

Eilink (Shenzhen) Intelligent Technology Co., LTD



天线测试报告

Test report



2024年 3月26日



目 录 (catalogue) :



1.项目信息 (Model Information)

2.无源驻波及匹配 (Passive and Matching)

3.3D有源测试数据 (3D Active Test Data) : 无

4.环境处理 (Environmental treatment)

5.总结 (Summary)



Eilink (Shenzhen) Intelligent Technology Co., LTD

1、项目信息 (Model Information)

Manufacturer	易联	RF	HuangZhiChao
Model Name		Email	
Antenna Type		Band	2.4G

Model pictures :



2、无源驻波及匹配 (Passive and Matching)

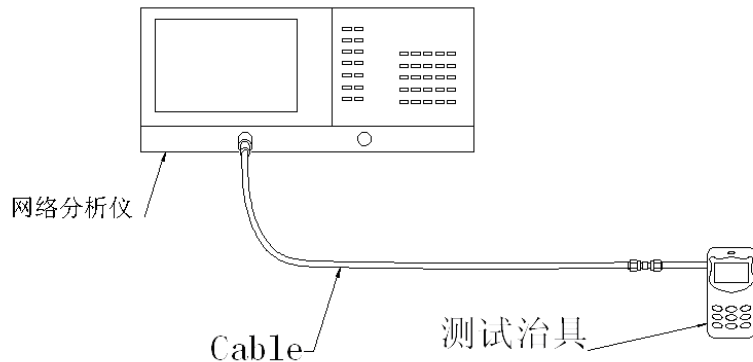
2.1 无源测试示意图 **Passive test diagram**

S11 Test method description

Test equipment: Network Analyzer (E5071C 30k-8.5Ghz)

Test method: Use a 50 ohm CABLE to export from the instrument test port and connect the prototype after calibration with a calibrator

The SMA joint of the tool records the return loss and standing wave ratio corresponding to the relevant frequency points.



Eilink (Shenzhen) Intelligent Technology Co., LTD

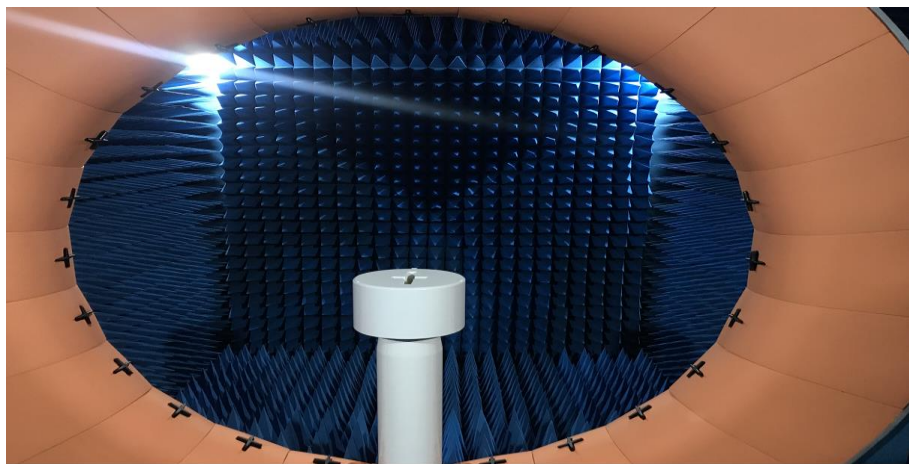
3.1 Active test diagram

3D test system: shielded darkroom

Test environment: Temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$

Test equipment: When testing passive data, use the network analyzer Agilent E5071C

When testing active data, use integrometer 8960/C MW500



总全向辐射功率 (TIRP)

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

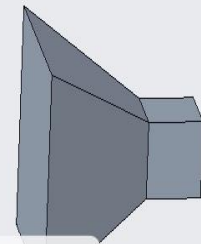
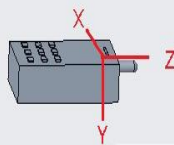
总全向辐射灵敏度 (TIRS)

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

E1: XZ的切面 PHI=0

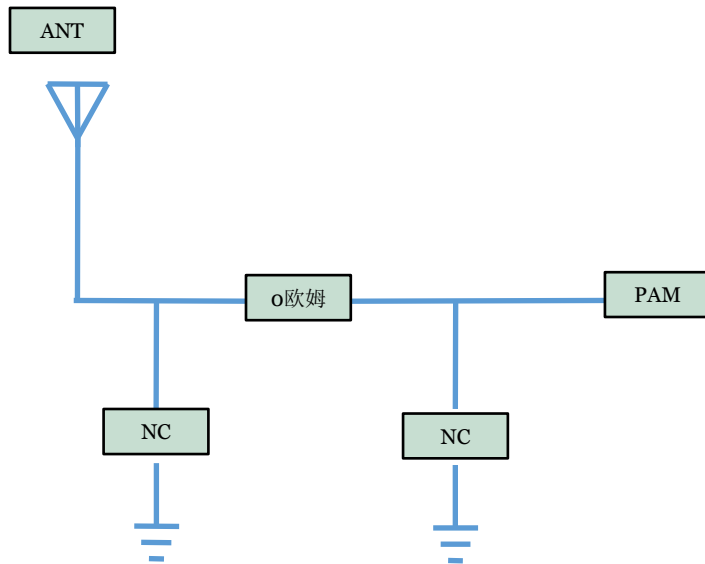
E2: YZ的切面 PHI=90

H: XY的切面 Theta=90



以喇叭天线为参考

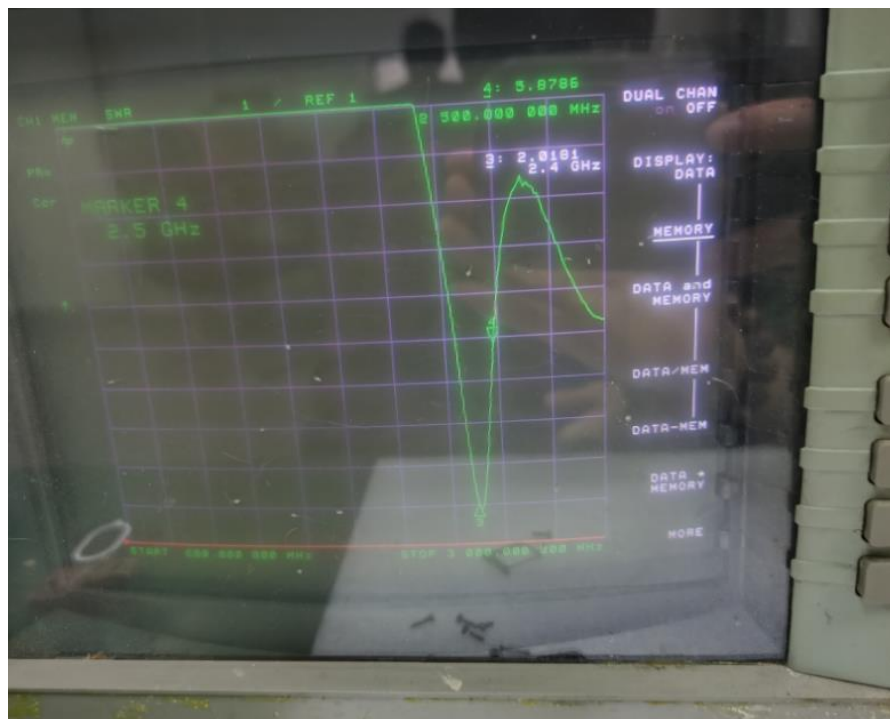
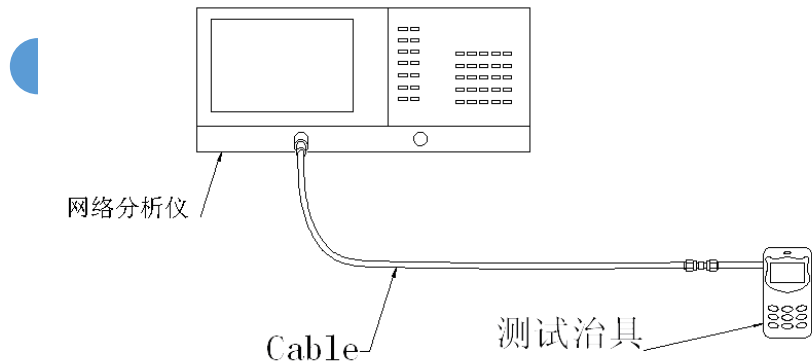
3.2 天线匹配 (Matching Circuit)



主板匹配没有做更改。

注：原串0欧姆，从天线-----串0欧姆
电阻 -----PA

S11参数



S11 Test method description

Test equipment:

Network Analyzer (E5071C 30k-8.5GHz)

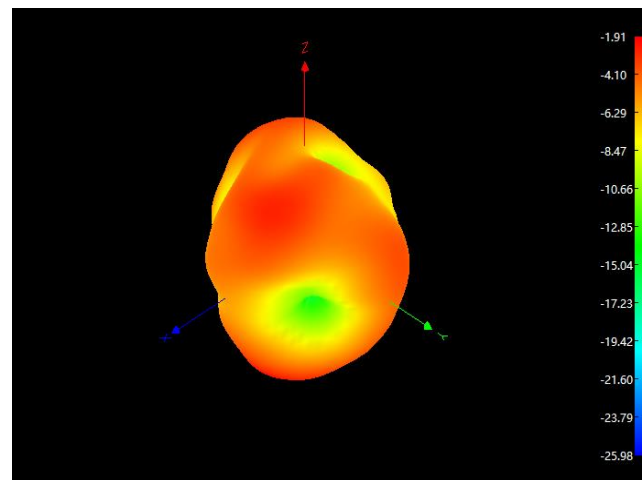
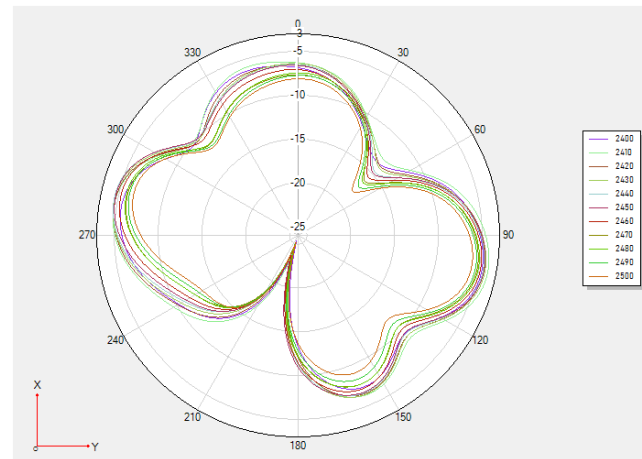
Test method:

Use a 50 ohm CABLE to export from the instrument test port and connect the prototype after calibration with a calibrator. The SMA joint of the tool records the return loss and standing wave ratio corresponding to the relevant frequency points.

频率 (MHz)	2400	2500			
驻波比	2.0	5.8			

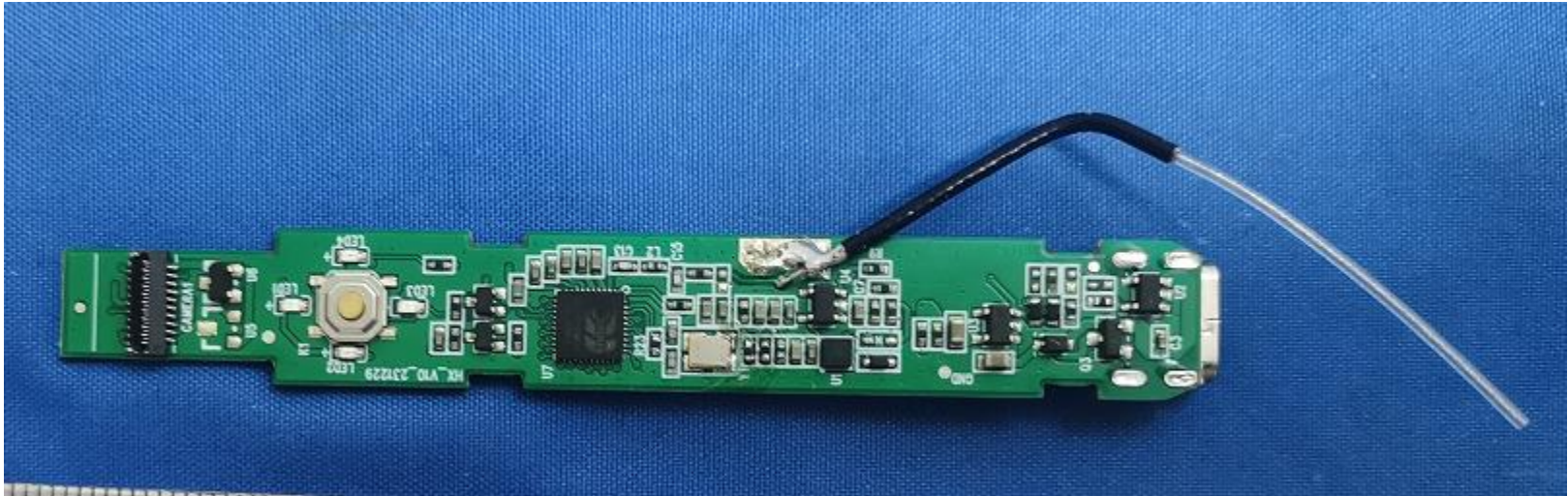
WIFI主天线
无源参数.

Frequency / MHz	Efficiency / %	Gain/ dB
2400	23.07	-2.38
2410	24.55	-2.08
2420	25.18	-1.96
2430	23.5	-2.04
2440	23.93	-1.91
2450	23.01	-1.99
2460	20.46	-2.34
2470	17.7	-2.98
2480	17.5	-3.01
2490	16.33	-3.41
2500	13.9	-3.86



Eilink (Shenzhen) Intelligent Technology Co., LTD

4、环境处理及装配说明 (Environmental handling and assembly instructions)



2.4G



**Eilink (Shenzhen) Intelligent
Technology Co., LTD**

Thank you