

**Product Name: NB40DG Antenna Module**

**Part Number: H2M1W031129900**

**Features:**

- Supporting: (L1+L5) GPS/GLONASS
- 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

# Antenna Module

## MODEL: NB40DG

Version: Preliminary

### 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>	55 Typ.	43 Typ.	39 Typ.
<b>Average Gain (dB)</b>	-2.6 Typ.	-3.6 Typ.	-4.1 Typ.
<b>Peak Gain (dBi)</b>	4.8 Typ.	3.9 Typ.	2.7 Typ.
<b>Polarization</b>	RHCP		
<b>Impedance (<math>\Omega</math>)</b>	50		

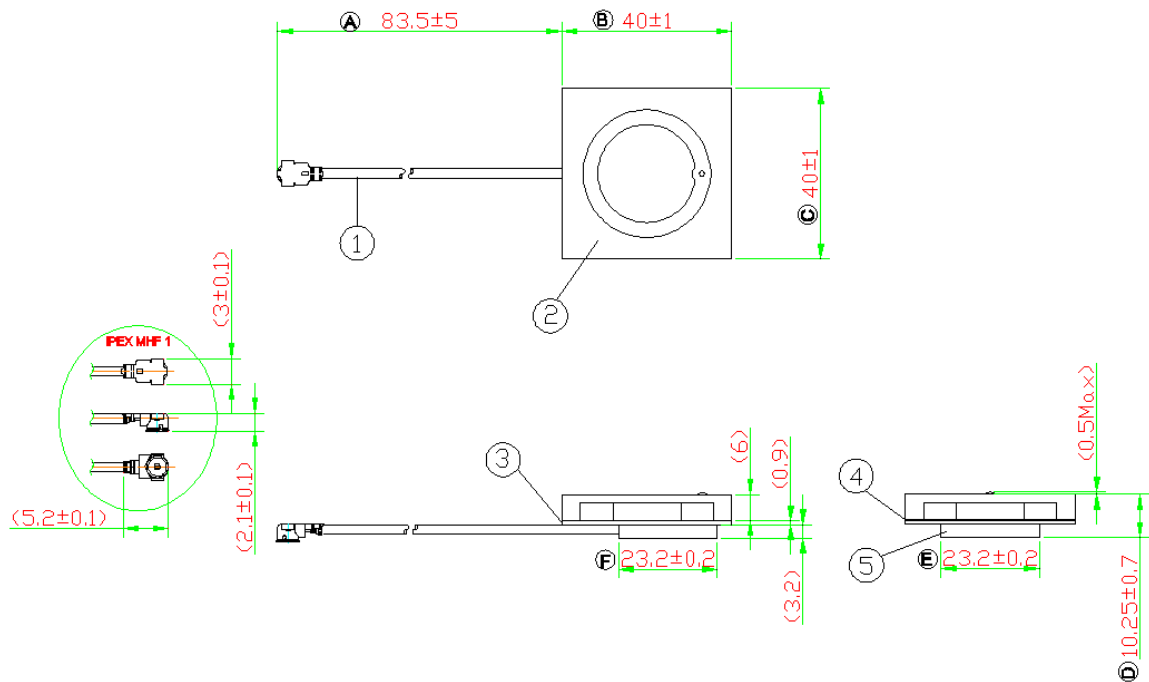
### II. Low noise amplifier Specifications:

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 &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 %

© Unictron Technologies Corp. All specifications subject to change without notice.

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



© Unictron Technologies Corp.  
All specifications subject to change without notice.

#### NOTE:

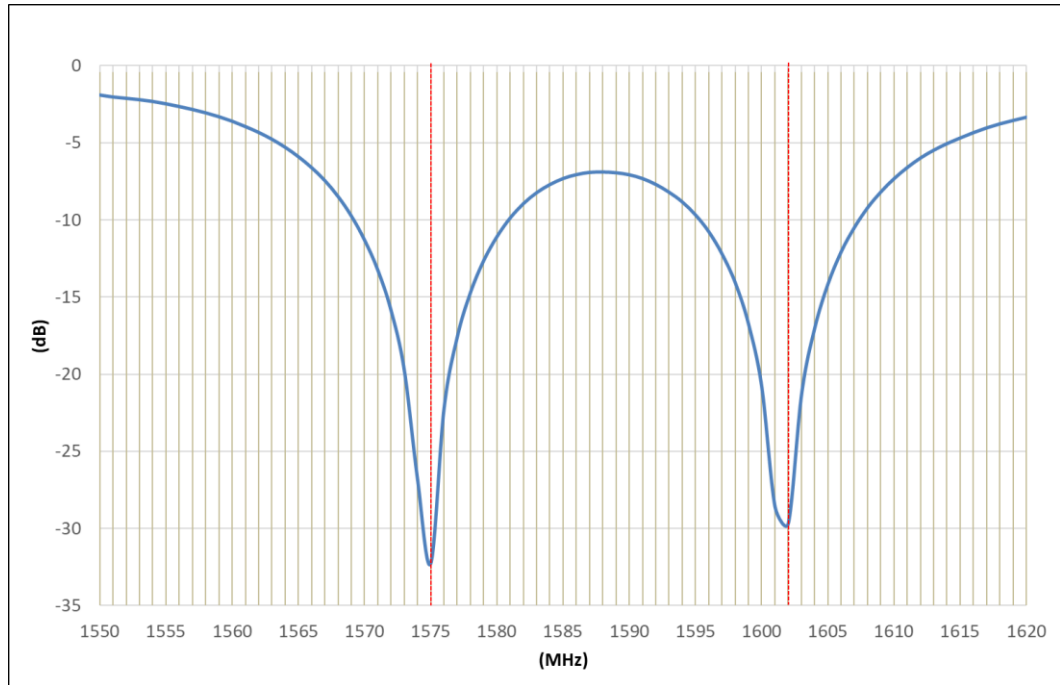
1. All materials are RoHS2.0 compliant.
2. "A~F" Critical Dimensions.
3. "( )" Reference Dimensions.

Item	Name	Material	Color	Q'ty
1	Connector (IPEX I)+cable( $\phi=1.13\text{mm}$ )	Brass/FEP	Gold/gray	1
2	Patch	Ceramic	-	1
3	LNA Module	FR4	Green	1
4	Adhesive	-	-	1
5	Shielding Case	Tin (SPTE)	-	1

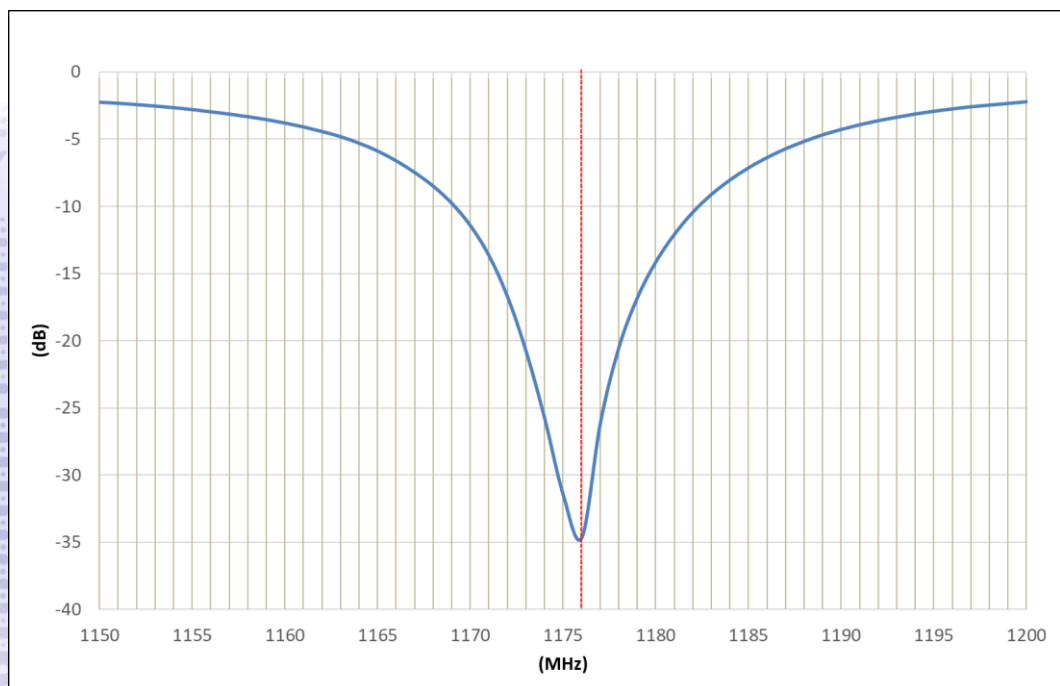
## IV. Properties:

### a) Return loss (dB)

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

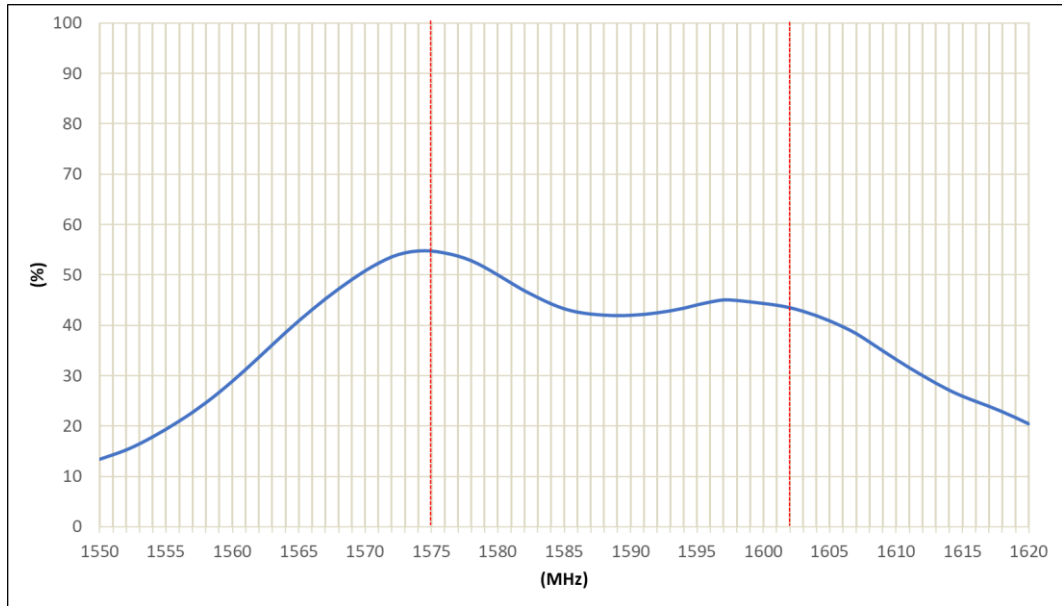


#### L5 Band (1176.45 MHz)



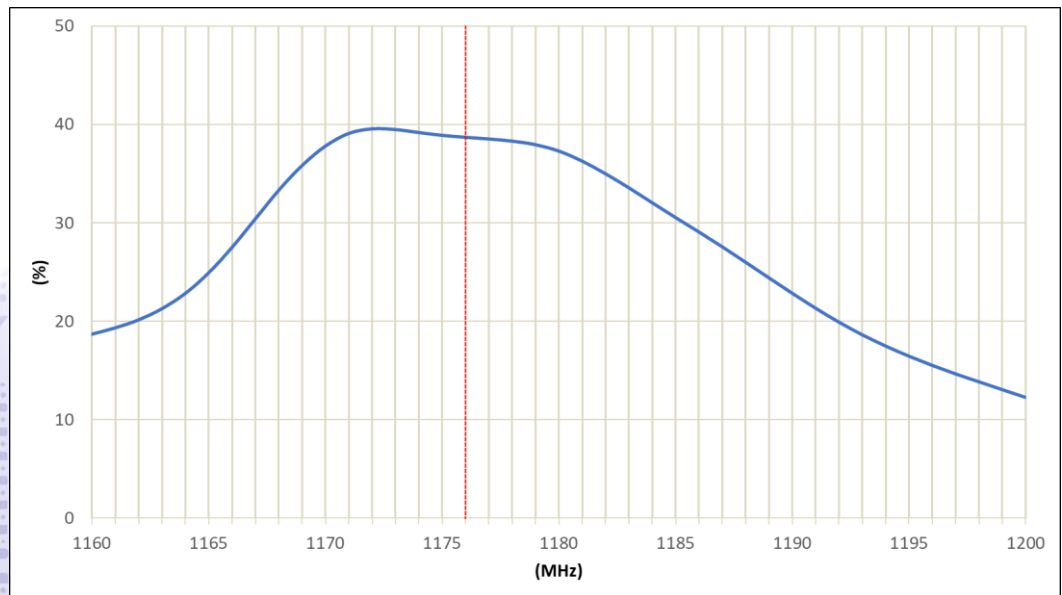
**b) Efficiency (%)**

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



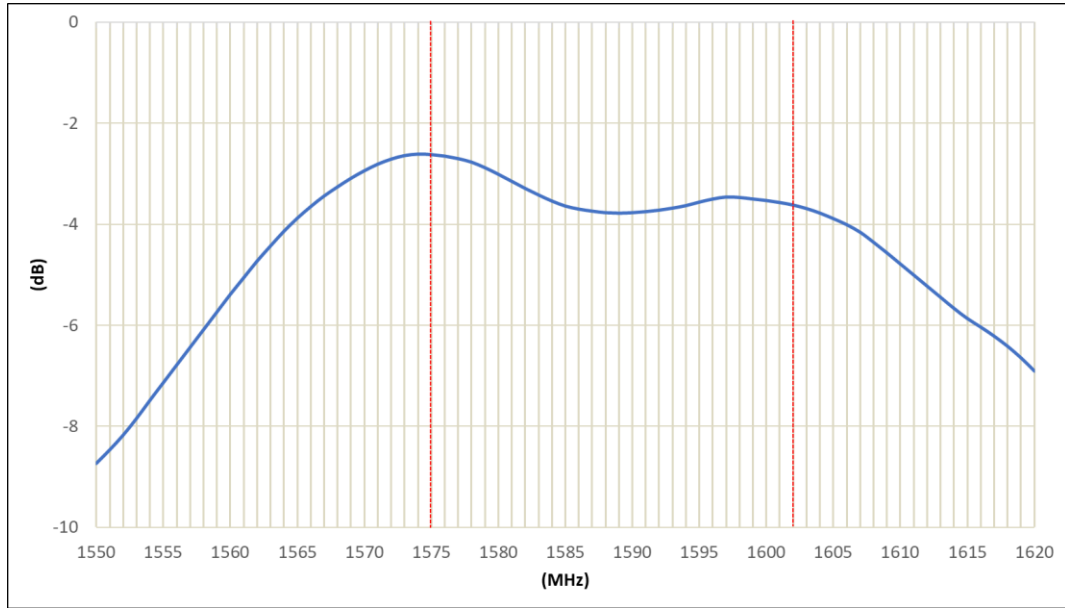
© Unictron Technologies Corp.  
All specifications subject to change without notice.

**L5 Band (1176.45 MHz)**



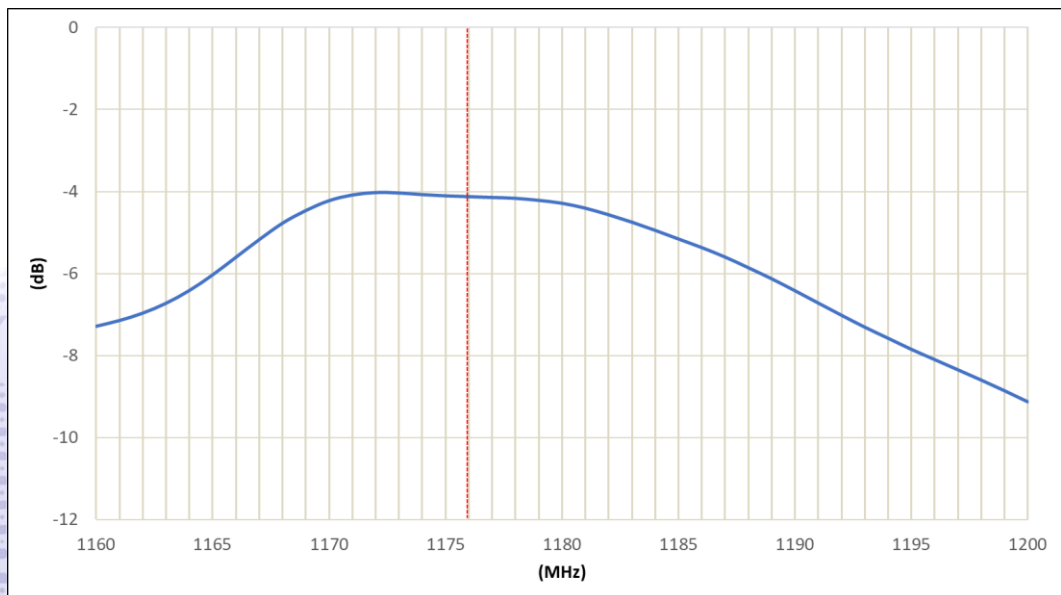
**c) Average Gain (dB)**

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



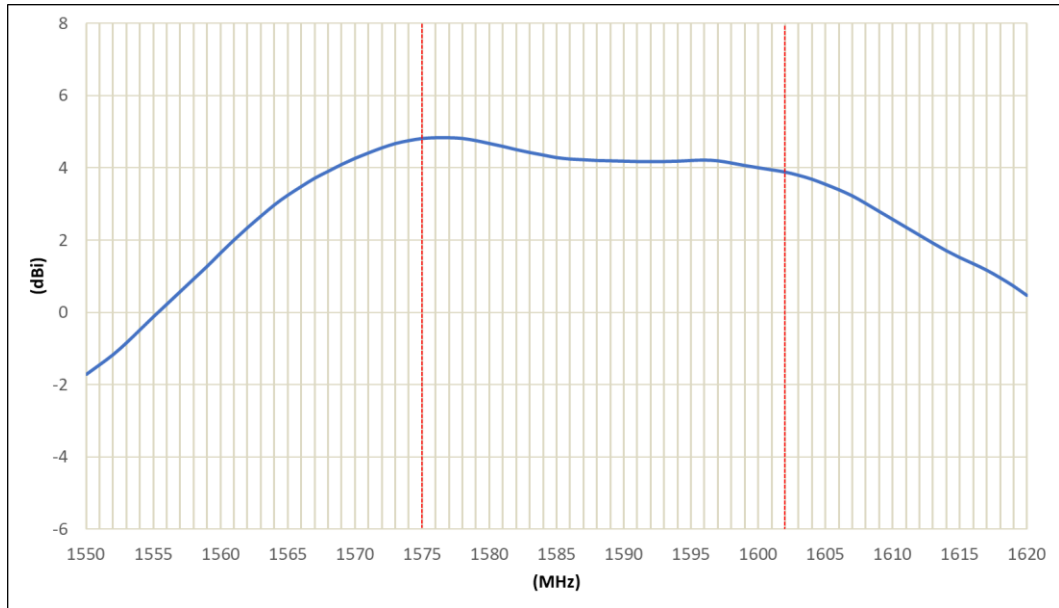
© Unictron Technologies Corp.  
All specifications subject to change without notice.

**L5 Band (1176.45 MHz)**



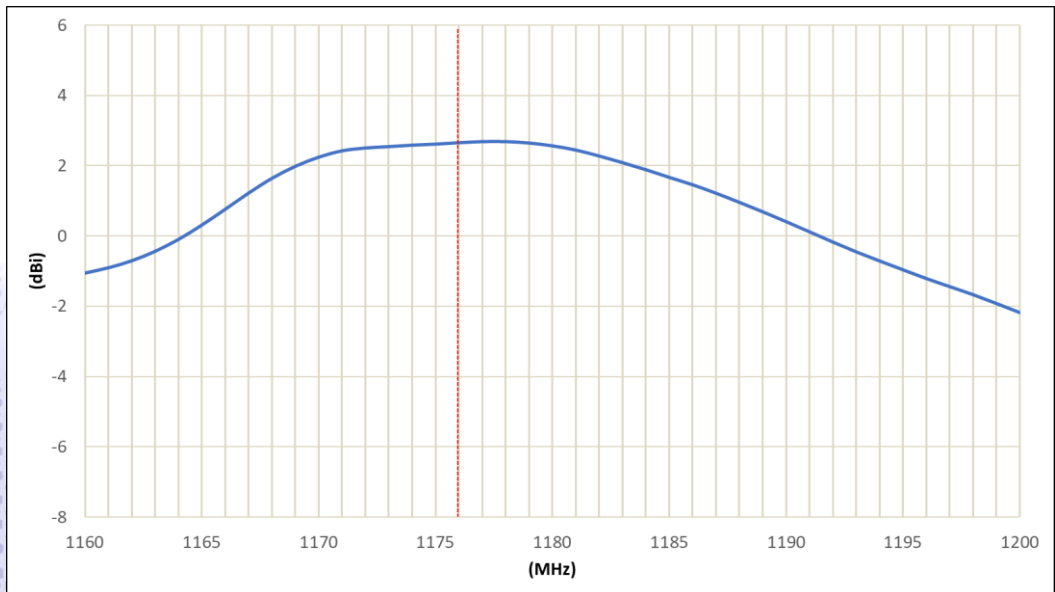
**d) Peak Gain (dBi)**

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



© Unictron Technologies Corp.  
All specifications subject to change without notice.

**L5 Band (1176.45 MHz)**





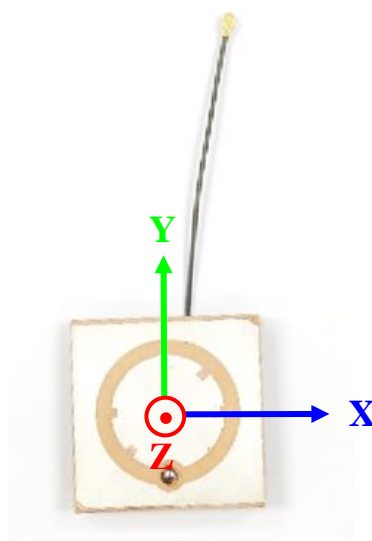
## V. Antenna Radiation Pattern Measurement:

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



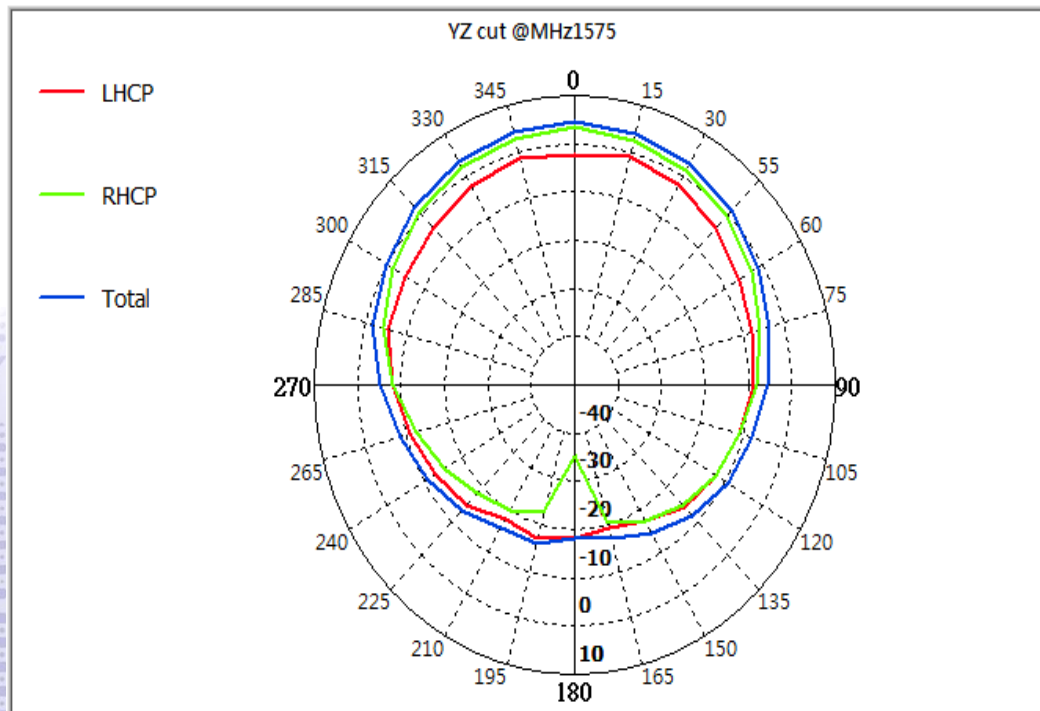
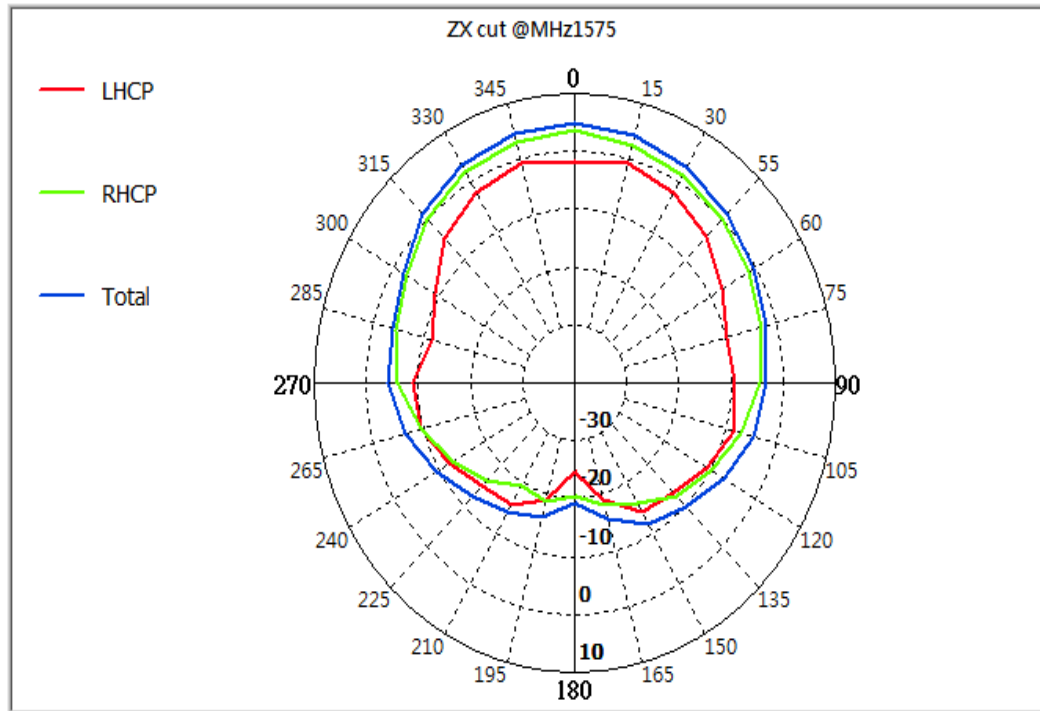
© Unictron Technologies Corp.  
All specifications subject to change without notice.

### 3D Radiation Gain Pattern



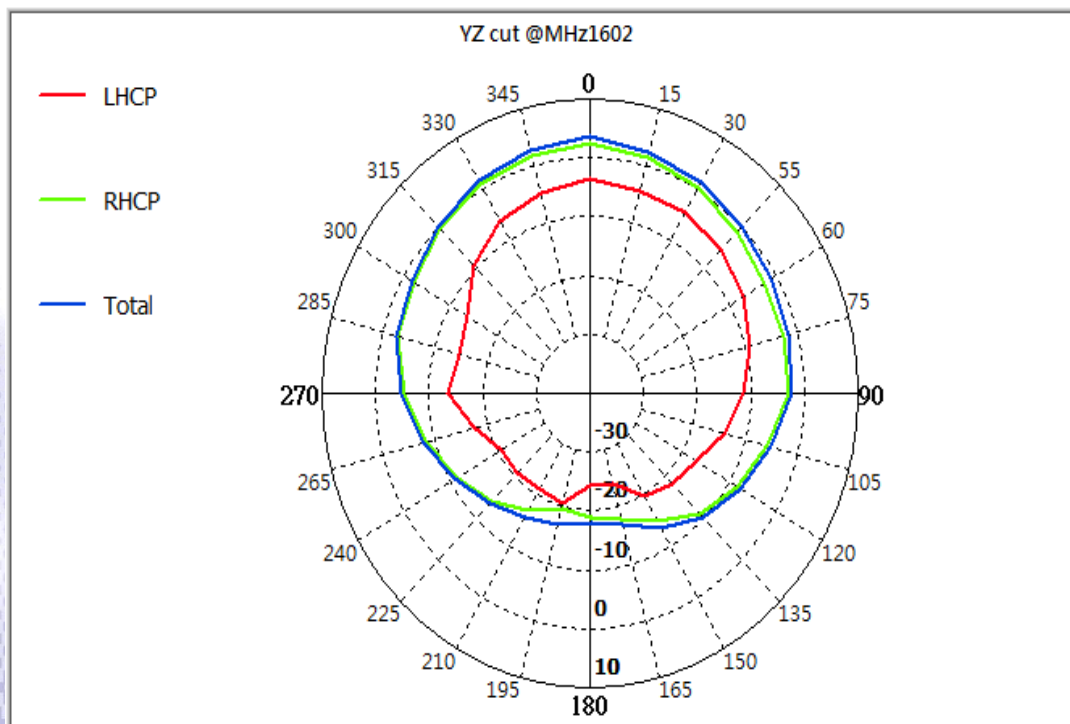
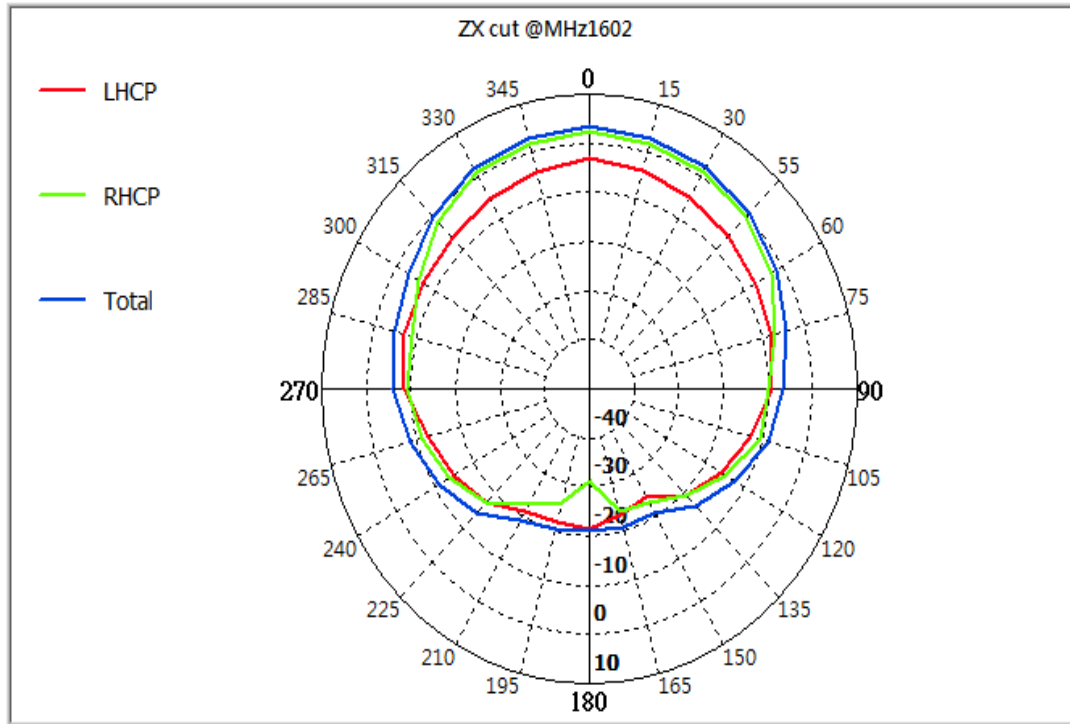


**a) 1575.42 MHz (unit: dBi)**



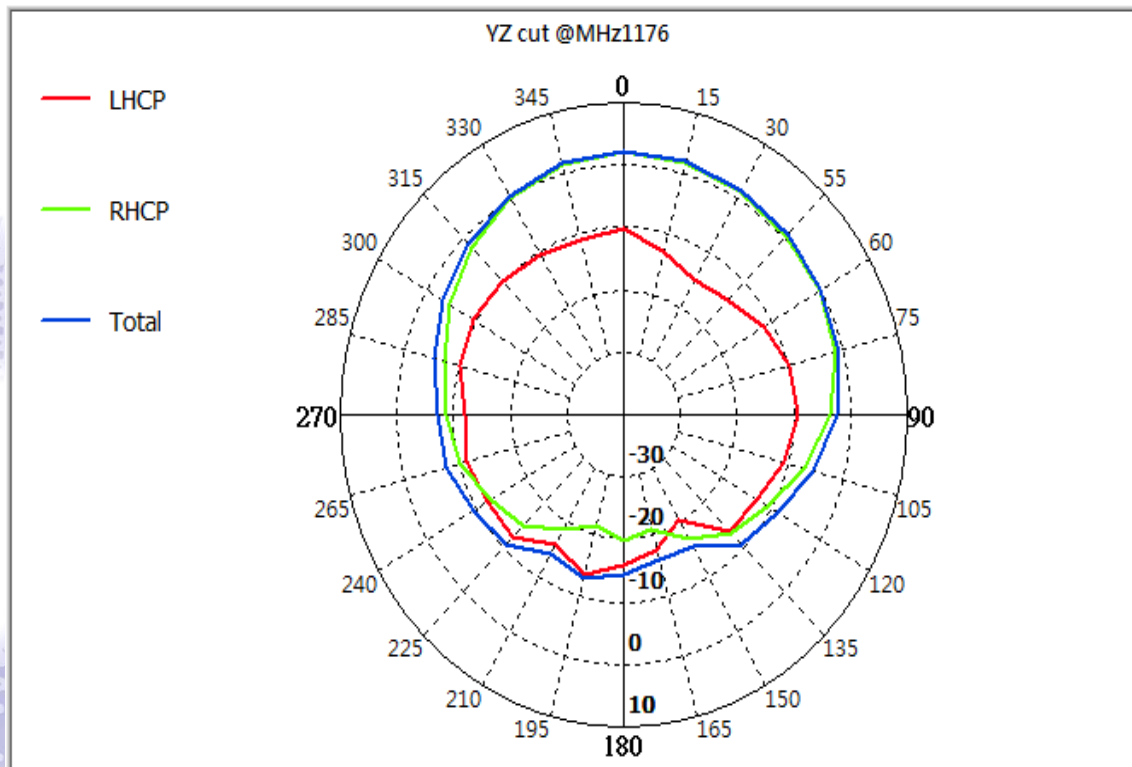
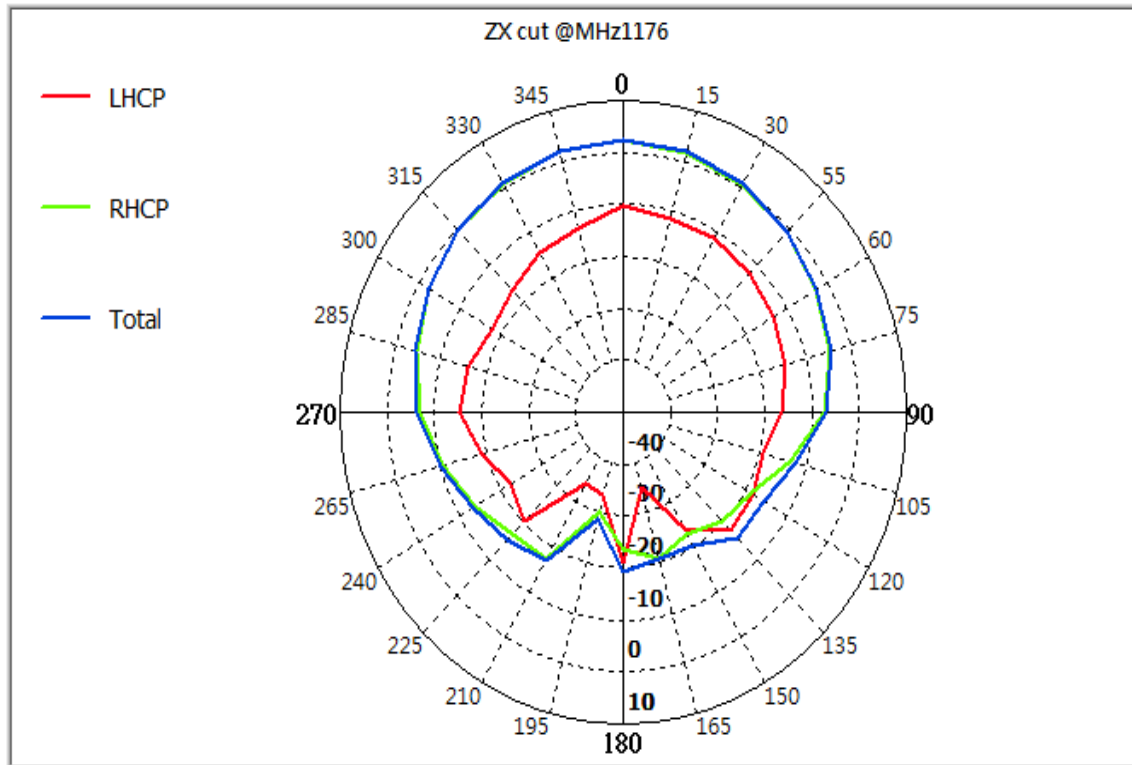
© Unictron Technologies Corp.  
All specifications subject to change without notice.

**b) 1602MHz (unit: dBi)**



© Unictron Technologies Corp.  
All specifications subject to change without notice.

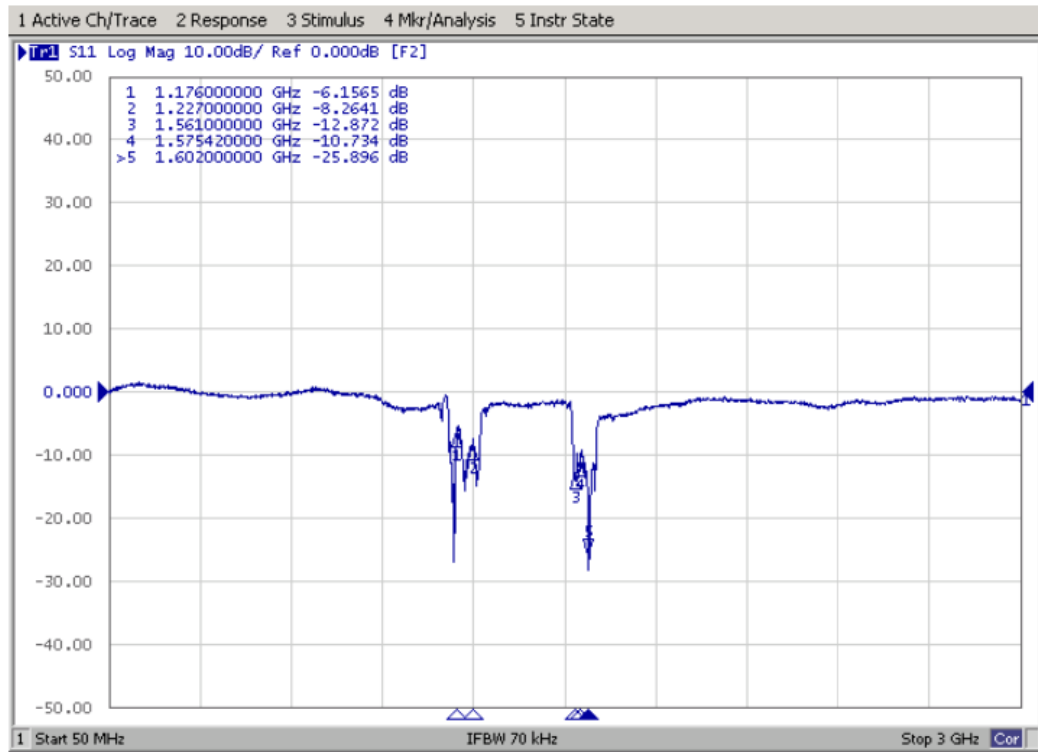
**c) 1176.45 MHz (unit: dBi)**



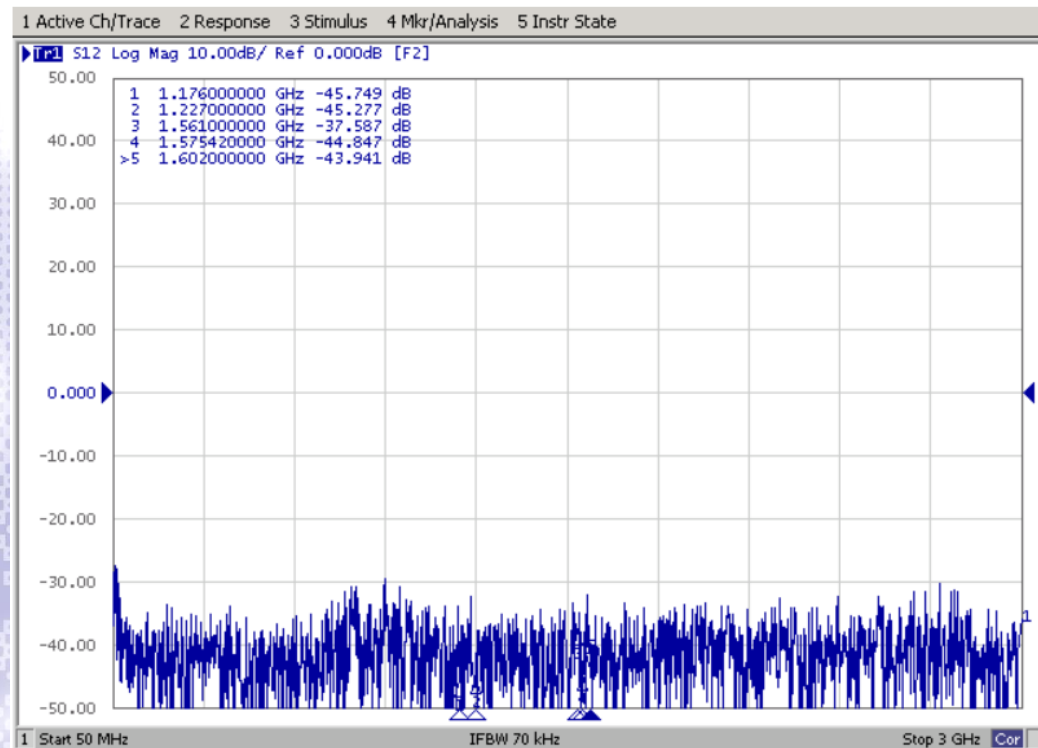
© Unictron Technologies Corp.  
All specifications subject to change without notice.

## VI. Low noise amplifier (LNA):

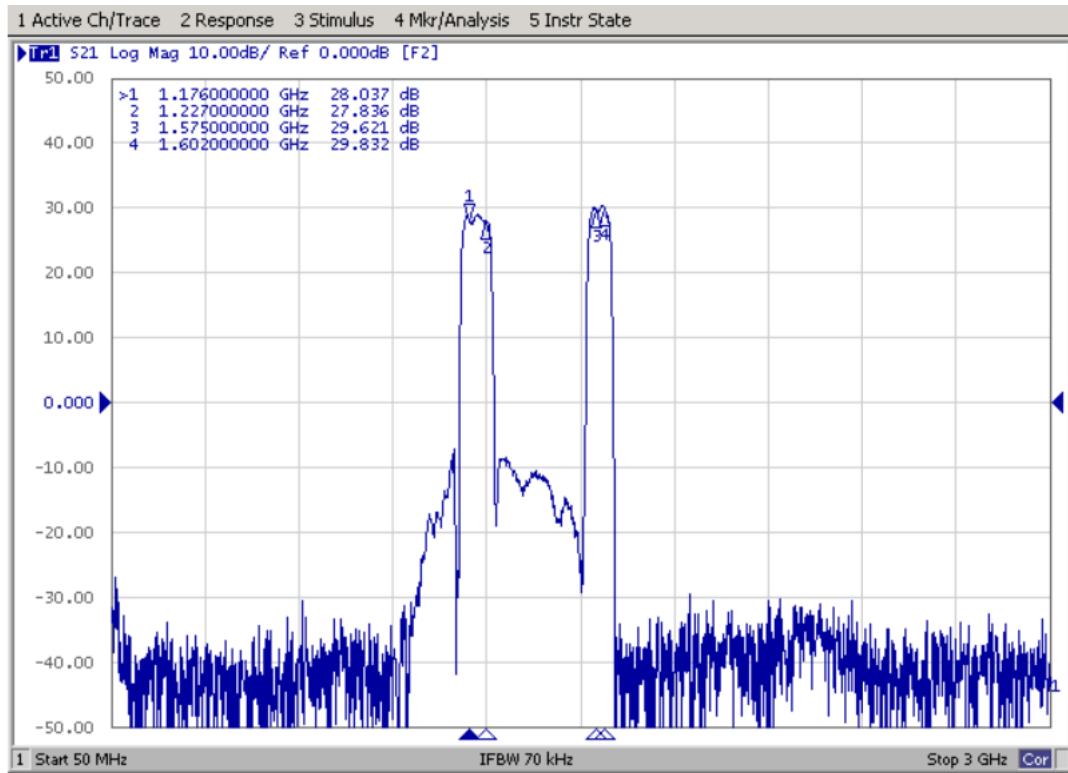
### a) S11: (The input power of network analyzer is -40dBm)



### b) S12: (The input power of network analyzer is -40dBm)

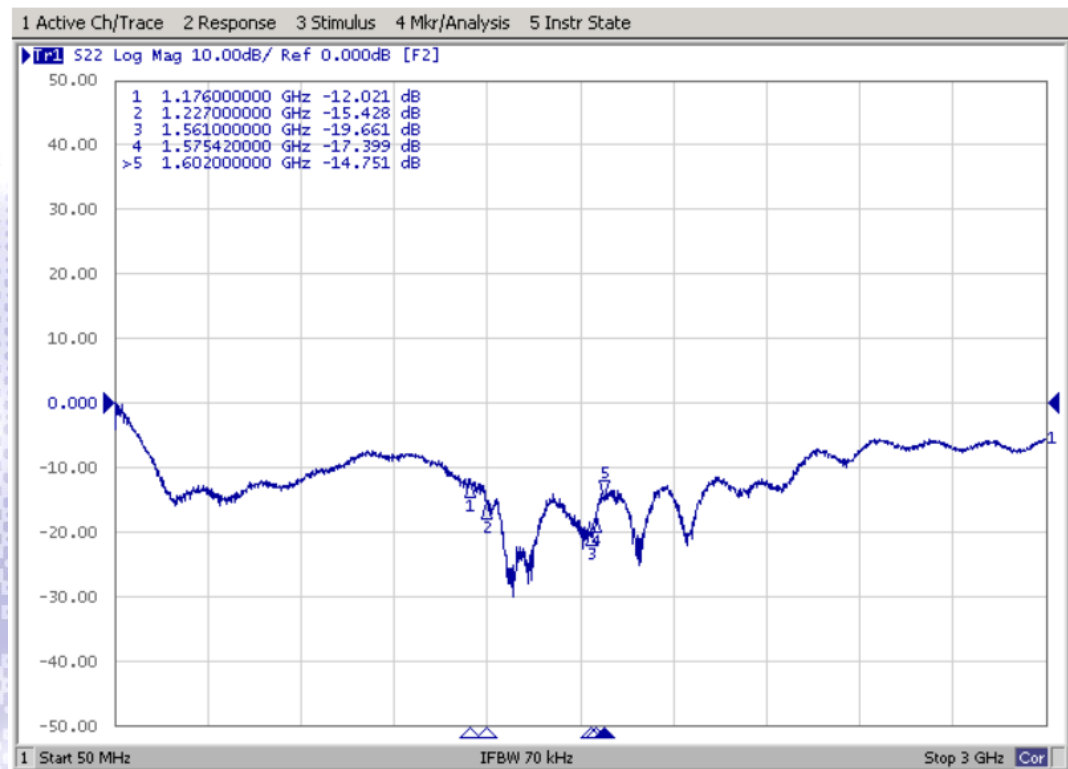


**c) S21: (The input power of network analyzer is -40dBm)**

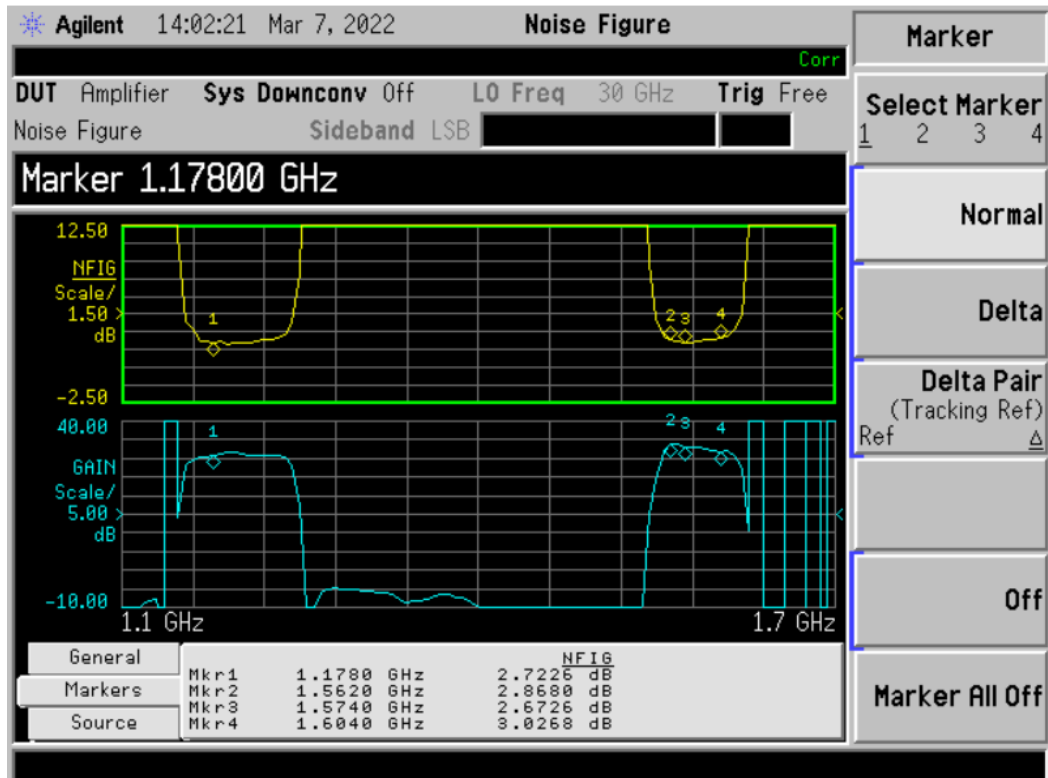


© Unictron Technologies Corp.  
All specifications subject to change without notice.

**d) S22: (The input power of network analyzer is -40dBm)**



### e) N.F(Noise Figure)






© Unictron Technologies Corp.  
All specifications subject to change without notice.



## VII. Package

- a) Weight:  
Unit Weight: 26 ± 1 (g)
- b) Quantity:  
Each bubble bag : 1 pcs  
Each outer carton : 100 pcs

Step	Pictures	Descriptions
1		Put one antenna into a bubble bag (110x70x5mm) .
2		Put all the bubble bags into the carton. Each carton should contain 100 pcs of antenna.
3		After wrapping the carton, place the label on the top right corner of the carton.