

深圳市亿圣邦科技有限公司

Shenzhen Yishengbang Technology Co., Ltd

深圳市宝安区西乡街道南昌社区深圳前湾硬科技产业园C栋101
101, Building C, Shenzhen Qianwan Hard Technology Industrial Park,
Nanchang Community, Xixiang Street, Bao'an District, Shenzhen, China

Shenzhen Yishengbang Technology Co., Ltd Antenna Specification Sheet

Customer: 艾普达

Project: SD3202

Product: G/W/B

Report date: 2024.08.07

Prepared by : 胡雪文

Checked by : 黄震

Approved by : 林美财

Purpose

This report is to measure the performance of SLK for Master Antenna on 艾普达. All measure data are showed below.

Content

1. Product Overview
2. Test Result
 - 2.1 WIFI+GPS Antenna VSWR/S11
 - 2.2 WIFI+GPS Antenna Gain/Efficiency/3D DATE
 - 2.3 WIFI Throughput Test
 - 2.4 GPS practical Test
3. Conclusions

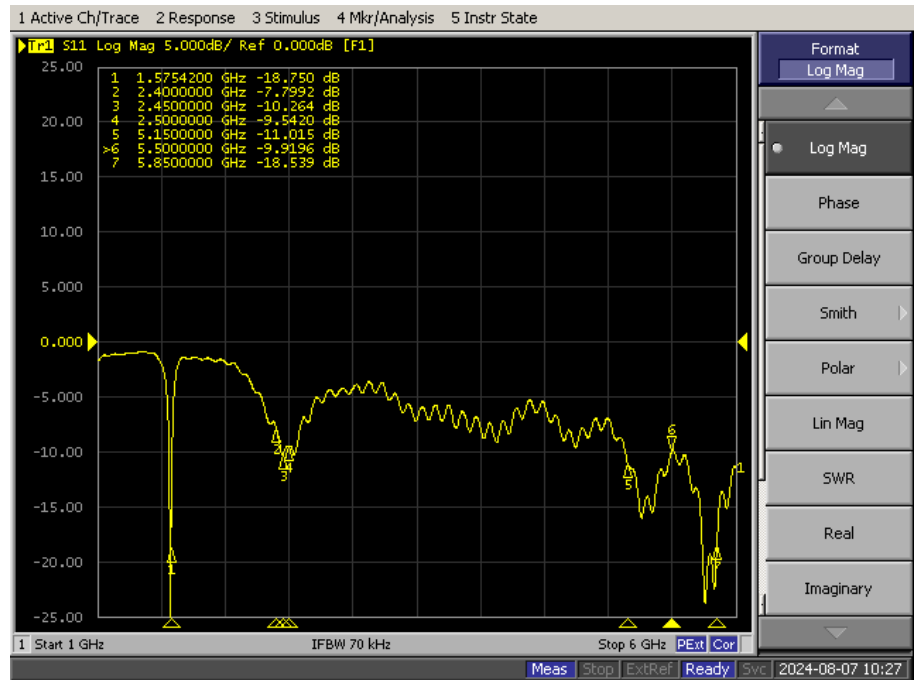
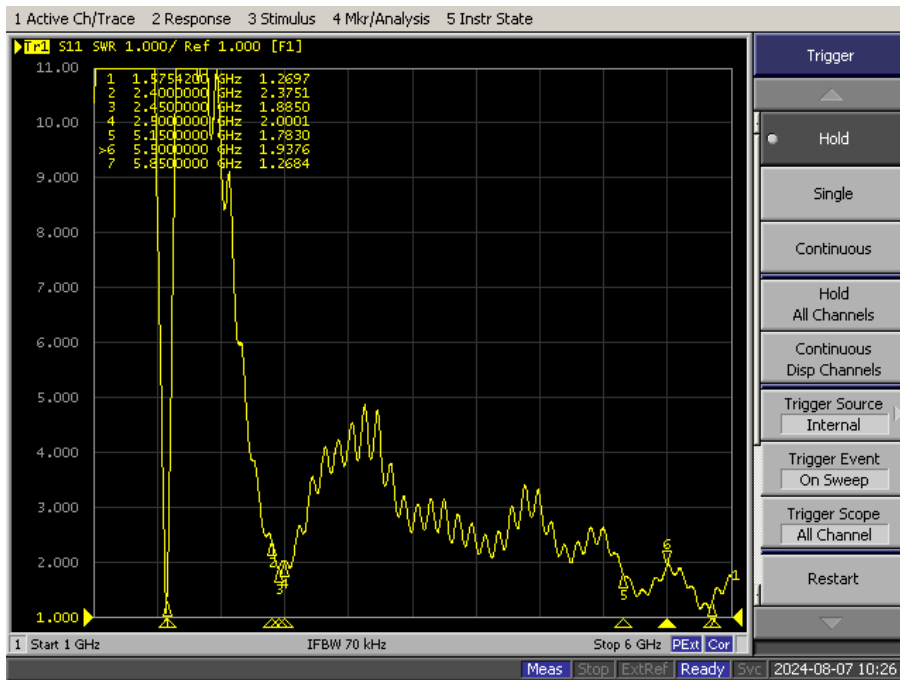
1. Product Overview & Dimension

天线贴放位置和机器环境处理照片



2. Test Result

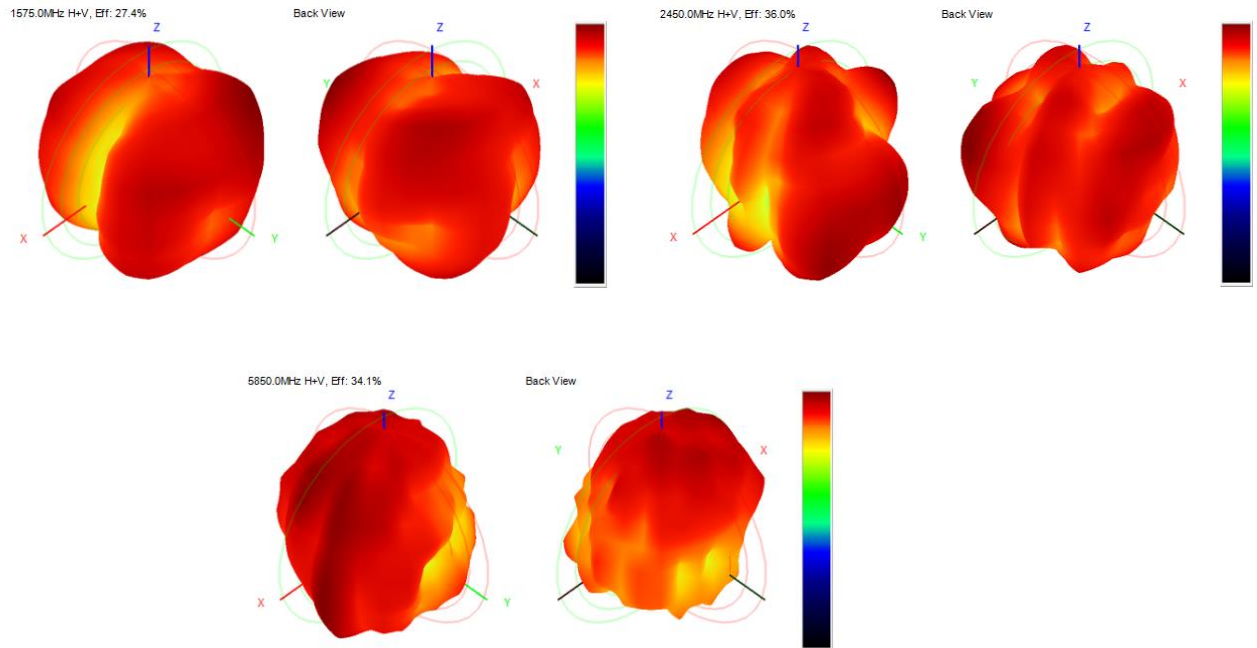
2.1 VSWR/S11 (WIFI+GPS)



2. Test Result

2.2 WIFI+GPS Antenna Gain/Efficiency/3D DATE

Frequency (MHz)	Efficiency (dBi)	Gain (dBi)	Efficiency (%)
1570.0	-5.53	1.59	27.94
1575.0	-5.62	1.35	27.37
1580.0	-5.55	1.23	27.80
2400.0	-4.40	1.14	36.33
2410.0	-4.01	1.19	39.74
2420.0	-4.06	1.26	39.25
2430.0	-4.19	1.14	38.13
2440.0	-4.29	1.08	37.27
2450.0	-4.44	1.16	35.96
2460.0	-4.26	1.07	37.48
2470.0	-4.20	1.11	38.00
2480.0	-4.11	1.06	38.83
2490.0	-4.31	1.29	37.04
2500.0	-4.29	1.28	37.27
5150.0	-4.92	2.32	32.23
5350.0	-5.03	2.15	31.40
5550.0	-5.08	2.87	31.01
5750.0	-5.22	2.34	30.05
5850.0	-5.10	2.26	30.87



2 Test Result

2.3 WIFI Throughput Test

```
C:\iperf-3.1.3-win64>iperf3 -c 192.168.1.102 -i 1 -t 30
Connecting to host 192.168.1.102, port 5201
[ 4] local 192.168.1.110 port 55661 connected to 192.168.1.102
[ 4] ID Interval Transfer Bandwidth
[ 4] 0.00-1.01 sec 4.00 MBytes 33.4 Mbits/sec
[ 4] 1.01-2.01 sec 4.00 MBytes 33.5 Mbits/sec
[ 4] 2.01-3.01 sec 4.12 MBytes 34.6 Mbits/sec
[ 4] 3.01-4.01 sec 3.88 MBytes 32.5 Mbits/sec
[ 4] 4.01-5.01 sec 3.75 MBytes 31.5 Mbits/sec
[ 4] 5.01-6.01 sec 4.12 MBytes 34.6 Mbits/sec
[ 4] 6.01-7.01 sec 4.00 MBytes 33.6 Mbits/sec
[ 4] 7.01-8.01 sec 4.12 MBytes 34.6 Mbits/sec
[ 4] 8.01-9.01 sec 3.50 MBytes 29.4 Mbits/sec
[ 4] 9.01-10.01 sec 4.00 MBytes 33.5 Mbits/sec
[ 4] 10.01-11.01 sec 3.50 MBytes 29.4 Mbits/sec
[ 4] 11.01-12.01 sec 4.00 MBytes 33.5 Mbits/sec
[ 4] 12.01-13.01 sec 4.00 MBytes 33.6 Mbits/sec
[ 4] 13.01-14.00 sec 4.00 MBytes 33.7 Mbits/sec
[ 4] 14.00-15.01 sec 4.00 MBytes 33.4 Mbits/sec
[ 4] 15.01-16.01 sec 4.12 MBytes 34.6 Mbits/sec
[ 4] 16.01-17.01 sec 4.00 MBytes 33.5 Mbits/sec
[ 4] 17.01-18.01 sec 3.88 MBytes 32.5 Mbits/sec
[ 4] 18.01-19.01 sec 3.88 MBytes 32.5 Mbits/sec
[ 4] 19.01-20.01 sec 3.75 MBytes 31.5 Mbits/sec
[ 4] 20.01-21.01 sec 4.12 MBytes 34.6 Mbits/sec
[ 4] 21.01-22.01 sec 4.00 MBytes 33.5 Mbits/sec
[ 4] 22.01-23.01 sec 4.00 MBytes 33.5 Mbits/sec
[ 4] 23.01-24.00 sec 4.00 MBytes 33.9 Mbits/sec
[ 4] 24.00-25.00 sec 4.12 MBytes 34.6 Mbits/sec
[ 4] 25.00-26.00 sec 3.75 MBytes 31.4 Mbits/sec
[ 4] 26.00-27.00 sec 4.12 MBytes 34.6 Mbits/sec
[ 4] 27.00-28.00 sec 3.88 MBytes 32.5 Mbits/sec
[ 4] 28.00-29.00 sec 4.12 MBytes 34.6 Mbits/sec
[ 4] 29.00-30.00 sec 4.00 MBytes 33.5 Mbits/sec
-----
[ 4] ID Interval Transfer Bandwidth
[ 4] 0.00-30.00 sec 119 MBytes 33.2 Mbits/sec
[ 4] 0.00-30.00 sec 118 MBytes 33.0 Mbits/sec
iperf Done.
```

2.4G下载

```
-c 192.168.1.110 -i 1 -t 30 -w 1m
[ 4] 0.00-10.00 sec 5.10 MBytes 42.7 Mbits/sec
[ 4] 10.00-11.00 sec 5.10 MBytes 42.7 Mbits/sec
[ 4] 11.00-12.00 sec 4.97 MBytes 41.7 Mbits/sec
[ 4] 12.00-13.00 sec 5.16 MBytes 43.3 Mbits/sec
[ 4] 13.00-14.00 sec 5.01 MBytes 42.0 Mbits/sec
[ 4] 14.00-15.00 sec 5.21 MBytes 43.7 Mbits/sec
[ 4] 15.00-16.00 sec 5.78 MBytes 48.5 Mbits/sec
[ 4] 16.00-17.00 sec 5.00 MBytes 41.9 Mbits/sec
[ 4] 17.00-18.00 sec 5.61 MBytes 47.1 Mbits/sec
[ 4] 18.00-19.00 sec 5.90 MBytes 49.5 Mbits/sec
[ 4] 19.00-20.00 sec 5.34 MBytes 44.8 Mbits/sec
[ 4] 20.00-21.00 sec 5.72 MBytes 48.0 Mbits/sec
[ 4] 21.00-22.00 sec 4.21 MBytes 35.3 Mbits/sec
[ 4] 22.00-23.00 sec 5.62 MBytes 47.1 Mbits/sec
[ 4] 23.00-24.00 sec 5.45 MBytes 45.7 Mbits/sec
[ 4] 24.00-25.00 sec 5.60 MBytes 47.0 Mbits/sec
[ 4] 25.00-26.00 sec 5.15 MBytes 43.3 Mbits/sec
[ 4] 26.00-27.00 sec 5.34 MBytes 44.9 Mbits/sec
[ 4] 27.00-28.01 sec 4.98 MBytes 41.6 Mbits/sec
[ 4] 28.01-29.00 sec 4.65 MBytes 39.2 Mbits/sec
[ 4] 29.00-30.00 sec 4.54 MBytes 38.0 Mbits/sec
-----
[ 4] ID Interval Transfer Bandwidth
[ 4] 0.00-30.00 sec 159 MBytes 44.3 Mbits/sec
[ 4] 0.00-30.00 sec 158 MBytes 44.2 Mbits/sec
```

2.4G上传

2 Test Result

2.3 WIFI Throughput Test

```
C:\iperf-3.1.3-win64\iperf3 -x 192.168.1.109 -i 1 -t 30
Connecting to host 192.168.1.109, port 5201
[ 4] local 192.168.1.110 port 55469 connected to 192.168.1.109
[ ID] Interval           Transfer     Bandwidth
[ 4] 0.00-1.00      sec  30.2 MBytes  253 Mbits/sec
[ 4] 1.00-2.00      sec  31.4 MBytes  263 Mbits/sec
[ 4] 2.00-3.00      sec  28.6 MBytes  241 Mbits/sec
[ 4] 3.00-4.00      sec  33.1 MBytes  277 Mbits/sec
[ 4] 4.00-5.01      sec  34.2 MBytes  286 Mbits/sec
[ 4] 5.01-6.00      sec  31.2 MBytes  265 Mbits/sec
[ 4] 6.00-7.00      sec  30.5 MBytes  255 Mbits/sec
[ 4] 7.00-8.00      sec  30.2 MBytes  254 Mbits/sec
[ 4] 8.00-9.00      sec  22.9 MBytes  192 Mbits/sec
[ 4] 9.00-10.00     sec  28.2 MBytes  237 Mbits/sec
[ 4] 10.00-11.00    sec  27.0 MBytes  226 Mbits/sec
[ 4] 11.00-12.00    sec  32.1 MBytes  269 Mbits/sec
[ 4] 12.00-13.00    sec  25.1 MBytes  211 Mbits/sec
[ 4] 13.00-14.00    sec  30.0 MBytes  252 Mbits/sec
[ 4] 14.00-15.00    sec  31.5 MBytes  264 Mbits/sec
[ 4] 15.00-16.00    sec  29.4 MBytes  246 Mbits/sec
[ 4] 16.00-17.00    sec  31.8 MBytes  266 Mbits/sec
[ 4] 17.00-18.00    sec  29.2 MBytes  245 Mbits/sec
[ 4] 18.00-19.00    sec  31.0 MBytes  260 Mbits/sec
[ 4] 19.00-20.00    sec  27.9 MBytes  234 Mbits/sec
[ 4] 20.00-21.00    sec  25.5 MBytes  214 Mbits/sec
[ 4] 21.00-22.00    sec  28.0 MBytes  235 Mbits/sec
[ 4] 22.00-23.00    sec  30.1 MBytes  253 Mbits/sec
[ 4] 23.00-24.00    sec  26.8 MBytes  224 Mbits/sec
[ 4] 24.00-25.00    sec  27.4 MBytes  230 Mbits/sec
[ 4] 25.00-26.00    sec  28.5 MBytes  240 Mbits/sec
[ 4] 26.00-27.00    sec  29.9 MBytes  250 Mbits/sec
[ 4] 27.00-28.00    sec  31.9 MBytes  268 Mbits/sec
[ 4] 28.00-29.00    sec  34.1 MBytes  285 Mbits/sec
[ 4] 29.00-30.01    sec  28.9 MBytes  242 Mbits/sec
-----
[ ID] Interval           Transfer     Bandwidth
[ 4] 0.00-30.01     sec  887 MBytes  248 Mbits/sec
[ 4] 0.00-30.01     sec  886 MBytes  248 Mbits/sec
```

5G下载

```
-c 192.168.1.110 -i 1 -t 30 -w 1m
[ 4] 7.00-10.00     sec  27.0 MBytes  230 Mbits/sec
[ 4] 10.00-11.00    sec  32.0 MBytes  268 Mbits/sec
[ 4] 11.00-12.00    sec  35.0 MBytes  294 Mbits/sec
[ 4] 12.00-13.00    sec  33.1 MBytes  278 Mbits/sec
[ 4] 13.00-14.00    sec  31.8 MBytes  266 Mbits/sec
[ 4] 14.00-15.00    sec  33.4 MBytes  281 Mbits/sec
[ 4] 15.00-16.00    sec  31.1 MBytes  261 Mbits/sec
[ 4] 16.00-17.00    sec  30.4 MBytes  255 Mbits/sec
[ 4] 17.00-18.00    sec  32.2 MBytes  270 Mbits/sec
[ 4] 18.00-19.00    sec  32.1 MBytes  270 Mbits/sec
[ 4] 19.00-20.00    sec  32.4 MBytes  272 Mbits/sec
[ 4] 20.00-21.00    sec  33.1 MBytes  277 Mbits/sec
[ 4] 21.00-22.00    sec  33.4 MBytes  281 Mbits/sec
[ 4] 22.00-23.00    sec  29.7 MBytes  249 Mbits/sec
[ 4] 23.00-24.00    sec  31.5 MBytes  264 Mbits/sec
[ 4] 24.00-25.00    sec  31.8 MBytes  266 Mbits/sec
[ 4] 25.00-26.00    sec  31.4 MBytes  264 Mbits/sec
[ 4] 26.00-27.00    sec  31.5 MBytes  264 Mbits/sec
[ 4] 27.00-28.00    sec  29.9 MBytes  251 Mbits/sec
[ 4] 28.00-29.00    sec  30.6 MBytes  257 Mbits/sec
[ 4] 29.00-30.00    sec  34.0 MBytes  285 Mbits/sec
-----
[ ID] Interval           Transfer     Bandwidth
[ 4] 0.00-30.00     sec  953 MBytes  267 Mbits/sec
[ 4] 0.00-30.00     sec  952 MBytes  266 Mbits/sec
iperf Done.
```

5G上传

2. Test Result

2.3 WIFI throughput test



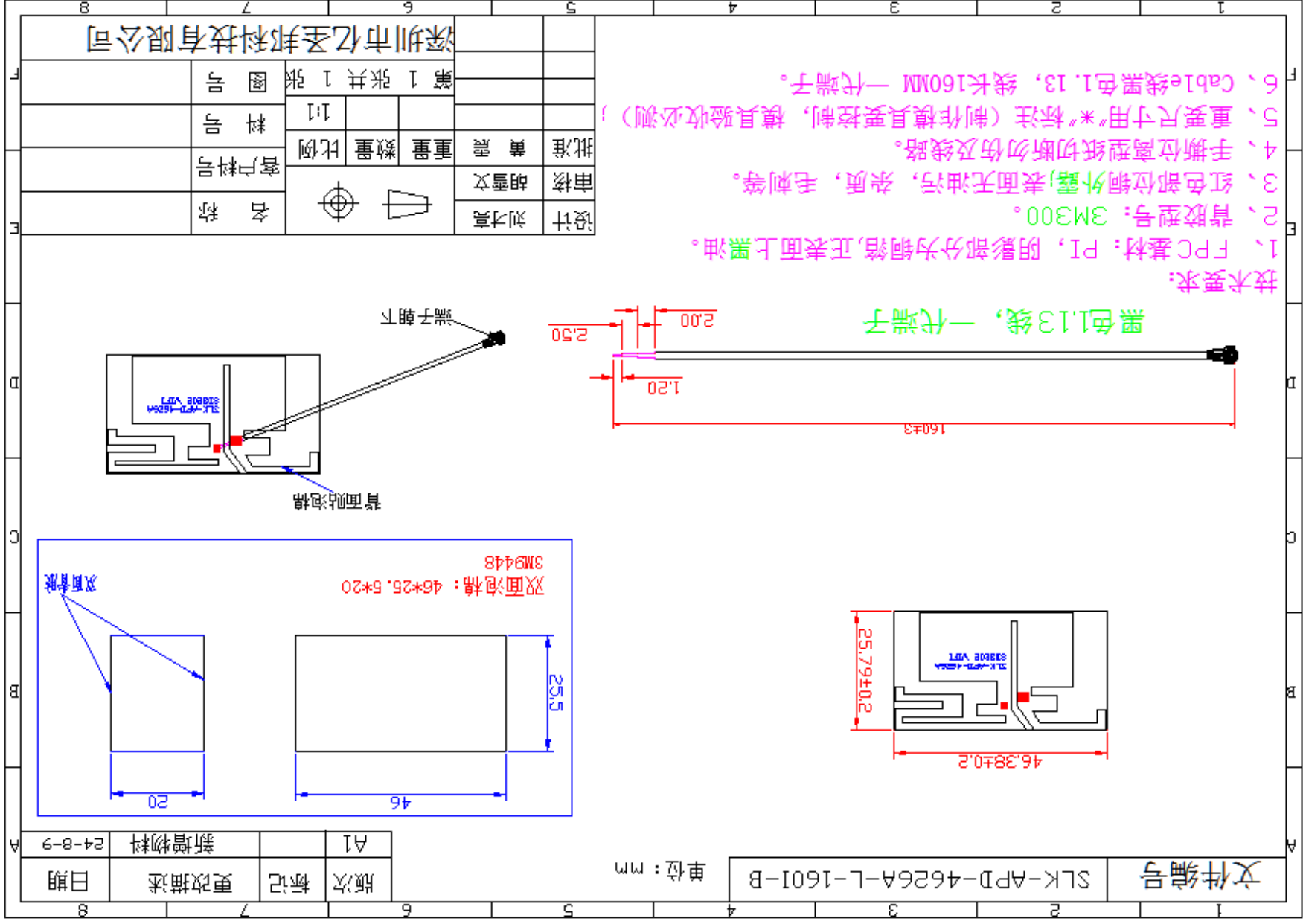
测试环境：室内10M，信号强度2.4G为-30dBm,5G为-39dBm

2. Test Result

2.4 GPS practical Test



6. Antenna Dimensions (unit: mm)



3. Conclusions

Thank you