Antenna Testing Report

Customer： apical Technology

Project Name：QBM0-F

Report Number: SZ24540IB77

Manufacturer: Sunnyway Technology(CHINA)

Address: Floor 6, Building 5, Nam Tai Inno Park, Guangming District, Shenzhen

Report version： October 25, 2024
Author：Sun Wen Long

Record

Version	Report date	Remark
A0	2024.10.25	Active Testing Report
A1		
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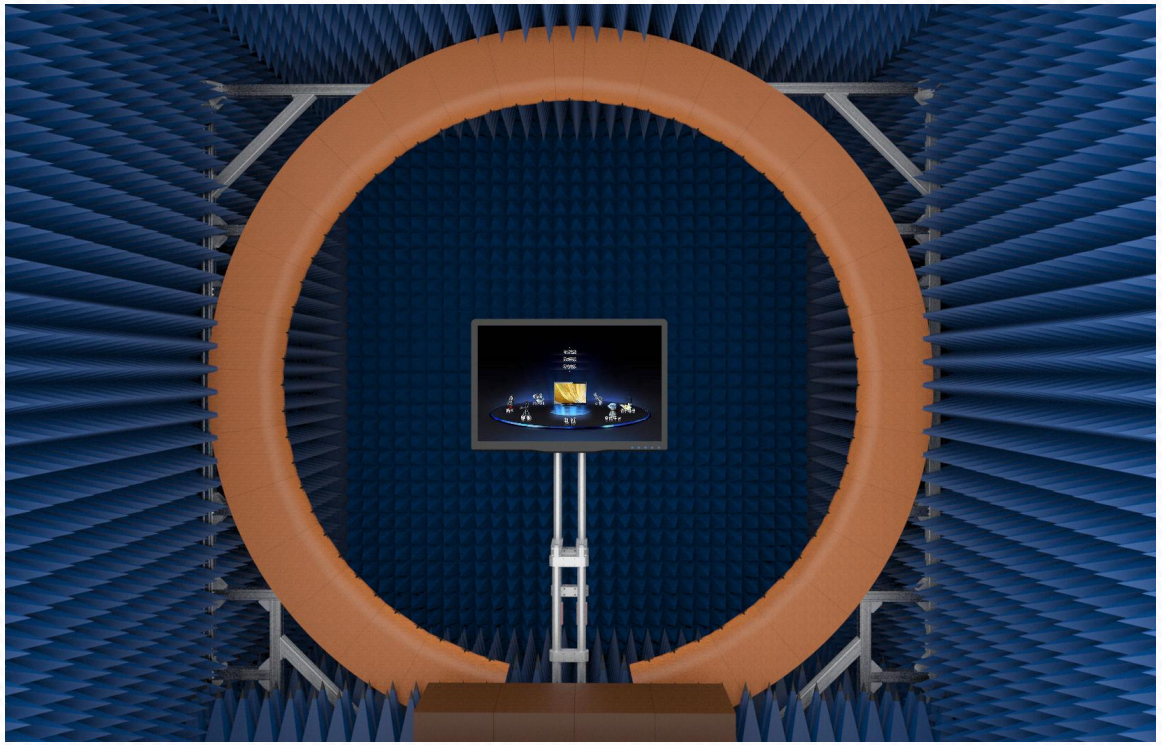
Project Overview

Prototype status	Debugging machine
Device type	car recorder
Number of antennas	WIFI antenna
Frequency band	2.4 5.8 WIFI
Structural style	FPC
Environment adjustment	No change
Matching modification	No change

Equipment List



The industry's top 64 sensors OTA chamber

Frequency range: 400MHz-11GHz

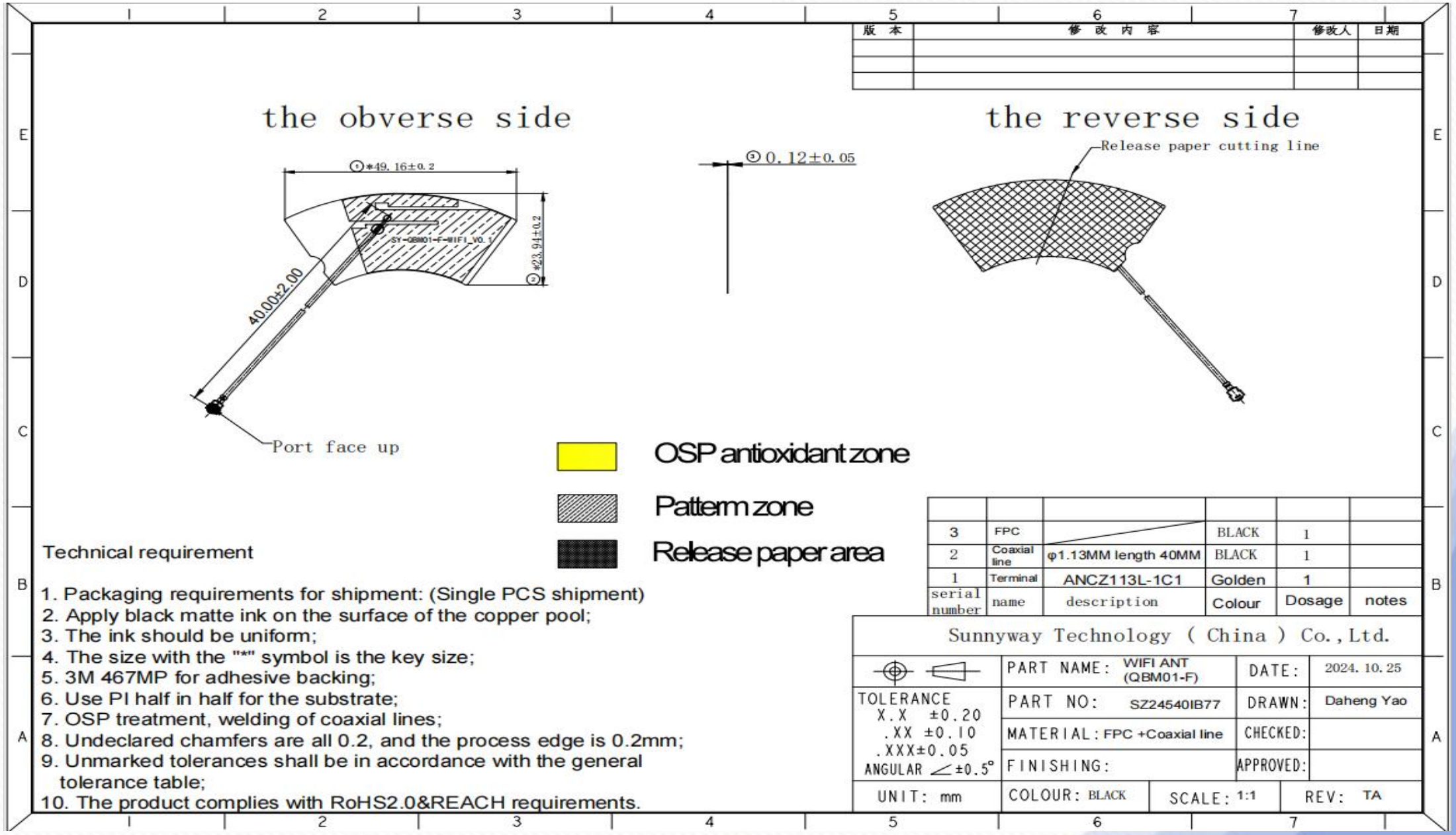
Device Llimitation: 2M

Load-bearing limitation:100KG

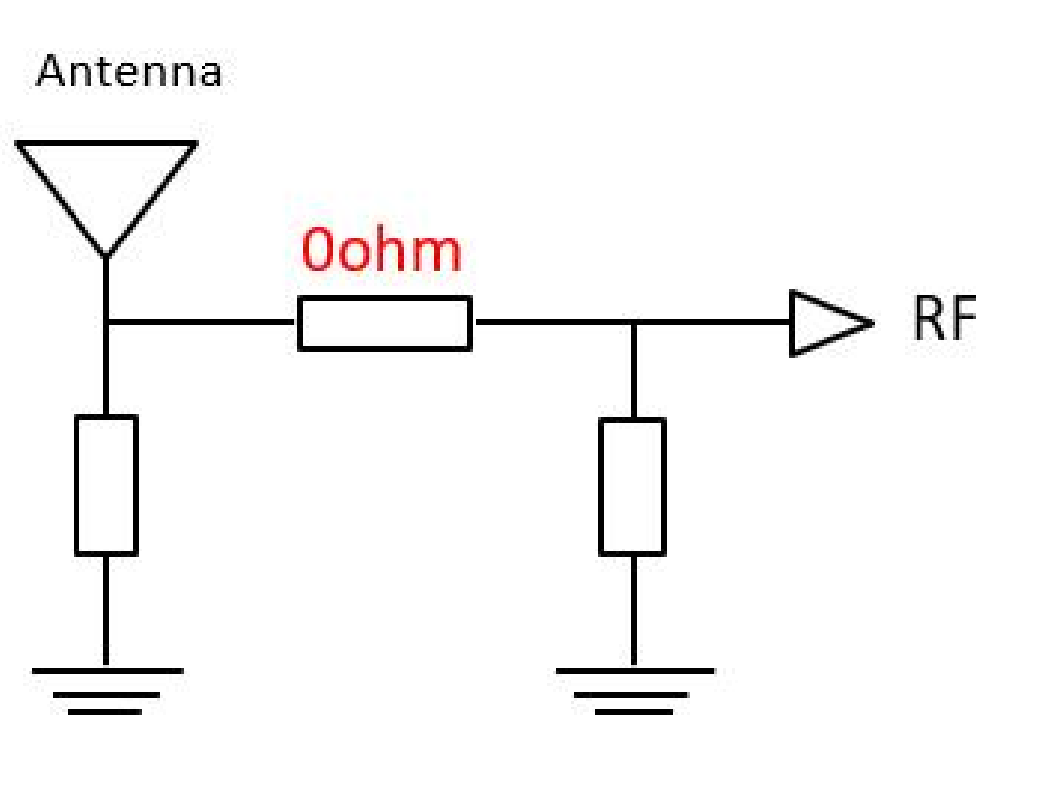
Equipments Items	Total Quantity	Quantity for Shanghai R&D	Quantity for Shenzhen R&D	Quantity for ChongQing R&D
OTA chamber	10	4	5	1
5G Tester（SP9500-CTS）	3	1	1	1
R&S Tester（high configuration CMW500）	6	3	2	1
Japan Anritsu Tester（Dual Channel 8820）	4	2	2	--
NB-IoT Tester (SP8315)	3	1	1	1
Agilent Tester（8960）	9	4	4	--
Agilent Network Analyzer（E5062A）	7	3	3	1
Agilent Network Analyzer（E5071C 8.5GHZ)	11	5	5	1
Agilent Network Analyzer（E5071B 8.5GHZ)	7	3	3	1
R&S Network Analyzer（ZND）	9	4	4	1
R&S Network Analyzer（ZVB）	3	1	1	1
OTA head hand / ear hand / arm hand	5	2	2	1
GPS/WIFI active test equipment	5	2	2	1

Project pictures andStructural drawings

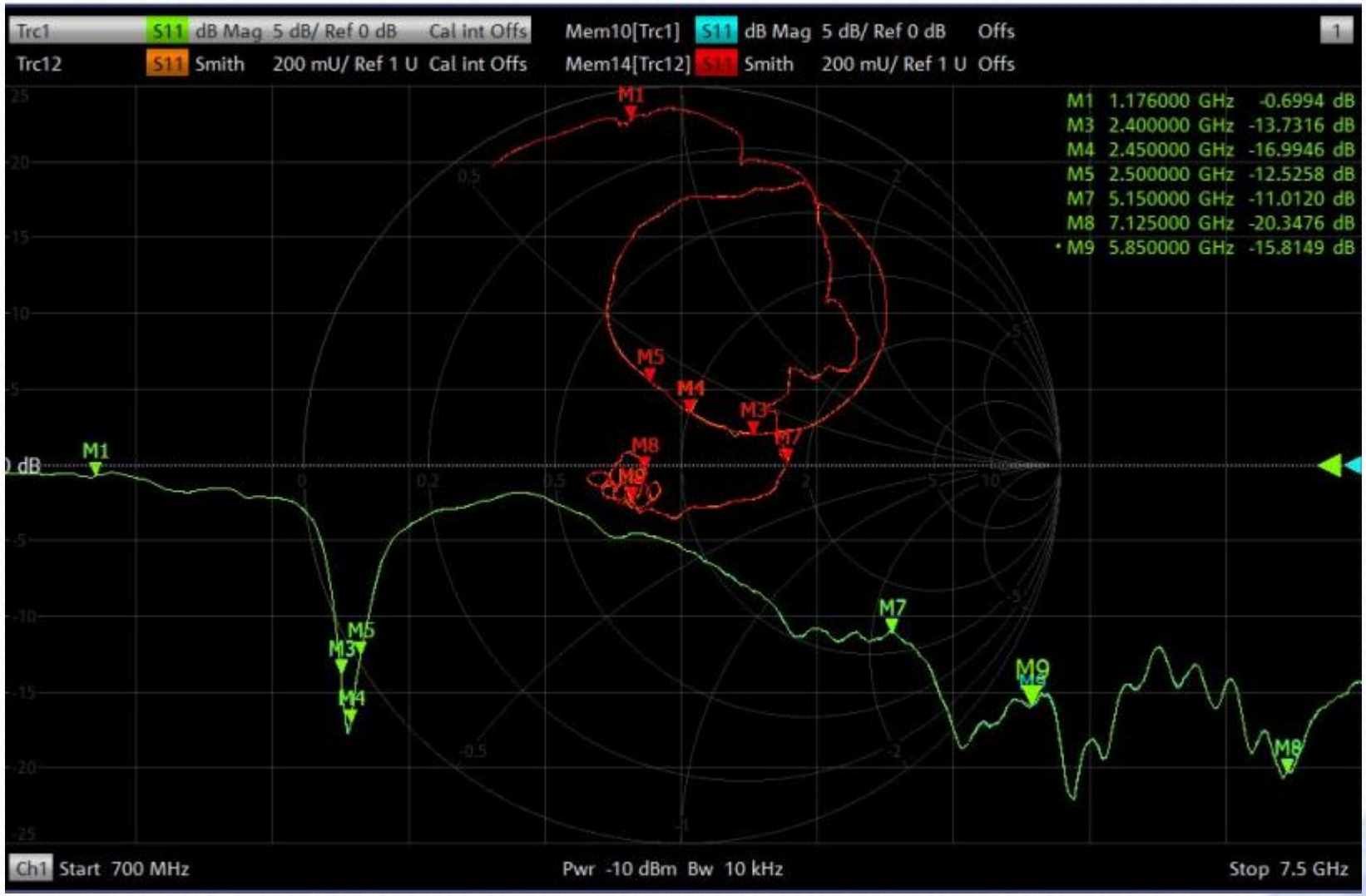
Project pictures andStructural drawings



Matching Circuit

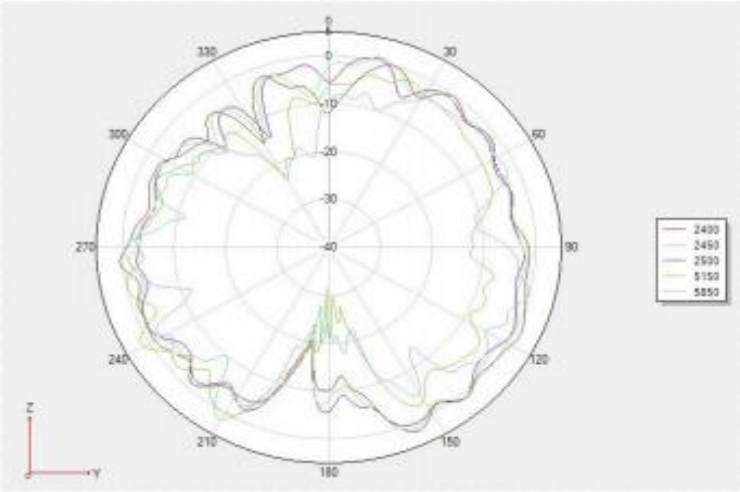


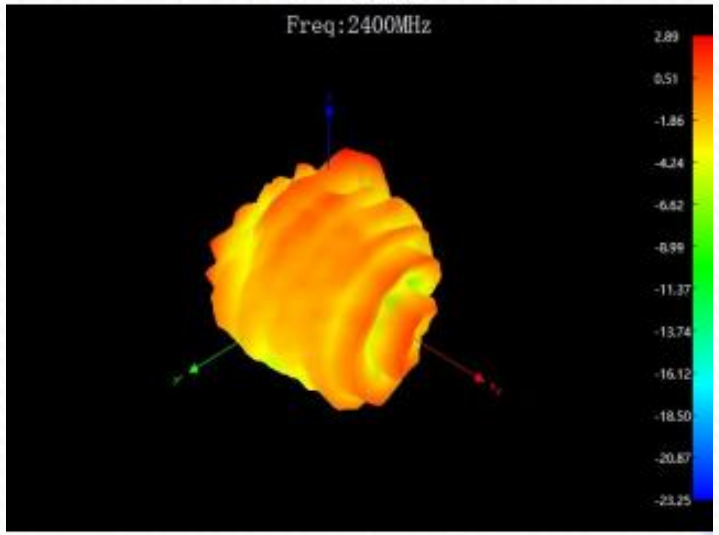
WiFi passive data

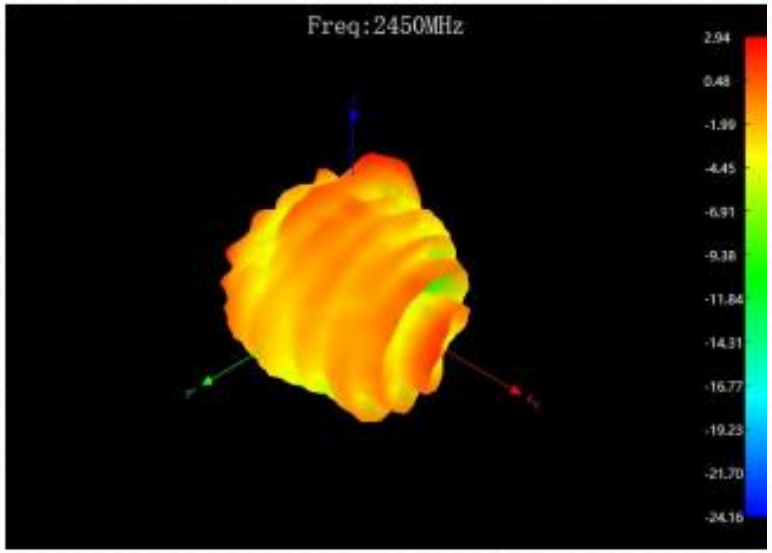


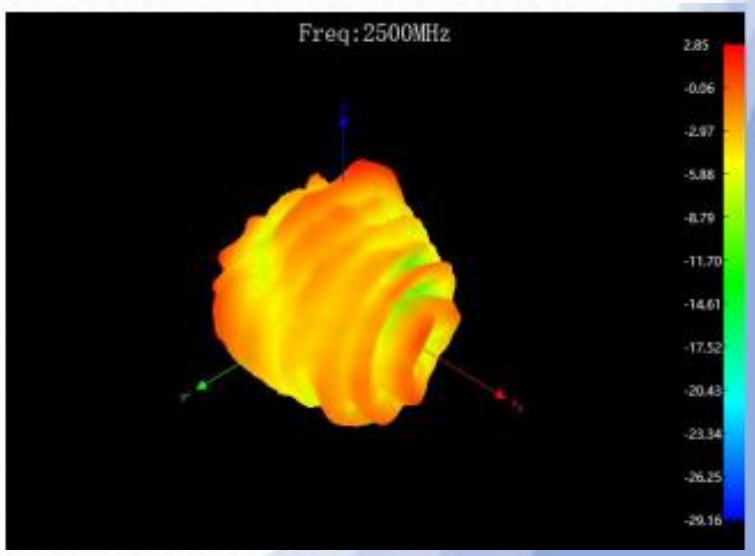
2.4GWiFi passive data

Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	2.89	55.25
2410	2.91	54.98
2420	2.81	57.53
2430	2.72	55.6
2440	2.69	53.88
2450	2.94	52.34
2460	2.69	56.77
2470	2.64	56.55
2480	2.74	57.21
2490	2.85	55.42
2500	2.85	51.92



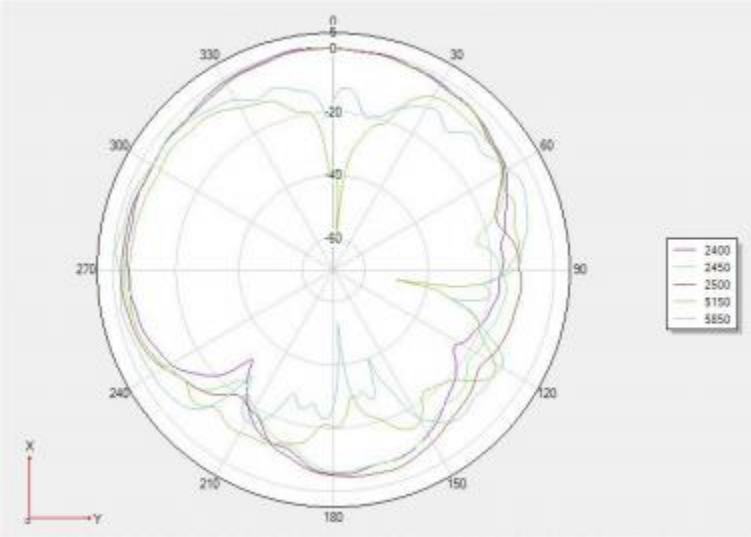


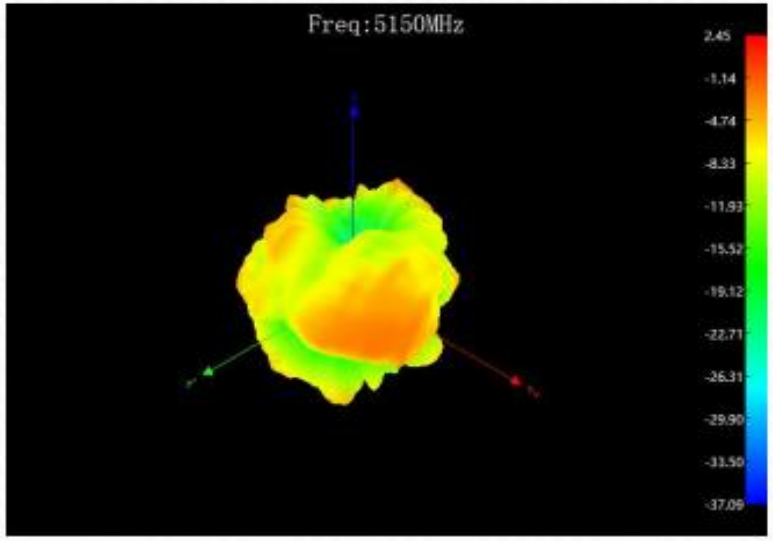


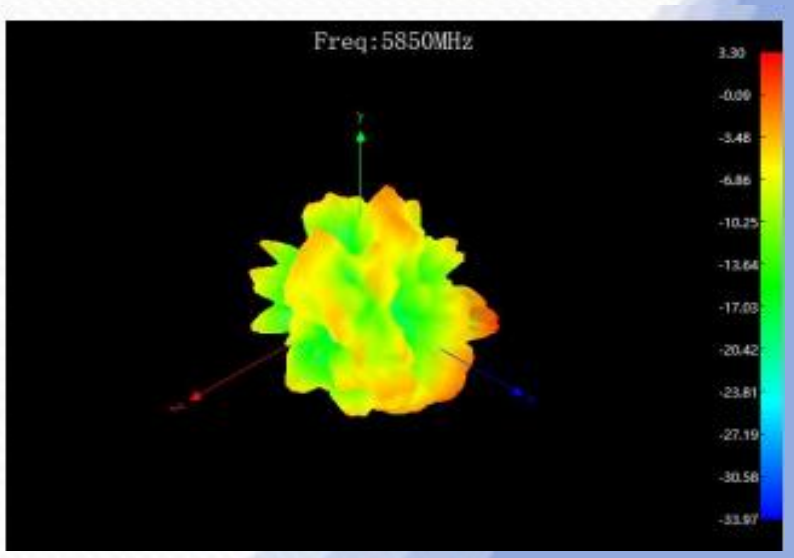


5.8GWiFi passive data

Frequency/Mhz	MaxGain/dBi	Efficiency / %
5150	2.45	48.31
5200	3.01	50.24
5250	2.91	49.85
5300	2.86	50.02
5350	2.95	49.17
5400	3.13	47.67
5450	3.23	49.26
5500	3.13	50.42
5550	3.23	53.81
5600	3.34	54.67
5650	3.14	49.14
5700	3.46	53.81
5750	2.82	45.56
5800	3.13	48.11
5850	3.3	50.83







wifi has source data

Measurement	Band	Channel	total	Band	Channel	total
TRP	WIFI_B (11M)	1	15.33	WIFI_A (54M)	36	14.64
TRP	WIFI_B (11M)	6	15.86	WIFI_A (54M)	149	15.73
TRP	WIFI_B (11M)	11	15.81	WIFI_A (54M)	165	15.76
TIS(RSSI)	WIFI_B (11M)	11	-82.02	WIFI_A (54M)	165	-72.83
TRP	WIFI_G (54M)	1	16.87	WIFI_N_UNII (65M)	36	13.72
TRP	WIFI_G (54M)	6	17.68	WIFI_N_UNII (65M)	149	14.71
TRP	WIFI_G (54M)	11	17.47	WIFI_N_UNII (65M)	165	14.05
TIS(RSSI)	WIFI_G (54M)	11	-70.42	WIFI_N_UNII (65M)	165	-70.1
TRP	WIFI_N_ISM (65M)	1	16.27			
TRP	WIFI_N_ISM (65M)	6	16.28			
TRP	WIFI_N_ISM (65M)	11	16.47			
TIS(RSSI)	WIFI_N_ISM (65M)	11	-68.39			

Summary

1 .Antenna matching has not changed

2 .Antenna environment handling has not changed

3 .From the current data analysis antenna performance OK

Thank You

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