

Yuande Electronics (Shenzhen) Co., Ltd

Sample Approval Sheet

Product Information:

Customer	Tianjin HUALAI Technology Co., Ltd
Material Description	WYZE V4 WIFI 2.4G Antenna
Customer's Part number	
Specifications	WYZE V4 WIFI 2.4G Antenna: FPC (L32*W9.5mm) +White Coaxial Cable (φ1.13*60mm) +Welding
Supplier's Part number	136-WYZEV4-10A
Date	2023-08-29

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:

Yuande Electronics (Shenzhen) Co., Ltd

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1、 Specification

This report mainly provides the testing status of various electrical and structural performance parameters of WYZE V4 WIFI 2.4G Antenna.



Figure 1 Antenna

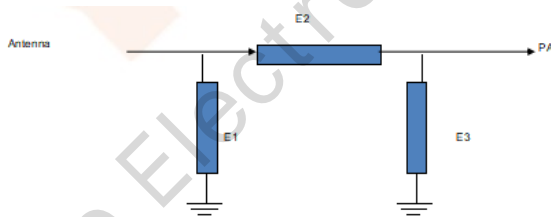
1.1 Electrical specification standard

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	WYZE V4 WIFI 2.4G Antenna
Frequency Range	2400-2480MHz
VSWR	<2
Efficiency	> 60%
Impedance	50 ohm
Type	PIFA
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

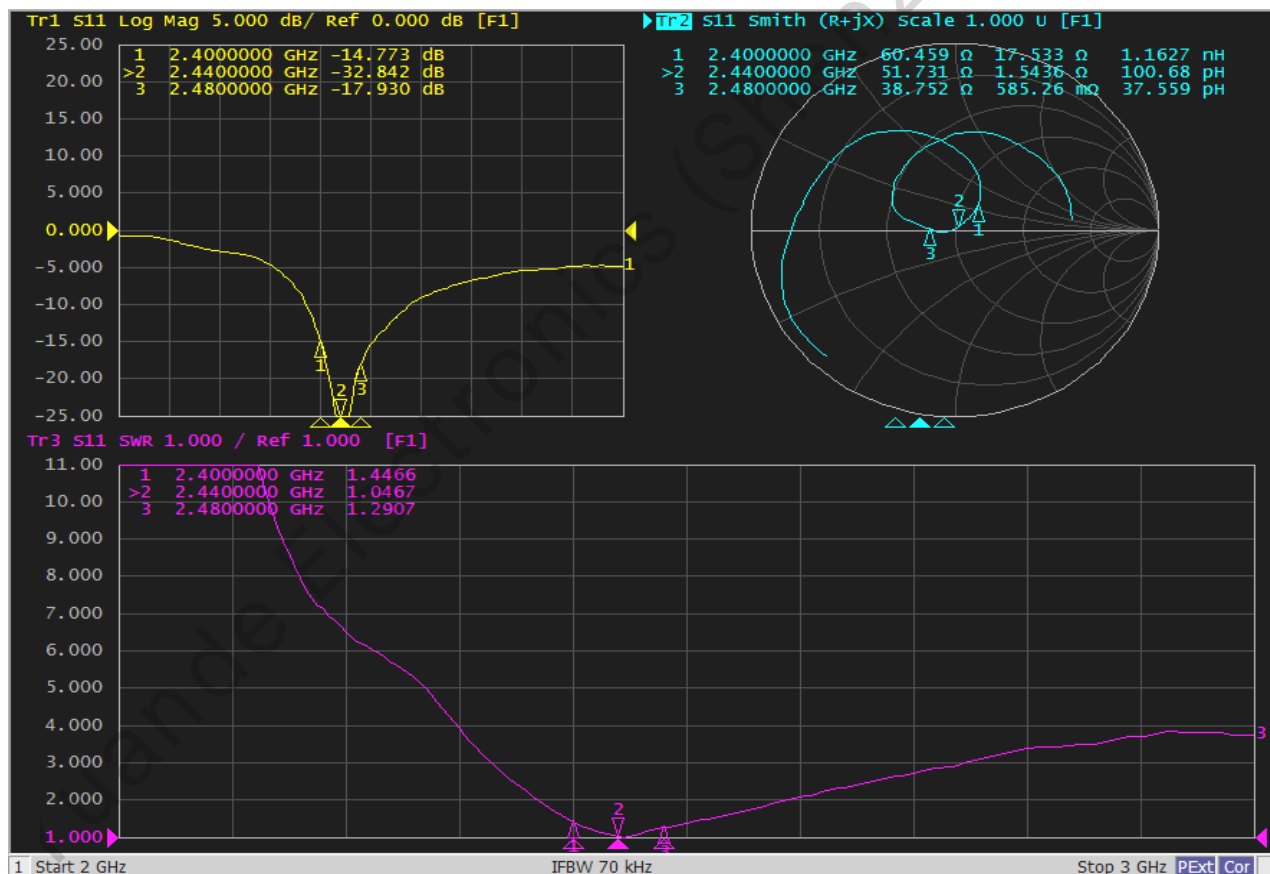
2.1.1 Test connection

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.

WYZE V4 WIFI 2.4G Antenna S11			
Frequency (MHz)	2400	2440	2480
VSWR	1.45	1.05	1.29
Return Loss	-14.77	-32.84	-17.93



2.2 Gain and efficiency Test

2.2.1 Test Position

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

2.2.2 Test equipment

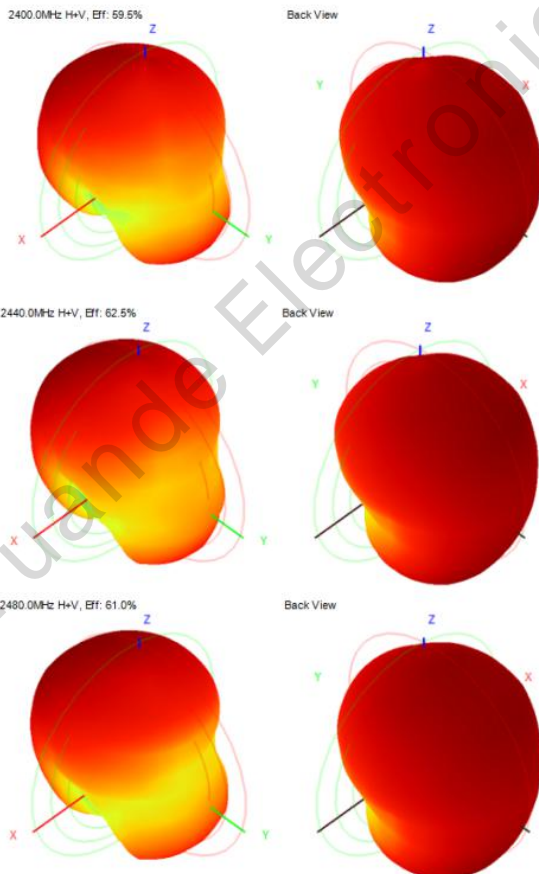
Network analyzer, standard horn antenna, multi-probe near field antenna test system, test computer, etc

2.2.3 Results Summary

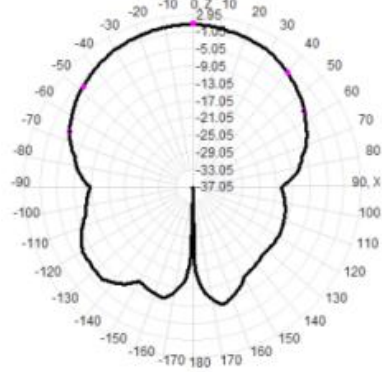
In the microwave anechoic chamber, the measured values related to efficiency and gain are shown in the table below.

Frequency(MHz)	Gain(dBi)	Efficiency(%)
2400	3.01	59.50
2410	3.03	60.01
2420	3.06	60.98
2430	3.08	61.80
2440	3.10	62.52
2450	3.10	62.50
2460	3.08	61.59
2470	3.07	61.42
2480	3.06	61.03

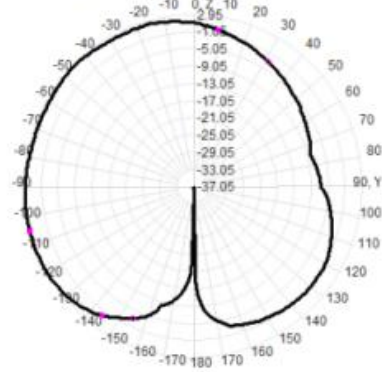
2.2.4 Radiation Pattern Results



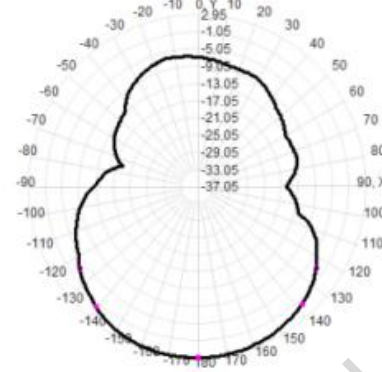
2400.0MHz Total(E1-XZ), Max= 0.74dBi



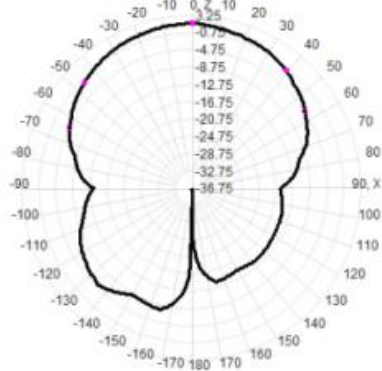
2400.0MHz Total(E2-YZ), Max= 2.95dBi



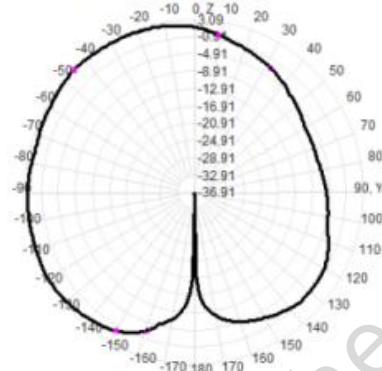
Total(H-XY), Max= 2.73dBi CirD=21.56



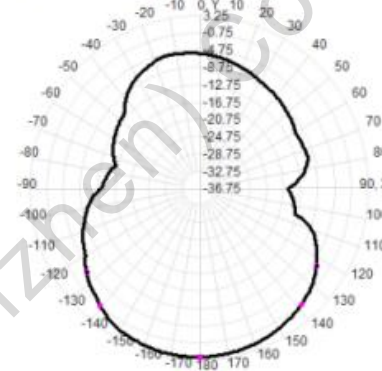
2440.0MHz Total(E1-XZ), Max= 1.43dBi



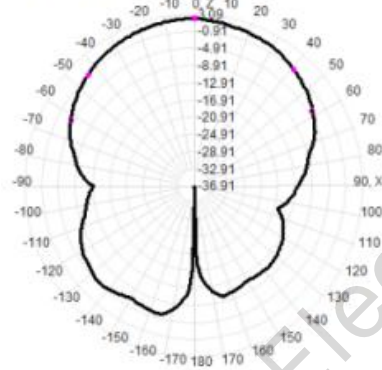
2440.0MHz Total(E2-YZ), Max= 3.09dBi



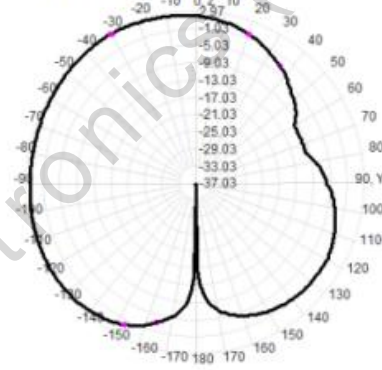
Total(H-XY), Max= 2.20dBi CirD=18.54



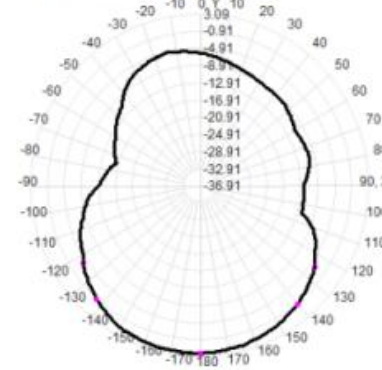
2480.0MHz Total(E1-XZ), Max= 2.07dBi



2480.0MHz Total(E2-YZ), Max= 2.97dBi



Total(H-XY), Max= 1.96dBi CirD=18.48

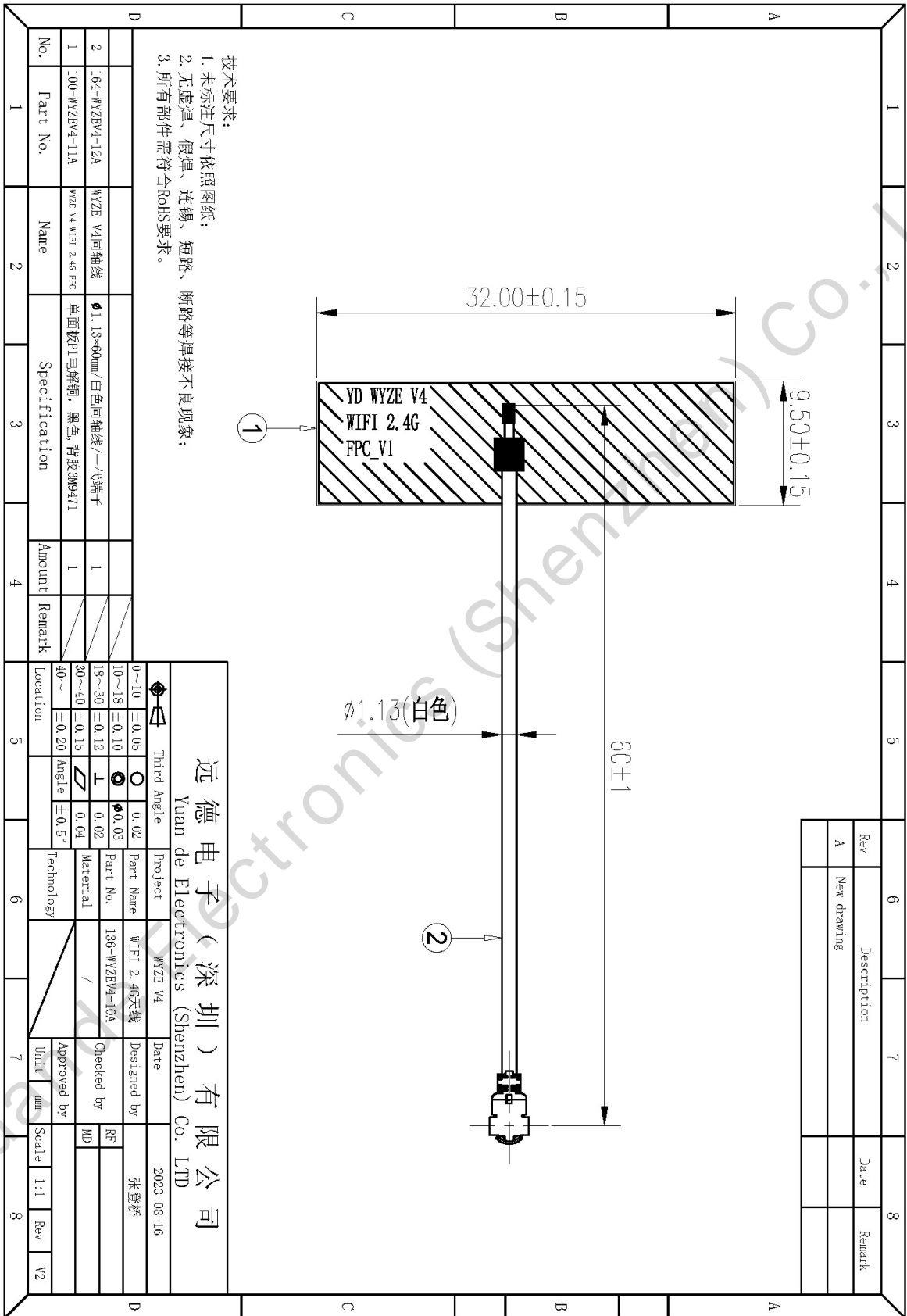


3、 Conclusion

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!

ruande Electronics (Shenzhen) Co., Ltd.

4、Part Drawing



- 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要求。

No.	Part No.	Name	Specification	Amount	Remark
1	100-WYZE V4-11A	WYZE V4 WIFI 2.4G FPC	单面板PI电浆铜, 黑色, 背胶3M9471	1	
2	164-WYZE V4-12A	WYZE V4同轴馈线	φ1.13±0.03mm/白色同轴馈线/一代端子	1	

Third Angle		Project		Date	
0°~10°	±0.05	WIFI 2.4G天线	WYZE V4	2023-08-16	张登桥
10°~18°	±0.10	Part No.	136-WYZE V4-10A	Designed by	
18°~30°	±0.12	Material	/	Checked by	RF
30°~40°	±0.15	Technology		Approved by	MD
40°~	±0.20	Angle	±0.5°	Unit	mm
Location			Scale	1:1	Rev
					V2

远德电子(深圳)有限公司
Yuan de Electronics (Shenzhen) Co. LTD

Rev	Description	Date	Remark
A	New drawing		