



Parts Approval Sheet

Supplier: Guozhi Xin Network Parts Name: Ceramic Antenna

Applicable Items: Luggage label tracker

NQI Parts No. : NQI-3216-P2450A

Brand: _____

Quantity: 20PCS

Date: 2025.11.19 Send out

Document No. : NQI-RD-SPEC-20251106

Approve Date: _____

Version: V0

Supplier		Customer	
Approved By	Prepared By	Engineering Dept.	Quality Dept.



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Revision history

No.	Version	Date	alter the state
1	V0	2025-11-19	first edition
2			
3			
4			
5			
6			

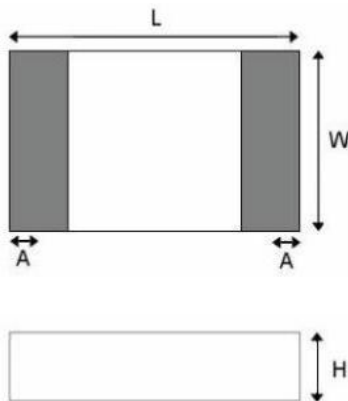
1. Operating frequency

Antenna Frequency for 2400-2500 MHz

2. Applications

For Miniaturized Bluetooth/WIFI System

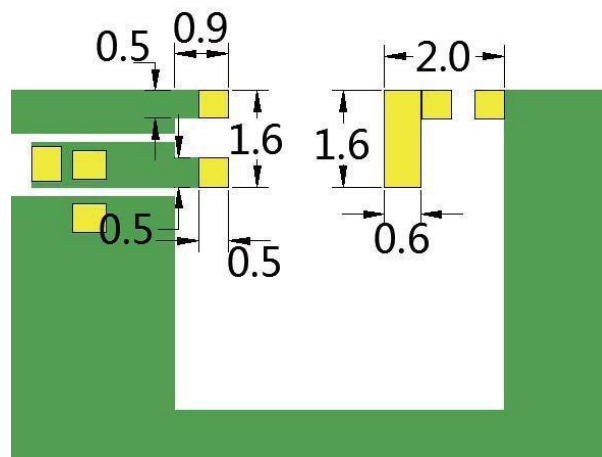
2.1. Appearance and Dimensions(Unit : mm):



L	W	A	H
3.10±0.10	1.55±0.10	0.40±0.20	0.55±0.1

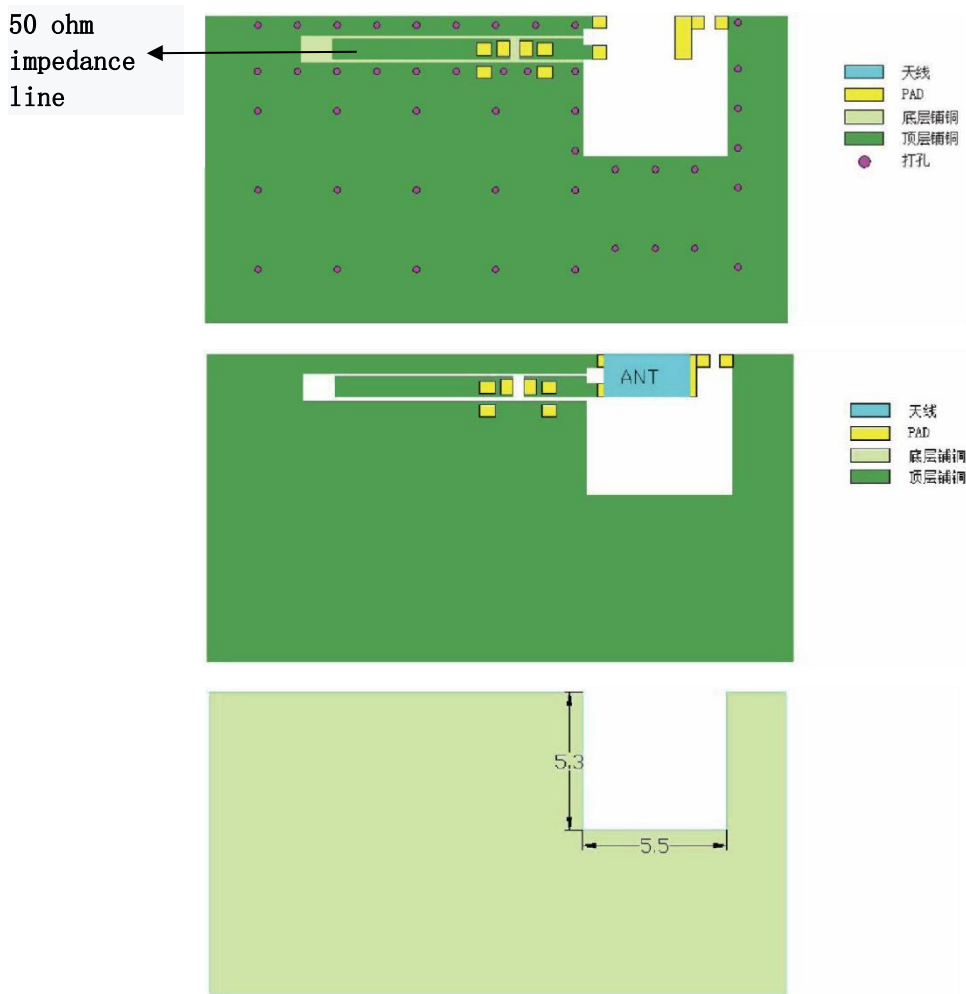


2.2. PCB Top Layout (Unit : mm)

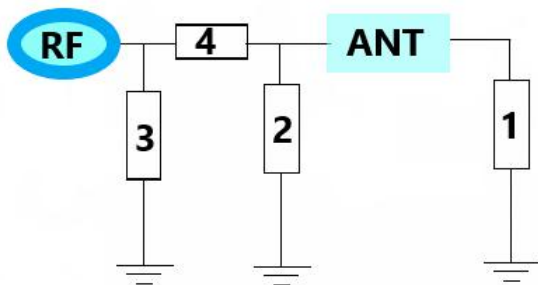


3. The DEMO Board and Matching Circuits

3.1. The DEMO Board



3.2. Matching Circuits



System Matching Circuit Component (Murata)		
Location	Description	Tolerance
1	0.5-6.2pF(0402)	±5%
2	0.5-3pF(0402)	±5%
3	0.5-3pF(0402)	±5%
4	1-6.2nH (0402)	±5%

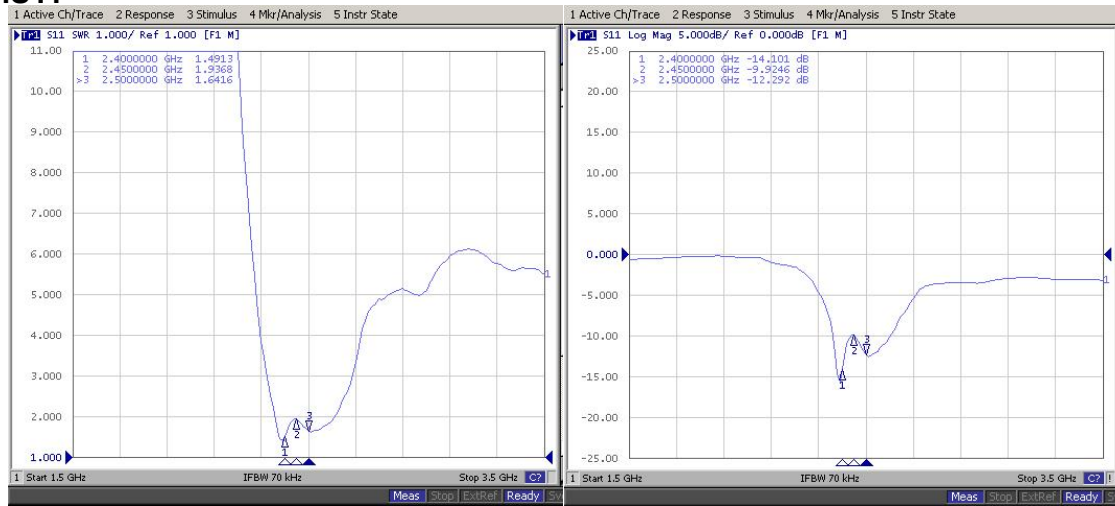
The recommended matching values for the above use are limited to our specified size DEMO board, with a center frequency of approximately 2440mhz。 Different circuit boards, parts suppliers and terminals may need to be heavy when changed。



4. Electrical Characteristics

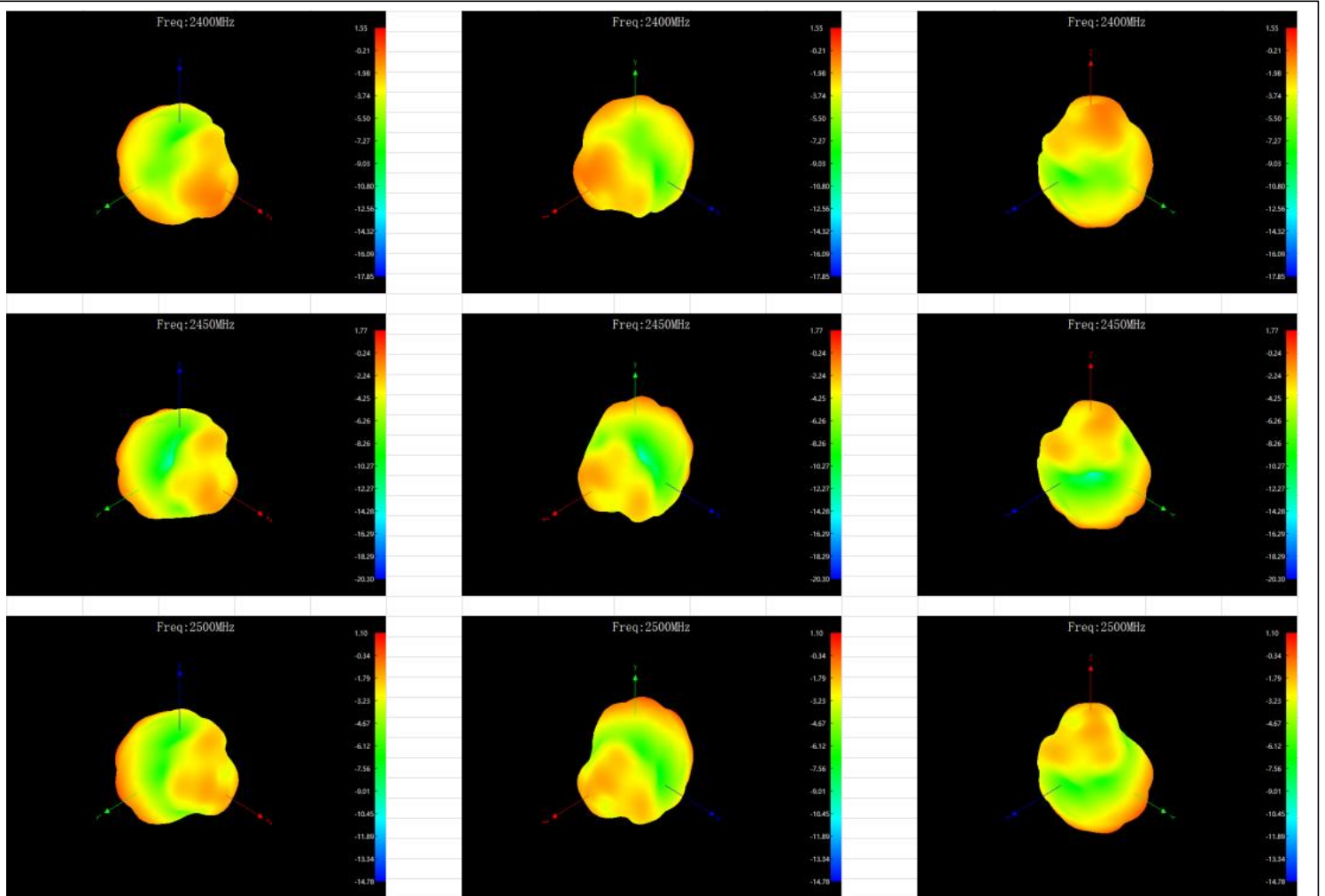
Outline Dimensions	3.2*1.6*0.6mm	
Central Frequency	2450	MHz
Bandwidth	100	MHz
VSWR	<2	
Efficiency	70	%
Peak Gain	2.5	dBi
Impedance	50	Ω
Polarization	Linear	
Azimuth Beamwidth	Omni-directional	

4.1.S11

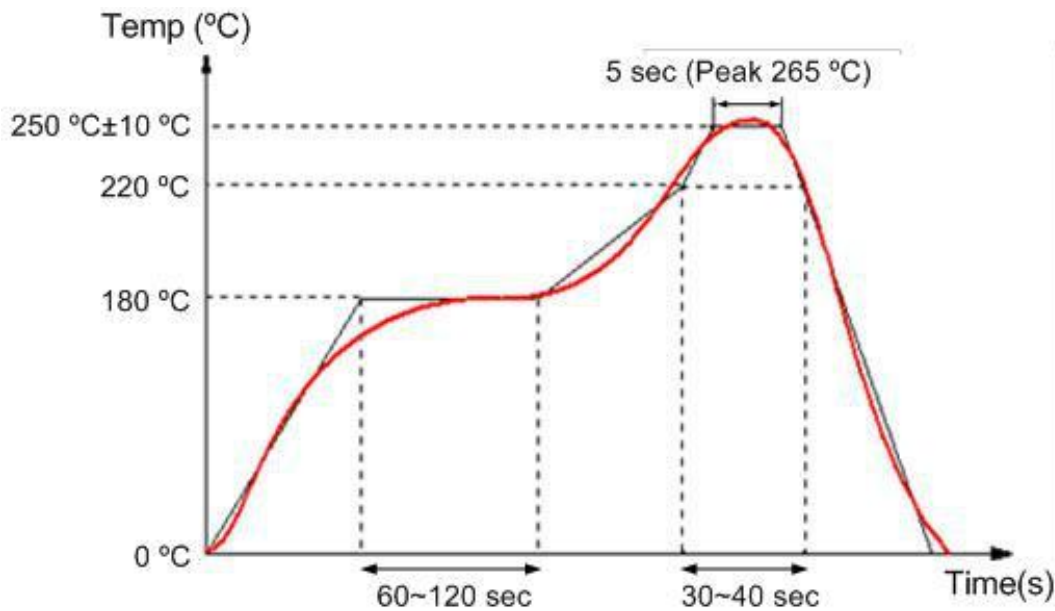


4.2.Efficiency and Gain

Freq (MHz)	Effi (%)	Gain (dBi)
2400	37.41	1.55
2410	35.81	1.28
2420	36.64	1.67
2430	34.91	1.5
2440	35.24	1.44
2450	35.48	1.77
2460	35.97	1.62
470	36.39	1.84
2480	33.04	2.5
2490	34.04	1.38
2500	32.89	1.1

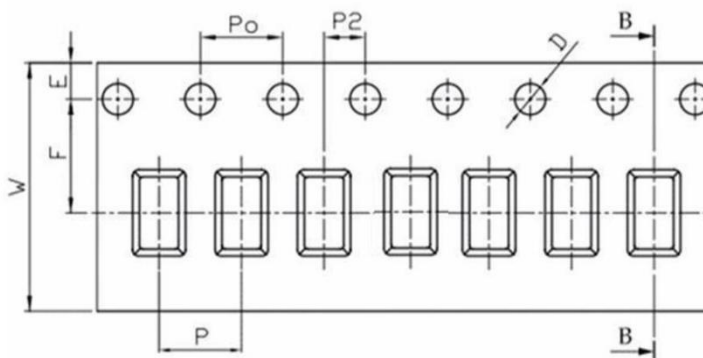


5. Reflow Soldering Standard Condition



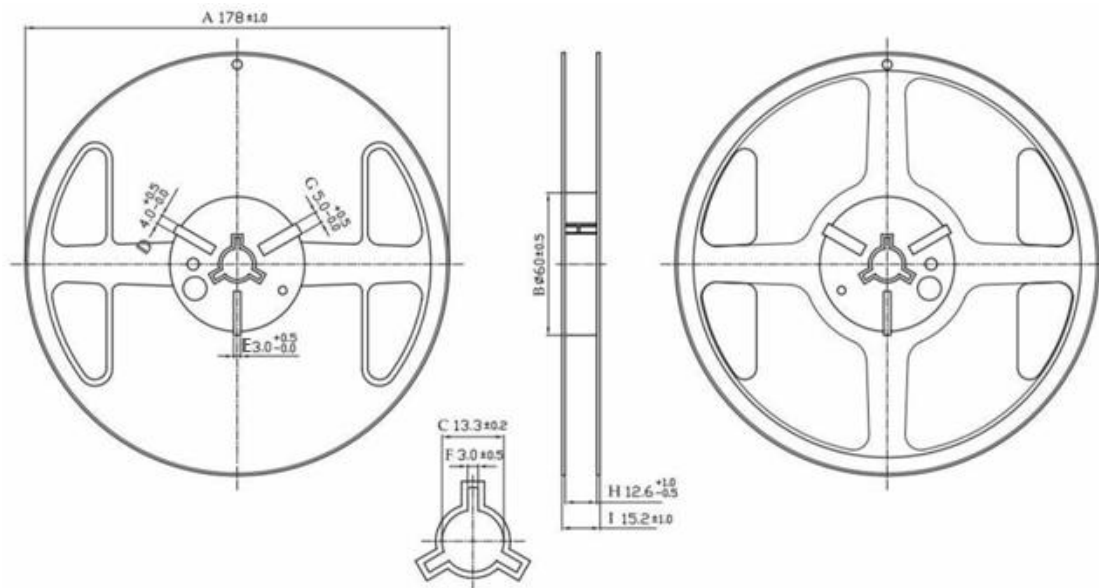
6. Packaging Information

6.1.Tape specification(Unit : mm)



Feature	Specifications	Tolerances
W	8.00	±0.30
P	4.00	±0.10
E	1.75	±0.10
F	3.50	±0.10
P ₂	2.00	±0.10
D	1.50	+0.10 -0.00
P ₀	4.00	±0.10
10P ₀	40.00	±0.20

6.2.Reel specification (5000 pcs / Reel, Unit : mm)



Index	A	B	C	D	E
Dimension (mm)	178±1.0	φ60±0.5	13.3±0.2	4.0±0.5/-0	3.0±0.3/-0
Index	F	G	H	I	
Dimension (mm)	3.0±0.5	5±0.5/-0	12.6±1/-0.5	15.2±1	

6.3.Storage Conditions

- Oxidizable Material, 12 months in vacuum sealed bag, please repack within 168 hours by re-seal the package treatment after using.
- Recommended products should be used within 6 months form the time of delivery.
- Storage Temperature Range : <30 degree C, and Humidity : <60%RH.
- The packaging material should be kept where no chlorine or sulfur exists in the air.
- Products should be storage in the warehouse without heat shock,vibration,direct sunlight and so on.



7. Dependability Test

Test item	Test condition / Test method	Specification
Solderability IEC 60068-2-58 GB/T2423.28	*Solder bath temperature: 240±5°C *Immersion time: 2±0.5 sec Solder: Sn96.5Ag3.0Gu0.5 for lead-free.	At least 95% of a surface of each terminal electrode must be covered by fresh solder.
Leaching (Resistance to dissolution of metallization) JIS C5101	*Solder bath temperature: 260±5°C *Leaching immersion time: 10±1 sec Solder : Sn96.5 Ag3.0 Gu0.5 for lead-free.	Loss of metallization on the edges of each electrode shall not exceed 25%.
Resistance to soldering heat IEC 60068-2-58 GB/T2423.28	*Preheating temperature: 120~150°C, 1 minute. *Solder temperature: 260±5°C *Immersion time: 10±1 sec Solder: Sn96.5Ag3.0Gu0.5 for lead-free Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature. Loss of metallization on the edges of each electrode shall not exceed 25%.
Drop Test IEC 60068-2-32 GB/T2423.8 Customer's specification	*Height: 50 cm *Test Surface: Rigid surface of concrete or steel. *Times: 6 surfaces for each units; 2 times for each side.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Vibration IEC 60068-2-6 GB/T 2423.10	*Frequency: 10Hz~55Hz~10Hz(1min) *Total amplitude: 1.5mm *Test times: 6hrs.(Two hrs each in three mutually perpendicular directions)	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Adhesive Strength of Termination IEC60068-2-21 GB/T 2423.6	*Pressurizing force: 5N(≤0603); 10N(>0603) *Test time:10±1 sec	No remarkable damage or removal of the termination.

Bending test IEC 60068-2-21 GB/T 2423.29	The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 2mm and then pressure shall be maintained for 10±1 sec. Measurement to be made after keeping at room temperature for 24±2 hours.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Temperature cycle IEC60068-2-14 GB/T 2423.22	30 minutes at -40°C±2°C. 10~15 minutes at room temperature. 30minutes at +85°C±2°C. 10~15 minutes at room temperature. Total 100 continuous cycles Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
High temperature IEC 60068-2-2 GB/T2423.2	*Temperature: 85±2°C. *Test duration: 500+24/-0 hours. Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics.
Humidity (steady conditions) IEC60068-2-3 GB/T 2423.3	*Humidity: 85±5%R.H. *Temperature: 85±2°C. *Time: 500+24/-0 hrs. Measurement to be made after keeping at room temperature for 24±2 hrs ※ 200hrs measuring the first data then 300hrs data.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Low temperature IEC 60068-2-1 GB/T2423.1	*Temperature: -40±2°C. *Test duration: 500+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.

8. Antenna structure drawing

