



**Product Name: HB80DG External Antenna**

**Part Number: H2MA704K104100**

**Features:**

- Supporting: (L1+L2) GPS/GLONASS/BDS/Galileo/QZSS
- Stable and reliable in performances
- Low temperature coefficient of frequency
- RoHS & REACH Compliant
- Pre-filtering

**Applications:**

- Navigation systems or position tracking systems
- Car Navigation
- Security Surveillance

# External Antenna

## MODEL: HB80DG

Version: Preliminary

### I. Patch antenna Specifications:

Items	Specifications			
<b>Navigation</b>	BDS B1/	GPS L1/ Galileo E1/ QZSS L1	GLONASS G1/	GPS L2/ GLONASS G2/ QZSS L2
<b>Center Frequency (MHz)</b>	1561	1575.42	1602	1227.6
<b>Return loss (dB)</b>	<-10 Typ.	<-10 Typ.	<-10 Typ.	<-10 Typ.
<b>Efficiency (%)</b>	64 Typ.	70 Typ.	52 Typ.	52 Typ.
<b>Average Gain (dB)</b>	-2.0 Typ.	-1.6 Typ.	-2.9 Typ.	-2.8 Typ.
<b>Peak Gain (dBi)</b>	4.5 Typ.	5.0 Typ.	3.9 Typ.	3.2 Typ.
<b>Axial Ratio (dB)</b>	1.7 Typ.	1.7 Typ.	1.7 Typ.	2.5 Typ.
<b>Polarization</b>	RHCP			
<b>Impedance (<math>\Omega</math>)</b>	50			

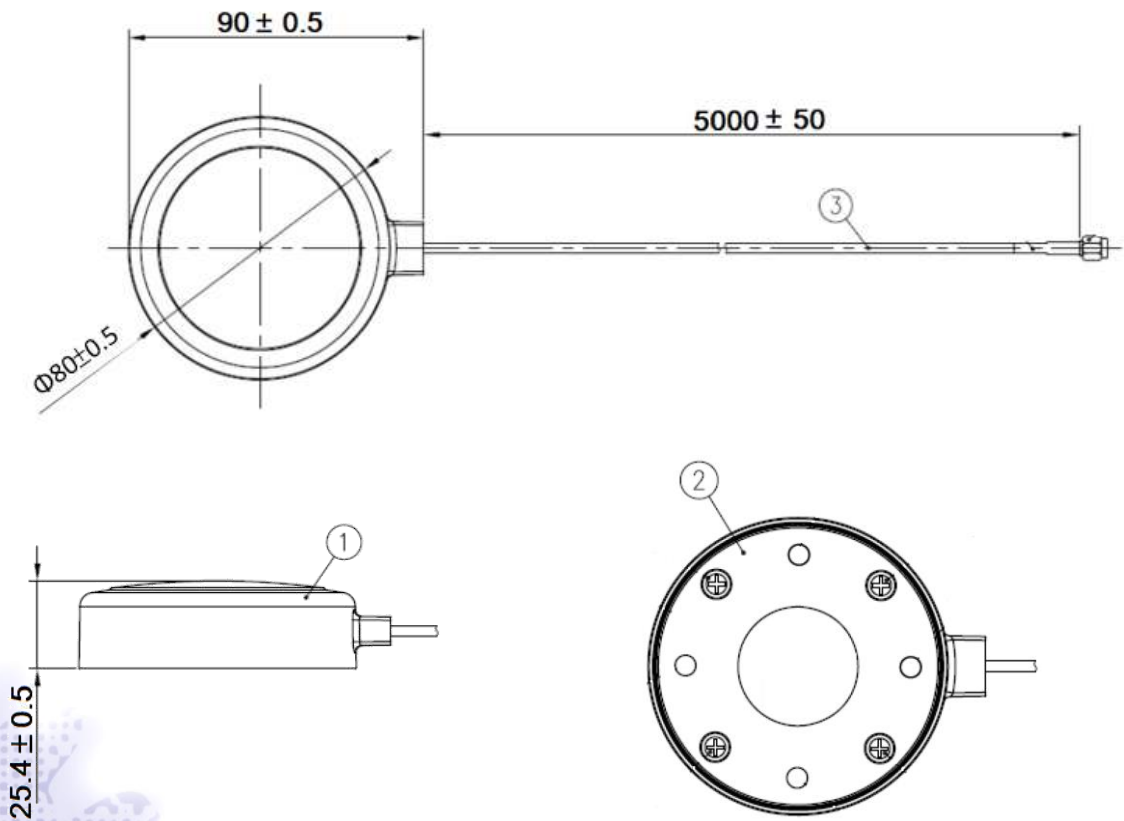
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### II. Low noise amplifier Specifications:

Items	Specifications			
<b>Navigation</b>	BDS B1	GPS L1	GLONASS G1	L2 Band
<b>Center Frequency (MHz)</b>	1561	1575.42	1602	1227.6
<b>Gain (dB)</b>	28 $\pm$ 3 Typ.	28 $\pm$ 3 Typ.	28 $\pm$ 3 Typ.	28 $\pm$ 3 Typ.
<b>Noise Figure (dB)</b>	3.0 Typ.	2.7 Typ.	3.0 Typ.	3.0 Typ.
<b>Input Voltage (V)</b>	DC = 3.0 $\pm$ 0.3			
<b>Current (mA)</b>	12.5 Typ. (at DC 3V)			
<b>Impedance (<math>\Omega</math>)</b>	50			

Environmental Conditions	
Operation & Storage Temperature (° C)	-40 ~ +85
Storage Temperature (° C) (Antenna with packing sealed)	-5 ~ +40
Relative Humidity	10 ~ 70 %

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

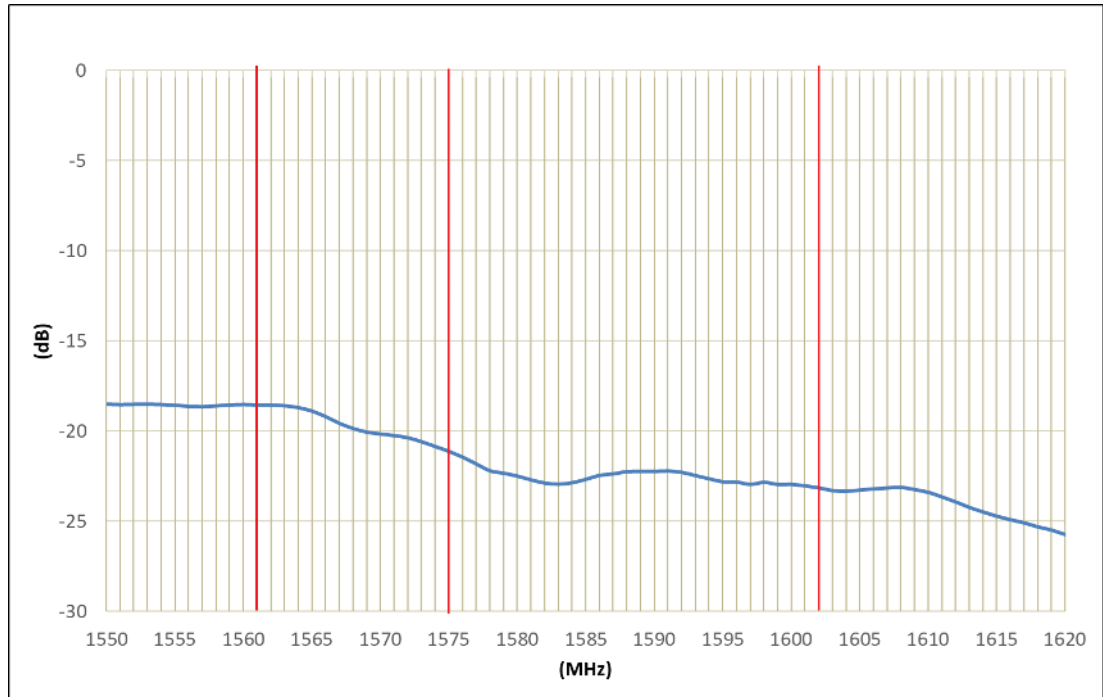


Item	Name	Material	Color	Q'ty
1	Top Housing	PC+ABS	Black	1
2	Bottom Base	Zinc Alloy	Ni Plated	1
3	Connector cable $\Phi 2.7$ mm	PVC	Black	1

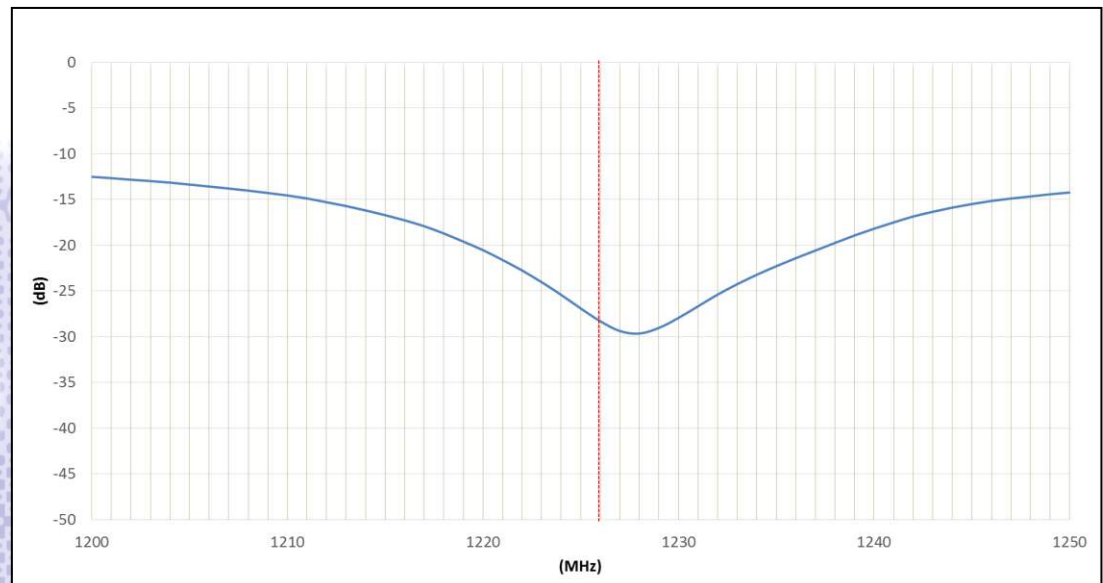
## IV. Properties:

### a) Return loss (dB)

#### L1 Band (1561 & 1575.42 & 1602MHz)

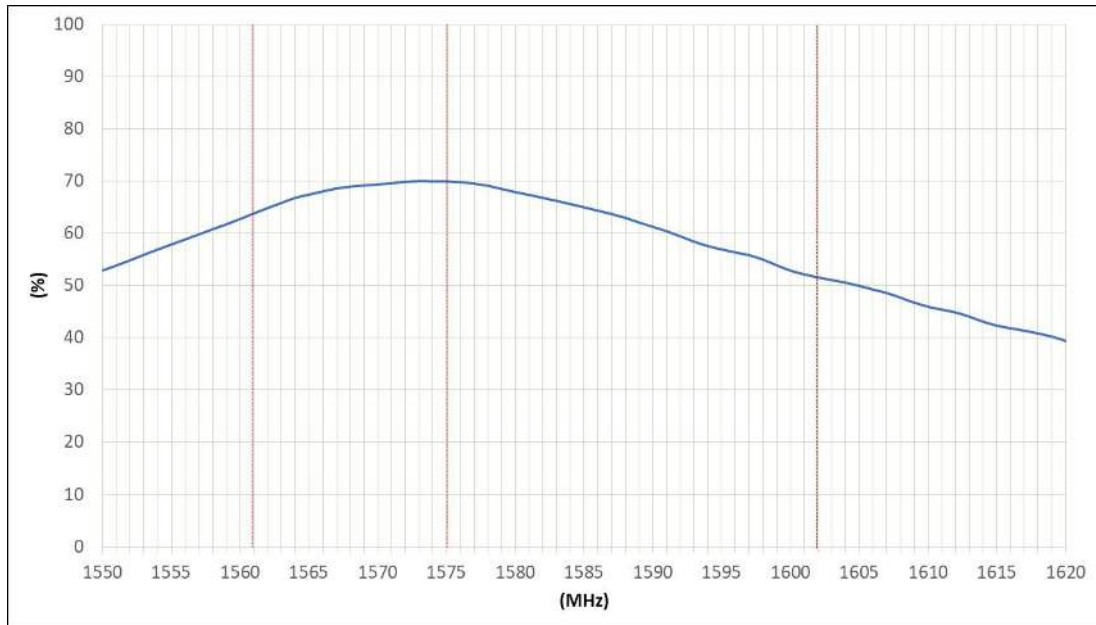


#### L2 Band (1227.6 MHz)



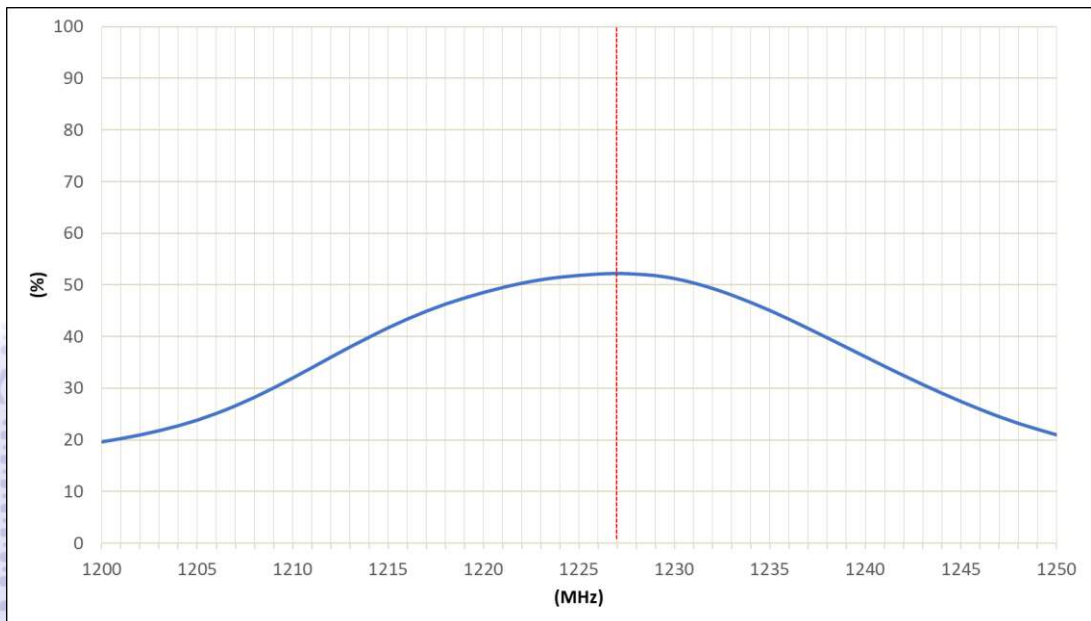
**b) Efficiency (%)**

**L1 Band (1561 & 1575.42 & 1602MHz)**



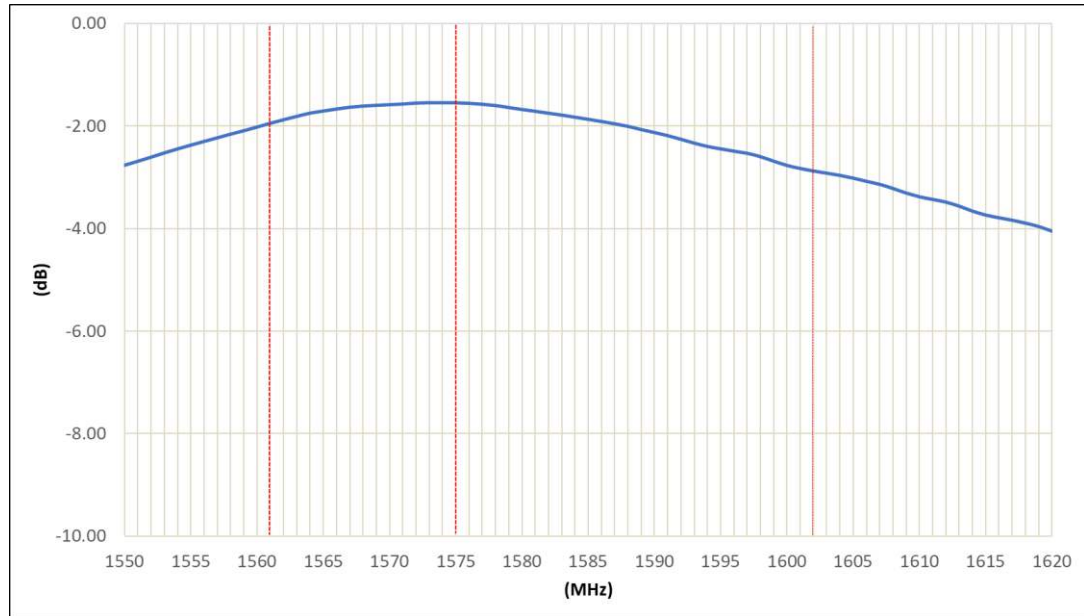
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**L2 Band (1227.6 MHz)**



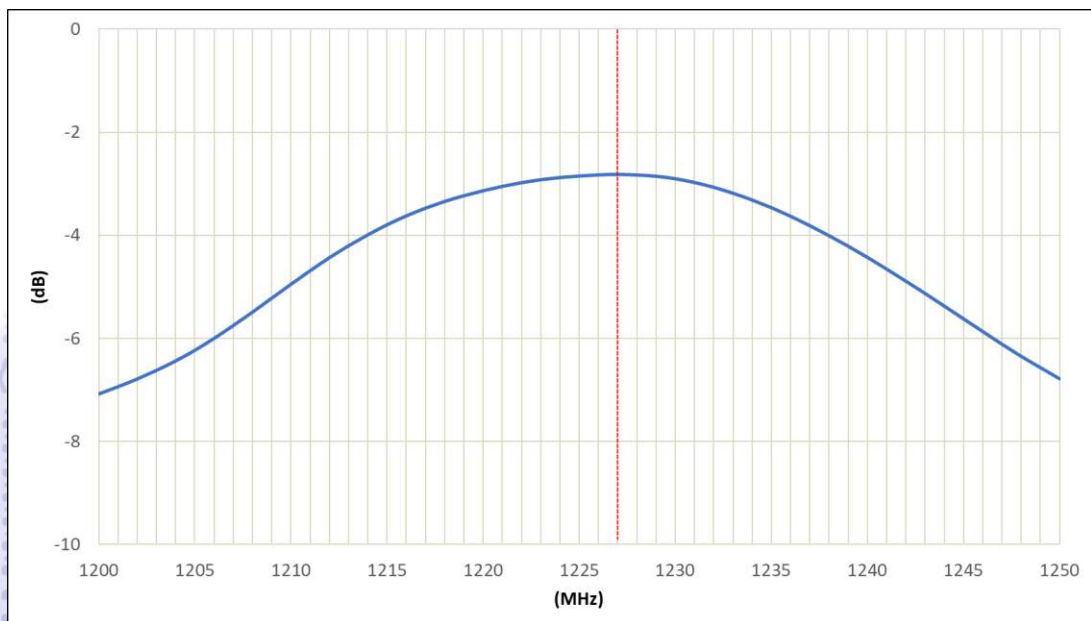
**c) Average Gain (dB)**

**L1 Band (1561 & 1575.42 & 1602MHz)**



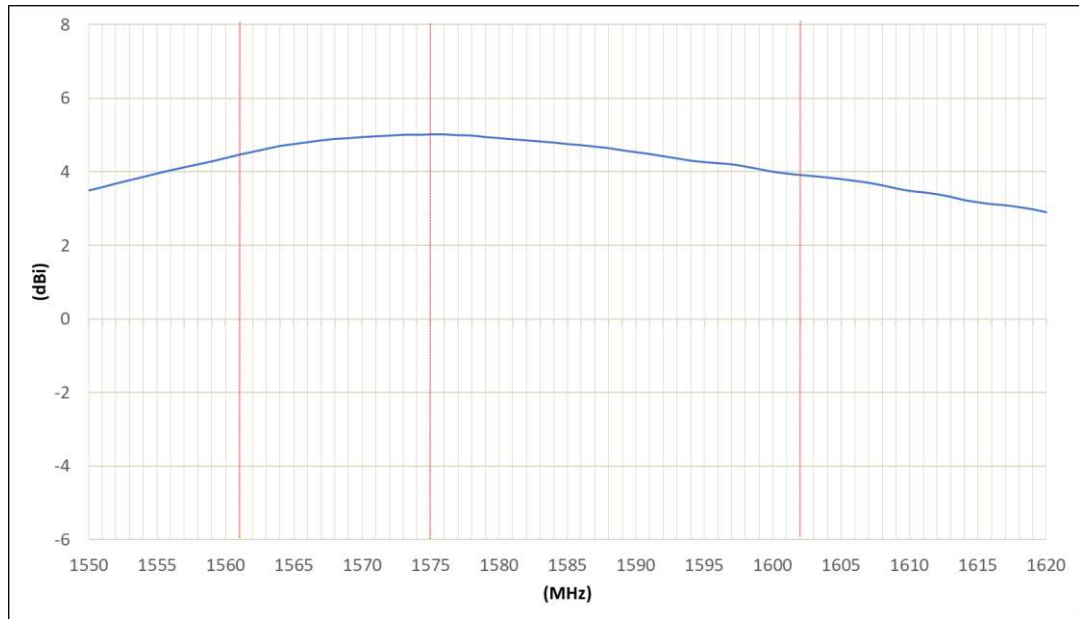
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**L2 Band (1227.6 MHz)**



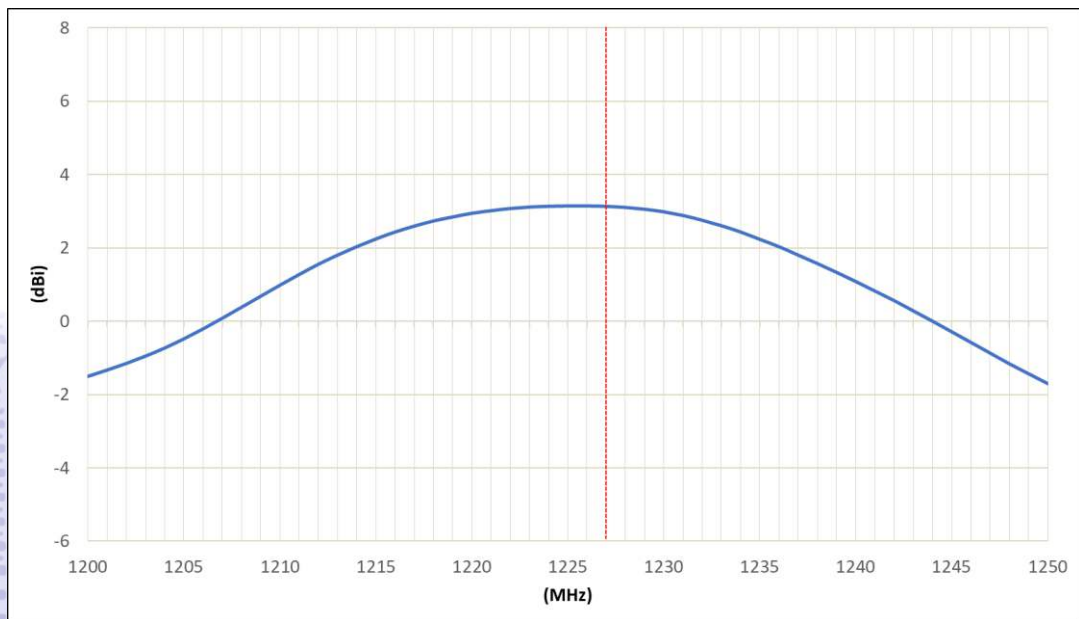
**d) Peak Gain (dBi)**

**L1 Band (1561 & 1575.42 & 1602MHz)**



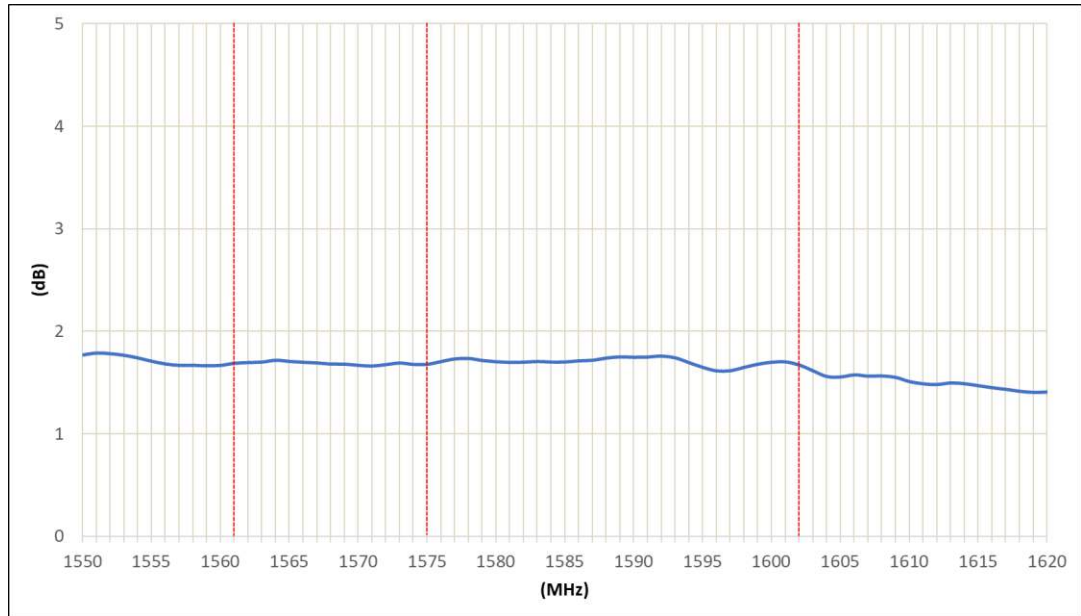
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**L2 Band (1227.6 MHz)**

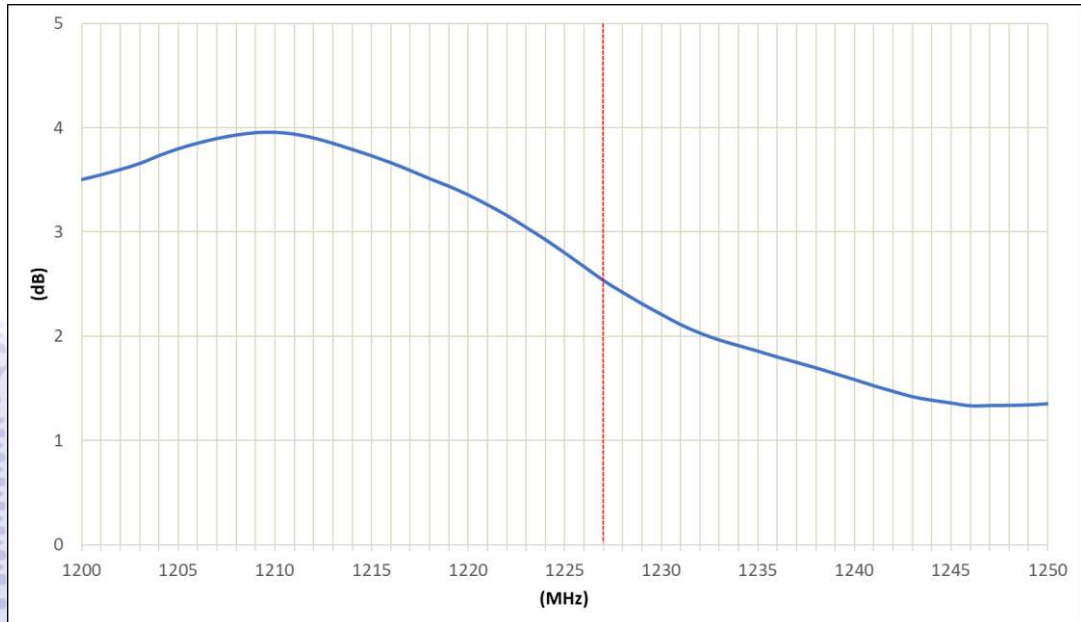


**e) Axial Ratio (dB)**

**L1 Band (1561 & 1575.42 & 1602MHz)**



**L2 Band (1227.6 MHz)**



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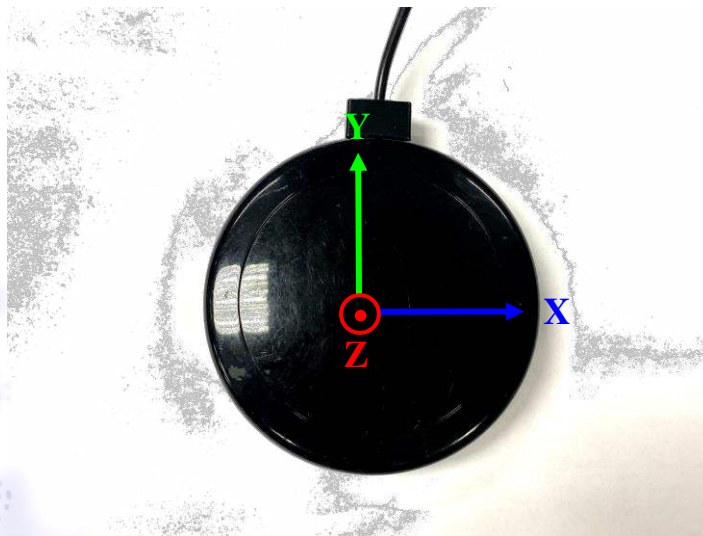
## V. Antenna Radiation Pattern Measurement:

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

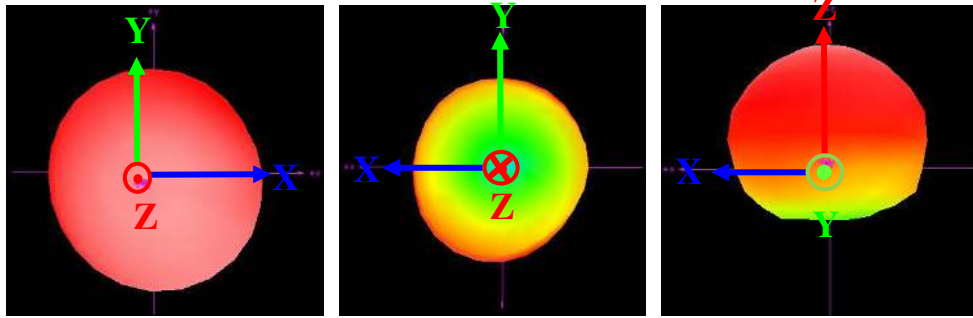


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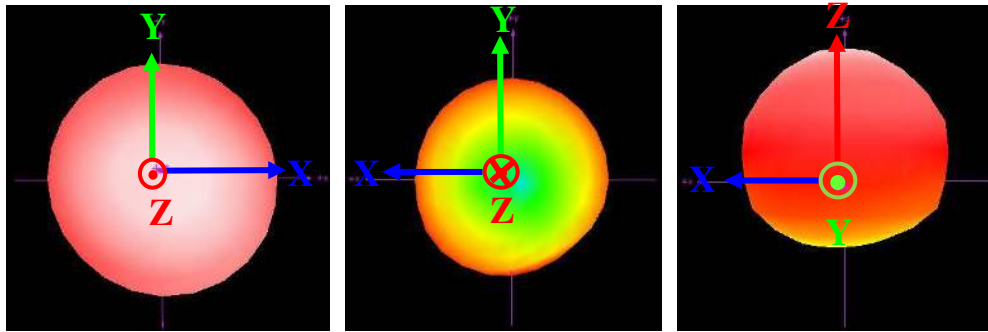
### 3D Radiation Gain Pattern



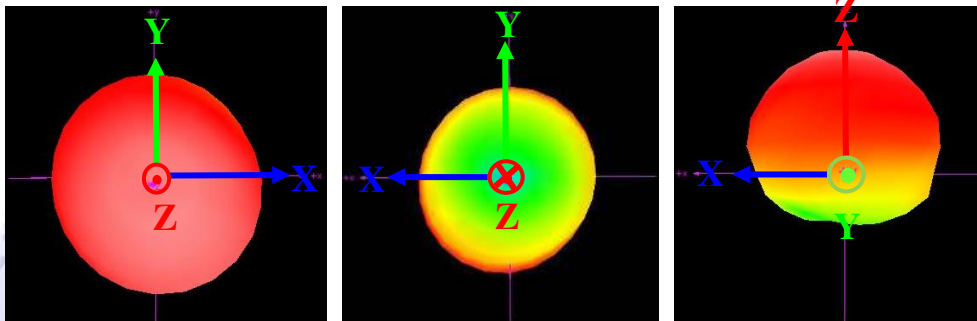
a) 1561 MHz (unit: dBi)



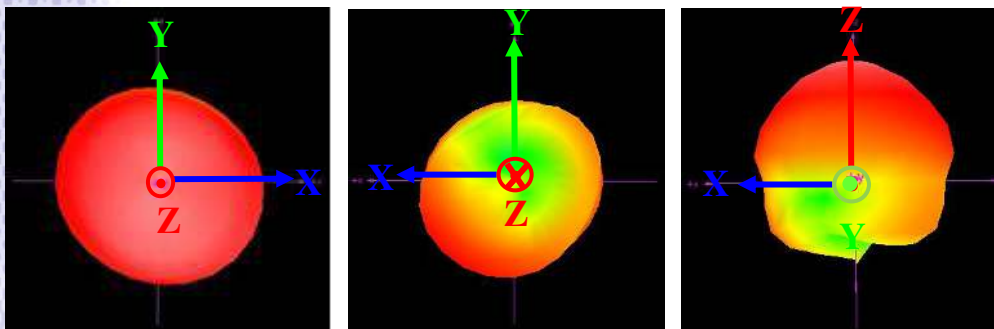
b) 1575.42 MHz (unit: dBi)



c) 1602 MHz (unit: dBi)



d) 1227.6 MHz (unit: dBi)






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## VI. Package

- a) Weight:  
Unit Weight: 242 ± 25 (g)
- b) Quantity:  
Each PE : 1 pcs  
Each outer carton : 100 pcs

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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	 <table border="1" data-bbox="489 1765 735 1937"> <tr> <td>Unictron P/N :</td> <td colspan="2">H2M3A023C20100</td> </tr> <tr> <td>Part No. :</td> <td colspan="2">120300000230A</td> </tr> <tr> <td>PO No. :</td> <td colspan="2">DSR1805074JA</td> </tr> <tr> <td>Q'TY :</td> <td>100</td> <td>PCS</td> </tr> <tr> <td>D/C :</td> <td colspan="2">1821</td> </tr> <tr> <td>DATE :</td> <td colspan="2">2018.05.21</td> </tr> </table>	Unictron P/N :	H2M3A023C20100		Part No. :	120300000230A		PO No. :	DSR1805074JA		Q'TY :	100	PCS	D/C :	1821		DATE :	2018.05.21		<p>After wrapping the carton, place the barcode label on the top right corner of the carton.</p>
Unictron P/N :	H2M3A023C20100																			
Part No. :	120300000230A																			
PO No. :	DSR1805074JA																			
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