

[illegible]

品名：RFMTA090400NNAB003

1. Explanation of part number：

RF	MTA	0904	00	N	N	A	B	0	03
Type Code	Product Code	Dimension (Unit: mm)	Cable Length (unit: cm)	Connector Brand	Type of Connector	Application	Project status	Wire Diameter	Project
RF Device	MTA: Metal Antenna	Per 2 digits of length, width e.g.:3706 Length 37.4mm, Width 6.5mm	2 digits for cable length e.g.:00 Length None	A: N C:MCX D:IPEX III E: IPEX IV F: IPEX A13 H: Hirose I: IPEX M: MMCX S: SMA T: TNC U:MURATA N: None	A: Reverse Female B: Reverse Male F: Female M: Male N: None	0: 0GHz 3: 3GHz 5: 5GHz 6: 6GHz A: 2.4GHz ISM band B: GSM 900/1800 dual band G: GPS band L: 2.4/5.2/5.8 GHz tri-band N: NFC T: LTE band W: WCDMA band	B: MP T:During Test X: Pile Run	0:None 1:∅ 0.81 3:∅ 1.13 6:RG316 7:∅ 1.37 8:RG178	01~99 series number

2. Electrical Specification：

Item	Specification
Working Frequency Range	2.4 ~ 2.5 GHz
Return Loss	-10dB(Max)
VSWR	2 max.
Peak Gain	2.54 dBi@無金屬桌面 4.93 dBi@有金屬桌面
Polarization	Linear
Radiation Pattern	Omni-directional
Impedance	50Ω
Operation Temperature	- 20℃ ~ + 65℃

UNLESS OTHER SPECIFIED TOLERANCES ON：

X = N/A X.X = N/A X.XX = N/A

ANGLES = N/A HOLEDIA = N/A



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SCALE：N/A

UNIT：mm

DRAWN BY：李欣樺

CHECKED BY：詹惠雯

DESIGNED BY：林育帆

APPROVED BY：陳振榮

TESTER：韩国军

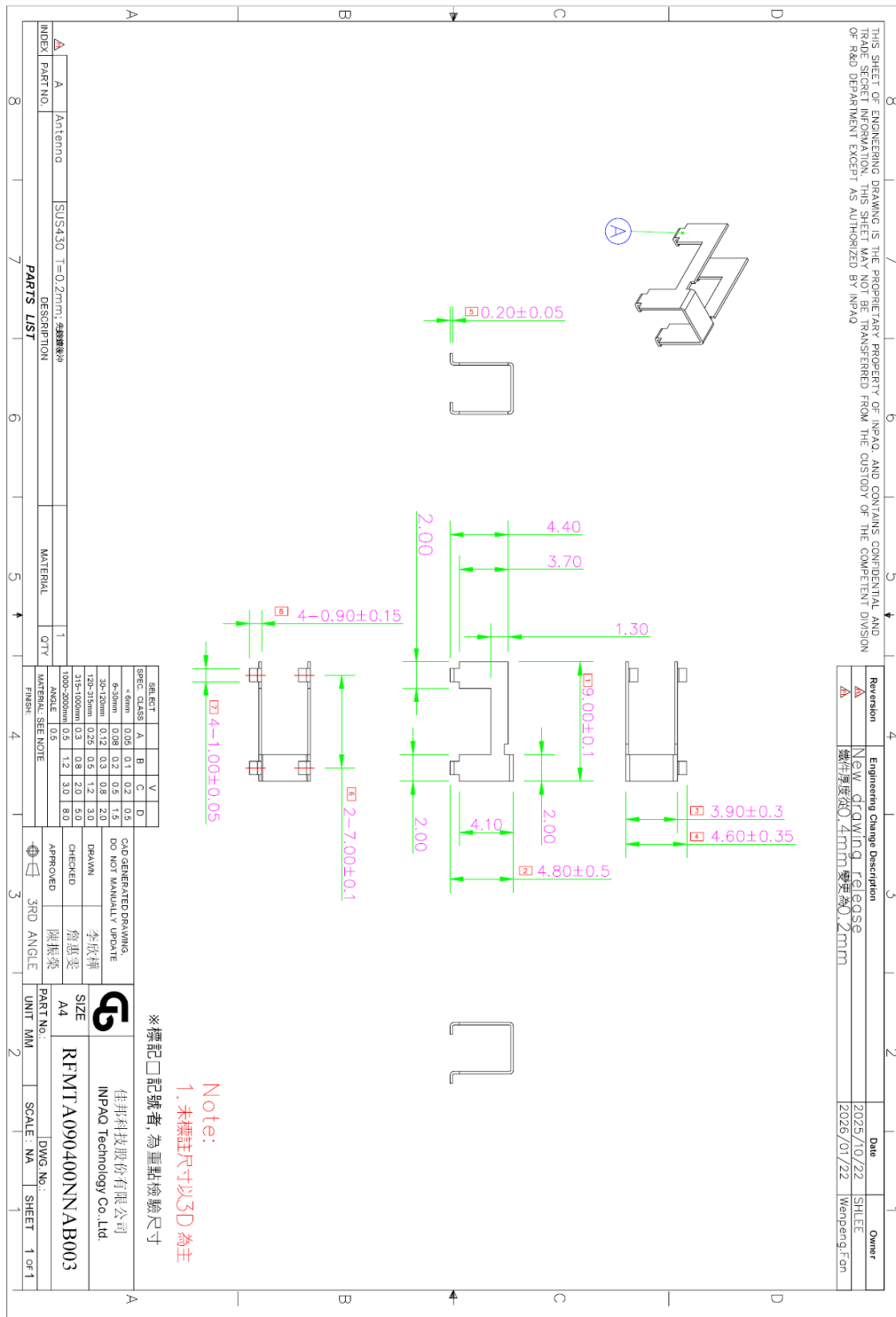
TEST DATE：2025/11/20

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3. Antenna Drawing :



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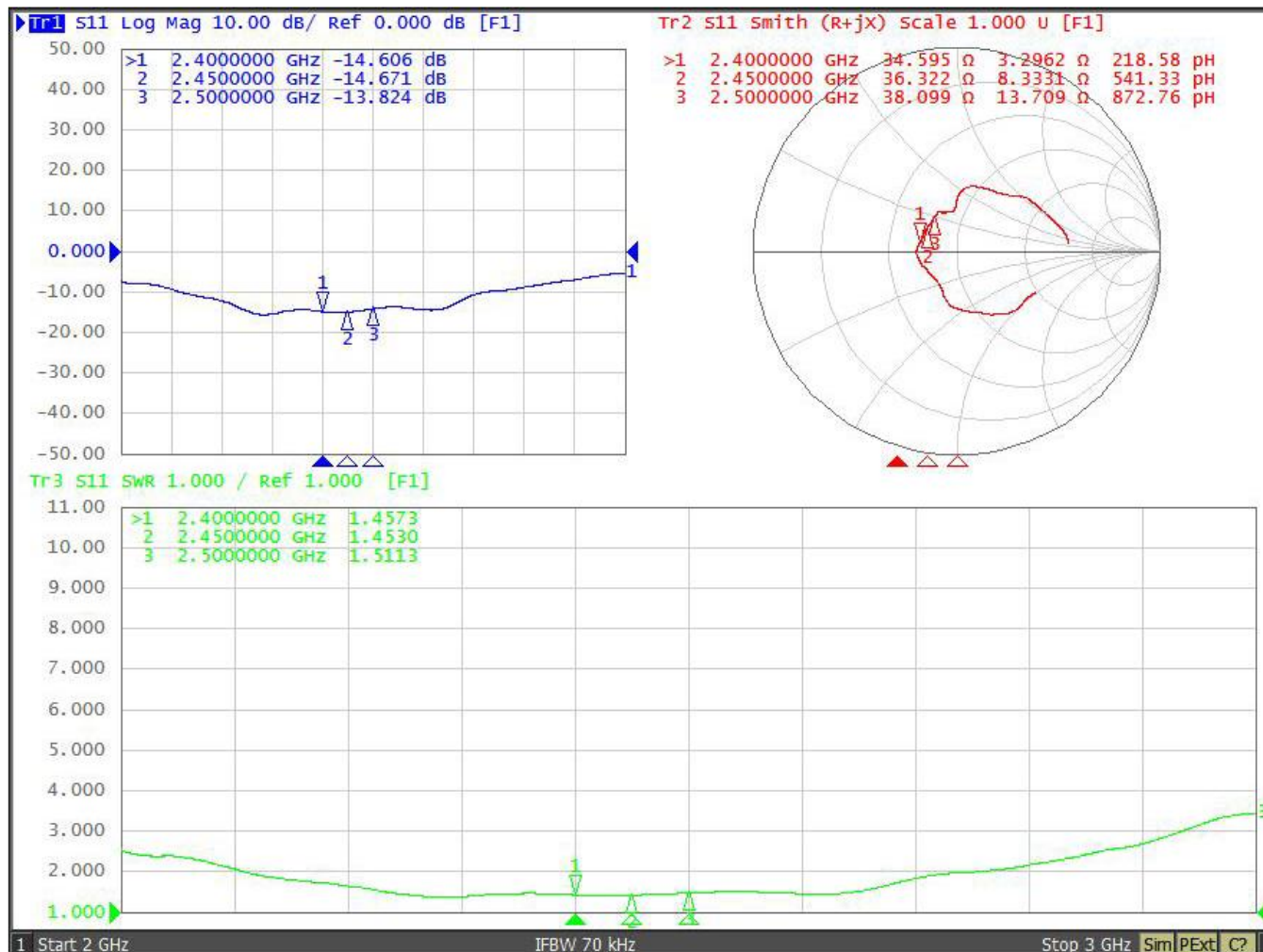
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ELECTRICAL CHARACTERISTICS

S-Parameter

无金属桌面



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Test criteria and methods: IEEE Std 149-2021

1 Overview of Test System

1.1 Test Conditions

Temperature: $22 \pm 3^{\circ}\text{C}$

Humidity: $< 80\%$

1.2 Test Equipment

Anechoic Chamber Model: GTS 1800

Tester: RS-CMW500

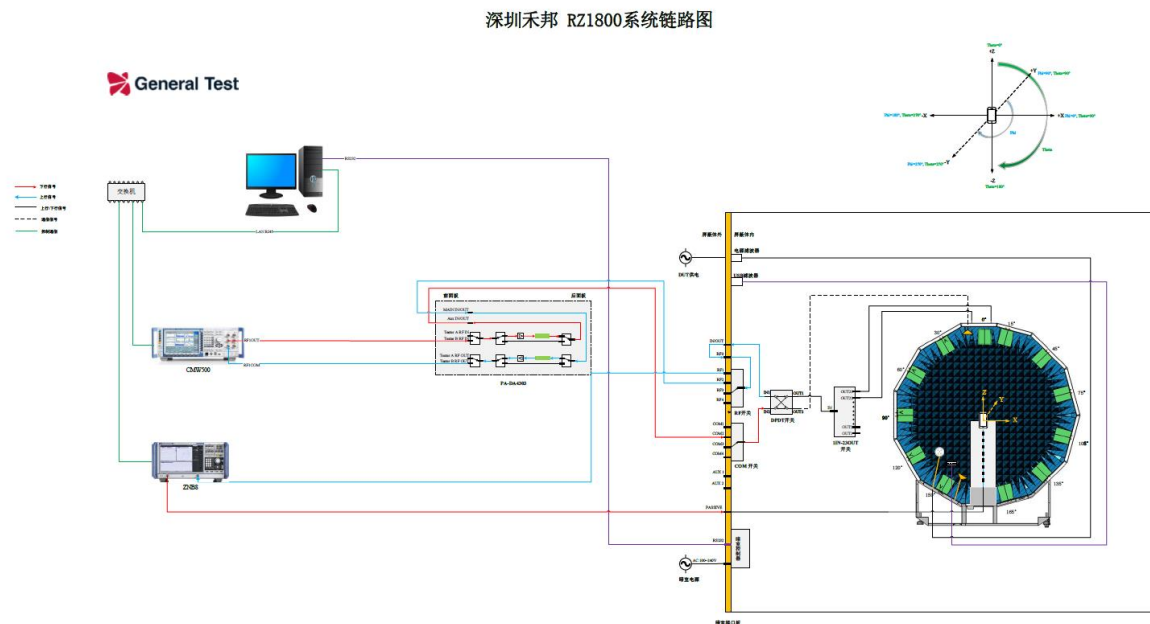
VNA: RS-ZNB8

1.3 Test Software

Maxsign 100 Ver.1.4.9

Pattern Pad Ver.2.1.0

1.4 System Link Diagram



2 Passive Antenna Test Procedure

The GTS1800 adopts an asymmetrical left-right structure. It uses only 12 pairs of dual-polarized probe antennas to perform data sampling at 15° intervals as required by CTIA standards. Its asymmetrical layout staggers the measuring antennas inside the chamber, eliminating the impact of mutual coupling between adjacent antennas in a compact space. The probes feature nanosecond-level switching speed to guarantee link stability during high-speed testing. The

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DUT (Device Under Test) is supported by a low-permittivity foam pillar, placed at the center of the anechoic chamber and rotated together with the turntable.

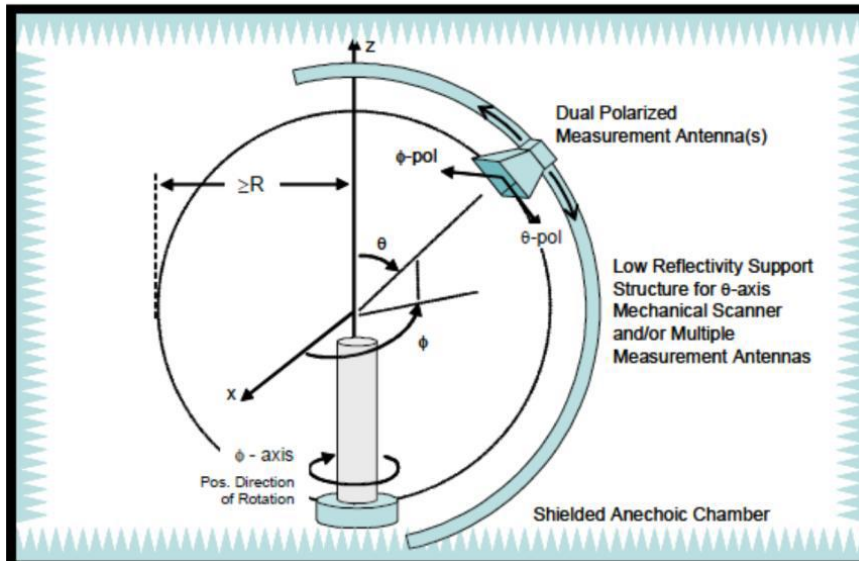


图 2-1 Typical Distributed System

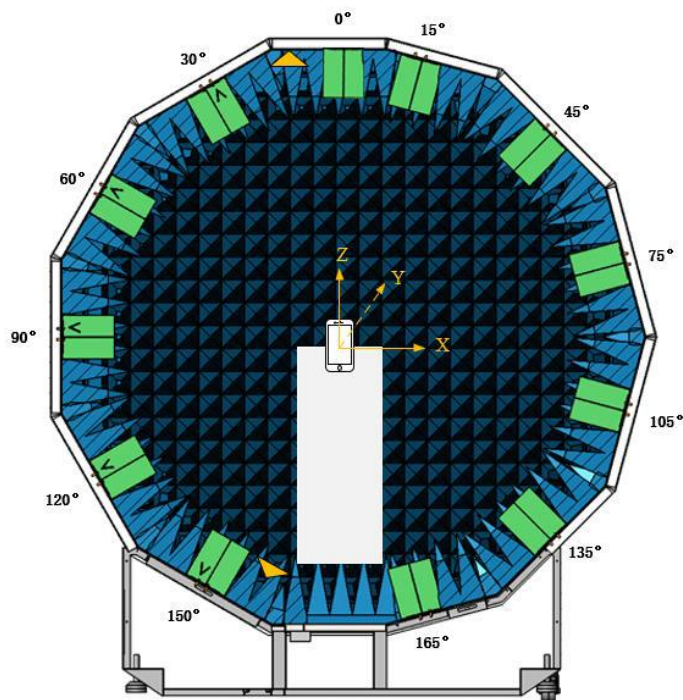


图 2-2 RZ1800 Antenna Distribution Schematic

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The passive test procedures are as follows: :

- 1 Connect the feed line of the antenna under test to the bead cable inside the anechoic chamber. Place the antenna at the center of the foam support and fix its posture;
- 2 Launch the test software and configure test parameters including frequency, power and IF bandwidth;
- 3 Start the test. The turntable begins rotating from 0°. The chamber probes switch sequentially to perform measurements. The software records the S21 data of each probe polarization, and calculates the antenna gain G at each test angle by combining with the calibrated path loss L;
- 4 After the turntable completes a full 360° rotation at equal intervals, all sampling points on the spherical surface are collected. The system aggregates gain data of all angles and generates a 3D radiation pattern. Key indicators such as antenna efficiency and maximum gain are calculated via corresponding formulas.

Calibration Equipment List:

Agilent E5071C

Calibration Date: 2025/11/03, Next Calibration Date: 2026/11/02

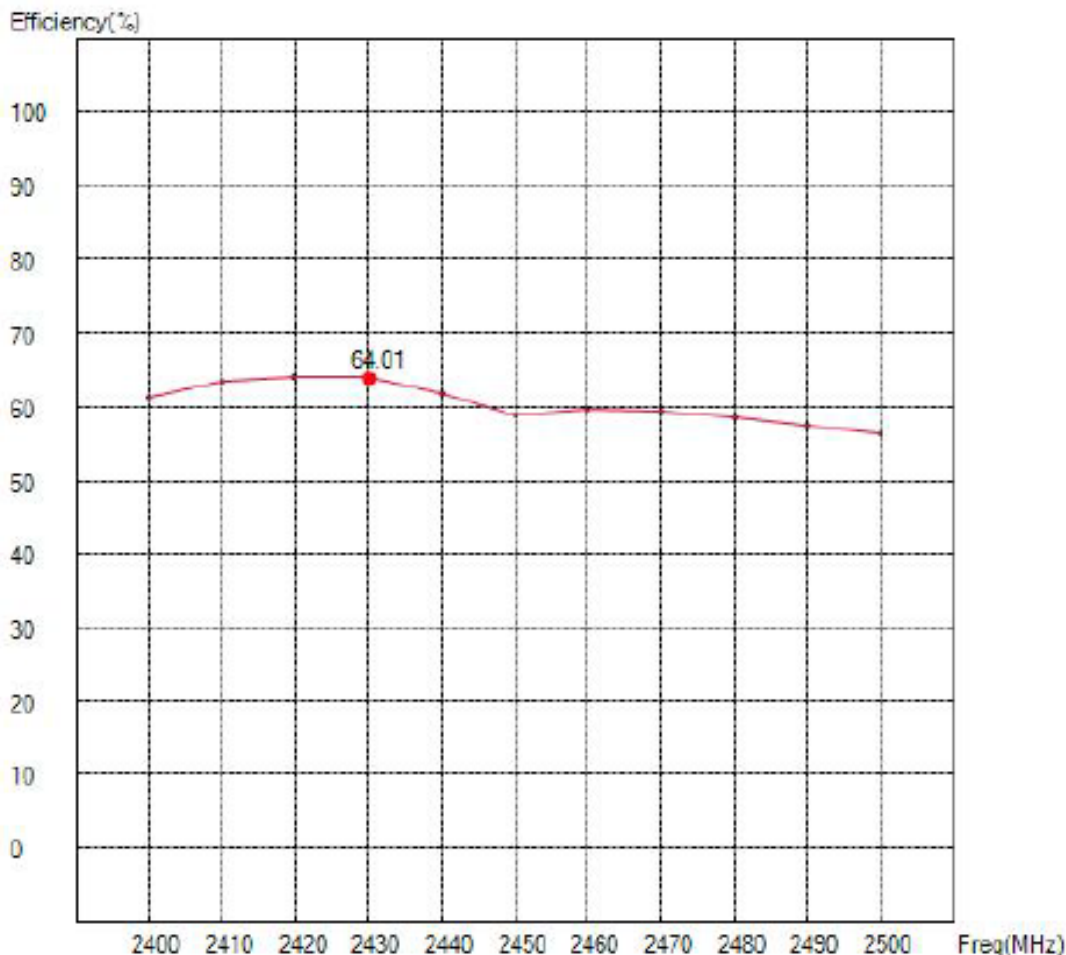
R&S ZNB8

Calibration Date: 2025/11/03, Next Calibration Date: 2026/11/02

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■ Antenna Efficiency and Peak Gain

无金属桌面



Maximum Efficiency at 2430 MHz : 64.01%

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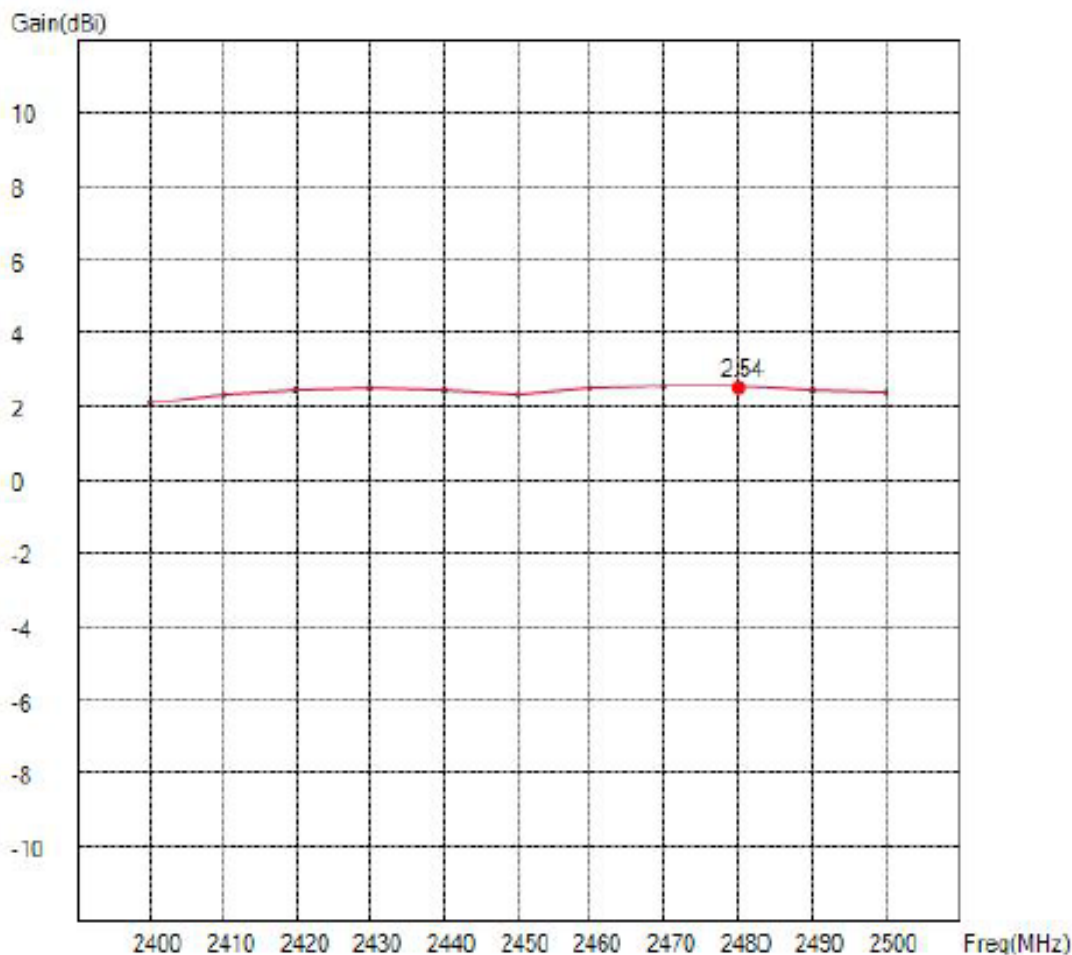
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Maximum Peak Gain at 2480 MHz : 2.54 dBi

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ANGLES = N/A

HOLEDIA = N/A



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RADIATION PATTERN

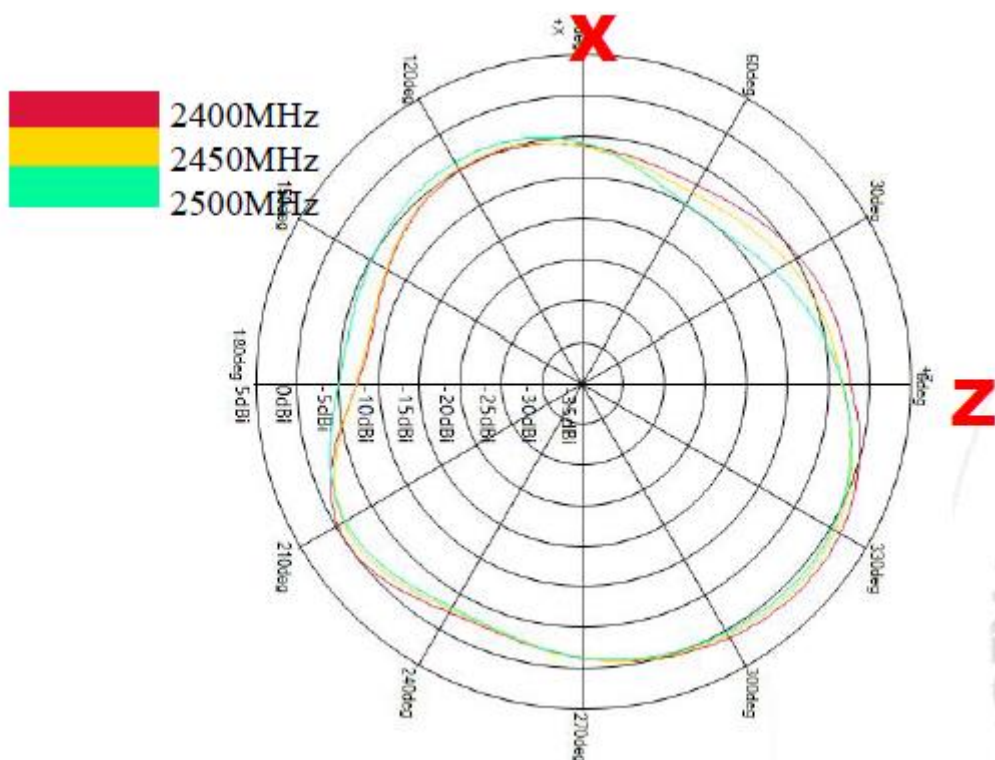
无金属桌面

2400~2500 MHz

X-Z Plane

Phi=0.00deg

Gain . dBi



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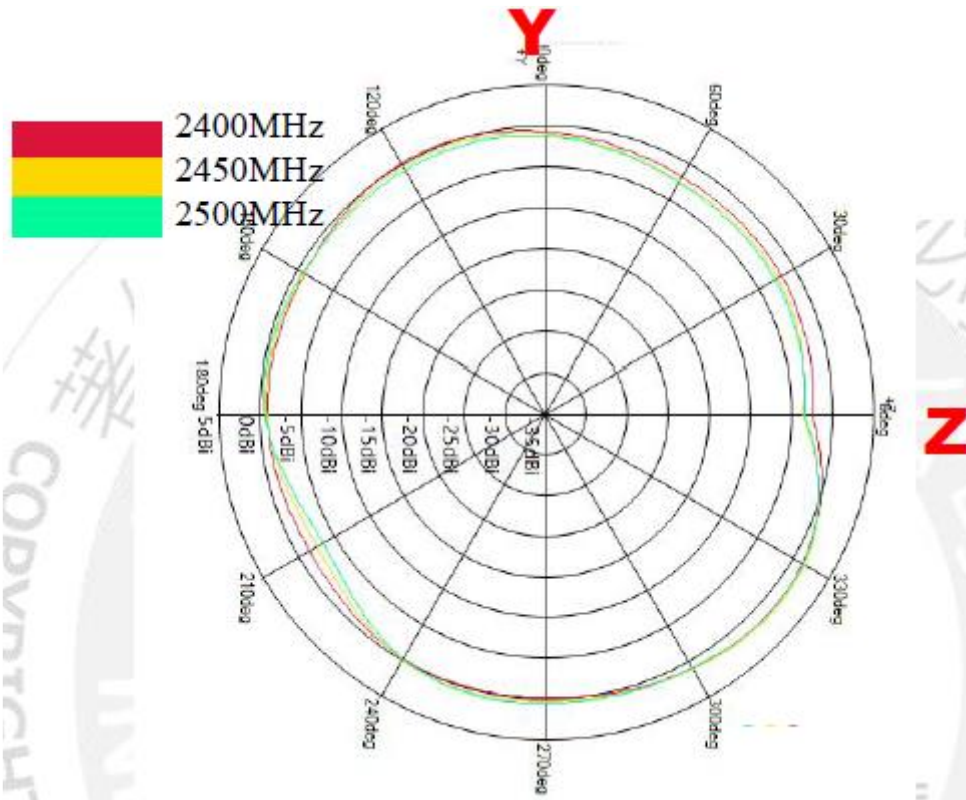
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Y-Z Plane

Phi=90.00deg

Gain . dBi



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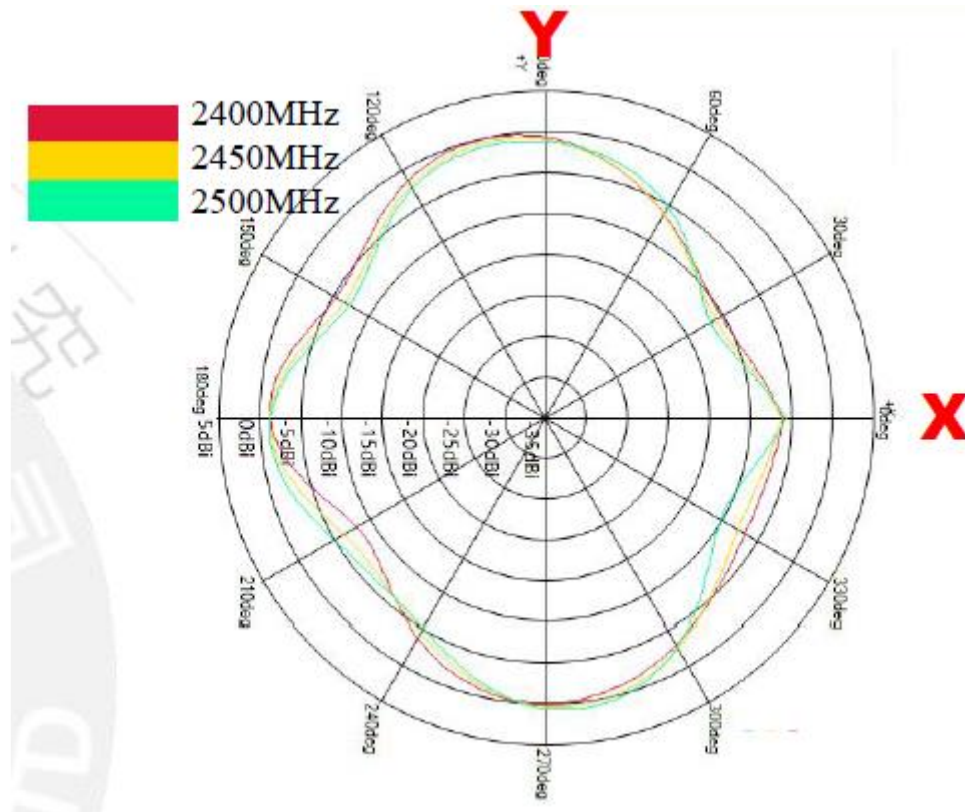
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X-Y Plane

Theta=90.00deg

Gain . dBi



	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	1.49	-1.89	1.34	-0.61	-0.31	-3.48
2450	0.77	-2.49	1.61	-0.85	0.11	-3.59
2500	0.33	-2.70	1.45	-1.01	0.37	-3.64

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