NGRM8010UW2R450G1TRF

2.4 GHz WIFI / Bluetooth Chip Antenna

9001:2015 CERTIFIED

ROHS/REACH COMPLIANT HALOGEN FREE

NIC Components Corp.

Features

- Stable and reliable performance
- FR4 Material: Monopole
- Low Profile, Compact Size
- RoHs Complaint

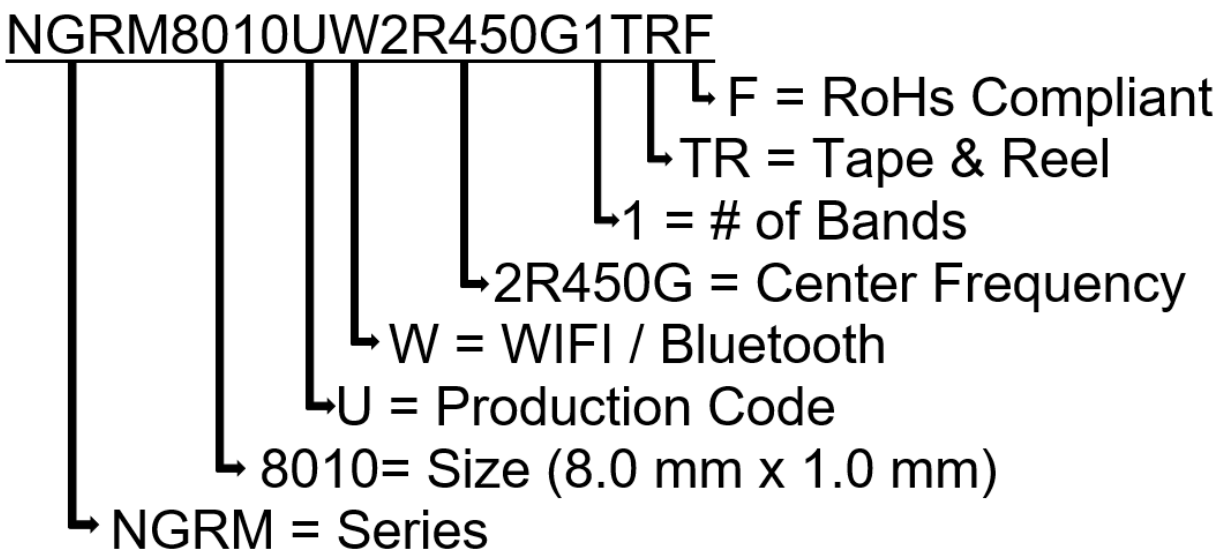
Applications

- ISM 2.4 GHz applications
- ZigBee / BLE applications
- Bluetooth earphone systems
- Hand-held devices when WiFi / Bluetooth functions are needed, e.g., Smart phones
- IEEE802.11 b/g/n
- Wireless PCMCIA cards or USB dongles

Specifications

Electrical	
Frequency Range	2400 ~ 2500 MHz
Efficiency	2450 MHz
Peak Gain	0.9 dBi Typ.
Efficiency	60 % Typ.
VSWR	2 Max.
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

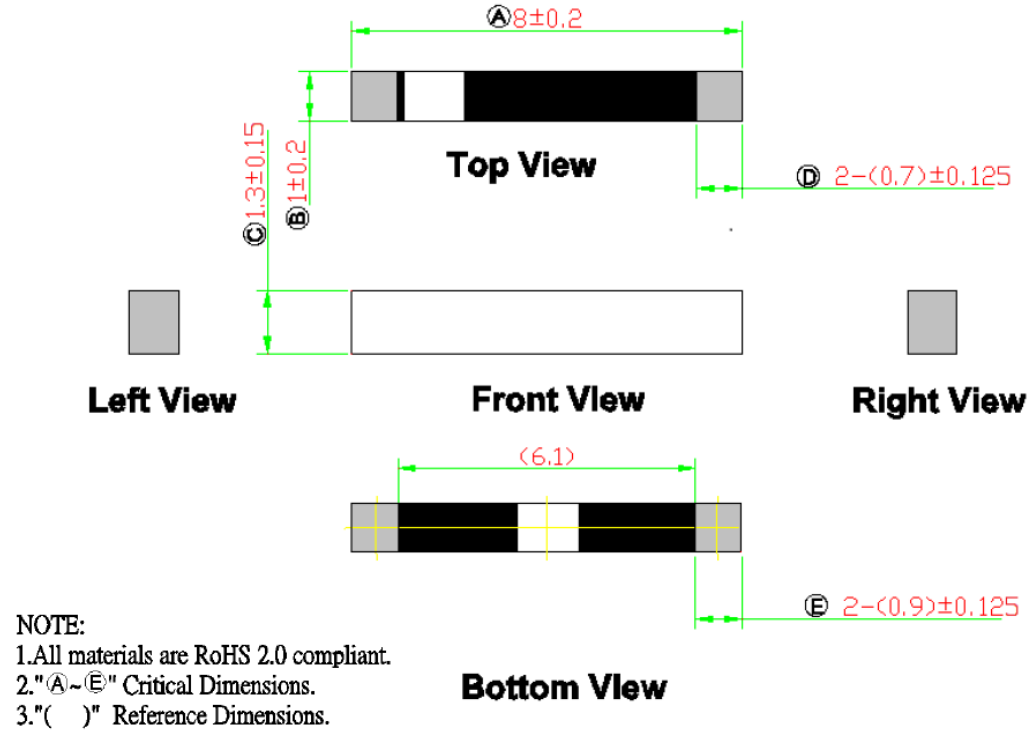
Part Number Breakdown



Pin Definition

PIN	1	2
Soldering PAD	Signal	N/C

Dimension Drawing

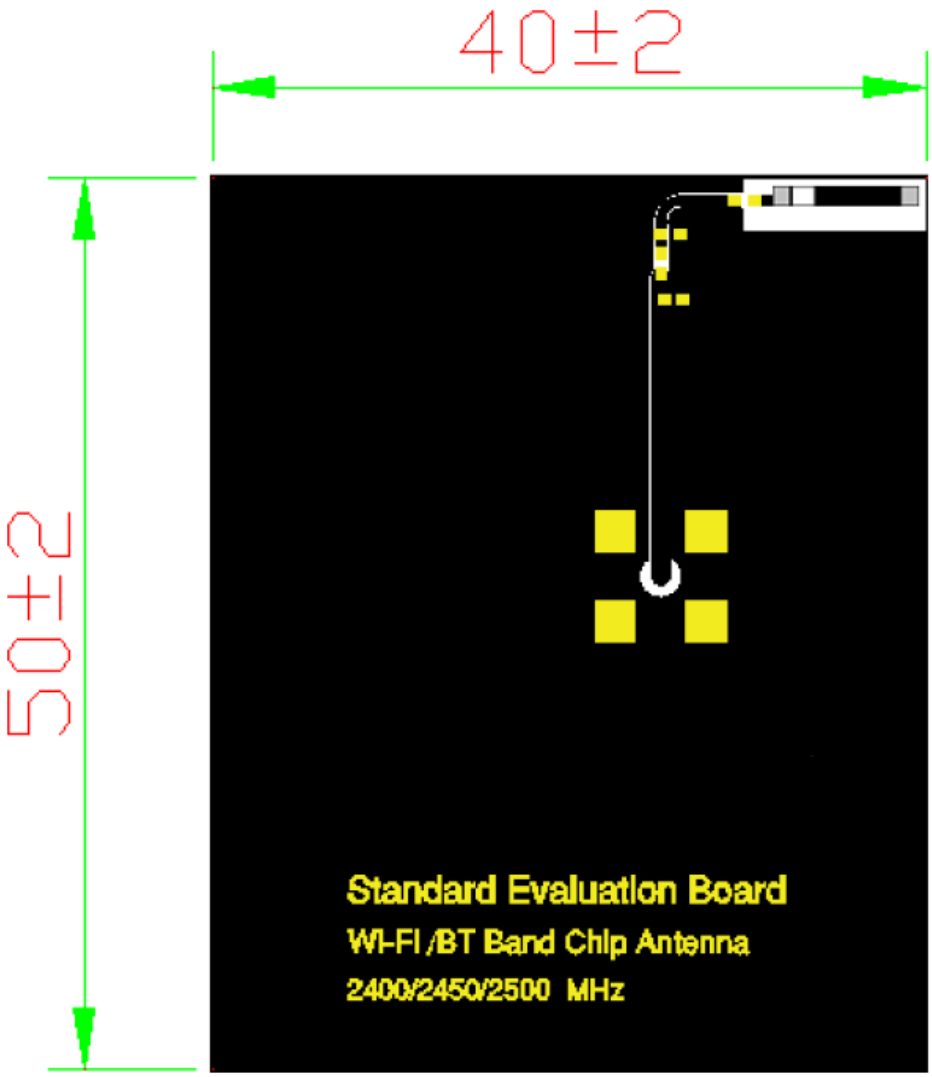


NOTE:
1.All materials are RoHS 2.0 compliant.
2."Ⓐ~Ⓔ" Critical Dimensions.
3."( )" Reference Dimensions.

Dimensions (mm) & Mechanical

Body Length (A)	8 ± 0.2
Width (B)	1 ± 0.2
Thickness (C)	1.3 ± 0.15
Connection Type	SMT
Material	FR4
Ground Plane	50 mm x 40 mm

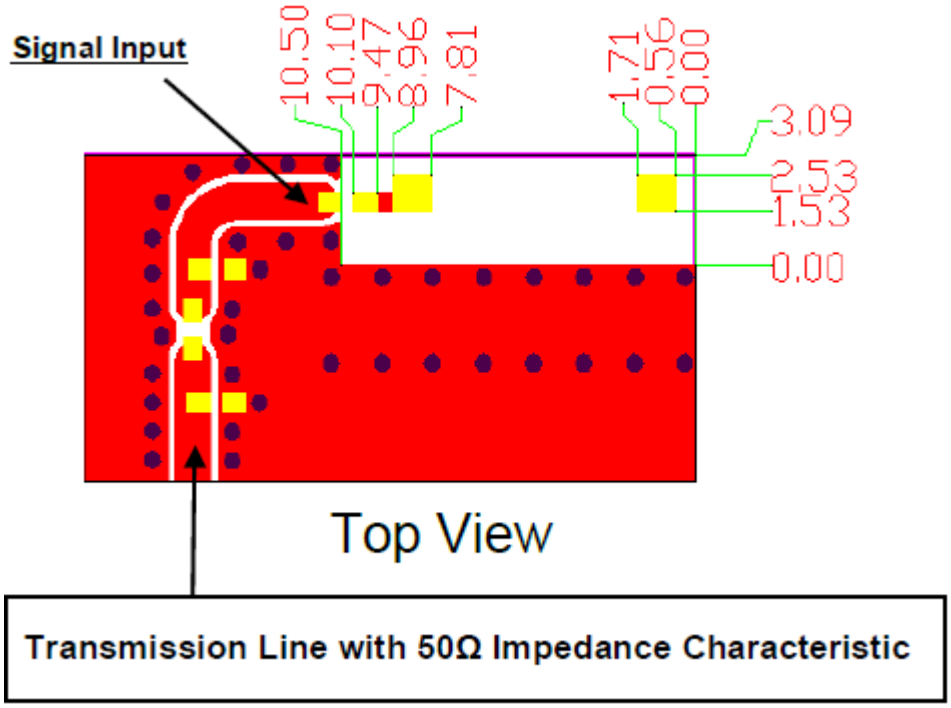
Evaluation Board

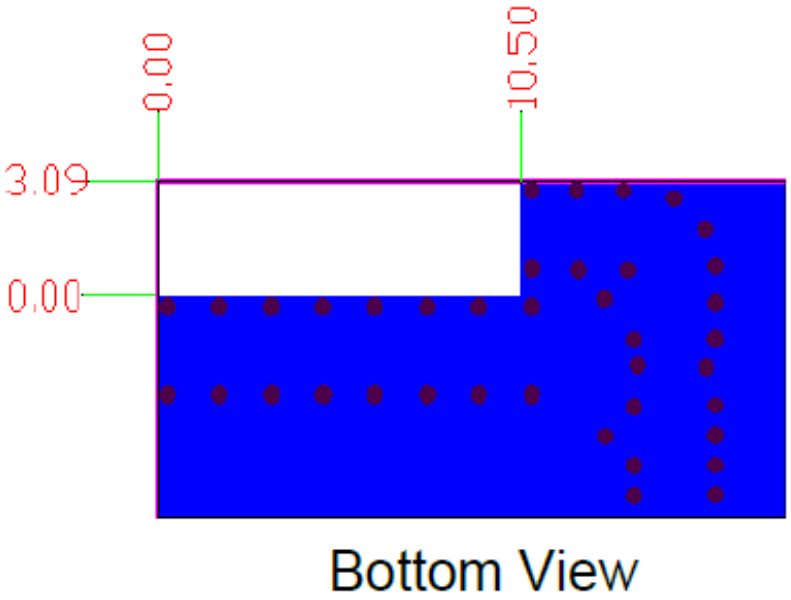


Unit: mm

Solder Land Pattern

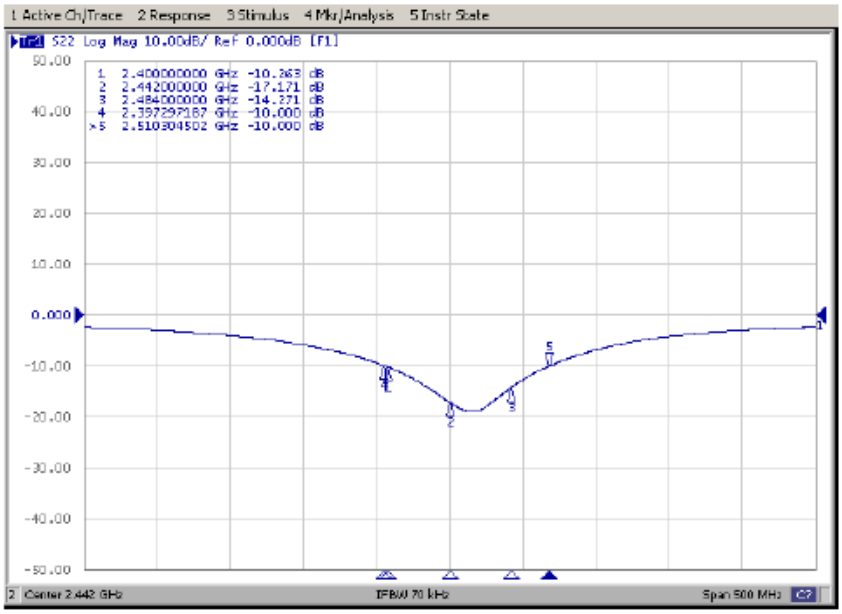
The gold areas represent the solder land pattern. Any recommendations on the matching circuit will be provided according to the customer's installation conditions.



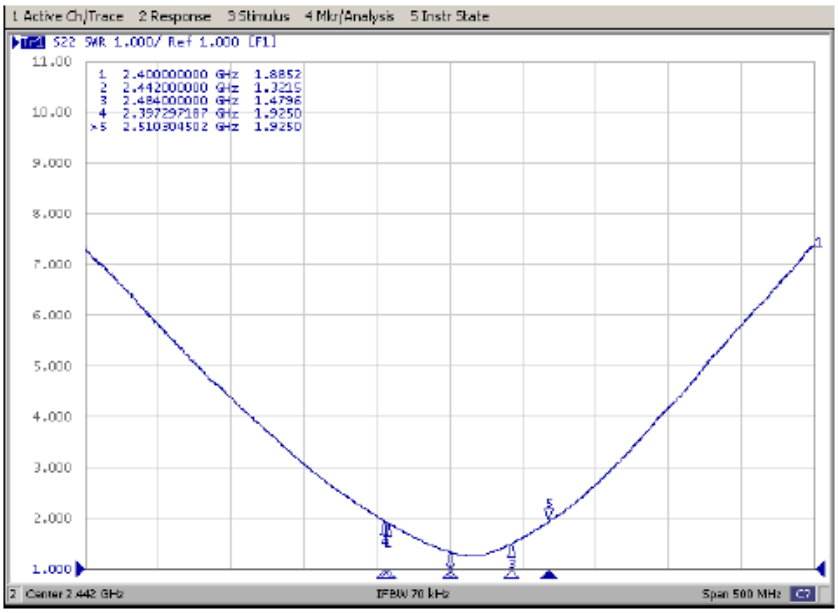


Return Loss & VSWR

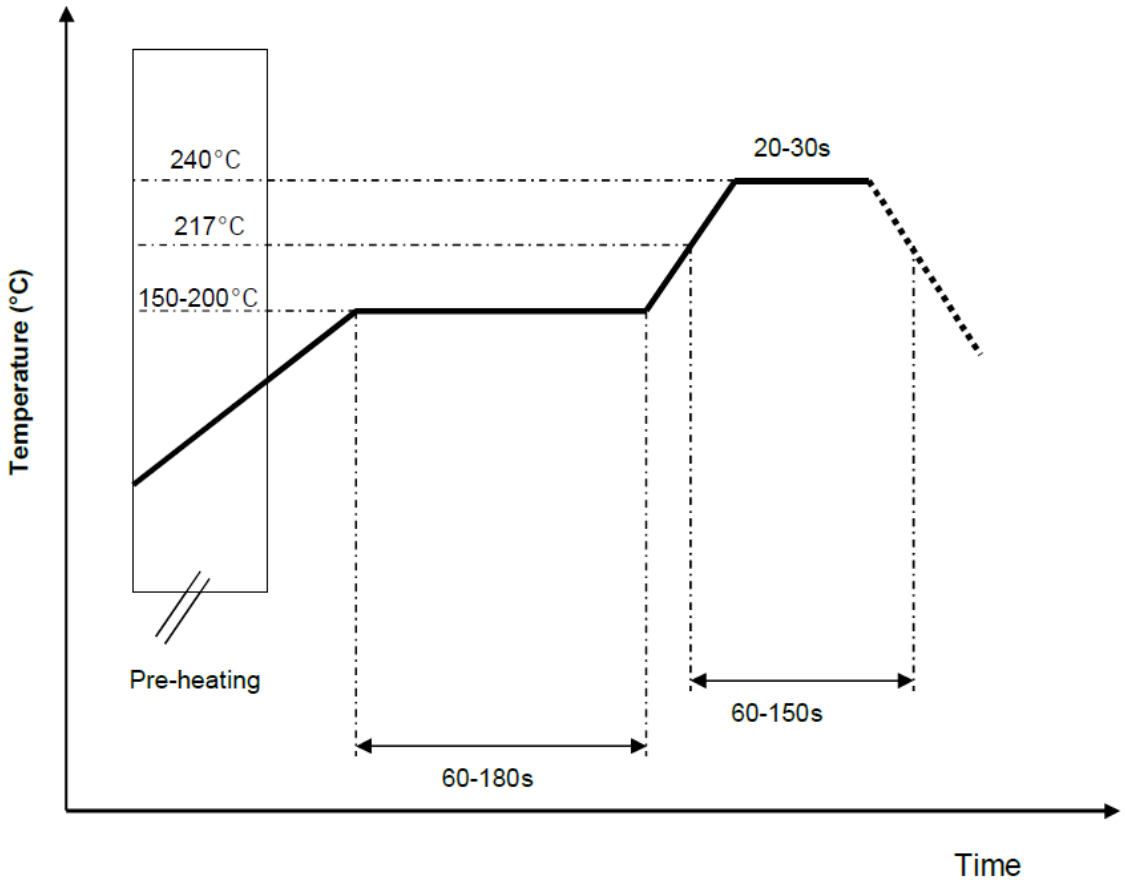
Return Loss (S_{11})



VSWR (S_{11})



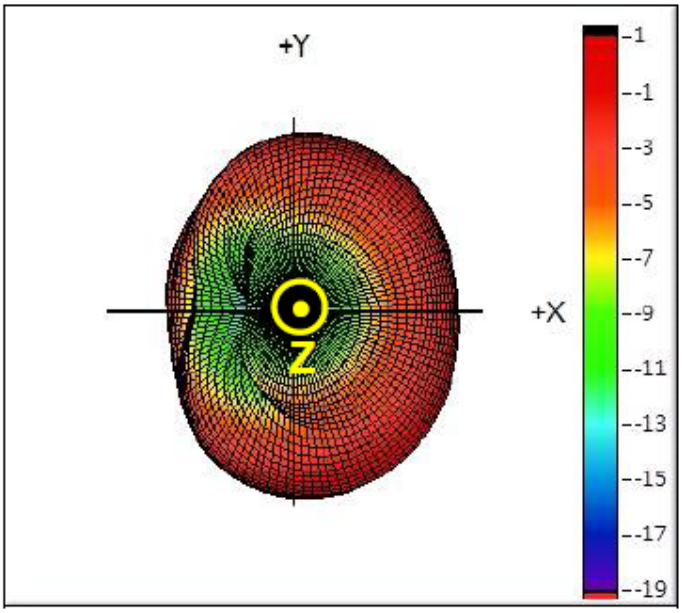
Soldering Conditions

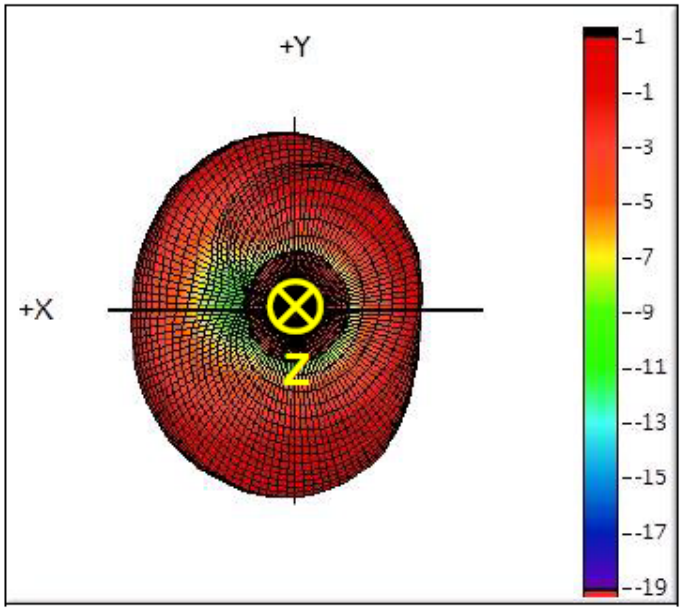


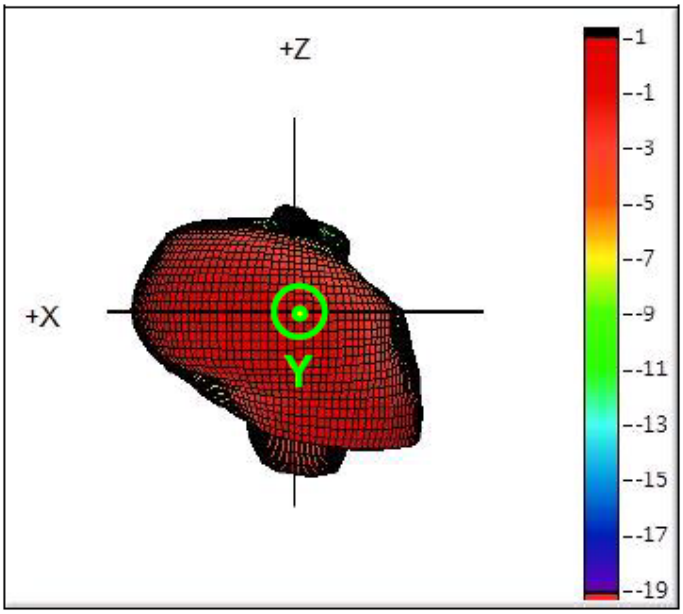
*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste

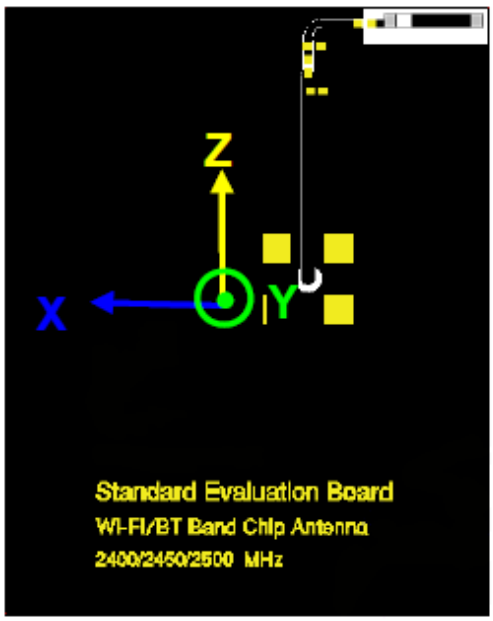
Radiation Pattern:

2400 ~ 2500 @ 2450 MHz (unit: dBi)





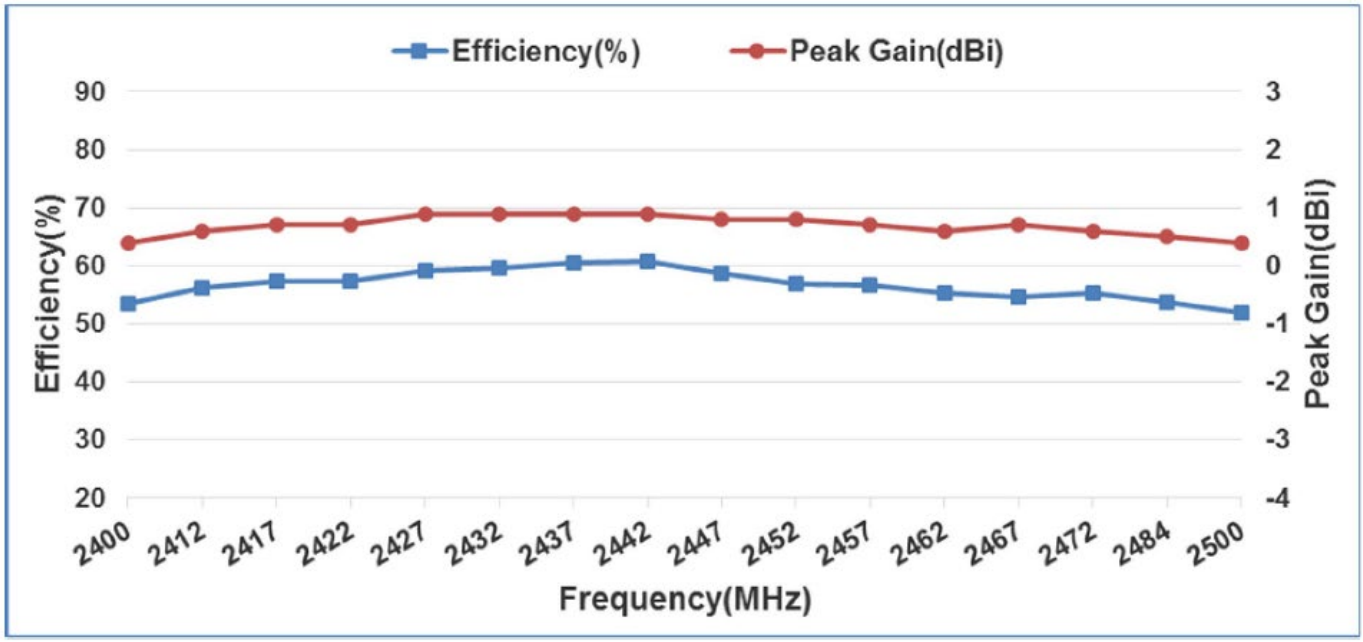




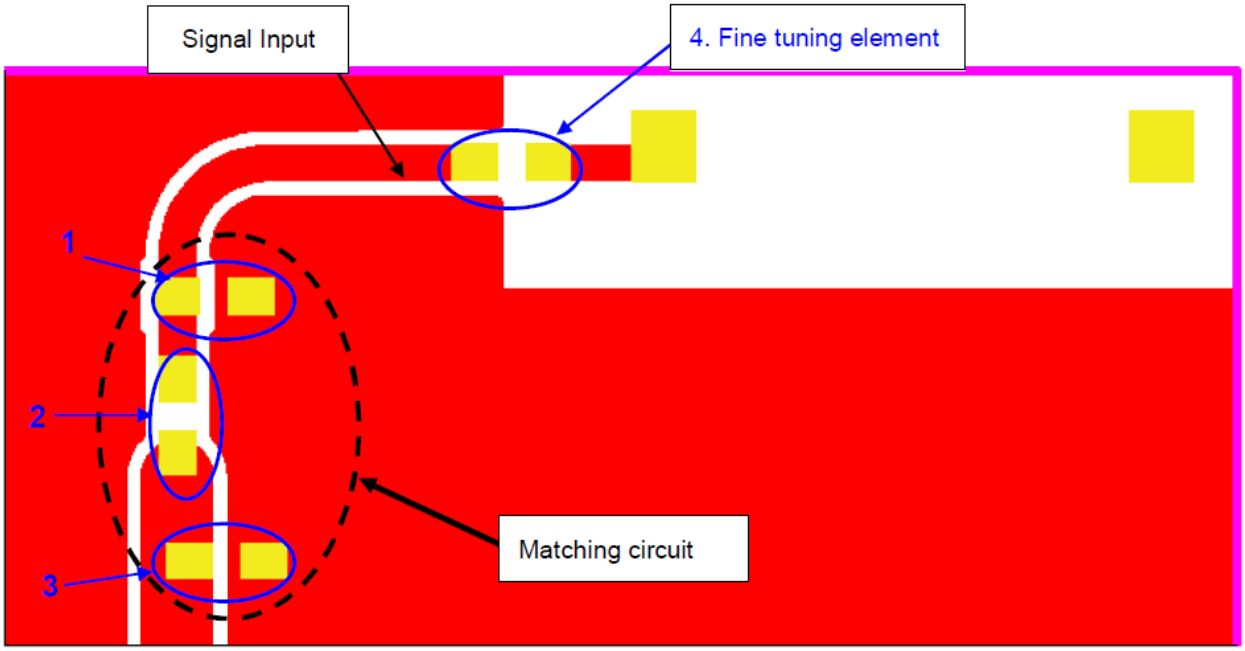
Efficiency Table

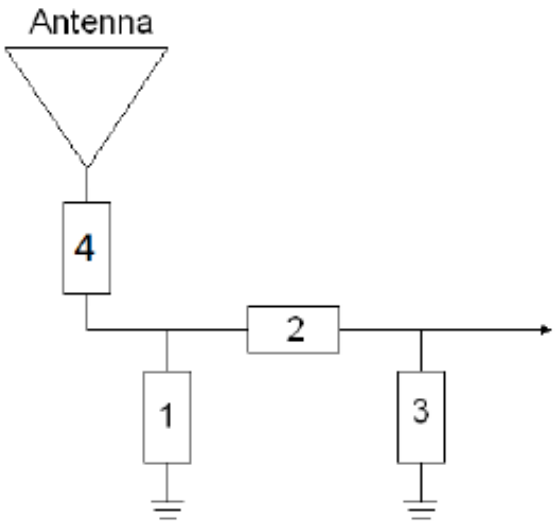
Frequency(MHz)	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484	2500
Efficiency(dB)	-2.7	-2.5	-2.4	-2.4	-2.3	-2.2	-2.2	-2.2	-2.3	-2.4	-2.5	-2.6	-2.6	-2.6	-2.7	-2.9
Efficiency(%)	53.4	56.3	57.3	57.4	59.2	59.7	60.5	60.7	58.8	56.9	56.7	55.3	54.7	55.4	53.7	51.8
Peak Gain(dBi)	0.4	0.6	0.7	0.7	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.6	0.7	0.6	0.5	0.4

Radiation Pattern:



Frequency Tuning & Matching Circuit





System Matching Circuit Component

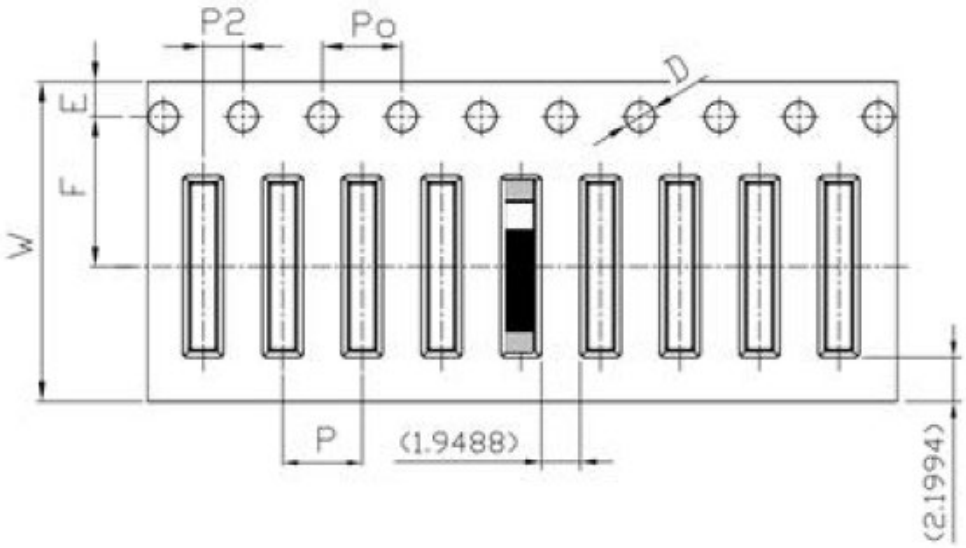
Location	Description	Tolerance	NIC Part Number
1	2.4pF, (0402)	±0.05pF	NMC-Q0402NPO2R4A25TRPF
2	0Ω, (0402)	-	NRC04ZOTRF
3	0.4pF, (0402)	±0.05pF	NMC-Q0402NPO0R4A25TRPF
4 Fine Tuning Element	3.9nH, (0402)	±0.1nH	NMLQ04B3N9TRF

Packing

(1) Quantity/Reel: 2500 pcs/Reel

(2) Plastic tape: Black Conductive Polystyrene.

a. Tape Drawing



b. Tape Dimensions (unit: mm)

Feature	Specifications	Tolerances
W	16.00	±0.30
P	4.00	±0.10
E	1.75	±0.10
F	7.50	±0.10
P2	2.00	±0.10
D	1.50	+0.10 -0.00
Po	4.00	±0.10
10Po	40.00	±0.20