NGPM1818PU1R176G3AF

L1 + L5 High Precision Patch Antenna

9001:2015 CERTIFIED

ROHS/REACH COMPLIANT HALOGEN FREE

NIC Components Corp.

Features

- Supporting: (L1+L5) GPS/BDS/Galileo/QZSS/IRNSS/GLONASS
- 18x18 Dimensions
- Stable and reliable performance
- RoHs Complaint

Applications

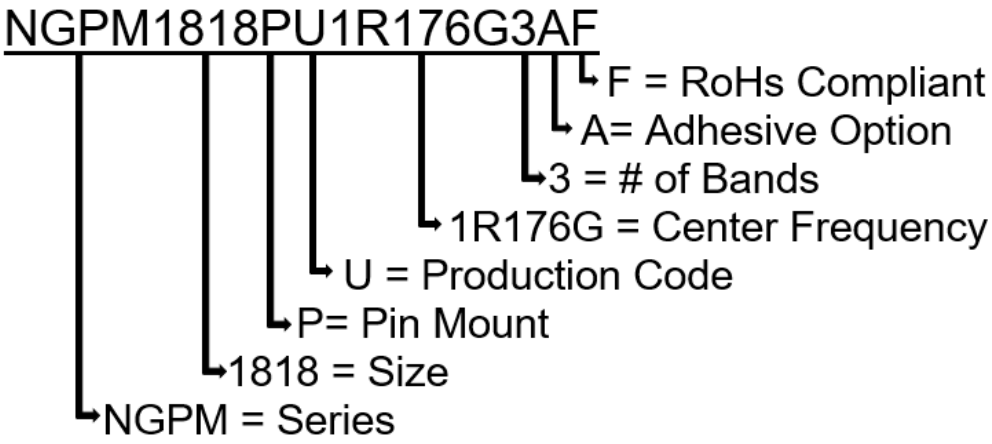
- Automotive telematics
- Safety of life transportation
- Marine
- Navigation

Specifications

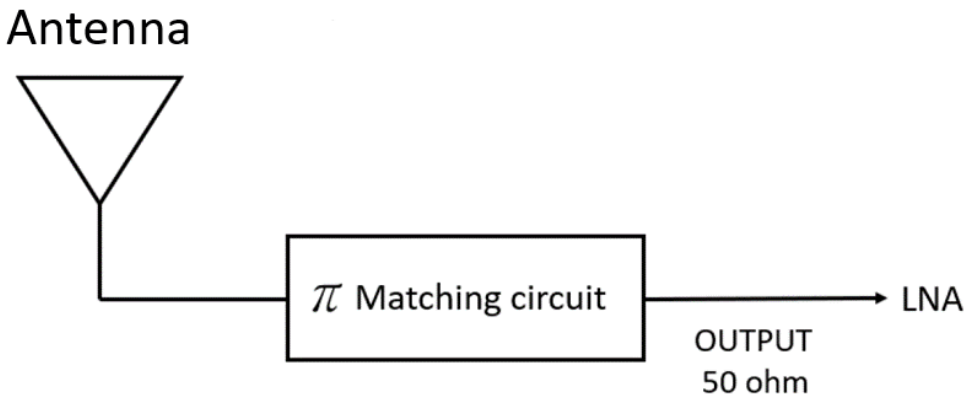
Electrical			
Frequency Bands	GPS L1 Galileo E1 BDS B1 QZSS L1	GLONASS G1	GPS L5 Galileo E5a BDS B2 QZSS L5 IRNSS L5
Frequency Range	1575.42 MHz	1602 MHz	1176.5 MHz
Peak Gain (typ.)	3.1 dBi	2.0 dBi	-0.8 dBi
Average Gain (typ.)	-3.6 dB	-4.5 dB	-6.0 dB
Efficiency (typ.)	44 %	36%	24%
Return Loss (typ.)	<-10 dB typ.		
Polarization	RHCP		
Impedance	50Ω		
Environmental			
Operating Temperature	-40°C~+85°C		
Storage Temperature (Antenna with packing sealed)	-5°C~+40°C		
Relative Humidity	10 ~ 70 %		
RoHS Compliant	Yes		

***= The above specification on based on testing conditions. Actual results may vary. Please contact NIC for more details**

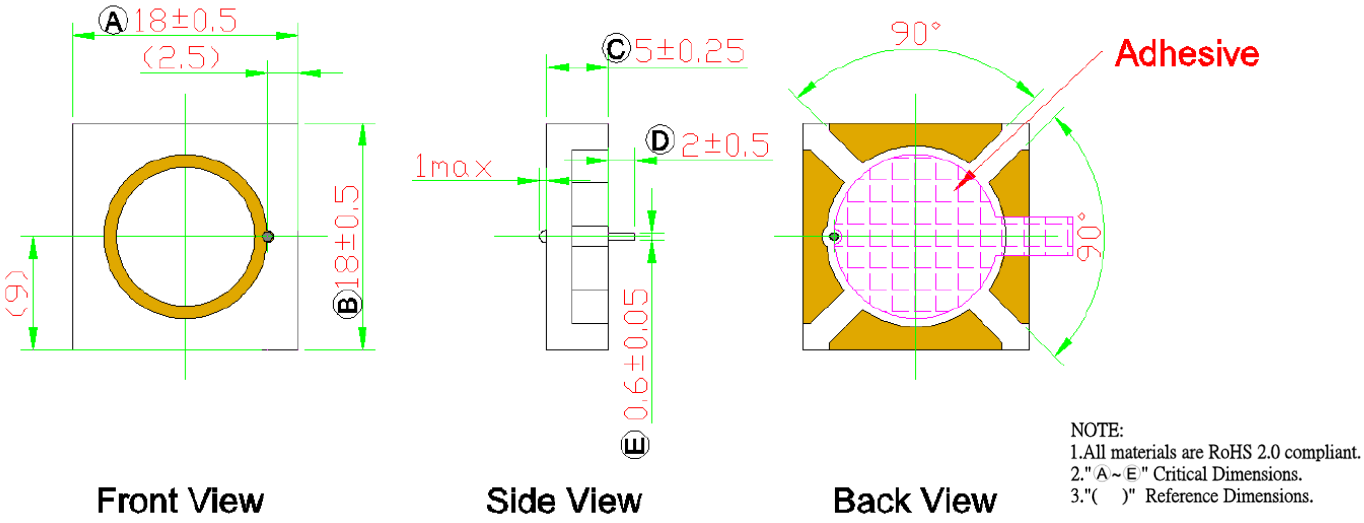
Part number Breakdown



Block Diagram



Dimensional Drawing



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

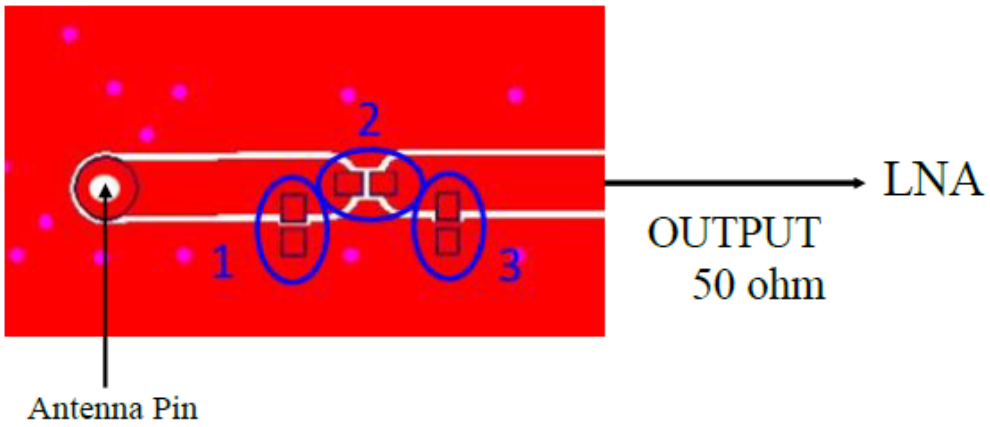
Dimensions (mm) & Mechanical

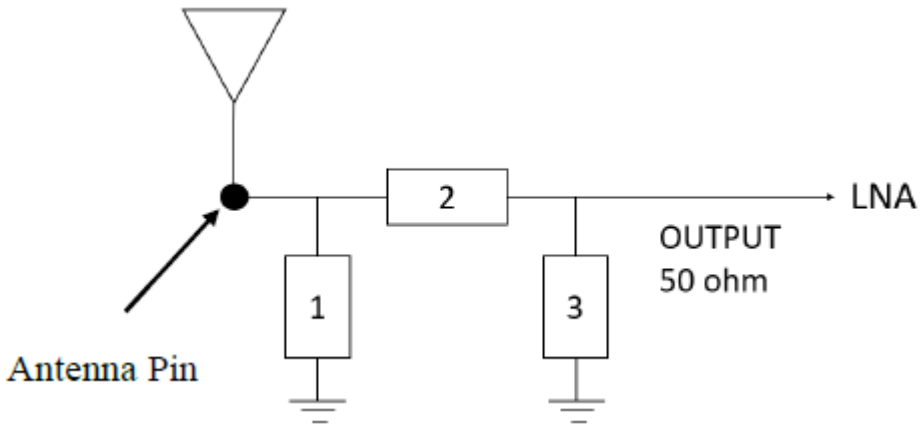
Body Length	18 ± 0.5
Width	18 ±0.5
Thickness	5 ± 0.25
Pin Diameter	0.6 ±0.05
Mounting Method	Pin
Material	Ceramic
Ground Plane	100 x 100 mm

Matching Circuit

The following are recommended values of matching and tuning components, with a standard 100mm x 100mm evaluation Board*

* = These are typical reference values

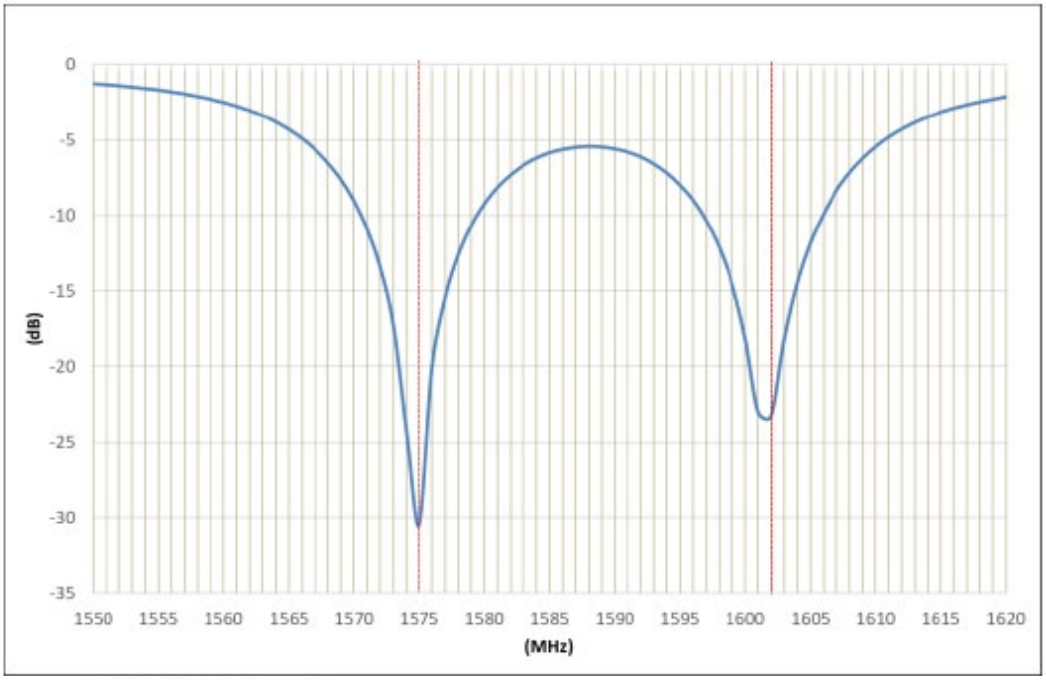




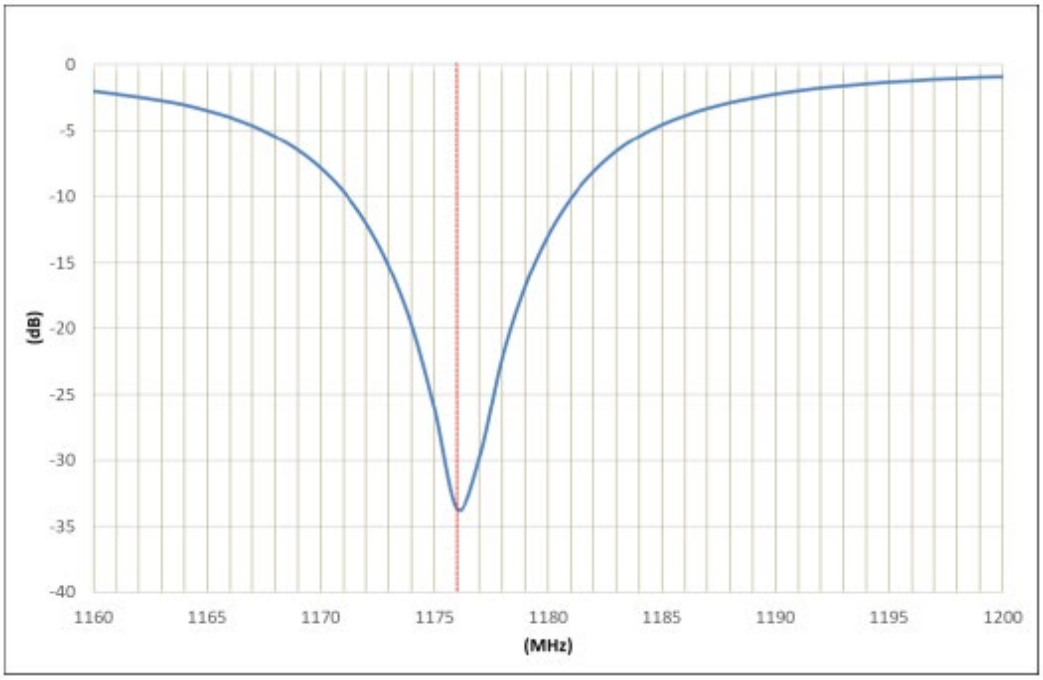
System Matching Circuit Component

Location	Description	Tolerance	NIC Part Number
1	N/A	N/A	N/A
2	0Ω, (0402)	-	NRC04Z0TRF
3	N/A	N/A	N/A

Return loss (dB)
GNSS L1 Band

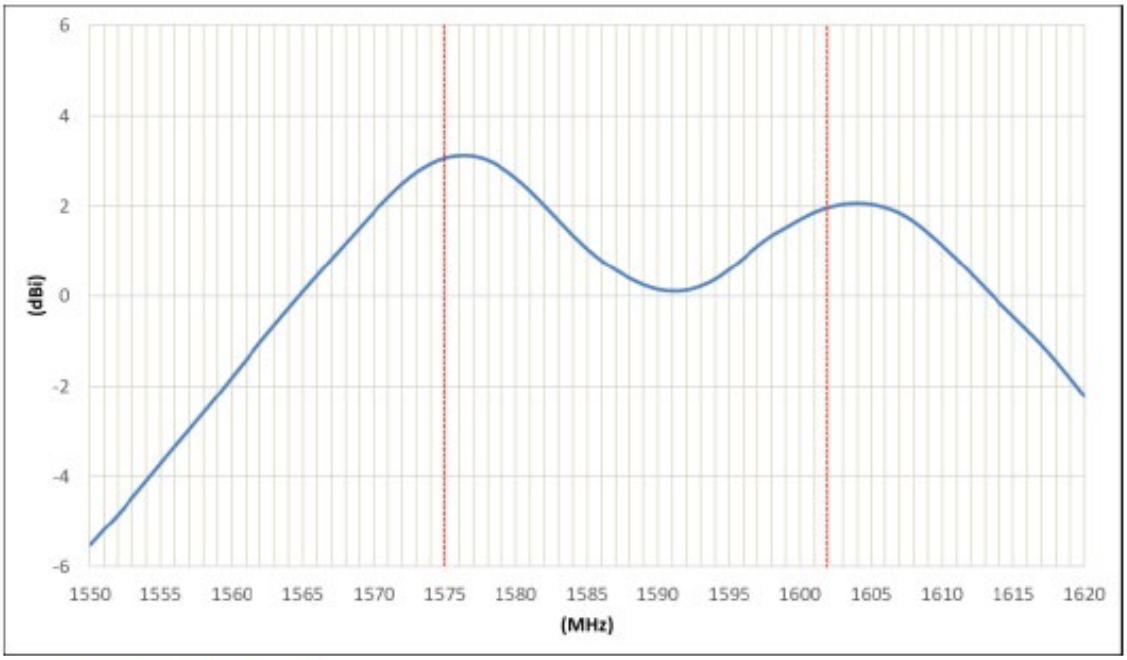


GNSS L5 Band

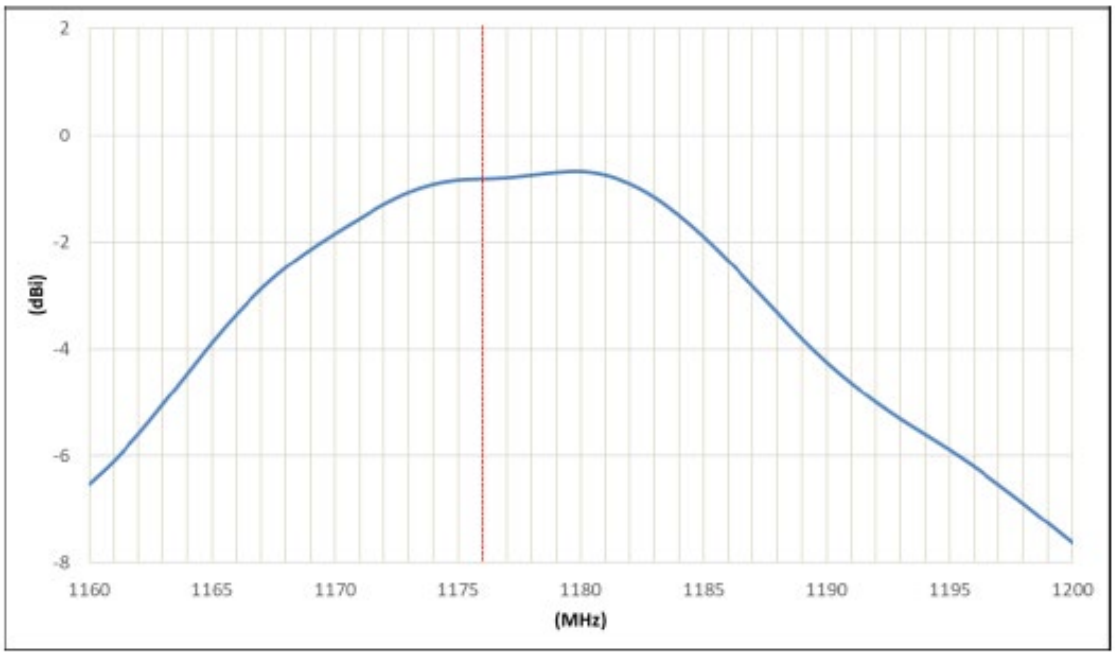


Peak Gain (dBi)

GNSS L1 Band

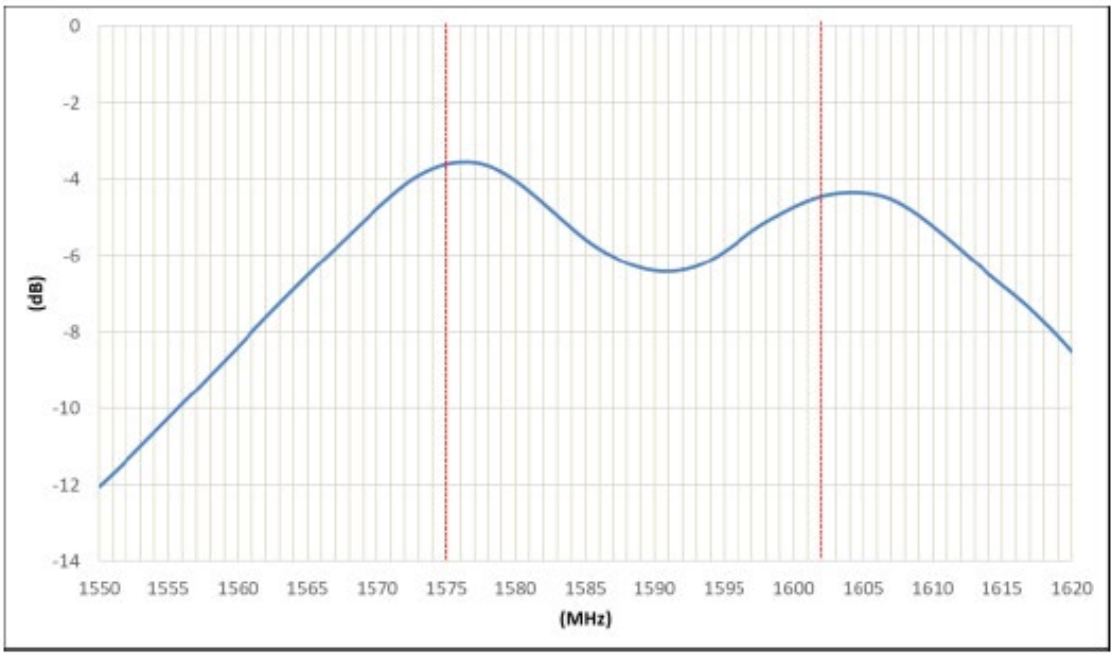


GNSS L5 Band

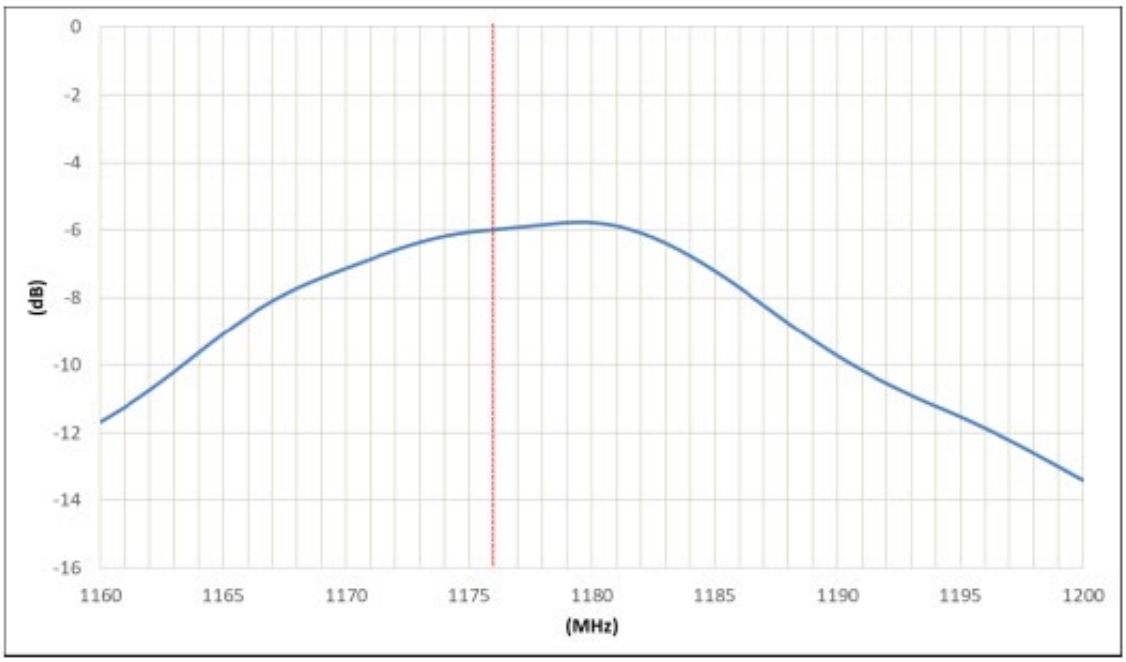


Average Gain(dB)

GNSS L1 Band

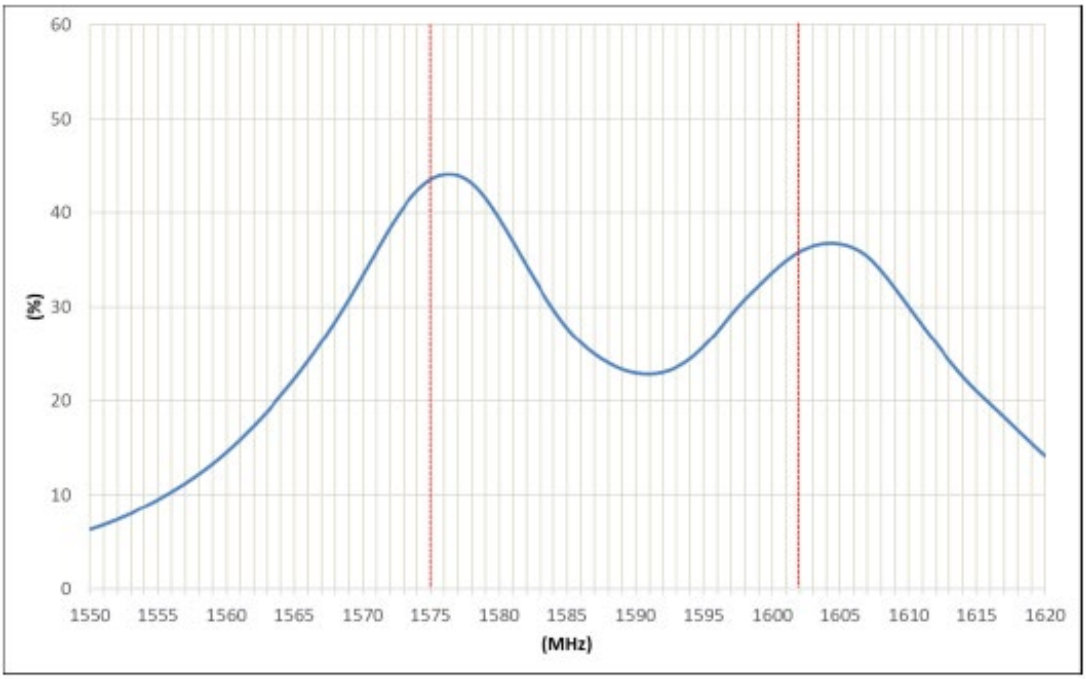


GNSS L5 Band

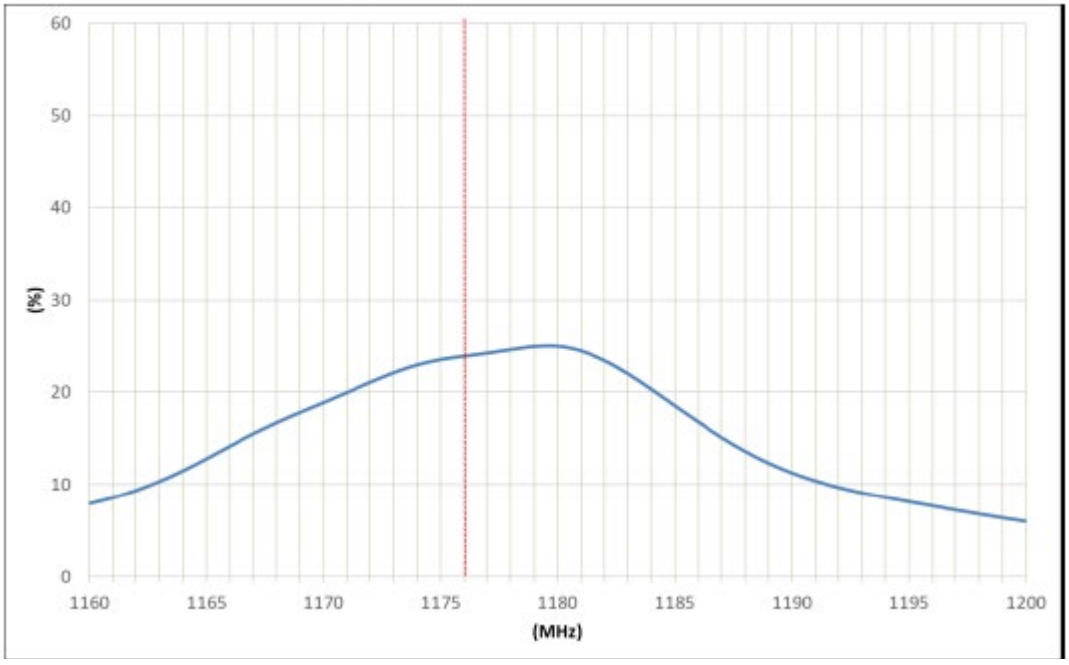


Efficiency (%)

GNSS L1 Band

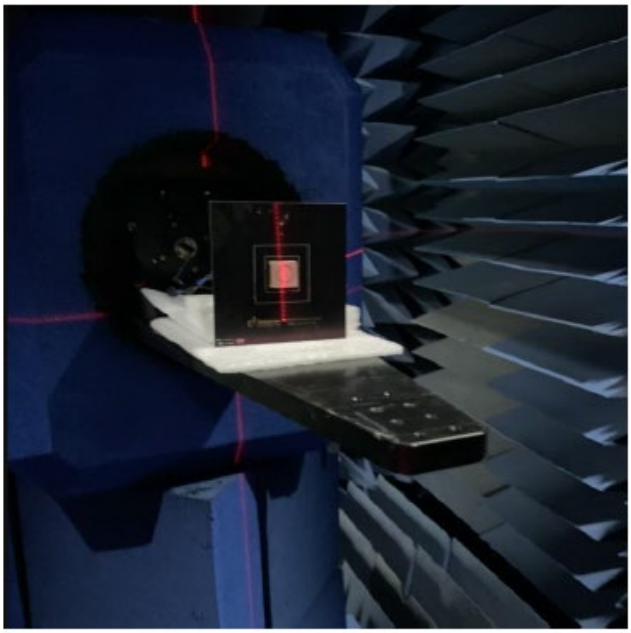


GNSS L5 Band

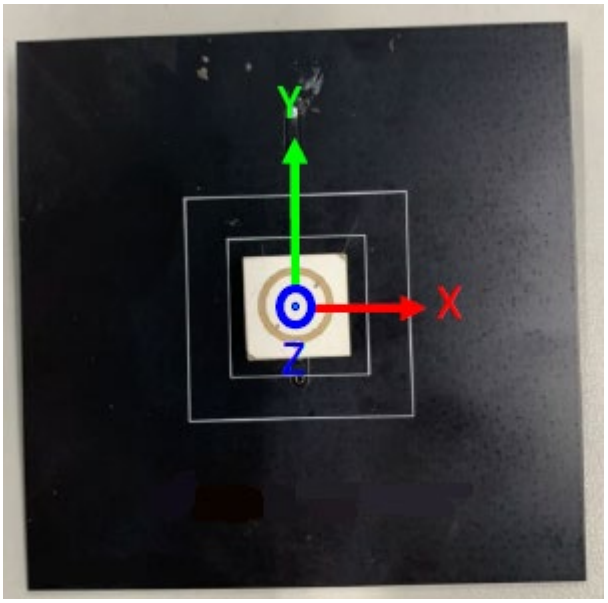


Antenna Radiation Pattern Measurement:

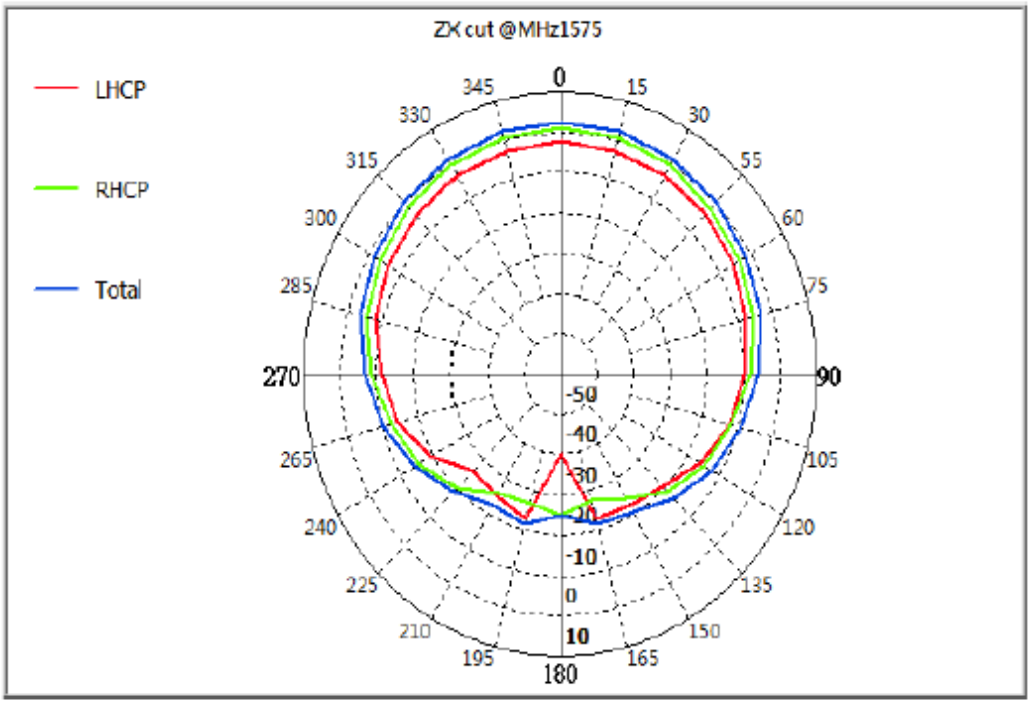
The antenna radiation patterns are measured in a 3D Anechoic Chamber. The measurement setup is as show below.

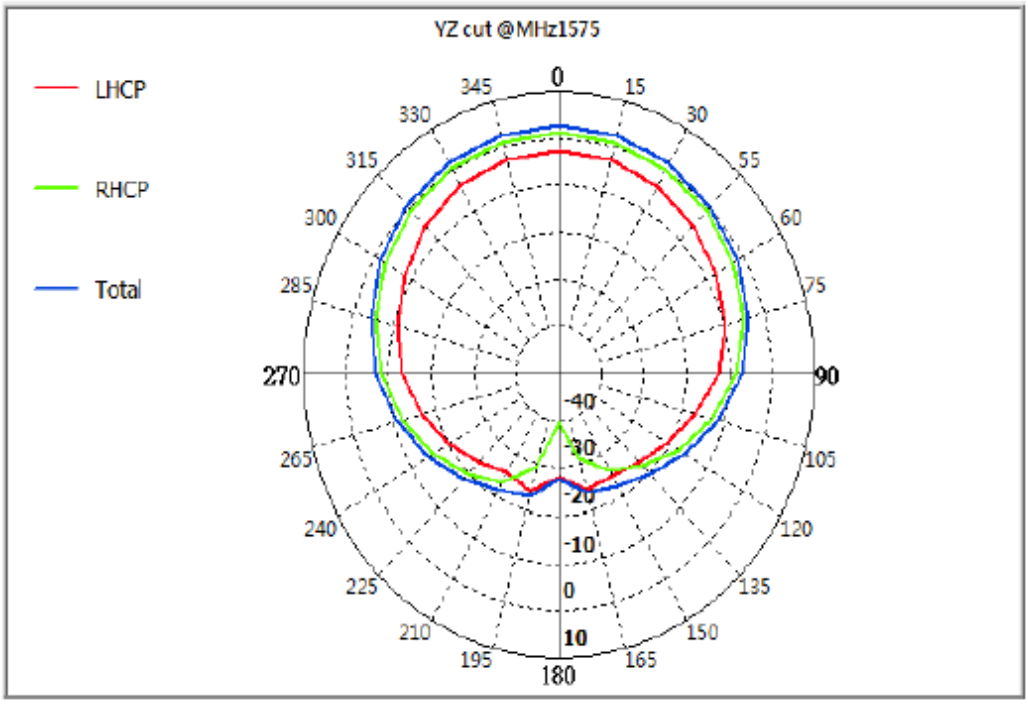


2D Radiation Gain Pattern

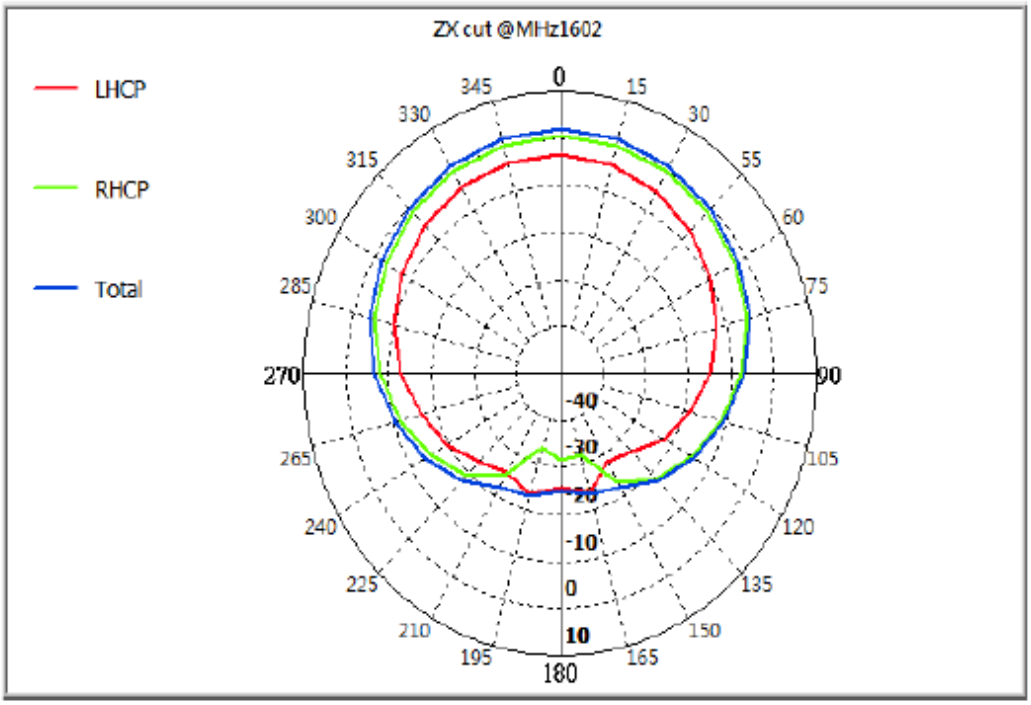


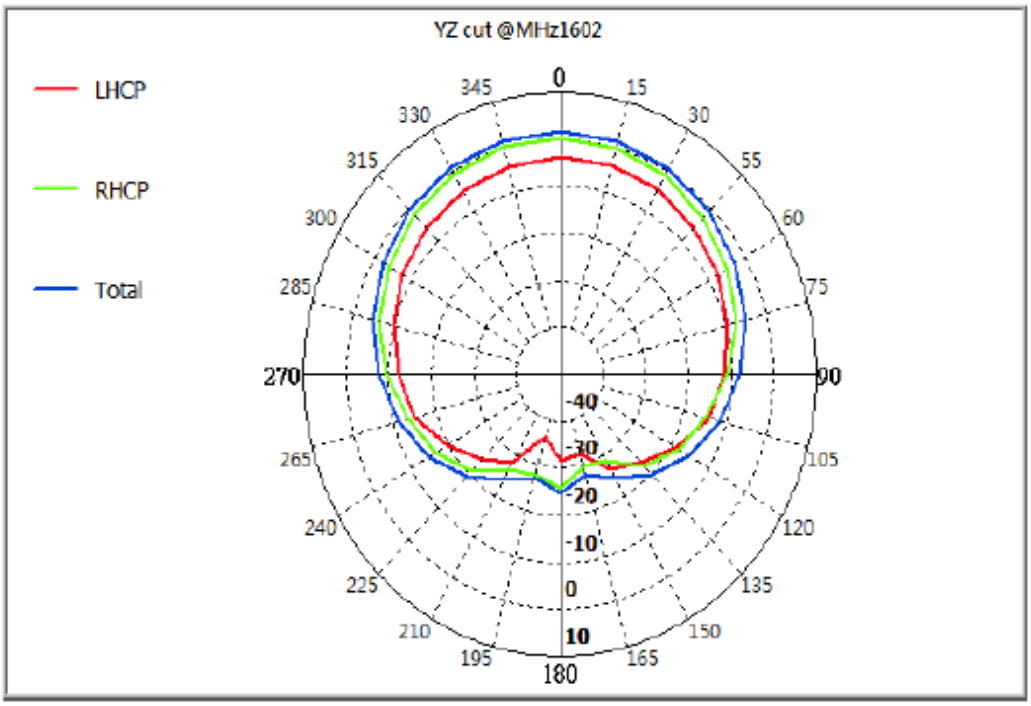
GNSS L1 Band @1575.42MHz (unit: dBi)



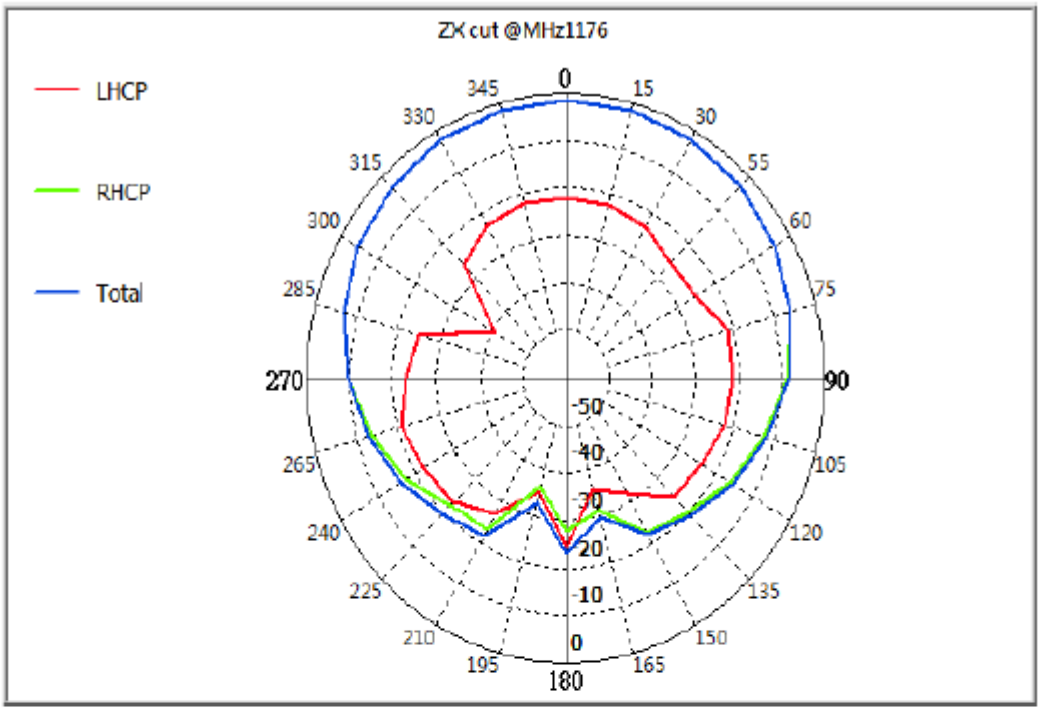


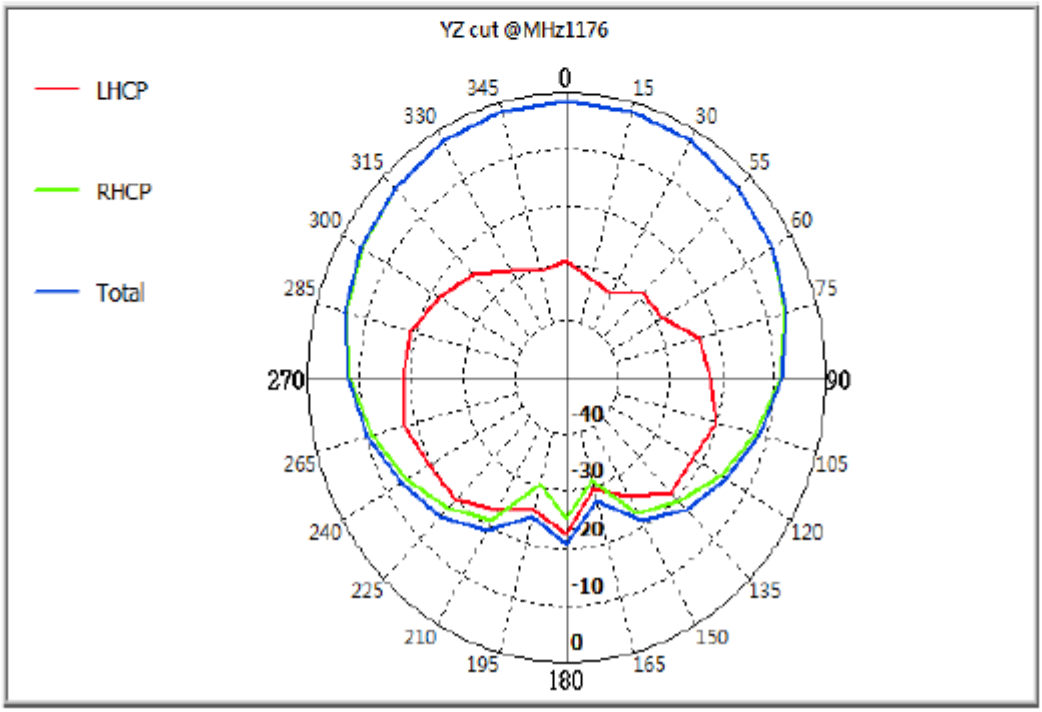
GNSS L1 Band @1602MHz (unit: dBi)





GNSS L5 Band @1176.5MHz (unit: dBi)





Packing

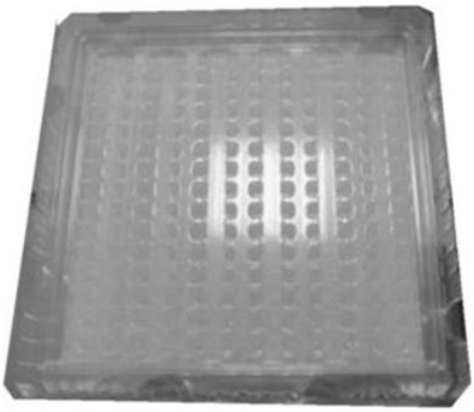
Weight:

Unit Weight: 6.7 ± 1 g

Quantity:

Each Vacuum Bag: 250 pcs
Each Outer Box: 1000 pcs

Tray: 250 Pcs



Carton: 1000 pcs