深圳市凯普深通讯科技有限公司

Shenzhen Kaipushen Communication Technology Co., Ltd

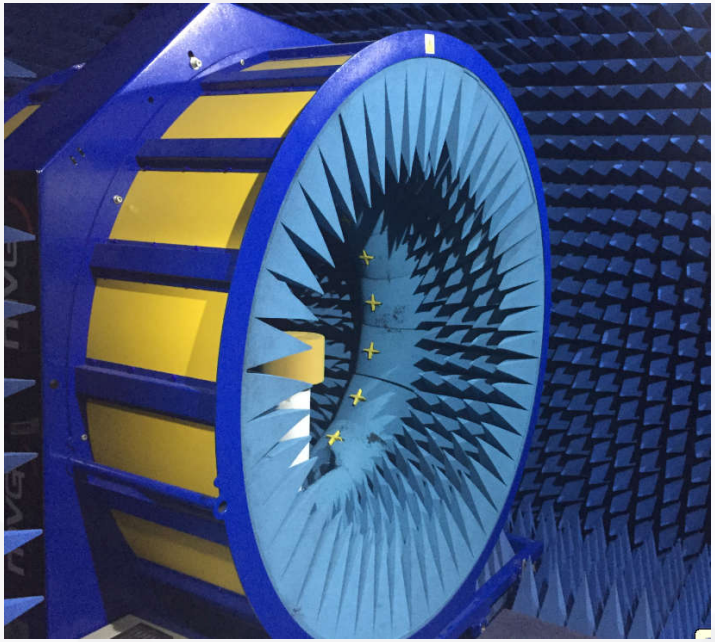
天线调试报告

Antenna debugging report

项目名project：	S1
射　频RF：	江工Jiang Gong
日　期Date：	2024.4.15
版　本version：	01
型号Model:	LTE MAIN --- KPS-US860-M-MAIN LTE DIV --- KPS-US860-DIV Wifi/BT/GPS --- KPS-US860-WIFI

凯普深

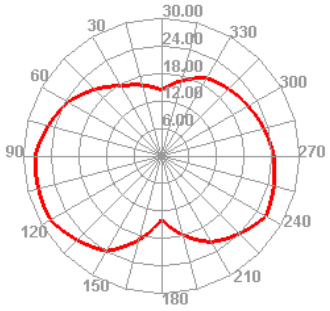
实验室测试环境及设备
Laboratory testing environment and equipment



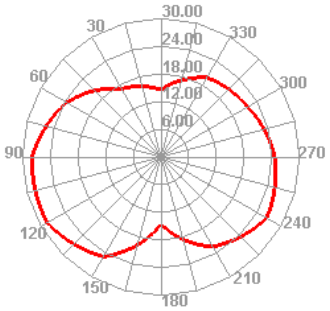
测试项目 Test items	测试设备 Test equipment
S11、S12 、VSWR 、LOSS	网络分析仪network analyzerE5071B、E5062A
Efficiency、Gain 3D Radiation Pattern	Satimo SG16暗室darkroom、GP7*4*3暗室 darkroom、E5071B
TRP、TIS	Satimo SG16暗室darkroom、GP7*4*3暗室 darkroom、8960 、CMW500、MT8820C、 E4438C、

方向图 Directional Diagram (2G)

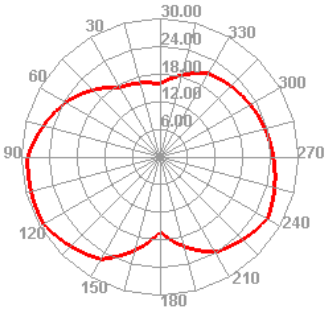
GSM850 128 TRP Phi=45



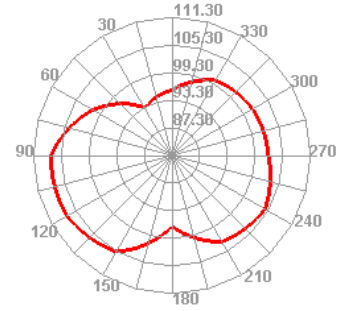
GSM850 190 TRP Phi=45



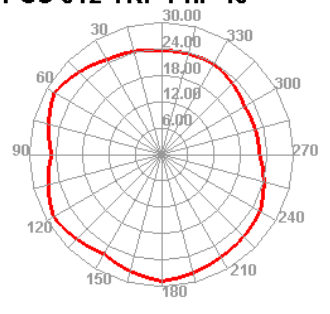
GSM850 251 TRP Phi=45



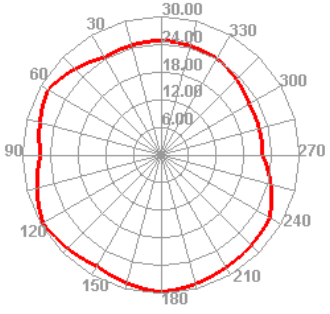
GSM850 251 TIS Phi=45



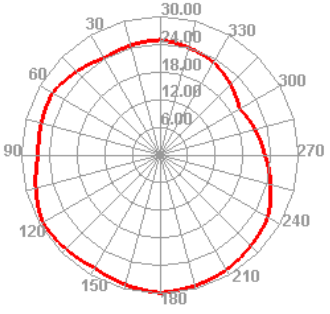
PCS 512 TRP Phi=45



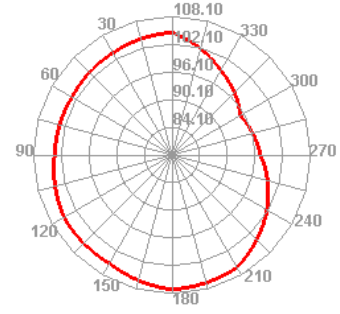
PCS 661 TRP Phi=45



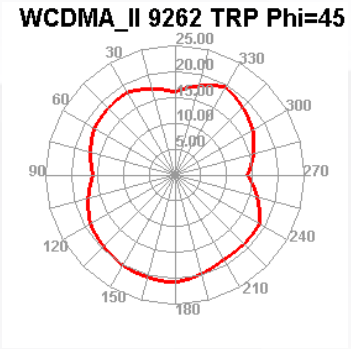
PCS 810 TRP Phi=45

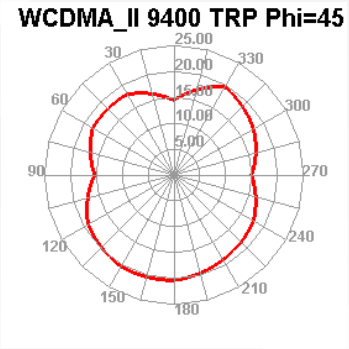


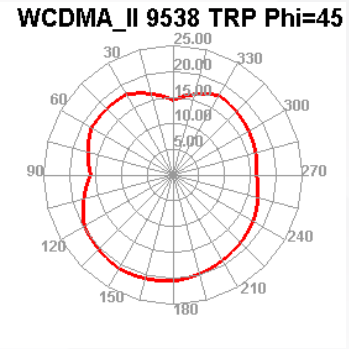
PCS 810 TIS Phi=45

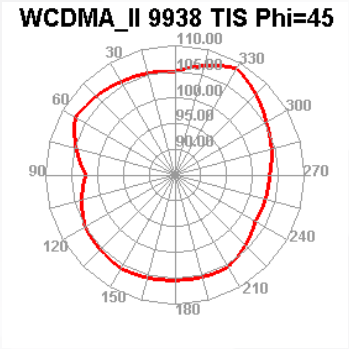


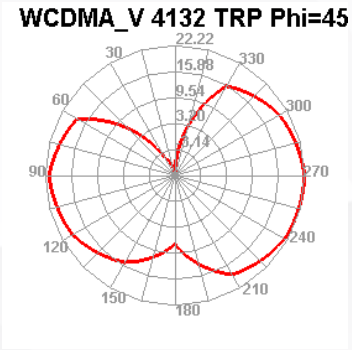
方向图 Directional Diagram (3G)

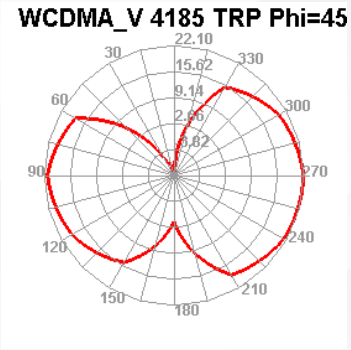


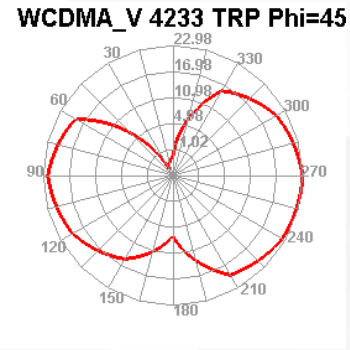


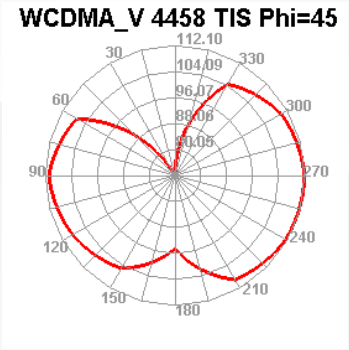






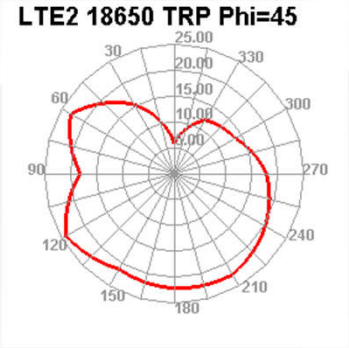




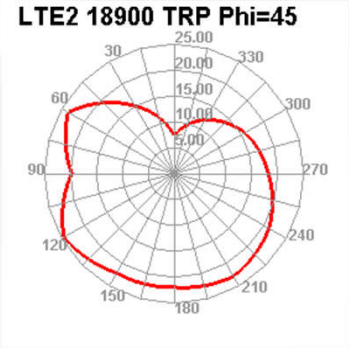


方向图 Directional Diagram (LTE)

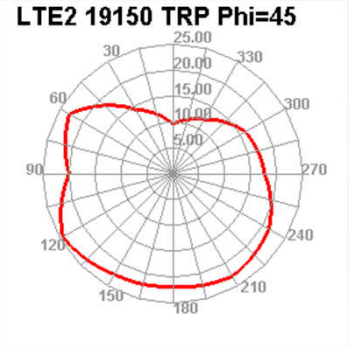
LTE2 18650 TRP Phi=45



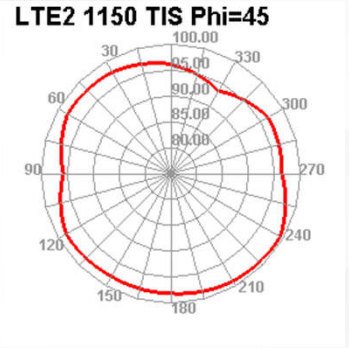
LTE2 18900 TRP Phi=45



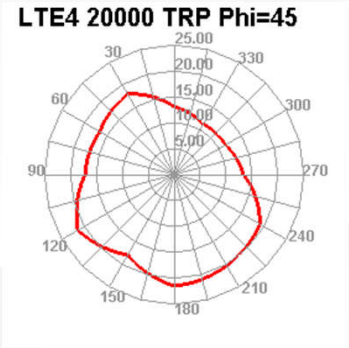
LTE2 19150 TRP Phi=45



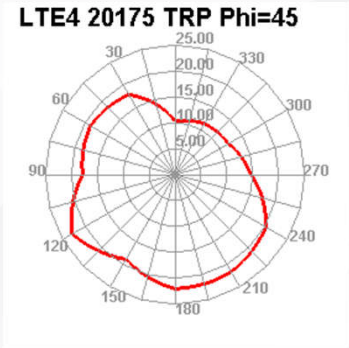
LTE2 1150 TIS Phi=45



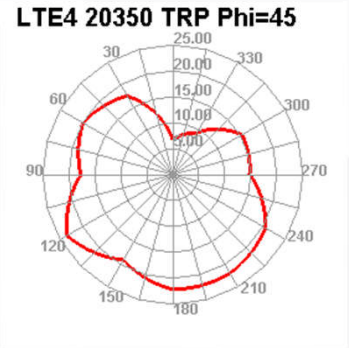
LTE4 20000 TRP Phi=45



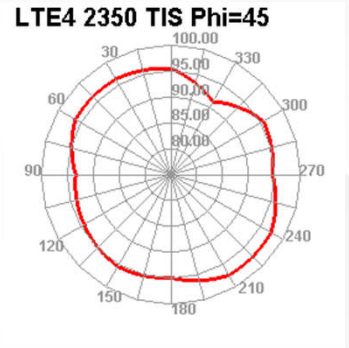
LTE4 20175 TRP Phi=45



LTE4 20350 TRP Phi=45

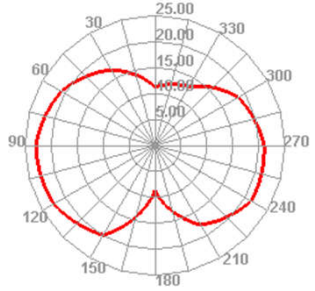


LTE4 2350 TIS Phi=45

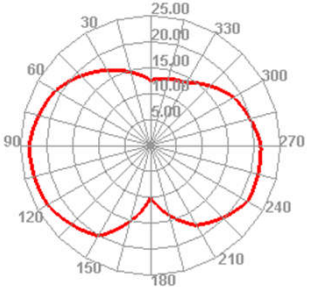


方向图 Directional Diagram (LTE)

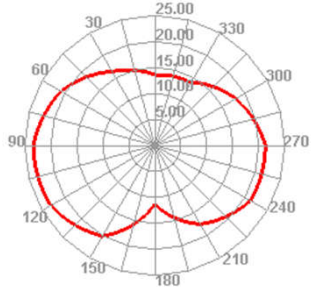
LTE5 20450 TRP Phi=45



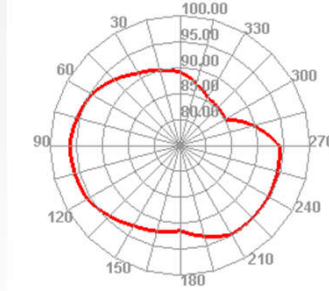
LTE5 20525 TRP Phi=45



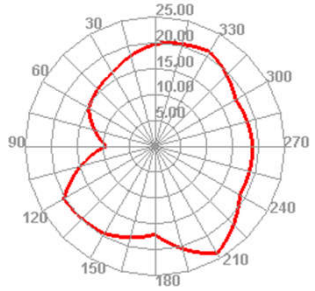
LTE5 20600 TRP Phi=45



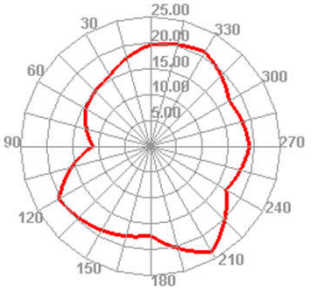
LTE5 2600 TIS Phi=45



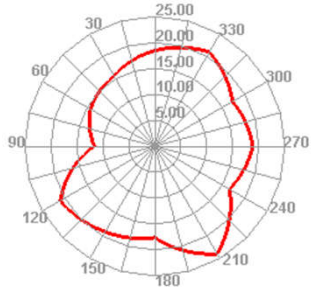
LTE7 20800 TRP Phi=45



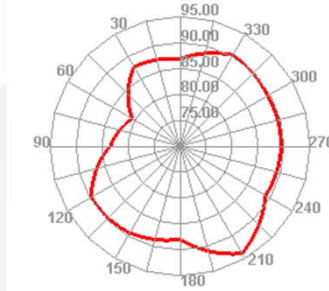
LTE7 21100 TRP Phi=45



LTE7 21400 TRP Phi=45

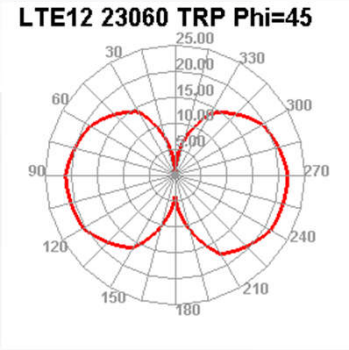


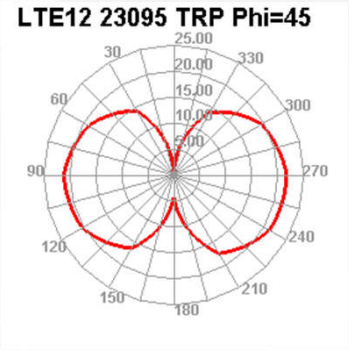
LTE7 3400 TIS Phi=45

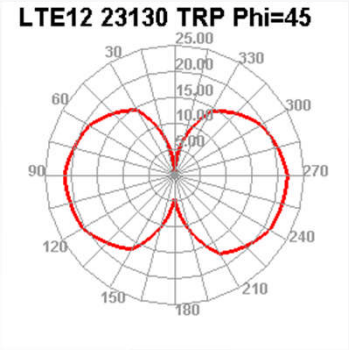


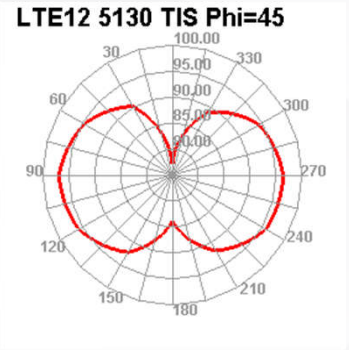
凯普深

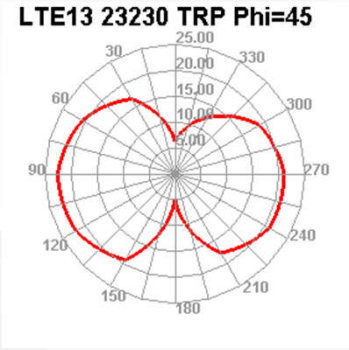
方向图 Directional Diagram (LTE)

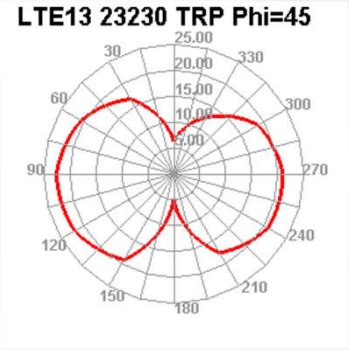


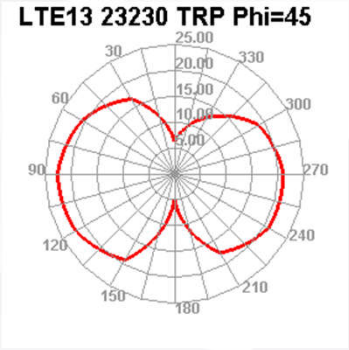


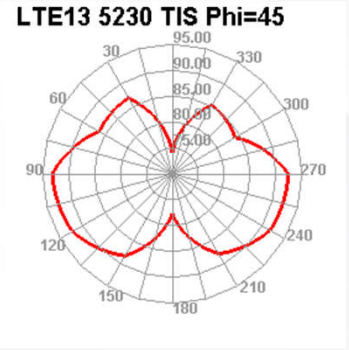






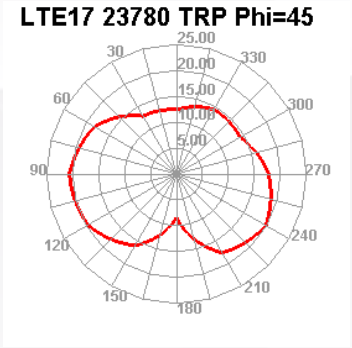




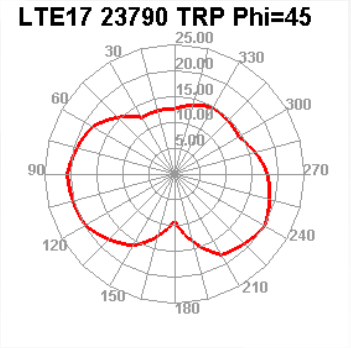


方向图 Directional Diagram (LTE)

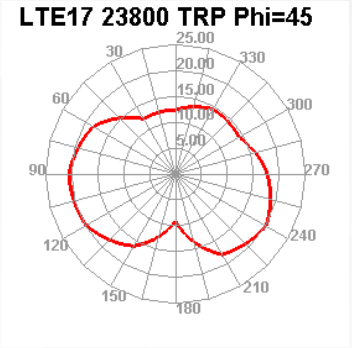
LTE17 23780 TRP Phi=45



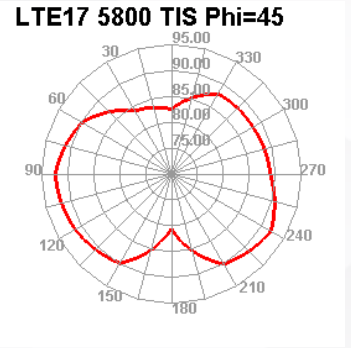
LTE17 23790 TRP Phi=45



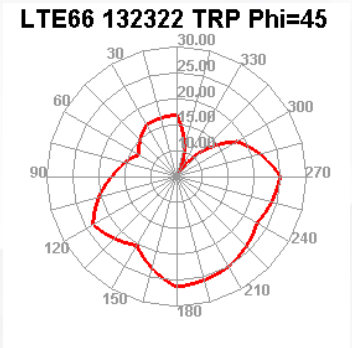
LTE17 23800 TRP Phi=45



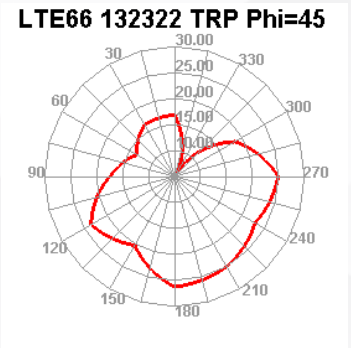
LTE17 5800 TIS Phi=45



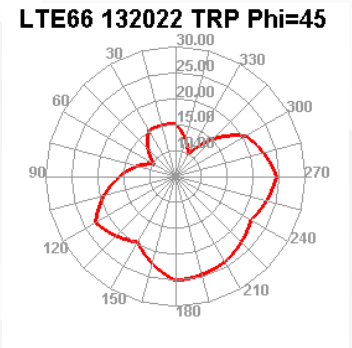
LTE66 132322 TRP Phi=45



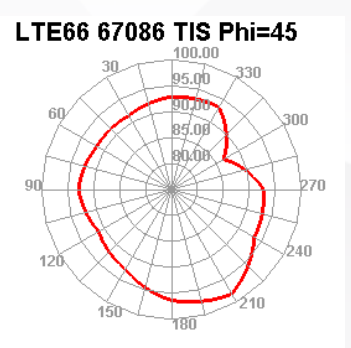
LTE66 132322 TRP Phi=45



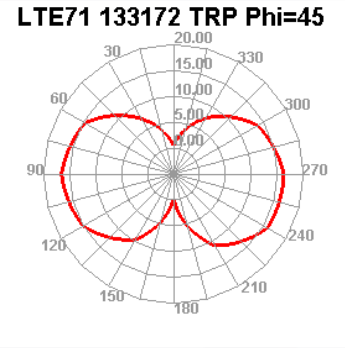
LTE66 132022 TRP Phi=45

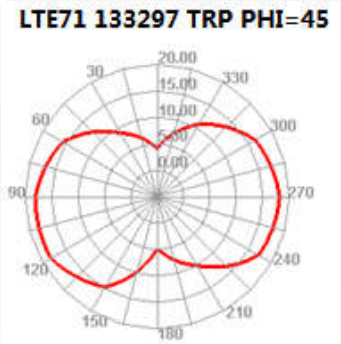


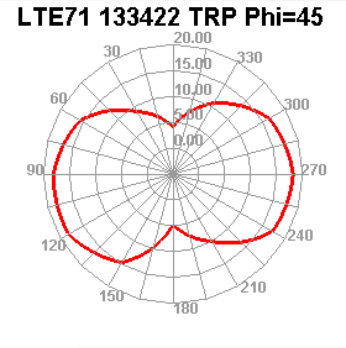
LTE66 67086 TIS Phi=45

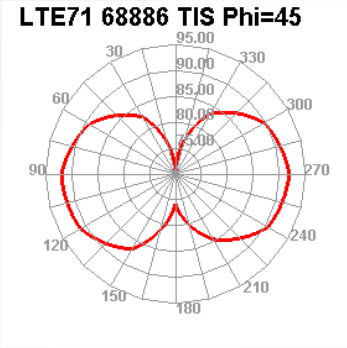


方向图 Directional Diagram (LTE)







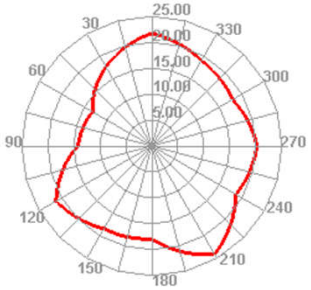


Notes:
LTE B25 – Refer to the directional diagram of PCS
LTE B26 – Refer to the directional diagram of GSM850

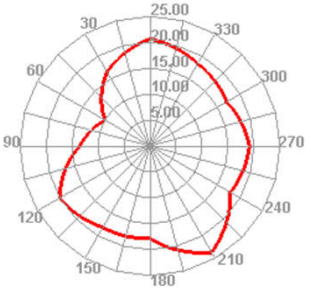
方向图 Directional Diagram (LTE)

凯普深

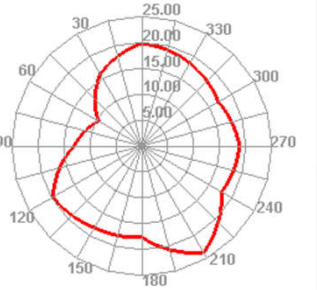
LTE38 37850 TRP Phi=45



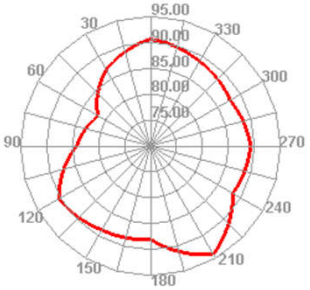
LTE38 38000 TRP Phi=45



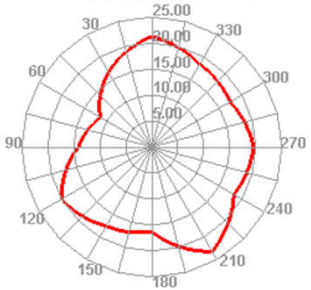
LTE38 38150 TRP Phi=45



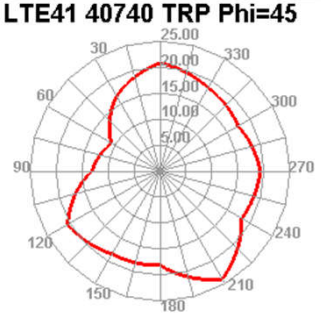
LTE38 38150 TIS Phi=45



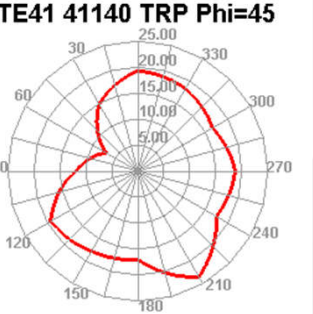
LTE41 40240 TRP Phi=45



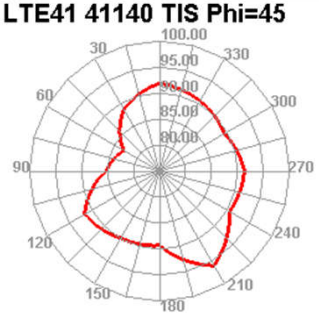
LTE41 40740 TRP Phi=45



LTE41 41140 TRP Phi=45



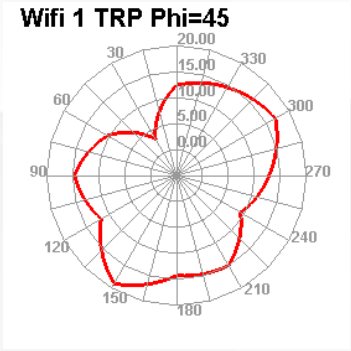
LTE41 41140 TIS Phi=45



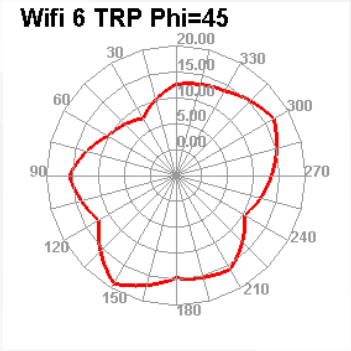
方向图 Directional Diagram (Wifi)

凯普深

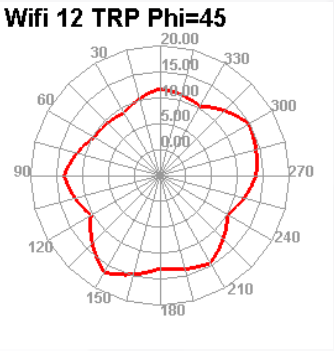
Wifi 1 TRP Phi=45



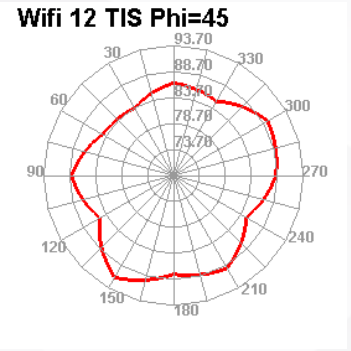
Wifi 6 TRP Phi=45



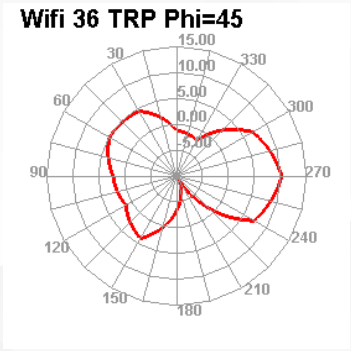
Wifi 12 TRP Phi=45



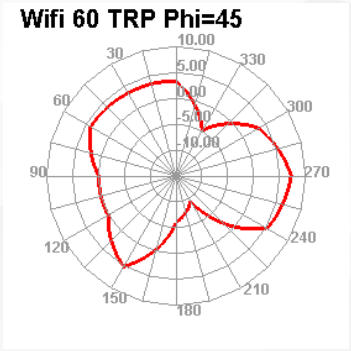
Wifi 12 TIS Phi=45



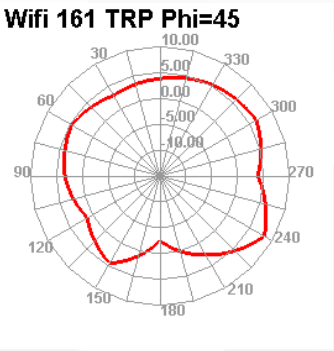
Wifi 36 TRP Phi=45



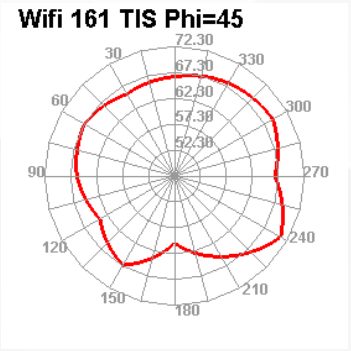
Wifi 60 TRP Phi=45



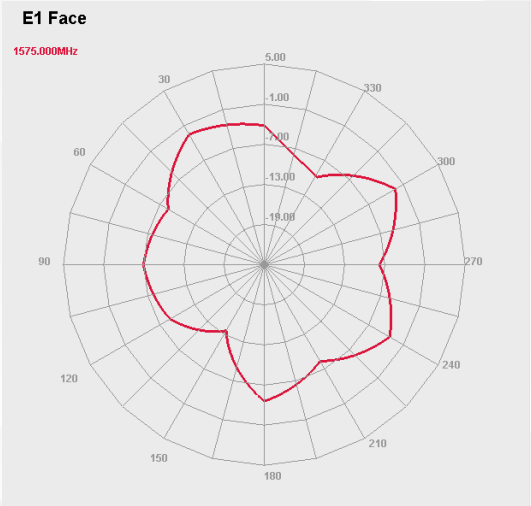
Wifi 161 TRP Phi=45



Wifi 161 TIS Phi=45



方向图 Directional Diagram (GPS)



Antenna Passive data (LTE)

Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)
650	12.48	-4.05	1690	19.75	-2.24	2030	30.13	0.83	2370	40.55	1.89
660	12.80	-4.40	1700	19.89	-2.16	2040	31.82	1.03	2380	45.16	2.49
670	11.13	-4.80	1710	21.02	-2.09	2050	33.00	1.17	2390	43.29	2.25
680	14.37	-4.62	1720	21.79	-1.83	2060	37.83	1.81	2400	43.23	2.15
690	13.26	-5.14	1730	20.33	-2.13	2070	38.49	1.97	2410	41.33	1.78
700	17.17	-4.35	1740	20.32	-1.85	2080	45.84	2.86	2420	44.61	2.04
710	17.26	-4.13	1750	18.20	-2.15	2090	42.99	2.71	2430	42.96	1.68
720	17.83	-4.60	1760	16.16	-2.41	2100	38.66	2.30	2440	46.80	1.88
730	19.58	-4.11	1770	14.35	-2.77	2110	42.41	2.77	2450	48.31	1.82
740	21.21	-4.08	1780	17.74	-1.50	2120	44.62	3.05	2460	46.70	1.55
750	21.68	-4.42	1790	16.59	-1.68	2130	47.42	3.45	2470	41.92	1.04
760	23.40	-3.76	1800	17.25	-1.20	2140	48.70	3.66	2480	49.01	1.65
770	18.42	-4.09	1810	17.42	-1.14	2150	47.33	3.65	2490	56.00	2.24
780	18.53	-4.01	1820	16.92	-1.08	2160	44.17	3.25	2500	55.68	2.19
790	18.43	-4.05	1830	18.34	-0.74	2170	44.01	3.16	2510	48.98	1.63
800	33.25	-0.36	1840	17.02	-0.99	2180	45.89	3.12	2520	50.52	1.66
810	31.35	-0.66	1850	16.35	-1.22	2190	48.69	3.19	2530	51.39	1.78
820	30.82	-0.65	1860	14.37	-1.77	2200	46.93	2.82	2540	43.23	1.10
830	27.08	-1.40	1870	15.61	-1.53	2210	49.08	2.97	2550	49.87	1.84
840	27.23	-1.43	1880	16.10	-1.58	2220	48.37	2.86	2560	53.14	2.36
850	30.79	-1.14	1890	14.03	-2.44	2230	49.94	2.85	2570	50.60	2.51
860	36.44	-0.46	1900	13.62	-2.58	2240	50.89	2.65	2580	48.71	2.55
870	38.89	-0.22	1910	17.56	-1.41	2250	45.40	1.77	2590	48.15	2.71
880	37.83	-0.19	1920	19.64	-1.01	2260	44.40	1.31	2600	46.55	2.74
890	36.79	-0.21	1930	20.04	-0.97	2270	43.08	0.94	2610	45.91	2.82
900	33.18	-0.61	1940	22.67	-0.51	2280	46.46	1.21	2620	44.55	2.79
910	31.16	-0.89	1950	24.79	-0.05	2290	42.69	0.89	2630	45.63	2.90
920	28.06	-1.37	1960	22.24	-0.56	2300	41.37	0.91	2640	44.95	2.93
930	21.47	-2.61	1970	24.85	-0.07	2310	39.70	0.88	2650	45.90	3.11
940	18.02	-3.44	1980	27.50	0.29	2320	41.46	1.13	2660	44.48	3.07
950	15.90	-4.06	1990	26.16	-0.05	2330	40.64	1.15	2670	46.22	3.14
960	12.18	-5.22	2000	26.22	0.16	2340	42.57	1.51	2680	46.00	3.16
			2010	30.51	0.89	2350	44.85	1.91	2690	48.83	3.25
			2020	33.49	1.35	2360	45.20	2.19	2700	48.41	3.28

Frequency / MHz	Peak Gain / dBi
650 - 960	-0.19
1700 - 2700	3.66

Antenna Passive data (Wifi)

Freq (MHz)	Effi (%)	Gain (dBi)
2400	38.39	0.24
2410	38.44	0.48
2420	41.49	1.01
2430	42.43	1.31
2440	49.49	2.13
2450	49.11	2.17
2460	46.03	1.91
2470	46.76	1.93
2480	52.72	2.36
2490	55.02	2.46
2500	57.54	2.63

Freq (MHz)	Effi (%)	Gain (dBi)
5150	41.13	1.34
5200	49.03	1.87
5250	38.2	0.65
5300	36.64	0.57
5350	41.59	1.16
5400	42.31	1.33
5450	35.88	1.15
5500	35.96	0.81
5550	38.83	0.91
5600	32.02	0.51
5650	27.44	-0.59
5700	29.03	-1.84
5750	27.53	-1.41
5800	29.24	-1.65
5850	31.4	-1.14

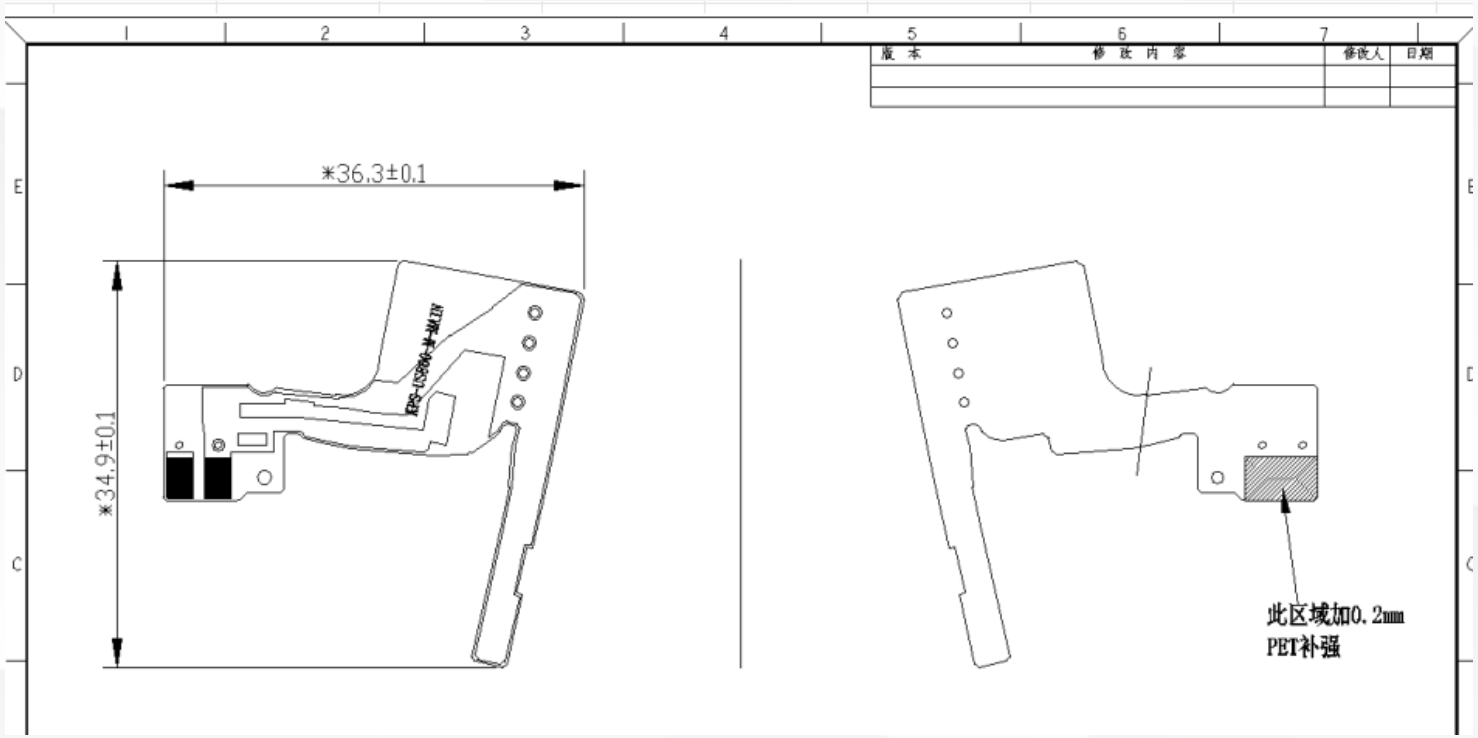
Frequency / MHz	Peak Gain / dBi
2400 - 2500	2.63
5150 - 5850	1.87

Antenna Passive data (GPS)

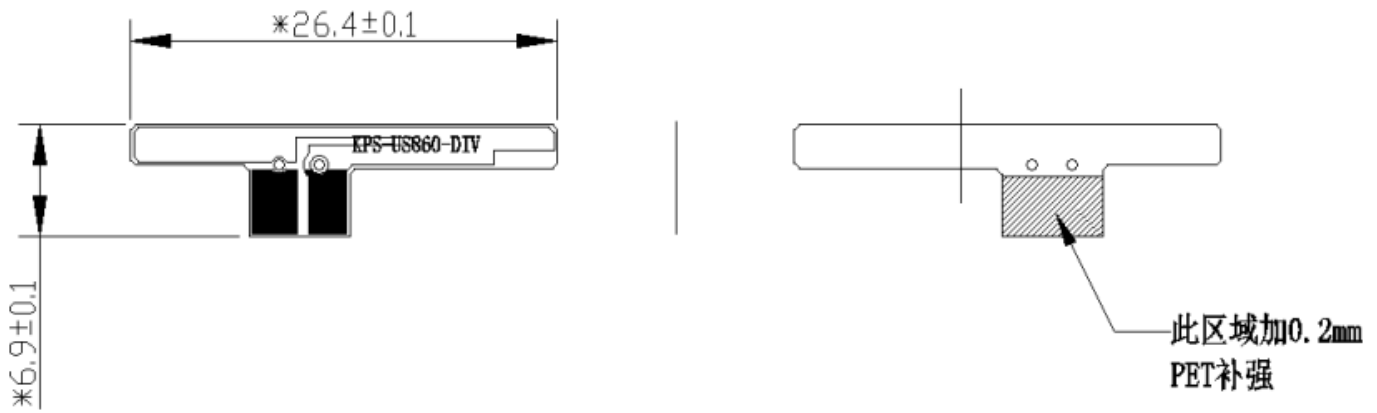
Freq (MHz)	Effi (%)	Gain (dBi)
1500	23.67	-0.87
1505	21.97	-1.14
1510	20.6	-1.24
1515	20.52	-1.08
1520	23.75	-0.32
1525	24.77	-0.08
1530	24.55	-0.06
1535	22.68	-0.31
1540	26.27	0.39
1545	27.96	0.63
1550	29.37	0.8
1555	28.5	0.71
1560	30.34	0.98
1565	31.56	1.19
1570	32.22	1.33
1575	31.73	1.2
1580	32.04	1.26
1585	31.82	1.21
1590	29.97	1
1595	29.53	1.07
1600	27.6	0.81

Frequency / MHz	Peak Gain / dBi
1500 - 1600	1.33

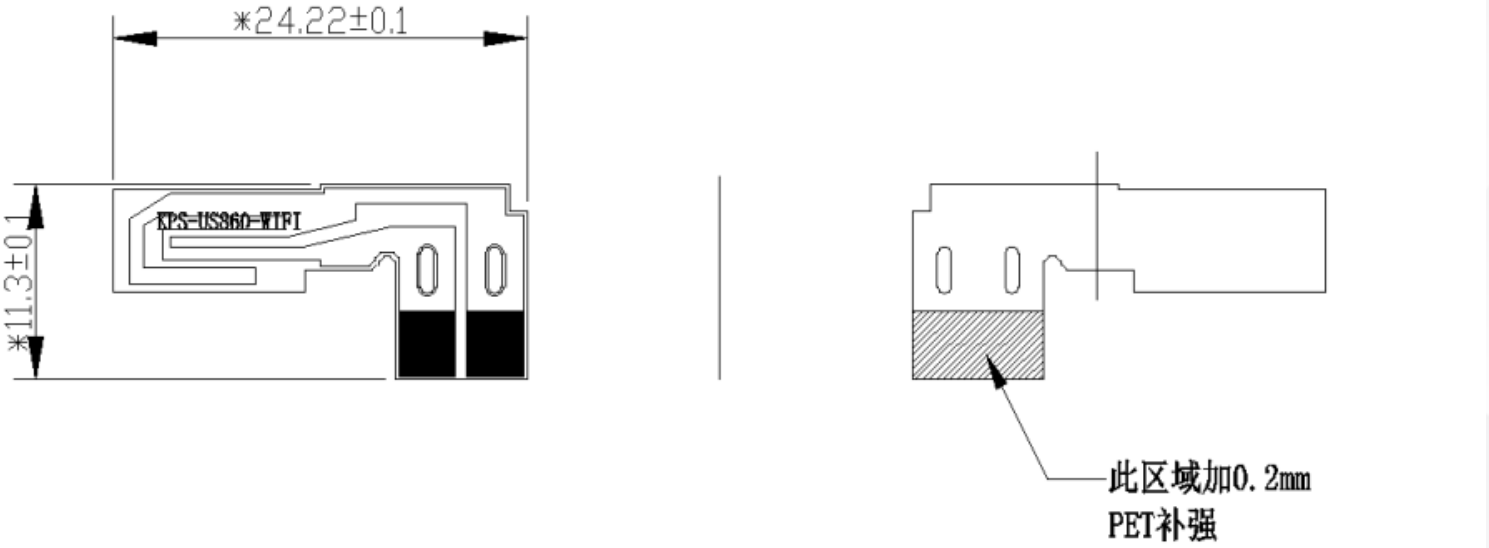
天线尺寸 Antenna size (LTE Main)



天线尺寸 Antenna size (LTE DIV)



天线尺寸 Antenna size (Wifi + GPS + BT)



联 系 方 式
Contact information

Manufacturer:
Shenzhen Kaipushen Communication Technology Co., Ltd

Address:
2nd Floor, Building 1, Yulong Building, Longcheng Industrial Zone,
No.440,Longguan Avenue, Longhua District, Shenzhen

凯普深

THE END

感谢您的宝贵意见！
Thank you for your valuable feedback ！