



Quectel

Razer-Marci T1 Antenna Test Report

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Revision History



Revision	Date	Reporter	Reviewer	Note
V1.0	2025/8/28	Edwin	Ezail Tan	First antenna evaluation report.
V1.1	2025/9/3	Edwin	Ezail Tan	Update the OTA test results.
V1.2	2025/9/5	Edwin	Ezail Tan	Update the Conducted power data.
V1.3	2025/10/21	Edwin	Ezail Tan	Update the data of the antenna cable length to 380mm
V1.4	2025/10/28	Edwin	Ezail Tan	Update the data of the antenna cable length to 400mm
V1.0	2025/11/28	Edwin	Ezail Tan	Final antenna sample verification



Project Overview

Antenna performance Test
Conclusion and Suggestion

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Project Overview



- Device Dimensions: -mm
- Mainboard Dimensions: -mm
- Antenna Quantity: 1
- Antenna OC: Y4RRW0MA6AA
- Network Standard and Frequency Band:
 - ✓ BLE 2.4G: 2400-2500 MHz
- Performance Requirements:
 - ✓ Efficiency > 50%



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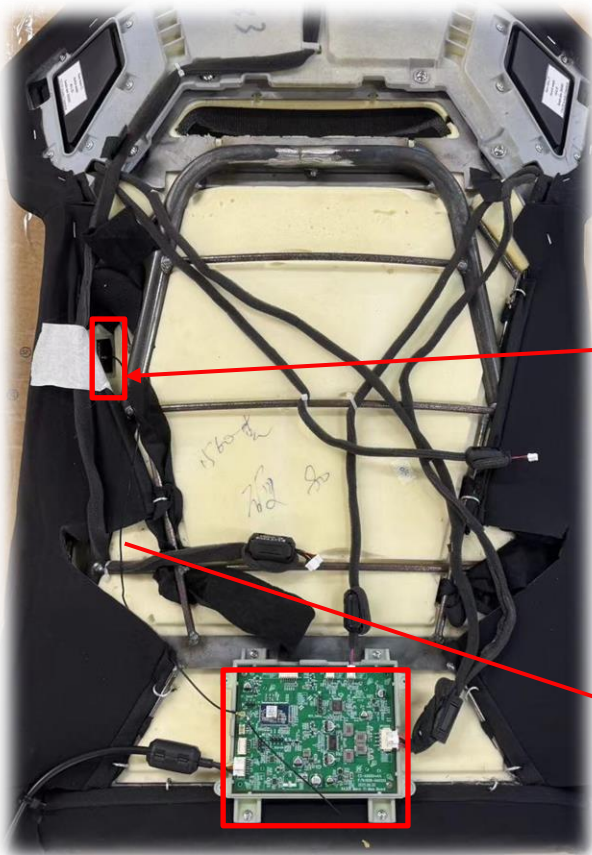
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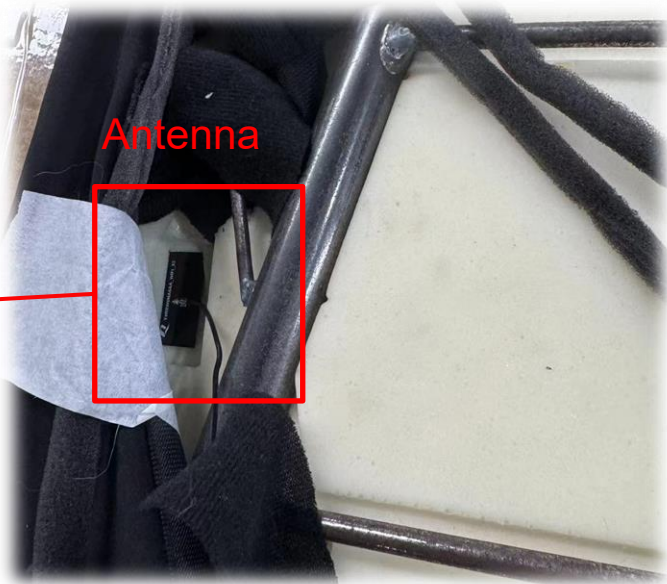
Antenna Placement Analysis



WiFi antenna(cable length:400mm)



Main board



Antenna

Cable: 1.37 low loss cable(ipex1)
Length: 400mm

Antenna Placement Analysis



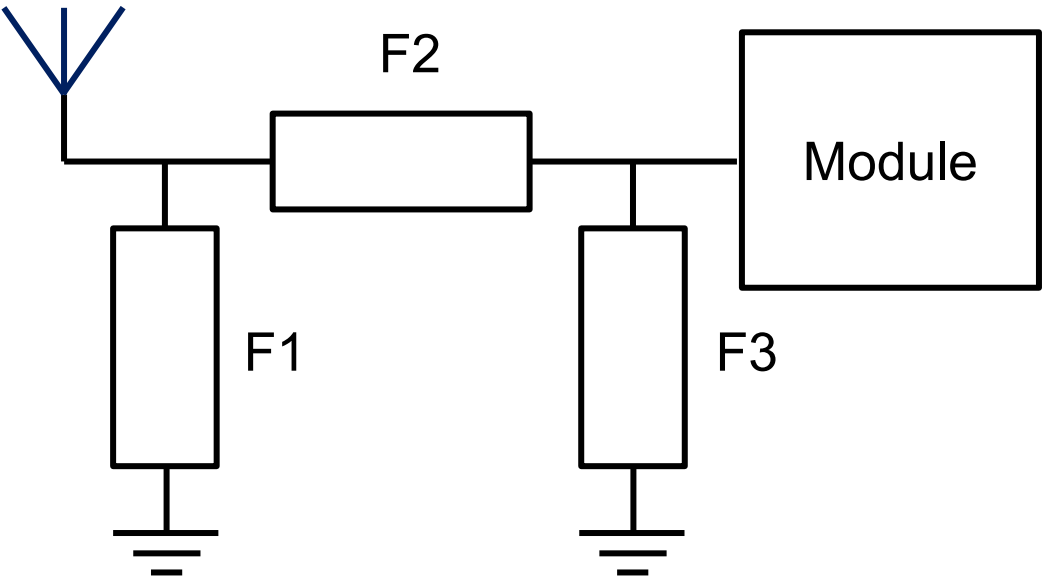
Original Antenna



Final Antenna

- Matching Circuit Diagram

Antenna



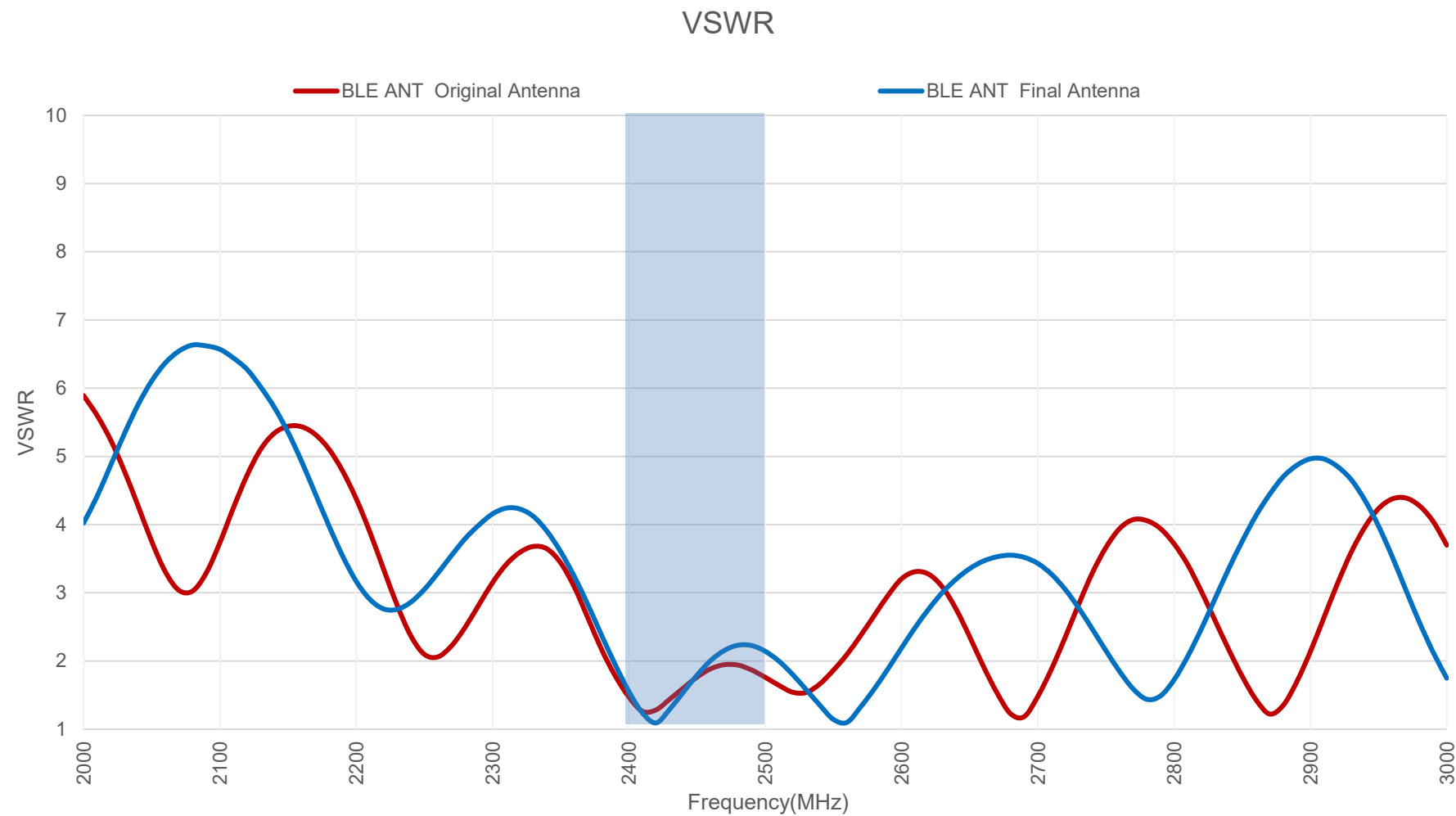
- Match Value:

No.	L/C
F1	NA
F2	00hm
F3	NA

Passive Test



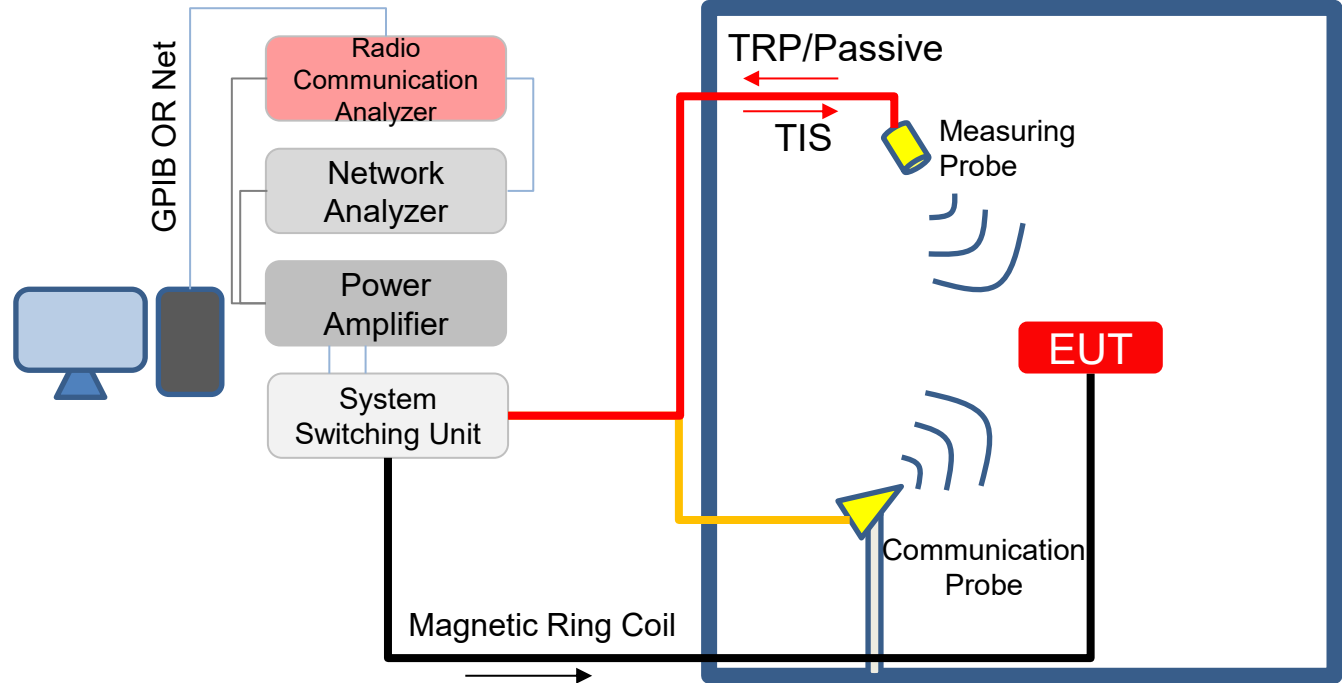
- VSWR



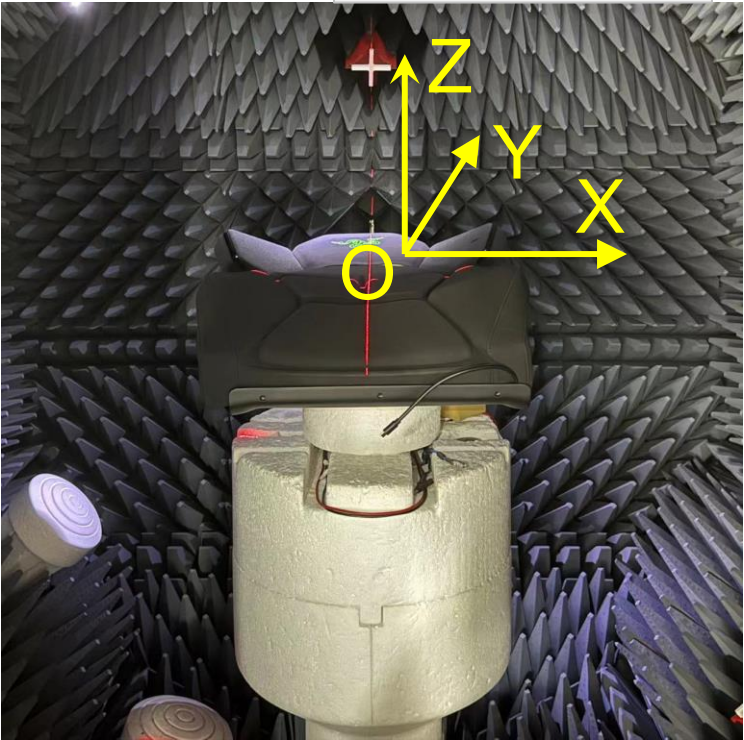
Antenna Test



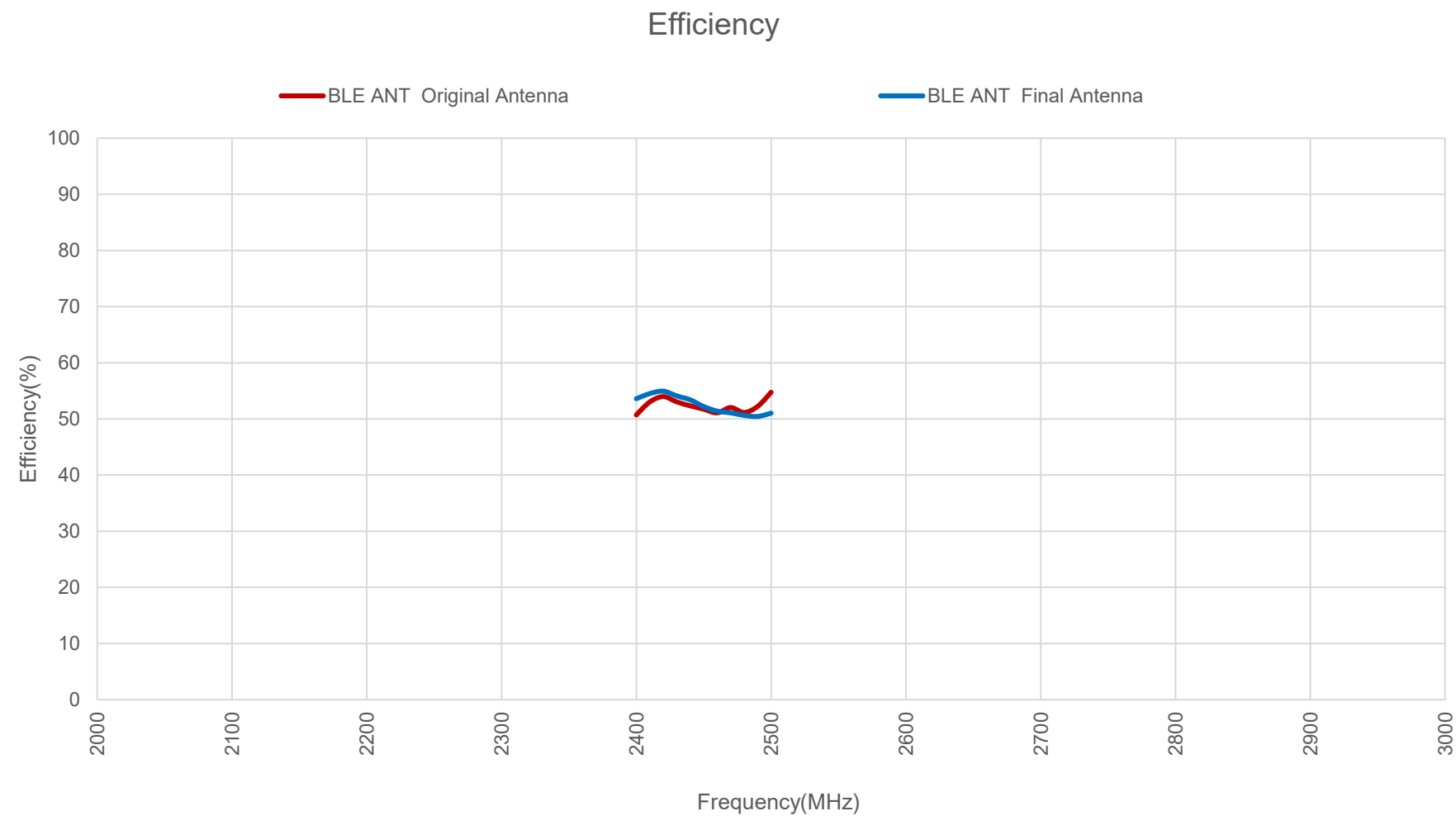
- Chamber Coordinate System GL-G-1



H Plane: XY
E1 Plane: XZ
E2 Plane: YZ



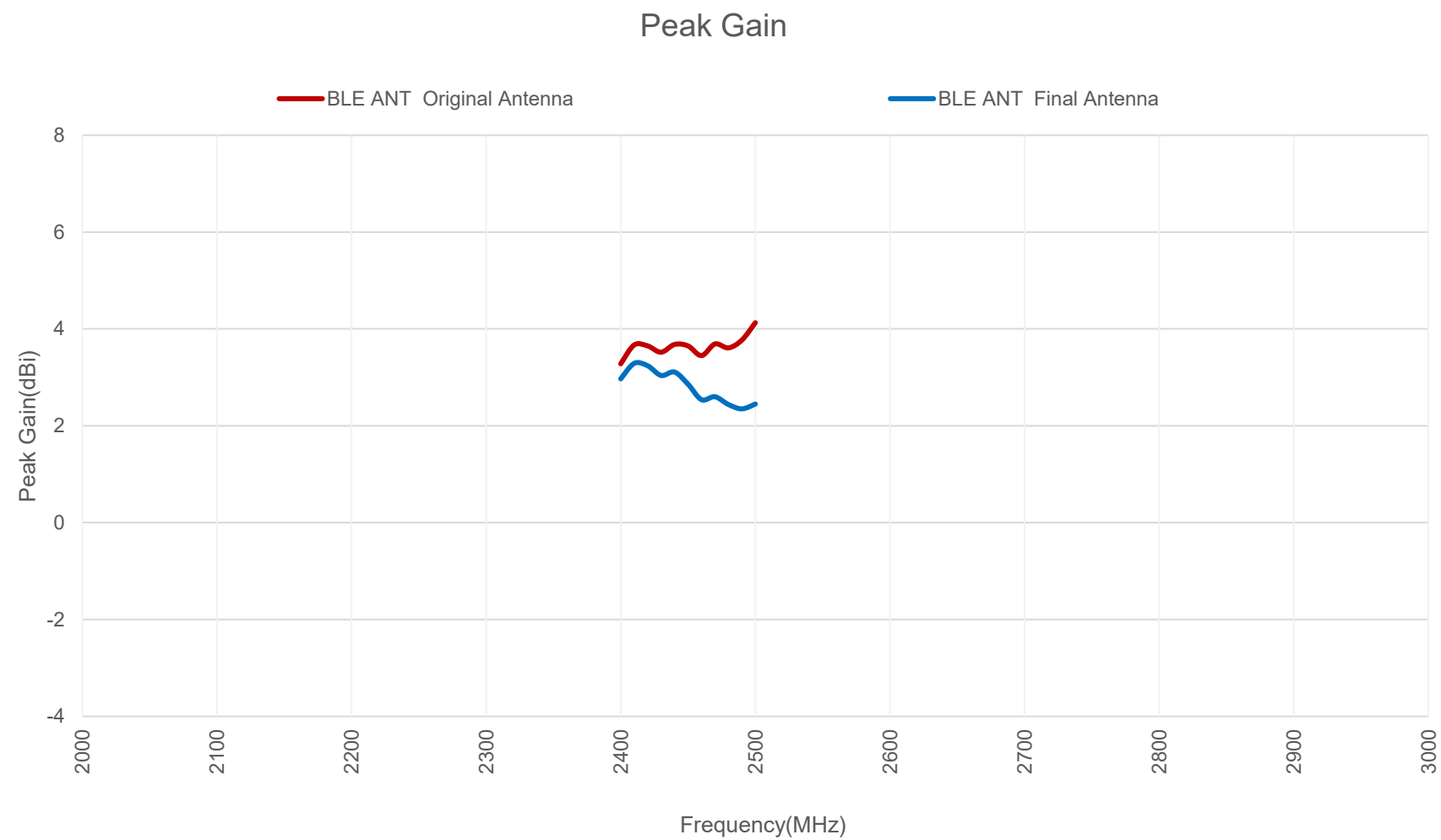
- Efficiency



Passive Test

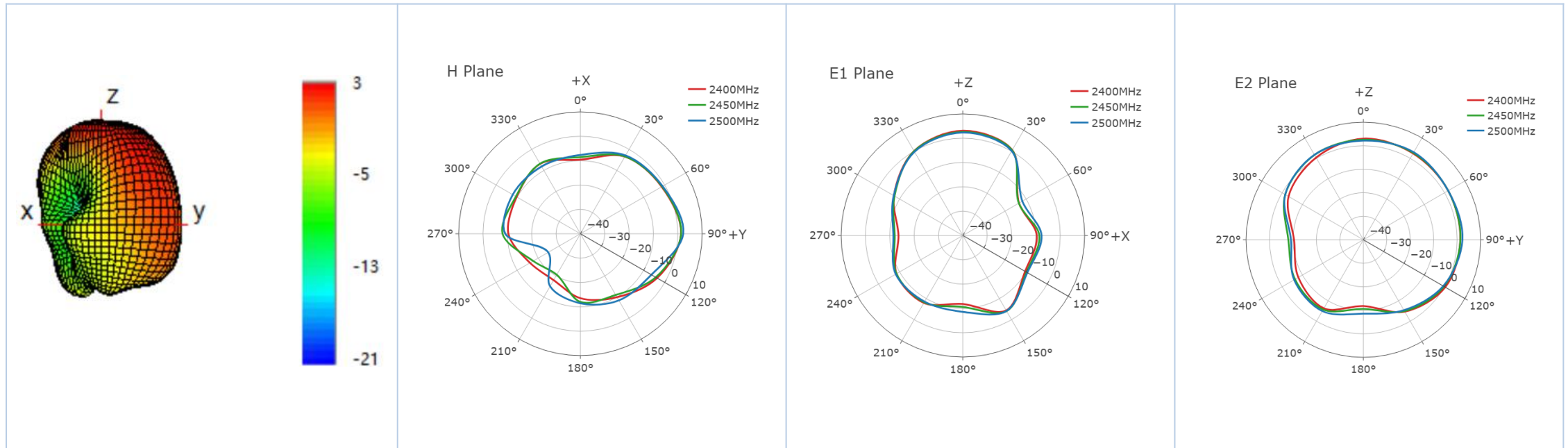


- Peak Gain



Passive Test

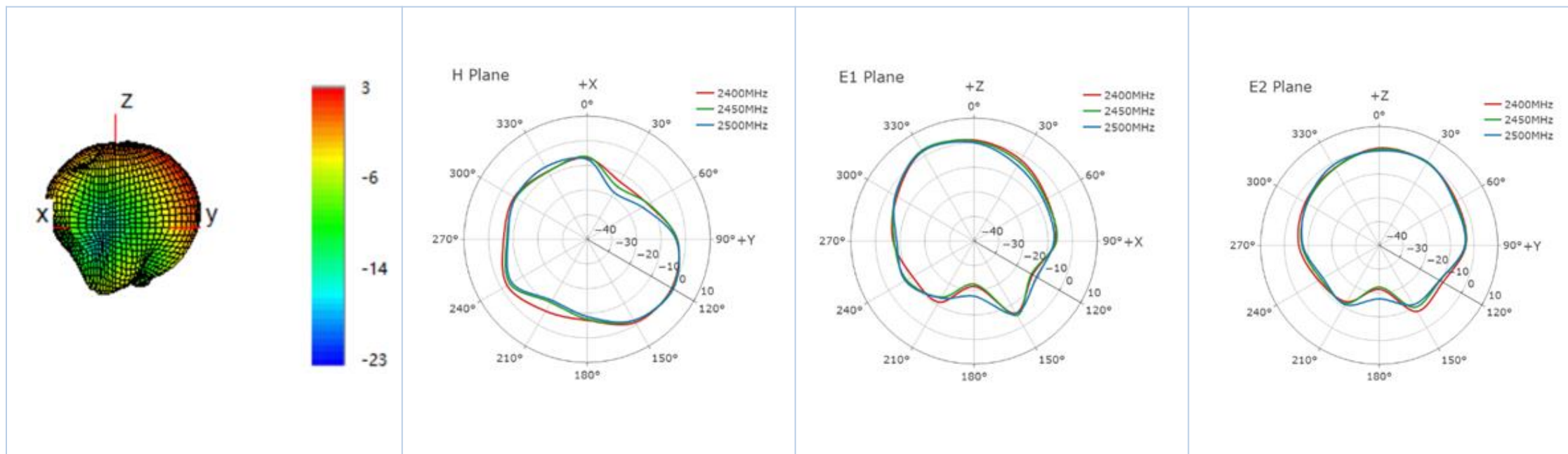
- Radiation Pattern(Original Antenna)



2450 MHz

Passive Test

- Radiation Pattern(Final Antenna)



2450 MHz

Passive Test

Passive Test											
	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi) (Original Antenna)	3.33	3.56	3.29	3.09	3.17	2.95	2.9	3.03	3	3.05	3
Peak Gain (dBi) (Final Antenna)	2.97	3.29	3.24	3.04	3.11	2.86	2.54	2.6	2.44	2.35	2.45



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- **Antenna Performance**

- This time, the passive performance of the antenna sample in the final state was verified. The antenna performance was basically the same as that of the previous version of the manual sample antenna. The antenna performance meets the requirements.



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backed by outstanding support and
services, to deliver a smarter world.**

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- Superb support with the largest R&D team in the industry
- Continuous innovation – in 5G, LPWA, Automotive, Smart module technology
- A passionate, dedicated team of "Quectelers" ensures our customers always come first

Thank You

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