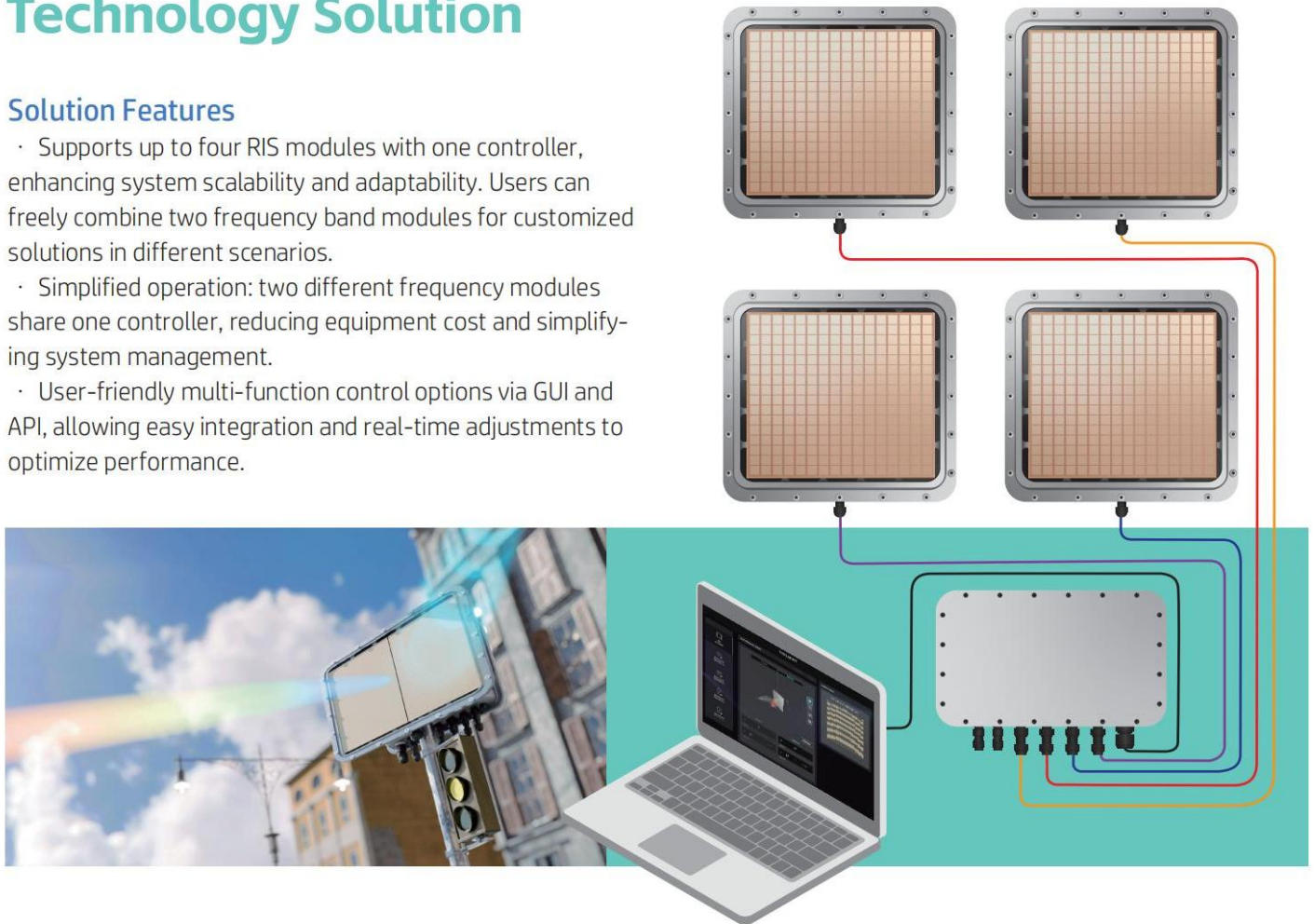
- Programmable metasurface supporting channel estimation algorithm validation
- Perceives environmental information to fully exploit its control potential
- Precisely regulates multiple electromagnetic properties (e.g., phase, amplitude) to enable on-demand customization of wireless environments
- Combines high reflection efficiency with high phase accuracy, ensuring stable coupling and precise sensing without interference during control
- Low-cost, low-power, and programmable



5G FR1/FR2 NR Signal Coverage Technology Solution

Solution Features

- Supports up to four RIS modules with one controller, enhancing system scalability and adaptability. Users can freely combine two frequency band modules for customized solutions in different scenarios.
- Simplified operation: two different frequency modules share one controller, reducing equipment cost and simplifying system management.
- User-friendly multi-function control options via GUI and API, allowing easy integration and real-time adjustments to optimize performance.



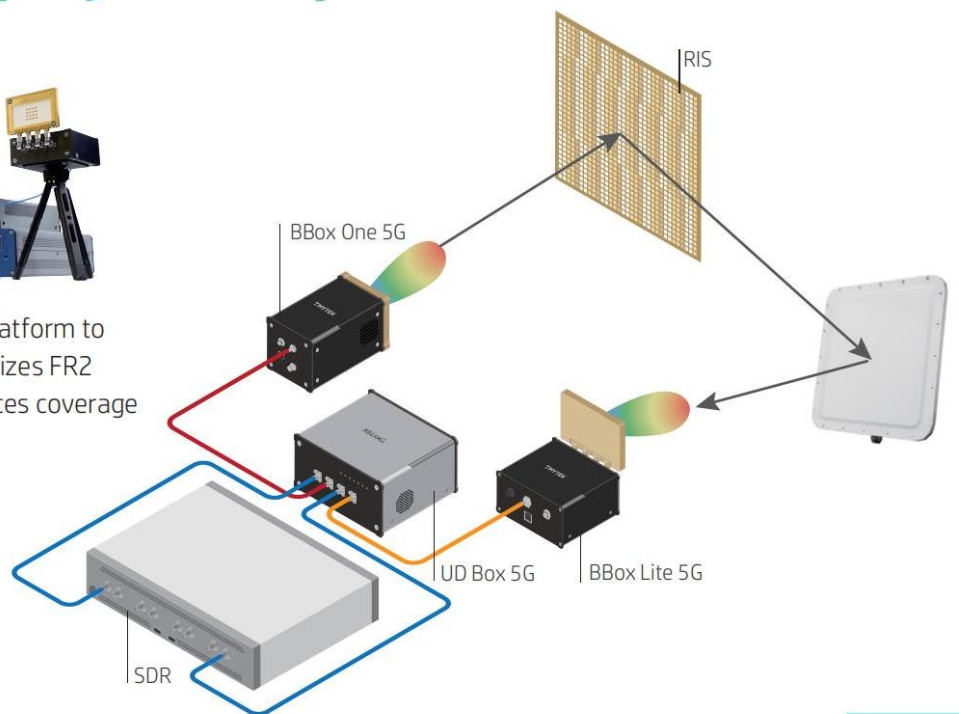
FR2 Network Deployment Optimization Solution



This solution uses an SDR-based test platform to simulate gNB and UE functions. It optimizes FR2 mmWave signal distribution and enhances coverage via Reflector and Dynamic RIS.

Solution Features

- Flexible modular hardware design
- Enhanced coverage

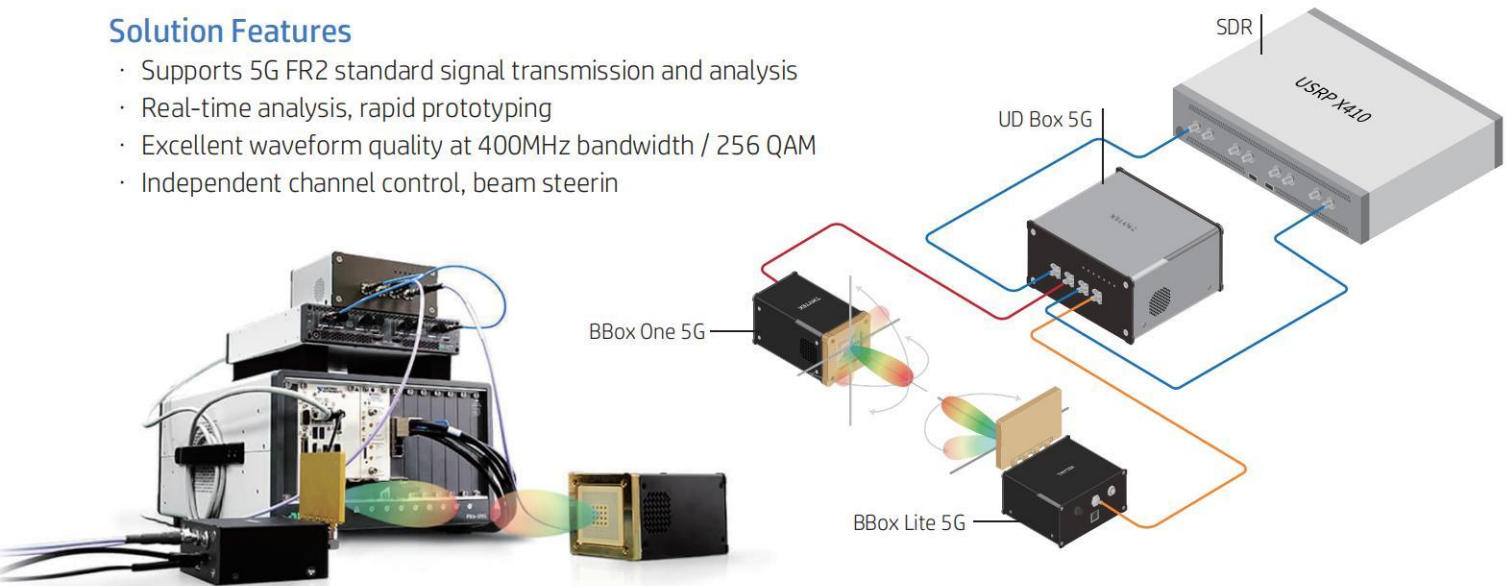


mmWave Rapid Prototyping (SDR) Development Platform

Demonstrated via NI Ettus USRP SDR platform for mmWave rapid prototyping. Developers can utilize complete mmWave functionalities to implement and validate protocols and algorithms.

Solution Features

- Supports 5G FR2 standard signal transmission and analysis
- Real-time analysis, rapid prototyping
- Excellent waveform quality at 400MHz bandwidth / 256 QAM
- Independent channel control, beam steerin

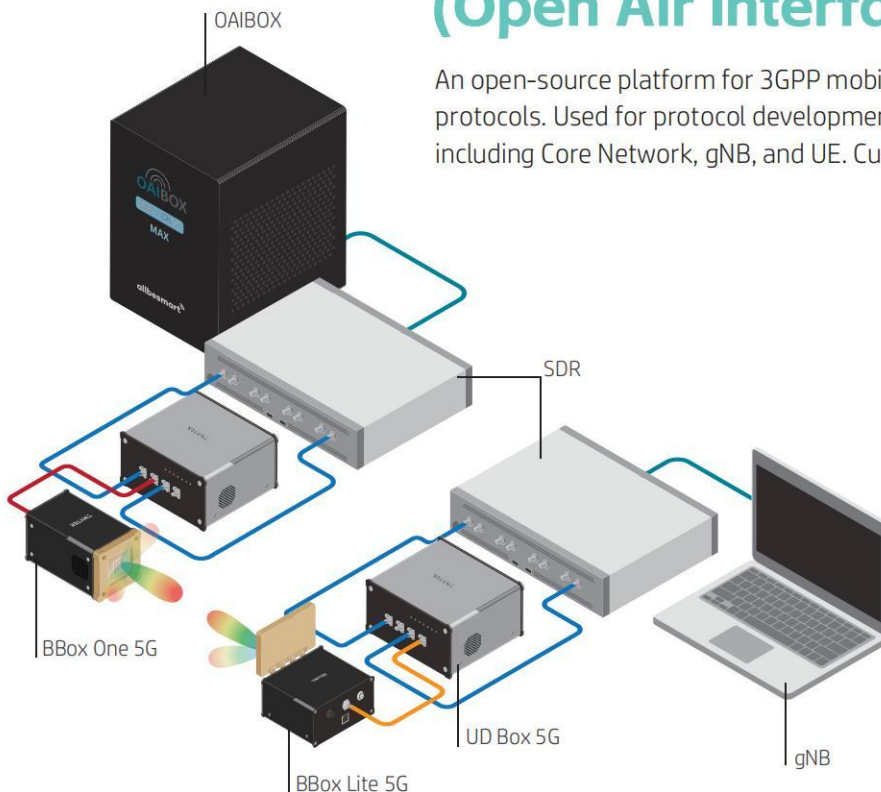


mmWave OAI Core Network (Open Air Interface)

An open-source platform for 3GPP mobile system standards, compliant with Open RAN protocols. Used for protocol development and testing of mobile network components, including Core Network, gNB, and UE. Customizable platform.

Solution Features

- Turnkey 5G Open RAN + Core Network Solution
- Complete integrated test platform for protocol development, testing, and evaluation
- Provides 4T4R & 400MHz channel bandwidth applications
- Test development platform with flexible beam management and signal analysis
- Seamless conversion between mmWave and IF
- Cloud-native application for controlling and visualizing cellular network metrics
- Ready-to-use private network deployment solution



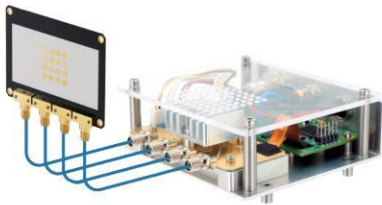
mmWave Teaching Kit



Communication System Prototyping

By connecting UD Box with any baseband instruments, can conduct more 5G mmWave communication R&D projects.

- Compatible with most SDRs: NI USRP/ Xilinx FPGA
- Beam tracking algorithm development
- Beam management implementation



UD Board

Signal Generator

SDR



Signal Source

BBoard

Power Detector



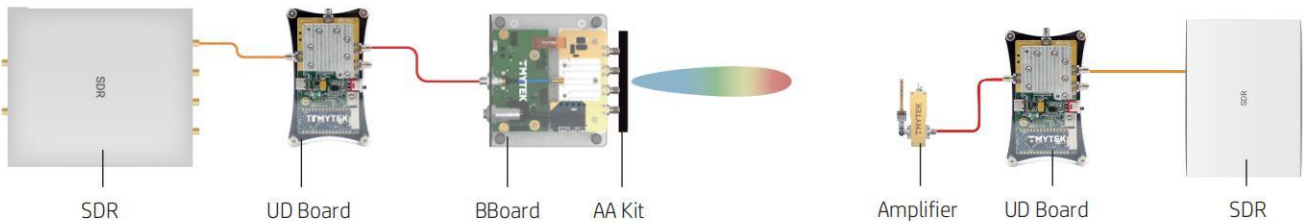
CoCo Antenna

AA Kit

RF Cables

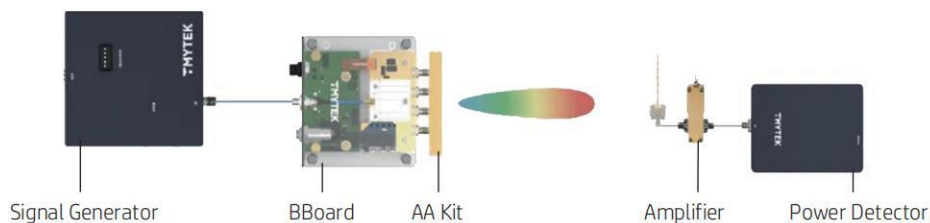
Amplifier

Power Combiner



NextGen Wireless Edu Solution

Just need the UD Kit, which comes with a frequency converter, LO, and SDR. It perfectly complements the mmWave Developer Kit and provides the necessary tools to explore these advanced concepts in depth.



Beamforming experiment solution for developers

The 5G mmWave Developer Kit can be used for a variety of 5G mmWave beamforming research and development projects. BBoard with AAkit and PLO can a beam generator that emits beams at mutiple angles. A CoCo antenna with a amplifier and a power detector, on the other hand, can receive and detect signals.

LAMBDA Series - Microwave Measurement System Accessories



LAMBDA Series Microwave Measurement System Accessories

Providing various microwave and mmWave antennas and probes from 2.6GHz~110GHz (higher bands customizable), such as: standard gain horn antennas, wideband horn antennas, omnidirectional antennas, planar wave generators, etc.



Waveguide antennas

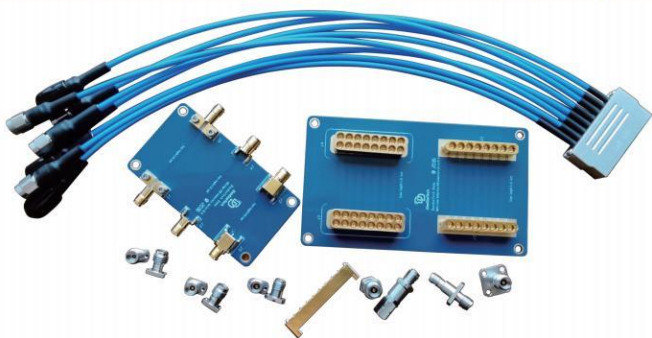
| Model | Freq. Band | Uswr | Terminal | Material |
|---------------------|--------------|-------|----------|----------|
| LAMBDA14WOEWPN | 1.13~1.73GHz | ≤ 2.2 | N-K | aluminum |
| LAMBDA22WOEWPN | 1.72~2.61GHz | ≤ 2.2 | N-K | aluminum |
| LAMBDA32WOEWPN | 2.6~3.95GHz | ≤ 2.2 | N-K | aluminum |
| LAMBDA48WOEWPN | 3.94~5.99GHz | ≤ 2.2 | N-K | aluminum |
| LAMBDA70WOEWPN | 5.38~8.17GHz | ≤ 2.2 | N-K | aluminum |
| LAMBDA100WOEWPS | 8.2~12.5GHz | ≤ 2.2 | SMA-K | aluminum |
| LAMBDA140WOEWPS | 11.9~18GHz | ≤ 2.2 | SMA-K | aluminum |
| LAMBDA220WOEWPK | 17.6~26.7GHz | ≤ 2.2 | 2.92-K | copper |
| LAMBDA320WOEWPK | 26.3~40GHz | ≤ 2.2 | 2.92-K | copper |
| LAMBDA400WOEWPV | 32.9~50GHz | ≤ 2.2 | 2.4-K | copper |
| LAMBDA500WOEWP+1.85 | 40~60GHz | ≤ 2.2 | 1.85-K | copper |
| LAMBDA620WOEWP+1.85 | 49.8~75.8GHz | ≤ 1.8 | 1.85-K | copper |
| LAMBDA900WOEWP+1.85 | 73.8~112GHz | ≤ 1.8 | 1.0-K | copper |

Standard gain horn antennas

| Model | Freq. Band | Gain(TYP.) | Uswr | Terminal | Material |
|----------------------|--------------|------------|-------|----------|----------|
| LAMBDA22SGAH15N | 1.72~2.61GHz | 15dB | ≤ 1.5 | N-K | aluminum |
| LAMBDA32SGAH15N | 2.6~3.95GHz | 15dB | ≤ 1.5 | N-K | aluminum |
| LAMBDA48SGAH15N | 3.94~5.99GHz | 15dB | ≤ 1.5 | N-K | aluminum |
| LAMBDA70SGAH20N | 5.38~8.17GHz | 20dB | ≤ 1.5 | N-K | aluminum |
| LAMBDA100SGAH20S | 8.2~12.5GHz | 20dB | ≤ 1.5 | SMA-K | aluminum |
| LAMBDA140SGAH20S | 11.9~18GHz | 20dB | ≤ 1.5 | SMA-K | aluminum |
| LAMBDA140SGAH25S | 11.9~18GHz | 25dB | ≤ 1.5 | SMA-K | aluminum |
| LAMBDA220SGAH20K | 17.6~26.7GHz | 20dB | ≤ 1.5 | 2.92-K | copper |
| LAMBDA220SGAH25K | 17.6~26.7GHz | 25dB | ≤ 1.5 | 2.92-K | copper |
| LAMBDA320SGAH20K | 26.3~40GHz | 20dB | ≤ 1.5 | 2.92-K | copper |
| LAMBDA320SGAH25K | 26.3~40GHz | 25dB | ≤ 1.5 | 2.92-K | copper |
| LAMBDA400SGAH20V | 32.9~50GHz | 20dB | ≤ 1.6 | 2.4-K | copper |
| LAMBDA400SGAH25V | 32.9~50GHz | 25dB | ≤ 1.6 | 2.4-K | copper |
| LAMBDA500SGAH20+1.85 | 40~60GHz | 20dB | ≤ 1.8 | 1.85-K | copper |
| LAMBDA620SGAH25+1.85 | 49.8~75.8GHz | 25dB | ≤ 1.8 | 1.85-K | copper |
| LAMBDA900SGAH25+1.85 | 73.8~112GHz | 25dB | ≤ 1.8 | 1.0-K | copper |

Wideband horn antennas

| Model | Freq. Band | Gain(TYP.) | Uswr | Terminal | Material |
|---------------------|------------|------------|-------|----------|----------|
| LAMBDA0680DRHA10N | 0.6~8GHz | 10dB | ≤ 2.5 | N-K | aluminum |
| LAMBDA0860DRHA10N | 0.8~6GHz | 10dB | ≤ 2.5 | N-K | aluminum |
| LAMBDA1080DRHA10N | 1~8GHz | 10dB | ≤ 2.5 | N-K | aluminum |
| LAMBDA10180RHA10N | 1~18GHz | 10dB | ≤ 2.5 | N-K | aluminum |
| LAMBDA20180DRHA10S | 2~18GHz | 10dB | ≤ 2.5 | SMA-K | aluminum |
| LAMBDA20180DRHA17S | 2~18GHz | 17dB | ≤ 2.5 | SMA-K | aluminum |
| LAMBDA80180DRHA20S | 8~18GHz | 20dB | ≤ 2.5 | SMA-K | aluminum |
| LAMBDA180400DRHA20K | 18~40GHz | 20dB | ≤ 2.5 | 2.92-K | copper |



LAMBMICROW

Foshan Lambda Technology Co., Ltd.

Our Service Scope

We provide high-quality customized services for you worldwide
Choosing us means choosing fast, stable, and accurate measurement solutions



Company Add.

RoomB426, Floor4, BlockB1, Nanhai Software Technology Park,
Nanhai Hi-tech Zone, Taoyuan Road, ShishanTown,
Nanhai District, Foshan City, Guangdong Province, China, 528225

Company Web.

<https://lamb-tech.com>

Contact Email

sales@lambmicrow.com