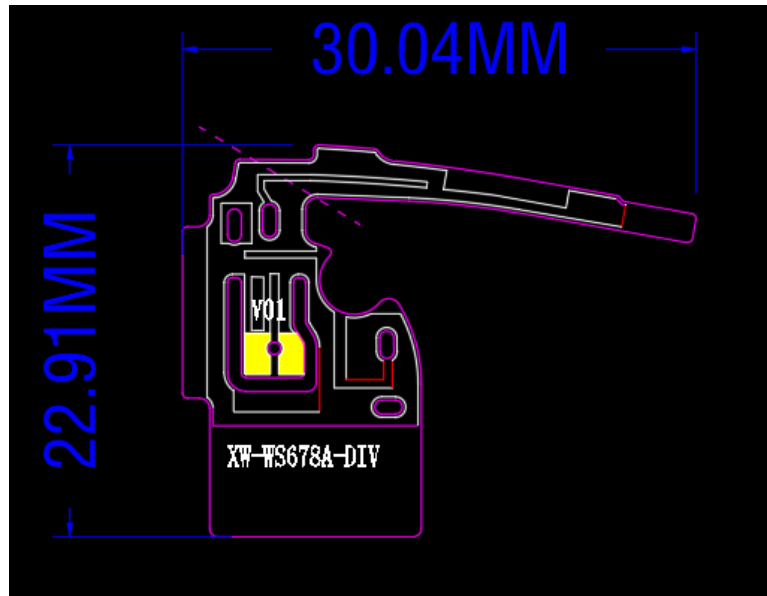
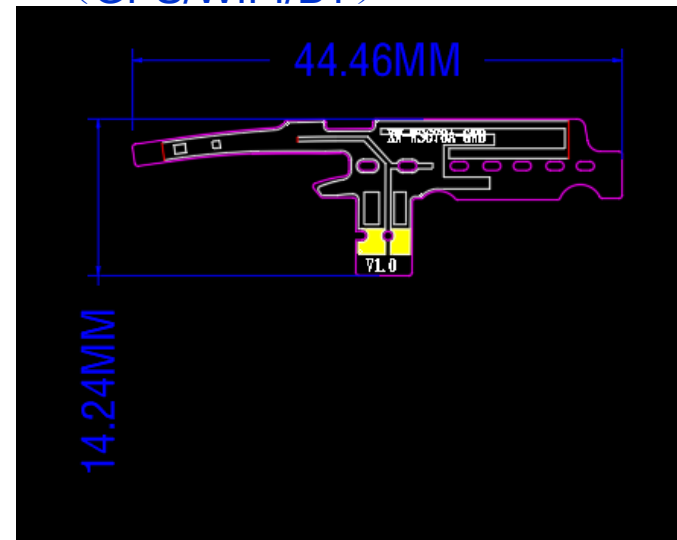


Project: WS678A The beautiful version

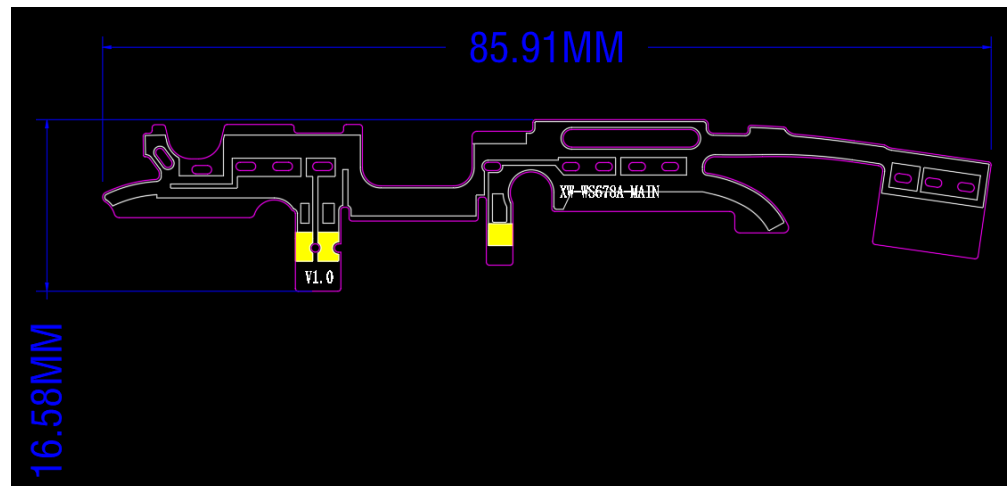
Diversity antenna



Three-in-one antenna
(GPS/WIFI/BT)



Main antenna



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WS678A Antenna switch configuration

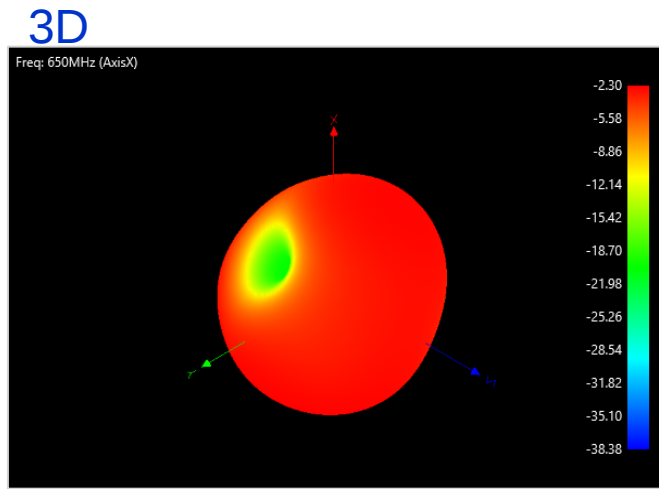
RF port	No.	Application frequency band
RF1	R104	G900 (880-960MHZ)
RF2	R105	G850+W-B5+LTE-B5 (824-894MHZ)
RF3	R107	LTE-B12/B17 (700-800MHZ)
RF4	R108	LTE-B71 (600-700MHZ)

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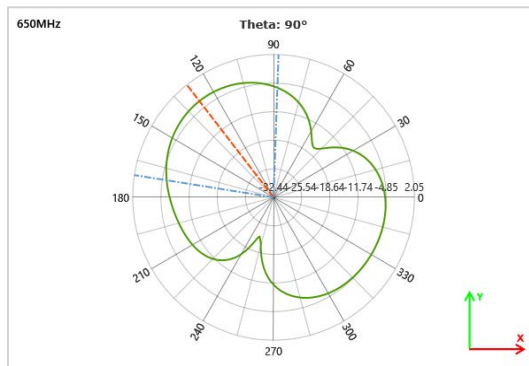
Add:M Zone, 8th Floor, Building 1, Baisha Emerging Industrial Park, 3011 Shahe West Road, Nanshan District, Shenzhen,China

Passive Test For (Main antenna) LTE-B71 (600-700MHz)			
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
600	-5.6	-8.14	15.34
610	-4.78	-7.34	18.46
620	-4.53	-7.31	18.58
630	-4.18	-7.21	19.01
640	-4.24	-7.22	18.95
650	-2.3	-6.65	21.64
660	-1.55	-6.88	20.53
670	-1.79	-6.93	20.26
680	-1.89	-7	19.97
690	-0.82	-6.54	22.17
700	-0.15	-6.28	23.57

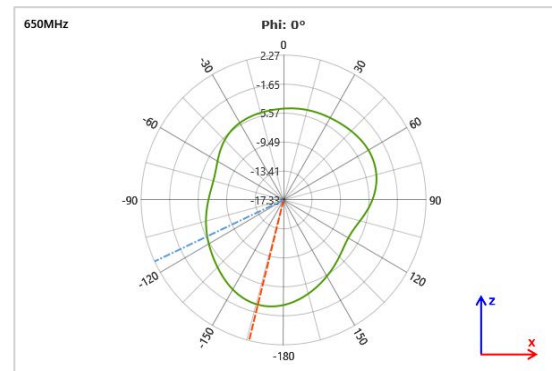
600-700MHZ (3D/2D) (Main antenna)



2D(theta 90°)



2D(phi 0°)



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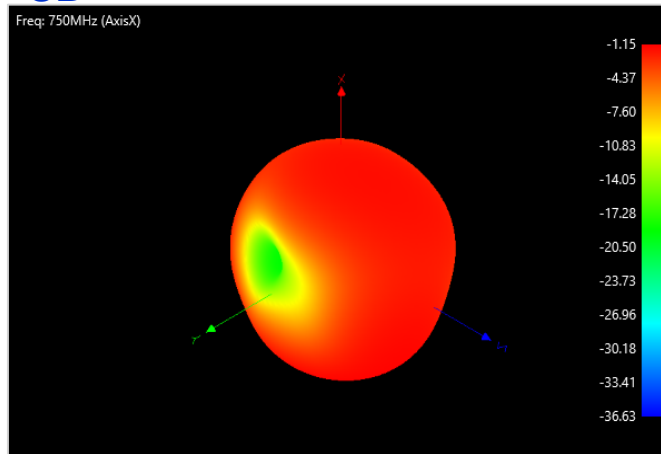
Add:M Zone, 8th Floor, Building 1, Baisha Emerging Industrial Park, 3011 Shahe West Road, Nanshan District, Shenzhen,China

Passive Test For
(Main antenna)
LTE-B12/17 (700-800MHz)

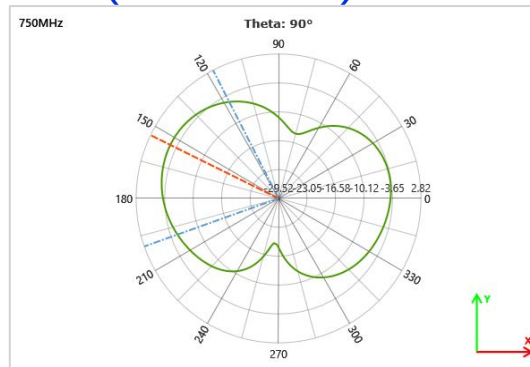
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
700	-0.91	-6.72	21.29
710	-2.1	-7.23	18.91
720	-2.4	-7.28	18.69
730	-2.03	-6.61	21.81
740	-1.27	-6.13	24.37
750	-1.15	-6.57	22.02
760	-0.79	-6.32	23.35
770	-0.86	-6.08	24.69
780	-0.59	-5.9	25.71
790	-0.81	-6.04	24.92
800	-3.03	-6.67	21.51

700-800MHz (3D/2D) (Main antenna)

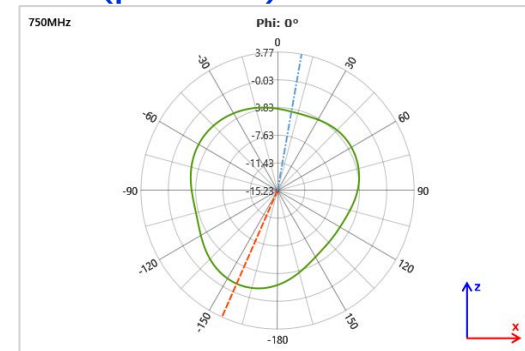
3D



2D(theta 90°)



2D(phi 0°)



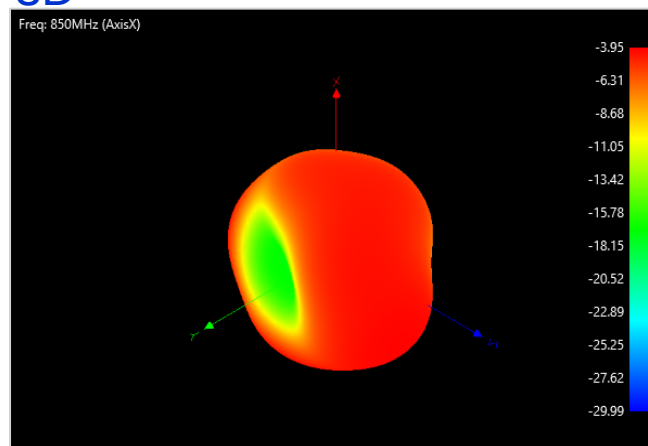
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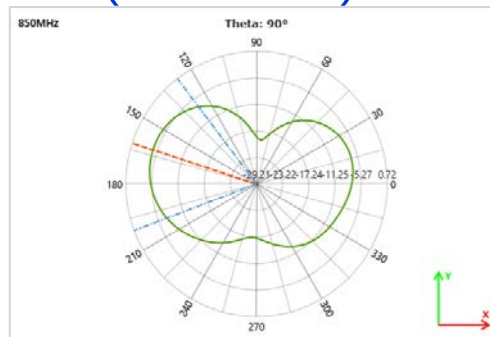
Passive Test For (Main antenna) G850+W-B5+LTE-B5 (820-890MHz)			
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
820	-4.21	-8.46	14.26
830	-4.16	-8.08	15.57
840	-4.04	-7.85	16.4
850	-3.95	-7.69	17.03
860	-3.58	-7.36	18.36
870	-3.13	-7.07	19.66
880	-2.57	-6.28	23.53
890	-2.07	-5.72	26.81

824-894MHZ (3D/2D) (Main antenna)

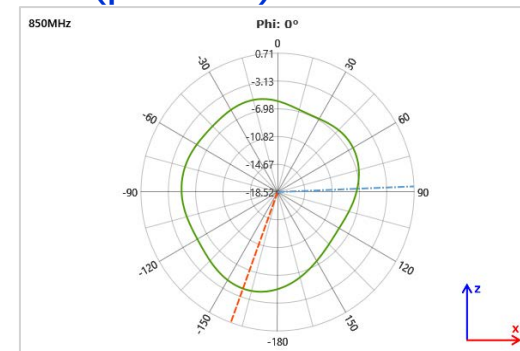
3D



2D(theta 90°)



2D(phi 0°)



Heyuan Xunwei Communication Technologies Co.,Ltd

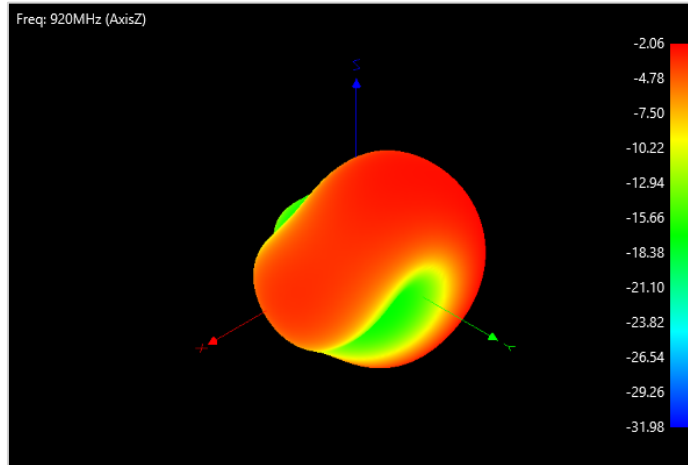
Add:M Zone, 8th Floor, Building 1, Baisha Emerging Industrial Park, 3011 Shahe West Road, Nanshan District, Shenzhen,China

Passive Test For
(Main antenna)
G900 (880-960MHz)

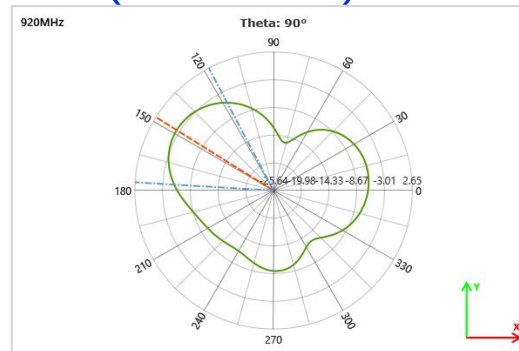
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
880	-3.63	-9.06	12.43
890	-2.58	-7.73	16.86
900	-2.09	-7.17	19.17
910	-1.83	-6.74	21.19
920	-2.06	-6.63	21.74
930	-2.5	-6.83	20.77
940	-2.7	-7.24	18.86
950	-3.31	-7.69	17.04
960	-4.12	-8.37	14.56

880-960MHZ (3D/2D) (Main antenna)

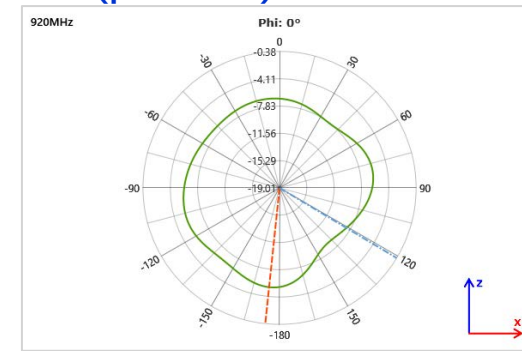
3D



2D(theta 90°)



2D(phi 0°)



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Passive Test For 1710-2170MHZ (Diversity antenna)			
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
1710	-0.2	-5.63	27.35
1720	0.05	-5.41	28.8
1730	0.05	-5.37	29.02
1740	0.18	-5.17	30.42
1750	0.17	-4.92	32.18
1760	-0.26	-4.8	33.13
1770	-0.35	-4.61	34.62
1780	-0.17	-4.41	36.22
1790	-0.17	-4.45	35.93
1800	-0.52	-4.35	36.71
1810	-0.39	-4.12	38.76
1820	0.01	-4	39.83
1830	0.01	-4.1	38.9
1840	0.11	-4.08	39.12
1850	0.07	-3.92	40.54
1860	0.56	-3.8	41.64
1870	0.45	-3.98	40.02
1880	0.66	-3.85	41.23
1890	1.03	-3.76	42.03
1900	1.12	-3.78	41.84

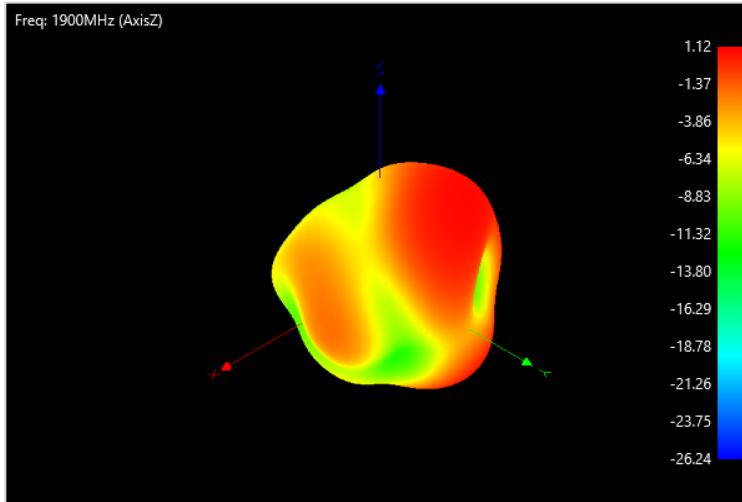
Passive Test For 1710-2170MHZ (Diversity antenna)			
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
1910	1	-3.66	43.02
1920	1.49	-3.58	43.8
1930	1.64	-3.64	43.28
1940	1.68	-3.63	43.37
1950	1.94	-3.56	44.04
1960	2.23	-3.52	44.5
1970	2.2	-3.69	42.72
1980	2.12	-3.81	41.57
1990	2.06	-4.02	39.61
2000	1.9	-4.08	39.1
2010	2.19	-4.03	39.57
2020	2.02	-4.38	36.5
2030	1.62	-4.76	33.4
2040	1.6	-4.88	32.48
2050	1.24	-5.23	30
2060	0.91	-5.57	27.71
2070	0	-6.19	24.05
2080	-0.39	-6.56	22.09
2090	-0.49	-6.87	20.54
2100	-1.57	-7.45	17.98
2110	-2.78	-8.33	14.7
2120	-3.28	-9.1	12.31
2130	-4.03	-9.63	10.9
2140	-4.48	-10.1	9.78
2150	-5.42	-11.06	7.83
2160	-5.97	-11.59	6.93
2170	-6.42	-11.88	6.49

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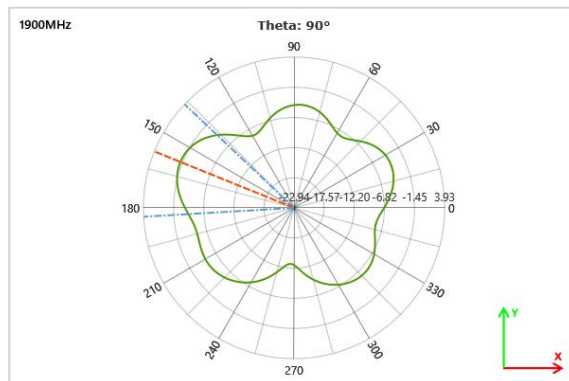
Add:M Zone, 8th Floor, Building 1, Baisha Emerging Industrial Park, 3011 Shahe West Road, Nanshan District, Shenzhen,China

1710-2170MHz (3D/2D) (Diversity antenna)

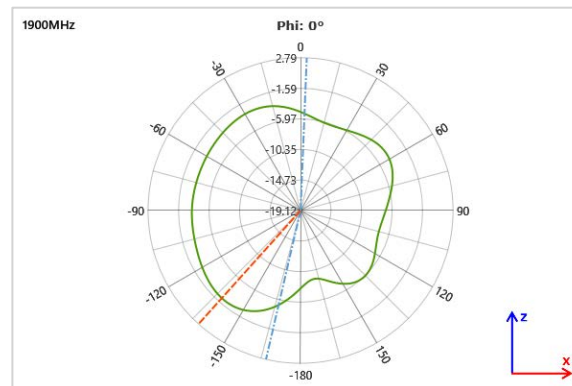
3D



2D(theta 90°)



2D(phi 0°)



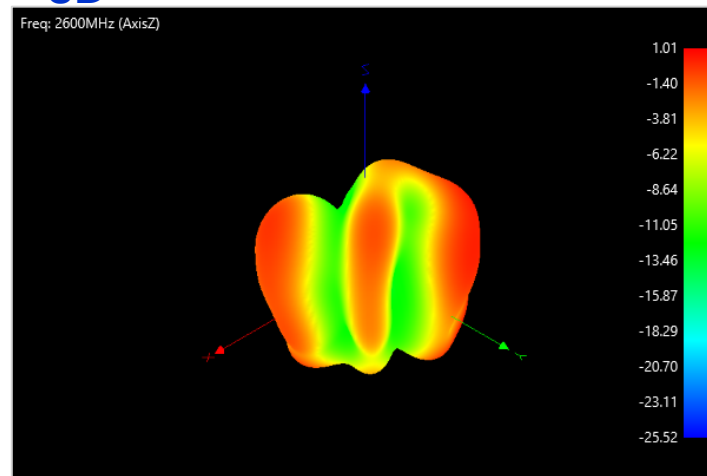
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Add:M Zone, 8th Floor, Building 1, Baisha Emerging Industrial Park, 3011 Shahe West Road, Nanshan District, Shenzhen,China

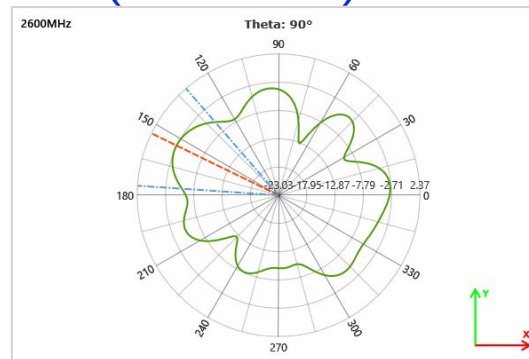
Passive Test For 2500-2700MHZ (Diversity antenna)			
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
2500	-0.67	-6.21	23.95
2510	-0.8	-6.23	23.85
2520	-0.52	-6.04	24.86
2530	-0.61	-5.95	25.4
2540	-0.25	-5.69	27
2550	0.08	-5.46	28.47
2560	0.38	-5.33	29.34
2570	0.23	-5.24	29.93
2580	0.48	-5.01	31.56
2590	0.92	-4.68	34.07
2600	1.01	-4.62	34.51
2610	1.03	-4.62	34.49
2620	1.07	-4.47	35.76
2630	1.32	-4.27	37.38
2640	1.26	-4.19	38.08
2650	1.32	-4.26	37.53
2660	1.08	-4.25	37.62
2670	1.13	-4.14	38.52
2680	1.26	-4.04	39.46
2690	1.13	-4.09	39.03
2700	1.01	-4.18	38.23

2500-2700MHZ (3D/2D) (Diversity antenna)

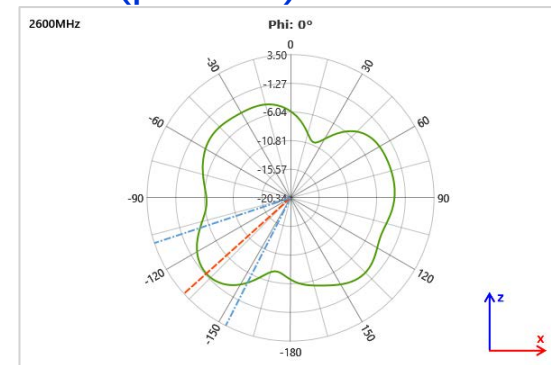
3D



2D(theta 90°)



2D(phi 0°)



Heyuan Xunwei Communication Technologies Co.,Ltd

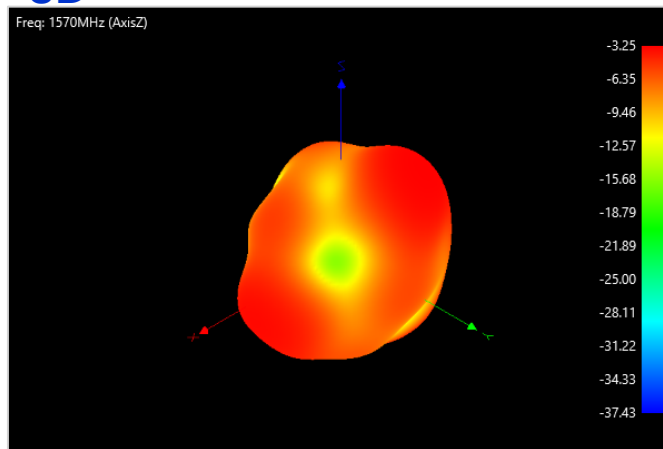
Add:M Zone, 8th Floor, Building 1, Baisha Emerging Industrial Park, 3011 Shahe West Road, Nanshan District, Shenzhen,China

Passive Test For
(Three-in-one antenna)
GPS (1500-1600MHZ)

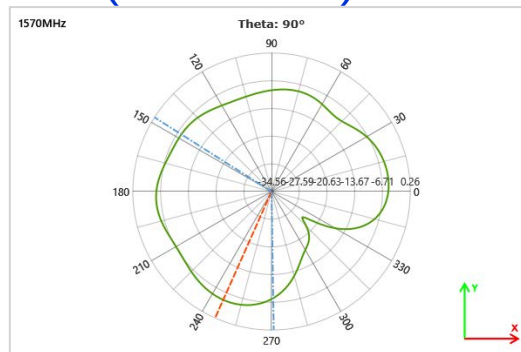
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
1500	-2.31	-6.67	21.52
1510	-2.41	-6.48	22.48
1520	-2.46	-6.65	21.65
1530	-2.76	-6.77	21.05
1540	-2.91	-6.74	21.2
1550	-2.63	-6.67	21.53
1560	-2.88	-6.71	21.33
1570	-3.25	-6.73	21.26
1580	-3.05	-6.6	21.89
1590	-2.86	-6.67	21.52
1600	-2.66	-6.65	21.63

1500-1600MHZ (3D/2D) (Three-in-one antenna)

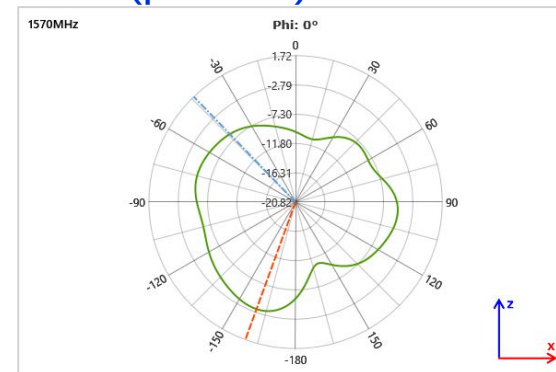
3D



2D(theta 90°)



2D(phi 0°)



Heyuan Xunwei Communication Technologies Co.,Ltd

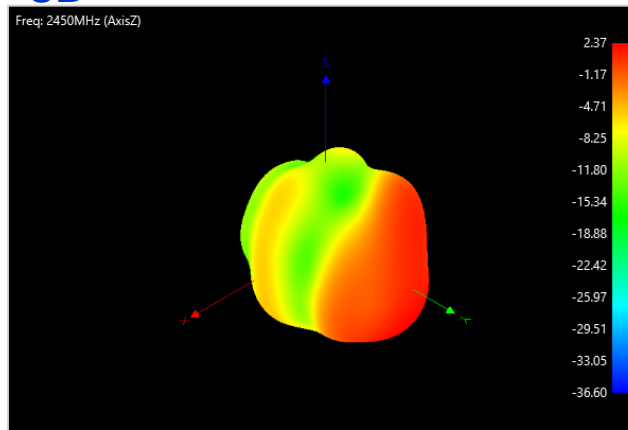
Add:M Zone, 8th Floor, Building 1, Baisha Emerging Industrial Park, 3011 Shahe West Road, Nanshan District, Shenzhen,China

Passive Test For
(Three-in-one antenna)
wifi (2400-2500MHZ)

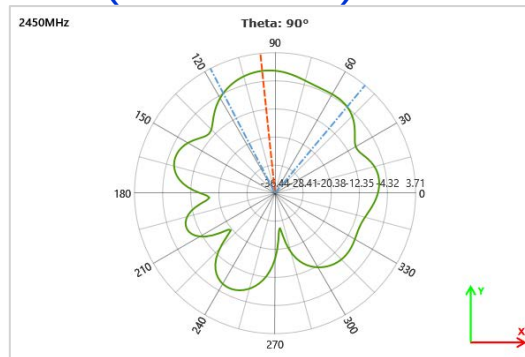
Freq.(MHz)	Gain(dBi)	Effi.(dB)	Effi.(%)
2400	2.87	-5.17	30.43
2410	2.83	-5.36	29.09
2420	2.35	-5.65	27.21
2430	1.91	-5.78	26.42
2440	2.28	-5.67	27.08
2450	2.37	-5.72	26.8
2460	2.18	-5.95	25.42
2470	1.34	-6.15	24.24
2480	1.58	-6.12	24.43
2490	1.45	-6.29	23.5
2500	1.22	-6.4	22.91

2400-2500MHZ (3D/2D) (Three-in-one antenna)

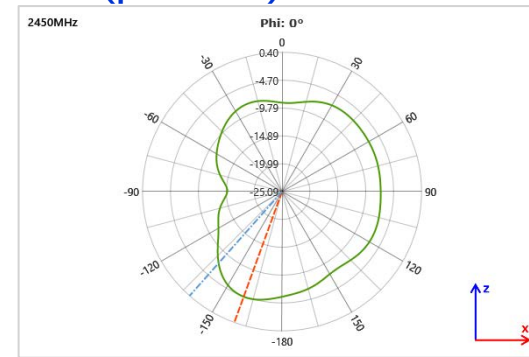
3D



2D(theta 90°)



2D(phi 0°)



Heyuan Xunwei Communication Technologies Co.,Ltd

Add:M Zone, 8th Floor, Building 1, Baisha Emerging Industrial Park, 3011 Shahe West Road, Nanshan District, Shenzhen,China