NGCL1206UW2R440G3TRF

WiFi 6 Chip Antenna

9001:2015 CERTIFIED

ROHS/REACH COMPLIANT HALOGEN FREE

NIC Components Corp.

Features

- Stable and reliable performance
- Supports WiFi Triple Band
- WiFi 6/6E
- Low Profile, Compact Size
- RoHs Complaint

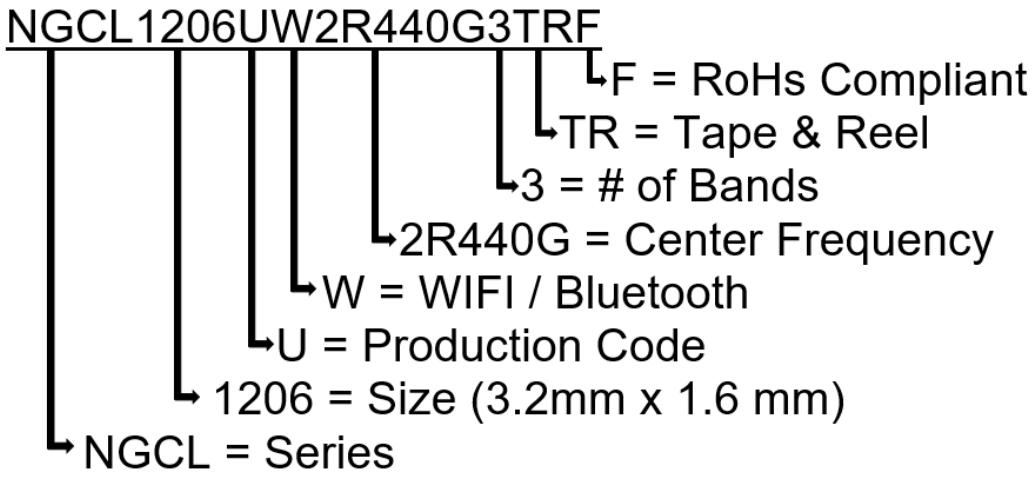
Applications

- For WiFi Triple Band Network Communication products
- Residential WiFi Access Points, Routers and Repeaters
- Set Top Box Clients

Specifications

Electrical			
Frequency Range	2400 ~ 2500 MHz	5150~5850MHz	5925 ~ 7125 MHz
Center Frequency	2445 MHz	5550 MHz	6500 MHz
Peak Gain	2.0 dBi	2.8 dBi	3.0 dBi
Average Gain	- 1.7 dB	-2.2 dB	-2.1 dB
Efficiency	68%	61%	62%
Return Loss	<-10 dB	<-5 dB	<-5 dB
Maximum Input Power	2 W		
Polarization	Linear		
Impedance	50Ω		
Environmental			
Operating Temperature	-40℃~+85℃		
Storage Temperature	-5℃~+40℃ -40℃~+85℃ : After mounting on PCB		
Relative Humidity	10% to 70% : Operating & Storage after mounting on PCB 20% to 70% : Storage		
Shelf Life	1 year		
RoHs Compliant	Yes		

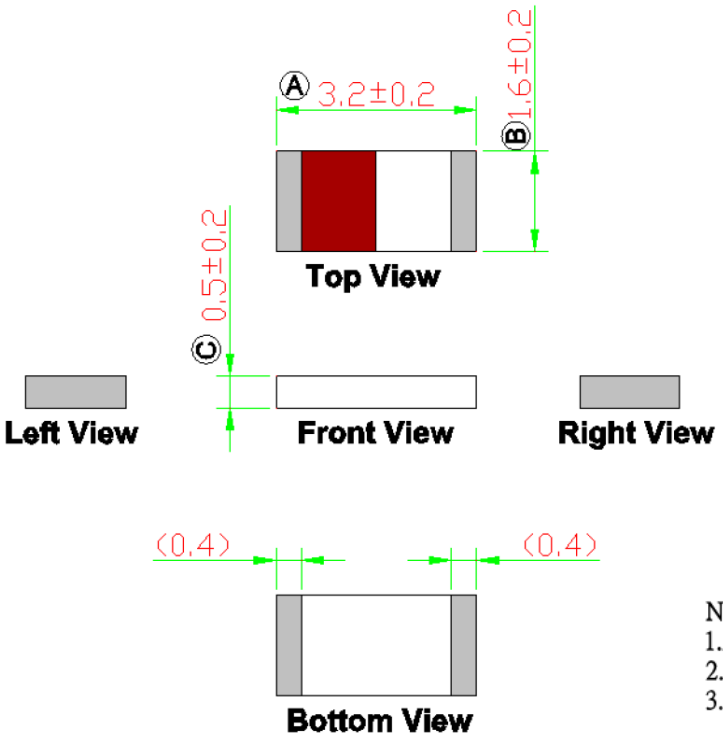
Part Number Breakdown



Pin Definition

PIN	1	2
Soldering Pad	Signal Input	Tuning/Signal Output

Dimension Drawing

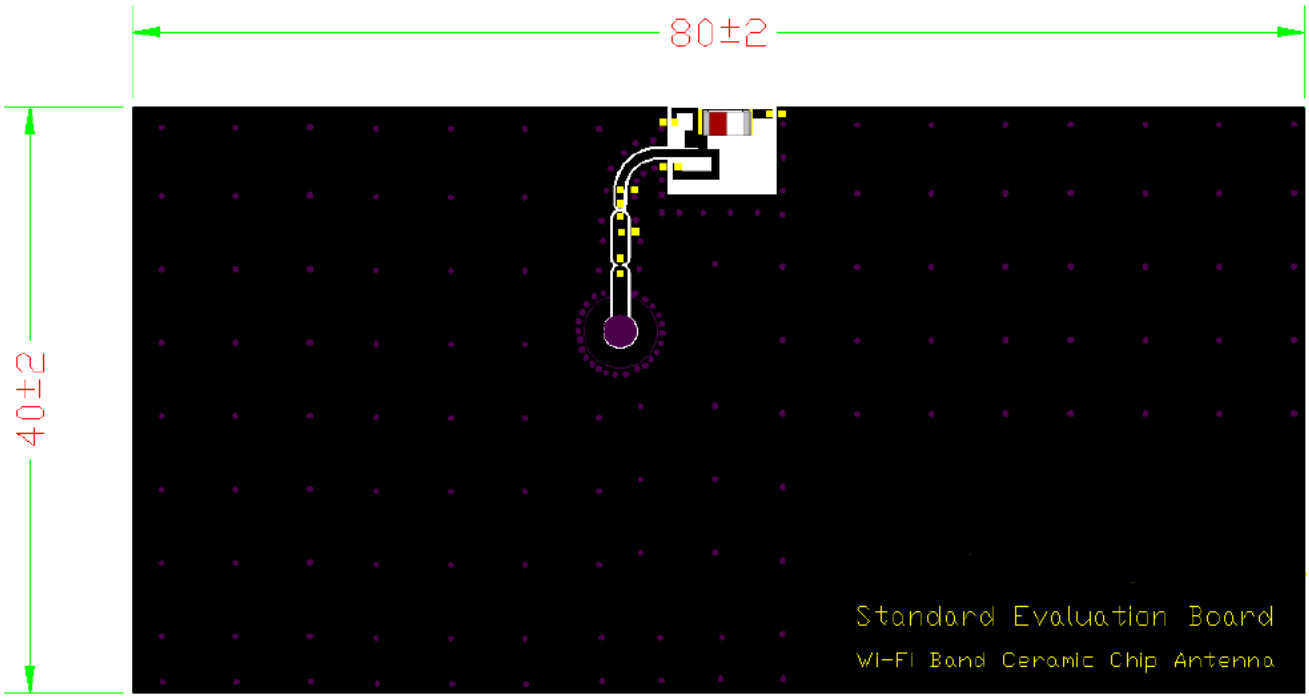


NOTE:
1.All materials are RoHS 2.0 compliant.
2."Ⓐ~Ⓒ" Critical Dimensions.
3."( )" Reference Dimensions.

Dimensions (mm) & Mechanical

Body Length (A)	3.2 ± 0.15
Width (B)	1.6 ± 0.15
Thickness (C)	0.5 ± 0.2
Connection Type	SMT
Ground Plane	80 mm x 40 mm
Material	Ceramic

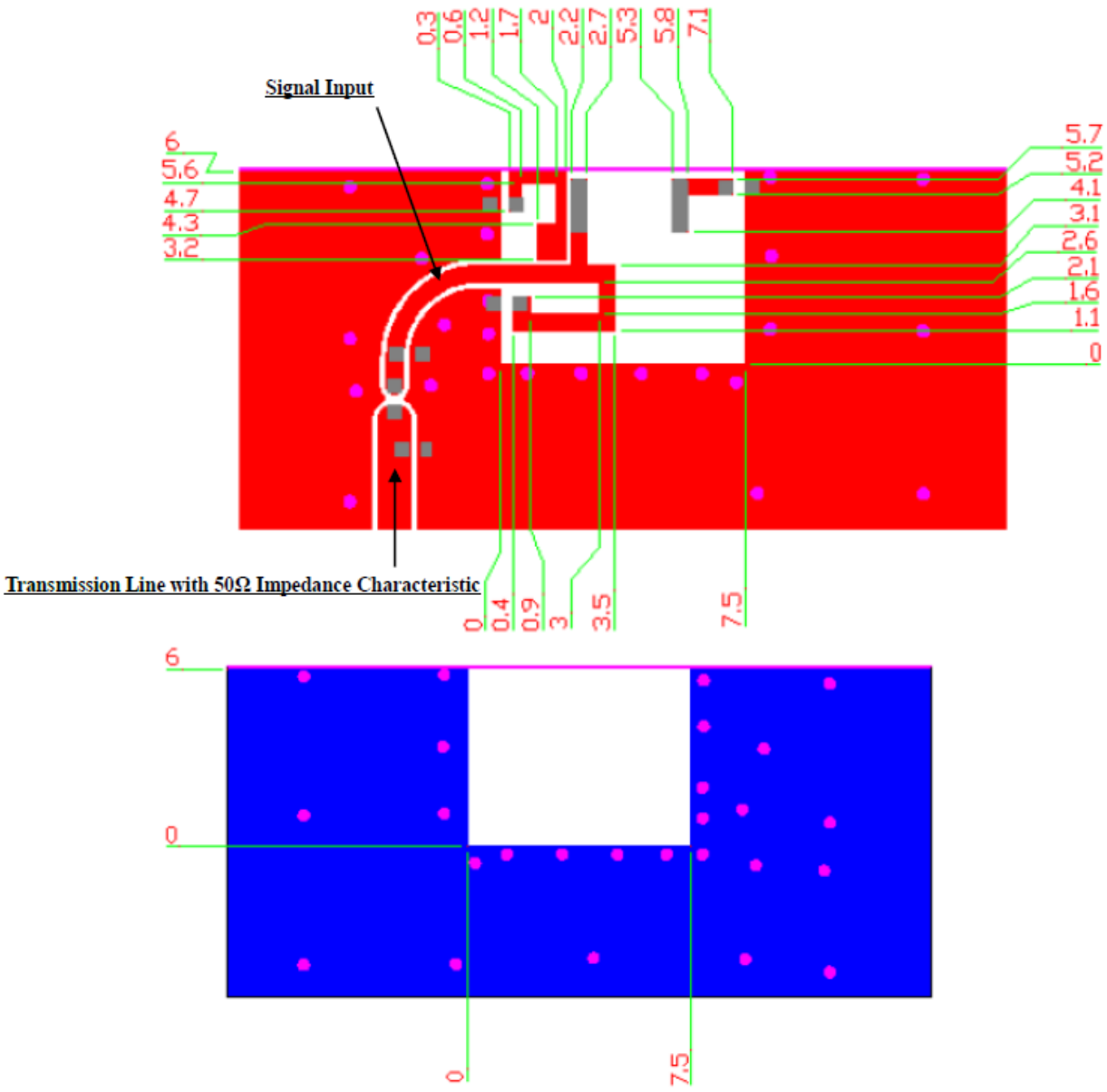
Evaluation Board



Solder Land Pattern

The gray areas represent the solder land pattern. Any recommendations on the matching circuit will be provided according to the customer's installation conditions.

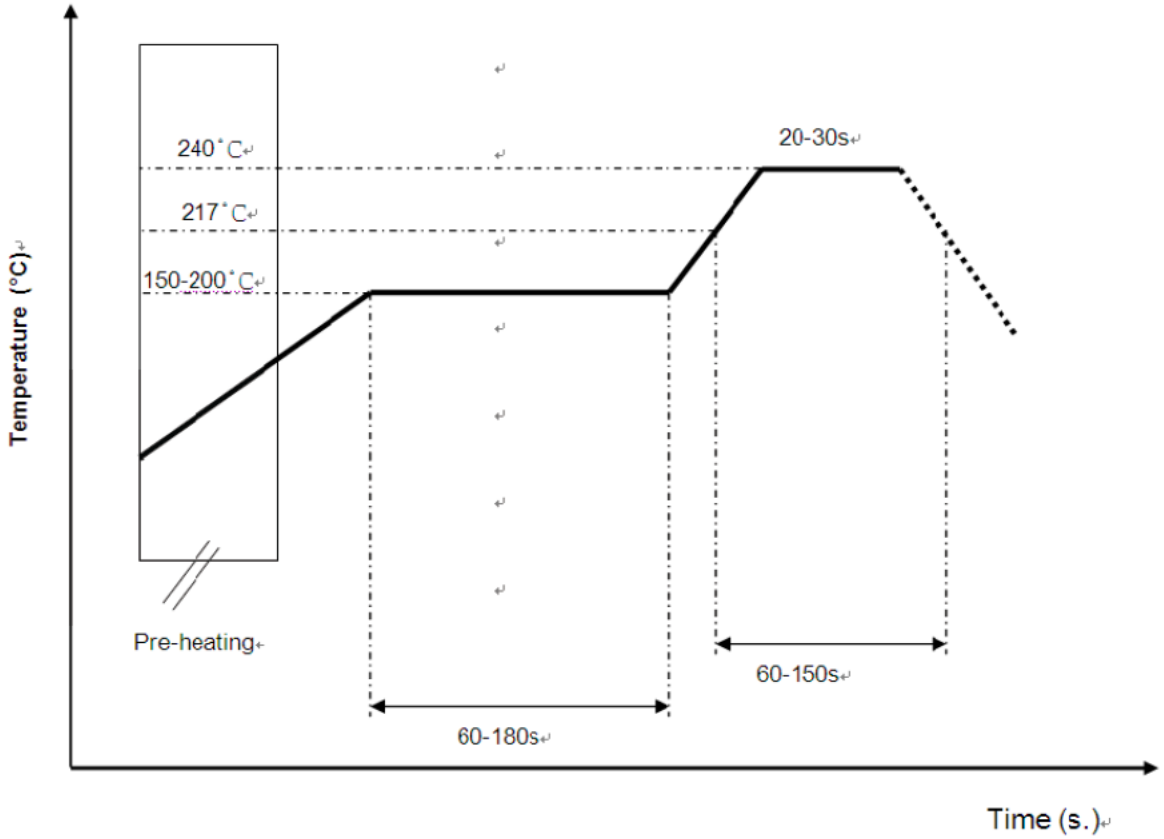
Top View



Bottom View

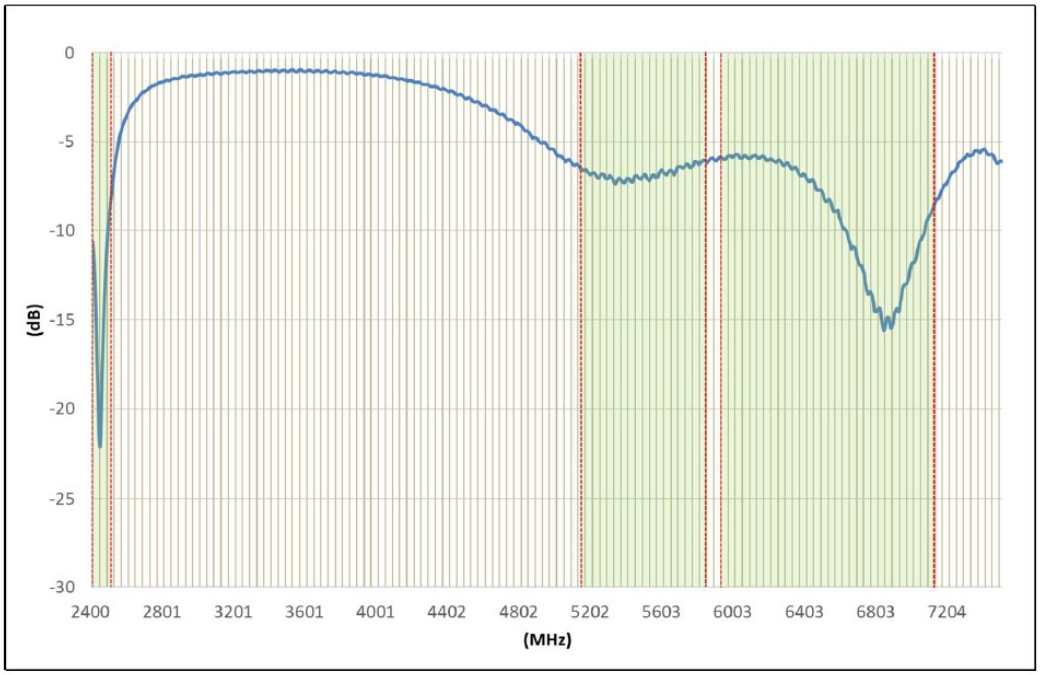
Soldering Conditions

Typical Soldering Profile for Lead-free Process

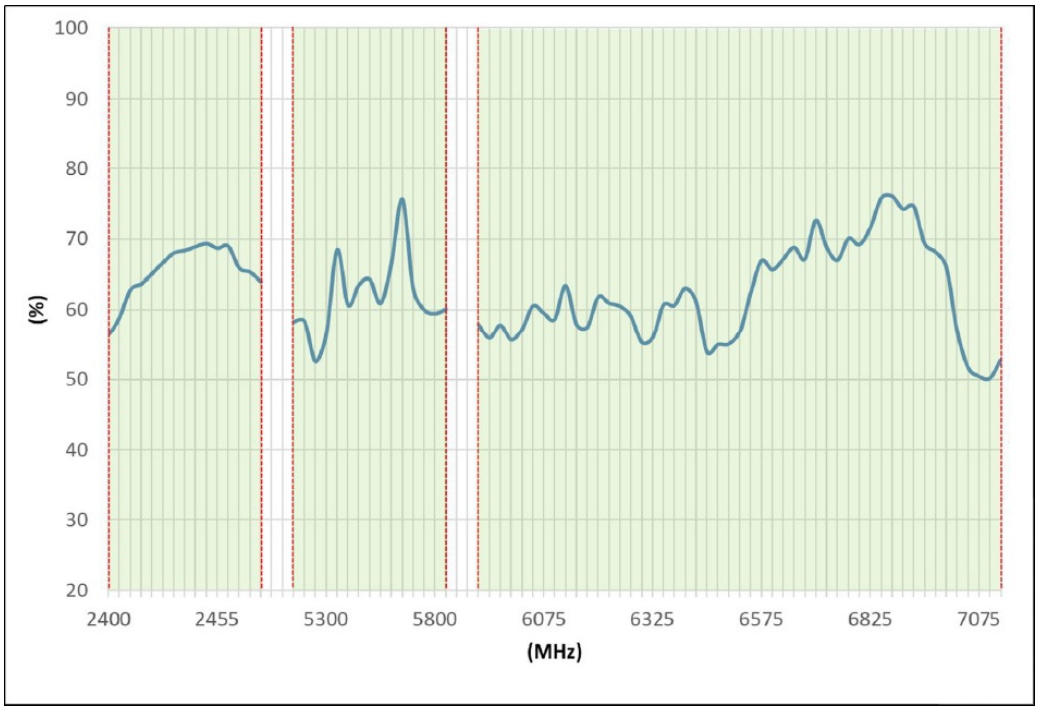


*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste

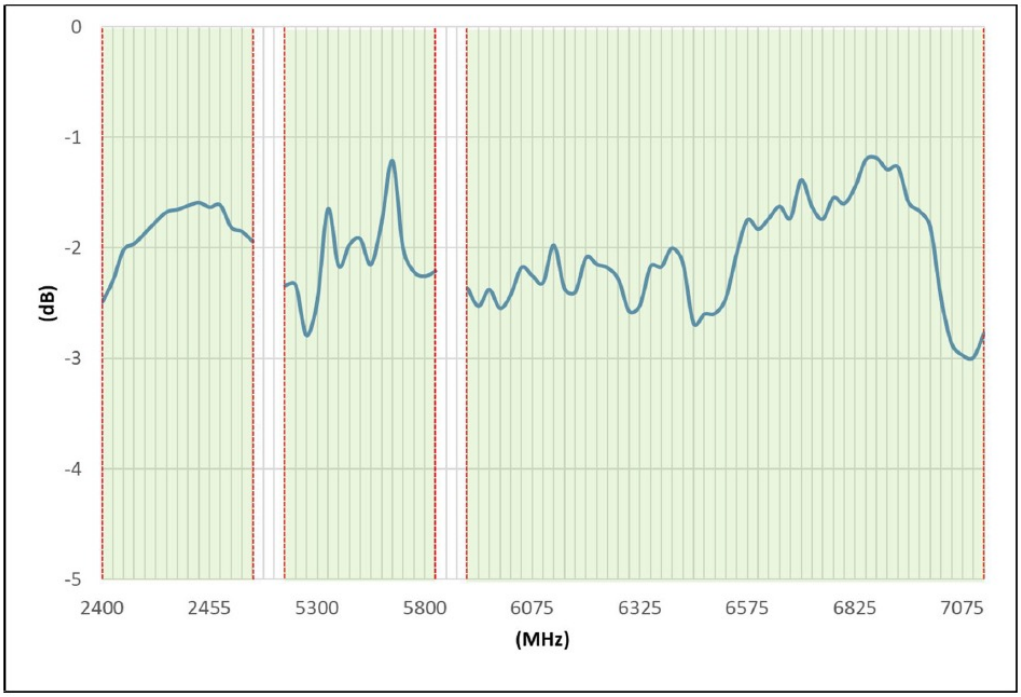
Return Loss



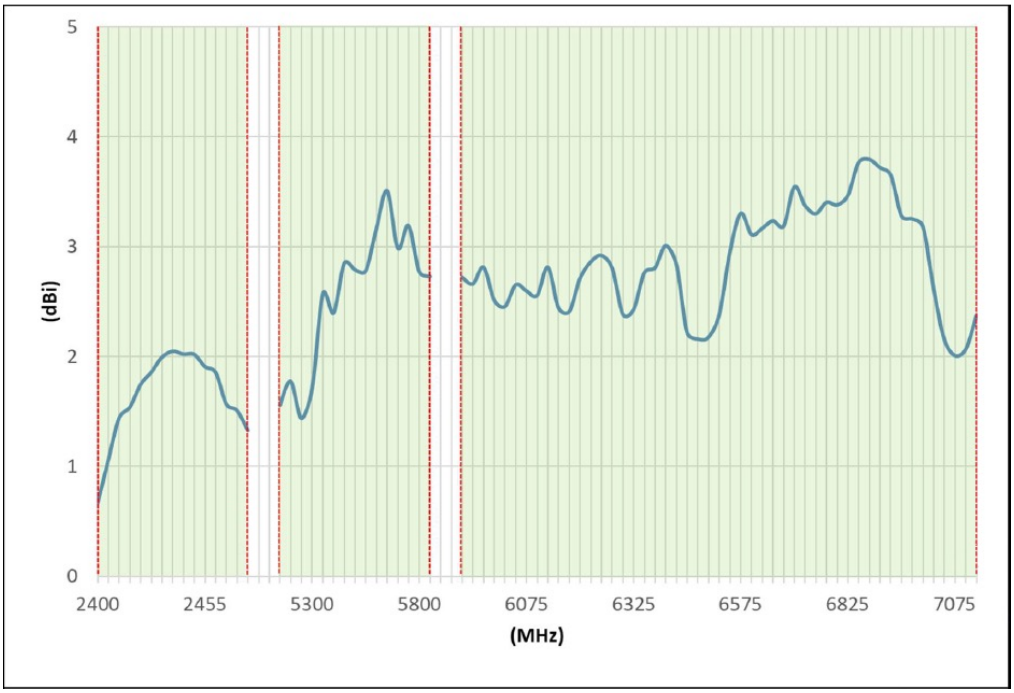
Efficiency



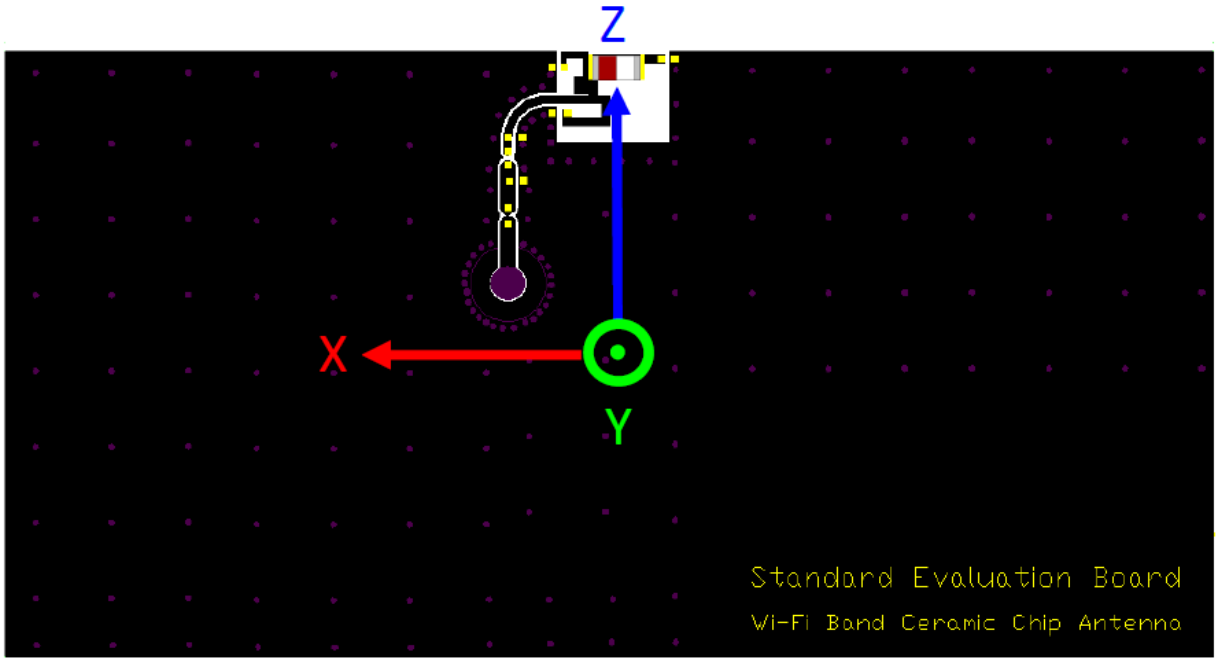
Average Gain



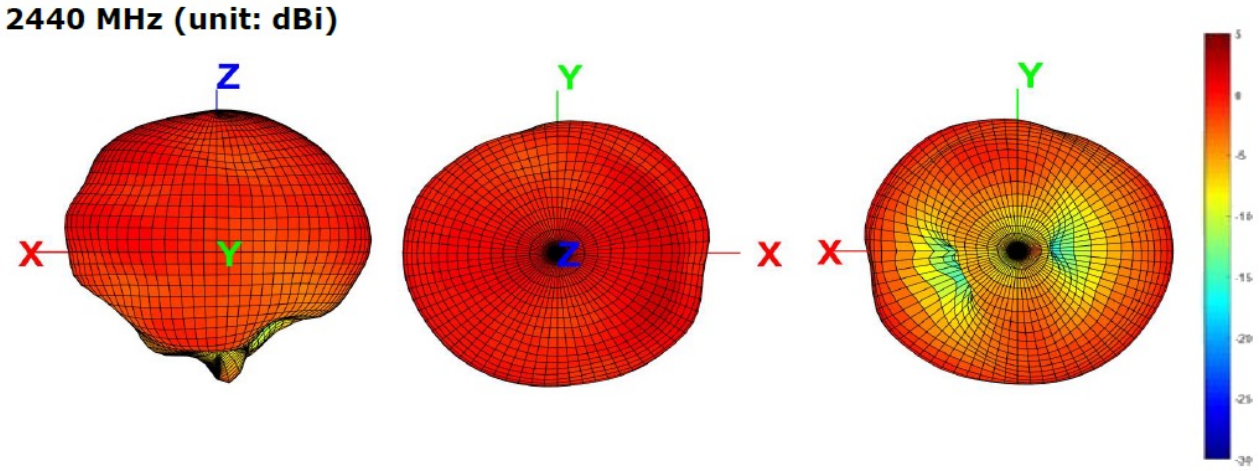
Peak Gain



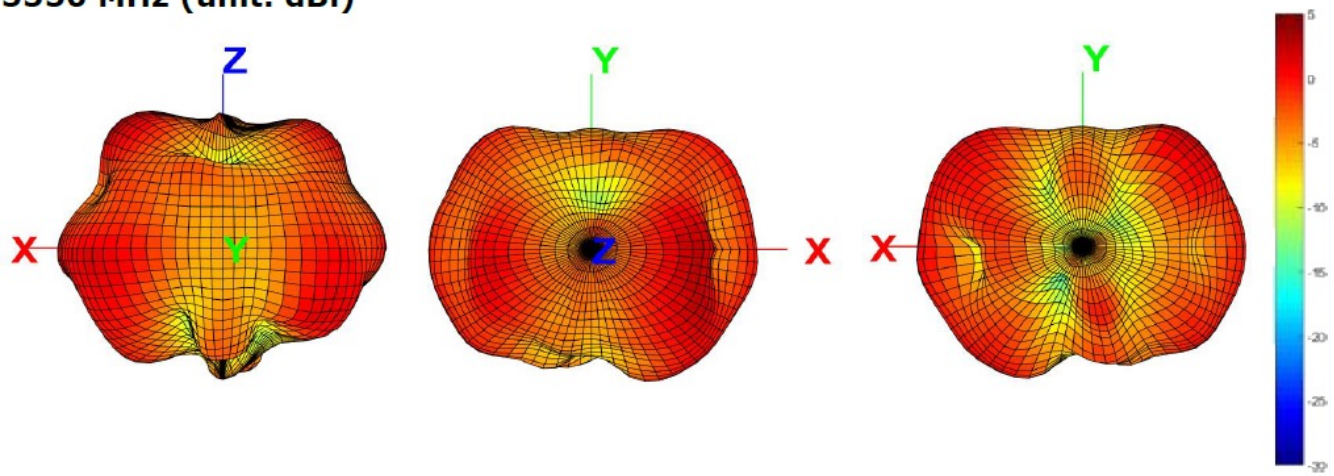
Antenna Radiation Pattern:



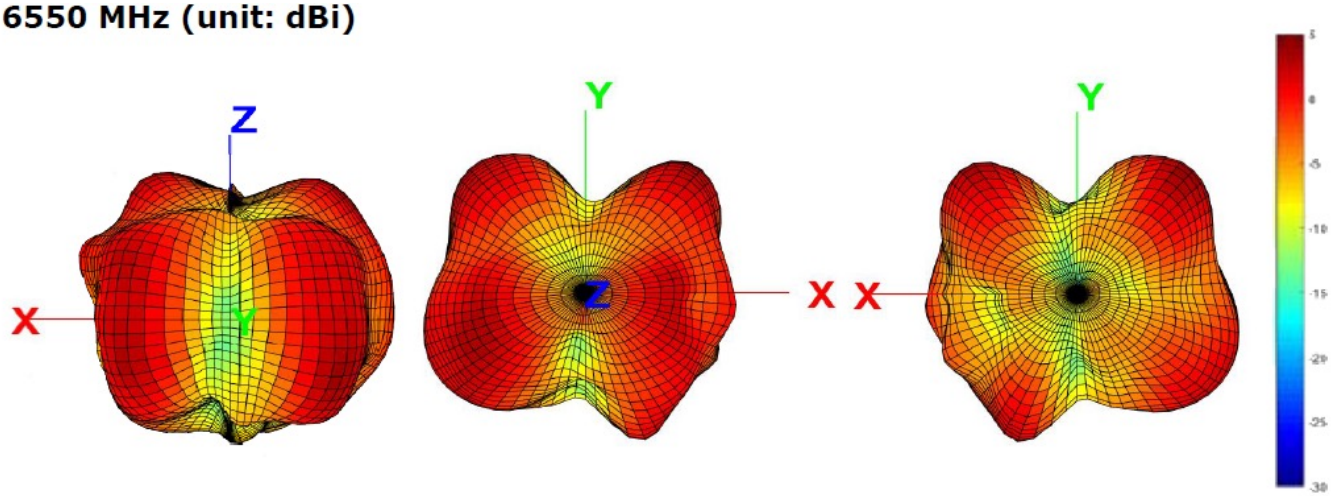
3D Radiation Gain Pattern



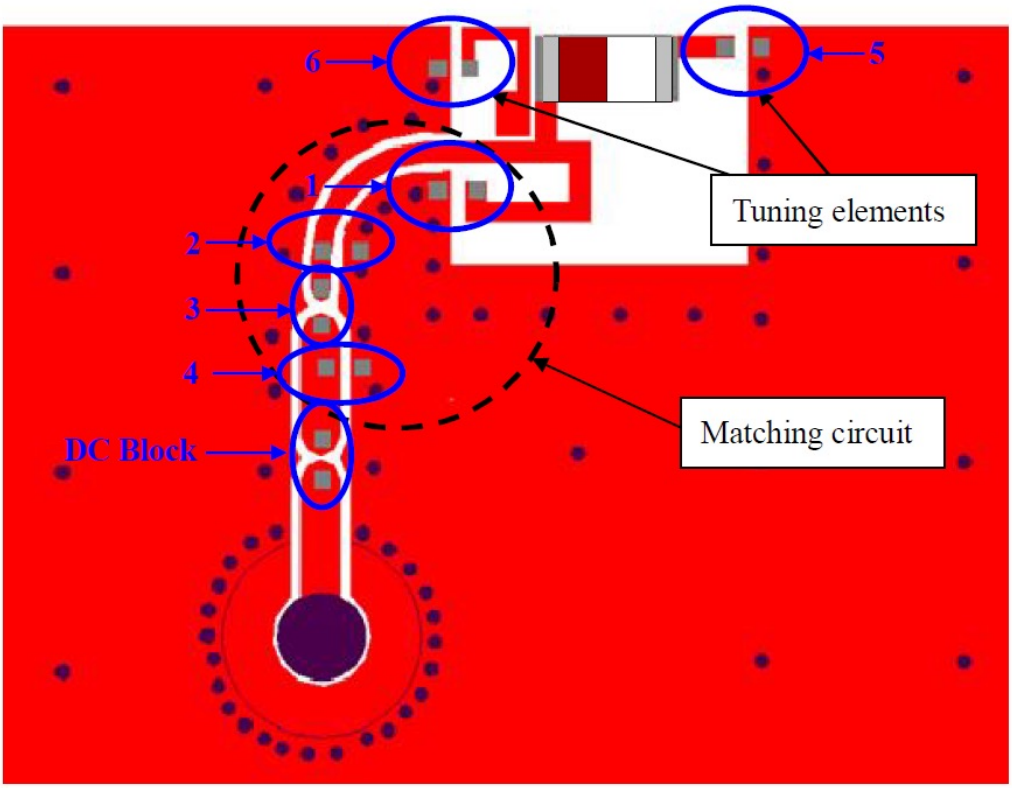
5550 MHz (unit: dBi)



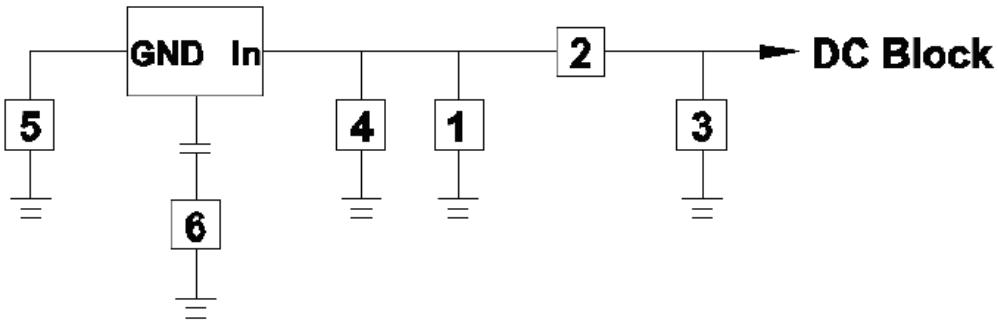
6550 MHz (unit: dBi)



Frequency Tuning



Matching Circuit



System Matching Circuit Component

Location	Description	Tolerance	NIC Part Number
1 &3	0Ω, (0402)	-	NRC04Z0TRF
2	8.2 nH (0402)	±5%	NMLQ04J8N2TRF
4	15 nH (0402)	±5%	NMLQ04J15NTRF
5	2.2pF, (0402)	±0.05 pF	NMC-Q0402NPO2R2A50TRPF
6	0.2pF, (0402)	±0.05 pF	NMC-Q0402NPO0R2A50TRPF
DC BLOCK	3.3pF, (0402)	±0.05pF	NMC-Q0402NPO3R3A50TRPF

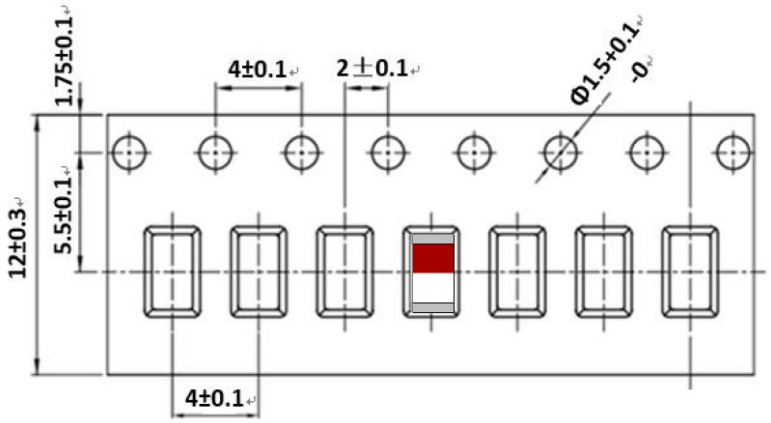
Packing

(1) Unit Weight: 0.008 ± 0.001 g / pcs

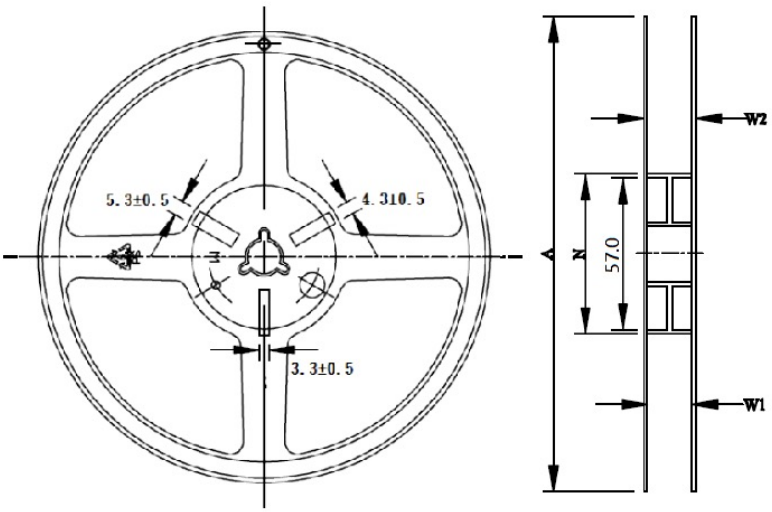
(2) Quantity/Reel: 5000 pcs /Reel

(3) Plastic tape: Black Conductive Polystyrene.

a. Tape Drawing



b. Reel Drawing



Feature	Specifications	Tolerances
A	178.0	±1.0
B	2.7	±0.5
C	13.3	±0.5
N	60.0	±0.5
W1	13.7	±0.5
W2	16.1	±0.5