

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		
	L1 Band		L5 Band
Navigation			
Center Frequency (MHz)	1575.42	1602	1176.45
Return loss (dB)	<-10 Typ.	<-10 Typ.	<-10 Typ.
Efficiency (%)	55 Typ.	43 Typ.	39 Typ.
Average Gain (dB)	-2.6 Typ.	-3.6 Typ.	-4.1 Typ.
Peak Gain (dBi)	4.8 Typ.	3.9 Typ.	2.7 Typ.
Polarization	RHCP		
Impedance (Ω)	50		

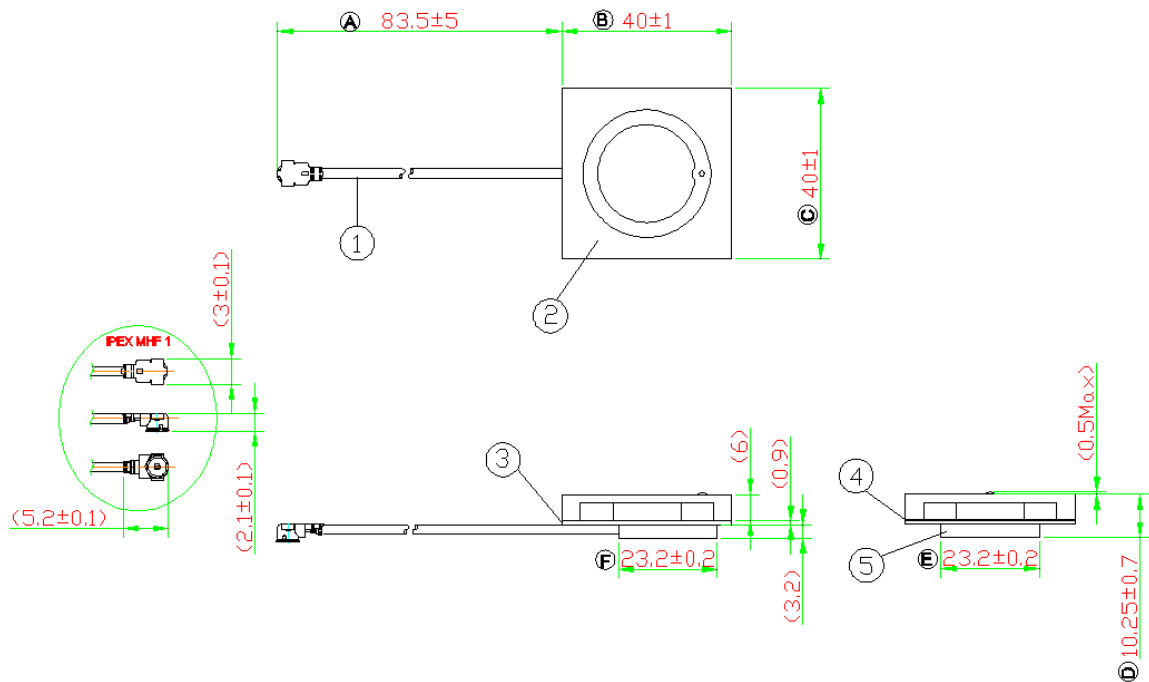
II. Low noise amplifier Specifications:

Items	Specifications		
	L1 Band		L5 Band
Navigation			
Center Frequency (MHz)	1575.42	1602	1176.45
Gain (dB)	28 \pm 3 Typ.	28 \pm 3 Typ.	28 \pm 3 Typ.
Noise Figure (dB)	3.0 Typ.	3.0 Typ.	3.0 Typ.
Input Voltage (V)	DC = 3.0 \pm 0.3		
Current (mA)	12.5 Typ. (at DC 3V)		
Impedance (Ω)	50		

Environmental Conditions	
Operation & Storage Temperature ($^{\circ}$ C)	-40 ~ +85
Storage Temperature ($^{\circ}$ C) (Antenna with packing sealed)	-5 ~ +40
Relative Humidity	10 ~ 70 %

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III. Antenna Dimensions (unit: mm):



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NOTE:

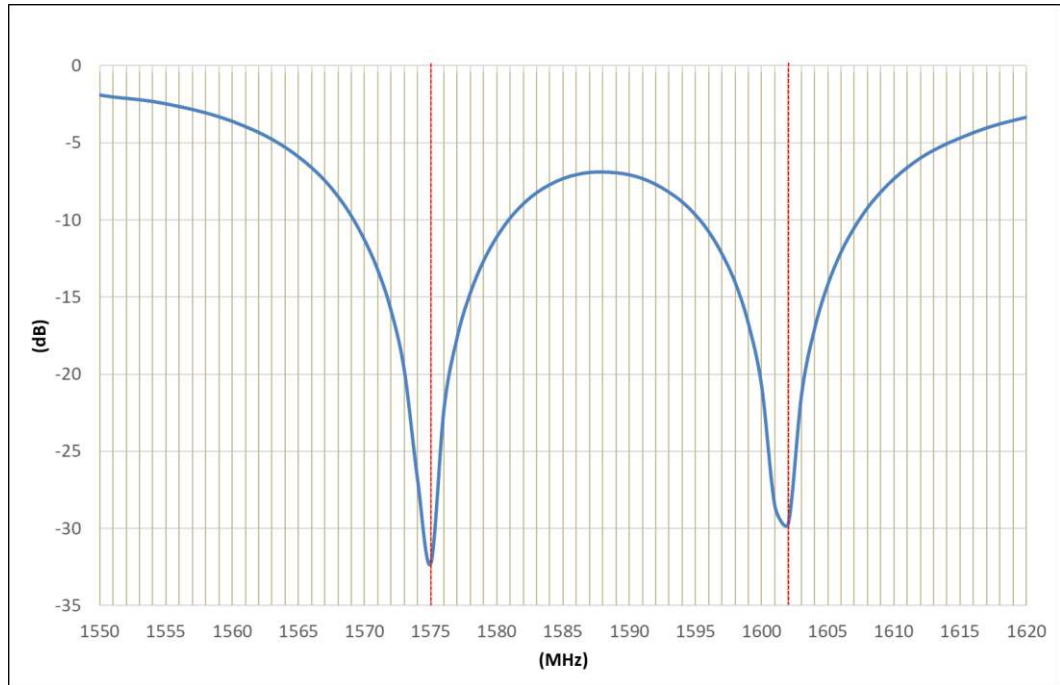
- 1.All materials are RoHS2.0 compliant.
- 2."A~F" Critical Dimensions.
- 3."()" Reference Dimensions.

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

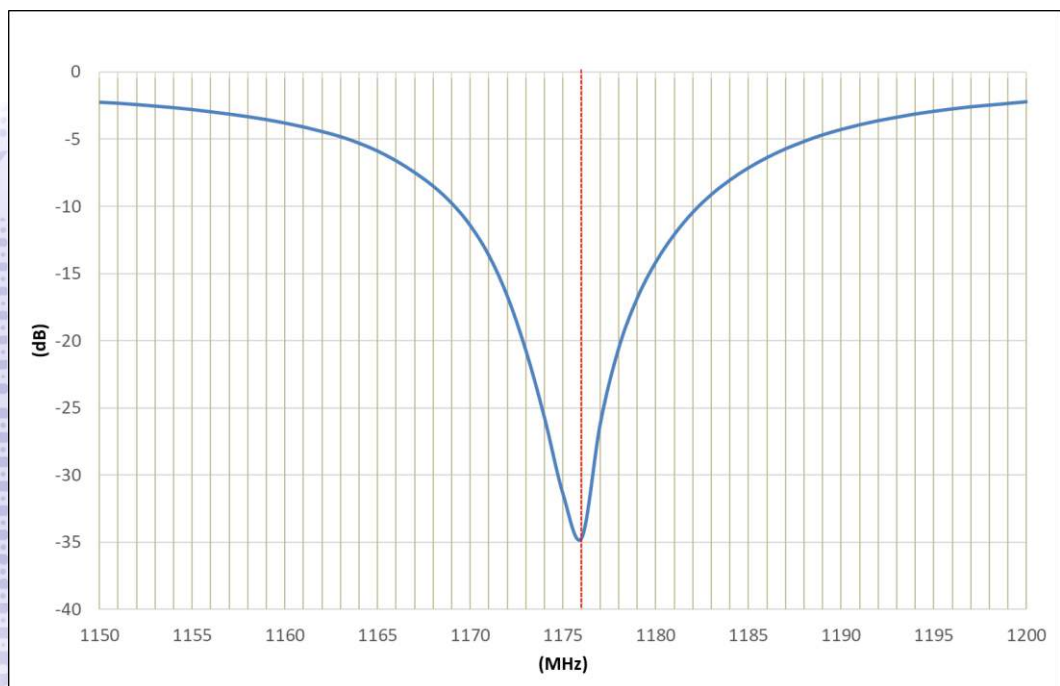
IV. Properties:

a) Return loss (dB)

L1 Band (1575.42 MHz & 1602 MHz)

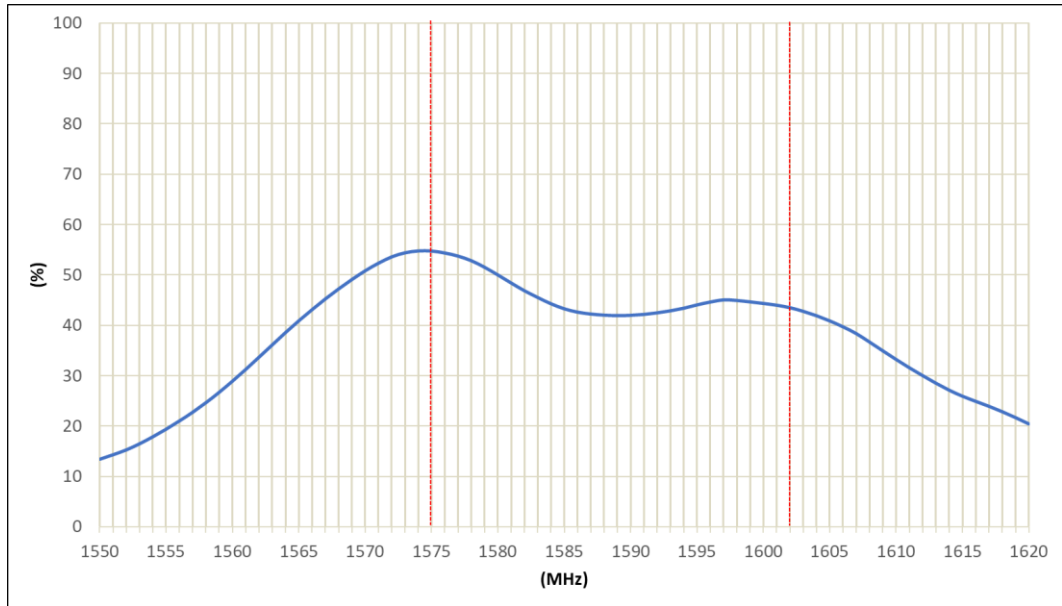


L5 Band (1176.45 MHz)



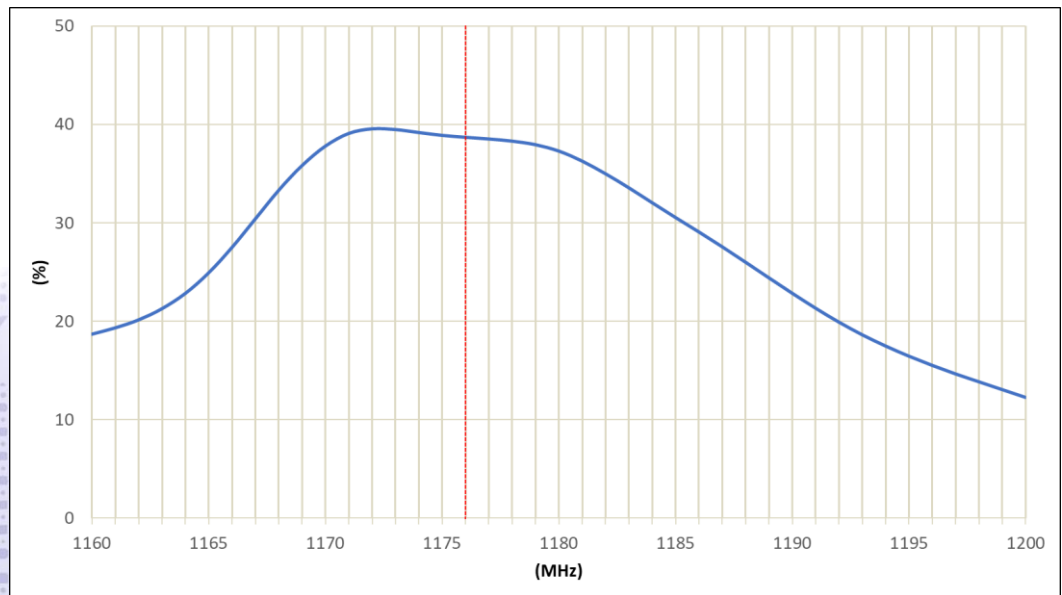
b) Efficiency (%)

L1 Band (1575.42 MHz & 1602 MHz)



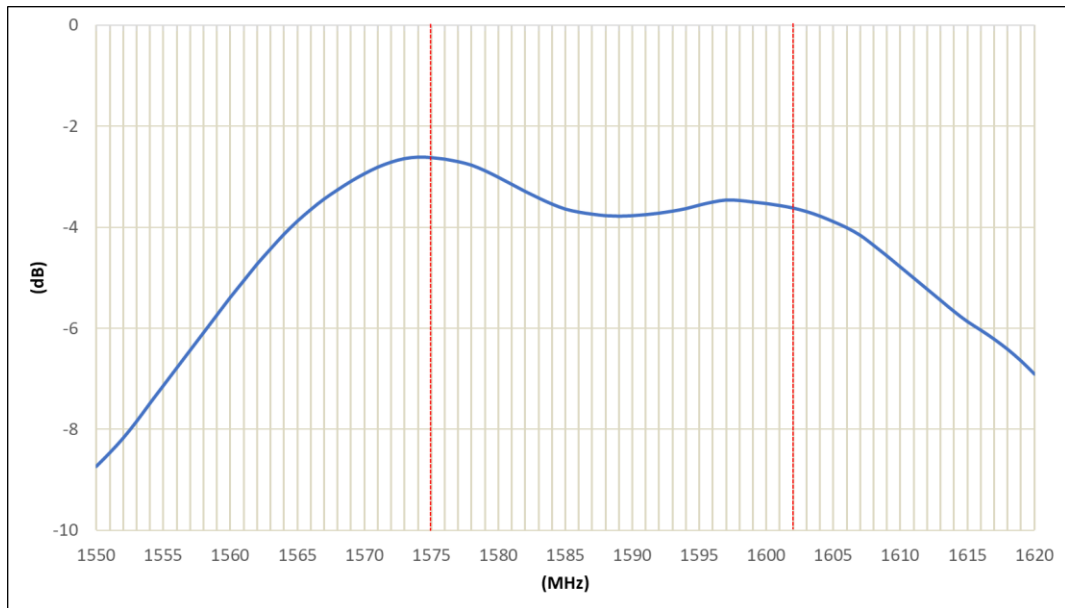
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L5 Band (1176.45 MHz)



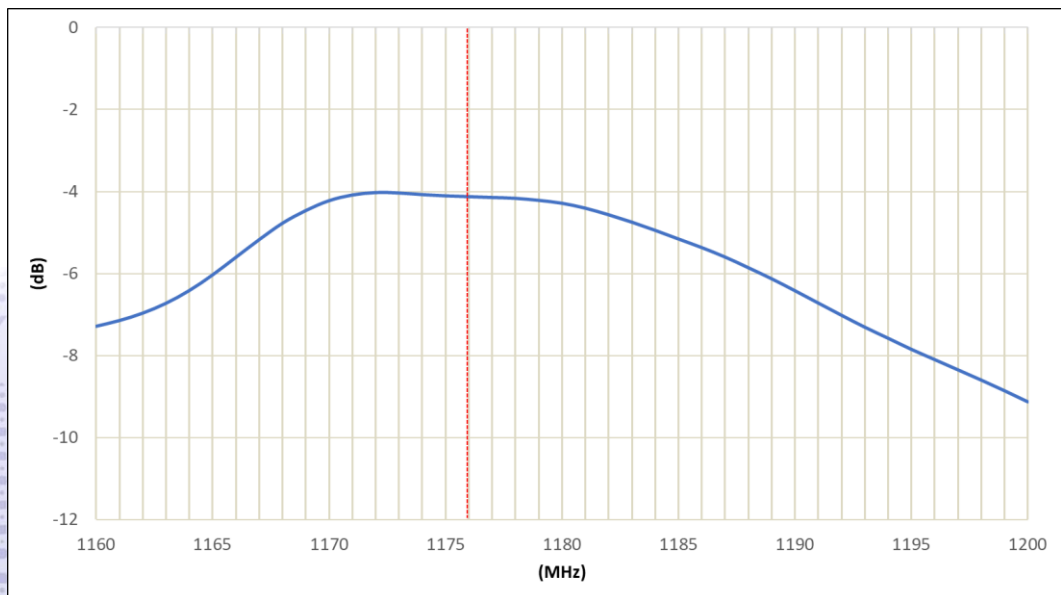
c) Average Gain (dB)

L1 Band (1575.42 MHz & 1602 MHz)



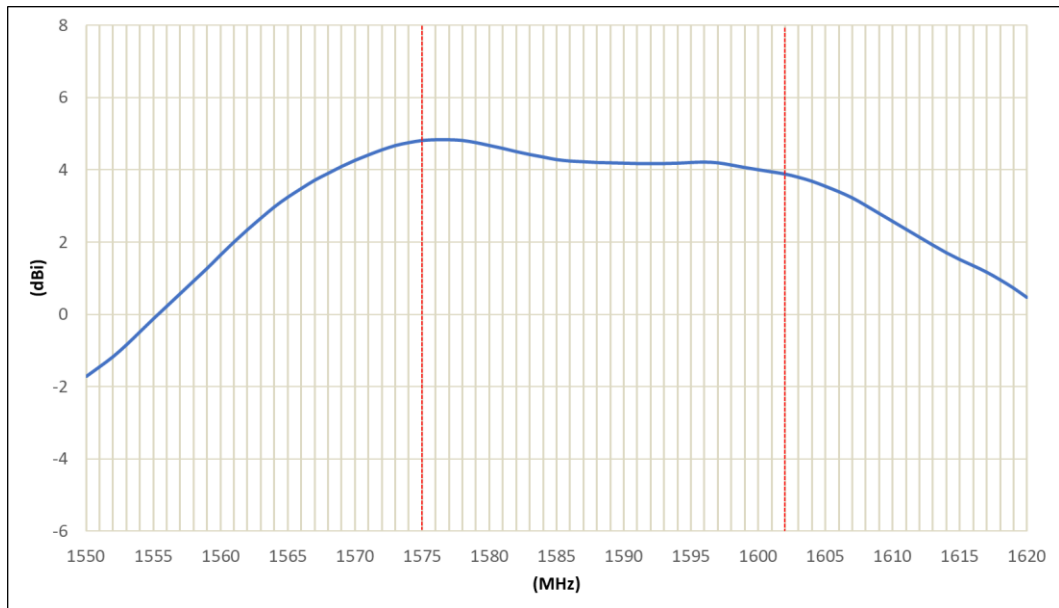
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L5 Band (1176.45 MHz)



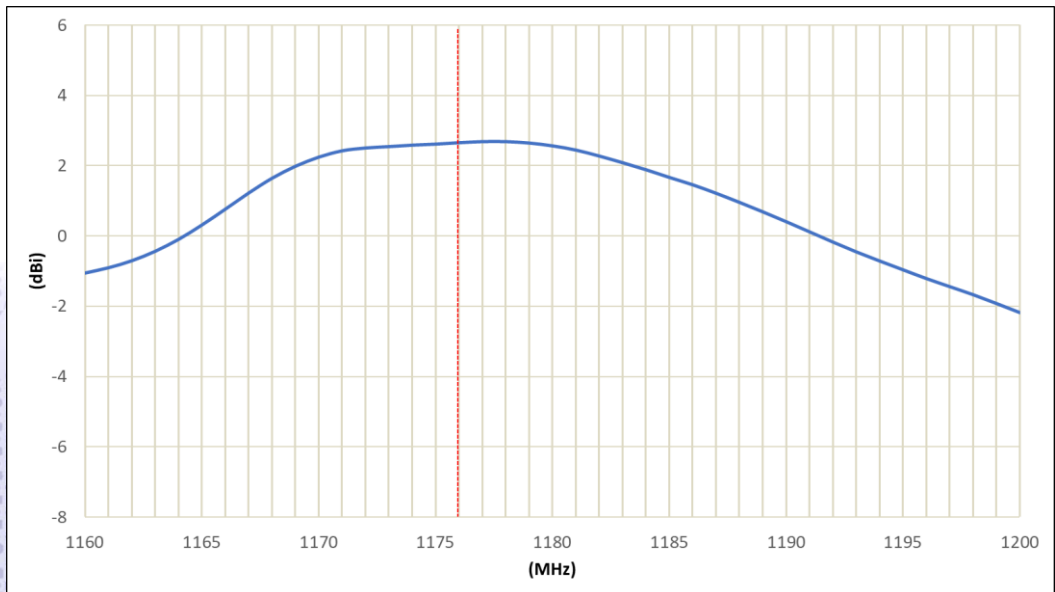
d) Peak Gain (dBi)

L1 Band (1575.42 MHz & 1602 MHz)



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L5 Band (1176.45 MHz)



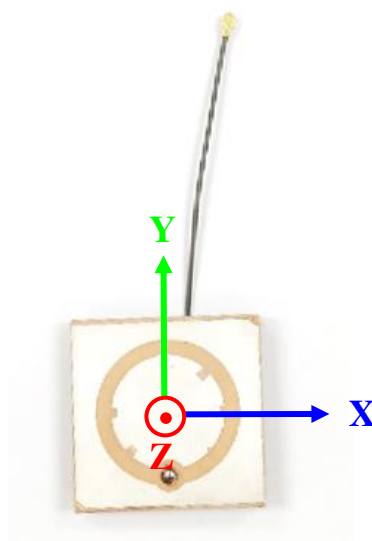
V. Antenna Radiation Pattern Measurement:

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

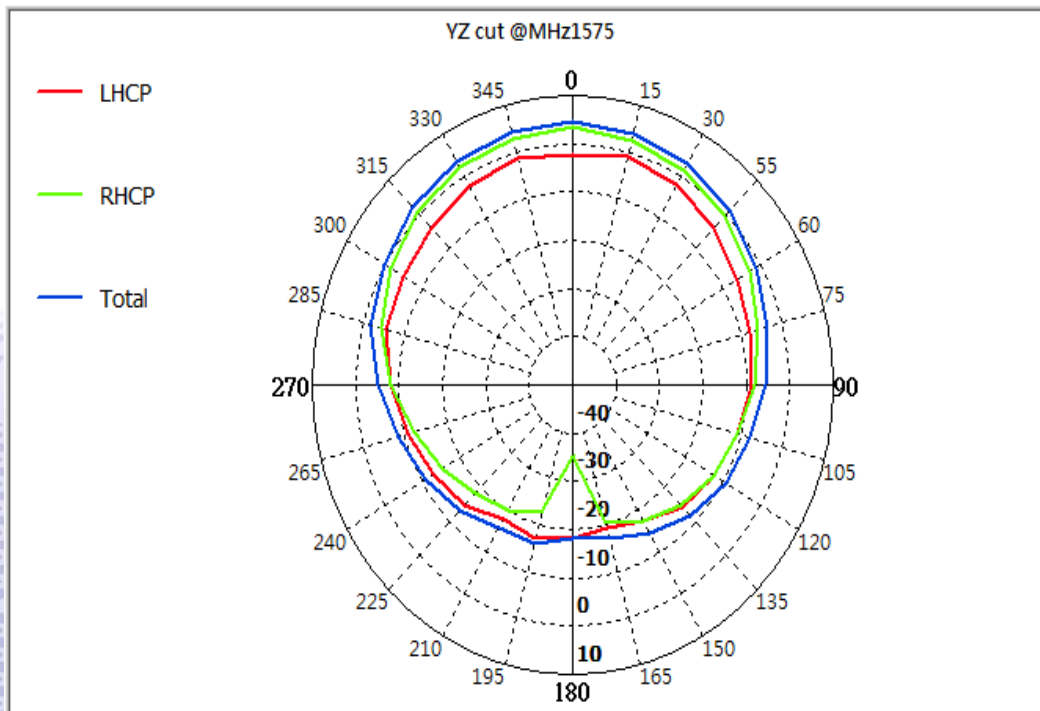
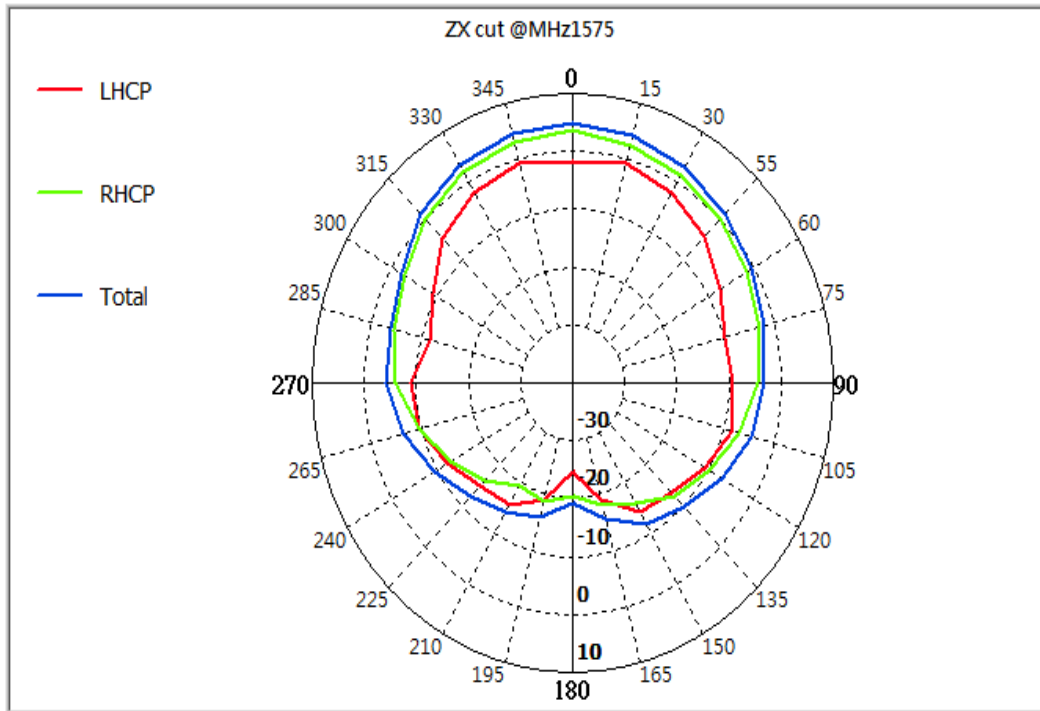


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3D Radiation Gain Pattern

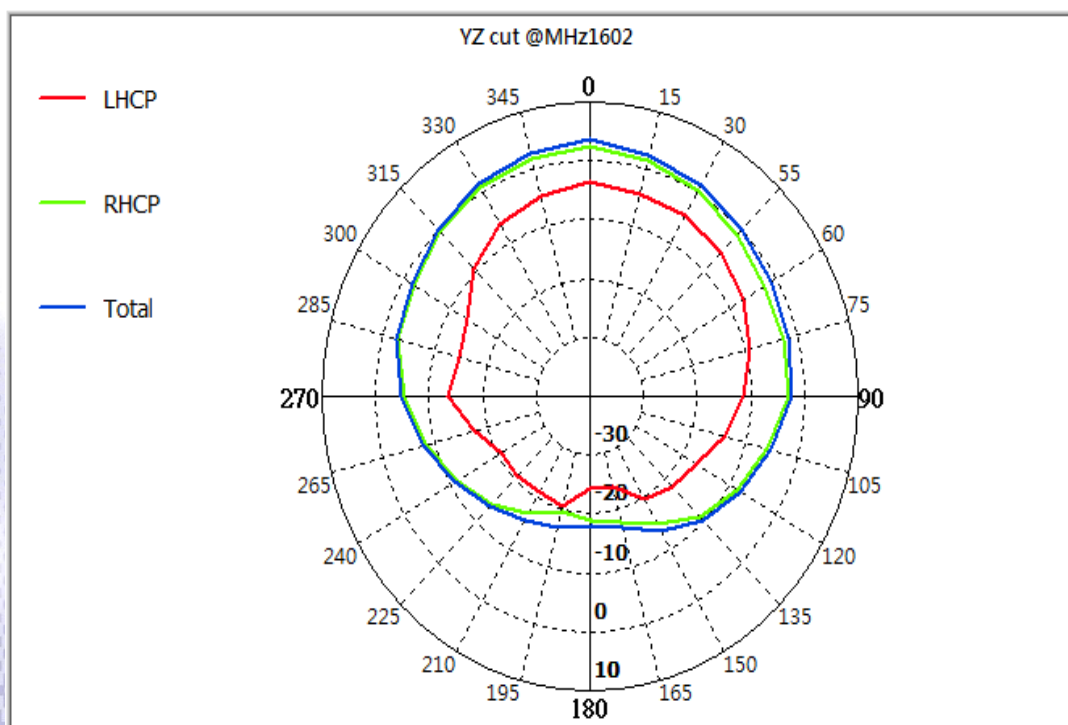
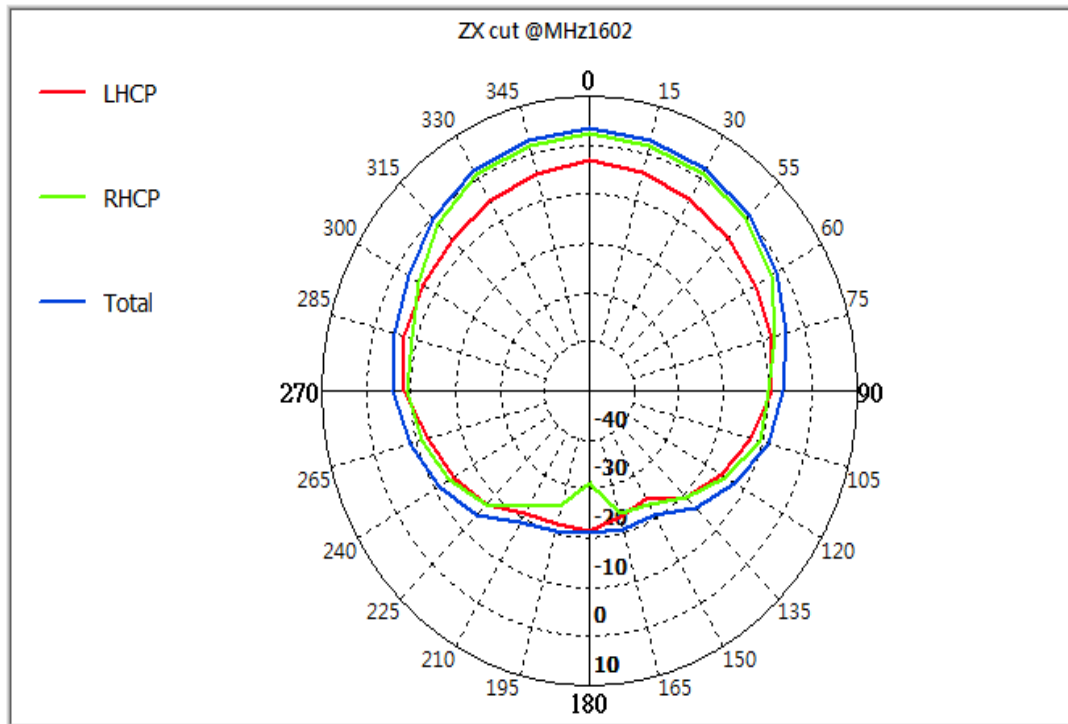


a) 1575.42 MHz (unit: dBi)



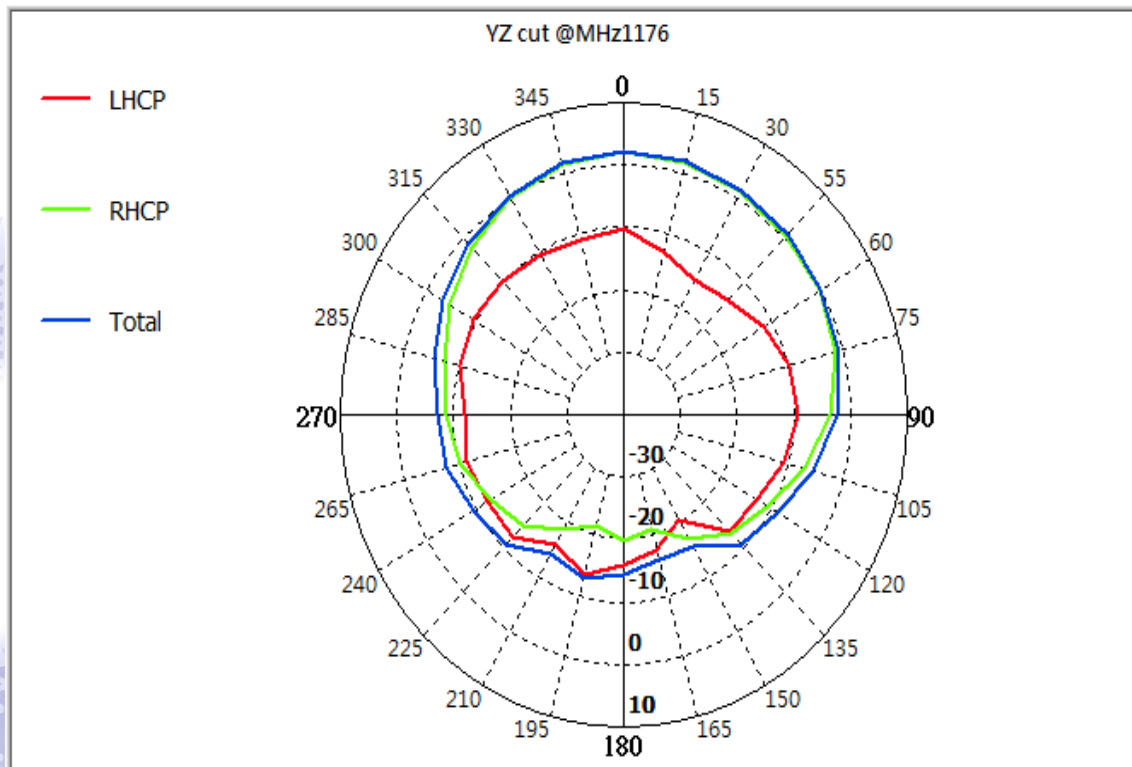
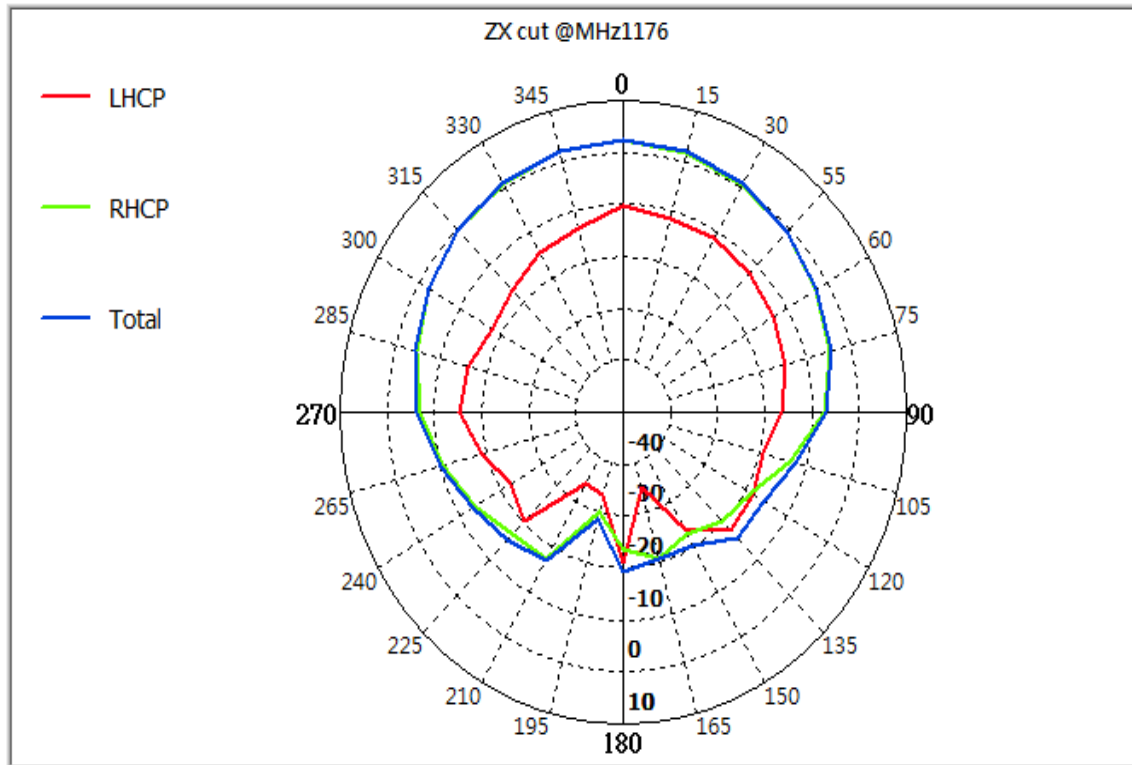
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b) 1602MHz (unit: dBi)



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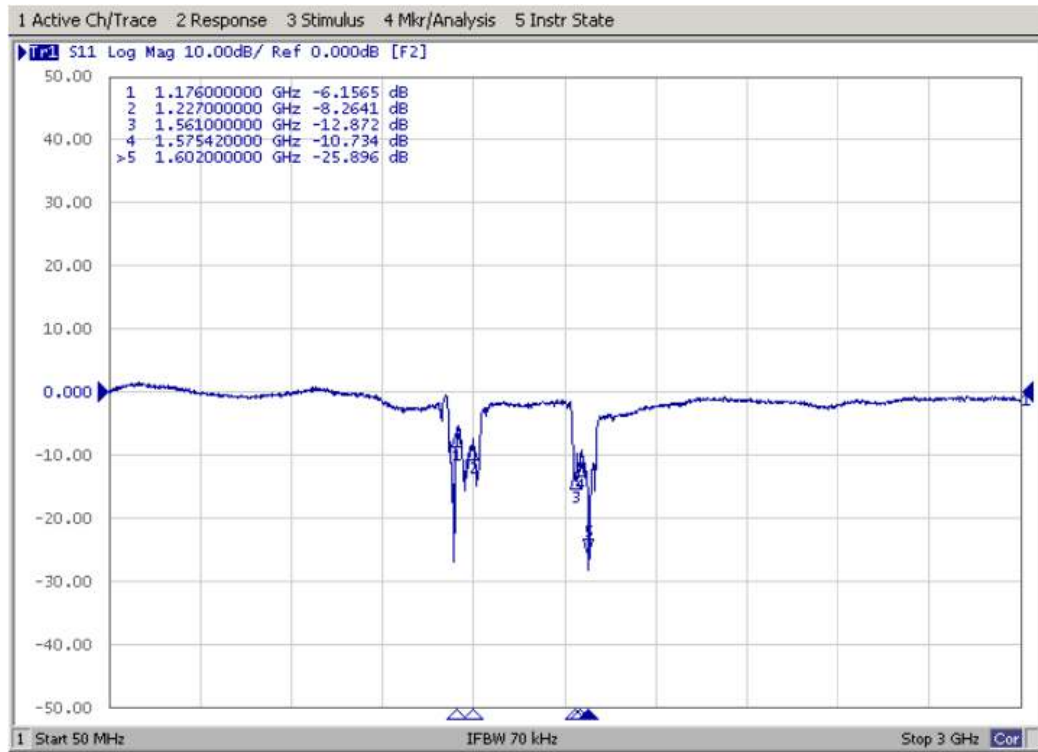
c) 1176.45 MHz (unit: dBi)



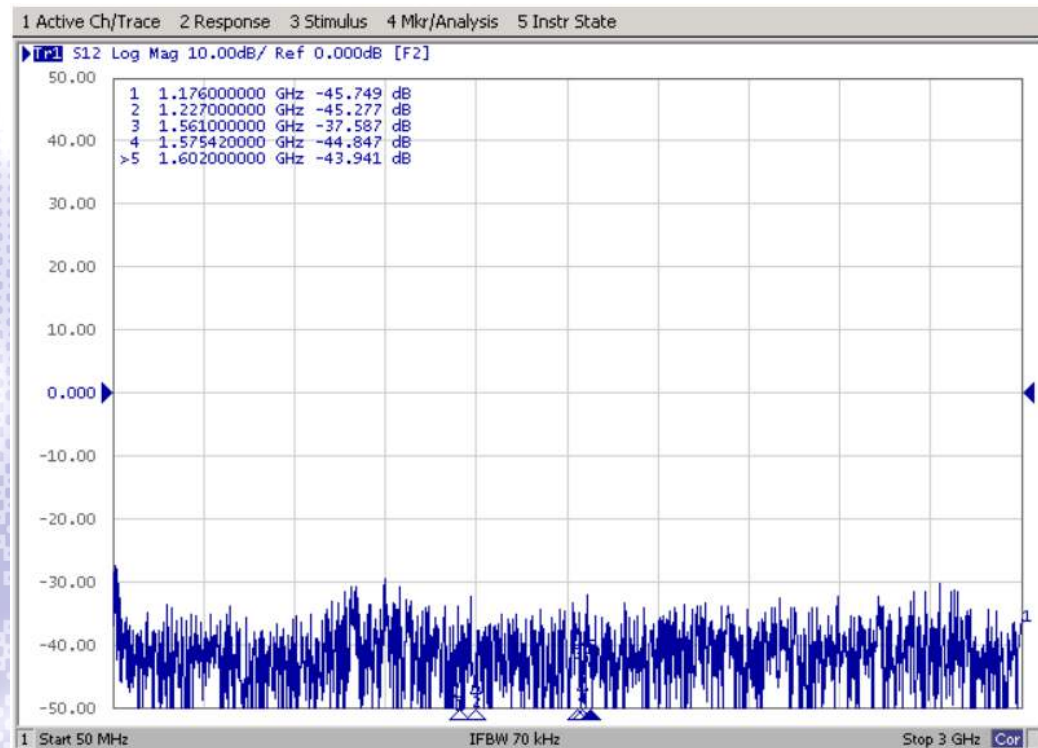
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VI. Low noise amplifier (LNA):

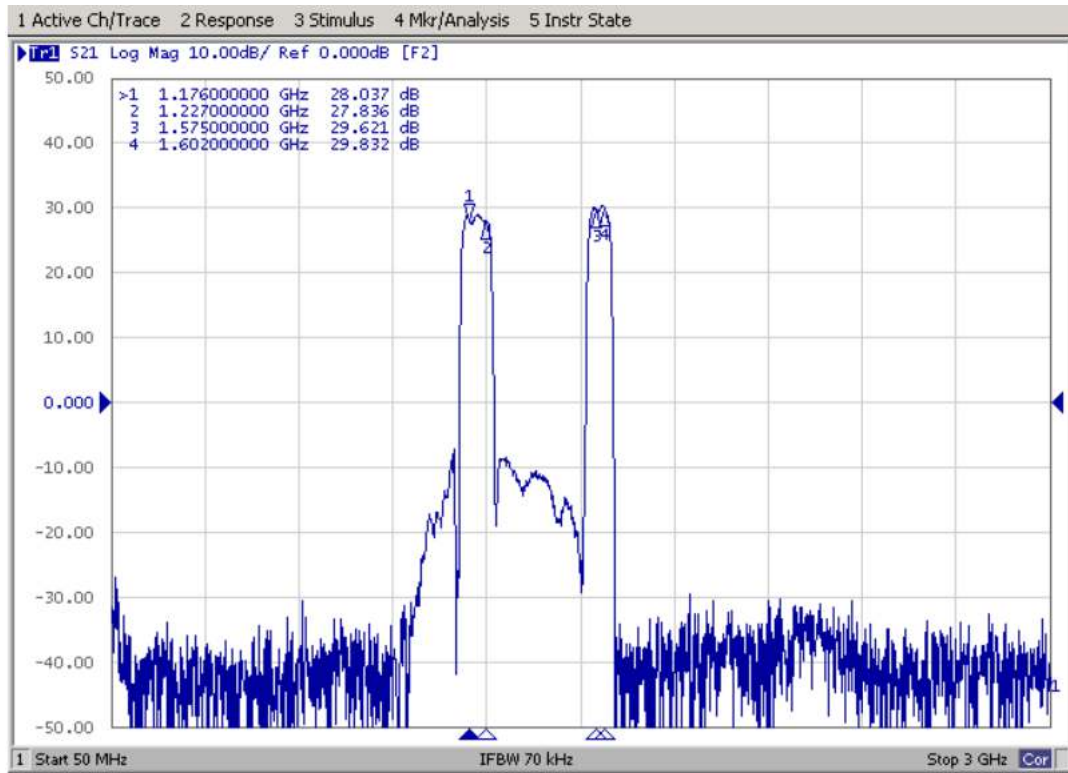
a) S11: (The input power of network analyzer is -40dBm)



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

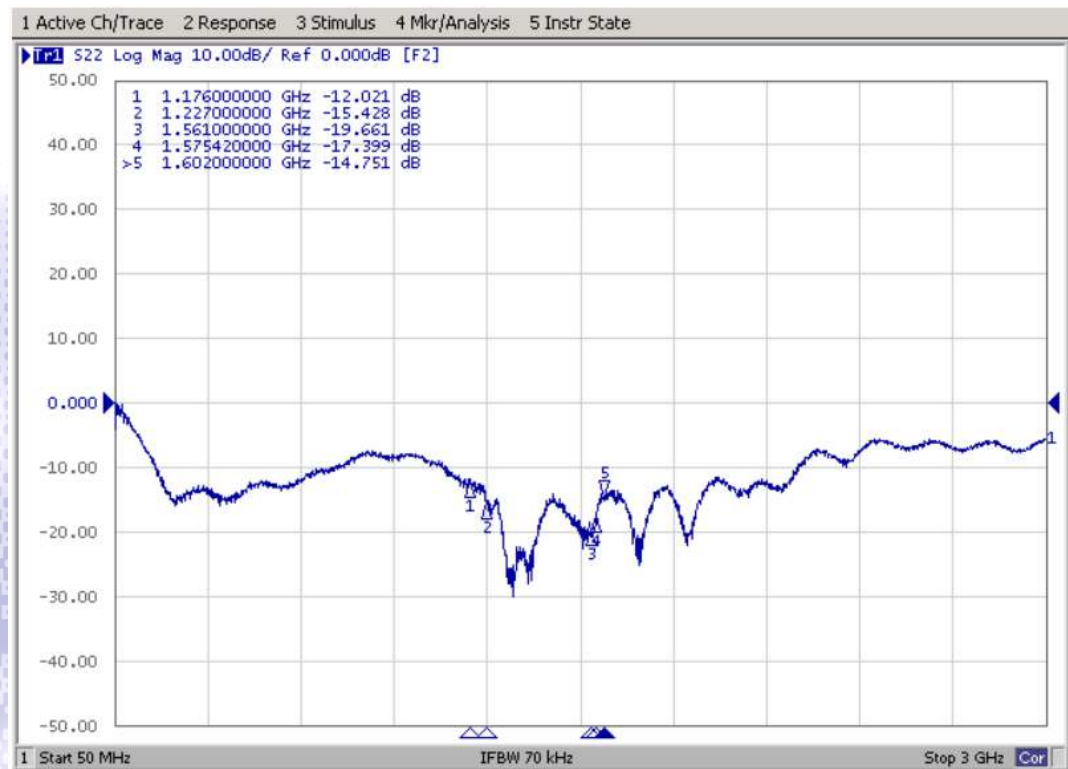


c) S21: (The input power of network analyzer is -40dBm)

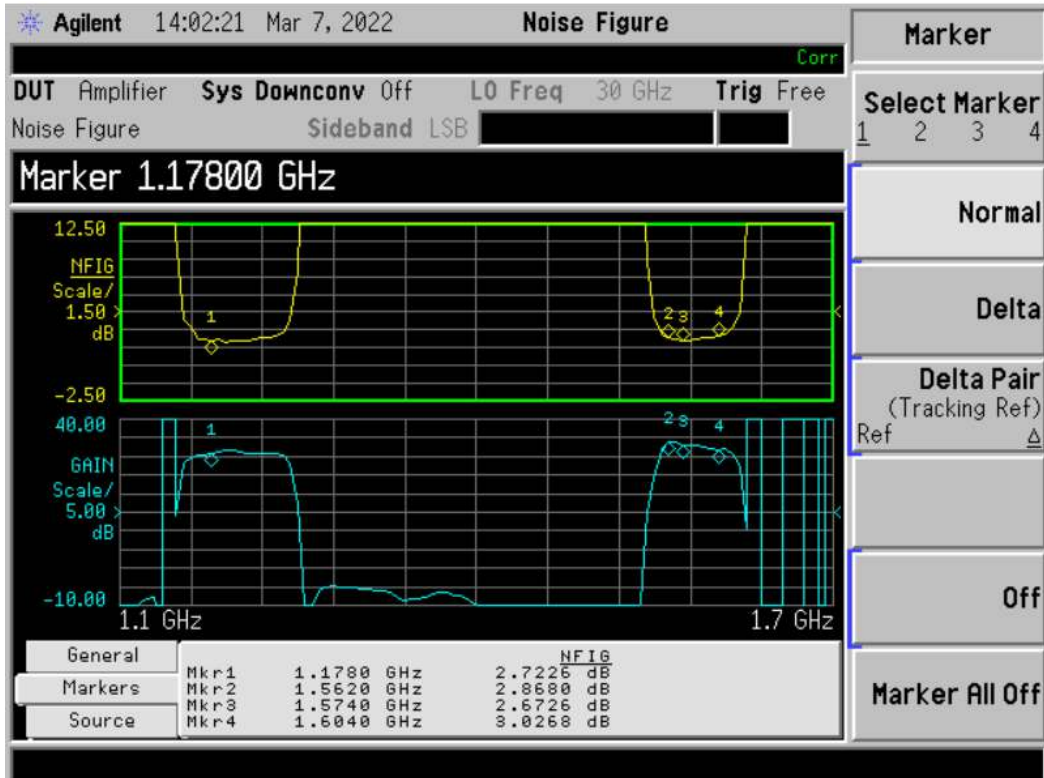


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d) S22: (The input power of network analyzer is -40dBm)






e) N.F(Noise Figure)



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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.