Shenzhen Haotiancheng Wireless Technology Co., Ltd	Name：Sample Approval
	Ver：V1.0
	date：2023.12.21

Sample Approval Sheet

Project Name：S6535

Sample Name：Main+DIV+WIFI/BT antenna

Sample SPEC：FPC material, gold-plated, 3M300 backing adhesive

Customer PN.：

Transfer Date： 2023.12.21

Supplier Confirm	Project	Engineer	Quality
	Xiao Qiang	Michael huang	Gu Shuang
date	2023.12.21	2023.12.21	2023.12.21

Customer confirm	PM	Electron	MD	PD	QE
date					

conclusion	□ MP □ Limits use（ ）K

□ **ROHS**

Supplier name:Shenzhen Haotiancheng Wireless Technology Co., Ltd

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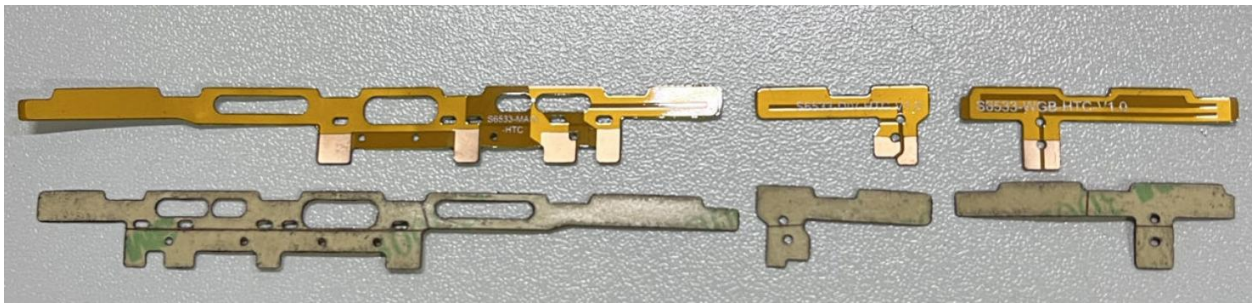
1. Overview of Recognition Letter

This acknowledgment describes the condition of the built-in antenna of the Rui Ou S6535, with its frequency band LTE/GSM/WCDMA/WIFI/BT/GPS/NFC, manufactured by Shenzhen Haotiancheng Wireless Technology Co., Ltd.

2. Appearance

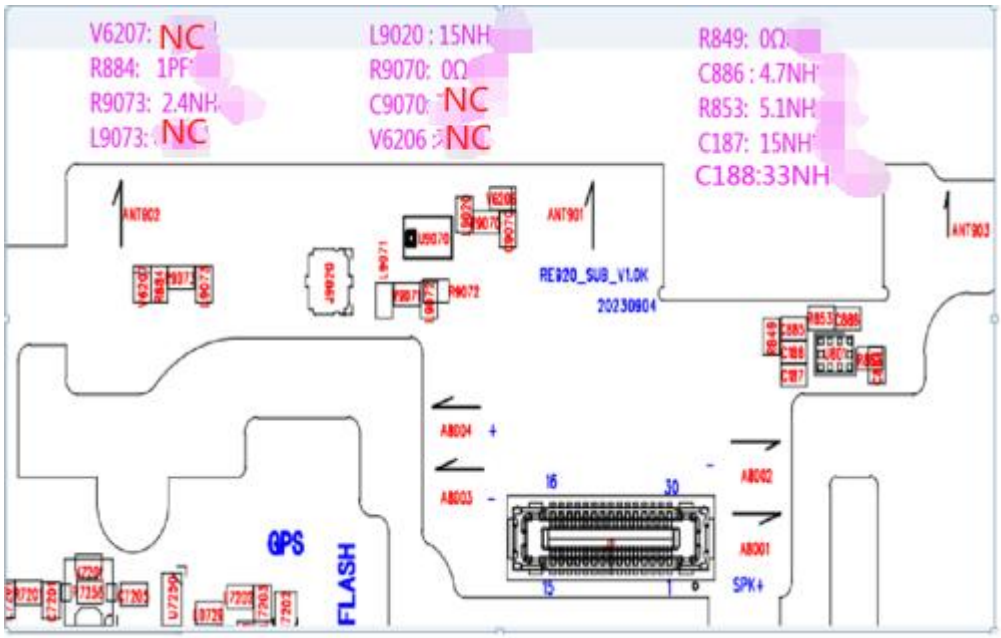


Electrical performance

2.1. Antenna frequency band

	4G	WIFI/BT	GPS
transmit frequency band(MHz)	824~2690	2400~2500	
Receiving frequency band(MHz)	894~2690	2400~2500	1575

3.2. Matching circuit



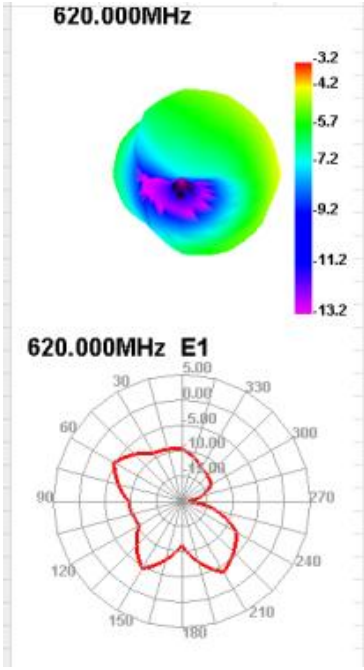
RF tuning switch	Control frequency band
RF1 (4.7NH）	GSM900 WCDMA
RF2（5.6nH）	GSM850 WCDMA-B5 LTE-B5
RF3（15nH）	LTE-B12/13
RF4（33nH）	LTE-B71
Divider control	DCS1800 PCS1900 WCDMA-B2/4 LTE-B2/4/66/41

3.3.Impedance requirements

50 ohm

3.4.Antenna passive gain and apple diagram

Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)
600	-3.01	700	-2.76	820	-1.12	880	-0.76	1500	-0.18	1710	0.41	2400	0.95	2300	0.45
610	-3.83	710	-2.92	830	-1.02	890	-0.92	1510	-0.39	1720	0.68	2410	0.91	2310	0.42
620	-3.25	720	-2.61	840	-1.68	900	-0.61	1520	-0.37	1730	0.8	2420	0.91	2320	0.38
630	-2.21	730	-2.98	850	-1.27	910	-0.98	1530	-0.41	1740	0.77	2430	2.05	2330	0.28
640	-2.63	740	-2.78	860	-1.25	920	-0.78	1540	-0.21	1750	0.88	2440	1.47	2340	0.22
650	-2.51	750	-2.74	870	-1.96	930	-0.74	1550	0.21	1760	0.99	2450	1.55	2350	0.42
660	-2.02	760	-2.6	880	-1.99	940	-0.6	1560	0.56	1770	0.99	2460	1.23	2360	0.37
670	-2.53	770	-2.65	890	-2.27	950	-1.87	1570	0.78	1780	1.15	2470	1	2370	0.51
680	-2.76					960	-1.68	1580	0.82	1790	1.1	2480	1.01	2380	0.29
690	-2.93							1590	0.63	1800	1.24	2490	1.13	2390	0.03
700	-2.52									1810	1.34	2500	0.9	2400	0.12
										1820	1.39			2410	0.25
										1830	1.44			2420	0.29
										1840	1.5			2430	0.6
										1850	1.59			2440	0.88
										1860	1.5			2450	1.03
										1870	1.18			2460	1.12
										1880	0.76			2470	0.9
										1890	0.4			2480	0.87
										1900	0.18			2490	0.78
										1910	0.14			2500	0.72
										1920	1.4			2510	0.58
										1930	1.82			2520	0.31
										1940	1.15			2530	0.26
										1950	1.53			2540	0.2
										1960	1.46			2560	0.24
										1970	0.83			2570	0.19
										1980	0.91			2580	0.02
										1990	0.93			2590	0.02
										2000	0.27			2600	0.28
										2010	0.25			2610	0.44
										2020	0.19			2620	0.67
										2030	0.12			2630	1.08
										2040	1.53			2640	1.2
										2050	1.17			2650	1.55
										2060	0.84			2660	1.61
										2070	0.61			2670	1.61
										2080	0.65			2680	1.27
										2090	0.55			2690	1.32
										2100	0.7				
										2110	0.33				
										2120	0.17				
										2130	0.07				
										2140	0				
										2150	0.27				
										2160	0.57				
										2170	0.81				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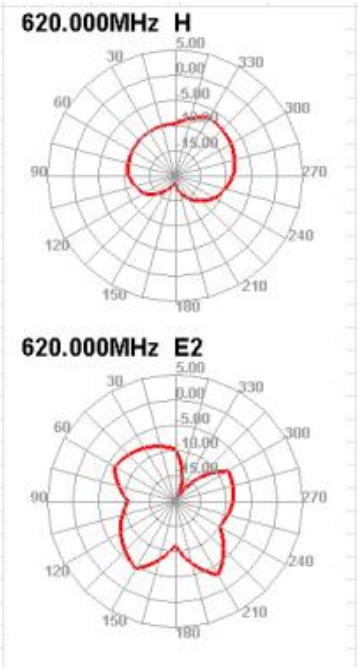
-4.2
-5.7
-7.2
-9.2
-11.2
-13.2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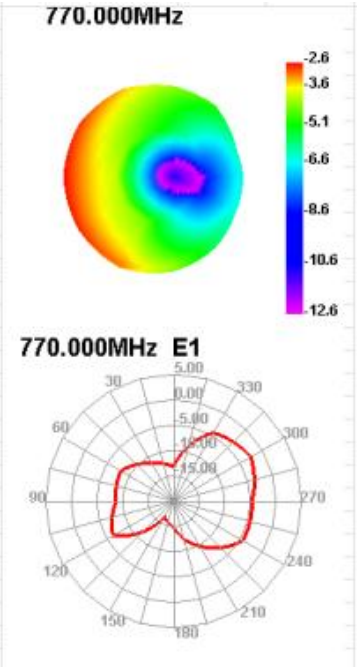
770.000MHz
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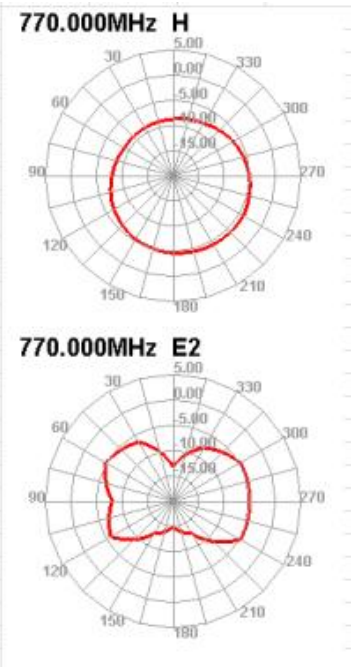
-3.6
-5.1
-6.6
-8.6
-10.6
-12.6

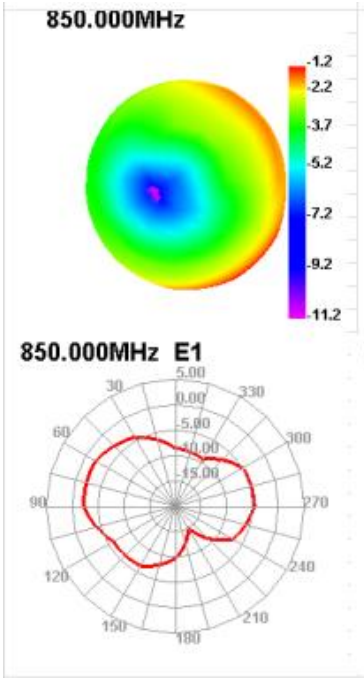

770.000MHz H

620.000MHz E1

620.000MHz E2

770.000MHz E1

770.000MHz E2


850.000MHz
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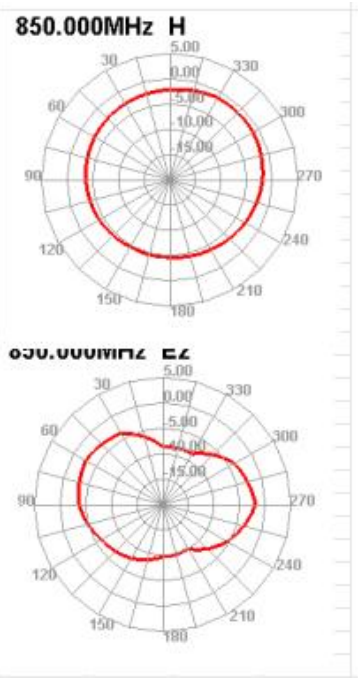
-2.2
-3.7
-5.2
-7.2
-9.2
-11.2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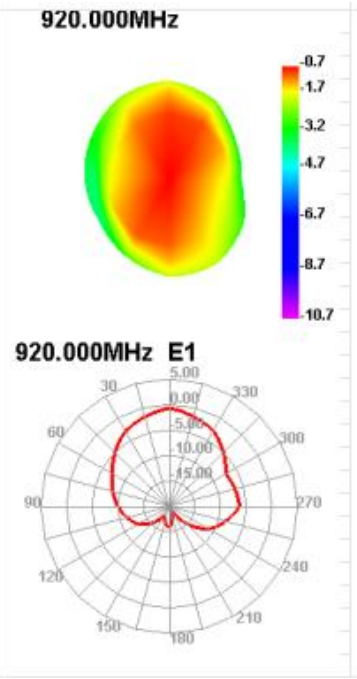
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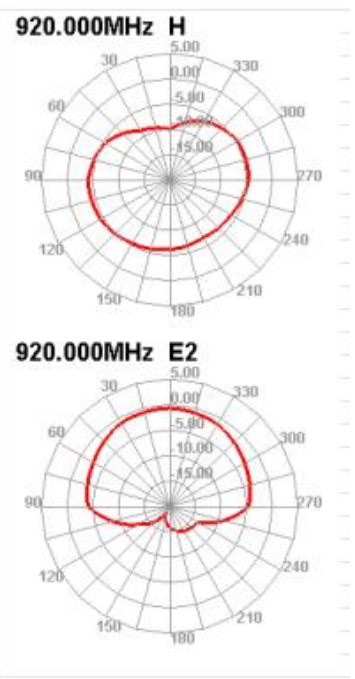
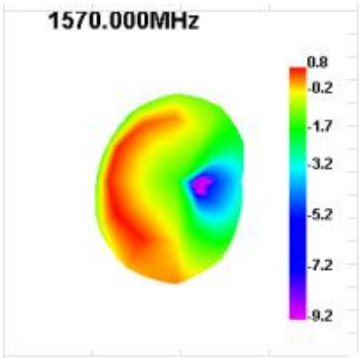
-1.7
-3.2
-4.7
-6.7
-8.7
-10.7


920.000MHz H

850.000MHz E1

920.000MHz E1

920.000MHz E2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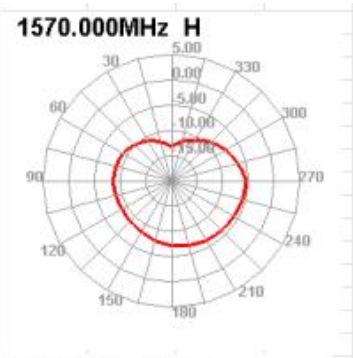
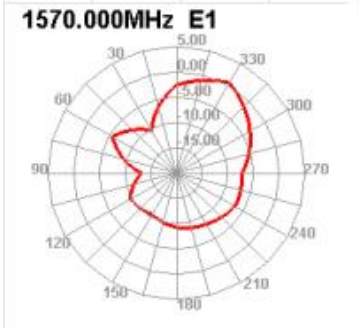
-0.2
-1.7
-3.2
-5.2
-7.2
-9.2


1570.000MHz H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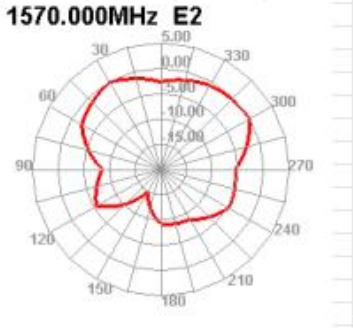
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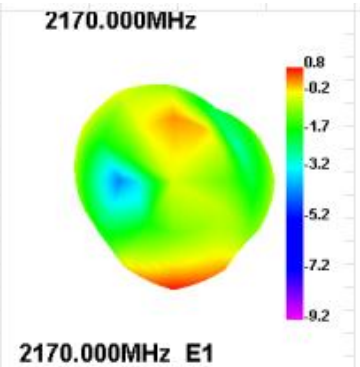
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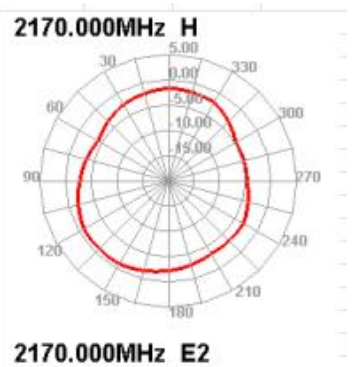
-1.7
-3.2
-5.2
-7.2
-9.2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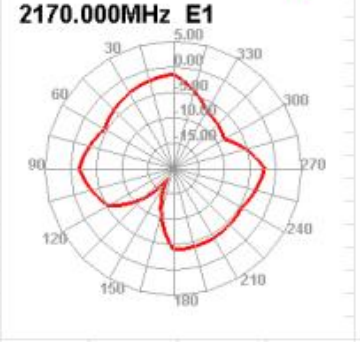
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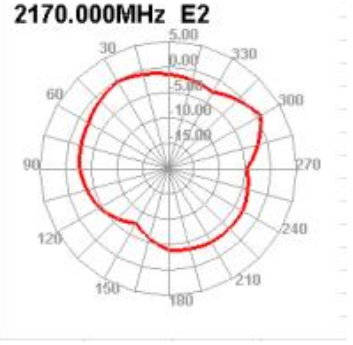
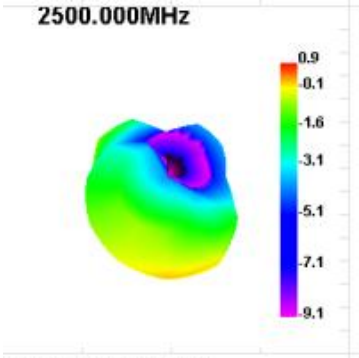
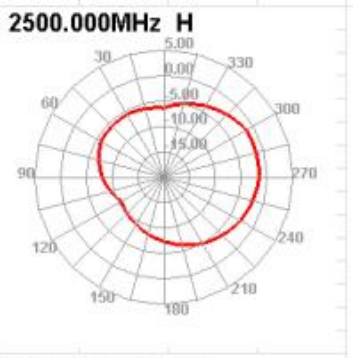
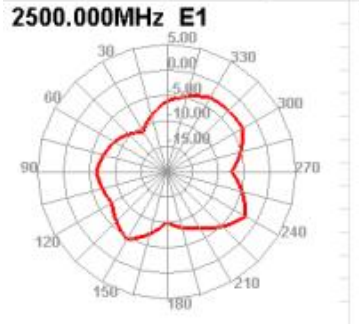
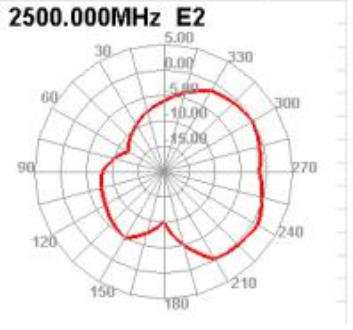
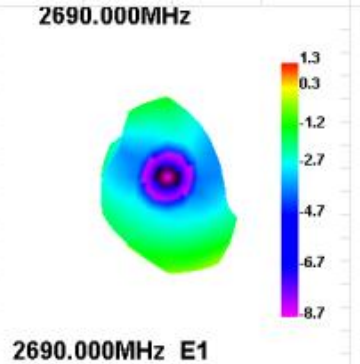

2170.000MHz E2

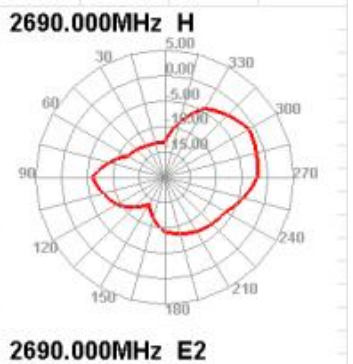

2500.000MHz
0.9
-0.1
-1.6
-3.1
-5.1
-7.1
-9.1


2500.000MHz H


2500.000MHz E1


2500.000MHz E2


2690.000MHz
1.3
0.3
-1.2
-2.7
-4.7
-6.7
-8.7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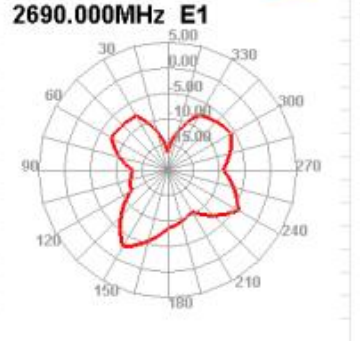
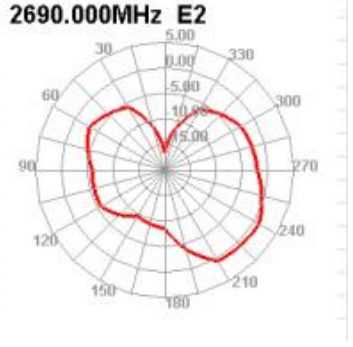

2690.000MHz E1

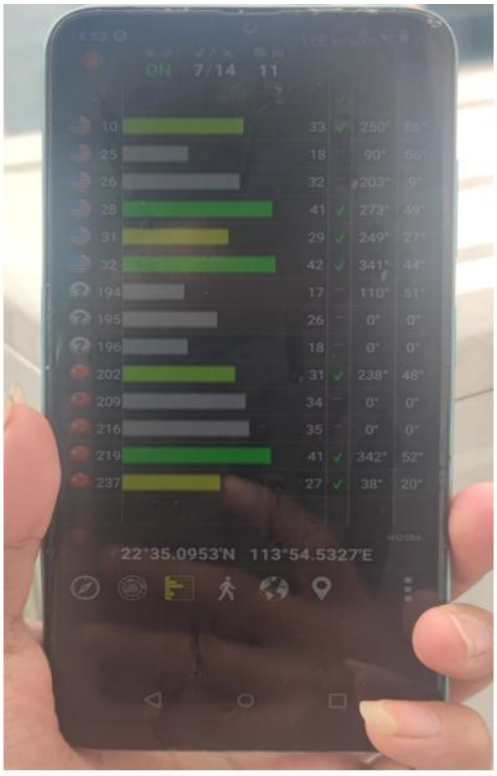

2690.000MHz E2

3.5. Antenna test data

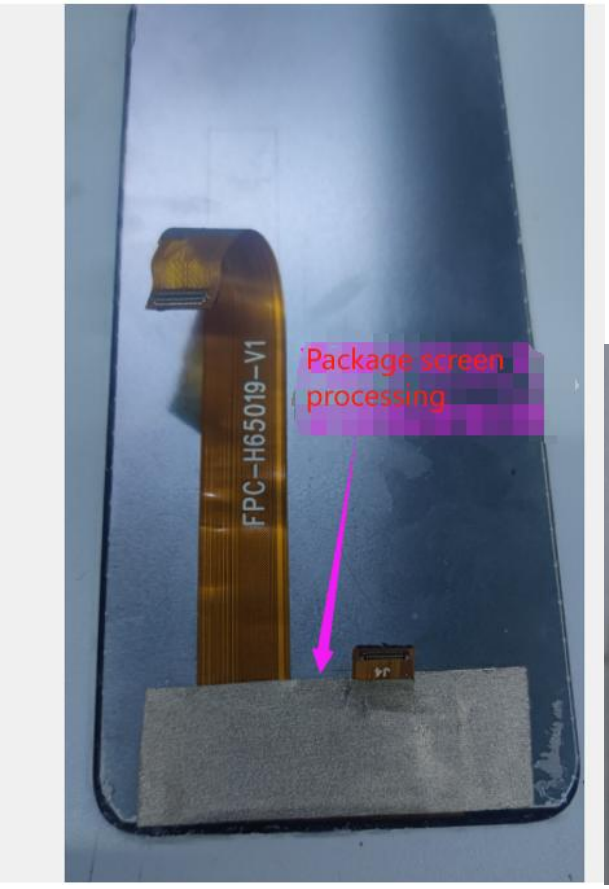
Band	TRP/TIS	L	M	H	Band	TRP/TIS	L	M	H
GSM850	TRP	25.98	26.05	26.01	LTE-B2	TRP	15.21	15.16	15.17
	TIS			-103.05		TIS			-90.87
GSM900	TRP	26.12	25.87	25.83	LTE-B4	TRP	15.59	15.54	15.38
	TIS			-102.54		TIS			-90.18
DCS1800	TRP	23.26	23.15	23.34	LTE-B5	TRP	17.83	17.69	17.56
	TIS			-102.27		TIS			-91.23
PCS1900	TRP	23.59	23.51	23.46	LTE-B12	TRP	16.83	17.25	17.64
	TIS			-102.33		TIS			-90.34
WCDMA850	TRP	17.71	17.82	17.79	LTE-B13	TRP	16.85	16.94	17.01
	TIS			-104.58		TIS			-90.33
WCDMA1700	TRP	15.63	15.44	15.38	LTE-B66	TRP	15.34	15.38	15.44
	TIS			-104.15		TIS			-90.16
WCDMA1900	TRP	15.26	15.35	15.22	LTE-B71	TRP	15.08	15.62	15.89
	TIS			-104.16		TIS			-89.21
	TRP				LTE-B41	TRP	15.34	15.17	15.35
	TIS					TIS			-87.65

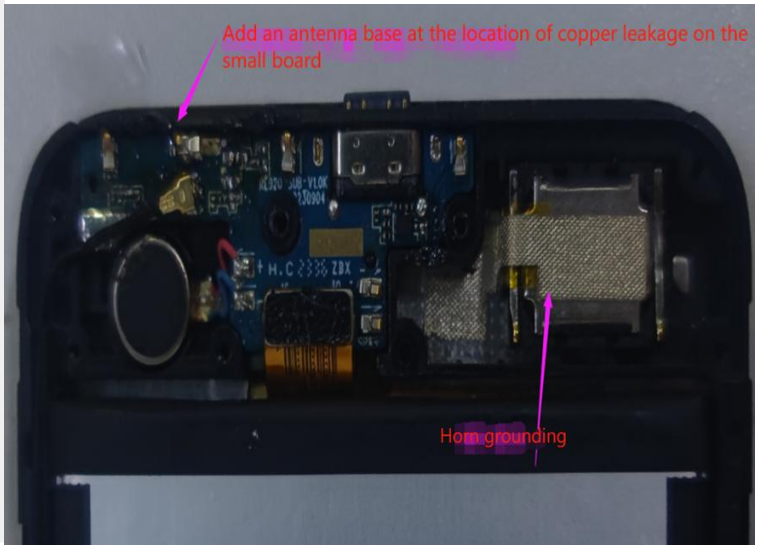
3.6. Secondary antenna test data

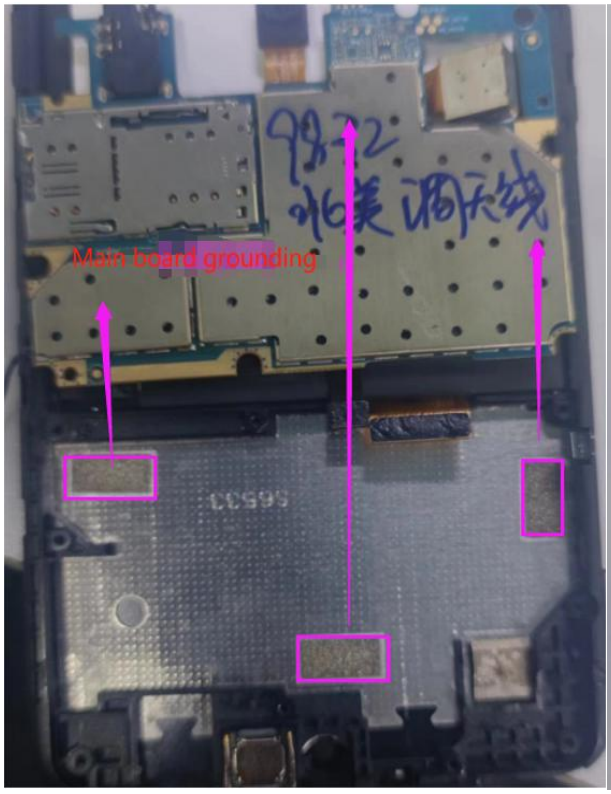
GPS BD	Maximum signal strength	Number of search stars
	41	7
	Average positioning time	Weather conditions
	35S	cloudy day
WIFI	Normal internet distance	
	25	
	Smooth distance of online video	
	15	
BT	Normal call distance	
	15	

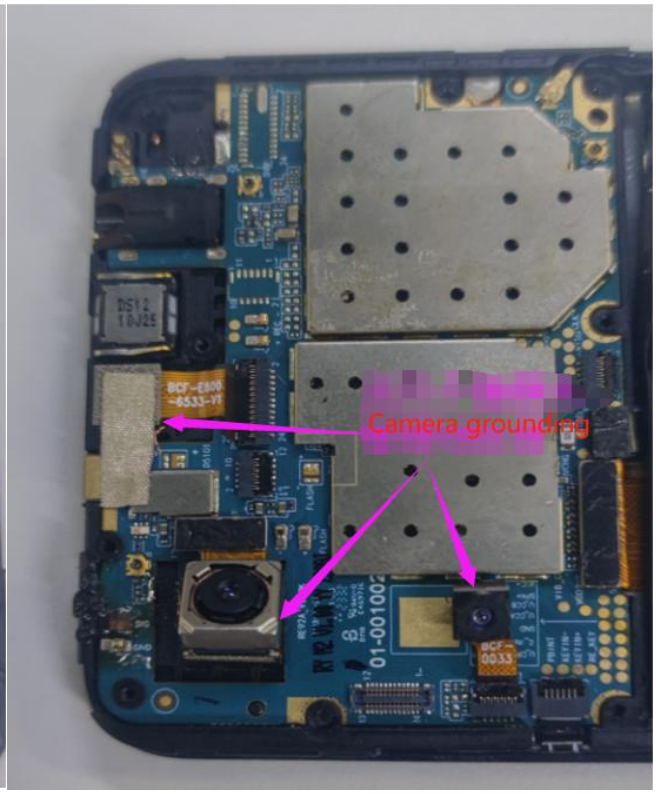


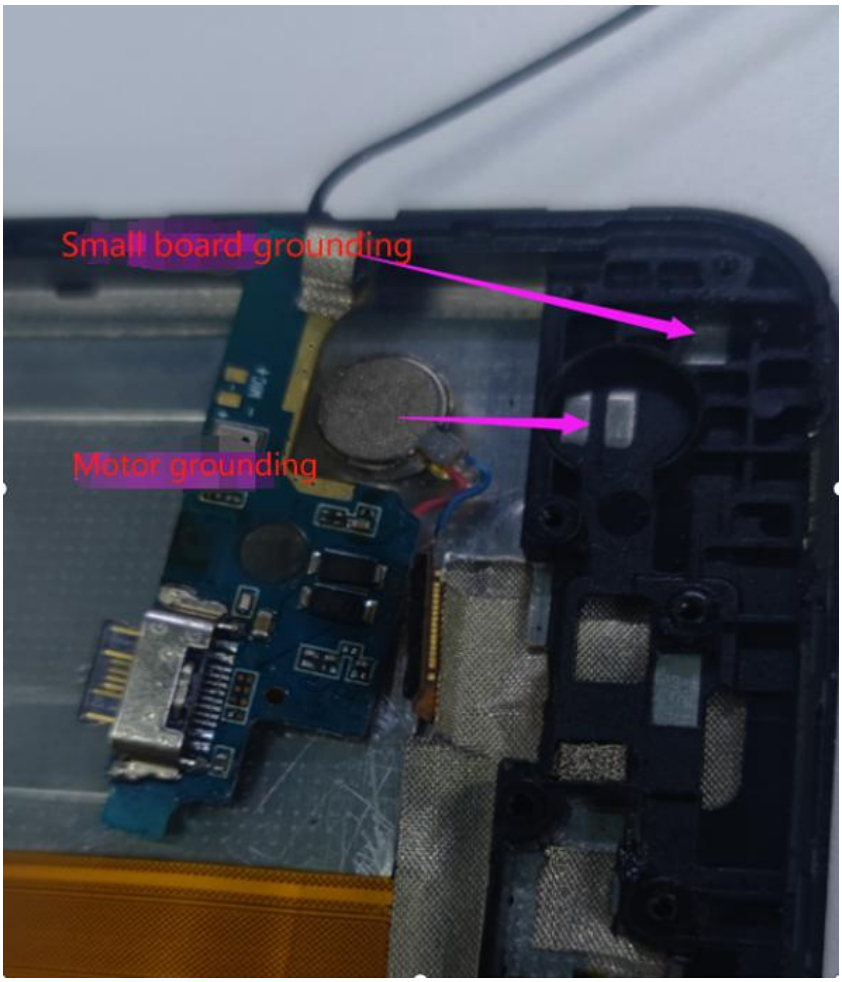
3.7.environmental treatment









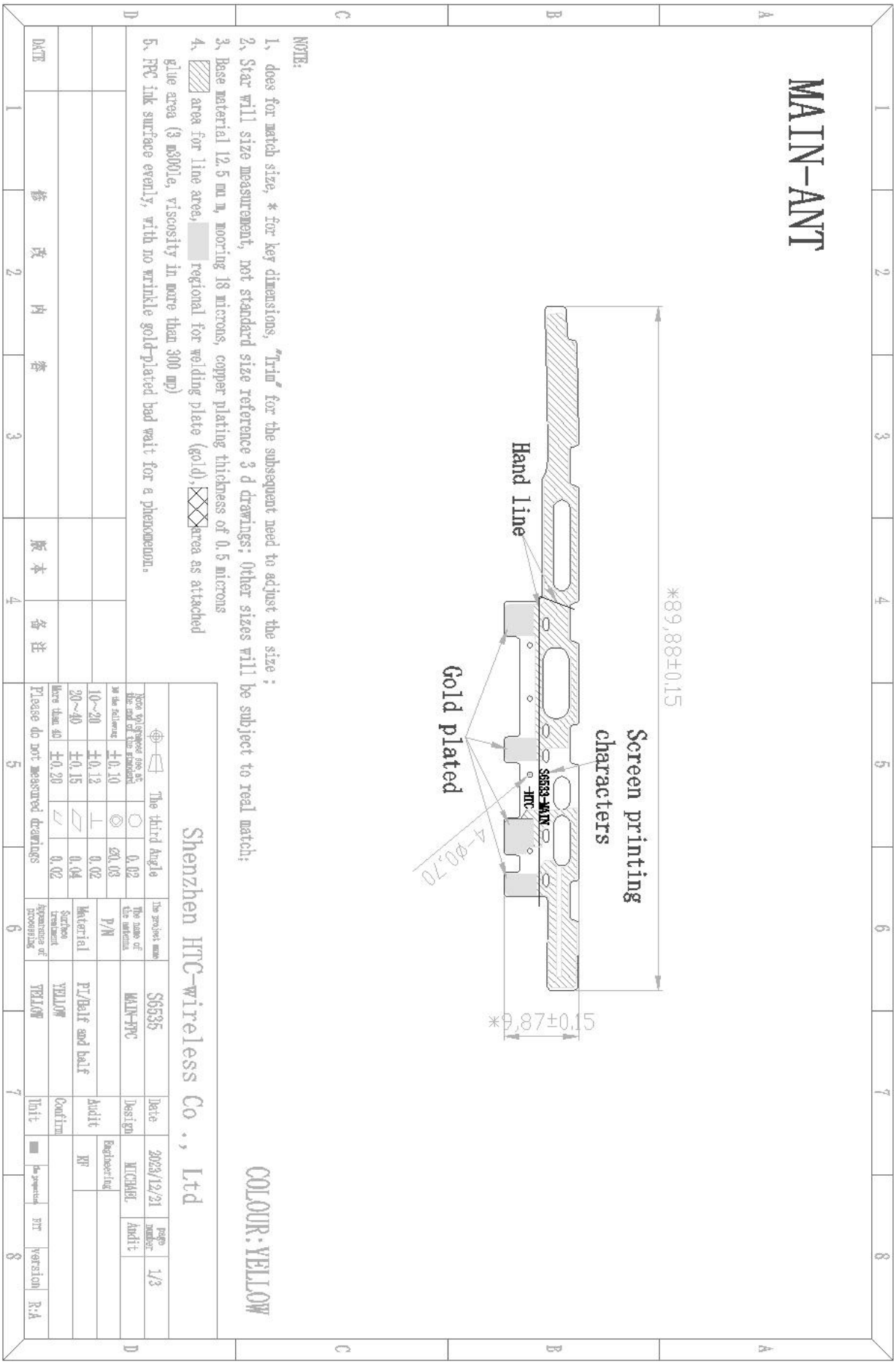


4. Appearance structure

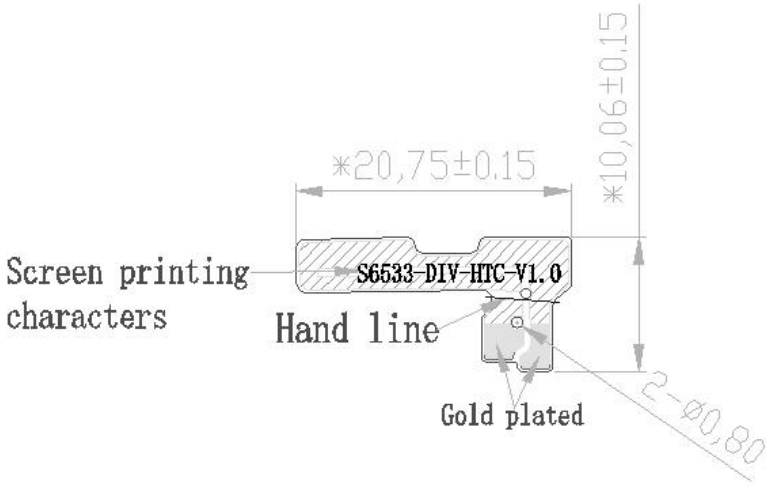
4.1 Antenna material

Antenna material: FPC antenna, Colour is yellow, gold plated in exposed copper area.
Substrate+double-sided tape+release paper

4.2 Structural drawings



DIV-ANT



NOTE:

1、 does for match size, * for key dimensions, "Trim" for the subsequent need to adjust the size ;

2、Star will size measurement, not standard size reference 3 d drawings; Other sizes will be subject to real match;

3、Base material 12.5 mu m, mooring 18 microns, copper plating thickness of 0.5 microns

4、 area for line area, regional for welding plate (gold), area as attached glue area (3 m300le, viscosity in more than 300 mp)

5、FPC ink surface evenly, with no wrinkle gold-plated bad wait for a phenomenon。

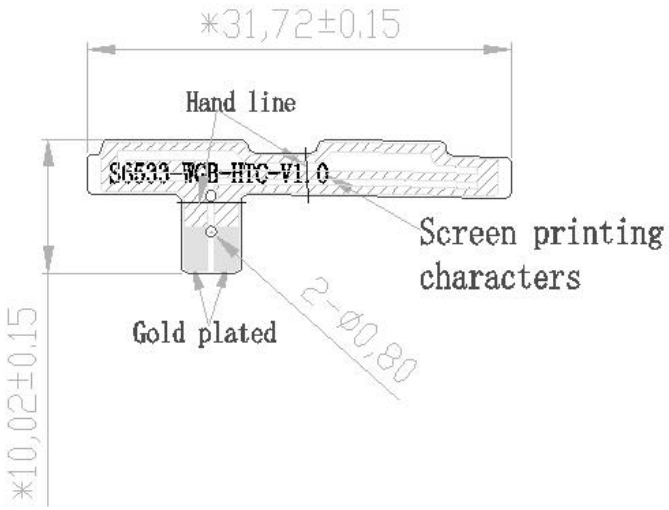
COLOUR:YELLOW

DATE	修 改 内 容	版 本	备 注

Shenzhen HTC-wireless Co ., Ltd

The third Angle				The project name	S6535	Date	2023/12/21	page number	2/3
Note tolerances see at the end of the standard			0.02	The name of the antenna	DIV-FPC	Design	MICHAEL	Audit	
30 the following	±0.10		Ø0.03	P/N		Audit	Engineering		
10~20	±0.12	⊥	0.02				KF		
20~40	±0.15	▱	0.04	Material	PI/Half and half				
More than 40	±0.20	∠	0.02	Surface treatment	YELLOW	Confirm			
Please do not measured drawings				Appearance of processing	YELLOW	Unit	the proportion	FIT	version R:A

WGB-ANT



NOTE:

1、 does for match size, * for key dimensions, "Trim" for the subsequent need to adjust the size ;
2、Star will size measurement, not standard size reference 3 d drawings; Other sizes will be subject to real match;
3、Base material 12.5 mu m, mooring 18 microns, copper plating thickness of 0.5 microns
4、 area for line area, regional for welding plate (gold), area as attached glue area (3 m300le, viscosity in more than 300 mp)
5、FPC ink surface evenly, with no wrinkle gold-plated bad wait for a phenomenon.

COLOUR:YELLOW

DATE	修 改 内 容	版 本	备 注

Shenzhen HTC-wireless Co ., Ltd

The third Angle		
Note tolerances see at the end of the standard	○	0.02
10 the following ±0.10	◎	Ø0.03
10~20 ±0.12	⊥	0.02
20~40 ±0.15	▱	0.04
More than 40 ±0.20	∠	0.02
Please do not measured drawings		

The project name	S6535	Date	2023/12/21	page number	3/3
The name of the materna	WGB-FPC	Design	MICHAEL	Audit	
P/N		Audit	Engineering		
Material	PI/Half and half		KF		
Surface treatment	YELLOW	Confirm			
Appearance of processing	YELLOW	Unit	The projection	FIT	version R:A

5 Packaging method

FPC antenna is shipped in one full version, stacked and packaged, packed in small boxes, with one small box containing two packages of antennas。