

承 认 书

SPECIFICATION FOR APPROVAL

客 户	
CUSTOMER:	
客 户 料 号:	
CUST P/N:	
天 夏 料 号:	
TX P/N:	TX-WPCX-D43.5*0.8-6.5UH
产 品 型 号	
DESC:	13*37.5-0.08*48P-12TS-45mm-D43.5*0.8双槽
日 期	
DATE:	2026/01/05
版 本:	
Version:	A.0

Shenzhen Tianxia Technology Co., Ltd.

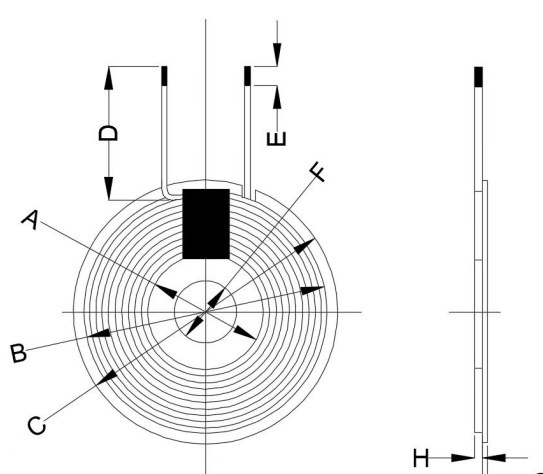
add: Room 523-525, C33 Science and Technology Park, District 33, Bao'an District, Shenzhen

TEL: 18718699959

E-mail: 2321113770@qq.com

We statement that All measurements were performed radiated and therefore additional antenna gain documentation is not required.

SPECIFICATION

产 品 型 号:		13*37.5-0.08*48P-12TS-45mmD43.5*0.8双		Rev: A.0	客户CUST:	研龙																								
DESC		槽出线带背胶-6.5uh			客户料号 CUST P/N:																									
一、尺寸 DIMENSION:(mm) 					The inner diameter of the coil A	13 ± 0.5mm																								
					The Outer diameter of the B coil	37.5 ± 0.5mm																								
					Outer diameter of the C magnetic disc	43.5 ± 1mm																								
					Inner diameter of the F magnetic disc	5.3 ± 0.5mm																								
					Length of the D lead	45 ± 1.5mm																								
					E Tin immersion length	3mm ± 1.5mm																								
					H thickness	2.2mmMAX																								
					注:																									
					1.线圈交叉出线																									
					2.线圈非平面																									
					3线圈总体厚度2.2mmMAX;																									
					4双线浸锡																									
					5中间需装5*1.2磁铁																									
二、原理图 SCHEMATIC DIAGRAM 																														
三、绕线参数 Winding Specification: <table><tr><td>序号 NO.</td><td colspan="2">端子 TERMINAL</td><td>线径 WIRE</td><td>圈数 Turns</td><td>绕线方向 Winding Direction</td></tr><tr><td>1</td><td>S</td><td>F</td><td>0.08*48P</td><td>12Ts</td><td>逆时针</td></tr></table>					序号 NO.	端子 TERMINAL		线径 WIRE	圈数 Turns	绕线方向 Winding Direction	1	S	F	0.08*48P	12Ts	逆时针														
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1	S	F	0.08*48P	12Ts	逆时针																									
四、电气特性 ELECTRICAL CHARACTERISTICS: 温度 TEMPERATURE:25±10°C, 湿度 RELATIVE HUMIDITY:65±20% <table><tr><td>序号 NO.</td><td>项目 ITEM</td><td>端子 TERMINAL</td><td>标准 SPECIFICATION</td><td>测试条件 TEST FREQUENCY</td><td>测试仪器 TEST EQUIPMENTS</td></tr><tr><td>1</td><td>IND.</td><td>S-F</td><td>4.0 uH±10% 单独线圈</td><td>100KHz/1.0V</td><td>LCZ METER 1062B</td></tr><tr><td>2</td><td>IND.</td><td>S-F</td><td>6.5 uH±10%带磁片</td><td>100KHz/1.0V</td><td>LCZ METER 1062B</td></tr><tr><td>3</td><td>DCR</td><td>S-F</td><td>600mΩ Max</td><td></td><td>LCZ METER 502B</td></tr></table>					序号 NO.	项目 ITEM	端子 TERMINAL	标准 SPECIFICATION	测试条件 TEST FREQUENCY	测试仪器 TEST EQUIPMENTS	1	IND.	S-F	4.0 uH±10% 单独线圈	100KHz/1.0V	LCZ METER 1062B	2	IND.	S-F	6.5 uH±10%带磁片	100KHz/1.0V	LCZ METER 1062B	3	DCR	S-F	600mΩ Max		LCZ METER 502B		
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3	DCR	S-F	600mΩ Max		LCZ METER 502B																									
拟制/日期 PREPARED BY/DATE			审核/日期 CHECKED BY/DATE																											
曾伟浩 2026/01/05			张燕 2026/01/05																											



Antenna Specification

Manufacture: TUYA

Product Name: WBR3 Antenna

Antenna Type: PCB

Test Date: 2021.05.20

Tested by: Long Wang

Approved by: Licco



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1.General Description

Manufacturer	Hangzhou Tuya Information Technology Co.,Ltd
Address	Room 701,Building 3,More Center,No.87 GuDun Road, Hangzhou, Zhejiang,China
Test Location	Room 106, Building 3, Letong Science Park, No. 500, Qiuyi Road, Binjiang District, Hangzhou
Product Name	WBR3 Antenna
Product model	WBR3
Antenna Type	PCB Antenna
Test Items	Gain; Efficiency; Radiation Pattern
Test Frequency	2400-2500MHz
Test Standard	ANSI/IEEE Std 149-1979

2.Test Configurations

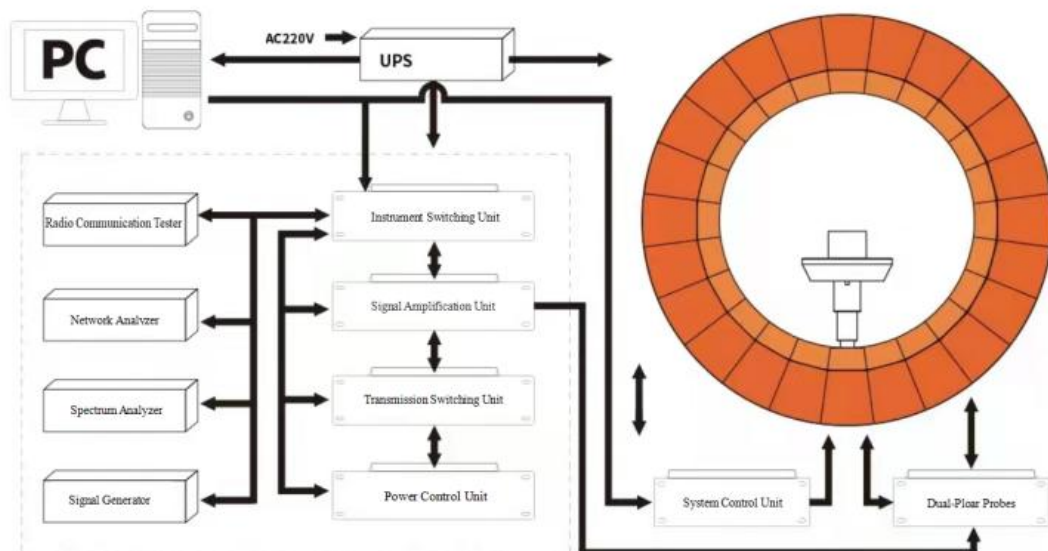
2.1 Test Environment

Temperature (°C)	25
Humidity (%RH)	60
Atmospheric Pressure (kPa)	100.5

2.2 Test Equipment

Test System	TEM 24 Multi-probe Microwave Chamber
Test Instrument	Agilent E5071B

2.3 Test Principle





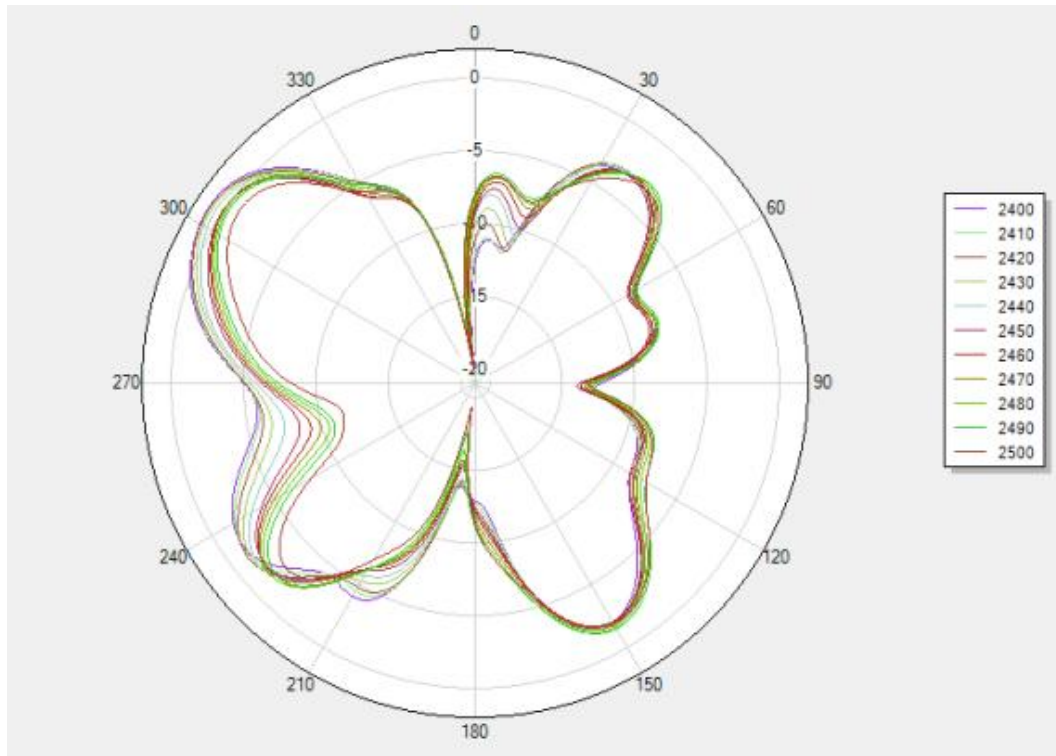
3.Test Results

3.1 Gain and Efficiency

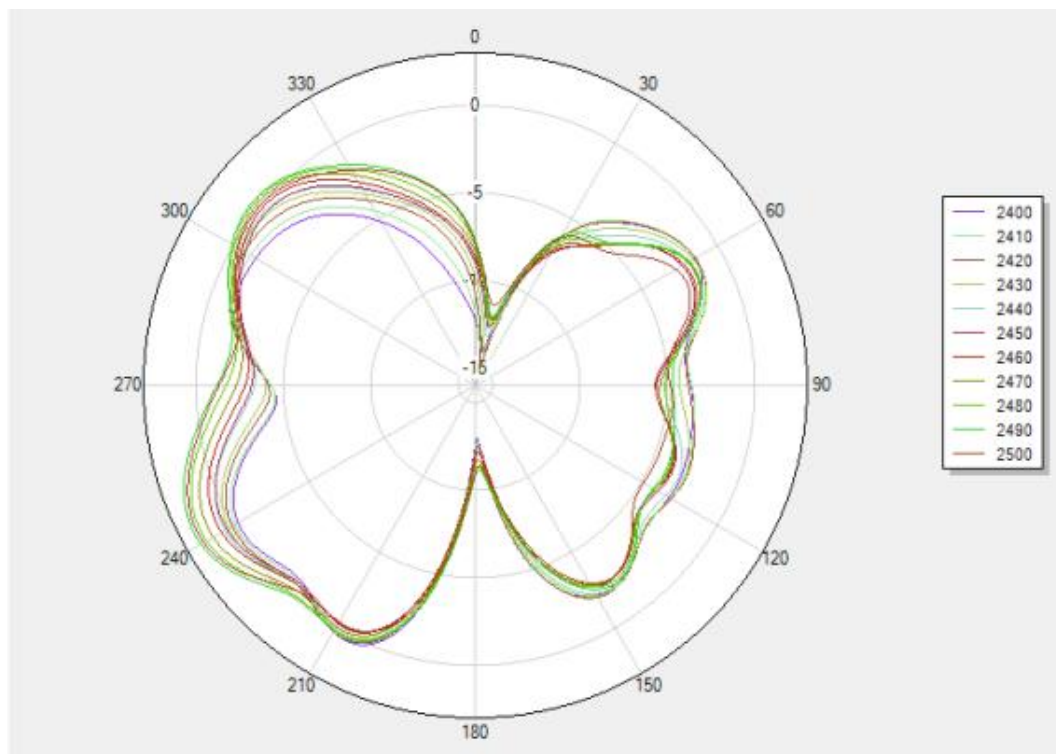
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	1.62	52.29
2410	1.71	52.17
2420	1.93	53.14
2430	1.98	54.16
2440	2.00	57.62
2450	2.17	59.64
2460	2.45	61.55
2470	2.38	60.64
2480	2.54	62.86
2490	2.30	59.85
2500	2.49	60.41

3.2 Radiation Pattern

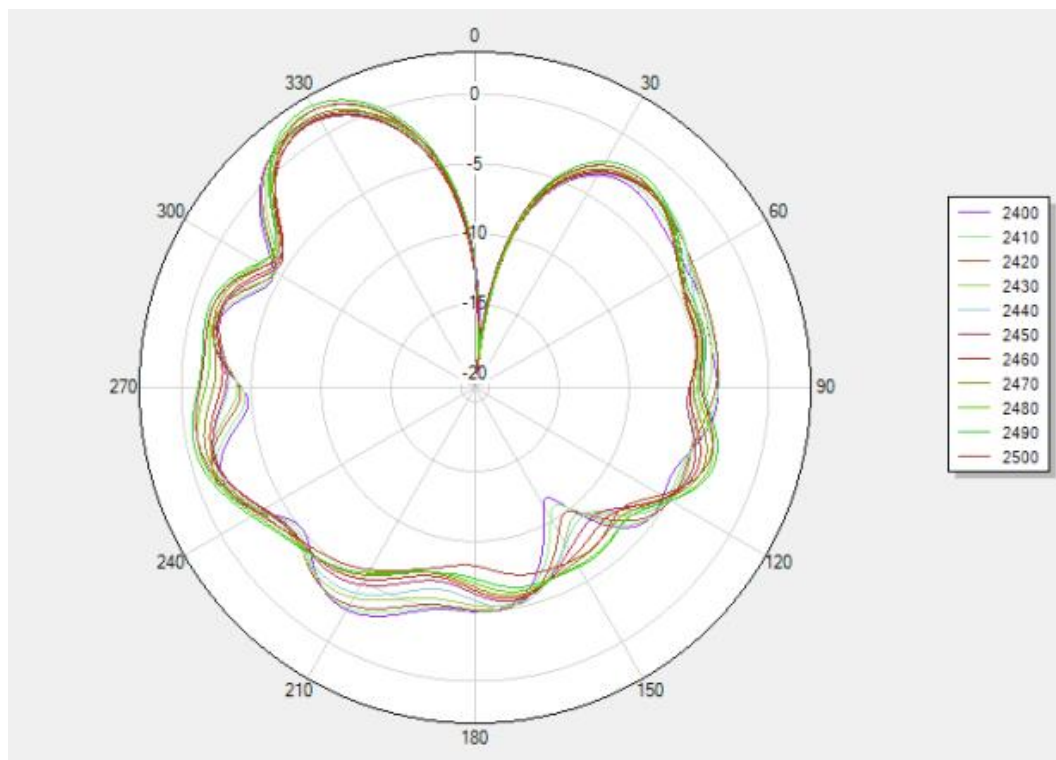
Phi 0 2D



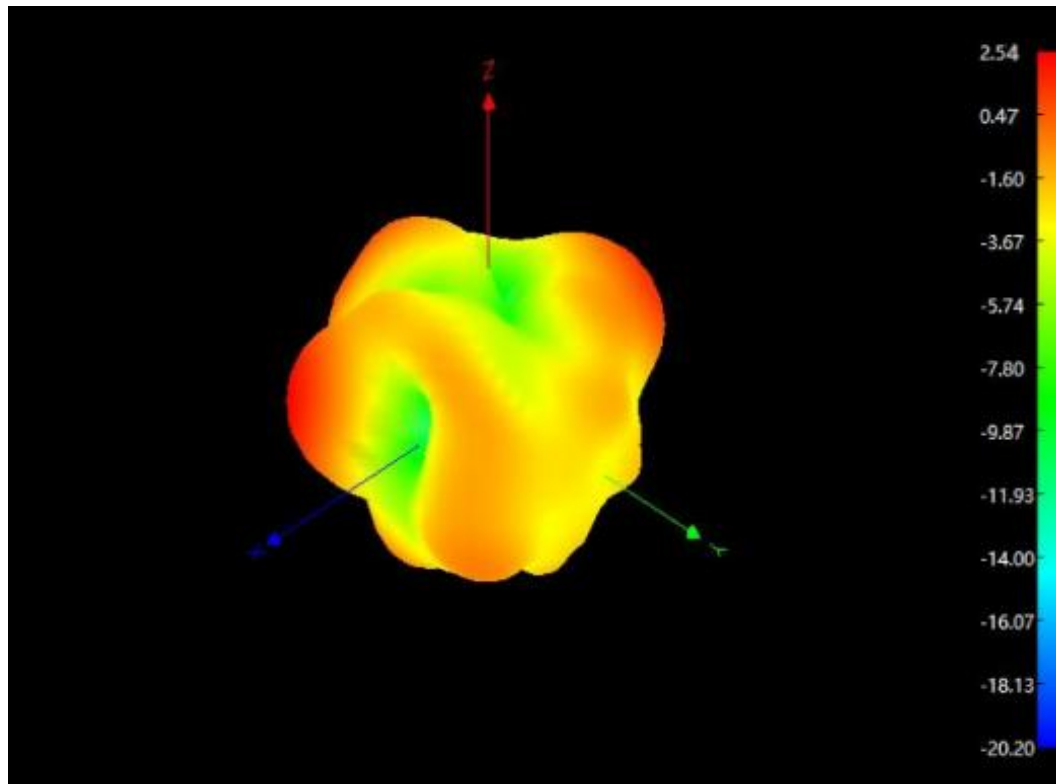
Phi 90 2D



Theta 90 2D

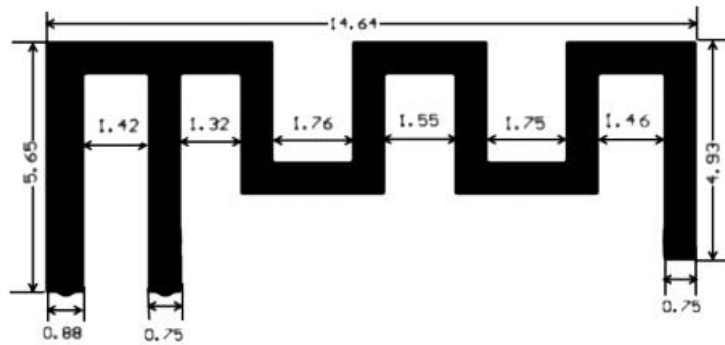


2480MHz 3D

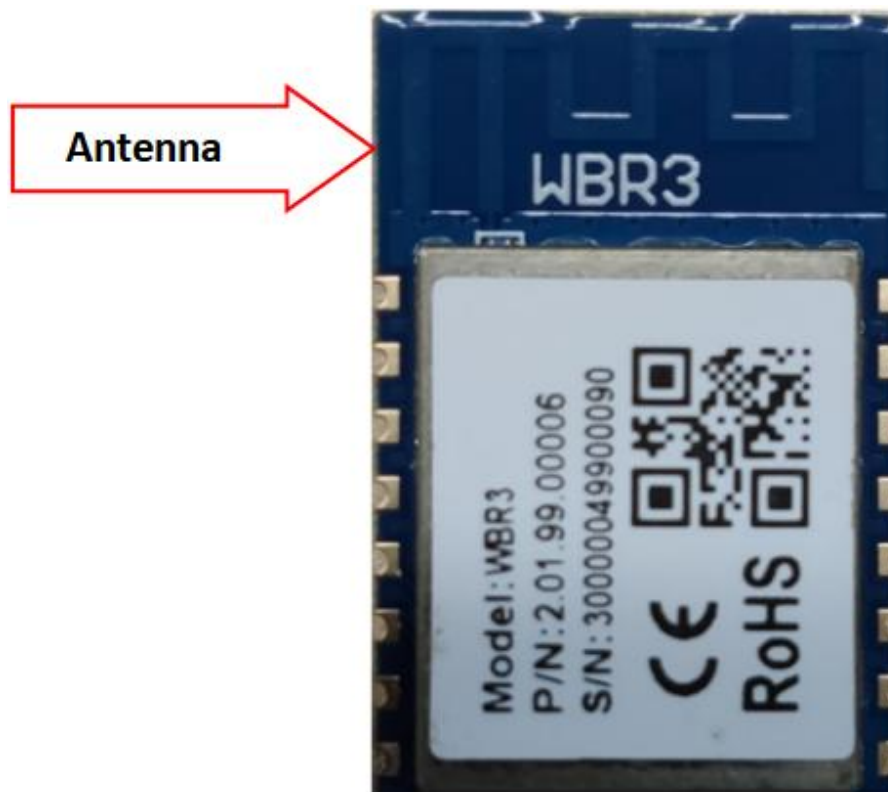


4. Antenna Dimensions

Unit: mm



5. EUT Photo



6.Test Setup Photo

