

承 认 书

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天线测试报告

antenna testing

客 户 Customer	科沃斯
项目名称 Project Name	4A8-1100-2400
客 户 料 号 Customer NO.	
规 格 specification	Fre : 2400-2500MHz FPC Size: 30.4x35.5m m IPEX; ROHS
供 方 料 号 Supplier NO.	1A4A8-1100-2400-00
规 格 书 编 号 Specification NO.	2025081803
编写人 Write by	Jack
版本 REV.	V2.0
日 期 Date	2025. 9. 27
备 注 Note	

4A8-1100-2400 specification

1. Explanation of part number :

WA – E – LALC – 01 – 102
(1) (2) (3) (4) (5)

(1) Product Type: Wireless Antenna

(2) Material: PCB

(3) Frequency : 2400MHz-2500MHz&5150 MHz- 5850 MHz

(4) Coaxial Cable Type : 01

(5) Suffix : 102

2. Electrical Specification :

Those specifications were specially defined for 4A8-1100-2400 model, and all characteristics were measured under the model's handset testing jig .

2-1. Frequency Band:

Frequency Band	2400-2500&5150-5850MHz

2-2. Impedance

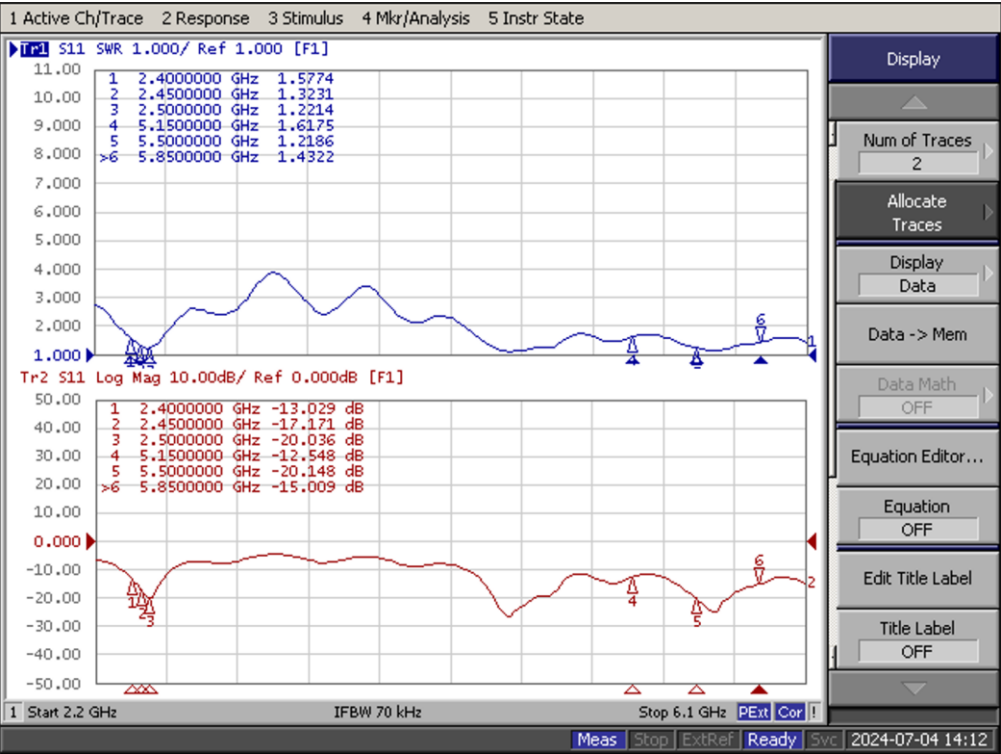
50 ohm nominal

2-3. VSWR

2-3-1.Measurement frequency points and VSWR value

Frequency (Unit MHz)	2400	2450	2500	5150	5850
VSWR	1.57	1.32	1.22	1.61	1.43

2-3-2. VSWR

Frequency Band(MHz)	2400	2450	2500	5150	5850
2-3-3. Typical Value:	≤2.5	≤2.5	≤2.5	≤3.0	≤3.0
2-3-4 Measuring Method	1. A 50Ωcoaxial cable is connected to the FPC. Then this cable is connected to a network analyzer to measure the VSWR. 2. Keeping this jig away from metal at least 20 cm				
2-3-5 Picture					

2-4. Efficiency and Gain

- Measuring instruments: microwave darkroom, network analyzer, standard antenna.微波

Dark room description:

This is the microwave darkroom set up by our company in Shenzhen, which belongs to a far-field measurement system. The size of the darkroom is 7.0 m x4.0 m x3.0 m, and the size of the Quiet zone is 15 cm x15 cm x15cm

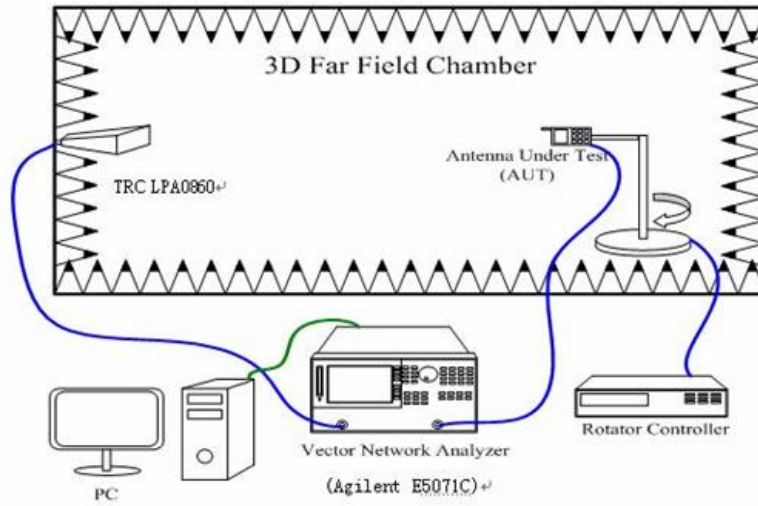


图. 1. 微波暗室内部仪器设置

FIG. 1 shows the instrument setup in the microwave darkroom and the connection diagram of the network analyzer. The distance between the transmitting antenna (the model of transmitting antenna used in the darkroom is TRC LPA0860 800MHZ-6GHZ) and the antenna to be tested (AUT) is 1.35m. The antenna to be measured is placed on a rotating platform and can be measured roughly and accurately by controlling the rotating Angle of the rotating table. The antenna to be measured is placed on the rotating table, and the 360-degree field intensity data of each plane (ZY plane and ZX plane) are measured. Another day to be measured The wire is changed into a standard dipole antenna (the model of the standard dipole antenna used in this darkroom is TRC AD series dipole antenna 800MHZ~2500MHZ), and the field intensity data of 360 degrees is measured, and the standard gain value is used as the converted gain value. The gain value and direction diagram of the antenna to be measured can be obtained through the conversion of formula 1.

$$G_{AUT} = G_{stand} + P_{AUT} - P_{stand}$$

G_{AUT} : Gain of AUT

G_{stand} : Gain of Standard Gain Antenna

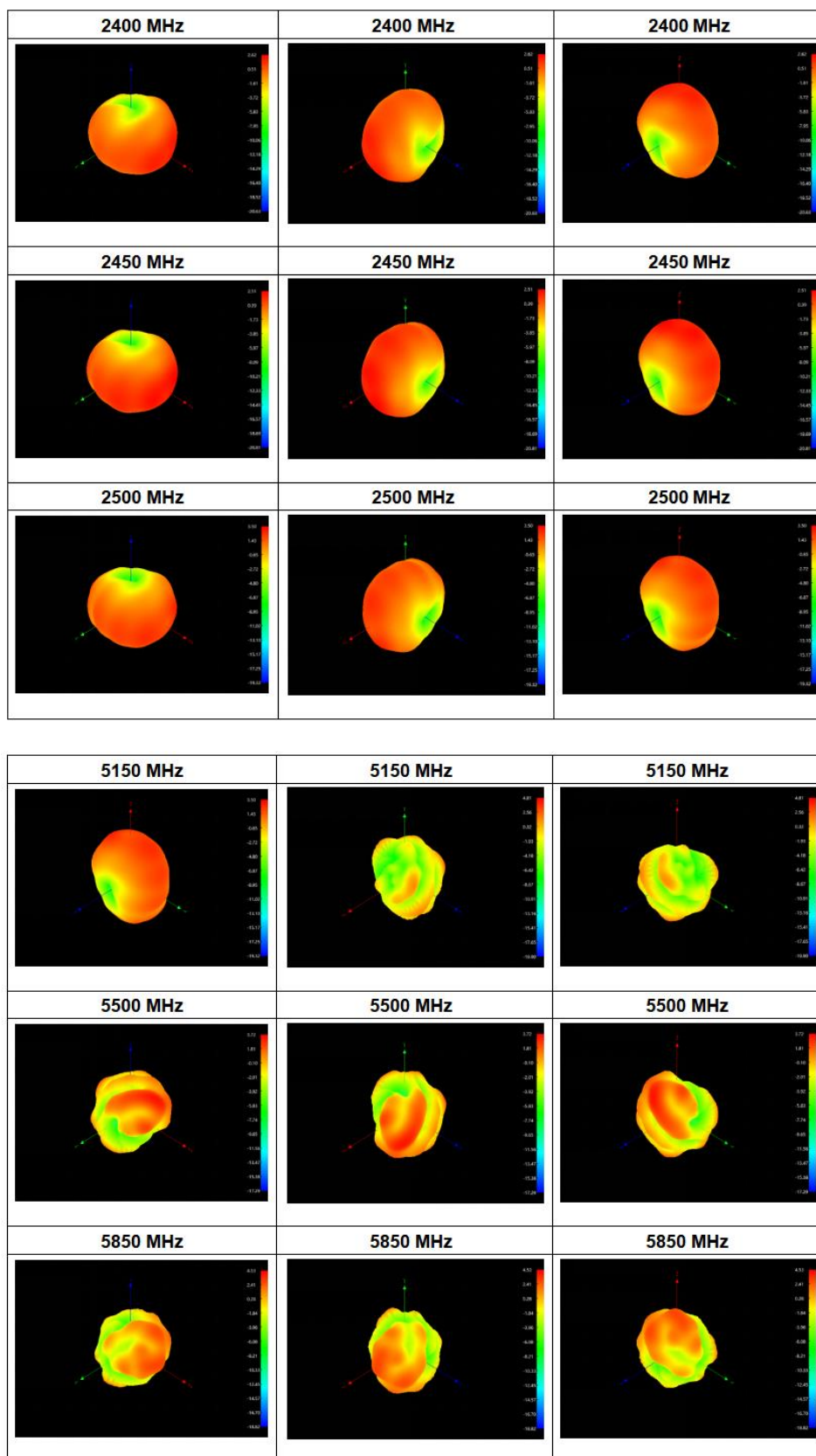
P_{AUT} : Measured Power of AUT

P_{stand} : Measured Power of Standard Gain Antenna

2-4-1 Efficiency and Gain

Frequency/Mhz	Gain/dBi	Efficiency / %
2400	2.62	69.34
2410	2.09	67.92
2420	2.71	72.61
2430	2.17	70.31
2440	2.81	74.3
2450	2.51	74.82
2460	2.87	75.68
2470	3.29	78.52
2480	3.5	79.07
2490	3.92	82.79
2500	3.5	77.62
5150	4.81	69.18
5200	4.74	72.11
5250	4.23	69.98
5300	4.11	71.78
5350	4.27	76.03
5400	4.03	77.62
5450	3.82	74.13
5500	3.72	72.61
5550	4.15	75.16
5600	4.55	73.79
5650	4.36	72.95
5700	4.48	71.45
5750	4.59	70.31
5800	4.44	68.23
5850	4.53	68.55

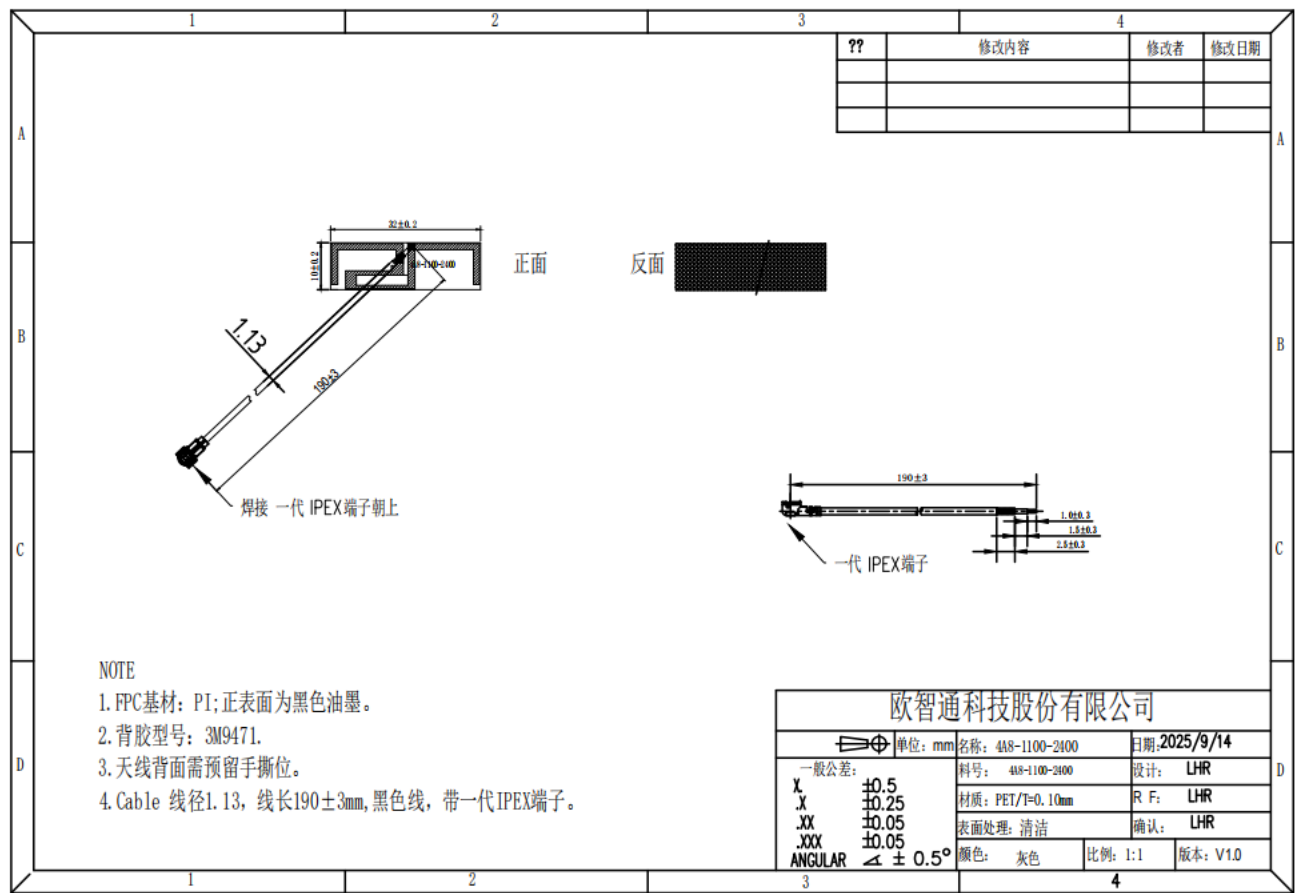
2-4-2 3D Gain Pattern



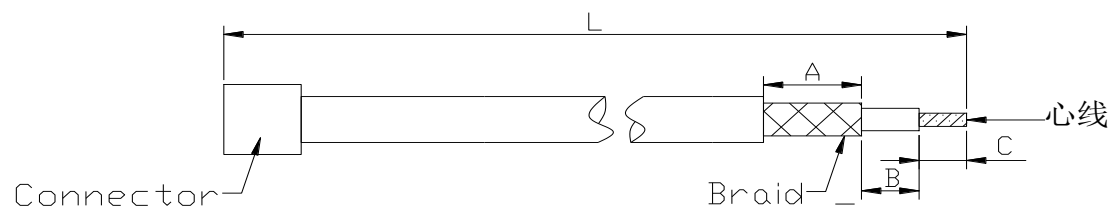
3. Mechanical Specification:

3-1. Mechanical Configuration (Unit: mm)

The appearance of the antenna is according to drawing



3-2. Cable Length



Connector: I-PEX MHF; Cable: RF Cable 1.13 (黑色) L: 190±3mm

A: 2.5±0.3mm B: 1.5±0.3mm C: 1±0.3mm