

NGCL5030UG1R575G4TRF

L1, L2 & L5 GNSS Chip Antenna



Features

- Stable and reliable performances
- Low profile, compact size
- SMT processes compatible
- RoHS Compliant



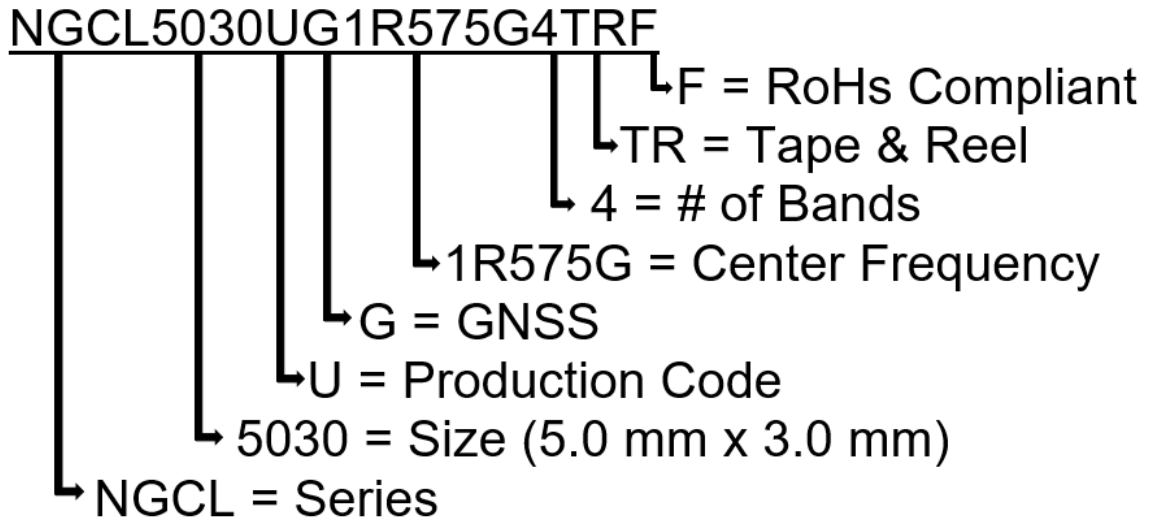
Applications

- Smartphones
- Wearables
- Tablets
- Digital Camera.

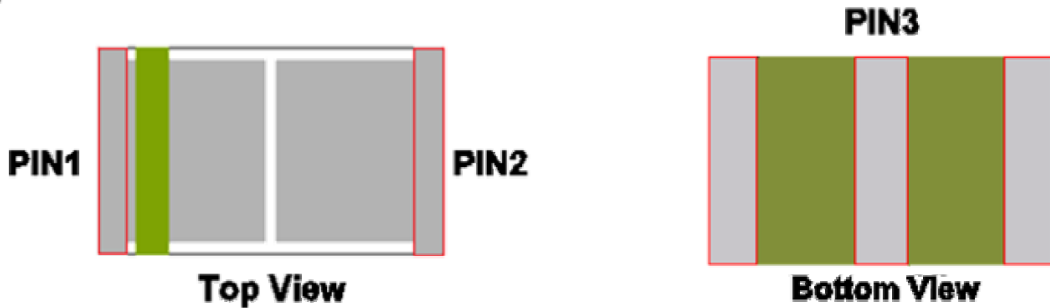
Specifications

Electrical Table				
Frequency Bands	GPS L1 GLONASS G1 Galileo E1 BDS B1 QZSS L1	GPS L2 GLONASS G2 QZSS L2	GPS L5 GLONASS G3 GALILEO E5 BDS B2 QZSS L5 IRNSS L5	Galileo E6 BDS B3 QZSS E6
Frequency Range	1575.42 MHz	1227.6 MHz	1176.45 MHz	1278.75 MHz
Average Gain	-1.7 dB typ.	-1.8 dB typ.	-1.5 dB typ.	-3.2 dB typ.
Peak Gain	3.3 dBi typ.	3.0 dBi typ.	3.0 dBi typ.	2.1 dBi typ.
Efficiency	68% typ.	66% typ.	70% typ.	48% typ.
V.S.W.R	2 typ.	3 typ.	2 typ.	5 typ.
Maximum Input Power	2 W			
Polarization	Linear			
Impedance	50Ω			
Environmental				
Operating Temperature	-40°C~+85°C			
Storage Temperature	-5°C~+40°C -40°C~+85°C : 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

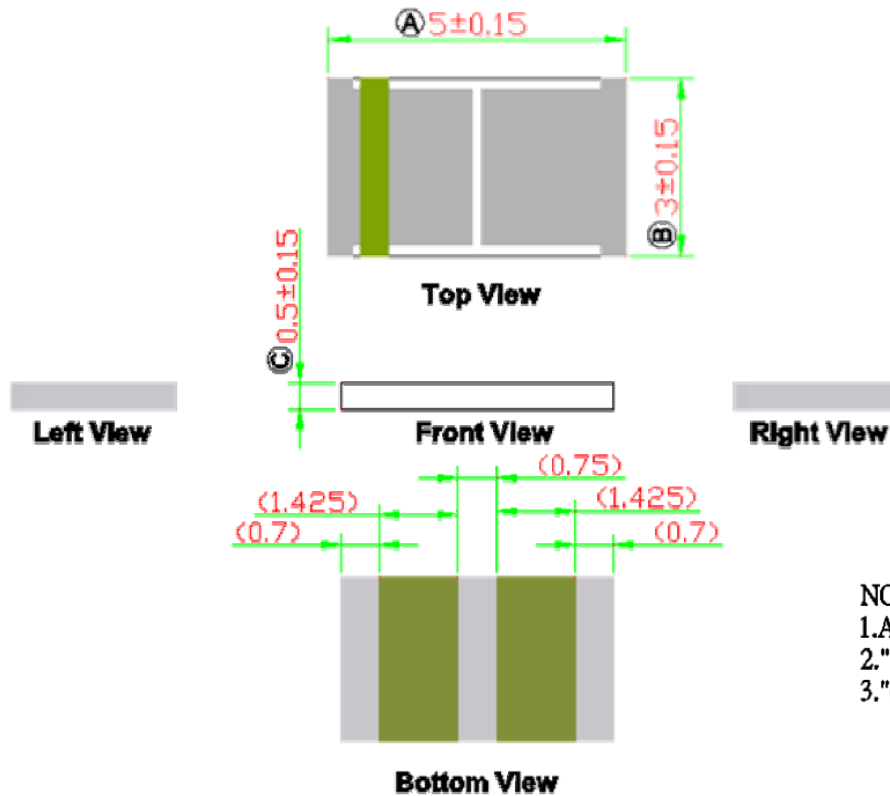


Pin Definition



PIN	1	2	3
Soldering Pad	Tuning / Ground	Tuning / Ground	Signal

Dimension Drawing



NOTE:

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

Dimensions (mm) & Mechanical

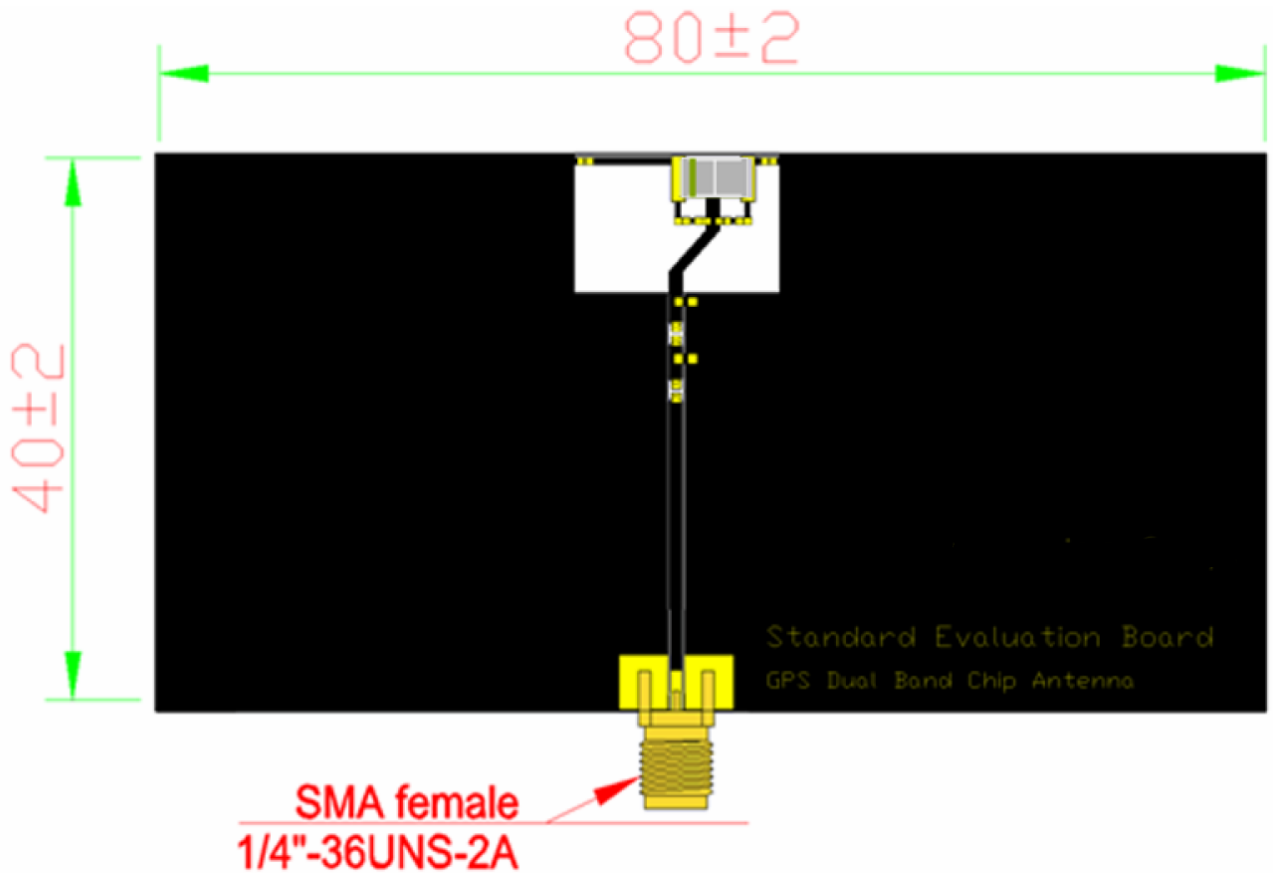
Body Length (A)	5.0 ± 0.15
Width (B)	3.0 ± 0.15
Thickness (C)	0.5 ± 0.15
Connection Type	SMT
Ground Plane	80 mm x 40 mm
Material	Ceramic

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Evaluation Board



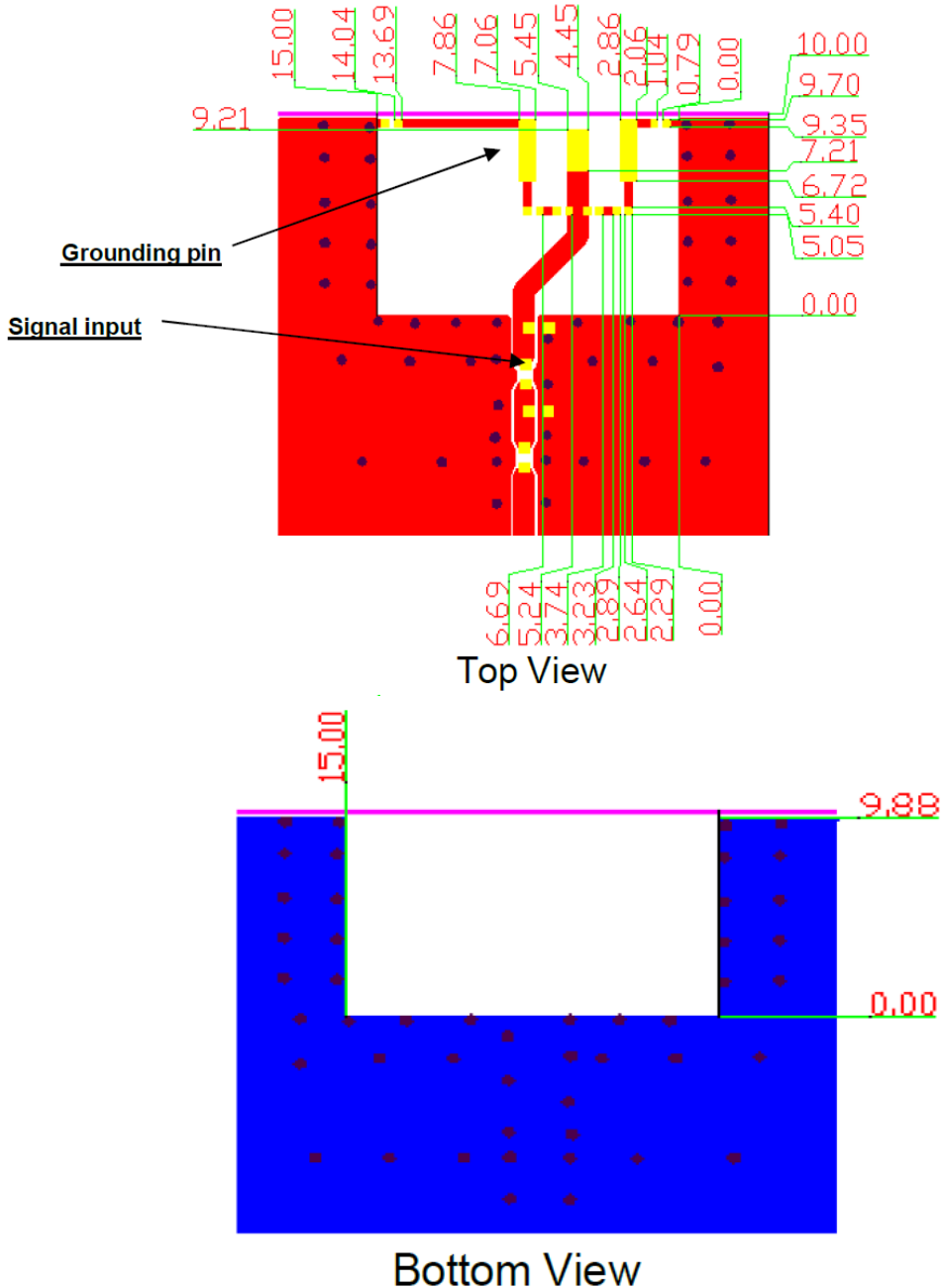
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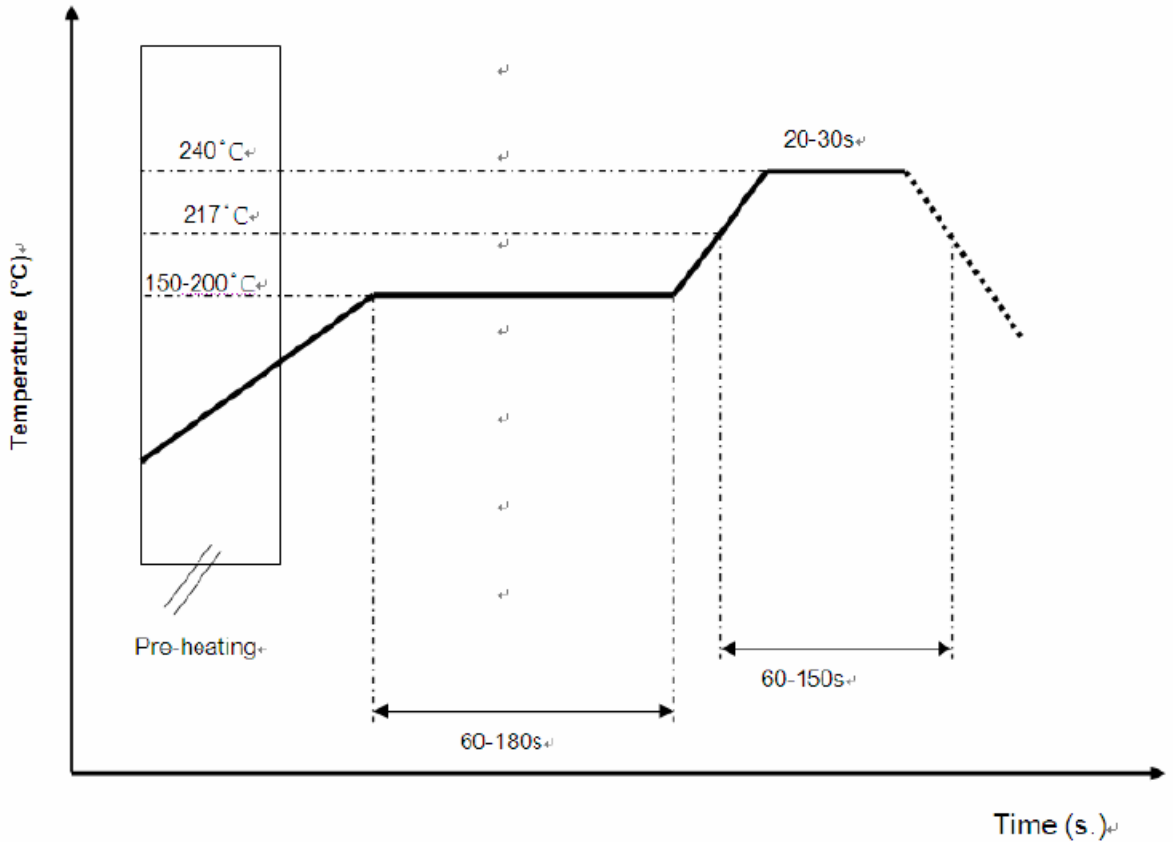
Solder Land Pattern

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



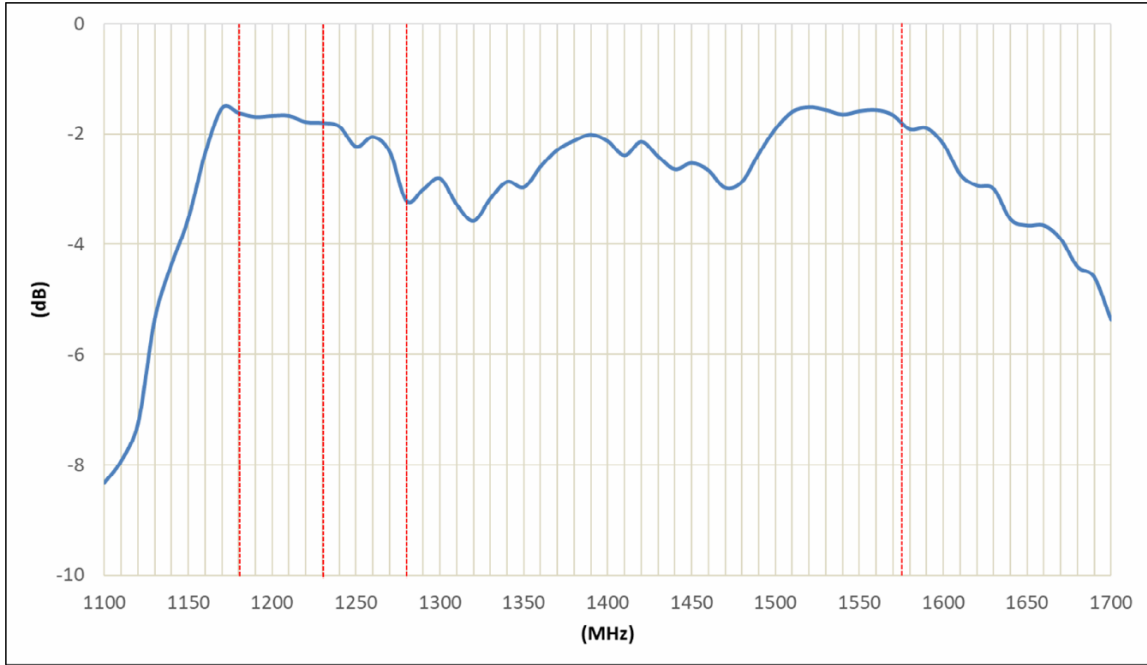
Typical Soldering Conditions

Typical Soldering Profile for Lead-free Process

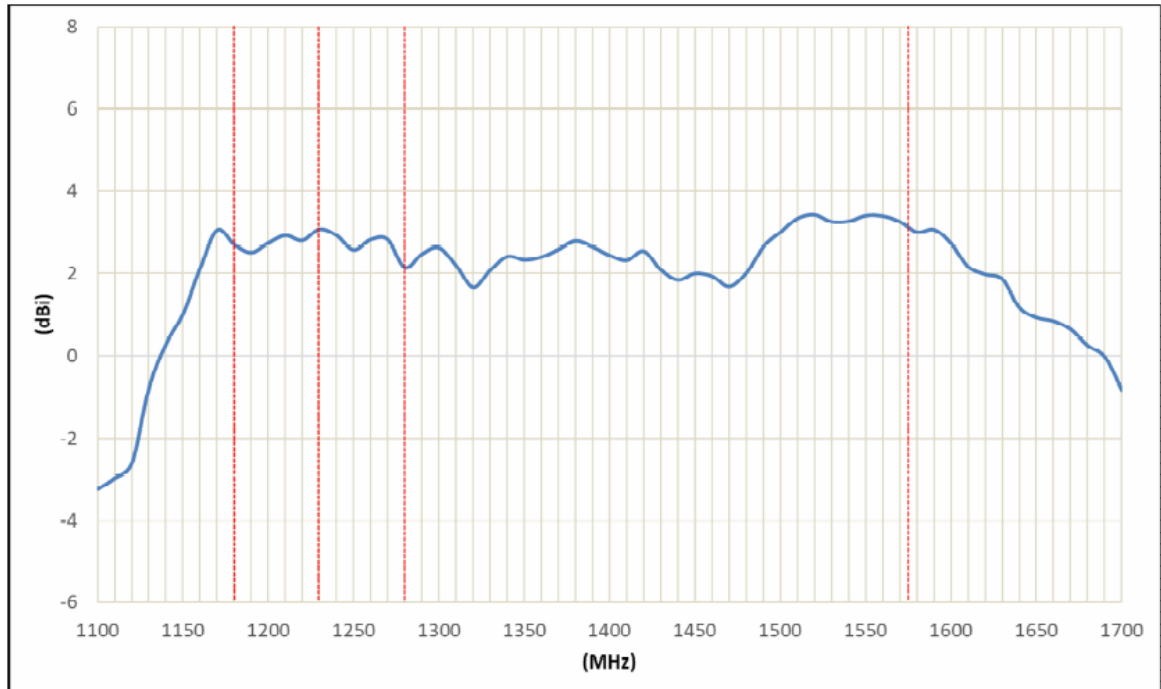




Average Gain



Peak Gain



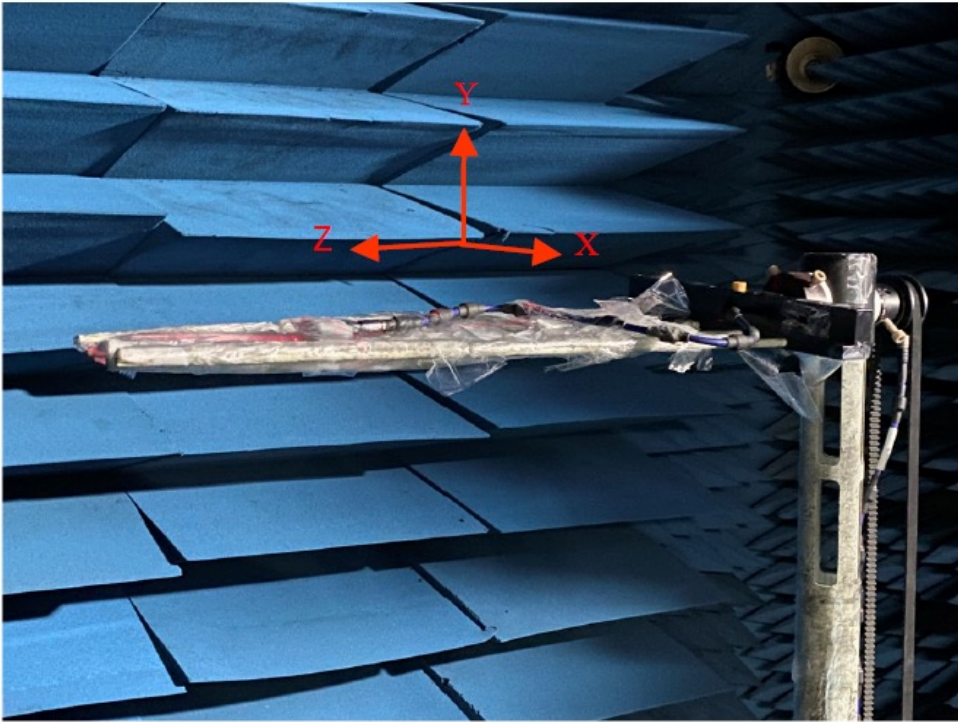
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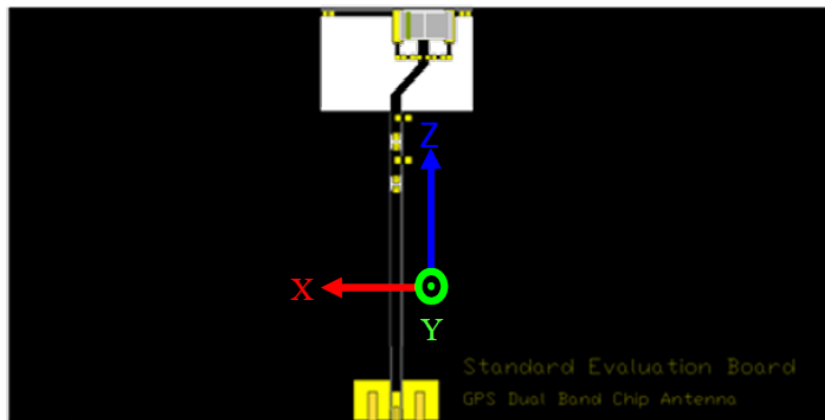


Antenna Radiation Pattern Measurement:

The antenna radiation patterns are measured in a 3D Anechoic Chamber. The measurement setup is as show below.



3D Radiation Patterns



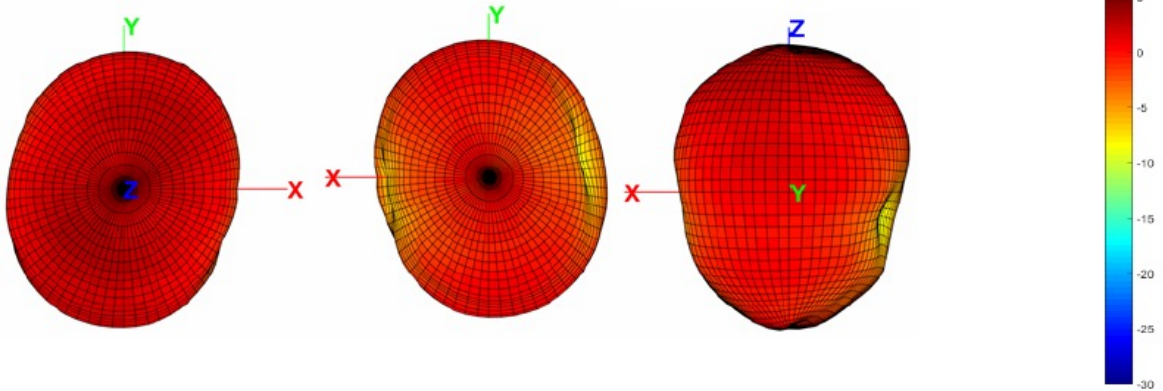
SMA female
1/4"-36UNS-2A

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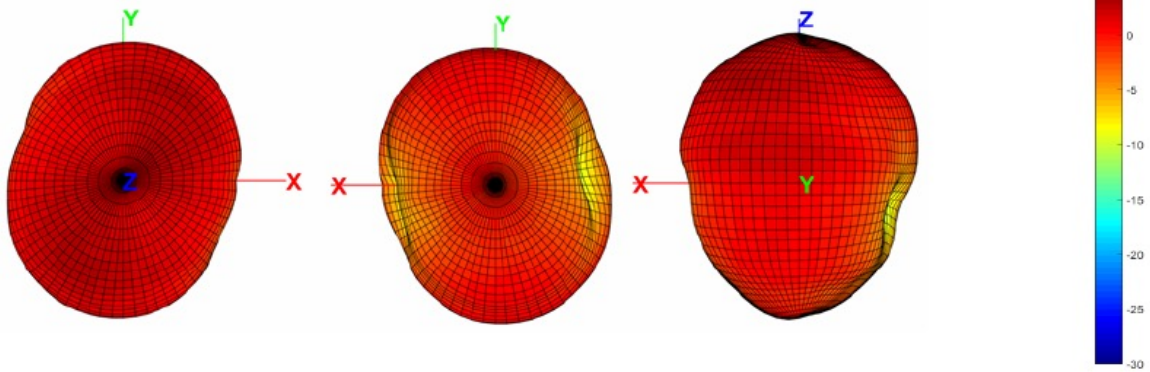
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@ 1176.45 MHz (unit: dBi)



@ 1227.6 MHz (unit: dBi)

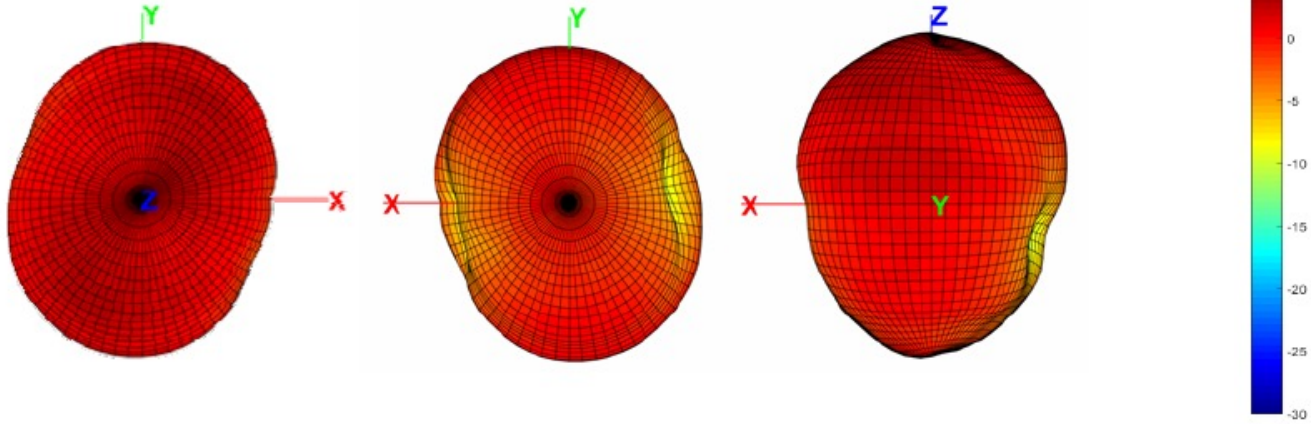


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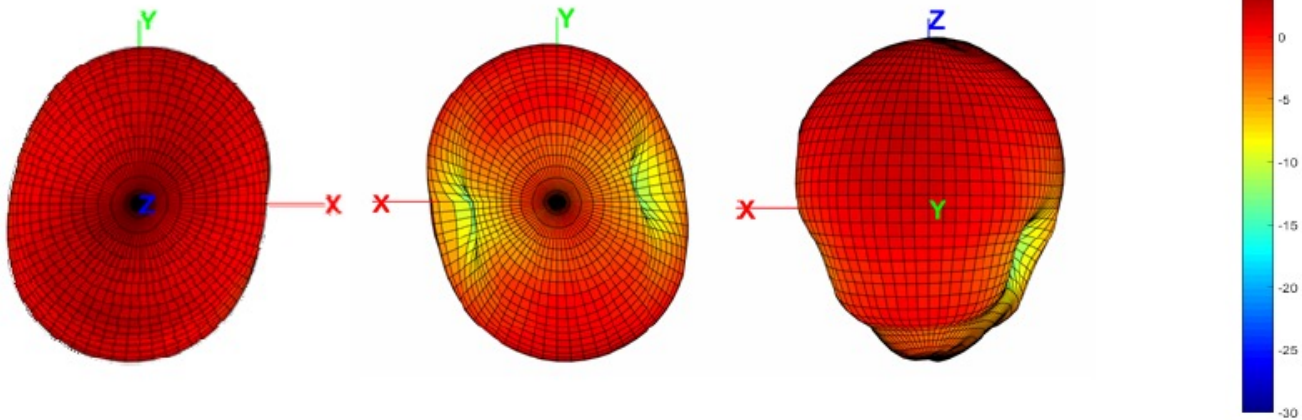
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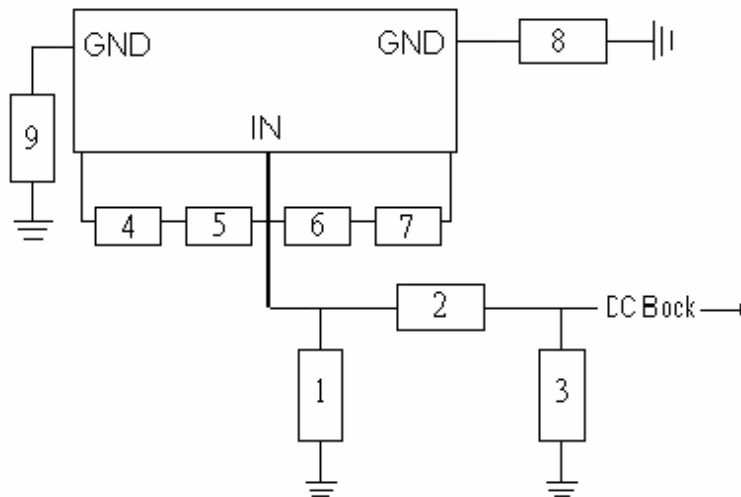
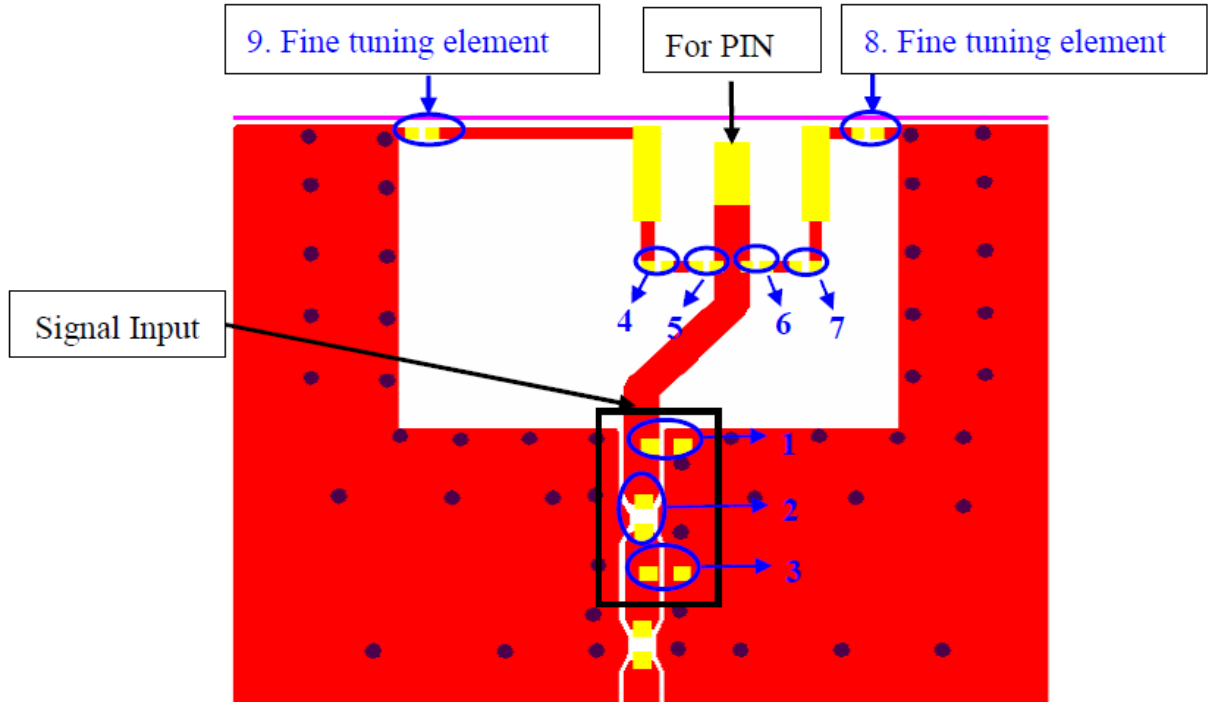
@ 1278.45 MHz (unit: dBi)



@ 1575.42 MHz (unit: dBi)



Frequency Tuning & Matching Circuit





System Matching Circuit Component

Location	Description	Tolerance	NIC Part Number
1	1.5pF (0402)	±0.05pF	NMC-Q0402NPO1R5A50TRPE
2	3.6pF (0402)	±0.1pF	NMC-Q0402NPO3R6B50TRPE
3	N/A	-	-
4-7 Fine Tuning Elements	N/A	-	-
8 Fine Tuning Elements	2.7pF (0201)	±0.1pF	NMC-Q0201NPO2R7B50TRPE
9 Fine Tuning Elements	6.8pF (0201)	±0.1pF	NMC-Q0201NPO6R8B50TRPE

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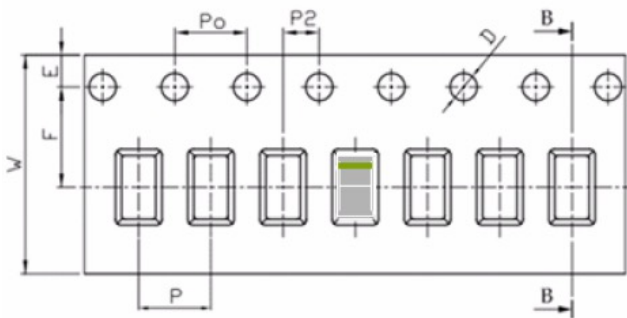
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Packing

- (1) Quantity/Reel: 6000 pcs/Reel
- (2) Unit Weight: 0.025 ± 0.001 g/pcs
- (3) Plastic tape: Black Conductive Polystyrene

a. Tape Drawing



b. Tape Dimensions (unit: mm)

Feature	Specifications	Tolerances
W	12.00	± 0.30
P	8.00	± 0.10
E	1.75	± 0.10
F	5.50	± 0.10
P2	2.00	± 0.10
D	1.50	+0.10 -0.00
Po	4.00	± 0.10
10Po	40.00	± 0.20

c. Reel Drawing

