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Material Acknowledgement

Suppliers: Shenzhen Haotiancheng Wireless Technology Co.Ltd

A67U-MAIN-HTC AND

A67U-DIV-HTC AND

Model: A67U-WGB-HTC

Product Name: On the antenna assembly

Specification

s / Models: _____

Antenna

trademark: _____

Color: _____

Address: _____

Contact /

Phone: _____

Supplier (with official seal)

Structural Department	R&D Department	Quality Department	Project Department	

Customer review

ID Department	Structural Department / Special Project	Hardware Department	Packaging engineering	Quality Department

1、Specifications

The report mainly provides A67U GSM+WCDMA +LTE,performance parameter test, antenna for built-in antenna:

2、Electrical performance

2-1Specification Standard

The AS65U antenna operates in the

GSM-850 820-894MHz

GSM-900 880-960MHz

DCS-1800 1710-1880MHz

PCS-1900 1850-1990MHz

WCDMA-850 820-894MHz

WCDMA-1700 1710-2170MHz

WCDMA-1900 1850-1990MHz

LTE Band 2/25:1850-1990MHz

LTE Band 4:1710-1755MHz

LTE Band 5/26: 820-894MHz

LTE Band 12: 699-716MHz

LTE Band 17:704-716MHz

LTE Band 25: 1850.7-1914.3 MHz

LTE Band 26(part90): 814.7 MHz ~ 823.3 MHz

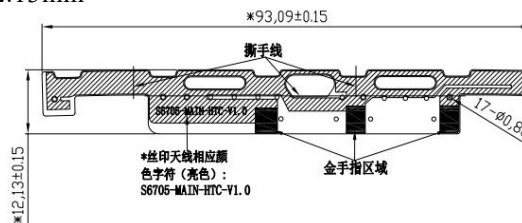
LTE Band 26(part22): 824.7 MHz ~ 848.3 MHz

LTE Band 41: 2535-2675MHz

LTE Band 66: 1710-1780MHz

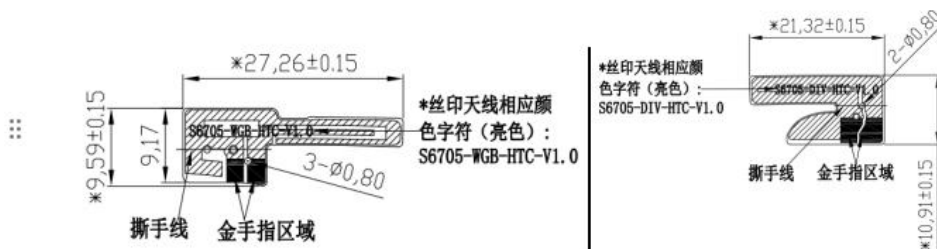
LTE Band 71: 663-698MHz, which generates resonances in this ;The following table shows the mass production performance test indicators for the AS65U design antenna:

GSM/WCDMA/LTE ant 93.09mm*12.13mm



WGB ANT 27.26mm*9.59mm

DIV ANT 21.32mm*10.91mm



2-2 gain test

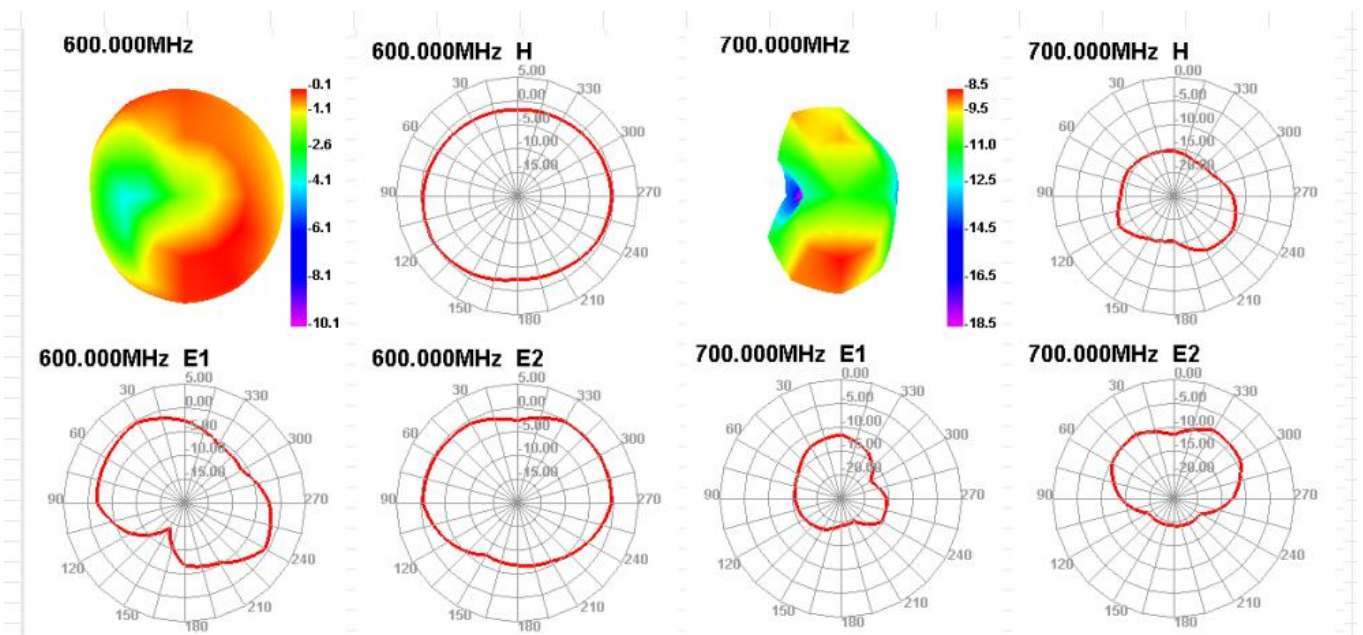
Main antenna gain

Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)
600	-0.14	710	-3.22	820	-1.39	1710	2.07	2300	3.05
610	-1.5	720	-2.03	830	-2.81	1720	2.08	2310	2.85
620	-1.54	730	-2.4	840	-3.11	1730	1.83	2320	3.01
630	-1.56	740	-3.66	850	-1.8	1740	1.13	2330	3.32
640	-2.47	750	-3.99	860	-1.48	1750	1.15	2340	3.17
650	-2.5	760	-4.34	870	-1.25	1760	1.52	2350	2.74
660	-2.07	770	-5.03	880	-0.32	1770	1.27	2360	2.41
670	-3.7	780	-4.42	890	-0.18	1780	0.82	2370	1.26
680	-5.82	790	-3.5	900	-0.37	1790	0.43	2380	0.29
690	-6.72	800	-2.86	910	0.16	1800	0.4	2390	0.06
700	-8.5			920	0.77	1810	0.33	2400	0.45
				930	0.28	1820	0.35	2410	0.43
				940	-0.77	1830	0.57	2420	0.21
				950	-0.48	1840	0.22	2430	0.38
				960	-0.29	1850	0.28	2440	1.13
						1860	0.88	2450	1.43
						1870	1.07	2460	1.5
						1880	1.15	2470	1.54
						1890	1.14	2480	1.6
						1900	1.01	2490	1.69
						1910	0.96	2500	1.79
						1920	1.36	2510	1.83
						1930	1.86	2520	1.57
						1940	1.93	2530	1.47
						1950	2.1	2540	1.22
						1960	2.31	2550	1.12
						1970	2.4	2560	1.08
						1980	2.58	2570	1.52
						1990	2.65	2580	1.33
						2000	2.91	2590	0.77
						2010	2.73	2600	1.33
						2020	2.76	2610	1.75
						2030	3	2620	1.04
						2040	2.68	2630	0.59
						2050	2.42	2640	1.04
						2060	2.45	2650	1.22
						2070	2.28	2660	0.65
						2080	2.53	2670	0.66
						2090	2.71	2680	1.46
						2100	2.76	2690	0.7
						2110	2.02		
						2120	2.04		
						2130	2.06		
						2140	2.07		
						2150	2.08		
						2160	2.17		
						2170	2.07		

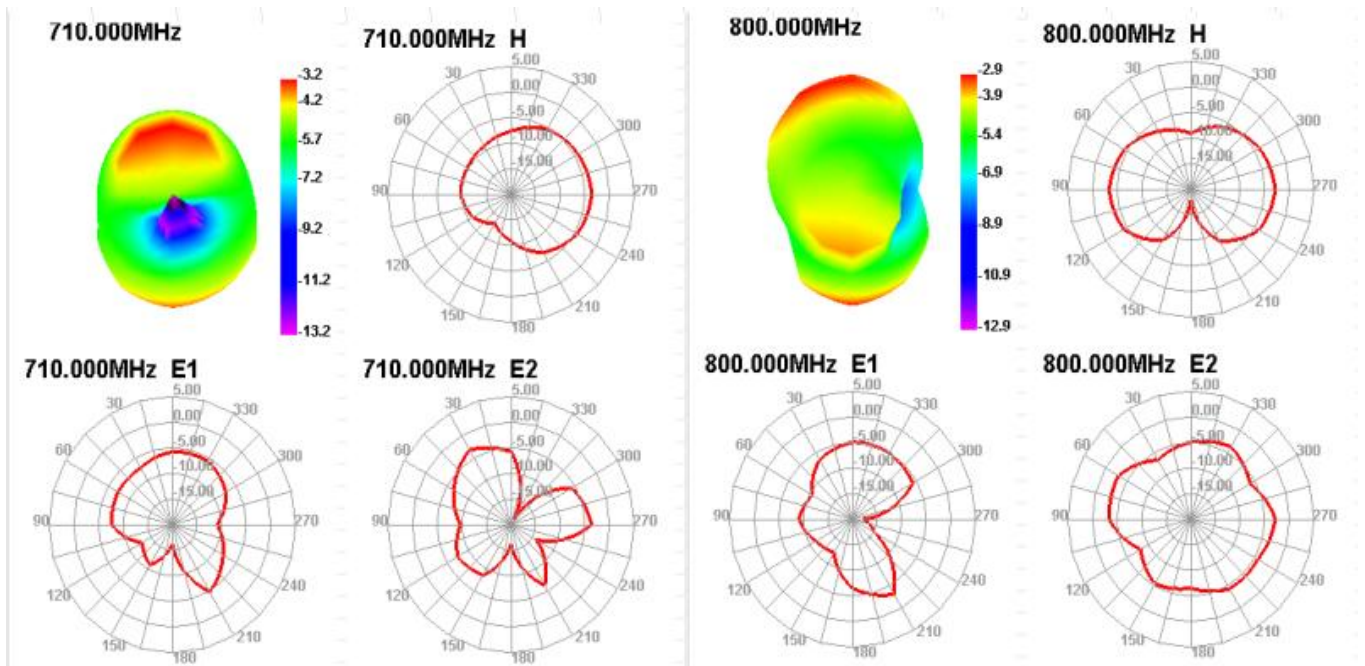
GPS/WIFI antenna gain

Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)
1500	-0.63	2400	2.44
1510	-0.62	2410	2.26
1520	-0.48	2420	2.39
1530	-0.61	2430	2.27
1540	-0.7	2440	2.04
1550	-0.6	2450	2.07
1560	-0.21	2460	1.98
1570	-0.22	2470	1.66
1580	0.22	2480	2.12
1590	0.39	2490	2.21
1600	0.12	2500	2.18

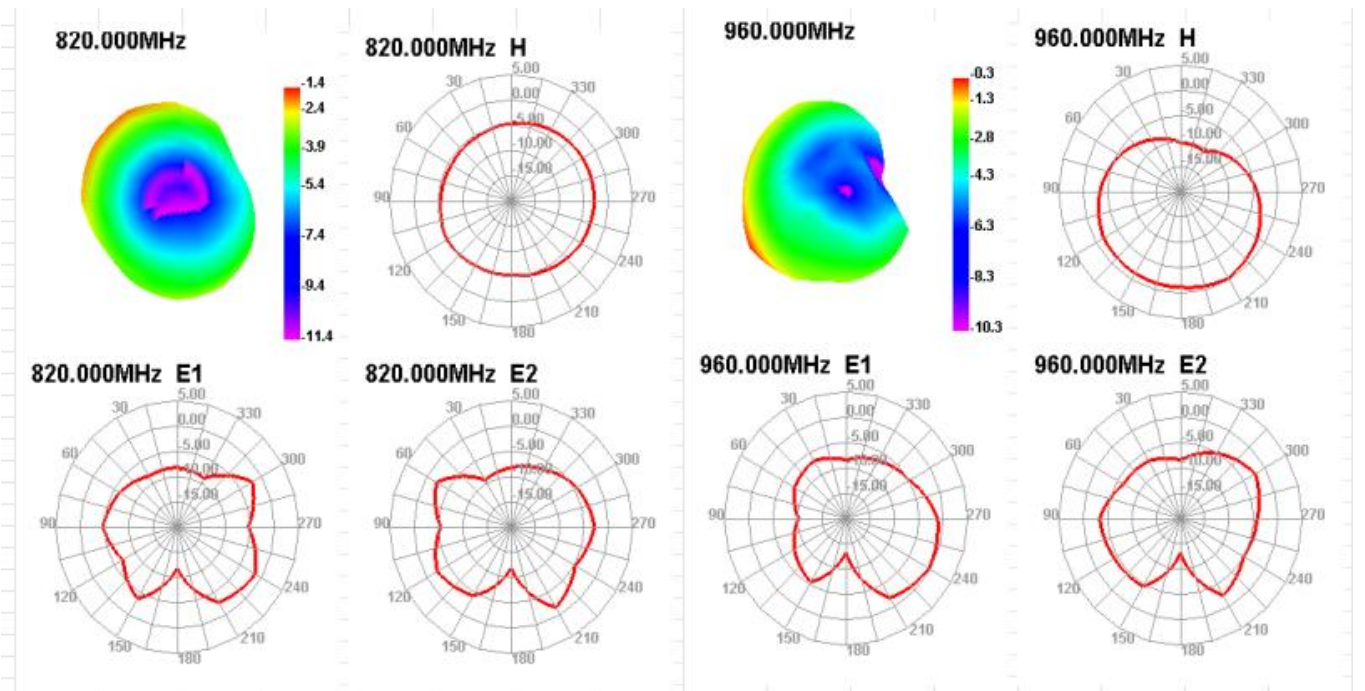
600MHz-700MHz



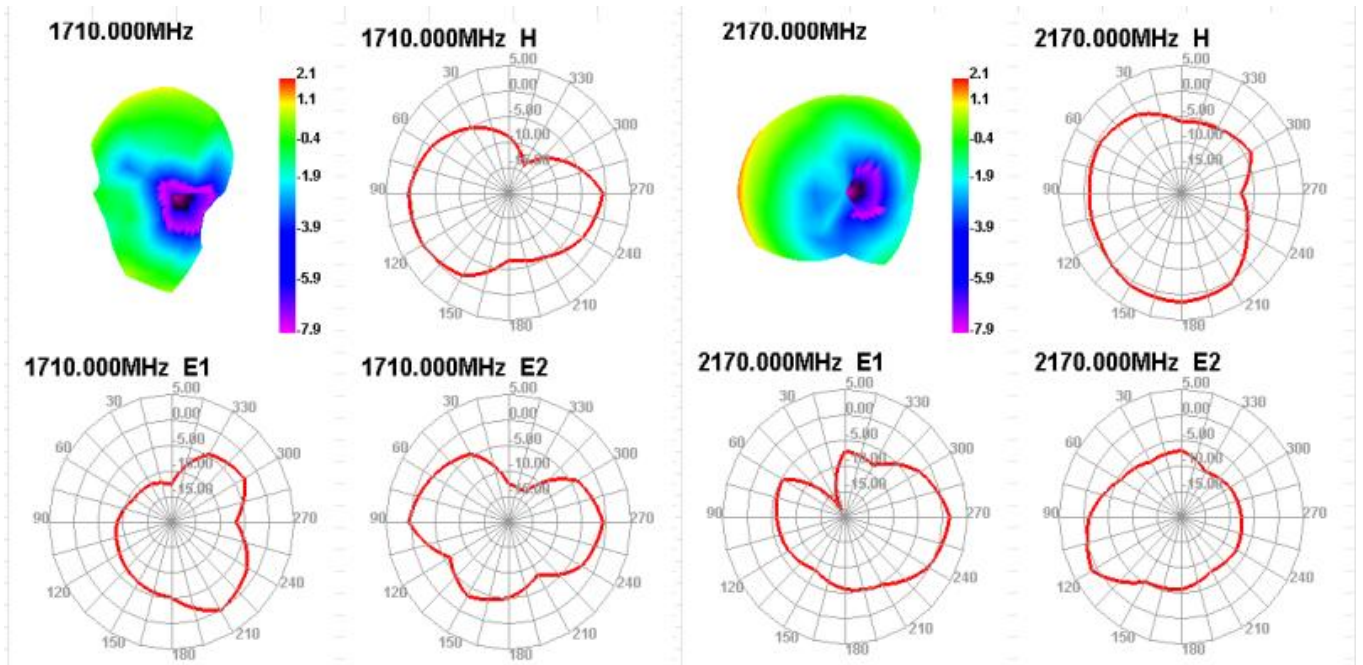
710MHz-800MHz



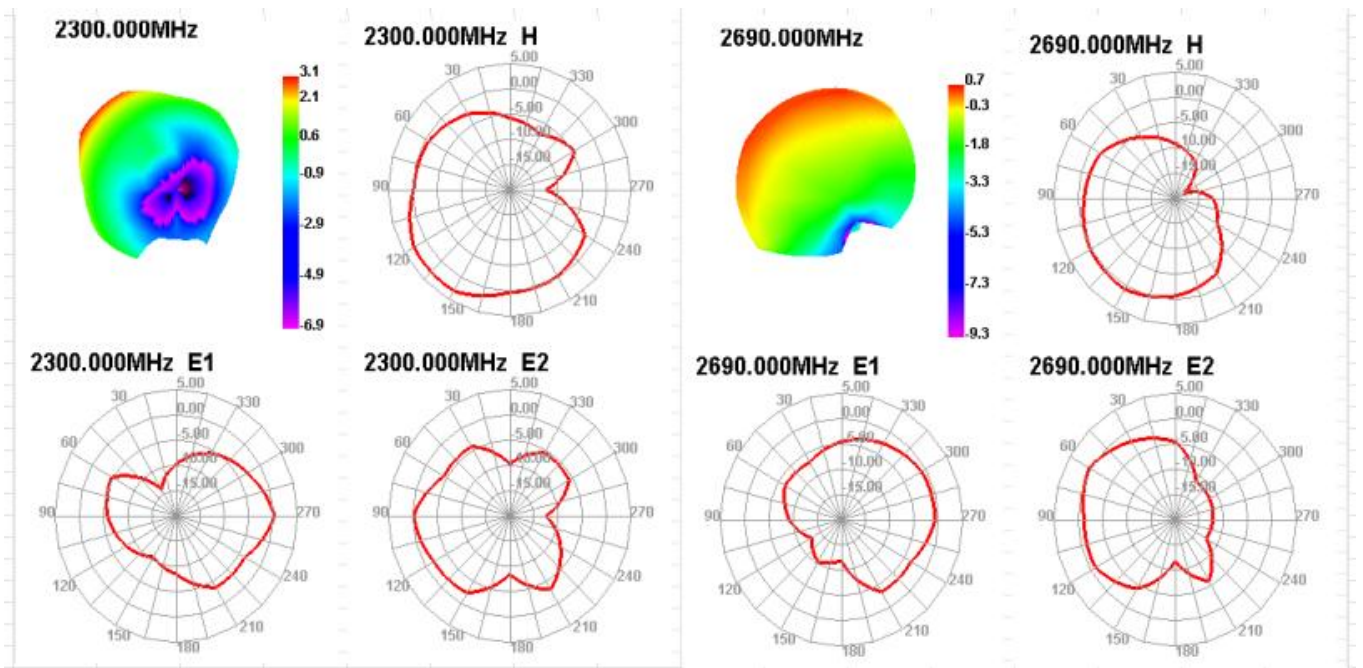
820MHz-960MHz



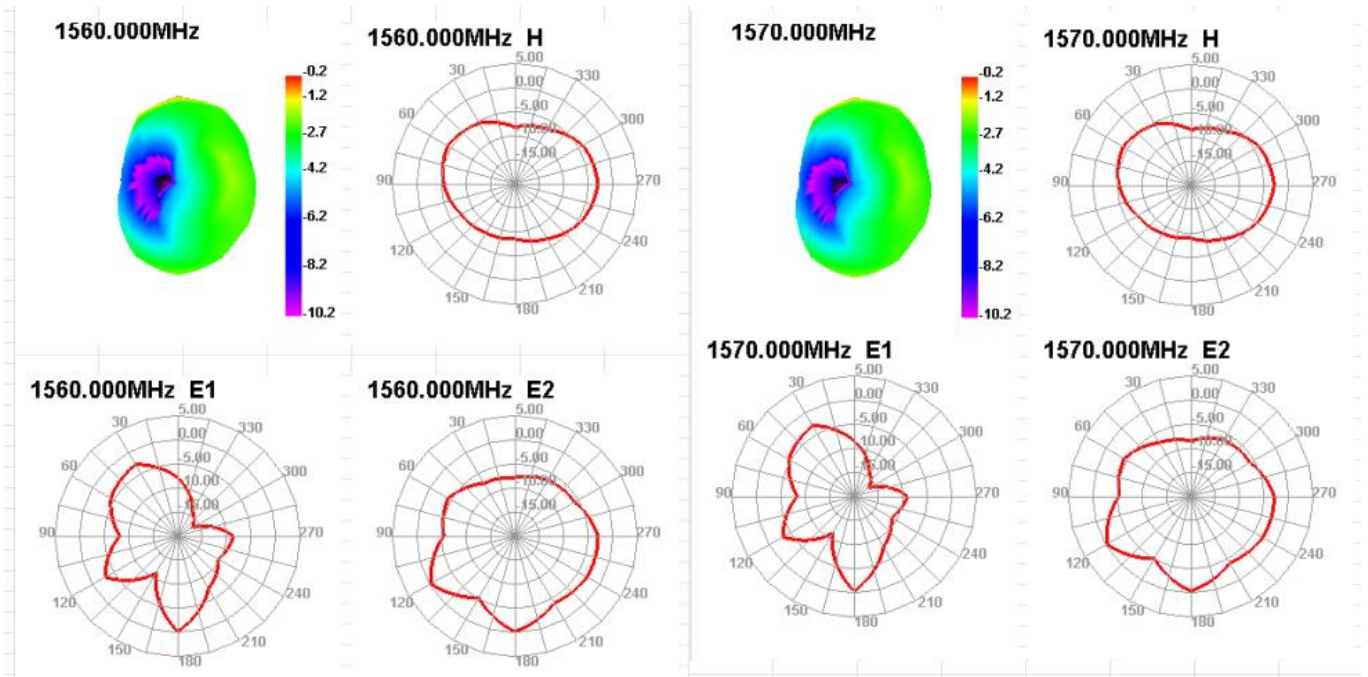
1710MHz-2170MHZ



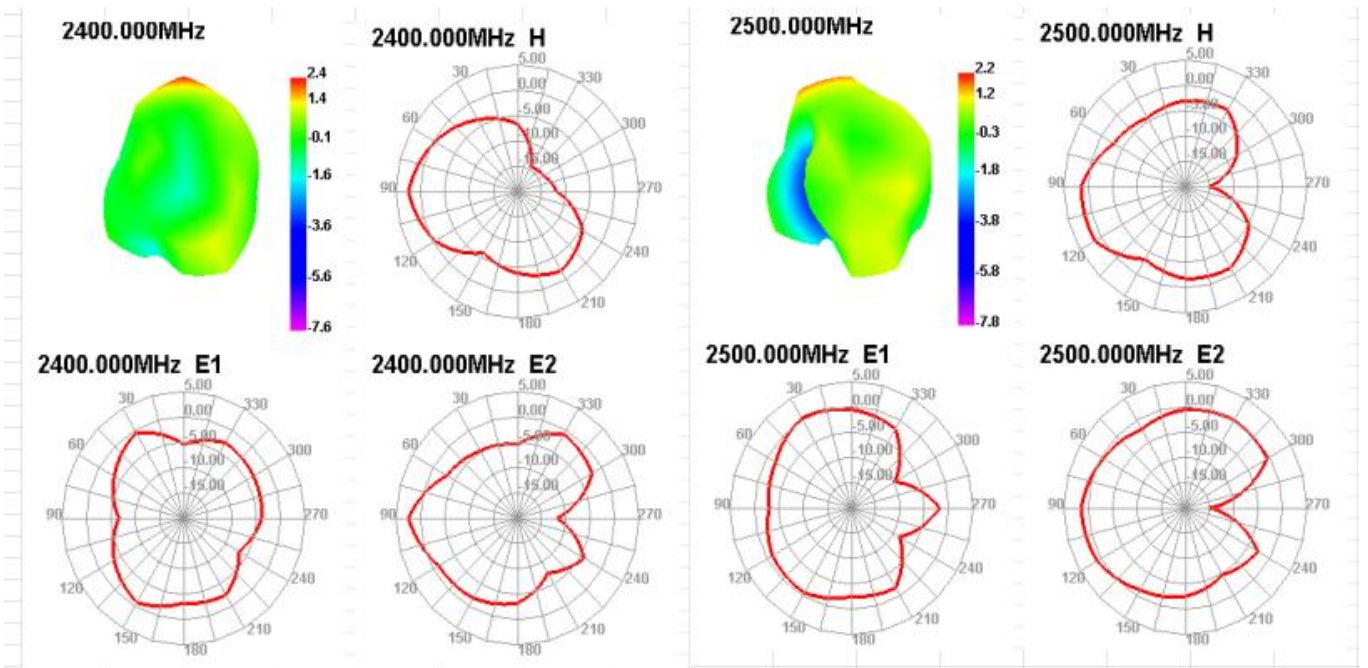
2300MHz-2690MHZ



1560MHZ-1570MHZ



2400MHZ-2500MHZ



2-3 Active antenna test data

Band	TRP/TIS	L	M	H	Band	TRP/TIS	L	M	H
GSM850	TRP	26.51	26.69	26.83	LTE-B5	TRP	16.93	16.31	15.84
	TIS			-102.26		TIS			-90.16
GSM900	TRP	26.06	26.28	26.4	LTE-B12	TRP	15.14	15.38	15.61
	TIS			-102.39		TIS			-88.24
DCS1800	TRP	23.16	23.64	23.81	LTE-B17	TRP	15.23	15.36	15.43
	TIS			-102.44		TIS			-88.59
PCS1900	TRP	23.84	23.52	23.07	LTE-B25	TRP	16.35	16.27	16.12
	TIS			-102.86		TIS			-90.39
WCDMA-B2	TRP	16.06	15.91	15.78	LTE-B26	TRP	16.74	16.31	16.05
	TIS			-102.19		TIS			-89.96
WCDMA-B4	TRP	15.82	16.08	16.33	LTE-B41	TRP	16.46	16.62	16.99
	TIS			-103.14		TIS			-89.5
WCDMA-B5	TRP	17.05	16.78	16.35	LTE-B66	TRP	15.61	15.94	16.38
	TIS			-102.61		TIS			-90.01
LTE-B2	TRP	15.98	15.91	15.82	LTE-B71	TRP	15.02	15.25	15.43
	TIS			-90.82		TIS			-87.92
LTE-B4	TRP	15.5	15.89	16.29					
	TIS			-91.27					