Features

- Supporting WiFi Triple band, covering 2.4 ~ 2.5 GHz & 5.15~5.85 GHz & 5.925~7.125 GHz
- WiFi 6/6E
- Stable and Reliable performance
- Low profile, compact size
- RoHS compliant
- SMT processes compatible

RoHS Compliant
includes all homogeneous materials
(see part numbering system for details)

Applications

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

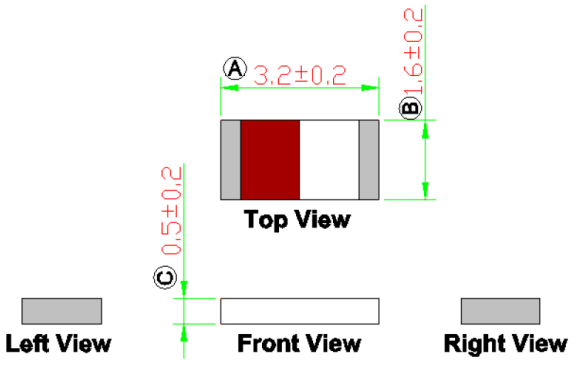
Specifications

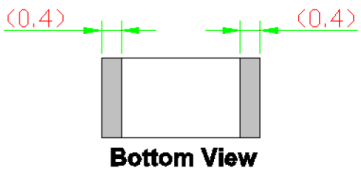
PN: NAN-CW3B3216AF			
Electrical			
Frequency Range	2400~2500MHz	5150~5850MHz	5925 ~ 7125 MHz
Center Frequency	2445 MHz	5550 MHz	6500 MHz
Average Gain	- 1.7 dB	-2.2 dB	-2.1 dB
Peak Gain	2.0 dBi	2.8 dBi	3.0 dBi
Efficiency	68%	61%	62%
Return Loss	<-10	<-5	<-5
Impedance	50 Ω		
Polarization	Linear		
Dimensions (mm):			
Body Length (A)	3.2 ± 0.15		
Width (B)	1.6 ± 0.15		
Thickness (C)	0.5 ± 0.15		
Connection Type	SMT		
Ground Plane	80 mm x 40 mm		

NAN-C W 3B 3216 A F
- F = RoHS compliant
- A = Version Code (See page 10)
- 3216 = Size (3.2 mm x 1.6 mm)
- 3B = Three Frequency Bands
- W=WiFi
- NAN-C = Series

PIN Definition

PIN	1	2
Soldering Pad	Signal Input	Tuning/Signal Output

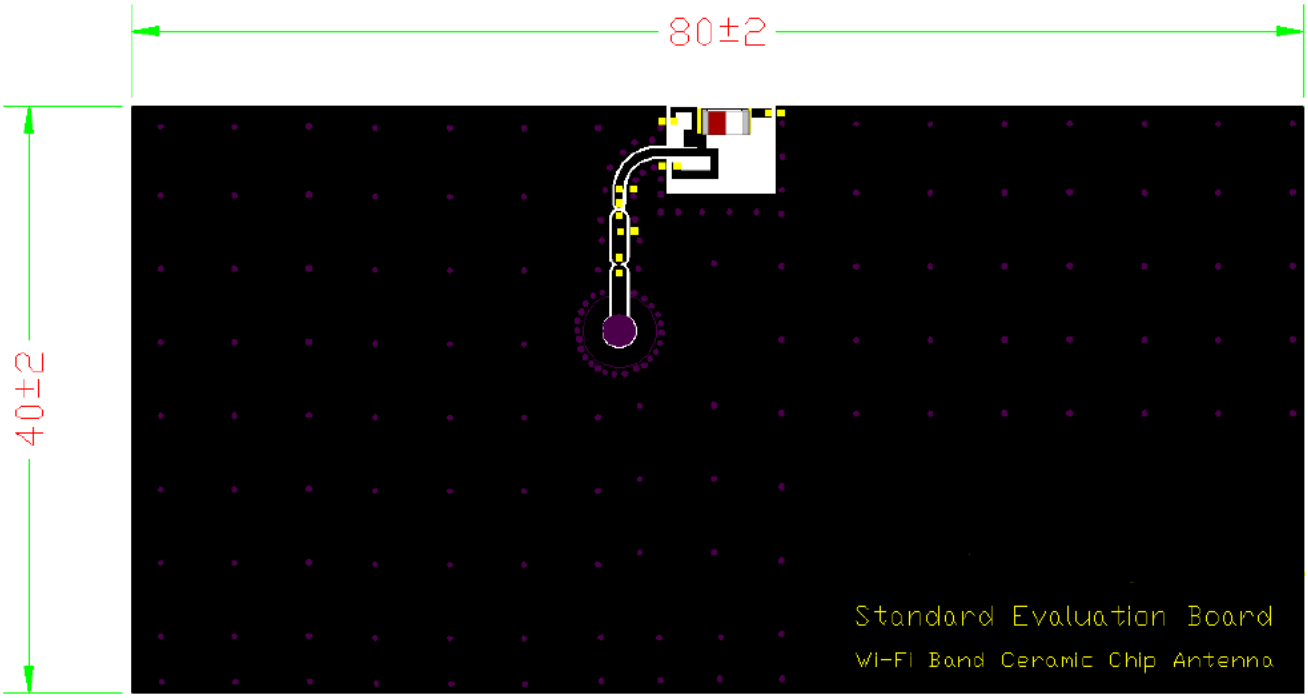




Operating & Storage Conditions

Operating	
Maximum Input Power	2W
Operating Temperature	-40°C to 85°C
Relative Humidity	10% to 70%
Storage (Sealed)	
Storage Temperature	-5°C to 40°C
Relative Humidity	20% to 70%
Shelf Life	1 Year
Storage (After mounted on customer's PCB with SMT process)	
Storage Temperature:	-40°C to 85°C
Relative Humidity	10% to 70%

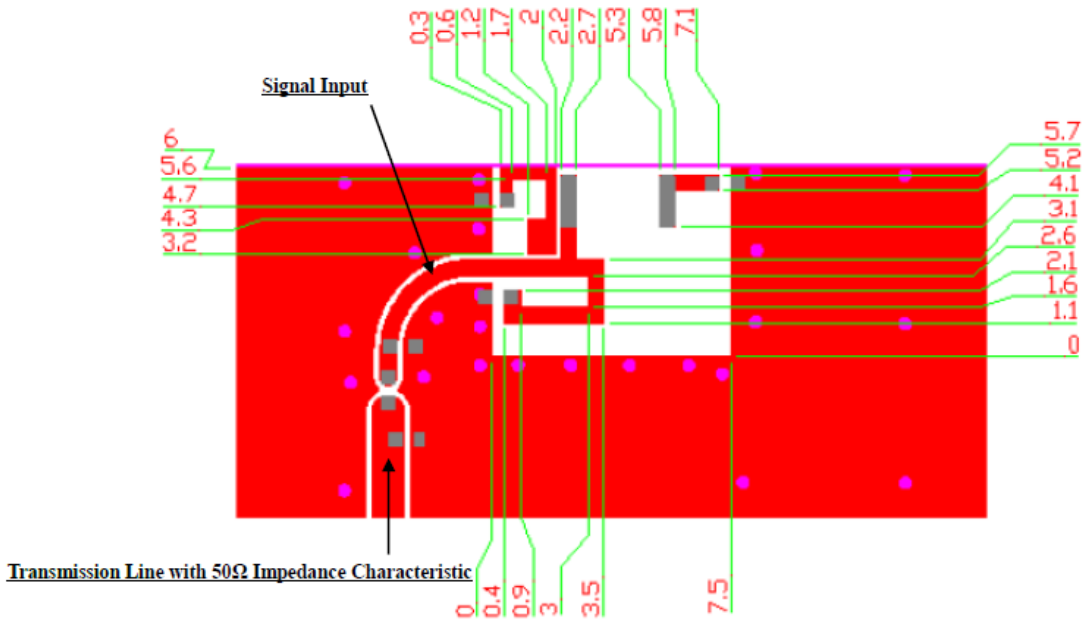
Evaluation Board

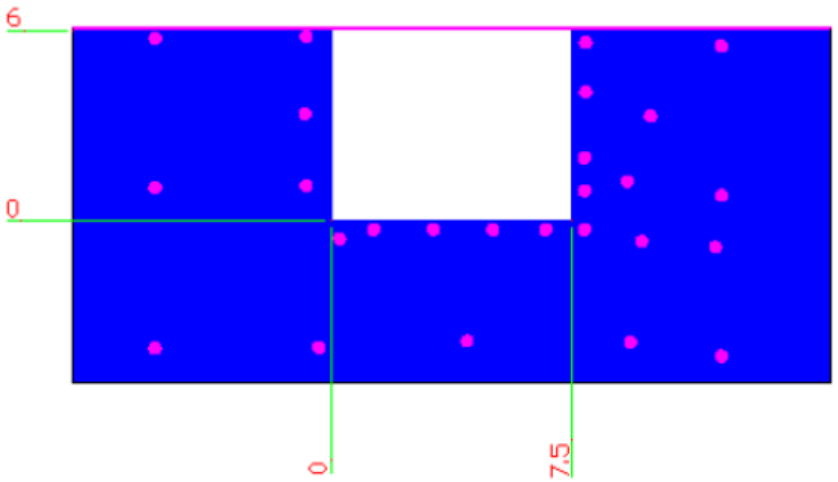


Solder Ground Pattern

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

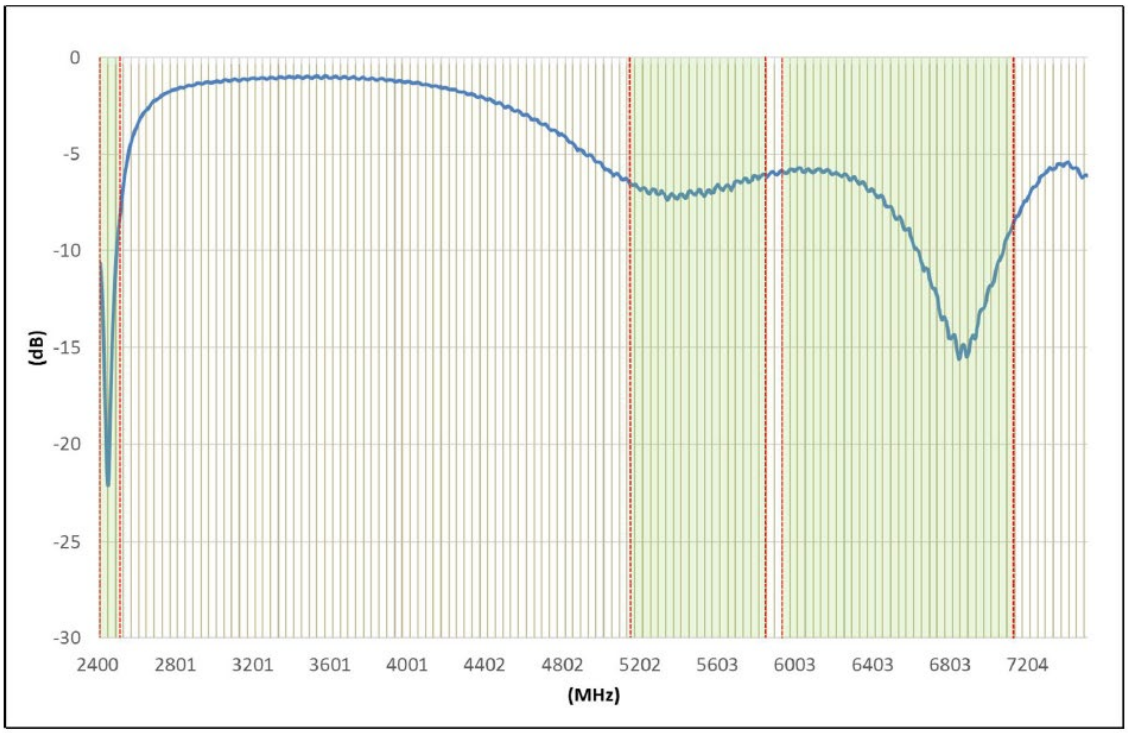
Top View



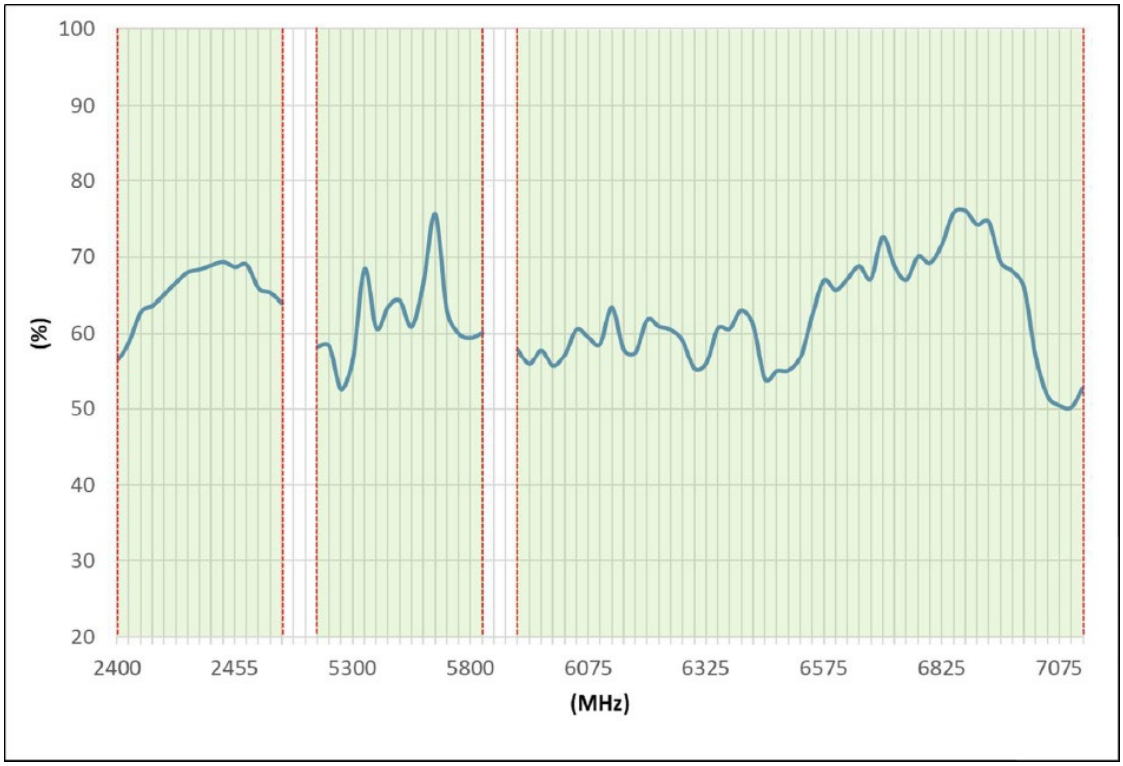


Bottom View

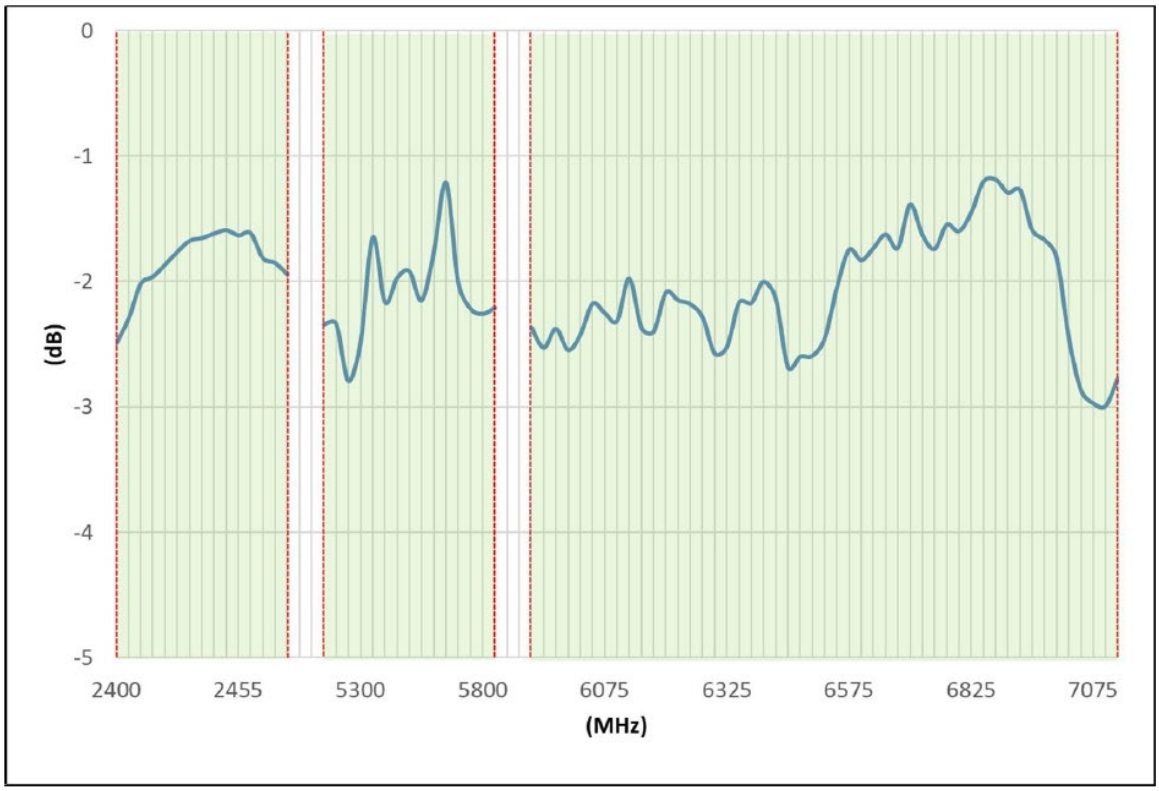
Return Loss



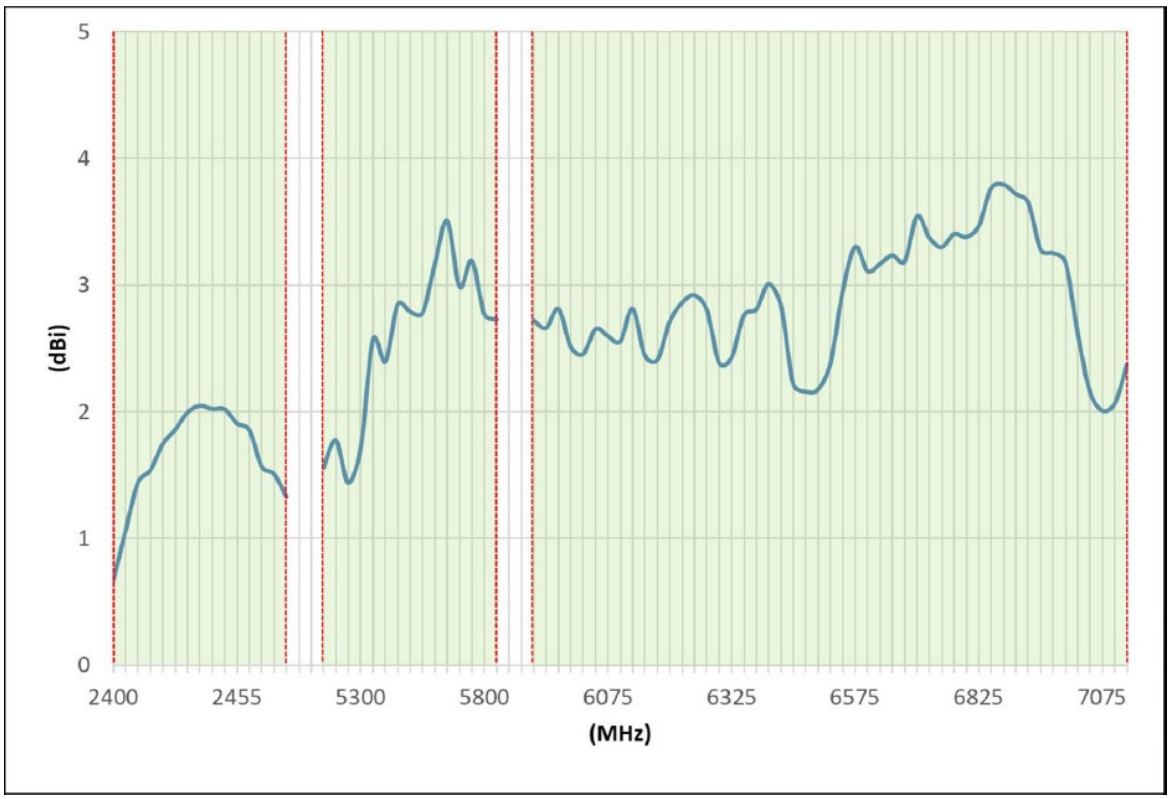
Efficiency



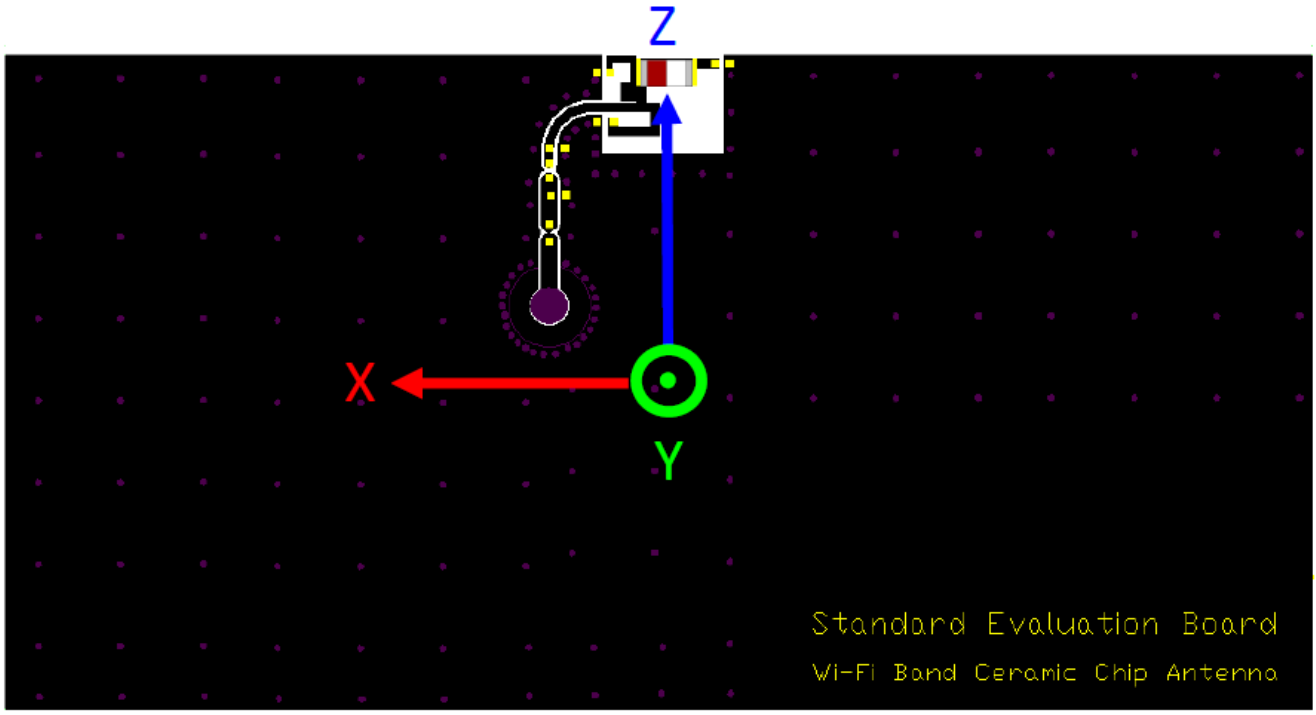
Average Gain



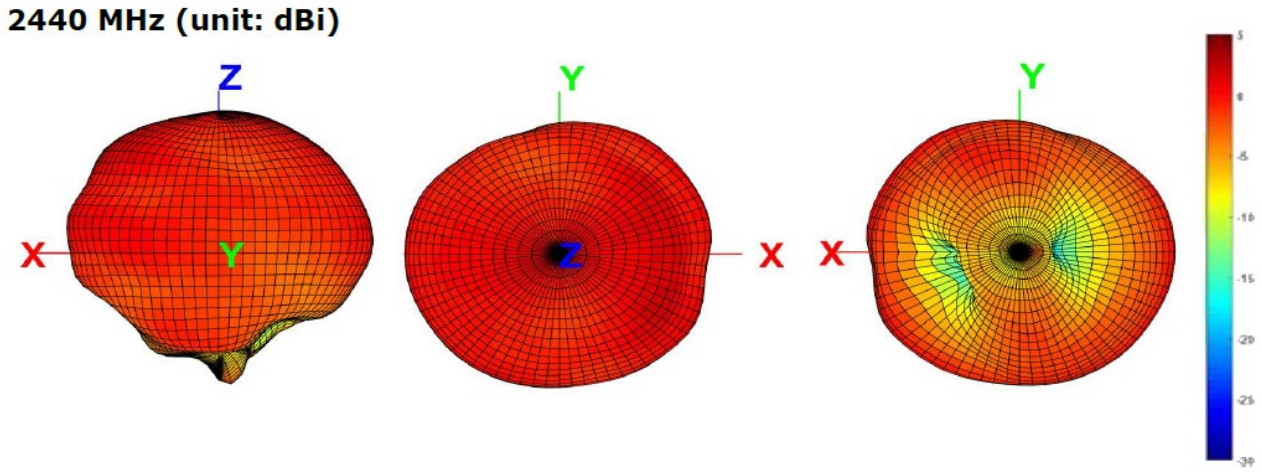
Peak Gain



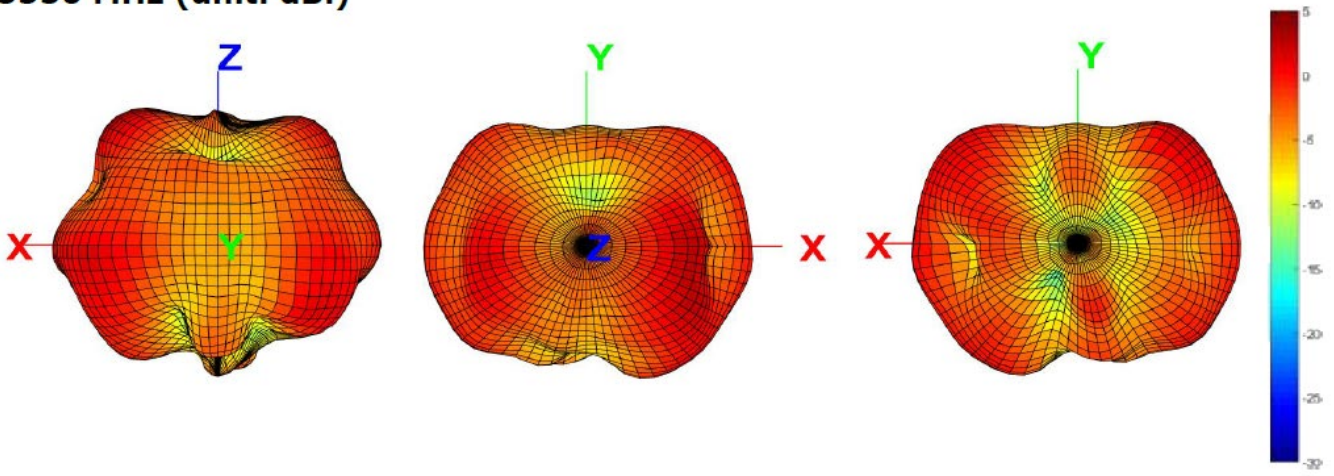
Antenna Radiation Patterns:



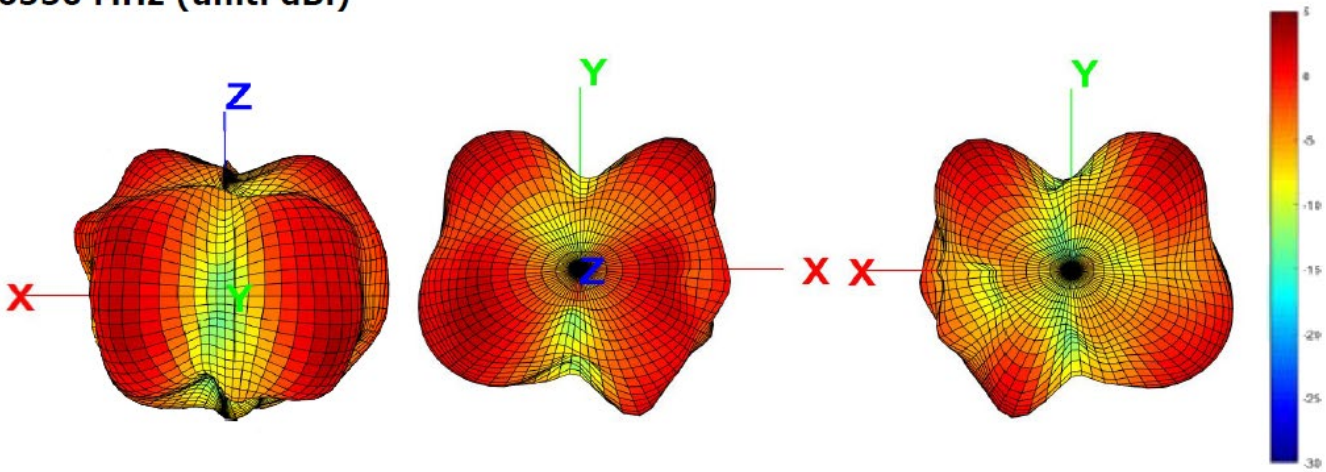
3D Radiation Gain Pattern



5550 MHz (unit: dBi)

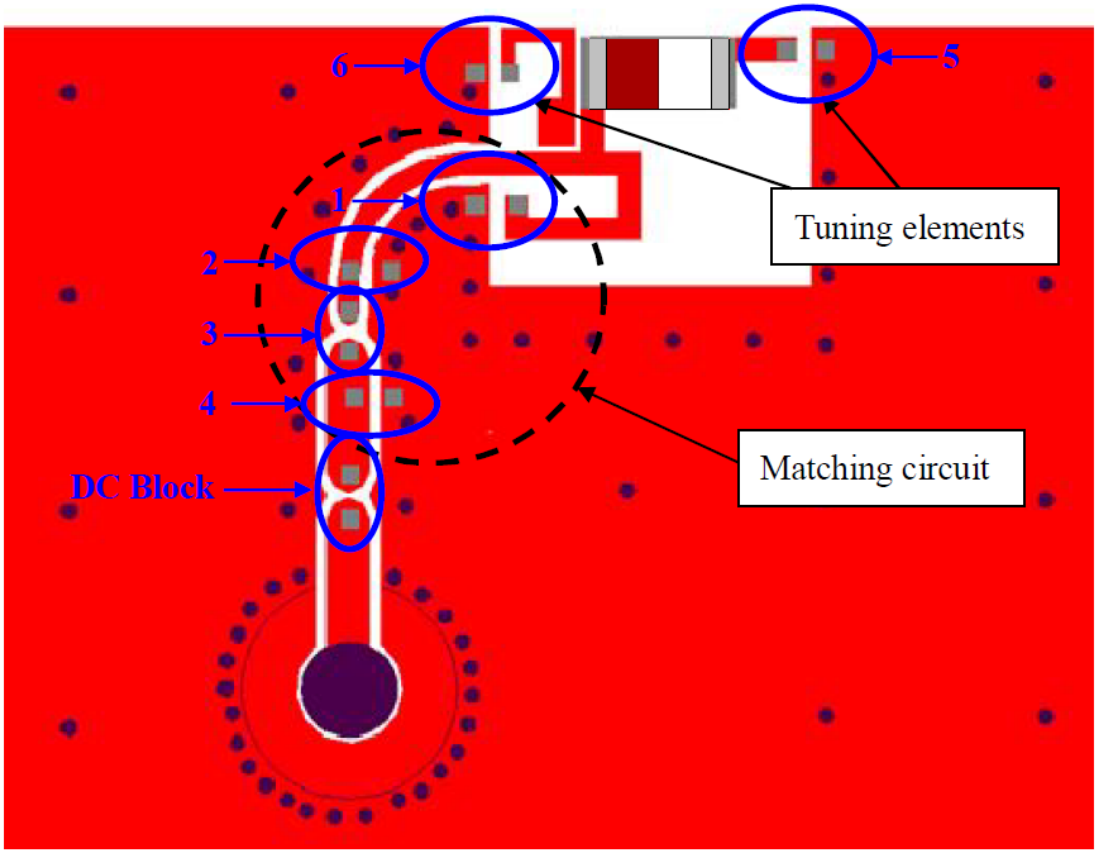


6550 MHz (unit: dBi)

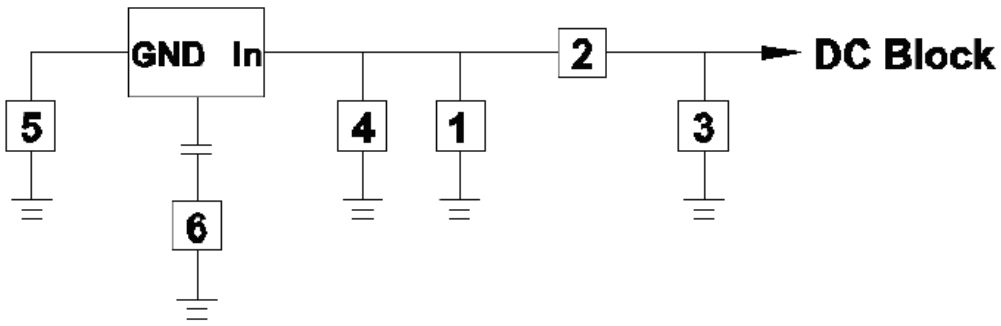


Frequency tuning and Matching circuit

Chip antenna tuning scenario：



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

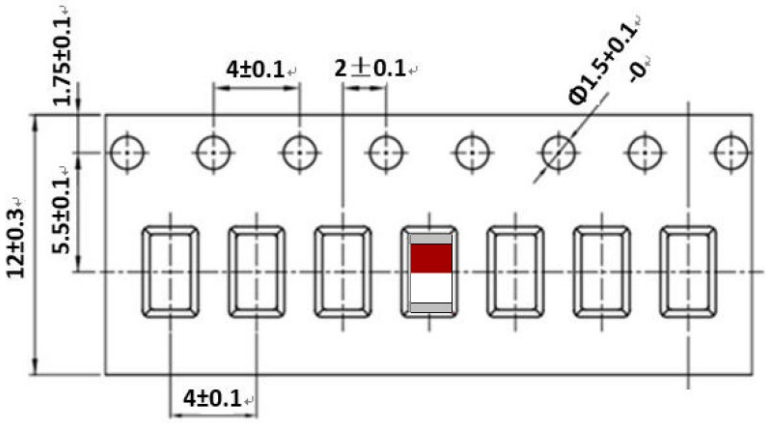
Packing

(1) Unit Weight: 0.008±0.001(g)/pcs

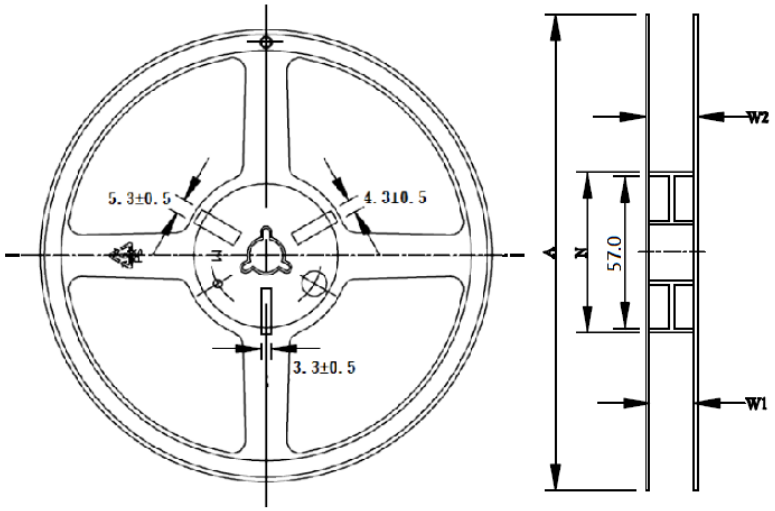
(2) Quantity/Reel: 5000pcs/Reel

(3) Plastic tape: Black Conductive Polystyrene.

a. Tape Drawing (unit: mm)



b. Reel Drawing (unit: mm)



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

Version History and Status

Version	Date Issued	Details	Status
A	January 12th, 2023	**Updated Release**	Supported

Please reach out to NIC for any customization requests and other inquiries:

- NIC Technical Support: tpmg@niccomp.com
- Compliance Support: rohs@niccomp.com