



Antenna Datasheet

Product OC: YECW058L1AM

Version: 1.0

Date: 2025-09-26

Status: Preliminary

Product Name: ISM Screw Mount External Dipole Antenna

Key Features:

Frequency Band: 400–470 MHz

Dimensions: 223.18 mm × 74.09 mm × 76.50 mm

Efficiency: Up to 66.5 % (FS)

RoHS and REACH Compliant

Overview

YECW058L1AM is an ISM external antenna measuring 223.18 mm × 74.09 mm × 76.50 mm. This antenna provides broad coverage from 400–470 MHz. The antenna is terminated with SMA Male connector. This low profile, screw mount omni-directional antenna, ideal for applications where the antenna is required to be discrete, is easy to install with maximum durability assured thanks to its PC + ABS enclosure. It is compatible with Quectel's ISM Series modules.

The YECW058L1AM is designed as dipole type to work with various GND plane sizes or in free space for ease of integration with a SMA Male connector to achieve the optimum position. This omni-directional antenna is ideally suited for Gateways & Routers, Smart Metering, Vending Machines, Industrial IoT, Smart Home, Connected Enterprise, offering great performance with its high gain and efficiency.

Typical applications include:

- Security Alerts
- Wireless Data-transmission
- Automated Manufacturing
- Industrial IoT

Quectel provides comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs. We have regional R & D centers to offer quick response to meet your requirements. Please contact our sales & FAEs if you have any requests

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1 Specification

Test Condition: In Free Space & On 500 mm × 500 mm Metal Plane

1.1. Electrical

Electrical	
Frequency Range	400–470 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

	Band	Band	B88	EU433	B31	LoRa	B12 /B13 /B28	B5 /B8 /B26	B1 /B2 /B3
SPEC	Freq. (MHz)		412– 427	433– 435	450– 470	470– 510	700– 810	820– 960	1700– 2170
Max VSWR	FS		2.5	2.4	1.5	-	-	-	-
	MP		4.5	4.3	3.2	-	-	-	-
Max Return Loss (dB)	FS		-7.3	-7.8	-13.4	-	-	-	-
	MP		-3.9	-4.1	-5.7	-	-	-	-
AVG Eff. (%)	FS		39.8	47.7	65.0	-	-	-	-
	MP		16.9	18.2	41.0	-	-	-	-
AVG Gain (dB)	FS		-4.0	-3.2	-1.9	-	-	-	-
	MP		-7.7	-7.4	-3.9	-	-	-	-
Max Peak Gain (dBi)	FS		-1.4	-0.3	2.1	-	-	-	-
	MP		-3.1	-3.2	1.7	-	-	-	-

VSWR	FS	≤ 2.5
	MP	≤ 4.5
Return Loss	FS	≤ -7.3 dB
	MP	≤ -3.9 dB
Peak Gain	FS	≤ 2.1 dBi
	MP	≤ 1.7 dBi

Note:

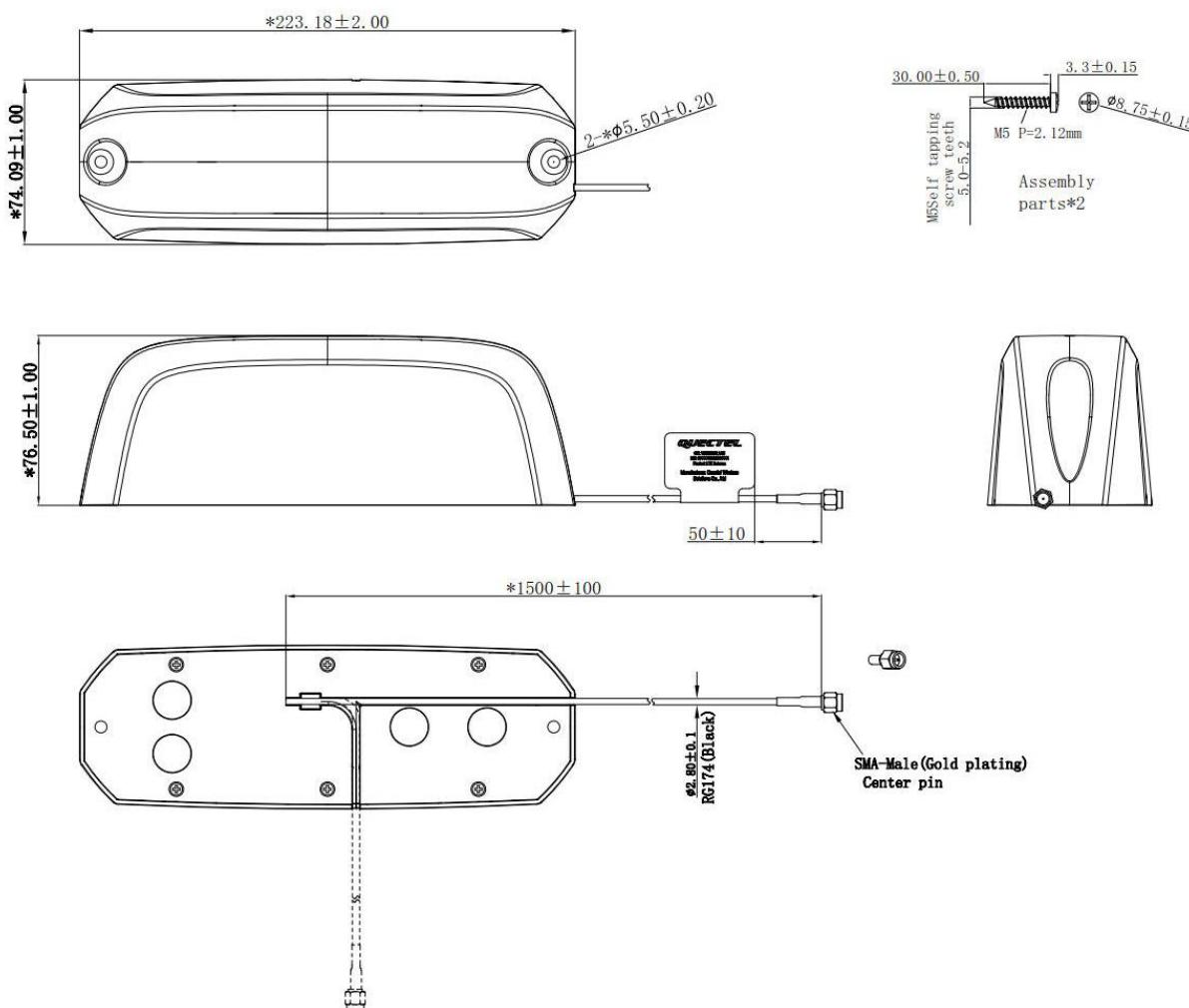
FS: In Free Space

MP: On 500 mm × 500 mm Metal Plane

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	223.18 mm × 74.09 mm × 76.50 mm
Material & Color	PC + ABS & Black
Cable Type & Color & Length	RG174 & Black & 1500 mm
Connector Type	SMA Male
Mounting Type	Screw
Weight	Typ. 224 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

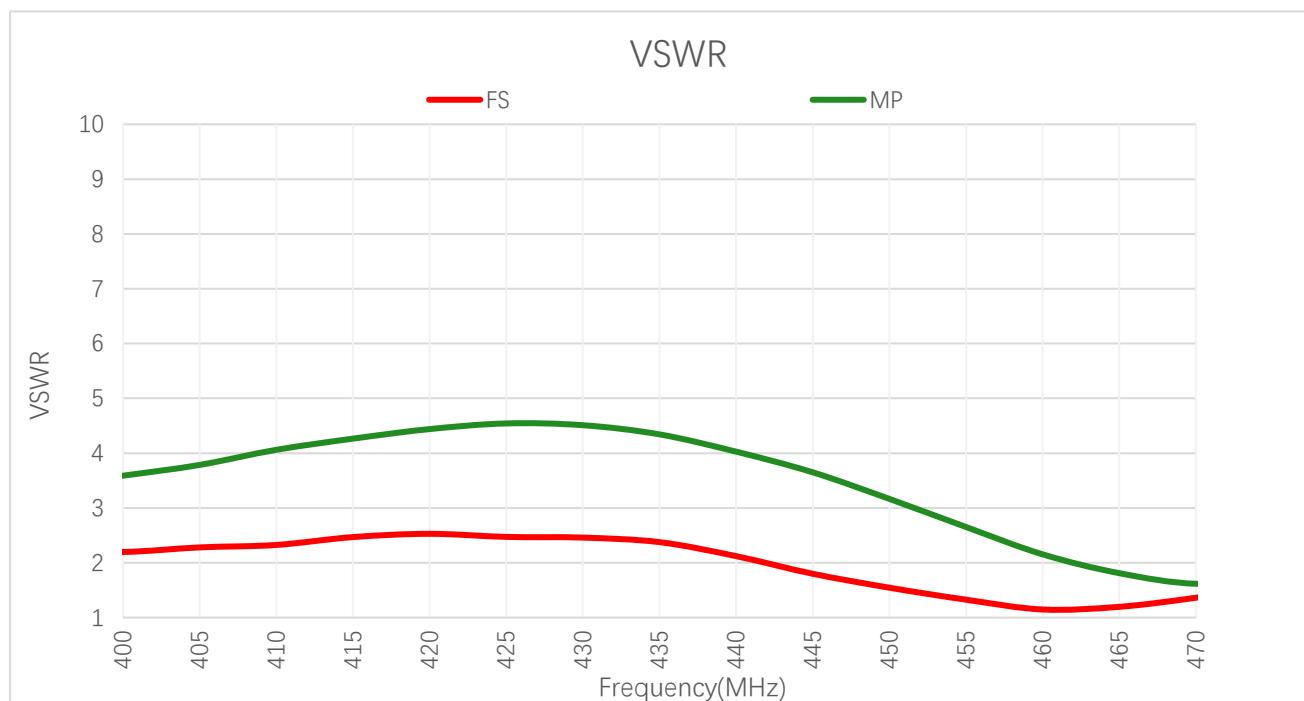
2 Drawing



3 Detailed Performance

3.1. S-Parameter Test

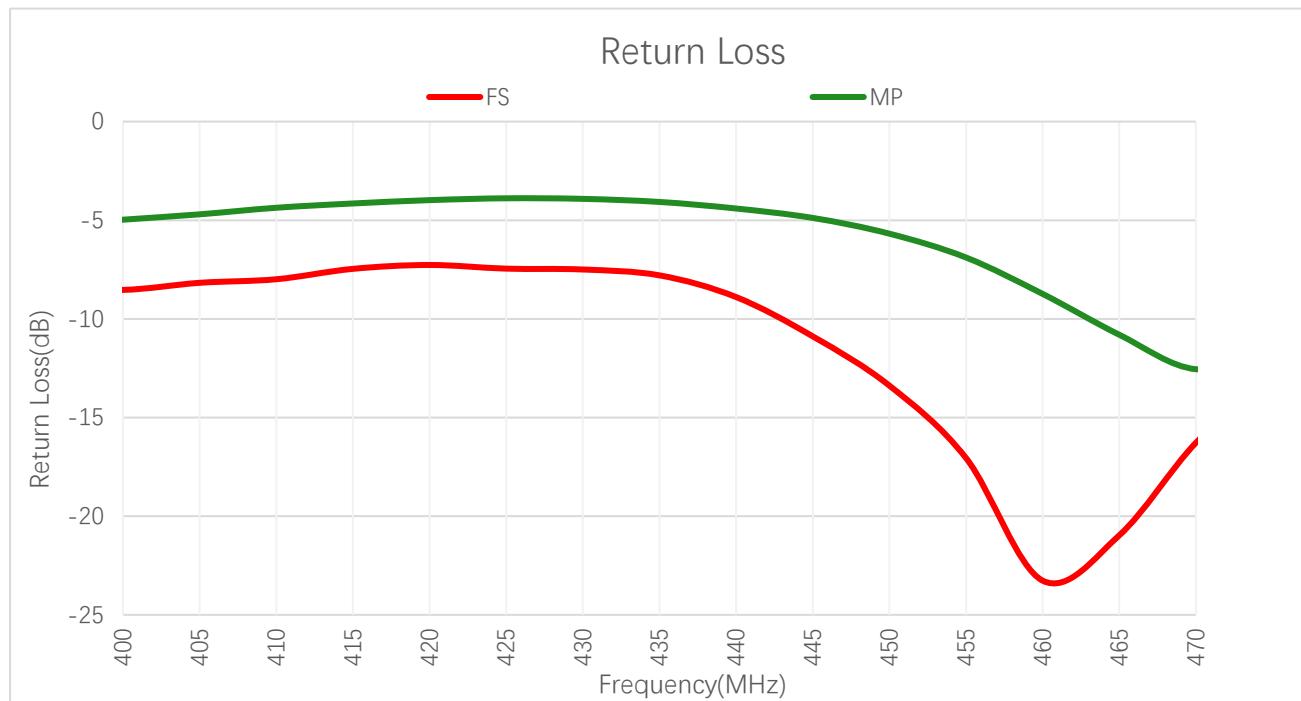
3.1.1. VSWR



VSWR

Frequency (MHz)	410	420	430	433	440	450	460	470
FS	2.3	2.5	2.5	2.4	2.1	1.5	1.1	1.4
MP	4.1	4.4	4.5	4.3	4.0	3.2	2.2	1.6

3.1.2. Return Loss



Return Loss (dB)

Frequency (MHz)	410	420	430	433	440	450	460	470
FS	-8.0	-7.3	-7.5	-7.8	-8.9	-13.4	-23.3	-16.3
MP	-4.4	-4.0	-3.9	-4.1	-4.4	-5.7	-8.7	-12.6

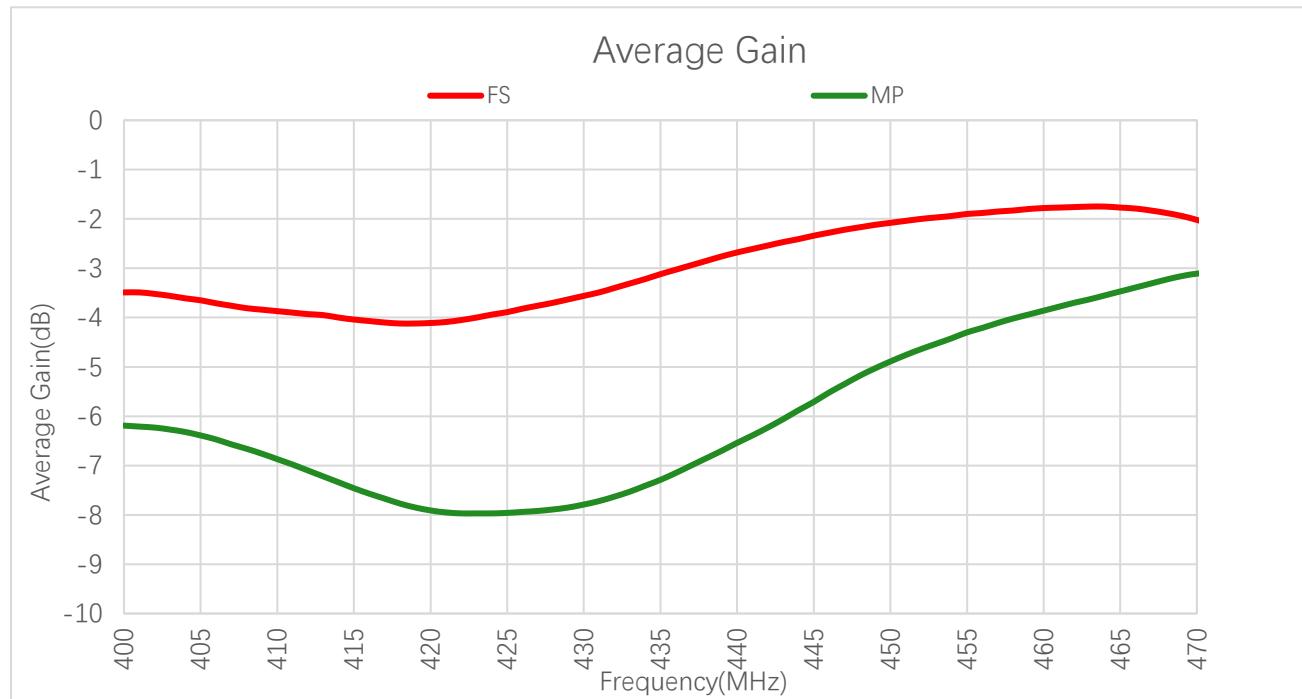
3.2. Radiation Performance Test

3.2.1. Efficiency



Efficiency (%)								
Frequency (MHz)	410	420	430	433	440	450	460	470
FS	41.0	38.8	44.0	46.6	53.9	61.9	66.3	62.8
MP	20.6	16.2	16.6	17.7	22.2	32.4	41.1	48.9

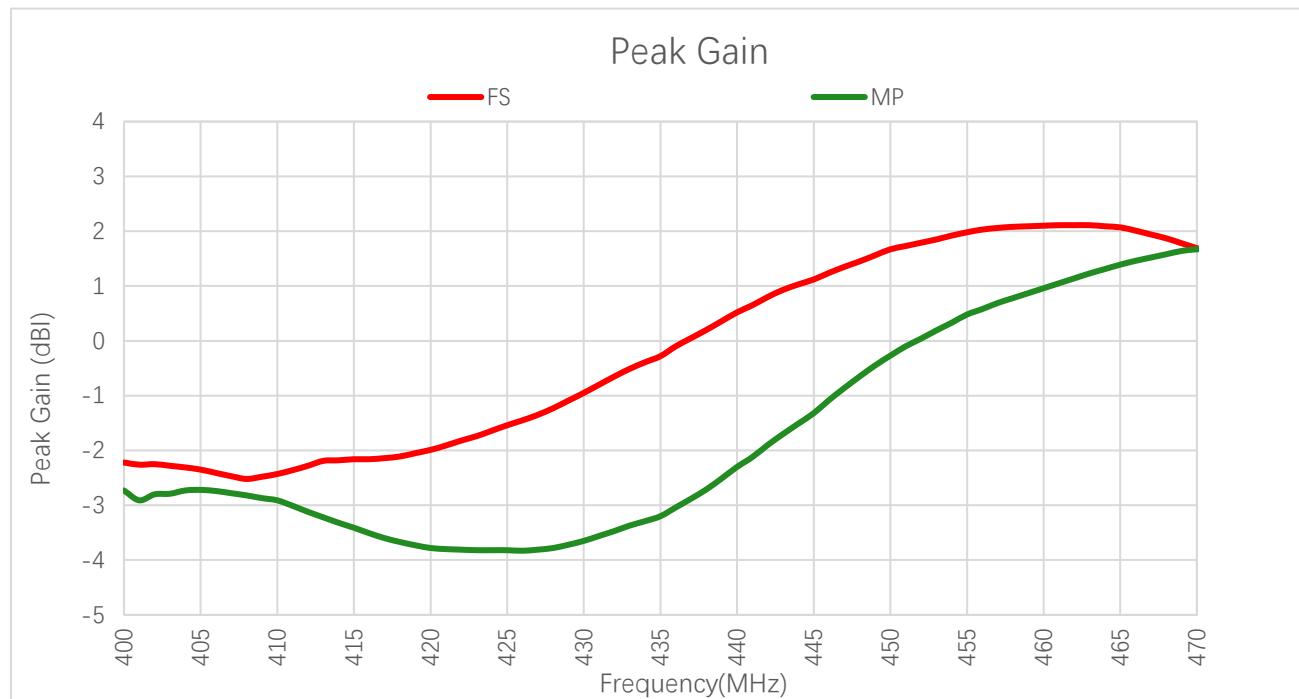
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	410	420	430	433	440	450	460	470
FS	-3.9	-4.1	-3.6	-3.3	-2.7	-2.1	-1.8	-2.0
MP	-6.9	-7.9	-7.8	-7.5	-6.5	-4.9	-3.9	-3.1

3.2.3. Peak Gain



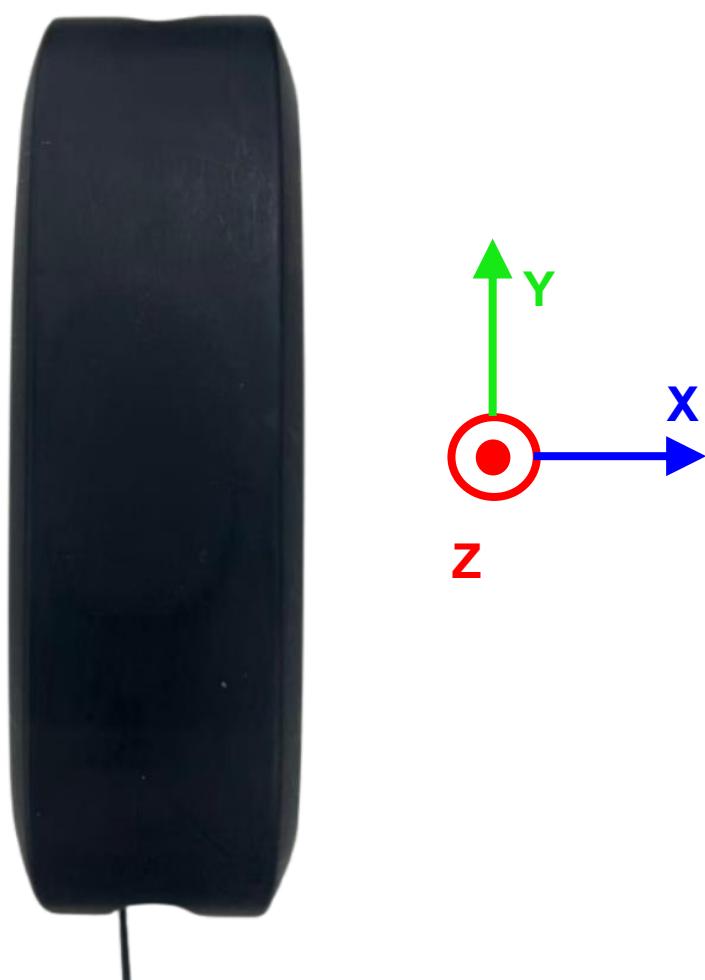
Peak Gain (dBi)

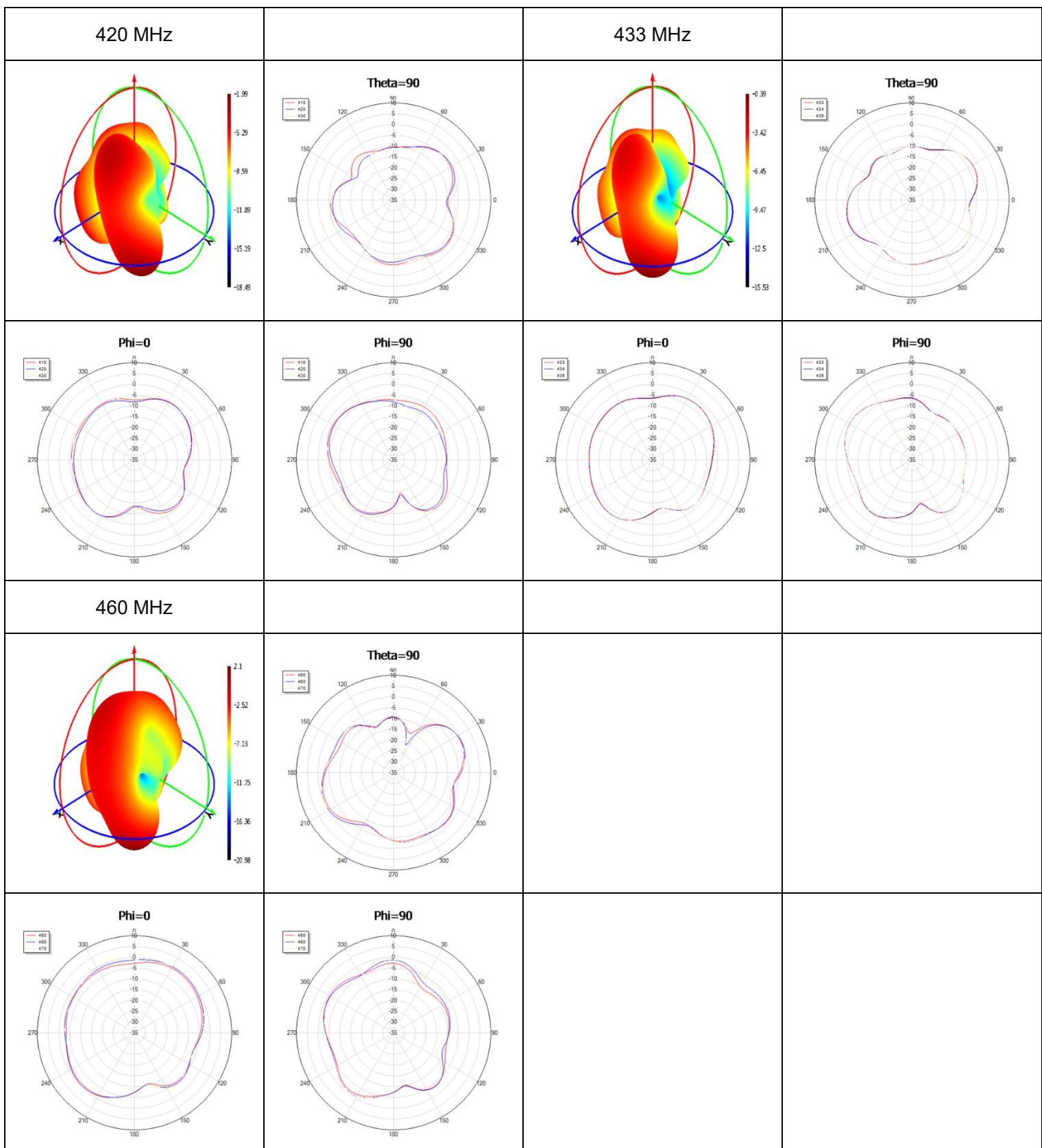
Frequency (MHz)	410	420	430	433	440	450	460	470
FS	-2.4	-2.0	-1.0	-0.5	0.5	1.7	2.1	1.7
MP	-2.9	-3.8	-3.7	-3.4	-2.3	-0.3	1.0	1.7

3.2.4. 3D & 2D Radiation Pattern

3.2.4.1. Test Condition: In Free Space

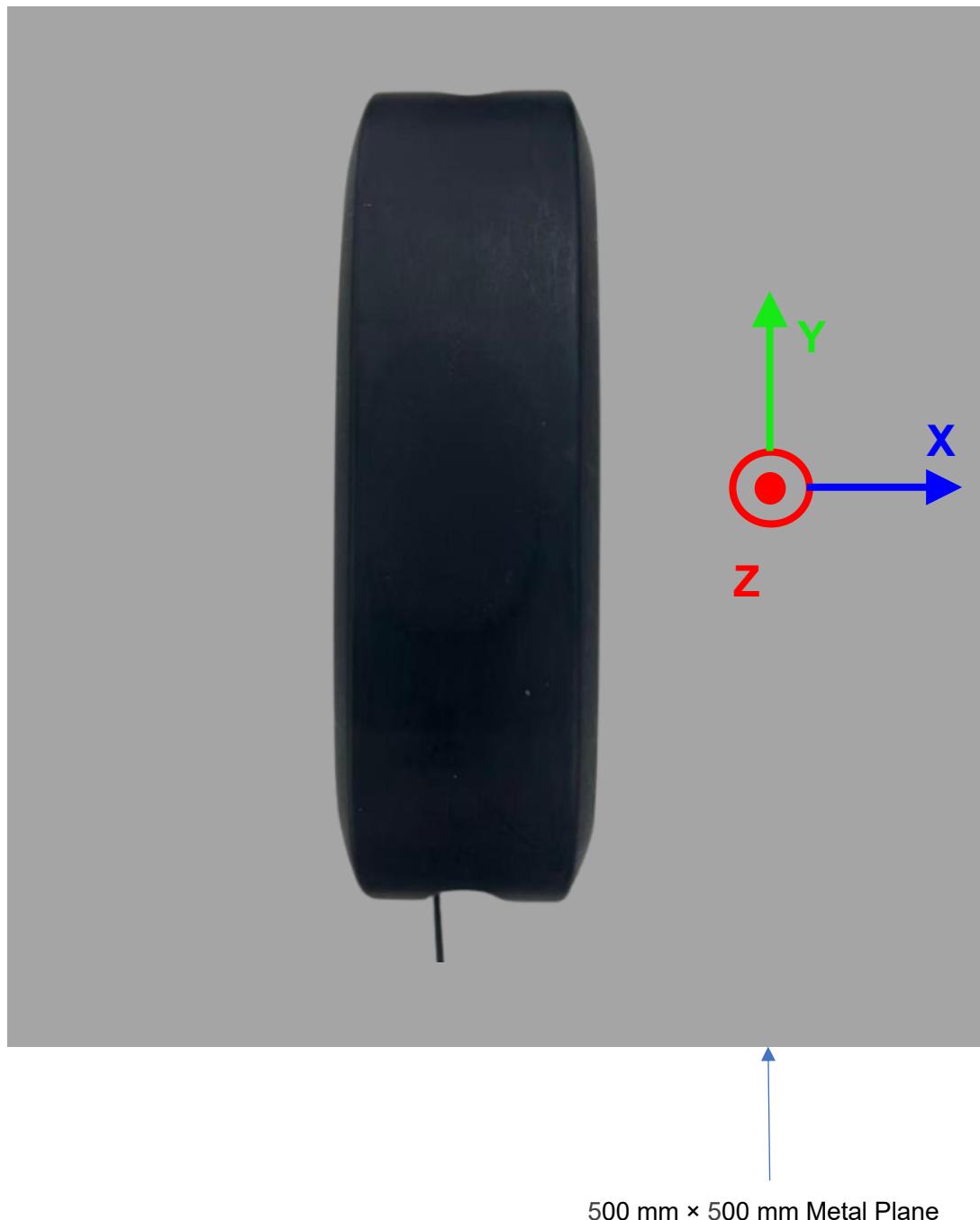
- Test Chamber: HF-S-1

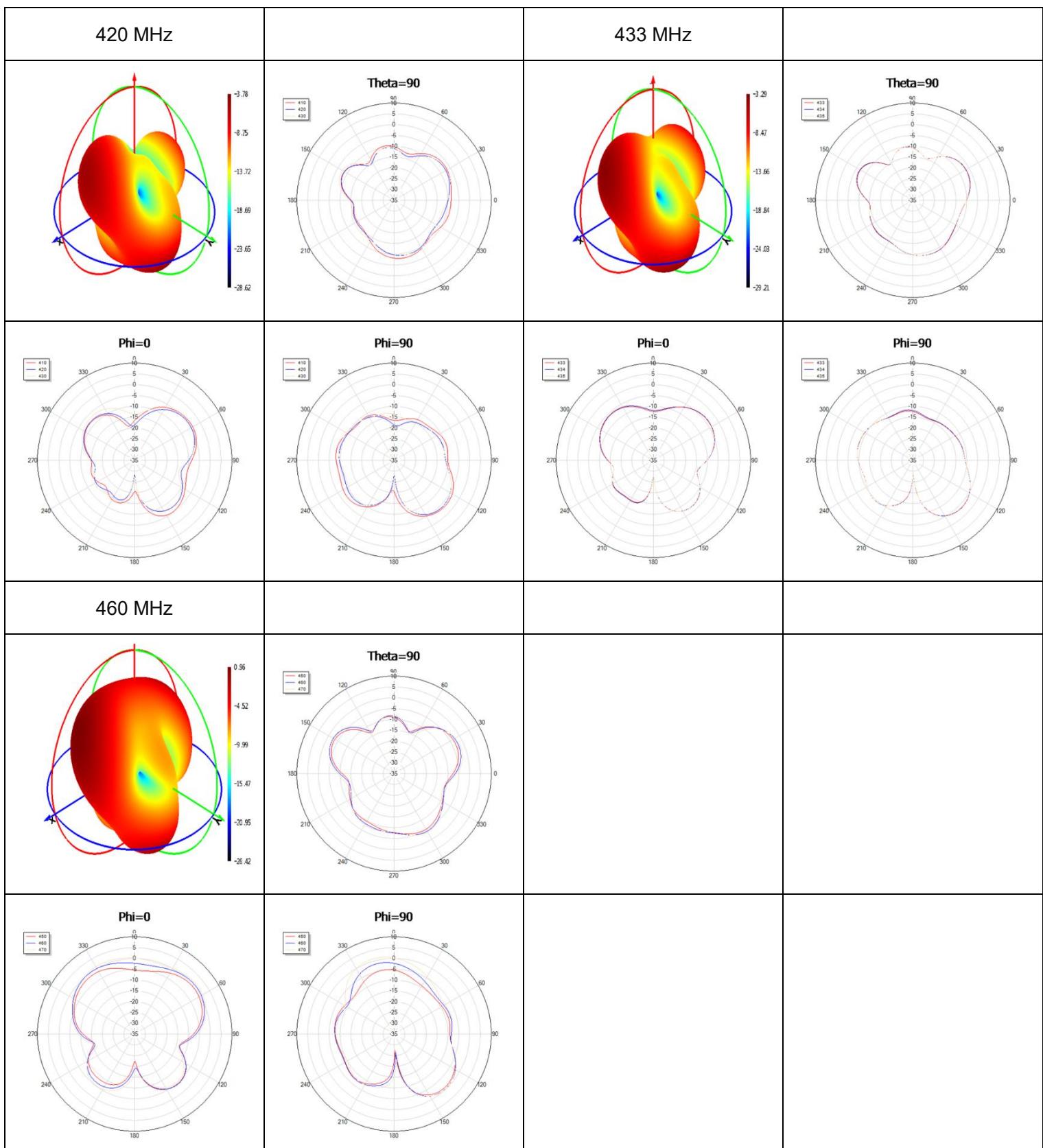




3.2.4.2. Test Condition: On 500 mm × 500 mm Metal Plane

- Test Chamber: HF-S-1





Contact Us

At Quectel, our aim is to provide timely and comprehensive services to our customers. If you require any assistance, please contact our headquarters:

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Revision History

Version	Date	Author	Note
-	2025-09-26	Christopher Yao/ Toby Wang/ Zeline Liang	Creation of the document
1.0	2025-09-26	Christopher Yao/ Toby Wang/ Zeline Liang	First official release



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