

NGRM7020UW2R442G1TRF

2.4 GHz WiFi / Bluetooth Chip Antenna



Features

- Stable and reliable performance
- Low temperature coefficient of frequency
- Low Profile, Compact Size
- RoHs Complaint

Applications

- ISM 2.4GHz 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

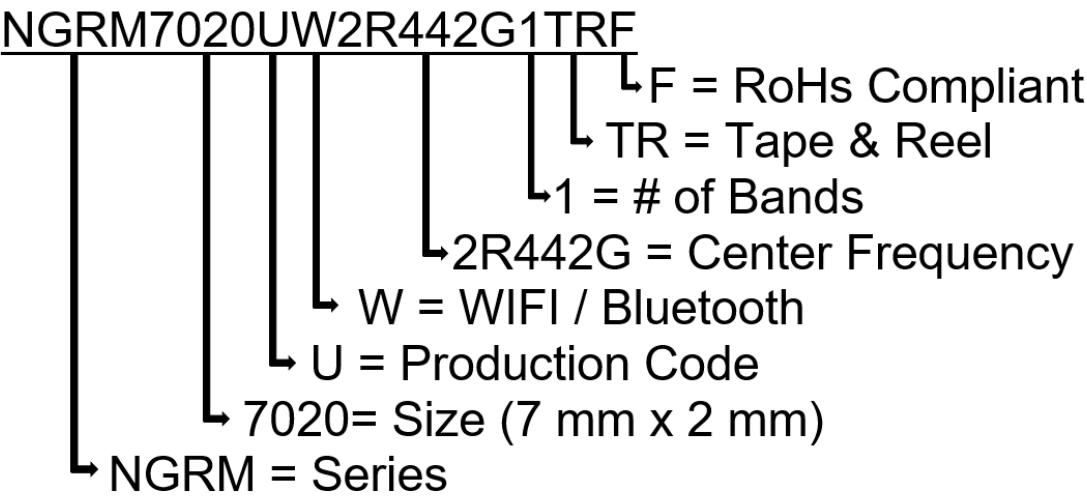
Electrical	
Frequency Range	2400 ~ 2484 MHz
Bandwidth	94 MHz (typ.)
Peak Gain	2 dBi
Efficiency	70 %
V.S.W.R	2 Max.
Maximum Input Power	2 W
Polarization	Linear
Impedance	50Ω
Environmental	
Operating Temperature	-40°C~+85°C
Storage Temperature	-5°C~+40°C
Relative Humidity	20% to 70%
Shelf Life	1 year
RoHs Compliant	Yes

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Part Number Breakdown



Pin Definition



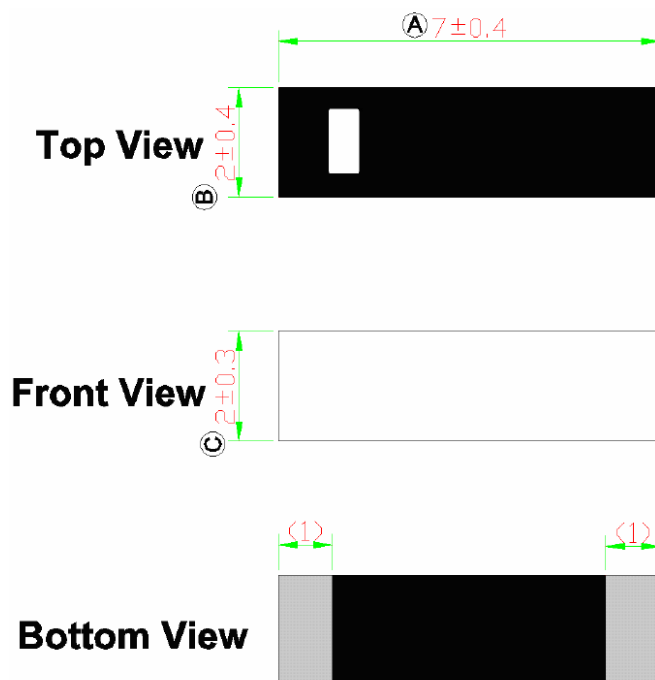
Item	PIN 1	PIN 2
Terminal	Signal Input	Soldering Pad

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Dimension Drawing



NOTE:

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

Dimensions (mm) & Mechanical

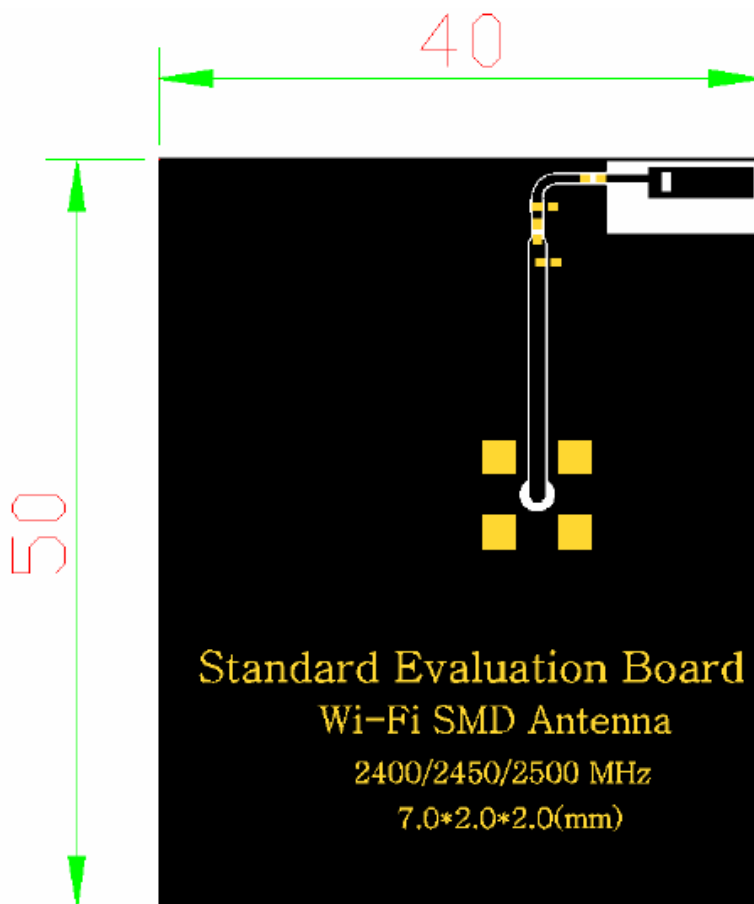
Body Length (A)	7 ± 0.4
Width (B)	2 ± 0.4
Thickness (C)	2 ± 0.3
Connection Type	SMT
Material	FR4
Ground Plane	50 mm x 40 mm

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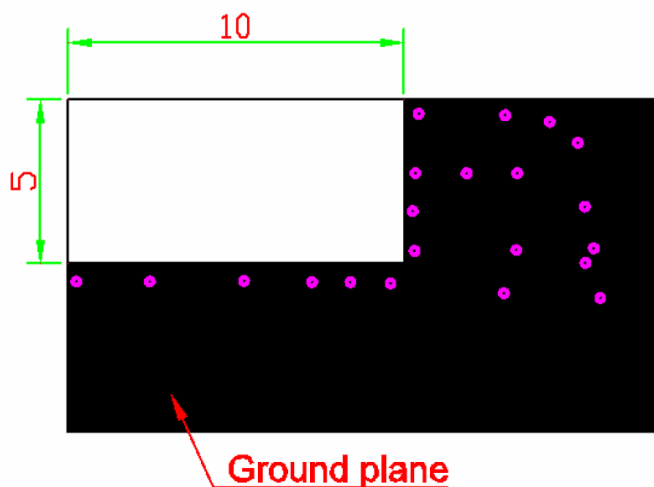
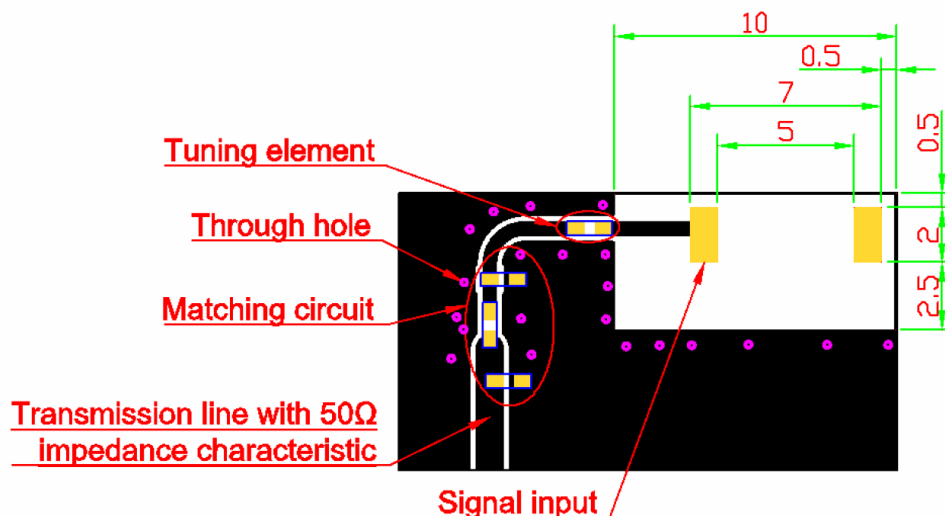


Evaluation Board

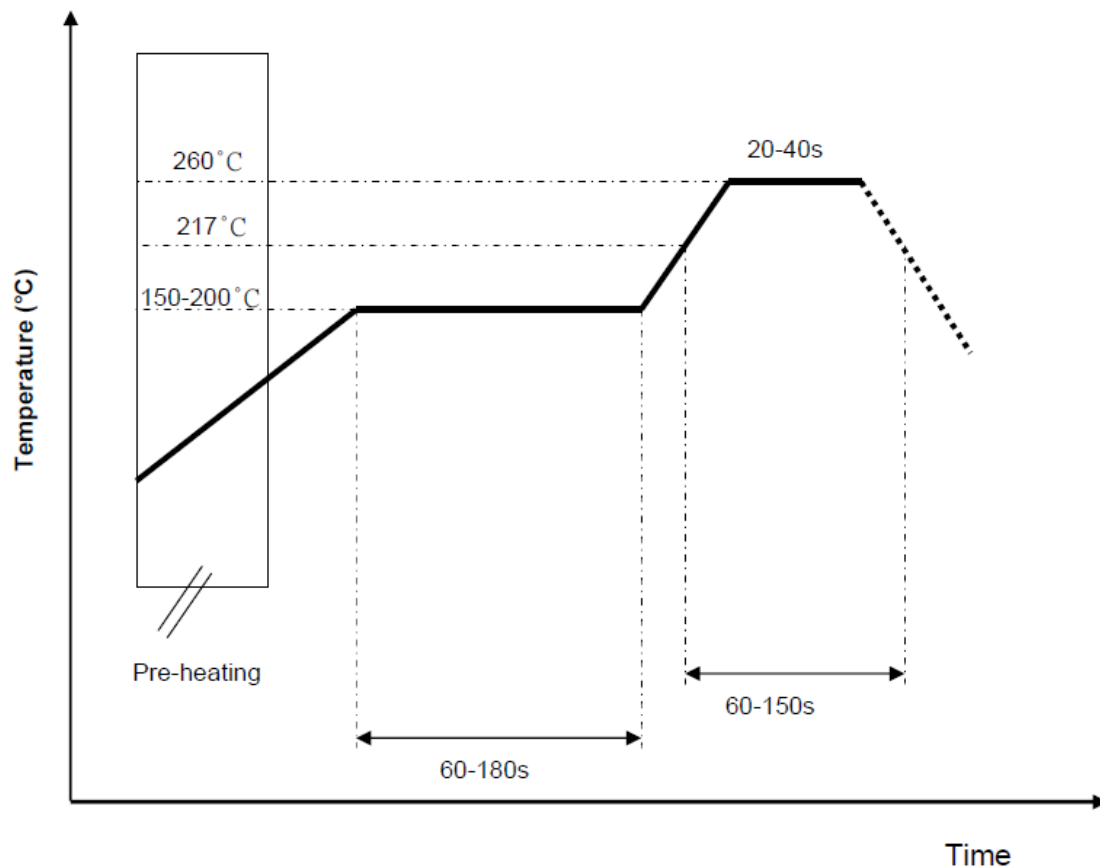


Solder Land Pattern

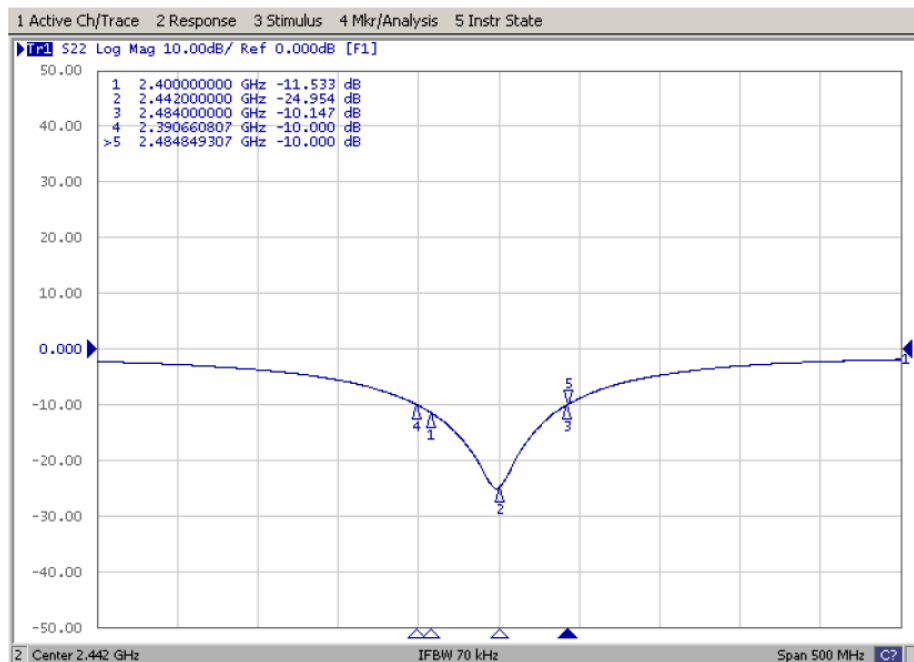
The gold areas represent the solder land pattern. Any recommendations on the matching circuit will be provided according to the customer's installation conditions.



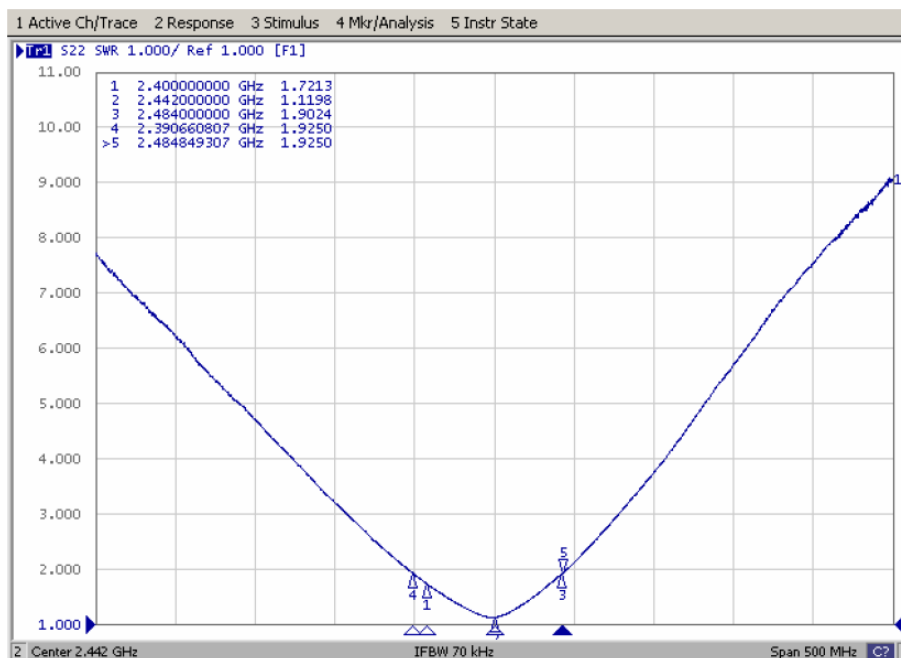
Soldering Conditions



Return Loss (S_{11})

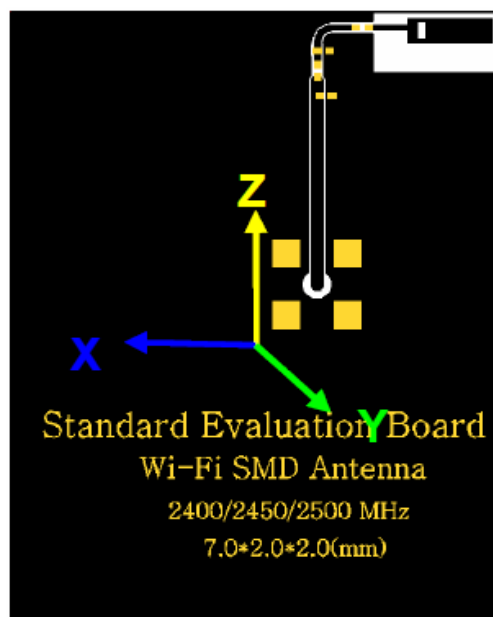
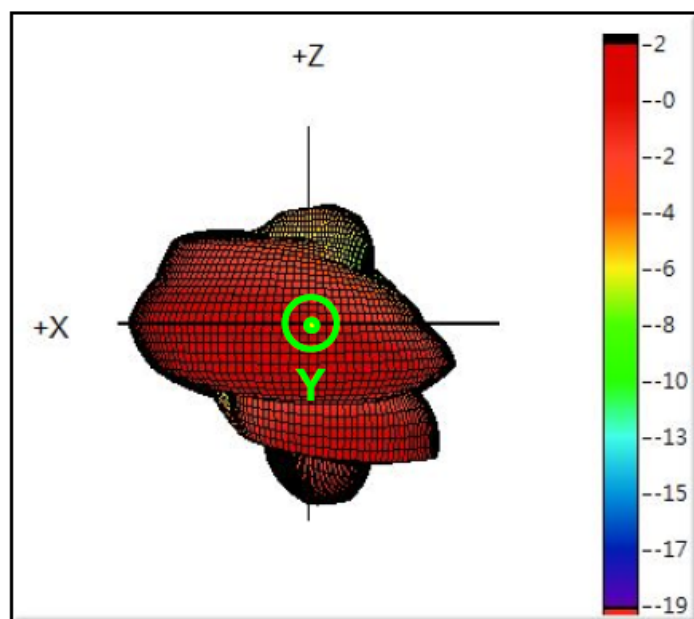
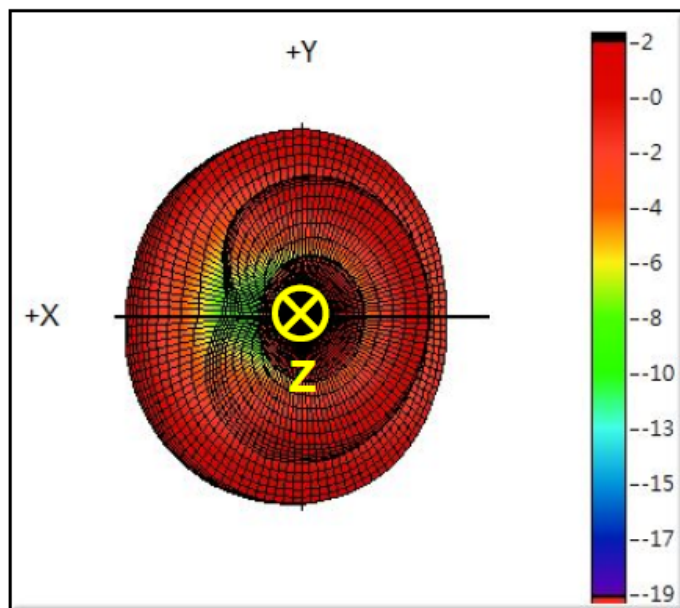
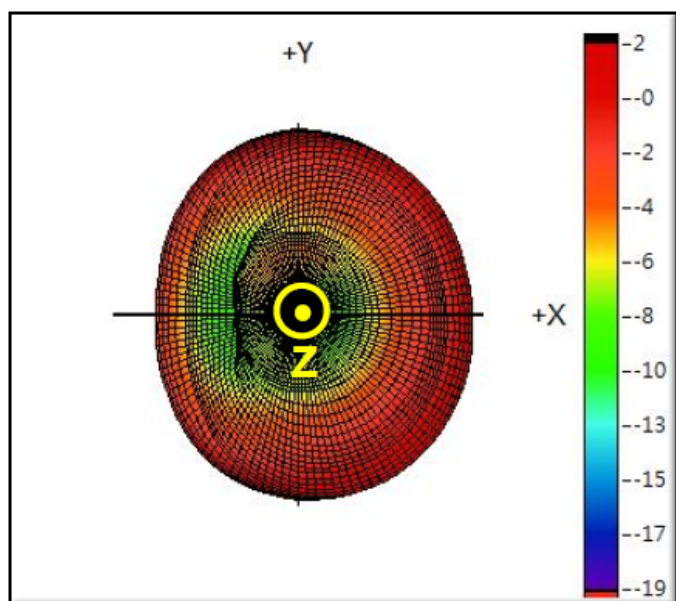


VSWR (S_{11})



Radiation Patterns

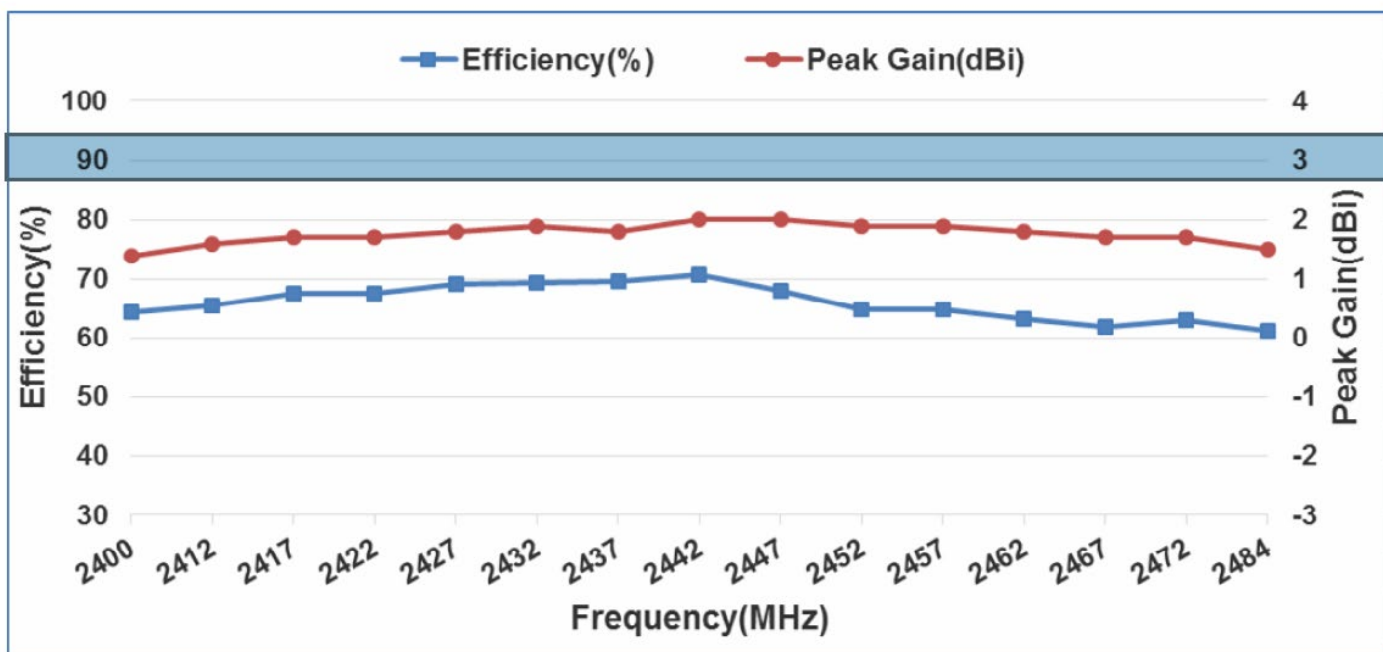
3D Gain Patterns @ 2442 MHz



Efficiency Table

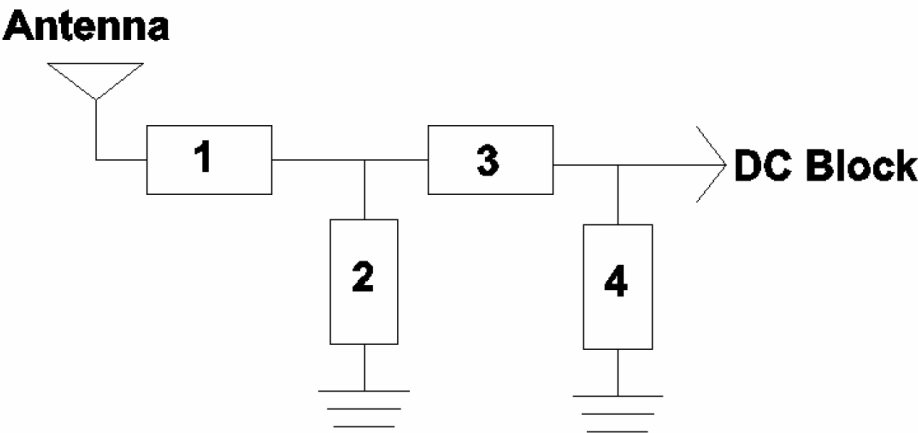
Frequency(MHz)	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484
Efficiency(dB)	-1.9	-1.8	-1.7	-1.7	-1.6	-1.6	-1.6	-1.5	-1.7	-1.9	-1.9	-2.0	-2.1	-2.0	-2.1
Efficiency(%)	64.5	65.6	67.5	67.5	69.1	69.4	69.6	70.8	68.1	64.9	64.8	63.2	61.8	63.0	61.2
Peak Gain(dBi)	1.4	1.6	1.7	1.7	1.8	1.9	1.8	2.0	2.0	1.9	1.9	1.8	1.7	1.7	1.5

Efficiency vs. Frequency





Matching circuit



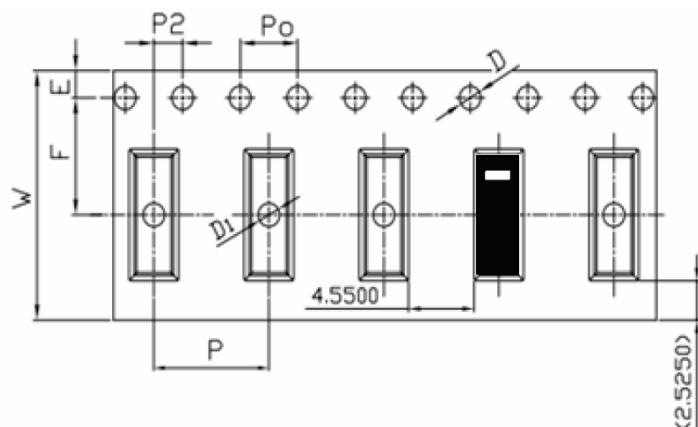
System Matching Circuit Component

Location	Description	Tolerance	NIC Part Number
1	3.9nH, (0402)	±0.1nH	NMLQ04B3N9TRF
2	1.2pF, (0402)	±0.1pF	NMC-Q0402NPO1R2B50TRPF
3	0Ω	-	NRC04Z0TRF
4	1.2pF, (0402)	±0.1pF	NMC-Q0402NPO1R2B50TRPF

Packing

- (1) Unit Weight: 0.056±0.005(g)/pcs
- (2) Quantity/Reel: 900 pcs/Reel
- (3) Plastic tape: Black Conductive Polystyrene.

a. Tape Drawing



b. Tape Dimensions (unit: mm)

Feature	Specifications	Tolerances
W	16.00	±0.30
P	8.00	±0.10
E	1.75	±0.10
F	7.5	±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

c. Reel Drawing (unit: mm)

