

Shenzhen World Elite Electronic Co. LTD.

Sample Approval Sheet

Product Information:

Customer	Shenzhen Gwelltimes Technology Co.,Ltd.
Material Description	ETI IP3MCB1A Antenna
Customer's Part number	
Specifications	FPC (32*14mm) +Black Coaxial Cable (ϕ 1.13*80mm) +Welding
Supplier's Part number	136-KPJXX-10A
Date	2025-7-17

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:

Shenzhen World Elite Electronic Co. LTD.

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1、Specification

This report mainly provides the testing status of various electrical and structural performance parameters of ETI IP3MCB1A Antenna.



Figure 1 Antenna

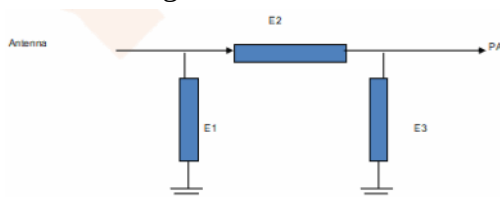
1.1 Electrical specification standard

1.1.1 Electrical Specifications

The antenna operates in the 2400-2480, 5150-5850 MHz. The following table is the electrical performance index of the antenna designed by our company.

Antenna	ETI IP3MCB1A Antenna
Frequency Range	2400-2480MHz 5150-5850MHz
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

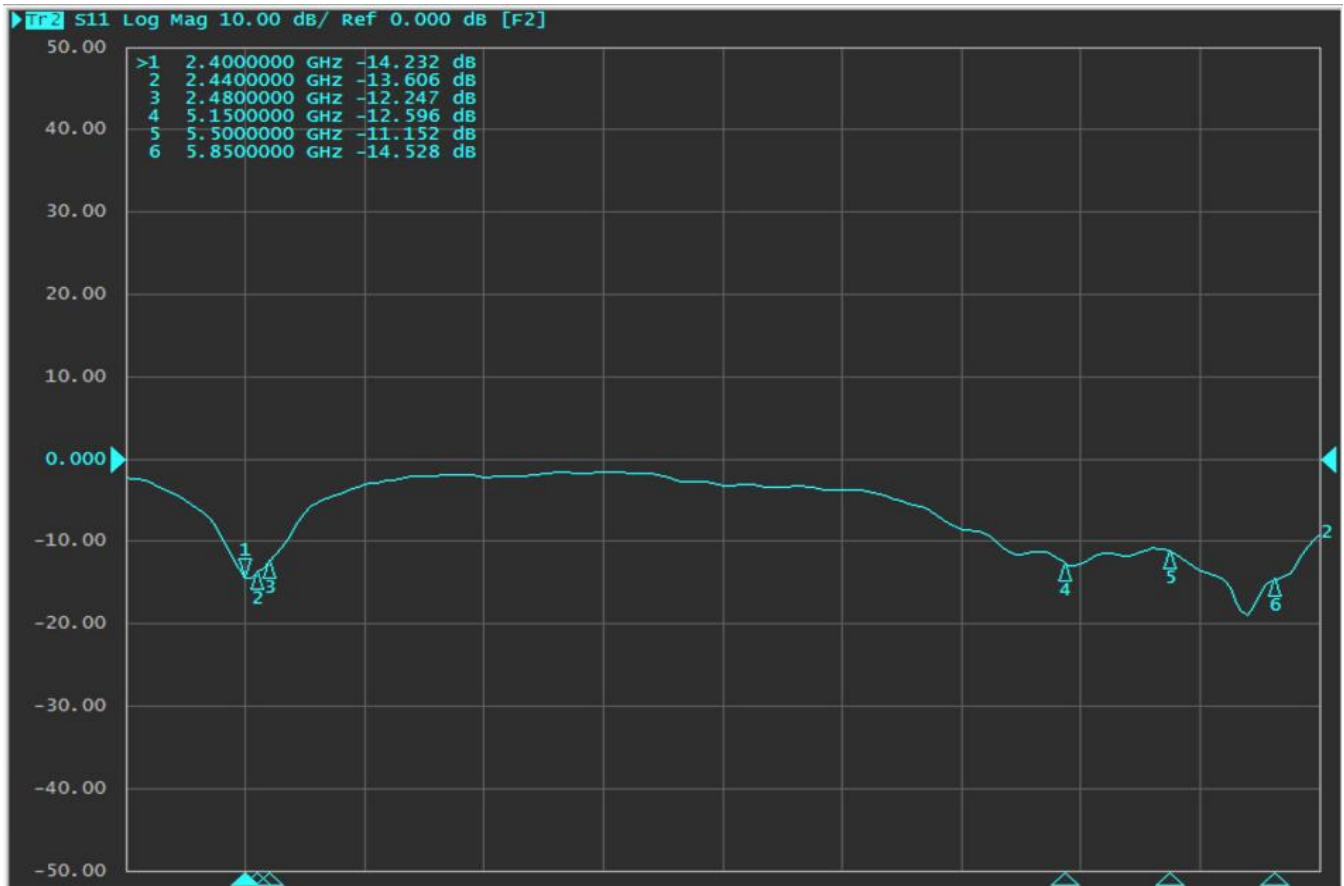
2.1.1 Test connection

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	5150	5500	5850
Return Loss	-14.32	-13.60	-12.24	-12.59	-11.15	-14.52



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

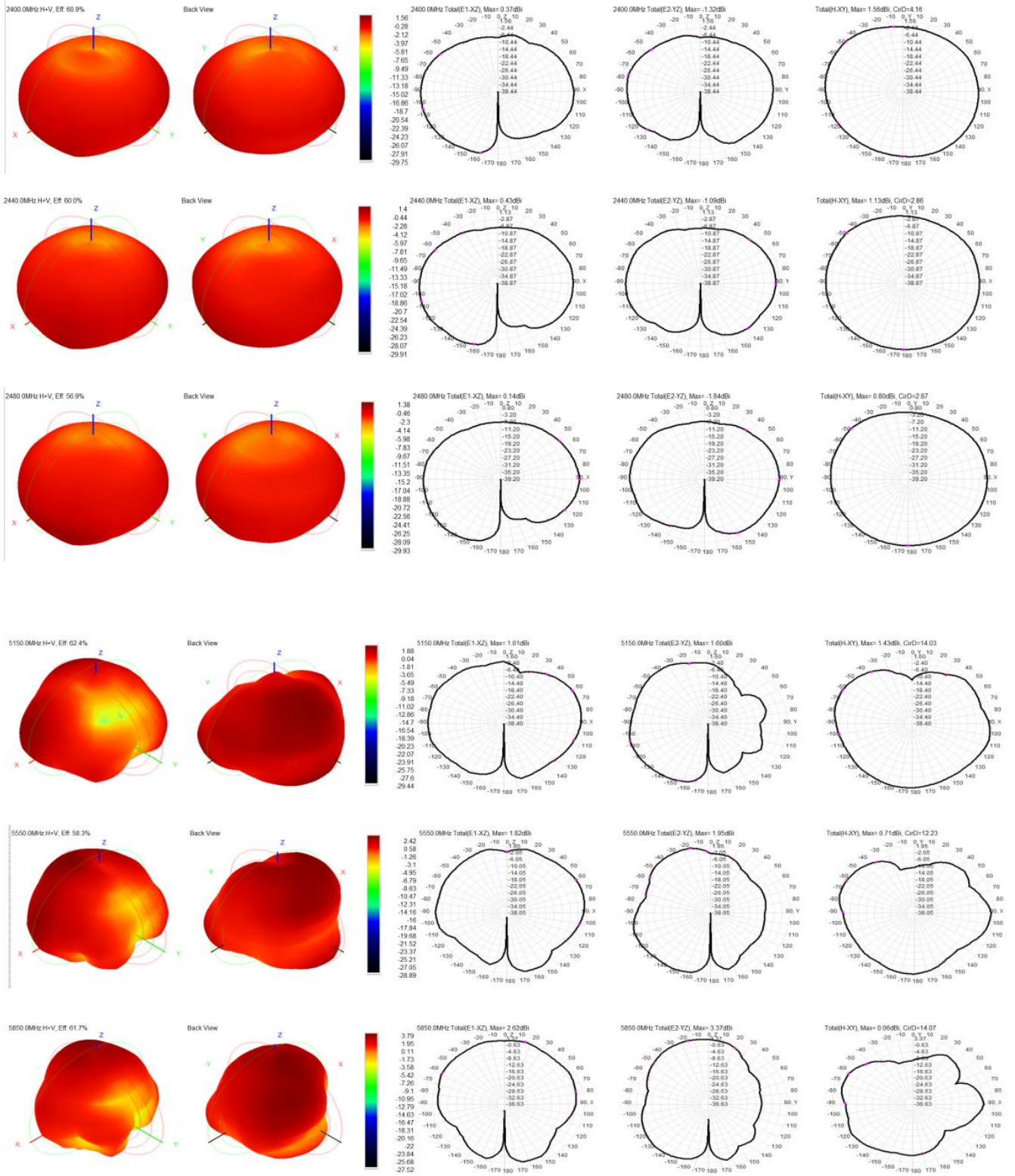
2.2.3 Results Summary

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	1.56	61.00%
2410	1.79	60.80%
2420	1.77	61.90%
2430	1.55	61.30%
2440	1.40	60.20%
2450	1.41	59.60%
2460	1.34	58.30%
2470	1.43	58.20%
2480	1.38	57.00%
2490	1.14	56.40%
2500	0.92	55.90%

Frequency(MHz)	Gain(dBi)	Efficiency(%)
5150	1.88	62.50%
5200	2.54	63.80%
5250	2.83	63.90%
5300	3.18	62.30%
5350	3.34	60.30%
5400	2.94	55.90%
5450	2.83	57.40%
5500	2.62	58.50%
5550	2.42	58.40%
5600	2.48	60.50%
5650	4.51	62.90%
5700	4.08	62.50%
5750	3.71	65.40%
5800	3.78	65.10%
5850	3.79	61.60%

2.2.4 Radiation Pattern Results



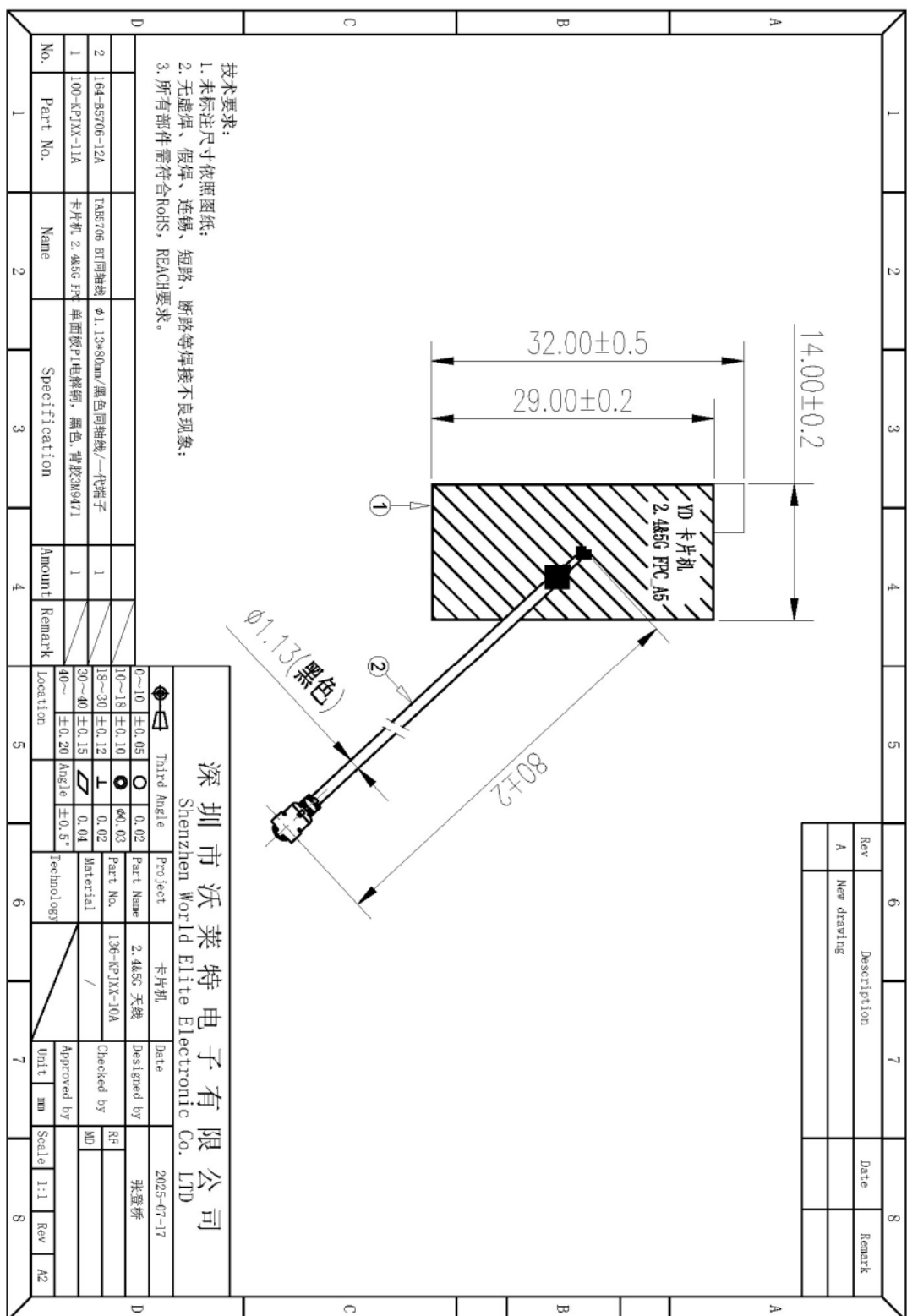
2.3 OTA test

2.3.1 Results Summary

		1#		2#	
WIFI b 11M	Channel	TRP(dBm)	TIS(dBm)	TRP(dBm)	TIS(dBm)
	1	18.42	-84.17	18.8	-84.33
	6	17.07	-83.73	17.33	-83.45
	11	17.68	-85.78	17.4	-84.33
WIFI g 54M	Channel	TRP(dBm)	TIS(dBm)	TRP(dBm)	TIS(dBm)
	1	14.3	-71.74	14.57	-71.54
	6	12.79	-71.16	13.23	-71.1
	11	13.82	-72.25	13.08	-71.39
WIFI n MCS7	Channel	TRP(dBm)	TIS(dBm)	TRP(dBm)	TIS(dBm)
	1	14.13	-66.66	14.67	-65.98
	6	12.42	-66.54	13.04	-66.74
	11	13.76	-67.63	12.94	-67.25
WIFI 11a MCS7	Channel	TRP(dBm)	TIS(dBm)	TRP(dBm)	TIS(dBm)
	36	13.03	-71.63	12.89	-71.71
	149	14.05	-72.77	12.85	-72.36
	165	14.82	-72.65	13.9	-71.53
WIFI 11ac MCS7	Channel	TRP(dBm)	TIS(dBm)	TRP(dBm)	TIS(dBm)
	36	13	-68.25	13.51	-68.04
	149	14	-69.54	13.38	-69.25
	165	15.69	-69.39	13.92	-69.17

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!



技术要求:

1. 未标注尺寸依照图纸;

2. 无虚焊、假焊、连锡、短路、断路等焊接不良现象;

3. 所有部件需符合RoHS, REACH要求。

深圳市沃莱特电子有限公司				Project			
Shenzhen World Elite Electronic Co. LTD				Third Angle			
				Part Name			
				2.4k5G 天线			
				Part No.			
				136-KPJXX-10A			
				Material			
				/			
				Technology			
				/			
				Date			
				2025-07-17			
				Designed by			
				张彦桥			
				Checked by			
				RF			
				MD			
				Approved by			
				Unit			
				mm			
				Scale			
				1:1			
				Rev			
				A2			

4、Part Drawing