

Test Report-Scout T2

Customer:	東莞東聚
Project:	Scout T2
Antenna:	CW337
Version:	D (左側PCB/結構修改/新機構)
Release date:	2026/05/06

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Purpose of Version D verification

D Version Test Scope

- Validate the antenna performance after left-side PCB / mechanical structure modification and new housing configuration.
- Confirm both left and right antenna performance with phone and right-hand phantom condition.
- Review return loss, radiation efficiency, peak gain, radiation pattern, and final matching network.

Evaluation Criteria

- Operating band: 2400–2485 MHz.
- Return loss target: ≤ -10 dB across the working band.
- Use the measured efficiency and peak gain as the reference data for next-stage sample review.

This report focuses on confirming whether the updated mechanical/PCB configuration can keep stable 2.4 GHz antenna performance under realistic handheld usage.

Measurement Setup

Equipment List

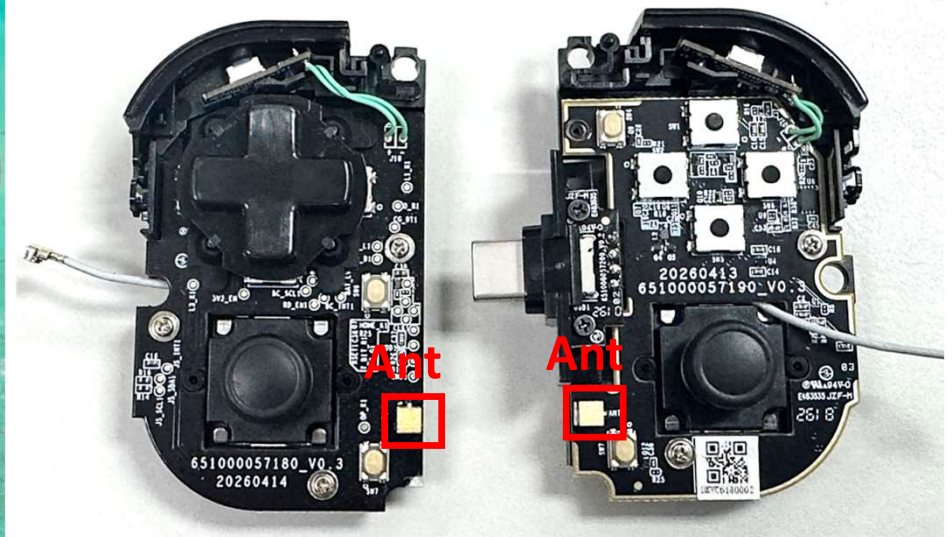
Equipment information

TYPE OF EQUIPMENT	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DUE DATE
OTA2-3D far field Chamber	十大科技 ETS-844 (600MHz-10GHz)	N/A	once a week
Measurement Software	Maxwell V3.7.1	N/A	N/A
switch control	MT8862A	SN6262021092	N/A
Network Analyzer (for Test items)	KEYSIGHT E5071C (9kHz-8.5GHz)	MY46213611	2026.07.03
Network Analyzer (for chamber)	KEYSIGHT E5072A (9kHz-14GHz)	MY51401470	2026.06.30

Experimental results

Measurement Setup

Placement of antenna



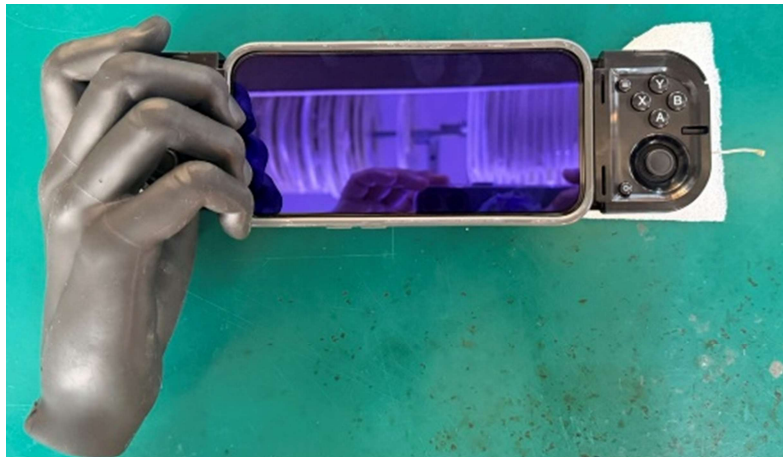
Left

Right

Cellphone(iPhone 15Pro)
Phantom hand(SPEAG SHO-V3RTHG)

Experimental results

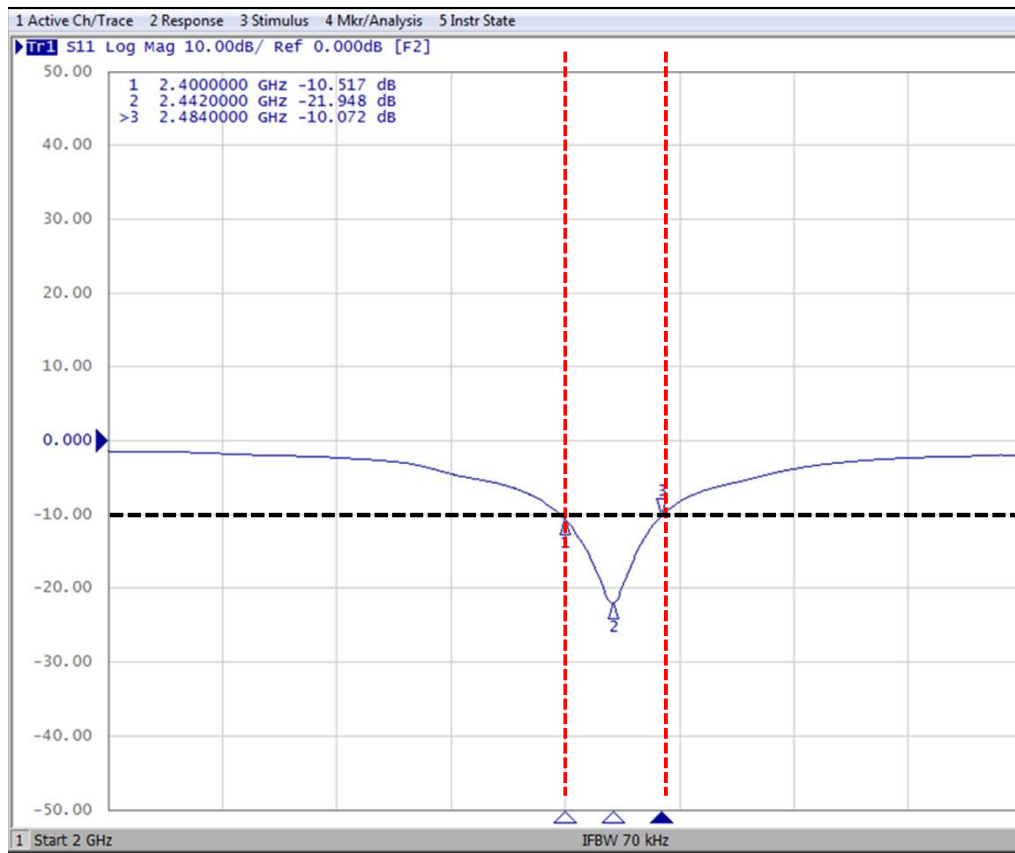
Left side & Right side



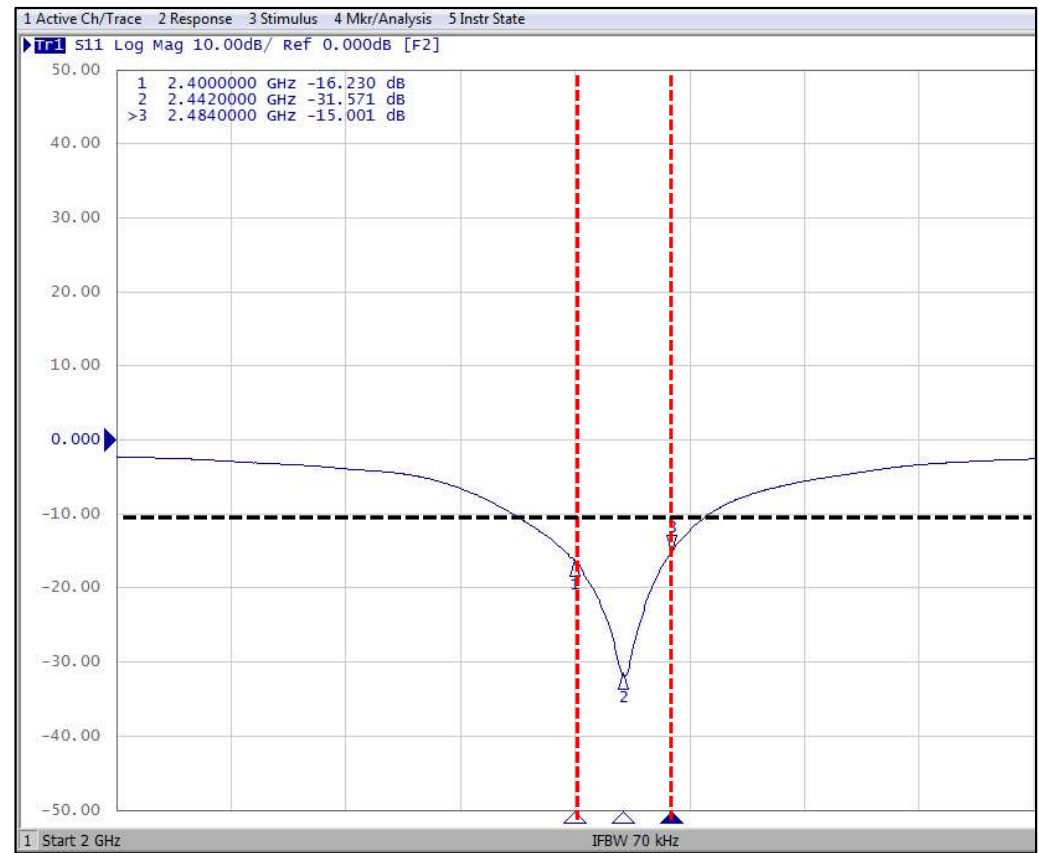
Return loss

Return Loss Both left and right side antennas meet the ≤ -10 dB requirement across the 2400–2485 MHz operating band.

Left side



Right side

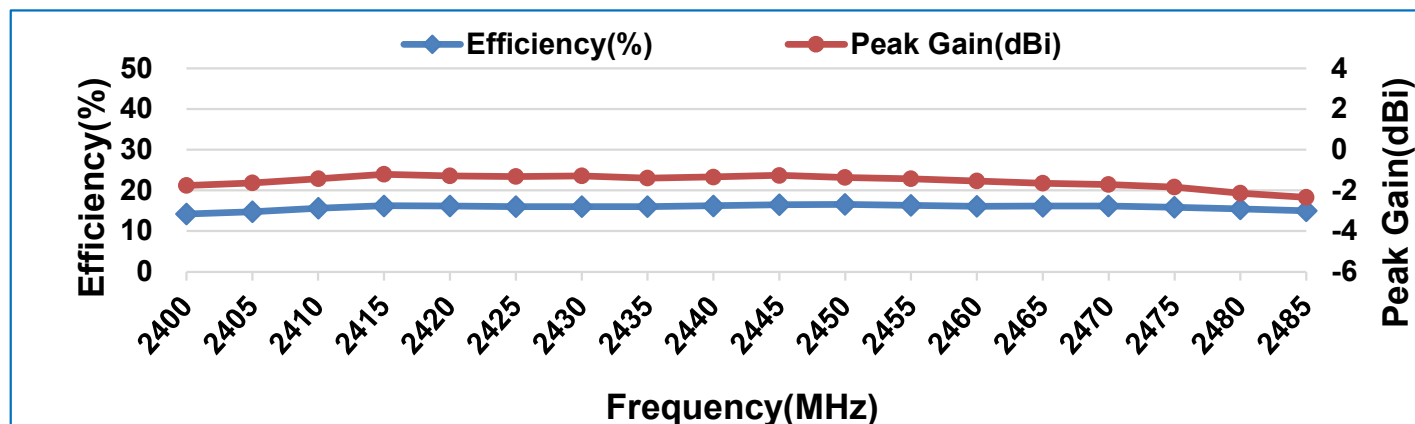


Radiation performance

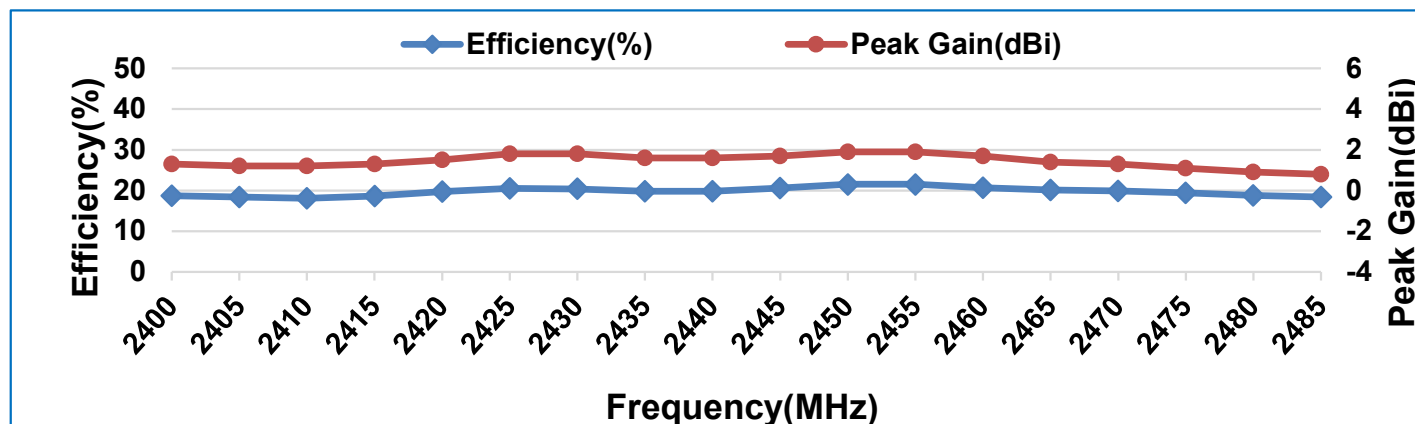
Efficiency

Average efficiency: Left side 19.7%; Right side 15.9%.

Right side



Left side



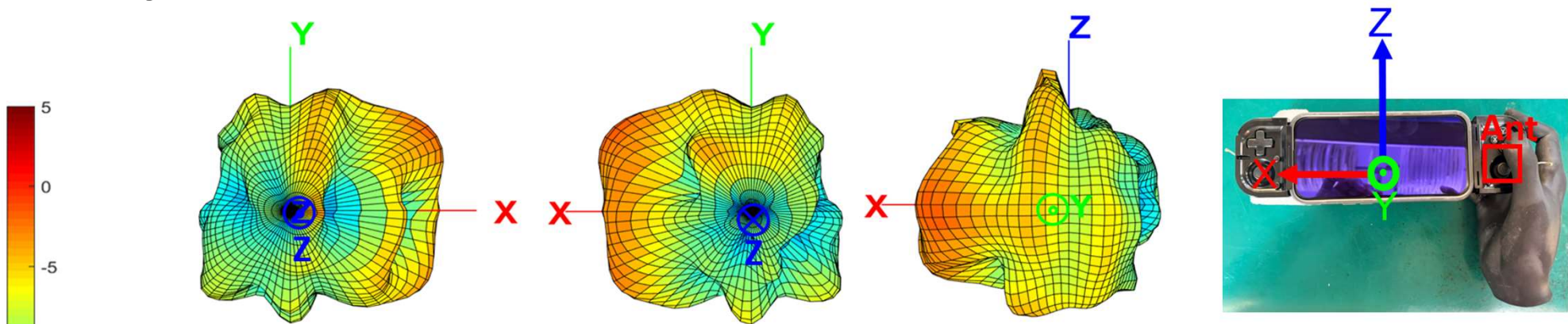
Frequency (MHz)		2400	2405	2410	2415	2420	2425	2430	2435	2440	2445	2450	2455	2460	2465	2470	2475	2480	2485
Right side	Efficiency (%)	14.2	14.8	15.6	16.2	16.2	16.0	16.0	16.0	16.2	16.5	16.6	16.4	16.1	16.1	16.2	15.9	15.5	15.0
	Peak Gain (dBi)	-1.8	-1.6	-1.4	-1.2	-1.3	-1.3	-1.3	-1.4	-1.3	-1.3	-1.4	-1.4	-1.5	-1.7	-1.7	-1.8	-2.1	-2.3
Left side	Efficiency (%)	18.7	18.4	18.1	18.6	19.7	20.5	20.4	19.8	19.8	20.6	21.5	21.5	20.7	20.1	19.9	19.4	18.8	18.4
	Peak Gain (dBi)	1.3	1.2	1.2	1.3	1.5	1.8	1.8	1.6	1.6	1.7	1.9	1.9	1.7	1.4	1.3	1.1	0.9	0.8

Radiation Pattern @ 2445 MHz (unit: dBi)

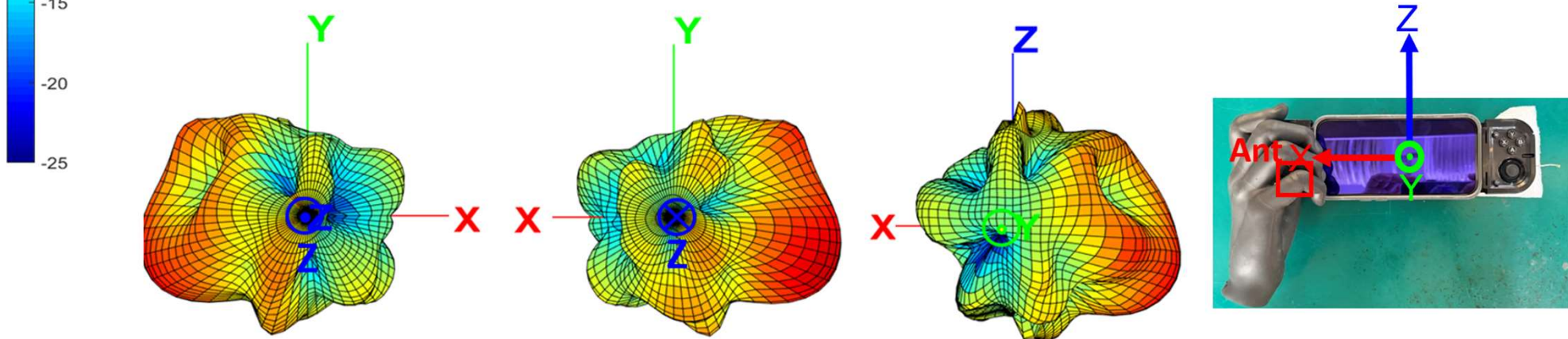
Peak Gain

Left side: 0.8 to 1.9 dBi; Right side: -2.3 to -1.2 dBi.

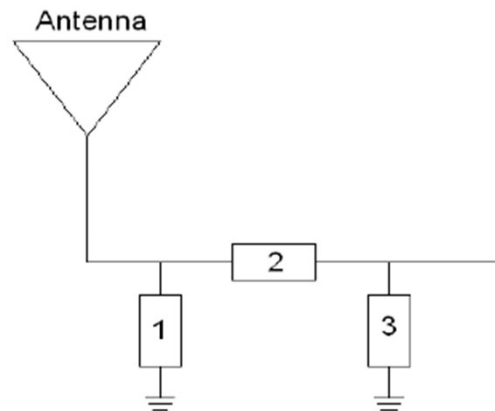
Right side



Left side



Matching network



Right side

System Matching Circuit Component			
Location	Description	Vendor	P/N
1	1.5nH, (0201)	MURATA	LQP03TG1N5B02D
2	1.5nH, (0201)	MURATA	LQP03TG1N5B02D
3	1.0pF, (0201)	MURATA	GRM0335C1H1R0WA01D

Left side

System Matching Circuit Component			
Location	Description	Vendor	P/N
1	1.0pF, (0402)	MURATA	GRM1555C1H1R0WA01D
2	1.8nH, (0402)	MURATA	LQG15HS1N8S02D
3	0.6pF, (0402)	MURATA	GRM1555C1HR06WA01D

Summary of Version D measurement results

Return Loss Both left and right side antennas meet the ≤ -10 dB requirement across the 2400–2485 MHz operating band.

Efficiency Average efficiency: Left side 19.7%; Right side 15.9%.

Peak Gain Left side: 0.8 to 1.9 dBi; Right side: -2.3 to -1.2 dBi.

Recommendation Use the current matching networks and layout as the D-version reference, and proceed with next-stage sample / system verification under the same phone + hand condition.

Conclusion: The left-side sample shows higher radiation performance. However, since it was measured using the right-hand phantom in a reversed gripping posture, the result may be affected by the gripping position and hand-shielding area. Further real-use reception testing with actual human gripping is recommended.