

Antenna

YCIS002AA Datasheet

Antenna Services

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Quectel Wireless Solutions Co., Ltd.

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

Tel: +86 21 5108 6236

Email: info@quectel.com

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

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About the Document

Revision History

Version	Date	Author	Note
-	2022-05-27	Junsen LI/ Joye WANG	Creation of the document
1.0	2022-05-27	Junsen LI/ Joye WANG	First official release
1.1	2022-09-20	Junsen LI	Added Chapter 6.

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1 Product Description

The antenna is designed for superior performance, and can be widely used for wireless applications.

We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

2 Product Features

- ISM 868 MHz
- High efficiency
- AEC-Q200 compliant
- Low profile, compact size
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	863–870 MHz
Input Impedence	50 Ω
VSWR	≤ 2.0
Gain	≤ 0.5 dBi
Polarization Type	Linear

Mechanical Specifications

Antenna Size (mm)	10 × 3.2 × 0.5
Materia	Ceramic
Cable Type	NA
Connector	NA
Antenna Color	Green
Weight	Typ. 0.052 g
Working Temperature	-40 °C to +85 °C
Mounting Type	SMD

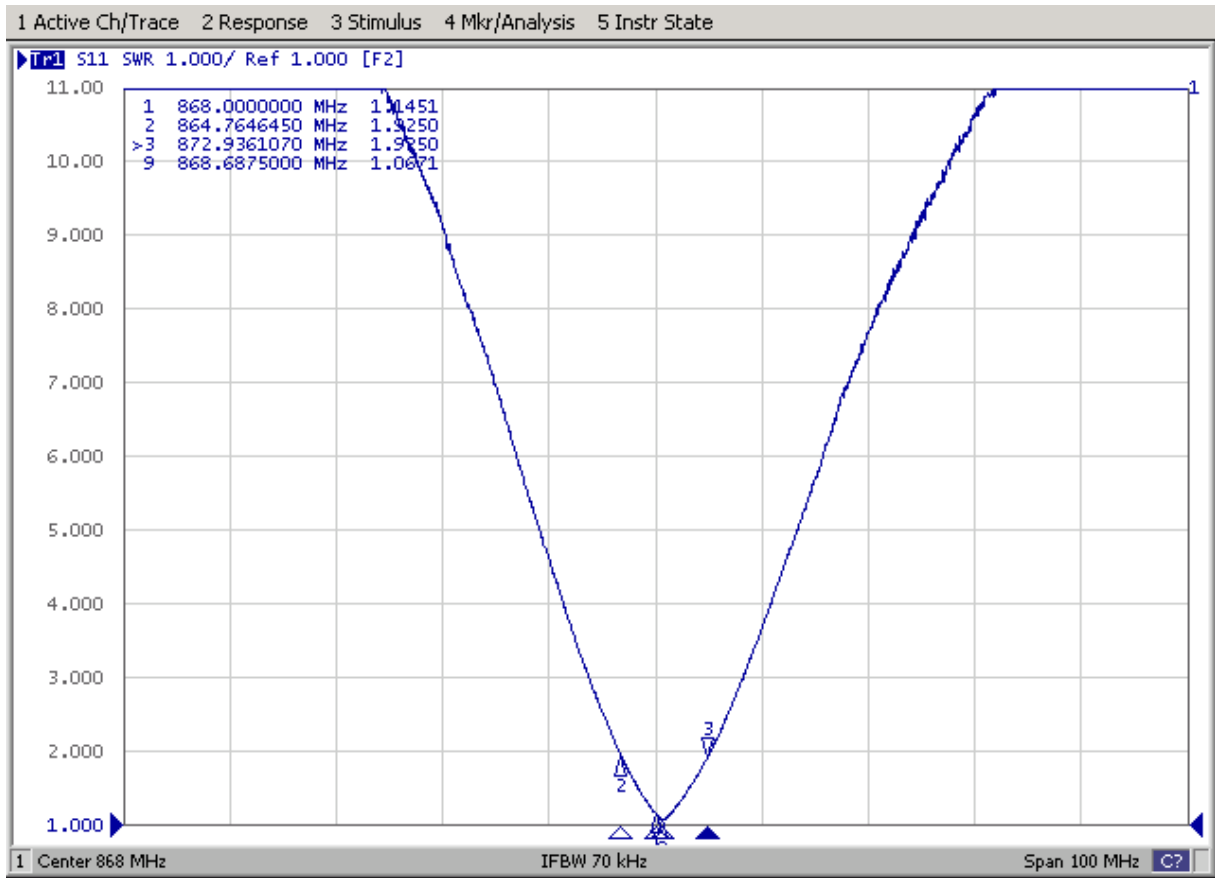
4 Overall Performance

4.1. Test Environment

- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz

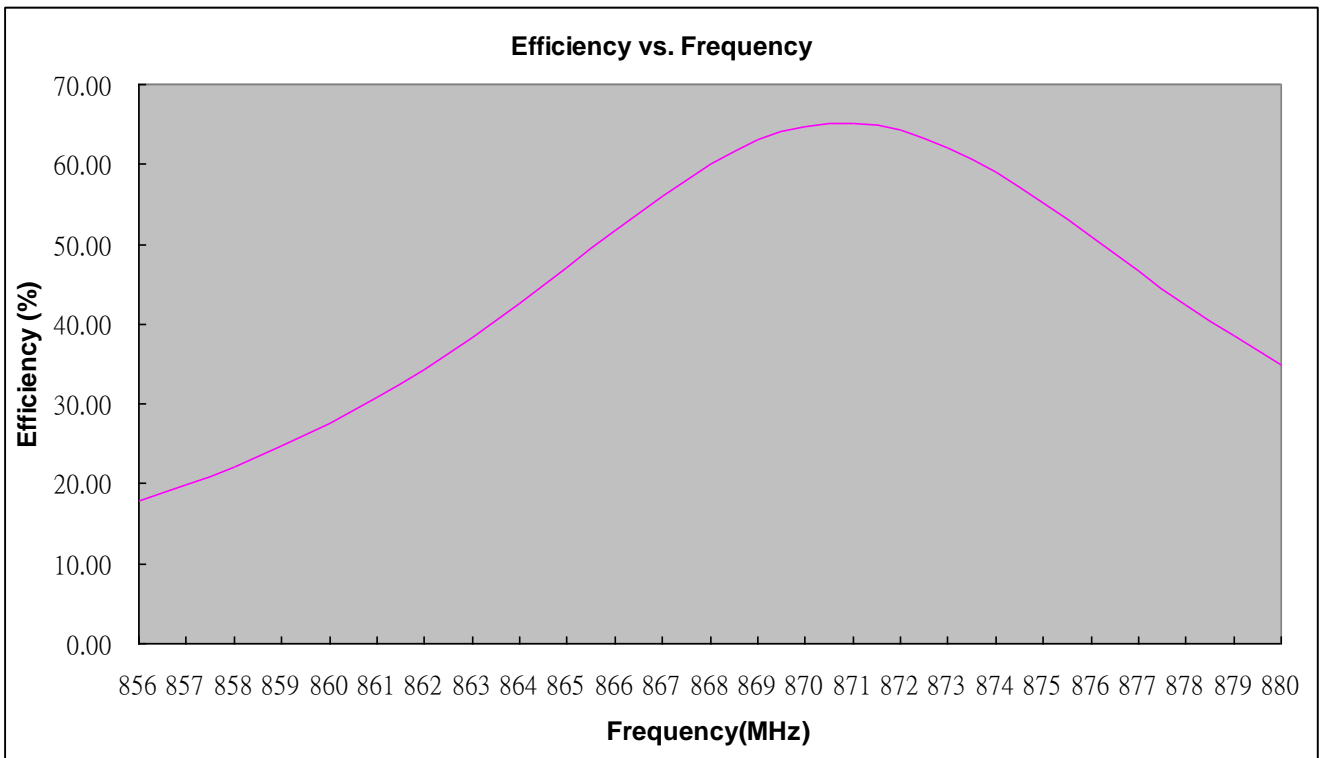


4.2. VSWR



Frequency (MHz)	868
VSWR	1.14

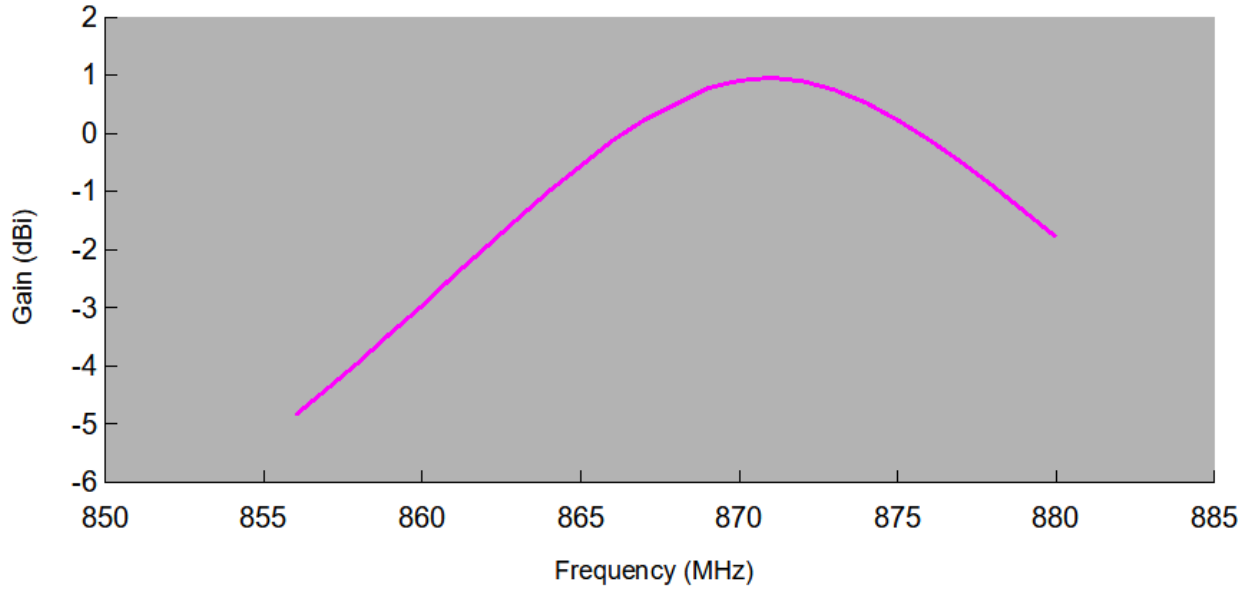
4.3. Efficiency



Frequency (MHz)	856	857	858	859	860	861	862	863	864	865
Efficiency (%)	17.95	19.92	22.19	24.73	27.61	30.81	34.35	38.28	42.59	47.04
Frequency (MHz)	866	867	869	870	871	872	873	874	875	876
Efficiency (%)	51.66	56.08	63.04	64.64	65.20	64.23	62.08	58.99	55.19	51.00
Frequency (MHz)	877		878		879		880			
Efficiency (%)	46.68		42.47		38.55		34.93			

4.4. Gain

Gain vs. Frequency



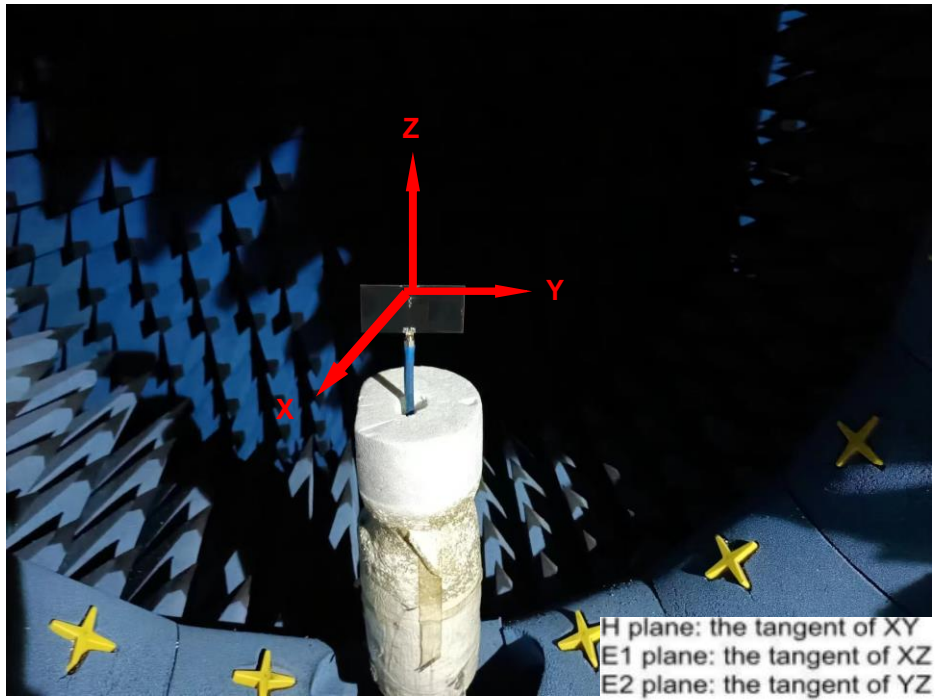
Frequency (MHz)	856	857	858	859	860	861	862	863	864	865
Gain (dBi)	-4.84	-4.39	-3.93	-3.43	-2.96	-2.44	-1.96	-1.47	-0.99	-0.56

Frequency (MHz)	866	867	869	870	871	872	873	874	875	876
Gain (dBi)	-0.12	0.23	0.78	0.91	0.96	0.90	0.75	0.53	0.23	-0.11

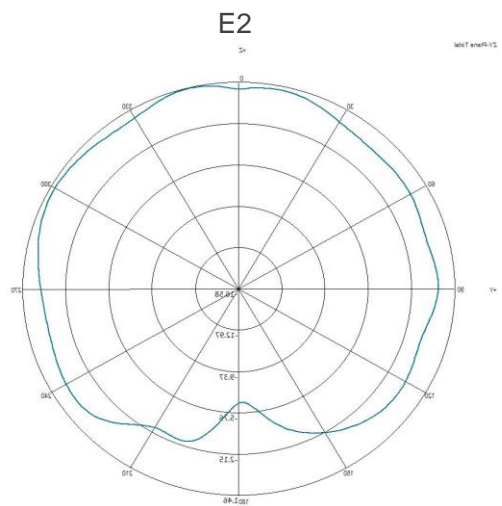
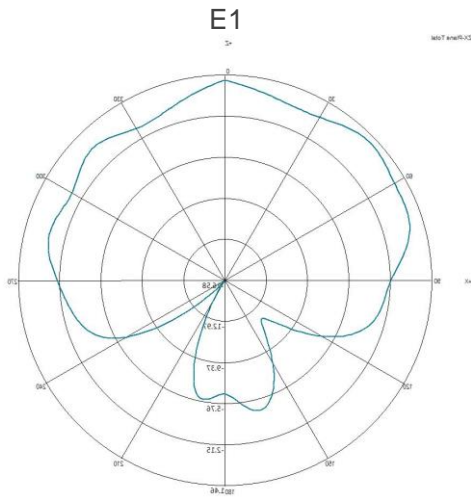
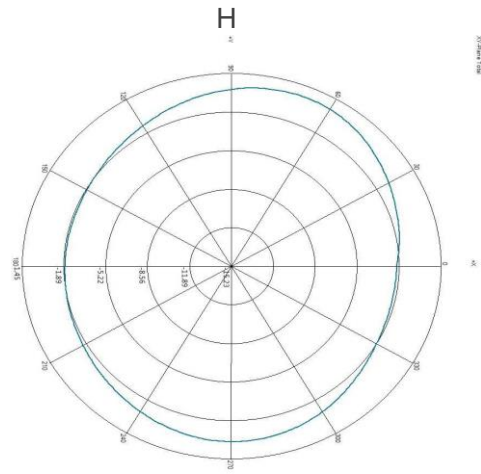
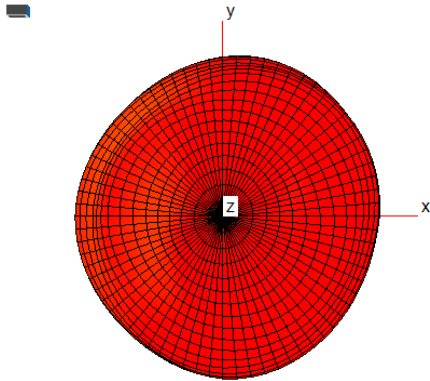
Frequency (MHz)	877	878	879	880
Gain (dBi)	-0.49	-0.90	-1.34	-1.78

4.5. Radiation Pattern

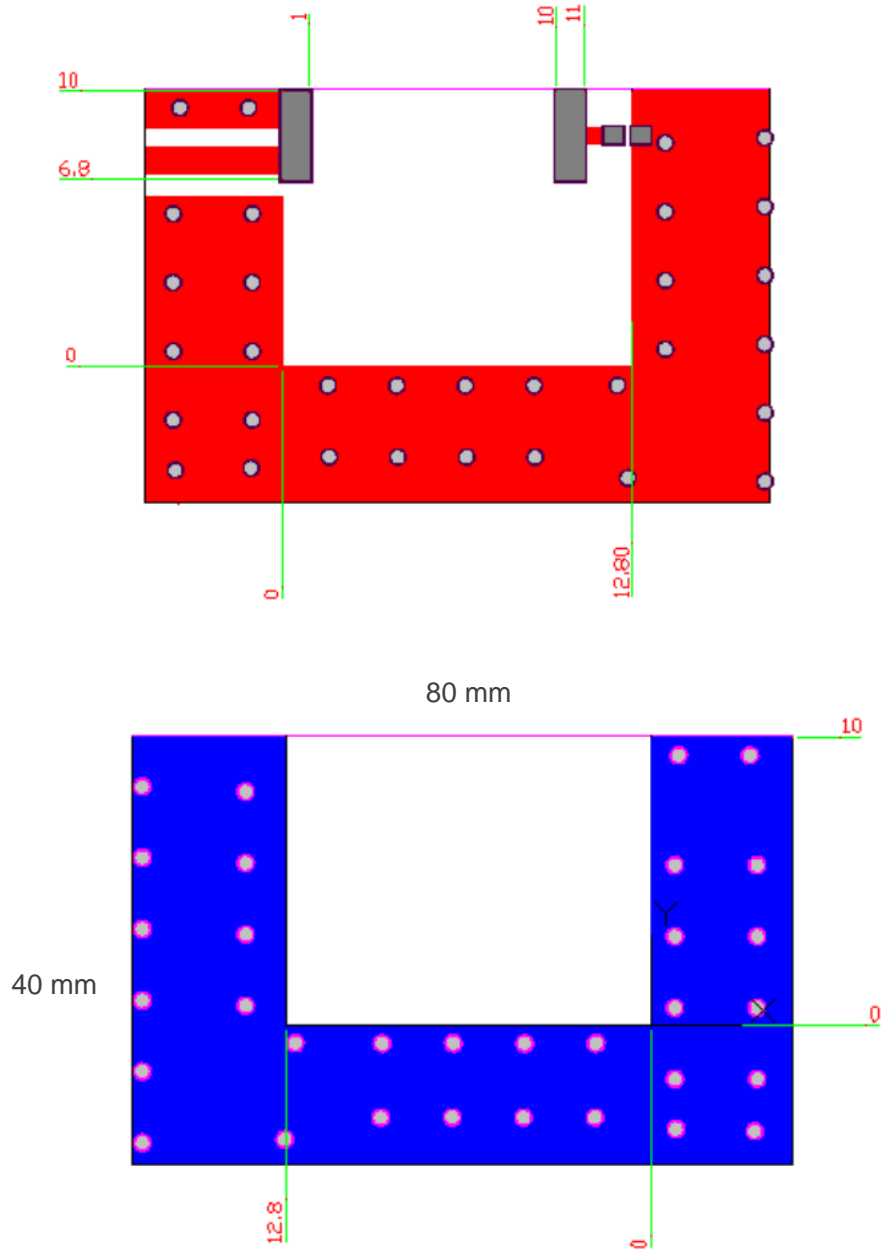
- Test condition: with ground plane (80 mm × 40 mm).



● 868 MHz

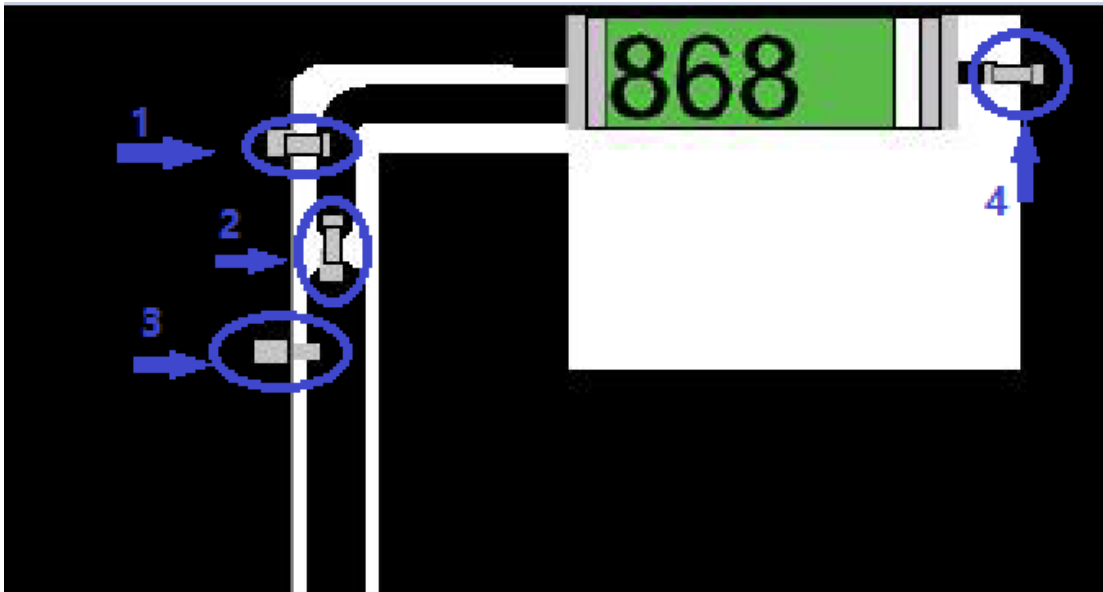


5 PCB Footprint Recommendation

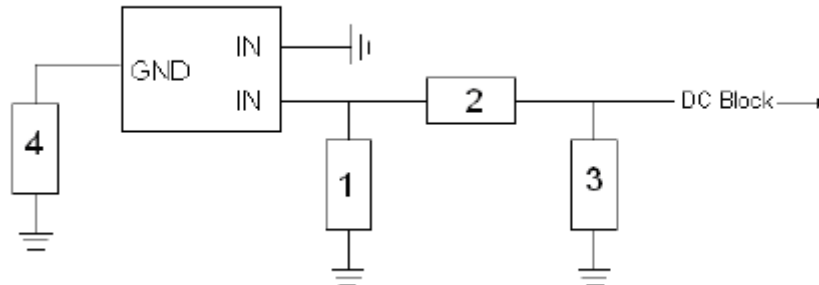


- **Note: The minimum PCB size is recommended to be 30 mm × 50 mm.**

6 Frequency Tuning and Matching Circuit

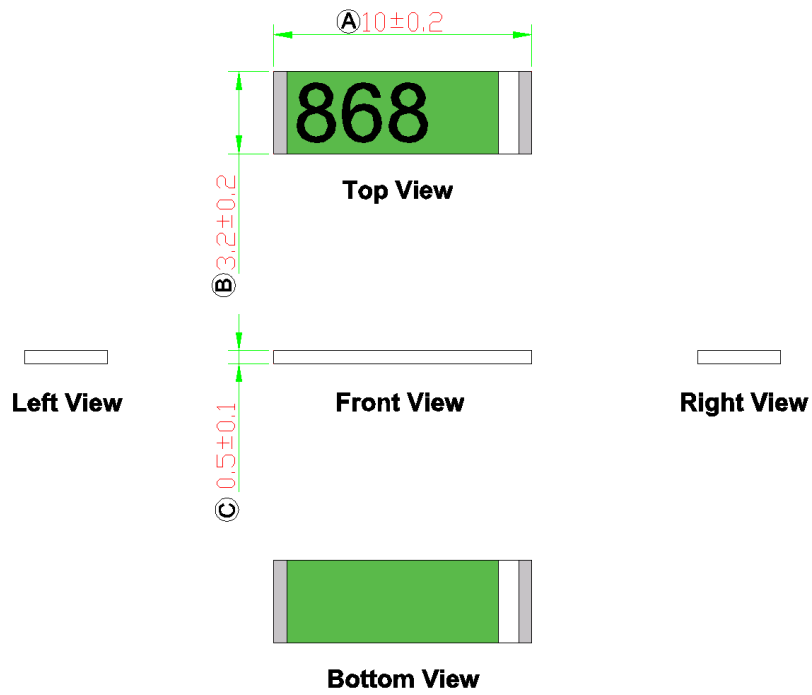


Matching circuit: (Center frequency is about 915 MHz @ 80 x 40 mm² Evaluation Board)



System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	N/A		
2	0Ω, (0402)		
3	5.0pF,(0402)	Murata	±0.05pF
4	12 pF,(0402)	Murata	±5%

7 Product Size



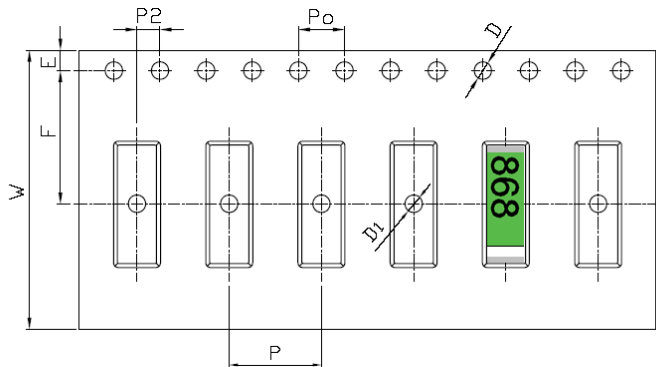
8 Packing Details

Quantity/Reel

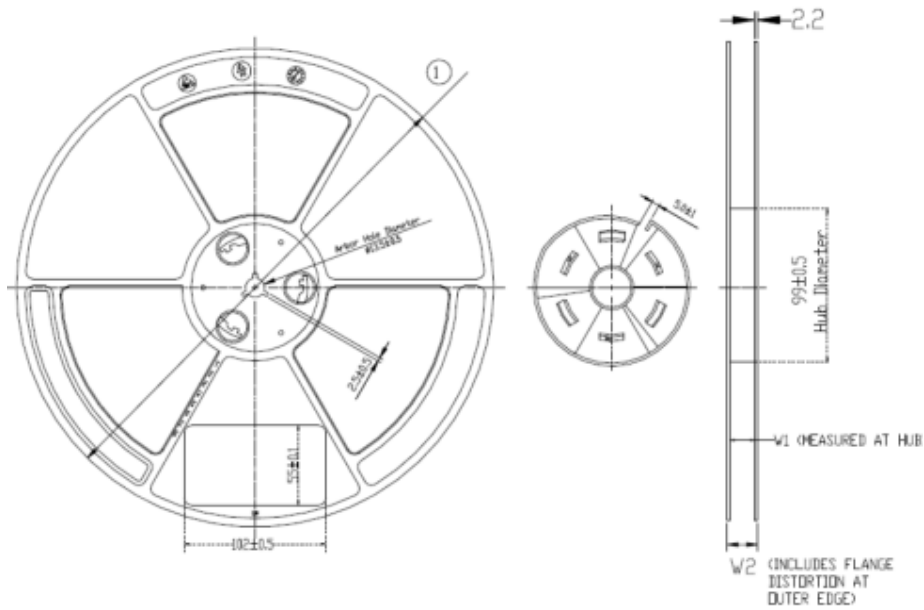
6000 PCS/Reel

Tape Dimensions (Unit: mm)

Feature	Specification	Tolerances
W	24.00	±0.30
P	8.00	±0.10
E	1.75	±0.10
F	11.50	±0.10
P2	2.00	±0.10
D	1.50	+0.10 -0.00
D1	1.50	±0.10
Po	4.00	±0.10
10Po	40.00	±0.20

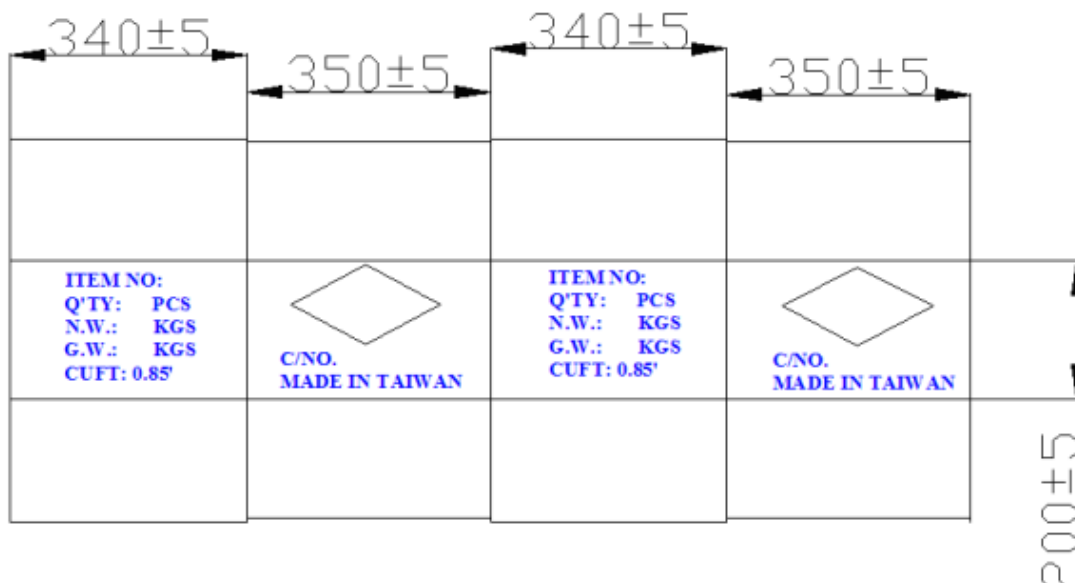


8.1. Reel Drawing (Unit: mm)






	Diameter	Inner Diameter	Outer Diameter
	①	W1	W2
13"24MMCSBY(24.6)	330±1	25.4±1	29.8±1

8.2. Carton Size (Unit: mm)



8.3. Picture of Reel Label

Quectel O/C	XXXXXXXX	
P/N	Q8 – XXXX	
Quantity	XXXXPCS 	
Lot No	XXXXXXXX 	
D/C	XXXXXXXX 	RoHS

8.4. Process of Packing

1. Attach the reel label on the reel.



2. Seal the labeled reel in a vacuum and dry package.



3. Put ten reels into a carton. After sealing the carton, attach the labels.



4. Pictures of carton labels.

- Label 1



- Label 2



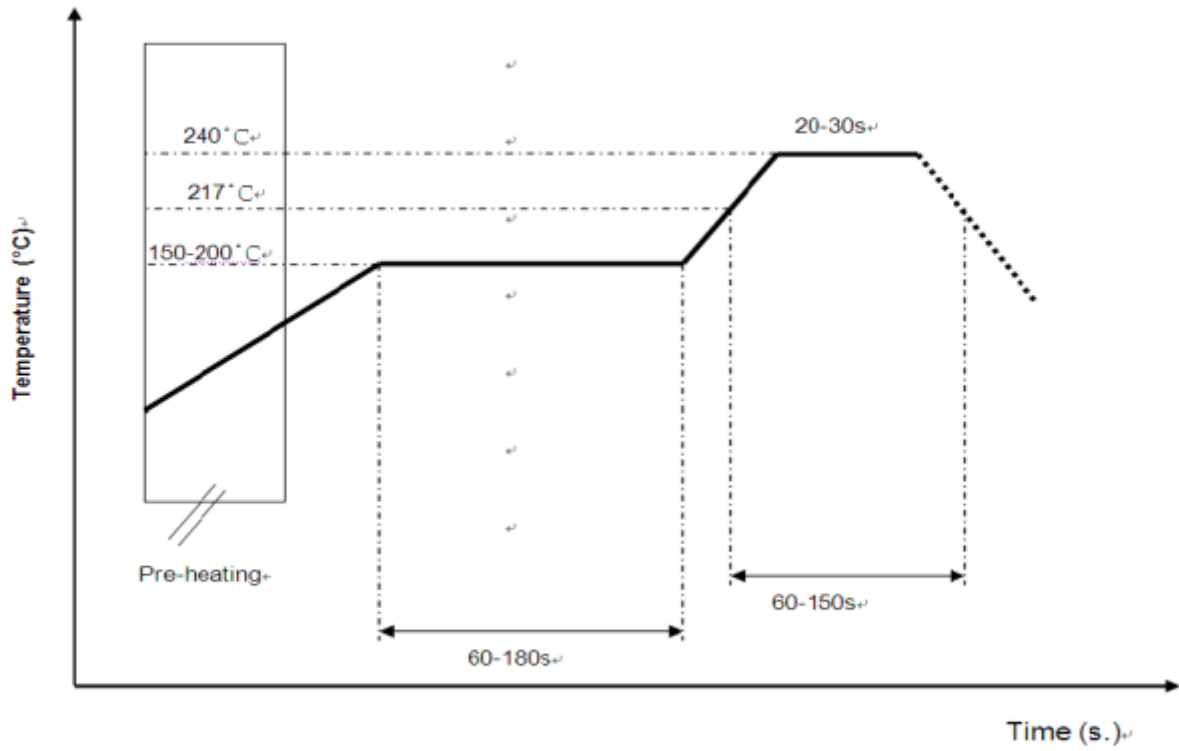
- Label 3

Paste this label in the carton containing the inspection report, if there are mantissa products.

<p>备注Remark:</p> <p>附检验报告 Attached Inspection Report</p> <p>QUECTEL[®] 上海移远通信技术股份有限公司</p>	<p>尾数箱</p>
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9 Soldering Conditions

Typical Soldering Profile for Lead-free Process



*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste.