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West District, Baoan Xixiang, Shenzhen
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TEL: 86-0755-29955983 **FAX:** 86-0755-29955983

APPROVAL SHEET

Customer: Yi lian wu xian

Product: 2.4G/5G PCB Antenna (L=120mm) IPEX-1

Model: KM75

Part Number: Z01-30447-R01

Written By: Hu Tao

Issued Date: 2025-04-29

CUSTOMER

ENGINEER R&D DEPT	QUALITY DEPT	APPROVED

Free Walk

R&D DEPT	ENGINEER R&D DEPT	APPROVED
Hu Tao	Gu Zhenghua	

Document Change Resume

Form number:QR-ZYX-084 APPROVAL REV: A0

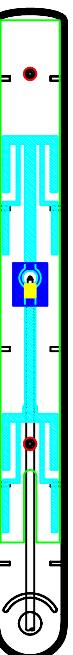
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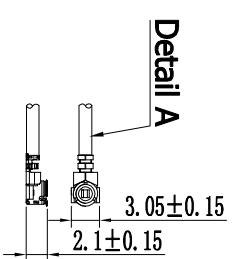
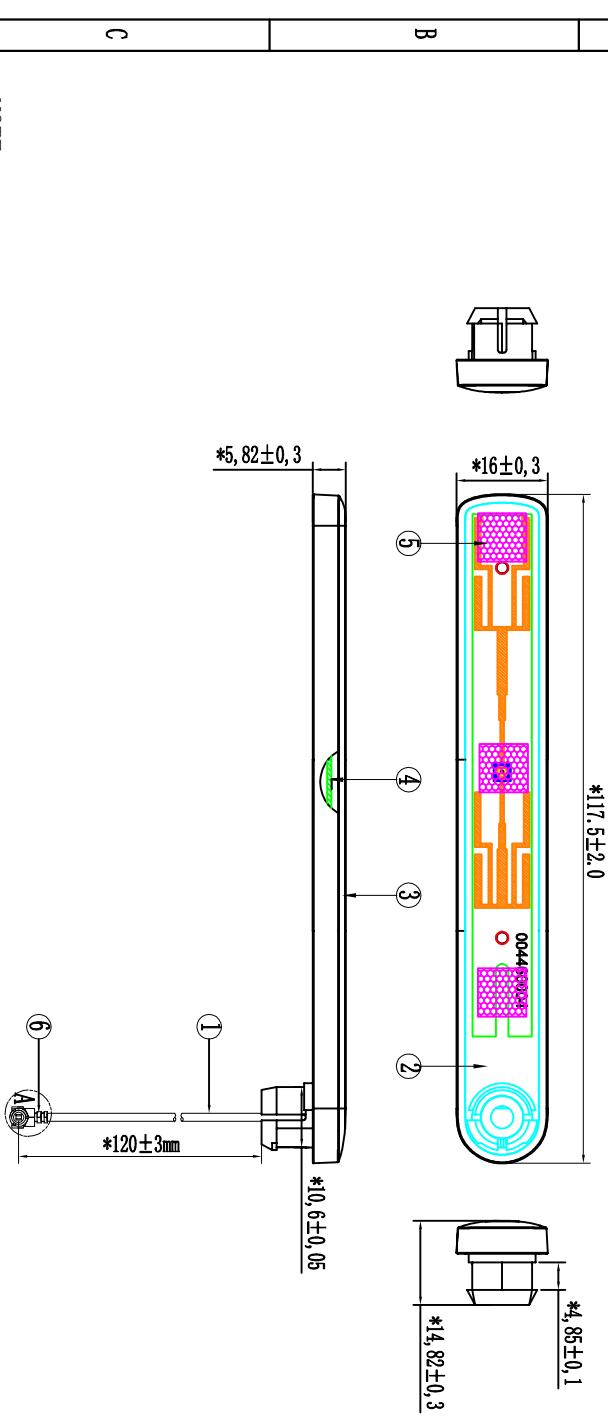
The basic parameters

A. Electrical Characteristics	
Frequency	2400 MHz ~2500MHz 5150 MHz ~5850MHz
VSWR	≤ 2
Efficiency	>50%
Impedance	50 Ohm
Polarization	Linear
Gain	ANT 1 2.4G 3.65dBi 5G 4.88dBi ANT 2 2.4G 3.61dBi 5G 4.65dBi
B. Material & Mechanical Characteristics	
Material of Radiator	
Cable Type	$\Phi 1.13\text{mm}$ Black
Connector Type	一代IPEX
Dimension	
C. Environmental	
Operation Temperature	- 20 °C ~ + 60 °C
Storage Temperature	- 40 °C ~ + 80 °C

Freewall



NO	Name	Material	Colour	Amount	Remark
①	RF line	Ø1.37	line	black	1
②	lower shell	PC	white	1	
③	Upper shell	PC	white	1	
④	PCB	FR-4	green	1	
⑤	Foam liner	PE Foam	gray	3	
⑥	IPEX	first generation	golden	1	



Shenzhen free travel communication technology Co., LTD

④	The third Angle method	Machine type	MM75	Date	2025-4-29	Page number	1/2
⑤	Note tolerances refer to standard	①	0.02	Product name	2.4G/5G-Antenna	Design	
⑥	10%下	±0.10	②	Ø0.03	Part number	Z01-30447-001	Audit
⑦	10~20	±0.12	③	0.02	Customer P/N	audit	Engineering
⑧	20~40	±0.15	④	0.04	Material quality	N/A	MR LI
⑨	40%上	±0.20	⑤	0.02	Affirm		
⑩	Do not observe drawing		⑥	appearance treatment	UNIT	mm	RATIO
⑪			⑦		FIT		versions
⑫			⑧				A2

C

B

A

NOTE:

- Mark * as the key dimension for inspection, and for unmarked tolerance dimensions, check within ± 0.15 .
- Reference drawings without specified dimensions; Other dimensions are subject to actual configuration.
- Plastic must not have any sharp edges, deformation, oil stains, shrinkage, severe imprinting, or other phenomena.
- There should be no virtual soldering, soldering or other phenomena at the finished solder pads, and the conductivity of the finished product should be tested to be OK.
- The material complies with environmental regulations such as ROHS 2.0

1

2

3

4

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8

Test Equipment & Conditions

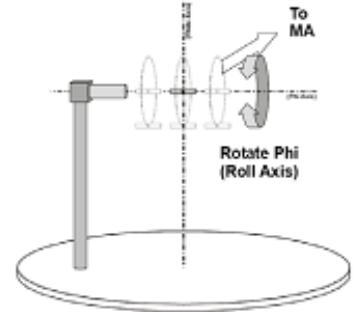
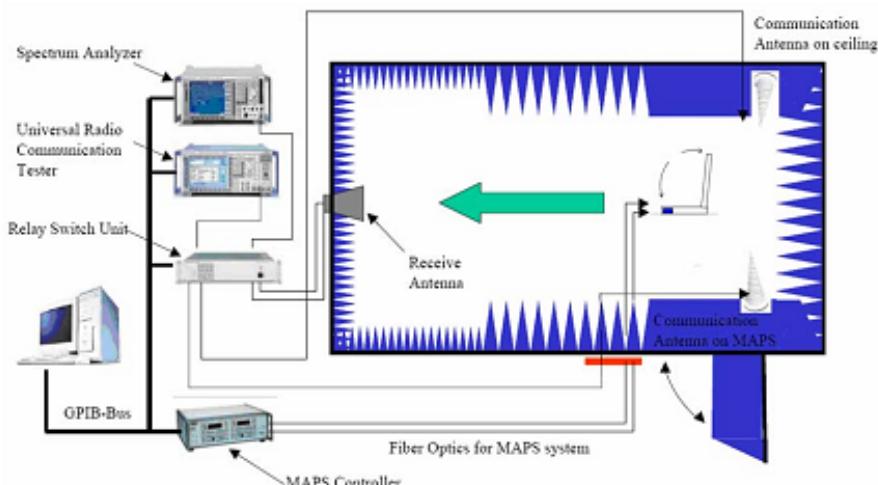
1. Network Analyzers :

Agilent 8753D 5071B

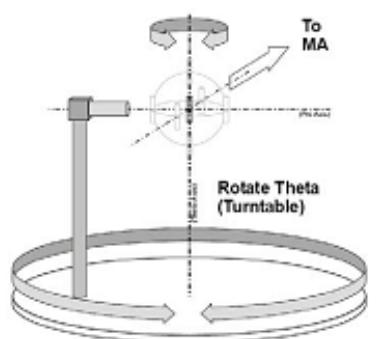
2. Communications Test Set:

Agilent 8960

3. 3D Chamber Test System



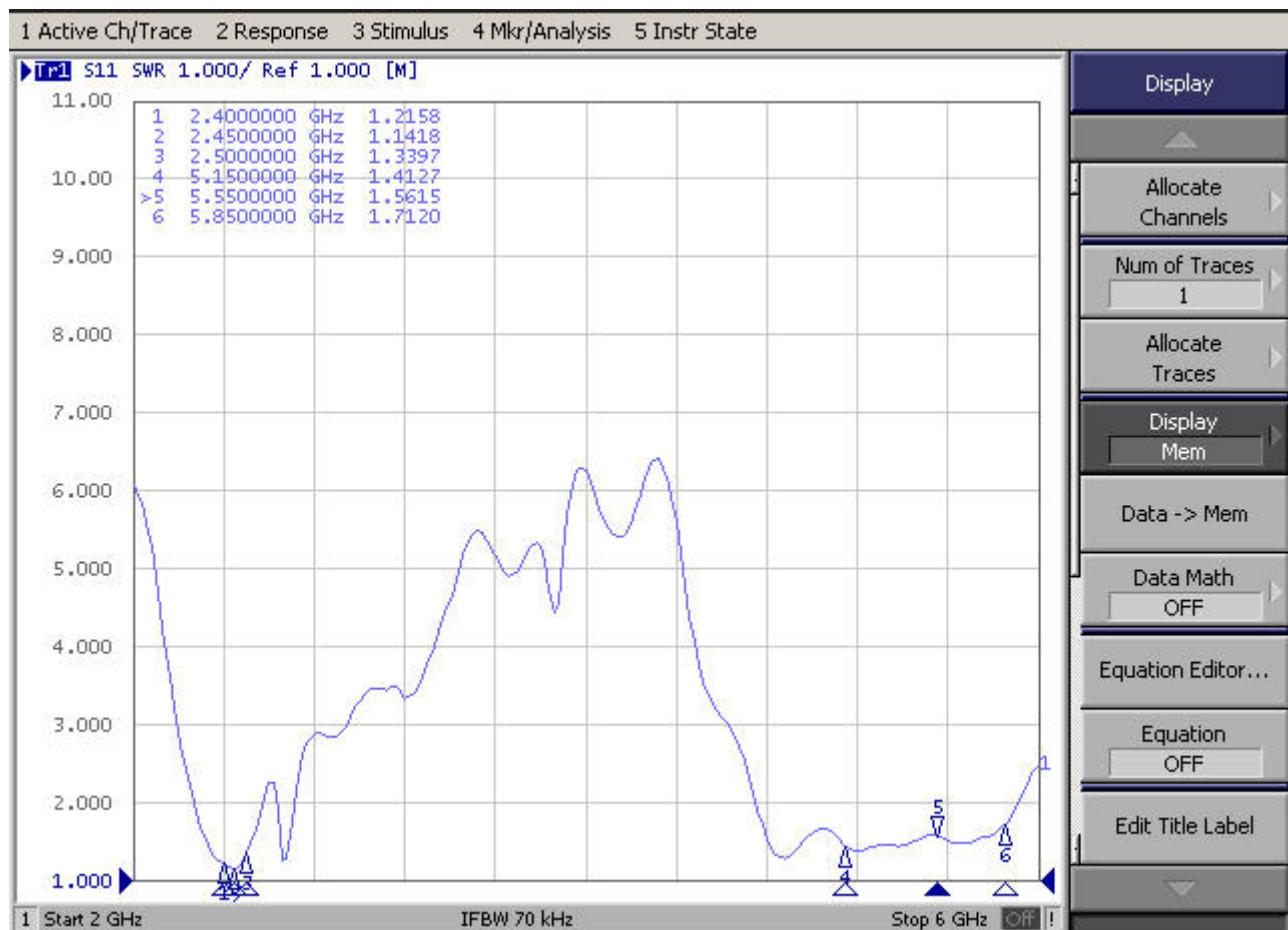
Phi axis test



Theta axis test

TEST DATA (ANT 1)

VSWR



(ANT 1)

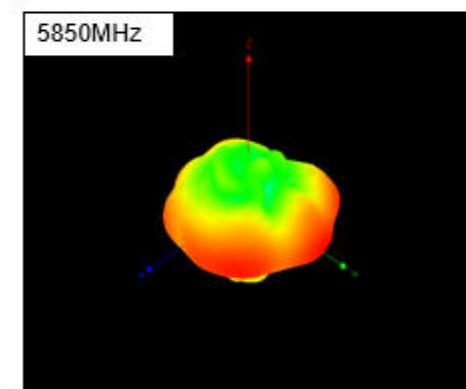
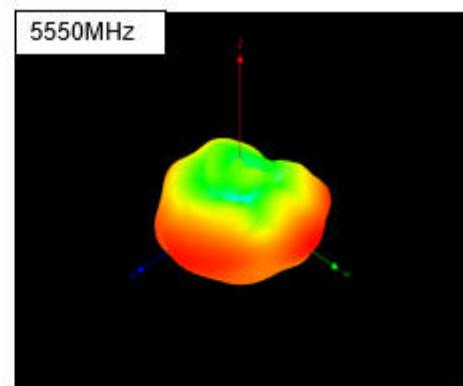
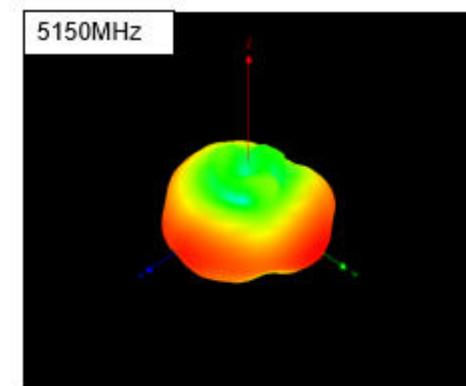
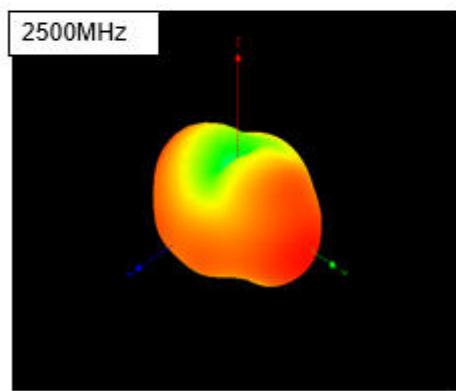
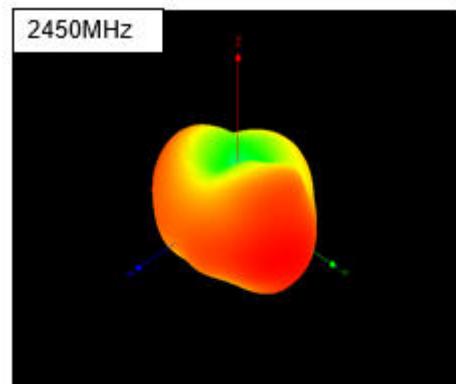
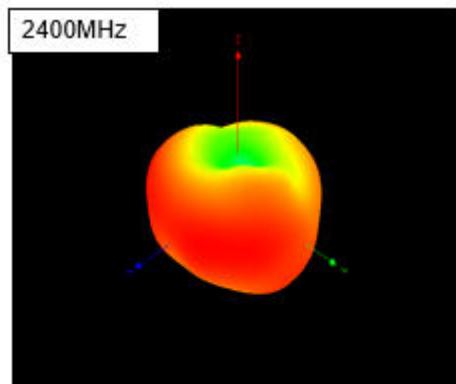
Efficiency&Gain

test data

Frequency / MHz	Efficiency / %	Gain/ dBi
2400	66.29	2.81
2410	65.51	3.30
2420	66.12	3.27
2430	65.16	3.65
2440	62.23	3.00
2450	59.84	3.32
2460	63.68	3.26
2470	64.57	3.55
2480	59.16	3.46
2490	55.34	2.95
2500	56.23	3.29

Frequency / MHz	Efficiency / %	Gain/ dBi
5150	64.02	4.40
5200	63.48	3.78
5250	64.57	3.55
5300	58.70	3.31
5350	62.54	3.74
5400	61.10	3.86
5450	68.24	4.40
5500	64.16	3.99
5550	59.58	4.37
5600	65.12	4.88
5650	59.58	4.71
5700	56.29	3.63
5750	56.77	3.84
5800	55.09	4.08
5850	55.71	4.22

(ANT 1)

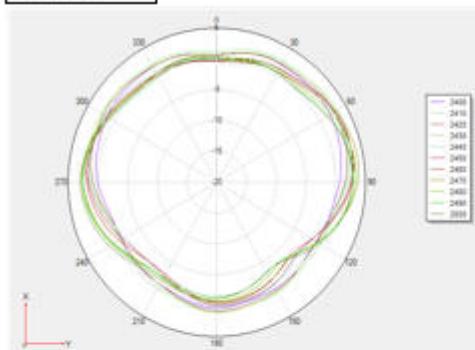
3D Patten

(ANT 1)

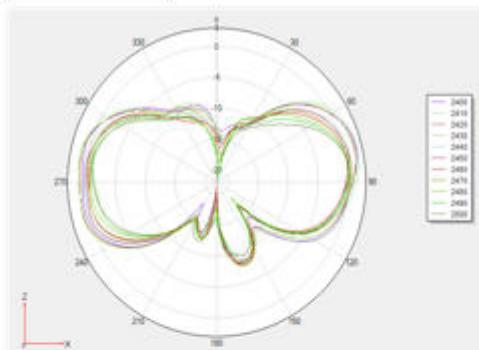
2D Pattern

2.4G

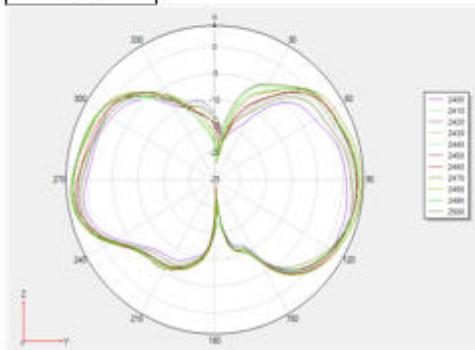
XOY面



ZOX面

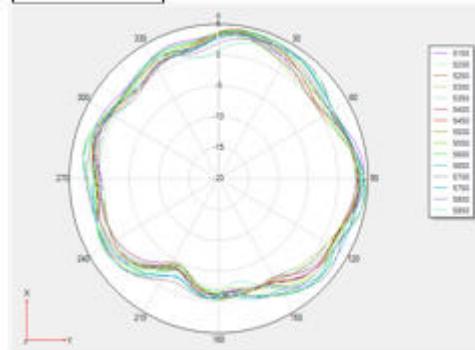


ZOY面

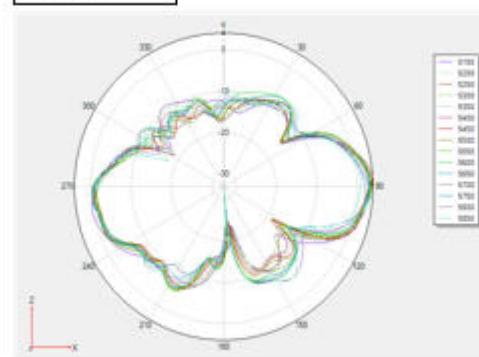


5G

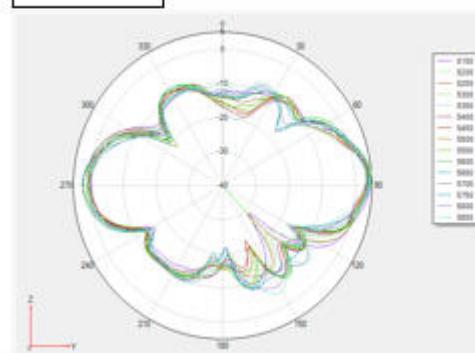
XOY面



ZOX面

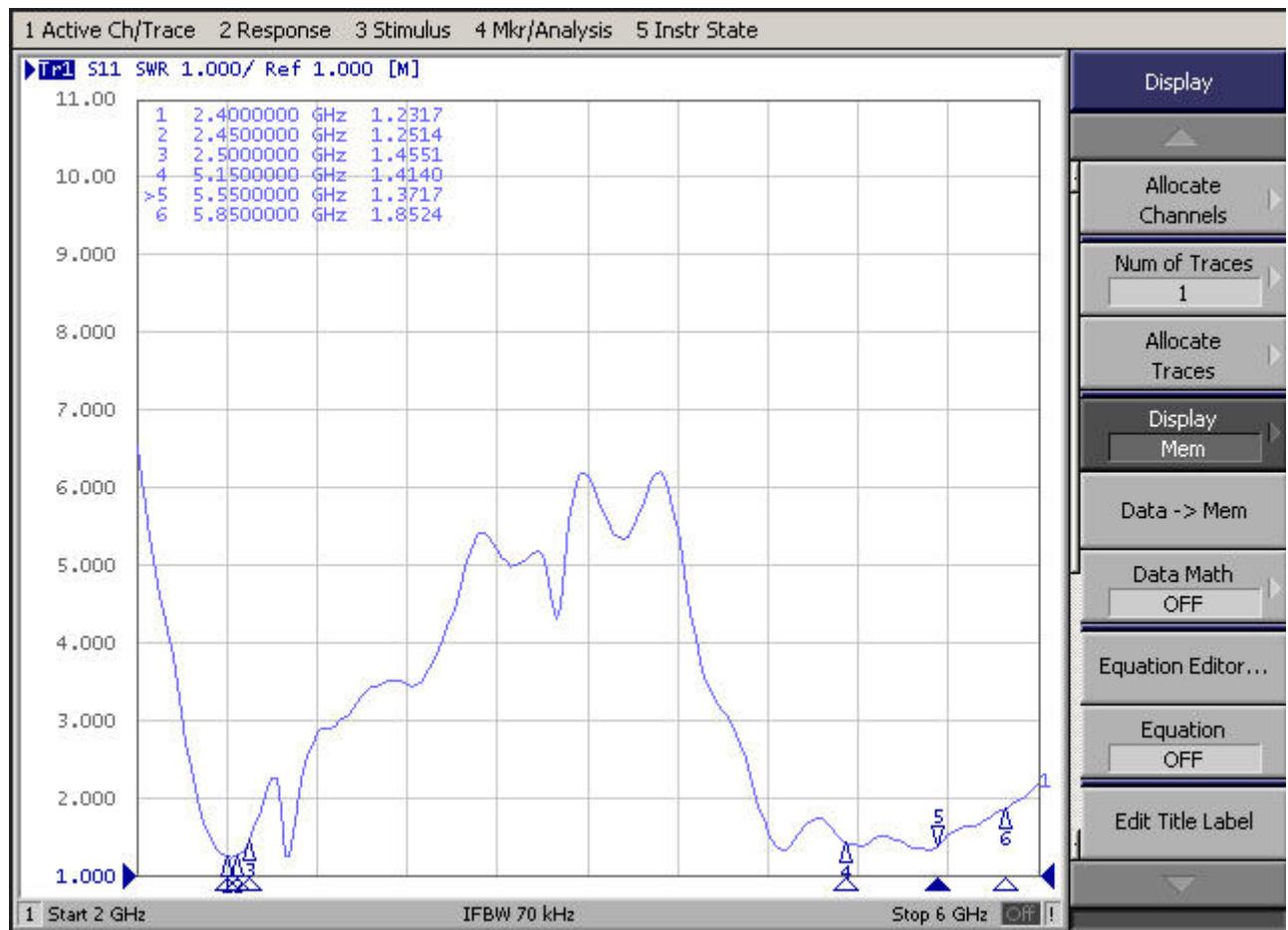


ZOY面



TEST DATA (ANT 2)

VSWR



(ANT 2)

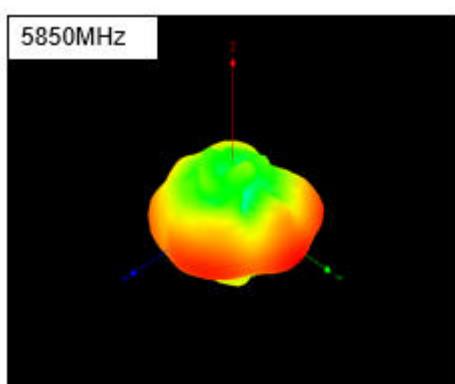
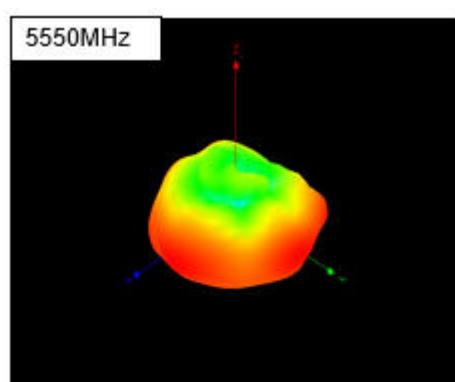
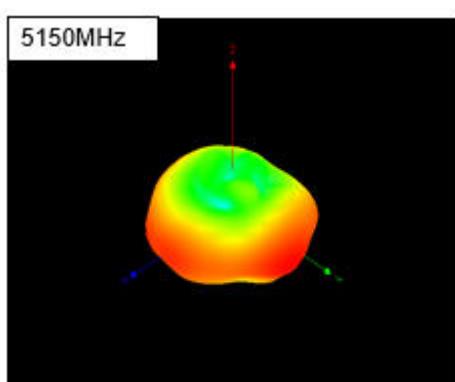
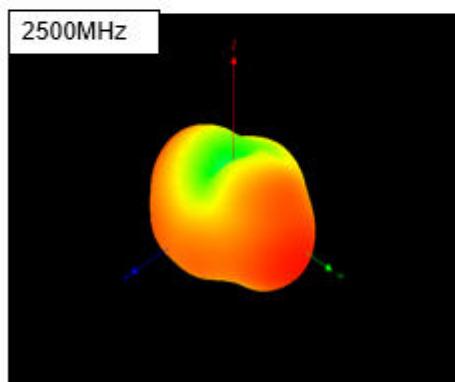
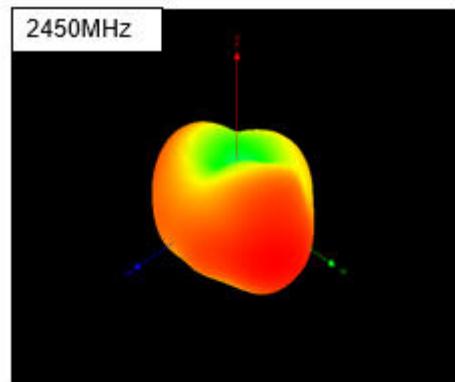
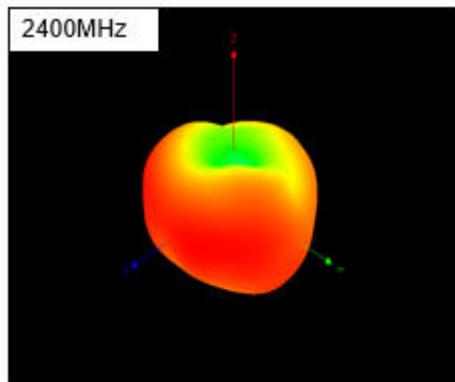
Efficiency&Gain

test data

Frequency / MHz	Efficiency / %	Gain/ dBi
2400	66.61	2.76
2410	65.68	3.17
2420	66.29	3.16
2430	65.34	3.61
2440	62.37	3.00
2450	59.98	3.35
2460	63.83	3.28
2470	64.71	3.55
2480	59.29	3.48
2490	55.46	2.95
2500	56.62	3.47

Frequency / MHz	Efficiency / %	Gain/ dBi
5150	63.75	4.21
5200	63.34	3.75
5250	63.75	3.38
5300	57.72	3.43
5350	62.02	3.55
5400	60.59	3.57
5450	67.66	4.19
5500	63.21	3.82
5550	59.45	4.02
5600	64.70	4.65
5650	59.08	4.36
5700	55.70	3.86
5750	56.45	4.12
5800	55.87	4.22
5850	55.29	4.31

(ANT 2)

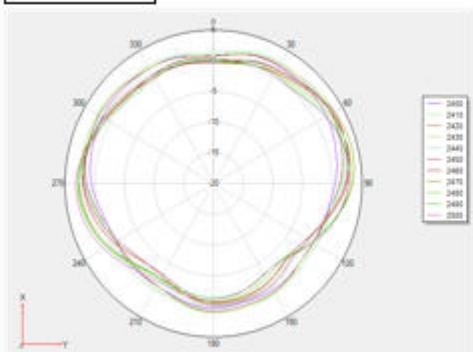
3D Patten

(ANT 2)

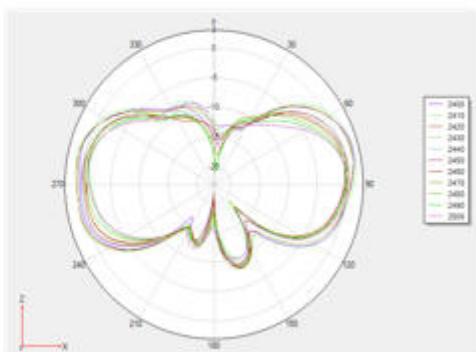
2D Pattern

2.4G

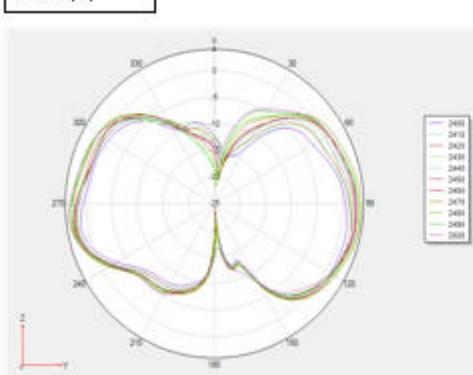
XOY面



ZOX面

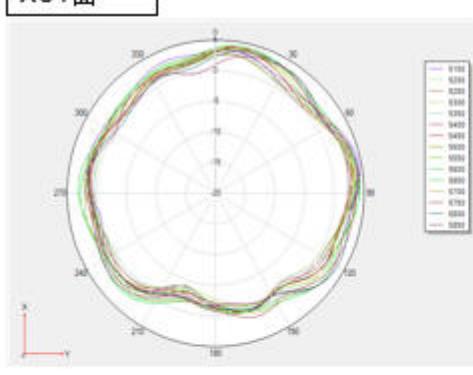


ZOY面



5G

XOY面



Shenzhen free travel communication technology Co., LTD
ROHS Report List for WIFI Antenna Material Components

Number	Raw Material Name	Raw material supplier (manufacturer)	Testing agency	Report Number	Test date	Detect expiration date	Notes
1	PC/PBT	yubang	CTI	A2240057268112001	2024/3/5	2025/3/5	 PCPBT.pdf
2	PCB	junxuan	CTI	A2240256191101002E	2024/5/9	2025/5/9	 FR-4 A2 ROHS.pdf
3	ABS	lejing	SGS	CANPC24004074902	2024/3/14	2025/3/14	 ABS HP171-本色 ROHS.CN_240314.pdf
4	Tinned round copper wire	mingxing	CTI	A2240182175102001E	2024/4/12	2025/4/12	 鎏金线-A2240182175102001E (rohs3.183g) 2024.04.12.pdf
5	TIN	taiyuan	SGS	CANEC24003588604	2024/3/8	2025/3/8	 CANEC24003588604(锡线).pdf
6	FEP BLUE	jianlong	CTI	A2240269286101007C	2024/5/21	2025/5/21	 见龙(护套) ROHS 蓝色中文.pdf
7	FEP Whine	jianlong	SGS	A2240269286101002C	2024/5/21	2025/5/21	 见龙(护套) ROHS 白色中文.pdf
8	Silk screen ink	Xinzheng Chemical	WT	WTH24F12305415C	2025/1/2	2026/1/2	 印刷油墨-白色中文.pdf
9	Solder Mask	Xinzheng Chemical	WT	WTH24F12305406C	2025/1/2	2026/1/2	 印刷油墨-白色中文.pdf
10	Nickel-Plated Steel	huapu	SGS	XMNPC24000170702	2024/3/6	2025/3/6	 弹簧-XMIN240300390PC01_CN.pdf

require:

1. The submission of component material reports must be in accordance with EU implementation requirements, including testing reports for indivisible care methods and named materials, as well as testing for other environmental regulations and requirements
2. If the submitted component materials are to be tested, they must include the composition of the original piece, all materials according to the department's packaging materials, social metal and other materials. No form of control report is accepted. Humorous acceptance of mixed testing reports within three types is accepted, and reports exceeding three types are not accepted
3. The company recognizes the reports provided by the following nine testing institutions, SGS, CTI, ITS, Saibao, Noni, CCIC, bv, STS, set
4. If the first page of the testing report needs to be stamped with our company's official seal and the side needs to be stamped with a saddle stitch seal, each report must be provided. It is not allowed to alter or forge the price report. The supplier must first review the report themselves to ensure that the submitted report is valid, correct, complete, and the content is clear and distinguishable

Provide electronic copies of report requirements: the report can be scanned together with the list; It can also be scanned separately, but with corresponding numbers for easy querying



Product packaging specification

page: 1 of 1

Product Name: antenna	Rea : A00
	Except for others

一: Antenna

二: Put them in PE bags, quantity is packed in (50 100pcs)
Subject to the actual situation

三: Put the antenna in the carton

四: Seal the box and paste the production label and RoHS label on the outer box(actual situation shall prevail)