

Antenna Specification

Specification: External dual-band antenna / 50 Ω / 2.4 – 2.5 GHz and 5.15 – 5.85 GHz

/ Four-Corner Board-Mount Pin

Connector / Black Dual-Band Antenna

Description: 2.4 GHz and 5.8 GHz antenna

Manufacturer: Shenzhen Luhengda Electronic Technology Co., Ltd.

Address: No. 7, Xiantang Da Wang Industrial Zone, Dakang
Community, Yuanshan Subdistrict, Longgang District, Shenzhen City

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1、Antenna Photograph



(Photograph for reference only. The mechanical drawing takes precedence.)

2、Electrical Parameters

Parameter	Specification
Frequency range	2.4~2.5 GHz and 5.15 – 5.85 GHz
Characteristic impedance	50 Ω
Voltage standing wave ratio	2.4~2.5 GHz $\leq$ 2.0
Antenna gain	3.74dBi @2.4 GHz
Polarization	Vertical polarization
Return loss	-9.2 dB MAX

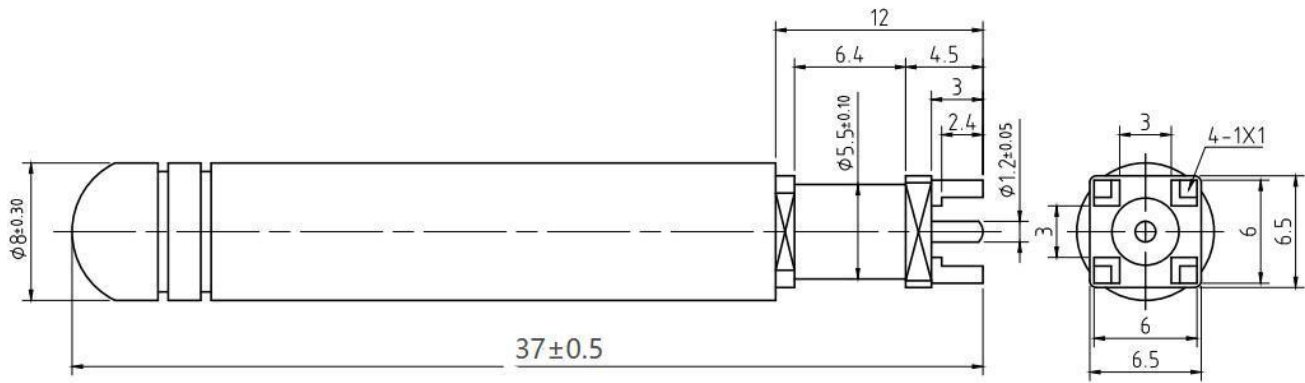
3、Mechanical Specifications

Parameter	Specification
Antenna color	Black
RF cable model	/
Connector type	Four-Corner Board-Mount Pin Connector

4、Operating / Storage Temperatures

Parameter	Range
Operating temperature	-40 to +85 °C
Storage temperature	-40 to +85 °C

5、Structural Drawings



Antenna length: 37 ± 0.5 mm

Antenna width: 8 ± 0.3 mm

6、Environmental and Reliability Tests

(1) Environmental test

High and Low Temperature and Constant Humidity Test Report						
Test items	High-temperature, low-temperature, and constant-humidity testing					
Test sample	Rubber-duck antenna			Test Date	November 15, 2023	
Experimental/Test ing Equipment	Constant Temperature and Humidity Test Chamber Network Analyzer			Number of tests	5PCS	
Inspection Standards	1. Metal surface plating shall be free from peeling, cracks, wrinkling and other defects. Non-metallic parts shall be free from discoloration, cracks, deformation, debonding and other defects. 2. Electrical performance shall meet the design requirements, and the VSWR test shall pass.					
Test Name	Test Items	Requirement	Test Method	Actual Test Data	Result	
					Sample	Determination
High Temperature Test	Temperature (°C)	+80 ± 3 °C	GB 2423.1-89, Clause 9.	+85 °C	1	Pass
	Sample temperature stabilization time (h)	1 h		1.2 h	2	Pass
	Test duration (h)	1 h		2.3 h	3	Pass
	Recovery time (h)	1 h		1 h	4	Pass
					5	Pass
Low Temperature Test	Temperature (°C)	−40 ± 3 °C	GB 2423.1-89, Clause 8.	−40 °C	1	Pass
	Sample temperature stabilization time (h)	1 h		1.2 h	2	Pass
	Test duration (h)	2 h		2.4 h	3	Pass
	Recovery time (h)	1 h		1.1 h	4	Pass

					5	Pass
Constant Damp-Heat Test	Temperature (°C)	+40 ± 2 °C	GB 2423.3- 93, Clause 5.	+42 °C	1	Pass
	Relative humidity (%)	90 – 95%		92%	2	Pass
	Test duration (h)	21 h		22 h	3	Pass
	Recovery time (h)	1 h		1.1 h	4	Pass
					5	Pass

(2) Salt Spray Tests

Salt Spray Test Report					
Test items	Salt spray test				
Test sample	Rubber rod antenna		Test Date	November 15, 2023	
Experimental/Test ing Equipment	Salt spray corrosion test chamber		Number of tests	5PCS	
Test method	Place the samples in the salt spray corrosion test chamber containing the prepared salt solution and perform continuous spraying.				
Salt solution concentration	52 g/L	Salt solution pH: 6.5 – 7.2	Test duration	48 h	
	55 g/L	Salt solution pH: 6.8	Test duration	50 h	
Test standard	Conduct the test in accordance with GB/T 10125, Corrosion tests in artificial atmospheres — Salt spray tests. Rate the results in accordance with GB/T 6461-2002, Metallic and other inorganic coatings on metallic substrates — Rating of test specimens and manufactured articles subjected to corrosion tests.				
Result					
Number	equired corrosion rating		Actual corrosion rating	Result	Remarks
1	Rp/Ra=10/10vsB		Rp/Ra=10/10vsB	Pass	
2	Rp/Ra=10/10vsB		Rp/Ra=10/10vsB	Pass	
3	Rp/Ra=10/10vsB		Rp/Ra=10/10vsB	Pass	
4	Rp/Ra=10/10vsB		Rp/Ra=10/10vsB	Pass	
5	Rp/Ra=10/10vsB		Rp/Ra=10/10vsB	Pass	

7、Test Equipment

(1) Agilent E5071C Network Analyzer



(2) HP 8594E Spectrum Analyzer



(3) CMW-500

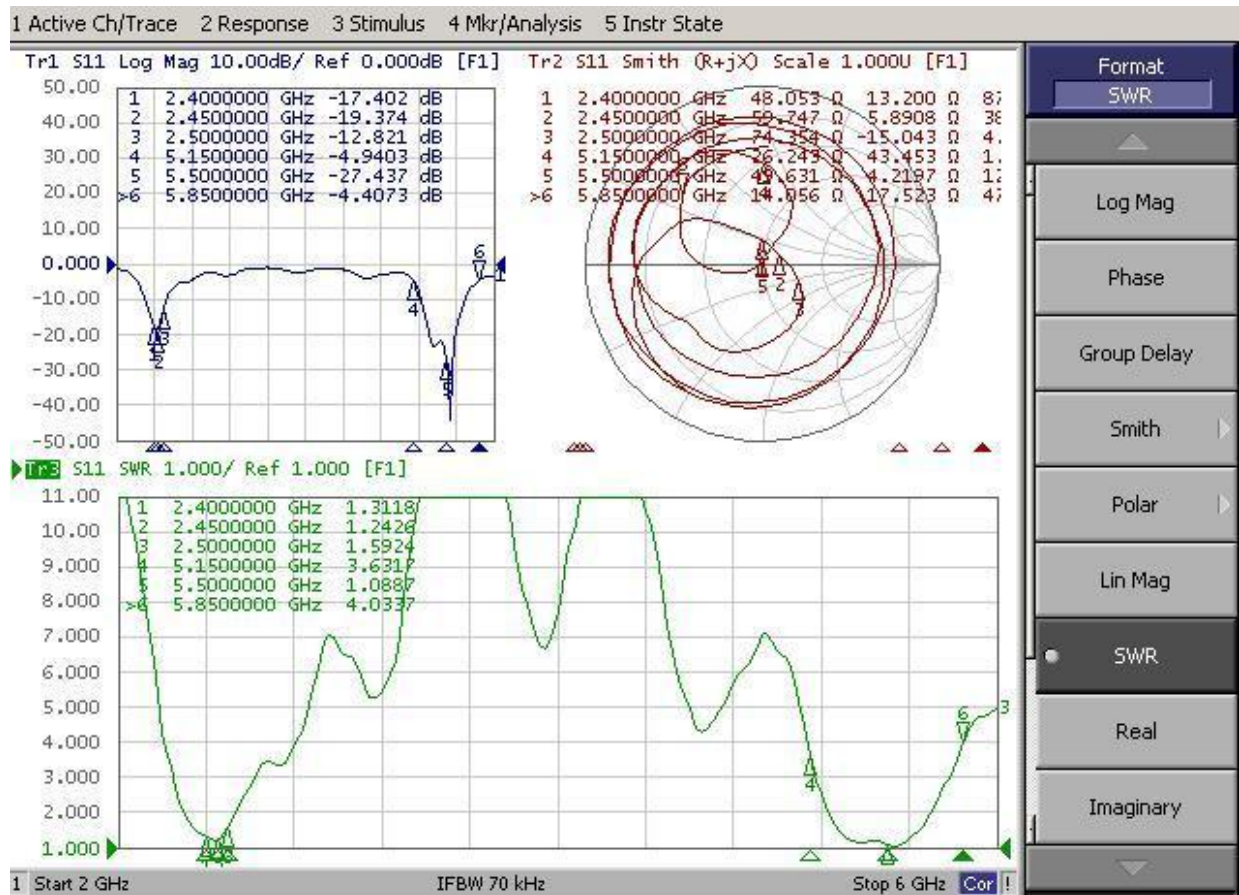


(4) Microwave Anechoic Chamber



8、Test parameters

(1) V.S.W.R and Return Loss



(2) Gain and Efficiency

FEITUKEJI											
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Gain (dBi)	1.88	2.15	2.77	3.14	3.30	3.74	3.55	3.39	2.90	3.00	3.04
Efficiency (%)	42.37	42.69	45.69	45.22	44.74	47.26	50.24	53.01	49.54	48.37	47.57

FEITUKEJI															
Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Frequency (MHz)	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0
Gain (dBi)	3.48	3.63	3.17	3.39	3.68	3.36	3.82	3.75	3.66	3.70	3.57	3.12	3.68	2.82	3.20
Efficiency (%)	54.28	58.30	51.60	55.98	59.85	56.69	60.40	57.69	50.19	56.90	55.22	53.42	55.07	49.34	50.33

(3) 2D and 3D Radiation Patterns

