

Product Number: TLT5468-MST-P10-T760

Product Name: Mobile Phone Antenna



SHENZHEN TLT COMMUNICATION CO.,LTD.

MST-P10-T760 antenna FPC

Product acknowledgement



Customer	Mast	Antenna type	2.4/5.8G
Types of mobile phones	Tablet computer	Edition	Latest version
Engineering code	TLT5468	Antenna type	PIFA
RF Designer	Zhouhang Mao	RD Designer	Chunzheng Tang
date	2024-9-27	date	2024-9-27
Customer information:			

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1. Antenna parameters

This report mainly provides the test conditions and results of various electrical and structural properties in mobile phone testing, which is designed by Tiantong antenna.

Electrical parameter

1.1.1 Electrical performance evaluation

The frequency band range of the antenna is 2400MHz~2480MHz and 5200MHz~5800MHz. This is an antenna designed and manufactured by Tiantong.

1.1.2 Matching circuit diagram

Use the original matching circuit diagram on the PCB board

1.2 Structural Parameters

1.2.1 Antenna Components

The antenna is generally composed of FPC.

1.2.2 Performance Test Requirements

Test item	Description	Acceptance criteries
1.Low temperature test	Temperature: -20 °C Time: 24 hours	1. No obvious damage 2. Electrical performance up to standard
2. High temperature test	Temperature: 80 °C Time: 24 hours	1. No obvious damage 2. Electrical performance up to standard
3. Salt spray test	5±0.1% Salt spray PH : 6.5-7.2 Temperature: 35±1 °C Time: 24 hours	1. No color change 2. No obvious cracks in appearance
4.Environmental adaptability test	Total value of Pb、Hg、Cr+6、Cd in packing materials is smaller than 50PPM Pb、Hg、Cr+6、PBBs、PBDEs in components are smaller than 500PPM, Cd is smaller than 50PPM	

Step 2 Test

The antenna is installed in the customer provided terminal for testing. Figure 3 depicts the electrical performance of the antenna as installed in the device

Test.

VSWR test

Test connection

Device connection sequence for testing VSWR: AgilentE8753C Network analyzer → Test cable → Customer provided mobile phone

2.1.2 VSWR

The table below describes the values of the voltage standing wave ratio of the antenna at both ends of the frequency band, in relation to the backloss and standing wave ratio

	WIFI-2.4G		WIFI-5.0G	
Frequency (MHz)	2.4G	2.48G	5.15G	5.80G
VSWR	1.59	1.39	1.59	1.60
Return Loss	-12.85	-15.71	-12.84	-12.78

2.2 Gain and efficiency testing

2.2.1 Test Environment

Tianlu Microwave darkroom: The frequency range of the test is from 800MHz to 6GHz, and in the 50cm diameter spherical area, the dark room reflects less than -50dB from 800MHz to 6GHz.

2.2.2 Testing Devices

Agilent 8960(8753C) wireless communication test device, dipole antenna, French Satimo antenna test system, printer, etc.

	2.40G	2.49G	5.20G	5.8G
Gain (dBi)	3.16	2.39	1.35	0.97
Efficiency (%)	55.9	46.4	39.1	32.3

3. Summarize

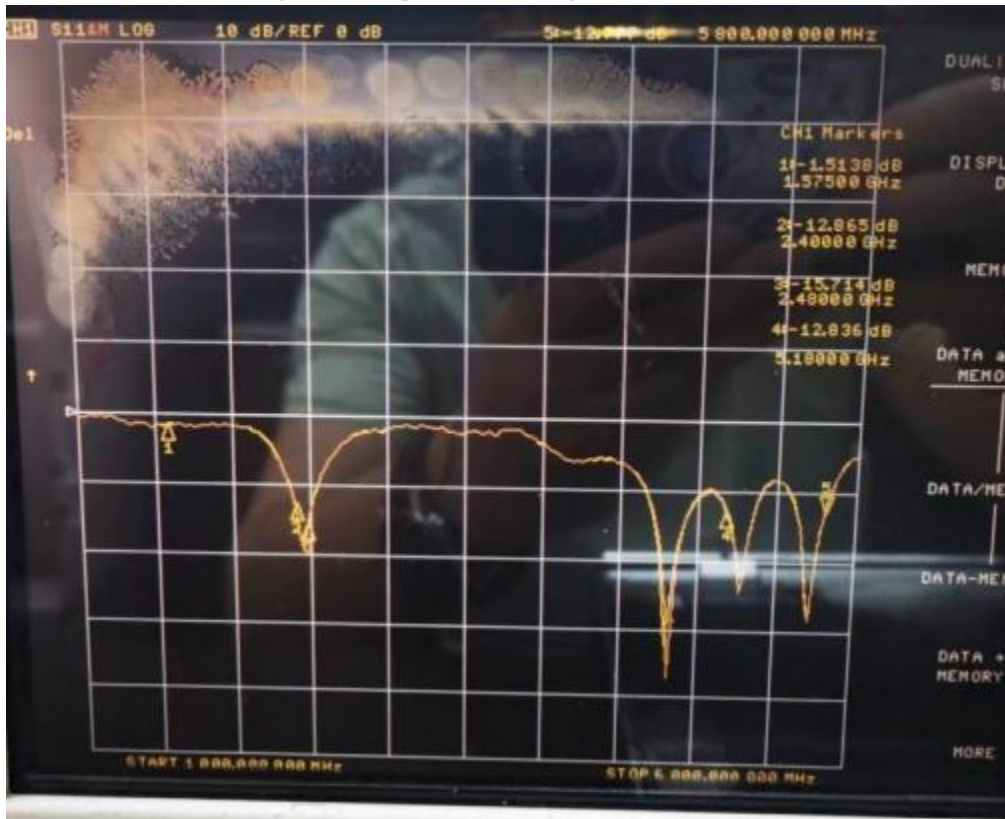
The antenna is designed according to the terminal sample provided by the customer. The electrical parameters and the result performance of the antenna meet the standard, we believe that you will be satisfied.

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4. Attached drawing

4.1 Backloss and voltage VSWR parameter diagram



5. WIFI Graphs and test data

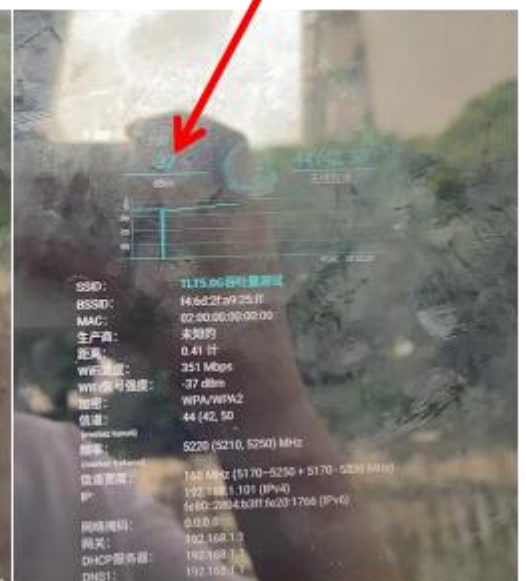
5.1 WIFI Field test: Test environment: open environment, 15 meters away from our router, the test is as follows:



2.4G-WIFI 显示-37DBM, 信号满格

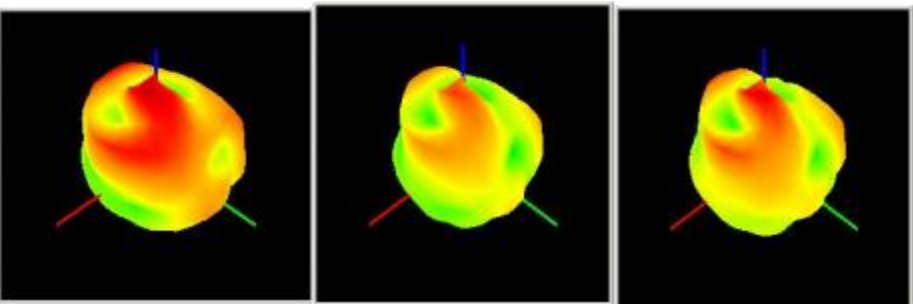


5G-WIFI 显示-37DBM, 信号满格



5.3 WIFI 增益和效率测试:

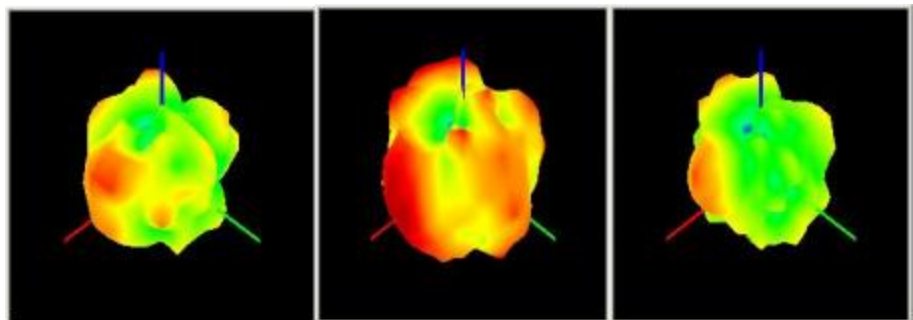
Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Efficiency (%)	Efficiency (dB)
1	2400.0	2400.00	3.16	55.9%	-2.52
2	2405.0	2405.00	1.32	37.2%	-4.30
3	2410.0	2410.00	1.16	36.2%	-4.41
4	2415.0	2415.00	1.72	41.2%	-3.86
5	2420.0	2420.00	2.24	46.2%	-3.36
6	2425.0	2425.00	2.33	47.1%	-3.27
7	2430.0	2430.00	1.63	40.4%	-3.94
8	2435.0	2435.00	0.43	30.9%	-5.09
9	2440.0	2440.00	0.54	31.8%	-4.97
10	2445.0	2445.00	1.97	44.3%	-3.54
11	2450.0	2450.00	1.20	37.5%	-4.27
12	2455.0	2455.00	0.04	28.7%	-5.43
13	2460.0	2460.00	0.84	34.3%	-4.65
14	2465.0	2465.00	1.50	39.6%	-4.02
15	2470.0	2470.00	1.87	42.5%	-3.72
16	2475.0	2475.00	1.14	35.7%	-4.48
17	2480.0	2480.00	0.35	29.7%	-5.28
18	2485.0	2485.00	0.86	33.2%	-4.79
19	2490.0	2490.00	2.39	46.4%	-3.33
20	2495.0	2495.00	3.02	53.6%	-2.71
21	2500.0	2500.00	1.59	38.4%	-4.16
22	5150.0	5150.00	1.58	36.5%	-4.38
23	5200.0	5200.00	1.35	39.1%	-4.08
24	5250.0	5250.00	-1.19	24.0%	-6.20
25	5300.0	5300.00	0.97	37.9%	-4.21
26	5350.0	5350.00	-2.63	16.3%	-7.89
27	5400.0	5400.00	0.32	33.2%	-4.78
28	5450.0	5450.00	-0.47	31.3%	-5.04
29	5500.0	5500.00	-1.05	27.8%	-5.55
30	5550.0	5550.00	2.26	51.8%	-2.85
31	5600.0	5600.00	0.41	32.3%	-4.91
32	5650.0	5650.00	-0.37	25.9%	-5.87
33	5700.0	5700.00	-0.40	24.9%	-6.05
34	5750.0	5750.00	-0.30	25.9%	-5.86
35	5800.0	5800.00	0.97	32.3%	-4.91
36	5850.0	5850.00	-0.23	21.4%	-6.69



2.4G

2.45G

2.49G



5.2G

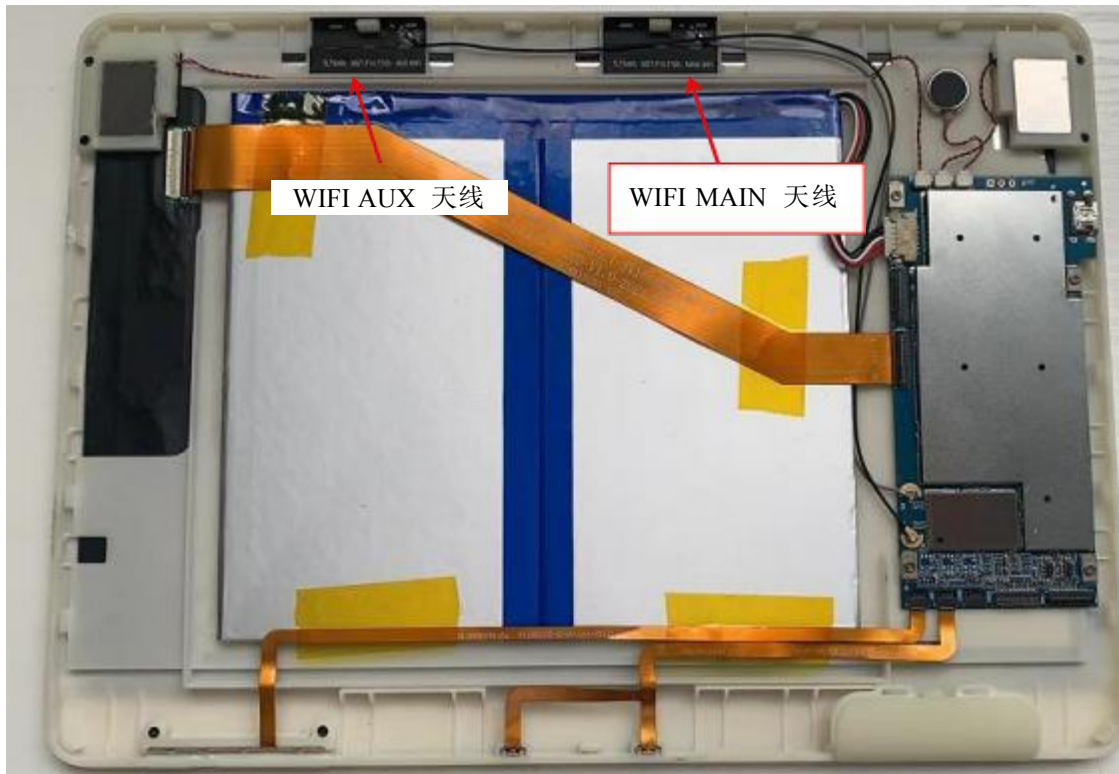
5.55G

5.8G

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6. Antenna assembly drawing file:



7.2D antenna file:

