

Product Number: TLT5254MST-101L

Product Name: Mobile Phone Antenna



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MST-101L Antenna Specification Sheet



Customer	Master	Frequency band range	WLAN/BT
Types of mobile phones	MST-101L	Version	The latest version
Project Code	TLT5254	approve	
RF Designer	Mao Hangzhou	RD Designer	Tang Chunzheng
Date	2024.07.08	Date	2024.07.08
Customer Information:			

1. Antenna parameters

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

Electrical parameters

1.1.1 Electrical performance evaluation

The frequency band range of the antenna is 2400-2500MHz and 5000-6000MHz. This is an antenna designed and manufactured by Sunny Road.

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 a plastic bracket and a piece of hardware.

1.2.2 Performance testing requirements

Test items	description	Acceptance criteria's
1.Low temperature test	Temperature: -20 °C Time: 24 hours	1. There is no visible damage 2. The electrical performance is up to standard
2. High temperature test	Temperature: 80°C Time: 24 hours	1. No visible damage 2. The electrical performance is up to standard
3. Salt spray test	5±0.1% salt spray PH value: 6.5-7.2 Temperature: 35±1°C Time e: 24 hours	1. No color change 2. There are no obvious cracks in the appearance
4. Environmental adaptability test	Total value of Pb, Hg,Cr+6, Cd in packing materials are smaller than 50PPM Pb, Hg, Cr+6, PBBs, PBDEs in components are smaller than 500PPM, Cd is smaller than 50PPM	

2.Test

The antenna is installed in the mobile phone provided by the customer for testing. Figure 3 depicts the antenna being installed in a device (mobile phone).

Electrical performance test

2.1 VSWR Test

Test the connection

Test the VSWR's Device Connection Sequence: AgilentE5062A Network Analyzer → test cable → the customer's mobile phone

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2.1.2 VSWR

The following table depicts the values of the VSWR of the antenna at both ends of the band, and for the graphs of the return loss and VSWR, please refer to Figure 4

2400-2500 VSWR		
Frequency (MHz)	2400	2500
VSWR	2.2	1.3
Return Loss	-8.3	-13.2

5000-6000 VSWR		
Frequency (MHz)	5000	6000
VSWR	2.5	3.9
Return Loss	-7.2	-4.5

2.2.1 Test environment

Tian Lutong microwave anechoic chamber: The frequency range of the test is from 800MHz to 6GHz, and the reflection of the anechoic chamber from 800MHz-6GHz is less than -50dB in a spherical area with a diameter of 50cm.

2.2.2 Test equipment

Agilent 8960 ((5515C) Wireless Communication Test Set, Dipole Antenna, French Satimo Antenna Test System, Printer, etc.

3. Summary

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

3.1 Antenna Gain and Efficiency

Frequency (MHz)	2.40G	2.45G	2.50G	5.15G	5.50G	5.85G
Gain (dBi)	0.17	-0.89	-0.33	0.15	-1.08	-1.95
Efficiency (%)	34.7	26.6	27.1	25.4	38.1	28.1

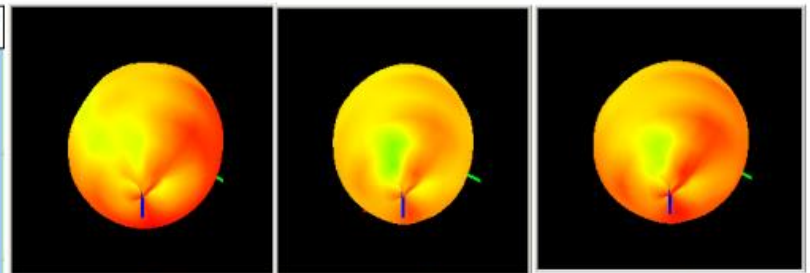
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4.1 2D/3D Radiated Pattern

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Efficiency (%)	Efficiency (dB)
1	2400.0	2400.00	0.17	34.7%	-4.60
2	2405.0	2405.00	-0.90	26.5%	-5.77
3	2410.0	2410.00	-0.24	30.3%	-5.19
4	2415.0	2415.00	0.23	34.0%	-4.69
5	2420.0	2420.00	-0.11	31.8%	-4.98
6	2425.0	2425.00	0.05	33.3%	-4.78
7	2430.0	2430.00	0.40	36.1%	-4.42
8	2435.0	2435.00	-0.14	31.5%	-5.02
9	2440.0	2440.00	-0.71	27.3%	-5.64
10	2445.0	2445.00	-0.71	27.7%	-5.58
11	2450.0	2450.00	-0.89	26.6%	-5.75
12	2455.0	2455.00	0.00	31.6%	-5.00
13	2460.0	2460.00	0.96	37.1%	-4.31
14	2465.0	2465.00	-0.73	25.2%	-5.99
15	2470.0	2470.00	-1.84	30.0%	-5.23
16	2475.0	2475.00	-0.82	35.2%	-4.53
17	2480.0	2480.00	0.01	39.2%	-4.07
18	2485.0	2485.00	-0.65	34.3%	-4.65
19	2490.0	2490.00	-1.17	28.5%	-5.45
20	2495.0	2495.00	-0.75	28.2%	-5.50
21	2500.0	2500.00	-0.33	27.1%	-5.67
22	5150.0	5150.00	0.15	25.4%	-5.95
23	5200.0	5200.00	1.23	27.3%	-5.64
24	5250.0	5250.00	-0.38	26.6%	-5.75
25	5300.0	5300.00	2.36	32.3%	-4.91
26	5350.0	5350.00	0.26	30.3%	-5.19
27	5400.0	5400.00	2.38	36.0%	-4.44
28	5450.0	5450.00	0.47	34.2%	-4.66
29	5500.0	5500.00	-1.08	38.1%	-4.19
30	5550.0	5550.00	1.84	38.6%	-4.13
31	5600.0	5600.00	0.83	31.1%	-5.07
32	5650.0	5650.00	1.28	28.7%	-5.42
33	5700.0	5700.00	-0.53	27.0%	-5.69
34	5750.0	5750.00	-0.02	26.4%	-5.78
35	5800.0	5800.00	0.73	27.2%	-5.65
36	5850.0	5850.00	-1.95	28.1%	-5.51

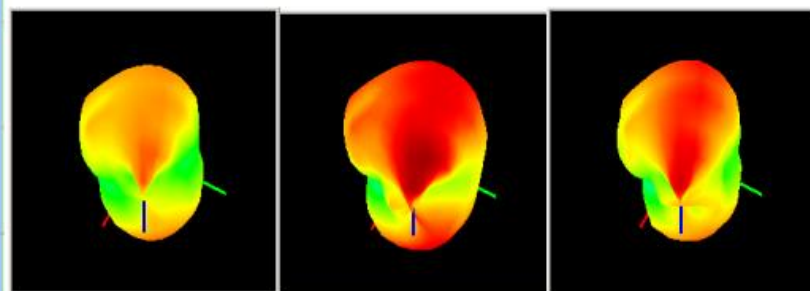
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2.4G

2.45G

2.8G



5.2G

5.5G

5.8G

5. Antenna Dimension

