



# **Antenna Datasheet**

Product OC: YBL01AFDA

Version: 1.0

**Date:** 2023-05-25 **Status:** Preliminary

Product Name: WIFI FPC Antenna

**Key Features:** 

Frequency Band: 2400-2500 MHz, 5150-5850 MHz

Dimensions: 25 \* 8.21 mm Efficiency: Up to 54.17%

RoHS and REACH Compliant

# **Overview**

Quectel Wi-Fi antenna covers 2.4 GHz and 5 GHz dual-bands, fully satisfying customers' requirements for Wi-Fi 5 and Wi-Fi 6. There are various antenna types, including built-in FPC/PCB antenna, ceramic patch antenna, and other external antennas of different shapes or sizes. The antenna performance meets the customers' demands for efficiency, gain, and radiation and ensures the superior experience of the customers' products in use.



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# 1 Specification

**Test Condition: Free Space** 

# 1.1. Electrical

Electrical							
Frequency Range	2400-2500 MHz, 5150-5850 MHz						
Impedance	50 Ω						
Polarization	Linear						
Radiation Pattern	Omni-directional						

Band	Band	WIFI 2G	WIFI 5G	WIFI 7G			
Specification	Freq. (MHz)	2400 - 2500	5150 - 5850	5925 - 7125			
Max. VSWR		2.2	4.3	-			
Max. Return Loss (dB)		-8.7	-4.1	-			
AVG Eff. (%)		52.0	-				
AVG AVG Gain (dB)		-2.8	-5.6	-			
Max. Peak Gain (dBi)		2.3 -0.4 -					
VSWR		≤ 4.3					
Return Loss		≤ -4.1 dB					
Peak Gain		≤ 2.3 dBi					

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# 1.2. Mechanical, Environmental & Storage

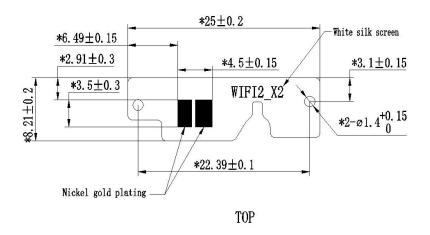
Mechanical							
Antenna Dimensions	25 * 8.21 mm						
Material & Color	FPC & Black						
Mounting Type	Adhesive						
Weight	Тур. 0.05 g						
Environmental							
Operation Temperature	-40 °C to +85 °C						
RoHS & REACH Compliant	Yes						

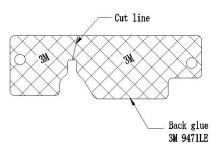
Storage	
Storage Temperature	18°C -27°C
Humidity	30%-80%RH
Storage Place	Away from corrosive gas and direct sunlight
Packaging	Antennas should be stored in unopened sealed manufacturer's plastic packaging

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# 2 Drawing





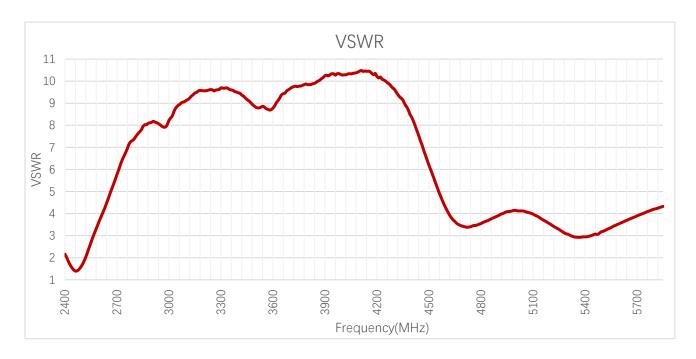
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# 3 Detailed Performance

## 3.1. S-Parameter Test

#### 3.1.1. VSWR



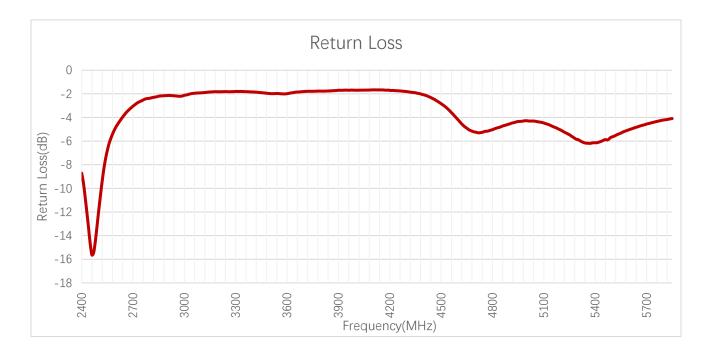
## **VSWR**

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
VSWR	2.2	1.5	1.7	3.7	3.2	4.3	-	-	-	-

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#### 3.1.2. Return Loss



#### Return Loss (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Return Loss (dB)	-8.7	-14.7	-11.8	-4.7	-5.6	-4.1	-	-	-	-

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## 3.2. OTA Test Data

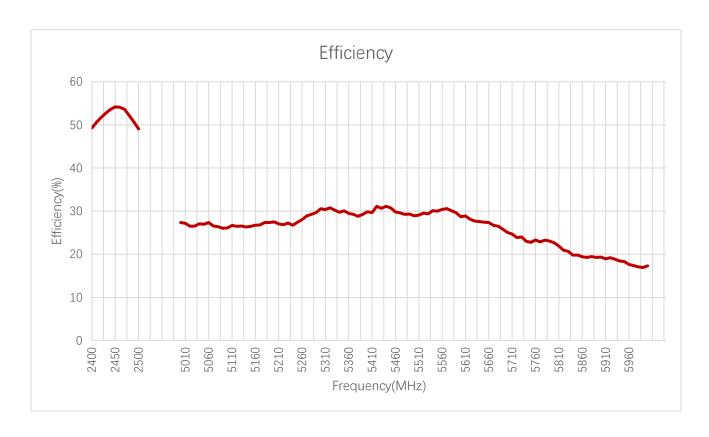
	Band	Channel	TRP (dBm)	Channel	TIS (dBm)	
		36	18.07	36	-70.55	
	WIFI-A	100	17.65	100	-73.78	
\A/IF1		161	16.1	161	-73.99	
WIFI		1	15.84	1	-84.36	
	WIFI-B	6	16.43	6	-84.88	
		11	17.49	11	-79.62	

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#### 3.3. Radiation Performance Test

# 3.3.1. Efficiency



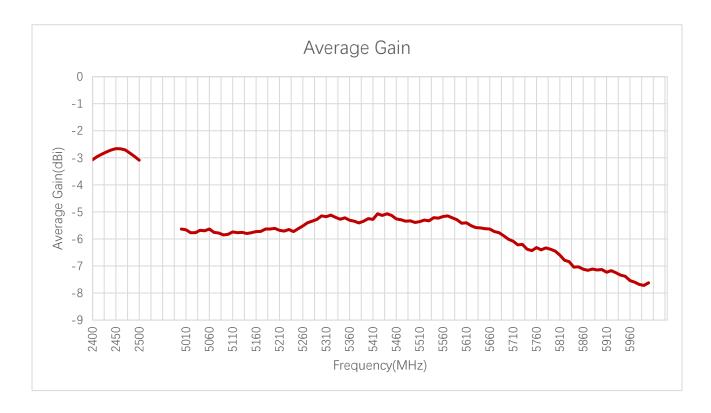
## Efficiency (%)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Efficiency (%)	49.3	54.2	49.1	26.5	28.9	19.8	-	_	_	-

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#### 3.3.2. Average Gain



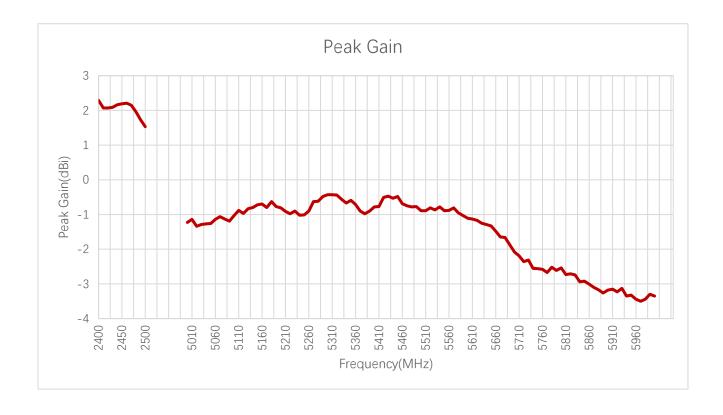
## Average Gain (dB)

Frequency (MHz)	2400	2450	2500	5150	5500	5850	5925	6325	6725	7125
Average Gain (dB)	-3.1	-2.7	-3.1	-5.8	-5.4	-7.0	-	-	-	-

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#### 3.3.3. Peak Gain



## Peak Gain (dBi)

Frequency (MHz)	2400	2480	2500	5150	5500	5850	5925	6325	6725	7125
Peak Gain (dBi)	2.3	2.3	1.5	-0.4	-0.9	-2.9	-	-	-	-

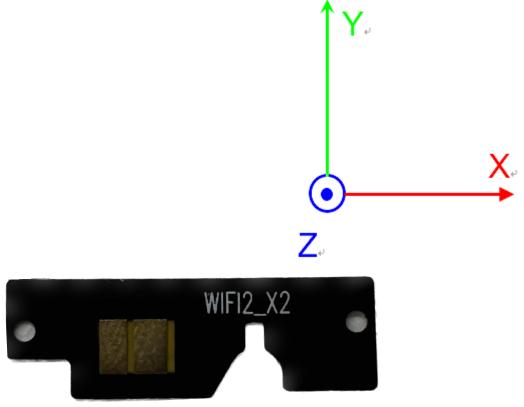
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#### 3.3.4. 3D & 2D Radiation Pattern

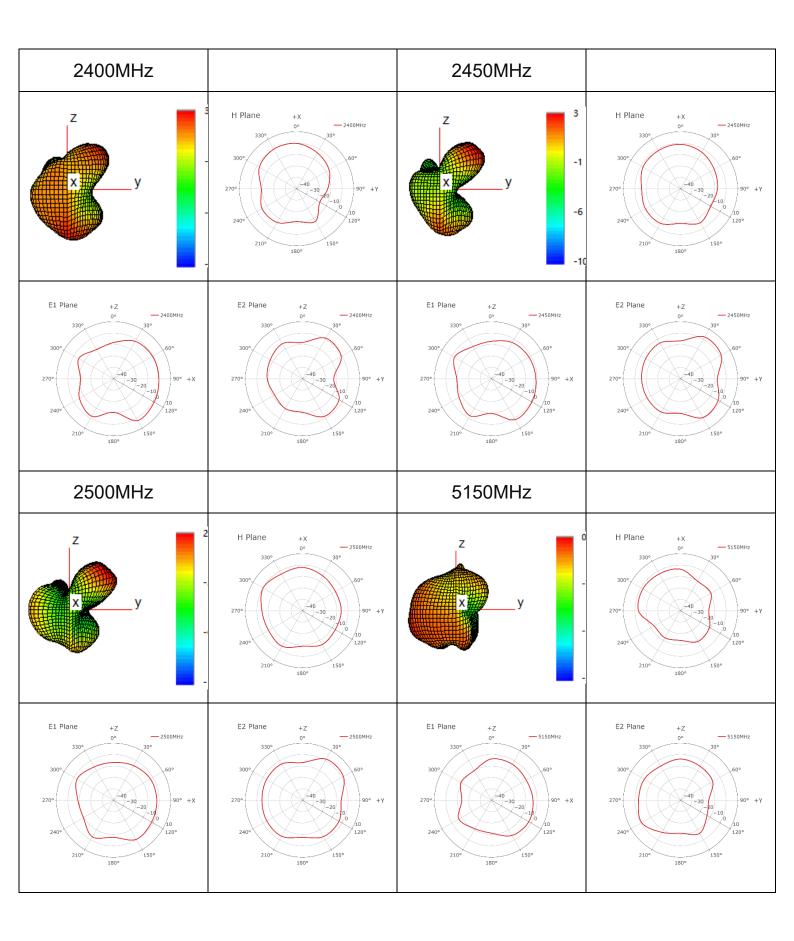
Test Condition: Free Space

Test Chamber: FS-G-1



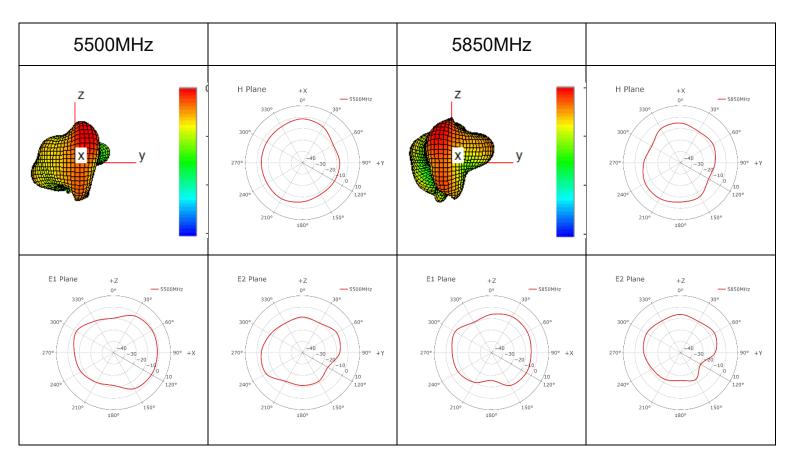
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# 4 Packaging

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# **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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#### Or our local offices. For more information, please visit:

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#### For technical support, or to report documentation errors, please visit:

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# **Revision History**

Version	Date	Author	Note
-	2023-05-25	Jim Xu Jason Long David Liu Bunny Zhang	Creation of the document
1.0	2023-05-25	Jim Xu Jason Long David Liu Bunny Zhang	First official release

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