

**Product Name: PB18DRS Patch Antenna**

**Part Number: H2PE366R110100**

**Features:**

- Supporting: (L1+L5) GPS/ BDS/Galileo/QZSS/IRNSS/GLONASS
- Dimensions: 18 x 18 x 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: PB18DRS

Version: A

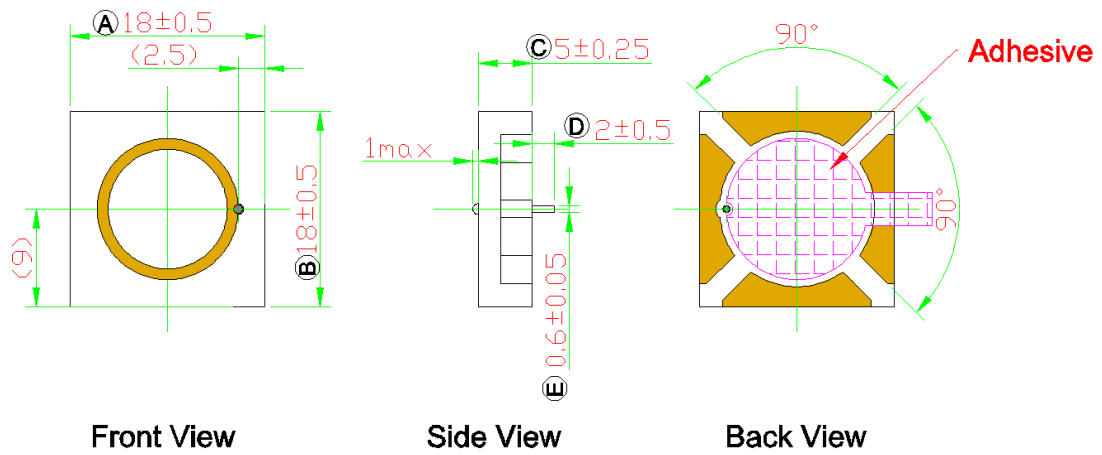
### I. Patch Antenna Specifications:

Items	Specifications		
<b>Navigation</b>	GPS L1/ Galileo E1/ BDS B1/ QZSS L1	GLONASS G1/	GPS L5 Galileo E5a/ BDS B2/ QZSS L5 IRNSS L5
<b>Center Frequency (MHz)</b>	1575.42	1602	1176.5
<b>Return loss (dB)</b>	< -10 Typ.		
<b>Peak Gain (dBi)</b>	3.1 Typ.	2.0 Typ.	-0.8 Typ.
<b>Average Gain(dB)</b>	-3.6 Typ.	-4.5 Typ.	-6.0 Typ.
<b>Efficiency (%)</b>	44 Typ.	36 Typ.	24 Typ.
<b>Test Condition</b>	100 x 100 mm <sup>2</sup> (Evaluation board)		
<b>Impedance (<math>\Omega</math>)</b>	50		
<b>Polarization</b>	RHCP		

Mechanical Specifications	
<b>Dimensions (mm)</b>	18 (L) x 18 (W) x 5 (H)
<b>Material</b>	Ceramic
Environmental Conditions	
<b>Operation &amp; Storage Temperature (<math>^{\circ}</math> C)</b>	-40 ~ +85
<b>Storage Temperature (<math>^{\circ}</math> C) (Antenna with packing sealed)</b>	-5 ~ +40
<b>Relative Humidity</b>	10 ~ 70 %

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## II. Antenna Dimensions (unit: mm):

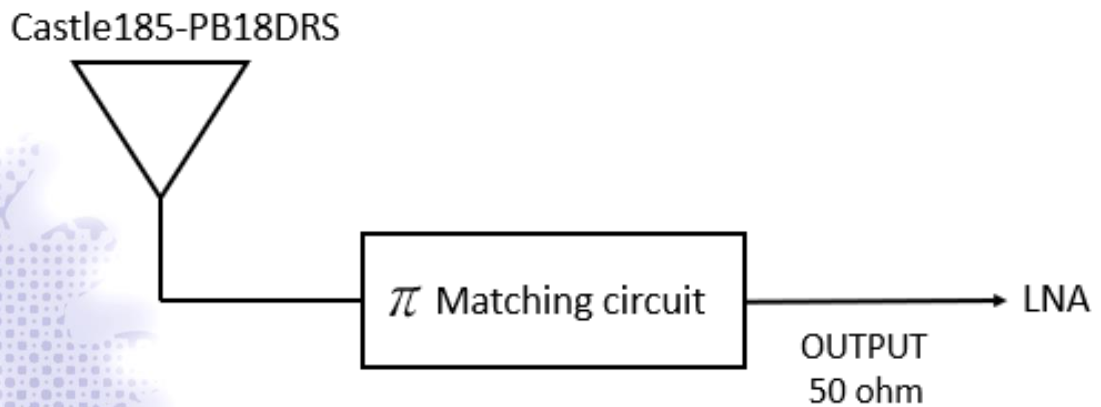


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### NOTE:

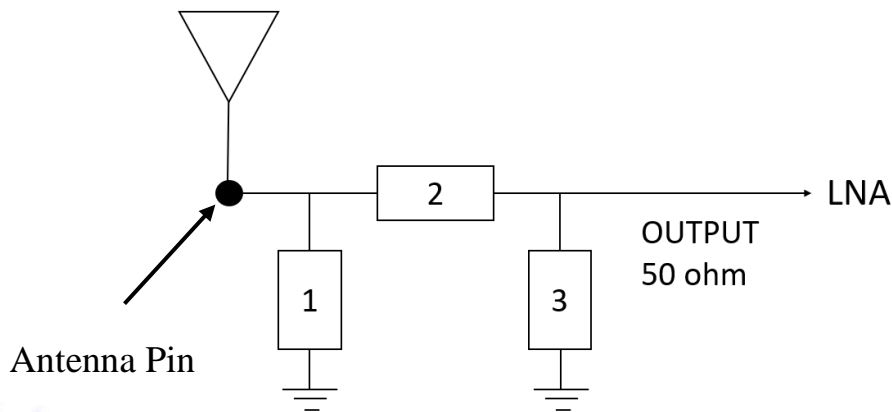
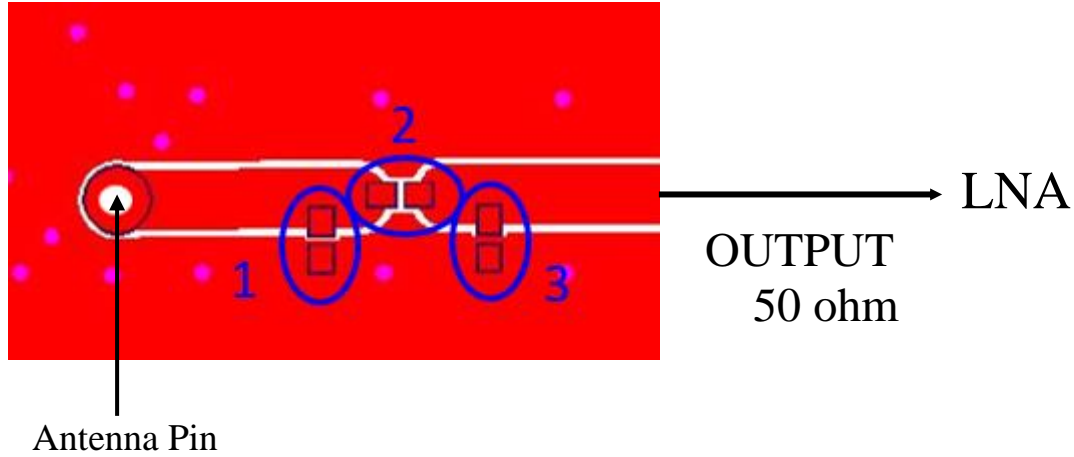
1. All materials are RoHS 2.0 compliant.
2. "A~E" Critical Dimensions.
3. "( )" Reference Dimensions.

## III. Block Diagram



#### IV. Matching circuit

With the following recommended values of matching and tuning components, at our standard 100 x 100 mm<sup>2</sup> evaluation board. However, these are typical reference values which may need to be changed when circuit boards or part vendors are different.

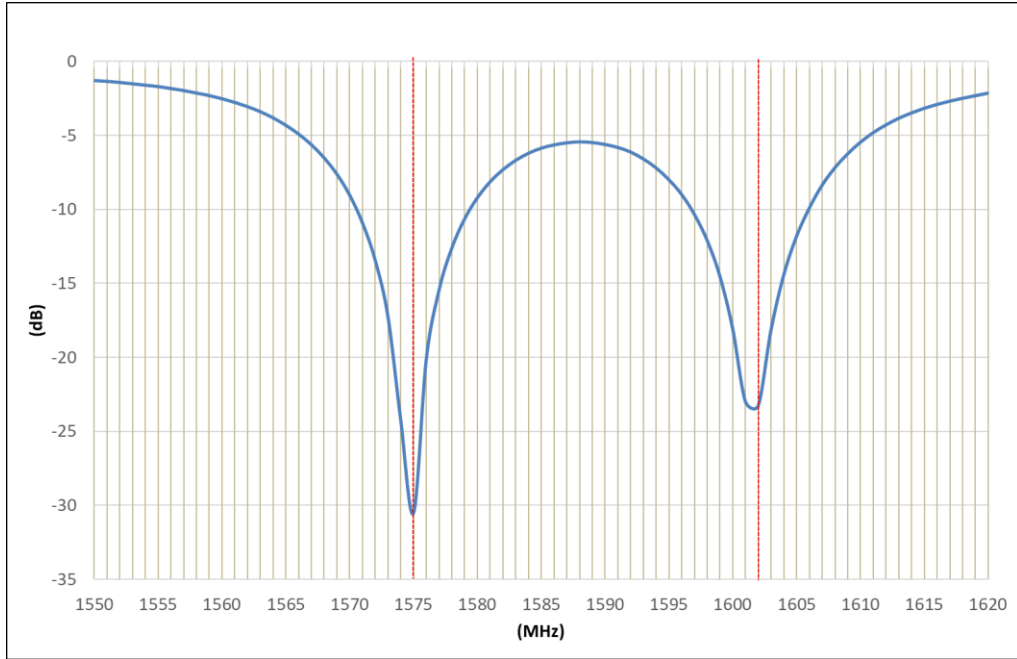


System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	N/A	-	-
2	0Ω, (0402)	-	-
3	N/A	-	-

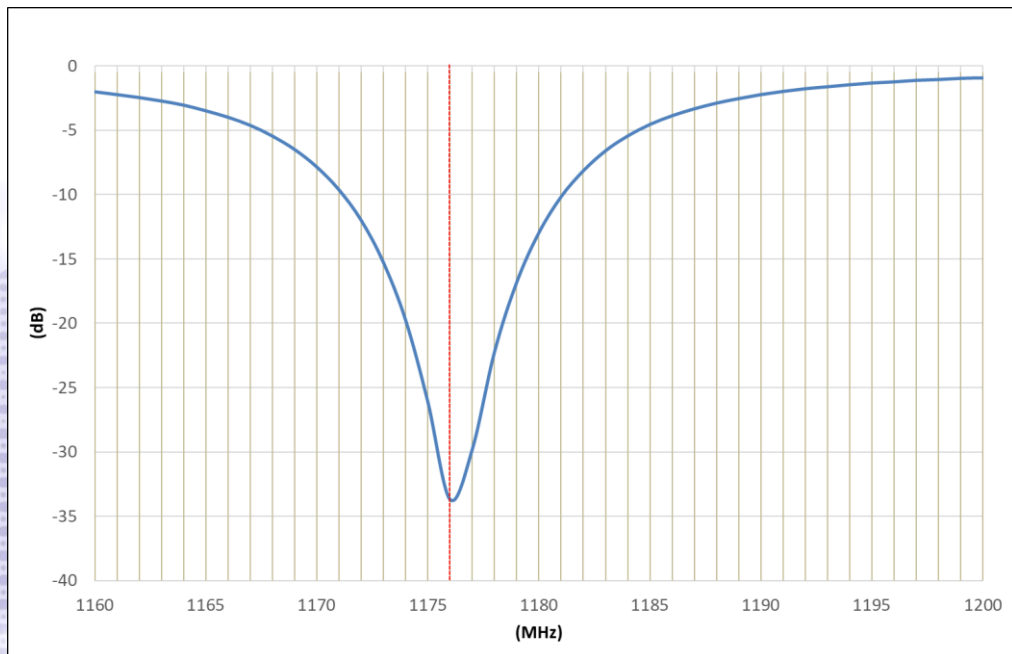
## V. Properties:

### a) Return loss (dB)

#### I. GNSS L1 Band

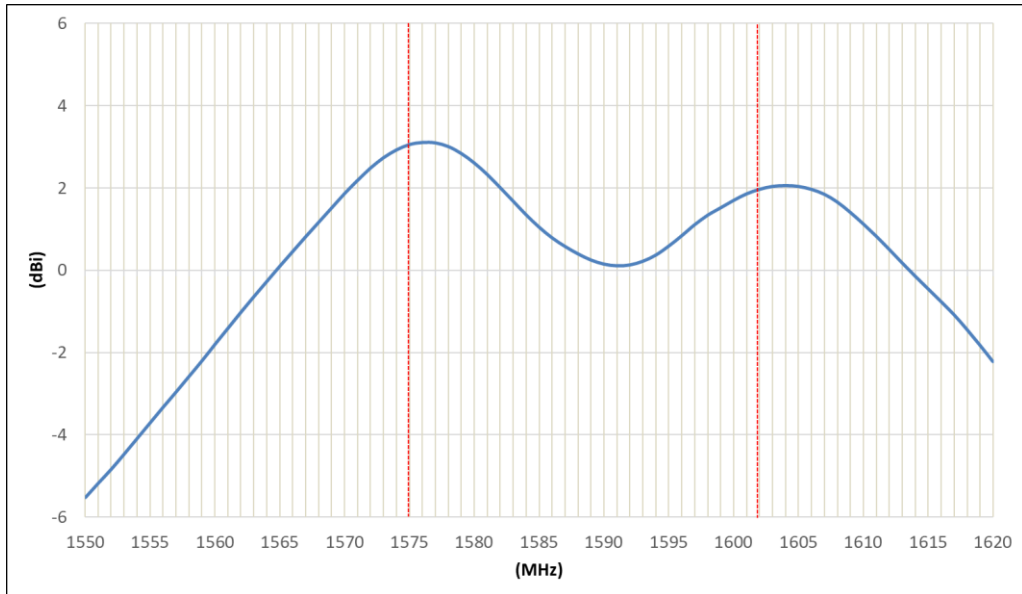


#### II. GNSS L5 Band

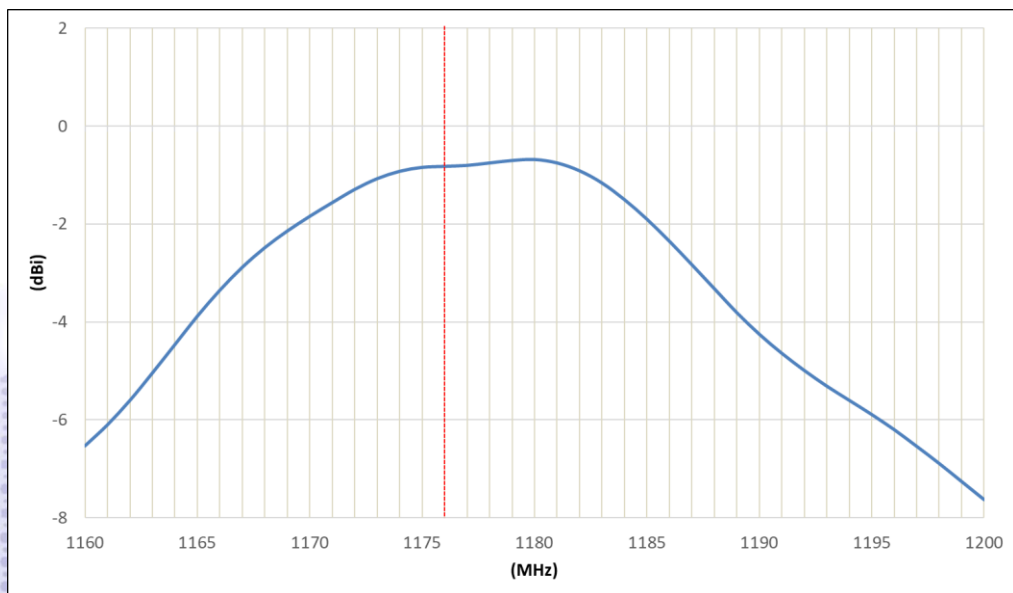


**b) Peak Gain (dBi)**

**I. GNSS L1 Band**



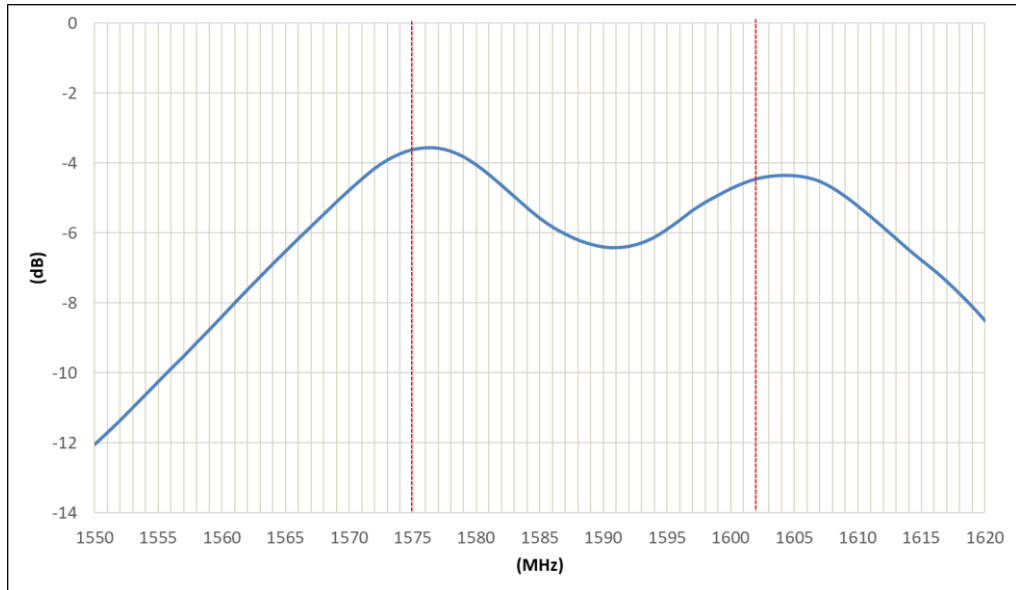
**II. GNSS L5 Band**



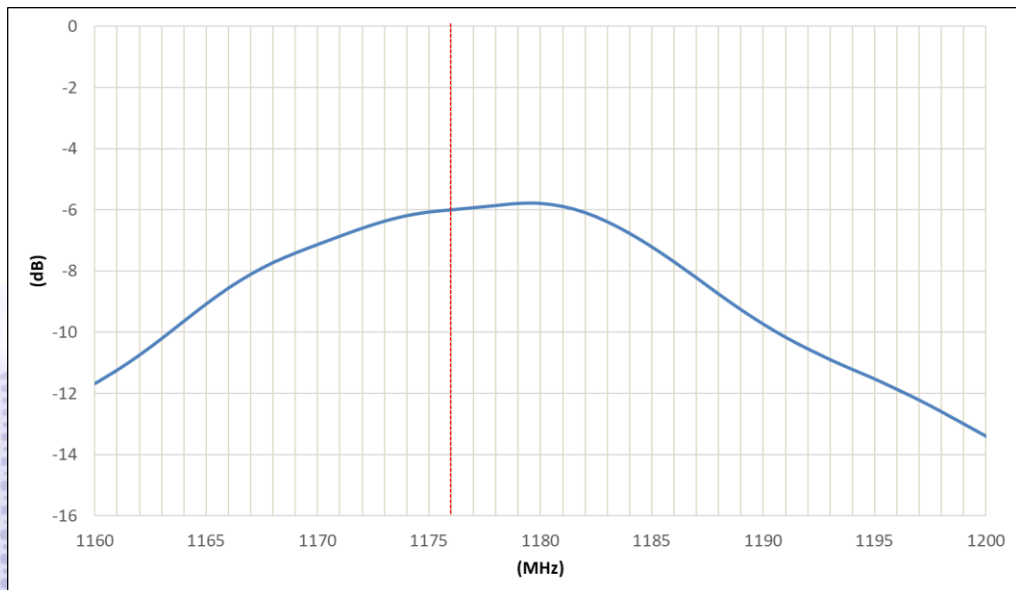
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**c) Average Gain(dB)**

**I. GNSS L1 Band**



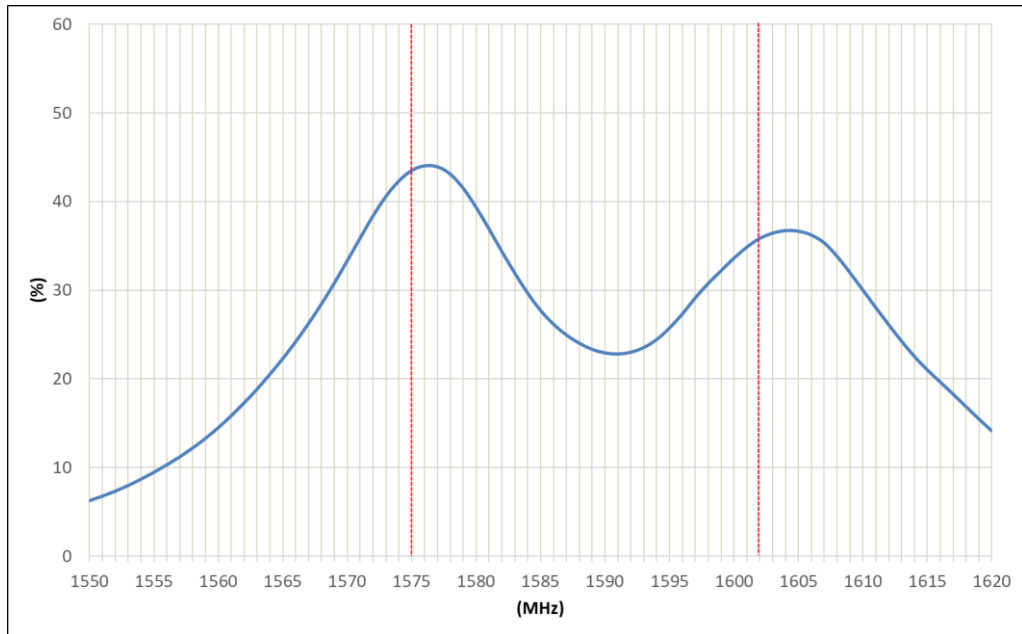
**II. GNSS L5 Band**



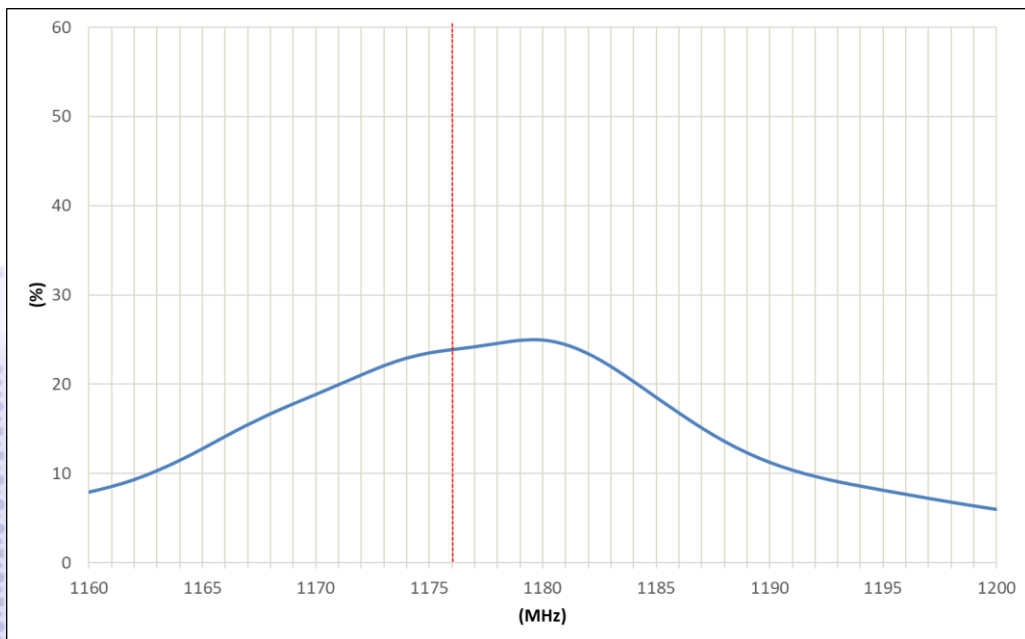
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**d) Efficiency (%)**

**I. GNSS L1 Band**



**II. GNSS L5 Band**

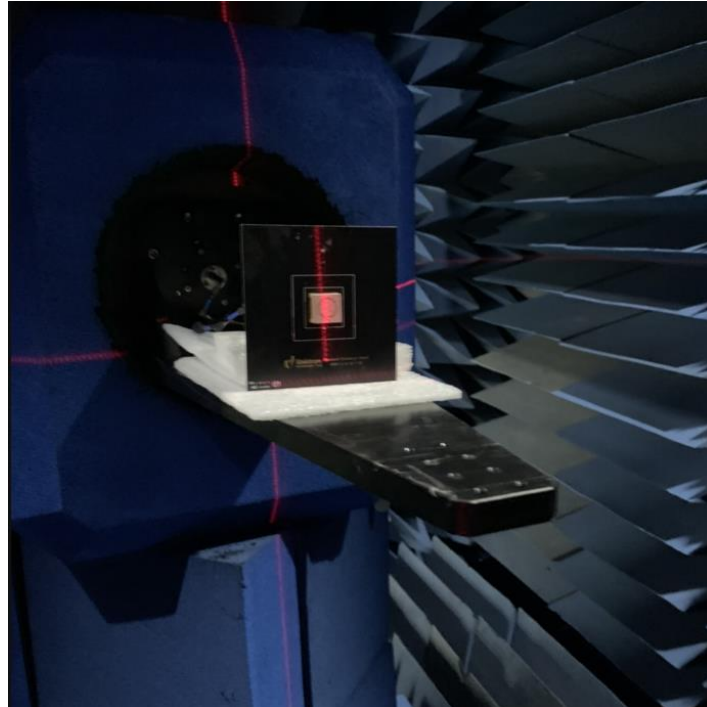


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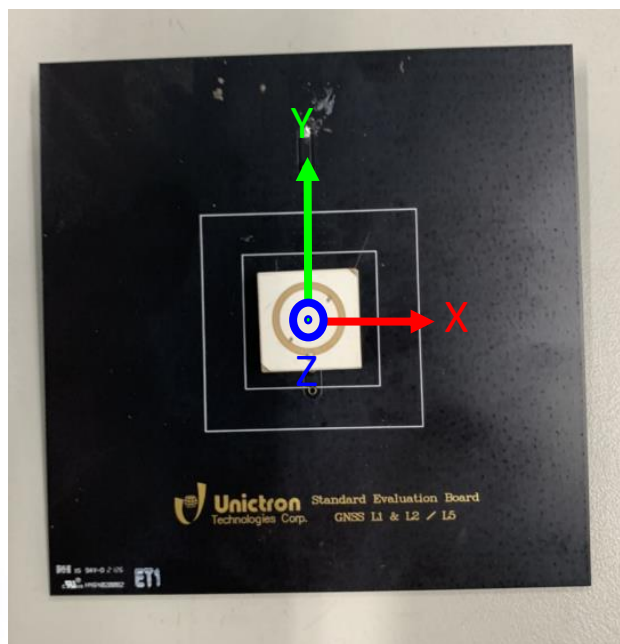
## VI. Antenna Radiation Pattern Measurement:

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

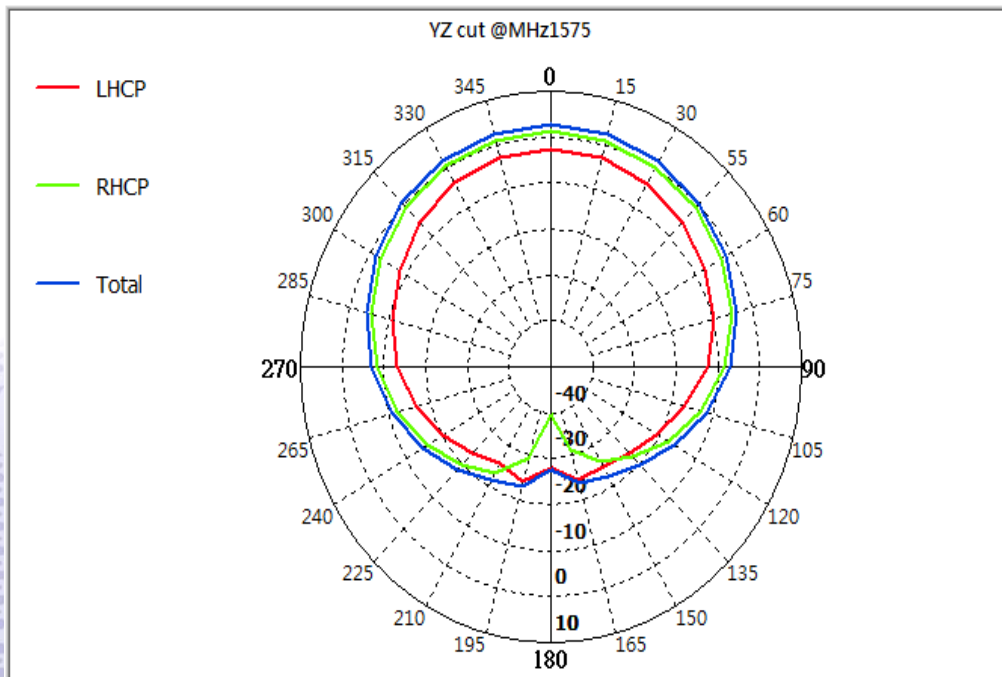
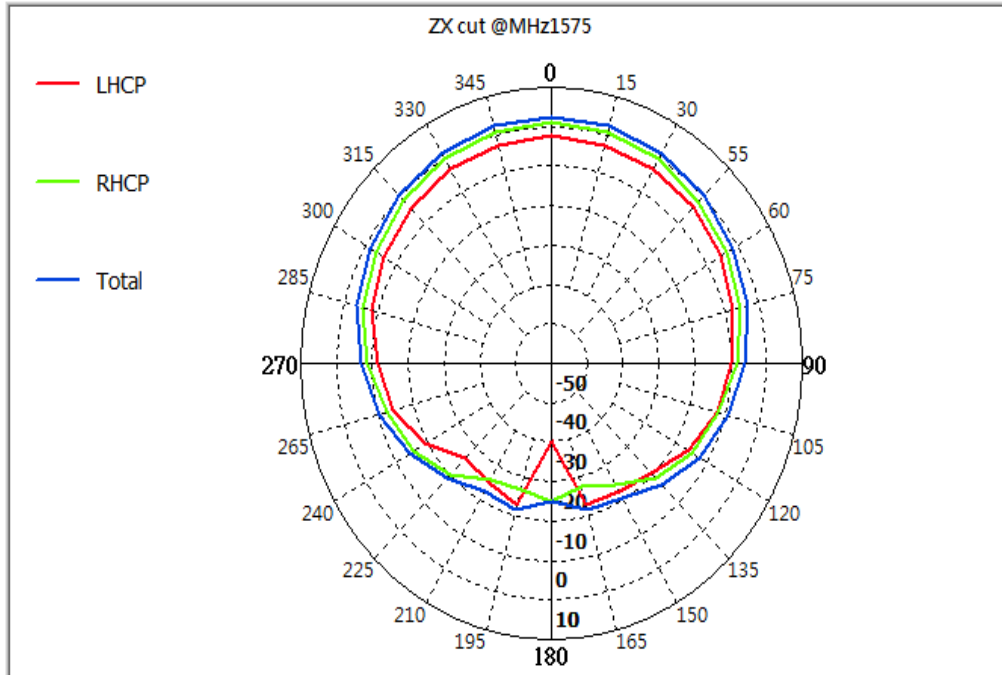


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## 2D Radiation Gain Pattern

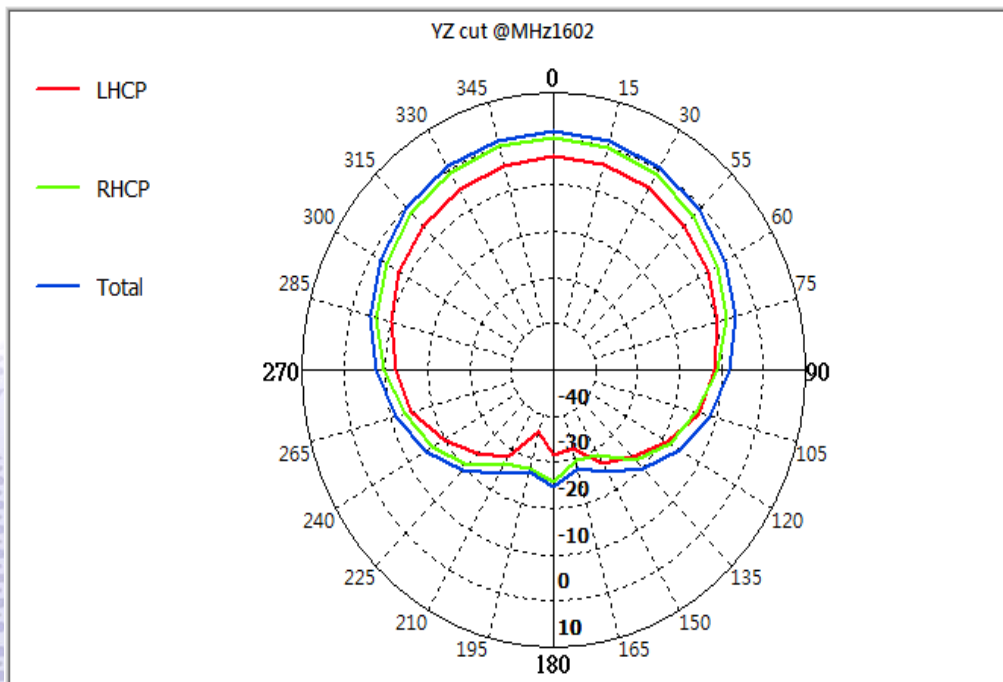
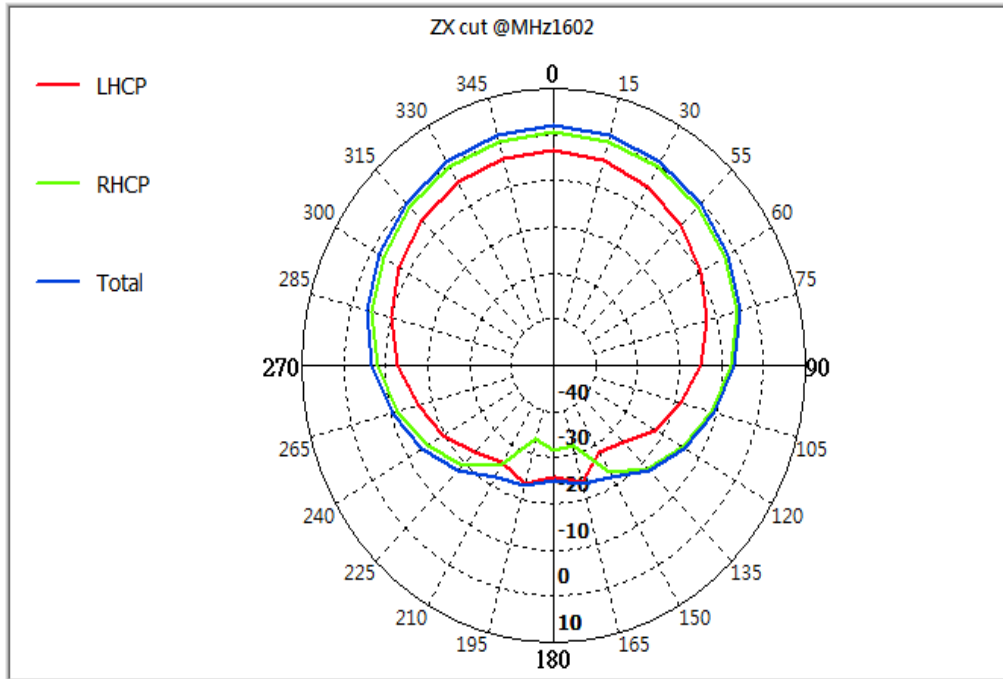


**a) GNSS L1 Band @1575.42MHz (unit: dBi)**



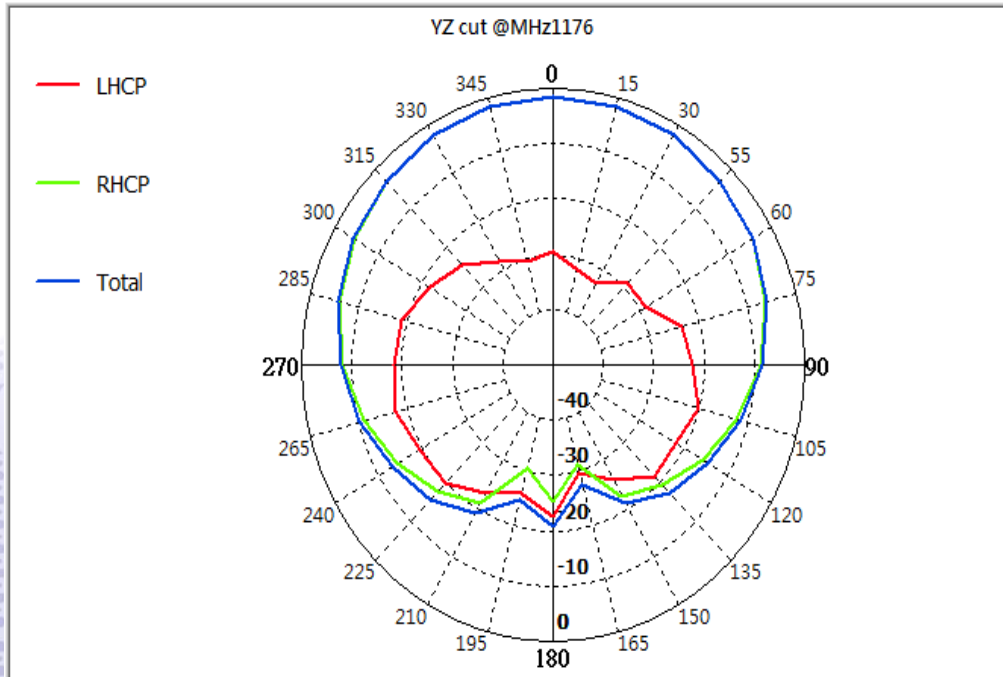
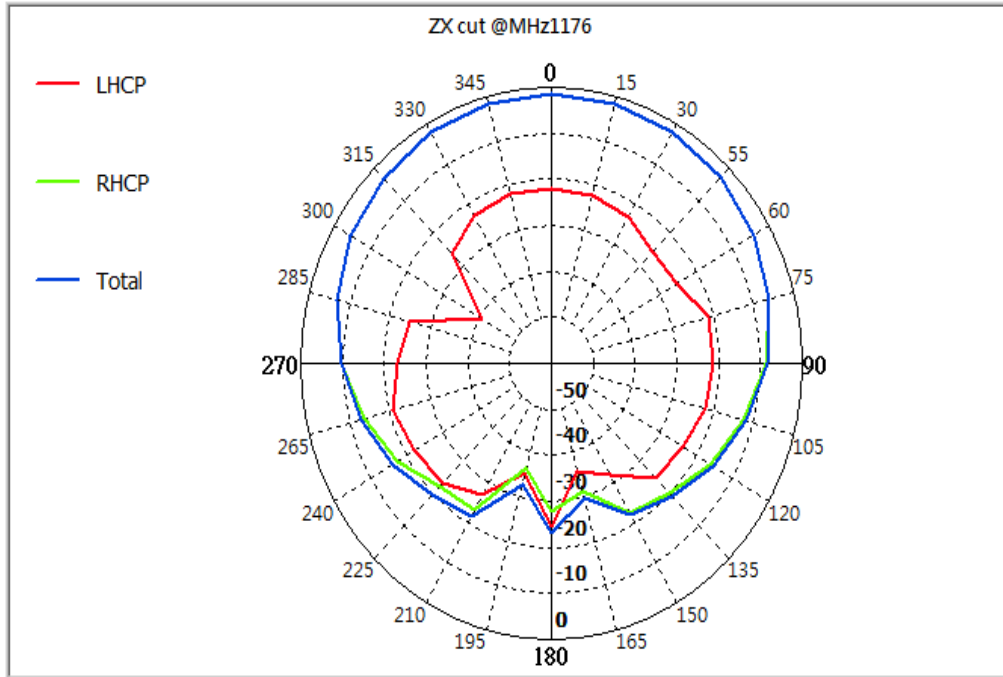
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**b) GNSS L1 Band @1602MHz (unit: dBi)**



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**c) GNSS L5 Band @1176.5MHz (unit: dBi)**



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## VII. Packing:

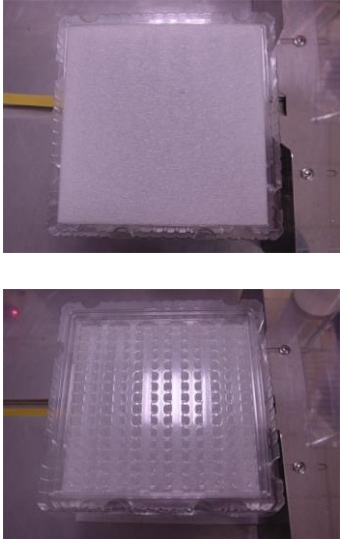
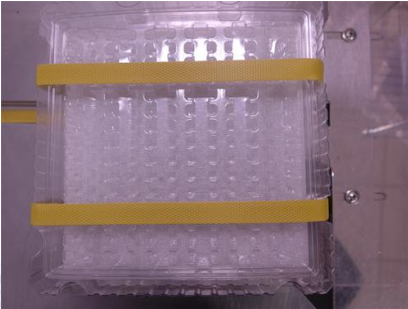

a) Weight:



Unit Weight:  $6.7 \pm 1$  (g)

b) Quantity:

Each Vacuum Bag: 300 pcs

Each Outer Box: 1200 pcs

Step	Pictures	Descriptions
1		<p>Place five trays(210*210*23mm/60EA) 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.</p>
2		<p>Place the stacked trays on the packaging machine to be tape punched and tightly secured.</p>
3		<p>Place the stacked trays into a vacuum bag to be vacuum sealed, and then labeled.</p>

4		Place two vacuum bags vertically into a carton and then seal the carton.
5		Place two boxes into the carton. After sealing the carton, attach the label to the top right corner to complete packaging.

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