深圳天路通电子有限公司

天路通

SHENZHEN TLT COMMUNICATION CO.,LTD.

S863T-T310-10LA antenna

The Product Recognition Letter

The Customer	康佳	**Band range**	**4G**
Mobile phone types	**S863T-T310-10LA**	**Version**	**Latest version**
Project code name	**TLT 5151**	**Approval**	
RF Designer	**Mao Hangzhou**	**RD Designer**	**Tang Chunzheng**
Date of this	**2023-1-5**	**Date of this**	**2023-1-5**
Customer Information:			

Address:Third floor, Building B, Dadan Industrial Park, Jihua Road, Bantian Street, Longgang District, Shenzhen City

Metric

1.Antenna parameters

This report mainly provides test conditions and results for various electrical and structural properties in mobile phone tests,

An antenna designed by SkyRoad.

Electrical parameters

1.1.1 Electrical Performance Assessment

The band range of the antenna is 2400MHz-2500MHz and 5000MHz~5800MHz. below are the basic parameters of the electrical performance of the antenna. This is designed antenna and produced by Tian Lu Tong.

1.1.2 distribution circuit diagram

Use the original matching circuit diagram on the PCB board

1.2 Structural parameters

1.2.1 antenna assembly

Antennas generally consisted of plastic supports and hardware pieces.

1.2.2 can test the requirements

Test item	description	Acceptance criteri e s
1. crytemperature test	temperature:-20℃ Time: 24 hours	The 1. had no obvious damage The 2. electrical performance meets the standard
The 2. high-temperature test	temperature.: 80℃ Time: 24 hours	The 1. had no obvious damage The 2. electrical performance meets the standard
3. salt fog test	5 ± 0.1% salt mist PH-value: 6.5-7.2 temperature: 35±1℃ Tim e: e:24 hours	1.No color was changed 2.There are no obvious cracks in the appearance
4. environmental adaptability test	Total value of Pb, Hg, Cr+6, Cd in packing materials is smaller thall 50PPM Pb, Hg, Cr+6, PBBs, PBDEs in components are smaller than 500PPM,Cd is smaller than 50PPM	

2. The test

Antenna are installed in a customer provided phone for testing. describes the antenna in mobile) for the equipment (electrical performance test.

2.1 The VSWR test

2.1.1Test the connection

Test VSWR order of device connections: Agilent E8753 network analyzer → test cable → customer-provided machine

2.1.2 VSWR

The table below describes the values of the voltage resident wave ratio of the antenna at the two endpoints of the frequency band, involving drawings about the return impairment and resident wave ratio, please refer .

GSM900 Frequency Range						
Frequency Range	Frequency (MHz)	VSWR	Gain (dBi)	Frequency (MHz)	VSWR	Gain (dBi)
	TX		Free Space	RX		Free Space
EGSM	880~915	≤3	≥0dBi± 0.5dBi	935~960	≤3	≥0dBi± 0.5dBi

DCS1800 Frequency Range						
Frequency Range	Frequency (MHz)	VSWR	Gain (dBi)	Frequency (MHz)	VSWR	Gain(dBi)
	TX		Free Space	RX		Free Space
DCS	1710~1785	≤3	≥-2.5dBi ±0.5dBi	1805~1890	≤3	≥-2.5dBi± 0.5dBi

GSM850 Frequency Range						
Frequency Range	Frequency (MHz)	VSWR	Gain (dBi)	Frequency (MHz)	VSWR	Gain (dBi)
	TX		Free Space	RX		Free Space
EGSM	824~844	≤3	≥≥0dBi ±0.5dBi	854~894	≤3	≥≥0dBi± 0.5dBi

PCS1900 Frequency Range						
Frequency Range	Frequency (MHz)	VSWR	Gain (dBi)	Frequency (MHz)	VSWR	Gain(dBi)
	TX		Free Space	RX		Free Space
DCS	1850~1910	≤3	≥-2.5dBi ±0.5dBi	1930~1990	≤3	≥-2.5dBi± 0.5dBi

2.2 Gain and power tests

2.2.1 test environment

Skyway microwave dark chamber: The test frequency range from 800MHz to 6GHz, in a 50cm diameter spherical area, and the dark chamber is reflected less than-50 dB. from 800MHz—6GHz

2.2.2 Test the equipment

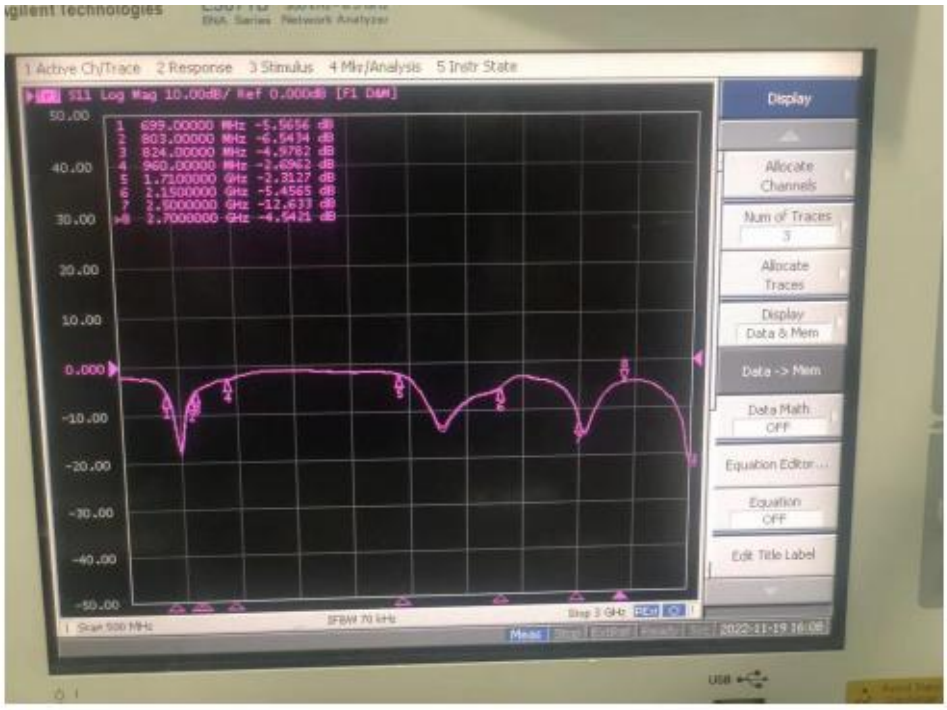
Agilent 8960 ((5515C) Wireless Communication Test Device, Dipole antenna, French Sa t imo Antenna Test System, Printer, etc.

3. summary

The antenna is designed according to the machine samples provided by the customer, and the electrical parameters and result performance of the antenna meet the standard, and we are sure to make you satisfied.

4. additional graphics

4.1 Drawing of return loss and voltage standing wave ratio parameters



5. Antenna Test Data

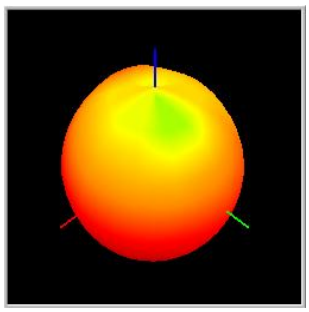
2G/3G	信道	传导功率	传导灵敏度	TRP	TIS	2G/3G	信道	传导功率	传导灵敏度	TRP	TIS
GSM850	128	31.5	-106	26.5	-104	PCS1900	512	28.7	-108	27.2	-103
	190	31.4	-106	26.2	-103		660	28.7	-107	26.4	-104
	251	31.3	-106	25.4	-102		810	28.7	-107	25.8	-102
DCS1800	512	28.2	-107	24.4	-104						
	698	28.3	-107	25.7	-104						
	885	28.5	-107	26.5	-105						
W850	4357	20.8	-108	16.8	-104	W1900	9662	20.8	-109	18.8	-107
	4407	20.9	-108	16.5	-103		9800	20.6	-109	18.6	-108
	4458	20.9	-109	15.2	-104		9938	20.5	-109	18.1	-105

4G	信道	传导功率	传导灵敏度	TRP	TIS	4G	信道	传导功率	传导灵敏度	TRP	TIS
LTE-B2	18650	22.6	-94	19.2	-91	LTE-B4	20000	22.2	-93	18.2	-90
	18900	22.5	-94	18.8	-89		20175	22.1	-93	17.4	-90
	19150	22.5	-93	19.5	-90		20350	22.2	-93	18.7	-88
LTE-B5	20450	22.3	-94	17.9	-91	LTE-B12	23010	22.2	-93	16.5	-91
	20525	22.2	-94	16.7	-89		23095	22.0	-93	17.6	-92
	20600	22.2	-93	16.9	-90		23179	22.0	-93	17.5	-91
LTE-B17	23730	22.0	-94	16.5	-92	LTE-B66	132022	22.0	-93	17.4	-92
	23790	22.0	-93	18.2	-91		132322	22.2	-93	18.2	-90
	23849	22.0	-93	17.7	-91		132622	22.1	-93	18.5	-90
LTE-B71	133172	21.1	-94	16.5	-92	LTE-B38	37850	21.1	-93	18.2	-89
	133297	21.1	-93	17.5	-92		38000	21.1	-93	18.1	-89
	133422	21.1	-94	17.7	-93		38249	21.3	-93	18.9	-90
LTE-B41	40340	21.2	-93	17.9	-89						
	40620	21.1	-94	18.3	-89						
	41140	21.4	-93	18.0	-90						

5.1Antenna Gain

Band	GSM850	GSM1900	GSM1800	WCDMA B2	WCDMA B5	LTE-B2	LTE-B4
Frequency (MHz)	824~894	1850-1990	1710-1880	1850-1990	824-894	1850-1990	1710-2155
Gain (dBi)	-2.9	1.7	2.0	1.7	-2.9	1.7	2.0
Band	LTE-B5	LTE-B12	LTE-B17	LTE-B66	LTE-B71	LTE-B41	WIFI/BT
Frequency (MHz)	824~894	699-746	704-746	1710-2200	617-698	2496-2690	2400
Gain (dBi)	-2.9	-2.0	-2.0	2.0	-1.9	2.5	2.1

5.2 Antenna Pattern



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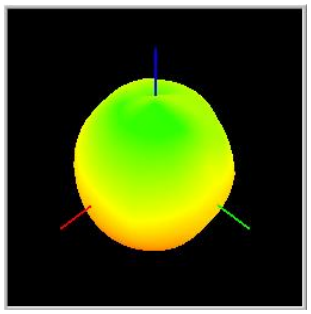

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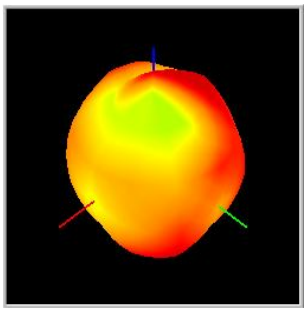

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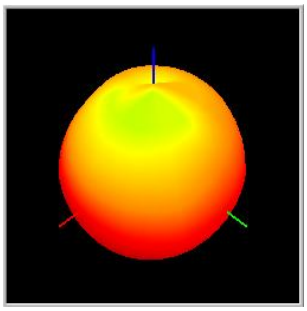

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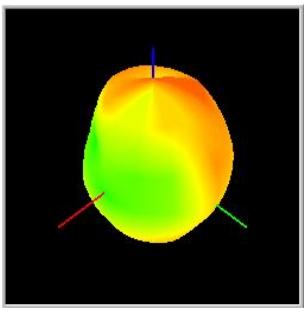

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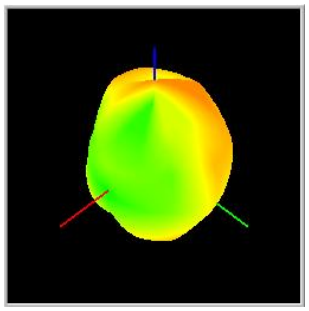

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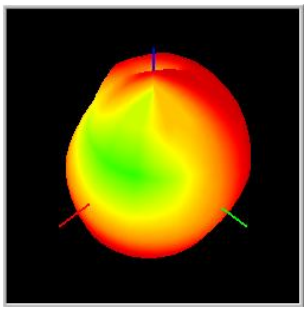

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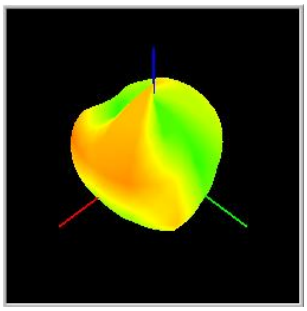

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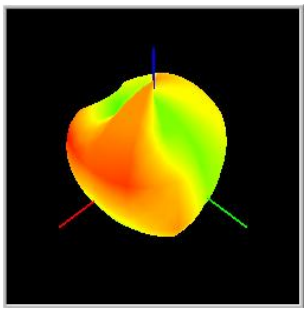

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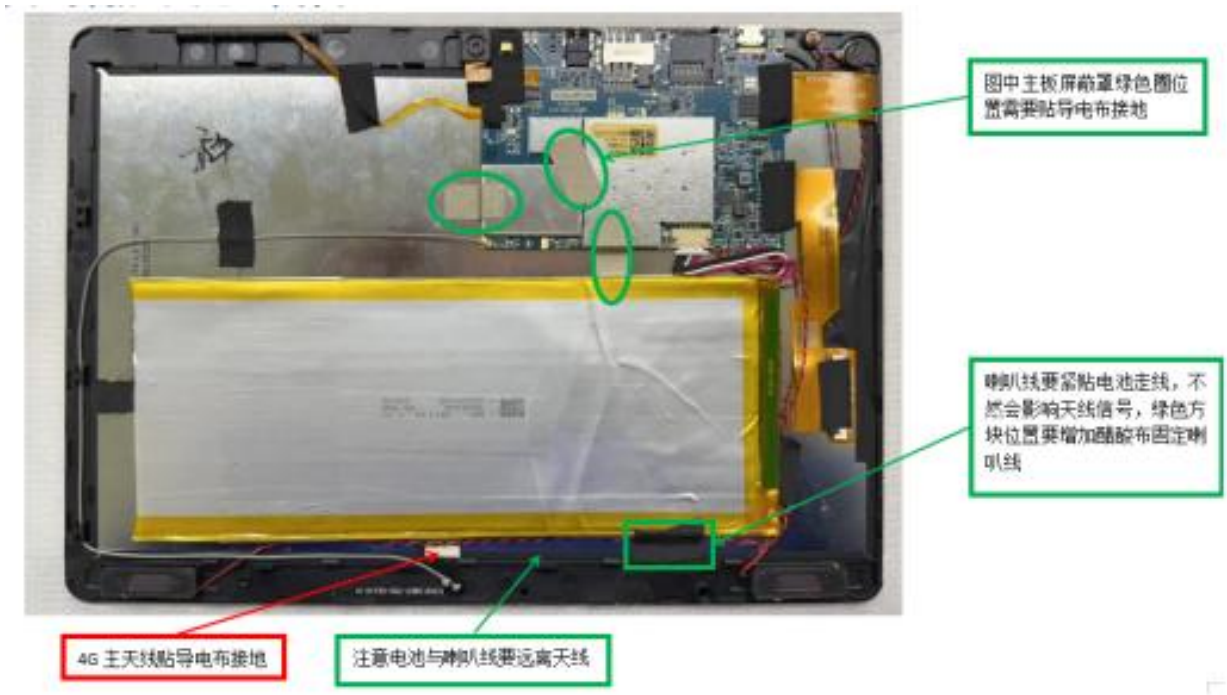
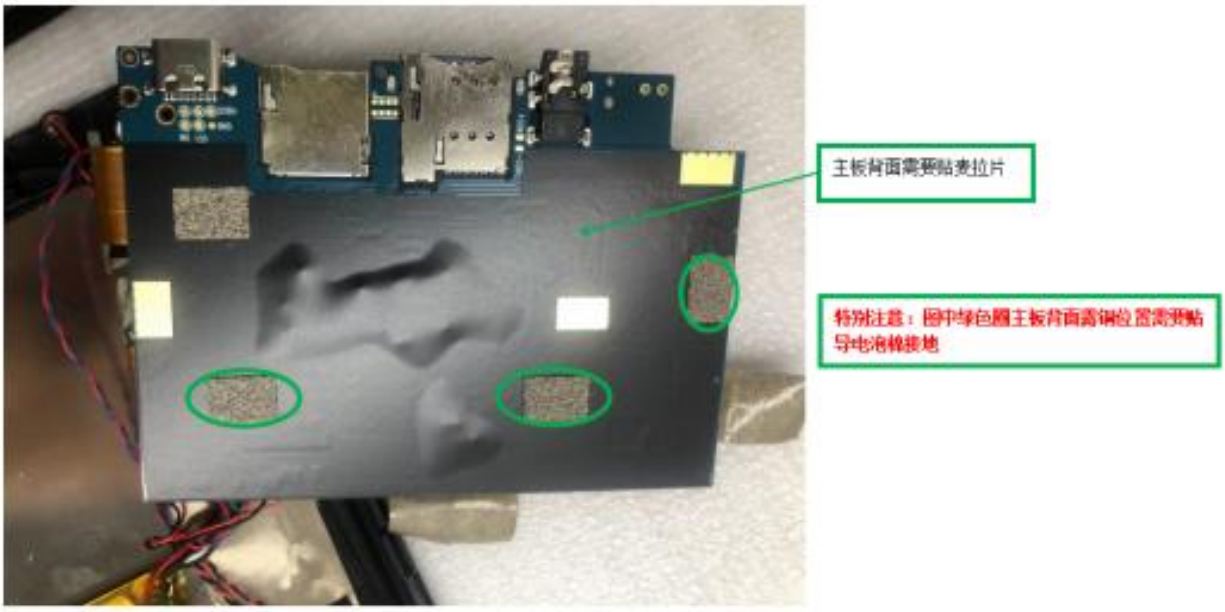
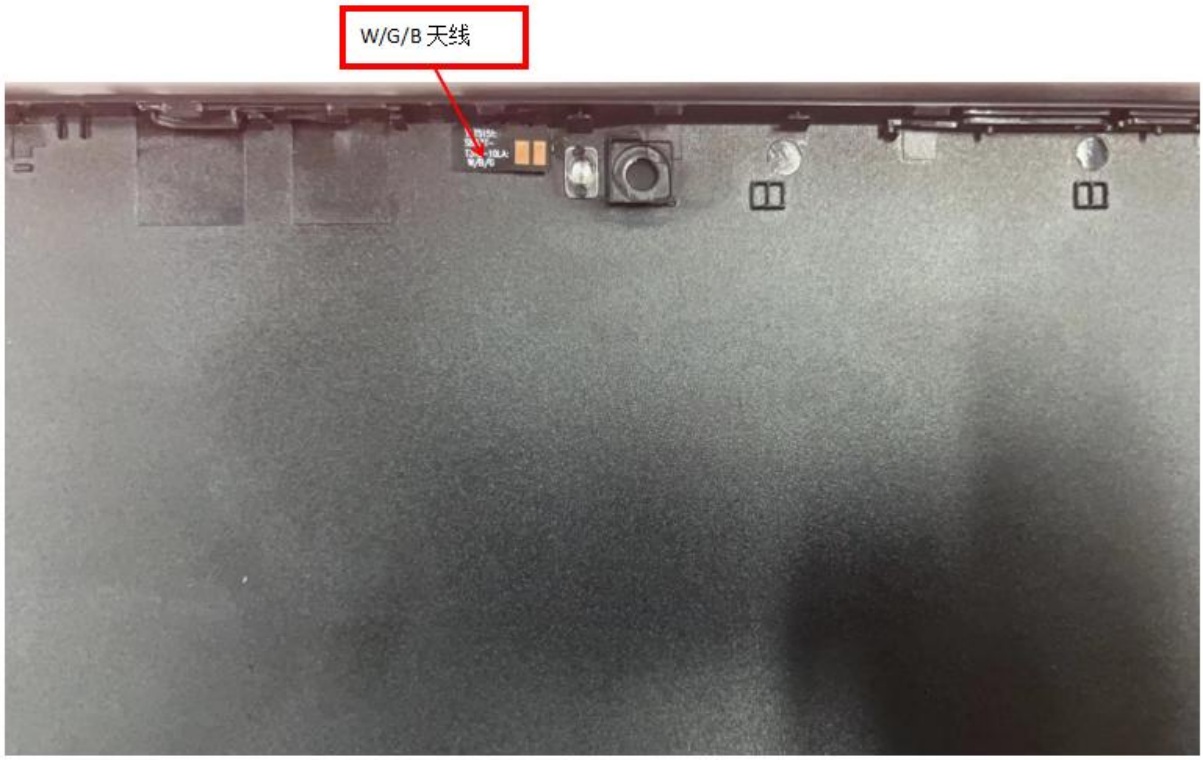
6.Antenna assembly and processing drawing file



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7. Antenna 2D Profile