

Antenna

YCIS003AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
-	2022-05-21	Junsen LI/ Joye WANG	Creation of the document
1.0	2022-05-21	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 915 MHz
- High efficiency
- AEC-Q200 compliant
- Low profile, compact size
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	902–928 MHz
Input Impedence	50 Ω
VSWR	≤ 2.0
Gain	≤ 0.9 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
Mounting Type	SMD
Working Temperature	-40 °C to +85 °C

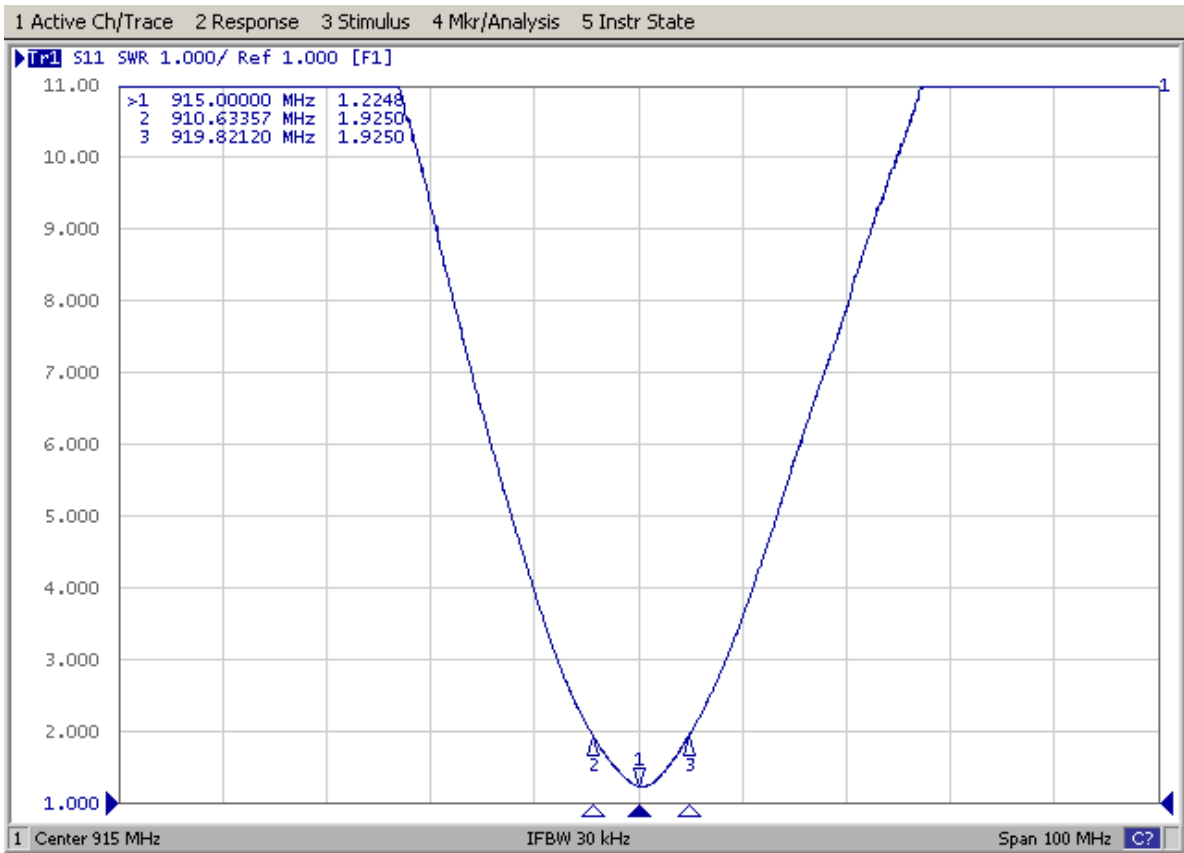
4 Overall Performance

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

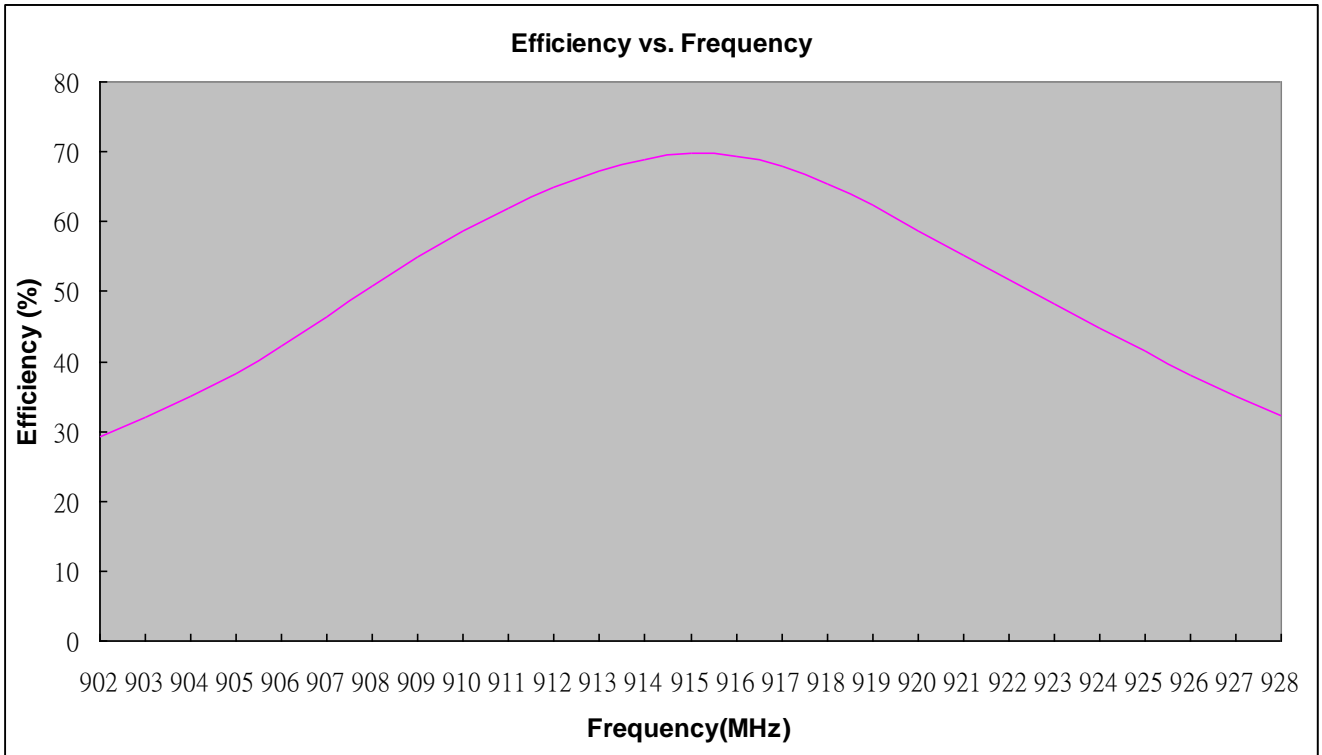


4.2. VSWR



Frequency (MHz)	915
VSWR	1.22

4.3. Efficiency



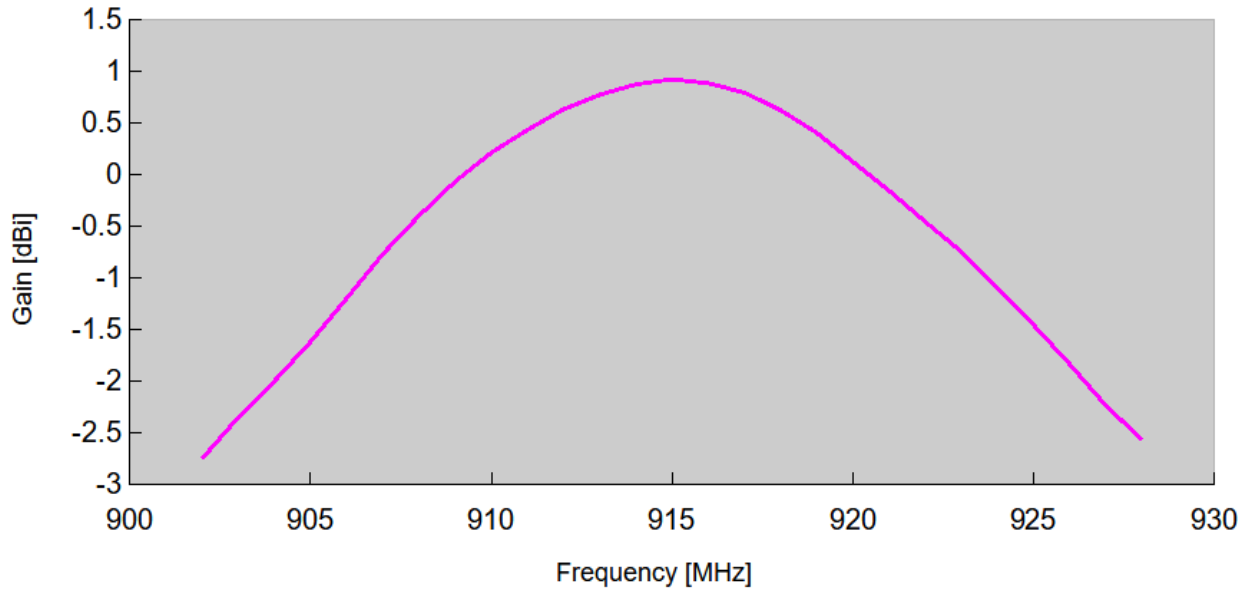
Frequency (MHz)	902	903	904	905	906	907	908	909	910	911
Efficiency (%)	29.29	31.93	34.91	38.31	42.22	46.45	50.71	54.87	58.73	61.95

Frequency (MHz)	912	913	914	915	916	917	918	919	920	921
Efficiency (%)	65.04	67.18	68.94	69.78	69.33	67.94	65.48	62.29	58.73	55.18

Frequency (MHz)	922	923	924	925	926	927	928
Efficiency (%)	51.79	48.33	44.85	41.5	38.08	34.98	32.21

4.4. Gain

Gain vs. Frequency



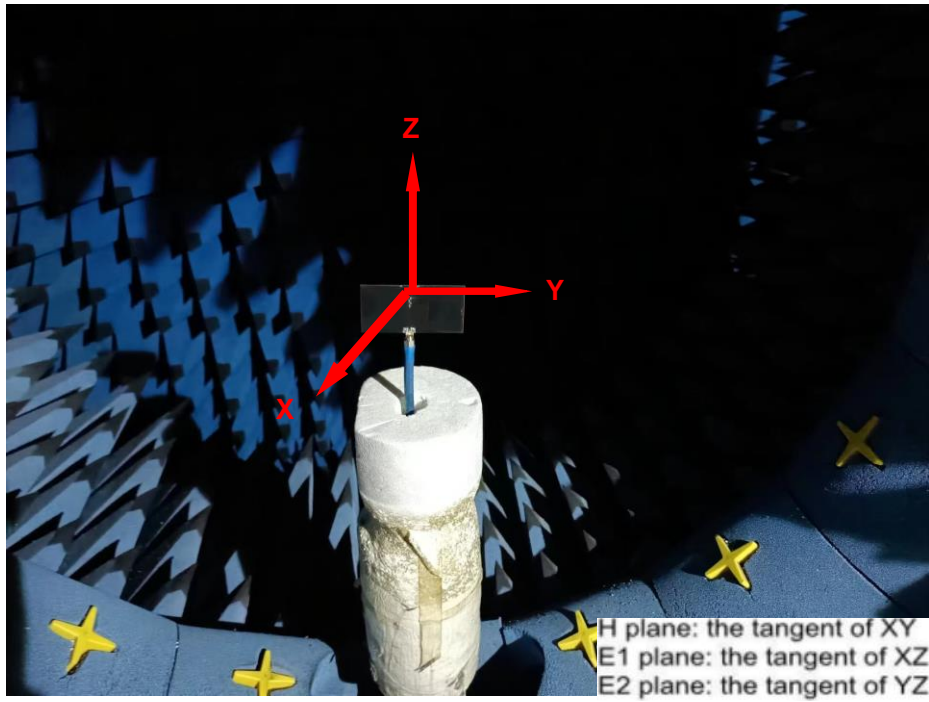
Frequency (MHz)	902	903	904	905	906	907	908	909	910	911
Gain (dBi)	-2.75	-2.35	-2	-1.62	-1.2	-0.77	-0.4	-0.07	0.21	0.43

Frequency (MHz)	912	913	914	915	916	917	918	919	920	921
Gain (dBi)	0.63	0.77	0.87	0.92	0.88	0.79	0.62	0.4	0.12	-0.16

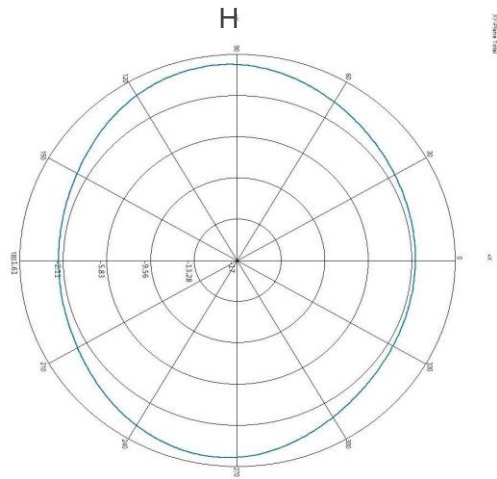
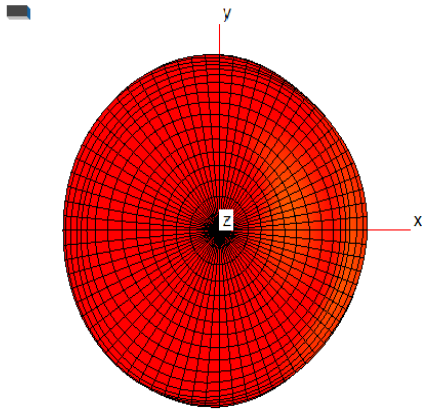
Frequency (MHz)	922	923	924	925	926	927	928
Gain (dBi)	-0.46	-0.75	-1.11	-1.46	-1.84	-2.24	-2.57

4.5. Radiation Pattern

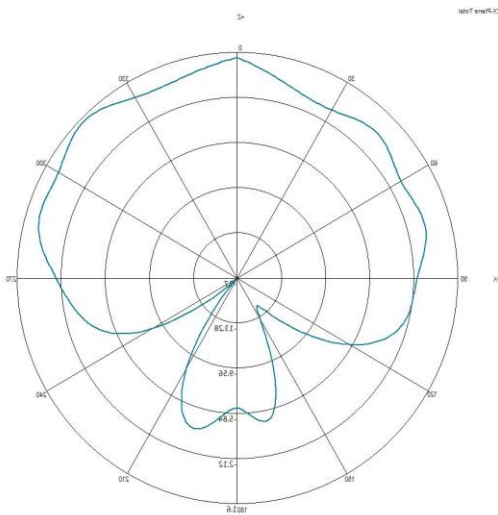
- Test condition: with ground plane (80 mm × 40 mm).



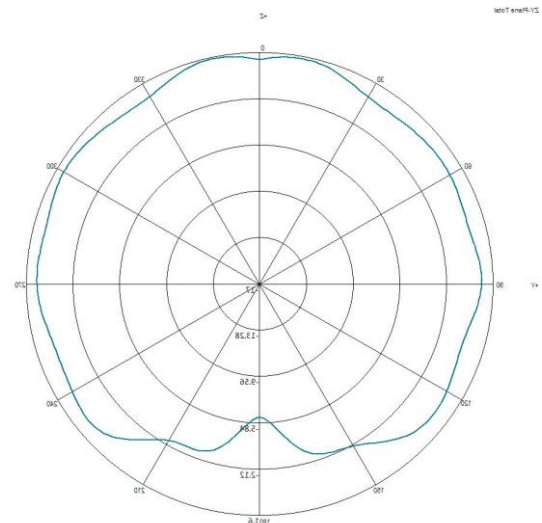
- 915 MHz



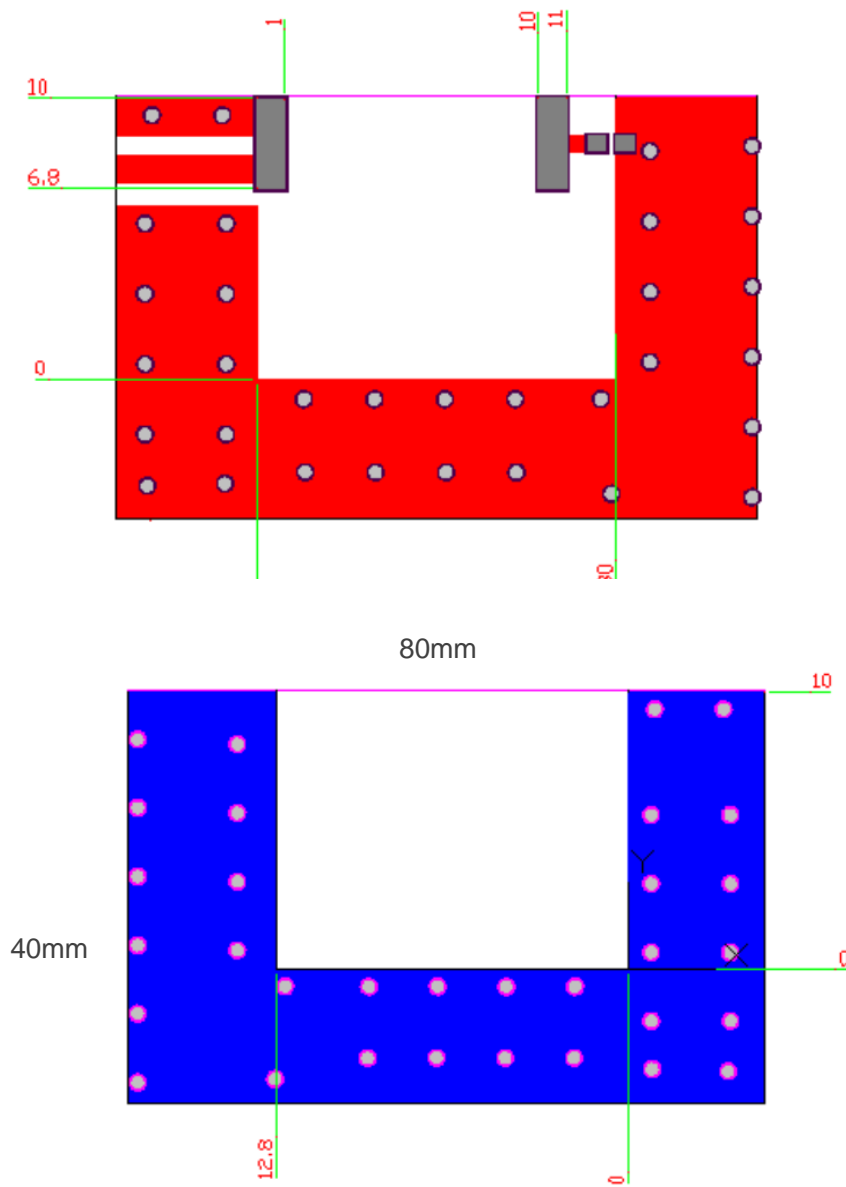
E1



E2

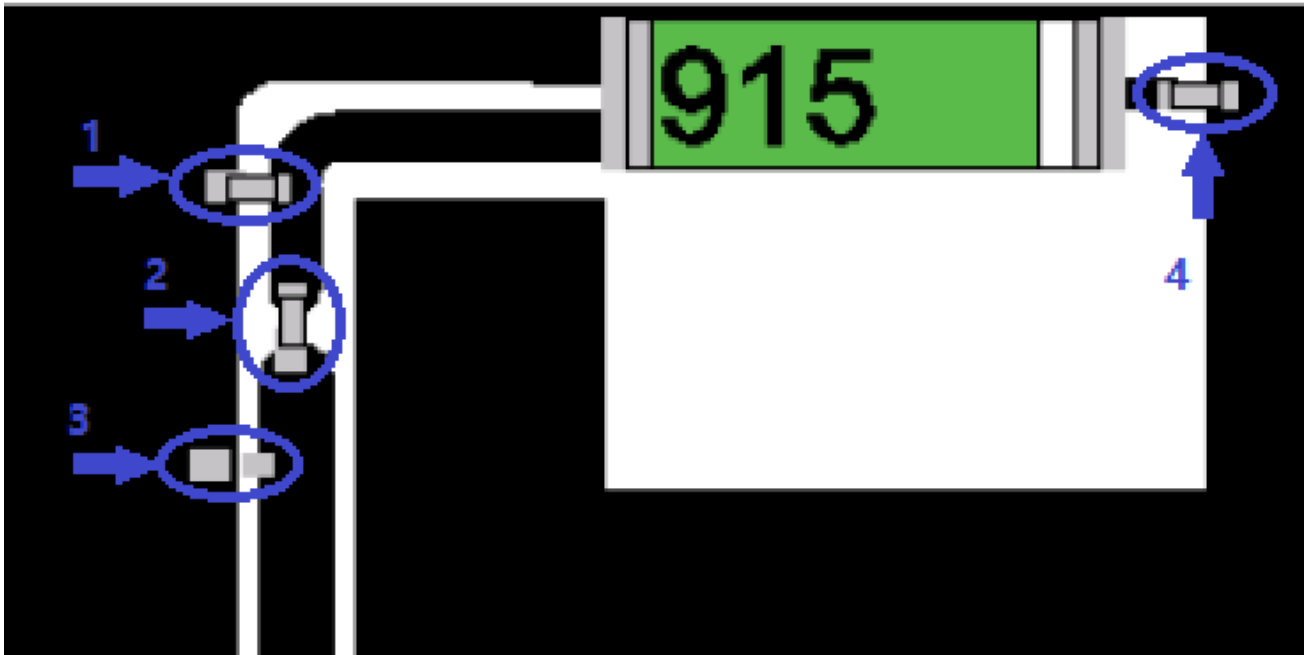


5 PCB Footprint Recommendation

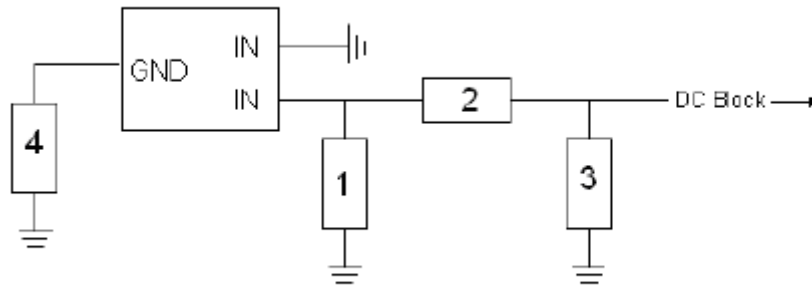


- **Note: The minimum PCB size is recommended to be 30 mm × 50 mm.**

6 Frequency Tuning and Matching Circuit

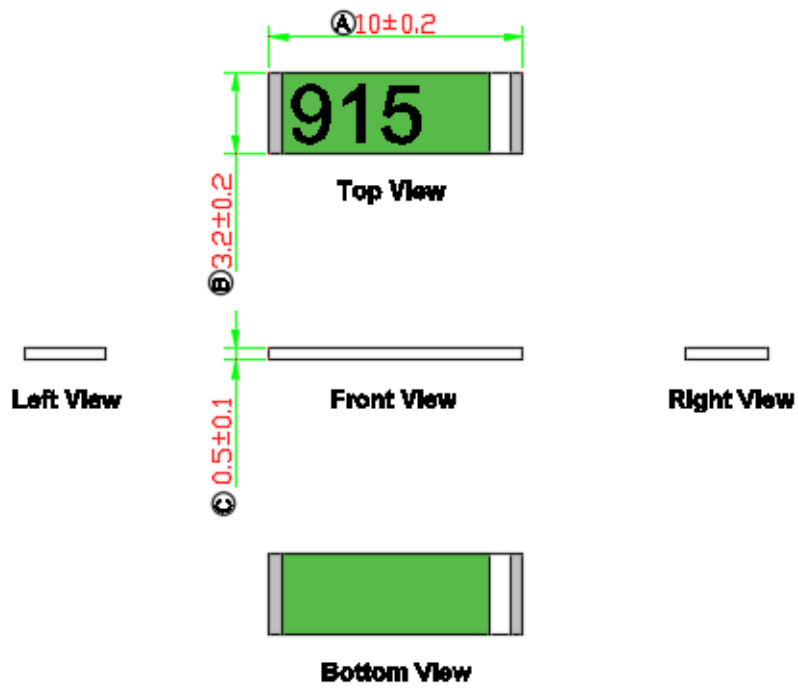


Matching circuit: (Center frequency is about 868 MHz at @ 80 x 40 mm² Evaluation Board)



System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	N/A		
2	0Ω, (0402)		
3	5.0pF,(0402)	Murata	±0.05pF
4	10 pF,(0402)	Murata	±5%

7 Product Size



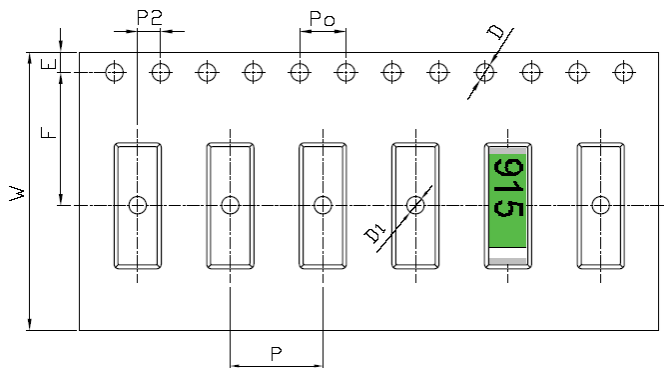
8 Packing Details

Quantity/Reel

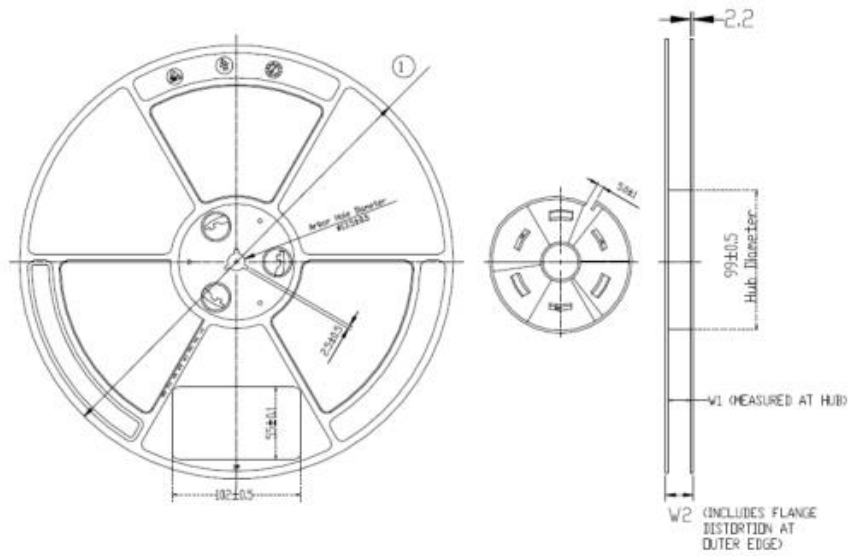
6000 PCS/Reel

Tape dimensions

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

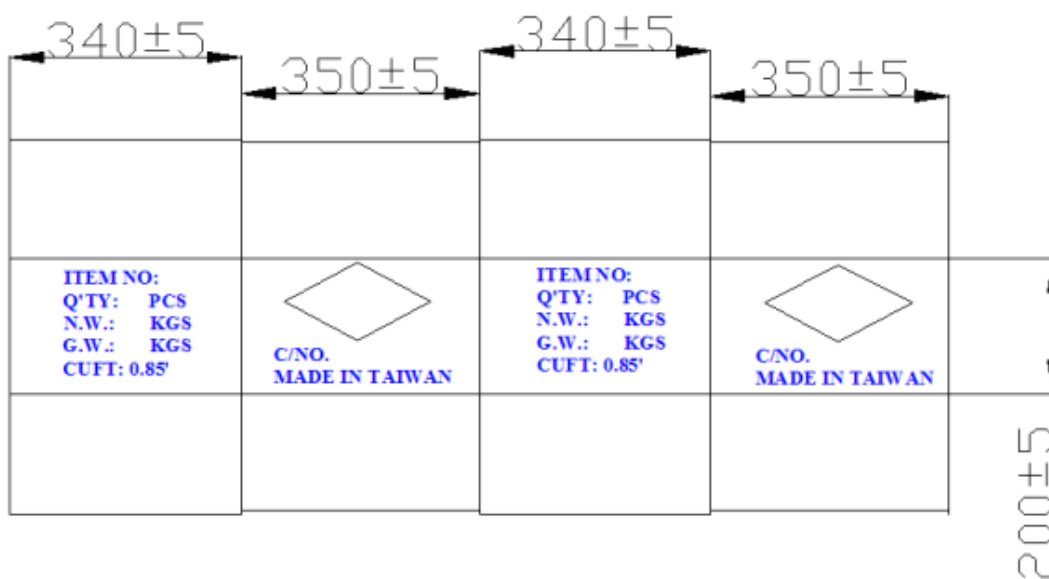


8.1. Reel Drawing (Unit: mm)






	D	ID	OD
	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



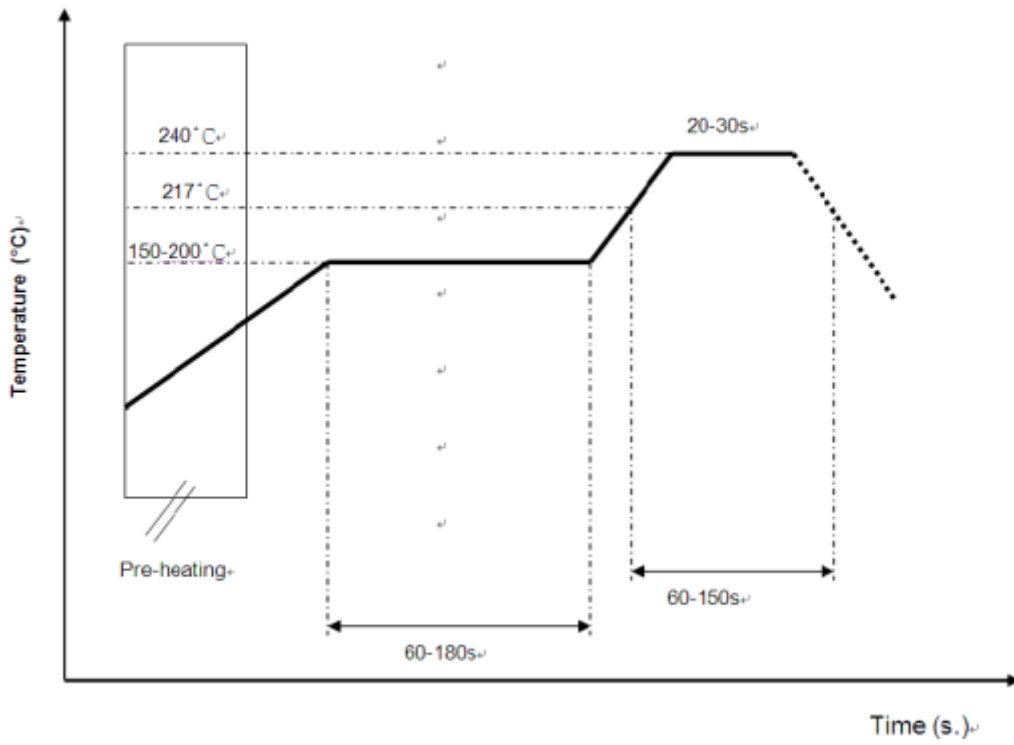
- Label 3

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>

9 Soldering Conditions

Typical Soldering Profile for Lead-free Process



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