

NGCP4005UC0R880G6TRF

5G NR Ceramic Chip Antenna



Features

- Supporting 5G NR (New Radio) FR1 Bands
- High performance, small size
- SMT processes compatible
- RoHS & REACH Compliant



Applications

- Transportation
- Autonomous / UAVs
- Industrial IoT
- Trackers

Specifications

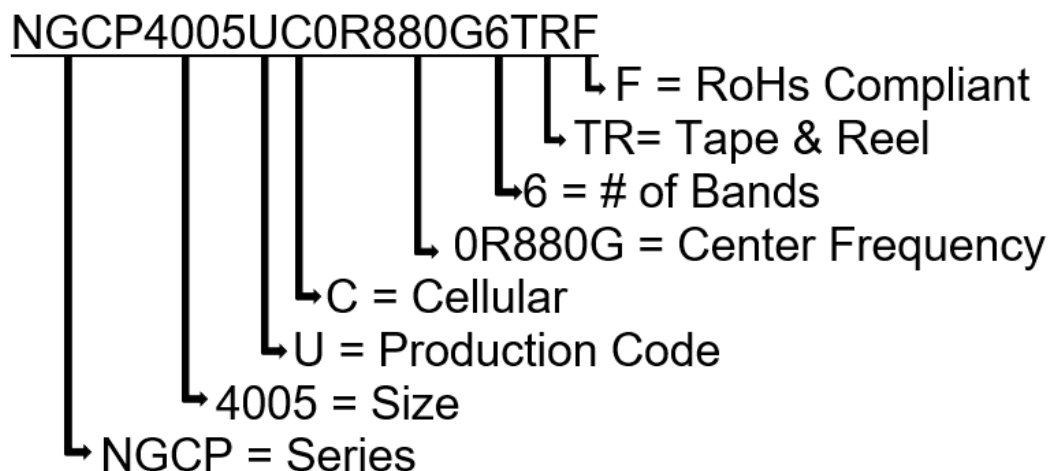
Electrical

Frequency Range (MHz)	617~960	1710~2170	2300~2690	3300~4200	4400 ~5000	5150~5925
Efficiency (%) typ.	63	78	62	61	48	37
Average Gain (dB) typ.	-2.1	-1.1	-2.2	-2.2	-3.4	-4.5
Peak Gain (dBi) typ.	0.5	2.9	3.0	2.5	0.7	-1.3
Maximum Input Power	2 W					
Polarization	Linear					
Impedance	50Ω					

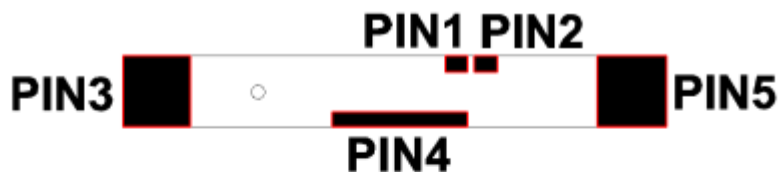
Environmental

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



Bottom View

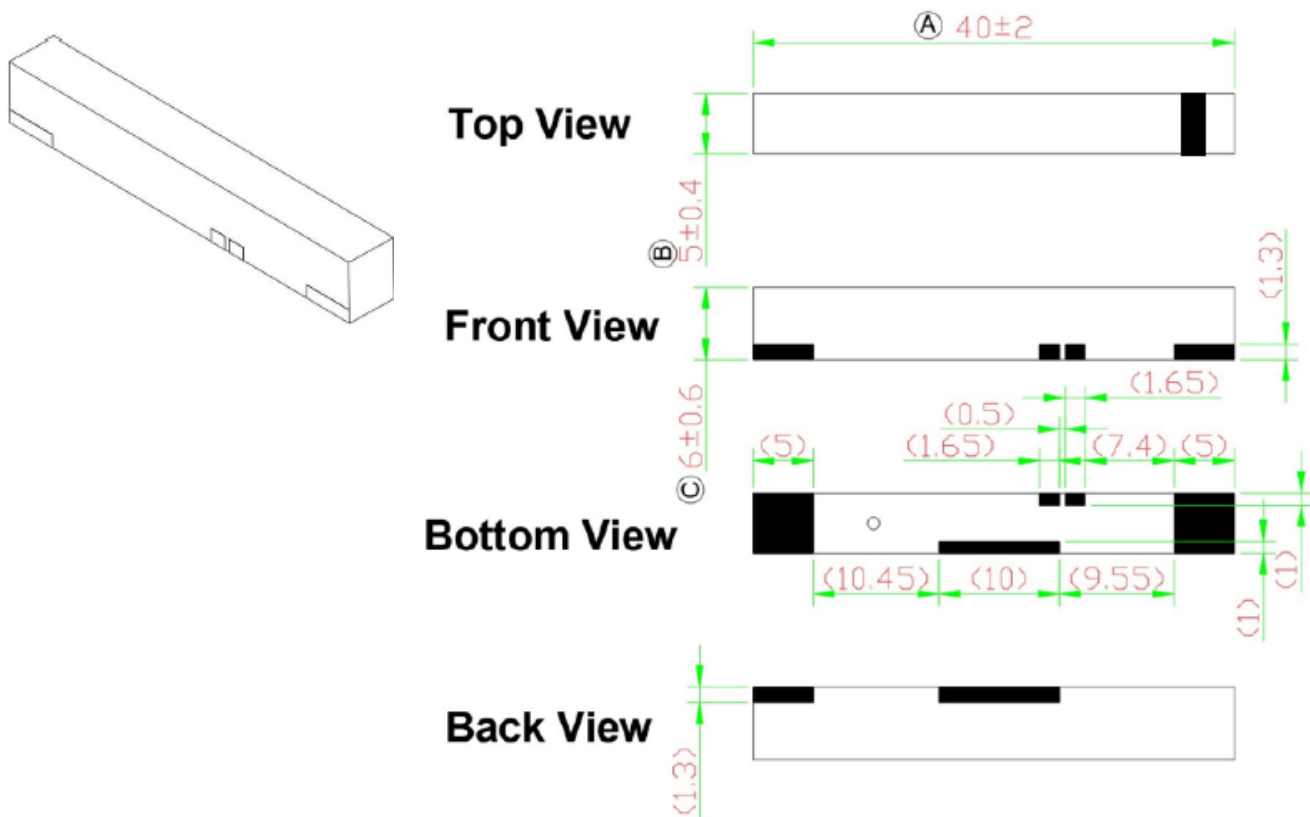
PIN	1	2	3~5
Soldering Pad	Tuning/Ground	Signal	Fixing

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Dimension Drawing



Dimensions (mm) & Mechanical

Unit: mm

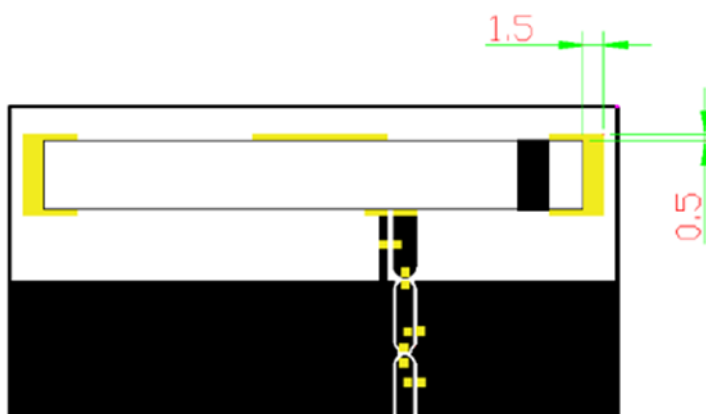
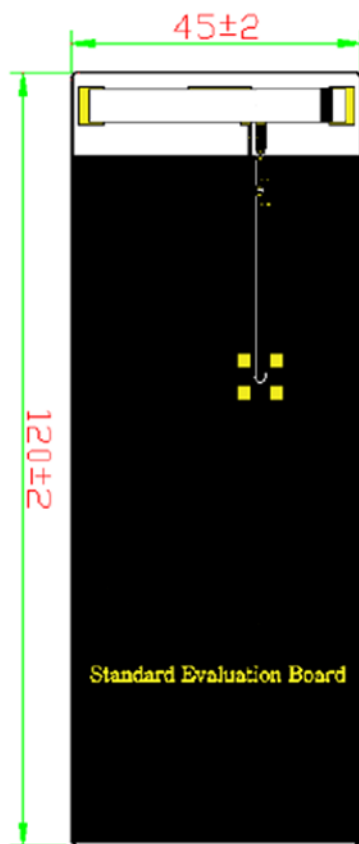
Body Length (A)	40 ± 2
Width (B)	5 ± 0.4
Thickness (C)	6 ± 0.6
Connection Type	SMT
Ground Plane	120 mm x 40 mm
Material	Ceramic
Termination	Ag (environmental Pb free)

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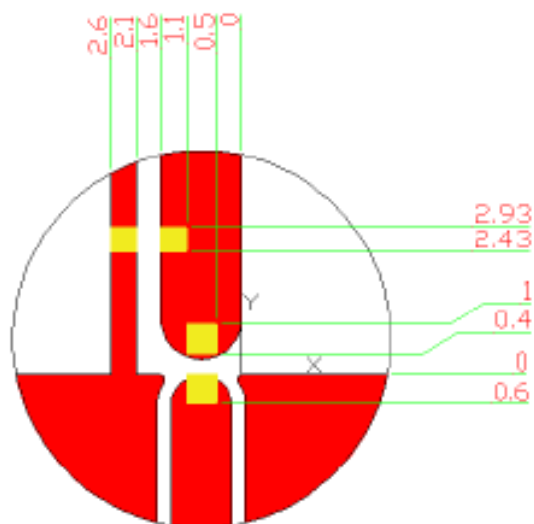
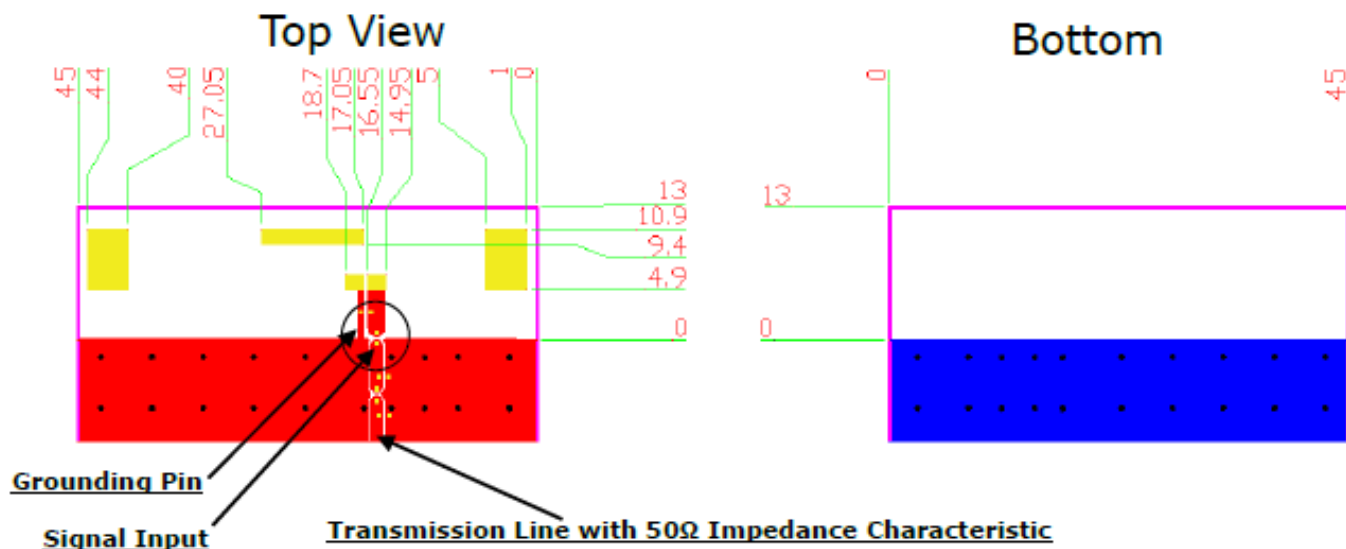
Evaluation Board



Unit: mm

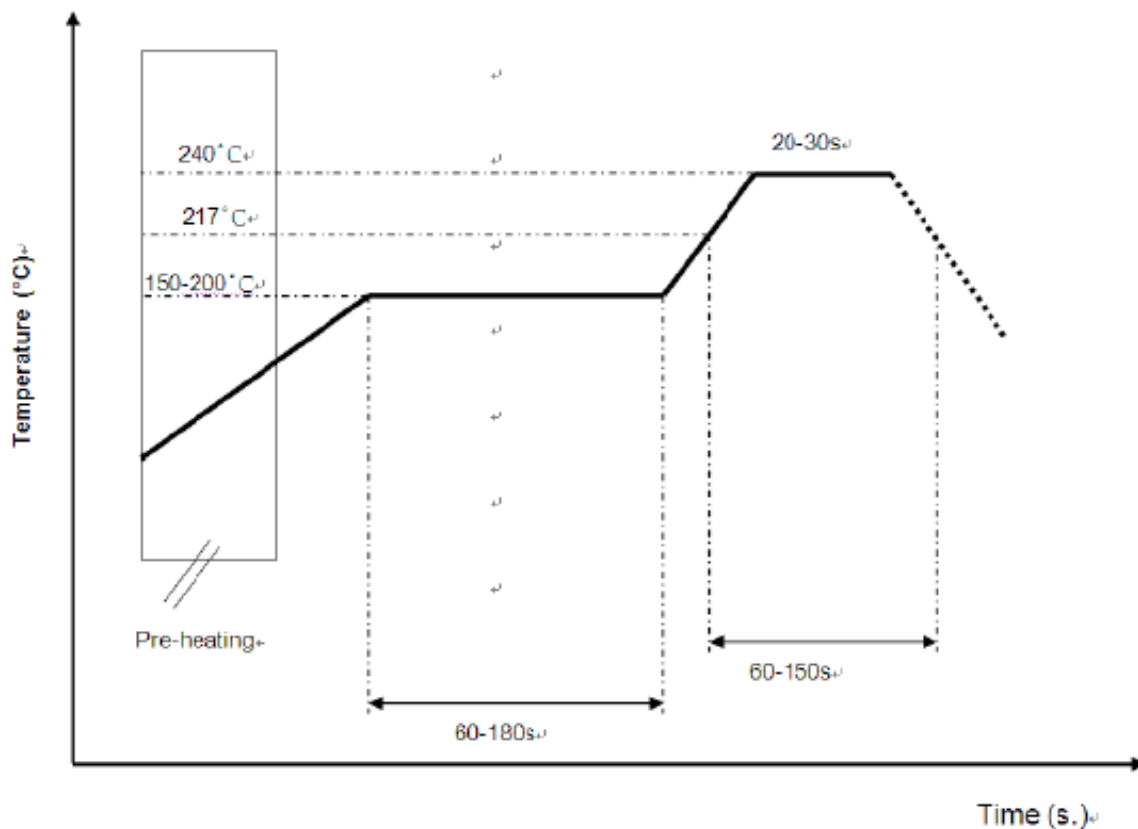
Solder Land Pattern

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



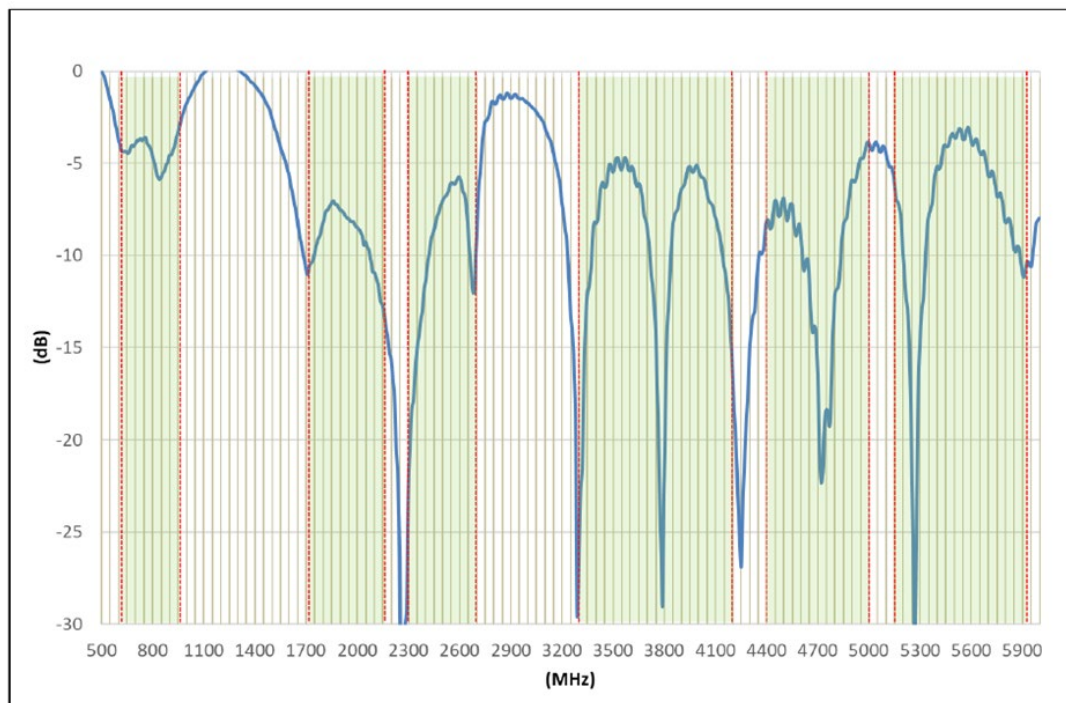
Unit: mm

Soldering Conditions

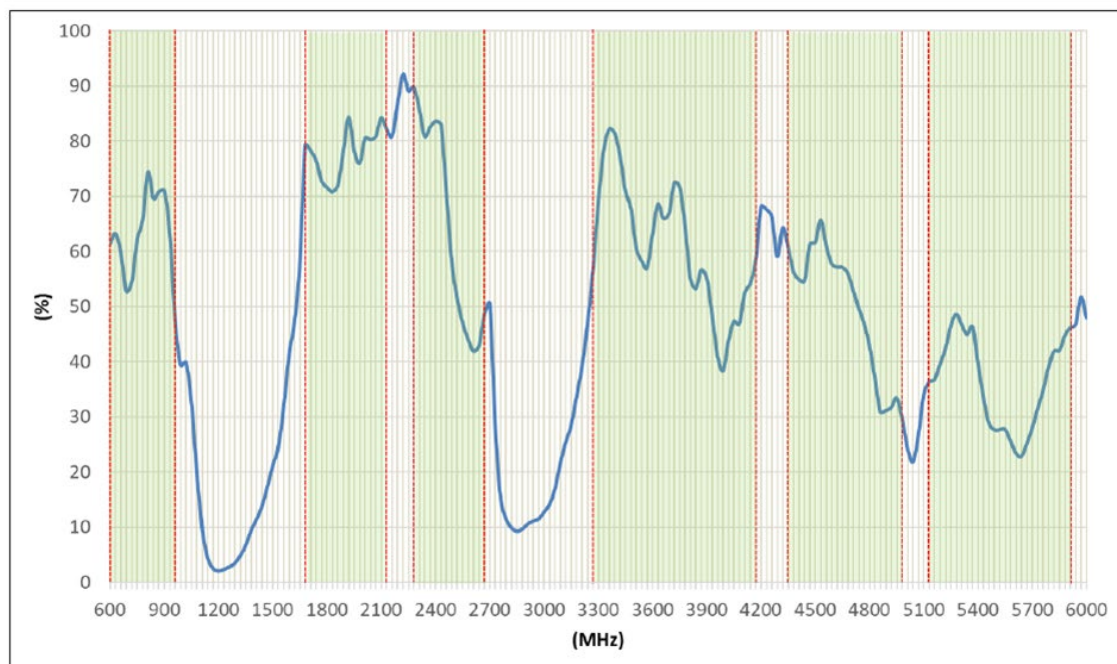


*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste.

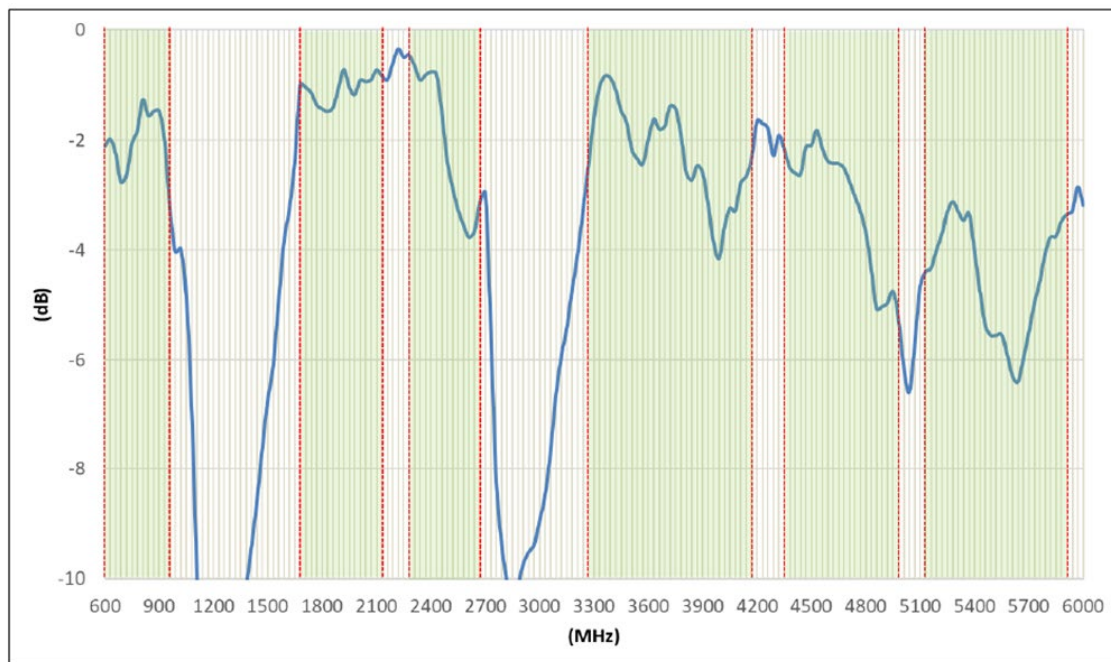
Return Loss (dB)



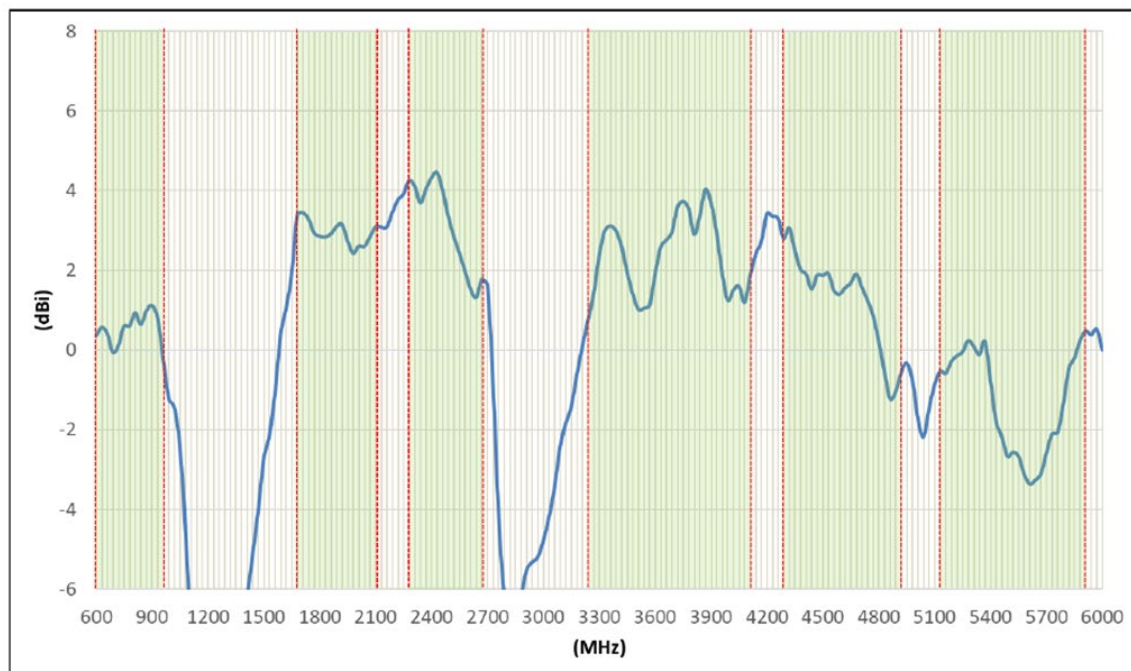
Efficiency (%)



Average Gain (dB)

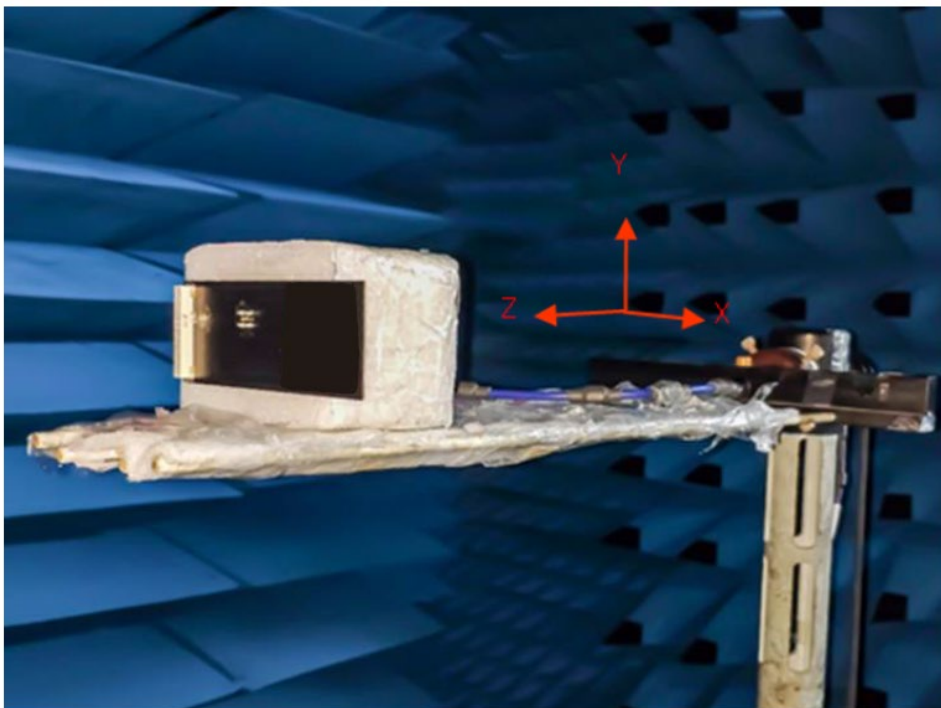


Peak Gain (dBi)

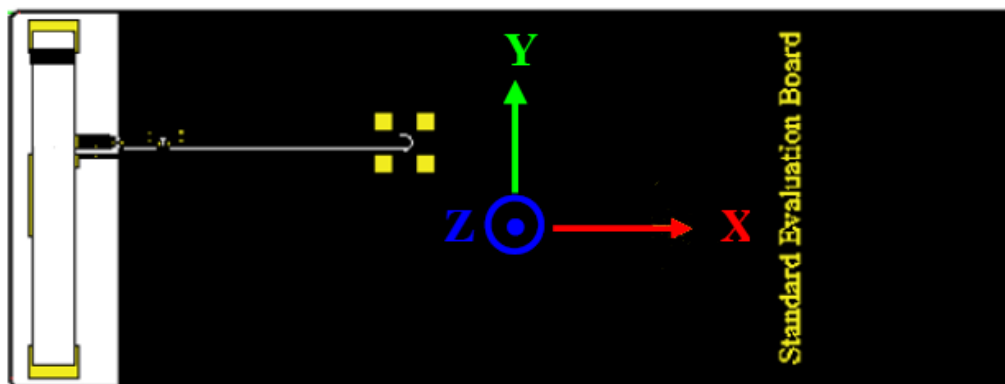


Antenna Radiation Pattern Measurement:

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



3D Radiation Gain Pattern

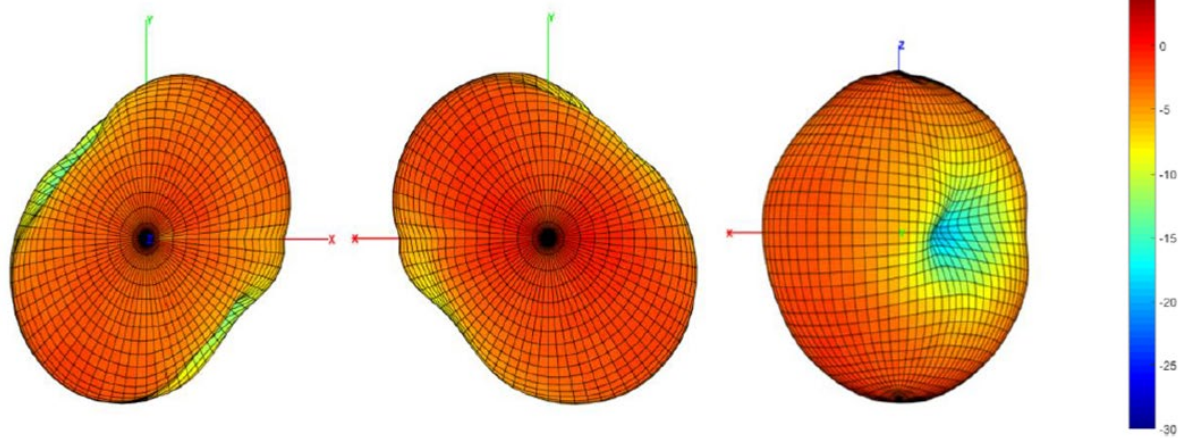


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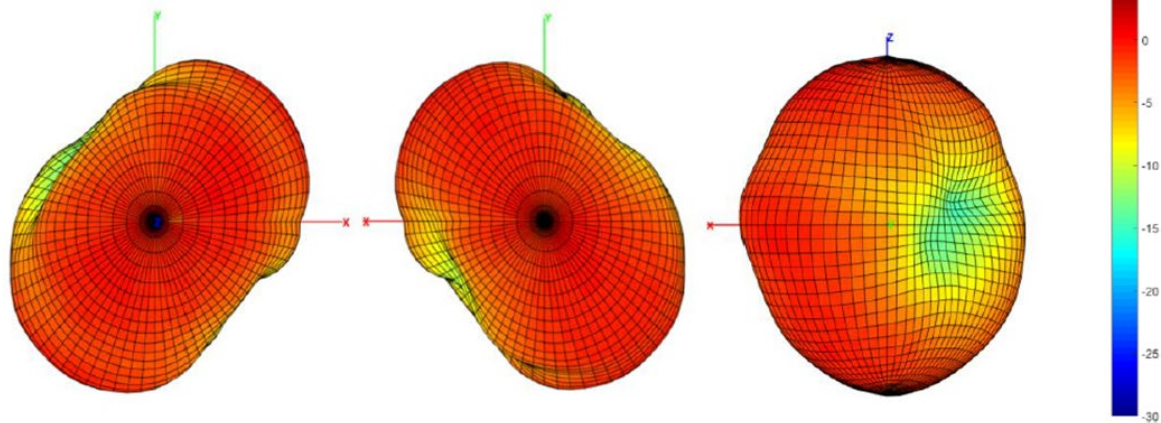
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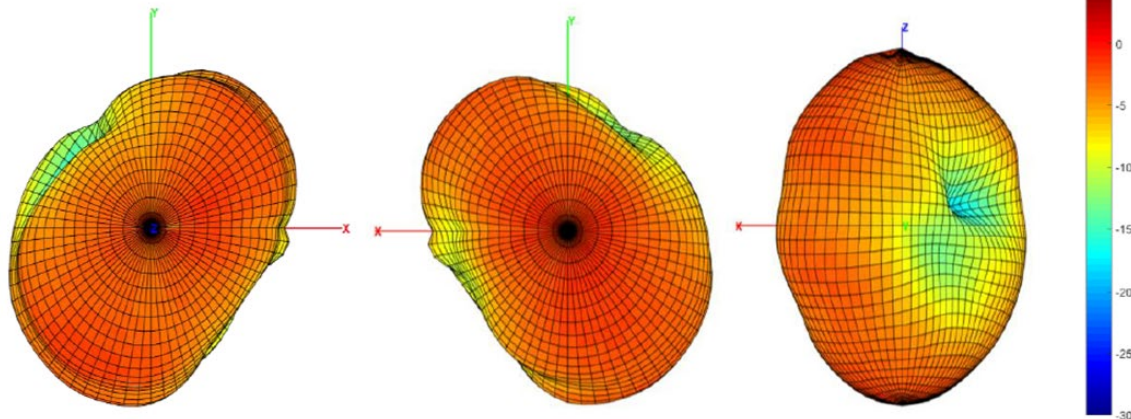
a) 660 MHz (unit: dBi)



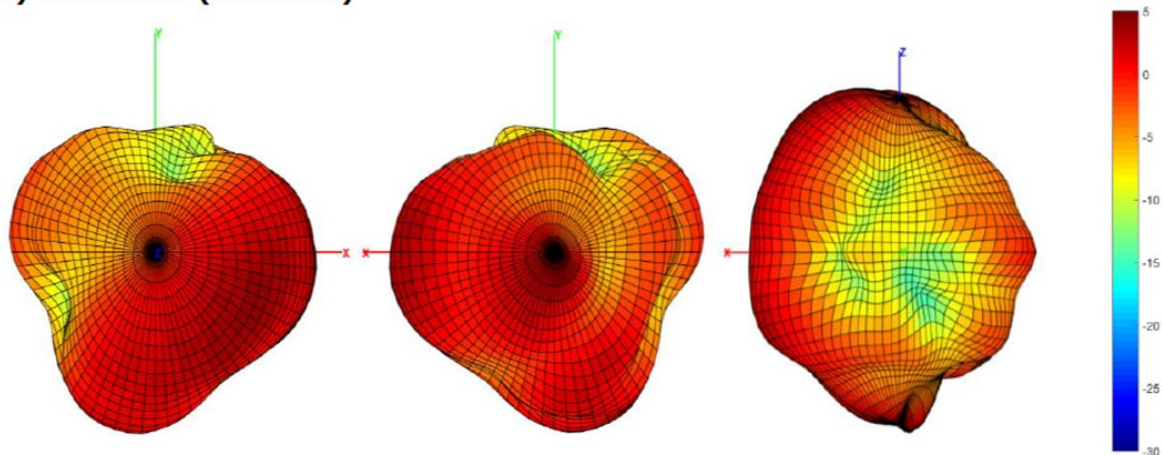
b) 800 MHz (unit: dBi)



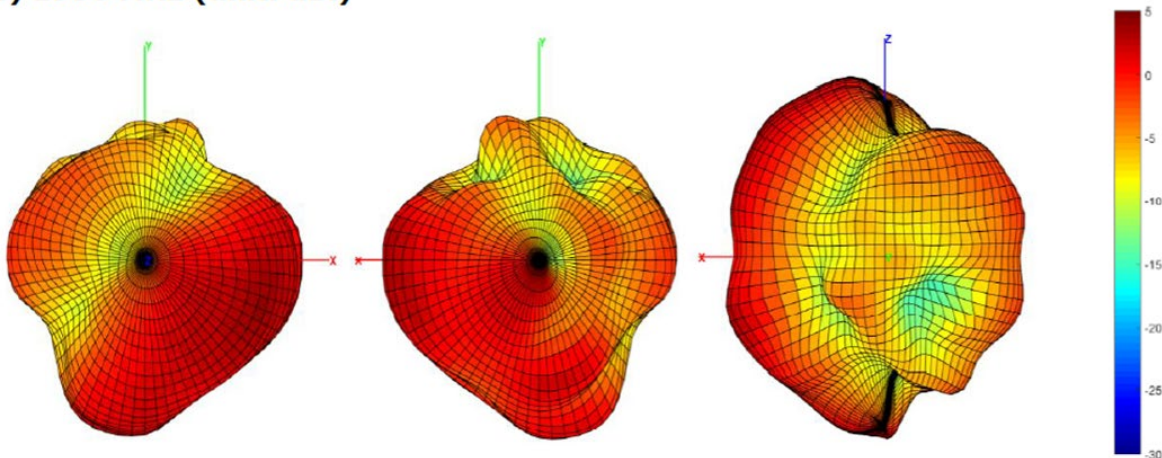
c) 960 MHz (unit: dBi)



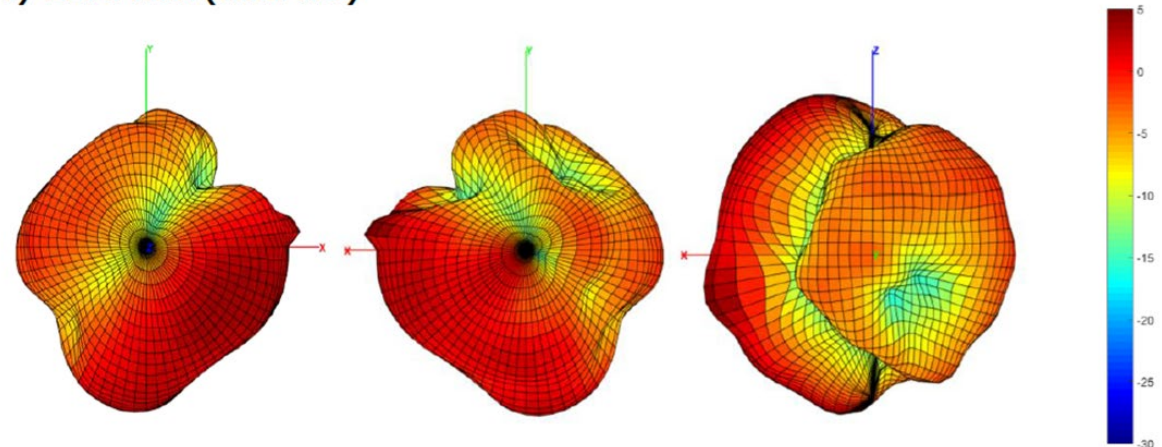
d) 1710 MHz (unit: dBi)



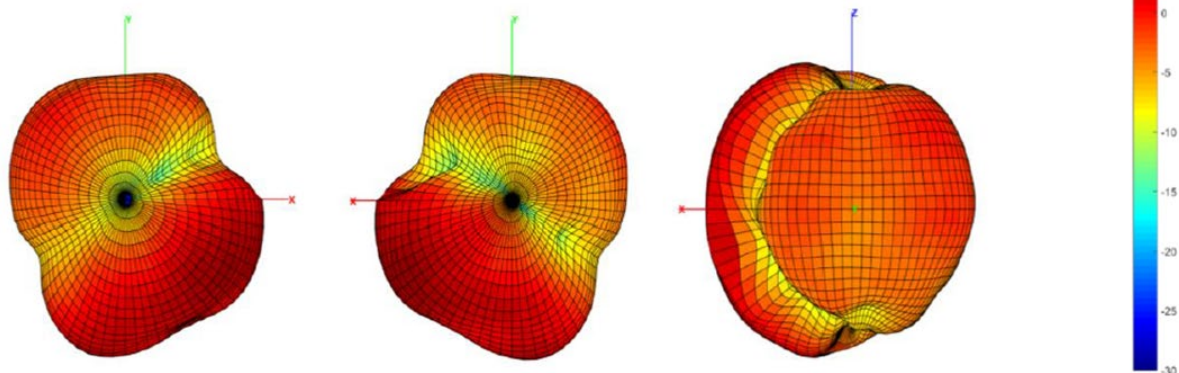
e) 1950 MHz (unit: dBi)



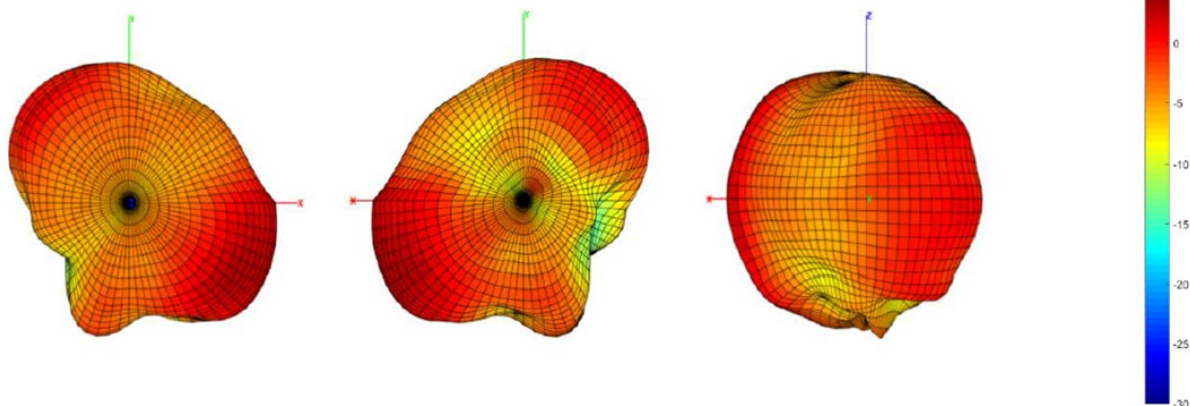
f) 2170 MHz (unit: dBi)



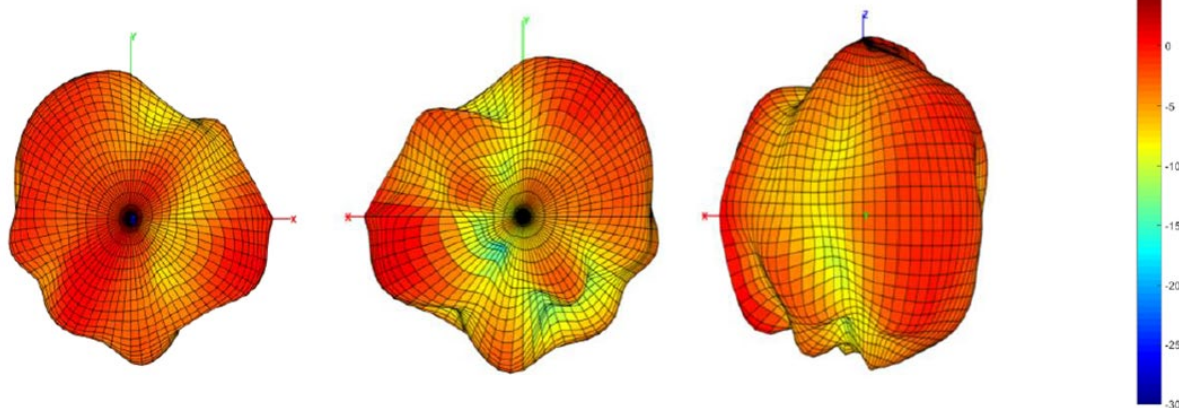
g) 2340 MHz (unit: dBi)



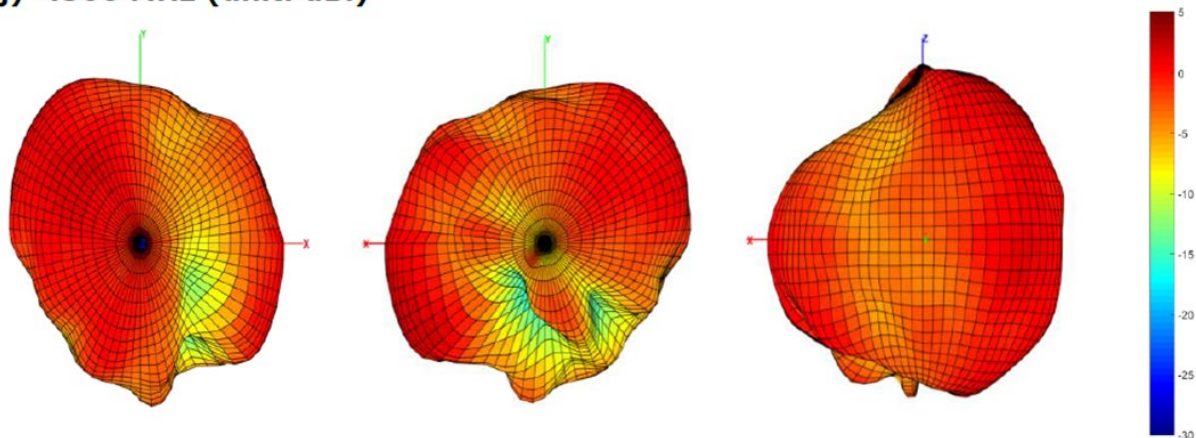
h) 2490 MHz (unit: dBi)



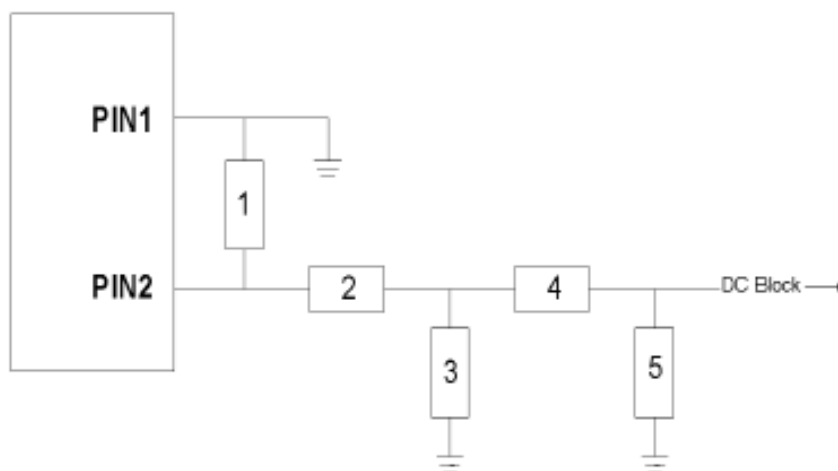
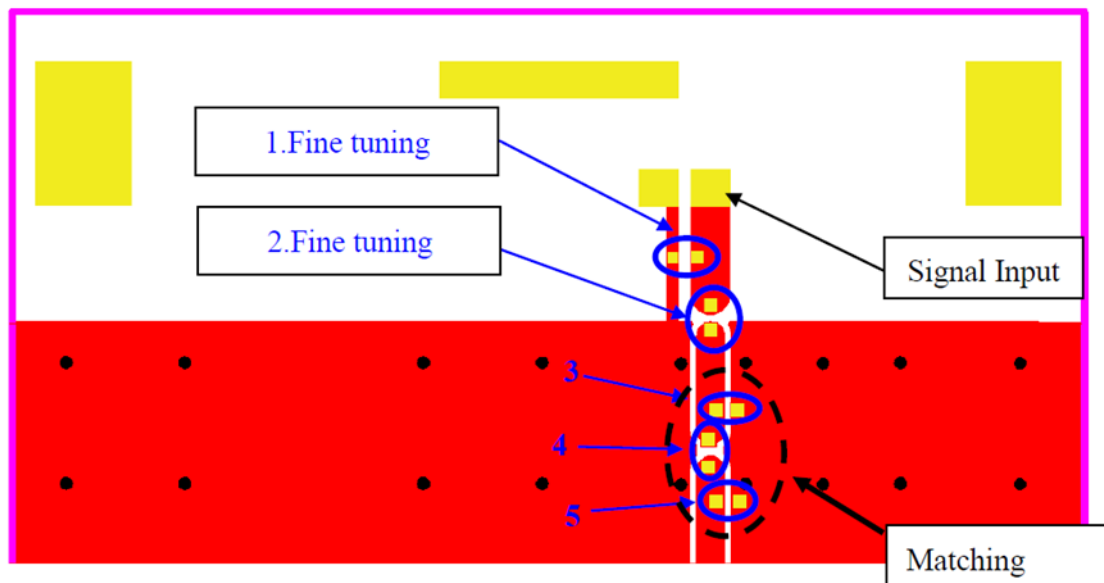
i) 3600 MHz (unit: dBi)



j) 4500 MHz (unit: dBi)



Frequency Tuning & Matching Circuit





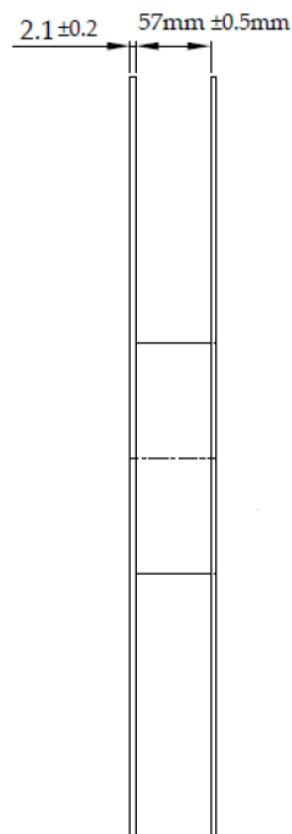
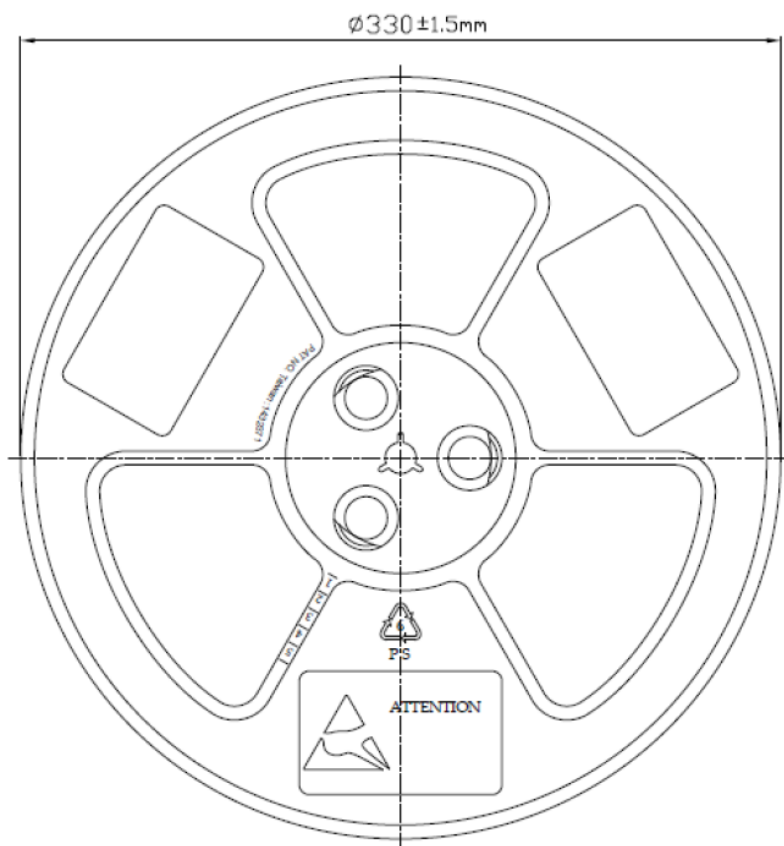
System Matching Circuit Component

Location	Description	Tolerance	NIC Part Number
1	6.8 nH (0402)	±2%	NIN-SK6N8GTR1450F
2	6.8 pF (0402)	±0.05 pF	NMC-Q0402NPO6R8A50TRPF
3 & 5	-	-	-
4 Fine Tuning Elements	0 Ω, (0402)	-	NRC04Z0TRF

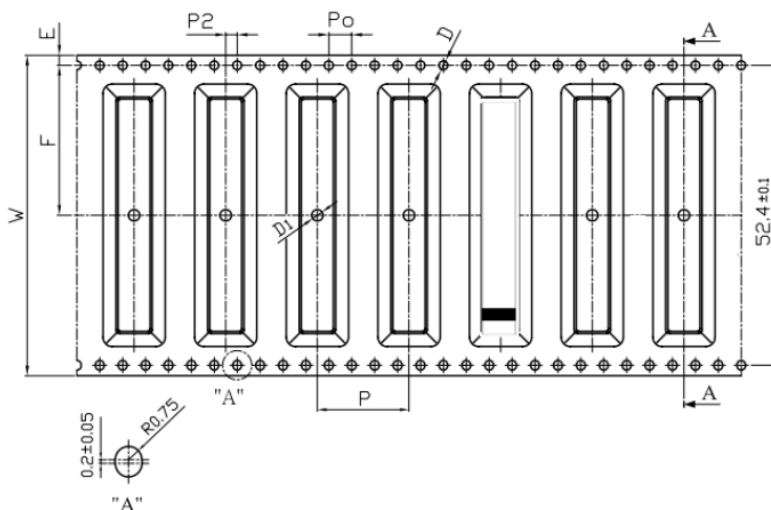
Packing

- (1) Quantity / Reel: 600 pcs / Reel
- (2) Plastic tape: Clear Non Anti-static Polystyrene
- (3) Weight: 1 pcs = 4.0g typ.
1 Reel = 3.1 Kg typ.

a. Reel Dimensions



b. Tape Drawing



c. Tape Dimensions

Feature	Specifications	Tolerances
W	56.00	± 0.30
P	16.00	± 0.10
E	1.75	± 0.10
F	26.20	± 0.15
P2	2.00	± 0.15
D	1.50	+0.10 -0.00
D1	2.00	± 0.10
Po	4.00	± 0.10
10Po	40.00	± 0.20