



Build a smarter world

Quectel Wireless Solutions

Razer-Primax-Zia Refresh-wireless charger Antenna Design Report

Reporter: Edwin.xiao

Tel: +86 18278080602

Email: Edwin.xiao@quectel.com

Date: 2026.5.22

Revision History



Revision	Date	Reporter	Reviewer	Note
V1.0	2026/05/22	Edwin Xiao	Ezail Tan	Antenna performance verification.

Contents

Project overview	01
Antenna placement analysis	02
Antenna matching	03
Passive test	04
Active test	05
Comparison experiment /De-sense	06
Conclusion and suggestion	07



Project Overview

Antenna Performance Evaluation

Conclusion and Suggestion

Build a Smarter World

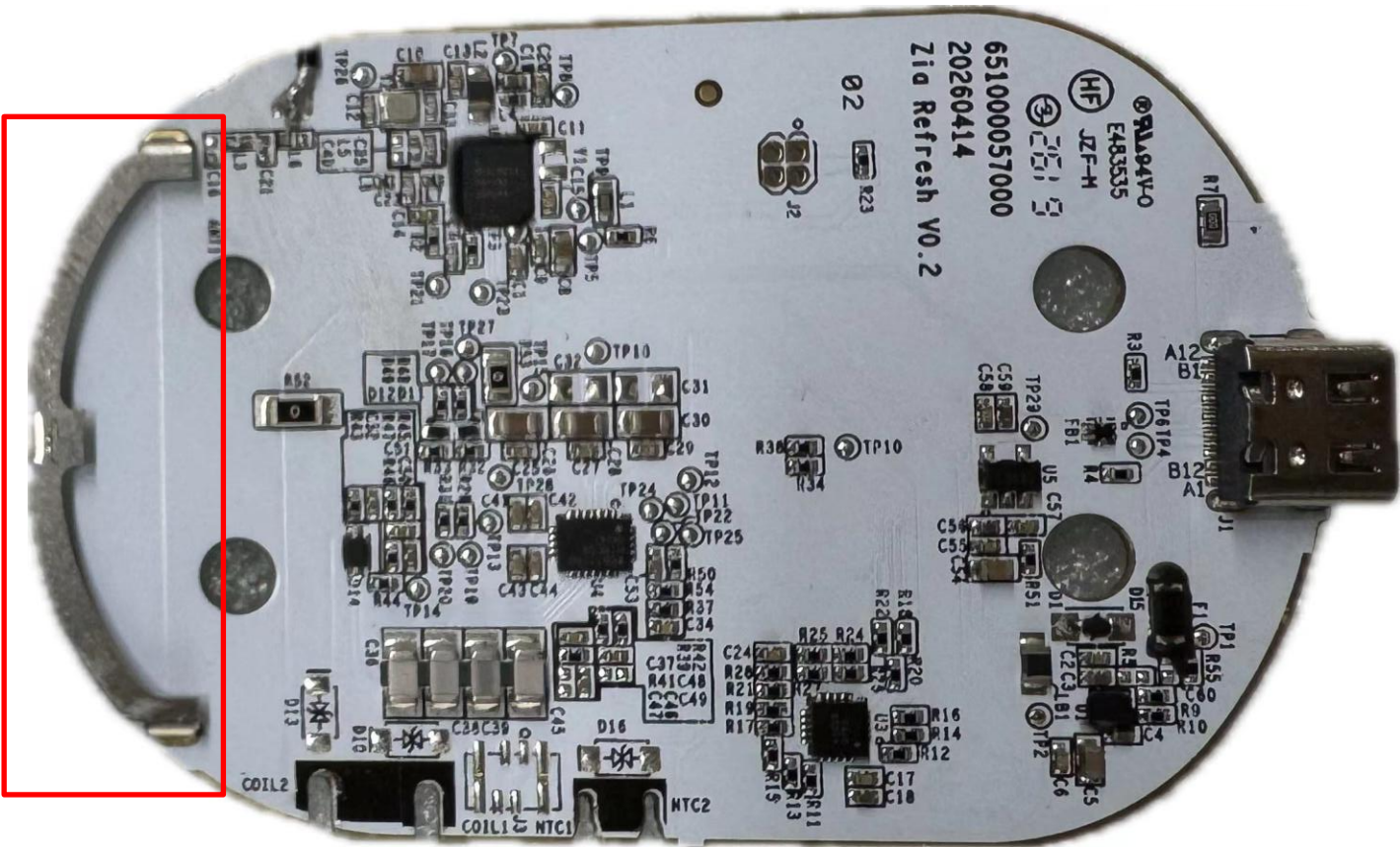


Antenna Analysis



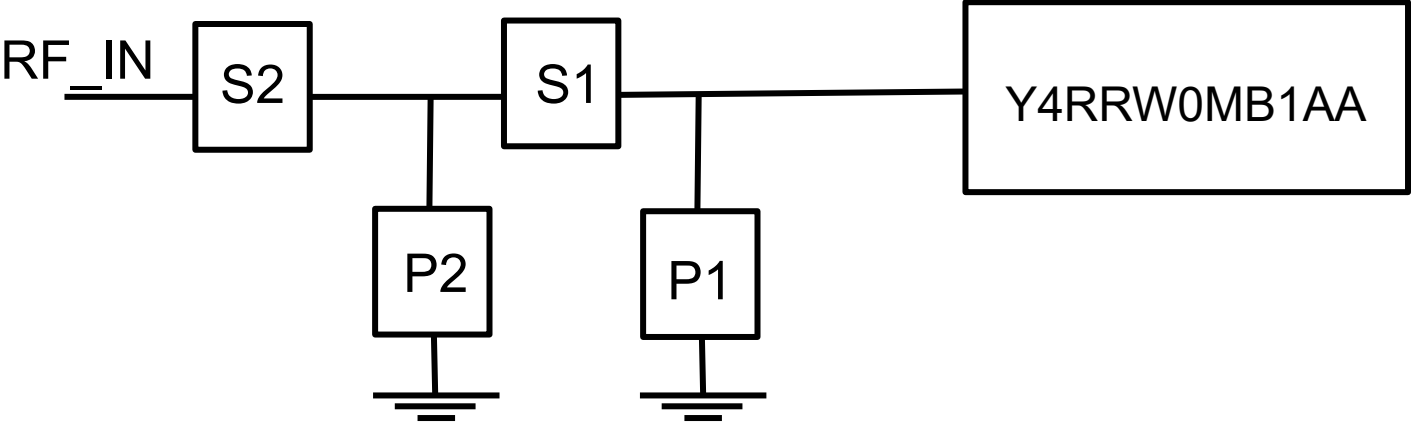
- Antenna Position

Y4RRW0MB1AA



Main board

- Matching Circuit Diagram



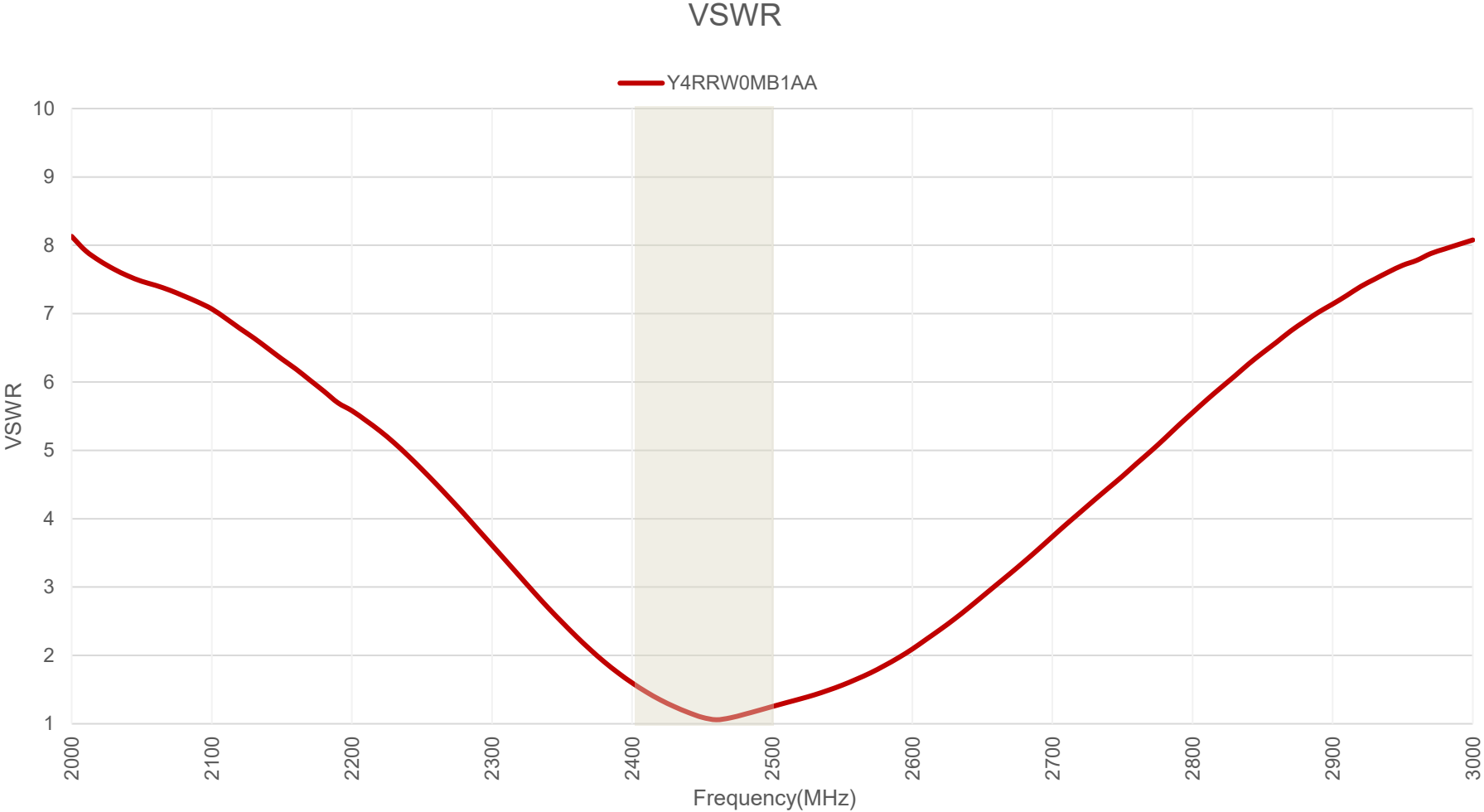
- Match Value:

No.	S1	S2	P1	P2
Value	4.7nH	00hm	NA	1.8pF

Passive Test



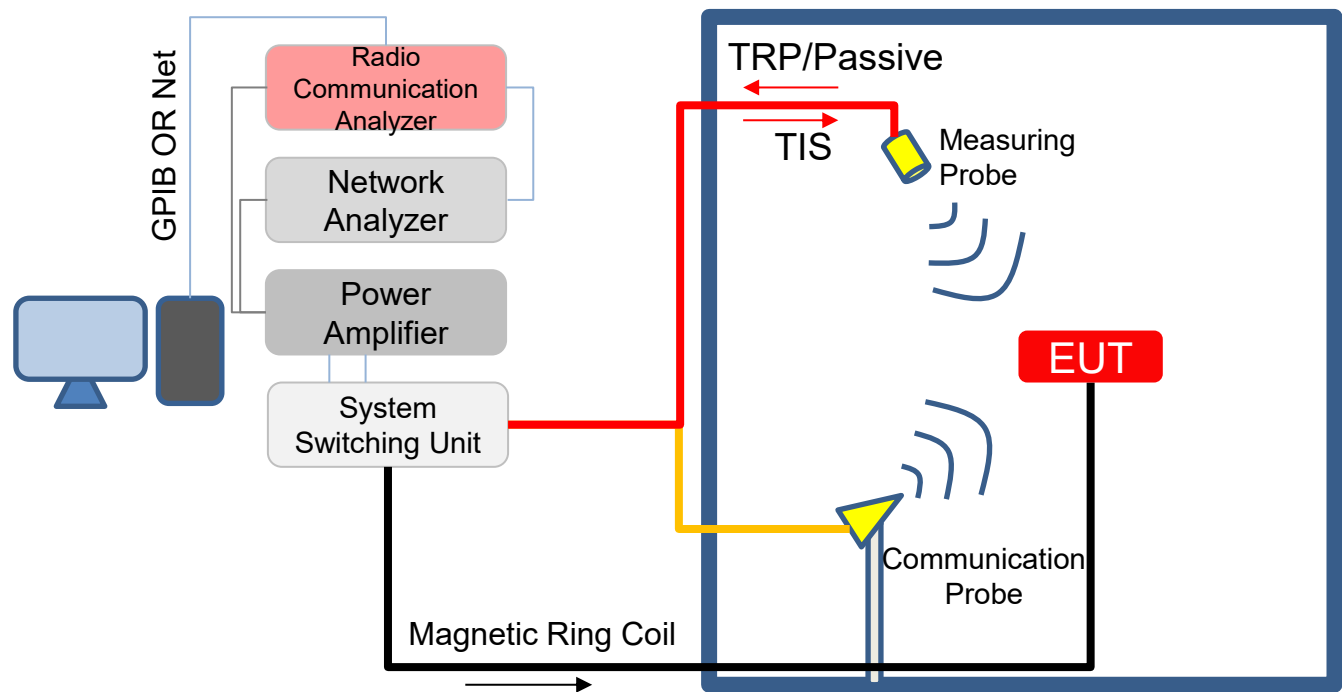
- VSWR



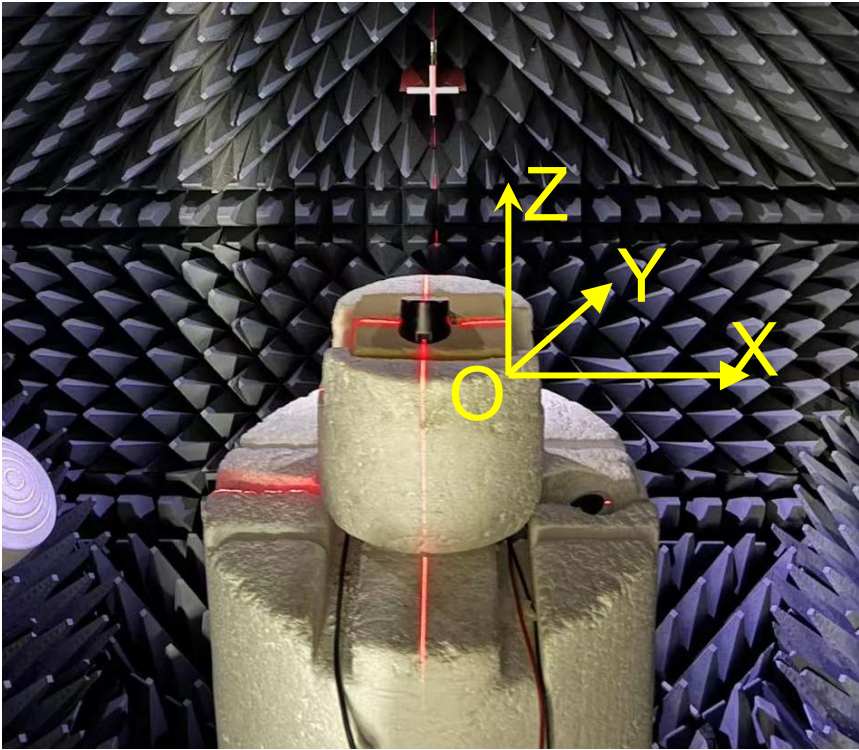
Antenna Test



- Chamber Coordinate GL-G-1



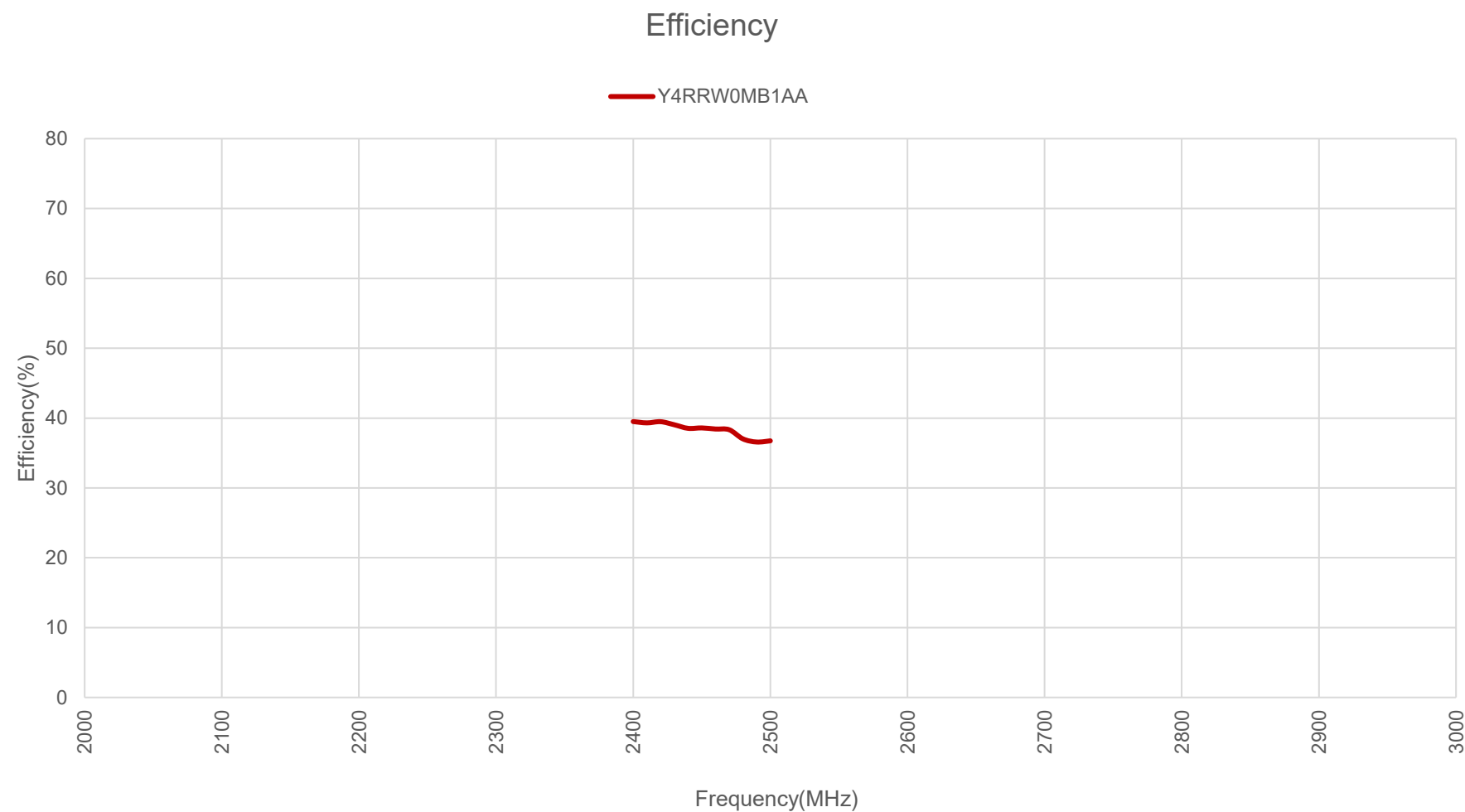
H Plane: XY
E1 Plane: XZ
E2 Plane: YZ



Passive Test



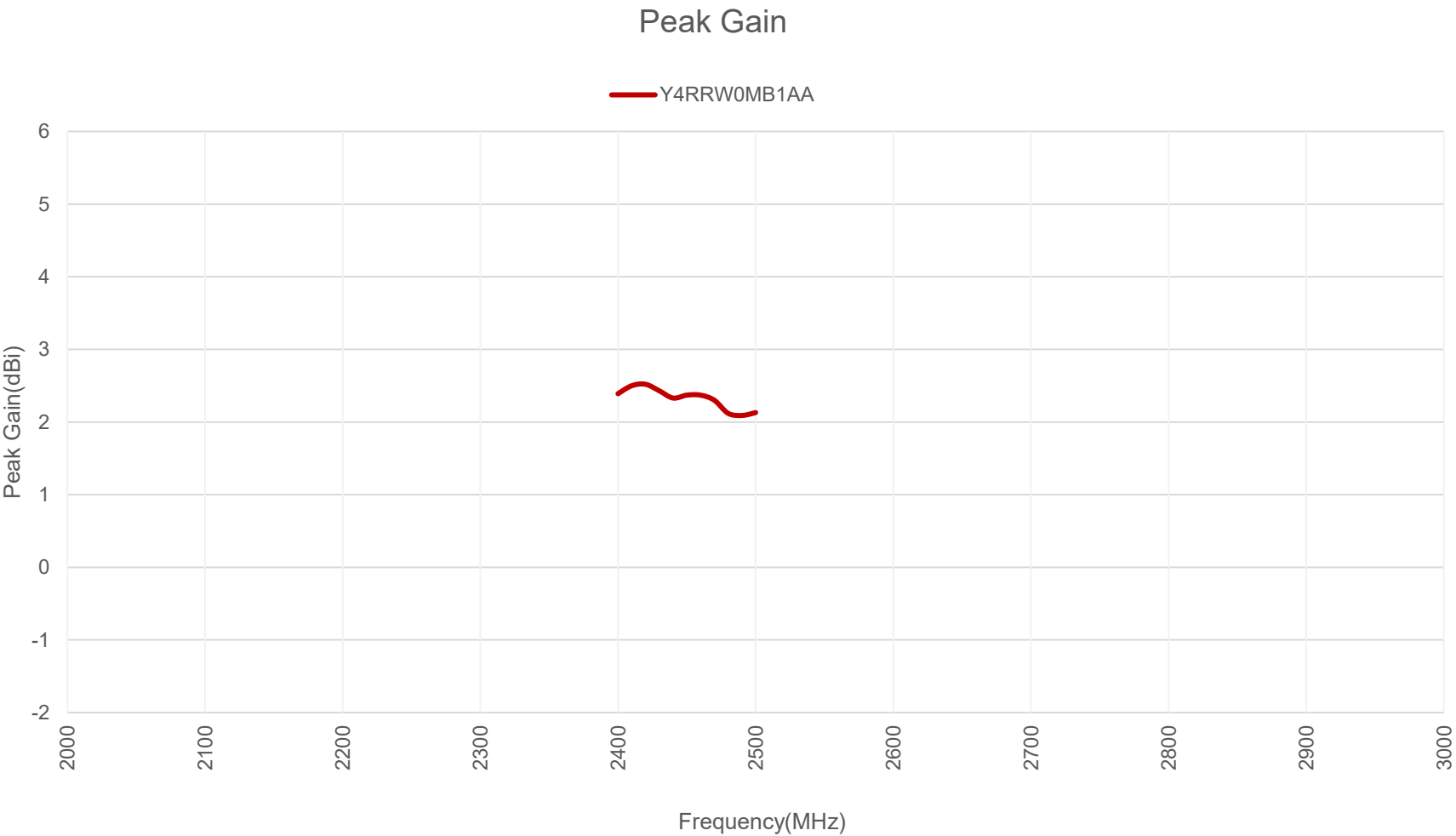
- Efficiency



Passive Test



- Peak Gain





Project Overview

Antenna Performance Evaluation

Conclusion and Suggestion

Build a Smarter World



Conclusion and Suggestion

- Antenna Performance

- This verification test evaluated the passive performance of the antenna sample Y4RRW0MB1AA in the equipment environment.
- Since the area above the antenna assembly is made of metal, it will have an impact on the antenna's radiation. Therefore, by adjusting the matching network, the average efficiency of the antenna in its current optimal performance state is 38.2%.The detailed antenna performance parameters can be found in the following table:

2.4G WIFI			
	Y4RRW0MB1AA		
Frequency(MHz)	2400	2450	2500
VSWR	1.6	1.1	1.3
Efficiency(%)	39.5	38.6	36.7
Peak Gain(dBi)	2.4	2.4	2.1



**We are a global IoT solutions provider,
backed by outstanding support and
services, to deliver a smarter world.**

- Unbeatable choice from the broadest module portfolio in the world
- High quality range of off-the-shelf and customized antennas
- 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

Build a Smarter World

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: **+86 21 5108 6236** Sales Support: sales@quectel.com

Technical Support: support@quectel.com General: info@quectel.com