



Quectel

XAC/xCL_AT-160-EL-18U

WiFi Antenna Test Report (DVT Equipment)

Reporter : Simon.Sheng
TEL: +86 13773157351
Email : Simon.Sheng@quectel.com
Date: 2025.09.10

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版本履历



Revision	Test Date	Report Date	Tester/Reporter	Reviewer	Note
V1.0	2024/11/18	2024/11/20	Simon. Sheng	Winfred. Wu	AT160EL-EU WiFi Antenna Test Report
V1.1	2025/09/07	2025/09/10	Simon. Sheng	Winfred. Wu	AT160EL-EU WiFi Antenna Test Report (DVT Equipment)

- **Antenna Testing Conditions**

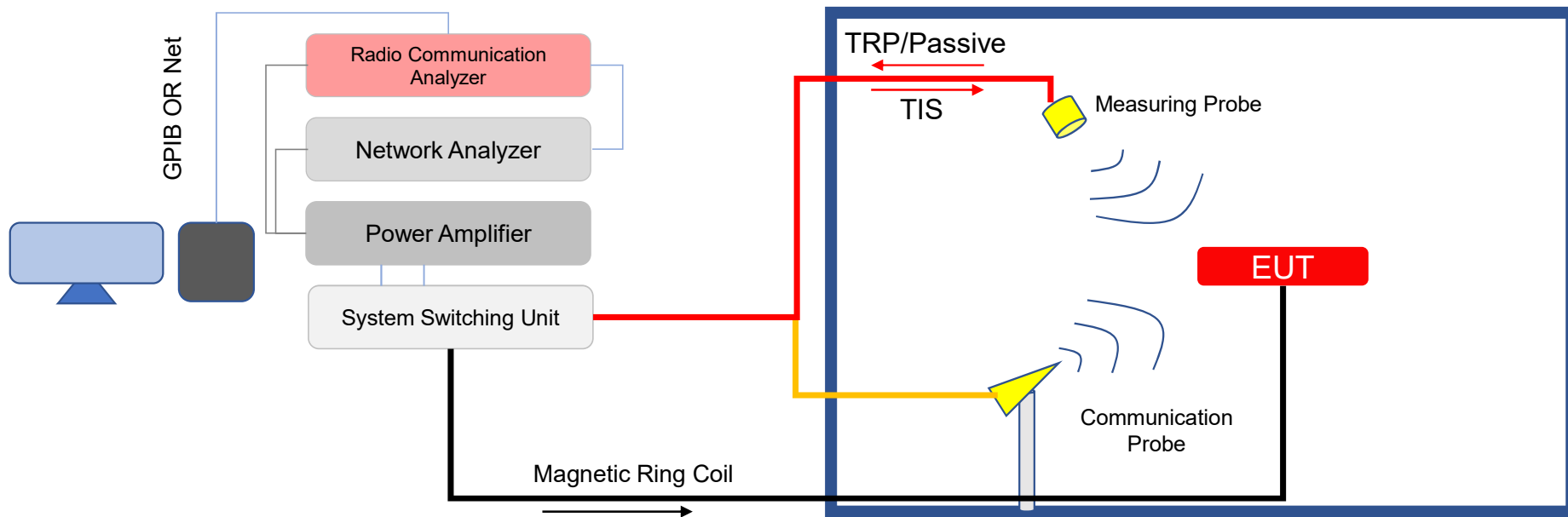
1. Test System
2. Antenna Under Test
3. Antenna Placement

- **Antenna RF characteristics**

1. VSWR & Gain Table
2. Radiation Patterns

Antenna Test

- Chamber Coordinate System HF-S-1



The antenna gain values are used in EMC measurement, the EIRP and/or Conducted power are compliance all FCC requirements and not exceed the limit.

Test Equipment

Equipment Description	Manufacturer	Identification no.	Current Calibration date	Next calibration date
Network Analyzer	KEYSIGHT	E5071C	2025/07/04	2027/01/03
Radio Communication Analyzer	ROHDE&SCHWARZ	CMW500	2023/10/19	2025/10/18
Measurement software	SUNYIELD	SY-68		

Test Procedure

1. Test Equipment

- ✓ VSWR and input impedance: KEYSIGHT 5071C Network Analyzer;
- ✓ Antenna gain and efficiency :SUNYIELD SY-68 Chamber;

2. Test Setup

2.1 Frequency Range. WiFi: 2400~2500 MHz, 5150~5850MHz;

2.2 VSWR

Step 1: The antenna is arranged on the customer provided test fixture;

Step 2: The VSWR of the antenna is measured via KEYSIGHT 5071C Network Analyzer;

2.3 Radiation pattern and Gain

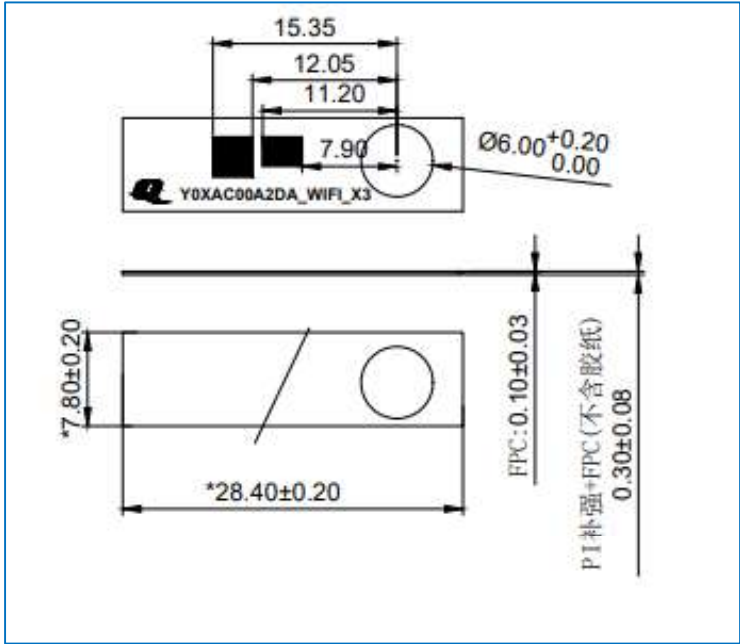
- ✓ The 3D chamber provides less than -40dB reflectivity from 500MHz to 8GHz and a 40cm diameter spherical quiet zone. The measurement results are calibrated using both dipoles and standard gain horns;
- ✓ The antenna under tested is arranged in the turntable and a decoupling sleeve is used to reduce feed line radiation;
- ✓ The measured results of the radiation patterns and antenna gain are obtained from the control system and showed on the monitor.

Antenna Under Test



WIFI/BT

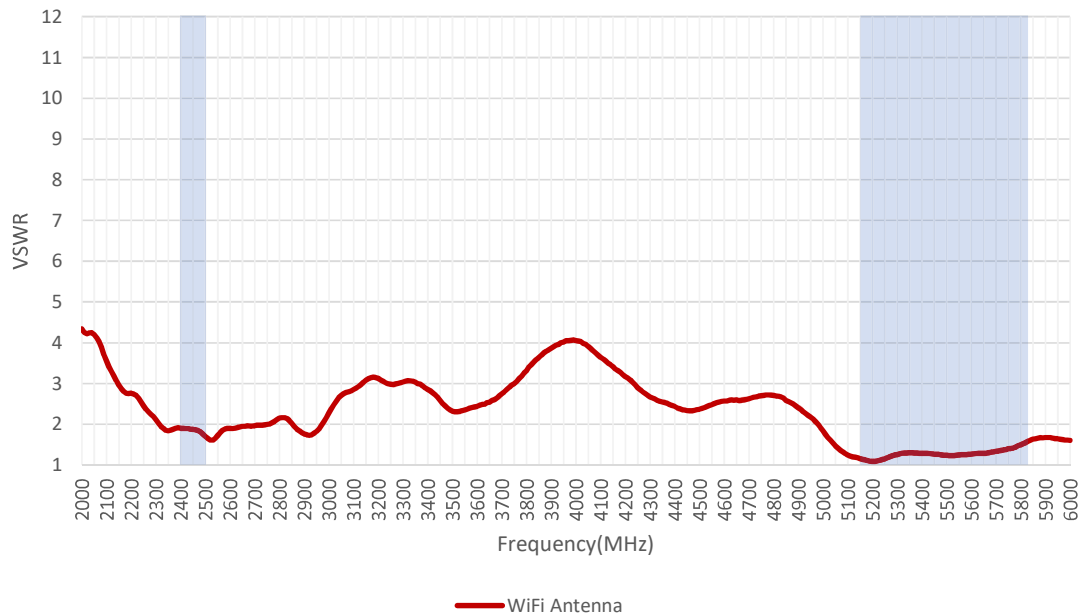
Antenna Model	Y0XAC00A2DA	
Antenna Type	PIFA Antenna For WIFI application	
Connector Material	Pogo Pin	
Cable Type	/	
Polarization	Linear	
Impedance	50Ω	
Radiation pattern	Omni-directional	
Frequency	2400-2500MHz	5150-5850MHz
VSWR	1.9 Max	1.7 Max
Peak gain(dBi)	0~0.3	0.7~2.4
Antenna dimension	Y0XAC00A2DA	Figure-1



VSWR & Gain Table-WIFI/BT



Setup photo



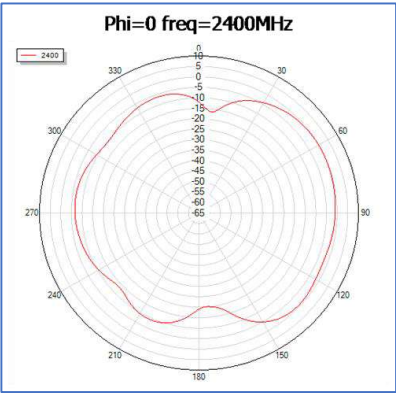
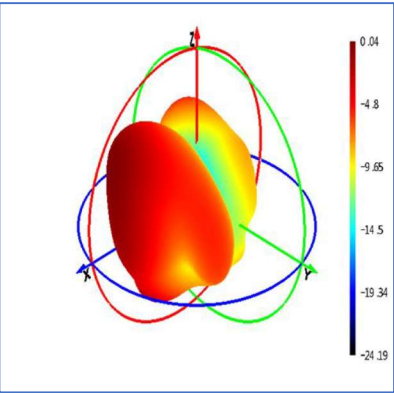
Frequency (MHZ)	3D Avg. Gain(dBi)	3D Peak Gain (dBi)	Efficiency(%)
2400	-4.7	0.0	34.0
2450	-4.1	0.2	38.9
2500	-4.3	0.3	36.9
5150	-4.9	0.7	32.1
5250	-4.4	2.1	36.5
5350	-4.5	2.4	35.8
5470	-4.4	2.1	36.2
5720	-3.7	2.3	43.0
5780	-4.0	1.8	39.4
5850	-4.2	1.4	38.0

Radiation Patterns-WIFI/BT-2400MHz

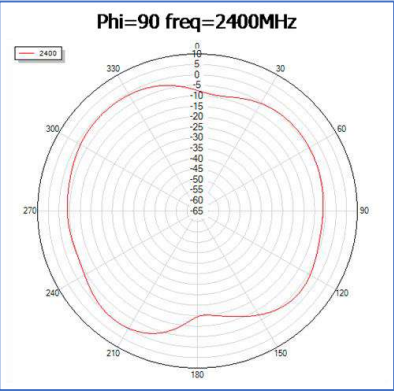


3D	ZY-Plane
ZX-Plane	XY-Plane

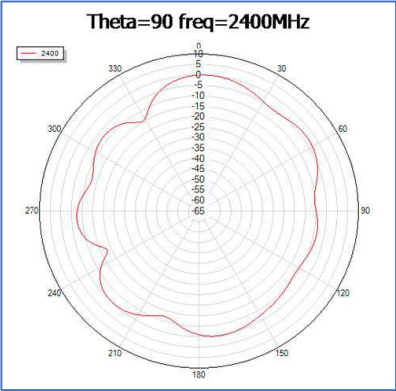
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-0.08	-4.65	-0.83



E1



E2



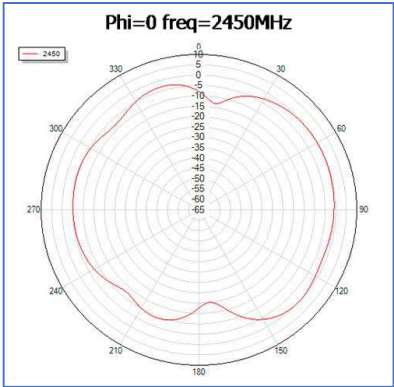
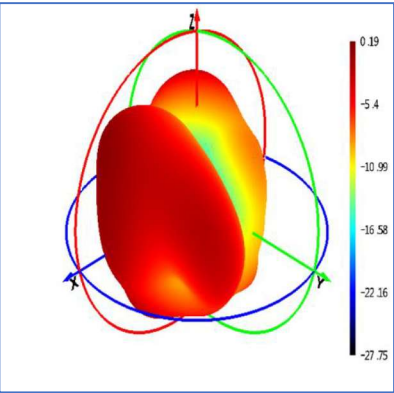
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Radiation Patterns-WIFI/BT-2450MHz

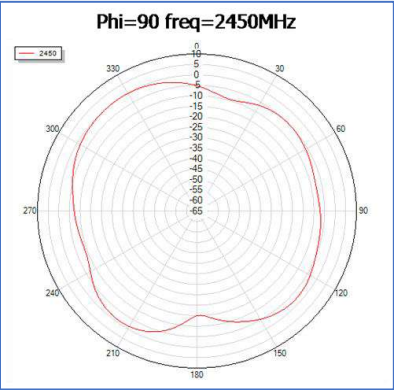


3D	ZY-Plane
ZX-Plane	XY-Plane

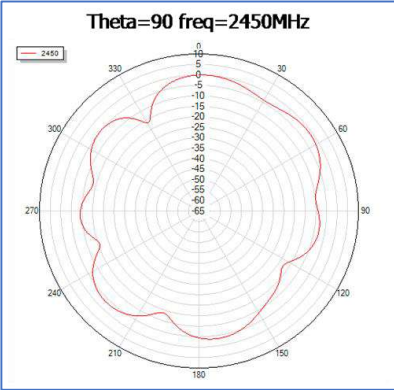
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-0.13	-2.81	-0.87



E1



E2



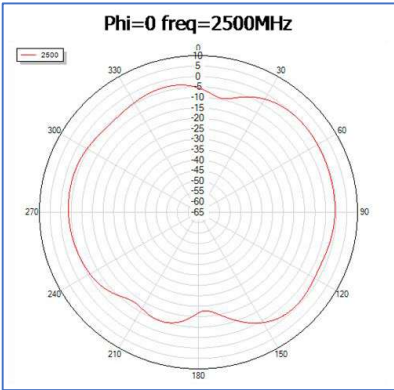
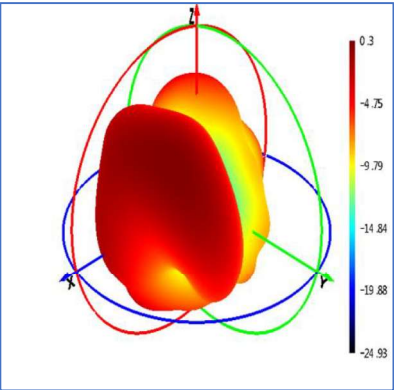
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Radiation Patterns-WIFI/BT-2500MHz

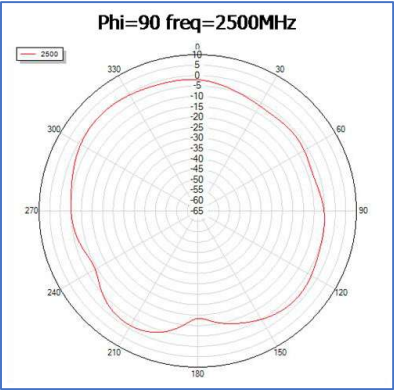


3D	ZY-Plane
ZX-Plane	XY-Plane

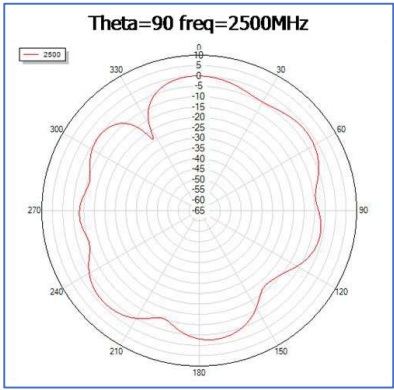
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-0.28	-3.72	-0.91



E1



E2



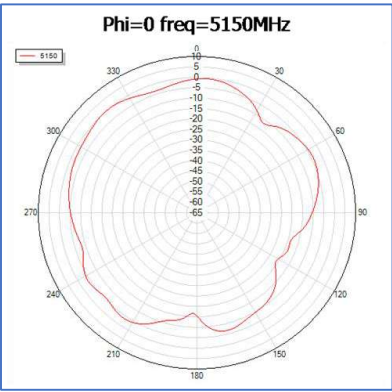
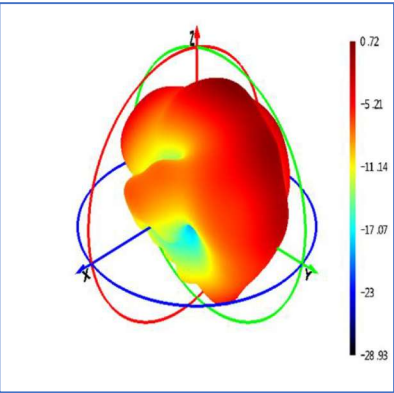
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Radiation Patterns-WIFI/BT-5150MHz

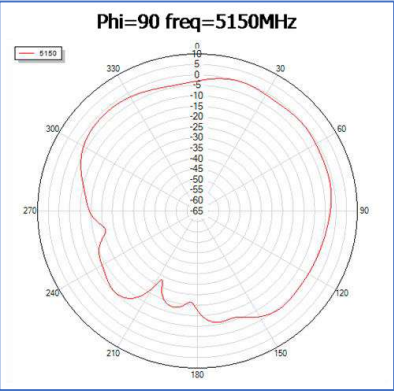


3D	ZY-Plane
ZX-Plane	XY-Plane

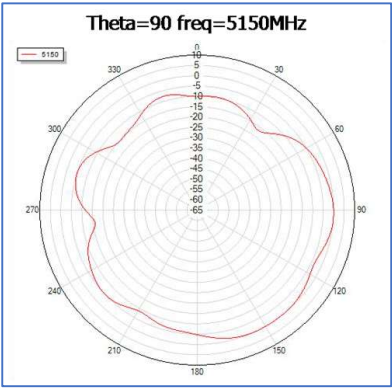
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-1.51	0.61	0.05



E1



E2



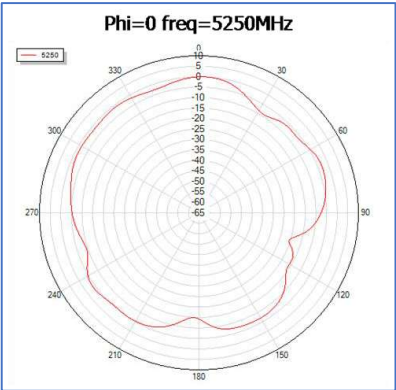
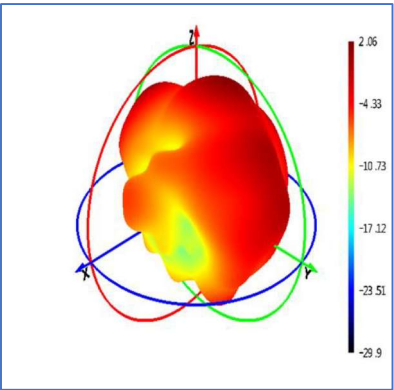
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Radiation Patterns-WIFI/BT-5250MHz

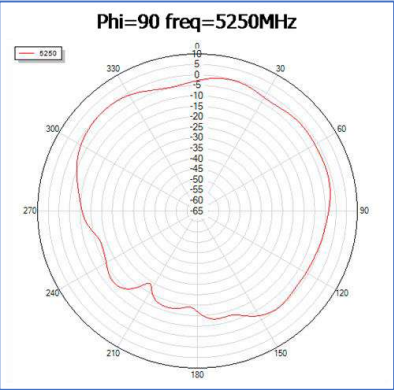


3D	ZY-Plane
ZX-Plane	XY-Plane

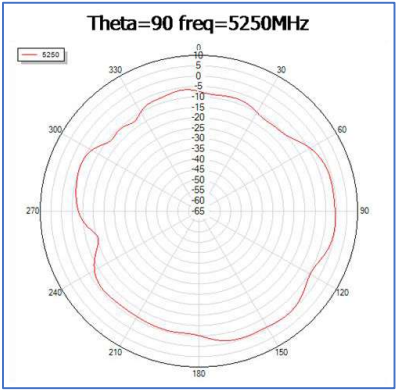
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-0.71	1.93	-0.91



E1



E2



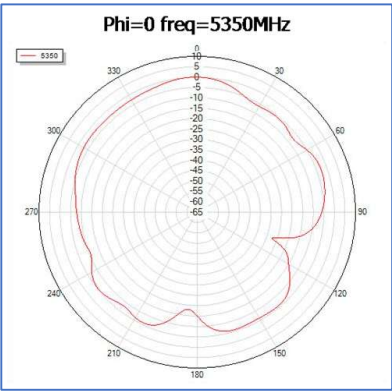
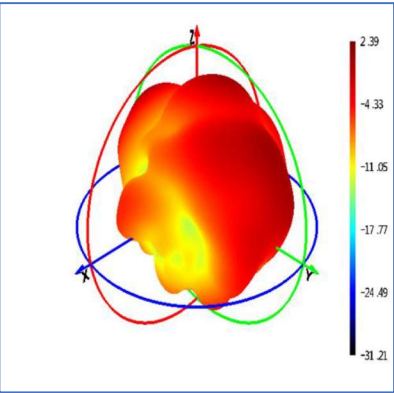
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Radiation Patterns-WIFI/BT-5350MHz

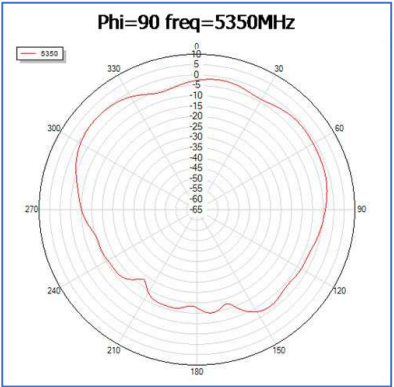


3D	ZY-Plane
ZX-Plane	XY-Plane

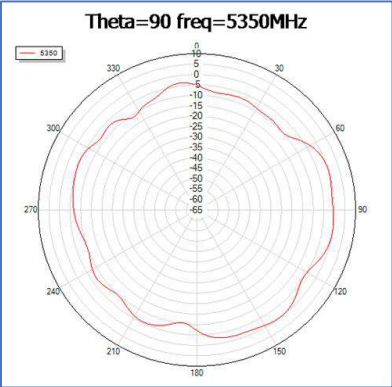
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-0.24	2.36	-1.01



E1



E2



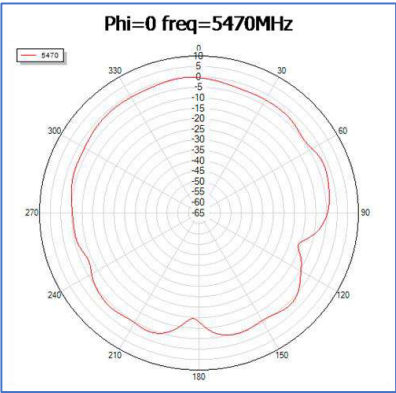
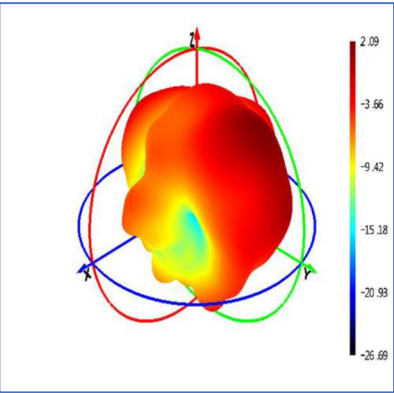
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Radiation Patterns-WIFI/BT-5470MHz

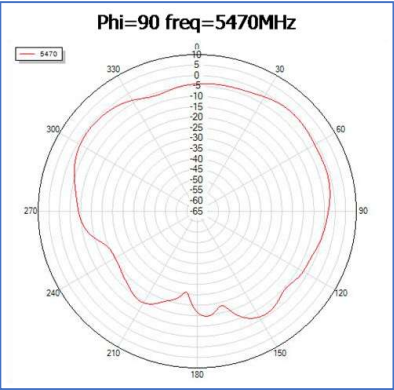


3D	ZY-Plane
ZX-Plane	XY-Plane

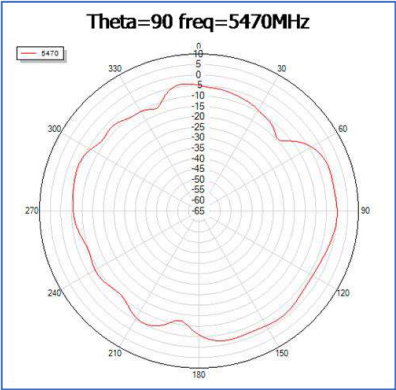
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-1.55	2.07	0.36



E1



E2



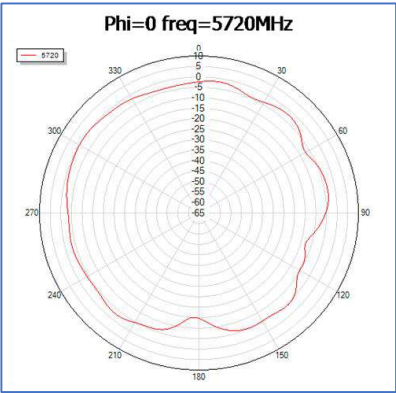
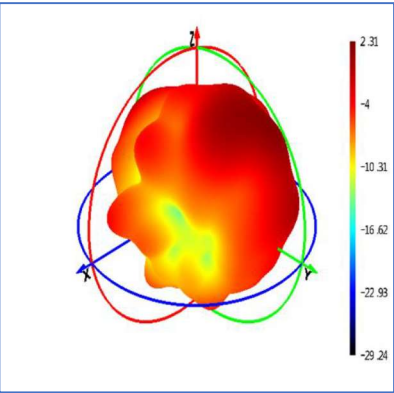
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Radiation Patterns-WIFI/BT-5720MHz

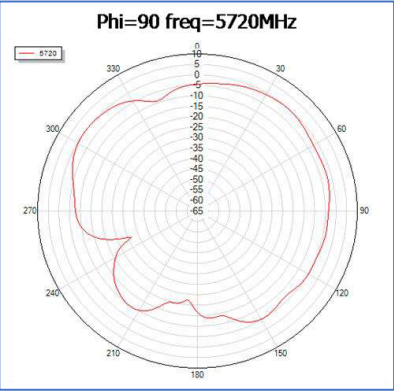


3D	ZY-Plane
ZX-Plane	XY-Plane

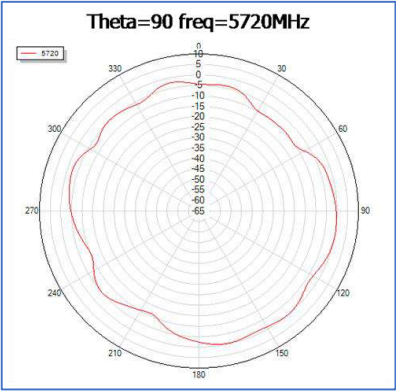
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	0.25	2.25	-0.81



E1



E2



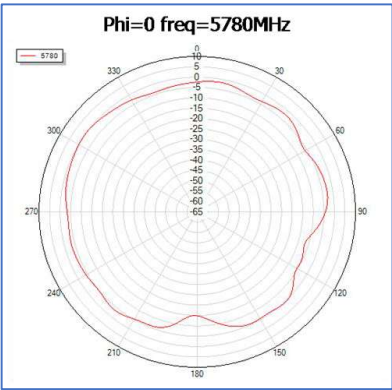
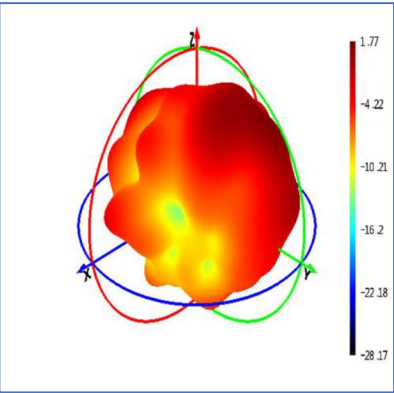
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Radiation Patterns-WIFI/BT-5780MHz

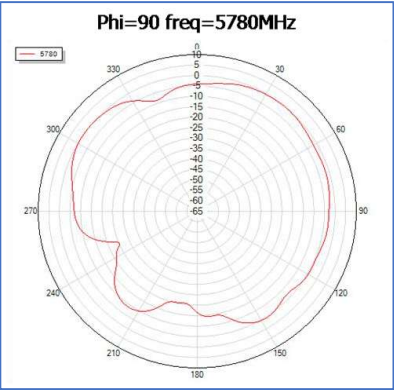


3D	ZY-Plane
ZX-Plane	XY-Plane

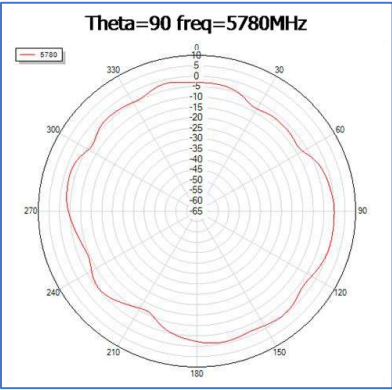
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-0.89	-0.36	-2.66



E1



E2



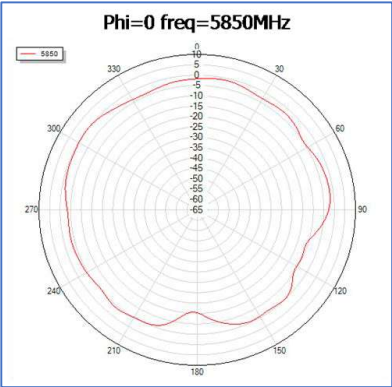
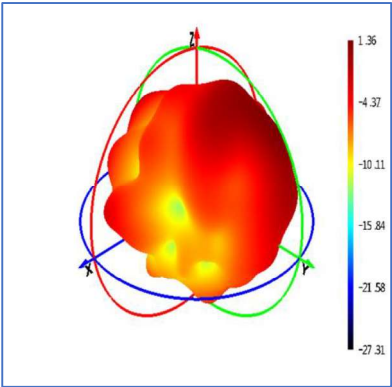
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Radiation Patterns-WIFI/BT-5850MHz

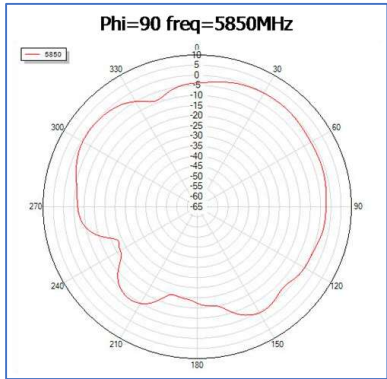


3D	ZY-Plane
ZX-Plane	XY-Plane

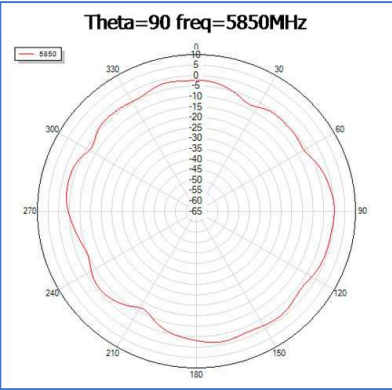
dB	ZY-Plane	ZX-Plane	XY-Plane
Total(Max.)	-0.84	1.17	-1.01



E1



E2



H



We are a global IoT solutions provider, backed by outstanding support and services, to deliver a smarter world.

- Unbeatable choice from the broadest module portfolio in the world
- High quality range of off-the-shelf and customized antennas
- Superb support with the largest R&D team in the industry
- Continuous innovation – in 5G, LPWA, Automotive, Smart module technology
- A passionate, dedicated team of "Quectelers" ensures our customers always come first

Thank You

Build a Smarter World

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: **+86 21 5108 6236** Sales Support: sales@quectel.com
Technical Support: support@quectel.com General: info@quectel.com