

Product Name: PB25D8X Castle Patch Antenna

Part Number: H2P13ABB210100

Features:

- Supporting: (L1+L2) GPS/ BDS/Galileo/QZSS/ GLONASS
- Dimensions: 25 x 25 x 4.5 mm
- Stable and reliable in performances
- Low temperature coefficient of frequency
- RoHS 2.0 compliance

Applications:

- Automotive telematics
- Safety of life transportation
- Marine
- Navigation

Castle Patch Antenna

MODEL: PB25D8X

Version: A

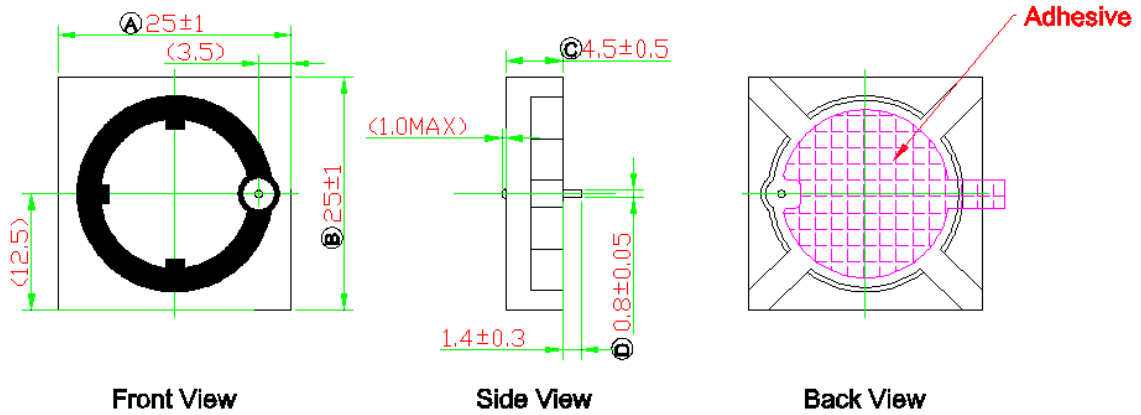
I. Patch Antenna Specifications:

Items	Specifications	
Navigation	GPS L1/ Galileo E1/ BDS B1/ QZSS L1	GPS L2/ GLONASS G2/ QZSS L2
Center Frequency (MHz)	1575.42	1227.6
Return loss (dB)	< -10 Typ.	
Peak Gain (dBi)	3.4 Typ.	3.3 Typ.
Average Gain(dB)	-2.8 Typ.	-3.0 Typ.
Efficiency (%)	52.8 Typ.	50 Typ.
Test Condition	100 x 100 mm ² (Evaluation board)	
Impedance (Ω)	50	
Polarization	RHCP	

Mechanical Specifications	
Dimensions (mm)	25(L) x 25 (W) x4.5 (H)
Material	Ceramic
Environmental Conditions	
Operation Temperature (°C)	-40 ~ +85
Storage Temperature (°C)	-5 ~ +40
Relative Humidity	10 ~ 70 %

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II. Antenna Dimensions (unit: mm):

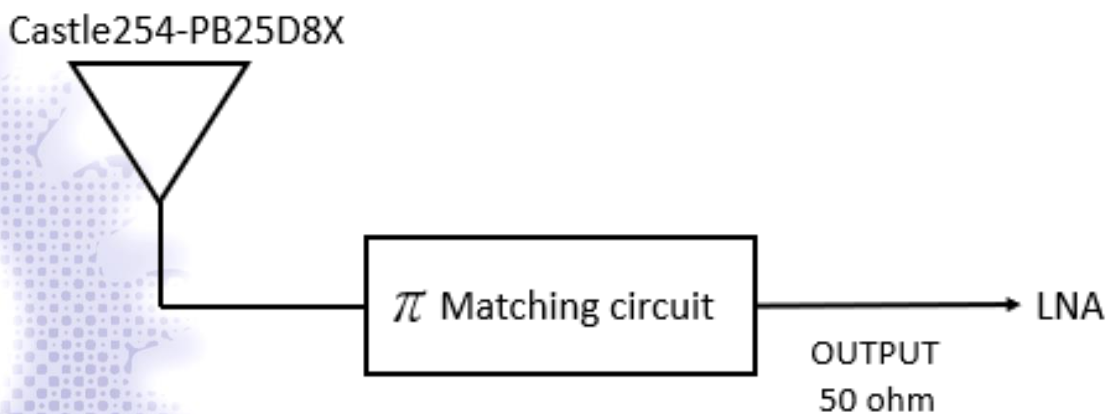


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NOTE:

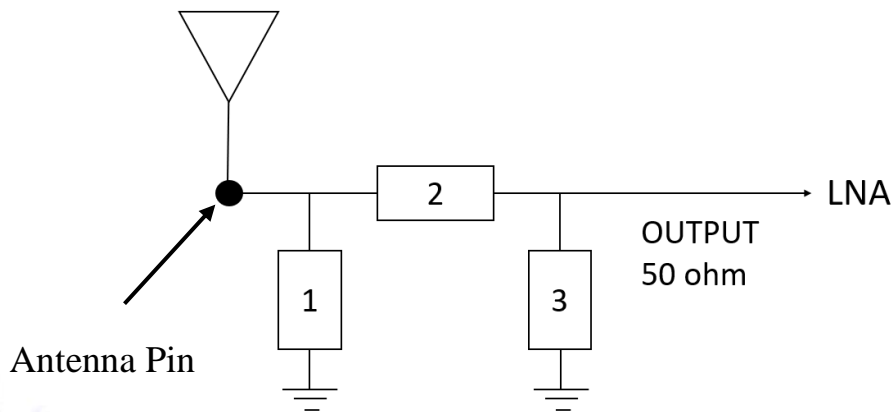
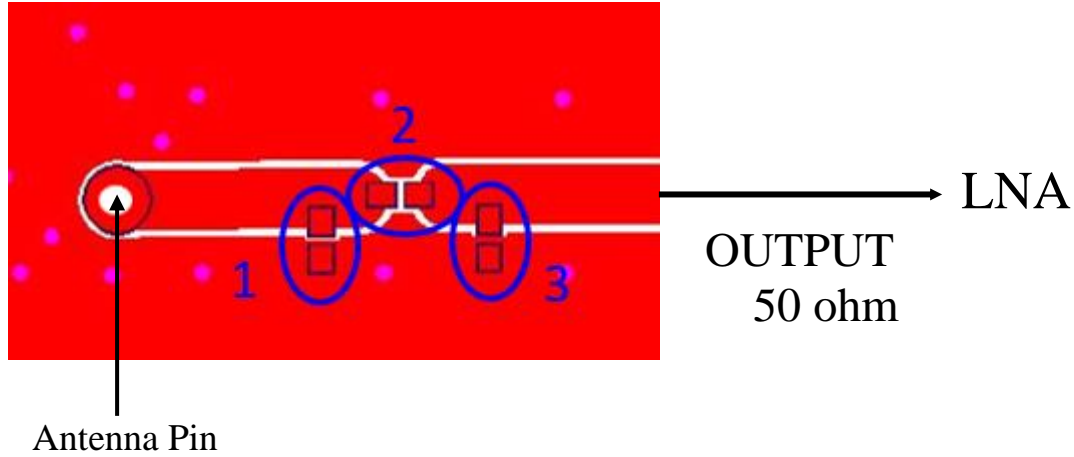
1. All materials are RoHS 2.0 compliant.
2. "A~D" Critical Dimensions.
3. "()" Reference Dimensions.

III. Block Diagram



IV. Matching circuit

With the following recommended values of matching and tuning components, at our standard 100 x 100 mm² evaluation board. However, these are typical reference values which may need to be changed when circuit boards or part vendors are different.

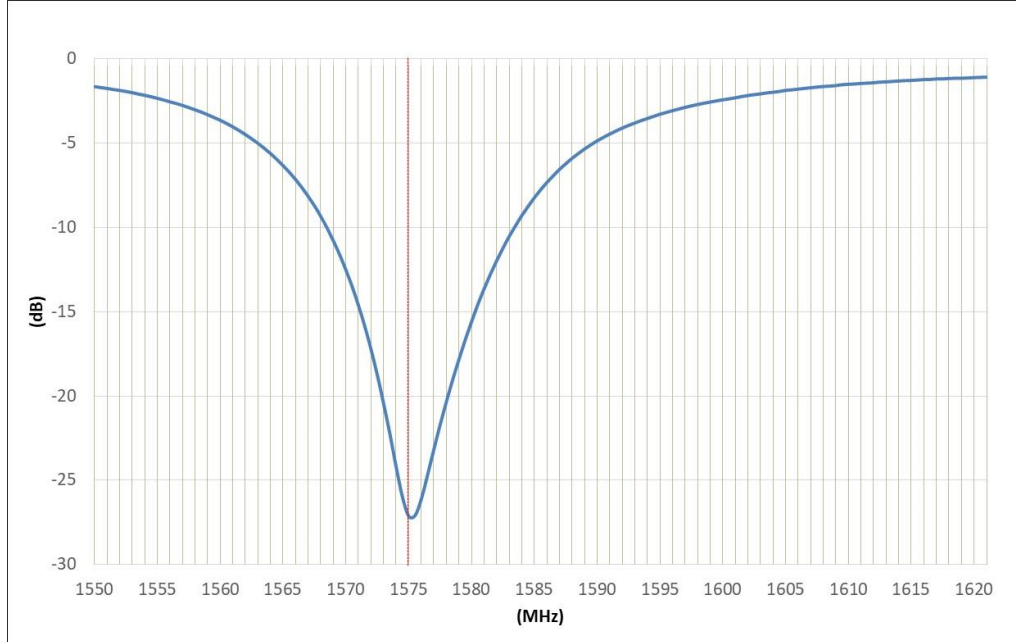


System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	4.7nH (0402)	MURATA	±0.1nH -
2	0Ω, (0402)	-	-
3	N/A	-	-

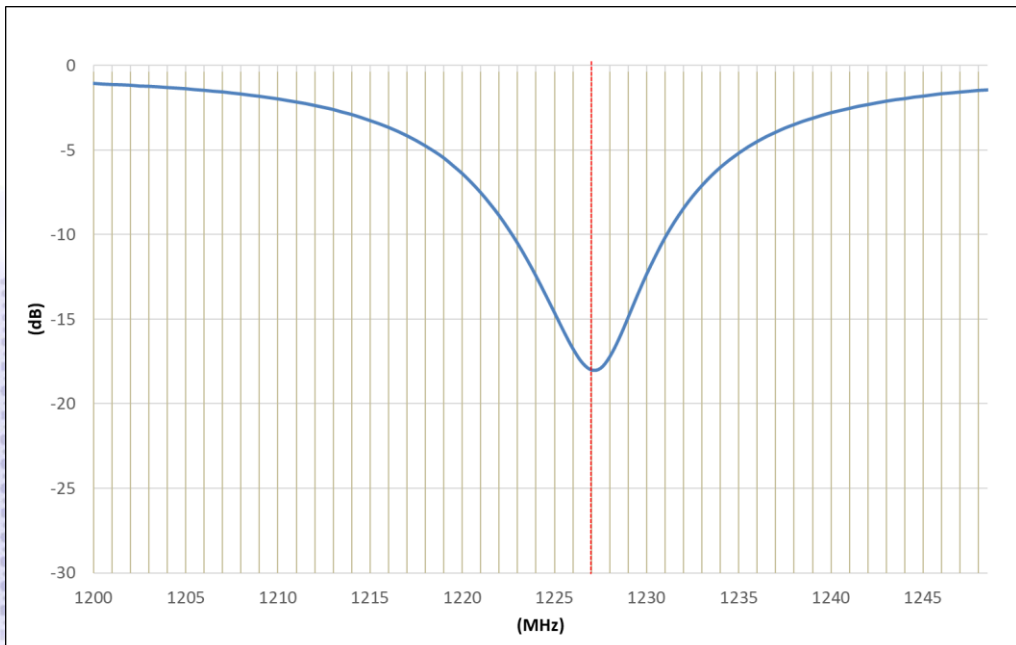
V. Properties:

a) Return loss (dB)

I. GNSS L1 Band

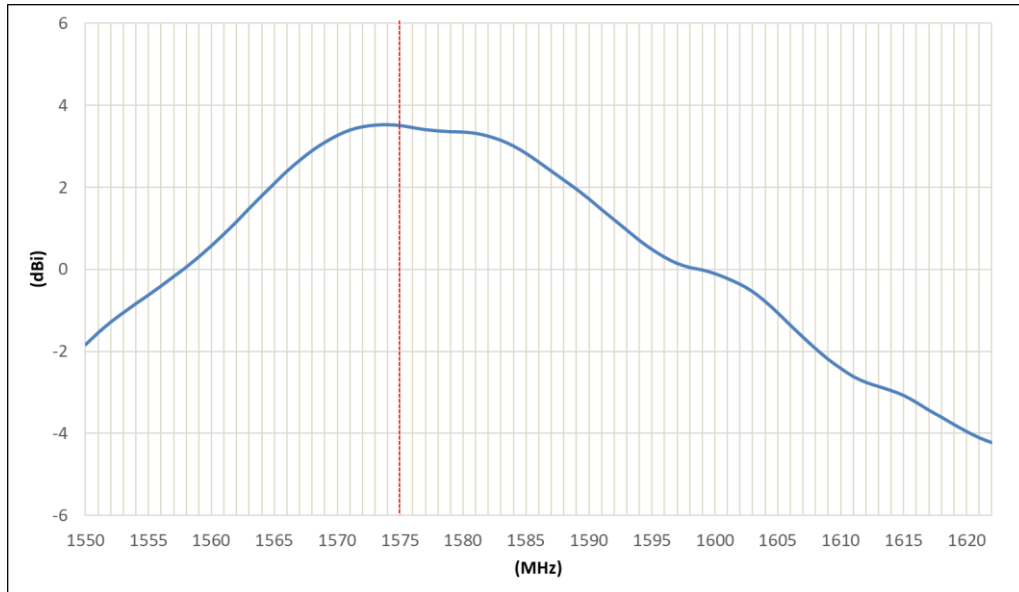


II. GNSS L2 Band

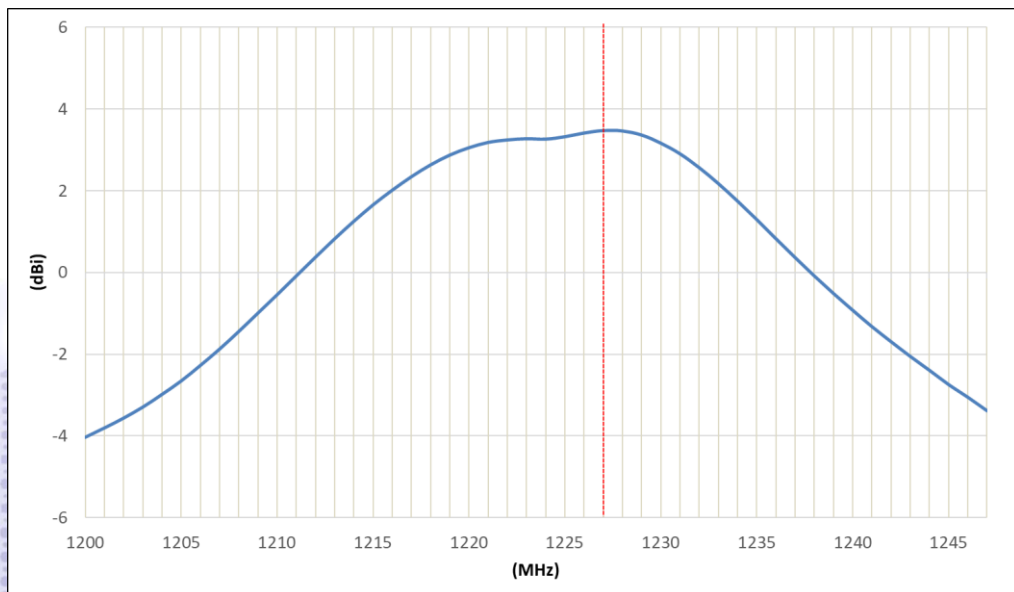


b) Peak Gain (dBi)

I. GNSS L1 Band



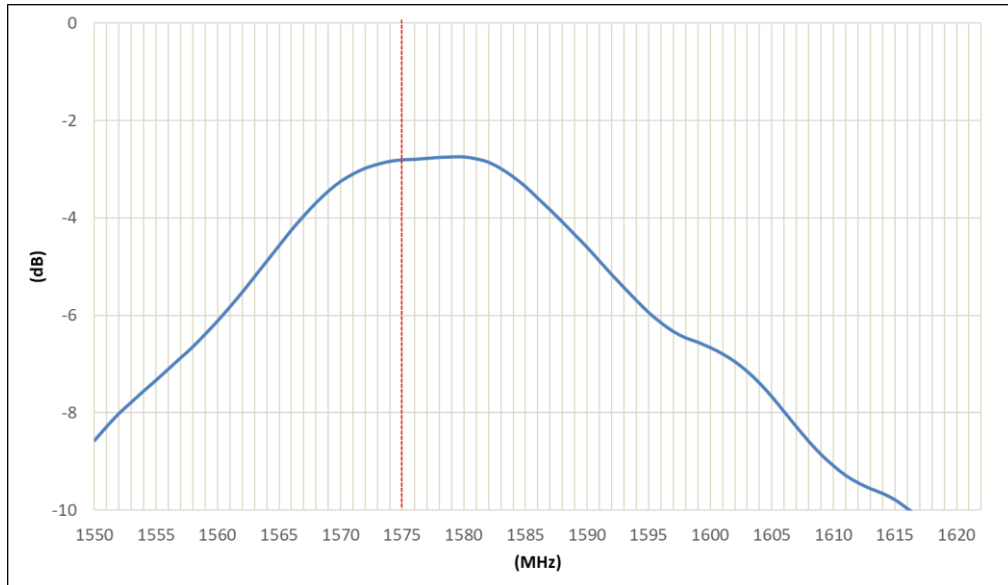
II. GNSS L2 Band



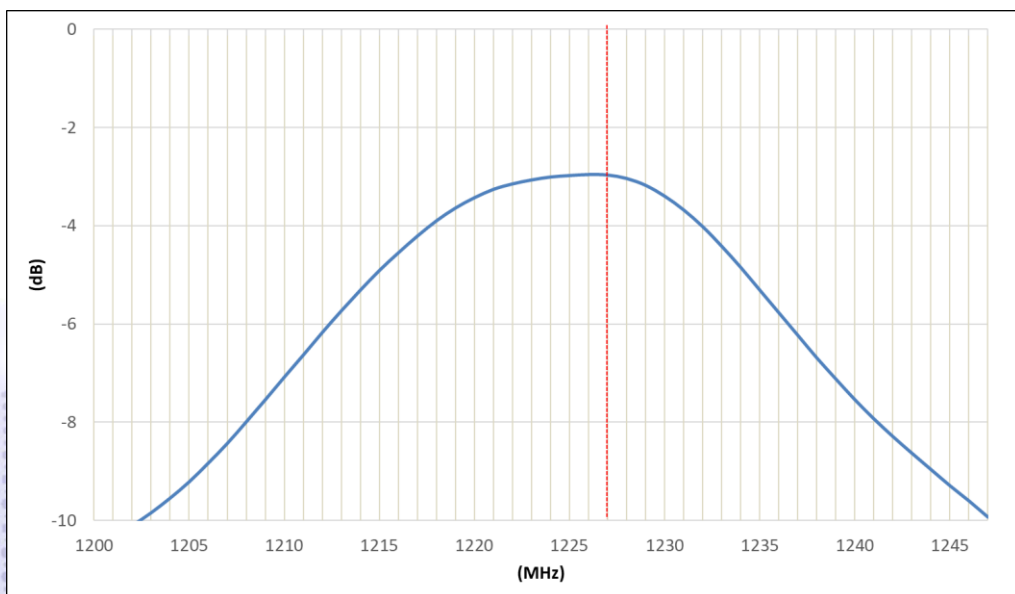
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c) Average Gain(dB)

I. GNSS L1 Band



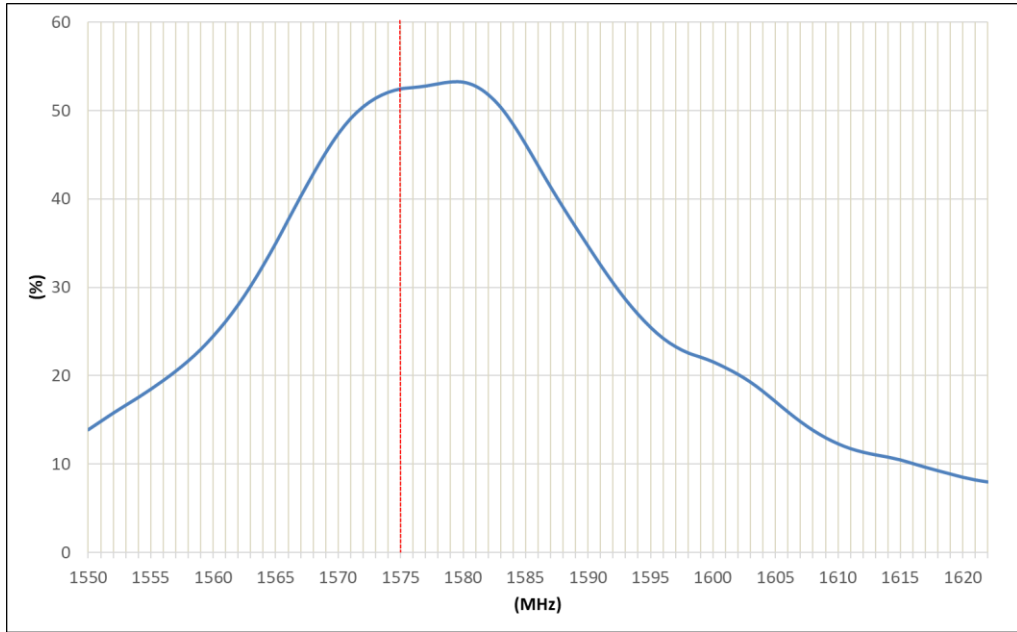
II. GNSS L2 Band



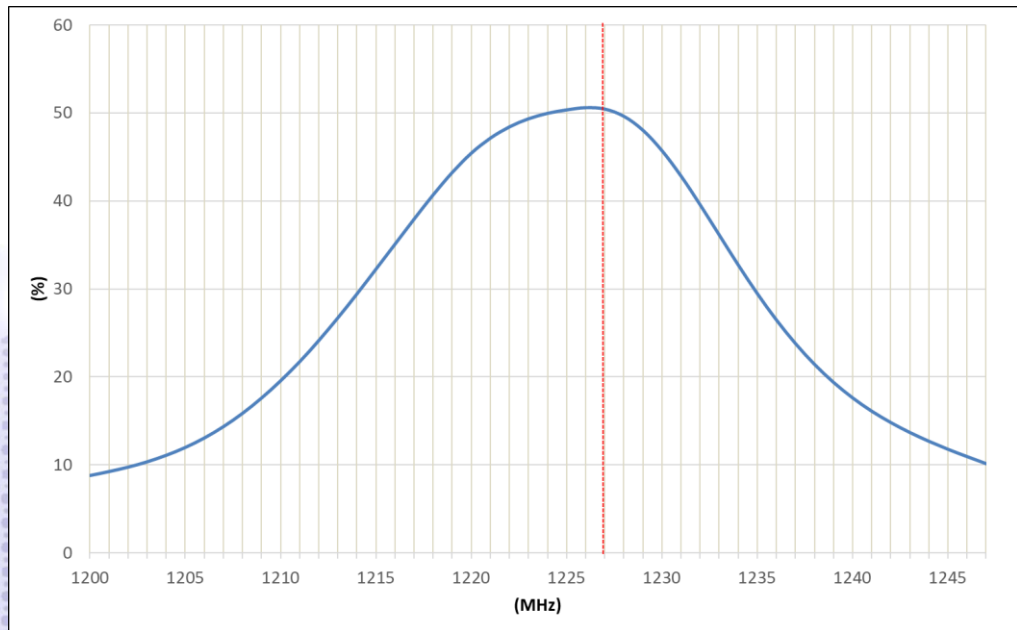
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d) Efficiency (%)

I. GNSS L1 Band



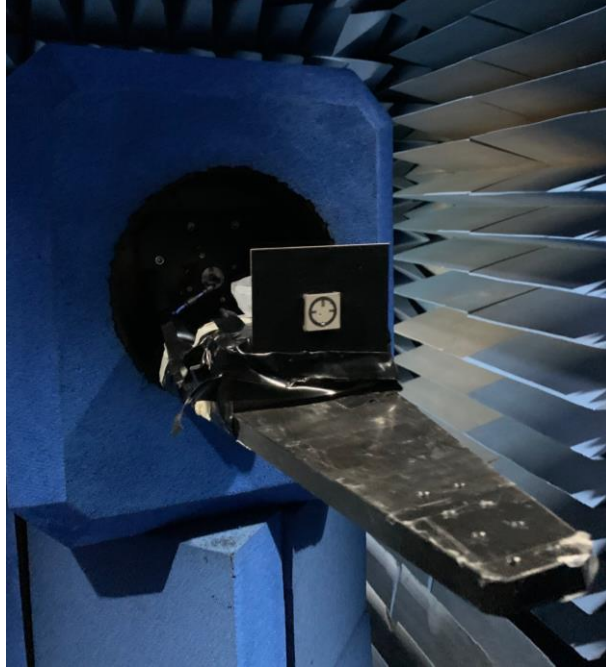
II. GNSS L2 Band



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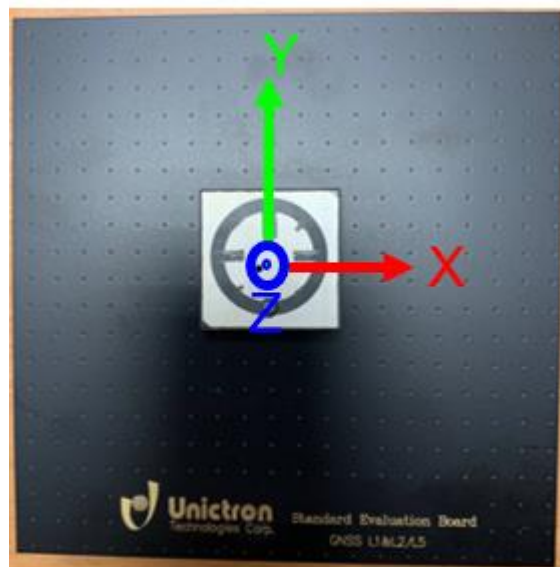
VI. Antenna Radiation Pattern Measurement:

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

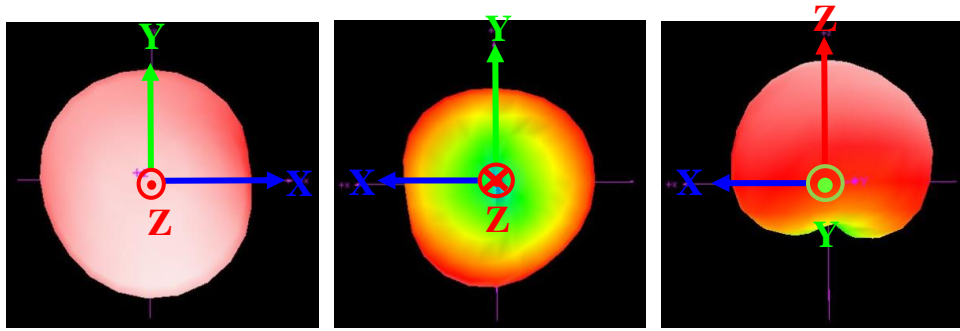


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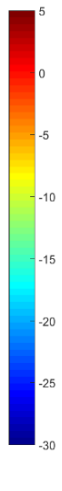
3D Radiation Gain Pattern



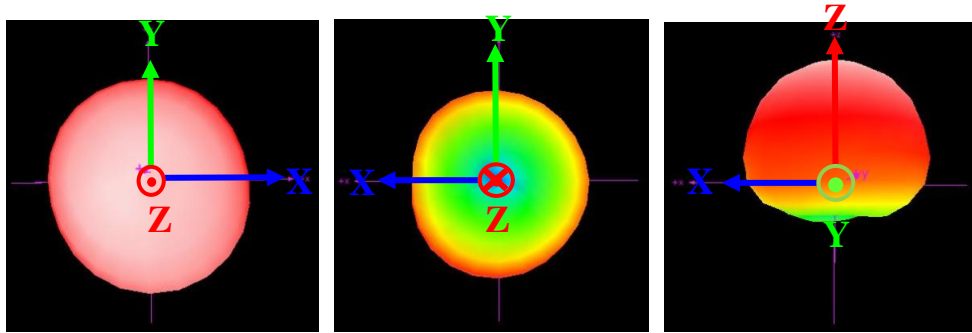
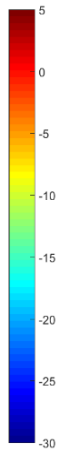
a) GNSS L1 Band @1575.42MHz (unit: dBi)



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b) GNSS L2 Band @1227.6MHz (unit: dBi)

VII. Packing:

a) Weight:

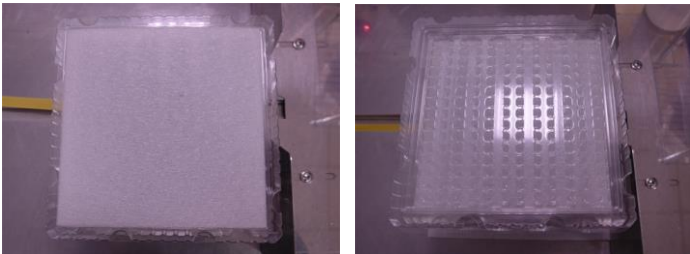
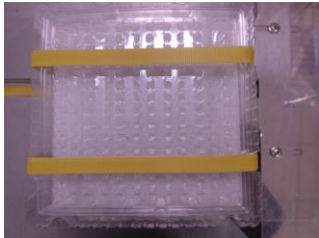


Unit Weight: 9.4 ± 0.5 (g)

b) Quantity:

Each Vacuum Bag: 250 pcs

Each Outer Box: 500 pcs

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Step	Pictures	Descriptions
1		Place five trays into one stack. Once stacked, place a sheet of EPE in the depression on the top tray, and then another tray on top. Place another sheet of EPE beneath the bottom tray to complete the stack. Make sure the trays and the EPE sheets are lined up correctly.
2		Place the stacked trays on the packaging machine to be tape punched and tightly secured.
3		Place the stacked trays into a vacuum bag to be vacuum sealed, and then labeled.
4		Place two vacuum bags vertically into a carton and then seal the carton.