

样品承认书



P/N		
样品适应机型		S15W1P-3200U
样品描述		
开发部	电子	确认结果： ☐ 合格 ☐ 不合格
	结构	确认结果： ☐ 合格 ☐ 不合格
开发承认		确认结果： ☐ 合格 ☐ 不合格
品质部		确认结果： ☐ 合格 ☐ 不合格
采购部		确认结果： ☐ 合格 ☐ 不合格
备注		

表格编号: QESP-023-F06C

深圳天路通电子科技有限公司



SHENZHEN TLT COMMUNICATION CO.,LTD.

S15W1P-3200U- WIFI 副天线 FPC 产品承认书

S15W1P-3200U- WIFI Aux Antenna FPC Product Warranty Card

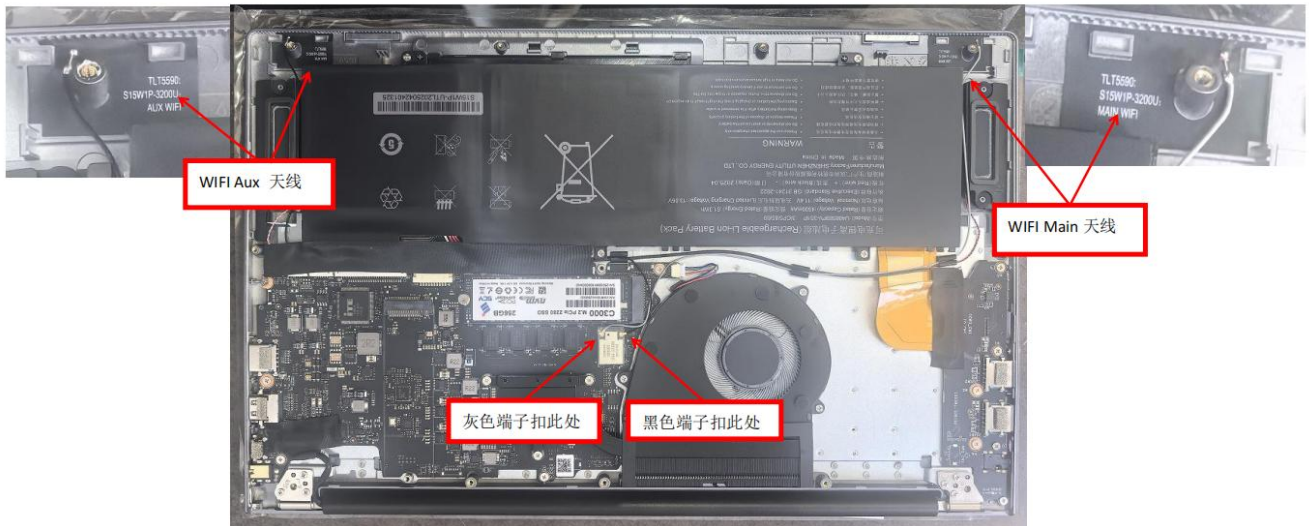


顾客 Customer	阳华数码	天线类型 Antenna type	2.4/5.8G
型号 Model	S15W1P-3200U	版本 Version	最新版本 Latest version
工程代号 Engineering code	TLT5590	批准 Approver	安青容
RF 设计人 RF designer	毛航洲	RD 设计人 RD designer	唐纯政
日期 Date	2025-4-29	日期 Date	2025-04-29

1.测试信息： (Test information)

天线测试信息 Antenna Test information	
项目 (Project)	TLT5590-S15W1P-3200-WIFI Aux Antenna
频段 (Frequency)	2.4G(2402~2483)Mhz/5G(5150~5850)Mhz
模块 (module)	6621C
驱动版本 (Driver version)	2024.10.139.200

2. 天线装配及处理图档 (Antenna assembly and environmental treatment) :



3.有源测试数据 (Active test data) :

3.1: WIFI OTA 测试数据 (WIFI OTA test data) :

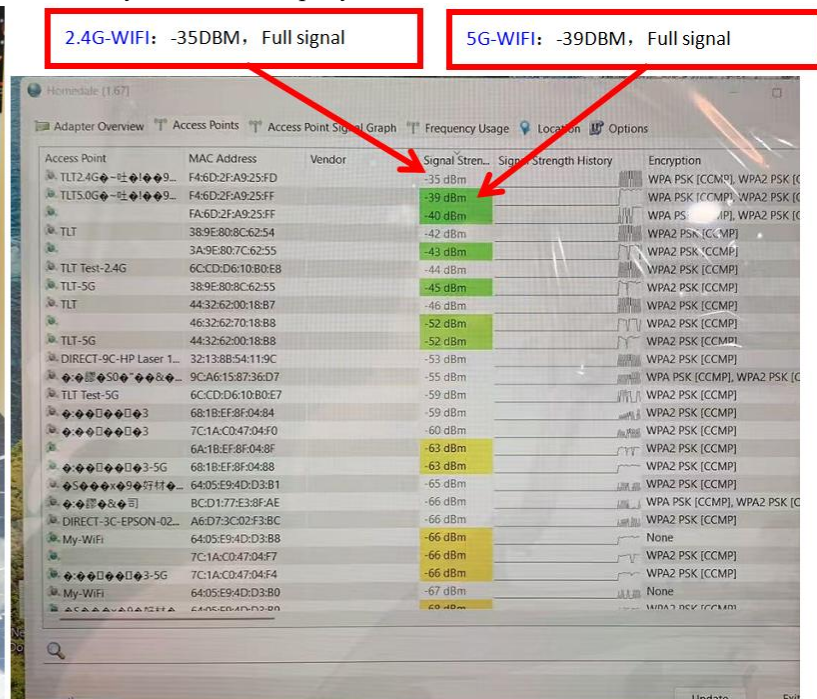
WIFI 2.4G RF Testing		11B(11Mbps)		
Channel		TCH 1	TCH 6	TCH 11
Frequency(Mhz)		2412	2437	2462
	TRP(dBm)	12. 23	12. 76	13. 48
	TIS(dBm)	-73	-74	-74

WIFI 5G RF Testing		11A(6Mbps)		
Channel		TCH 36	TCH 100	TCH 157
Frequency(Mhz)		5180	5500	5785
	TRP(dBm)	11. 13	11. 84	11. 16
	TIS(dBm)	-81	-82	-82

3.2: WIFI 场测 (WIFI field test) :

测试环境: 空旷环境, 距离我司路由器 15 米, 测试如下:

Test environment: open environment, 15 meters away from our company's router, test as follows:



3.3 WIFI 吞吐量测试 (WiFi throughput test) :

```
C:\WINDOWS\system32\cmd. X + v
[ ID] Interval      Transfer      Bandwidth
[364] 18.0-19.0 sec  5.08 MBytes   42.6 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 19.0-20.0 sec  5.27 MBytes   44.2 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 20.0-21.0 sec  4.92 MBytes   41.3 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 21.0-22.0 sec  5.03 MBytes   42.2 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 22.0-23.0 sec  5.36 MBytes   45.0 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 23.0-24.0 sec  5.27 MBytes   44.2 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 24.0-25.0 sec  5.36 MBytes   45.0 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 25.0-26.0 sec  4.52 MBytes   37.9 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 26.0-27.0 sec  4.95 MBytes   41.5 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 27.0-28.0 sec  5.12 MBytes   42.9 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 28.0-29.0 sec  5.38 MBytes   45.2 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 29.0-30.0 sec  5.30 MBytes   44.4 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 30.0-31.0 sec  136 MBytes   38.1 Mbits/sec
C:\Users\A\Desktop\WIFI吞吐量测试方法及软件 - Copy\W
```

2.4G TX: 38.1M

```
Users\A\Desktop\WIFI吞吐量测试方法及软件 - Copy\WIFI吞吐量
Server listening on TCP port 5001
TCP window size: 64.0 KByte (default)
-----
[368] local 192.168.1.100 port 5001 connected with 192.168.1.1
[ ID] Interval      Transfer      Bandwidth
[368] 0.0-30.2 sec   182 MBytes   50.5 Mbits/sec
[400] local 192.168.1.100 port 5001 connected with 192.168.1.10
[ ID] Interval      Transfer      Bandwidth
[400] 0.0-30.2 sec   172 MBytes   47.9 Mbits/sec
[424] local 192.168.1.100 port 5001 connected with 192.168.1.101
[ ID] Interval      Transfer      Bandwidth
[424] 0.0-30.1 sec   210 MBytes   58.4 Mbits/sec
[416] local 192.168.1.100 port 5001 connected with 192.168.1.101
[ ID] Interval      Transfer      Bandwidth
[416] 0.0-30.1 sec   171 MBytes   47.7 Mbits/sec
[448] local 192.168.1.100 port 5001 connected with 192.168.1.101 p
[ ID] Interval      Transfer      Bandwidth
[448] 0.0-30.1 sec   171 MBytes   47.5 Mbits/sec
```

2.4G RX: 47.5M

```
C:\WINDOWS\system32\cmd. X + v
[ ID] Interval      Transfer      Bandwidth
[364] 17.0-18.0 sec  26.1 MBytes   219 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 18.0-19.0 sec  26.0 MBytes   218 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 19.0-20.0 sec  26.7 MBytes   224 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 20.0-21.0 sec  26.2 MBytes   219 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 21.0-22.0 sec  26.6 MBytes   224 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 22.0-23.0 sec  25.6 MBytes   214 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 23.0-24.0 sec  25.8 MBytes   216 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 24.0-25.0 sec  25.3 MBytes   212 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 25.0-26.0 sec  25.6 MBytes   215 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 26.0-27.0 sec  25.5 MBytes   214 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 27.0-28.0 sec  26.1 MBytes   219 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 28.0-29.0 sec  26.6 MBytes   224 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 29.0-30.0 sec  25.8 MBytes   217 Mbits/sec
[ ID] Interval      Transfer      Bandwidth
[364] 30.0-31.0 sec  769 MBytes   215 Mbits/sec
C:\Users\A\Desktop\WIFI吞吐量测试方法及软件 - Copy\W
```

5G TX: 215M

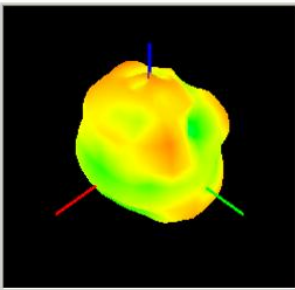
```
Server listening on TCP port 5001
TCP window size: 64.0 KByte (default)
-----
[376] local 192.168.1.4 port 5001 connected with 192.16
[ ID] Interval      Transfer      Bandwidth
[376] 0.0-30.0 sec   1.04 GBytes   296 Mbits/sec
[400] local 192.168.1.4 port 5001 connected with 192.16
[ ID] Interval      Transfer      Bandwidth
[400] 0.0-30.0 sec   1.01 GBytes   289 Mbits/sec
[416] local 192.168.1.4 port 5001 connected with 192.16
[ ID] Interval      Transfer      Bandwidth
[416] 0.0-30.0 sec   1.06 GBytes   304 Mbits/sec
[440] local 192.168.1.4 port 5001 connected with 192.16
[ ID] Interval      Transfer      Bandwidth
[440] 0.0-30.0 sec   1.02 GBytes   293 Mbits/sec
[456] local 192.168.1.4 port 5001 connected with 192.16
[ ID] Interval      Transfer      Bandwidth
[456] 0.0-30.0 sec   1.02 GBytes   292 Mbits/sec
```

5G RX: 292M

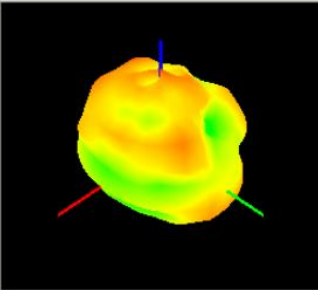
4. 无源测试数据 (Passive test data) :

Aux 天线效率和增益 (Main antenna efficiency and gain) :

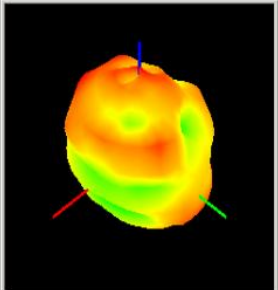
Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Efficiency (%)	Efficiency (dB)
1	2400.0	2400.00	-0.09	37.7%	-4.24
2	2405.0	2405.00	-1.12	29.4%	-5.31
3	2410.0	2410.00	-0.21	36.1%	-4.43
4	2415.0	2415.00	0.50	41.9%	-3.77
5	2420.0	2420.00	0.36	39.8%	-4.01
6	2425.0	2425.00	0.60	41.4%	-3.83
7	2430.0	2430.00	0.83	43.3%	-3.64
8	2435.0	2435.00	0.24	37.6%	-4.25
9	2440.0	2440.00	0.13	36.2%	-4.41
10	2445.0	2445.00	0.86	42.4%	-3.73
11	2450.0	2450.00	0.40	37.9%	-4.21
12	2455.0	2455.00	0.11	35.5%	-4.50
13	2460.0	2460.00	1.01	43.7%	-3.59
14	2465.0	2465.00	0.97	42.5%	-3.72
15	2470.0	2470.00	0.83	40.4%	-3.93
16	2475.0	2475.00	0.77	40.2%	-3.96
17	2480.0	2480.00	0.43	37.0%	-4.32
18	2485.0	2485.00	0.68	39.0%	-4.09
19	2490.0	2490.00	1.68	48.5%	-3.14
20	2495.0	2495.00	2.29	55.5%	-2.56
21	2500.0	2500.00	1.26	44.4%	-3.53
22	5150.0	5150.00	3.96	25.7%	-5.91
23	5200.0	5200.00	2.59	26.6%	-5.75
24	5250.0	5250.00	-0.29	31.4%	-5.04
25	5300.0	5300.00	2.89	30.2%	-5.20
26	5350.0	5350.00	-0.46	28.1%	-5.52
27	5400.0	5400.00	2.22	29.0%	-5.37
28	5450.0	5450.00	1.79	29.6%	-5.29
29	5500.0	5500.00	1.42	31.5%	-5.02
30	5550.0	5550.00	4.18	32.8%	-4.85
31	5600.0	5600.00	2.89	29.5%	-5.30
32	5650.0	5650.00	2.68	28.5%	-5.46
33	5700.0	5700.00	1.67	34.6%	-4.61
34	5750.0	5750.00	0.89	36.7%	-4.35
35	5800.0	5800.00	3.24	31.7%	-4.99
36	5850.0	5850.00	1.04	31.2%	-5.06



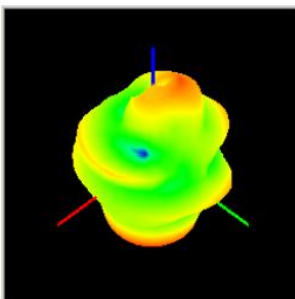
2.4G



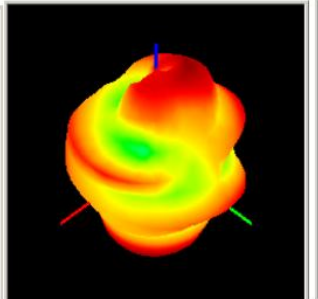
2.45G



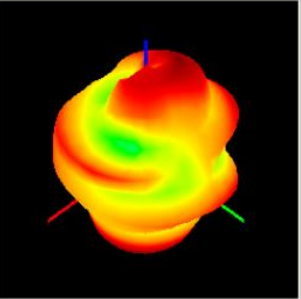
2.48G



5.2G



5.5G



5.8G

5.天线 2D 图档 (Antenna 2D drawing) :

