

**Product Name: NB80DG Antenna Module**

**Part Number: H2M1W011129900**

**Features:**

- Supporting: L1+L5 GPS
- Stable and reliable in performances
- Low temperature coefficient of frequency
- RoHS & REACH Compliant
- Pre-filtering

**Applications:**

- Navigation systems or position tracking systems
- Hand-held devices when GPS function is needed, e.g., PDA, Smart phone, PND.

# Antenna Module

## MODEL: NB80DG

Version: Preliminary

### I. Patch antenna Specifications:

Items	Specifications	
<b>Navigation</b>	L1 Band	L5 Band
<b>Center Frequency (MHz)</b>	1575.42	1176.45
<b>Return loss (dB)</b>	<-10 Typ.	<-10 Typ.
<b>Efficiency (%)</b>	65 Typ.	56 Typ.
<b>Average Gain (dB)</b>	-1.9 Typ.	-2.5 Typ.
<b>Peak Gain (dBi)</b>	4.6 Typ.	2.6 Typ.
<b>Axial Ratio (dB)</b>	<3 Typ.	<3 Typ.
<b>Polarization</b>	RHCP	
<b>Impedance (<math>\Omega</math>)</b>	50	

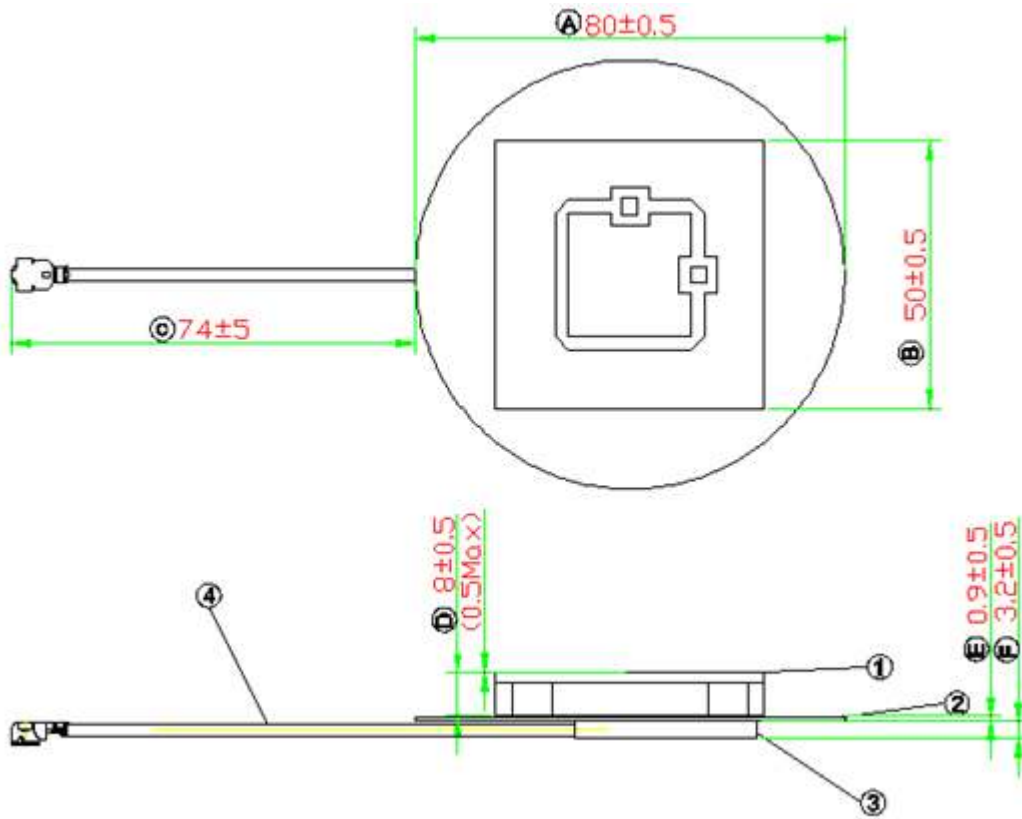
### II. Low noise amplifier Specifications:

Items	Specifications	
<b>Navigation</b>	L1 Band	L5 Band
<b>Center Frequency (MHz)</b>	1575.42	1176.45
<b>Gain (dB)</b>	23 Typ.	23 Typ.
<b>Noise Figure</b>	2.8 Typ.	2.8 Typ.
<b>Input Voltage</b>	DC = 3.3 $\pm$ 0.3	
<b>Current</b>	18 mA Typ.	
<b>Impedance (<math>\Omega</math>)</b>	50	

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



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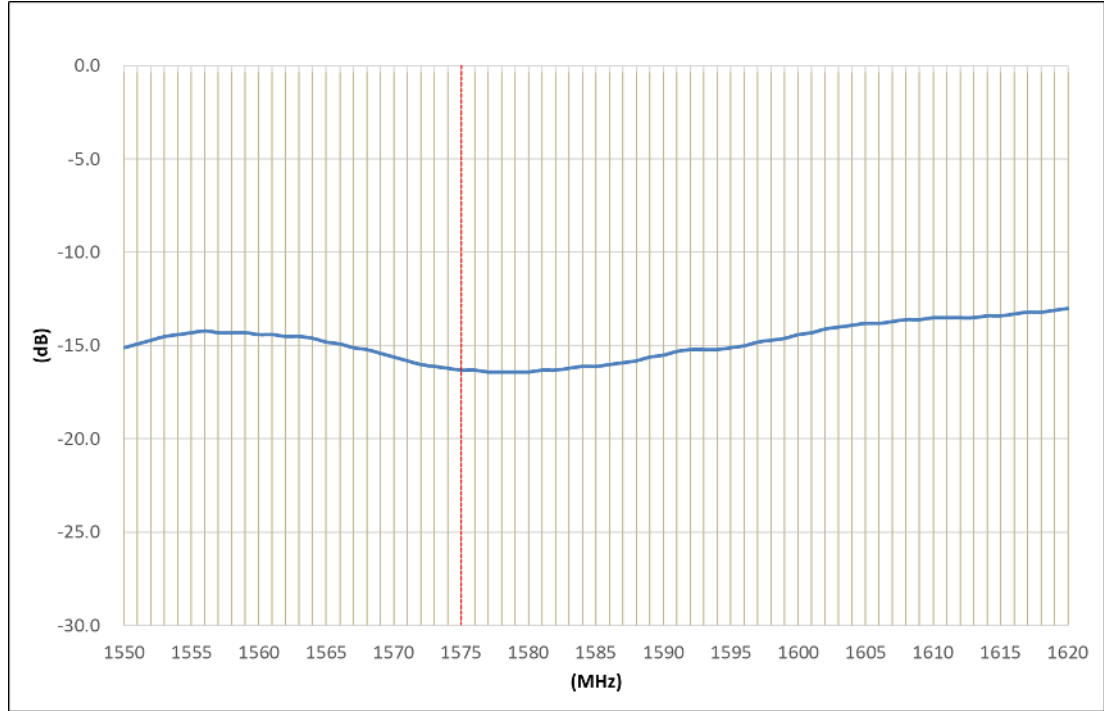
#### NOTE:

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

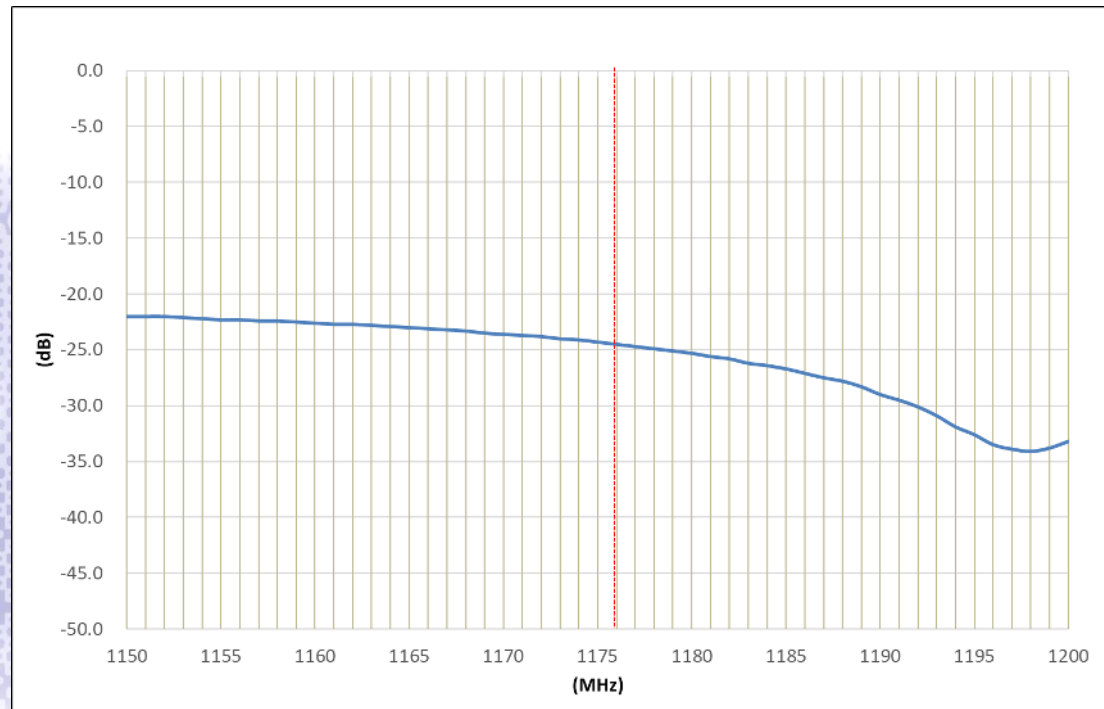
ITEM	Name	Material	Color	Q'ty
1	Castle 508	Ceramic		1
2	LNA Module	FR4	Black	1
3	Shielding Case	Tin(SPTE)		1
4	IPEX Connector(MHF I)_Cable $\phi$ 1.13mm L=100mm	FEP	Gray	1

## IV. Properties:

### a) Return loss (dB) L1 Band (1575.42 MHz)

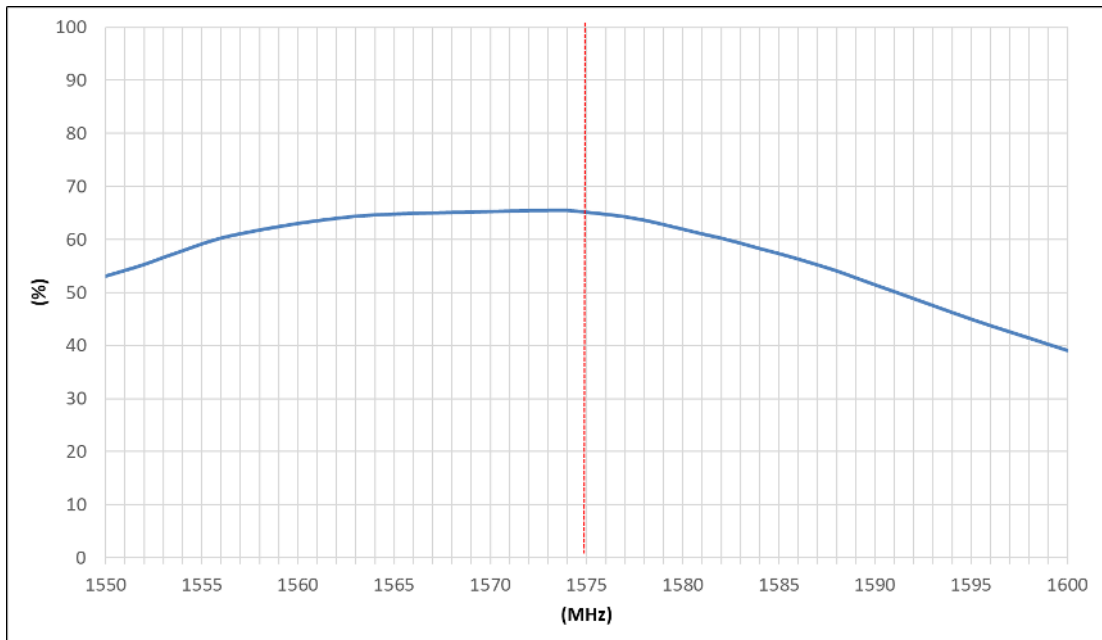


### L5 Band (1176.45 MHz)



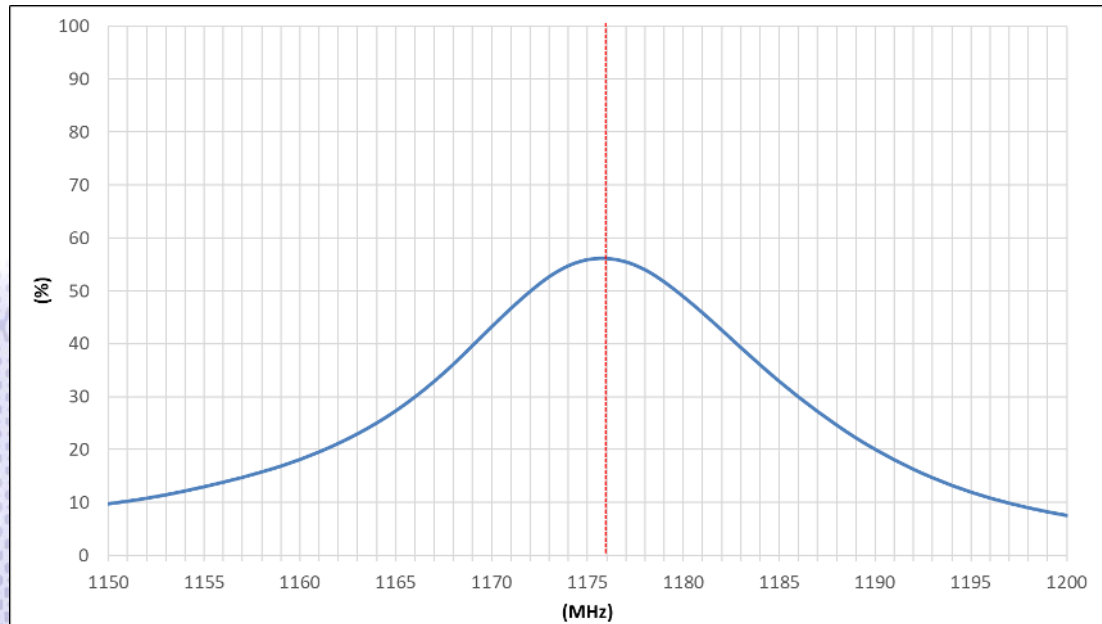
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**b) Efficiency (%)**  
**L1 Band (1575.42 MHz)**

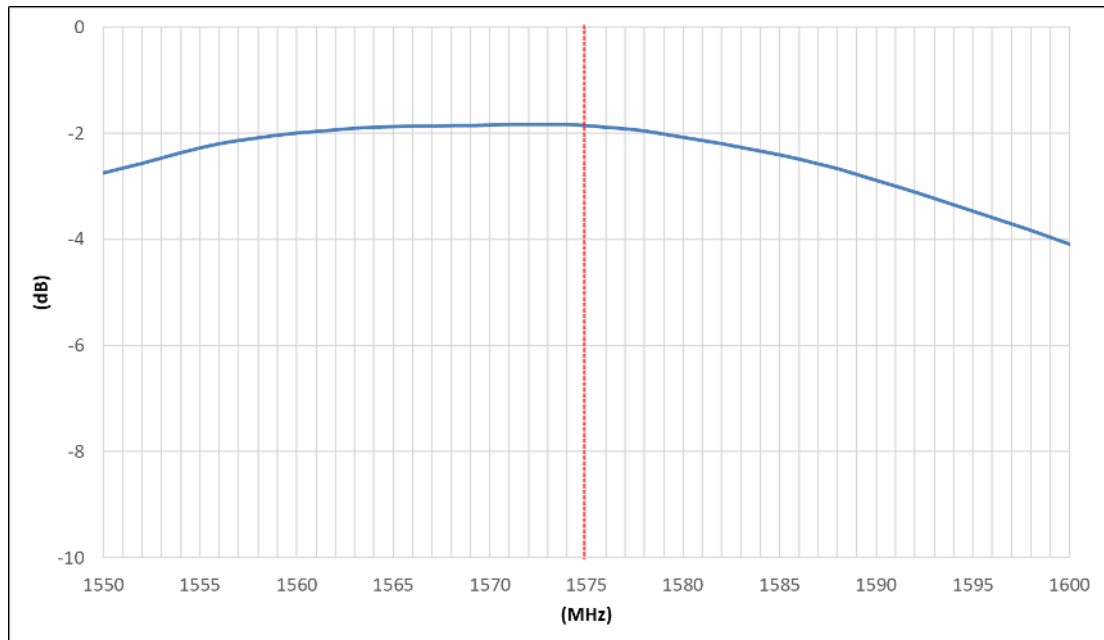


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**L5 Band (1176.45 MHz)**

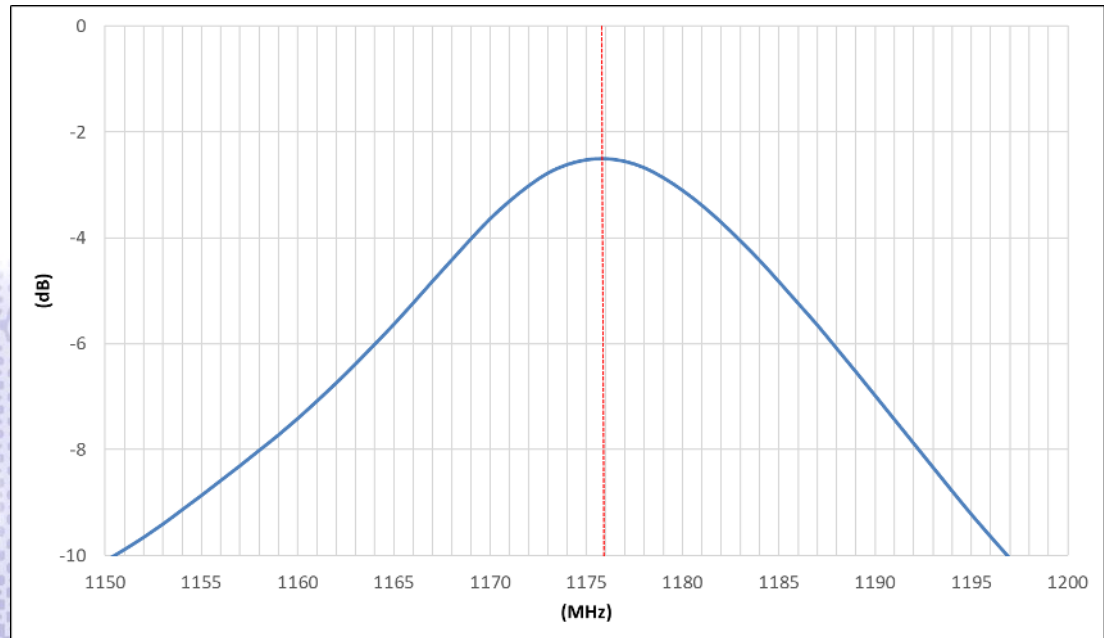


**c) Average Gain (dB)**  
**L1 Band (1575.42 MHz)**

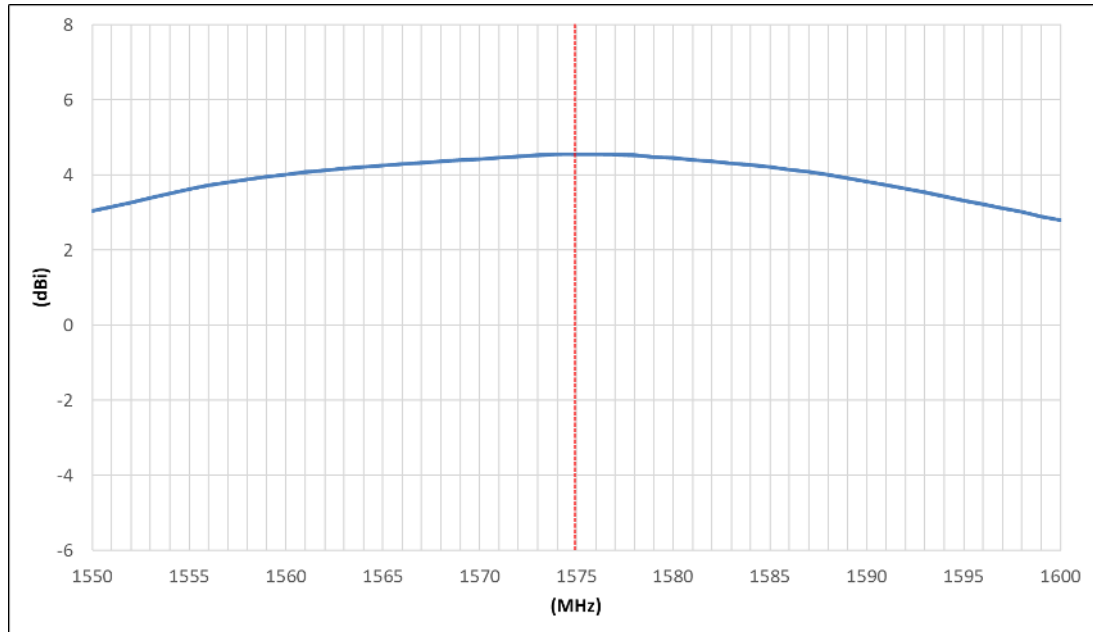


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**L5 Band (1176.45 MHz)**

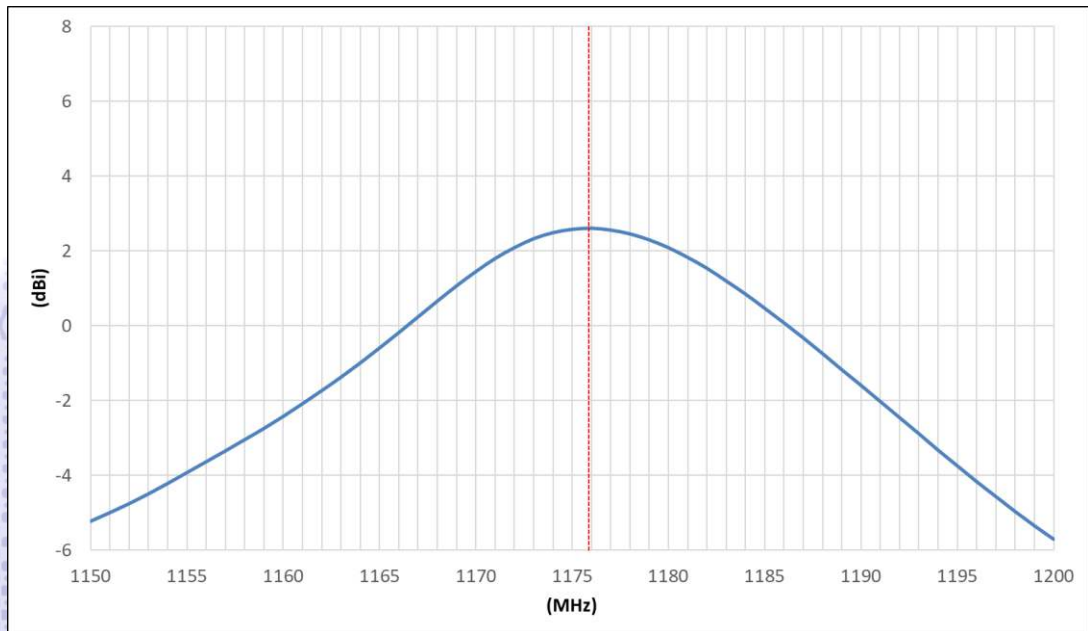


**d) Peak Gain (dBi)**  
**L1 Band (1575.42 MHz)**

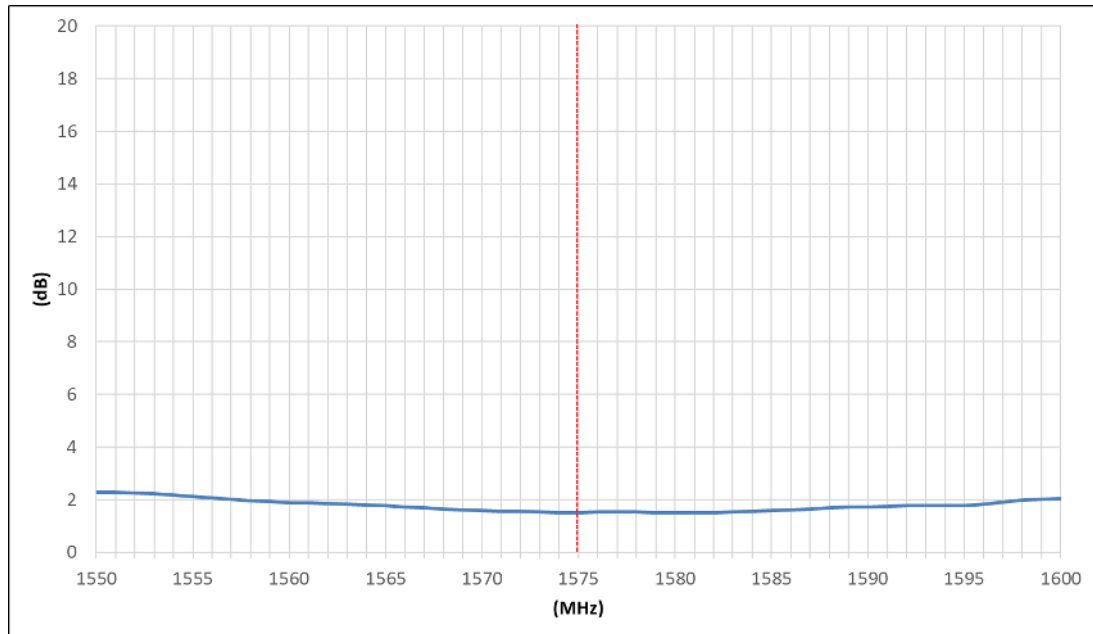


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**L5 Band (1176.45 MHz)**

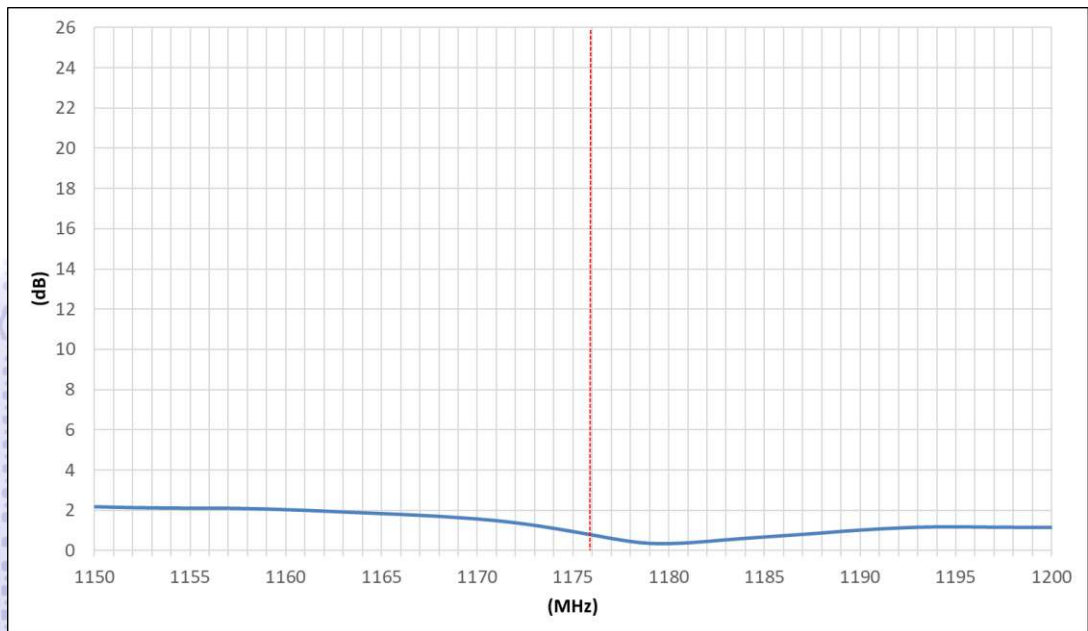


**e) Axial Ratio (dB)**  
**L1 Band (1575.42 MHz)**



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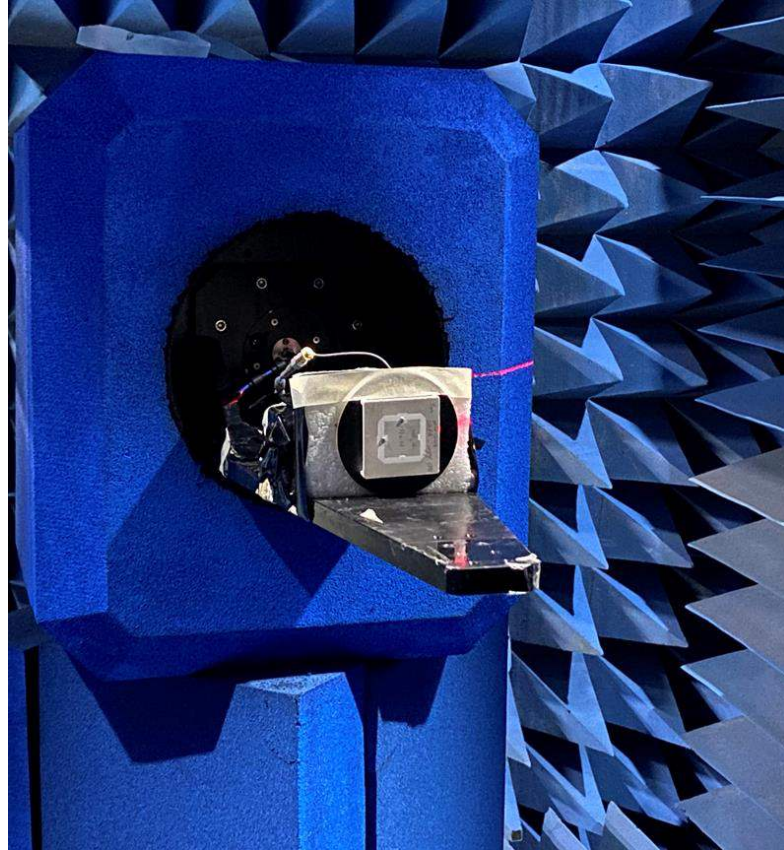
**L5 Band (1176.45 MHz)**





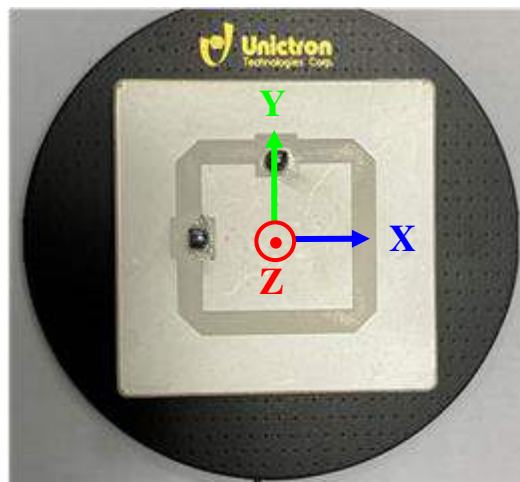
## V. Antenna Radiation Pattern Measurement:

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

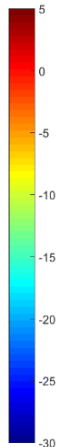
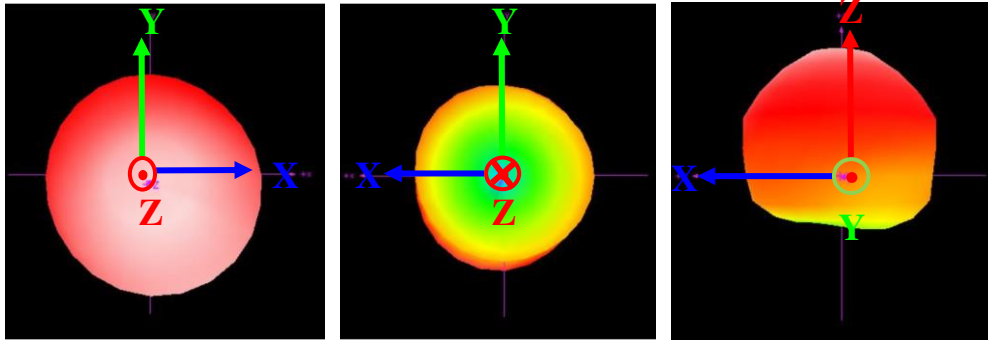


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### 3D Radiation Gain Pattern

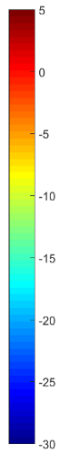
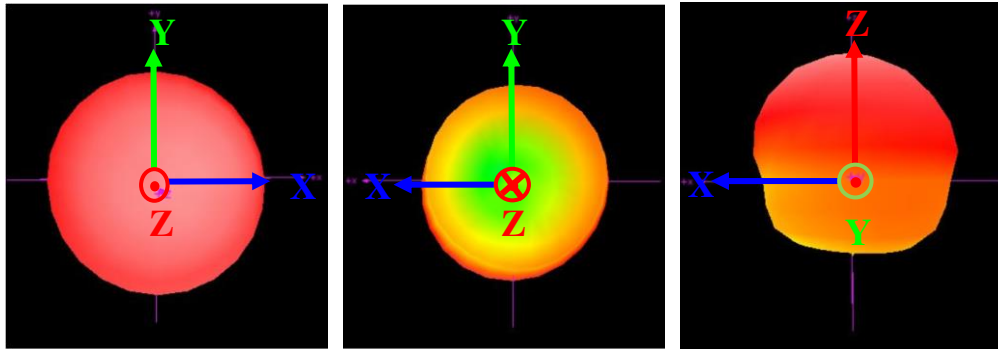


**a) 1575.42 MHz (unit: dBi)**






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**b) 1176.45 MHz (unit: dBi)**



## VI. Package

- a) Weight:  
Unit Weight: 52.8 ± 5 (g)
- b) Quantity:  
Each PE bag : 1 pcs  
Each outer carton : 100 pcs

Step	Pictures	Descriptions
1		<p>First, put one antenna into a PE bag (160x165 mm), PE bags are sealed by sealing machine .</p>
2		<p>Put all the PE bags into the carton. Each carton should contain 100 pcs of antenna.</p>
3		<p>After wrapping the carton, place the barcode label on the top right corner of the carton.</p>

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