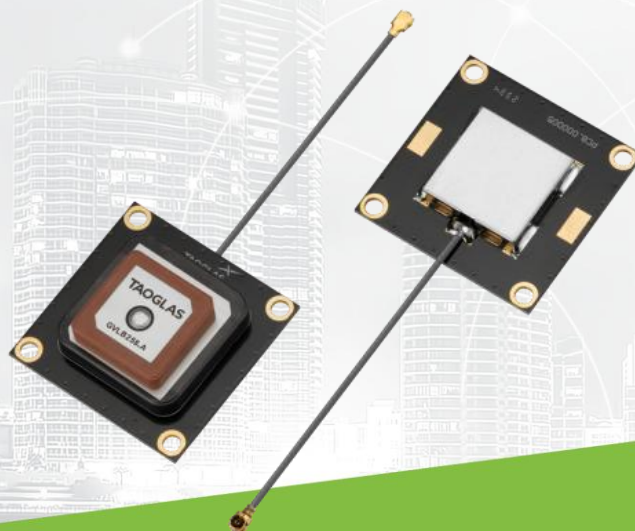




TAOGLAS®



Datasheet

Accura Series Stacked Patch Antenna

Part No:
AGVLB.25B.07.0060A

Description:

Embedded Active GNSS L1/GPS L5 Stacked Patch Antenna

Features:

Single Feed Stacked Patch Assembly

Covering Bands

- GPS L1 & L5
- Galileo E1 & E5a
- BeiDou B1 & B2a
- GLONASS G1
- IRNSS L5

Excellent Out-of-Band Rejection

2 stage LNA and SAW filter

Patch Dimensions: 25 x 25 x 8mm

Overall Dimensions: 35 x 35 x 12mm

Cable: 60mm of Ø1.13mm

Connector: I-PEX MHF® I (U.FL Compatible)

RoHS & REACH Compliant

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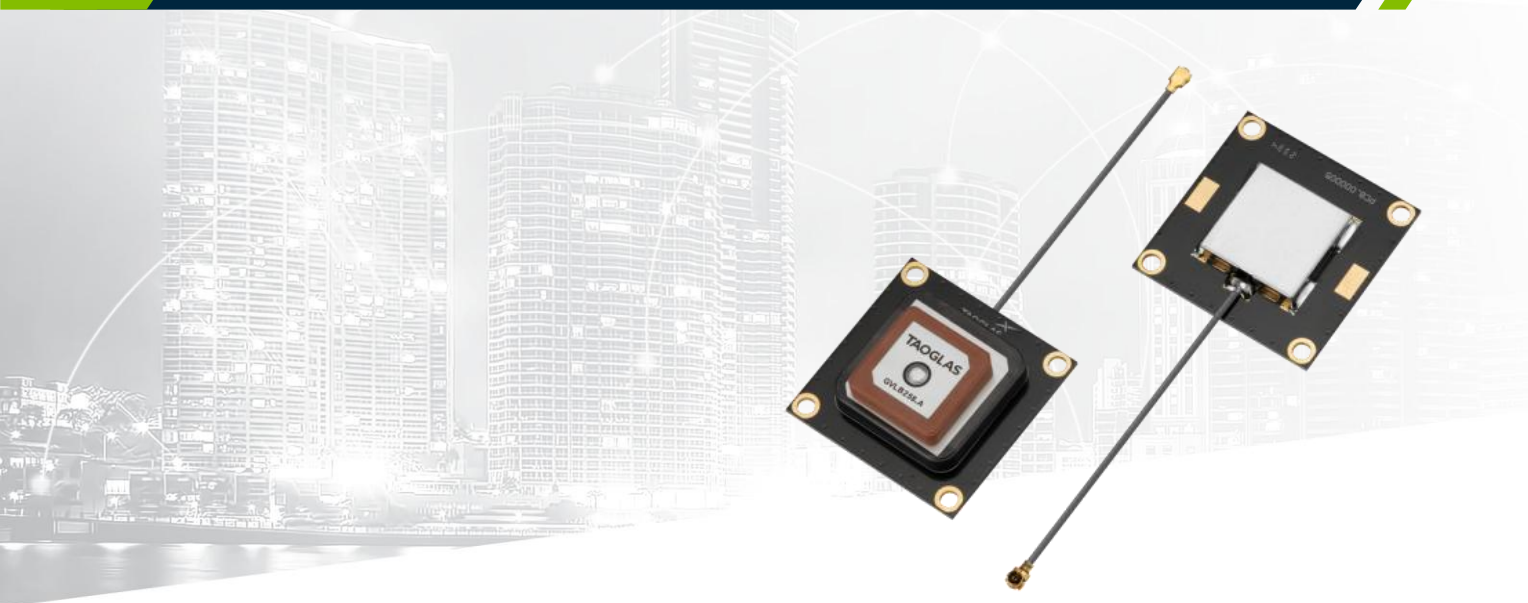
Ireland & USA
ISO 9001:2015
Certified



Taiwan
ISO 9001:2015
Certified



1. Introduction



The Taoglas Accura AGVLB.25B, is a multi-band GPS, GLONASS, BeiDou/Compass and IRNSS, high-performance GPS L1 / L5 & BeiDou B1 Active Stacked Patch Antenna for high precision GPS and BeiDou accuracy and fast positioning. It utilizes a 25*25*8mm advanced dual stacked ceramic patch antenna with optimized gain for GPS L1/L5, Galileo, IRNSS and BeiDou bands. Integration of IRNSS allows for better navigation accuracy and enables compliance with AIS-140 for tracking devices in India.

The AGVLB.25B has been designed for in-device mounting with an overall small size of just 35*35*12mm, it can fit in some of the most compact devices.

This compact antenna exhibits excellent radiation patterns on both GPS L1/L5 bands and with a low noise figure to preserve signal quality helps minimize time to first fix. It also features excellent out-of-band rejection to prevent out-of-band signals from overdriving or damaging its LNAs.

Typical Applications Include:

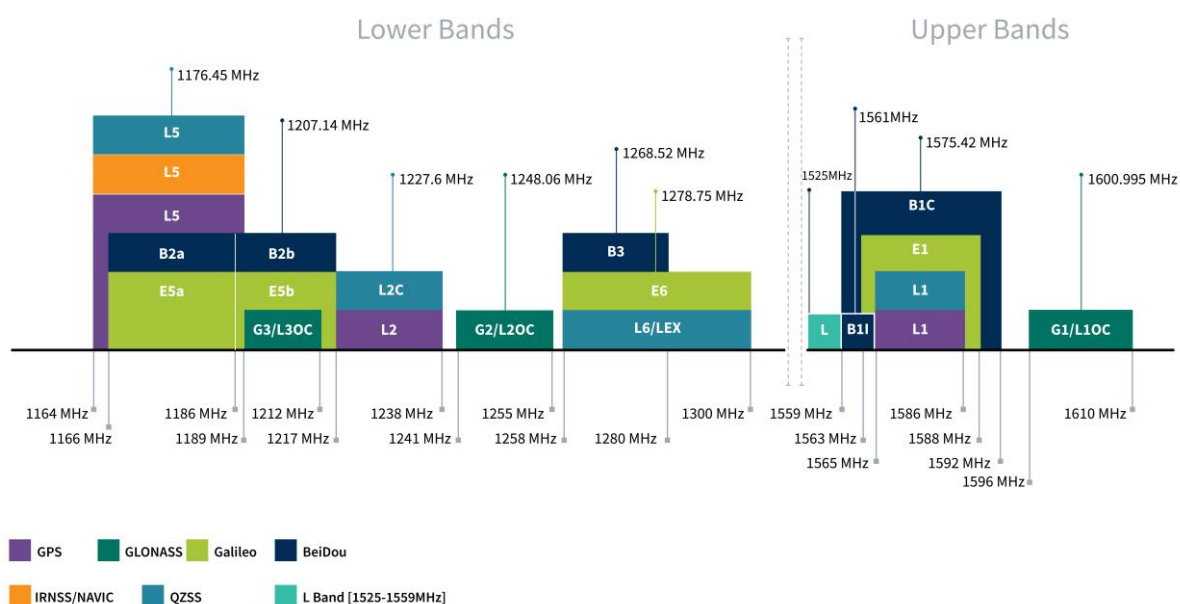
- RTK
- Wearables
- Transportation
- Agriculture
- Navigation
- Security
- Autonomous Vehicles

The AGVLB.25A has been tuned and tested on a 70 x 70 mm ground plane and exhibits omnidirectional radiation patterns at both bands.

The cable and connector are fully customizable, contact your regional Taoglas customer support team to request these services or additional support to integrate and test this antenna's performance in your device.

2. Specifications

GNSS Frequency Bands					
GPS	L1 1575.42 MHz	L2 1227.6 MHz	L5 1176.45 MHz		
	■	□	■		
GLONASS	G1 1602 MHz	G2 1248 MHz	G3 1207 MHz		
	■	□	□		
Galileo	E1 1575.24 MHz	E5a 1176.45 MHz	E5b 1201.5 MHz	E6 1278.75 MHz	
	■	■	□	□	
BeiDou	B1C 1575.42 MHz	B1I 1561 MHz	B2a 1176.45 MHz	B2b 1207.14 MHz	B3 1268.52 MHz
	■	■	■	□	□
L-Band	L-Band 1542 MHz				
	□				
QZSS (Regional)	L1 1575.42 MHz	L2C 1227.6 MHz	L5 1176.45 MHz	L6 1278.75e6	
	■	□	■	□	
IRNSS (Regional)	L5 1176.45 MHz				
	■				
SBAS	L1/E1/B1 1575.42 MHz	L5/B2a/E5a 1176.45 MHz	G1 1602 MHz	G2 1248 MHz	G3 1207 MHz
	■	■	■	□	□



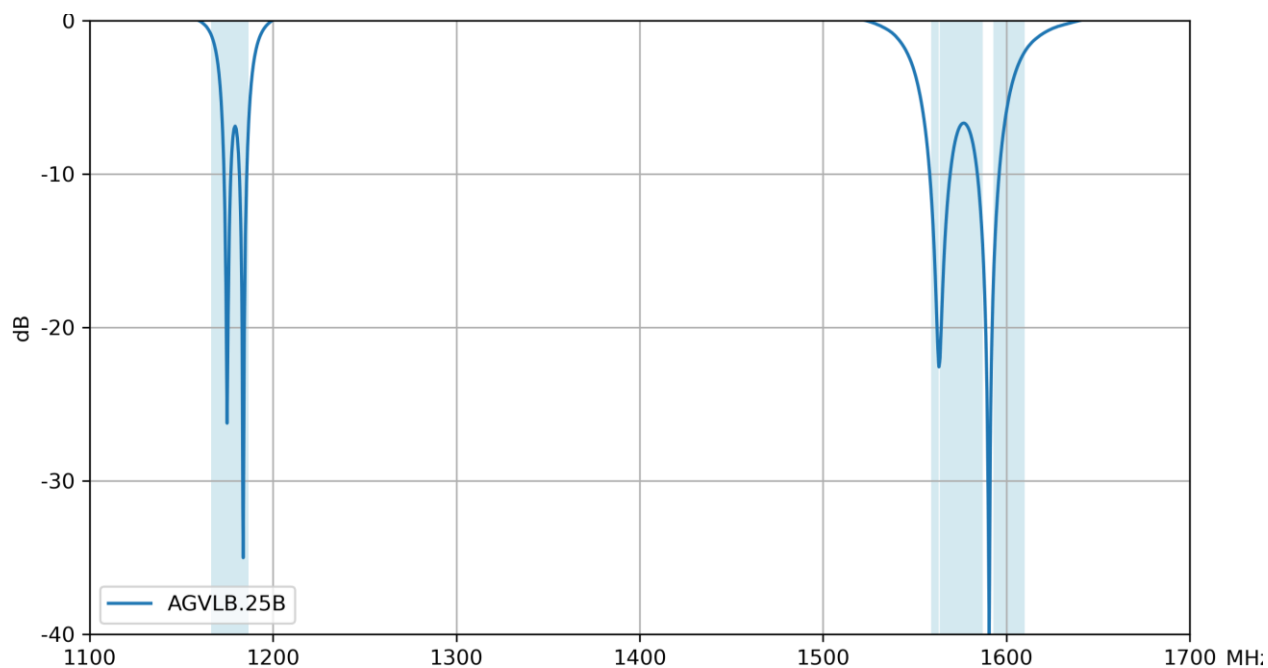
GNSS Electrical				
Frequency (MHz)	GPS L5	BeiDou_B1	GPS_L1C	GLONASS_L1
	1166-1186	1559-1563	1563-1587	1593-1610
Efficiency (%)				
AGVLB.25B	58.5	68.5	60.7	62.5
Average Gain (dB)				
AGVLB.25B	-2.33	-1.64	-2.17	-2.04
Peak Gain (dBi)				
AGVLB.25B	2.31	2.94	2.87	3.08
Impedance	50 Ω			
Polarization	Right-Hand Circularly Polarized (RHCP)			
Radiation Pattern	Directional			

LNA and Filter Electrical Specifications				
Frequency (MHz)	GPS_L5	BeiDou_B1	GPS_L1	GLONASS
	1166-1186	1559-1563	1563-1587	1593-1610
LNA Gain (dB)				
AGVLB.25B	30.3	28.2	28.3	28.3
Noise Figure (dB)				
AGVLB.25B	2.6	2.8	2.8	2.4
Return Loss (dB)	< -8			
Input Voltage (V)	+ 1.8 to 5.5			
Current consumption (mA)	18			
Outer Band Attenuation (dB)	> 70dB @ LTE low band; > 65dB @ LTE high band			

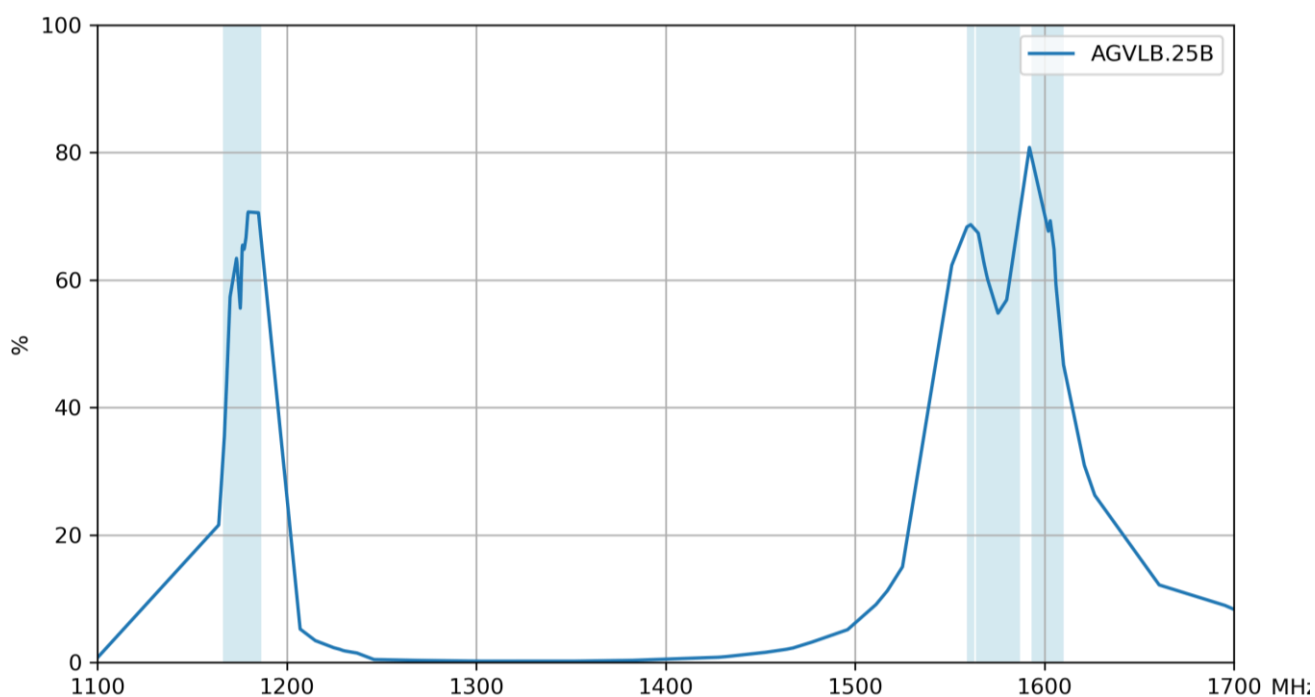
Mechanical	
Patch Dimensions	25*25*8mm
Overall Dimensions	35*35*12mm
Weight	18g
Material	Ceramic
Connector	IPEX MHF I U.FL Compatible
Cable	1.13 Coaxial Cable
Environmental	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

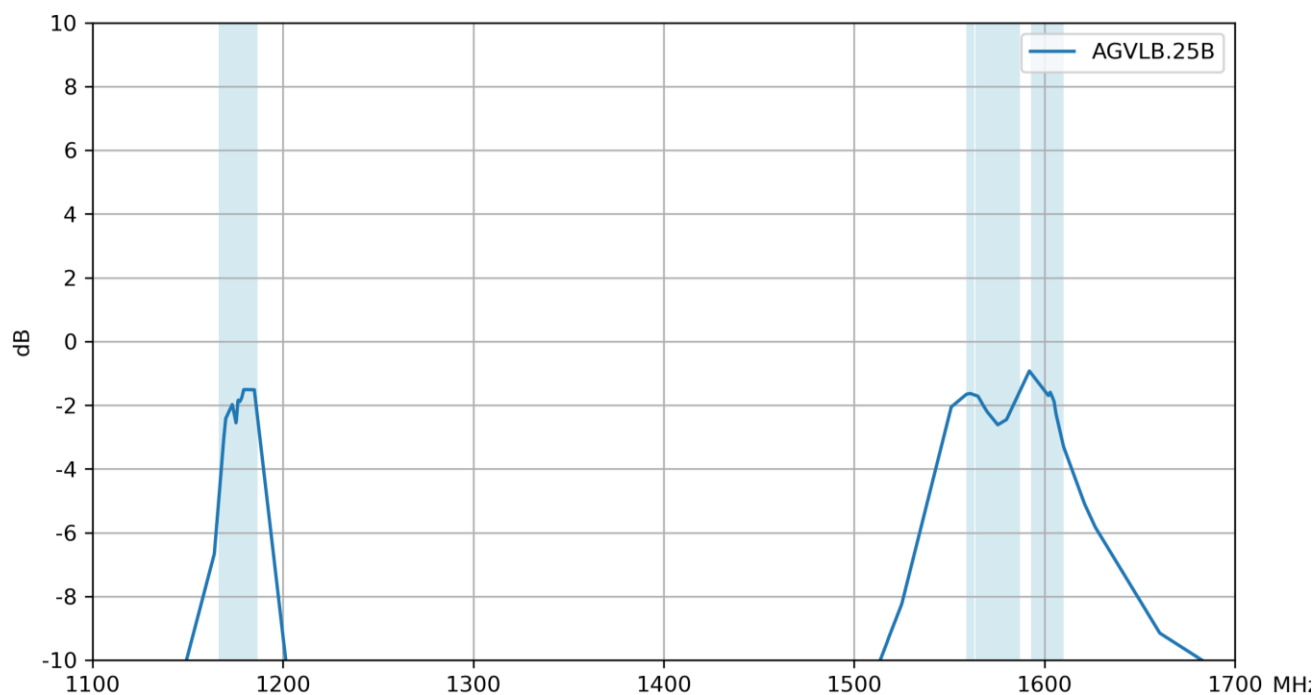
3.1 Return Loss



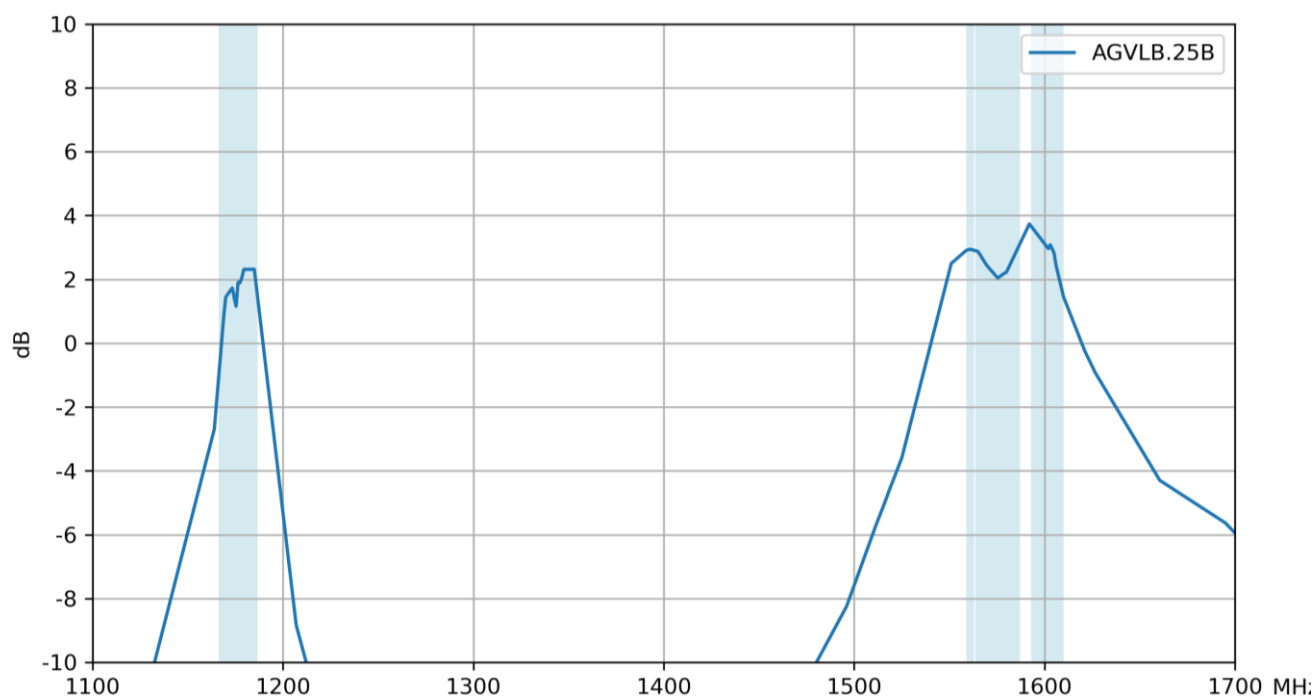
3.2 Efficiency



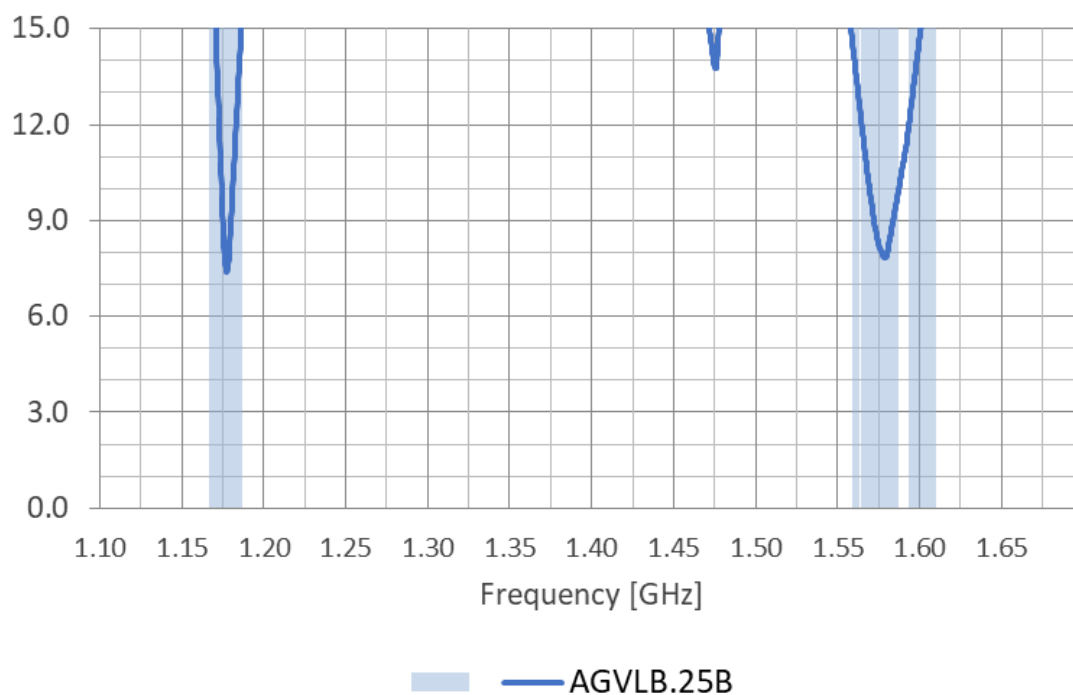
3.3 Average Gain



3.4 Peak Gain

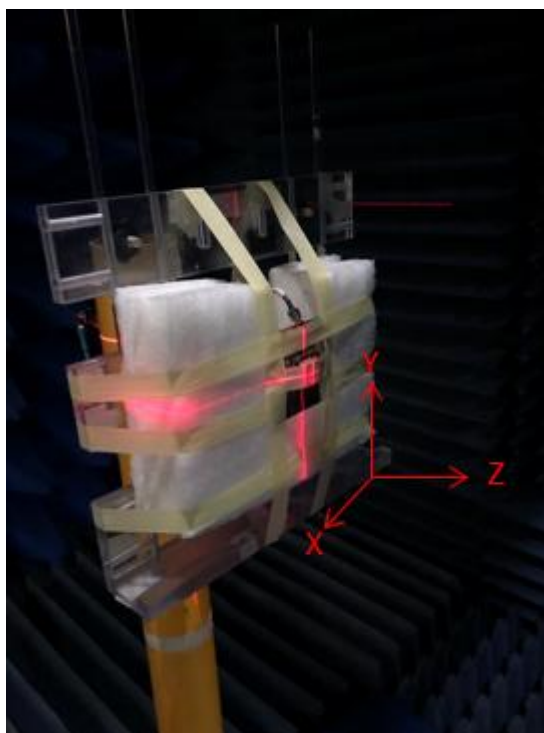
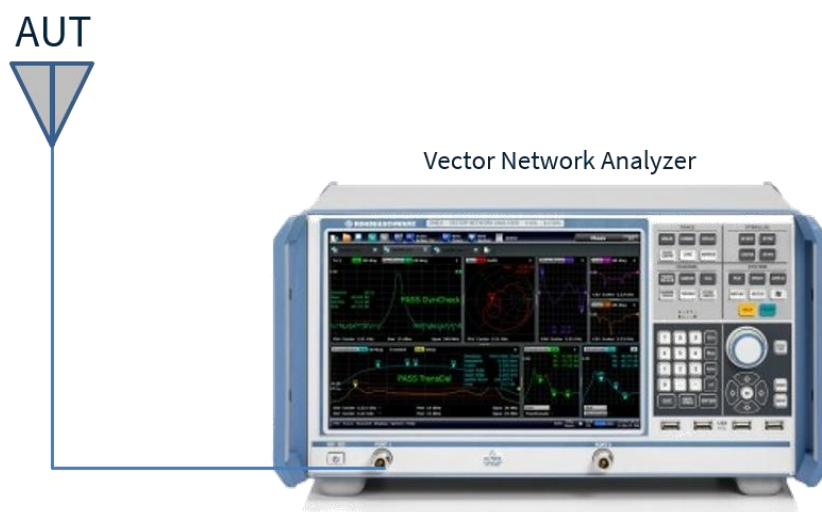


3.5 Axial Ratio



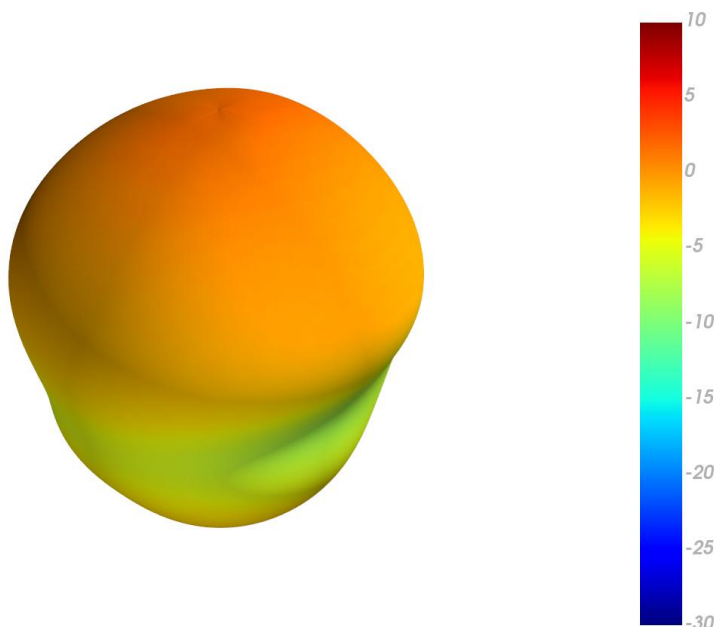
4. Radiation Patterns

4.1 Test Setup

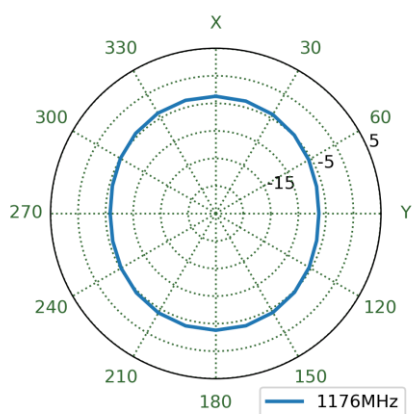


4.2 3D and 2D Radiation Patterns

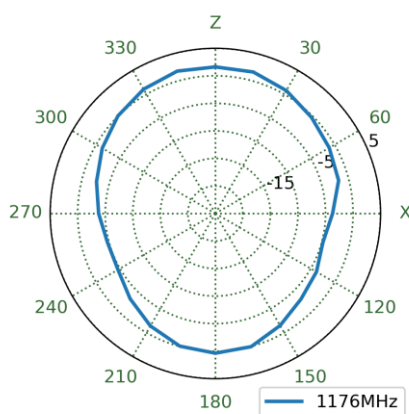
1176MHz



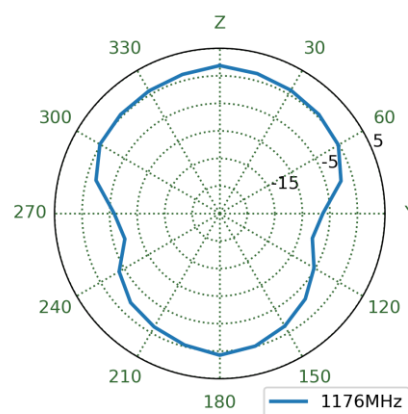
XY Plane



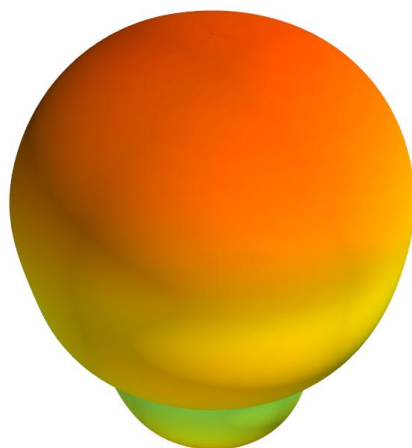
XZ Plane



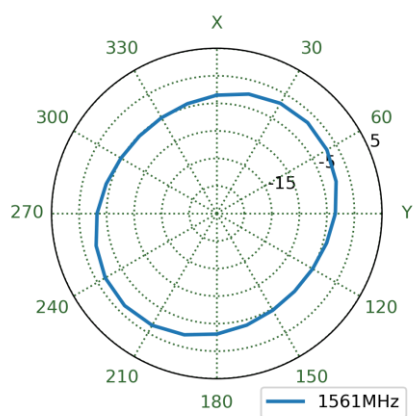
YZ Plane



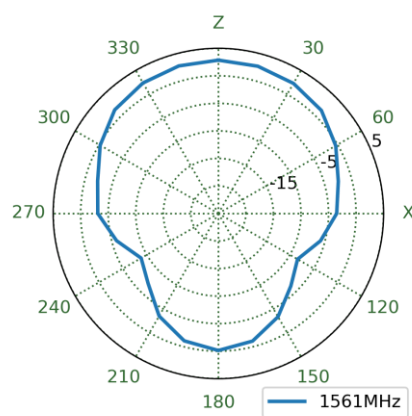
1561MHz



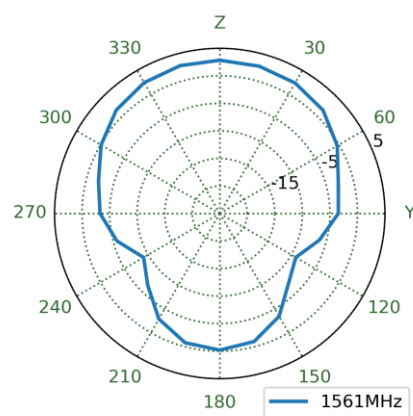
XY Plane



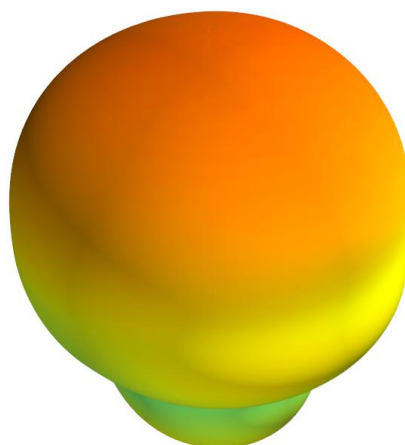
XZ Plane



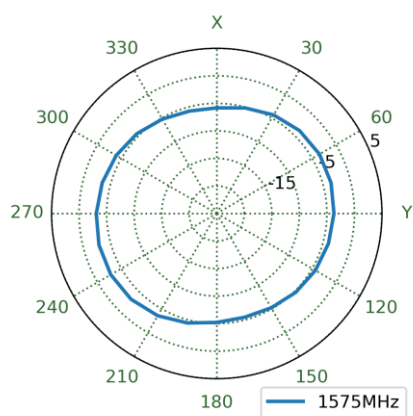
YZ Plane



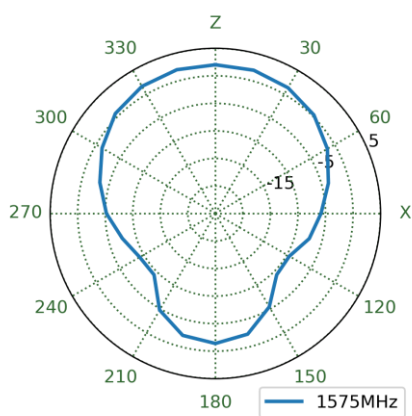
1575MHz



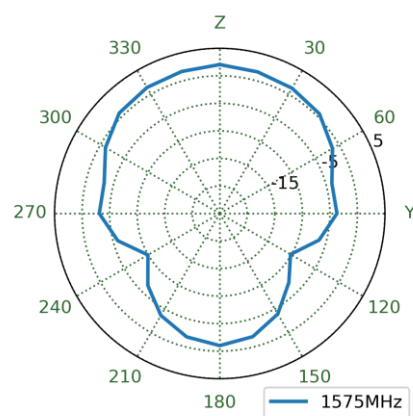
XY Plane



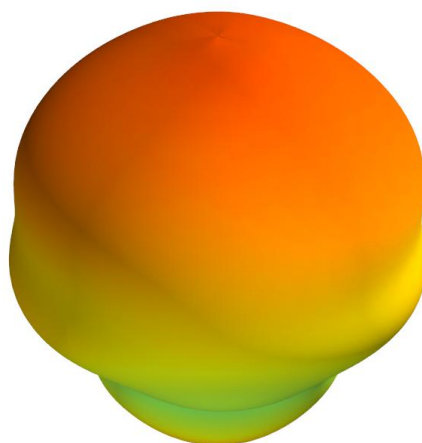
XZ Plane



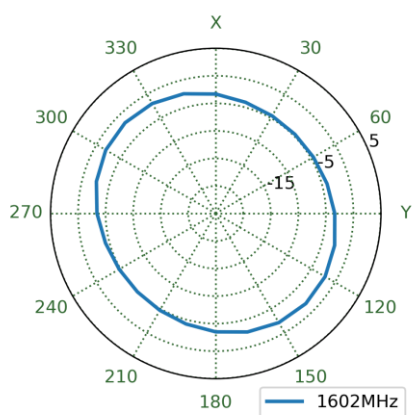
YZ Plane



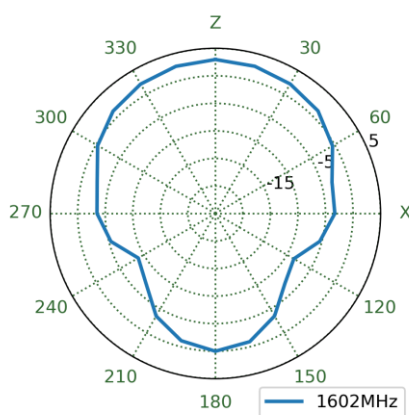
1602MHz



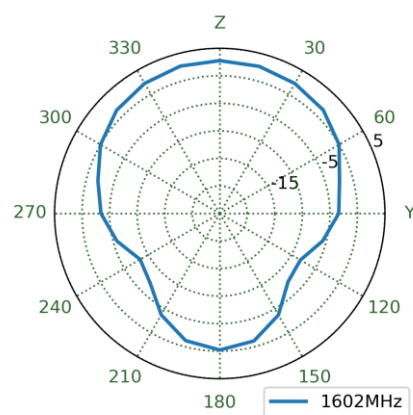
XY Plane



XZ Plane

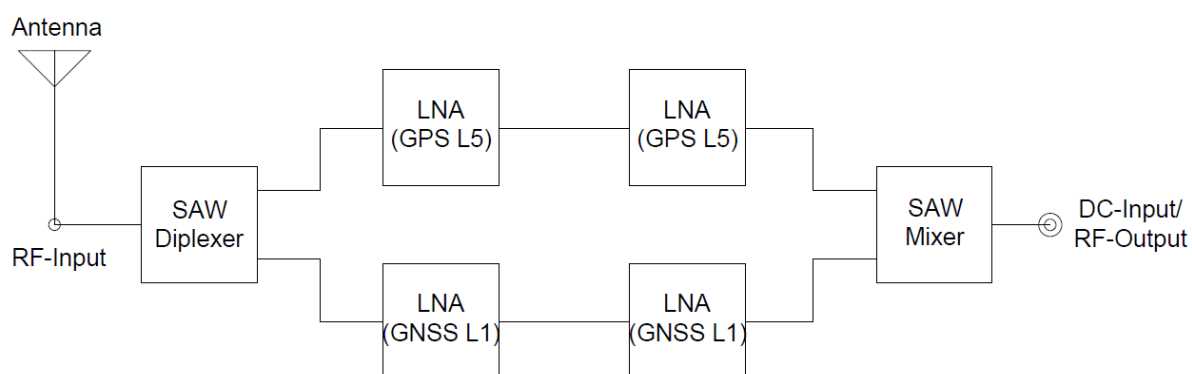


YZ Plane

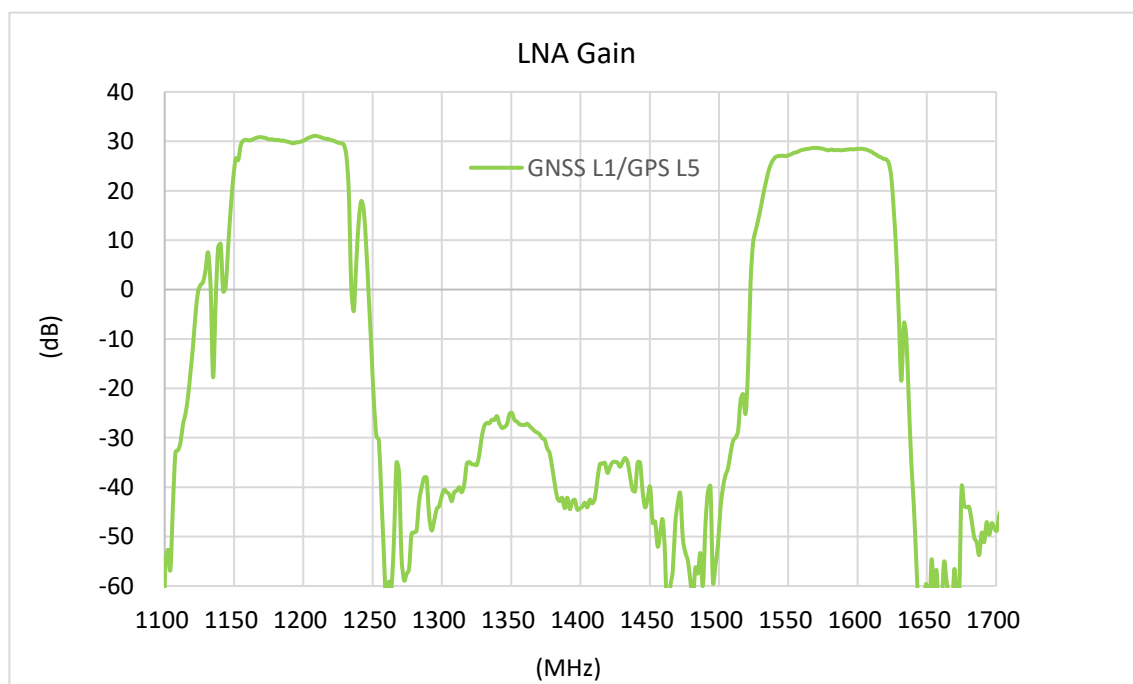


5. LNA Characteristics

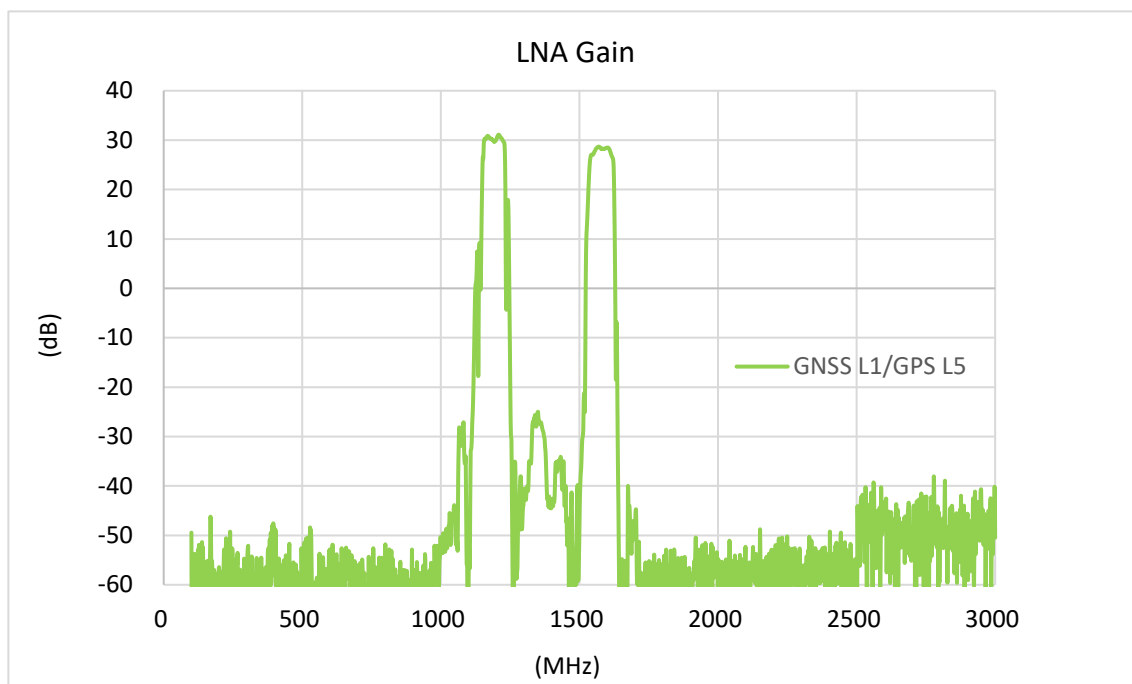
5.1 LNA Block Diagrams



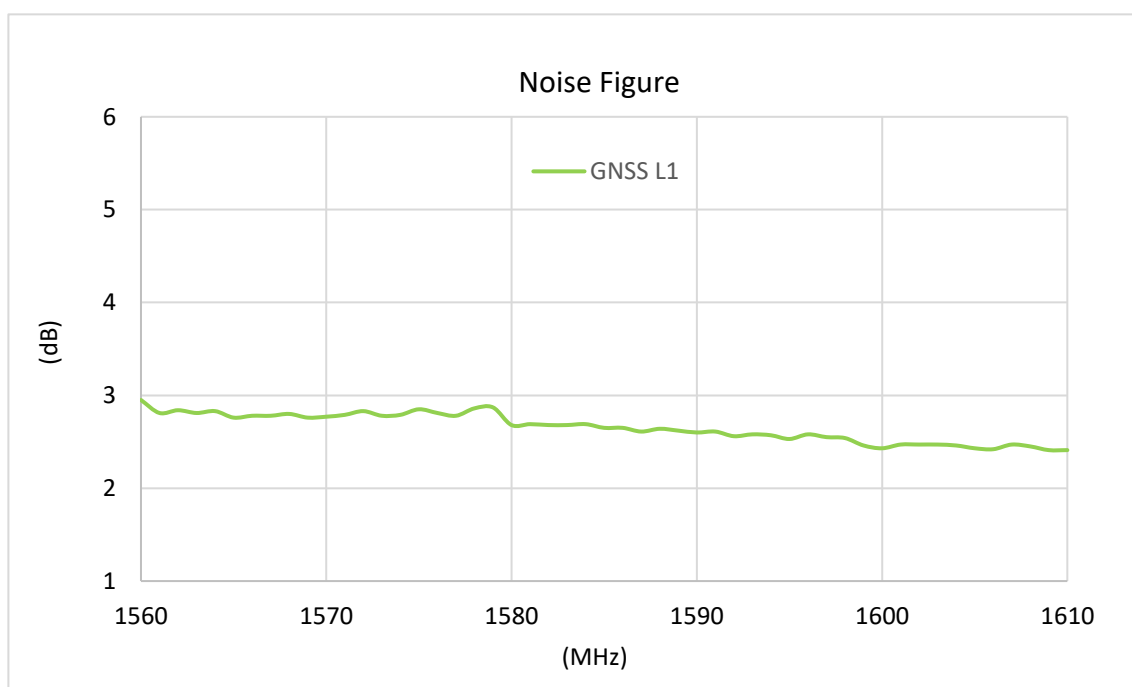
5.2 LNA Gain



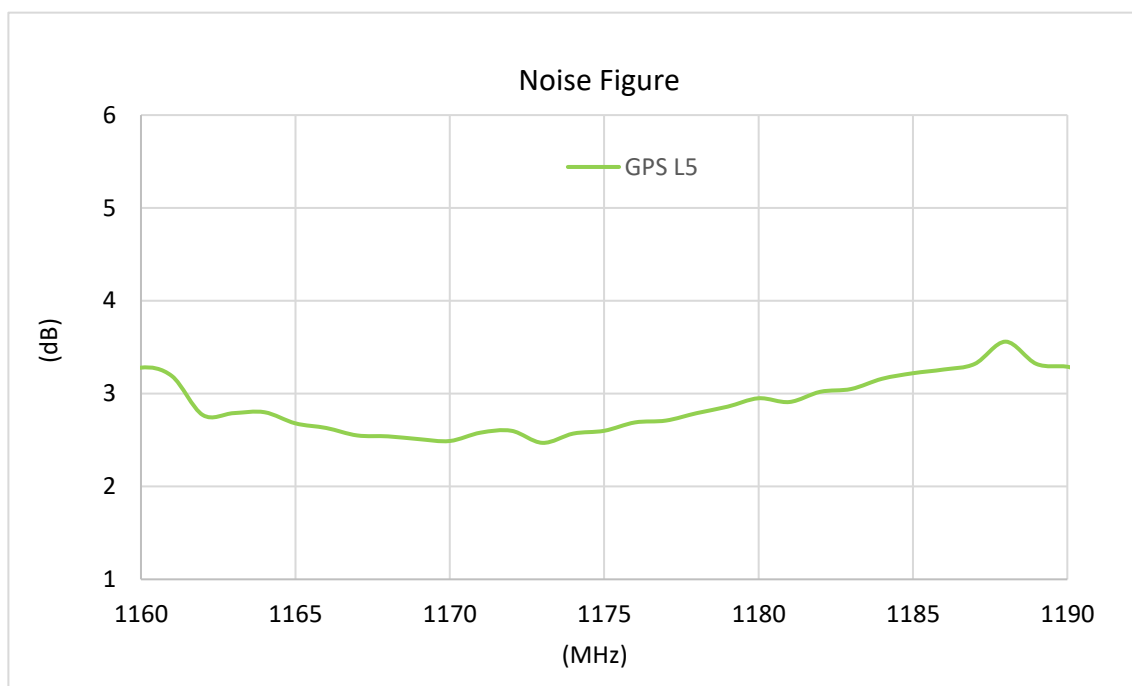
5.3 Out of Band Rejection



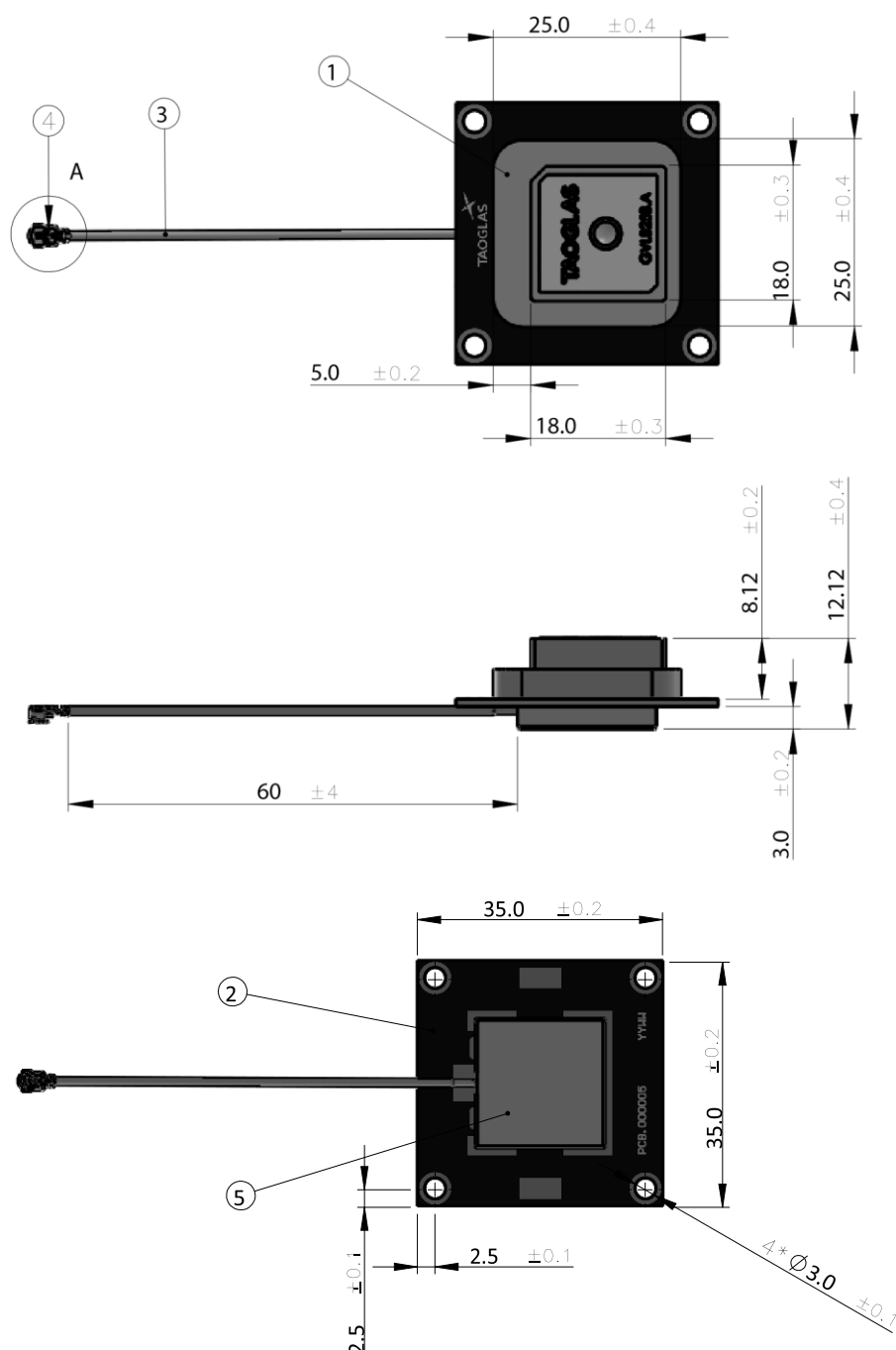
5.5 Noise – GNSS L1



5.6 Noise – GNSS L5



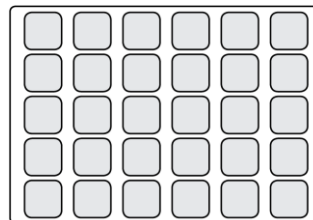
6. Mechanical Drawing (Units: mm)



	Name	Material	Finish	Qty
1	Patch(18*18*4)&(25*25*4)	Ceramic	Clear	1
2	PCB(35*35)	Composite 1.0t	Black	1
3	1.13 Coaxial Cable	FEP	Gray	1
4	IPEX MHF1	Brass	Au Plated	1
5	Shielding Can	SPTE	Sn Plated	1

7. Packaging

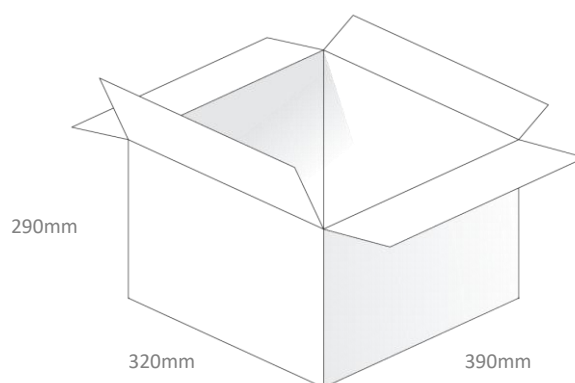
30pcs AGVLB.25B.07.0060A per Tray
Weight: 800g



120pcs AGVLB.25B.07.0060A per PE Bag
Weight: 3.4Kg



360pcs AGVLB.25B.07.0060A per carton
Dimensions: 390*320*290mm
Weight: 10.5Kg



Changelog for the datasheet

SPE-23-8-223 – AGVLB.25B.07.0060A

Revision: C (Current Version)

Date:	2025-08-20
Notes:	Updated current consumption and ISO logo on page 3.
Author:	Cesar Sousa

Previous Revisions

Revision: B

Date:	2024-03-04
Notes:	Drawing updated
Author:	Cesar Sousa

Revision: A (Original First Release)

Date:	2023-07-13
Notes:	Initial Release
Author:	Cesar Sousa



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