



**Product Name: HB45DF External Antenna**

**Part Number: H2MA803F104100**

**Features:**

- Stable and reliable in performances
- Low temperature coefficient of frequency
- RoHS & REACH Compliant

**Applications:**

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

# External Antenna

## MODEL: HB45DF

Version: A

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### I. Patch antenna Specifications:

Items	Specifications		
<b>Navigation</b>	L1 Band		L5 Band
<b>Center Frequency (MHz)</b>	1575.42	1602	1176.45
<b>Return loss (dB)</b>	<-10 Typ.	<-10 Typ.	<-10 Typ.
<b>Efficiency (%)</b>	45 Typ.	46 Typ.	31 Typ.
<b>Average Gain (dB)</b>	-3.3 Typ.	-3.3 Typ.	-5.0 Typ.
<b>Peak Gain (dBi)</b>	2.2 Typ.	2.0 Typ.	0.2 Typ.
<b>Polarization</b>	RHCP		
<b>Impedance (<math>\Omega</math>)</b>	50		

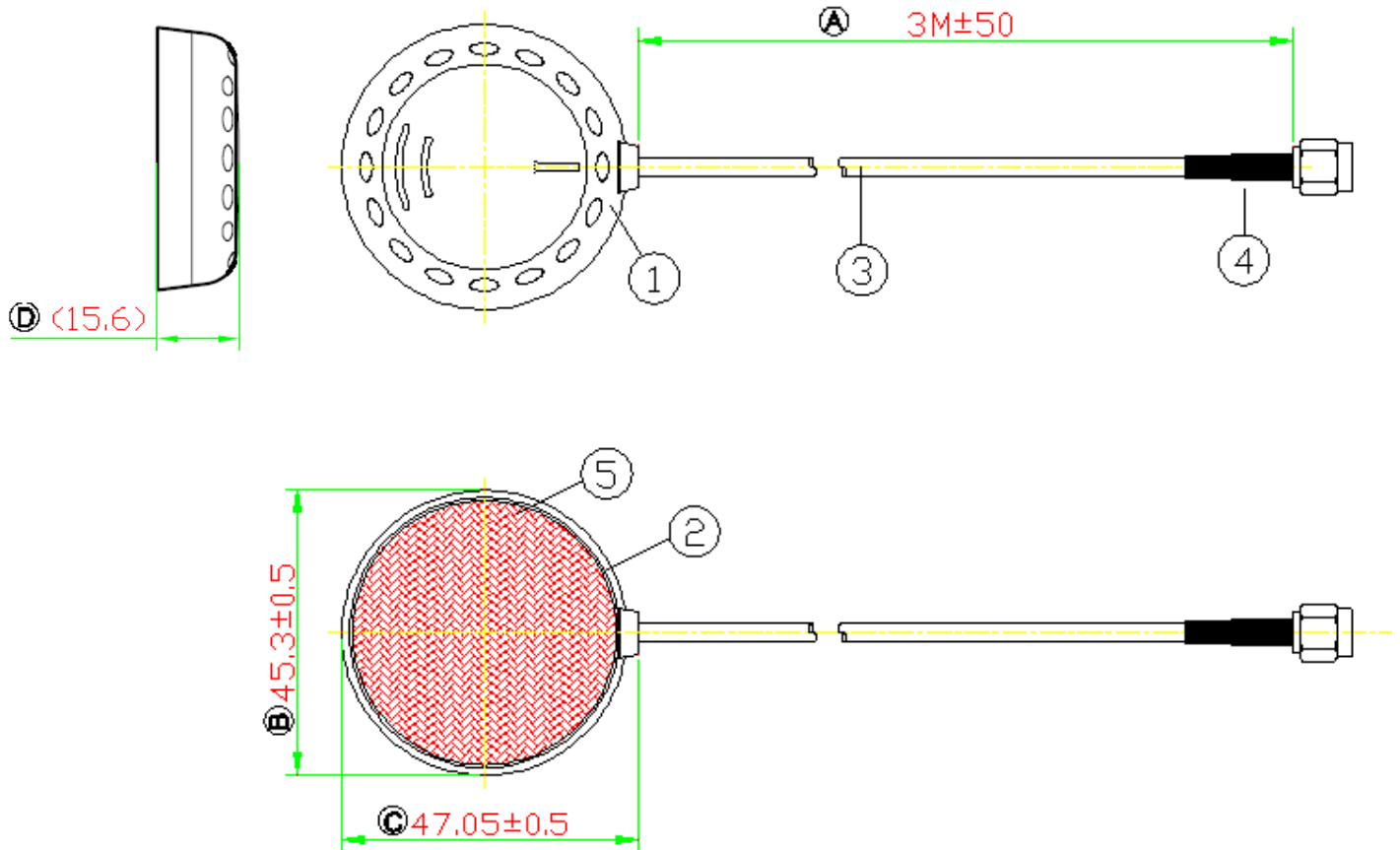
### II. Low noise amplifier Specifications:

Items	Specifications		
<b>Navigation</b>	L1 Band		L5 Band
<b>Center Frequency (MHz)</b>	1575.42	1602	1176.45
<b>Gain (dB)</b>	28 $\pm$ 3 Typ.	28 $\pm$ 3 Typ.	28 $\pm$ 3 Typ.
<b>Noise Figure (dB)</b>	3.0 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	
<b>Operation Temperature (<math>^{\circ}</math> C)</b>	-40 ~ +85
<b>Storage Temperature (<math>^{\circ}</math> C)</b>	-5 ~ +40
<b>Relative Humidity</b>	10 ~ 70 %

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

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All specific



#### NOTE:

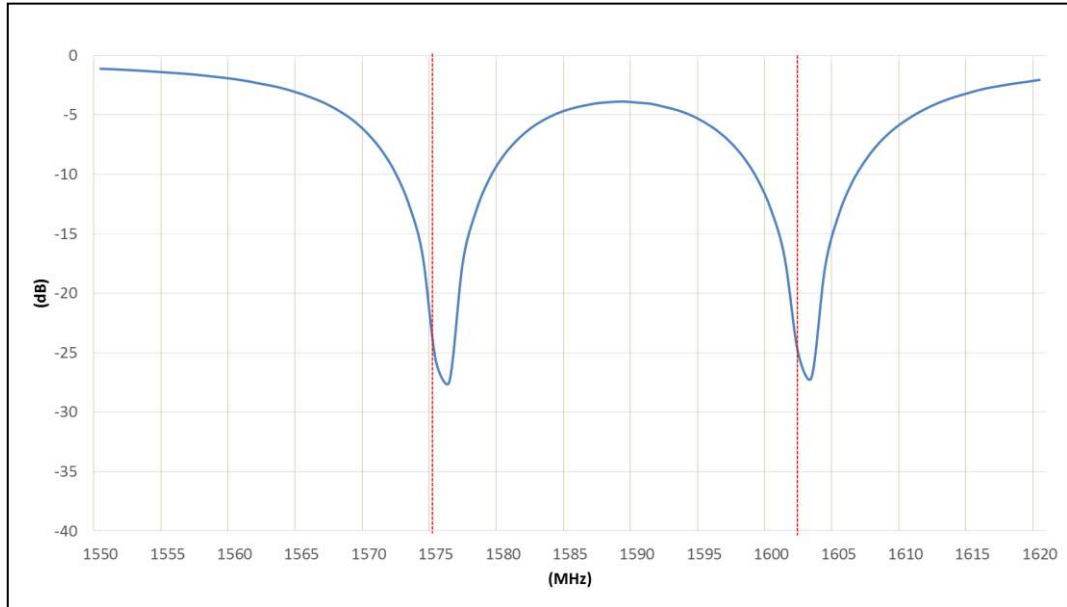
1. All materials are RoHS2.0 compliant.
2. "A~D" Critical Dimensions.
3. "( )" Reference Dimensions.

Item	Name	Material	Color	Q'ty
1	Plastic Top Cover	ABS+PC	Black	1
2	Plastic Under Cover	ABS+PC	Black	1
3	Cable RG174 $\Phi$ 2.7mm	PVC	Black	1
4	Heat Shrinkable Tube	PE	Black	1
5	Adhesive	-	Black	1

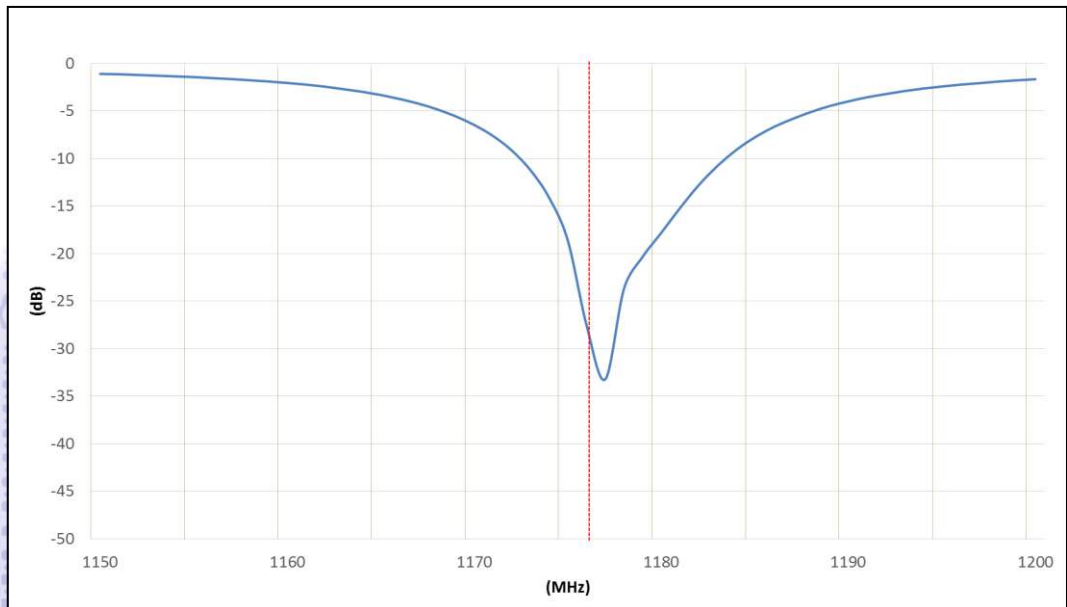
## IV. Properties:

### a) Return loss (dB)

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

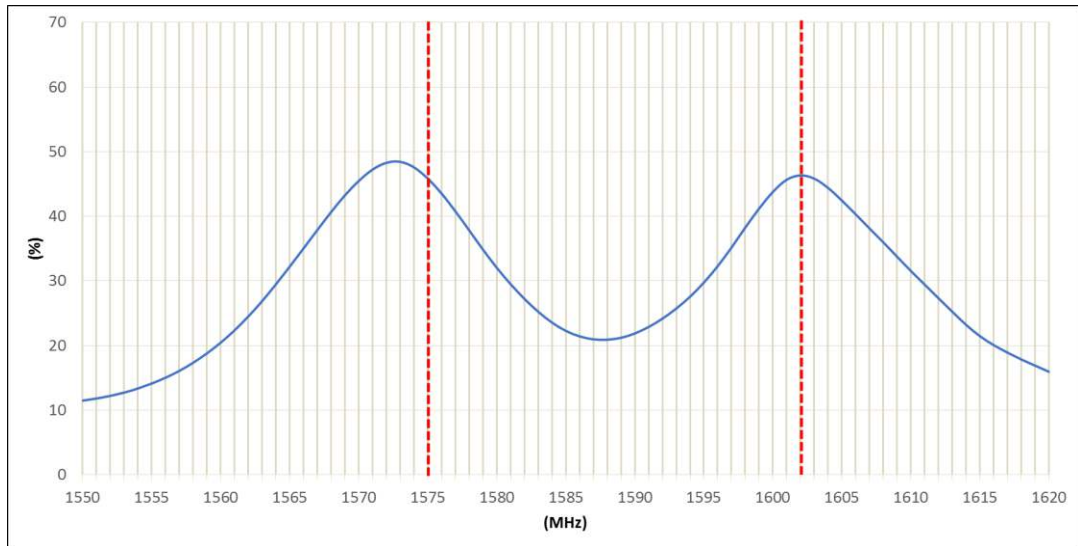


#### L5 Band (1176.45 MHz)

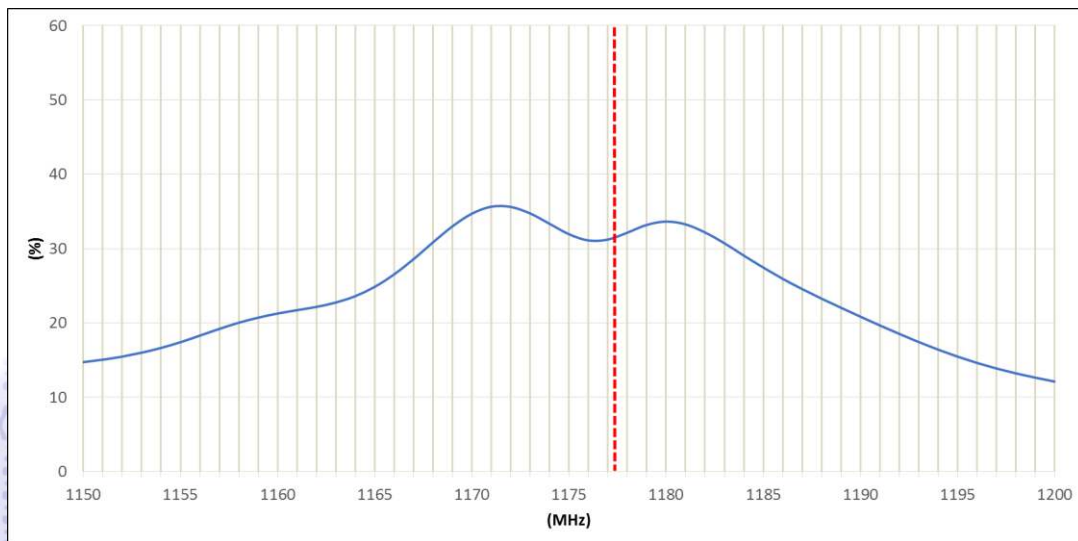


**b) Efficiency (%)**

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



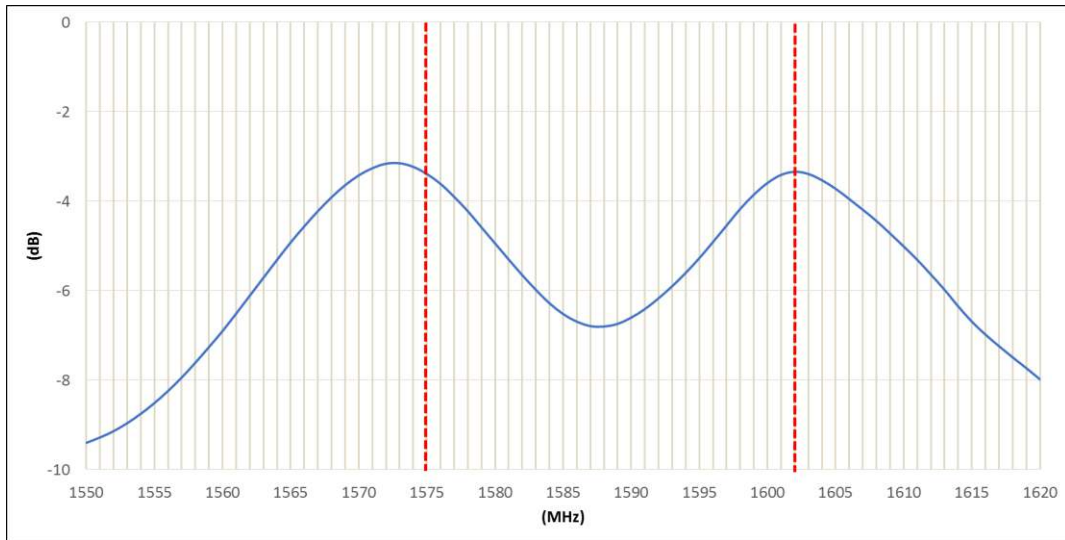
**L5 Band (1176.45 MHz)**



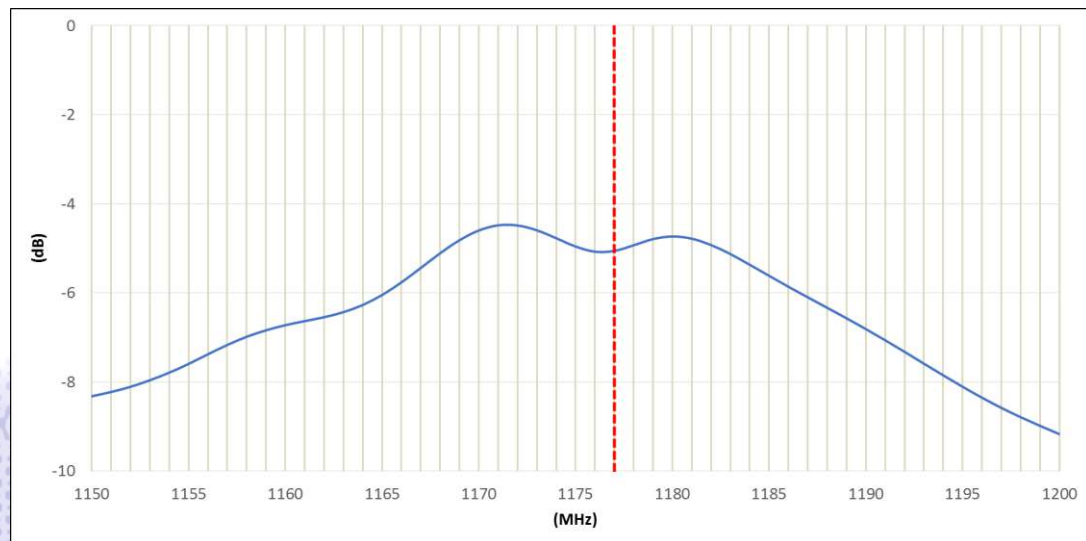
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**c) Average Gain (dB)**

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



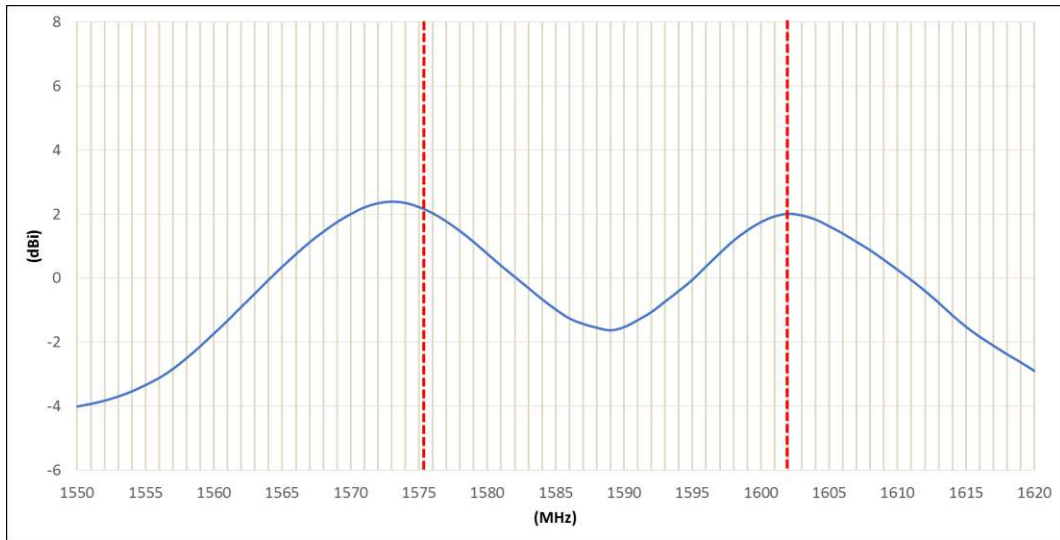
**L5 Band (1176.45 MHz)**



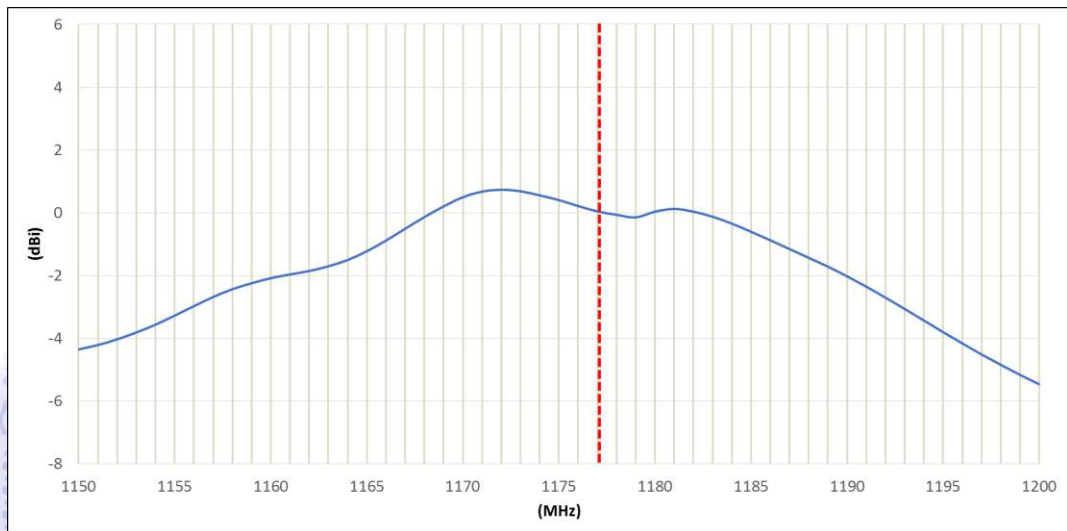
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**d) Peak Gain (dBi)**

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



**L5 Band (1176.45 MHz)**



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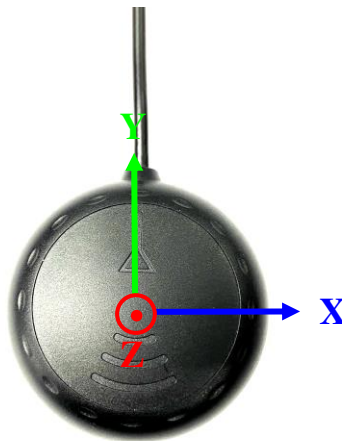
## V. Antenna Radiation Pattern Measurement:

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



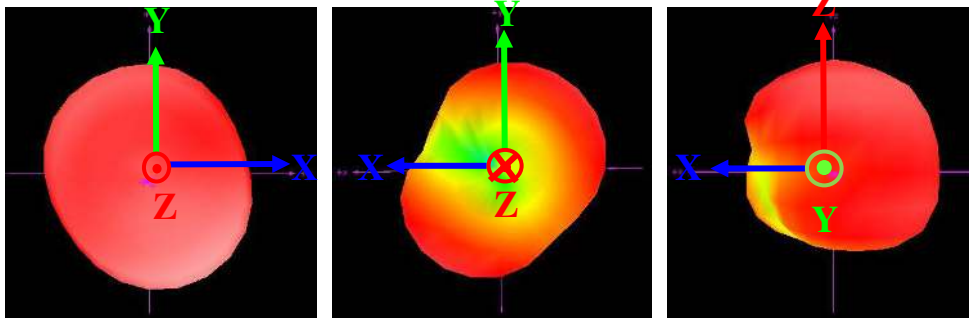
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### 3D Radiation Gain Pattern

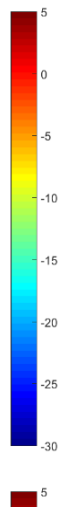




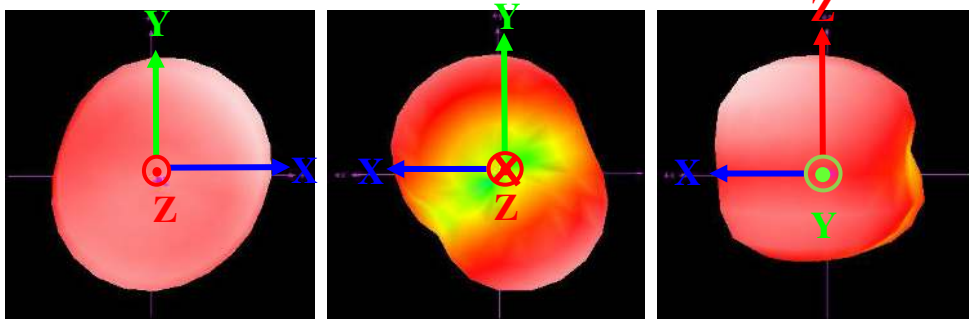
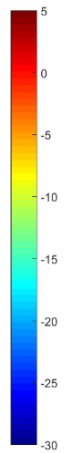
a) 1575.42 MHz (unit: dBi)



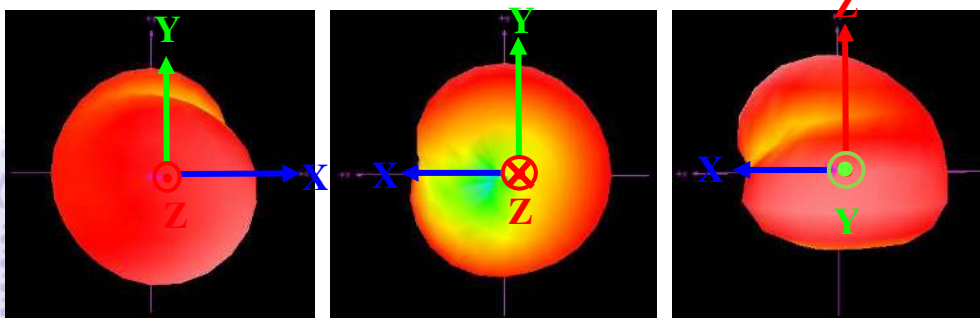
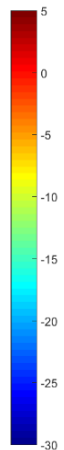
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b) 1602MHz (unit: dBi)




c) 1176.45 MHz (unit: dBi)

## VI. Package

- a) Weight:  
Unit Weight: 210 ± 25 (g)
- b) Quantity:  
Each PE : 1 pcs  
Each outer carton : 100 pcs

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Step	Pictures	Descriptions												
1		First, put one antenna into a PE bag (160x165 mm), PE bags are sealed by sealing machine .												
2		Put all the PE bags into the carton. Each carton should contain 100 pcs of antenna.												
3	 <table border="1" data-bbox="488 1765 735 1937"> <tr> <td>Unictron P/N :</td> <td>H2M3A023C20100</td> </tr> <tr> <td>Part No. :</td> <td>120300000230A</td> </tr> <tr> <td>PO No. :</td> <td>DSR1805074JA</td> </tr> <tr> <td>Q'TY :</td> <td>100 PCS</td> </tr> <tr> <td>D/C :</td> <td>1821</td> </tr> <tr> <td>DATE :</td> <td>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	After wrapping the carton, place the barcode label on the top right corner of the carton.
Unictron P/N :	H2M3A023C20100													
Part No. :	120300000230A													
PO No. :	DSR1805074JA													
Q'TY :	100 PCS													
D/C :	1821													
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