NGCL1032US0R915G1TRF

915 MHz ISM Chip Antenna

9001:2015 CERTIFIED

ROHS/REACH COMPLIANT HALOGEN FREE

NIC Components Corp.

Features

- Stable and reliable performance
- Supports ISM 915 MHz Band
- Low Profile, Compact Size
- Low Temperature coefficient of frequency
- Loop Antenna
- RoHs Complaint

Applications

- ISM Band System
- RFID System

Specifications

Electrical	
Frequency Range	902 ~ 928 MHz
Center Frequency	915 MHz
VSWR	2 Max.
Peak Gain	0.9 dBi Typ.
Efficiency	69 %
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

NGCL1032US0R915G1TRF

- F = RoHs Compliant
- TR = Tape & Reel
- 1 = # of Bands
- 0R915G = Center Frequency
- S = ISM / LoRa
- U = Production Code
- 1032= Size (10mm x 3.2 mm)
- NGCL = Series

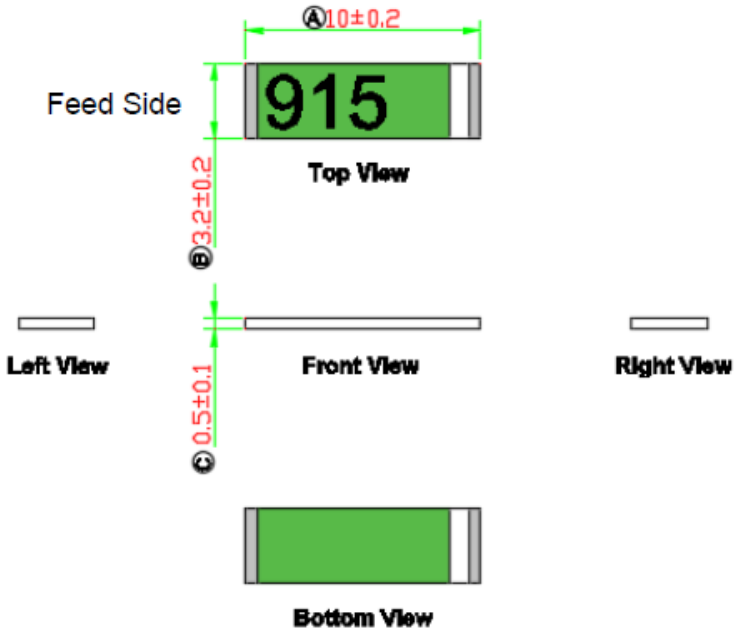
Pin Definition

Top View

Bottom View

PIN	1	2
Soldering PAD	Signal	Tuning / Ground

Dimension Drawing

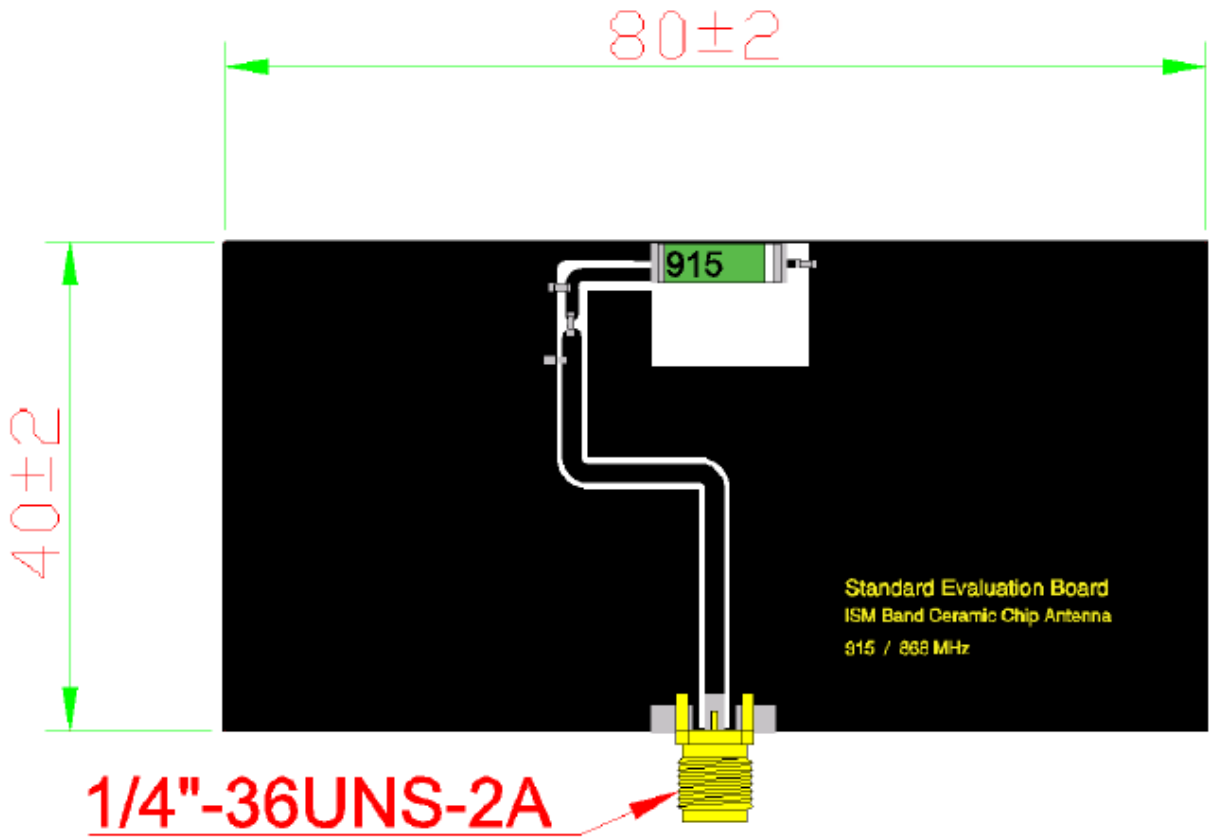


NOTE:
1.All materials are RoHS 2.0 compliant.
2."Ⓐ~Ⓒ" Critical Dimensions.
3."( )" Reference Dimensions.

Dimensions (mm) & Mechanical

Body Length (A)	10 ± 0.2
Width (B)	3.2 ± 0.2
Thickness (C)	0.5 ± 0.1
Connection Type	SMT
Ground Plane	80 mm x 40 mm
Material	Ceramic

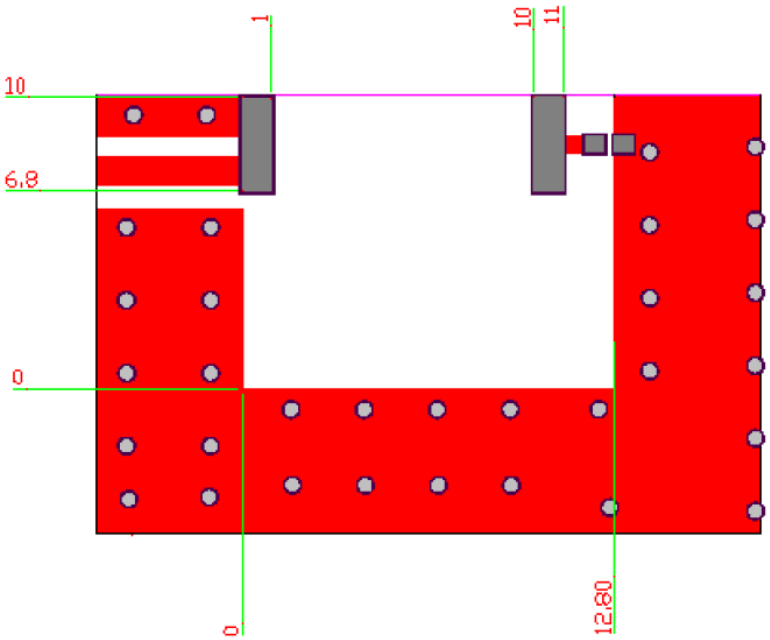
Evaluation Board

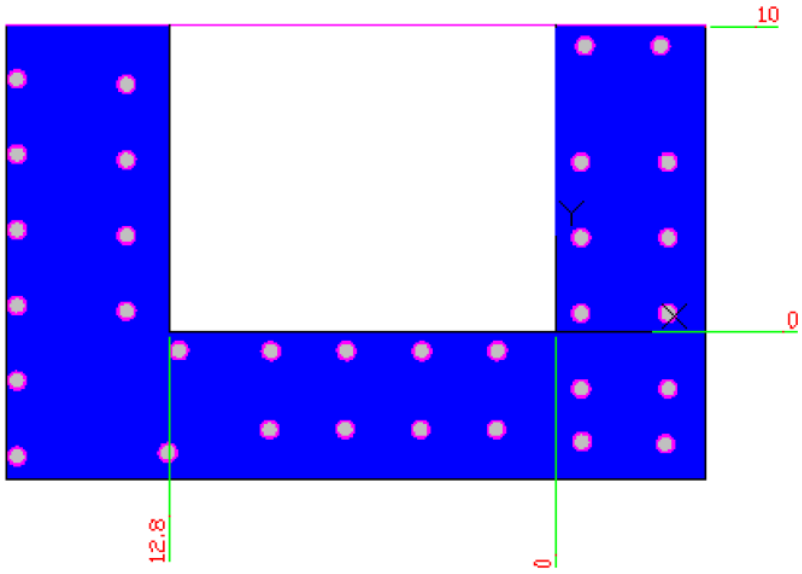


Unit : mm

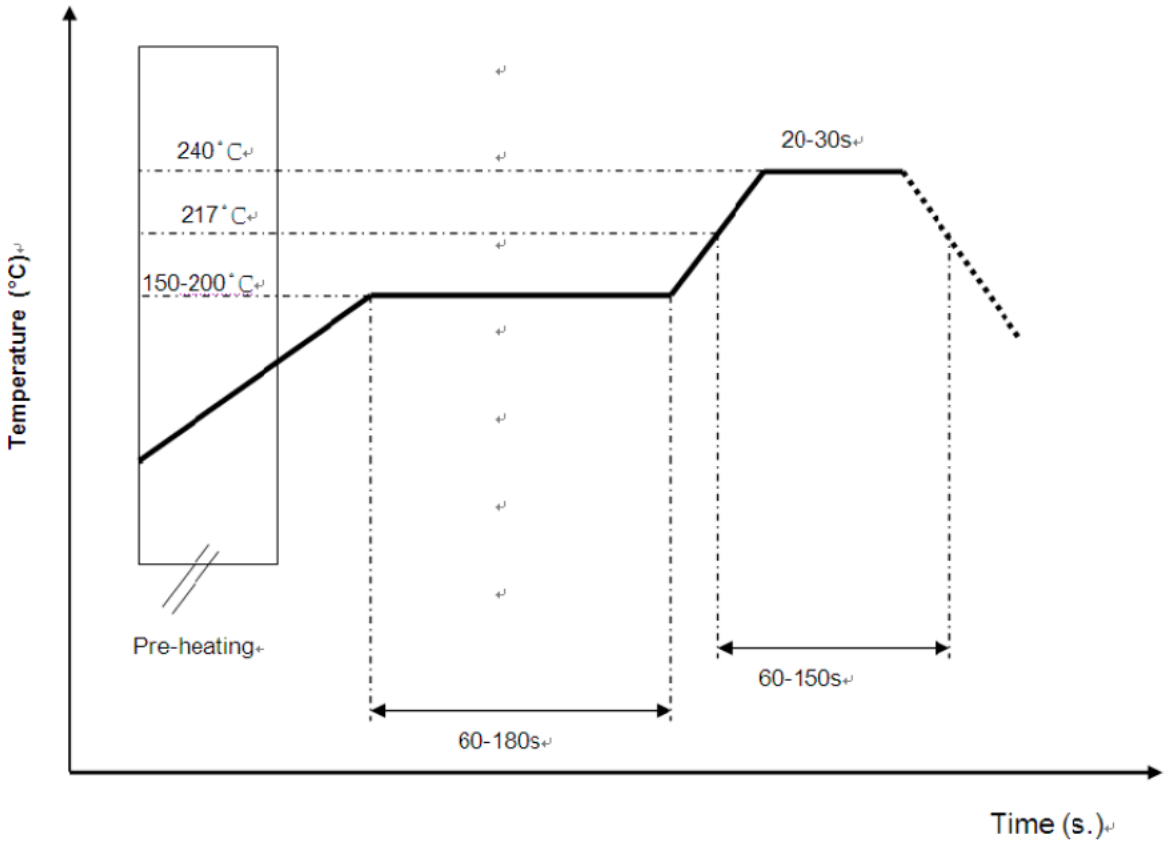
Solder Land Pattern

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



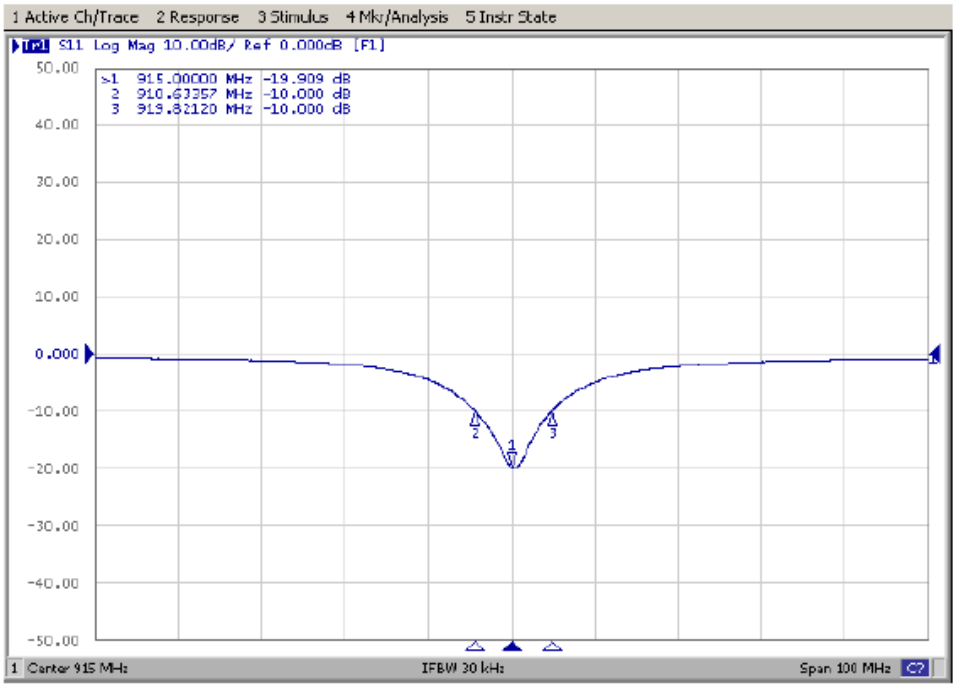


Soldering Conditions

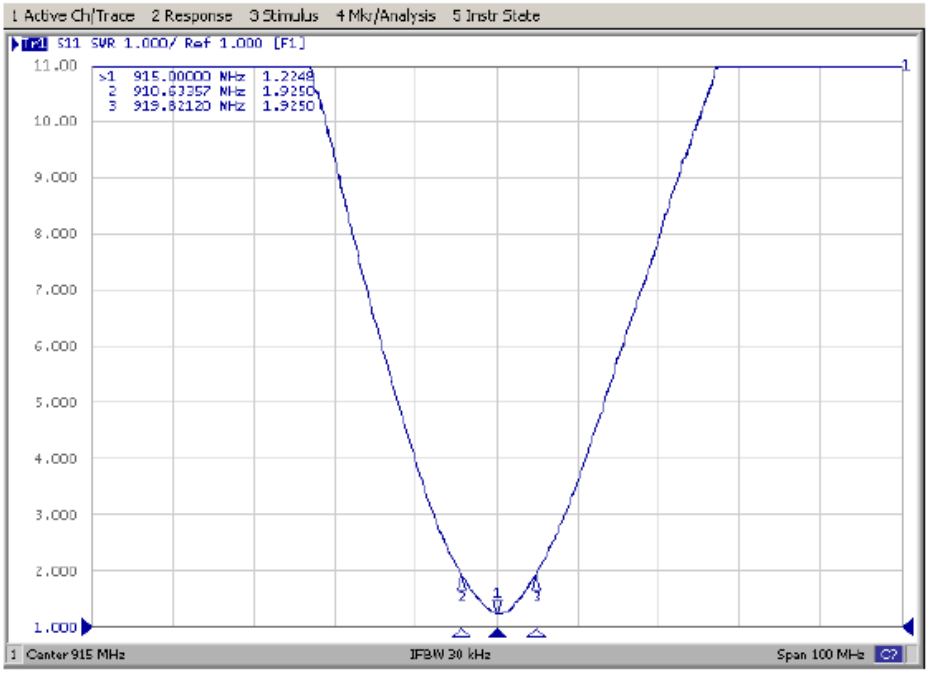


*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste

Return Loss (S_{11})

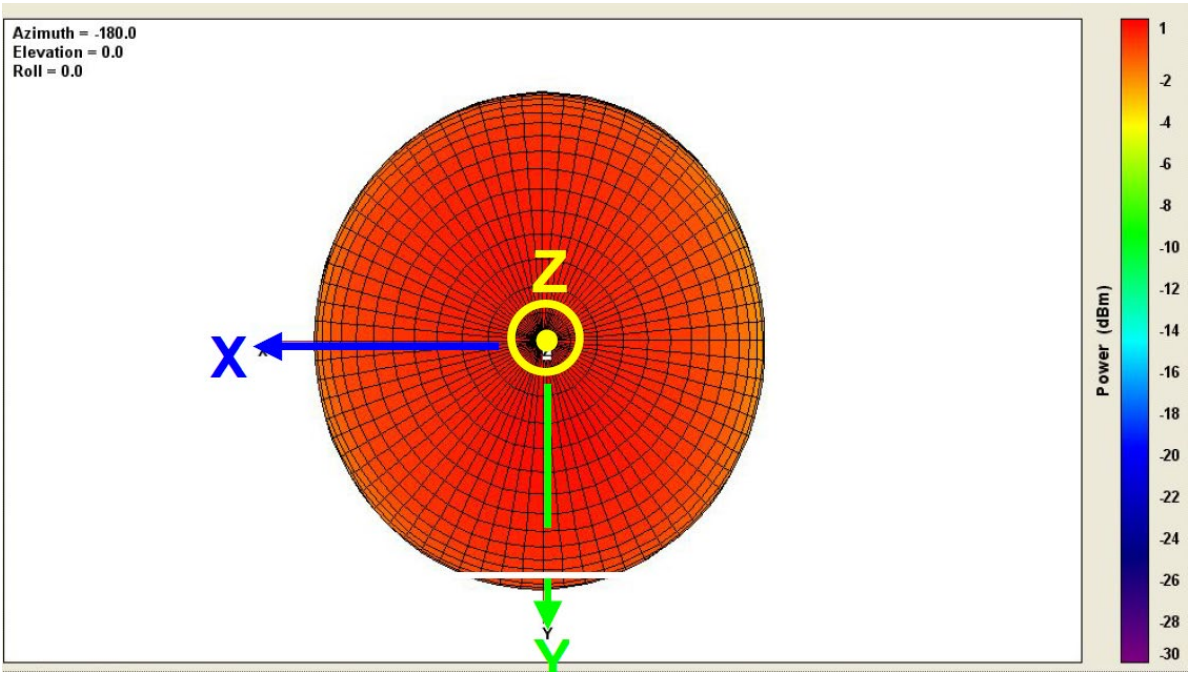


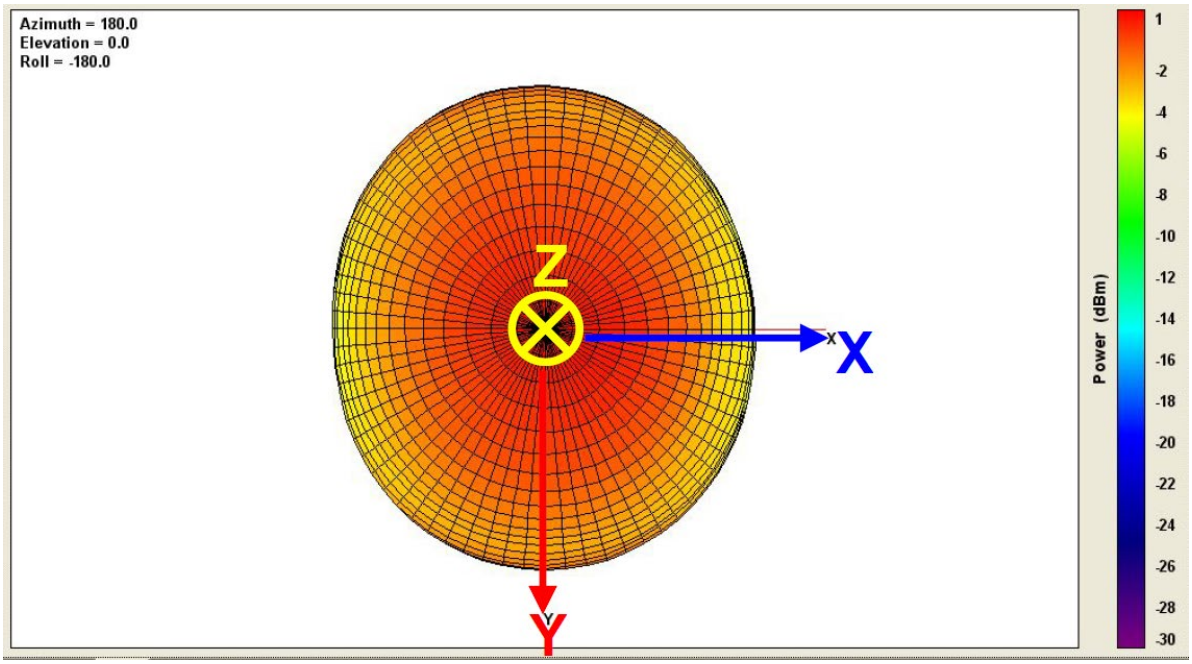
VSWR (S_{11})

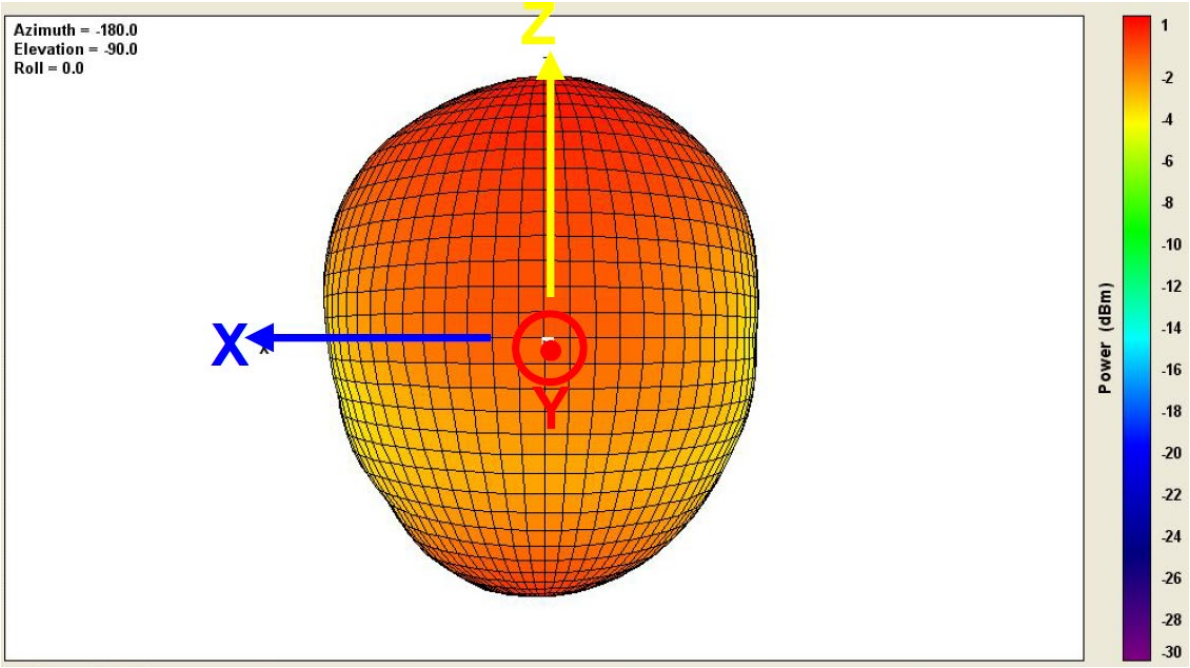


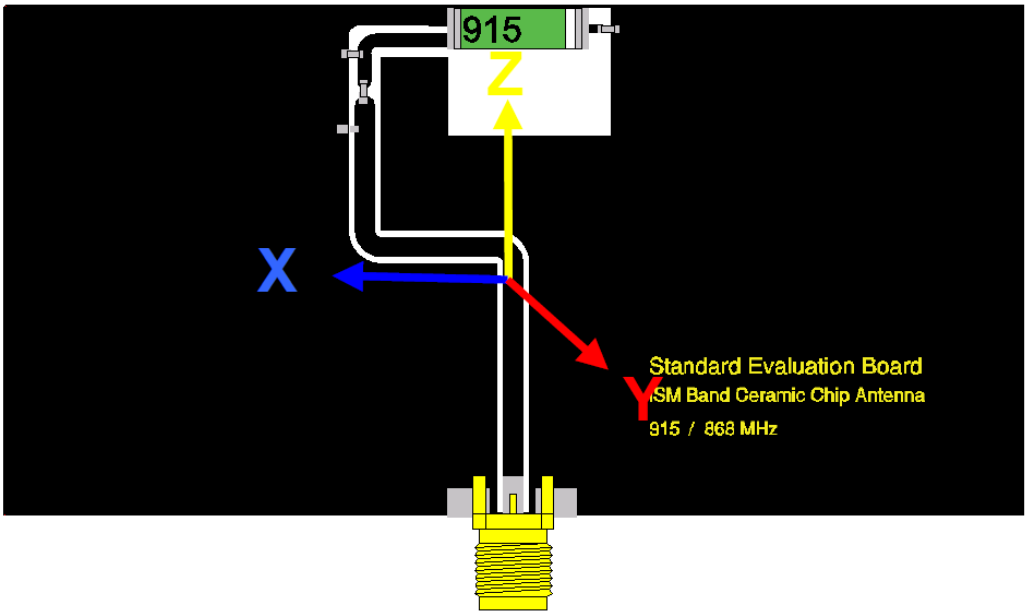
Antenna Radiation Pattern

3D Gain Radiation @ 915 MHz






Azimuth = -180.0
Elevation = -90.0
Roll = 0.0
Z
X
Y
Power (dBm)
1
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30

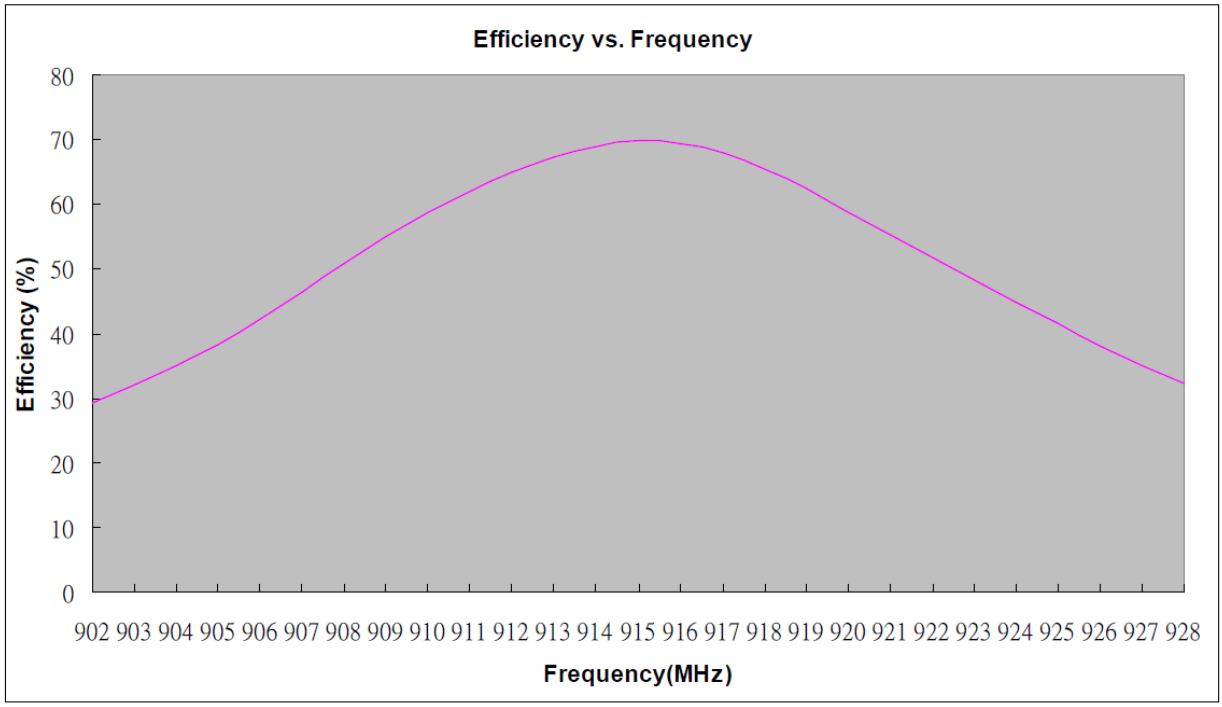

915
Z
X
Y
Standard Evaluation Board
ISM Band Ceramic Chip Antenna
915 / 868 MHz

3D Efficiency Table

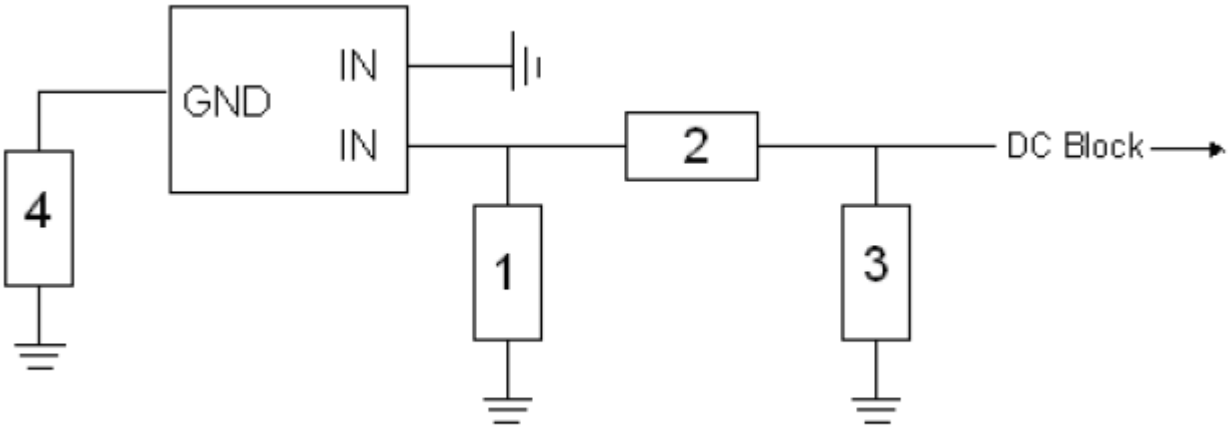
Frequency(MHz)	902	903	904	905	906	907	908	909	910	911	912	913	914	915
Efficiency (dB)	-5.33	-4.96	-4.57	-4.17	-3.74	-3.33	-2.95	-2.61	-2.31	-2.08	-1.87	-1.73	-1.62	-1.56
Efficiency (%)	29.29	31.93	34.91	38.31	42.22	46.45	50.71	54.87	58.73	61.95	65.04	67.18	68.94	69.78
Gain (dBi)	-2.75	-2.35	-2	-1.62	-1.2	-0.77	-0.4	-0.07	0.21	0.43	0.63	0.77	0.87	0.92

Frequency(MHz)	916	917	918	919	920	921	922	923	924	925	926	927	928
Efficiency (dB)	-1.59	-1.68	-1.84	-2.06	-2.31	-2.58	-2.86	-3.16	-3.48	-3.82	-4.19	-4.56	-4.92
Efficiency (%)	69.33	67.94	65.48	62.29	58.73	55.18	51.79	48.33	44.85	41.5	38.08	34.98	32.21
Gain (dBi)	0.88	0.79	0.62	0.4	0.12	-0.16	-0.46	-0.75	-1.11	-1.46	-1.84	-2.24	-2.57

3D Efficiency vs Frequency



Matching Circuit



System Matching Circuit Component

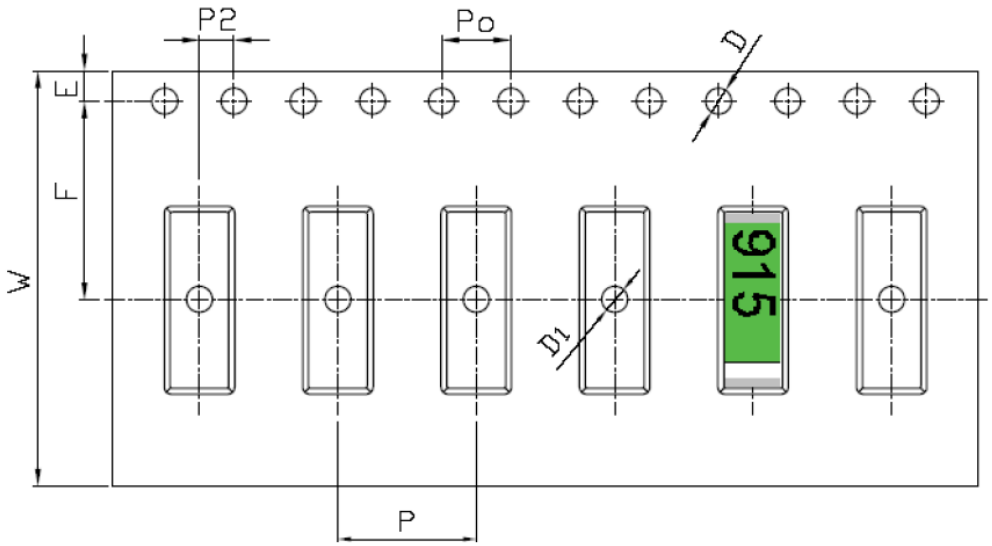
Location	Description	Tolerance	NIC Part Number
1	N/A	-	-
2	0Ω, (0402)	-	NRC04Z0TRF
3	5.1pF, (0402)	±0.05pF	NMC-Q0402NPO5R1D50TRPF
4	10pF, (0402)	±5%	NMC-Q0402NPO100J50TRPF

Packing

(1) Quantity/Reel: 6000 pcs/Reel

(2) Plastic tape: Black Conductive Polystyrene.

a. Tape Drawing



b. Tape Dimensions (unit: mm)

Feature	Specifications	Tolerances
W	24.00	±0.30
P	8.00	±0.10
E	1.75	±0.10
F	11.50	±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