

FPC Antenna specification acknowledgment

Product Specifications for A pproval

customer name:

Antenna band: 2400-2500/5150-5850MHz

Version: A0 Production Date: 2024-09-20

Number: HS-NZ-FPC-001

structure:		radio frequency:	
examine and verify:		ratify:	
Customer confirmation			
Customer review:		Customer approval:	

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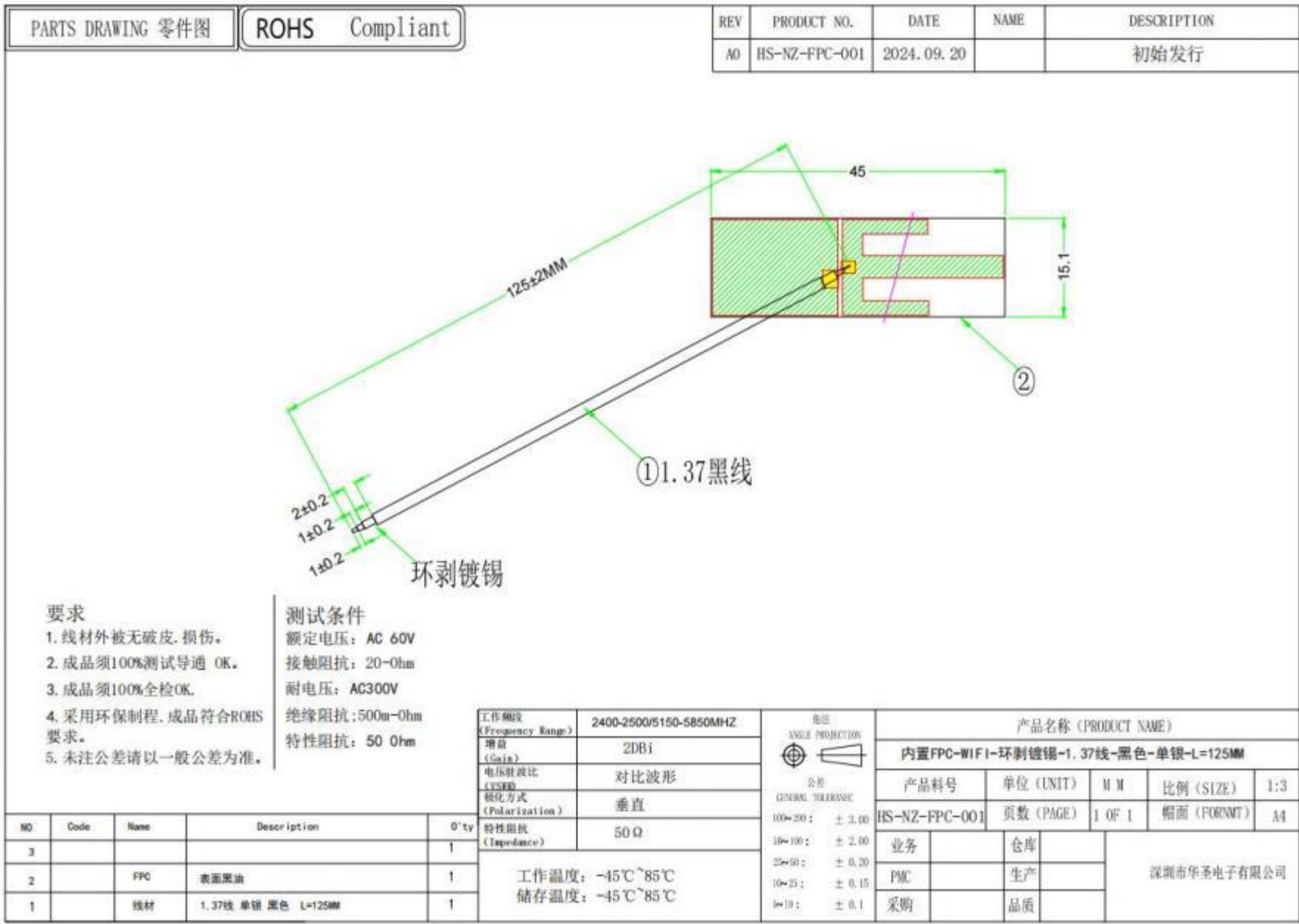
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amendant record

Version date	Engineers modification
A02024-09-20	



Product characteristics specification sheet

I. Basic characteristics of products:

Product type: FPC antenna-WIFI dual frequency-ring stripping tin-1.37 wire-double tin wire-black-L=125MM	
DESCRIPTION	VALUE
Frequency range (working band)	2400-2500/5150-5850MHz
Impedance (Characteristic impedance)	50 Ω
V.S.W.R (voltage standing wave ratio)	Compare the sample waveform
Gain(gain)	2DBi
Radiation (Directionality)	Omni-directional
Polarization (linearization mode)	linear Vertical
Admitted power (power)	1W
Connector (joint type)	/
Operating temp (working temperature)	-45℃~+85℃
Storage temp (storage temperature)	-45℃~+85℃

1. Summary Overview:

This report to account for the measurement setup and result of the Antenna. The measurement setup includes s-parameter, The measured data for Antenna are presented and analysis.

This report is used to illustrate the results of the measured antenna, which includes the voltage standing wave ratio and reflection coefficient of S parameters, for the data representation and analysis of the measured antenna

2. Measurement of S-Parameter Measurement S parameters:

A. Reflection coefficient Reflection coefficient:

(a) Instrument (Protocol): Network Analyzer (Network Analysis Protocol). (b) Setup establishment:

(1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.

The calibration of the instrument is performed by the OSL calibration kit for one port.

(2) Connect the antenna under test to the Network Analyzer.

Connect the antenna under test to the network analysis protocol.

(3) Measure the S_{11} (reflection coefficient) shown in Fig. 1.

Measure S_{11} as shown in Figure 1.

(4) Generally, the S_{11} is less than -10dB to ensure the 90% VSWR 2.0:1 power into antenna and only less than 10% power back to system.

Generally, the S_{11} is less than -10dB VSWR less than 2.0: 1 to ensure that 90% of the power is converted into the antenna and less than 10% of the power is reflected back into the system.

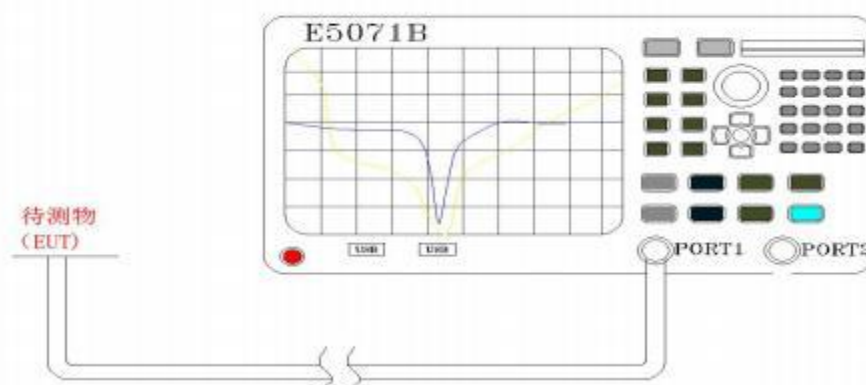


Fig.1 Antenna measured in Network Analyzer Figure 1 Antenna measurement network analyzer

3. Measurement results of S-Parameter Measurement Result S parameters:

S-Parameter test dataS parameter measurement data:

Frequency MHz Working frequency band	2400	2450	2500	5150	5850
V.S.W.R Stationary Wave Ratio	1.41	1.48	1.61	1.53	1.66

S-Parameter test image S parameter measurement image:



picture of real products:

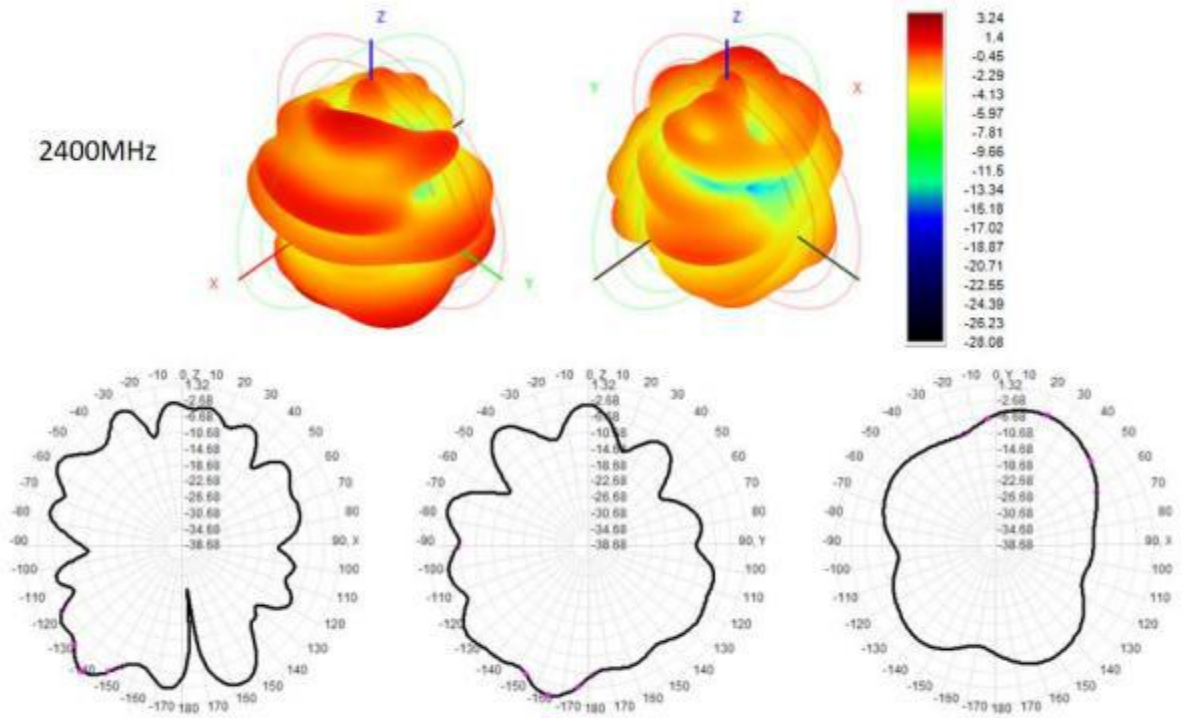


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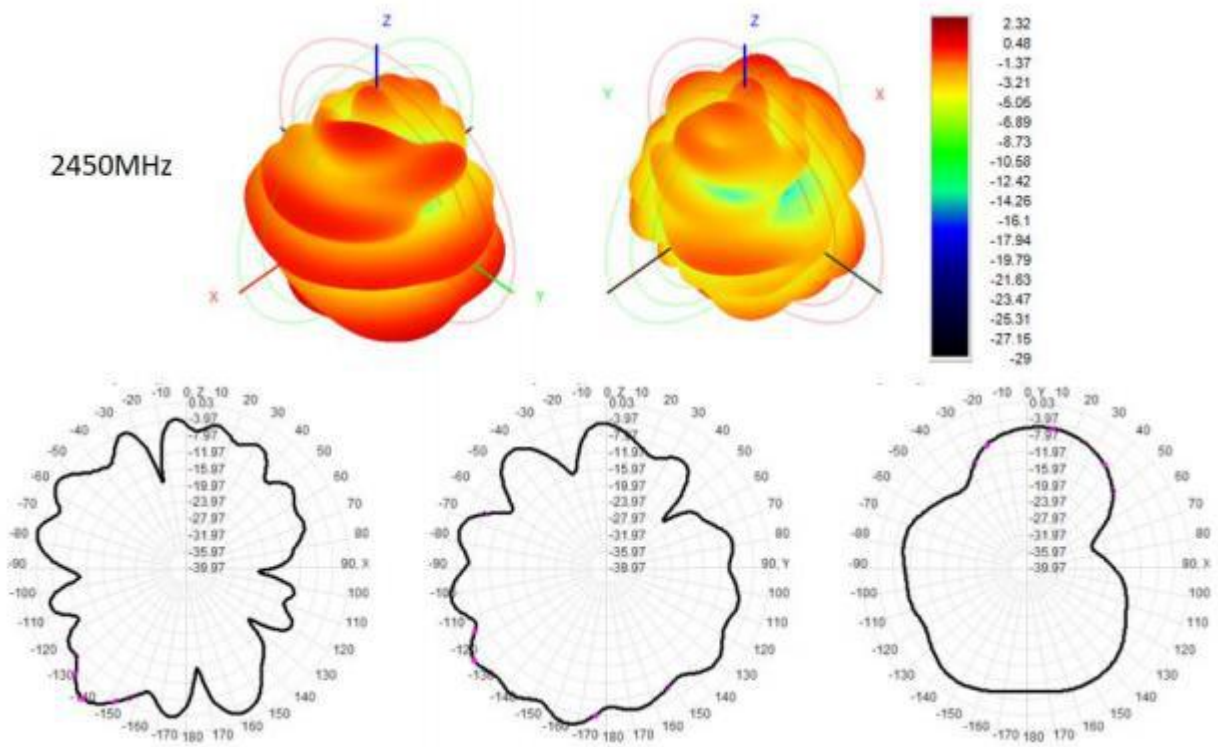
Frequency (MHz) (工作频段)	Efficiency (%) (效率)	Peak GAIN (dBi) (增益)
2400	28.37	1.71
2450	23.71	1.83
2500	29.70	1.88
5150	32.45	1.94
5850	40.68	2.02

2D,3D

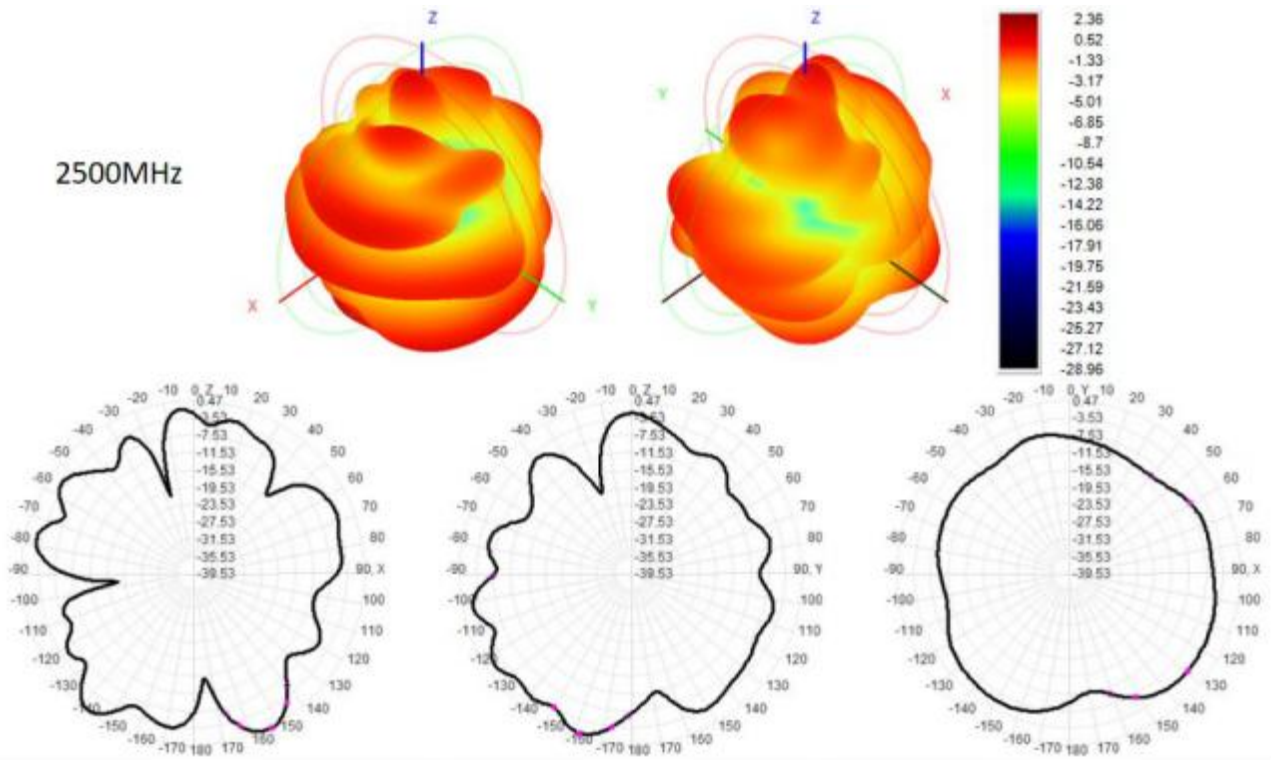
2400MHz



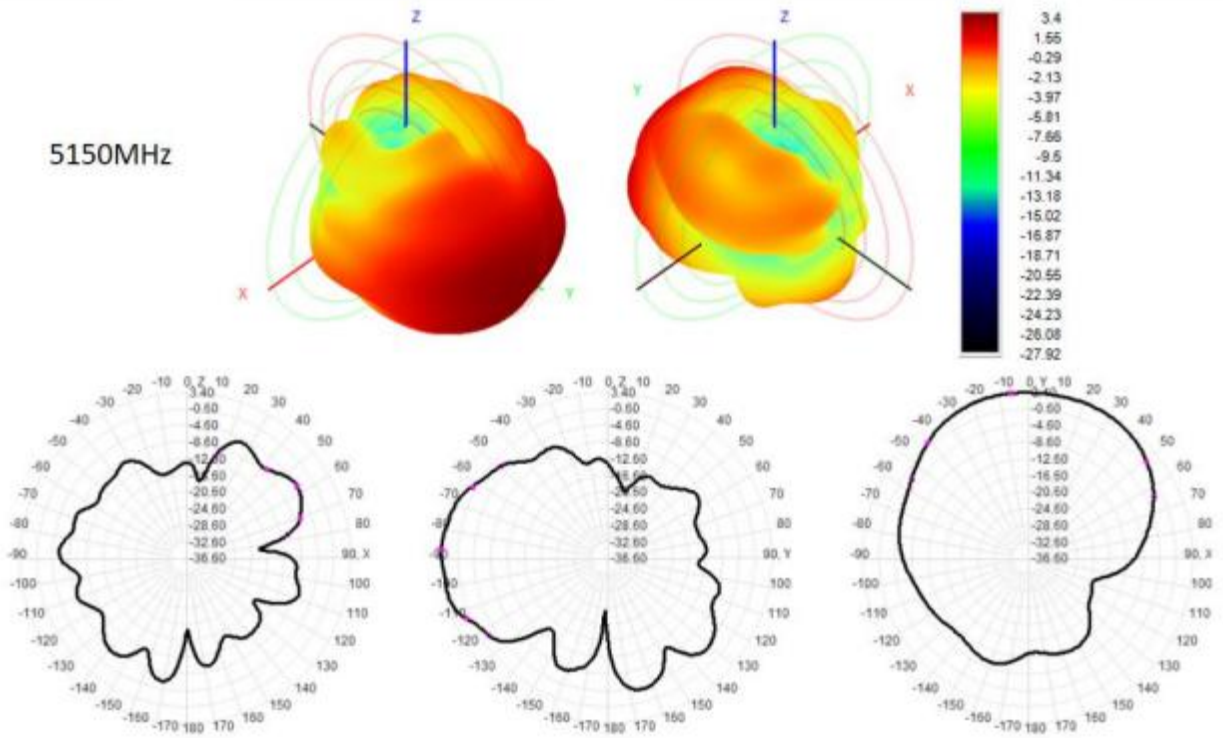
2450MHz

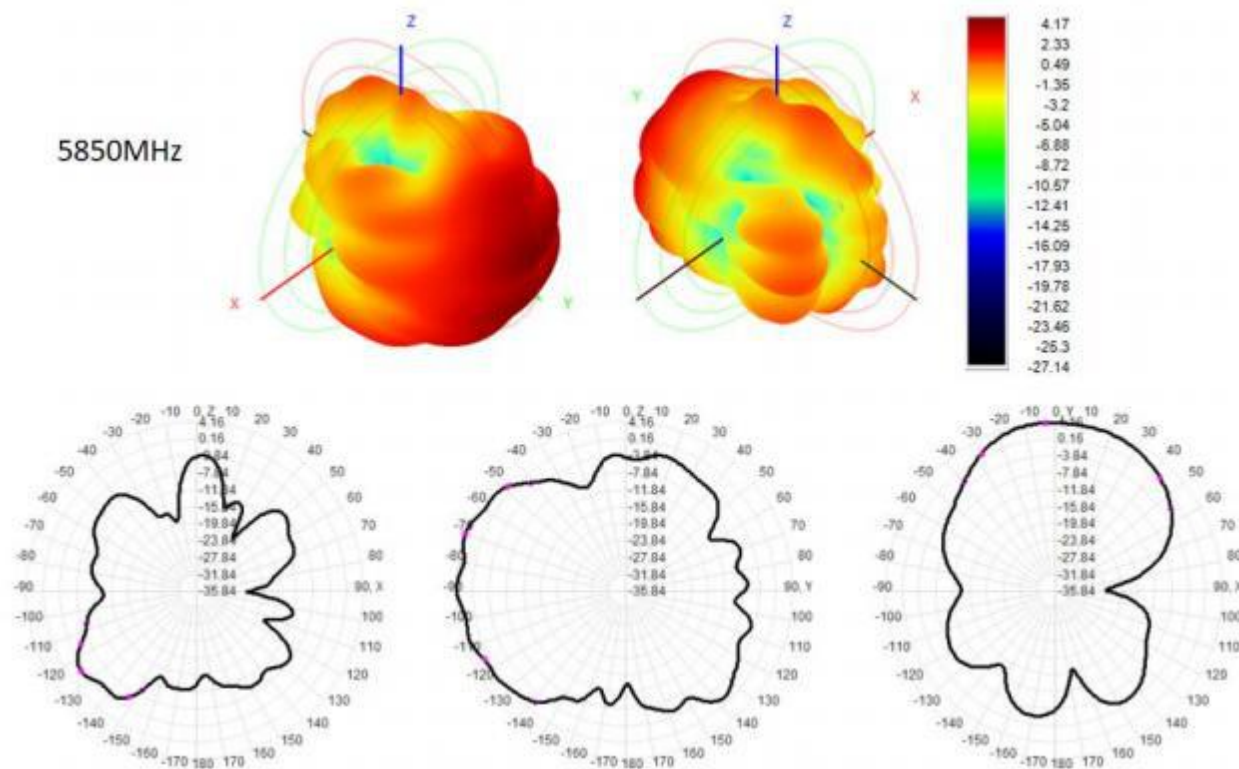


2500MHz



5150MHz





Environmental testing requirements

order	test item	Test method and conditions	testing facility	test result
1	Temperature and humidity testing	Refer to method EIA 364-31, test condition A The purpose of this test procedure is to evaluate products used in detailed standard test methods that are affected by high humidity and heat to affect material performance. ask: temperature:85℃ Humidity: 90~95% (R.H) Time: 72 hours	K.SON INS THS-A4L-150	qualified
2	Low temperature test	Refer to the electronic test specifications: The samples shall be placed in a constant temperature environment with a temperature set at-45℃ ask: Time: 24 hours	K.SON INS THS-A4L-150	qualified

3	High temperature testing	Refer to electronic test specifications: The samples shall be placed in a constant temperature environment with a temperature set at 85°C.	K.SON INS THS-A4L-150	qualified
		ask: Time: 24 hours		
4	Cold and hot shock	Refer to the electronic test specifications: The samples shall be placed in a fixed environment with a temperature set at -45 to 85°C.	K.SON INS THS-A4L-150	qualified
		ask: More than 8 hours. (30 minutes per session, 12 cycles)		
5	Salt Spray Test	Refer to Feisheng Electronics test specification: The samples shall be placed in a fixed environment as required: NaCL concentration: 40-60g/1Kg pH: 6.5-7.2 Test time: 24H	Salt spray tester	qualified
		1. Gold-plated products shall not have rust spots or peeling 2. Other nickel, tin and zinc plating products on the same shaft or surface shall not have more than two rust spots.		

Mechanical test requirements

order	test item	Test method and conditions	testing facility	test result
1		test condition A The purpose of this test procedure is to evaluate the performance of materials by moving or handling products used in detailed standard test methods.	Vibration	qualified

Vibration
testing

ask:

Vibration range: 10-55HZ

Displacement amplitude: 0.35mm

Acceleration amplitude: 50.0M/S

testing
machine

		Scan frequency cycle: 30 times		
2	drop test	Refer to the electronic test specifications: The samples to be tested should be placed at a certain height, which is set at 1M, and freely dropped 3 times in the direction of 6 surfaces	Drop test fixture	qualified
		ask: The mechanical characteristics of the product are normal after the drop test		
3	strain relief test	Refer to the electronic test specifications: The test object is fixed by the fixture, and the force is applied in the opposite direction with a certain force so that the product assembly cannot fall off.	Tensile testing machine	qualified
		ask: 1. The product assembly shall not be detachable. 2. Minimum pull: 1.2KG		

Note: Electronic execution of the above mechanical and environmental parameters is carried out before R&D and trial production.