

P2W Antenna Test Report

Date: 2024.3.30

CONTENTS

01

Project Overview

02

Test Environment

03

Matching Circuit

04

Environmental
Treatment

05

Passive Report

06

Active Report

07

Conclusion

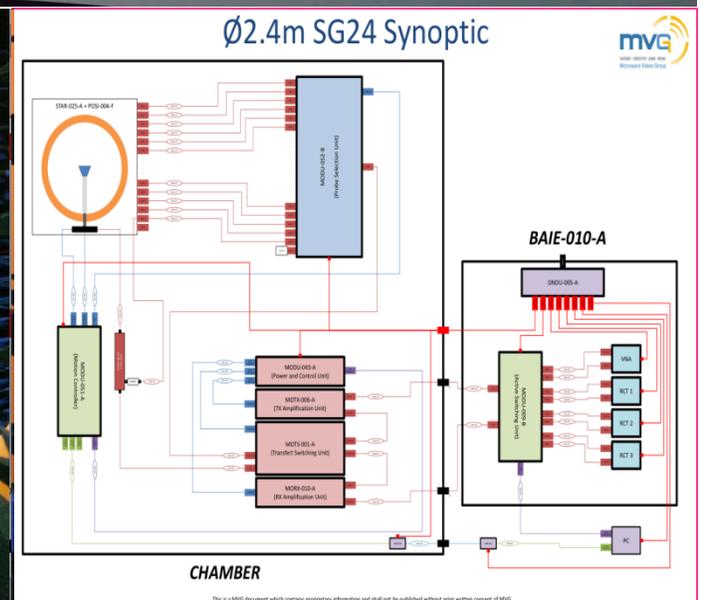
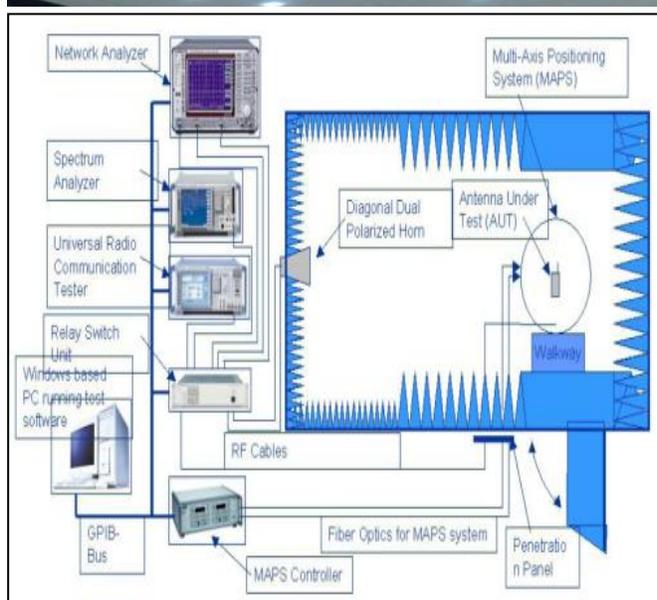
Project Overview



Main antenna design spectrum	4G
Type of antenna	PIFA
Deputy antenna design spectrum	WIFI GPS
Type of antenna	PIFA

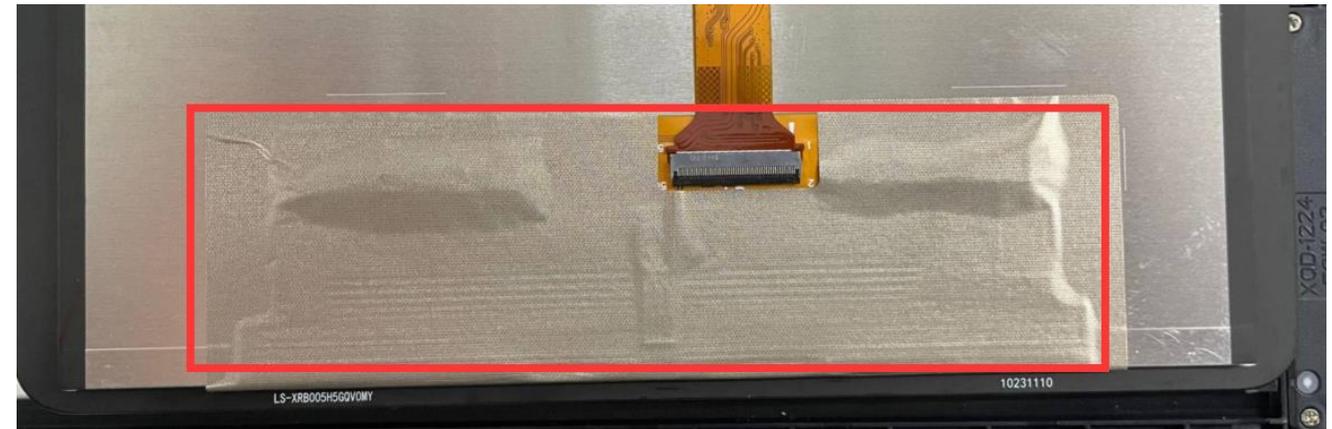
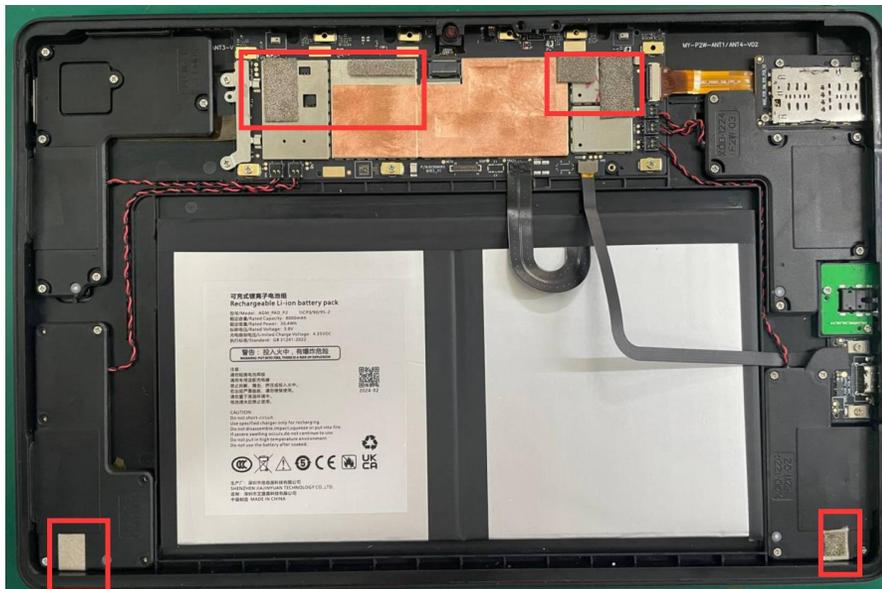
Report version	Date	Content
V2.0	2024.3.30	Antenna test report

Test Environment



Darkroom system : MVG SG24LT (Satmio)

Figure: The motherboard is grounded with a conductive sponge.



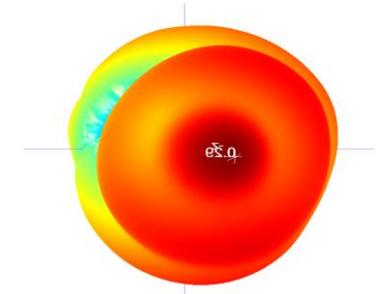
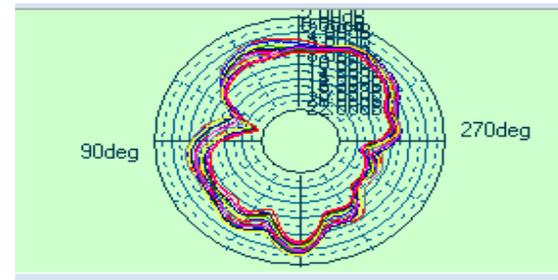
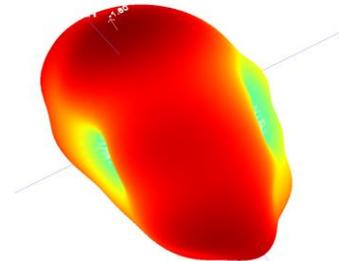
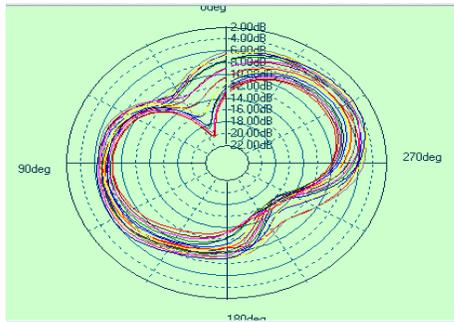
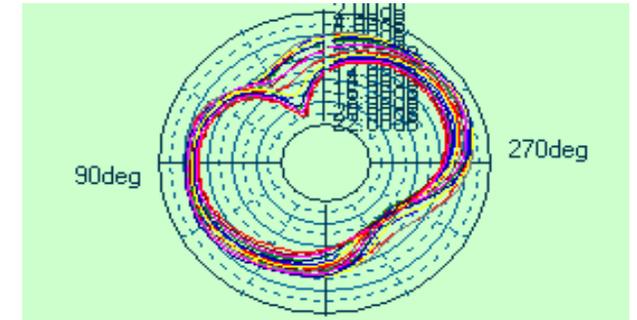
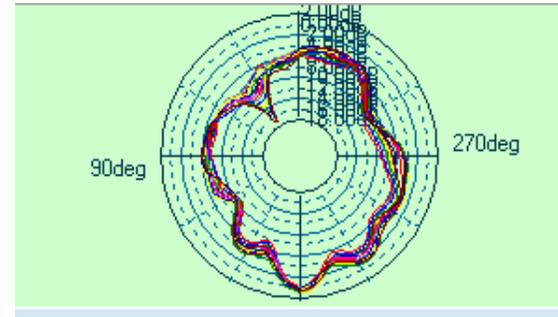
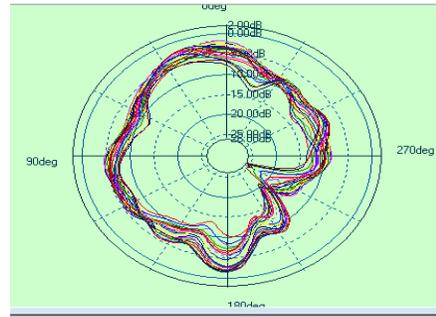
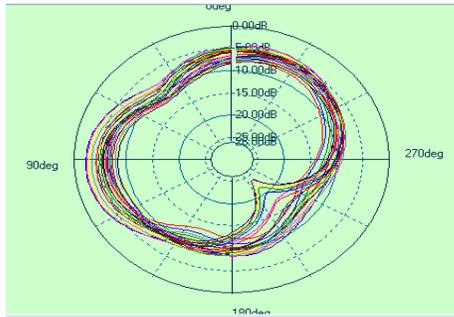
Passive Report



Frequency	Efficiency	Efficiency .	Frequency	Gain . dB	Frequency	Efficiency	Efficiency .	Frequency	Gain . dB	Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
691000000	12.17%	-9.14814	691000000	-4.51209	824000000	13.91%	-8.56744	824000000	-0.58265	880000000	21.02%	-6.77359	880000000	-1.30952
696090909	16.94%	-7.71204	696090909	-3.39201	829000000	16.46%	-7.83455	829000000	0.403421	885000000	23.15%	-6.35538	885000000	-0.50173
701181818	13.83%	-8.59232	701181818	-3.85314	834000000	15.14%	-8.19754	834000000	-0.01736	890000000	20.14%	-6.96029	890000000	-1.37668
706272727	20.84%	-6.81163	706272727	-2.25565	839000000	17.73%	-7.51401	839000000	0.709733	895000000	21.26%	-6.7241	895000000	-0.72497
711363636	15.40%	-8.12448	711363636	-3.38688	844000000	16.23%	-7.89798	844000000	0.179459	900000000	18.19%	-7.40073	900000000	-1.57211
716454545	22.06%	-6.56383	716454545	-1.6005	849000000	18.59%	-7.30657	849000000	0.286366	905000000	20.25%	-6.93607	905000000	-1.12585
721545454	16.89%	-7.72333	721545454	-2.97485	854000000	17.22%	-7.63903	854000000	-0.16848	910000000	16.81%	-7.74511	910000000	-1.98706
726636363	22.36%	-6.50617	726636363	-1.48531	859000000	20.14%	-6.95889	859000000	-0.13188	915000000	17.97%	-7.45555	915000000	-1.71207
731727272	17.52%	-7.56583	731727272	-2.75637	864000000	20.10%	-6.96713	864000000	-0.0919	920000000	15.10%	-8.21022	920000000	-2.42493
736818181	21.07%	-6.76243	736818181	-1.71386	869000000	22.99%	-6.38368	869000000	-0.24164	925000000	16.50%	-7.82479	925000000	-2.29926
741909090	18.84%	-7.24822	741909090	-2.40293	874000000	23.41%	-6.3059	874000000	0.216943	930000000	13.68%	-8.64004	930000000	-2.77777
747000000	19.59%	-7.08018	747000000	-2.05947	879000000	25.57%	-5.92327	879000000	-0.05206	935000000	14.23%	-8.46683	935000000	-2.87658
752090909	19.72%	-7.05142	752090909	-2.23243	884000000	27.12%	-5.66722	884000000	0.497492	940000000	12.03%	-9.19853	940000000	-3.37653
757181818	18.71%	-7.27818	757181818	-2.01253	889000000	26.27%	-5.80468	889000000	-0.251	945000000	12.44%	-9.05338	945000000	-3.59055
762272727	19.81%	-7.03137	762272727	-1.92727	894000000	26.41%	-5.78198	894000000	0.193424	950000000	10.88%	-9.63192	950000000	-3.7693
767363636	16.38%	-7.85695	767363636	-2.48595						955000000	11.07%	-9.55952	955000000	-4.15683
772454545	18.82%	-7.25436	772454545	-1.71694						960000000	9.96%	-10.0188	960000000	-4.38682
777545454	15.04%	-8.22626	777545454	-2.48515										
782636363	17.11%	-7.66804	782636363	-1.7659										
787727272	13.44%	-8.71491	787727272	-2.1534										
792818181	15.43%	-8.11767	792818181	-1.86241										
797909090	12.71%	-8.95882	797909090	-1.9999										
803000000	13.13%	-8.81857	803000000	-2.18929										

690-960MHz passive Efficiency, Gain

Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)



690-800MHz

824-894MHz

Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

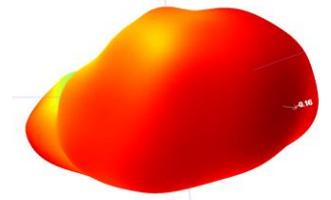
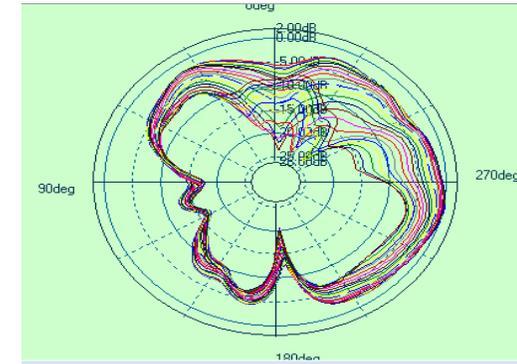
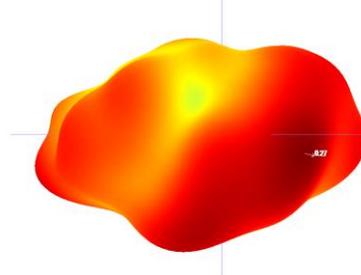
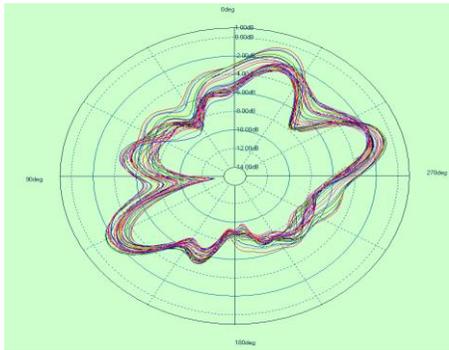
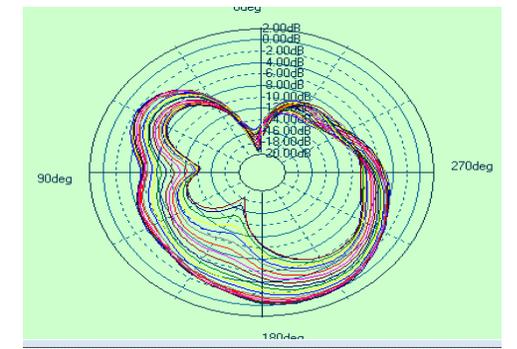
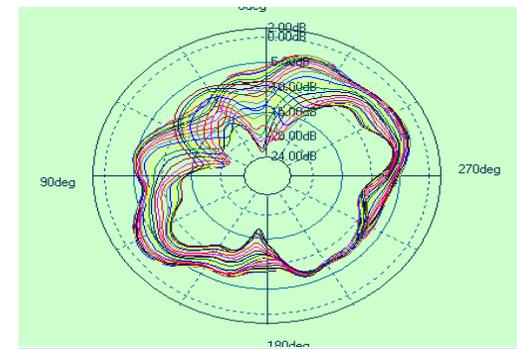
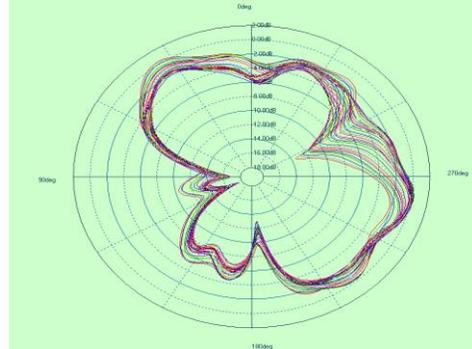
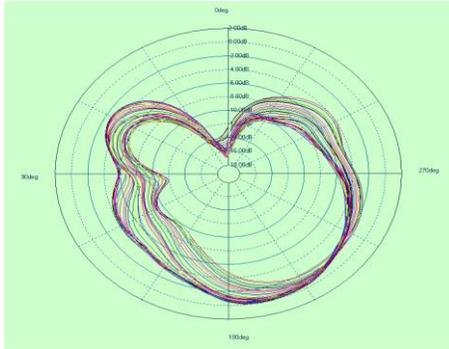
Passive Report



Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB	Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB	Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
1710000000	37.88%	-4.21602	1710000000	1.659746	1880000000	39.41%	-4.04376	1880000000	0.566684	2020000000	15.82%	-8.00725	2020000000	-2.76655
1715000000	37.18%	-4.29691	1715000000	1.469654	1885000000	40.38%	-3.93857	1885000000	0.479342	2030000000	17.00%	-7.69555	2030000000	-2.43932
1720000000	37.41%	-4.27068	1720000000	1.371056	1890000000	40.66%	-3.90793	1890000000	0.716883	2040000000	18.26%	-7.38451	2040000000	-2.23427
1725000000	36.21%	-4.41173	1725000000	1.109503	1895000000	39.93%	-3.98714	1895000000	0.382998	2050000000	19.70%	-7.05432	2050000000	-2.0911
1730000000	35.63%	-4.48151	1730000000	0.965469	1900000000	38.72%	-4.12076	1900000000	0.408912	2060000000	21.44%	-6.68848	2060000000	-1.50863
1735000000	34.72%	-4.59465	1735000000	0.744043	1905000000	38.73%	-4.11997	1905000000	0.32455	2070000000	22.84%	-6.41378	2070000000	-1.35782
1740000000	34.76%	-4.58859	1740000000	0.800861	1910000000	36.79%	-4.34263	1910000000	0.327975	2080000000	22.87%	-6.40799	2080000000	-1.48668
1745000000	33.15%	-4.79522	1745000000	0.544094	1915000000	34.82%	-4.58209	1915000000	-0.06179	2090000000	23.70%	-6.25237	2090000000	-1.14198
1750000000	32.61%	-4.86712	1750000000	0.443129	1920000000	32.66%	-4.86048	1920000000	-0.15676	2100000000	25.55%	-5.92638	2100000000	-0.98523
1755000000	32.24%	-4.91577	1755000000	0.224709	1925000000	31.32%	-5.04144	1925000000	-0.41072	2110000000	27.43%	-5.61839	2110000000	-0.96815
1760000000	32.30%	-4.90764	1760000000	0.241629	1930000000	28.50%	-5.45138	1930000000	-0.67787	2120000000	28.43%	-5.4618	2120000000	-0.77188
1765000000	31.75%	-4.98227	1765000000	-0.04366	1935000000	26.09%	-5.83464	1935000000	-1.06377	2130000000	29.61%	-5.28568	2130000000	-0.4976
1770000000	32.52%	-4.8789	1770000000	0.100317	1940000000	23.52%	-6.28476	1940000000	-1.37771	2140000000	31.90%	-4.96273	2140000000	-0.45817
1775000000	33.01%	-4.81331	1775000000	0.178338	1945000000	21.46%	-6.68373	1945000000	-1.60127	2150000000	32.72%	-4.85218	2150000000	-0.02482
1780000000	32.78%	-4.84335	1780000000	0.267674	1950000000	19.19%	-7.16891	1950000000	-2.00727	2160000000	32.82%	-4.83895	2160000000	0.03829
1785000000	31.63%	-4.99922	1785000000	0.05981	1955000000	17.56%	-7.55447	1955000000	-2.13632	2170000000	34.52%	-4.619	2170000000	0.185103
1790000000	32.59%	-4.86945	1790000000	0.181333	1960000000	15.86%	-7.99736	1960000000	-2.39805	2300000000	43.25%	-3.64043	2300000000	1.499776
1795000000	33.87%	-4.7024	1795000000	0.287318	1965000000	14.31%	-8.44423	1965000000	-2.59525	2305000000	43.16%	-3.64951	2305000000	1.538297
1800000000	33.46%	-4.75431	1800000000	0.268908	1970000000	13.89%	-8.57354	1970000000	-2.64643	2310000000	43.22%	-3.64286	2310000000	1.606688
1805000000	33.60%	-4.73651	1805000000	0.346383	1975000000	13.57%	-8.67369	1975000000	-2.66051	2315000000	43.84%	-3.58167	2315000000	1.701872
1810000000	35.44%	-4.50517	1810000000	0.557263	1980000000	13.08%	-8.83449	1980000000	-2.89227	2320000000	43.75%	-3.59019	2320000000	1.589152
1815000000	36.75%	-4.34743	1815000000	0.584486	1985000000	12.79%	-8.93014	1985000000	-2.99464	2325000000	42.96%	-3.66937	2325000000	1.301301
1820000000	36.37%	-4.39227	1820000000	0.449657	1990000000	13.57%	-8.67341	1990000000	-2.94956	2330000000	42.09%	-3.7585	2330000000	1.225364
1825000000	36.04%	-4.43168	1825000000	0.224285	1900000000	38.86%	-4.10539	1900000000	0.423048	2335000000	41.66%	-3.80266	2335000000	1.235123
1830000000	37.10%	-4.30627	1830000000	0.195744	1910000000	36.89%	-4.3304	1910000000	0.333468	2340000000	41.23%	-3.84816	2340000000	1.03189
1835000000	37.88%	-4.21605	1835000000	0.387939	1920000000	32.74%	-4.84952	1920000000	-0.14151	2345000000	40.52%	-3.92312	2345000000	1.198532
1840000000	36.94%	-4.32544	1840000000	0.231144	1930000000	28.57%	-5.44133	1930000000	-0.65704	2350000000	40.07%	-3.97143	2350000000	0.914442
1845000000	37.57%	-4.25132	1845000000	0.303715	1940000000	23.56%	-6.27748	1940000000	-1.3626	2355000000	40.47%	-3.92896	2355000000	1.261423
1850000000	39.71%	-4.01118	1850000000	0.552431	1950000000	19.21%	-7.16382	1950000000	-1.98809	2360000000	40.08%	-3.97122	2360000000	1.10841
1855000000	39.84%	-3.99724	1855000000	0.693479	1960000000	15.89%	-7.98914	1960000000	-2.37997	2365000000	38.85%	-4.10564	2365000000	1.076686
1860000000	39.01%	-4.08831	1860000000	0.530326	1970000000	13.91%	-8.56567	1970000000	-2.62228	2370000000	37.59%	-4.24935	2370000000	0.813586
1865000000	39.23%	-4.06395	1865000000	0.532351	1980000000	13.11%	-8.82332	1980000000	-2.8477	2375000000	37.35%	-4.27664	2375000000	1.120732
1870000000	39.72%	-4.00992	1870000000	0.748676	1990000000	13.61%	-8.663	1990000000	-2.9182	2380000000	37.27%	-4.28624	2380000000	1.180021
1875000000	39.14%	-4.07353	1875000000	0.511225	2000000000	13.84%	-8.58947	2000000000	-2.93211	2385000000	37.57%	-4.25186	2385000000	1.548821
1880000000	39.01%	-4.08811	1880000000	0.526572	2010000000	14.92%	-8.26254	2010000000	-2.93502	2390000000	38.37%	-4.16025	2390000000	1.695705
										2395000000	38.60%	-4.13374	2395000000	1.838297

1710-2400MHz passive Efficiency, Gain

Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

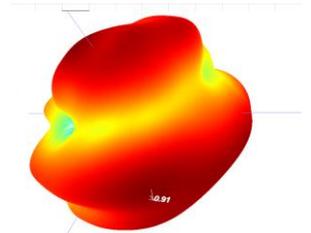
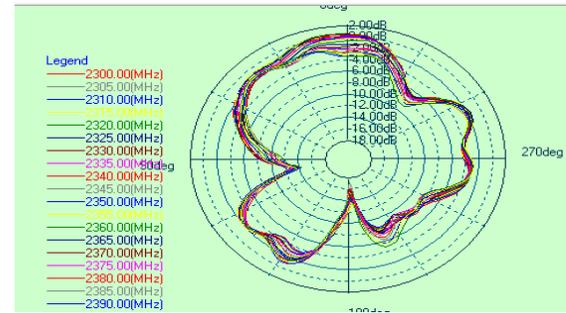
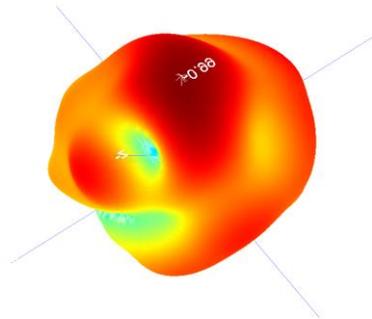
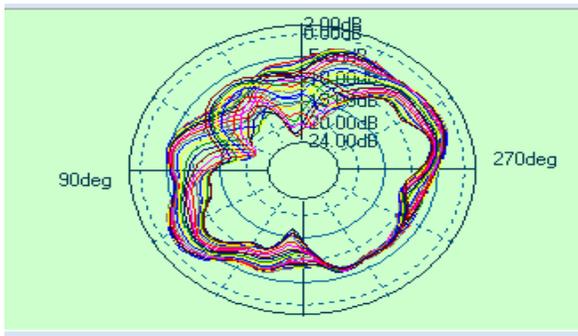
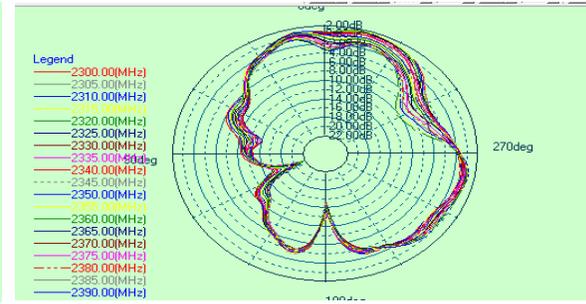
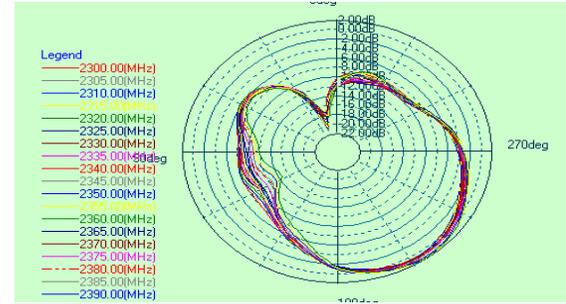
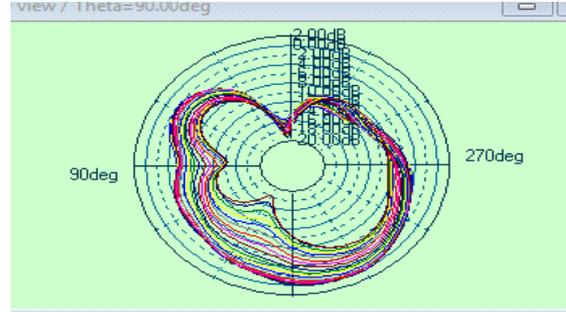
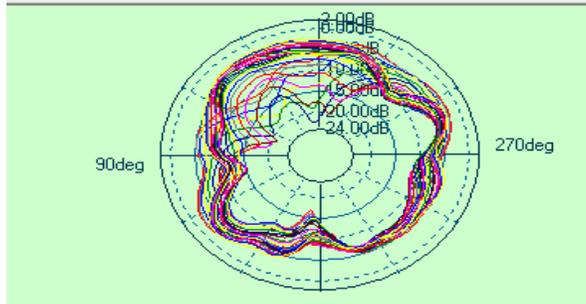


1710-1880MHz

1880-1990MHz

Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

Passive Report



1990-2170MHz

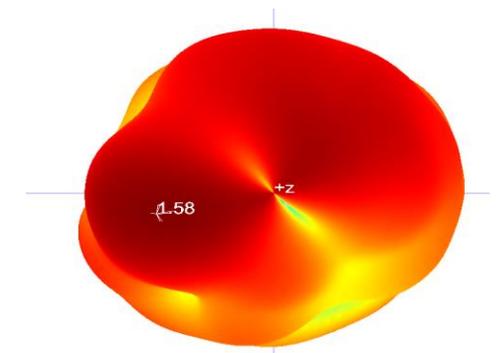
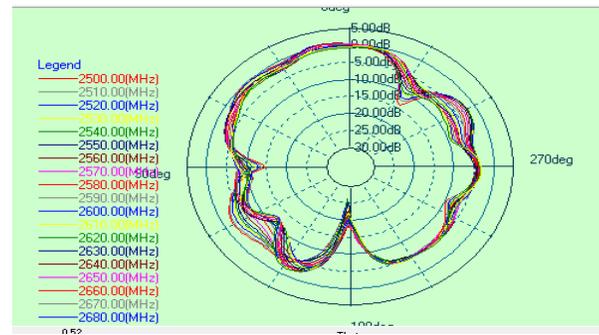
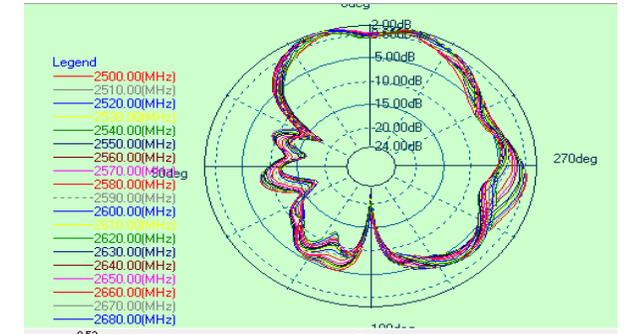
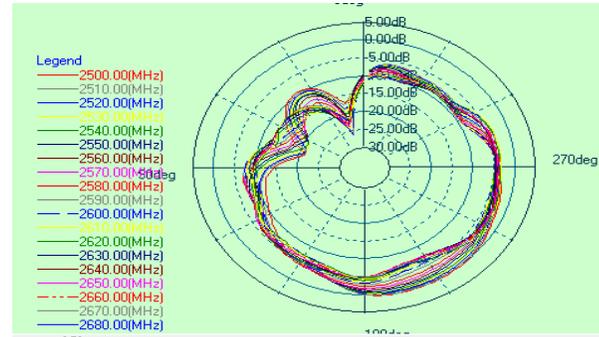
2300-2400MHz

Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

Passive Report



Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
2500000000	0.393608	-4.04936	2500000000	1.336982
2510000000	0.397181	-4.01011	2510000000	1.400273
2520000000	0.383221	-4.16551	2520000000	1.380007
2530000000	0.373242	-4.28009	2530000000	1.105141
2540000000	0.368666	-4.33367	2540000000	0.937846
2550000000	0.365655	-4.36929	2550000000	1.180967
2560000000	0.356674	-4.47729	2560000000	1.471432
2570000000	0.346228	-4.60638	2570000000	1.537193
2580000000	0.333815	-4.76494	2580000000	1.532297
2590000000	0.32499	-4.8813	2590000000	1.732506
2600000000	0.318077	-4.97468	2600000000	1.851247
2610000000	0.31669	-4.99366	2610000000	1.794149
2620000000	0.306252	-5.13921	2620000000	1.532376
2630000000	0.304783	-5.16009	2630000000	1.444912
2640000000	0.304437	-5.16503	2640000000	1.483069
2650000000	0.301082	-5.21316	2650000000	1.482672
2660000000	0.297135	-5.27046	2660000000	1.529181
2670000000	0.296454	-5.28042	2670000000	1.635867
2680000000	0.301734	-5.20375	2680000000	1.831144
2690000000	0.303576	-5.17733	2690000000	1.82334
2700000000	0.291033	-5.36057	2700000000	1.57545



2500-2700MHz passive Efficiency, Gain

2500-2700MHz

Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

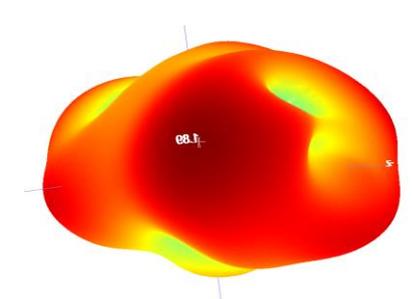
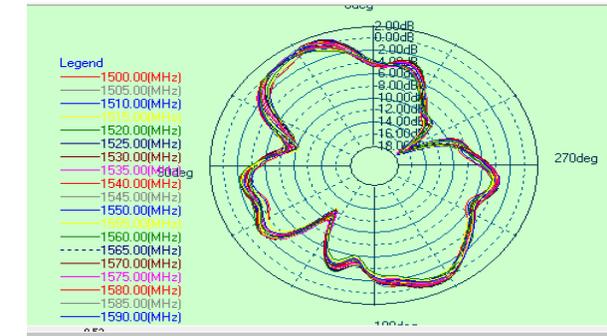
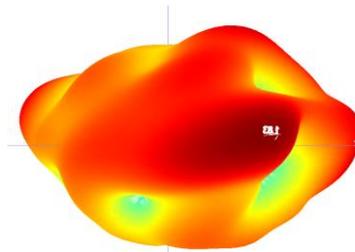
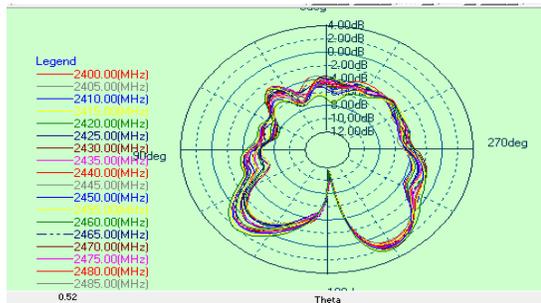
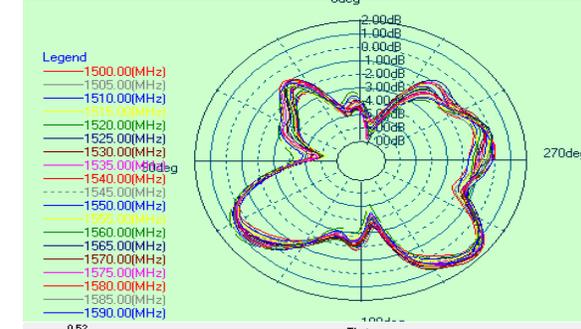
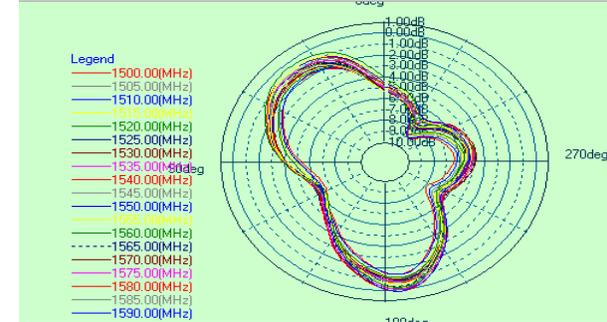
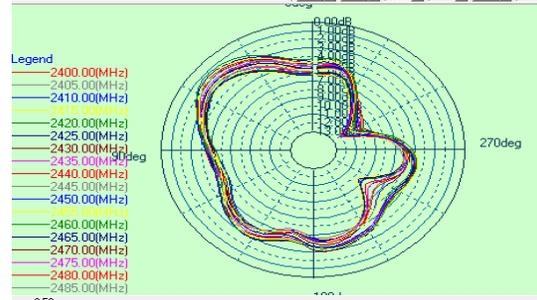
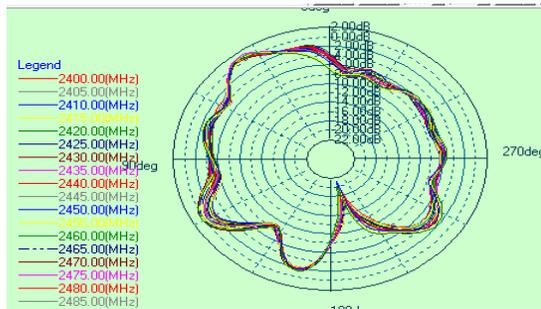
Passive Report



Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dE	Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB	Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dB
1500000000	46.64%	-3.31281	1500000000	1.260934	2400000000	36.85%	-4.33525	2400000000	1.346914	5000000000	53.21%	-2.74004	5E+09	6.298164
1505000000	49.11%	-3.0885	1505000000	1.491102	2405000000	35.98%	-4.4388	2405000000	1.205684	5050000000	49.84%	-3.02439	5.05E+09	5.857493
1510000000	48.22%	-3.16796	1510000000	1.378481	2410000000	35.76%	-4.46589	2410000000	1.675884	5100000000	53.40%	-2.72482	5.1E+09	6.216383
1515000000	49.21%	-3.07977	1515000000	1.509937	2415000000	35.99%	-4.43848	2415000000	1.573253	5150000000	48.88%	-3.10886	5.15E+09	6.159821
1520000000	51.48%	-2.88346	1520000000	1.728756	2420000000	37.33%	-4.27896	2420000000	2.064822	5200000000	53.32%	-2.73121	5.2E+09	7.083434
1525000000	53.52%	-2.71475	1525000000	1.675437	2425000000	38.09%	-4.19156	2425000000	1.94765	5250000000	47.31%	-3.25065	5.25E+09	6.685157
1530000000	53.58%	-2.71022	1530000000	1.808438	2430000000	40.12%	-3.96594	2430000000	2.356548	5300000000	38.13%	-4.18704	5.3E+09	5.842289
1535000000	52.89%	-2.76609	1535000000	1.601384	2435000000	40.70%	-3.90448	2435000000	2.211114	5350000000	30.59%	-5.14484	5.35E+09	4.149772
1540000000	53.91%	-2.68369	1540000000	1.787426	2440000000	40.97%	-3.87559	2440000000	2.169352	5400000000	31.06%	-5.07738	5.4E+09	3.982125
1545000000	53.80%	-2.69198	1545000000	1.661827	2445000000	39.87%	-3.99315	2445000000	2.107975	5450000000	33.45%	-4.75657	5.45E+09	4.299916
1550000000	53.89%	-2.68479	1550000000	1.908229	2450000000	40.34%	-3.94254	2450000000	2.036024	5500000000	32.58%	-4.87078	5.5E+09	4.771152
1555000000	53.32%	-2.73071	1555000000	1.788147	2455000000	41.24%	-3.84673	2455000000	2.069278	5550000000	30.50%	-5.15662	5.55E+09	5.011499
1560000000	55.98%	-2.51979	1560000000	2.104944	2460000000	43.70%	-3.59529	2460000000	2.115579	5600000000	28.32%	-5.47933	5.6E+09	4.181716
1565000000	55.42%	-2.56344	1565000000	1.914887	2465000000	44.46%	-3.51997	2465000000	2.227524	5650000000	23.91%	-6.21475	5.65E+09	3.234411
1570000000	56.45%	-2.4831	1570000000	2.149661	2470000000	46.03%	-3.36961	2470000000	2.033326	5700000000	23.62%	-6.26767	5.7E+09	2.181363
1575000000	55.42%	-2.56356	1575000000	1.886232	2475000000	44.72%	-3.49483	2475000000	2.075583	5750000000	29.23%	-5.34141	5.75E+09	2.498612
1580000000	56.29%	-2.49549	1580000000	1.948262	2480000000	45.20%	-3.44898	2480000000	1.828971	5800000000	35.21%	-4.53307	5.8E+09	3.530783
1585000000	54.30%	-2.65238	1585000000	1.650211	2485000000	45.49%	-3.42083	2485000000	2.256797	5850000000	34.30%	-4.64676	5.85E+09	3.757806
1590000000	54.60%	-2.62786	1590000000	1.699278	2490000000	45.72%	-3.39879	2490000000	2.178808	5900000000	30.21%	-5.19916	5.9E+09	3.908327
1595000000	53.59%	-2.70925	1595000000	1.498727	2495000000	46.80%	-3.29748	2495000000	2.56739	5950000000	28.29%	-5.48293	5.95E+09	3.728794
1600000000	52.78%	-2.77515	1600000000	1.574712	2500000000	48.13%	-3.17597	2500000000	2.594879	6000000000	31.69%	-4.99052	6E+09	3.629509

WIFI GPS passive Efficiency, Gain

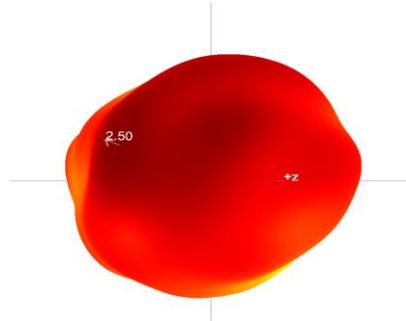
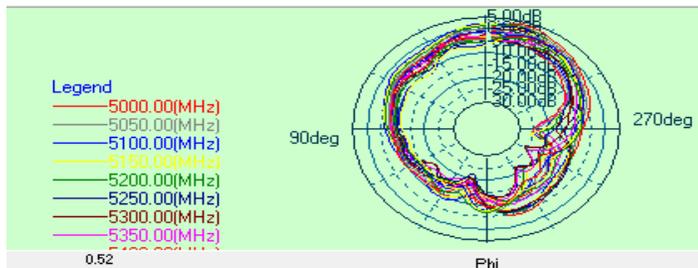
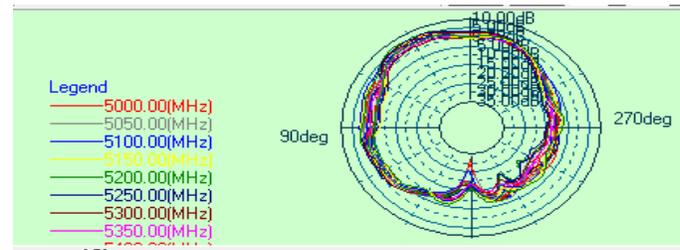
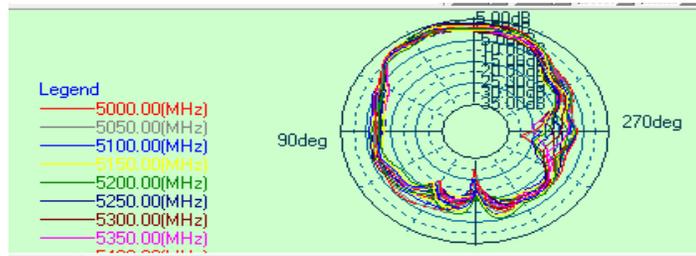
Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)



2400-2500MHz

1500-1600MHz

Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)



5000-6000MHz

Measuring instrument : Agilent Technologies E5071B 300kHz-8.5GHz ENA Series Network Analyzer Darkroom system : MVG SG24LT (Satmio)

OTA

3D	BAND	GSM900			DCS1800		
	CHANNEL	1	62	124	512	699	885
	TRP	28.37	28.54	28.56	24.58	24.61	25.06
	TIS			-101.57			-103.18
	BAND	GSM850			PCS1900		
	CHANNEL	128	190	251	512	661	810
	TRP	25.12	25.47	26.34	24.33	24.02	24.01
	TIS			-103.47			-102.72



OTA

3D	BAND	WCDMA-B1			WCDMA-B2		
	CHANNEL	L	M	H	L	M	H
	TRP	17.12	17.37	17.62	17.12	17.23	17.45
	TIS			-106.34			-106.38
	BAND	WCDMA-B4			WCDMA-B5		
	CHANNEL	L	M	H	L	M	H
	TRP	16.15	16.27	16.53	15.31	16.42	17.64
	TIS			-106.68			-105.14



OTA

3D	BAND	WCDMA-B8			WCDMA-B6		
	CHANNEL	L	M	H	L	M	H
	TRP	18.17	18.57	18.53	16.12	16.52	16.79
	TIS			-103.71			-105.66



OTA

3D	BAND	LTE-B1			LTE-B2		
	CHANNEL	L	M	H	L	M	H
	TRP	17.58	17.56	17.64	17.27	17.54	17.65
	TIS			-93.53			-93.82
	BAND	LTE-B3			LTE-B4		
	CHANNEL	L	M	H	L	M	H
	TRP	16.25	16.56	17.29	16.12	16.51	16.65
	TIS			-92.57			-94.12



OTA

3D	BAND	LTE-B5			LTE-B7		
	CHANNEL	L	M	H	L	M	H
	TRP	15.31	16.42	17.14	16.57	17.34	17.73
	TIS			-92.26			-91.08
	BAND	LTE-B8			LTE-B12		
	CHANNEL	L	M	H	L	M	H
	TRP	18.68	18.59	18.53	15.23	15.34	15.51
	TIS			-92.41			-89.47



OTA

3D	BAND	LTE-B17					
	CHANNEL	L	M	H			
	TRP	15.46	15.43	15.55			
	TIS			-89.45			
	BAND	LTE-B18			LTE-B19		
	CHANNEL	L	M	H	L	M	H
	TRP	15.26	15.36	15.76	15.32	16.41	16.88
	TIS			-92.58			-92.31



OTA

3D	BAND	LTE-B20			LTE-B25		
	CHANNEL	L	M	H	L	M	H
	TRP	15.43	17.08	17.16	16.01	16.57	17.24
	TIS			-87.23			-94.07
	BAND	LTE-B26			LTE-B28		
	CHANNEL	L	M	H	L	M	H
	TRP	15.04	15.64	16.63	15.01	15.41	15.14
	TIS			-93.45			-91.07



OTA

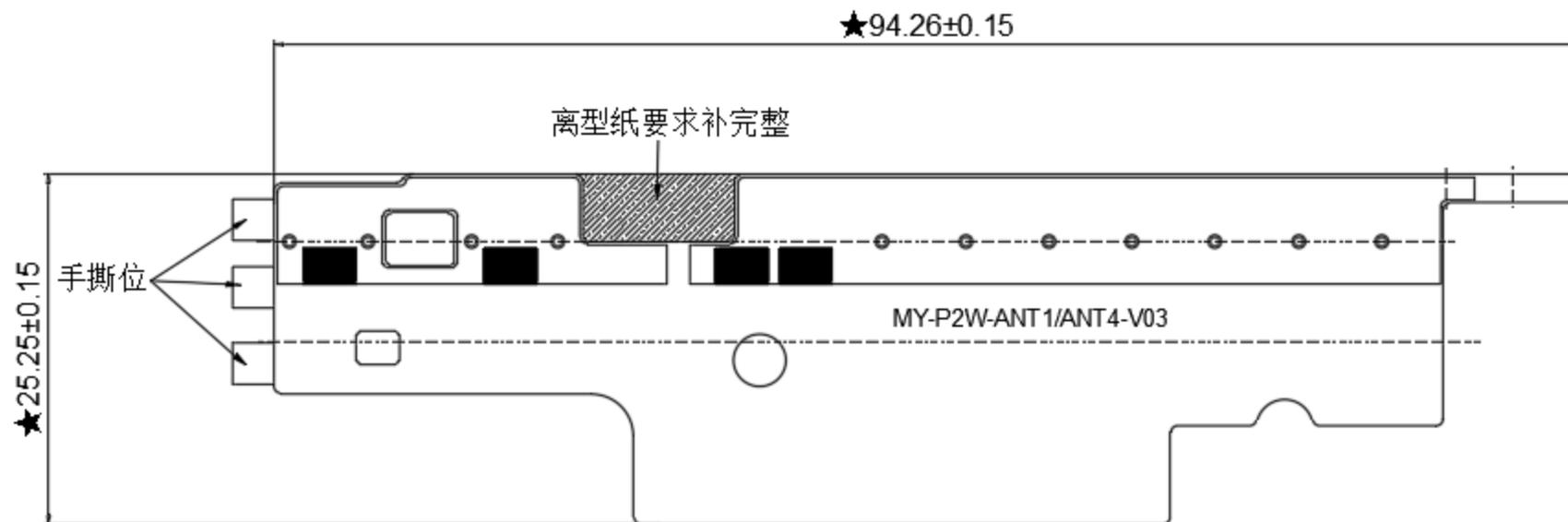
3D	BAND	LTE-B66					
	CHANNEL	L	M	H			
	TRP	16.06	16.63	17.49			
	TIS			-94.28			
	BAND	LTE-B38			LTE-B39		
	CHANNEL	L	M	H	L	M	H
	TRP	16.95	17.05	17.29	17.64	17.51	17.83
	TIS			-92.55			-90.51



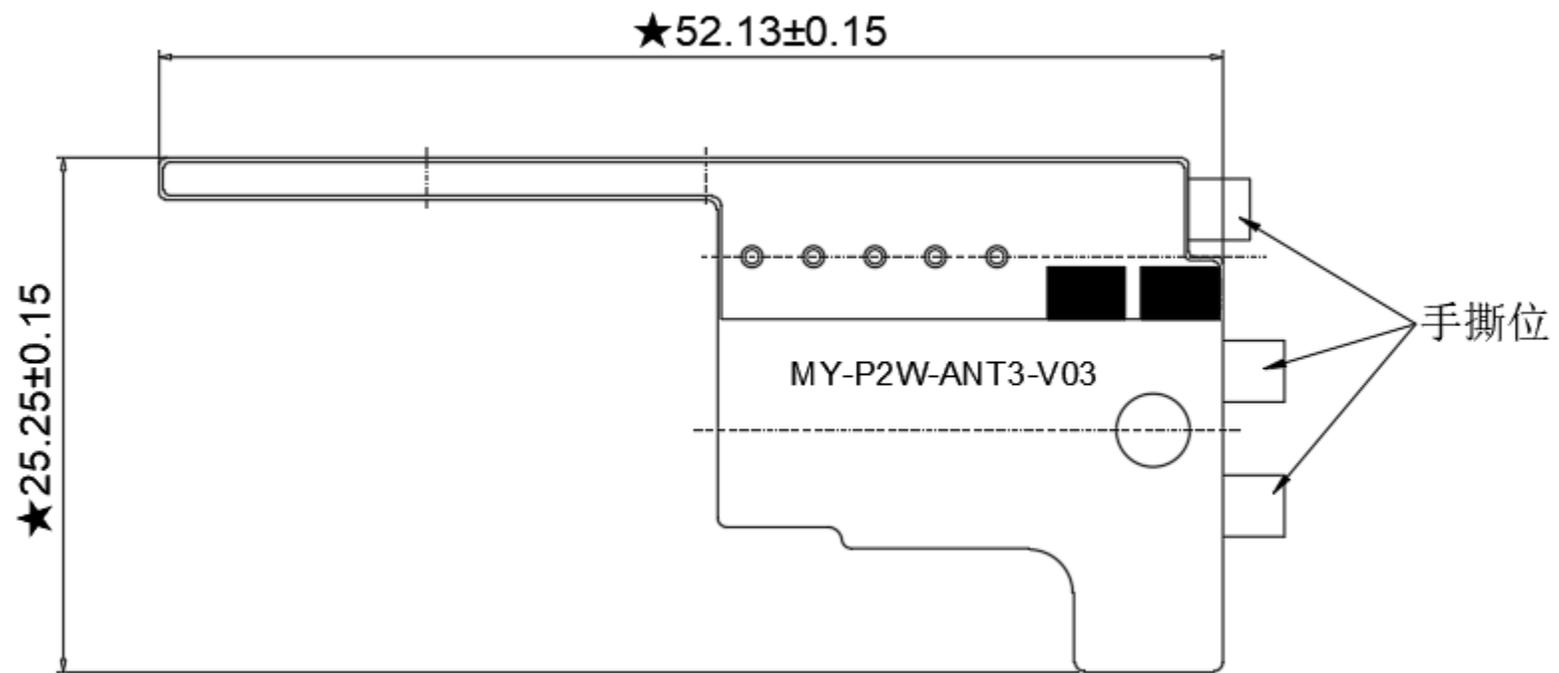
OTA

3D	BAND	LTE-B40			LTE-B41		
	CHANNEL	L	M	H	L	M	H
	TRP	15.58	15.52	15.33	17.58	17.22	17.03
	TIS			-94.31			-92.49
	BAND	WiFi_B			WiFi_A		
	CHANNEL	L	M	H	L	M	H
	TRP	11.01	11.12	11.17	9.03	9.25	9.37
	TIS			-79.10			-69.24

图纸



图纸





Conclusion

1. This report is the sample antenna test results .
2. If you have any questions, please call.

THANK YOU

If you have any questions, please contact us
Daily service hours : Monday to Saturday 9:00-18:00
Switchboard Hotline : 0755-36615535 Fax: 0755-82916227
 website : www.mayaant.com

Confidentiality requirements

Shenzhen Maya communication equipment Co., Ltd. has owned the information provided by the proprietary technology and is not allowed to disclose it to any person or company without the prior written consent of Shenzhen Maya communication equipment Co., Ltd.