

**Features:**

- 🌀 Ultra low noise 30dB amplifiers
- 🌀 Stacked L1 / L2 + L5 patch antenna
- 🌀 Single RF feed with DC bias
- 🌀 High rejection filters to suppress out of band interference
- 🌀 ESD Protected

Applications:

- 🌀 GPS, Glonass, Galileo, Beidou, IRNSS
- 🌀 Multiband satellite navigation receivers
- 🌀 L1 and L2 + L5 band devices
- 🌀 Asset tracking, Fleet management, IoT, M2M

Electrical specifications¹ @ 25° C

Antenna type	Nominal Impedance	Polarization	Radiation pattern
Patch	50Ω	RHCP	Directional

Frequency (MHz)	L1: 1561-1602	L2: 1215-1237	L5: 1164-1189
Return Loss (dB)	< -10	< -10	< -10
Radiating Element Peak Gain (dBi/dBic)	>2.7/1.5	>1.7/0.2	>1/-2
Avg. Efficiency (%)	>60	>40	>40
LNA Gain (dB) Typical	28	33	30
Noise Figure (dB)	1.7 @1575MHz	2.2@1227MHz	2.2 @1164MHz
Operating Voltage ² (V)	2.5 - 18		
Power Consumption	Max. 16mA		

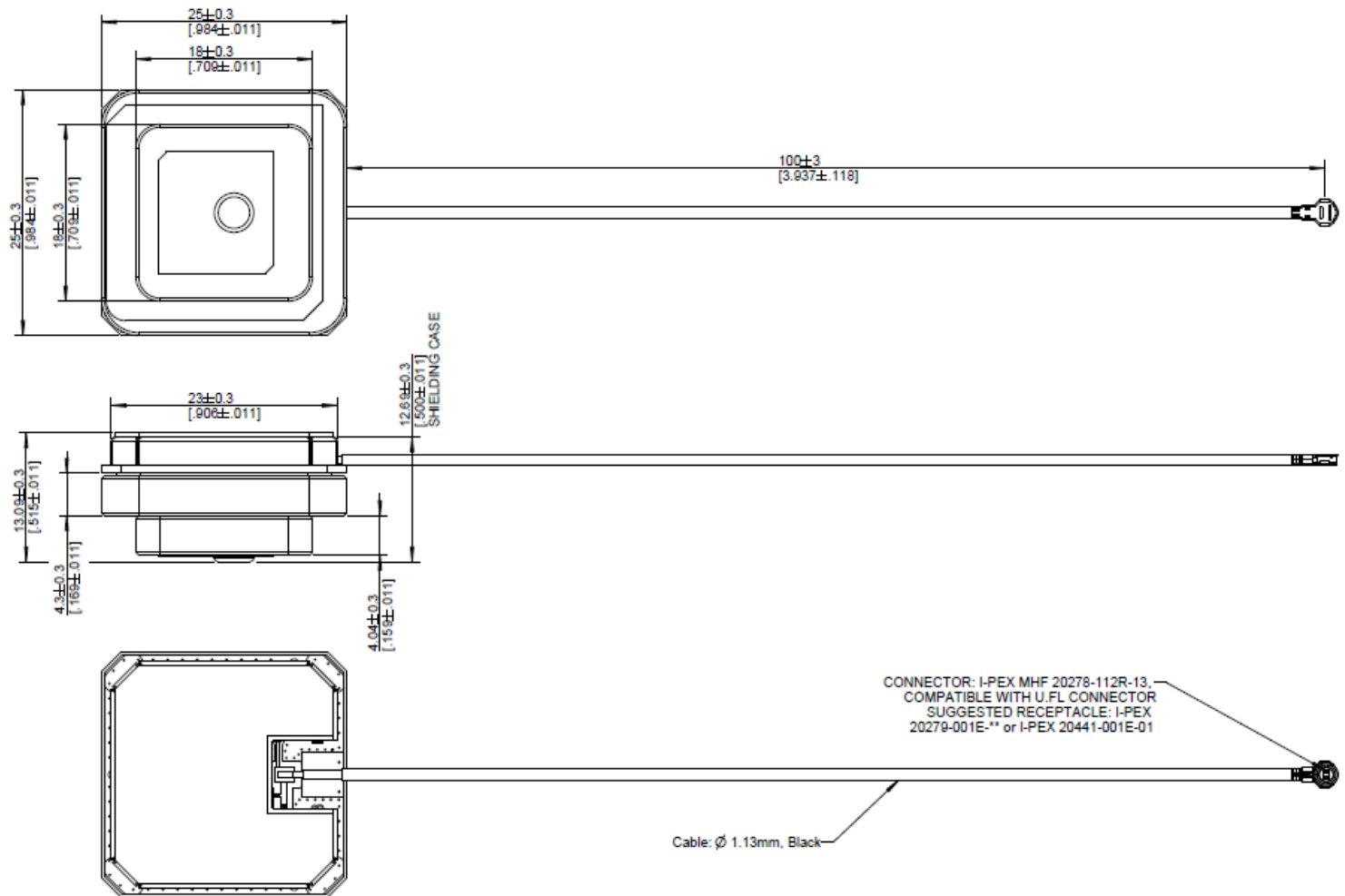
Mechanical Specifications

Dimension	Color	Antenna Material	Connector Type	Cable Type
Length x Width x Height (w/o cable)				
25mm*25mm*12.69mm/.984"x.984"x.5"	Gray	Ceramic+PCB+cable	I-PEX MHF	Ø1.13mm
Cable Length	Weight	RoHS- Compliant	Storage and operating Temperature	
100mm/3.937"	16 grams	Yes	-40°C to +85°C	

Notes:

1. The product is ESD sensitive, must be handled carefully and strictly according to the ESD requirements.
2. LNA internal voltage stabilized by LDO (Low dropout regulator)

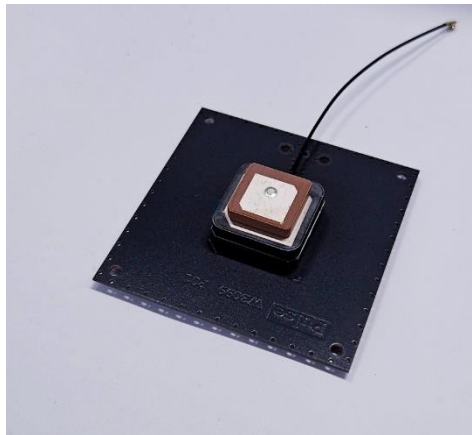
Mechanical Drawing



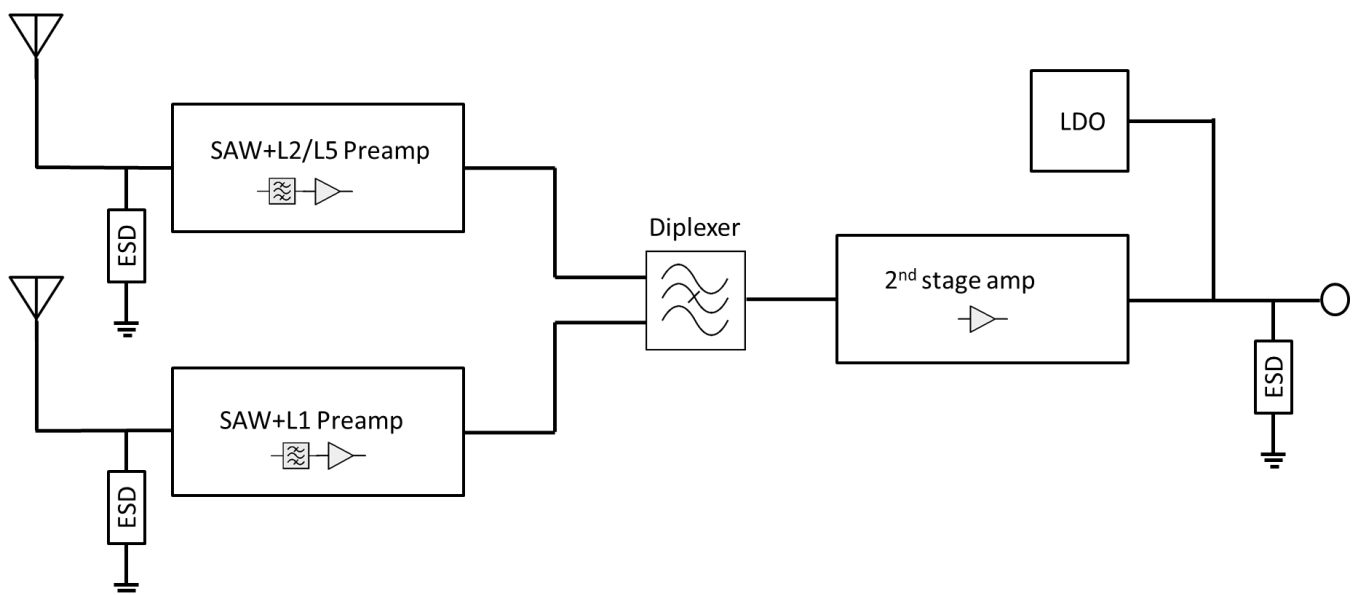
All dimensions are in mm/inch

Testing Setup

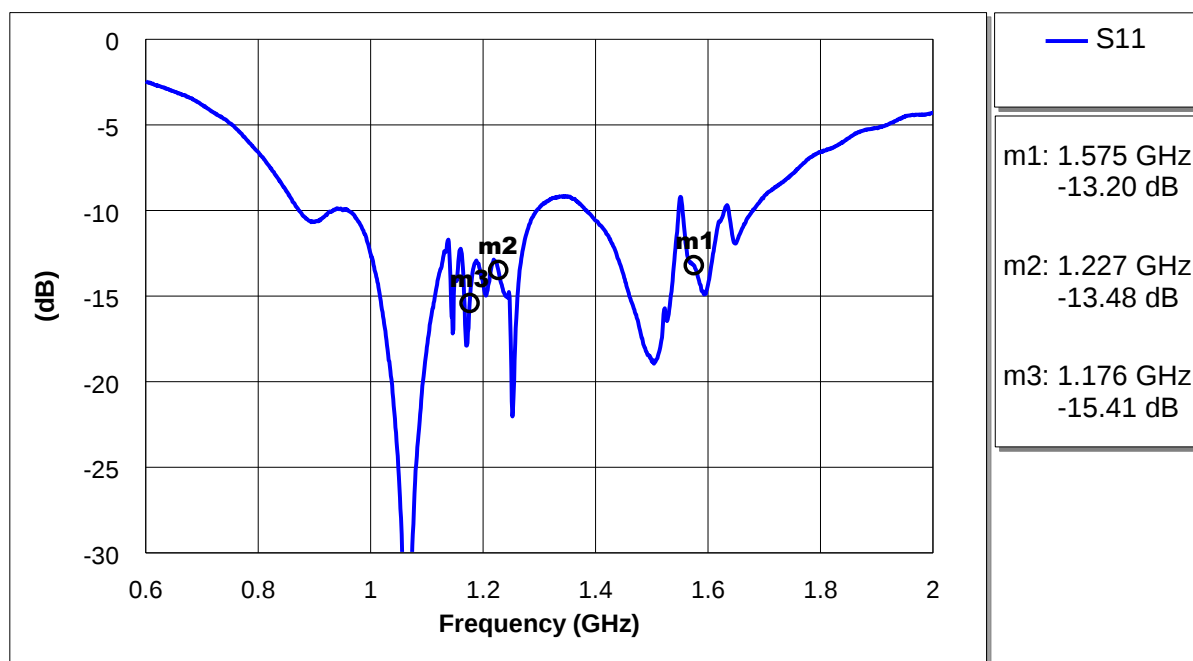
Module is tested on 70x70mm ground plane.



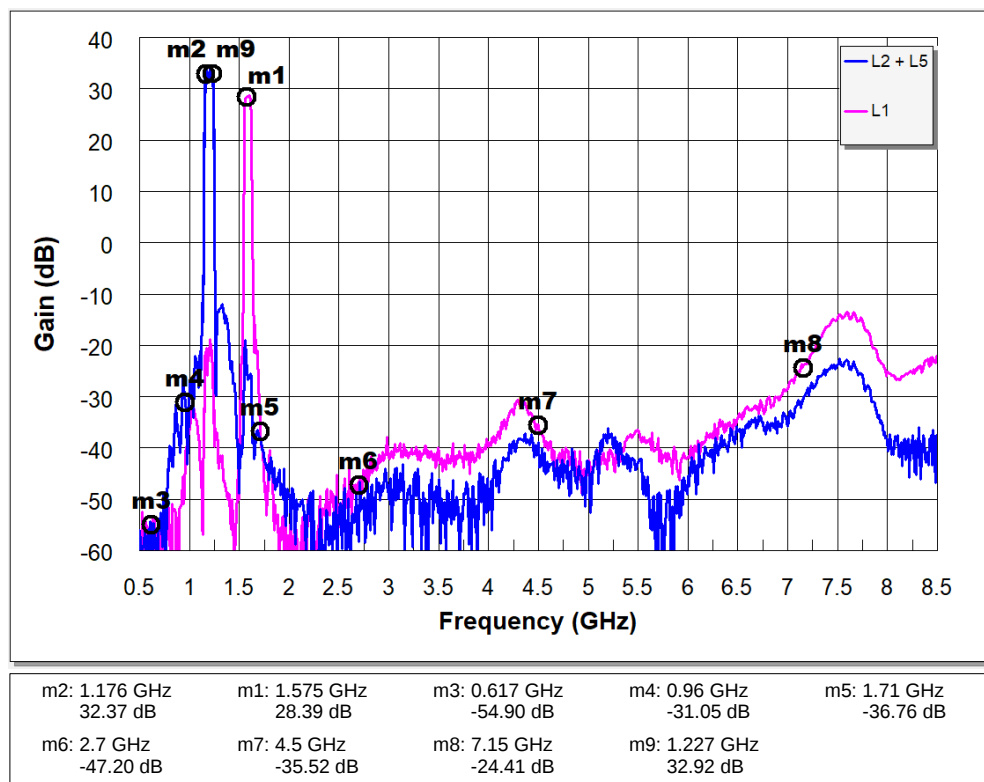
Active Antenna Block Diagram



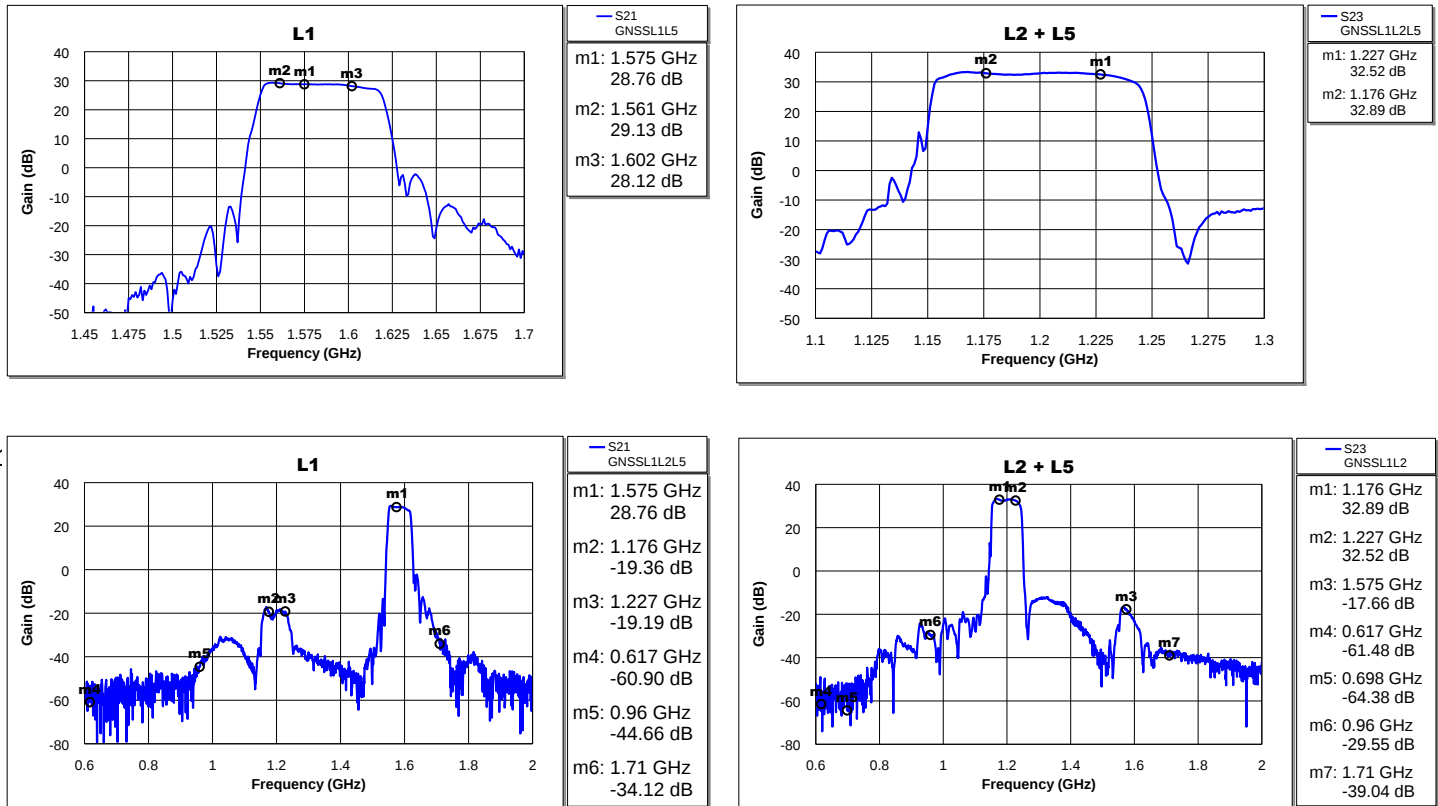
Return Loss



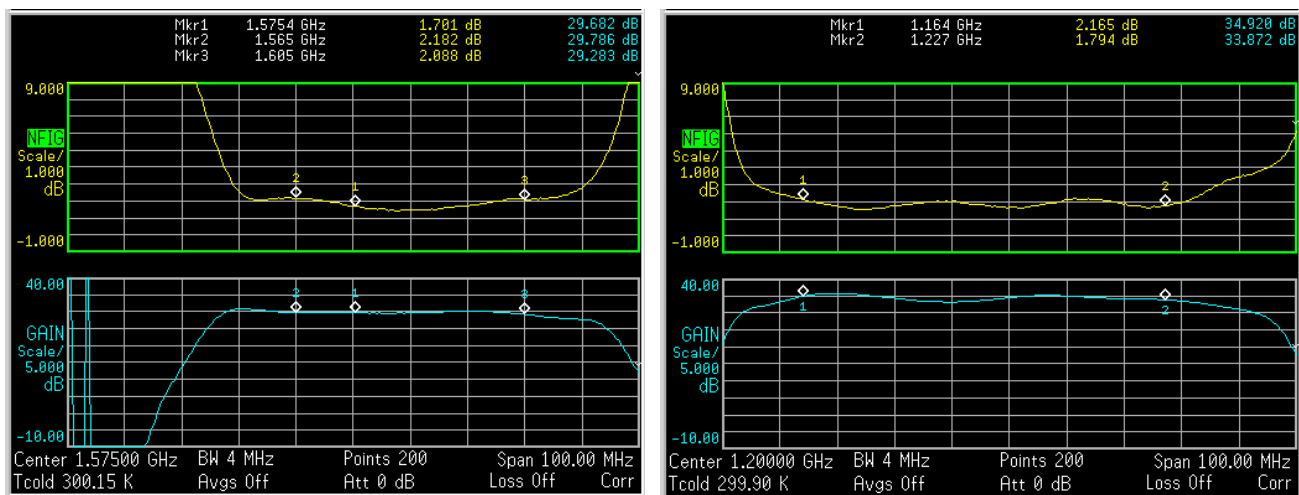
LNA Out of band rejection



LNA Gain



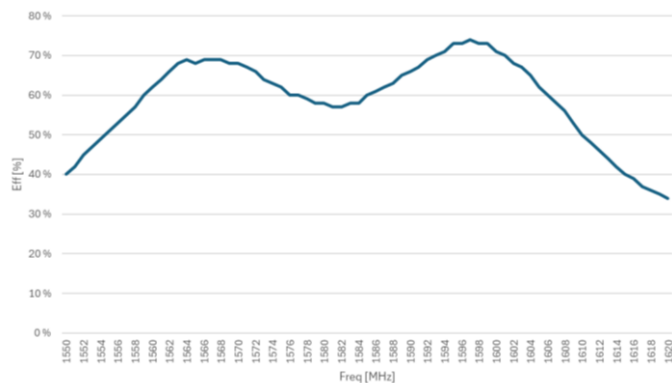
LNA Noise Figure



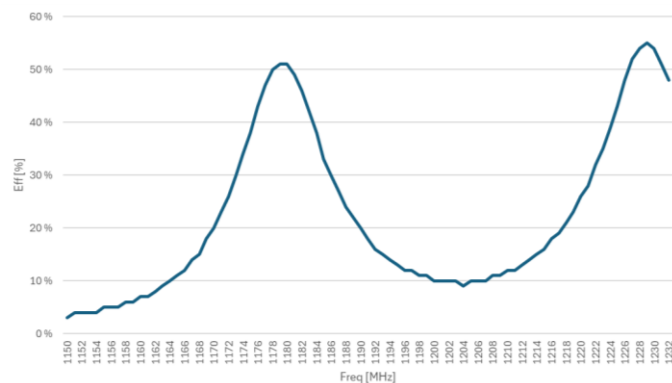
L1 Noise Figure

L2 + L5 Noise Figure

Radiating Element Efficiency

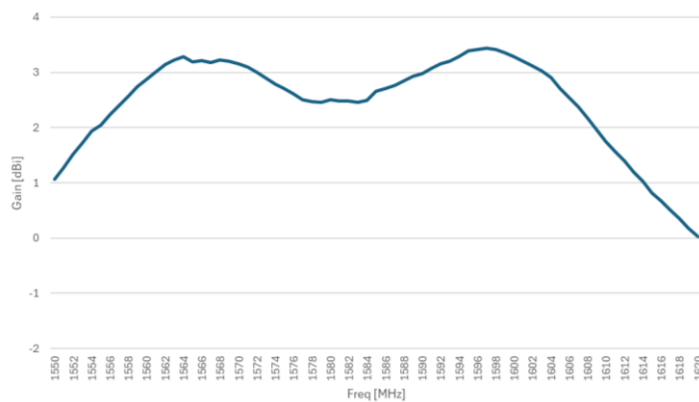


L1 Band

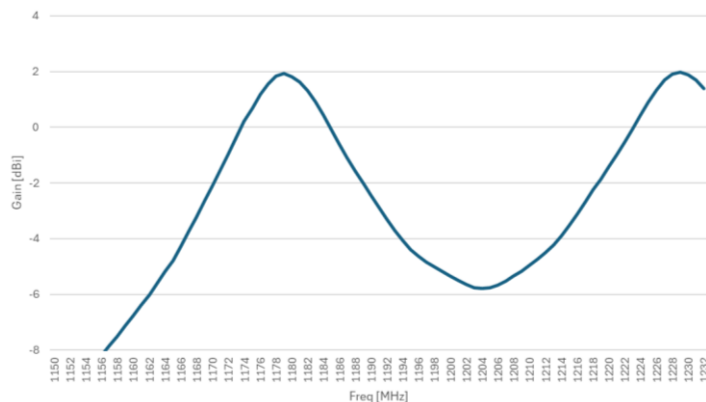


L2 + L5 Band

Radiating Element Peak Gain (Linear)

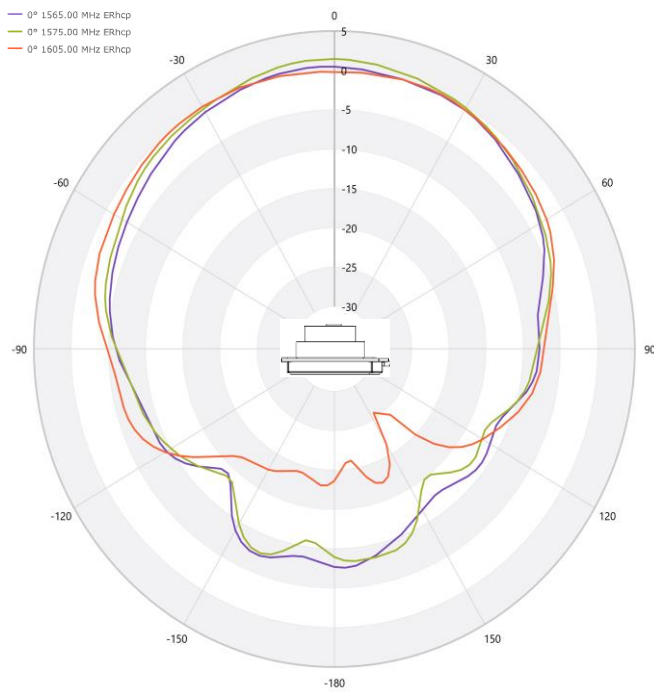


L1 Band

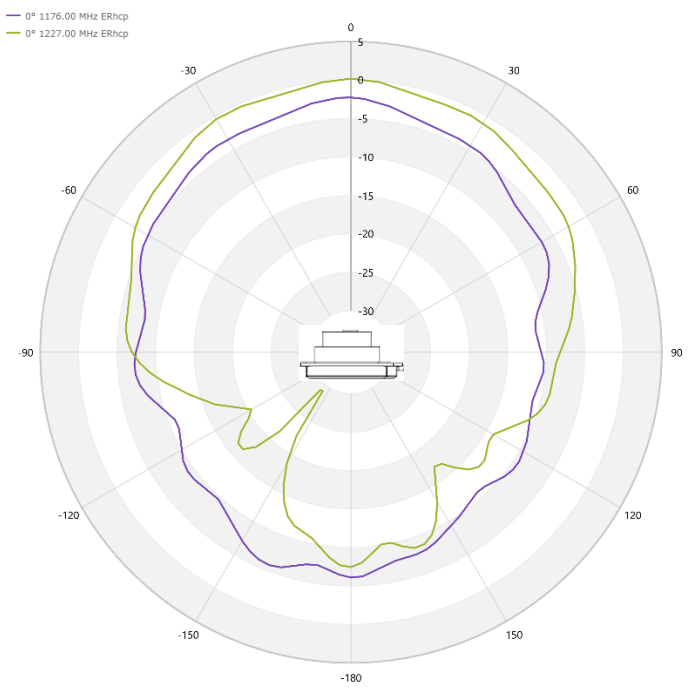


L2 + L5 Band

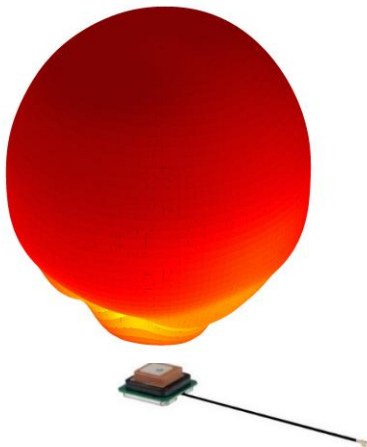
Radiation Patterns RHCP (dBic)



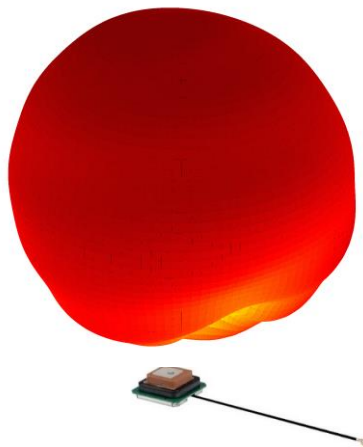
L1 RHCP Pattern



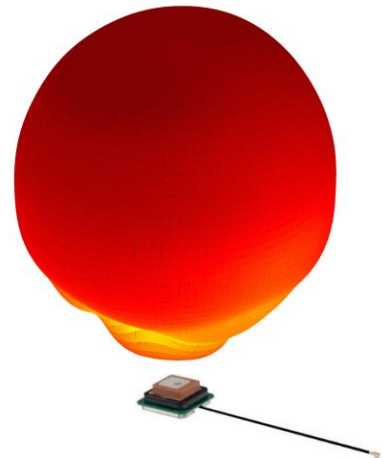
L2 + L5 RHCP Pattern



L1 3D RHCP Pattern
@1575 MHz



L2 3D RHCP Pattern
@1227 MHz



L5 3D RHCP Pattern
@1176 MHz

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