



## Shenzhen Tianweixun Wireless Technology Co., Ltd.

shenzhenTian wei xun wireless technology co.,ltd.

Product performance and specification approval letter

### Product performance and specification

client's name:

CUSTOMER NAME

Shenzhen Maizi Intelligent Co., Ltd.

product name:

PRODUCT NAME

SN88

Tianweixun material number:

BOARD MODE L

DE007-02

client Client	Producer Admit manufacturing partyR		
client confirmation <b>Customers confirmation</b>	Quality department <b>Quality department</b>	&D Department <b>R&amp;D</b>	approved <b>Approval</b>
		ME:  RF:	
<b>Date (Date):</b>	<b>Date: May 5, 2023</b>		

Shenzhen Tianweixun Wireless Technology Co., Ltd.

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Confidentiality

requirements Shenzhen Tianweixun Wireless Technology Co., Ltd. already owns the information provided by proprietary technology, and it is not allowed to disclose to any person or company without the prior written consent of Shenzhen Tianweixun Wireless Technology

## Shenzhen Tianweixun Wireless Technology Co., Ltd.

Liao Xianming		Product specification	Version	A1
Publishing department	R & D Center		issue date	2023-5-5

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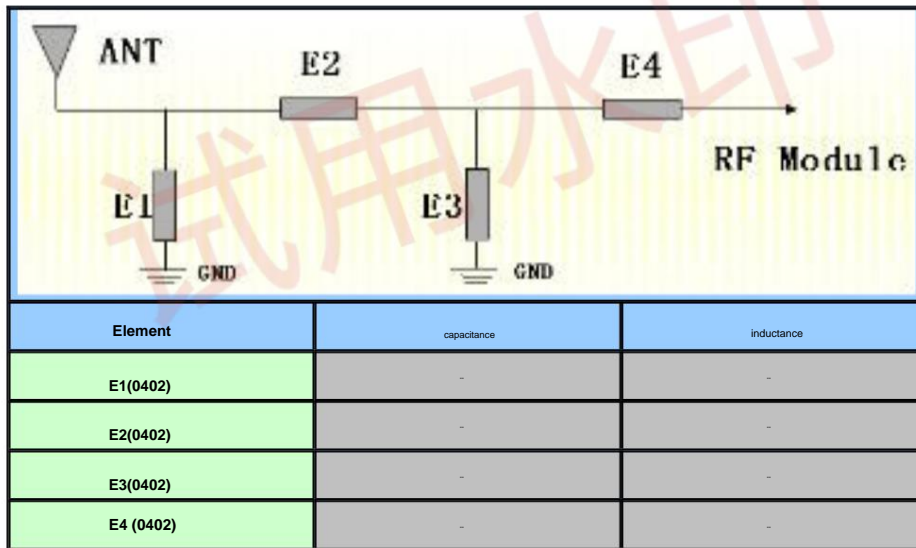
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1.1 Project Diagram



SN88

1.1.1 Antenna matching picture



Matching Description: The matching is based on the original main board and has not been changed.

2.1 Purpose

To regulate the specifications and test methods of mobile communication terminal antenna products produced by Shenzhen Tianweixun Wireless Technology Co., Ltd. range, to avoid errors caused by different test conditions and methods.

3.1 Antenna

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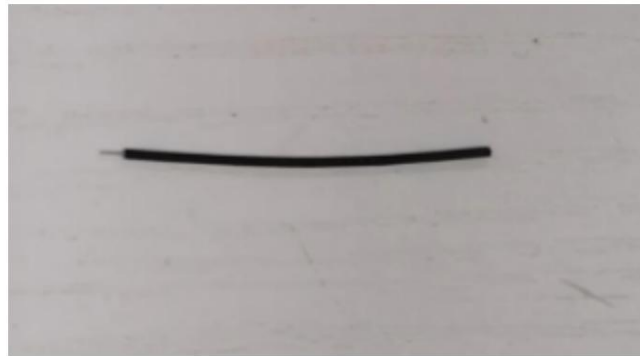
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3.1.1 Antenna Electrical Specifications and Materials

This report mainly provides the test status of the structural performance parameters of the SN 8 8 antenna.



The physical picture of the antenna designed by Tianweixun

3.1.2 Antenna form:

Implementation type: monopole antenna

Antenna material: Bluetooth antenna

3.1.3 Antenna design working frequency band:

The working frequency band of the antenna is 2412MHz- 2472MHz.

3.1.4 Main antenna measurement data in ETS-SG24SYSTEM 3D test system

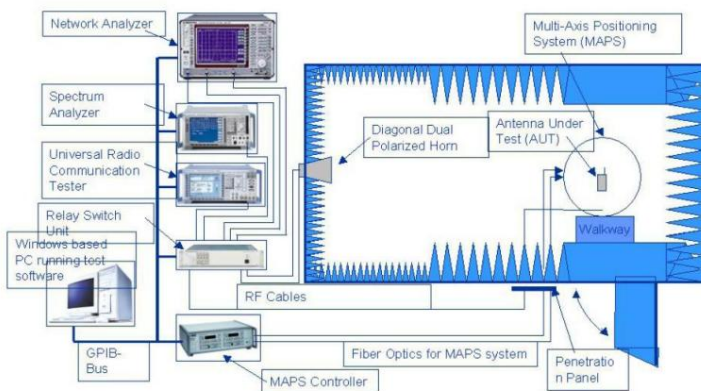


Figure (1) ETS test system



Figure (2) The three-dimensional positioning device of the mobile phone in the dark room

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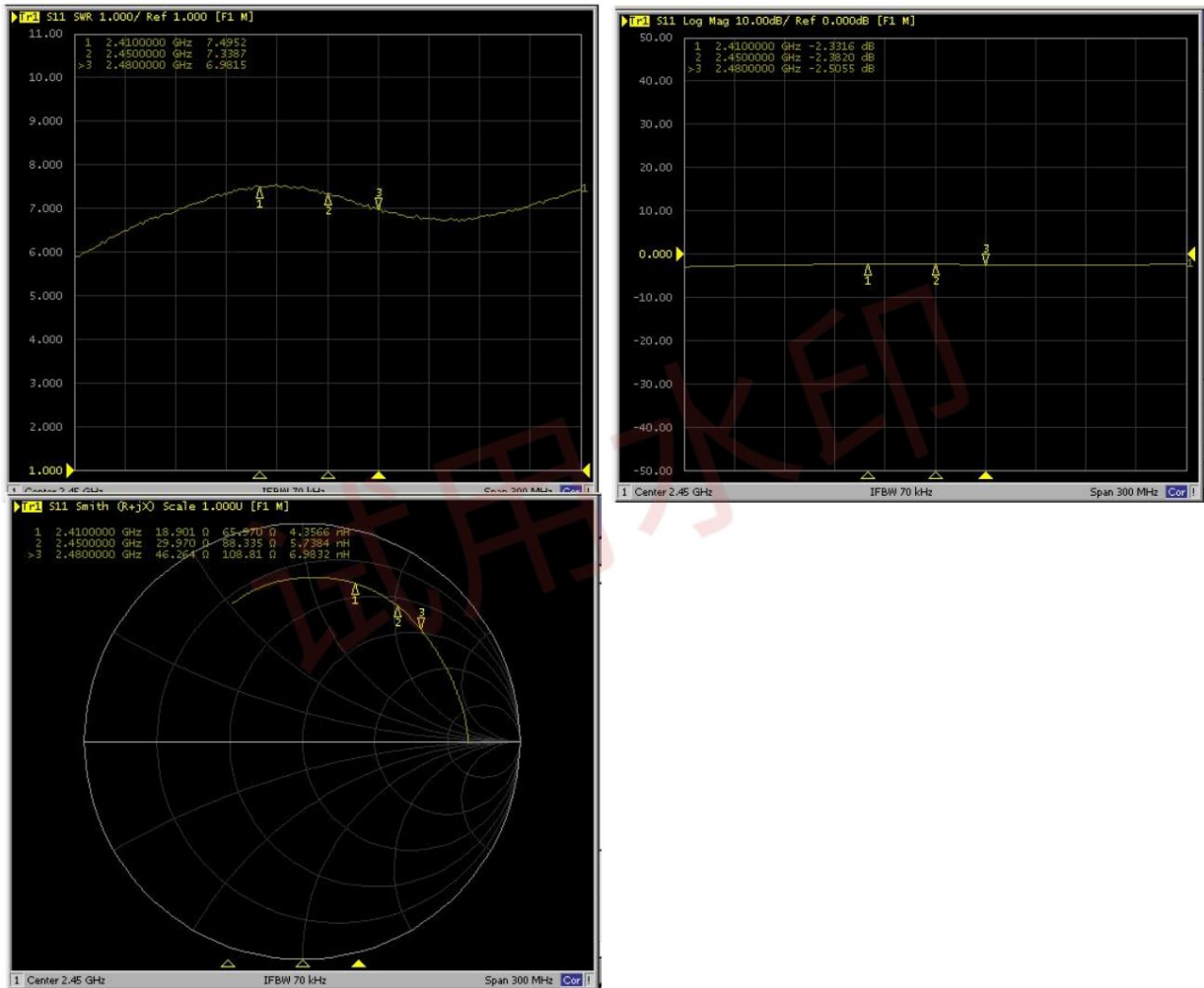
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3.1.5 The data measured by the antenna on the network analyzer (antenna passive standing wave and return loss)



3.1.6 The following table is the passive performance index of antennas designed and mass-produced by Topway:



3.1.6 Gain, efficiency and pattern:

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
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-9.15	-9.42	-9.49	-9.78	-9.91	-9.88	-9.93	-10.35	-10.47	-11.04	-10.98
Peak EIRP (dBm)	-4.23	-4.37	-4.34	-4.56	-4.63	-4.64	-4.74	-5.16	-5.12	-5.70	-5.55
Directivity (dBi)	4.92	5.05	5.14	5.21	5.28	5.24	5.19	5.19	5.36	5.33	5.43
Efficiency (dB)	-9.15	-9.42	-9.49	-9.78	-9.91	-9.88	-9.93	-10.35	-10.47	-11.04	-10.98
Efficiency (%)	12.20	11.40	11.30	10.50	10.20	10.30	10.20	9.20	9.00	7.90	8.00
Gain (dBi)	-4.23	-4.37	-4.34	-4.56	-4.63	-4.64	-4.74	-5.16	-5.12	-5.70	-5.55

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Product model: SN88

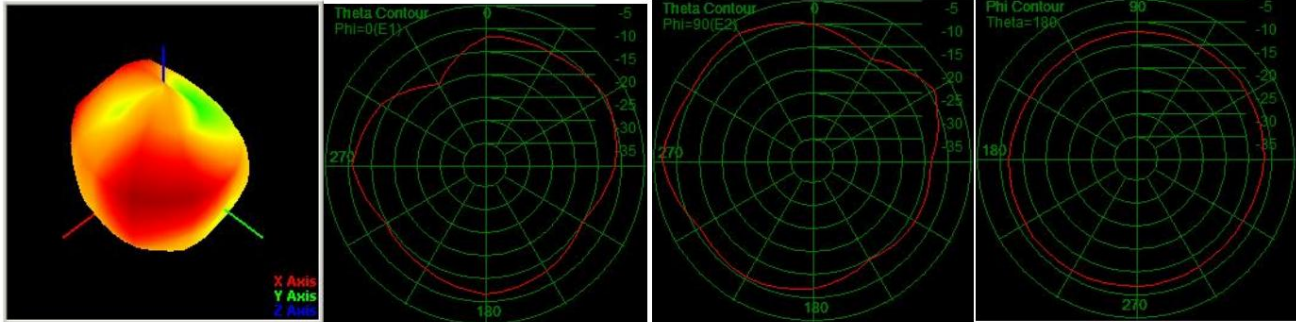
Confidential Information

Product Name: 2.4G BT Antenna

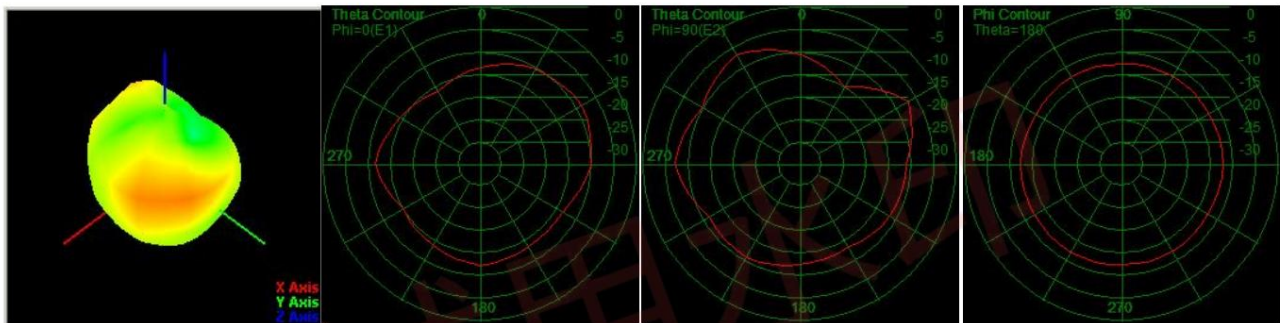
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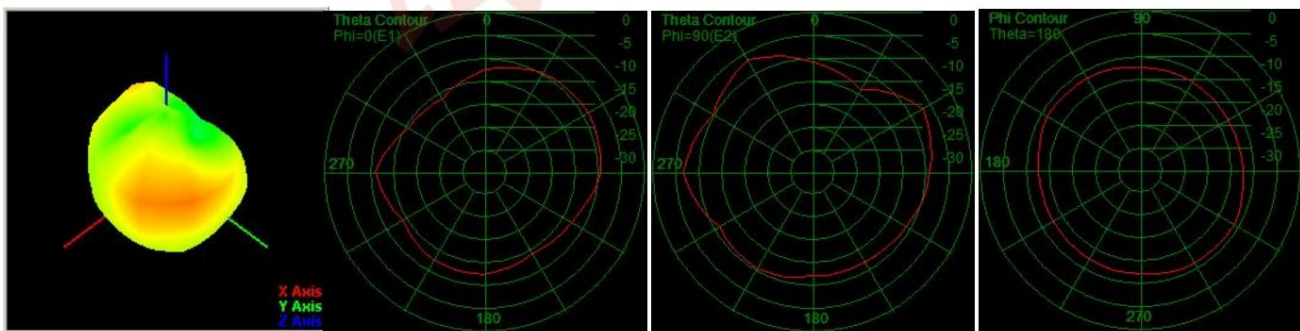
2400Mhz



2450Mhz



2500Mhz



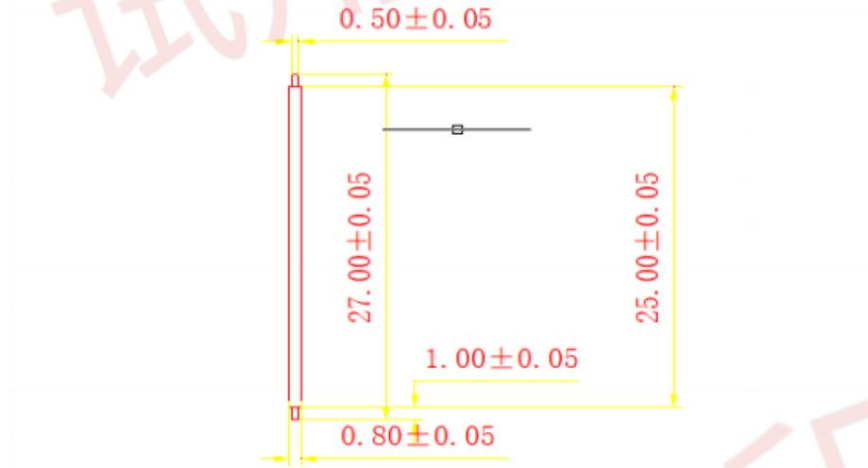
4.1 Product Design Drawing

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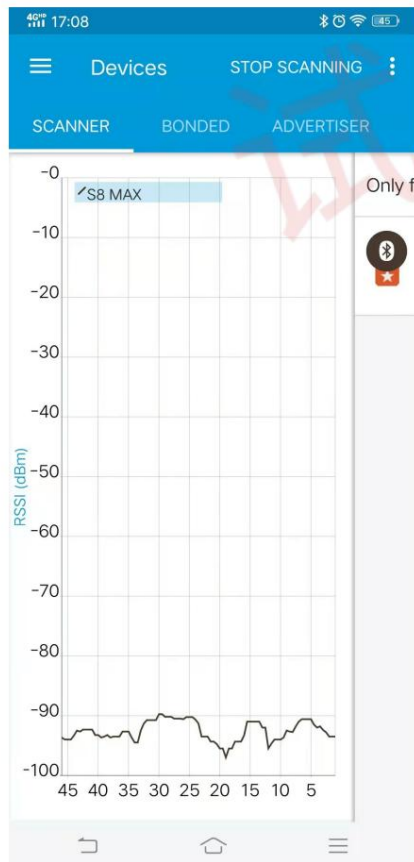
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## 5.1 Product assembly diagram

Solder the antenna as shown in the figure and assemble it.



Bluetooth measured distance of 15 meters:



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