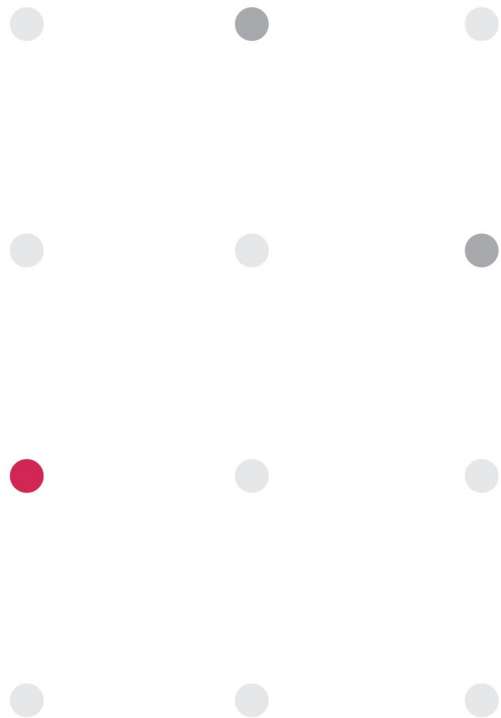


PASSIVE SYSTEM ALLIANCE
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Adress: No. 81 Antai 1st Road, Xishan Economic
Development Zone, Wuxi, Jiangsu



凯迪仕-HPP

Presented by

冯立翔

2025/07/28



Version	Date	Description	Author
V01	2025/02/07	New Release	郑冲
V02	2025/03/28	重新优化天线	冯立翔
V03	2025/05/27	新样机验证	冯立翔
V04	2025/07/07	DVT样机验证	冯立翔
V05	2025/07/09	DVT样机加前锁	冯立翔
V06	2025/07/16	重新整理天线	冯立翔
V07	2025/07/28	整理天线数据	冯立翔

OUTLINE

1. Measurement Information

1.1 Experimental Setup

1.2 Antenna Solution Detail

2. Antenna Characteristics

2.1 S-Parameter

2.2 Antenna Efficiency and Peak Gain

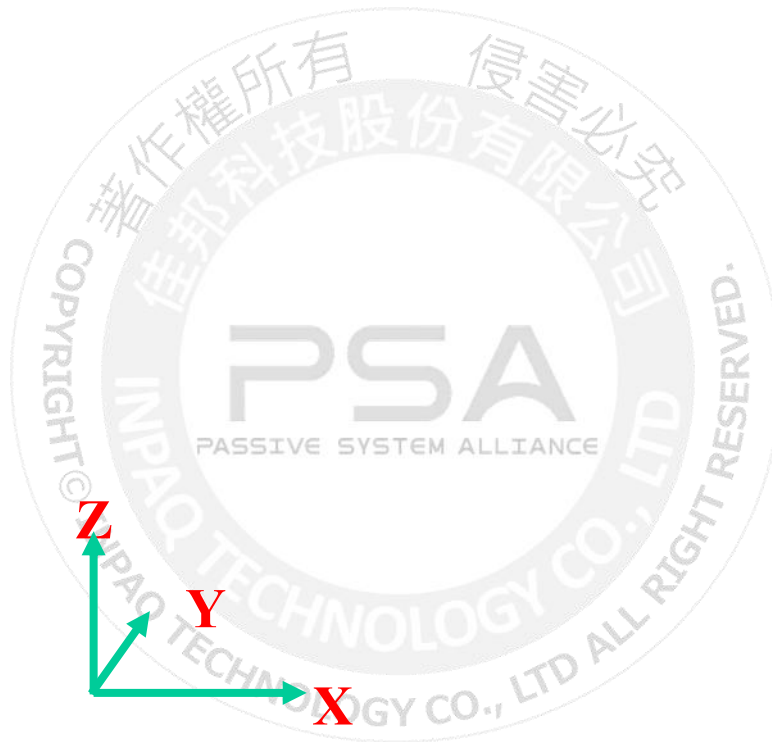
2.3 3 views of antenna & 2D Radiation Patterns

2.4 3D Radiation Patterns

3. Summary

1. Measurement Information

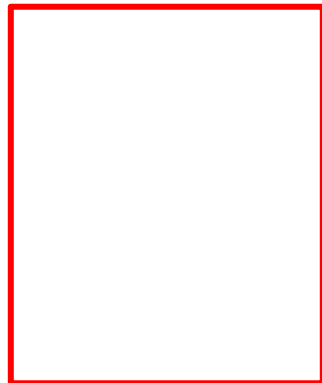
1.1 Experimental Setup



1. Measurement Information

1.2 Antenna Solution Detail

WiFi



Antenna Size: 28.5mm*34mm

1.13 Black plain wire, 1st IPEX

Cable length: 320+40mm
(excluding cable terminals)

Antenna bands:
2400-2500MHz

The antenna is aligned along the
antenna mold position of the
chassis as shown in the figure

WiFi model: RFFPA342804CFAB301

WiFi Cable model: RFCBA080332CM6B801

1. Measurement Information

1.2 Antenna Solution Detail

BLE



Antenna Size: 28.5mm*25.5mm

1.13 Black plain wire, 1st IPEX

Cable length: 55mm

Antenna bands:

2400-2500MHz

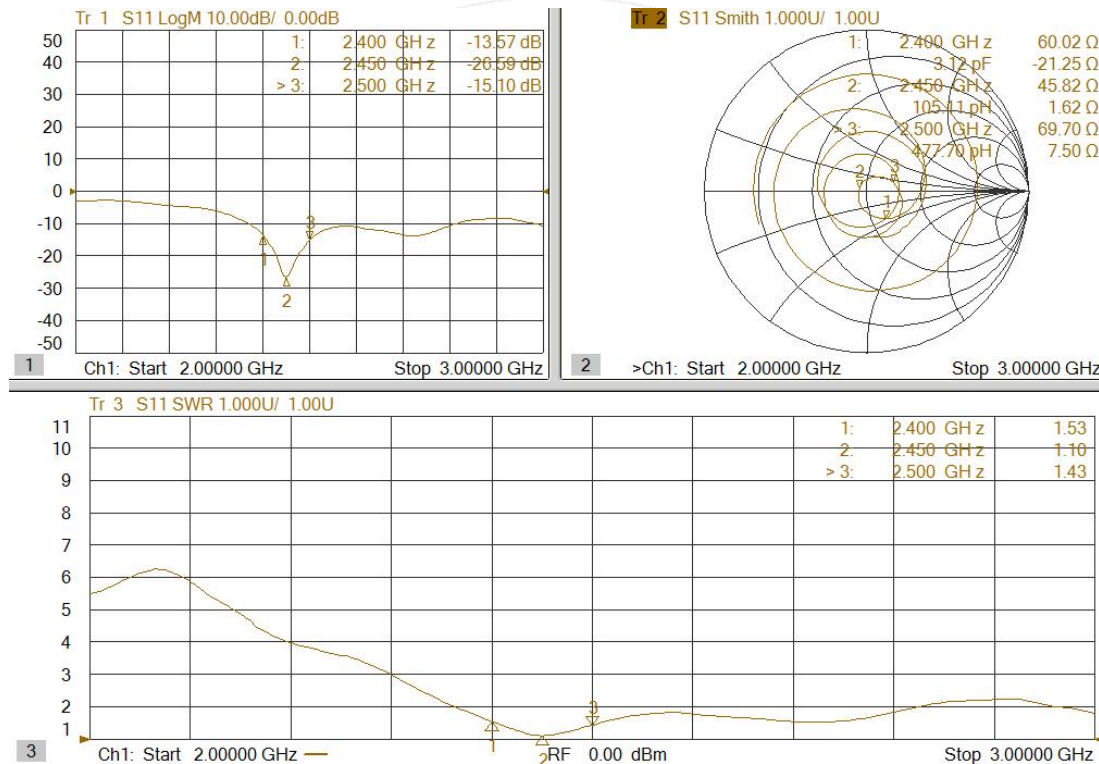
The antenna is aligned along the antenna mold position of the chassis as shown in the figure

BLE model: RFFPA282505IMAB301

2. Antenna Characteristics

WiFi

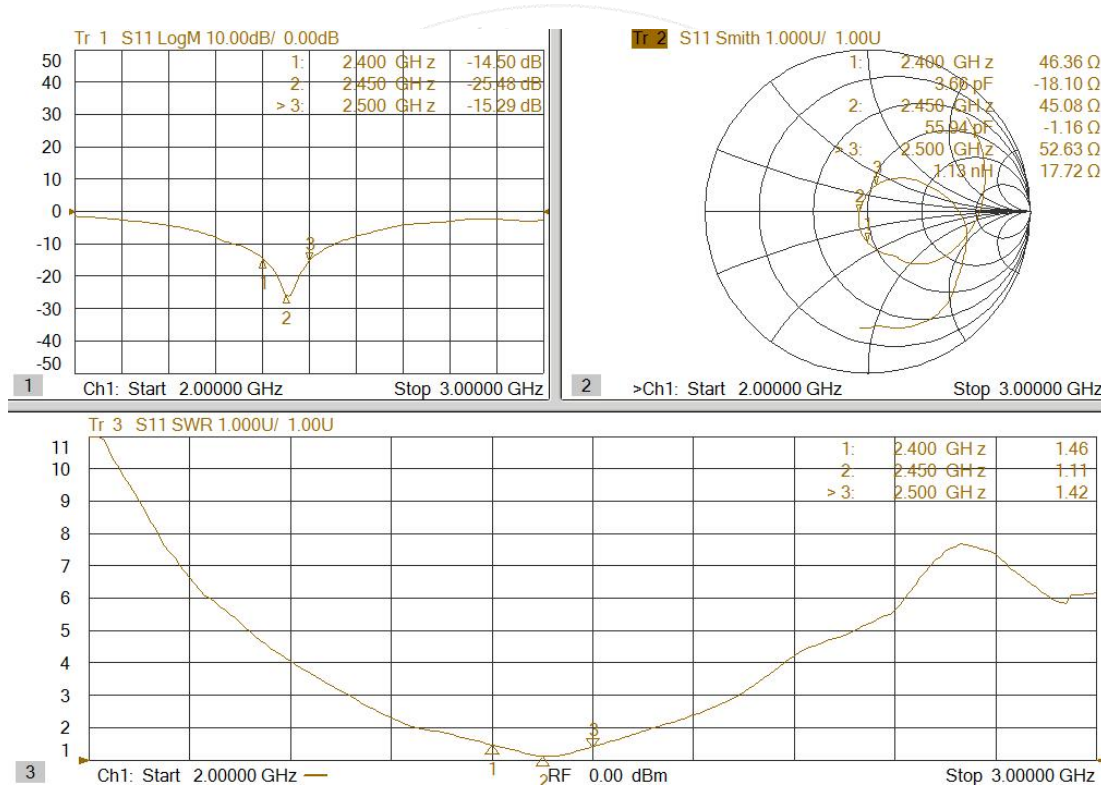
2.1 S-Parameter



2. Antenna Characteristics

BLE

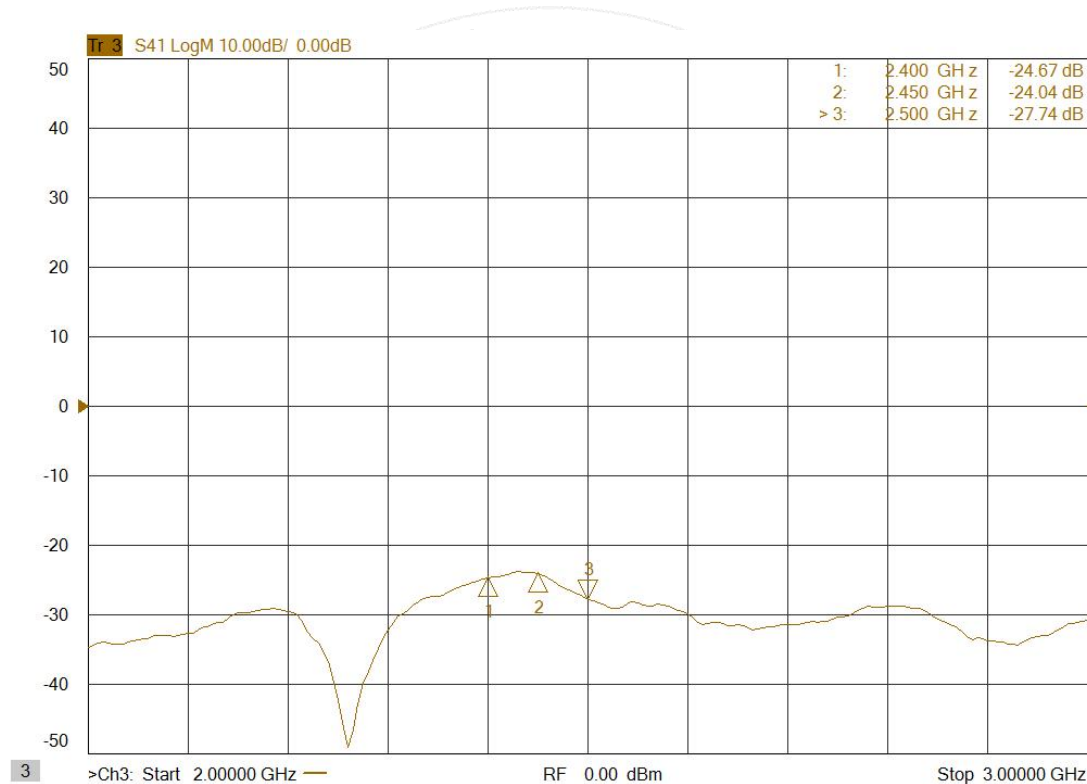
2.1 S-Parameter



2. Antenna Characteristics

BLE to WiFi

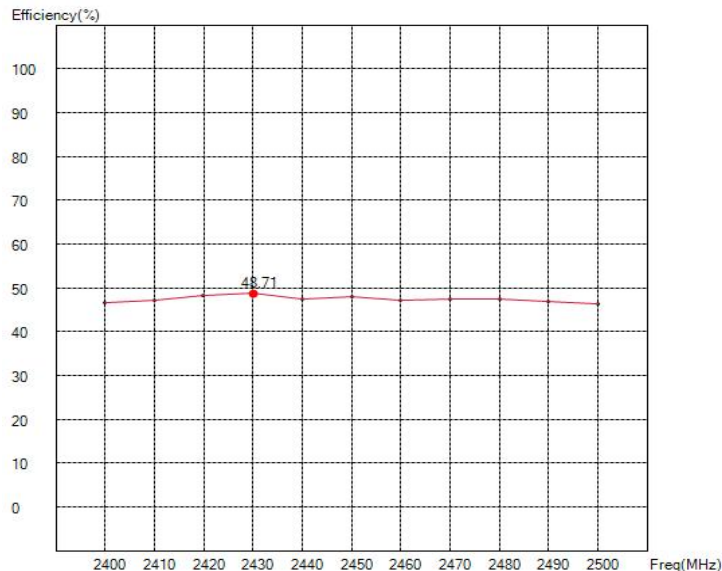
2.1 S-Parameter



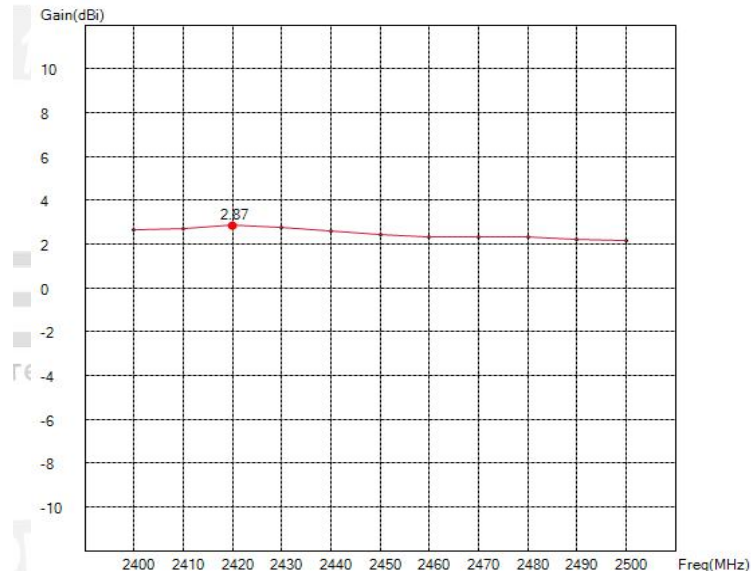
2. Antenna Characteristics

WiFi

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 2430MHz : 48.71%



Maximum Peak Gain at 2420MHz : 2.87dBi

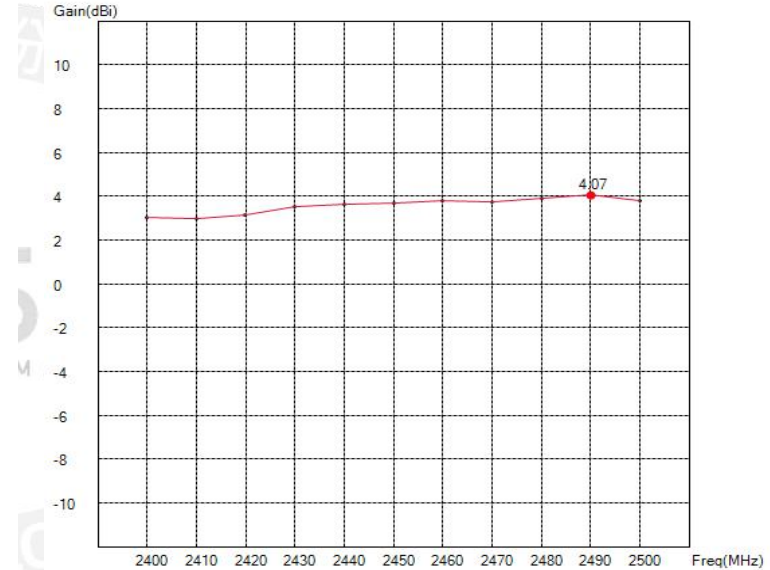
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

BLE



Maximum Efficiency at 2470MHz : 60.68%



Maximum Peak Gain at 2490MHz : 4.07dBi

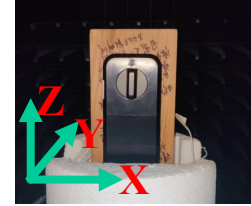
2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

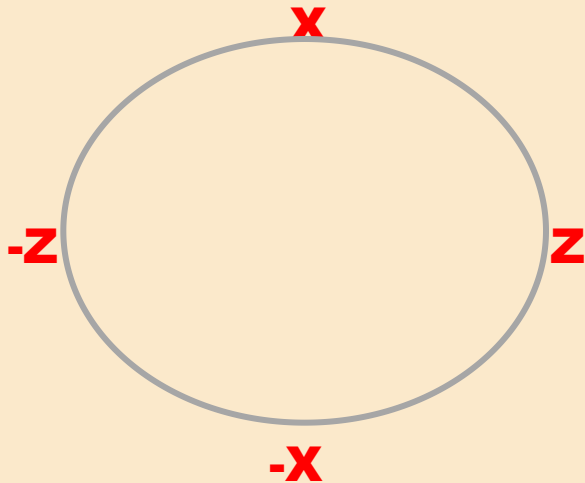
	WiFi		BLE	
Frequency (MHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
2400	46.50	2.64	54.32	3.05
2450	47.84	2.42	58.72	3.70
2500	46.22	2.15	59.05	3.81

2. Antenna Characteristics

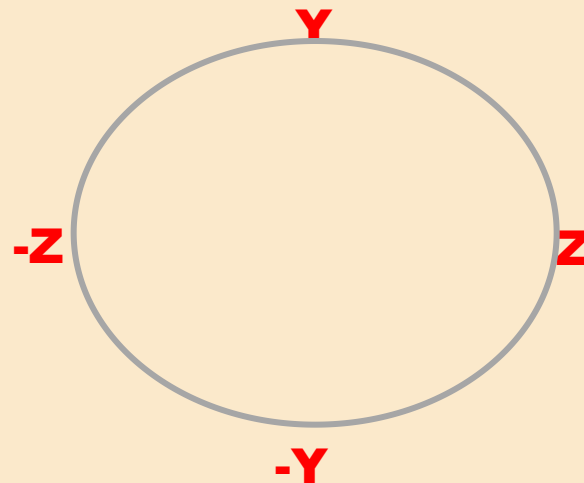
2.3 3 views of antenna



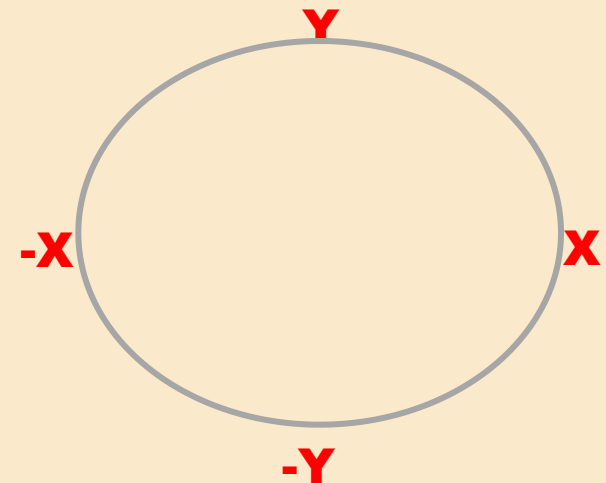
X-Z plane



Y-Z plane

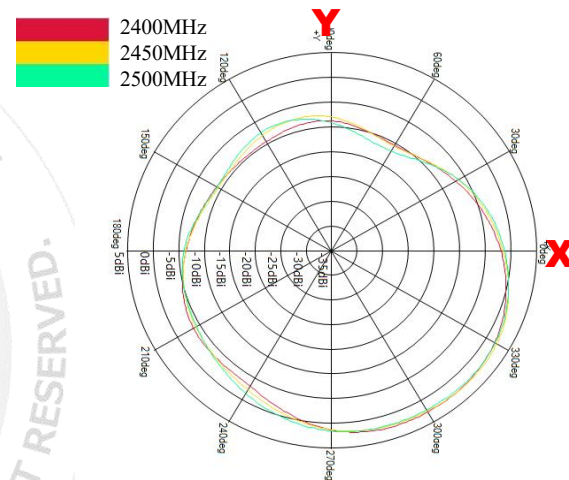
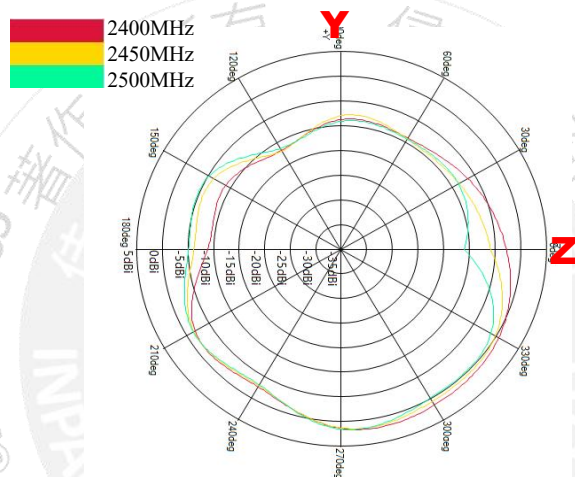
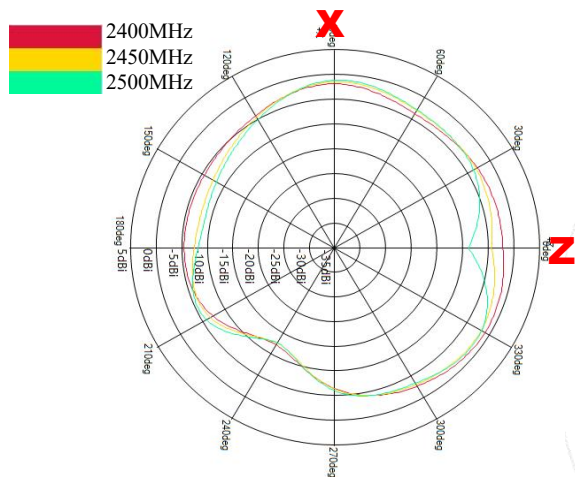


X-Y plane



2. Antenna Characteristics

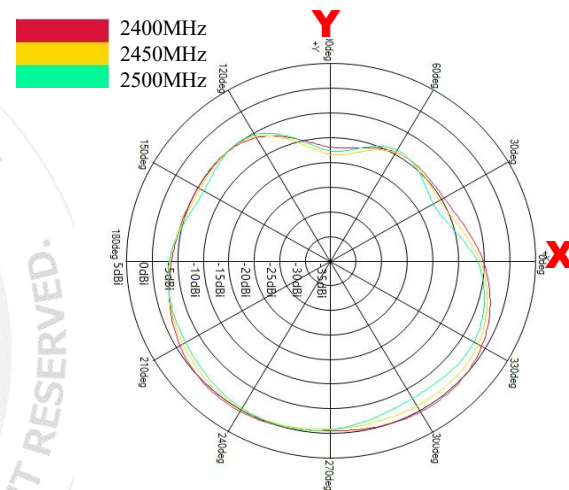
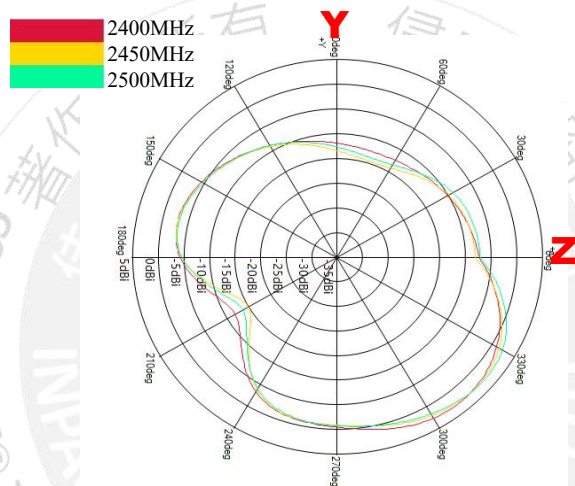
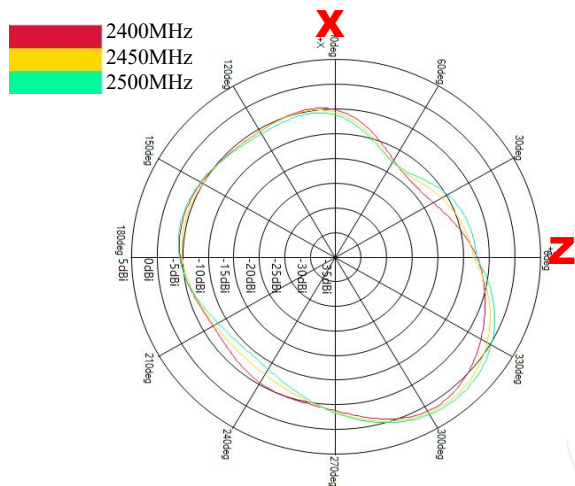
2.3 2D Radiation Patterns



	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	-0.89	-3.35	1.46	-2.18	2.64	-2.25
2450	-1.39	-3.90	1.14	-2.95	2.42	-2.09
2500	-1.07	-4.38	1.40	-3.54	2.15	-2.08

2. Antenna Characteristics

2.3 2D Radiation Patterns



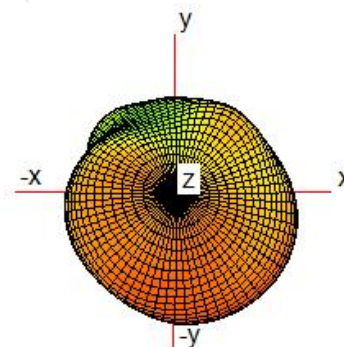
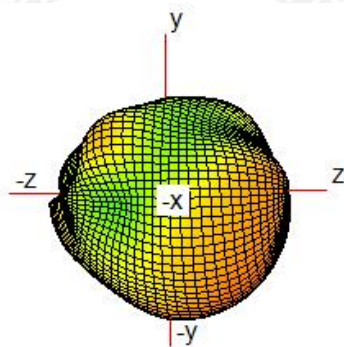
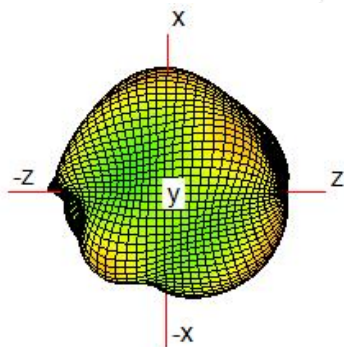
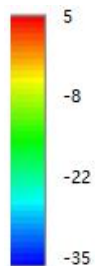
	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	0.99	-4.59	2.64	-3.24	0.23	-2.91
2450	1.45	-4.34	2.02	-3.52	-0.42	-3.53
2500	1.76	-4.08	2.35	-3.29	-0.61	-3.99

2. Antenna Characteristics

WiFi

2.4 3D Radiation Patterns

2450MHz

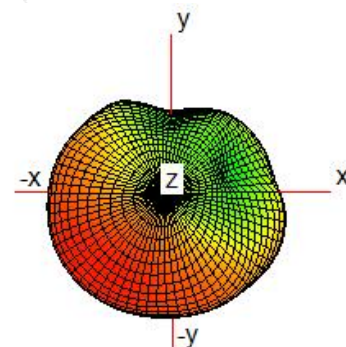
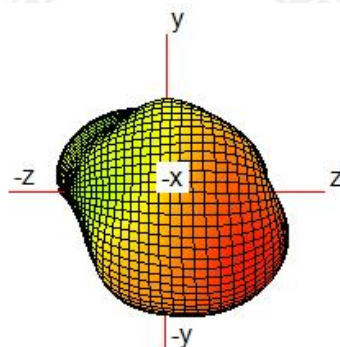
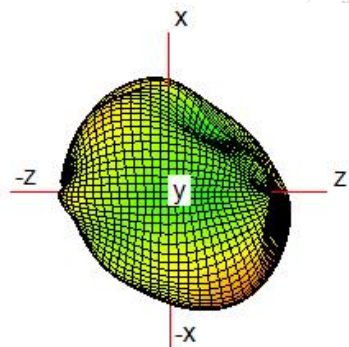
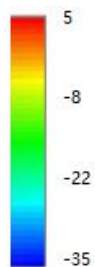


2. Antenna Characteristics

BLE

2.4 3D Radiation Patterns

2450MHz



3. Summary

- The performance of antennas is shown in table

	WiFi	BLE
Maximum Efficiency (%)	48.71	60.68
Maximum Gain (dBi)	2.87	4.07

3. Summary

- The performance of antennas is shown in table

DVT									
测试时间: 2025/07/28							实测值		
	Mode	Channel	Frequency (MHz)	TRP data rate Mbps	TIS data rate Mbps	result,dbm TRP	result,dbm TIS	result,dbm TRP	result,dbm TIS
WIFI 2.4G (BW 20MHz)	b	1	2412	1	1			11.36	-92.03
		6	2437	1	1			11.36	-86.74
		11	2462	1	1			11.14	-89.07
	g	1	2412	6	6			11.66	-87.72
		6	2437	6	6			11.57	-87.62
		11	2462	6	6			11.27	-88.01
	n	1	2412	6.5	6.5			11.51	-85.95
		6	2437	6.5	6.5			11.39	-84.98
		11	2462	6.5	6.5			10.98	-85.57

Thank you

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