

Antenna specifications

SPECIFICATION FOR APPROVAL

PRODUCT NAME: 2.4/5.8GHz embedded metal antenna

UB P/N: UB01NJ1D1510A-DH REV: B

Version revision history :

edition	Revisers	date	Amendment record
V-A	Wan Bin	July 25,2024	first draft
V-B	Wan Bin	August 15,2024	Correct the number of packages
		MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
CHECKED BY:		Wan Bin 	
APPROVED BY:		Xiong Wendi 	
DATE:		2025/08/19	

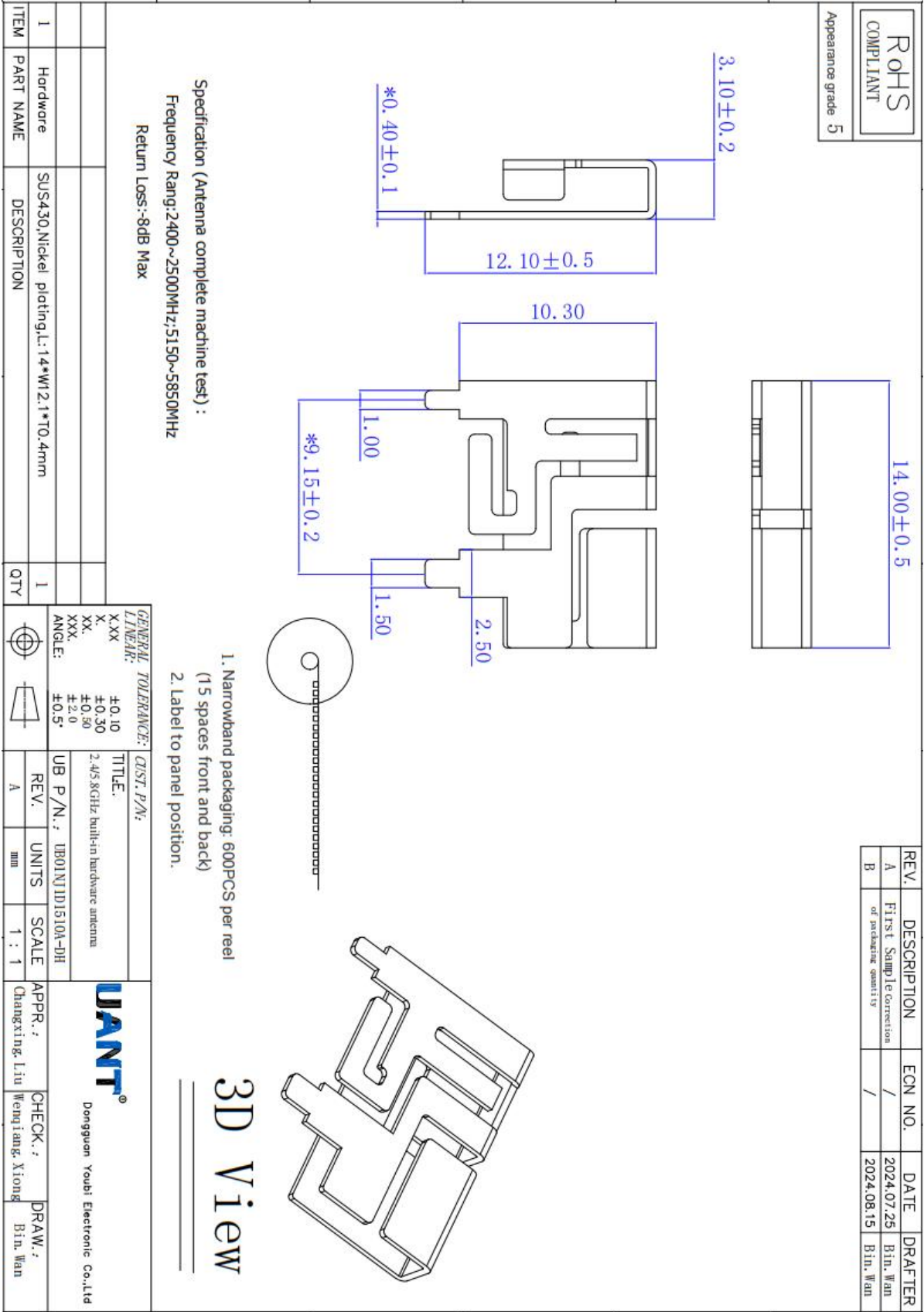
catalogue

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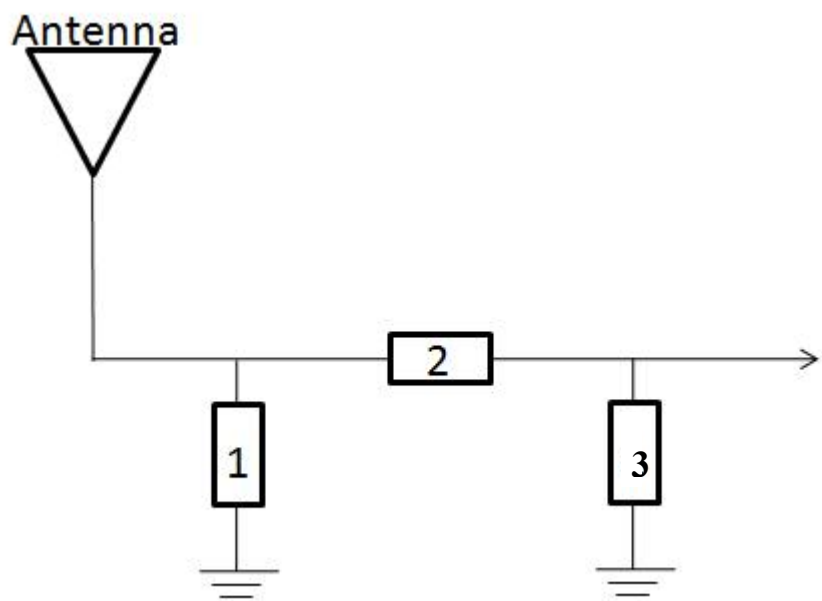
1. Specifications

Product main parameters	
Product model	
frequency range	2.4G/5.8G Antenna 2400-2500MHz; 5150-5850MHz
Antenna type	PIFA
Processing	Stamping
Dimensions	14*12.1*3.1*0.4mm
material	SUS430
characteristic impedance	50Ω
polarization	linear
voltage standing-wave ratio	Less than 3
axial ratio	N/A
Efficiency	47.1~54.83%(2400-2500MHz);48.19~60.12%(5150-5850MHz)
Peak gain	1.29dBi(2400-2500MHz);2.86dBi(5150-5850MHz)
Radiation Pattern	Omni-directional
Active/passive	passive
Housing material	N/A
Contact method	DIP
cable type	N/A
cable loss	N/A
power capacity	1W
working temperature	-20~70°C
Storage temperature	-20~50°C
waterproof rating	N/A
Wind resistance rating	N/A
Salt spray rating	N/A

2. Product 2D diagram



3. Matching circuits



System matching circuit components		
position	Value	Tolerance
1	-	-
2	0Ω	-
3	-	-

4. Performance test report

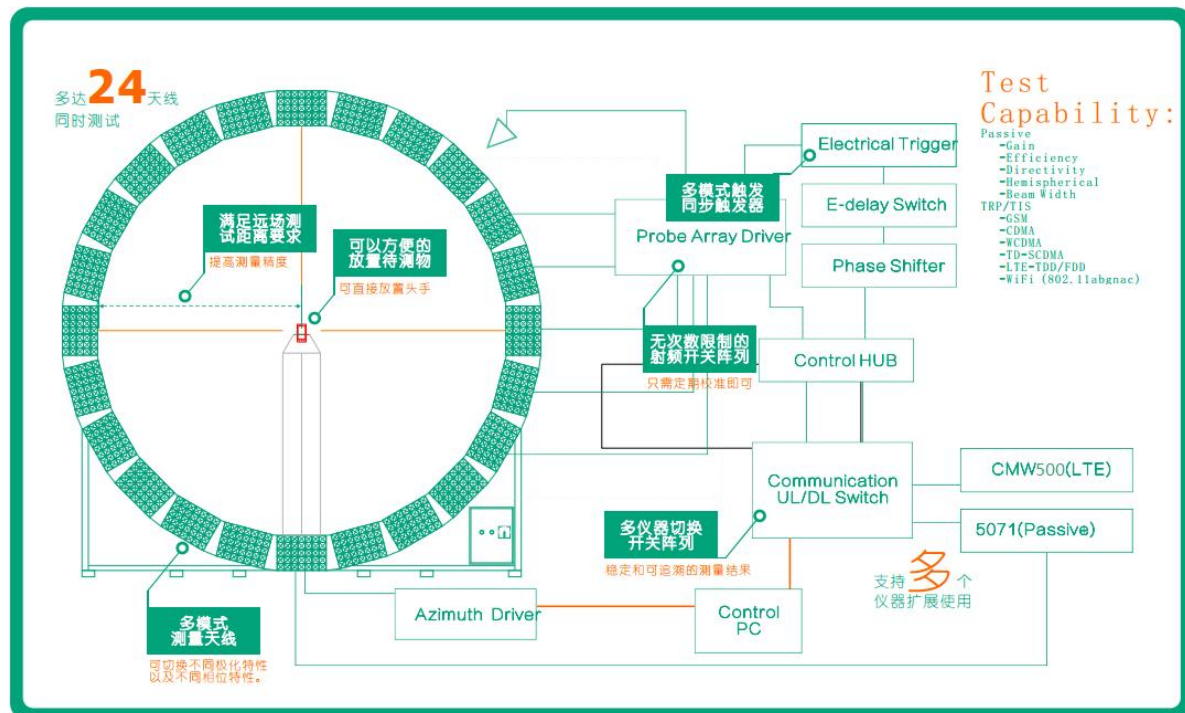
4.1 Test steps

name	parameter	method	Standard number
Mobile communication antenna	voltage standing-wave ratio	General technical specifications for mobile communication antennas	GB/T 9410-2008
	peak gain		
	Radiation pattern		
antenna performance	radiation gain	IEEE antenna standard test process	ANSI/IEEE Std 149-1979

4.2 Equipment list

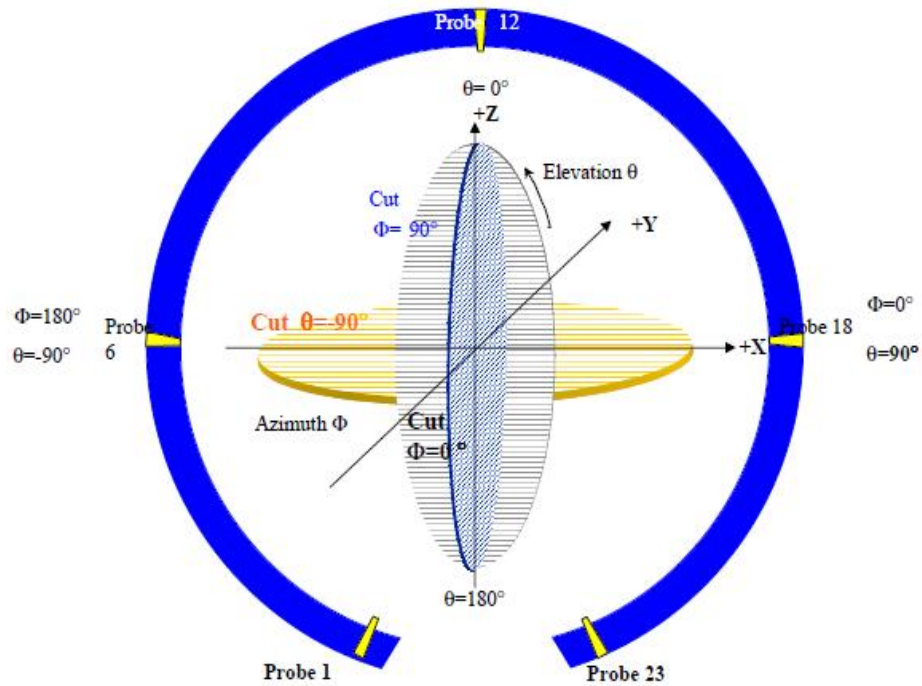
device name	manufacturer	model	serial number	Calibration date	effective data
Network Analyzer	Agilent	E5071C	MY46315996	2023.08.25	2024.08.24
Radio Communication Tester	ROHDE&SCHWARZ	CMW500	0002K50-100844	2023.08.25	2024.08.24

4.3 Test configuration diagram



4.4 Passive test

4.4.1 Chamber coordinate system



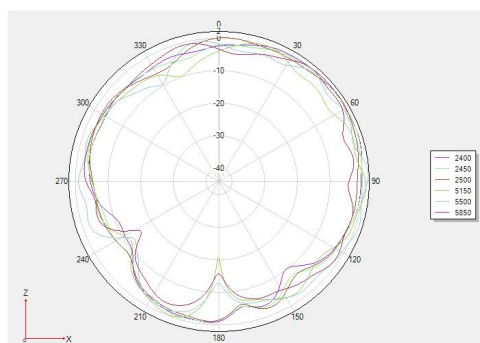
4.4.2 Return loss & VSWR



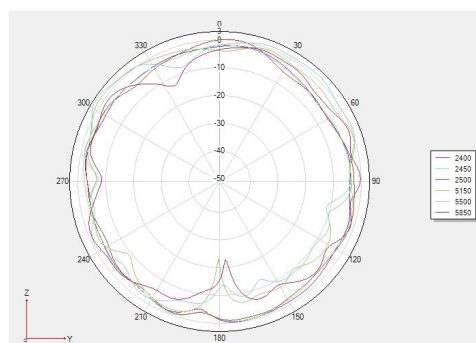
4.4.3 Passive test data of the whole device

Frequency / MHz	Efficiency / dB	Efficiency / %	Gain/ dBi
2400	-3.22	47.64	1.01
2410	-3.27	47.1	0.81
2420	-3.03	49.77	0.93
2430	-3.16	48.31	0.72
2440	-3.03	49.77	0.88
2450	-2.88	51.52	0.85
2460	-2.99	50.23	0.8
2470	-2.69	53.83	1.05
2480	-2.93	50.93	0.98
2490	-2.61	54.83	1.29
2500	-2.89	51.4	1.1
5150	-2.71	53.58	2.46
5200	-2.48	56.49	2.79
5250	-2.45	56.89	2.75
5300	-2.43	57.15	2.4
5350	-2.21	60.12	2.81
5400	-2.22	59.98	2.83
5450	-2.41	57.41	2.43
5500	-2.43	57.15	2.52
5550	-2.37	57.94	2.86
5600	-2.48	56.49	2.74
5650	-2.41	57.41	2.58
5700	-2.44	57.02	2.42
5750	-2.44	57.02	1.71
5800	-3.17	48.19	1.77
5850	-3.01	50	2.09

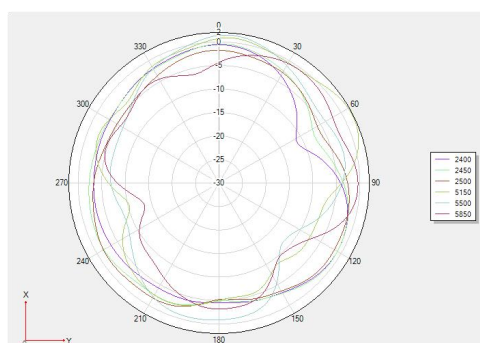
4.4.4 2D radiation pattern



E1

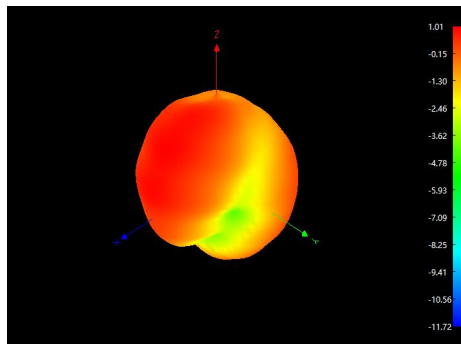


E2

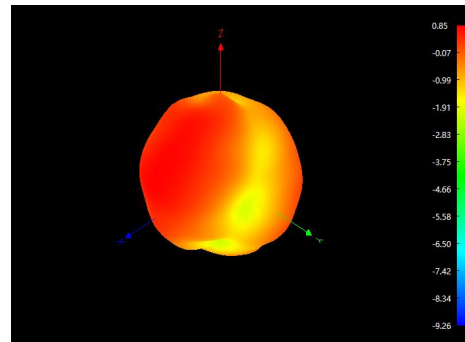


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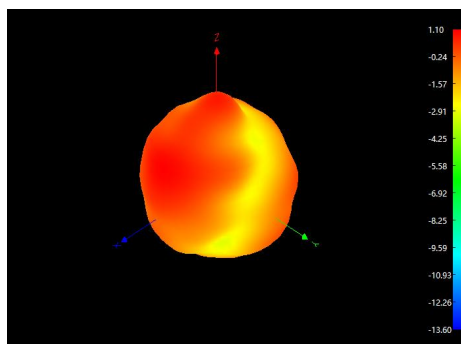
4.4.5 3D radiation pattern



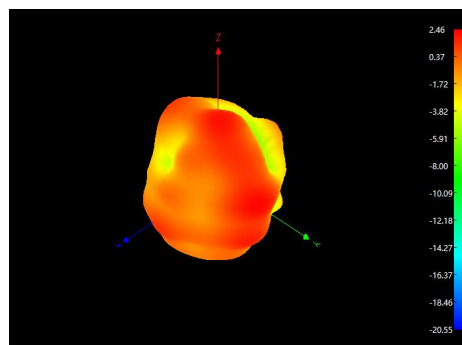
2400MHz



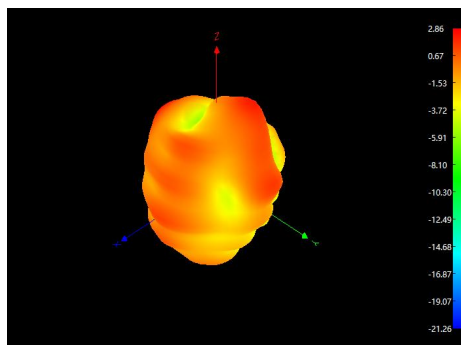
2450MHz



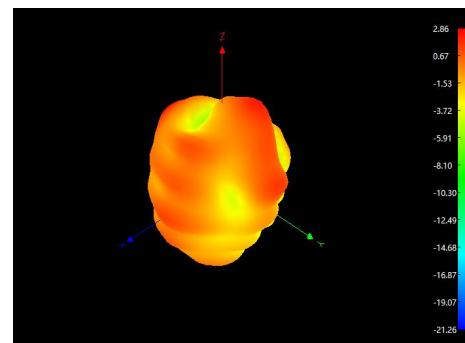
2500MHz



5150MHz



5550MHz



5850MHz

5. Reliability test report

test item	test condition	requirement	Number of tests	judge
1. High temperature test	Leave it in a $70^{\circ}\text{C}\pm 2^{\circ}\text{C}$ environment for 4H	After 2H at room temperature, each size meets the normal requirements, and there is no deformation, warping, delamination and other abnormal phenomena, and the performance is normal.	5pcs	qualified
2. Low temperature test	Place 4H in an environment of $-20^{\circ}\text{C}\pm 2^{\circ}\text{C}$	After 2H at room temperature, each size meets the normal requirements, and there is no deformation, warping, delamination and other abnormal phenomena in appearance, and the performance is normal.	5pcs	qualified
3. Temperature cycle test	Leave in the $60^{\circ}\text{C}\pm 2^{\circ}\text{C}$ environment for 30 minutes, remove and leave at room temperature for 5 minutes, leave in the $-20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ environment for 30 minutes, remove and leave at room temperature for 5 minutes;	After 5 cycles, the size meets the normal requirements, and there is no deformation, warping, delamination and other abnormal phenomena, and the performance is normal.	5pcs	qualified
4. Heat resistance	The temperature is $40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ and the humidity is $93\pm 2\%\text{RH}$.	After 4H at room temperature, each size meets the normal requirements, and there is no deformation, warping, delamination and other abnormal phenomena, and the performance is normal.	5pcs	qualified
Final conclusion	☒ Qualified ☐ Unqualified ☒ Qualified ☐ Unqualified			

6. Packaging

