



**AANI-AP-0200**

Request Samples



Check Inventory



18 x 18 x 6.6 mm  
RoHS Compliant  
MSL Level = N/A

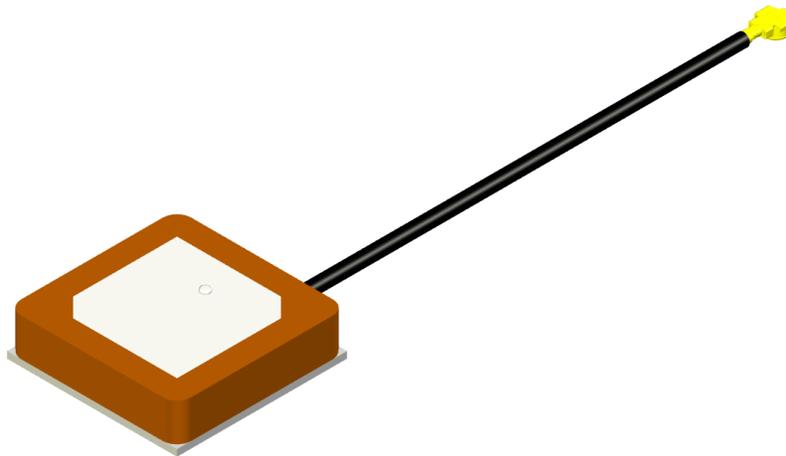
## Features

- Full-Constellation Active GNSS Antenna
- Low Profile with Size 18 x 18 x 6.6 mm
- LNA Gain:  $15 \pm 3$  dB
- Pre-Filtering for Enhanced Anti-Jamming Performance
- Low Current Consumption:  $5 \pm 3$  mA
- Custom Cable & Connector Options Available

## Applications

- Asset Tracking
- Fleet Management
- Micro-Mobility Solutions
- UAVs, Robotics & Autonomous Vehicles
- Precision GNSS Positioning
- Mission-Critical GNSS Timing
- Geofencing

## Product Image





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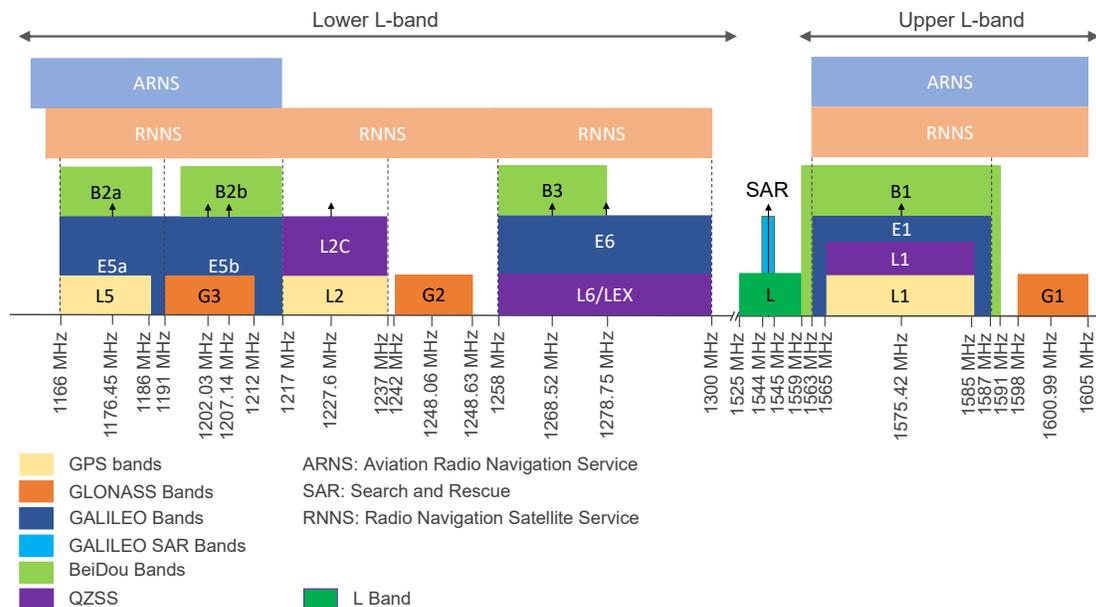
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## GNSS Frequency Bands Covered

	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	
GPS	■	□	□	
GLONASS	G1 1598.06-1609.31MHz	G2 1242.93-1251.68MHz	G3 1202.025MHz	
Galileo	E1 1575.42MHz	E5a 1176.45MHz	E5b 1201.5MHz	E6 1278.75MHz
BeiDou	B1 1561MHz	B2 1207.14MHz	B3 1268.52MHz	
QZSS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	L6 1278.75MHz
IRNSS/NAVIC			L5 1176.45MHz	
SBAS	L1/E1/B1 1575.42MHz		L5/B2a/E5a 1176.45MHz	



Frequency allocation: GNSS systems, upper L bands and lower L bands



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**Electrical Specification**

Parameters		Min.	Typ.	Max.	Units	Note
<b>Antenna</b>						
Frequency	GPS: L1 GLONASS: G1 GALILEO: E1 QZSS: L1 SBAS: L1					
VSWR	≤ 2				-	
Polarization	RHCP				-	(Right Hand Circular Polarization)
Nominal Impedance	50				Ω	
Peak Gain (RHCP)	0.16	0.8	2.1		dBic	On 70 × 70 mm ground plane
Efficiency	58.3	58.9	78.1		%	
Axial Ratio	≤ 20				dB	
<b>LNA</b>						
VSWR	≤ 2.0				-	
DC Input	1.8		5.0		V	
Gain	15 ± 3				dB	
Noise Figure	≤ 2.6				dB	
Out of Band Attenuation	10-840 MHz	> 50			dB	
	840-1500 MHz	> 60				
	1700-2000 MHz	> 50				
	2000-3000 MHz	> 50				
Current Consumption	5 ± 3				mA	

Please note: All measurement data is based on the standard configuration (conducted in free space unless otherwise specified).



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**Mechanical Specification**

Parameter	Specification
Antenna Dimension	18 x 18 x 6.6 mm
Mounting Type	Adhesive Mount
RF Connector <sup>(1)</sup>	u.FL/IPEX-1/MHF1
Cable Length <sup>(1)</sup>	Ø 1.13mm x 100 mm

(1): Fully customizable RF Cable & Connector

**Environmental Specification**

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
RoHS Compliance	Yes
ESD Sensitive	No
Relative Humidity	Up to 95%

# Full-Constellation Internal Active GNSS L1 Patch Antenna



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## Ordering Information

Part Number	Description	Connector Option
AANI-AP-0200-1	Full-Constellation Internal Active GNSS L1 Patch Antenna with 100 mm cable & MHF1 connector	u.FL/IPEX-1/MHF1
AANI-AP-0200-2	Full-Constellation Internal Active GNSS L1 Patch Antenna with 150 mm cable & MHF1 connector	u.FL/IPEX-1/MHF1
AANI-AP-0200-3	Full-Constellation Internal Active GNSS L1 Patch Antenna with 60 mm cable & MHF1 connector	u.FL/IPEX-1/MHF1

Note: Different cable and connector configurations that are not listed may be available upon request via [Abracon online support](#)



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# Full-Constellation Internal Active GNSS L1 Patch Antenna



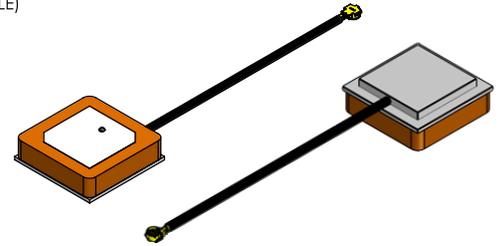
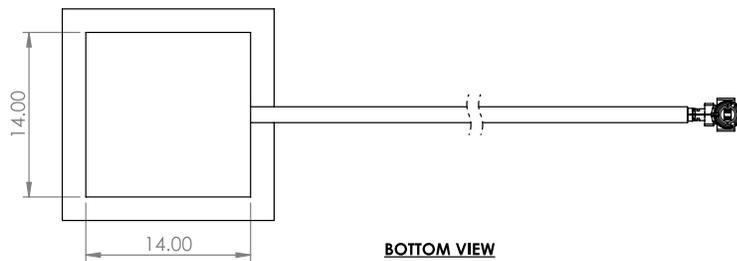
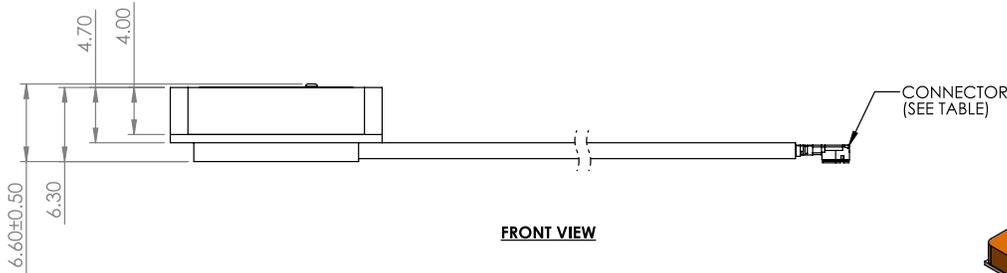
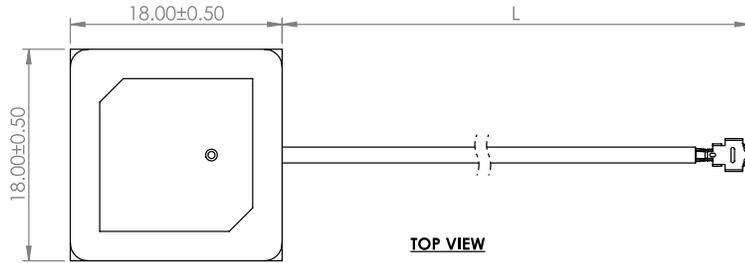
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## Product Dimension



PART NUMBER	CABLE LENGTH (L)	CONNECTOR
AANI-AP-0200-1	100	u.FL/IPEX-1/MHF1
AANI-AP-0200-2	150	u.FL/IPEX-1/MHF1
AANI-AP-0200-3	60	u.FL/IPEX-1/MHF1

Unit: mm



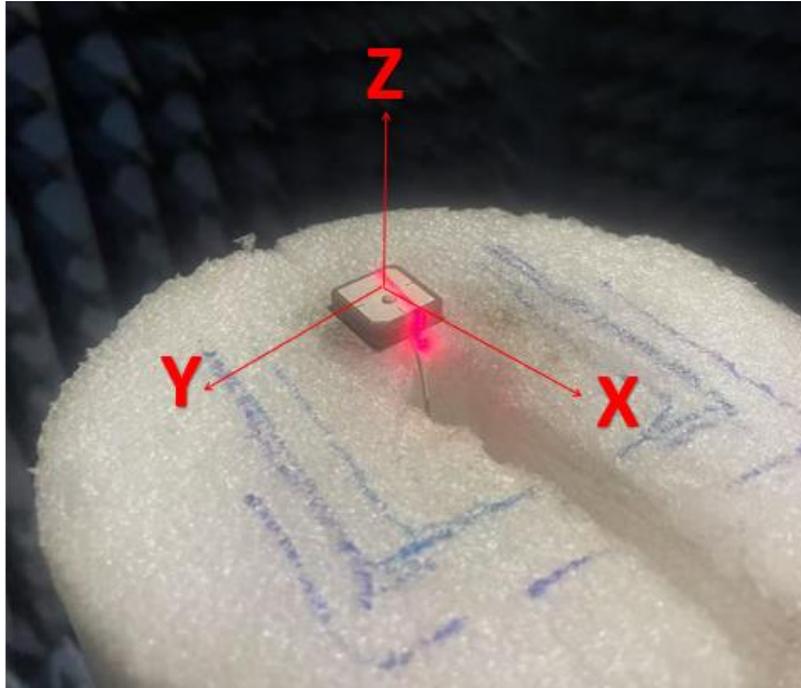
AANI-AP-0200

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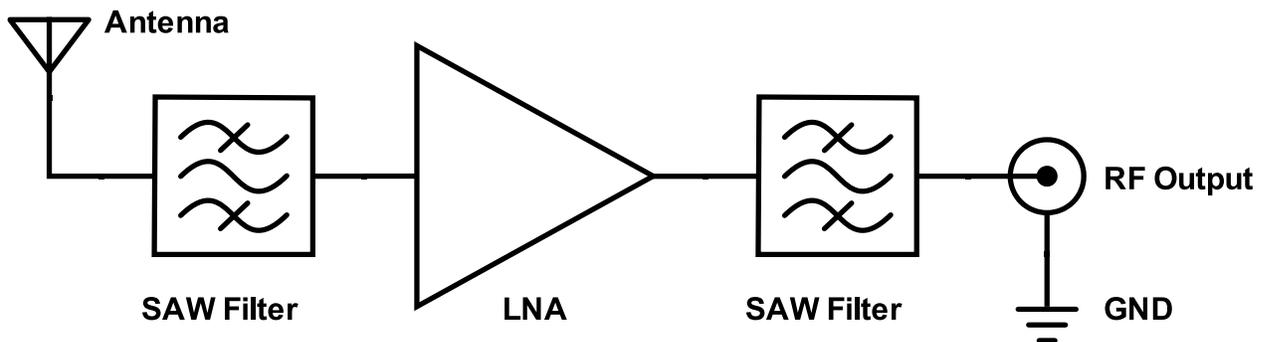
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Measurement Setup



GNSS Block Diagram





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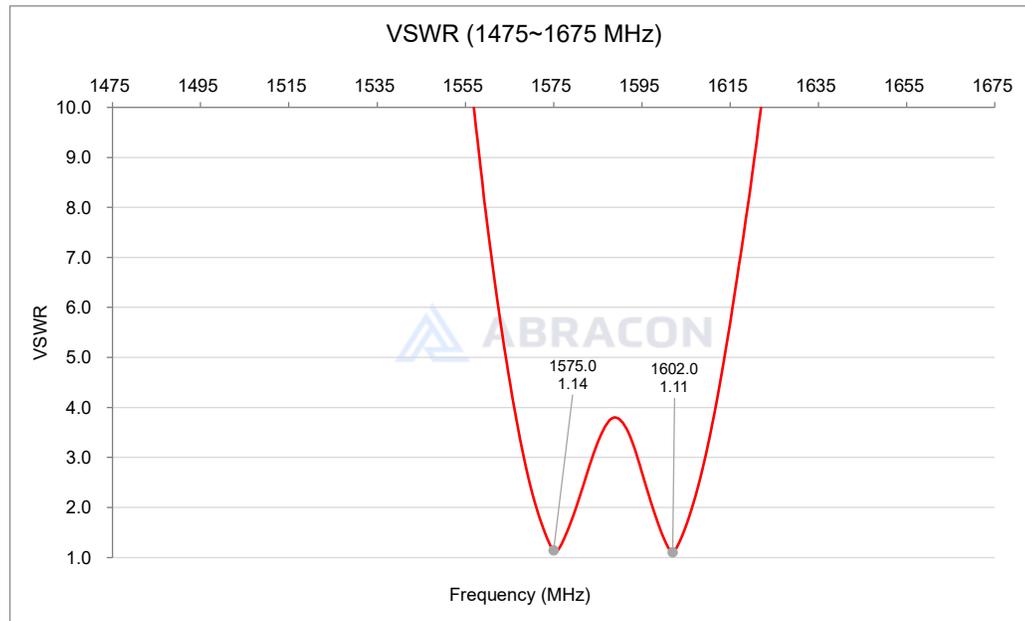
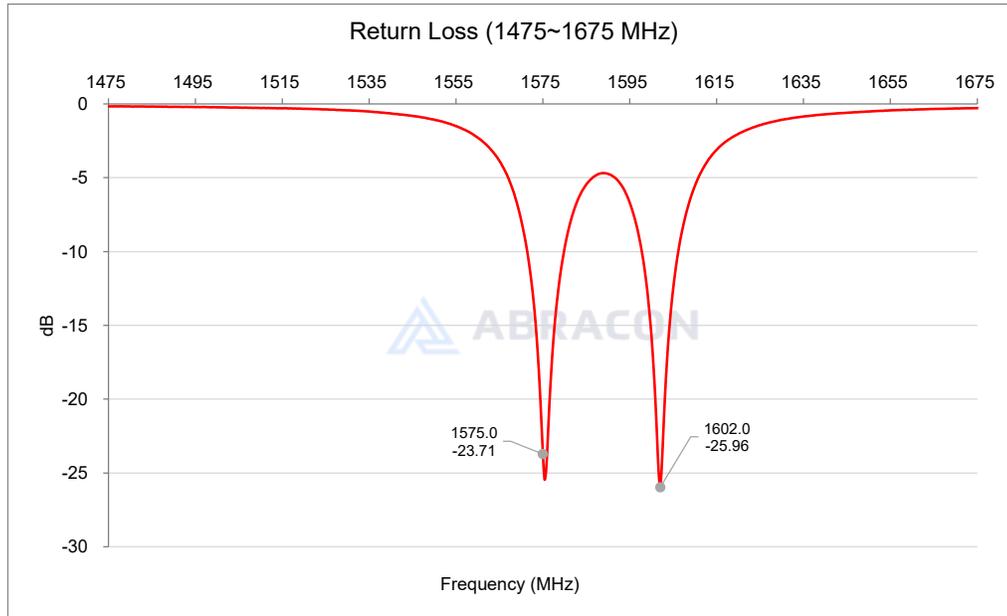


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## Reflection Characteristics – Return Loss & VSWR





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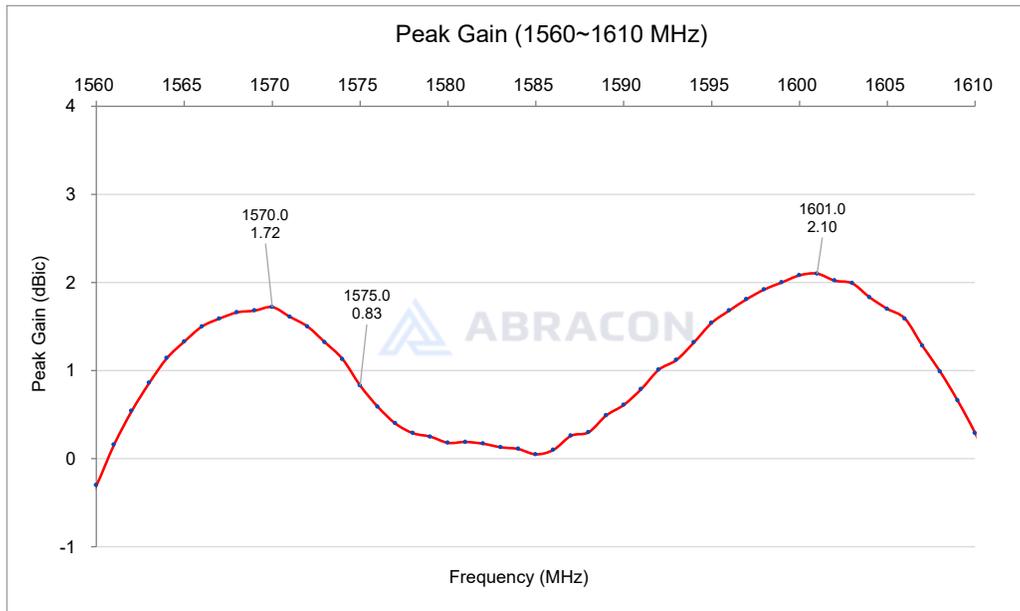


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### Radiation Characteristics –Passive Peak Gain





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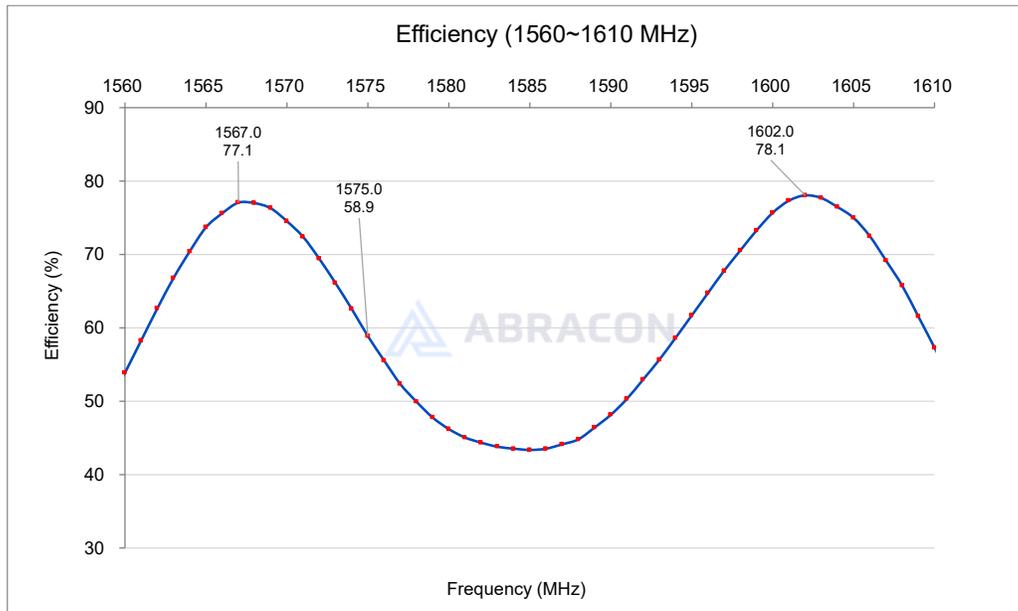


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## Radiation Characteristics –Passive Efficiency





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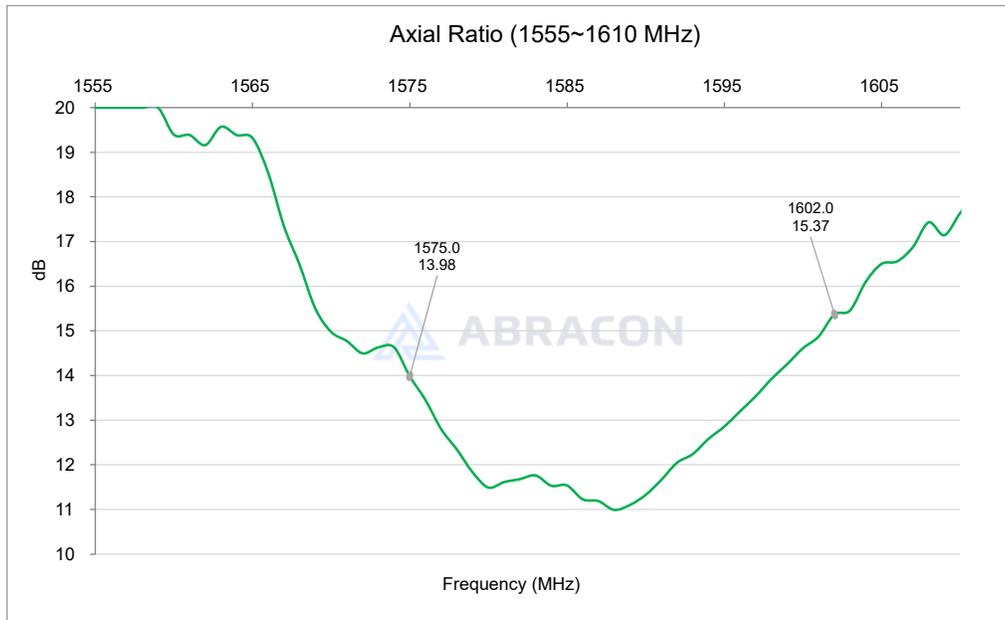


Check Inventory



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MSL Level = N/A

### Radiation Characteristics –Axial Ratio





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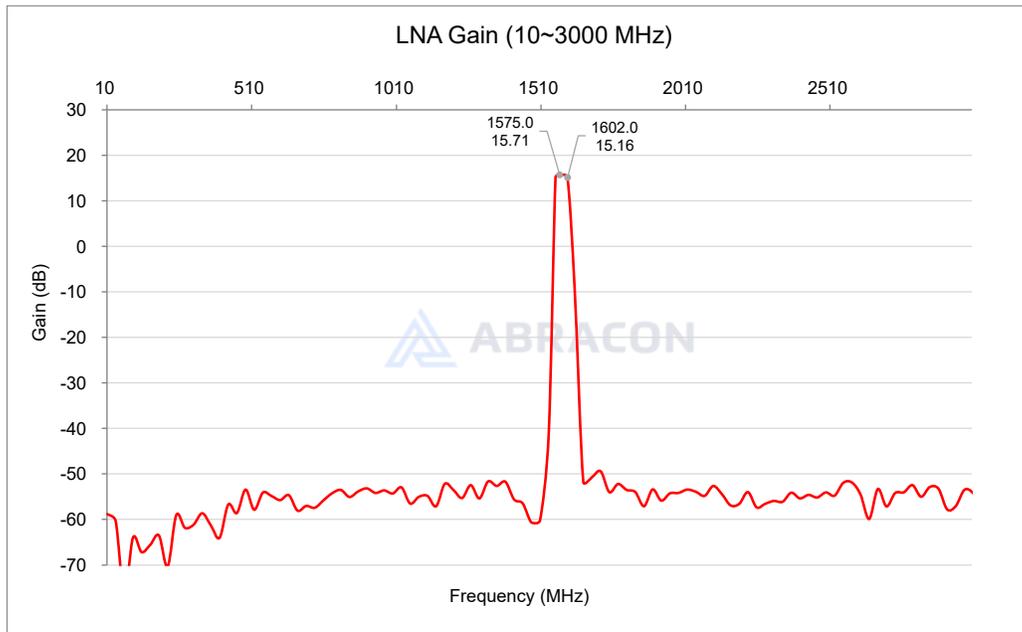


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### LNA Characteristics –LNA Gain





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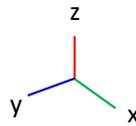
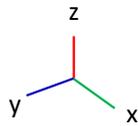
Request Samples

Check Inventory

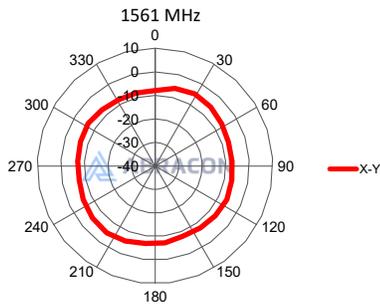
**18 x 18 x 6.6 mm**  
**RoHS Compliant**  
MSL Level = N/A

**Radiation Characteristics – 3D & 2D Pattern**

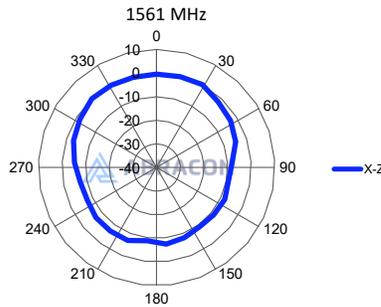
1561MHz



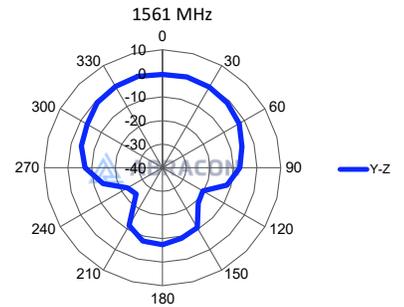
XY plane



XZ plane



YZ plane



# Full-Constellation Internal Active GNSS L1 Patch Antenna



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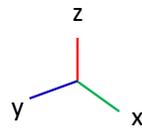
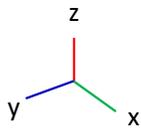


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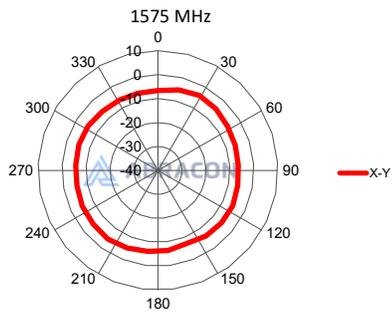


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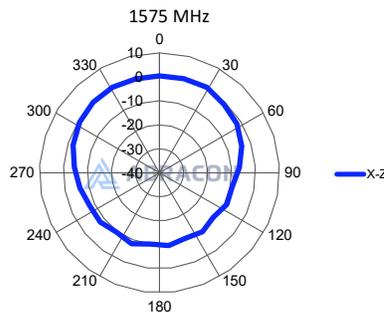
1575MHz



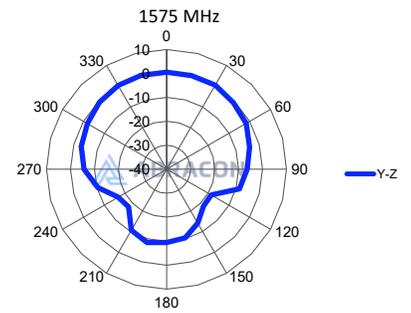
XY plane



XZ plane



YZ plane



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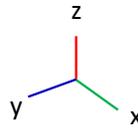
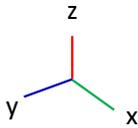
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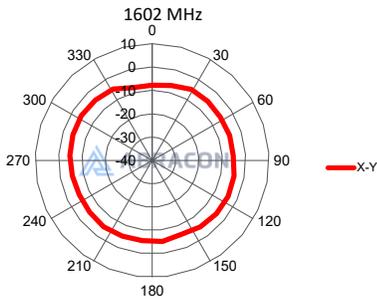
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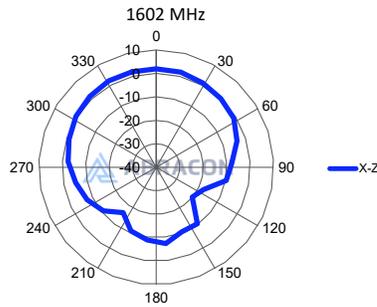
1602MHz



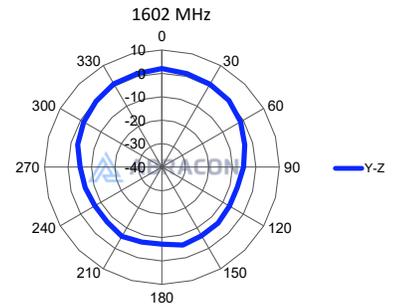
XY plane



XZ plane



YZ plane



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## Packaging

1000 pcs antennas per carton

Dimensions: 345 x 210 x 275 mm

**ATTENTION:** Abracon LLC's products are Commercial-Off-The-Shelf ('COTS'), which are designed, intended, and validated for use in commercial, industrial, and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.



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