

Shenzhen World Elite Electronic Co. LTD.

Sample Approval Sheet

Product Information:

Material Description	H010A 2.4G Antenna
Customer's Part number	
Specifications	FPC (26*23mm) +Gray Coaxial Cable (ϕ 1.13*130mm) +Welding+UV adhesive
Supplier's Part number	136-H010A-10A
Date	2024-9-12

Supplier:

Prepared By	Checked By	Approved By
Zhang Dengqiao	Li Yuepeng	Zhang Xiangting

Customer Approval:

Accepted By	Checked By	Approved By

Results:

- ☐ Full Approval
- ☐ Conditional Approval
- ☐ Unqualified
- ☐ Others:

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1、Specification

This report mainly provides the testing status of various electrical and structural performance parameters of H010A 2.4G Antenna.



Figure 1 Antenna

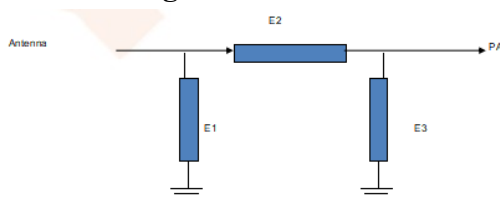
1.1 Electrical specification standard

1.1.1 Electrical Specifications

The antenna operates in the 2400-2480 MHz. The following table is the electrical performance index of the antenna designed by our company.

Antenna	H010A 2.4G Antenna
Frequency Range	2400-2480MHz
VSWR	< 2.0
Efficiency	>50%
Impedance	50 ohm
Polarization	Linear polarization

1.1.2 Antenna Matching Network



Element	Value
E1(0402)	N/A
E2(0402)	0R
E3(0402)	N/A

2、Test

The antenna was debugged and tested with the prototype provided by the customer.

2.1 Test of passive S11

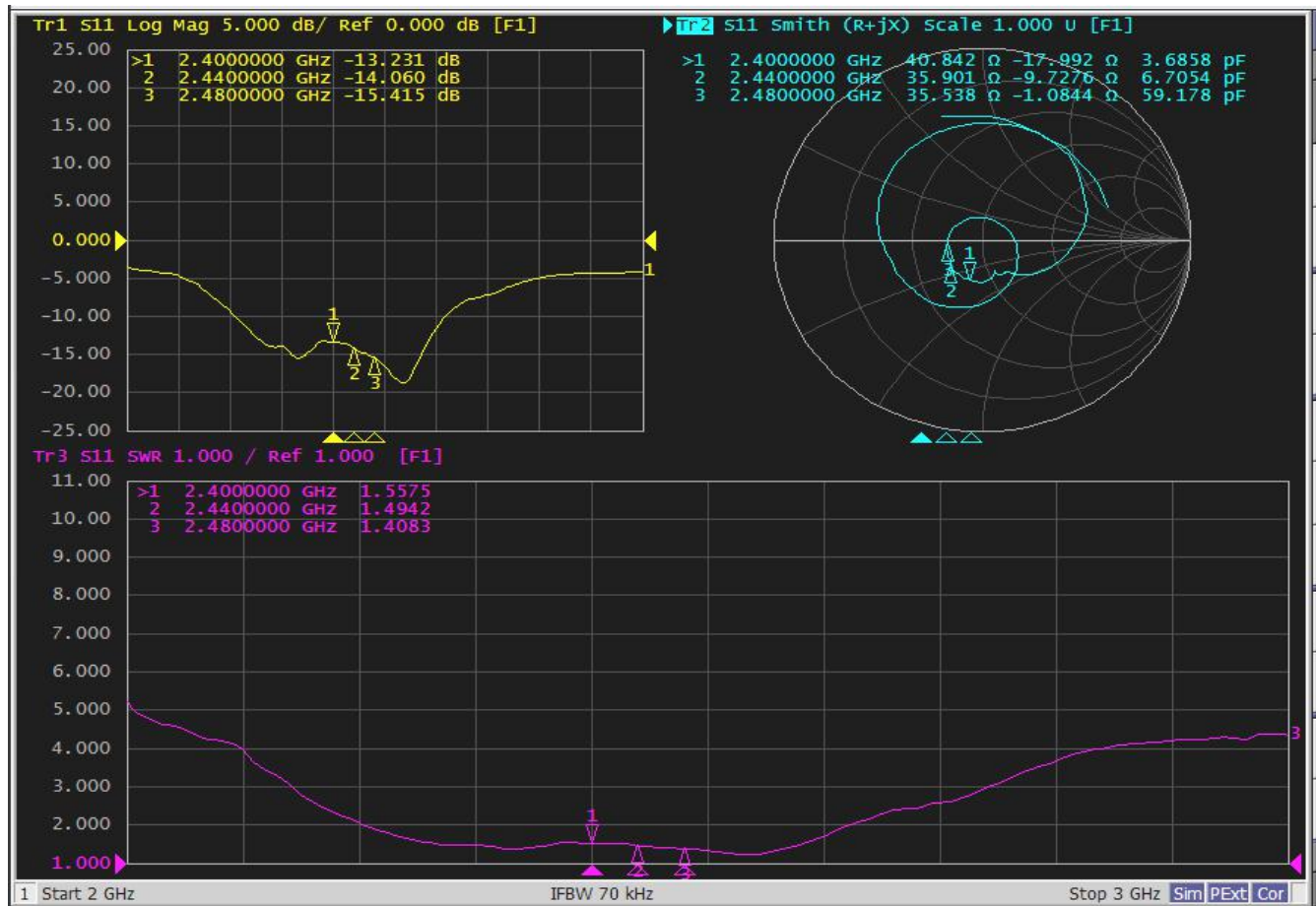
2.1.1 Test connection

The passive S11 test device is connected as follows: Network Analyzer → Test Line → Test Fixture.

2.1.2 Passive S11

The following table shows the standing wave ratio values of the edge frequency points of the antenna operating frequency band. The waveform of Return Loss and VSWR obtained by the test is shown as follows.

Frequency (MHz)	2400	2440	2480
VSWR	1.55	1.49	1.40
Return Loss	-13.23	-14.06	-15.41



2.2 Gain and efficiency test

2.2.1 Test Position

Microwave anechoic chamber, the test frequency range is 400MHz-6GHz.

2.2.2 Test equipment

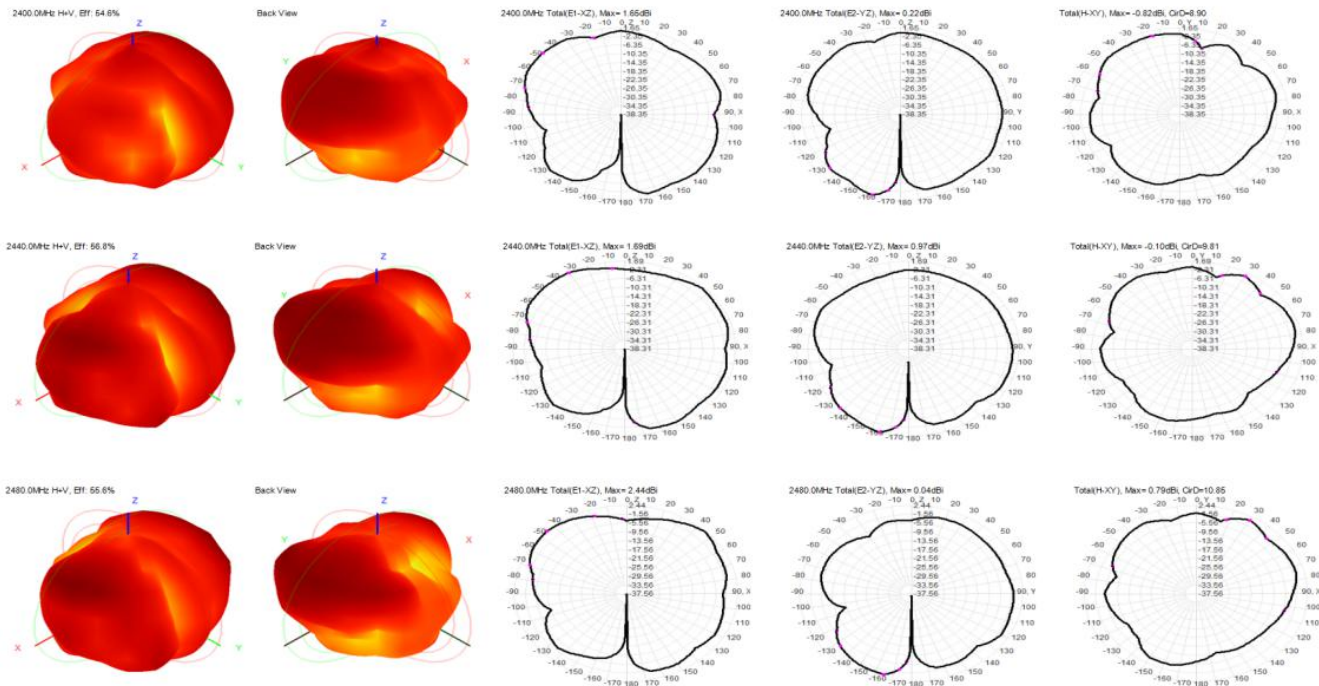
Network analyzer, standard horn antenna, multi-probe near field antenna test system, test computer, etc

2.2.3 Results Summary

In the microwave anechoic chamber, the measured values related to efficiency and gain are shown in the table below.

Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	2.52	54.70%
2410	2.35	56.60%
2420	1.98	56.60%
2430	2.04	57.10%
2440	1.89	56.90%
2450	2.13	56.70%
2460	2.37	57.00%
2470	2.58	56.70%
2480	2.64	55.70%
2490	2.82	56.40%
2500	2.93	56.50%

2.2.4 Radiation Pattern Results



3、 Conclusion

This antenna is designed on the basis of the prototype provided by the customer. The above electrical performance parameters are tested under the environmental treatment conditions of the test prototype. The electrical parameters and structural performance have met the technical requirements. Please confirm!

4、Part Drawing

1	2	3	4	5	6		7	8	
					Rev	Description		Date	Remark
					A	New drawing			

Technical drawing of a 2.4G FPC antenna. The drawing shows a rectangular substrate with dimensions 26.00±0.15 (width) and 23.00±0.15 (height). A 2.4G FPC AI antenna is mounted on the substrate, with a length of 130±2 and a diameter of Ø1.3 (Grey). UV adhesive is applied to the base of the antenna. A callout '1' points to the substrate, and a callout '2' points to the antenna.

Technical requirement:

1. Dimensions not marked as per drawing;
2. There is no poor welding phenomenon such, as false soldering, solder bonding, short circuit, etc;
3. All parts shall meet RoHS/REACH requirements.

No.	Part No.	Name	Specification	Amount	Remark
1					
2	164-B8907-22A	788907 WFL 2.4G Cabl	Ø1.13*130mm/Grey Coaxial Cabl/MHF-1 plug	1	
1	100-H010A-11A	H010A 2.4G FPC	PL, Black, 3M9471	1	

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Third Angle	Project	H010A	Date	2024-09-12
0~10 ±0.05	Part Name	2.4G Antenna	Designed by	Zhang Dengtao
10~18 ±0.10	Part No.	136-H010A-10A	Checked by	RF
18~30 ±0.12	Material	/	MD	
30~40 ±0.15	Technology		Approved by	
40~ ±0.20	Angle	±0.5°	Unit	mm
Location			Scale	1:1
			Rev	A1