

# NGCM6050UU7R000G1TRF

6.0 ~ 8.25 GHz UWB Chip Antenna

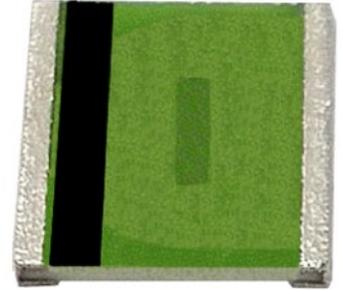


## Features

- UWB Antenna 6.0 ~ 8.25GHz
- Stable and reliable performance
- RoHs Complaint

## Applications

- Automotive sensors
- Ultra-wideband radios
- Precision surveying
- Remote controls
- Centimeter Level Positioning



## Specifications

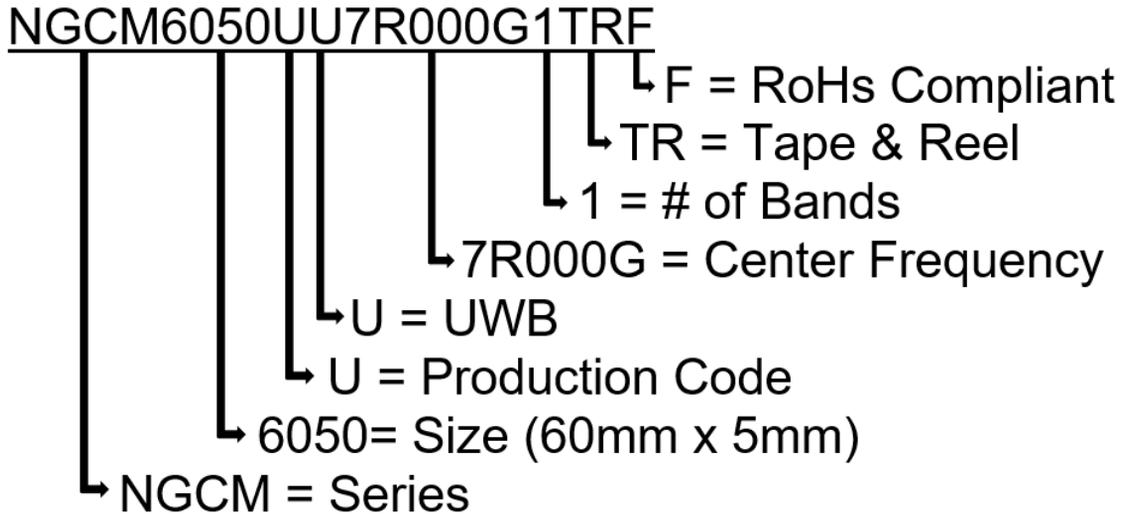
Electrical	
Frequency Range	6000 ~ 8250 MHz
Center Frequency	7000 MHz
Peak Gain	3.5 dBi typ.
Average Gain	-1.5 dB typ.
Efficiency	72% typ.
V.S.W.R	2.0 Max
Maximum Input Power	2 W
Polarization	Linear
Impedance	50Ω
Environmental	
Operating Temperature	-40°C~+125°C
Storage Temperature	-5°C~+40°C -40°C~+85°C - 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

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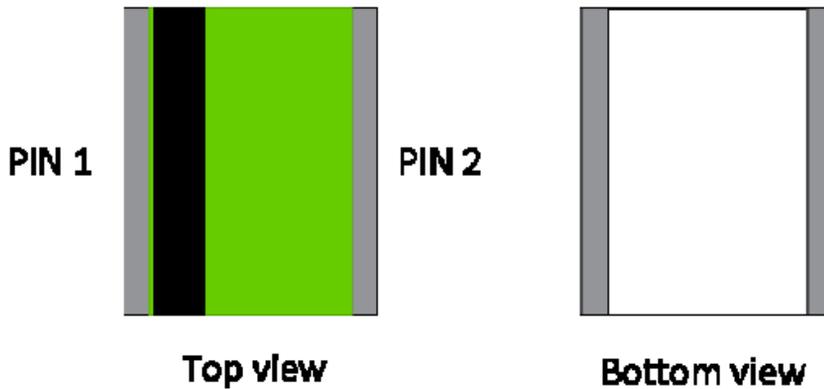
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## Part Number Breakdown

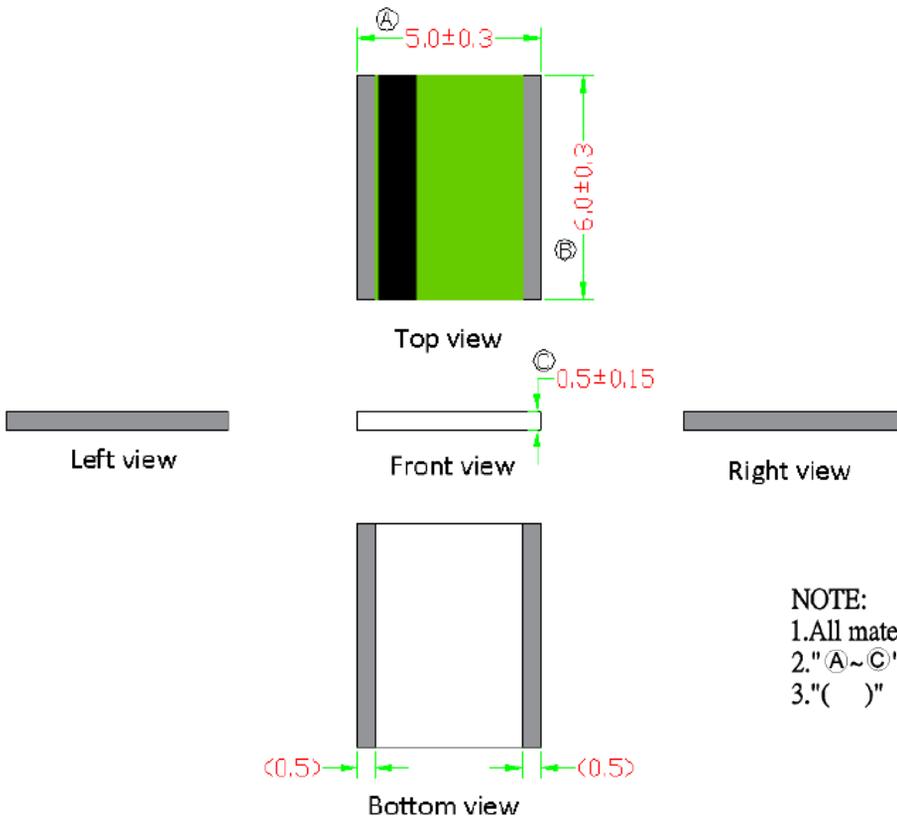


## Pin Definition



PIN	1	2
Soldering PAD	Signal	N/A

### Dimension Drawing



#### NOTE:

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

### Dimensions (mm) & Mechanical

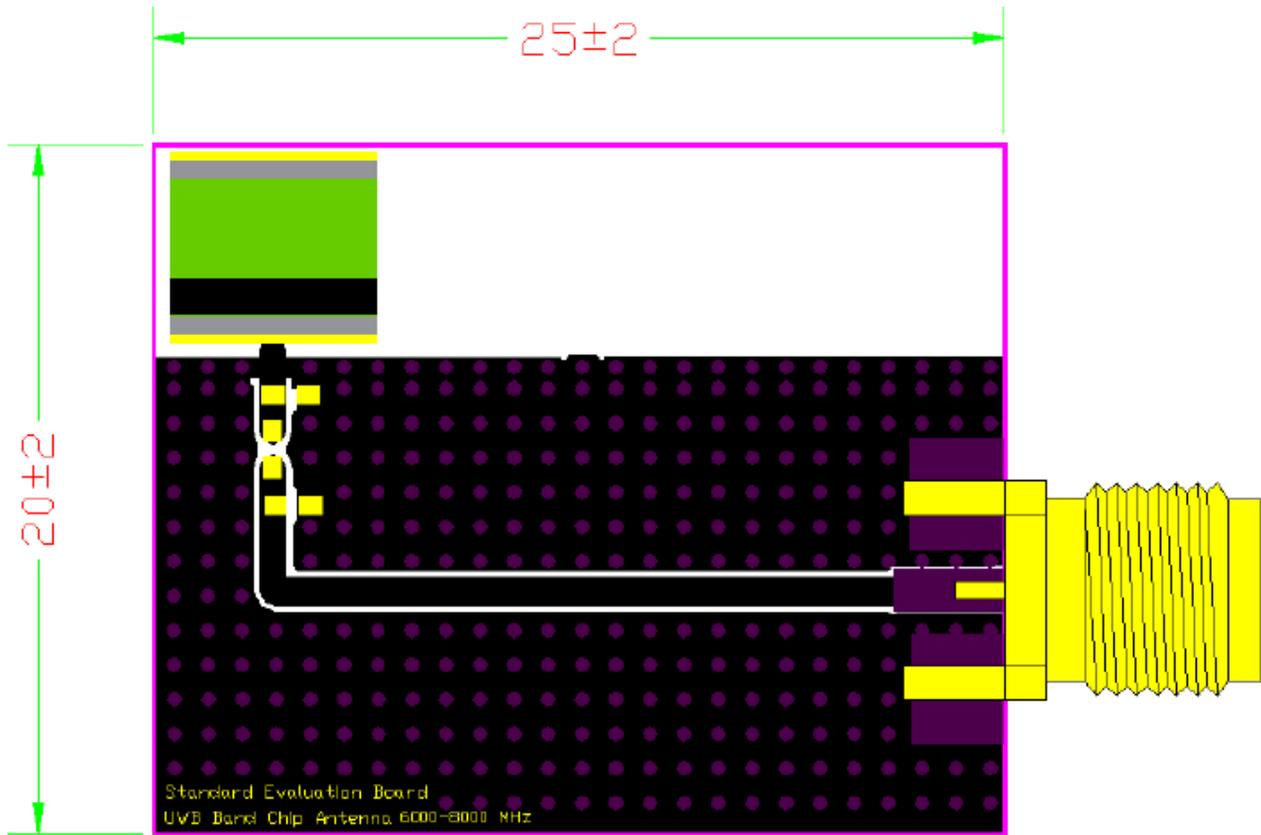
Body Length (A)	$8 \pm 0.3$
Width (B)	$6 \pm 0.3$
Thickness (C)	$0.5 \pm 0.15$
Connection Type	SMT
Ground Plane	32 mm x 14 mm
Material	Ceramic

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## Evaluation Board



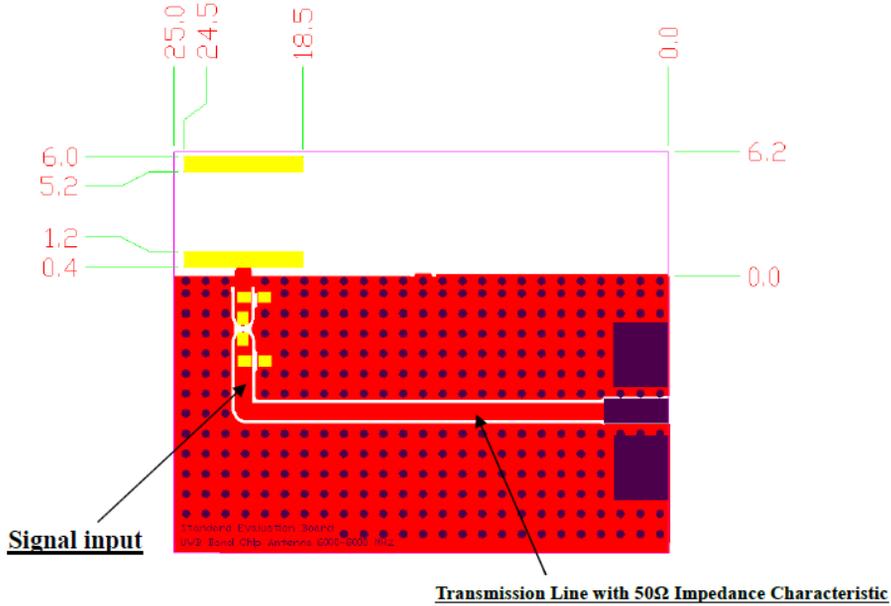
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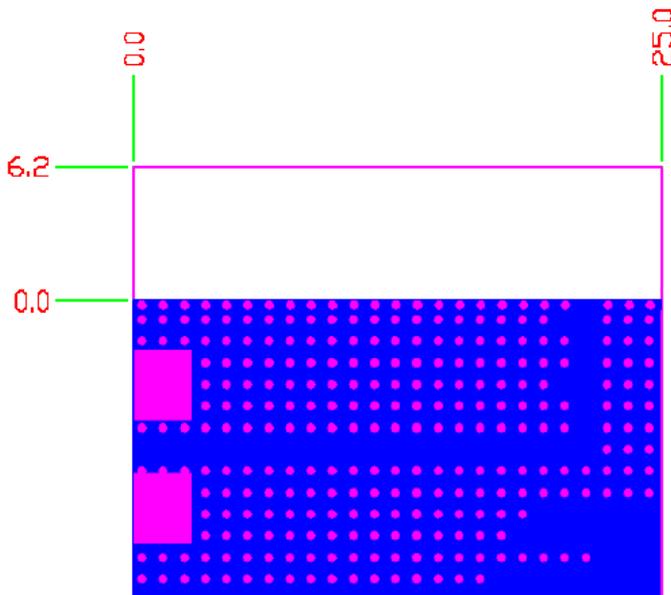


## Solder Land Pattern

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

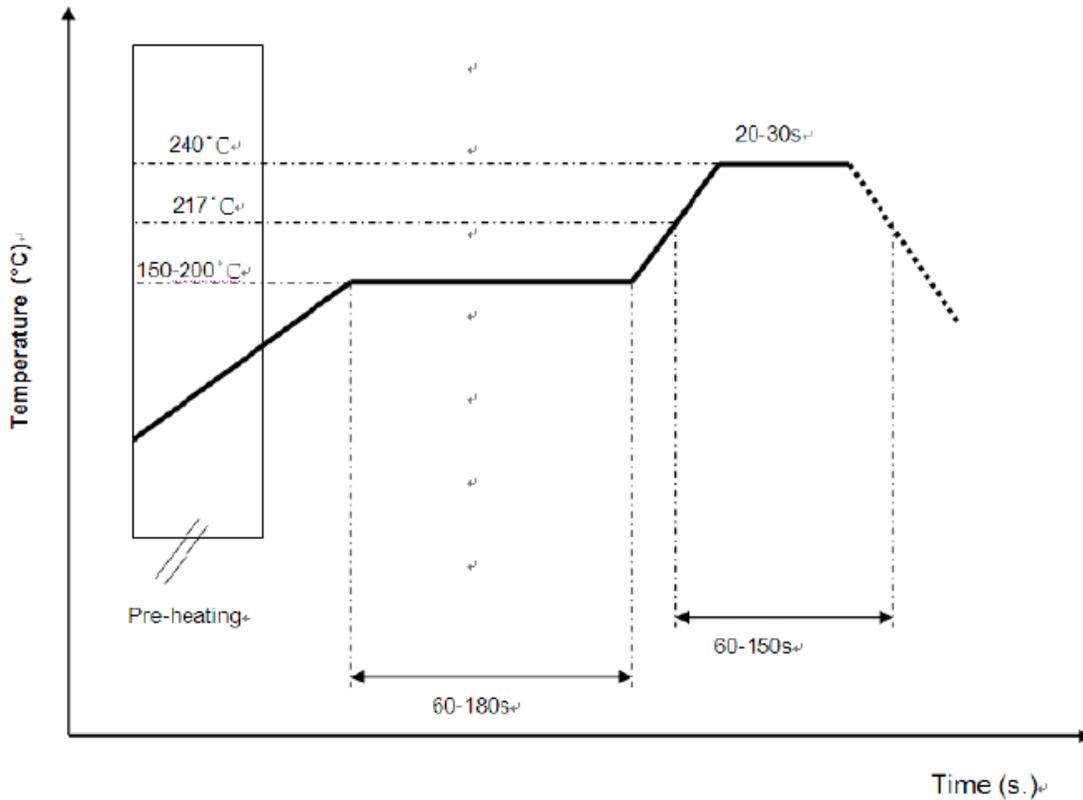


Top View



Bottom View

### Soldering Conditions



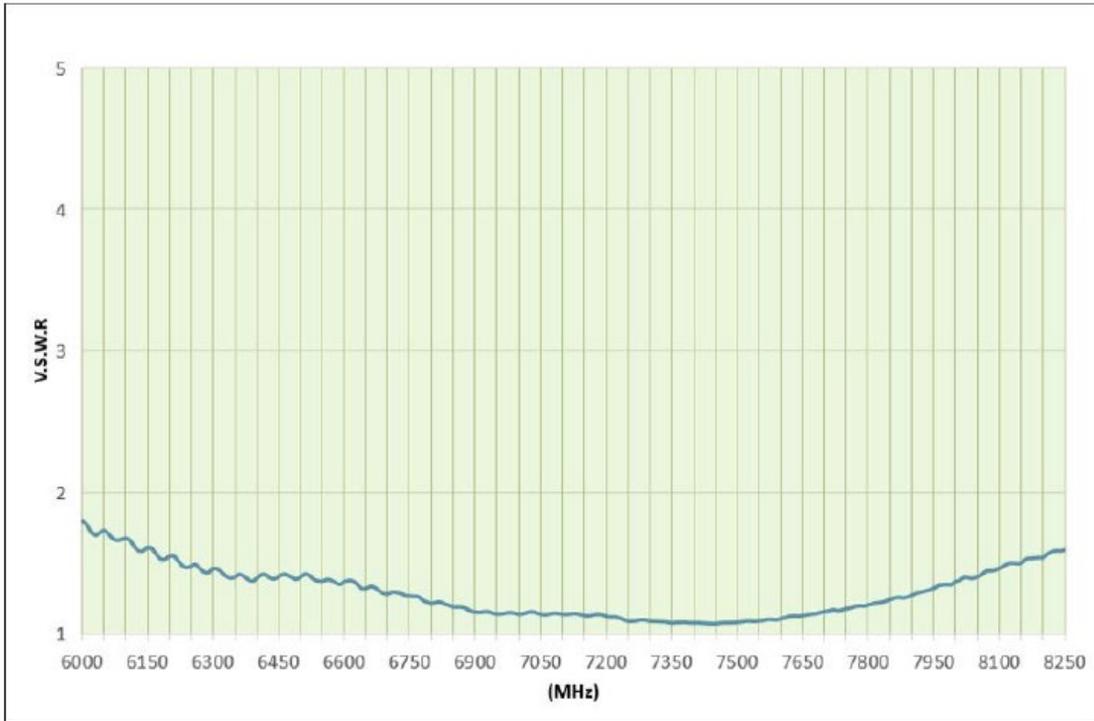
\* Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste.

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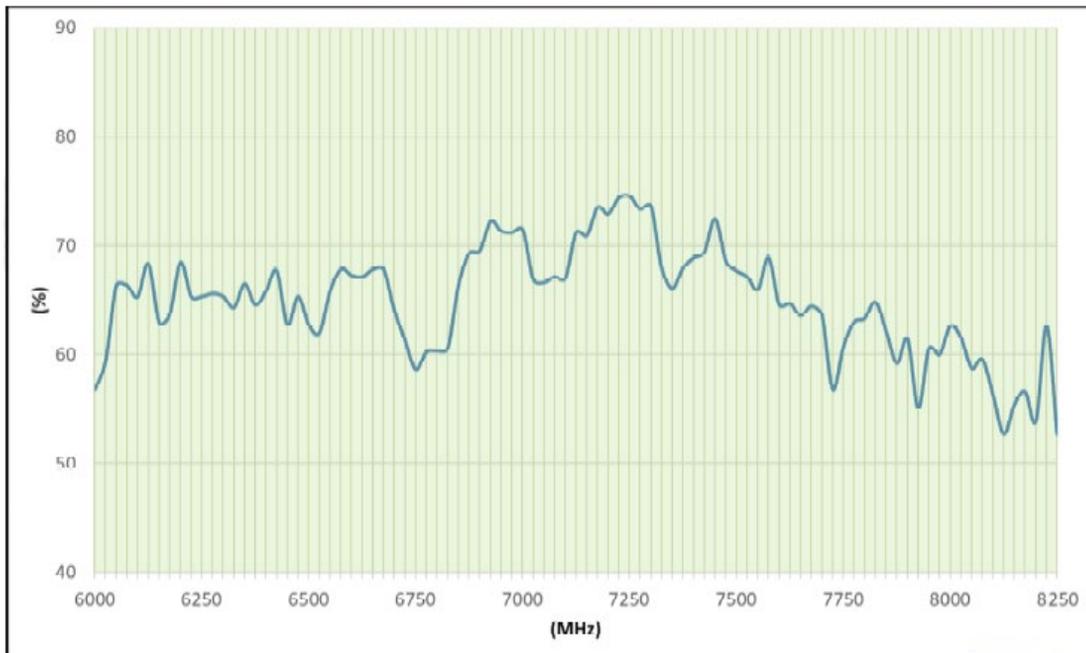
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## VSWR

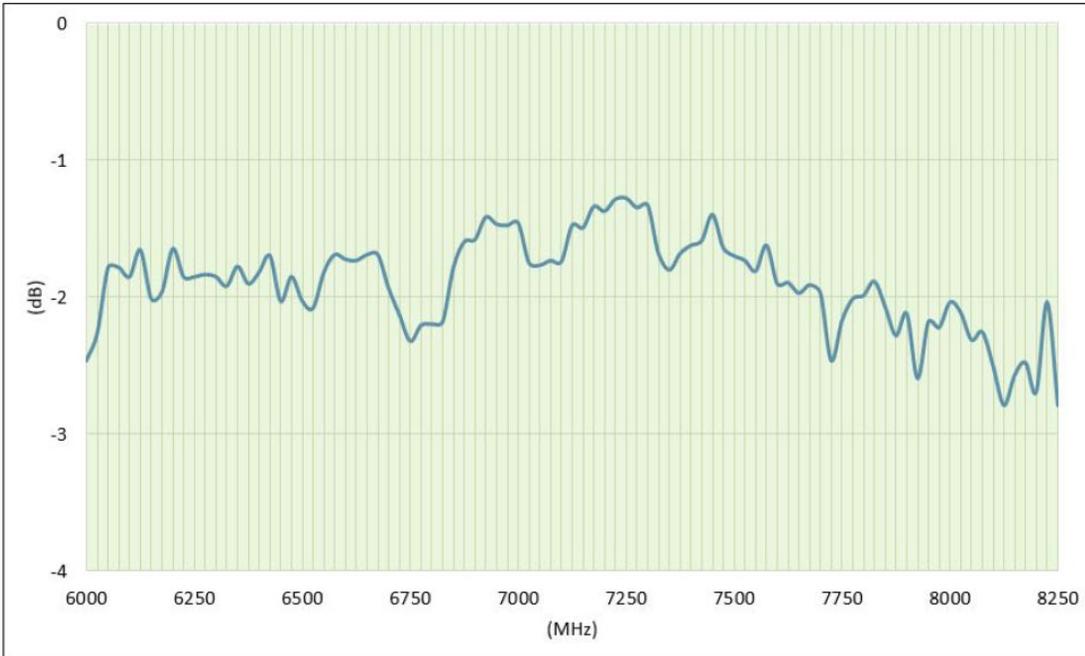


## Efficiency (%)

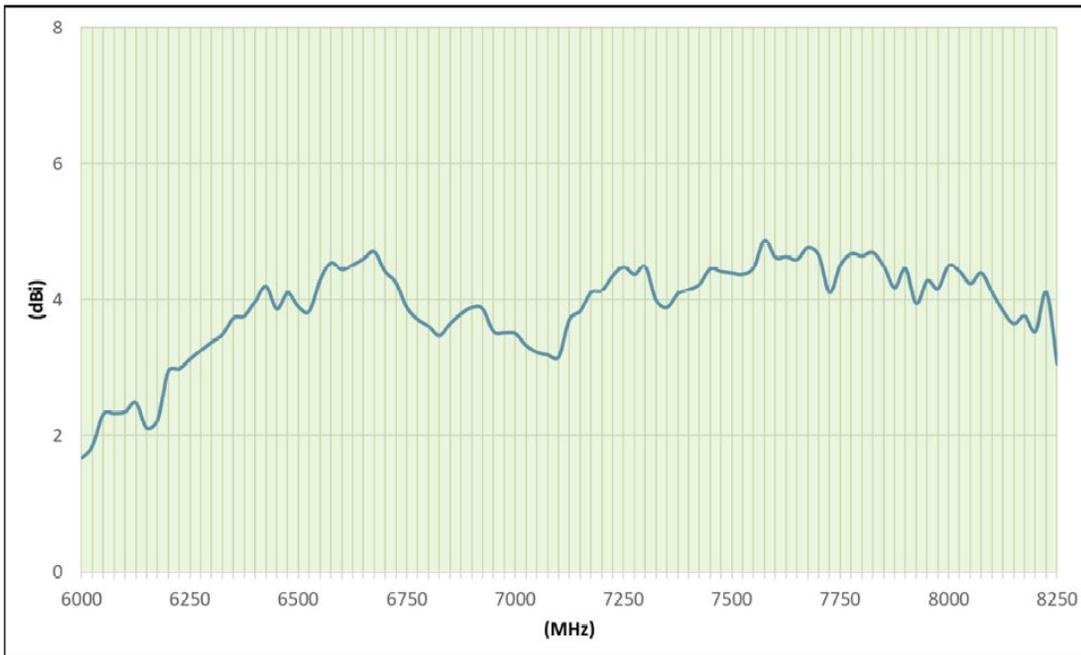




### Average Gain (dB)



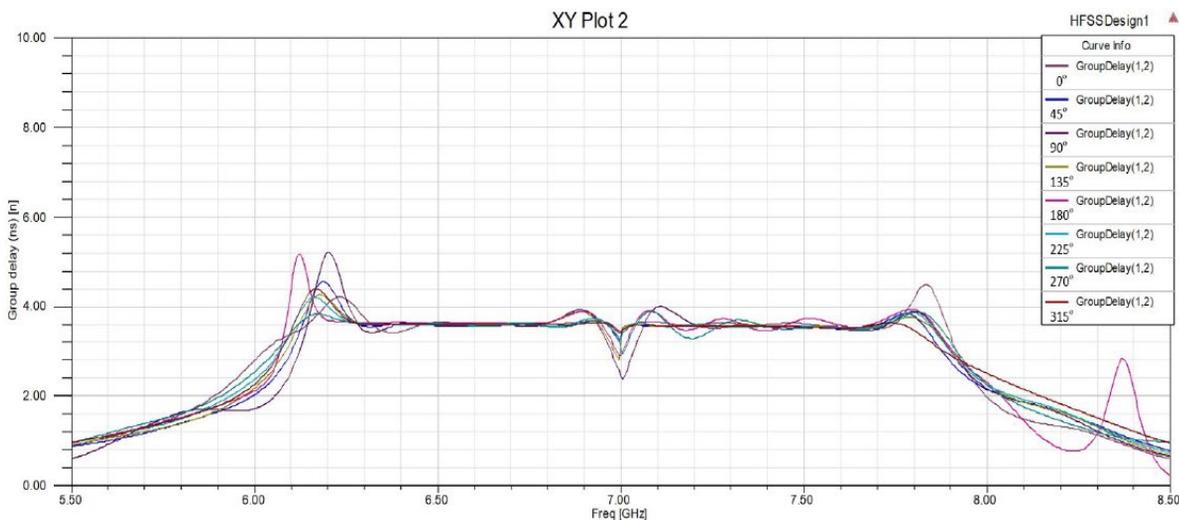
### Peak Gain (dBi)





### Group Delay vs Frequency

The group delay was simulated for two UWB chip antennas placed at 1m distance. One of the antennas was kept stationary, while the other was rotated along XZ-cut in 45 ° intervals

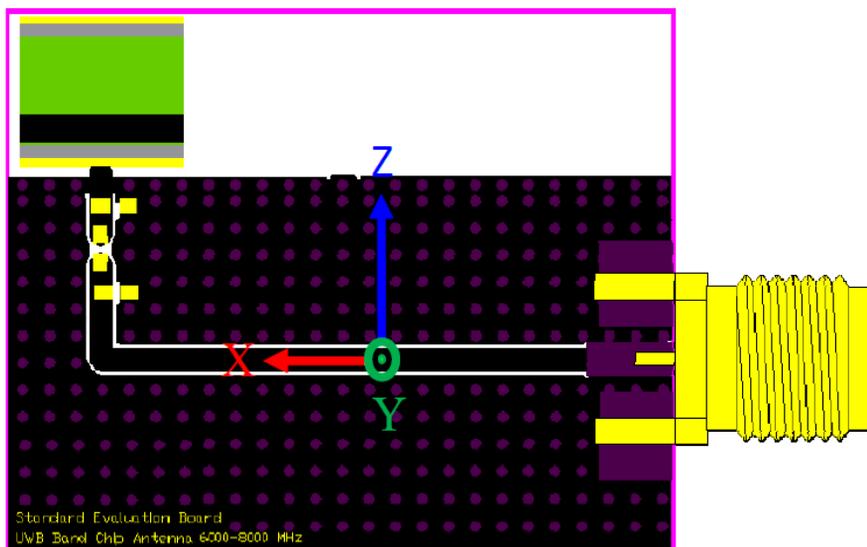


### Antenna Radiation Pattern Measurement:

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



### 3D Radiation Gain Pattern

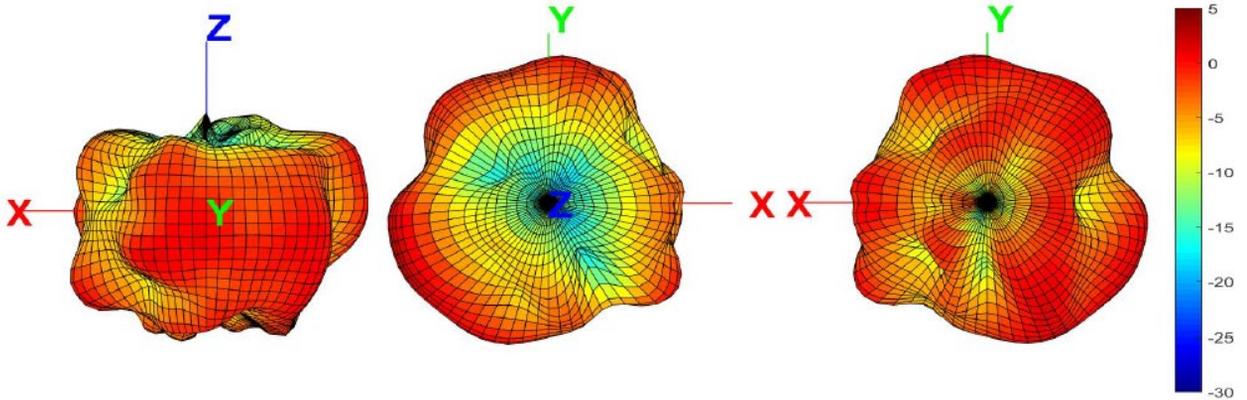


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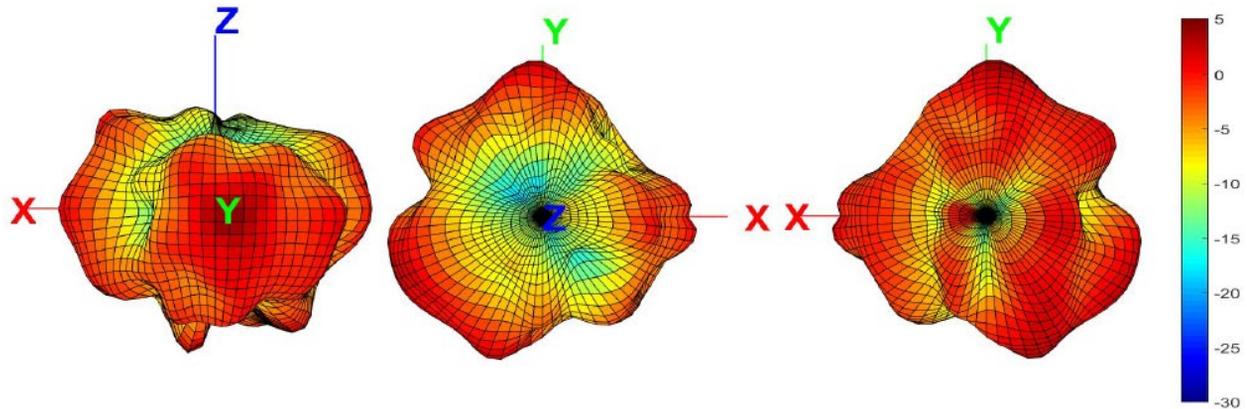
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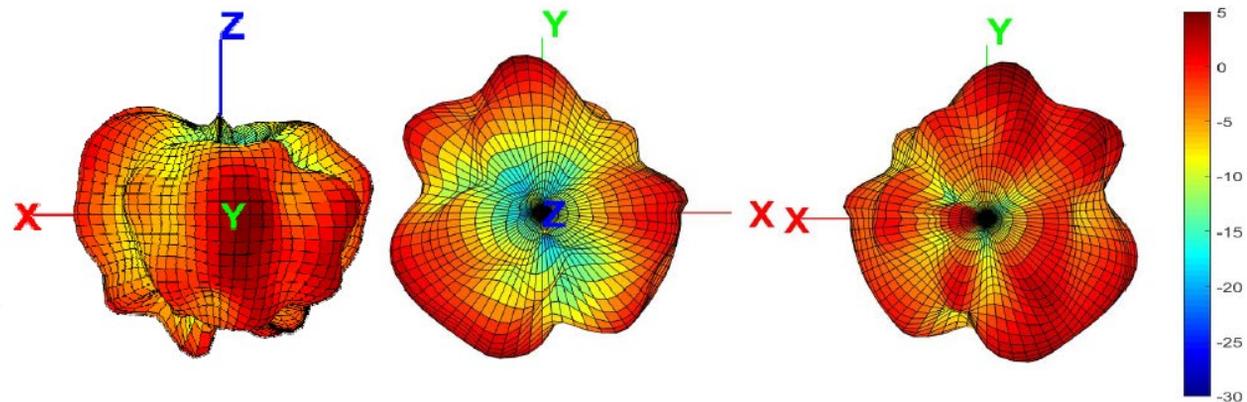
a) @ 6000 MHz (unit: dBi)



b) @ 6500 MHz (unit: dBi)



c) @ 7000 MHz (unit: dBi)

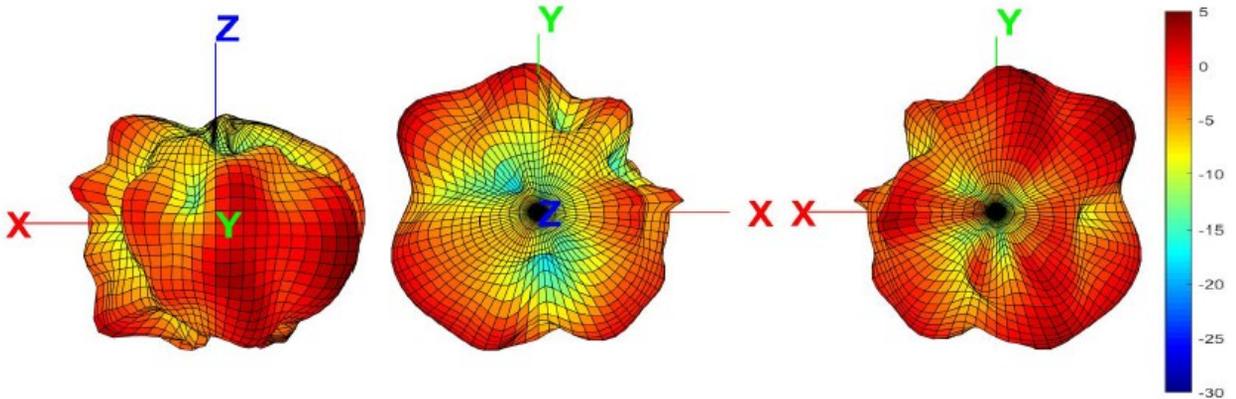


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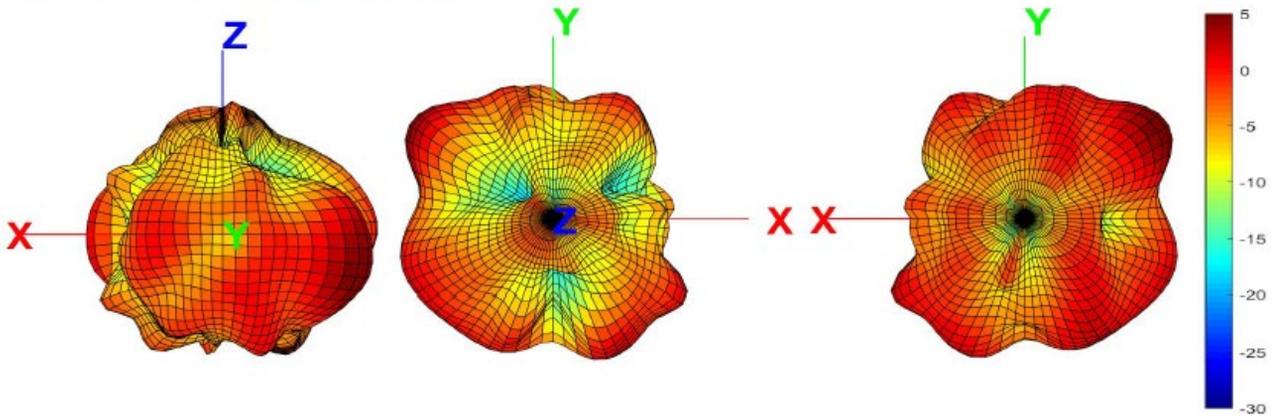
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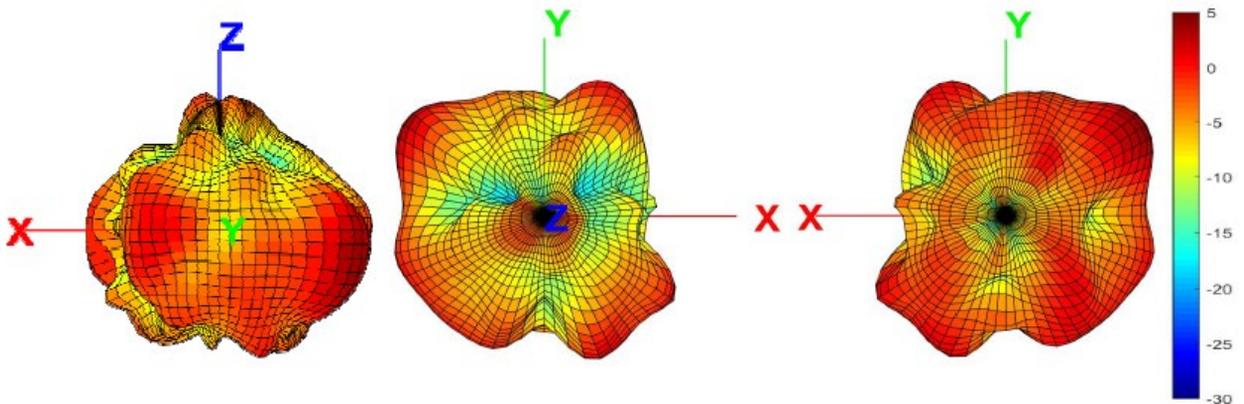
d) @ 7500 MHz (unit: dBi)



e) @ 8000 MHz (unit: dBi)

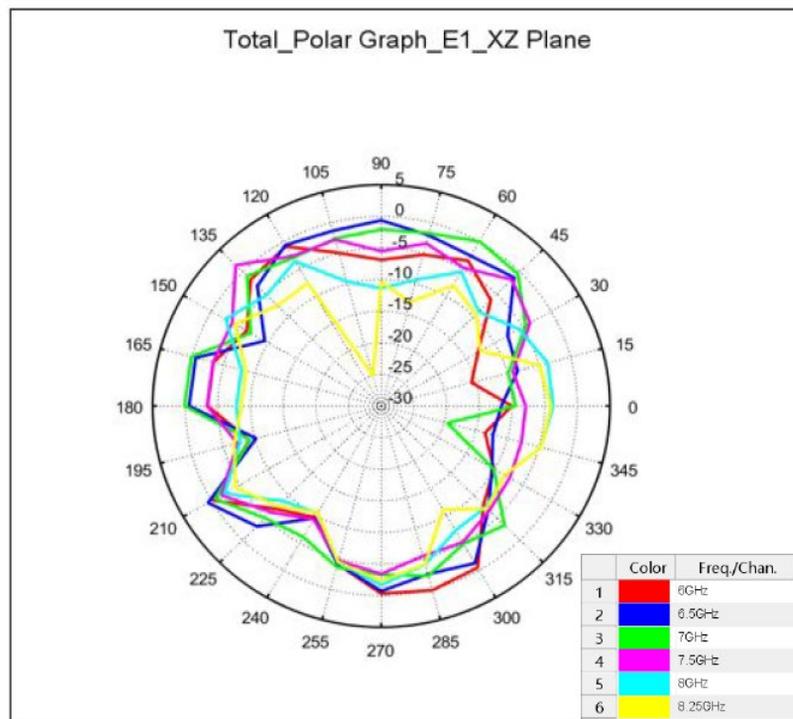
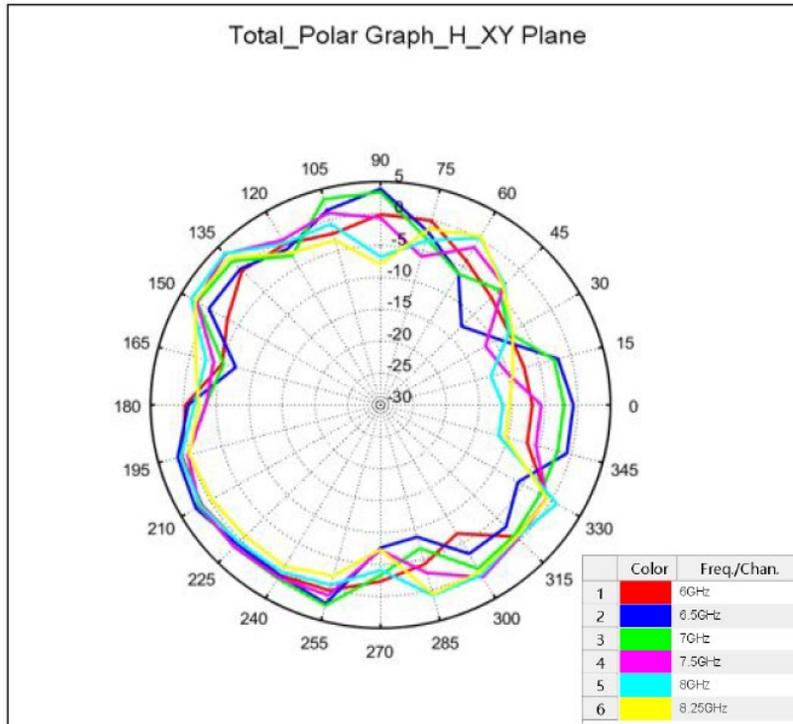


f) @ 8250 MHz (unit: dBi)



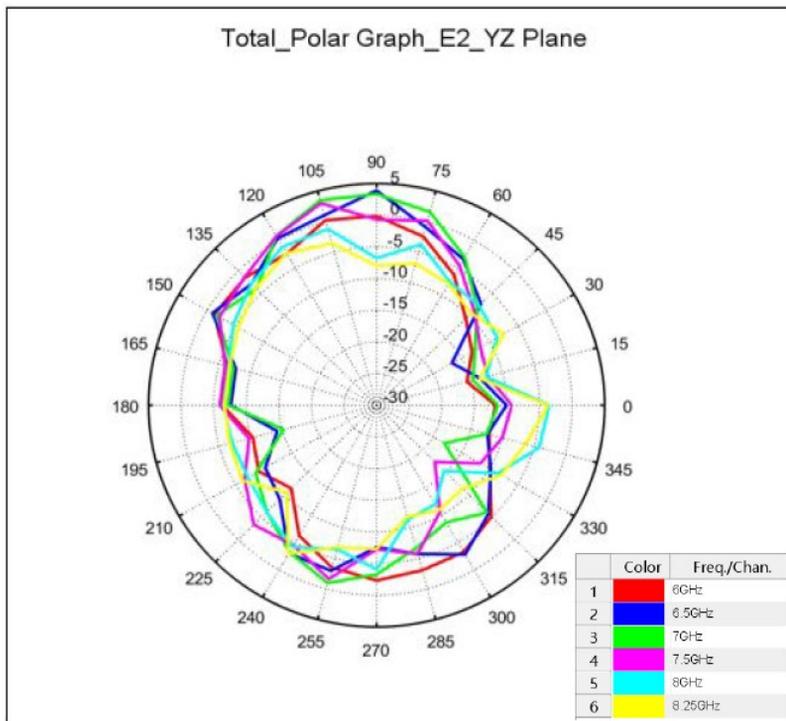


### 2D Radiation Gain Pattern

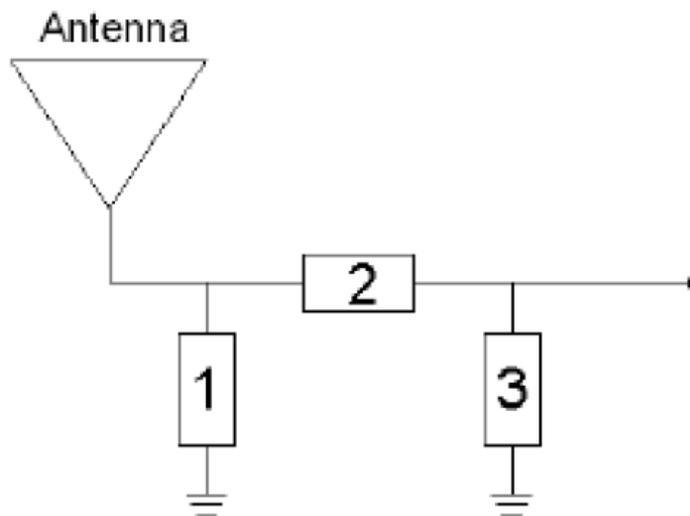
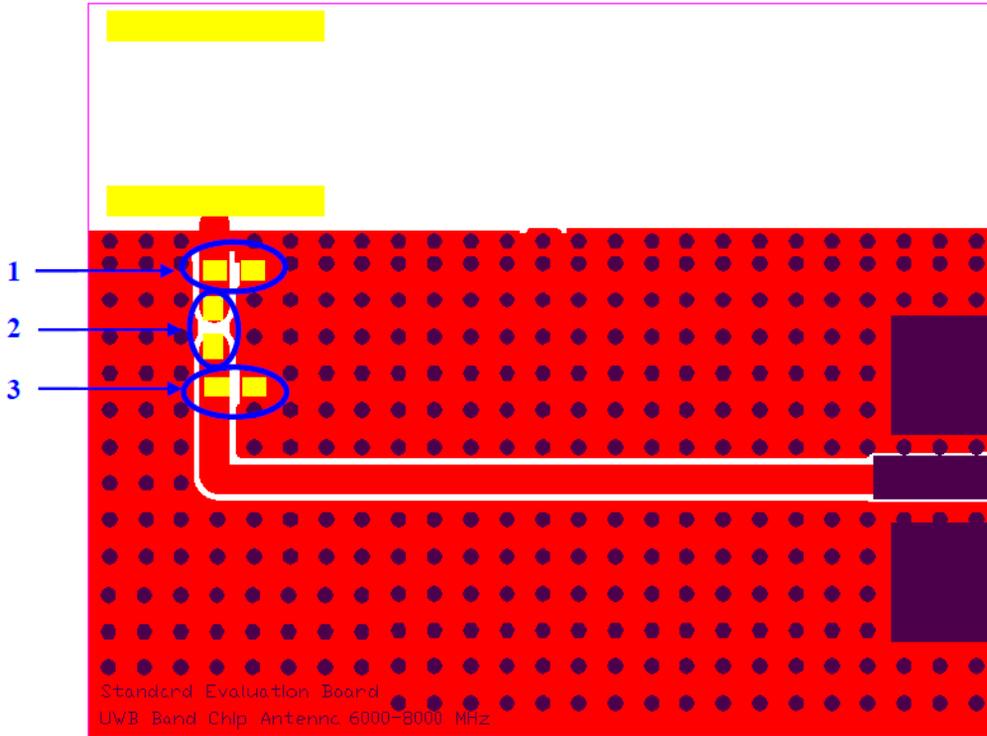


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### Frequency Tuning & Matching Circuit



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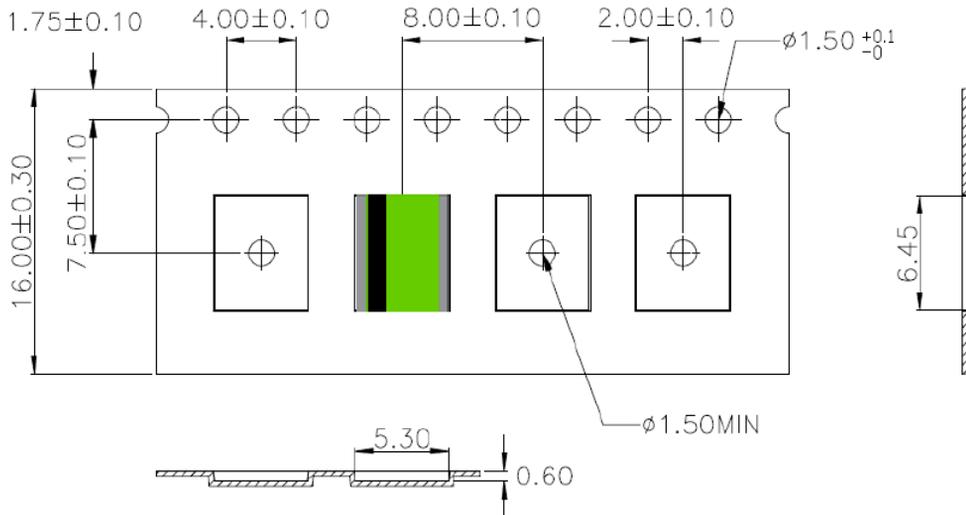
## System Matching Circuit Component

Location	Description	Tolerance	NIC Part Number
1	-	-	-
2	0Ω, (0402)	±5%	<a href="#">NRC04ZOTRF</a>
3	0.3pF, (0402)	±0.1pF	<a href="#">NMC-Q0402NPO0R3B25TRPF</a>

### Packing

- (1) Unit Weight:  $0.05 \pm 0.005$ (g)/pcs
- (2) Quantity/Reel: 3000 pcs/Reel
- (3) Plastic tape: Black Conductive Polystyrene.

a. Tape Drawing (unit: mm)



b. Reel Drawing (unit: mm)

