

Dongguan Hongxin Plastic products Co., LTD

SPECIFICATION FOR APPROVAL

Customer name:

Customer project name:

Customer part number:

Customer name: WIFI 2.4G White flat integrated antenna

Tianqin material number: DF5DBI82564/5-40

DATE: 2024-02-26

Edition: X1

	MANUFACTURE SIGNATURE	CUSTOMER SIGNATURE
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DATE:	2024-02-26	

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Product Number: DF5DBI82564/5-40

Product Name: Antenna

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Product Number: DF5DBI82564/5-40

Product Name: Antenna

1. Revision History

Revision	Date	Change Notification	Description
1.0	2024-02-26	V1.0	

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2. Specification

Main technical specifications	
Frequency Range (MHZ)	2400~2500, 5150~5850
Impedance(Ω)	50
Peak Gain(dBi)	2dBi(Max)
VSWR	≤ 2
Admitted Power	10W
Polarization	vertical polarization
Radiation	Omni-directional
Connector Type	Strip
Physical Properties	
Antenna cable	1.37mm Cable
Operating Temp	-40°C~+60°C

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3. Characteristics and Reliability Test

Test Items		Test Condition and Procedure	Requirements	Result
C1	V.S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification	PASS
C2	Insertion Loss	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification	N/A
C3	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification	PASS
C4	Voltage Breakdown	Test voltage should be applied between insulated portions, or between ground as specified.	Max Voltage > 500 V or directive material specification	N/A
C5	Insulation Resistance	Set Voltage: 500 ± 50 V; between the insulated portions, or between ground as specified.	Resistance > 500 M ohm or directive material specification	N/A
C6	Contact Resistance	Air Temp: 26°C ; measured with test equipment	Directive material specification	N/A
M1	Vibration	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol. $\leq 5\%$	PASS
M2	Random Drop	GB / T2423.8-1995 Single Height: 1.0 Meter; 3 directions; 1 time for each direction	1. No parts separated, fracture 2. Frequency Tol. $\leq 5\%$	PASS
		Packing Height: 0.76 Meter; 1 corner, 3 edges, 6 surface		PASS
		Antenna+Machine: Height: 0.76 Meter; 1 corner, 3 edges, 6 surface.		N/A
M3	Solderability	GB / T2423.28-2005	Tin evenly on full	N/A

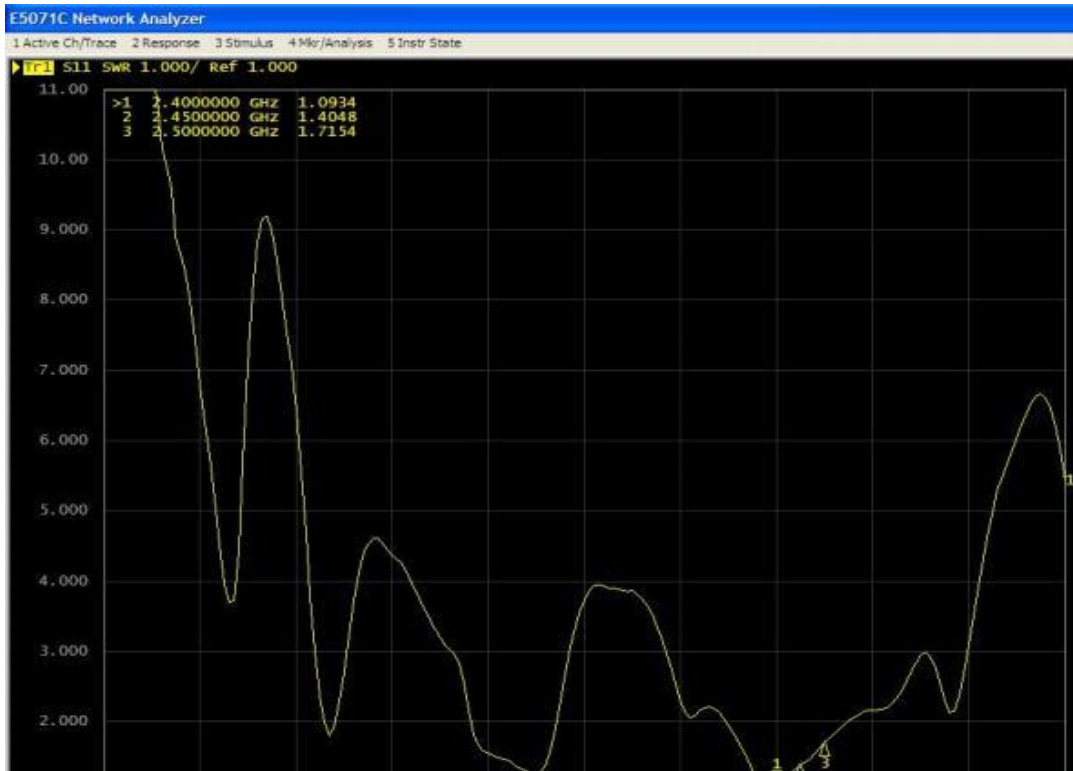
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		Temp: 260±5°C;Duration: 5 seconds		
M4	Pull Test	Holding with individual specification; force applied to axis of terminal .	Directive DUT specification Frequency Tol. ≤5%	PASS
M5	Torque Test	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	Directive DUT specification Frequency Tol. ≤ 5%	N/A
M6	Dimension	Inspection of dimension, color, material, package, surface process	Directive DUT specification	PASS
E1	Waterproof	With Reference to IEC 60529 // IP Code Definition	Directive DUT specification	N/A
E2	Salt Spray	GB / T 2423.17-2008 Temp: 35°C; RH: ≥ 95%; NaCl solution: ≥ 5%;Time: 24H	No Visual Damage Frequency Tol. ≤5%	PASS
E3	Temperature and Humidity Chamber	GB / T 2423.3-2006 Temp: 80°C / 12 H; -40°C / 12H RH: ≥ 90 %; Time: 24H	After 2 Hours Recovery No Visual Damage Frequency Tol. ≤5%	PASS
E4	Termal Shock	GB / T 2423.22 - 2008 40°C (30 minutes) to + 80°C (30 minutes)† Cycles: 24h	After 2 Hours Recovery No Visual Damage Frequency Tol. ≤5%	PASS
E5	Aging test	GB /T 2423.2 - 2008 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery No Visual Damage Frequency Tol. ≤5%	PASS
E6	High Temp.	Temp. 270±10 °C† Times† 120 seconds	No Visual Damage	N/A
R1	RoHS	With Reference to IEC 62321:2008 with flow chart	Directive RoHS 2011/65/EU RoHS 2011/65/EU	PASS
R2	PFOS	With Reference to USA EPA 3550C:1996 by LC/MS	Directive RoHS 2006/122/EC RoHS 2011/65/EU	PASS

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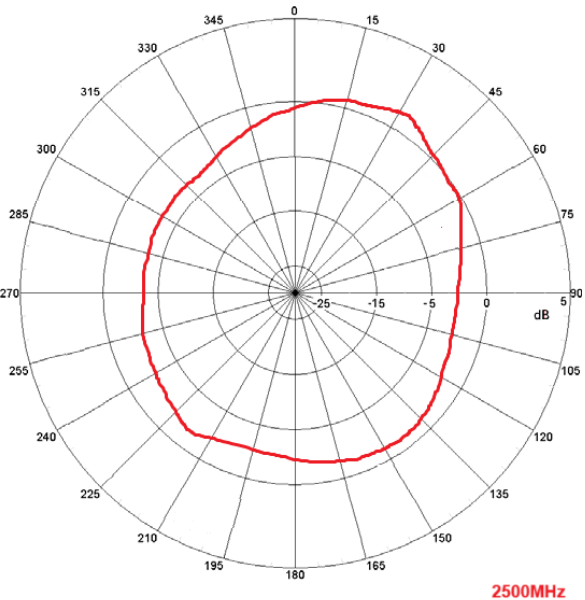
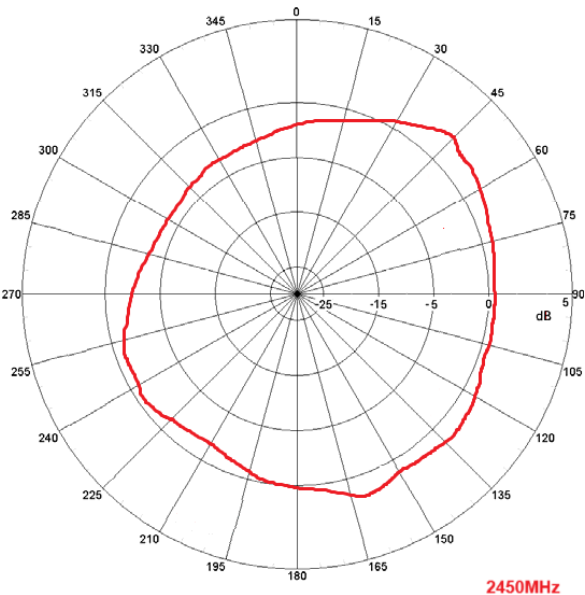
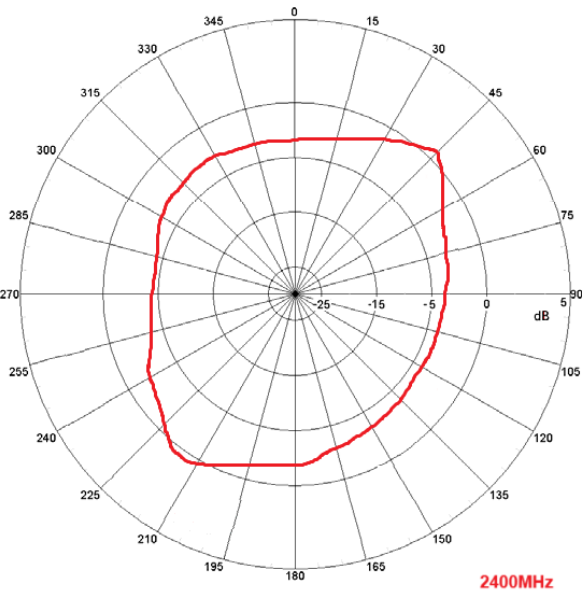
4. Antenna - S Parameter Test Data 2.4G



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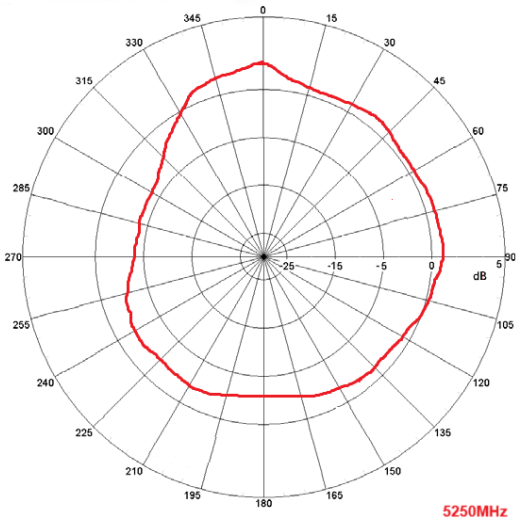
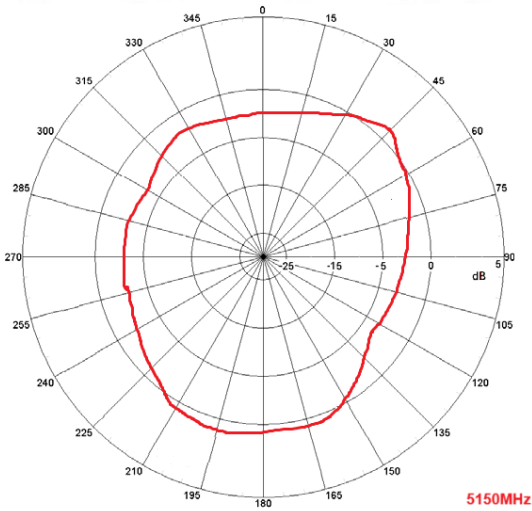
5. Antenna - Radiation Pattern Test Data
2.4GHz

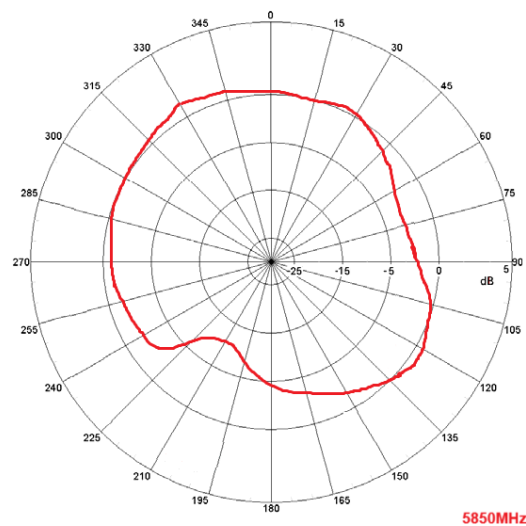
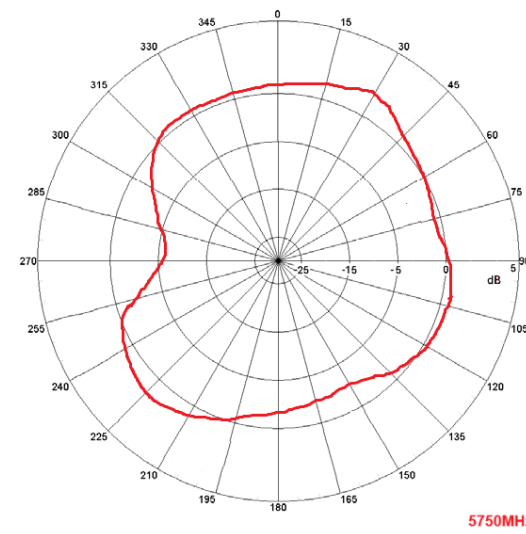
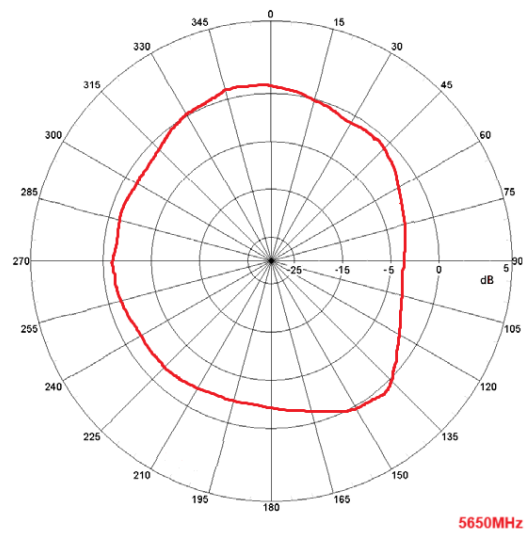
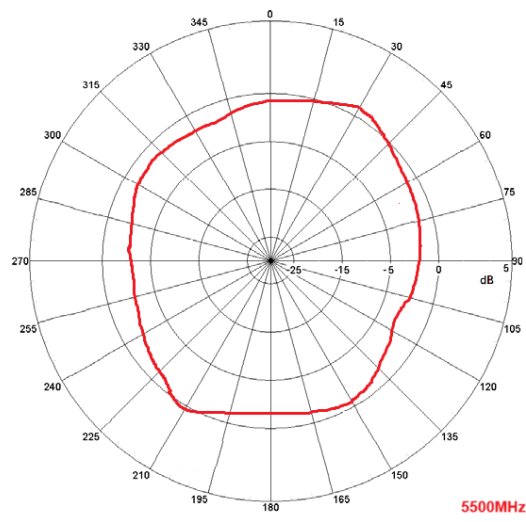
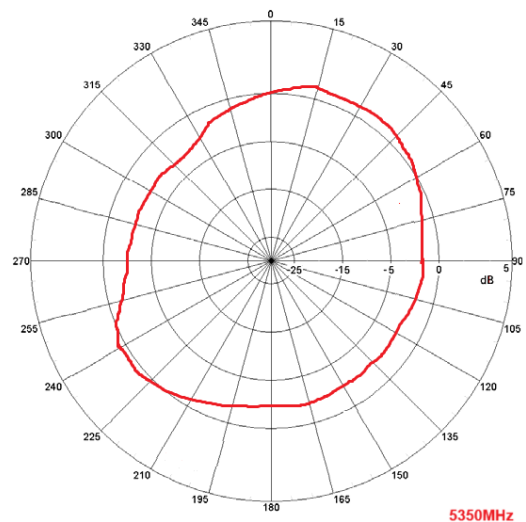
Frequency	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
TRP (dBm)	-1.64	-1.45	-1.31	-1.44	-1.45	-1.21	-1.65	-1.51	-1.53	-1.63	-1.56
Peak EIRP (dBm)	4.37	4.64	4.72	4.37	4.64	4.87	4.6	4.63	4.29	4.3	4.37
NHPRP +/- 45 (degree)	-2.06	-1.8	-1.7	-1.8	-1.79	-1.57	-1.95	-1.78	-1.81	-1.87	-1.8
NHPRP +/- 30 (degree)	-2.27	-2.03	-1.88	-2.04	-2	-1.75	-2.19	-1.97	-2.01	-2.12	-1.97
E-Theta Peak Gain (dBi)	-18.09	-15.22	-15.93	-15.27	-13.52	-13.63	-16.36	-15.62	-15.33	-15.22	-15.08
E-Phi Peak Gain (dBi)	1.34	1.63	1.71	1.35	1.64	2.00	1.58	1.61	1.26	1.3	1.34
E-Total Peak Gain (dBi)	1.37	1.64	1.72	1.37	1.64	2.00	1.6	1.63	1.29	1.3	1.37
Directivity (dBi)	6.01	6.08	6.04	5.81	6.1	6.08	6.25	6.14	5.82	5.93	5.93
Efficiency (%)	68.52	71.68	73.89	71.85	71.53	75.62	68.4	70.57	70.37	68.71	69.88



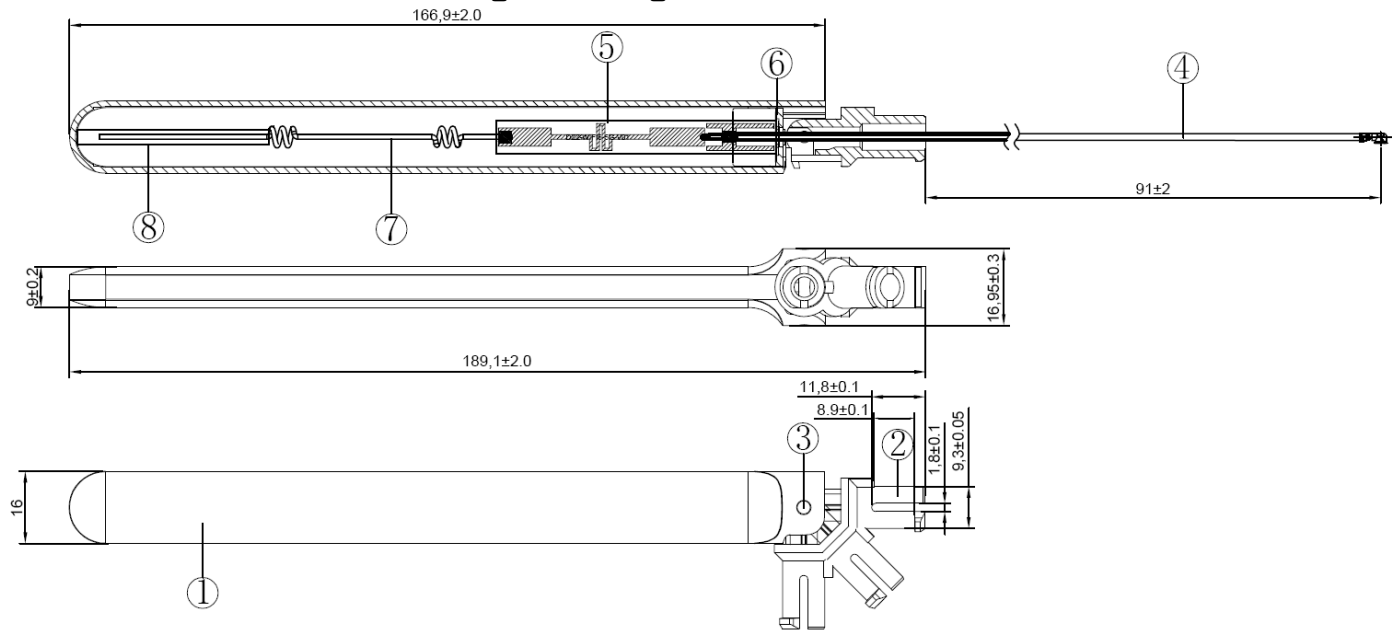
5GHz

Frequency (MHz)	Gain(dB)	Efficiency(%)
5150	1.6985	66.8799
5200	1.7855	69.0049
5250	1.9904	68.4193
5300	1.5688	67.9594
5350	1.4969	69.4033
5400	1.3711	70.7349
5450	1.5654	74.8927
5500	1.452	72.9257
5550	1.6178	75.6981
5600	1.0588	68.3601
5650	1.3308	71.4817
5700	1.566	71.4289
5750	1.9895	73.4546
5800	1.5778	68.6961
5850	1.6087	66.8094





5. Mechanical and Packing Drawing



Unit: mm