Shenzhen Jianhaitong Antenna Technology Co., Ltd

Antenna test report

Test report

July 25, 2024

Manufacturer: Lichengquxiangfenganbaihuodian
The manufacturer address: lichengquwanxiangxintiantianhongwanjuanfu7haolou1-1104 jinan shandong

（catalogue）：

1.（Model Information）

2.（Company profile）

3.（ Passive and Matching ）

4.（ 3D Active Test Data ）：There is no

5.（ Environmental treatment ）

6.（ Summary ）

1、（Model Information）

Manufacturer	Verui Technology	**RF**	**HuangZhiChao**
Model Name	D1	**Email**	
Antenna Type		**Band**	**2.4G**
Model pictures :			

Shenzhen Jianhaitong Antenna Technology Co., Ltd. - specializing in antenna research and development, manufacturing and sales

2、Company profile-About Jianbotong

The company was founded in 1995, After 23 years of development, It has grown to about 500 employees, A company with a registered capital of 67.65 million yuan。The company covers an area of 60 acres, Area**55,000**square metre, Workshop area36,000square metre, Warehouse area13,000square metre, Annual production capacity up to **24 million** Secondary / year antenna, There are more than 4,000 product models。

◆Famous trademark in Guangdong Province

◆National high-tech enterprise

◆Contract-abiding and credit-worthy enterprise in Guangdong Province for 20 consecutive years

◆Top 10 antenna production enterprises in China

◆Guangdong Engineering Technology Research Center

◆In 2015, the New Third Board was listed, Stock symbol831958

3、Passive and Matching

3.1Schematic of a passive test

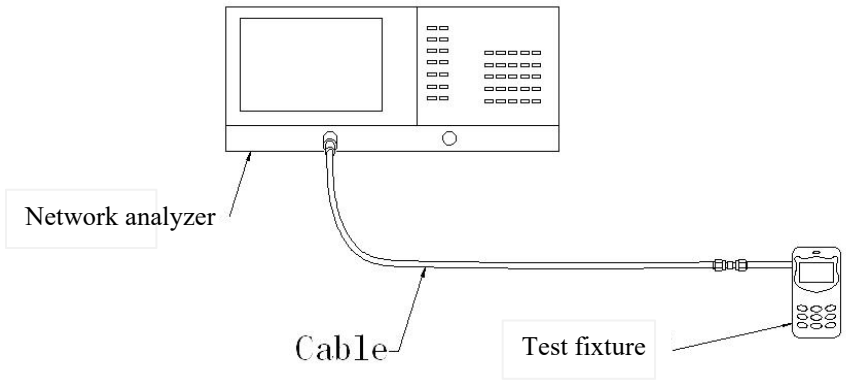
S11Description of the test method

Test the equipment：

Network analyzer(E5071C 30k-8.5Ghz)

Test methodology：

Use a 50 ohm CABLE cable to export from the instrument test port，Connect the prototype after calibration using the calibration kit SMA joint for the tool，Record the return loss and VSWR corresponding to the frequency point of interest。



3.2Active test schematic

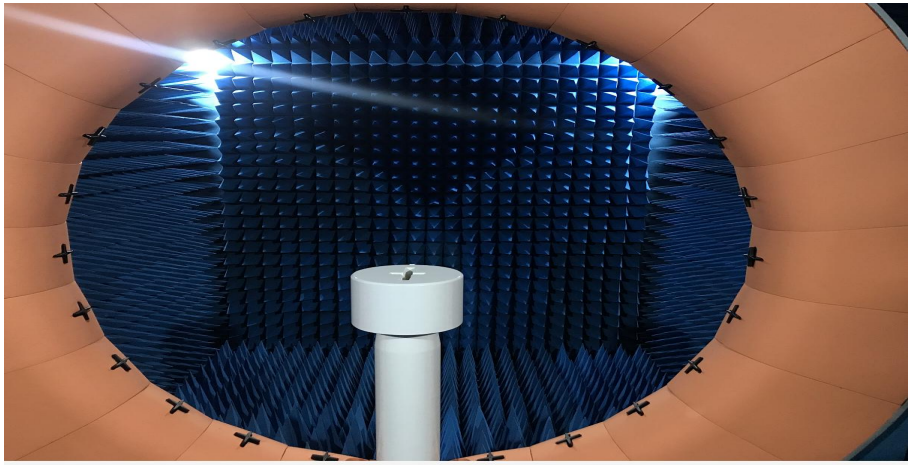
3D Test System: Shielded darkroom
Test environment: temperature 22° C±3° C, humidity 50%±15%
Test equipment: When testing passive data, use the network analyzer Agilent E5071C
When testing active data, use the Synthetic Tester 8960/CMW500

Total omnidirectional radiated power（TIRP）

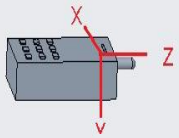
$$TIRP \cong \frac{\pi}{2NM}\sum_{i=1}^{N-1}\sum_{j=0}^{M-1}\left[Eirp_{\theta}(\theta_i,\phi_j)+Eirp_{\phi}(\theta_i,\phi_j)\right]\sin(\theta_i)$$

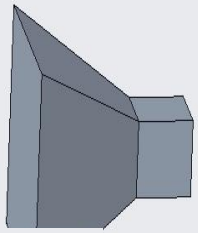
Total omnidirectional radiation sensitivity（TIRS）

$$TIRS \cong \frac{2NM}{\pi\sum_{i=1}^{N-1}\sum_{j=0}^{M-1}\left[\frac{1}{EIS_{\theta}(\theta_i,\phi_j)}+\frac{1}{EIS_{\phi}(\theta_i,\phi_j)}\right]\sin(\theta_i)}$$



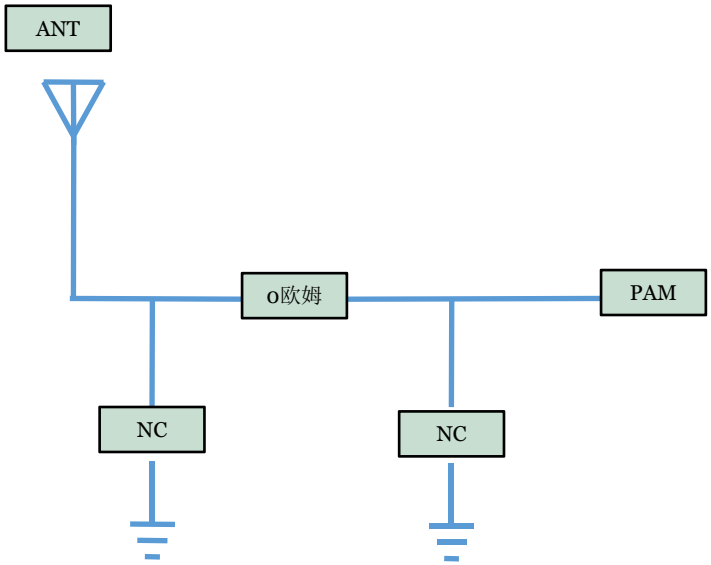
E1:XZ Section of PHI=0
E2:YZ Section of PHI=90
H:XY Section of Theta=90





Take horn antenna as a reference

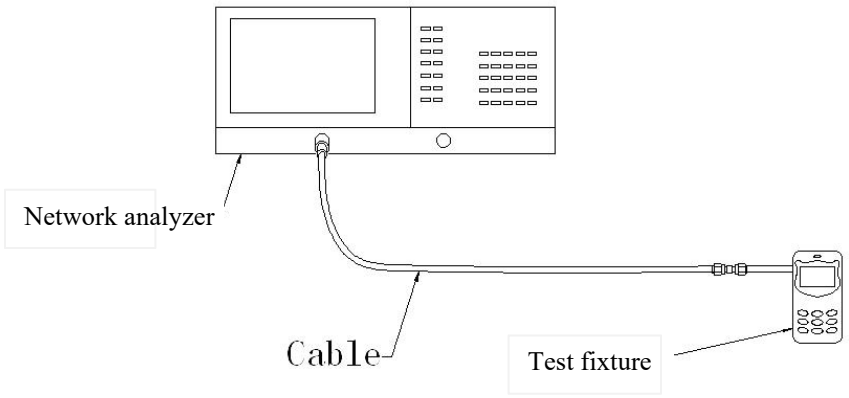
3. 3Matching Circuit



Motherboard matching has not changed.

concentrate： Original string 0 ohms，
From the antenna-----String 0 ohm resistor -----PA

S11 argument



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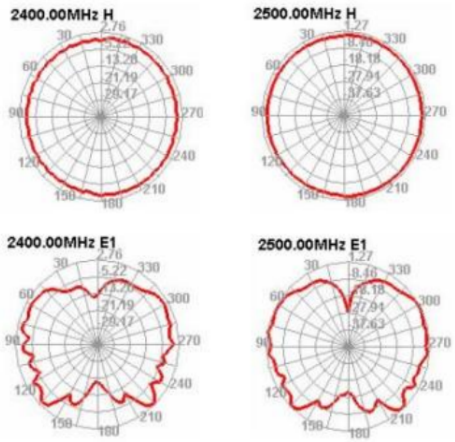
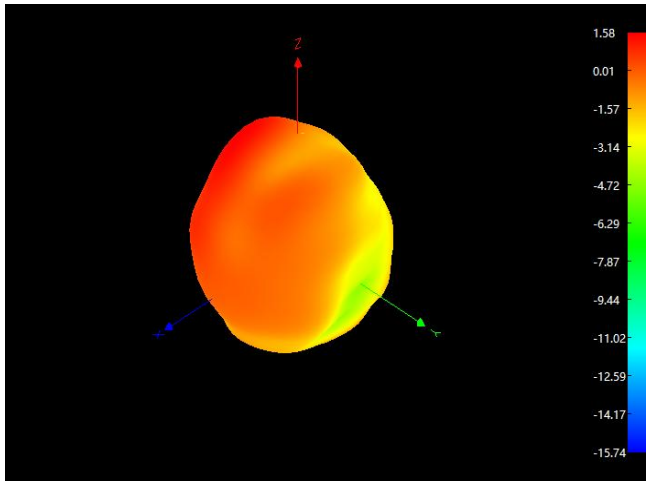
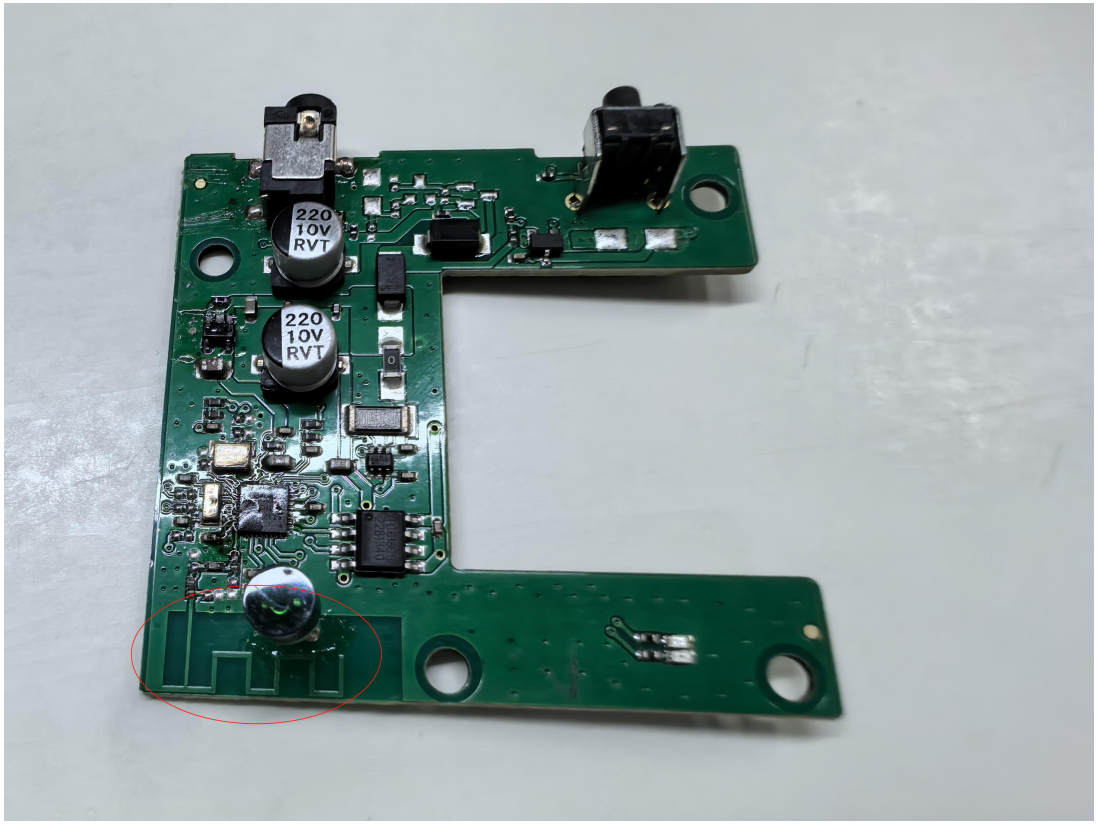
(MHz)	2400	2450	2483			
Standing ratio	0.5		0.5			

WIFI main antenna
Passive parameters.

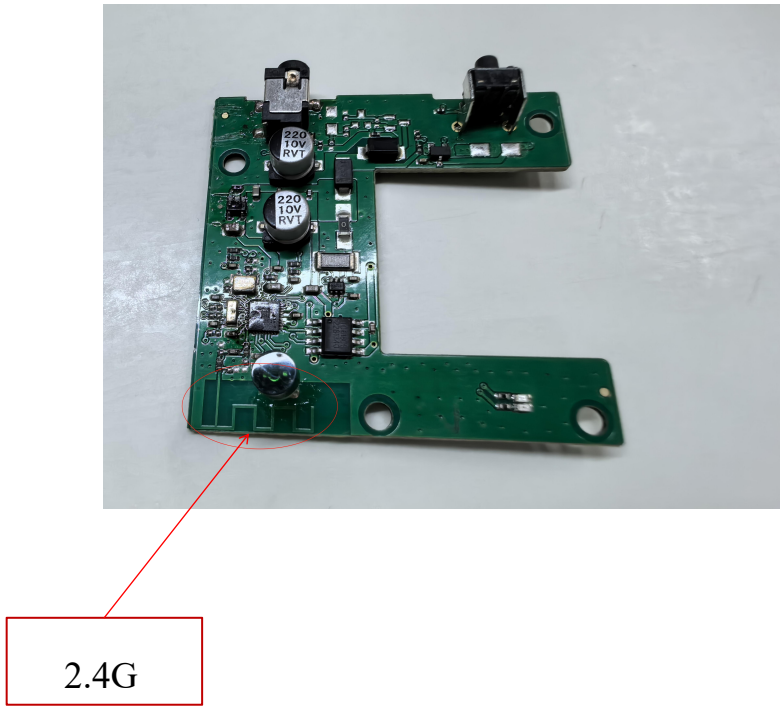
	Antenna module on the system board	
Frequenc Range	2.4~2.5GHZ	
Ant. Port Input Pwr. (dBm)	8	
Tot. Rad. Pwr. (dBm)	-1.2 (Input pwr – loss pwr)	
Peak EIRP(dBm)	1.02	
Directivity (dBi)	2(all direction antenna)	
Efficiency (dB)	45 %	
Gain (dBi)	-0.5	
Maximum Power (dBm)	1.5 (XY-plane)	
Minimum Power (dBm)	-5(XY-plane)	
Avg. Power (dBm)	-0.5(XY-plane)	
Input Impendence(ohm)	50	
Polarization Type	V ertical & Horizontal	
V . S .W .	R < 2	







5、（Environmental handling and assembly instructions）



Note: 1. This report is obtained based on the actual debugging and testing of the debugging prototype, in which the environmental treatment, antenna position and assembly position of each device cannot be changed arbitrarily;

2. If the materials used in the prototype change, it is necessary to feedback to our company in time for re-verification;

3. List of sensitive devices:

TP (material, coating, trace, etc.)

Screen (amplification circuit, LED, cable design, etc.)

Shell material (antenna assembly method, structural interference, shell material, antenna position, height and area, etc.)

Motherboard (motherboard conduction, RF circuit matching, PA, duplex, filter, LNA, power circuit, etc.)

Camera, battery, motor, MIC, fingerprint recognition module, etc

4. Due to the small number of debugging prototypes or only one, some probabilistic problems cannot be completely found, it is recommended to check the problem points (such as splash screen flower screen, speaker noise, TP jump point, black screen of death, signal diving, etc.) before mass production)

Thank you