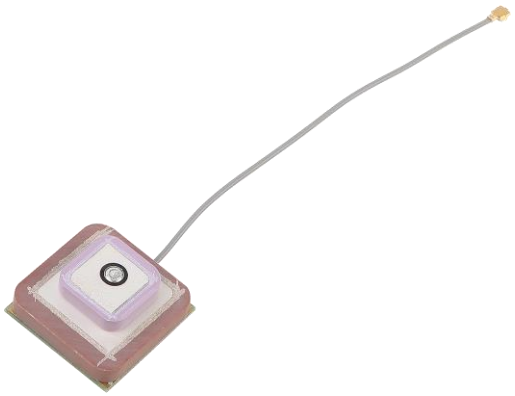
YIC



GPS L1+L2+L5 Ceramic Antenna

ATIGGBL2L52580-100

Datasheet

www.yic.com.tw

1. Product Information

1.1 Product Description

This product can be used as various L1+L2+L5 GPS navigation, clock, positioning.

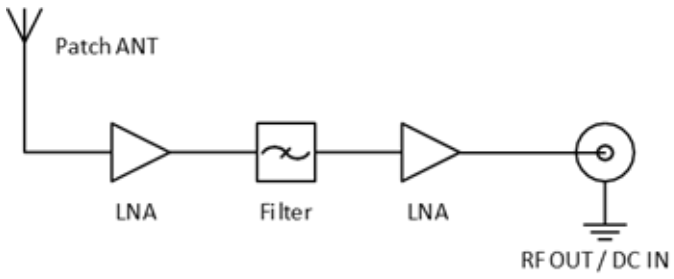
2. Part NO. : ATIGGBL2L525880-100

3. Overall Performance

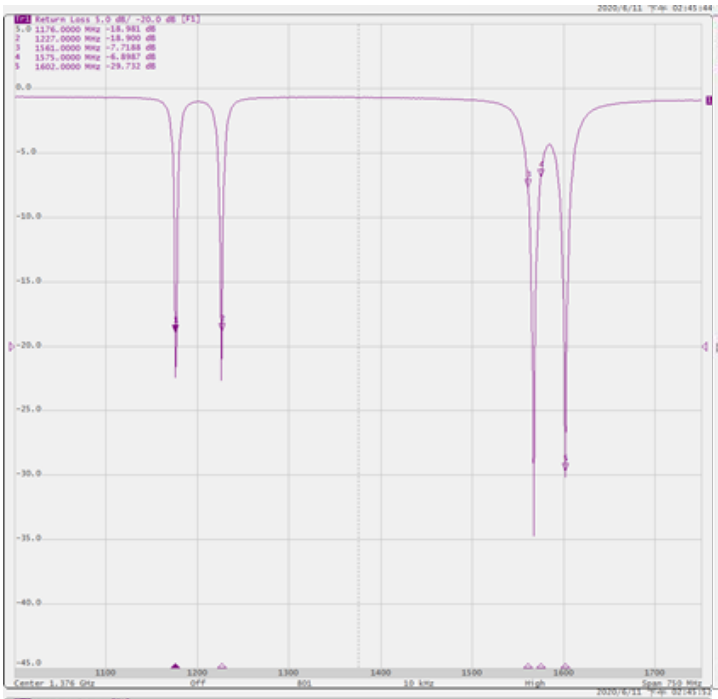
Characteristics	SPEC
Center Frequency	L1: 1561±2.046 MHz for Beidou L1: 1575±1.023 MHz for GPS/Galileo L1: 1602±8 MHz for GLONASS L2: 1227 ±10 MHz L5: 1176 ±10 MHz
Voltage	Min: 3.0 V Typ.: 3.3 V Max: 5.0V
Current	Typ: 10mA Max: 15mA
Gain	1561 MHz: 0 dBi Typ. @zenith 1575 MHz: 0.5 dBi Typ. @zenith 1602 MHz: 1.5 dBi Typ. @zenith 1227 MHz: 0 dBi Typ. @zenith 1176 MHz: -3.0 dBi Typ. @zenith
Output VSWR	2.0 max
Output Impedance	50ohm
Dimensions	25mm(L)×25mm(W)×4mm(H) & 15mm(L)×15mm(W)×4mm(H)
Cable	RF Coaxial Cable,ψ1.13 ± 0.1mm, L =100 ± 10mm
Connector	I-PEX (F)

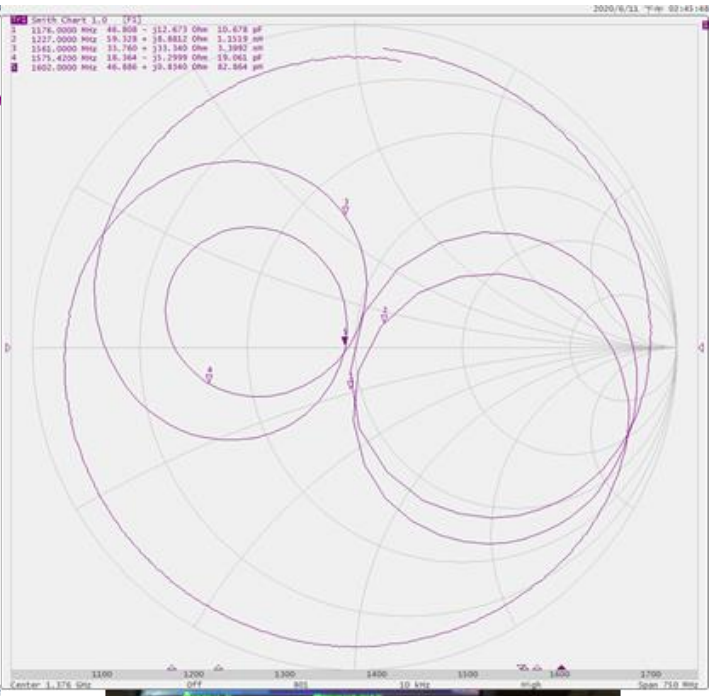
3.1 Circuit Diagram

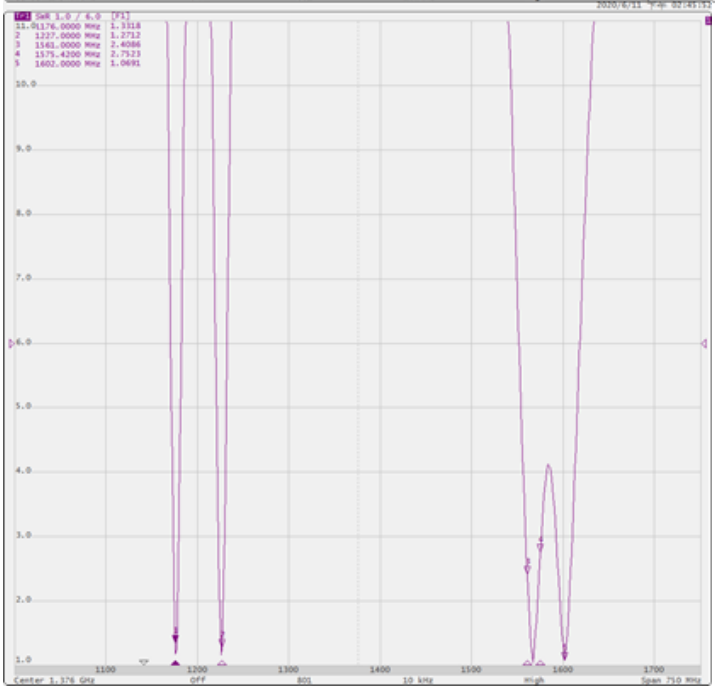
This antenna system consists of two functional blocks, the LNA portion and the patch antenna.

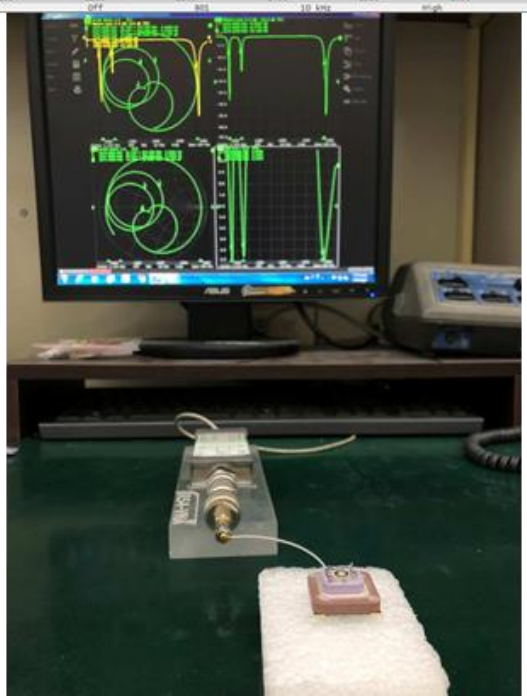


4. DA25/DA15 in GPS L1+L2+L5 Antenna Housing S11 Return Loss & Smith Chart Measure





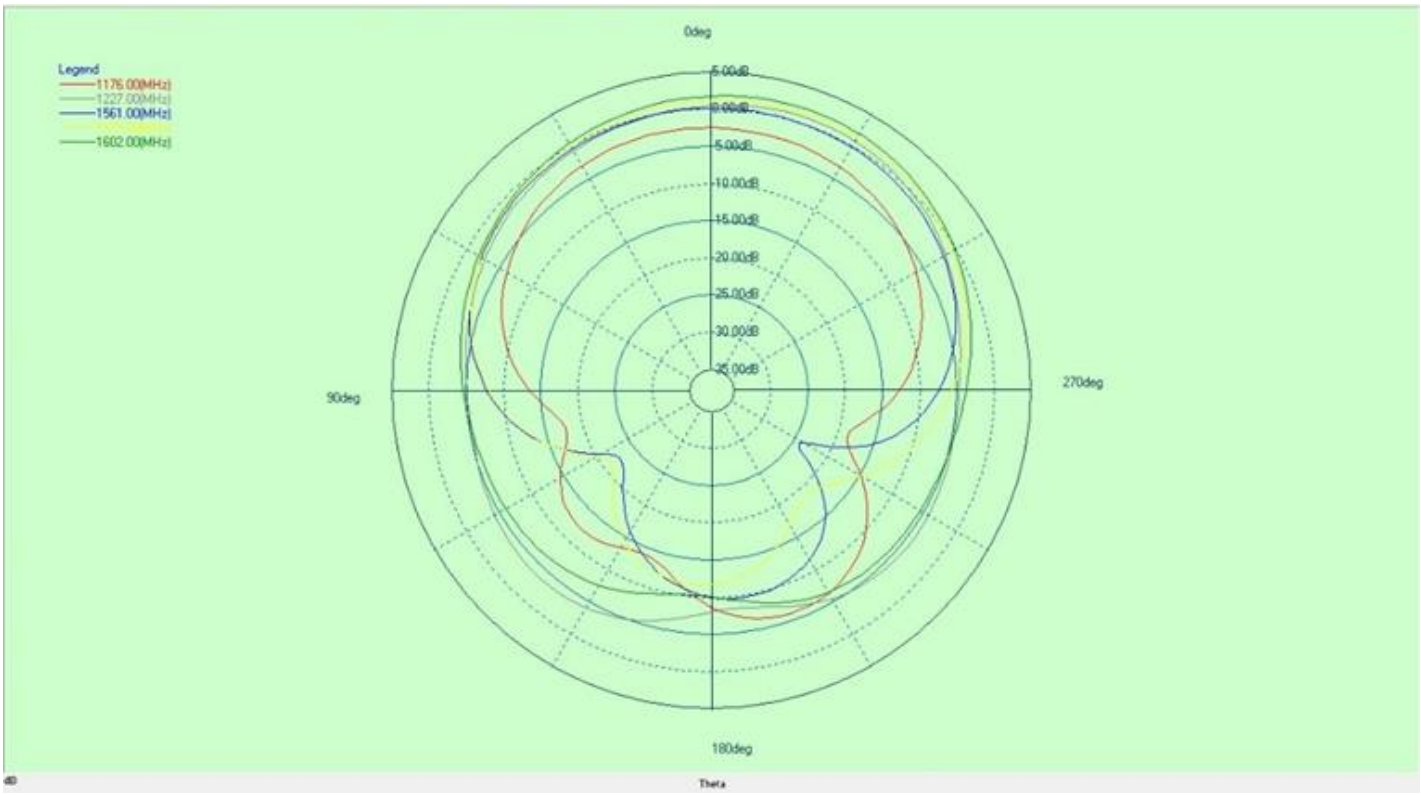




DA15+DA25	Return Loss(dB)	Impedance(Ohm)	VSWR(MHz)
1176 MHz	-18.98	46.80-j12.67	1.33
1227 MHz	-18.90	59.32+j8.88	1.27
1561 MHz	-7.71	33.76+j33.34	2.40
1575 MHz	-6.89	18.36-j5.29	2.75
1602 MHz	-29.73	46.88+j0.83	1.06

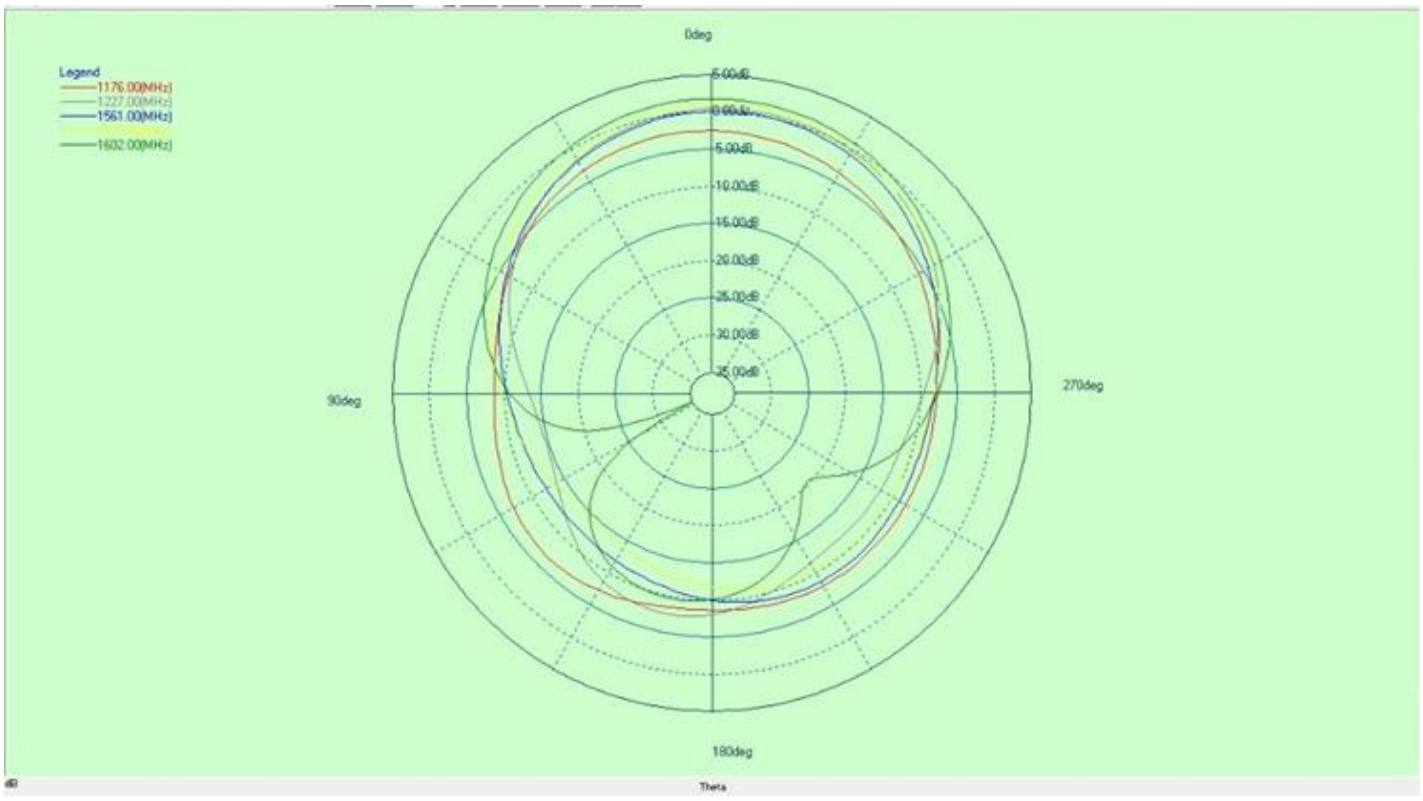
5. Gain Pattern Value

5.1 XZ-Plane



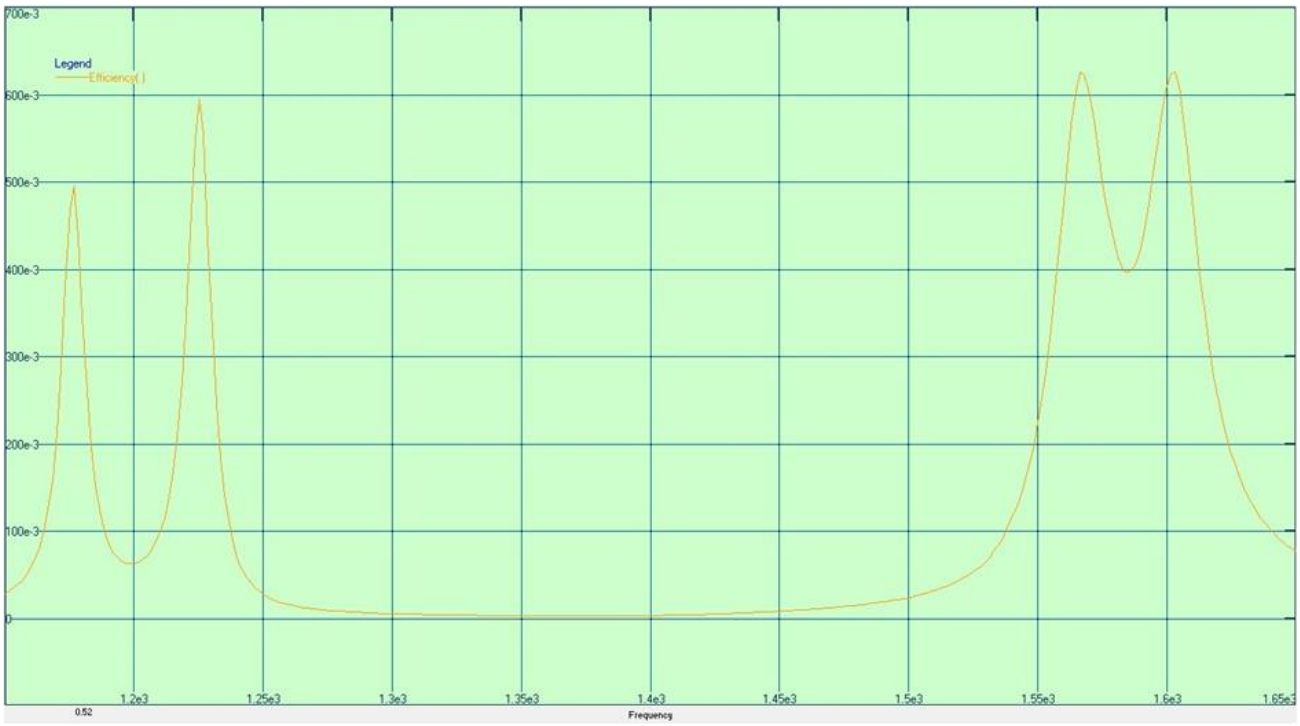
	Peak Gain	Zenith Gain
1176 MHz	-2.66	-2.70
1227 MHz	0.80	0.26
1561 MHz	-0.05	-0.07
1575 MHz	1.22	0.89
1602 MHz	1.91	1.59

5.2 YZ-Plane



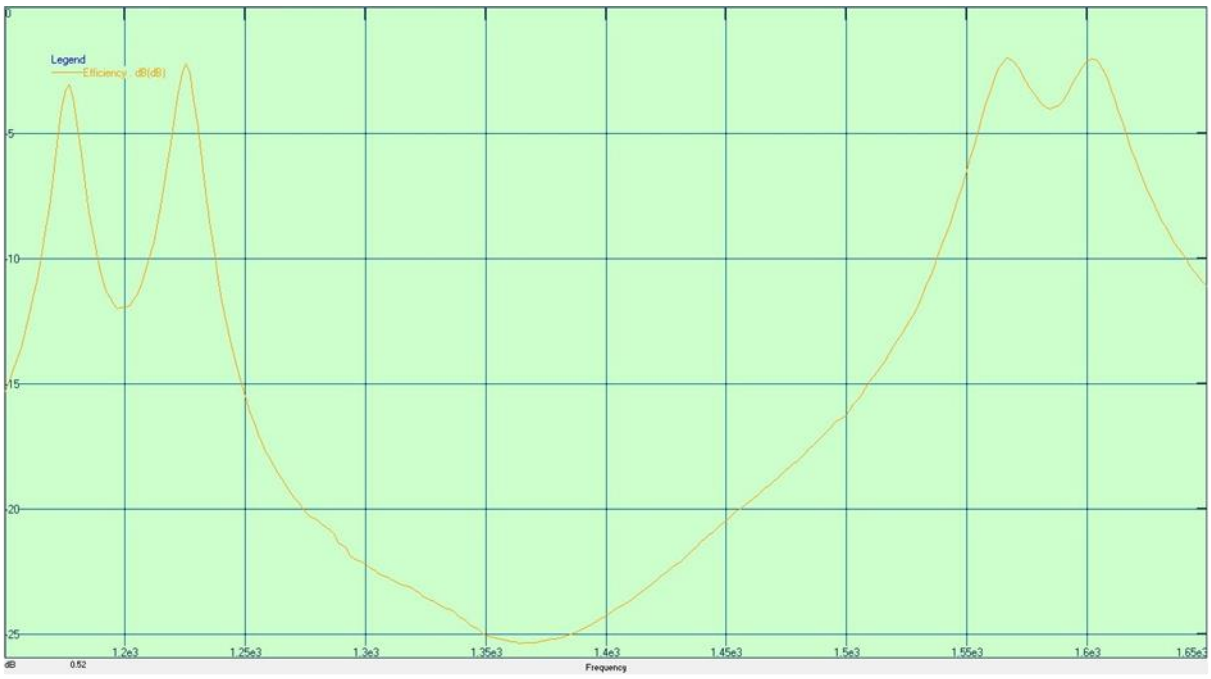
	Peak Gain	Zenith Gain
1176 MHz	-2.68	-2.70
1227 MHz	0.35	0.26
1561 MHz	-0.02	-0.07
1575 MHz	0.93	0.89
1602 MHz	1.59	1.59

5.2 Efficiency



Efficiency：48%@1176MHz、55%@1227MHz、50%@1561MHz、50%@1575MHz、62%@1602MHz

5.3 Average Gain

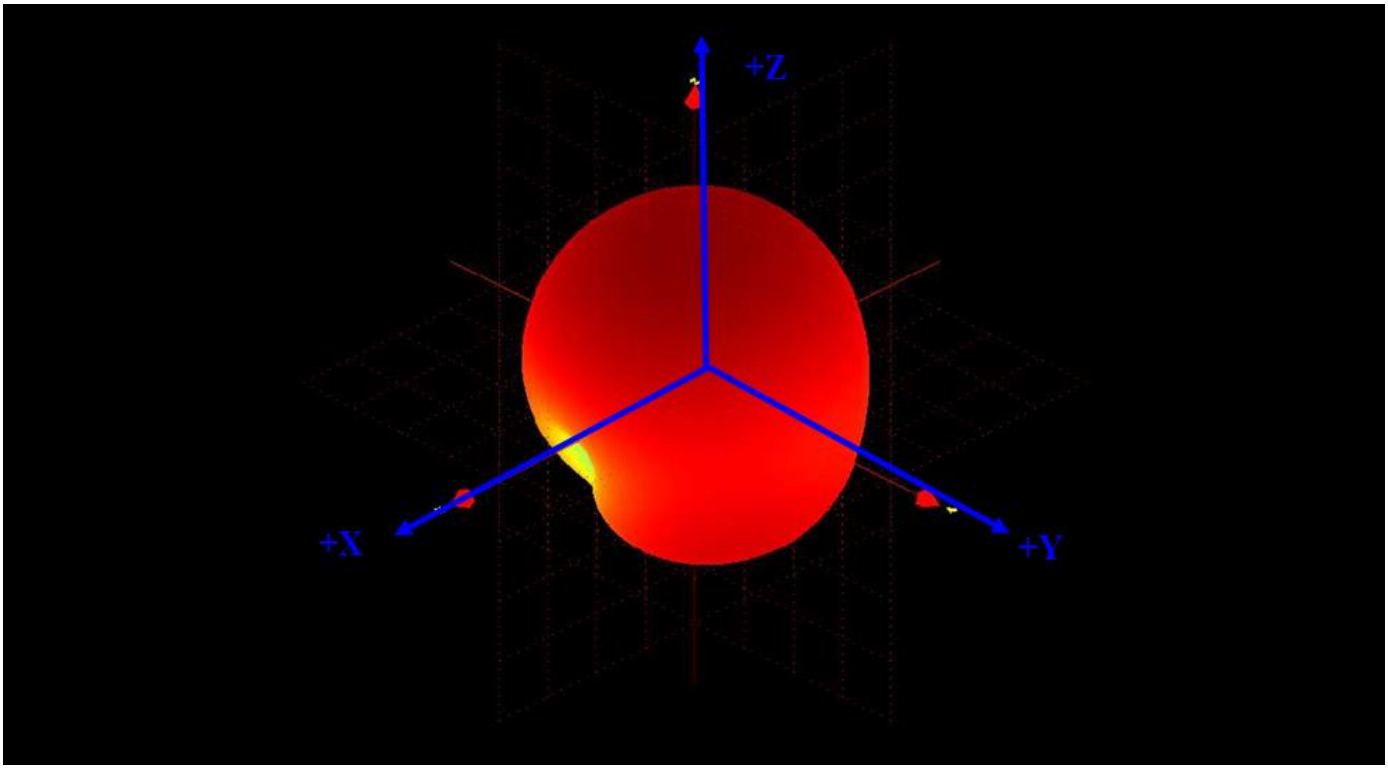


Average Gain：-3.15dBi@1176MHz、-2.59dBi@1227MHz、-2.96dBi@1561MHz、-2.98dBi @1575MHz、-2.04dBi @1602MHz

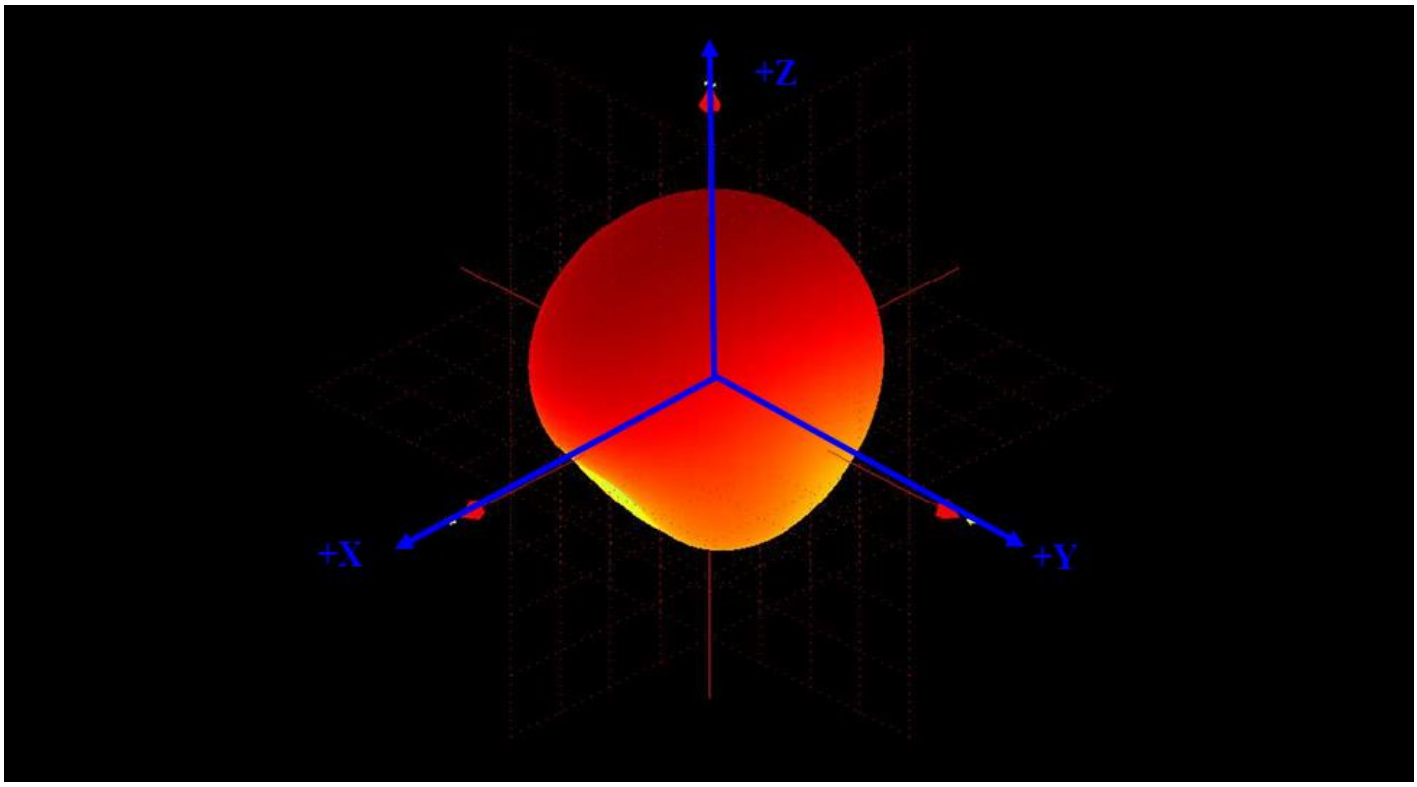
5.4 Peak Gain

Peak Gain：-2.72dBi@1176MHz、0.83dBi@1227MHz、0dBi @1561MHz、1.27dBi @1575MHz、1.91dBi @1602MHz

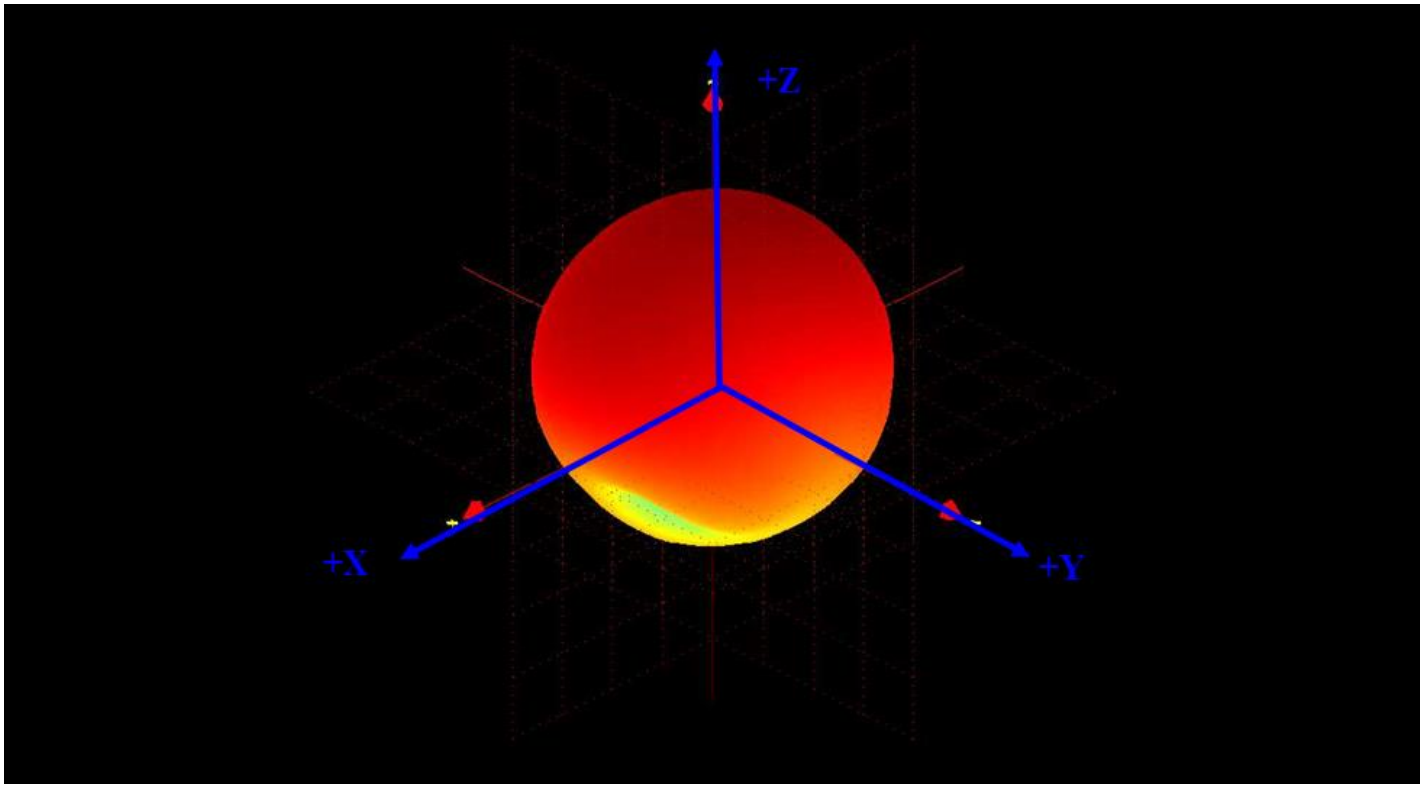
5.5 3D Radiation Pattern (1176 MHz)



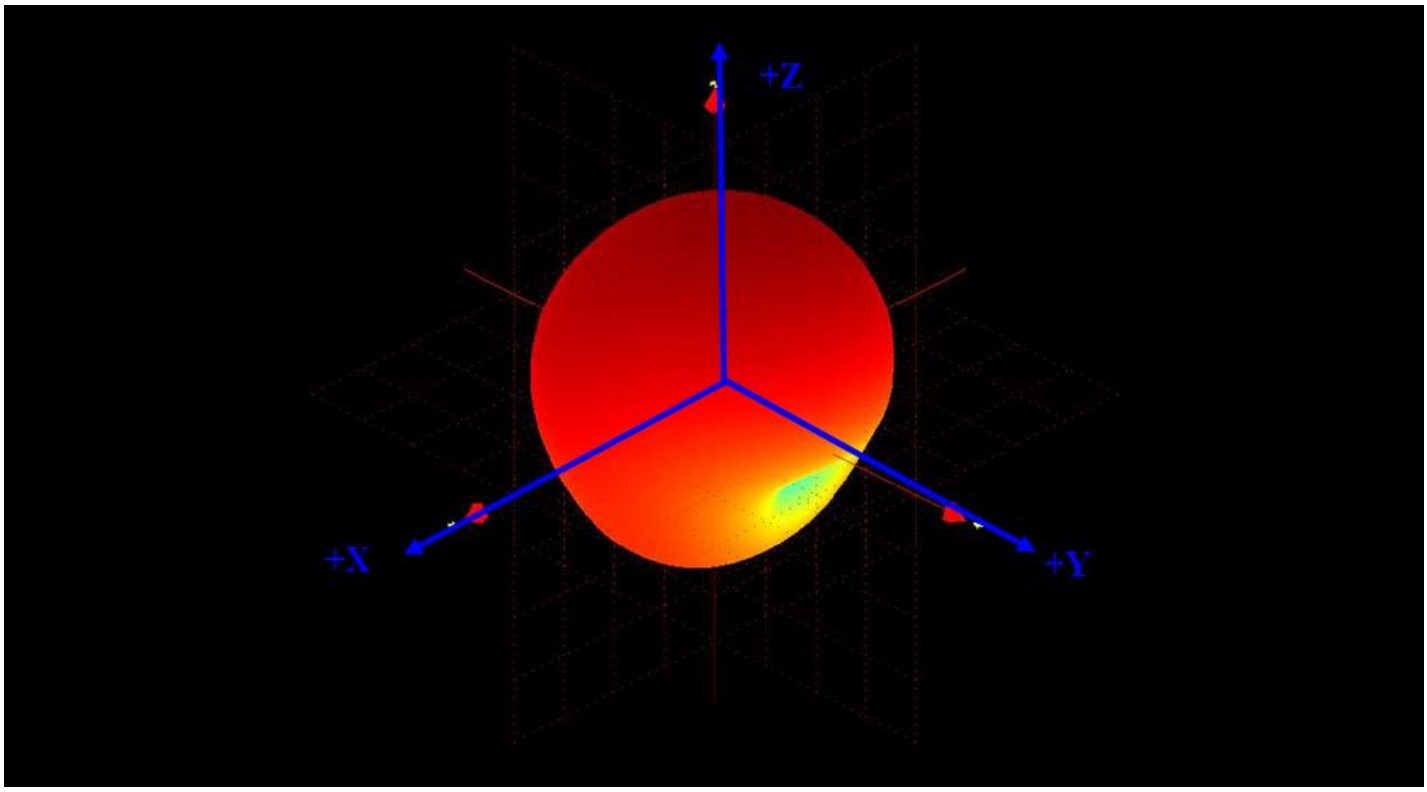
5.6 3D Radiation Pattern (1561 MHz)



5.7 3D Radiation Pattern (1575 MHz)



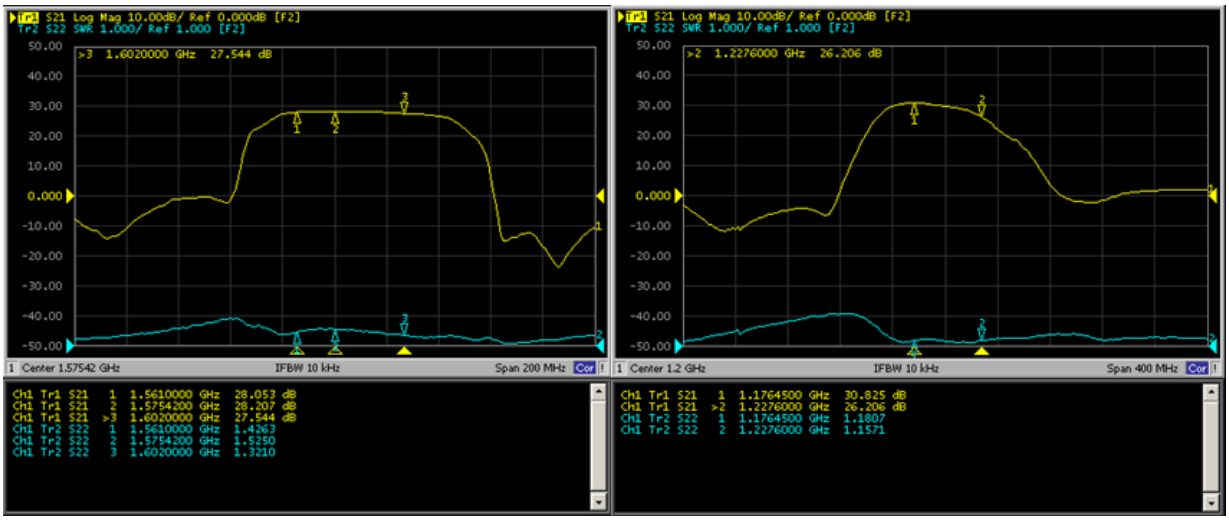
5.8 3D Radiation Pattern (1602 MHz)



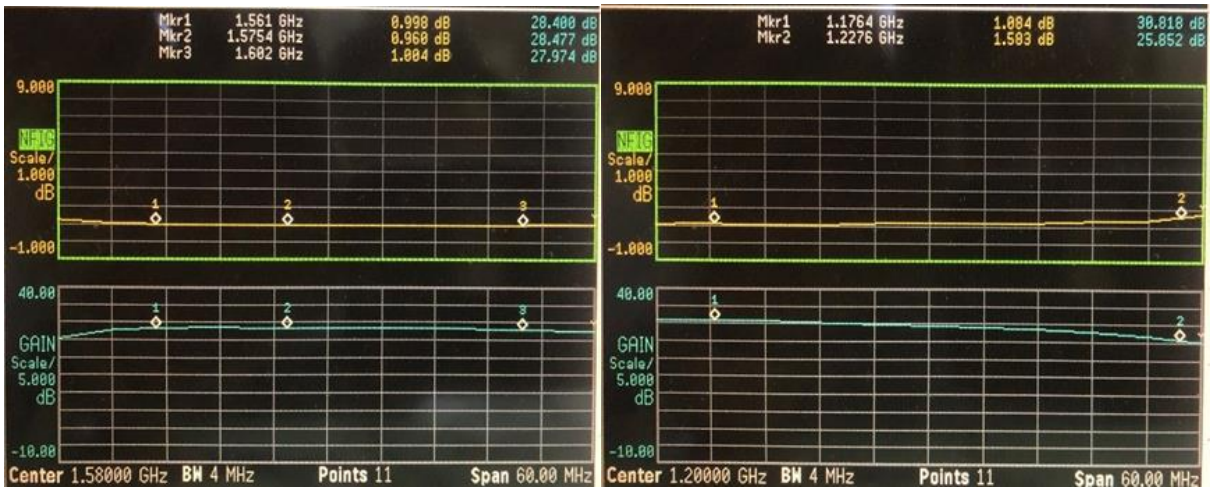
6. LNA

Characteristics	SPEC
Frequency Range	L1: 1561±2.046 MHz for Beidou L1: 1575.42±1.023 MHz for GPS/Galileo L1: 1602±8 MHz for GLONASS L2: 1227.6 ±10 MHz L5: 1176.45 ±10 MHz
Gain	1561 MHz: 28±3 dB Typ. (+ 25 ℃± 5℃) 1575.42 MHz:28±3 dB Typ. (+ 25 ℃± 5℃) 1602 MHz: 27±3 dB Typ. (+ 25 ℃± 5℃) 1227.6 MHz: 26±3 dB Typ. (+ 25 ℃± 5℃) 1176.45 MHz: 30±3 dB Typ. (+ 25 ℃± 5℃)
Noise Figure	1561 MHz: 1 dB Typ. (+ 25 ℃± 5℃) 1575.42 MHz: 1 dB Typ.(+ 25 ℃± 5℃) 1602 MHz: 1 dB Typ. (+ 25 ℃± 5℃) 1227.6 MHz: 1 dB Typ. (+ 25 ℃± 5℃) 1176.45 MHz: 1.5 dB Typ. (+ 25 ℃± 5℃)
Output Impedance	5 0 Ω
Output VSWR	2.0 Max

LNA Gain @3.3V



LNA Noise Figure @3.3V



7. Total Specifications

Characteristics	SPEC
Frequency Range	L1: 1561±2.046 MHz for Beidou L1: 1575.42±1.023 MHz for GPS/Galileo L1: 1602±8 MHz for GLONASS L2: 1227.6 ±10 MHz L5: 1176.45 ±10 MHz
Gain@3.3V	At 90° L1: 1561 MHz: 28 dBi @Zenith – Cable Loss(Note:1) L1: 1575.42 MHz: 28.5 dBi @Zenith – Cable Loss(Note:1) L1: 1602 MHz: 28.5 dBi @Zenith – Cable Loss(Note:1) L2: 1227.6 MHz: 26 dBi @Zenith – Cable Loss(Note:1) L5: 1176.45 MHz: 27 dBi @Zenith – Cable Loss(Note:1)
Output Impedance	50Ω

Note: 1 Cable Loss = Max. (-1.4dB/meter)

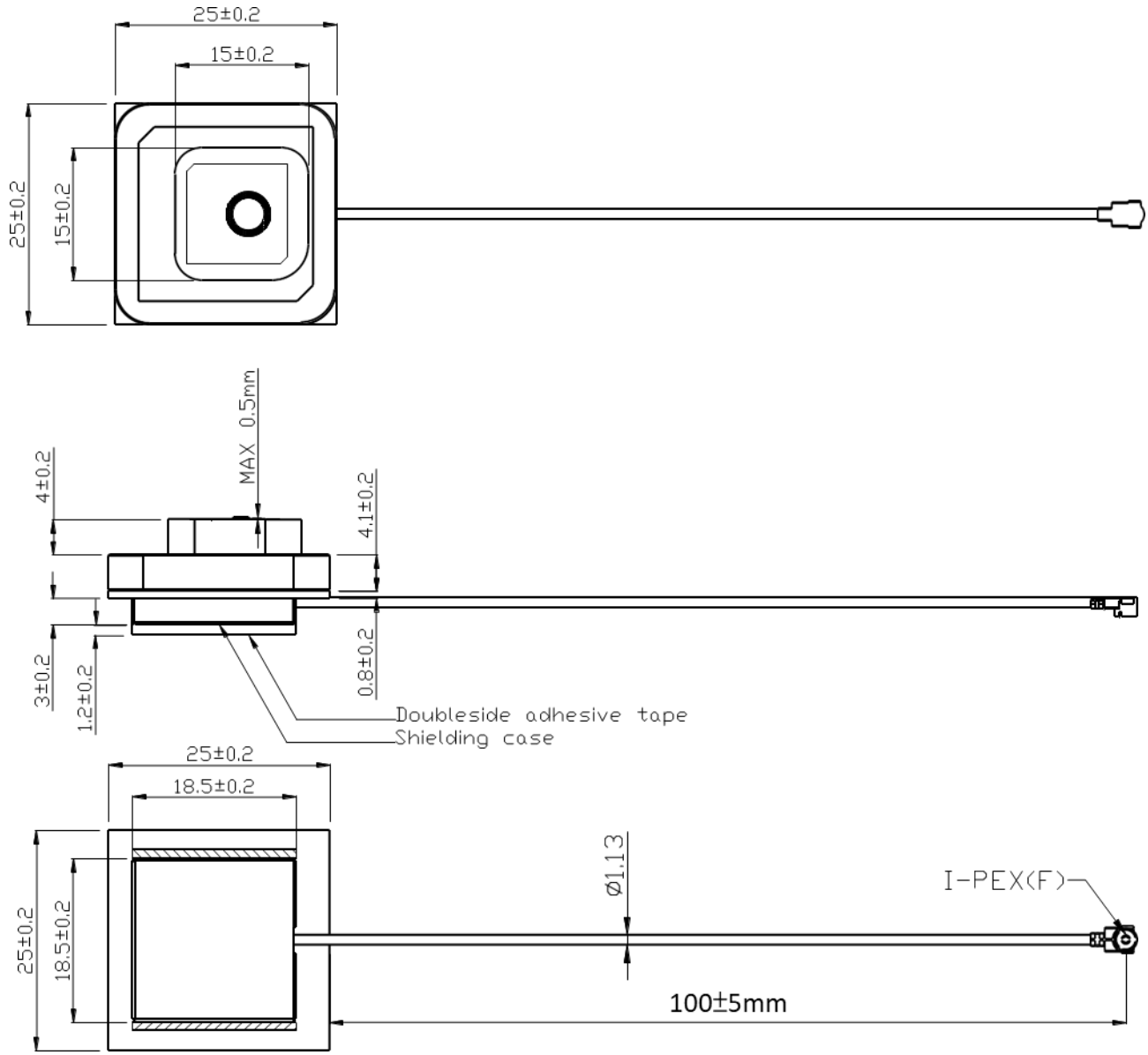
8. Operating Condition

Temperature	-40℃ to +85℃
Humidity	10% to 95% RH

9. Storage Condition

Temperature	-40℃ to +85℃
Humidity	10% to 95% RH

10. Outline



11. Note

1. This product specification guarantees the quality of our product as a single unit. Please make sure that your product is evaluated and confirmed against your specifications when our product is mounted to your product.

2. We cannot warrant against failure caused by any use of our product that deviates from the intended use as described in this product specification.

3. Electrostatic sensitive device Observe precautions for handling.