

Features

- Stable and reliable performance
- Low Profile, Compact Size
- Low Temperature coefficient of frequency
- 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

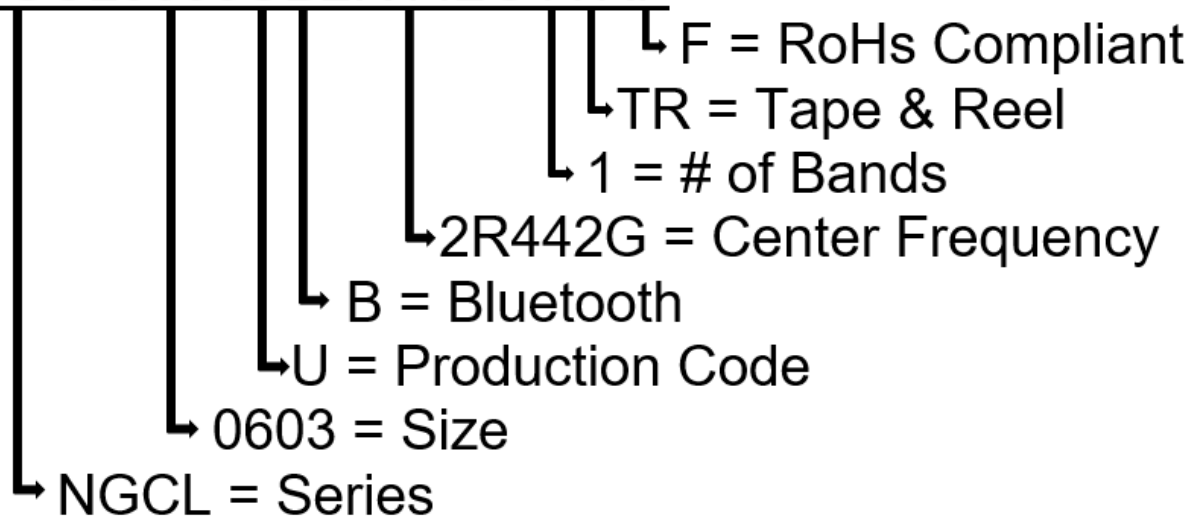
Frequency Range	2400~2500MHz
Center Frequency	2442 MHz
Peak Gain	-0.3 dBi typ.
Efficiency	60% typ.
V.S.W.R	2.5 Max
Maximum Input Power	2W
Polarization	Linear
Impedance	50Ω

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

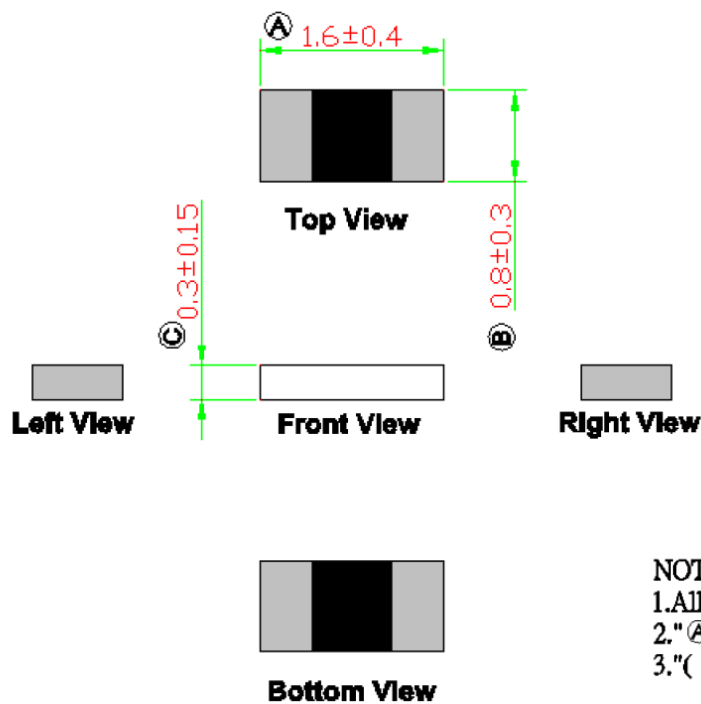
Part Number Breakdown

NGCL0603UB2R442G1TRF





Dimension Drawing



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

Dimensions (mm) & Mechanical

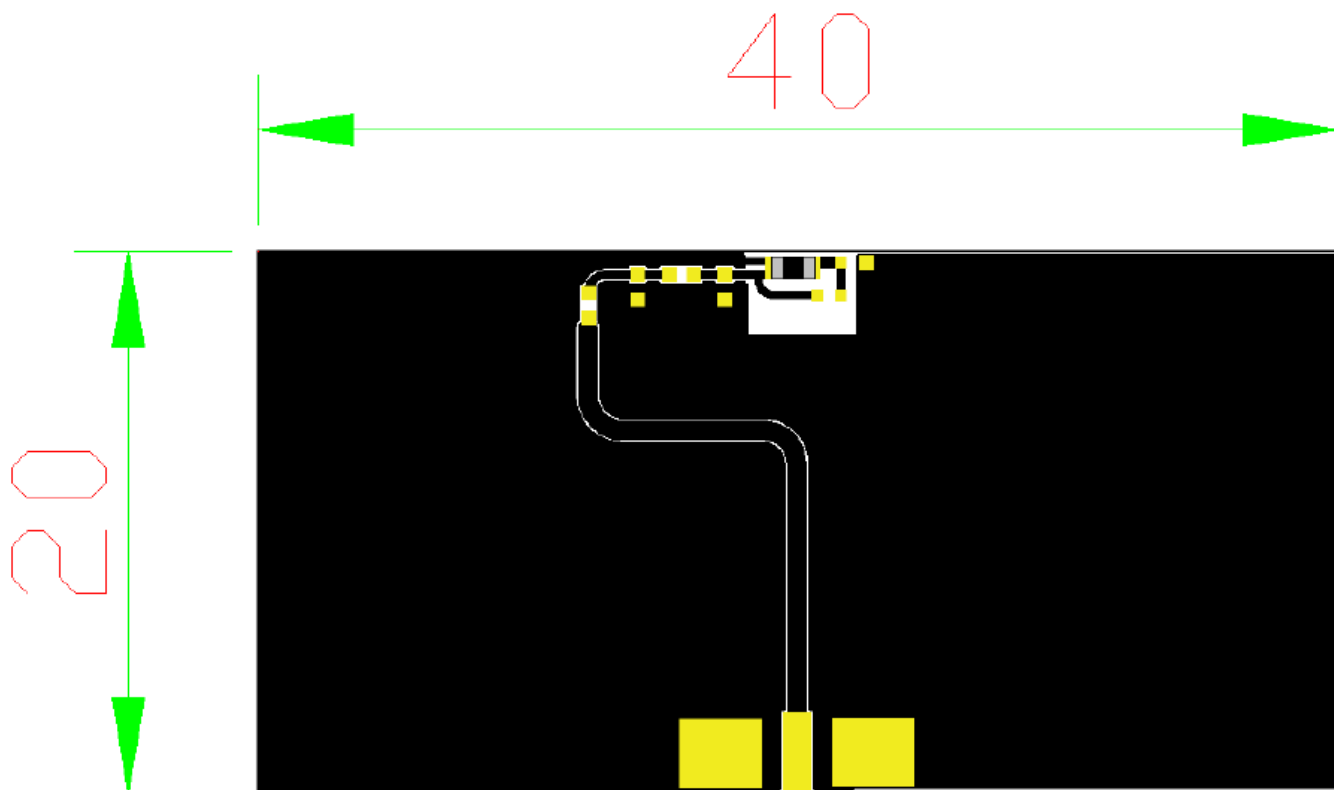
Body Length (A)	1.6 ± 0.4
Width (B)	0.8 ± 0.3
Thickness (C)	0.3 ± 0.15
Connection Type	SMT
Ground Plane	40 mm x 20 mm
Material	Ceramic

NGCL0603UB2R442G1TRF

2.4 GHz Bluetooth Chip Antenna

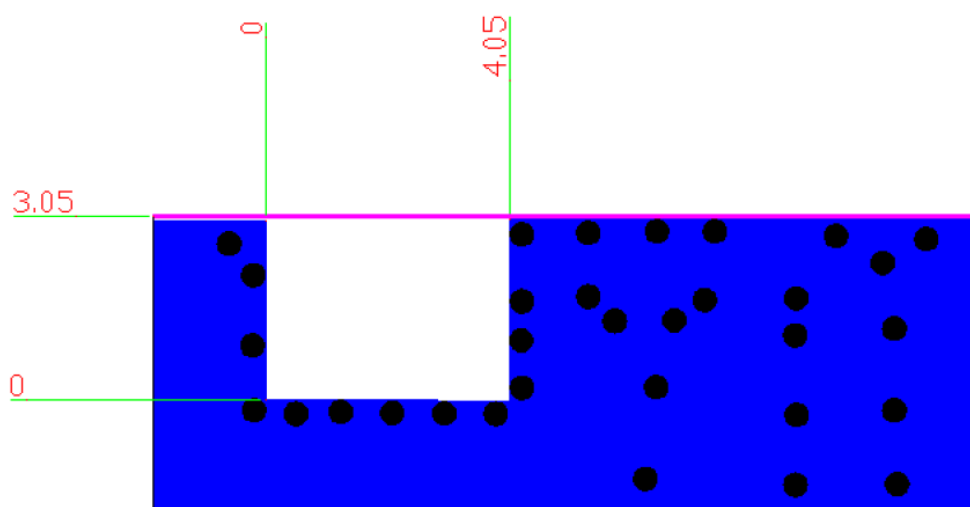
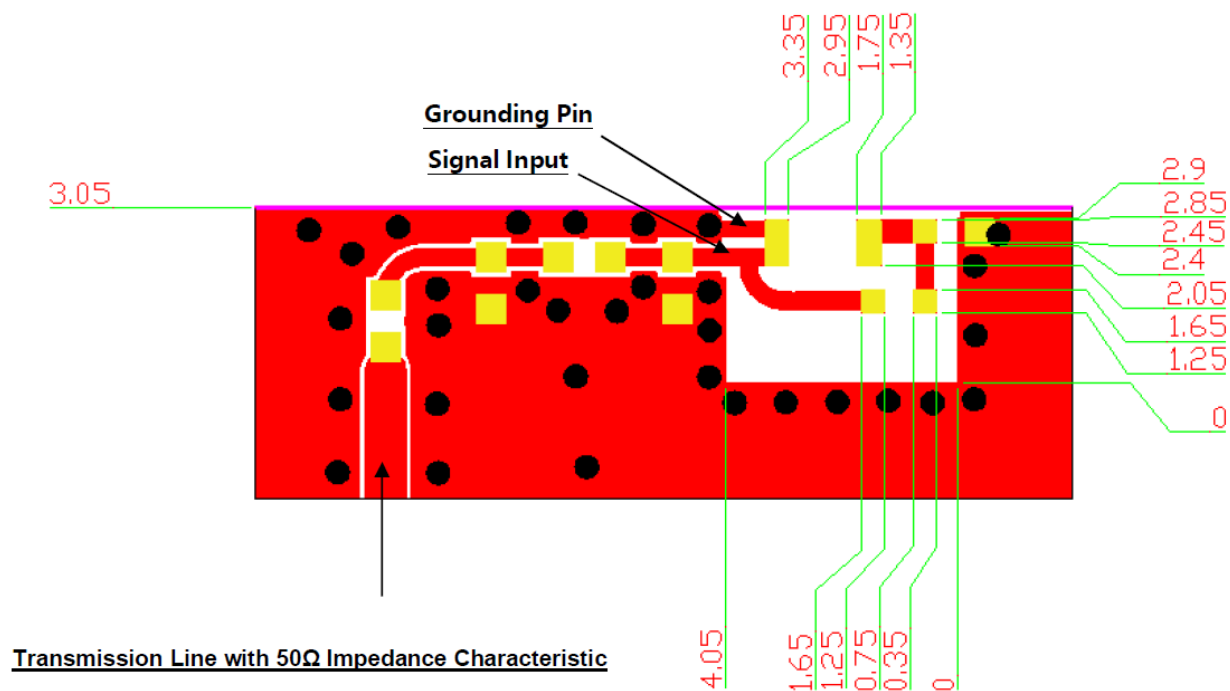


Evaluation Board

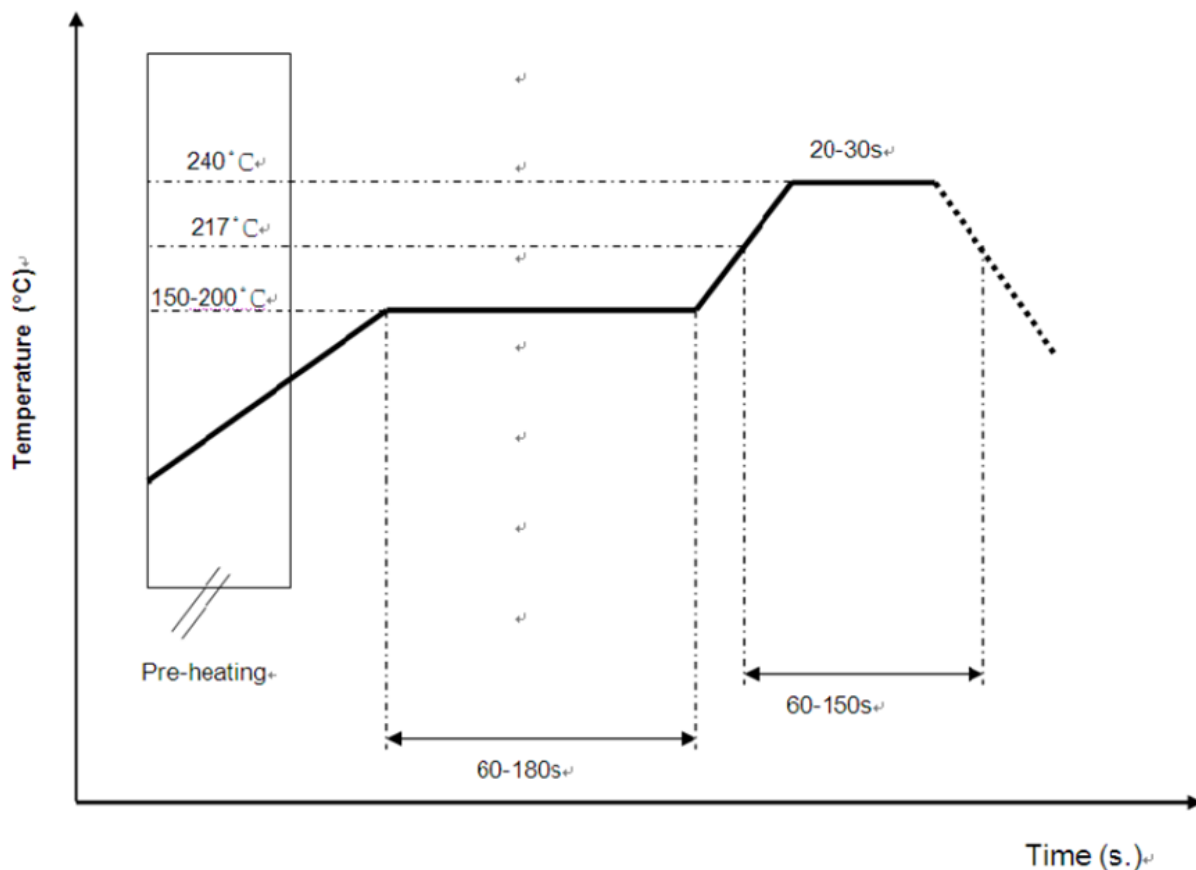


Solder Land Pattern

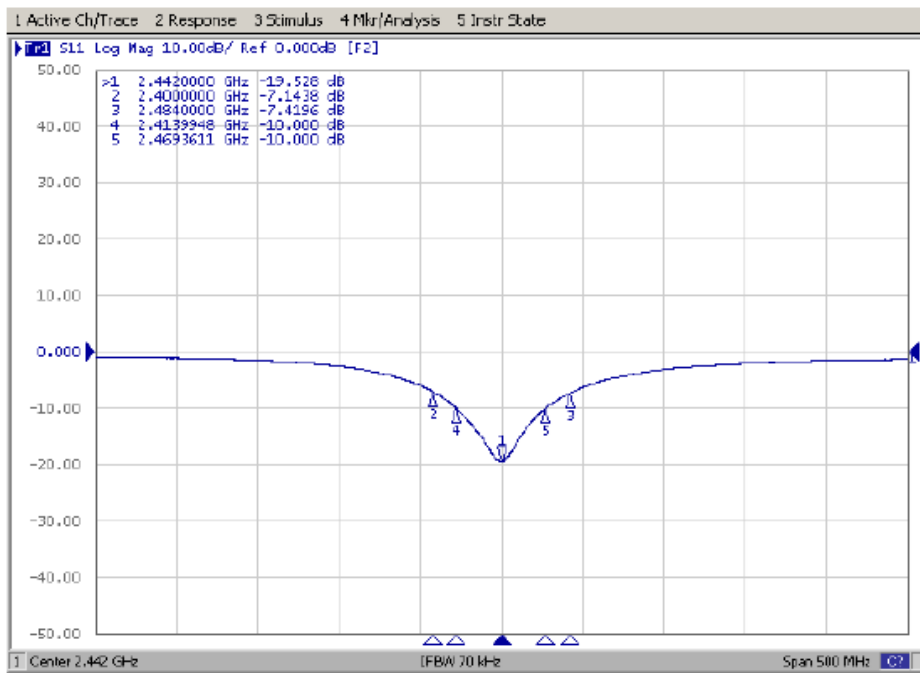
The gold areas represent the solder land pattern. Any recommendations on the matching circuit will be provided according to the customer's installation conditions.



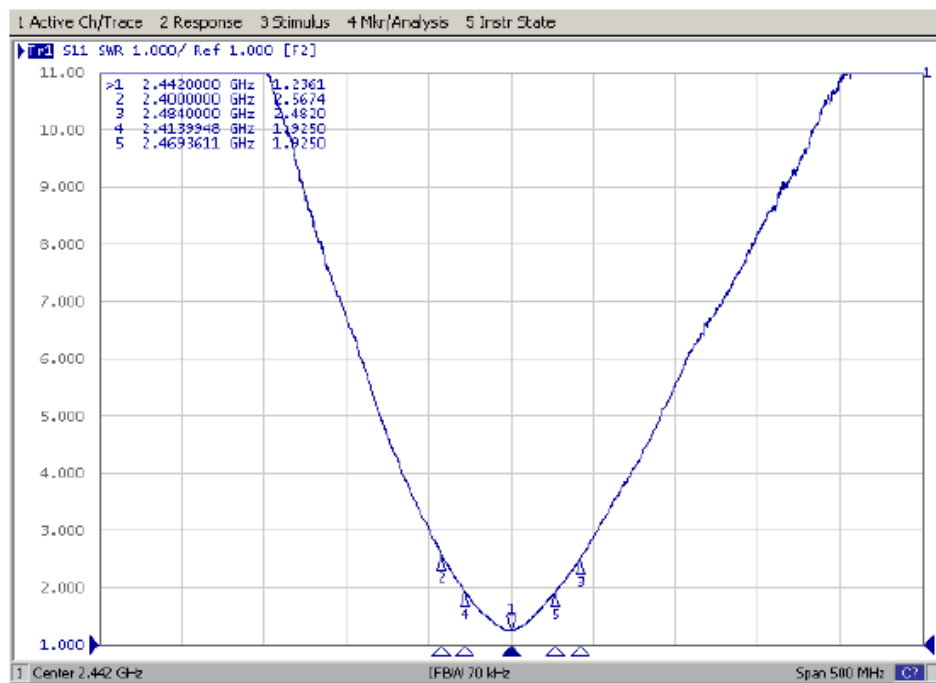
Typical Soldering Conditions



Return Loss (S_{11})

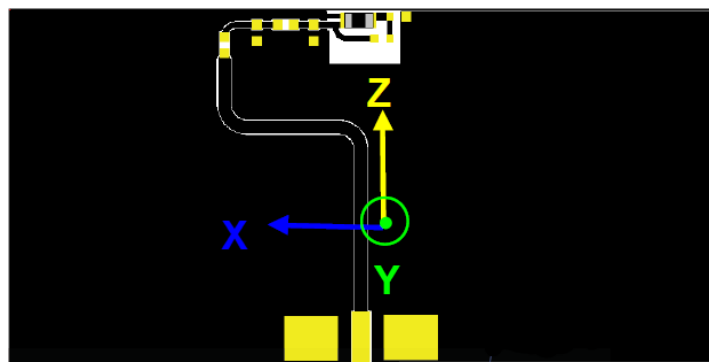
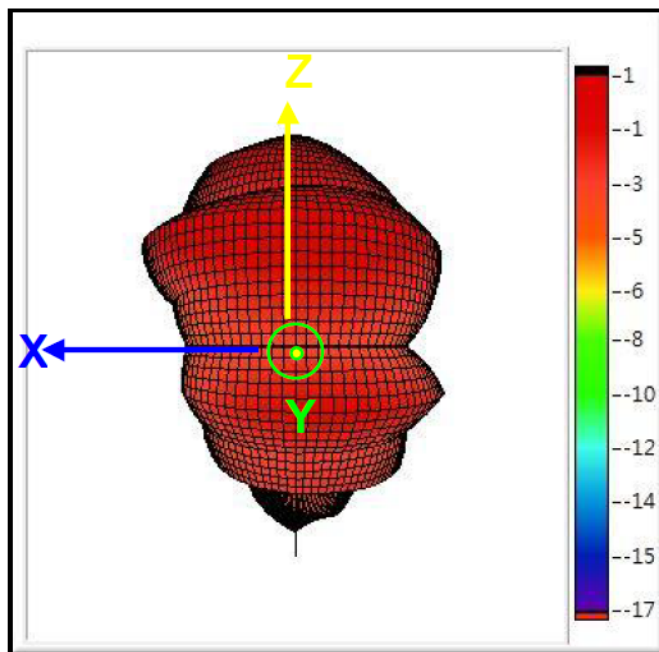
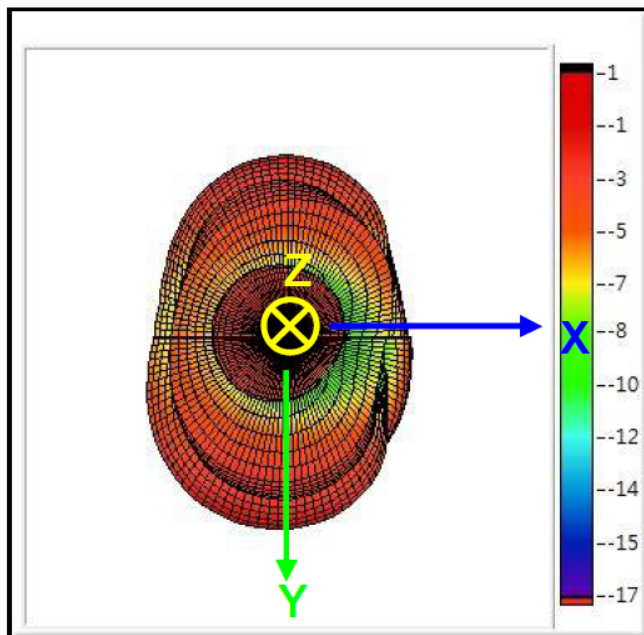
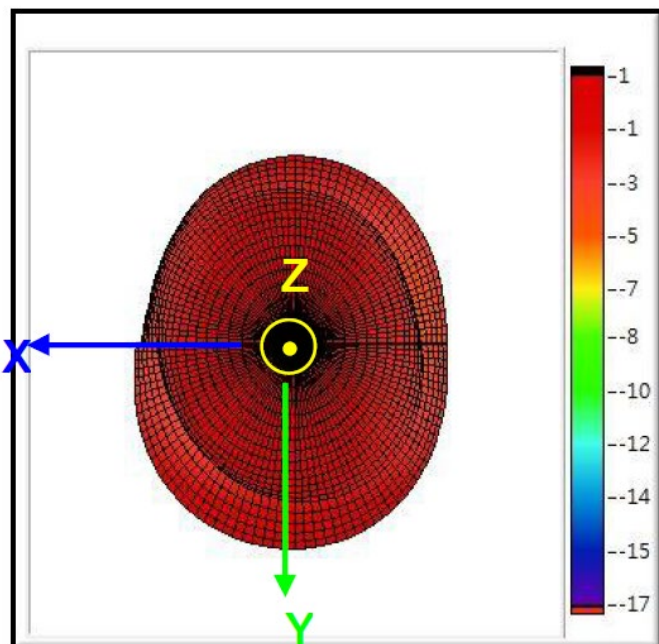


VSWR (S_{11})



Antenna Radiation Pattern

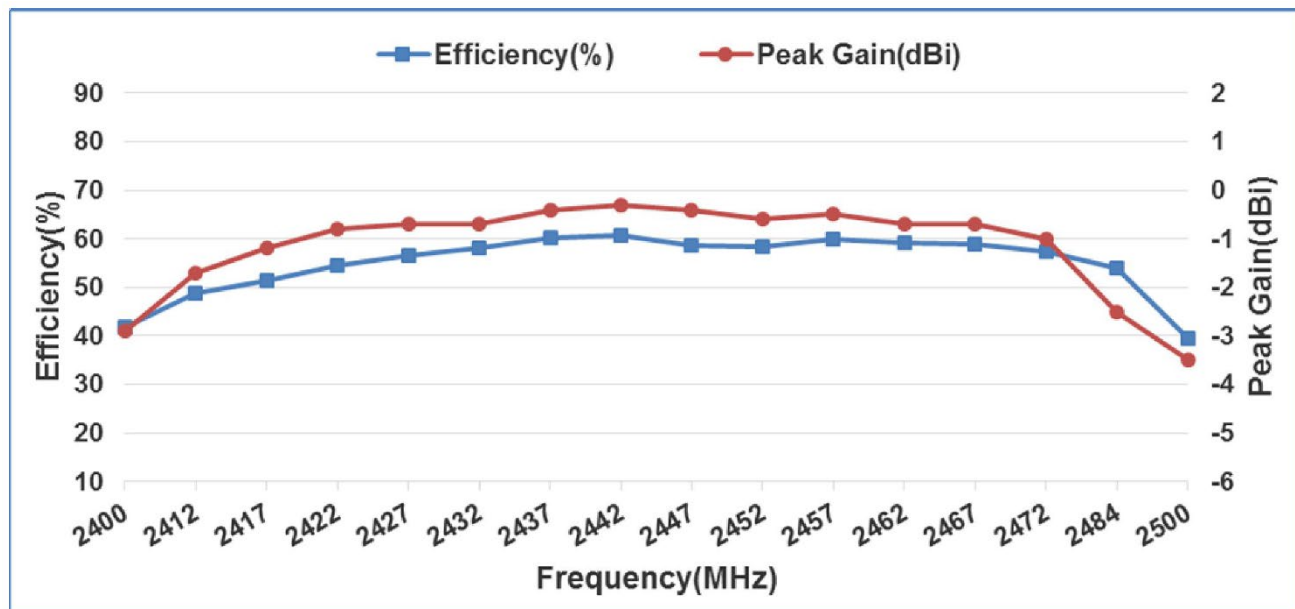
3D Gain Radiation @ 2442 MHz



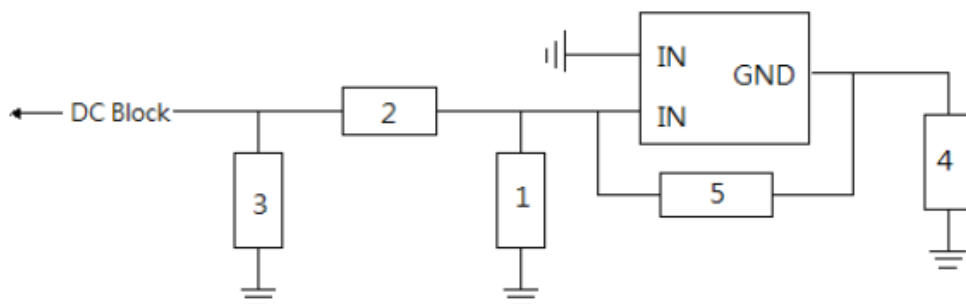
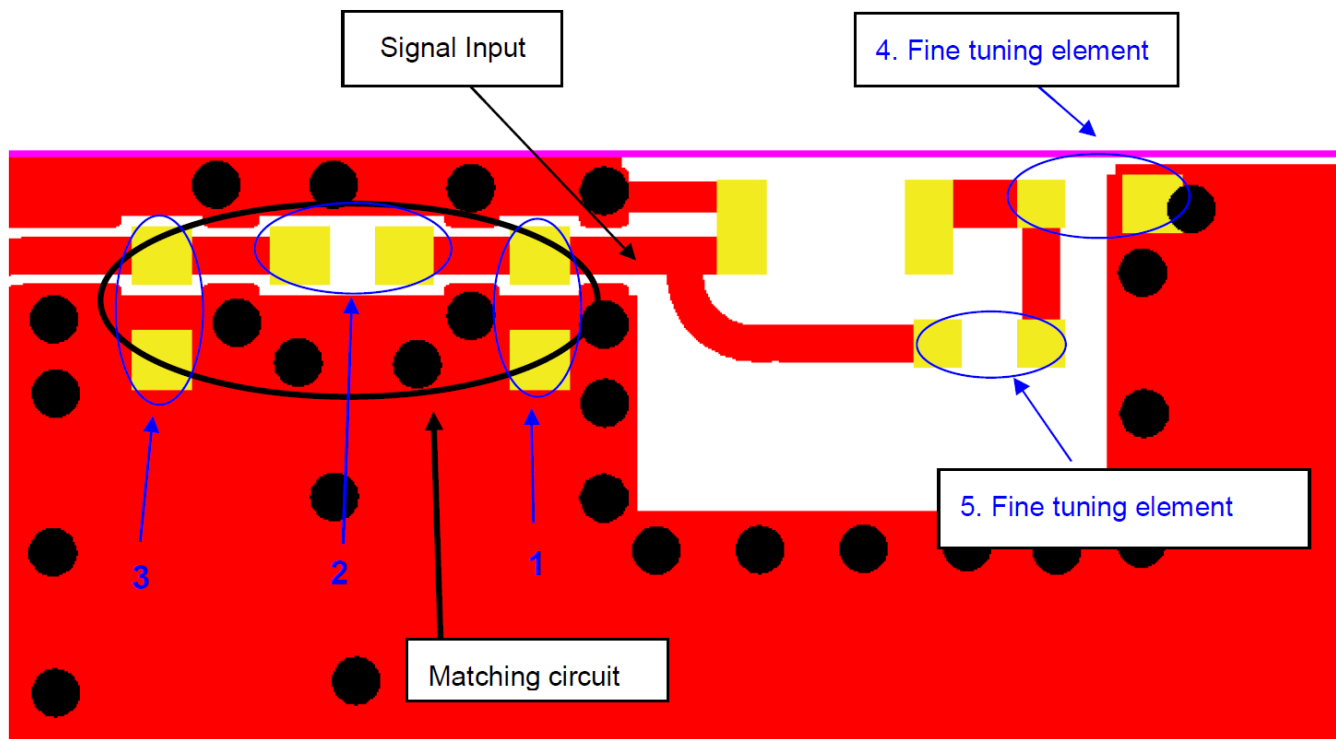
Efficiency Table

Frequency(MHz)	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484	2500
Efficiency(dB)	-3.8	-3.1	-2.9	-2.6	-2.5	-2.4	-2.2	-2.2	-2.3	-2.3	-2.2	-2.3	-2.3	-2.4	-2.7	-4.0
Efficiency(%)	41.8	48.9	51.4	54.6	56.5	58.1	60.1	60.7	58.6	58.3	60.0	59.2	59.0	57.4	53.9	39.5
Peak Gain(dBi)	-2.9	-1.7	-1.2	-0.8	-0.7	-0.7	-0.4	-0.3	-0.4	-0.6	-0.5	-0.7	-0.7	-1.0	-2.5	-3.5

Efficiency vs Frequency



Frequency Tuning & Matching Circuit

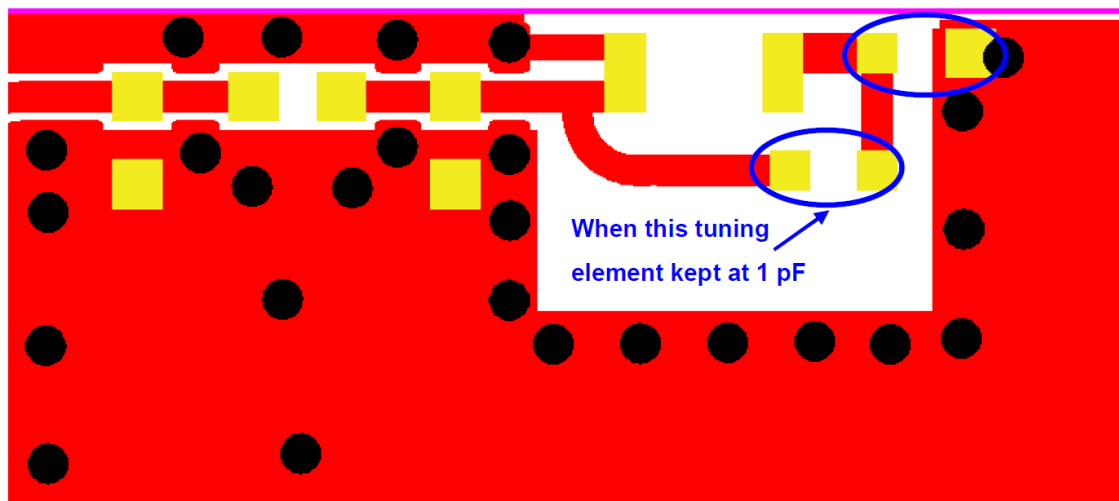




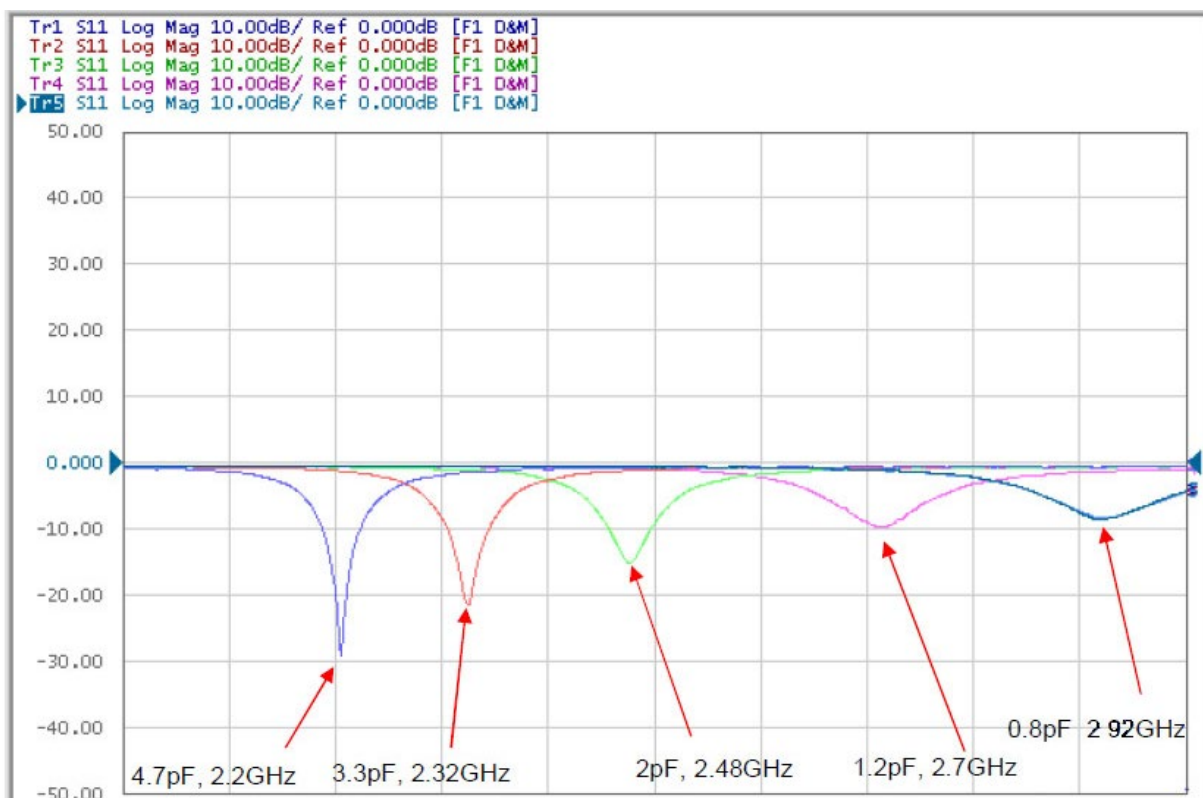
System Matching Circuit Component

Location	Description	Tolerance	NIC Part Number
1 & 3	N/A	-	-
2	0Ω, (0402)	5%	NRC04ZOTRF
4 Fine Tuning Element	2.2pF, (0402)	±0.1 pF	NMC-Q0402NPO2R2B50TRPF
5 Fine Tuning Element	1.2pF, (0402)	±0.1pF	NMC-Q0402NPO1R2B50TRPF

Reference for the Use of Frequency Tuning Element:



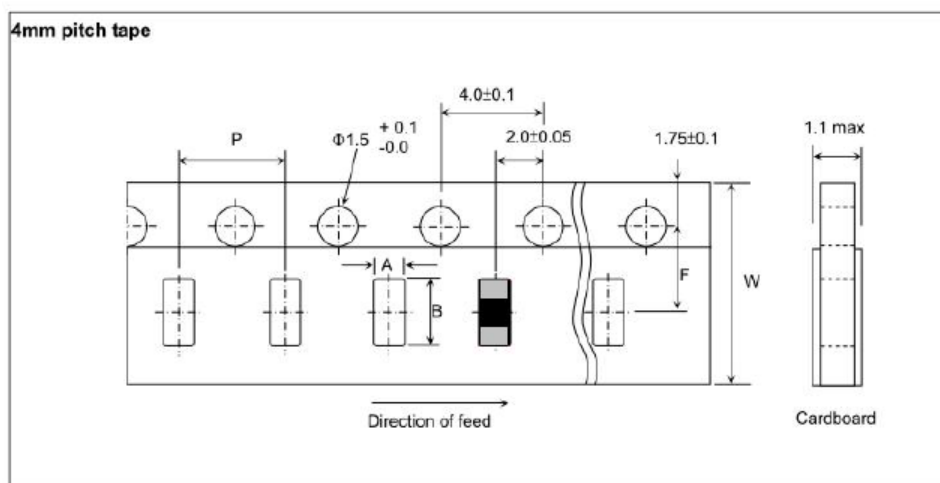
Frequency vs Capacitance of Tuning Element 5



Packing

- (1) Quantity/Reel: 5000 pcs/Reel
- (2) Plastic tape:

a. Tape Drawing



b. Tape Dimensions (unit: mm)

Feature	Specifications	Tolerances
A	1.1	±0.20
B	1.9	±0.20
F	3.5	±0.05
P	4	±0.10
W	8	±0.20