Antenna Datasheet

Product OC: YFNF868F3AM
Version: 1.3
Date: 2024-10-22
Status: Released

Product Name: LoRa Adhesive Mount FPC PIFA Antenna
Key Features:
Frequency band: 868 MHz
Dimensions: 70 mm × 40 mm
Efficiency: Up to 70.44 %
RoHS & REACH Compliant

Overview

YFNF868F3AM is a LoRa FPC antenna measuring 70 mm × 40 mm. This LoRa antenna provides coverage from 863–870 MHz. The antenna has a 150 mm cable, terminated with IPEX MHF 1 connector, and is available with customized cable lengths and connectors. Ideal for applications where the antenna is required to be mounted inside, this adhesive mount omni-directional antenna, is easy to install thanks to its flexible material. It is compatible with Quectel's ISM Series modules. It has been tested with ABS board.

It allows constant and reliable transmission and reception due to its omni-directional gain across all frequency bands. YFNF868F3AM is designed as a PIFA antenna, which is to offer high efficiency in many different mounting scenarios. It is a perfect antenna product for customers that desire highest performance. This high-efficiency, high-gain omni-directional antenna is ideally suited for smart metering, remote monitoring, vehicle tracking and telematics, and many other IoT devices.

Typical applications include:

- Medical Devices
- Smart Monitoring
- Smart Home

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: Stick on ABS board

1.1. Electrical

Electrical	
Frequency Range	863–870 MHz
Impedance	50 Ω
Polarization	Linear
Radiation Pattern	Omni-directional

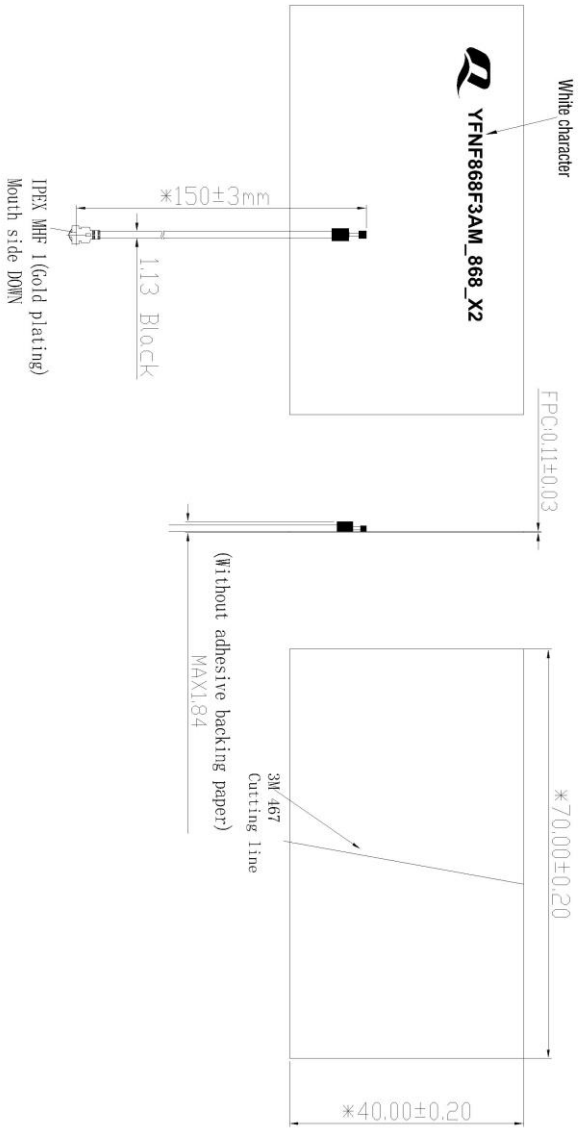
Band / Specification	470–510	863–870
Max. VSWR	-	1.5
Max. Return Loss (dB)	-	-13.5
AVG Eff. (%)	-	68.8
AVG AVG Gain (dB)	-	-1.6
Max. Peak Gain (dBi)	-	1.3

Note:
ABS: Acrylonitrile Butadiene Styrene.

1.2. Mechanical & Environmental

Mechanical	
Antenna Dimensions	70 mm × 40 mm
Material & Color	FPC & Black
Cable Type & Color & Length	Φ 1.13 & Black & 150 mm
Connector Type	IPEX MHF 1
Mounting Type	Adhesive
Weight	Typ. 1.43 g
Environmental	
Operation Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
RoHS & REACH Compliant	Yes

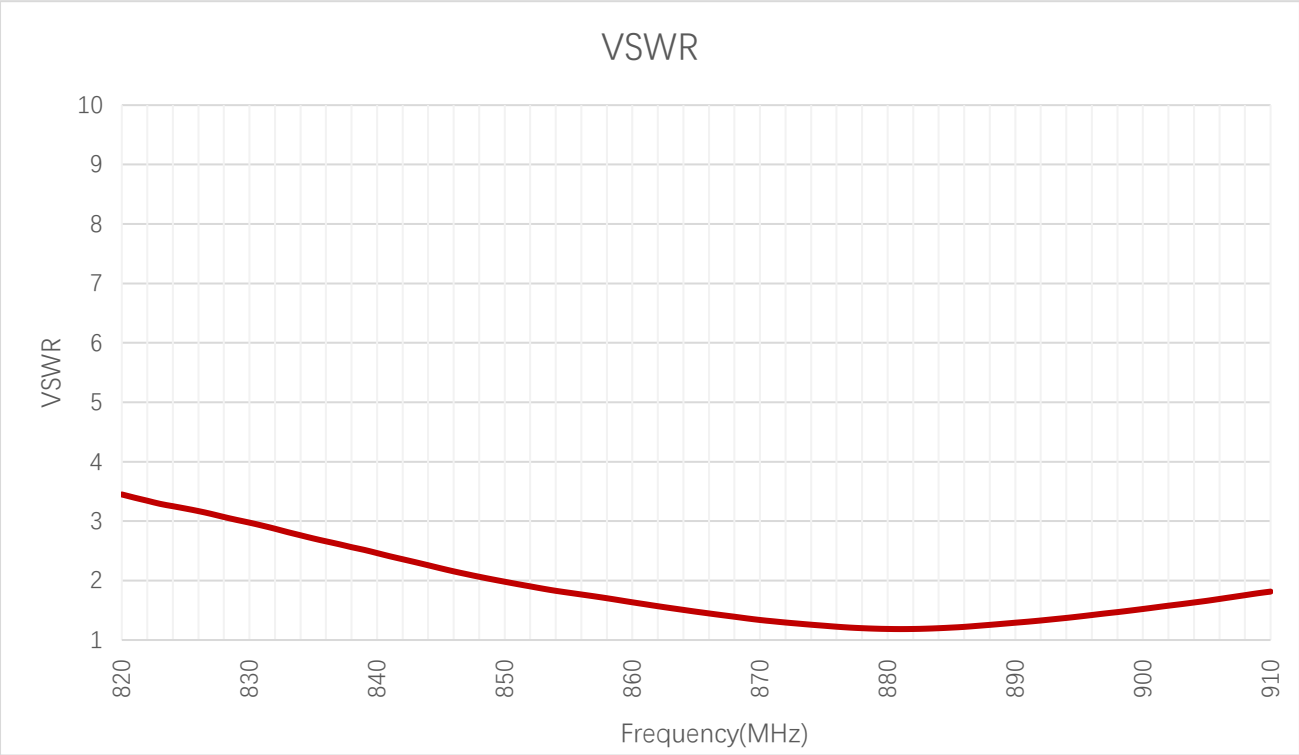
2 Drawing


YFNF868F3AM_868_X2
White character
*150±3mm
IPEX MHF I(Gold plating)
Mouth side DOWN
1.13 Black
FPC:0.11±0.03
(Without adhesive backing paper)
MAX1.84
3M 467
Cutting line
*70.00±0.20
*40.00±0.20

3 Detailed Performance

3.1. S-Parameter Test

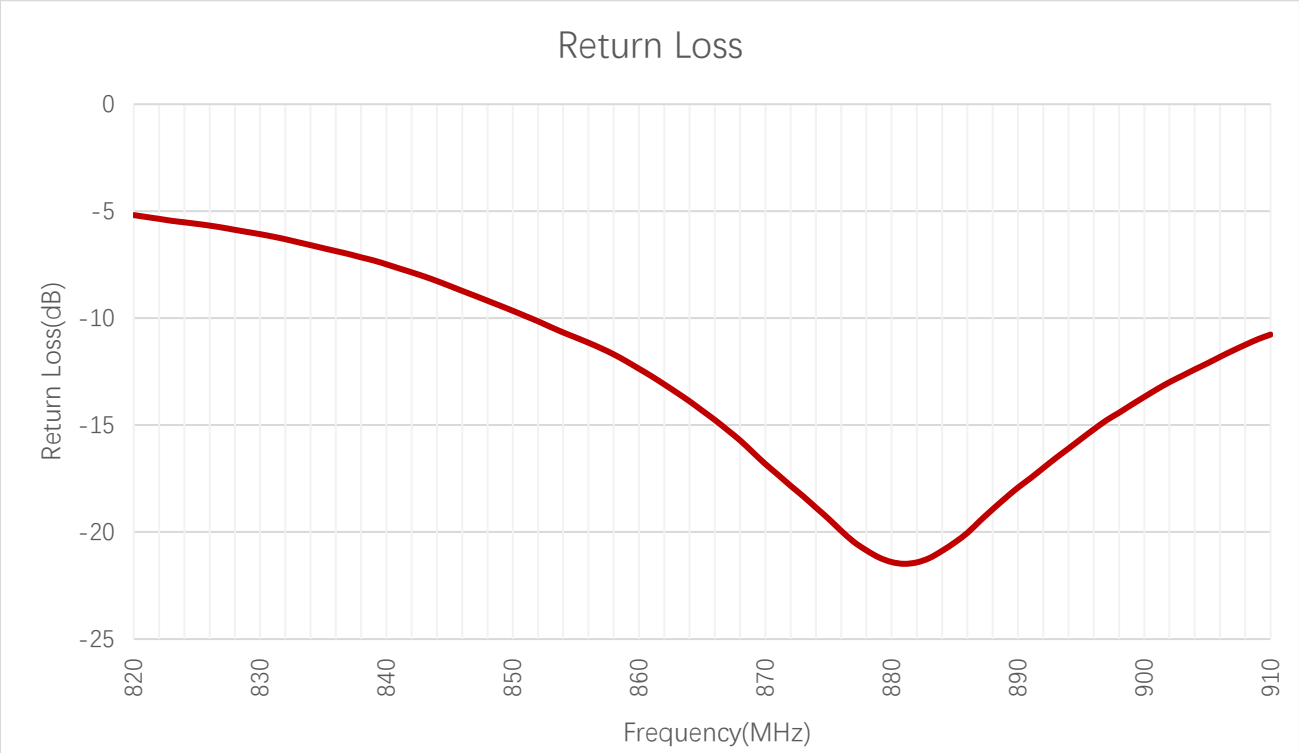
3.1.1. VSWR



VSWR

Frequency (MHz)	433	470	490	510	860	863	868	870	915	930
VSWR	-	-	-	-	-	1.5	1.4	1.3	-	-

3.1.2. Return Loss

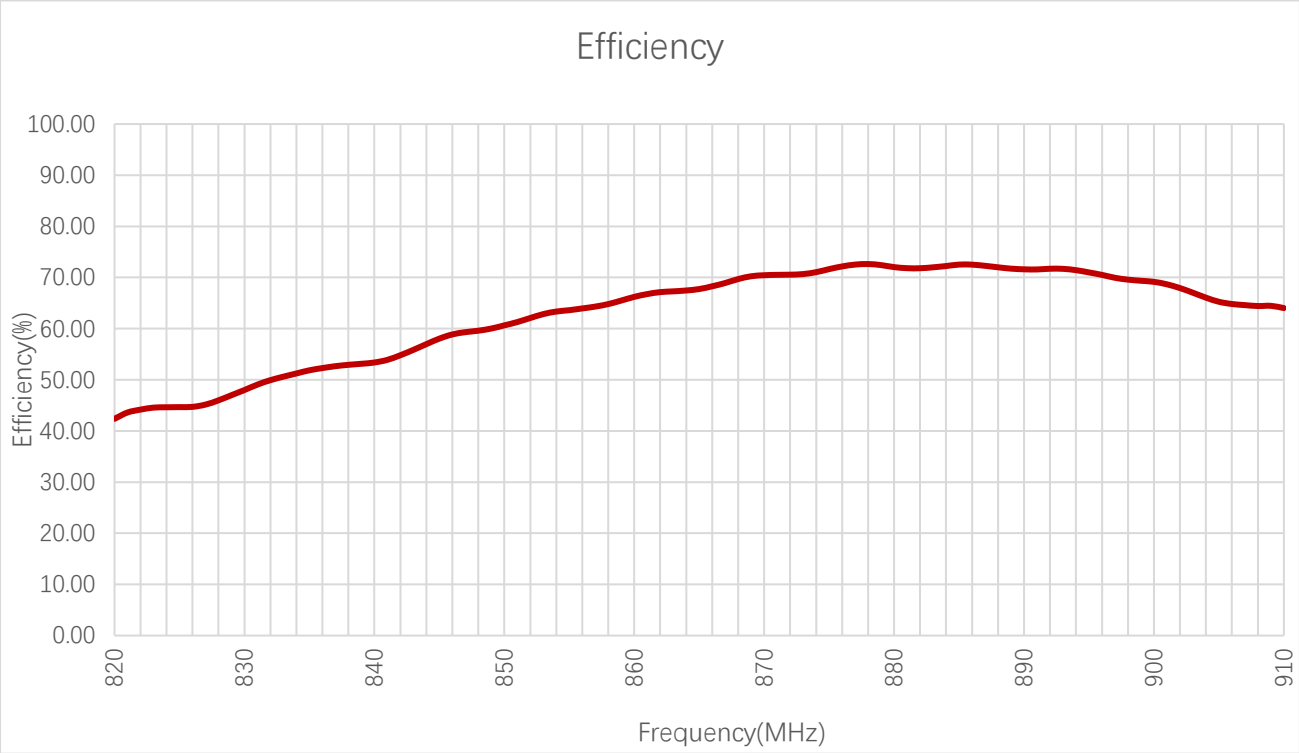


Return Loss (dB)

Frequency (MHz)	433	470	490	510	860	863	868	870	915	930
Return Loss (dB)	-	-	-	-	-	-13.5	-15.7	-16.8	-	-

3.2. Radiation Performance Test

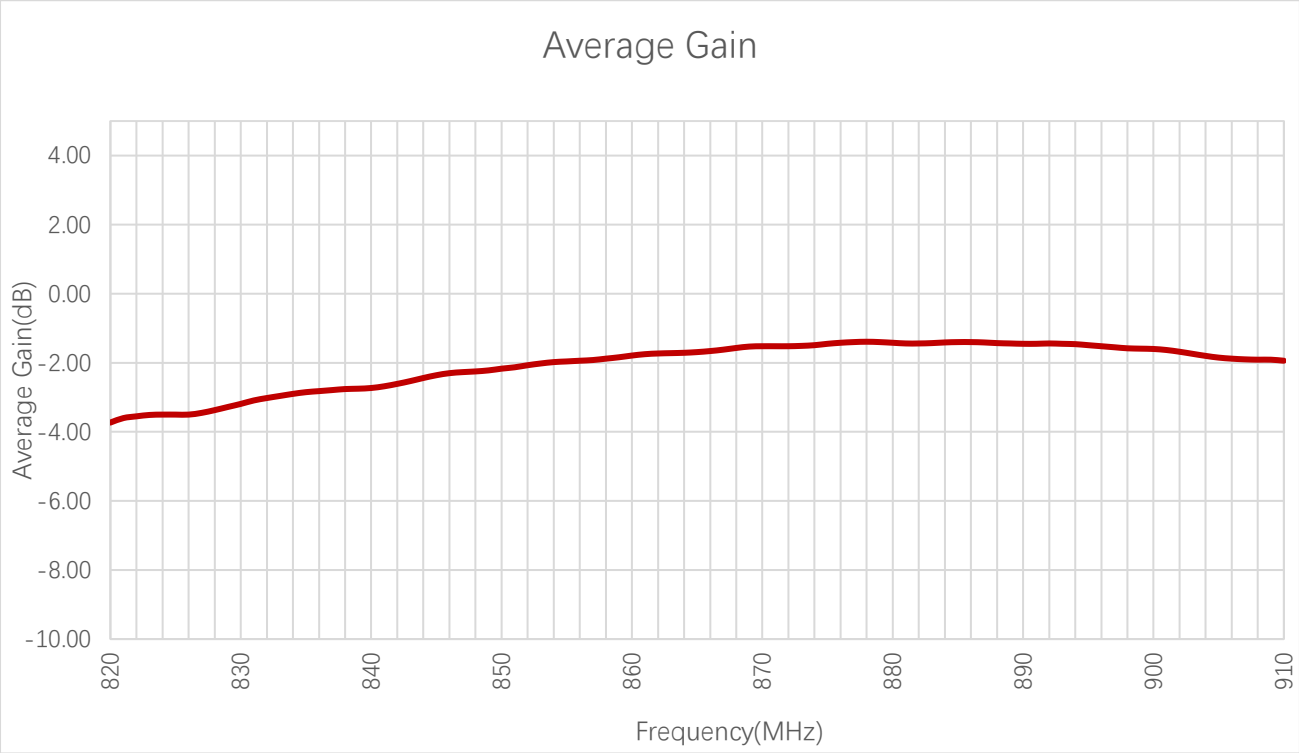
3.2.1. Efficiency



Efficiency (%)

Frequency (MHz)	433	470	490	510	860	863	868	870	915	930
Efficiency (%)	-	-	-	-	-	67.3	69.7	70.4	-	-

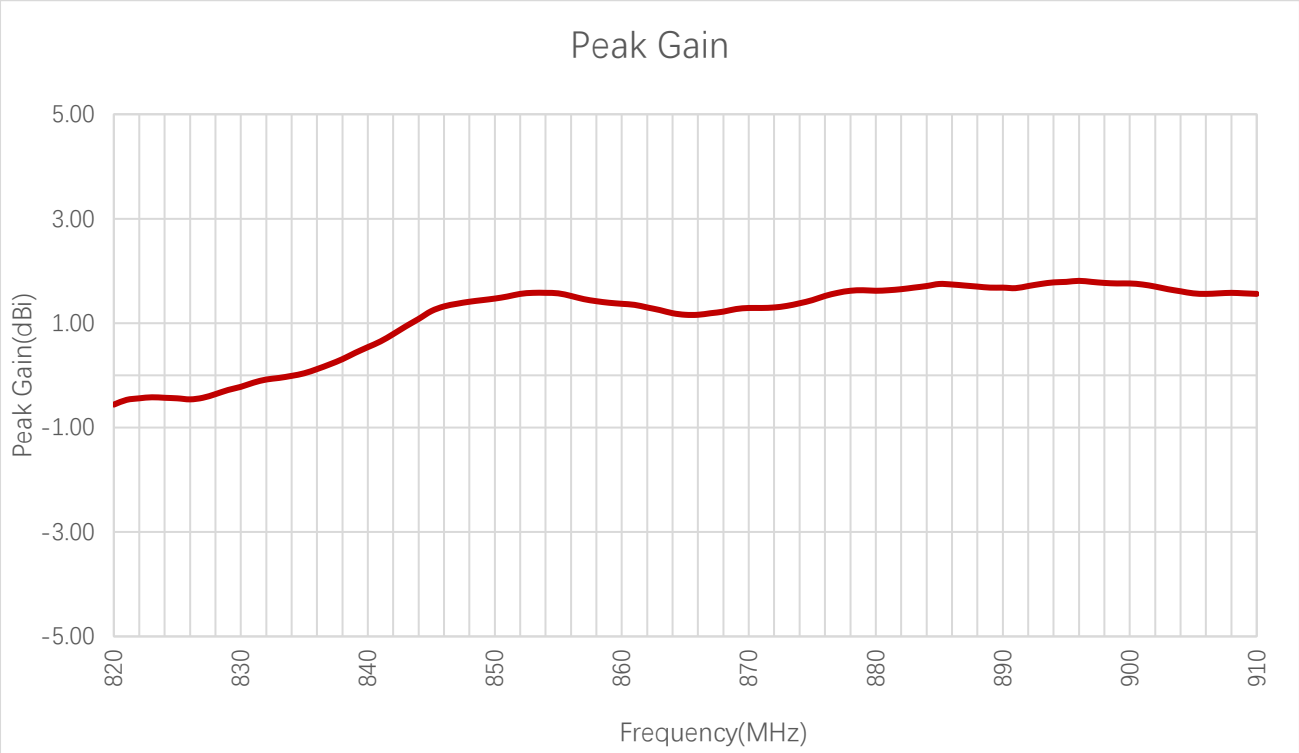
3.2.2. Average Gain



Average Gain (dB)

Frequency (MHz)	433	470	490	510	860	863	868	870	915	930
Peak Gain (dBi)	-	-	-	-	-	-1.7	-1.6	-1.5	-	-

3.2.3. Peak Gain

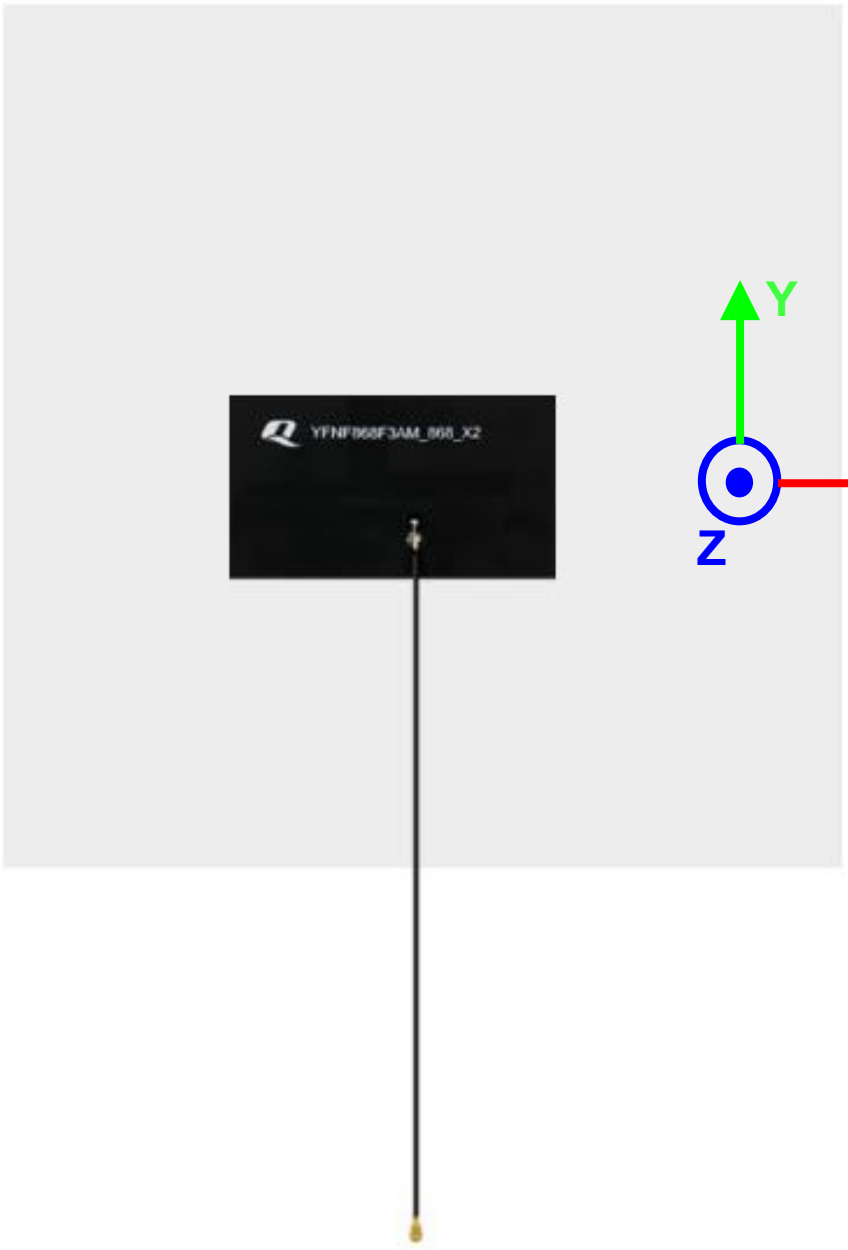


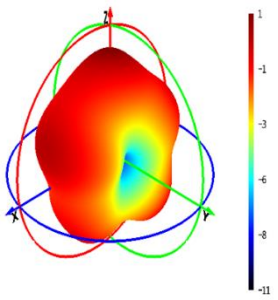
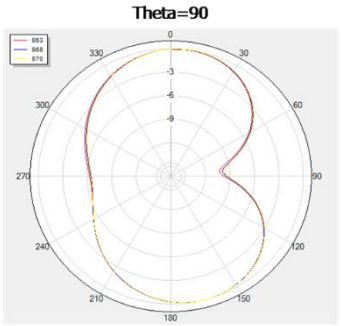
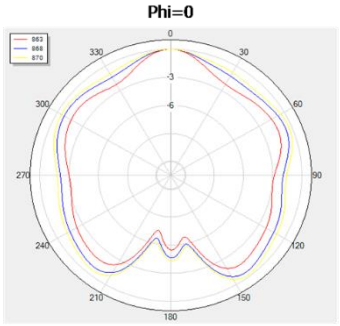
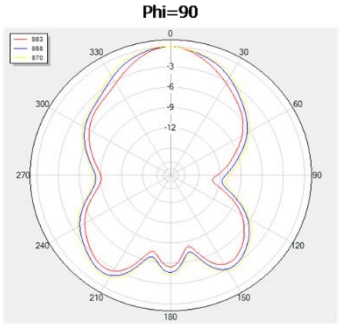
Peak Gain (dBi)

Frequency (MHz)	433	470	490	510	860	863	868	870	915	930
Peak Gain (dBi)	-	-	-	-	-	1.3	1.2	1.3	-	-

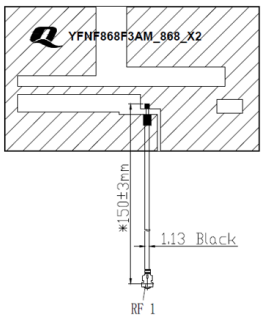
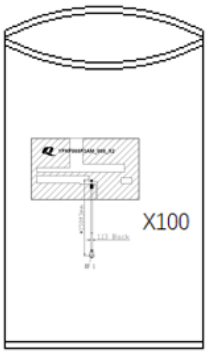
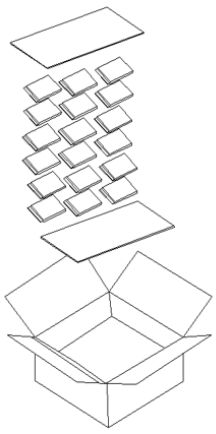
3.2.4. 3D & 2D Radiation Pattern

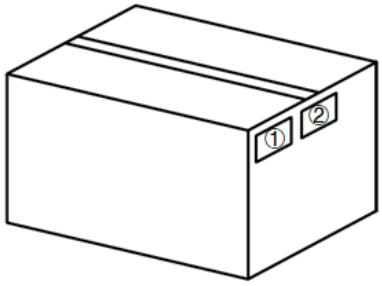
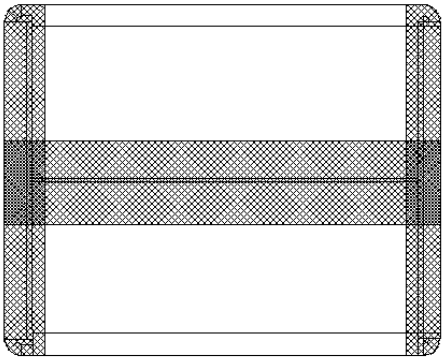
- Test Status: Assembled on Acrylonitrile Butadiene Styrene
- Test Chamber: HF-S-1



868 MHz	
	
	

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1		Product drawing
2		100 pcs antenna products in a PE bag. (100 PCS / PE Bag)
3		(40 PE Bags / Carton Box) (4000 PCS Antennas / Carton Box) Estimated quantity Products that cannot fill the entire carton box are packed in a suitable size carton box. Carton Size: L × W × H = 300 × 250 × 200 mm

4		**Position for Attaching Labels** ① Carton Label ② Quality Label
5		**Sealing Cartons** "工" type sealing cartons
Note	The initial packaging method described above is for reference only, and the final actual packaging method shall be subject to the actual shipping packaging.	

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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Tel: +86 21 5108 6236
Email: info@quectel.com

Or our local offices. For more information, please visit:
http://www.quectel.com/support/sales.htm.

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Revision History

Version	Date	Author	Note
-	2024-03-25	Kane LIU/ Joye WANG/ David LIU/ Aria CHU	Creation of the document
1.0	2024-03-25	Kane LIU/ Joye WANG/ David LIU/ Aria CHU	First official release
1.1	2024-06-07	Joye WANG	Updated the drawing (Chapter 2).
1.2	2024-08-12	Joye WANG	1. Updated the antenna connector type (Chapter 1.2). 2. Updated the drawing (Chapter 2).
1.3	2024-10-22	Rainey LIAO	Updated the Overview.

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