

Antenna Test Report

Customer Name: EEYELOG

Project Name: X3

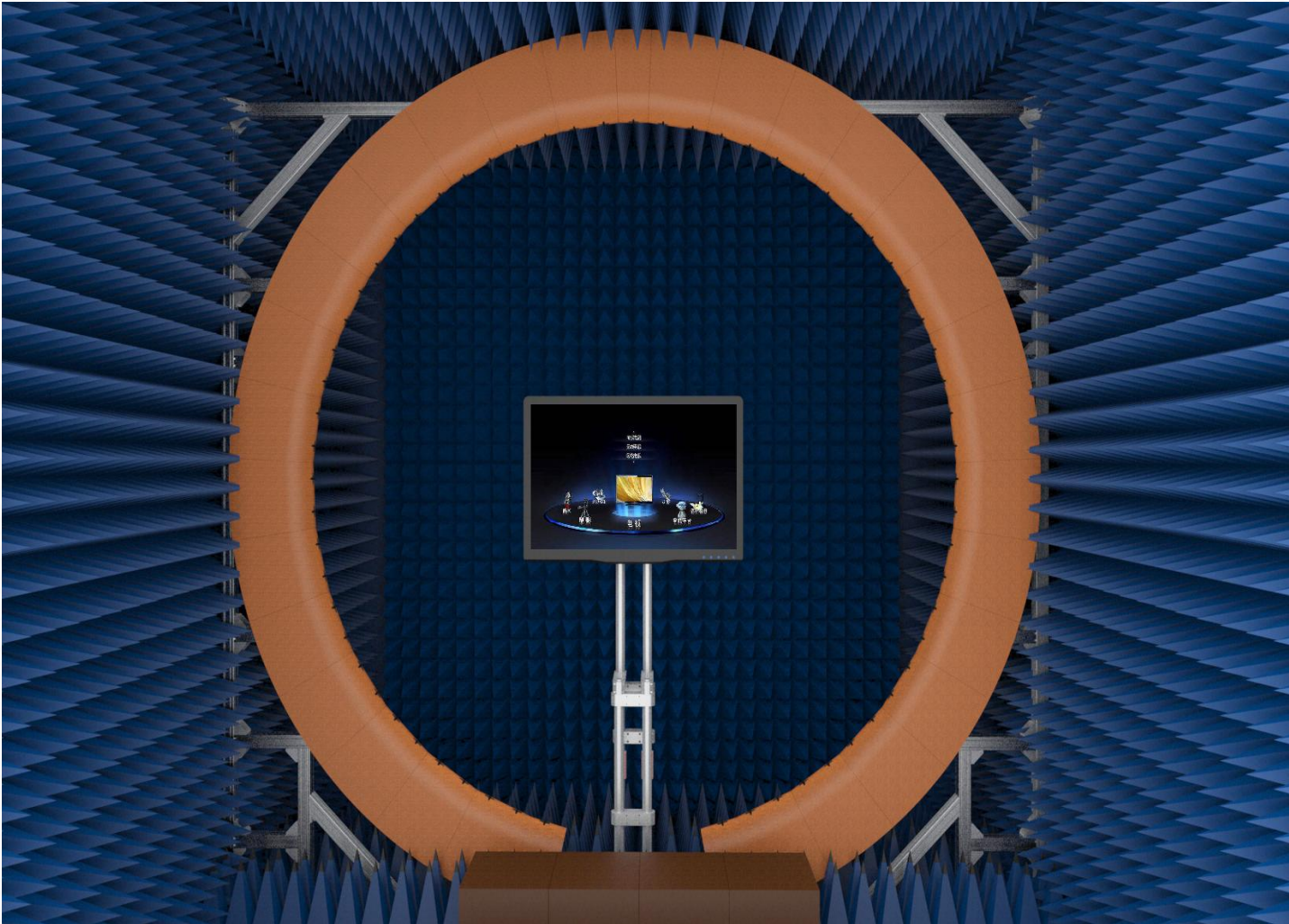
Report version: 2025.12.30 A7

R&D: Li Jiabin

Version	Date	Update notes
A0	2024-03-19	Initial passive data testing and debugging
A1	2024.9.24	Sample antenna test - initial version data
A2	2024.11.15	Change mount; new optimized antenna; changed matching test data
A3	2024.11.21	Change mount; new optimized antenna; changed matching test data
A4	2025.1.22	New mainboard test optimization data
A5	2025.4.24	New mold-modified prototype test data; switch tests not enabled
A6	2025.5.22	New prototype test data: verify the effect of the magnetic back clip
A7	2025.12.30	Passive data for adding a Wi-Fi antenna
A8		
A9		

1 . Resume	
2 . Project Overview	
3 . Company and Test Environment Introduction	
4 . Antenna Installation Position	
5 . Main Antenna Related Data	
6 . Diversity Antenna Related Data	
7 . WiFi Antenna Related Data	
8 . Overall machine environment processing	
9 . Summary	

Prototype status	Has Debugging machine Project prototype diagram:	
Product type	Law enforcement device	
Antenna	Main antenna, Diversity antenna, Wi-Fi	
Antenna Frequency Band	2G: N/A	
	3G: N/A	
	4G-LTE: B2/B4/B5/B12/B13/B14/B66	
	5G-NR: N/A	
	WIFI 2.4G/5.8	
Antenna Type	FPC	
Environmental processing	No changes made	
Matching Circuit	No changes	

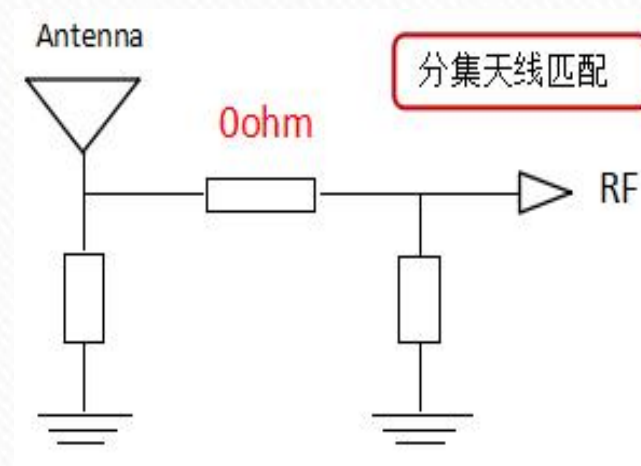
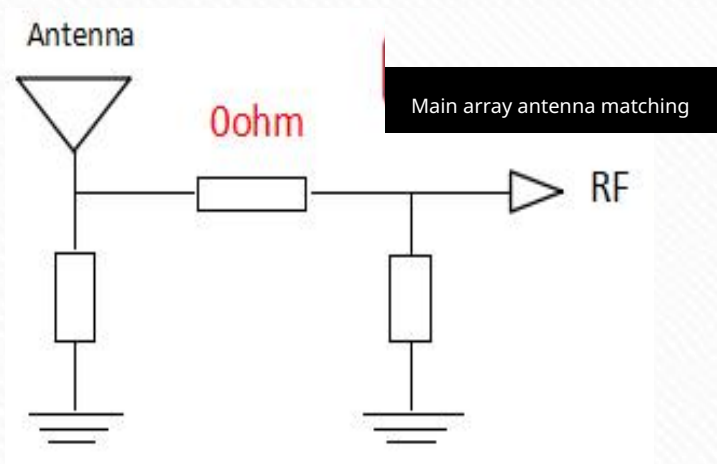


Industry-leading OTA darkroom:

64 probes; length/width/height are all 6 meters; test item size up to 2 meters

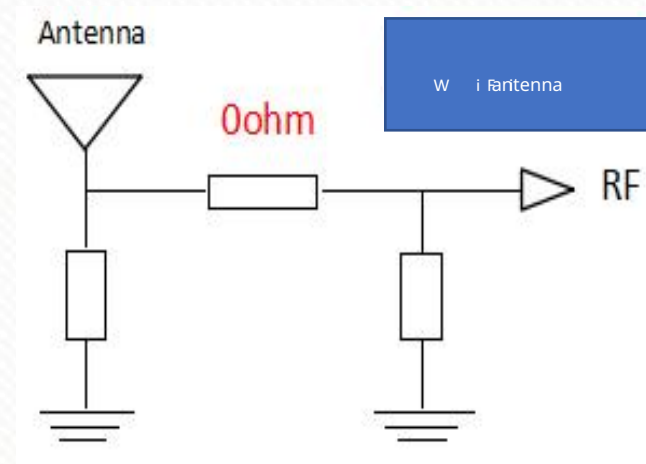
Equipment Name	Total Quantity	Shanghai R&D Center Quantity	Shenzhen R&D Center Quantity	Chongqing R&D Center Quantity
OTA Laboratory	10 units	4 units	5 units	1 unit
5G test instrument (SP9500-CTS)	3 units	1 unit	1 unit	1 unit
R&S spectrum analyzer (high-end CMW500)	7 units	3 units	3 units	1 unit
Advantest Universal Tester (Dual Channel 8820)	4 units	2 units	2 units	—
NB-IoT Universal Tester (SP8315)	3 units	1 unit	1 unit	1 unit
Agilent Universal Tester (8960)	9 units	4 units	4 units	1 unit
Agilent Network Analyzer (E5062A)	7 units	3 units	3 units	1 unit
Agilent Network Analyzer (E5071C 8.5 GHz)	11 units	5 units	5 units	1 unit
Agilent Network Analyzer (E5071B 8.5 GHz)	10 units	5 units	5 units	1 unit
R&S Network Analyzer (ZND)	10 units	5 units	4 units	1 unit
R&S Network Analyzer (ZVB)	3 units	1 unit	1 unit	1 unit
OTA head/hand/cochlea/arm	5 sets	2 sets	2 sets	1 set
GPS/WIFI active testing equipment	5 sets	2 sets	2 sets	1 set

Antenna matching:

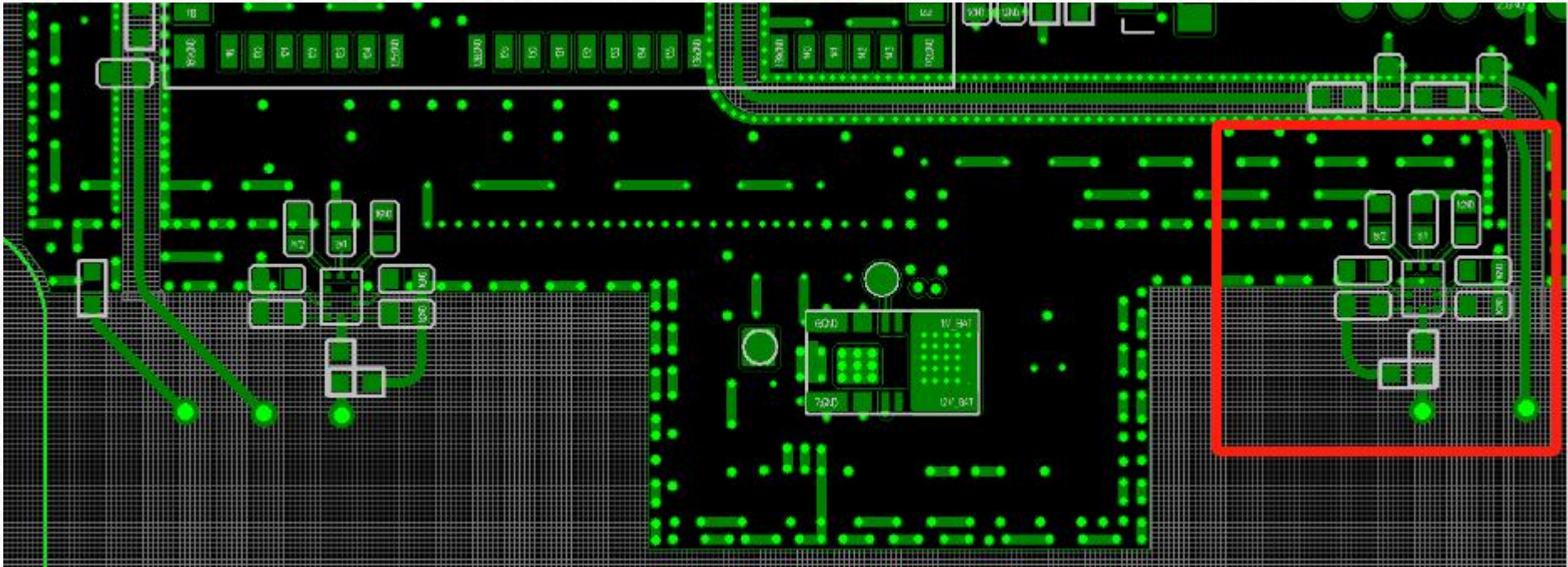


Note: customer sample motherboard, main unit, diversity

W antenna matching has not been changed

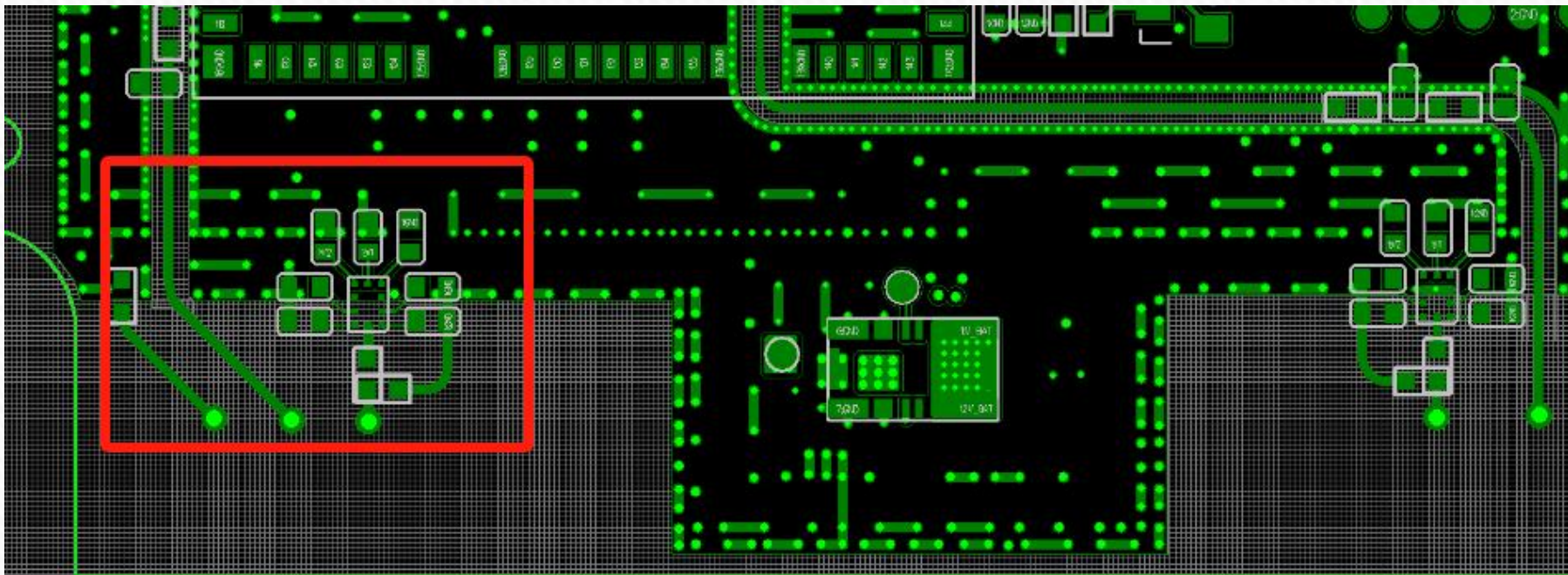


Main RF switch logic



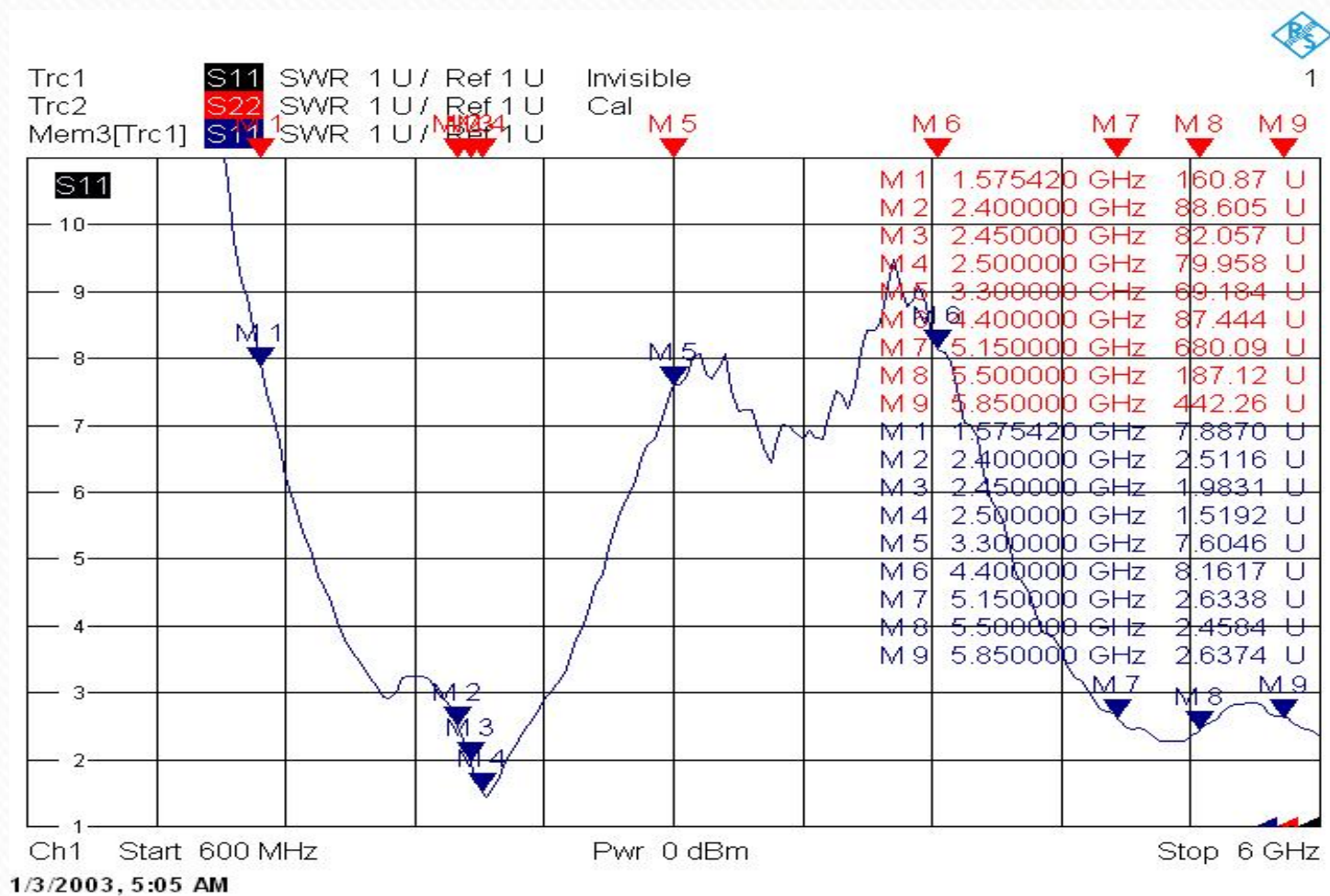
Master switch logic		
Logic	Matching parameters	Band
RF1	0 Ω	B2/4/5/66
RF2	5.6NH	B13/14
RF3	18 NH	B12
RF4	0 Ω	

Diversity RF switch logic



Diversity switch logic		
Logic	Matching parameters	Band
RF1	0 Ω	B2/4/5/66
RF2	0 Ω	B13/14
RF3	0 Ω	B12
RF4	0 Ω	

S11-VSWR :

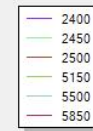
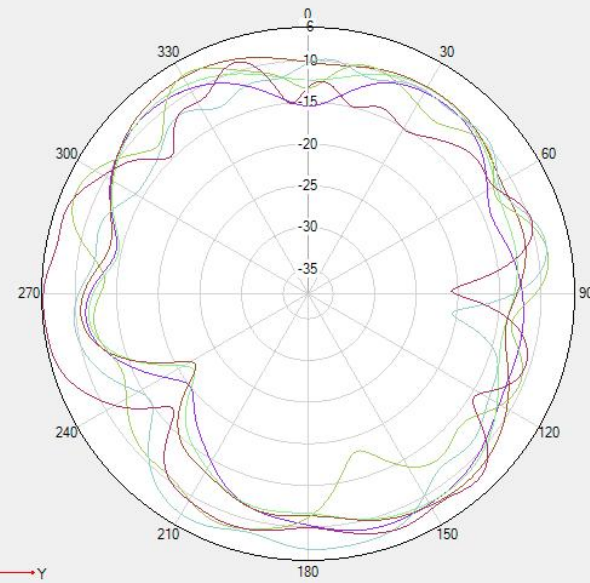
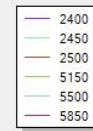
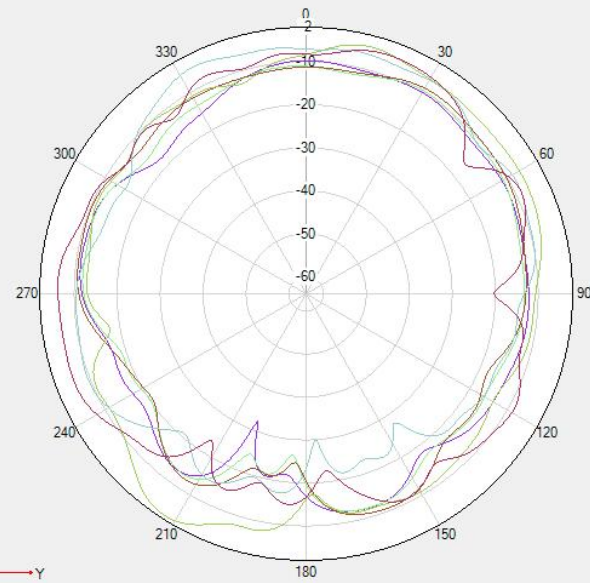
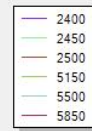
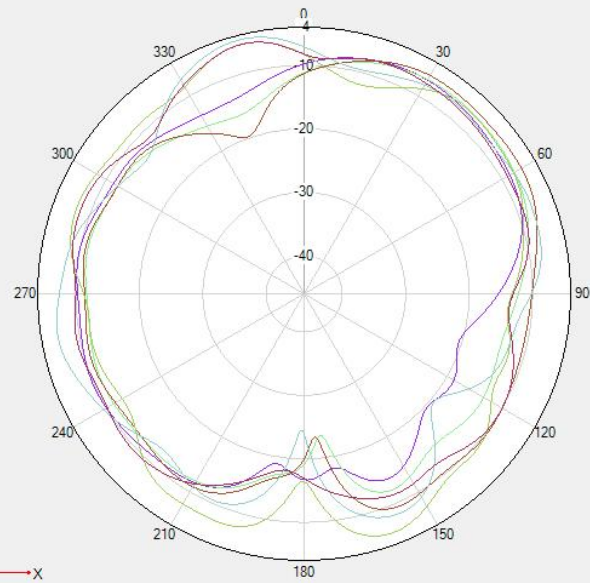


Passive test data:

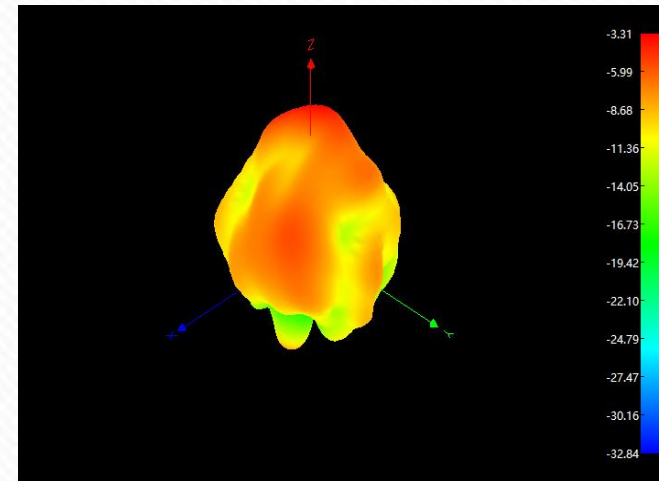
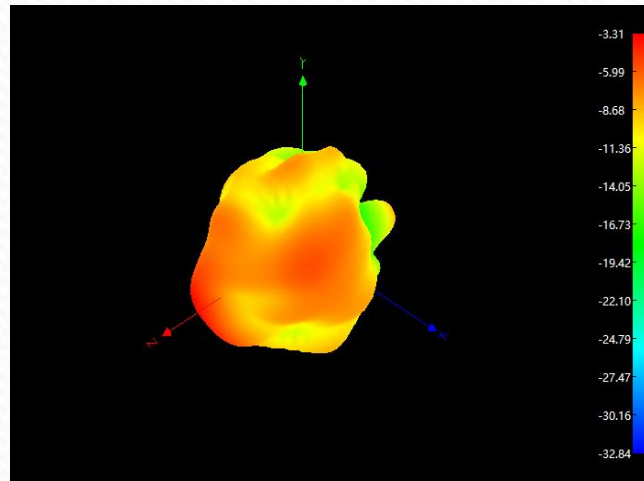
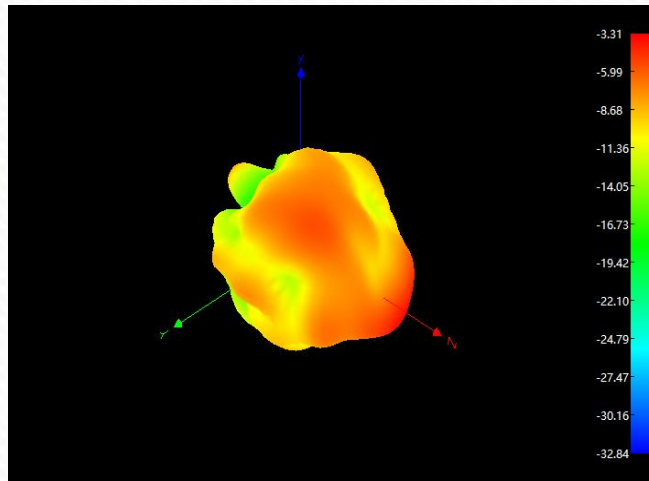
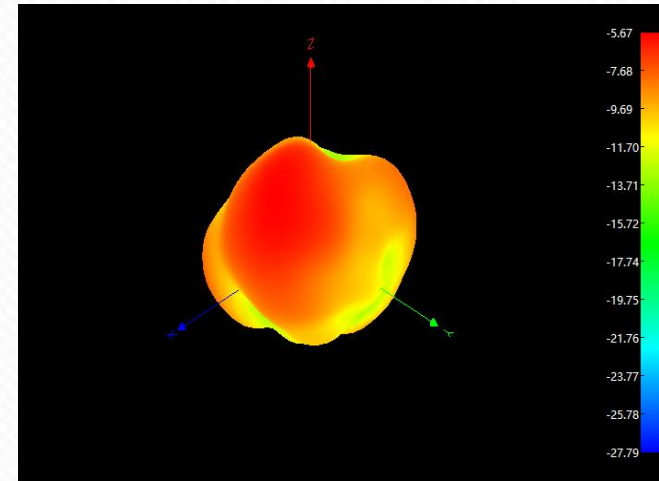
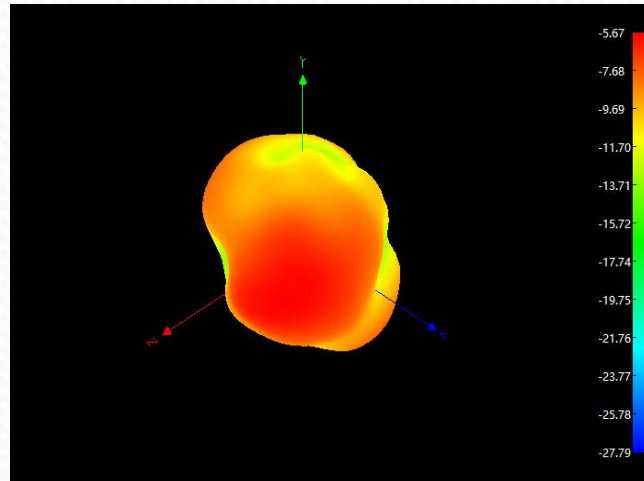
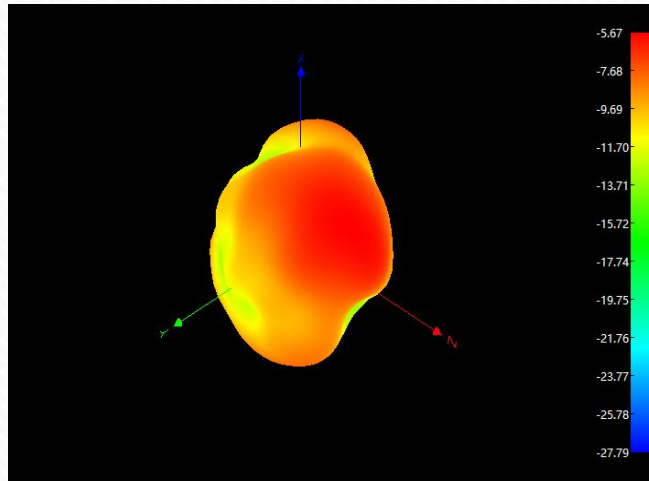
Freq	Efficiency	Gain
(MHz)	(%)	(dB)
2400	32.61	-1.08
2410	31.66	0.18
2420	33.91	-0.25
2430	33.85	-0.22
2440	34.18	0.09
2450	34.73	0.56
2460	34.38	0.47
2470	34.36	0.51
2480	35.55	1.09
2490	34.42	1.63
2500	34.67	1.47

Freq	Efficiency	Gain
(MHz)	(%)	(dB)
5150	24.83	0.81
5200	25.54	0.74
5250	26.97	0.74
5300	26.92	0.6
5350	28.18	0.52
5400	28.52	0.68
5450	28.52	0.23
5500	29.09	0.39
5550	29.47	0.3
5600	28.45	0.04
5650	29.84	0.76
5700	28.68	0.36
5750	28.64	0.16
5800	28.15	0.14
5850	28.12	0.1

2D Figure



3D Figure:



Measurement	Standard	Band	Channel	Frequency	Idle Test	Test State 1	Test State 2	Test State 3
TRP	FDD_LTE	FDD_B2(10MHz)	18650	1855	20.13	20.1	20.38	20.75
TRP	FDD_LTE	FDD_B2(10MHz)	18900	1880	20.49	20.49	20.97	20.31
TRP	FDD_LTE	FDD_B2(10MHz)	19150	1905	20.71	20.6	20.24	20.4
TIS(RSSI)	FDD_LTE	FDD_B2(10MHz)	1150	1985	-92.38	-93.6	-91.9	-95.44
TRP	FDD_LTE	FDD_B4(10MHz)	20000	1715	20.91	20.7	20.2	20.53
TRP	FDD_LTE	FDD_B4(10MHz)	20175	1732.5	20.17	20.1	20.62	20.82
TRP	FDD_LTE	FDD_B4(10MHz)	20350	1750	20.21	20.11	20.73	20.88
TIS(RSSI)	FDD_LTE	FDD_B4(10MHz)	2350	2150	-96.35	-94.33	-94.51	-94.77
TRP	FDD_LTE	FDD_B5(10MHz)	20450	829	20.39	20.27	20.98	20.34
TRP	FDD_LTE	FDD_B5(10MHz)	20525	836.5	21.24	21.23	21.4	20.23
TRP	FDD_LTE	FDD_B5(10MHz)	20600	844	21.19	21.09	20.79	20.2
TIS(RSSI)	FDD_LTE	FDD_B5(10MHz)	2600	889	-72.73	-79.5	-80.04	-81.7
TRP	FDD_LTE	FDD_B12(10MHz)	23060	704	15.41	15.5	17.36	15.87
TRP	FDD_LTE	FDD_B12(10MHz)	23095	707.5	15.6	15.66	17.46	16.1
TRP	FDD_LTE	FDD_B12(10MHz)	23130	711	15.71	15.78	17.3	16.07
TIS(RSSI)	FDD_LTE	FDD_B12(10MHz)	5130	741	-82.84	-82.61	-84	-82.72
TRP	FDD_LTE	FDD_B13(10MHz)	23230	782	19.76	19.8	20.34	19.78
TRP	FDD_LTE	FDD_B13(10MHz)	5230	751	-80.87	-80.11	-82.17	-80.67
TRP	FDD_LTE	FDD_B14(10MHz)	23330	793	18.87	18.78	20.14	19.19
TIS(RSSI)	FDD_LTE	FDD_B14(10MHz)	5330	763	-83.25	-81.99	-83.97	-82.76
TRP	FDD_LTE	FDD_B66(10MHz)	132022	1715	20.8	20.44	20.02	20.25
TIS(RSSI)	FDD_LTE	FDD_B66(10MHz)	132322	1745	20.22	20.83	20.3	20.58
TRP	FDD_LTE	FDD_B66(10MHz)	132622	1775	20.32	20.34	20.65	20.13
TIS(RSSI)	FDD_LTE	FDD_B66(10MHz)	67036	2170	-94.5	-93.35	-93.62	-94.33

Environmental handling remains unchanged for now.

1. Antenna version: sample antenna test data
2. Matching changes: none
3. Environment handling: unchanged
4. Current summary: Prototype test data validating the effect of the magnetic back clip
5. Follow-up plan: Customer confirmation of the data

Thank You

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