



深圳市凯普深通讯科技有限公司

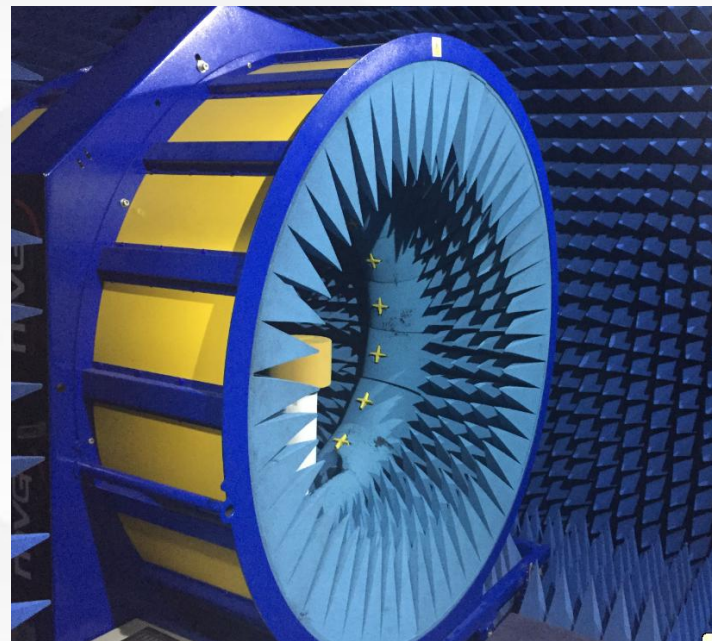
Shenzhen cape deep communication technology co., LTD

Antenna Specification



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Laboratory test environment and equipment



Test Item	Test Equipment
S11、S12、VSWR、LOSS	E5071B、E5062A
Efficiency、Gain 3D Radiation Pattern	Satimo SG16、GP7*4*3、E5071B
TRP、TIS	Satimo SG16、GP7*4*3、8960、 CMW500、MT8820C、E4438C、



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Project Commissioning Introduction

Complete machine type	4G intelligent machine		
		Frequency band information	Antenna form
Antenna type and frequency band information	Main antenna	GSM850/900/1800/1900 WCDMA; B1/2/4/5/8 FDD: B1/2/3/4/5/7/12/17/28/66/38	PIFA
	Secondary antenna	WIFI+BT+GPS	PIFA
	diversity antenna	700M-2710MHZ	PIFA
Antenna type	PIFA Antenna		



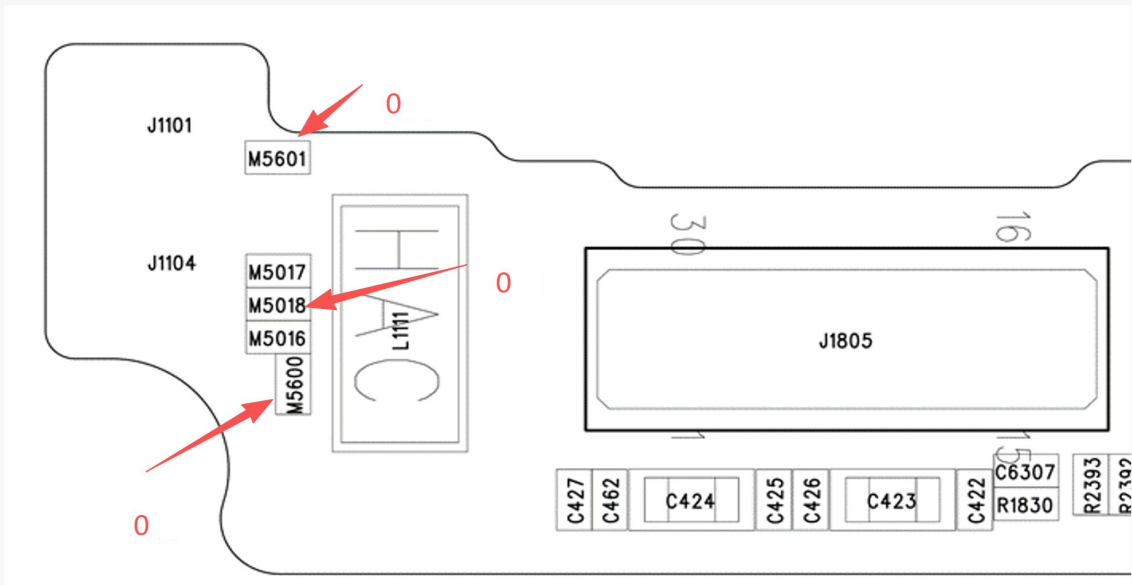
antenna switch matching circuit and logic

Upper Antenna	TRX		DRX
	2G:	/	/
	3G:	/	WCDMA-B1, 5, 8
	4G:	/	LTE-B1, 3, 5, 8
Lower Antenna (Tuning switch)	TRX		DRX
	RF1	GSM900, DCS1800, PCS1900+WCDMA-B1/2/4/8+LTE-B1, 2/3/4/7/66/38	/
	RF2	GSM850+WCDMA-B5+LTE-B5	/
	RF3	LTE12/17/28	/
	RF4	NA	/



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Three-in-one antenna matching

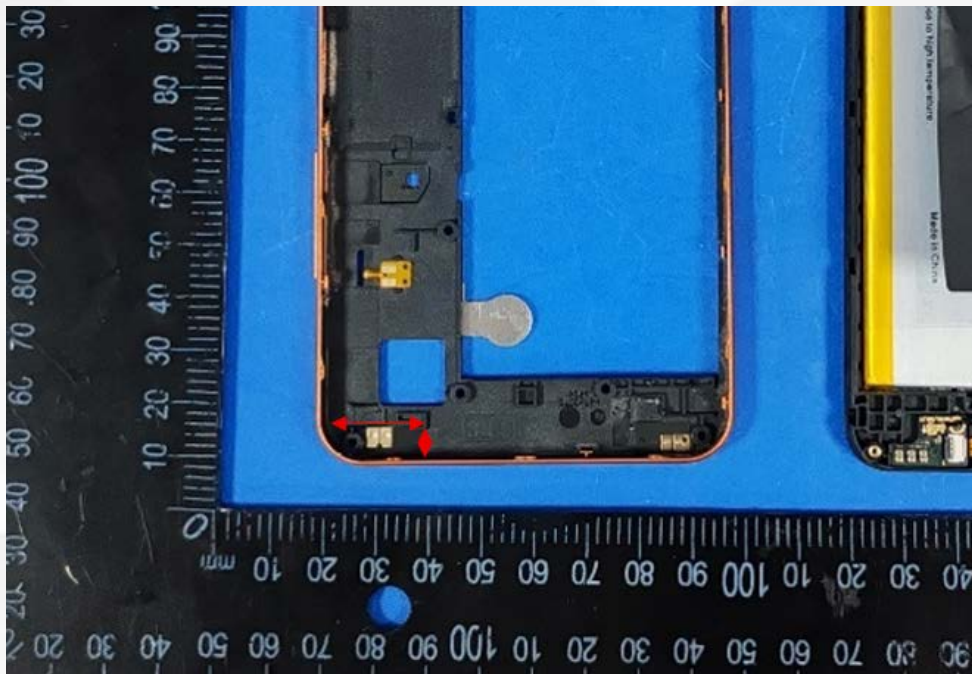




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WIFI antenna size

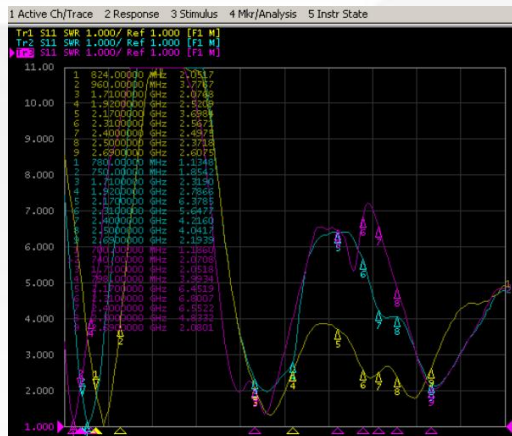
length: 19mm
width: 5.5mm



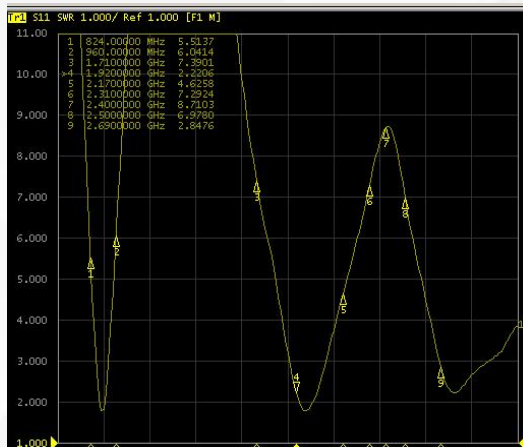


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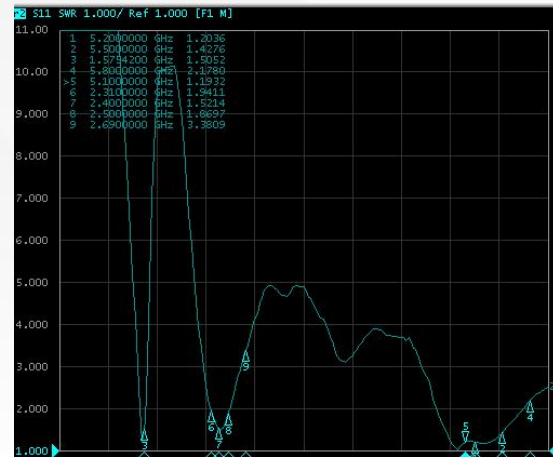
S11 figure



Main antenna



Diversity antenna



Three-in-one antenna



Apple Chart/Efficiency

Frequency (MHz)	Gain(dBi)	Efficiency (dB)	Efficiency (%)
700	-3.14	-7.03	19.84
710	-2.94	-6.98	20.04
720	-3.26	-6.89	20.47
730	-3.59	-6.98	20.03
740	-3.21	-6.48	22.47
750	-4.1	-7.25	18.83
760	-2.94	-6.98	20.04
770	-4.64	-7.78	16.67
780	-3.91	-7.08	19.61
790	-3.77	-7.12	19.4



Apple Chart/Efficiency

Frequency(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
880	-3.18	-6.93	20.26
890	-3.11	-6.78	21
900	-2.91	-6.81	20.84
910	-2.84	-6.87	20.55
920	-2.95	-7.26	18.8
930	-3.26	-7.58	17.47
940	-3.18	-7.86	16.36
950	-3.18	-8.23	15.03
960	-3.58	-8.81	13.17

Frequency(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
800	-3.18	-7.32	18.55
810	-2.95	-7.04	19.79
820	-3.02	-6.89	20.47
830	-3.1	-6.87	20.54
840	-2.96	-6.66	21.56
850	-3.02	-6.9	20.39
860	-3.22	-7.17	19.18
870	-3.46	-7.35	18.39
880	-3.71	-7.57	17.49
890	-4.16	-8	15.84
900	-4.83	-8.47	14.22



Apple Chart/Efficiency

Frequency(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
1700	-4.09	-9.55	11.08
1720	-3.61	-9.08	12.36
1740	-3.44	-8.75	13.34
1760	-3.33	-8.5	14.13
1780	-3.2	-8.32	14.72
1800	-2.44	-8	15.86
1820	-1.8	-7.53	17.67
1840	-1.57	-7.22	18.97
1860	-1.54	-7.05	19.72
1880	-1.77	-6.93	20.26
1900	-1.94	-6.88	20.53
1920	-2.24	-6.87	20.58
1940	-2.63	-6.95	20.17
1960	-3.14	-7.06	19.66
1980	-3.64	-6.9	20.39
2000	-3.69	-6.91	20.36
2020	-3.61	-6.93	20.29
2040	-3.57	-6.87	20.54
2060	-3.53	-7.01	19.89
2080	-3.4	-7	19.97
2100	-3.23	-6.95	20.2
2120	-2.88	-7	19.96
2140	-2.77	-6.92	20.3
2160	-2.79	-6.93	20.26
2180	-2.78	-6.79	20.93



Apple Chart/Efficiency

2200	-1.85	-5.54	27.91
2220	-1.97	-5.47	28.35
2240	-2.04	-5.37	29.06
2260	-2.13	-5.44	28.55
2280	-2.5	-5.63	27.34
2300	-2.98	-5.98	25.26
2320	-3.07	-6.34	23.22
2340	-2.75	-6.79	20.95
2360	-2.41	-7.1	19.48
2380	-2.08	-7.14	19.32
2400	-1.66	-7	19.96
2420	-1.48	-6.69	21.45
2440	-1.01	-6.2	23.99
2460	-0.66	-5.71	26.84
2480	-0.42	-5.11	30.82
2500	-0.13	-4.63	34.45
2520	-0.22	-4.32	37.01
2540	-0.17	-4.25	37.57
2560	-0.03	-4.27	37.41
2580	0.07	-4.33	36.93
2600	-0.08	-4.54	35.15
2620	-0.1	-4.77	33.34
2640	-0.13	-4.94	32.07
2660	-0.35	-5.18	30.31
2680	-0.57	-5.48	28.29
2700	-0.63	-5.67	27.08



Apple Chart/Efficiency

WIFI/BT-2.4G

Frequency(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	1.79	-5.22	30.08
2410	1.76	-5.08	31.06
2420	1.86	-4.91	32.29
2430	1.92	-4.84	32.81
2440	1.96	-4.78	33.26
2450	1.93	-4.79	33.2
2460	1.92	-4.83	32.92
2470	2.01	-4.8	33.11
2480	2.04	-4.79	33.22
2490	2.11	-4.78	33.25
2500	2.19	-4.79	33.17

Frequency(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
1500	1.3	-4.29	37.2
1510	1.57	-3.97	40.1
1520	1.34	-3.94	40.36
1530	1.24	-3.85	41.23
1540	1.52	-3.52	44.43
1550	1.76	-3.33	46.5
1560	1.88	-3.24	47.42
1570	2.14	-3.08	49.24
1580	2.22	-3.02	49.85
1590	2.07	-3.17	48.18
1600	2.04	-3.23	47.58



Apple Chart/Efficiency

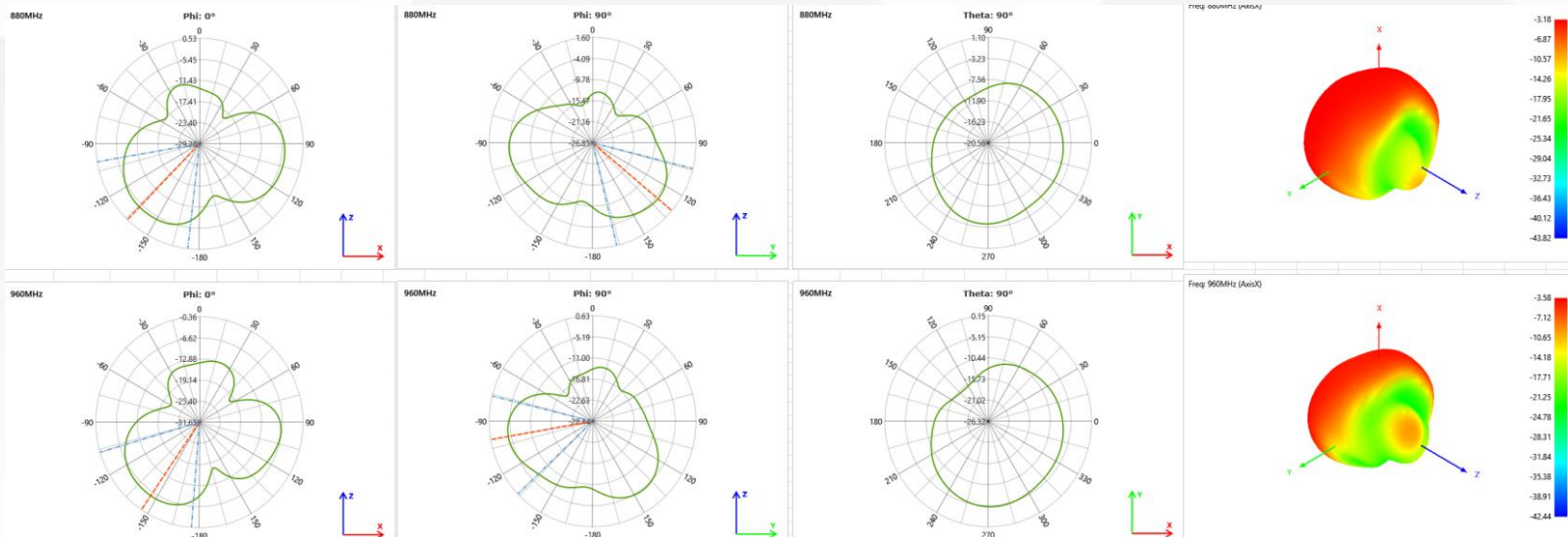
Frequency(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
5100	1.31	-6.09	24.61
5120	1.33	-6.06	24.78
5140	1.27	-6.3	23.46
5160	1.4	-6.14	24.34
5180	1.49	-6.08	24.68
5200	1.29	-6.19	24.03
5220	1.65	-6.05	24.84
5240	1.78	-5.89	25.73
5260	1.56	-6.14	24.35
5280	1.69	-5.95	25.38
5300	1.66	-5.9	25.69
5320	1.77	-5.77	26.48
5340	1.27	-5.93	25.55
5360	1.46	-5.91	25.66
5380	1.45	-6.05	24.85
5400	1.95	-5.9	25.73
5420	2.23	-5.86	25.95
5440	2.32	-5.79	26.39
5460	2.36	-5.83	26.13
5480	2.53	-5.99	25.18

5520	2.4	-6.18	24.08
5540	2.55	-6.25	23.72
5560	2.58	-6.42	22.78
5580	2.19	-6.63	21.74
5600	1.95	-6.8	20.91
5620	2.41	-6.77	21.02
5640	2.29	-6.91	20.35
5660	2.16	-7.05	19.73
5680	2.13	-7.13	19.38
5700	1.83	-7.25	18.83
5720	1.82	-7.47	17.9
5740	2	-7.38	18.3
5760	1.85	-7.39	18.23
5780	1.54	-7.8	16.59
5800	1.41	-7.92	16.15
5820	1.44	-7.92	16.14
5840	1.45	-8.27	14.9



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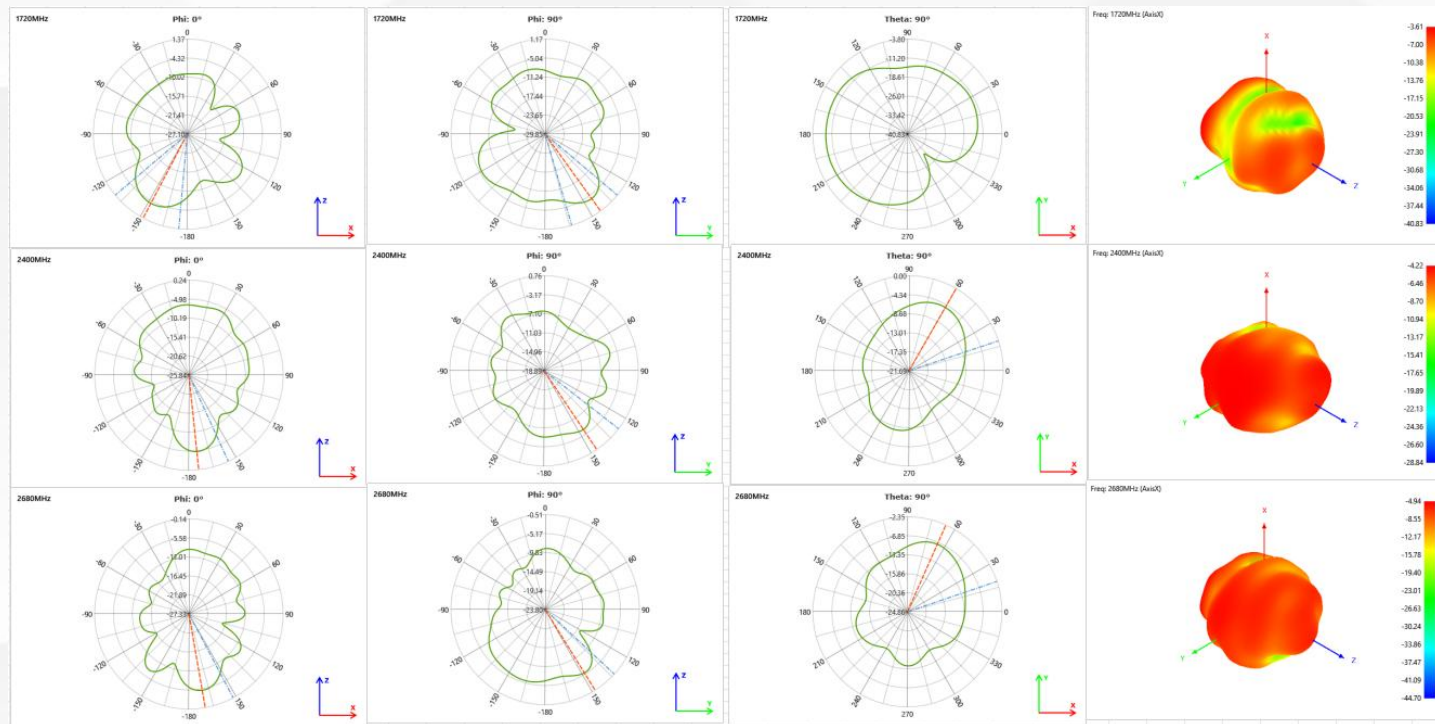
Apple Chart/Efficiency





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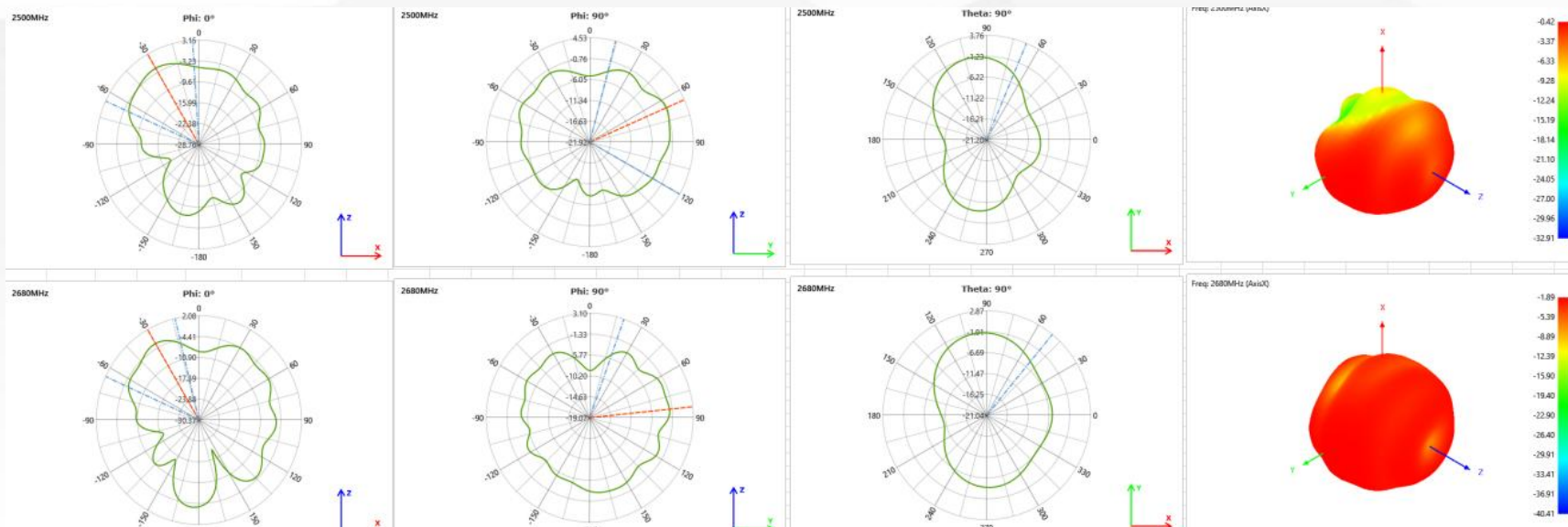
Apple Chart/Efficiency





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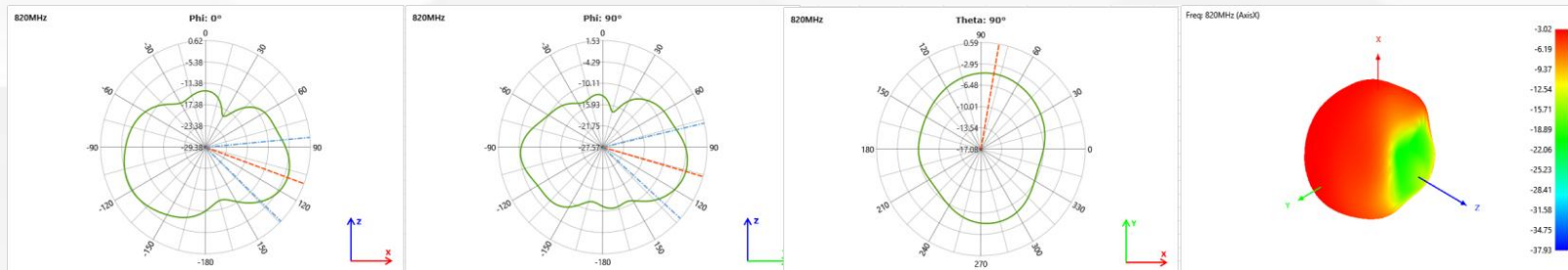
Apple Chart/Efficiency





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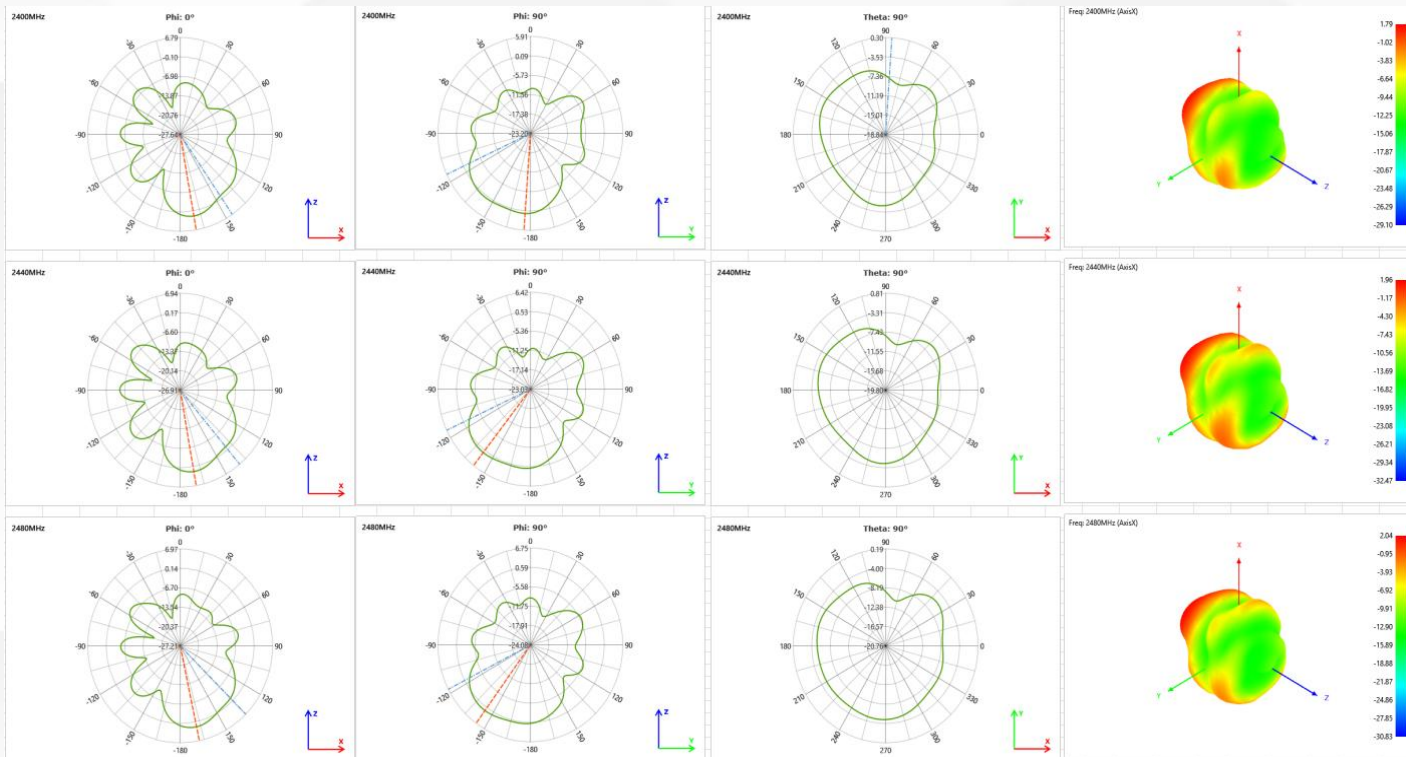
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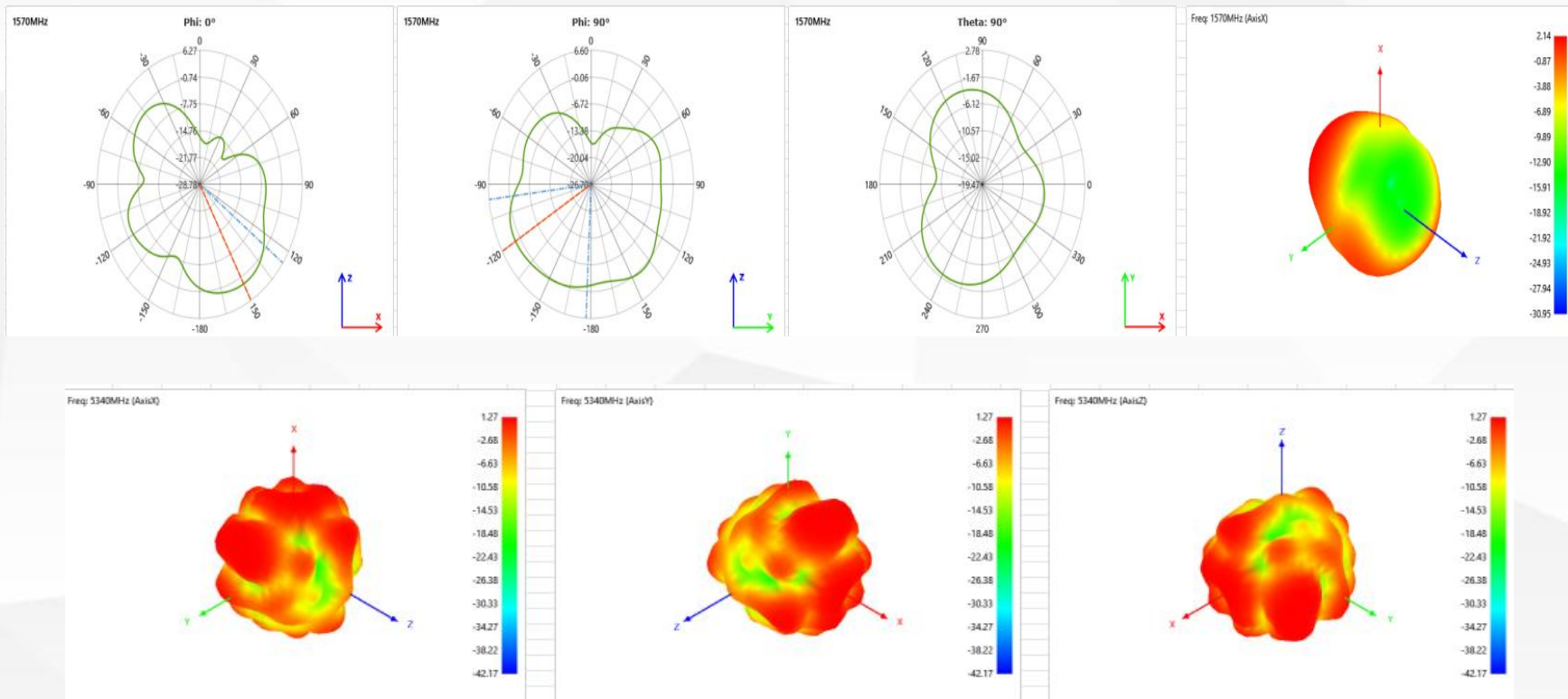
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深圳市凯普深通讯科技有限公司

Shenzhen cape deep communication technology co., LTD



Environmental treatment

Original environmental treatment of other trial
production machines



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THE END

Thank you for your valuable comments!