

AANI-AP-0158

Request Samples



Check Inventory



27.2 x 27.2 x 9.3 mm

RoHS Compliant

MSL Level = N/A

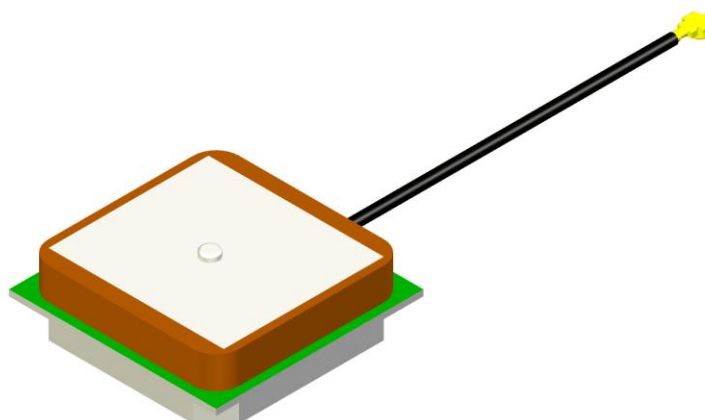
Features

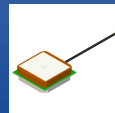
- Multi-Constellation Active GNSS Antenna
- Low Profile with Size 27.2 x 27.2 x 9.3 mm
- High LNA Gain of 28 ± 2 dB
- Pre-Filtering for Enhanced Anti-Jamming Performance
- Low Current Consumption
- Custom Cable & Connector Options Available

Applications

- Precision Land Survey Positioning
- Surveying and Mapping Systems
- Precision GNSS Positioning
- Autonomous Driving and UAVs
- Mission-Critical GNSS Timing
- Geofencing

Product Image



**AANI-AP-0158**

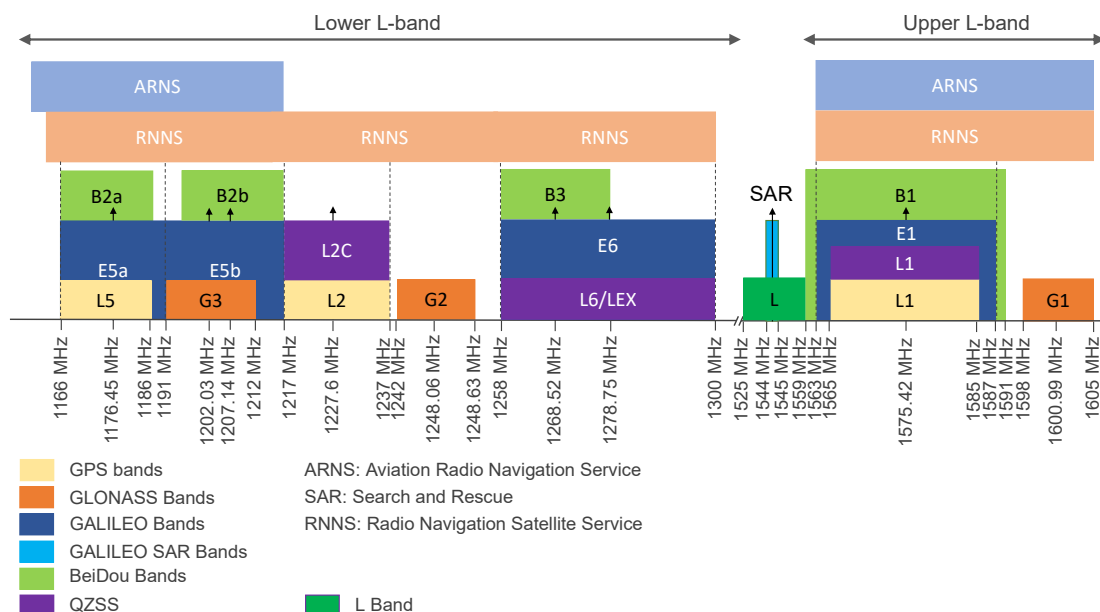
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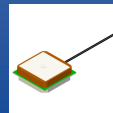
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**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****GNSS Frequency Bands Covered**

	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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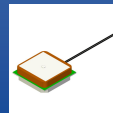
RoHS Compliant

MSL Level = N/A

Electrical Specification

Parameters		Min.	Typ.	Max.	Units	Note
Antenna						
Frequency		GPS: L1 GLONASS: G1 GALILEO: E1 BEIDOU: B1 QZSS: L1 SBAS: L1				
VSWR		≤ 2			-	
Polarization		RHCP			-	(Right Hand Circular Polarization)
Nominal Impedance		50			Ω	
Gain RHCP	1563-1588MHz(L1/E1)	2.1	3.1	3.8	dBic	On 70 × 70 mm ground plane
	1598-1606MHz(G1)	3.2	3.6	3.9		
	1559-1592MHz(B1)	1.3	2.8	3.8		
Efficiency	1563-1588MHz(L1/E1)	33	47	55	%	
	1598-1606MHz(G1)	58	65	69		
	1559-1592MHz(B1)	27	45	55		
Axial Ratio		≤ 3			dB	1575MHz
LNA						
VSWR		≤ 2.0			-	
DC Input		3.0 ~ 5.0			V	
Gain	1545-1610MHz	28 ± 2			dB	
Current Consumption		15 ~ 25			mA	
Noise Figure		≤ 3.0			dB	

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

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**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A**

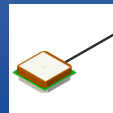
Mechanical Specification

Parameter	Specification
Antenna Dimension	27.2 x 27.2 x 9.3 mm
Mounting Type	Adhesive Mount
RF Connector ⁽¹⁾	u.FL/IPEX-1/MHF1
Cable Length ⁽¹⁾	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%

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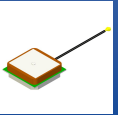


Check Inventory

**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****Ordering Information**

Part Number	Description	Connector Option
AANI-AP-0158-1	GNSS L1 Internal Active Patch Antenna with 100 mm cable & MHF1 connector	MHF1
AANI-AP-0158-2	GNSS L1 Internal Active Patch Antenna with 50 mm cable & MHF1 connector	MHF1
AANI-AP-0158-3	GNSS L1 Internal Active Patch Antenna with 150 mm cable & MHF1 connector	MHF1
AANI-AP-0158-4	GNSS L1 Internal Active Patch Antenna with 200 mm cable & MHF1 connector	MHF1

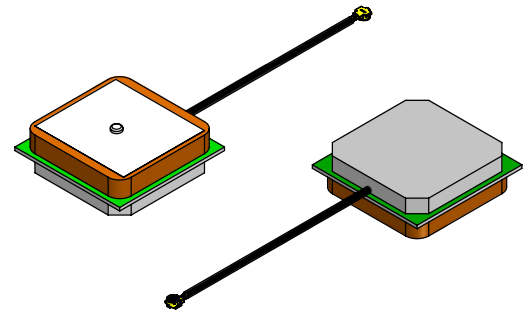
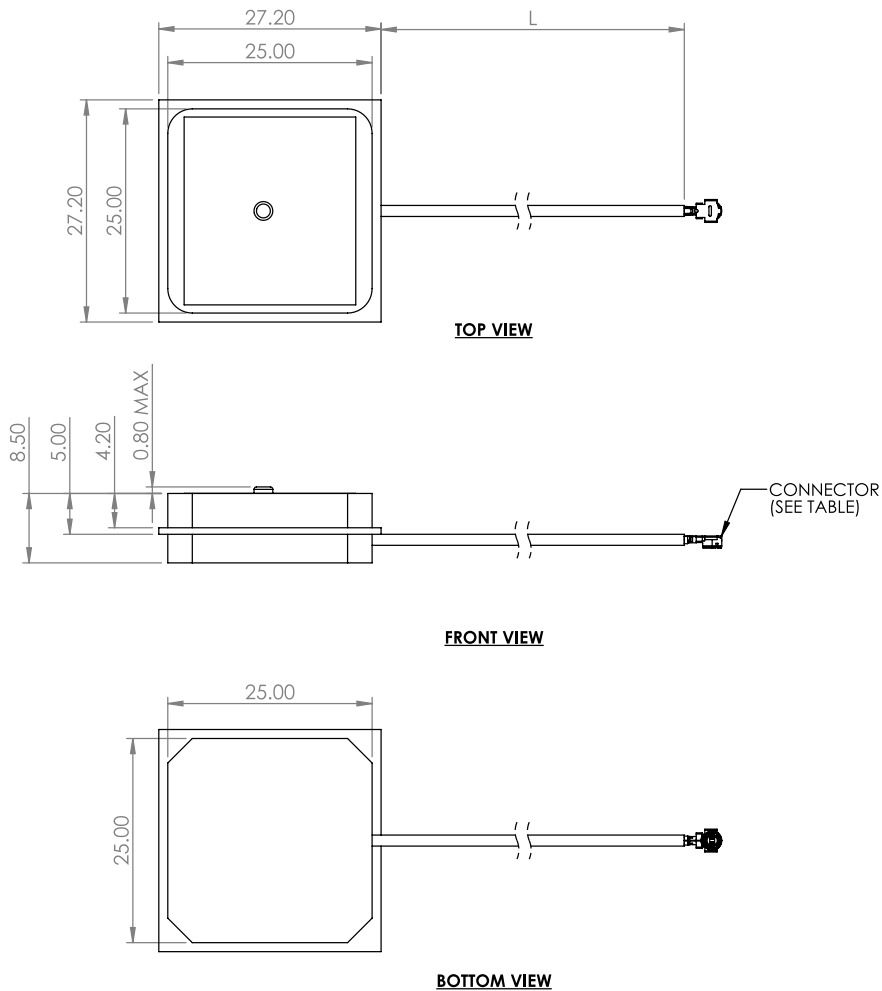
Note: Different cable and connector configurations that are not listed may be available upon request via [Abracon online support](#)

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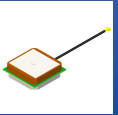


Check Inventory

**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****Product Dimension**

PART NUMBER	CABLE LENGTH (L)	CONNECTOR
AANI-AP-0158-1	100	u.FL/IPEX-1/MHF1
AANI-AP-0158-2	50	u.FL/IPEX-1/MHF1
AANI-AP-0158-3	150	u.FL/IPEX-1/MHF1
AANI-AP-0158-4	200	u.FL/IPEX-1/MHF1

Unit: mm



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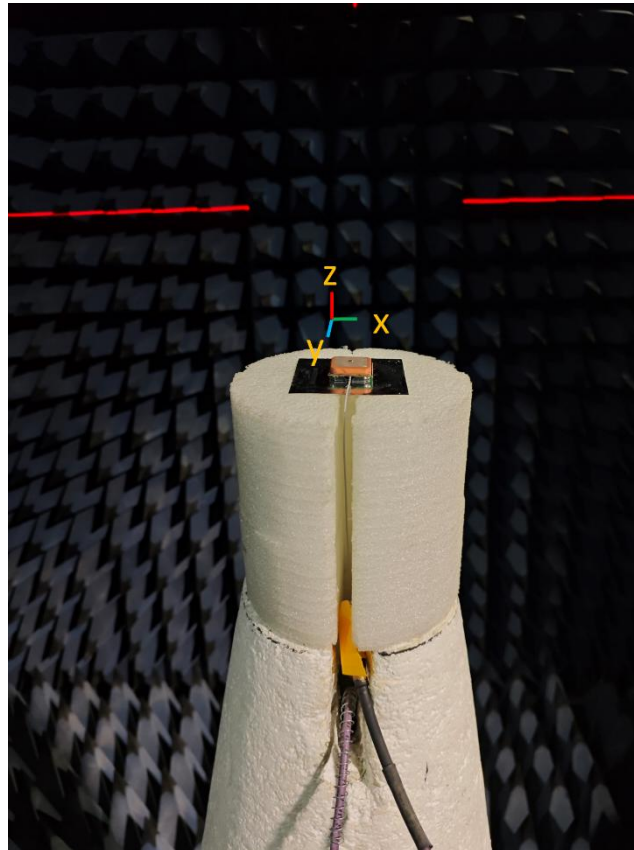


Check Inventory

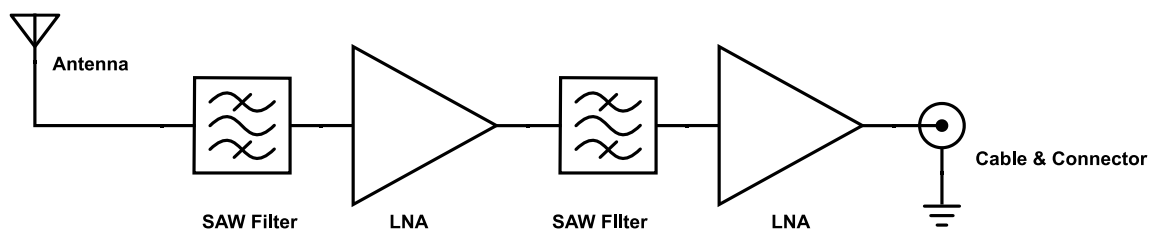


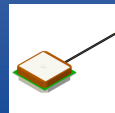
27.2 x 27.2 x 9.3 mm
RoHS Compliant
MSL Level = N/A

Measurement Setup



GNSS Block Diagram

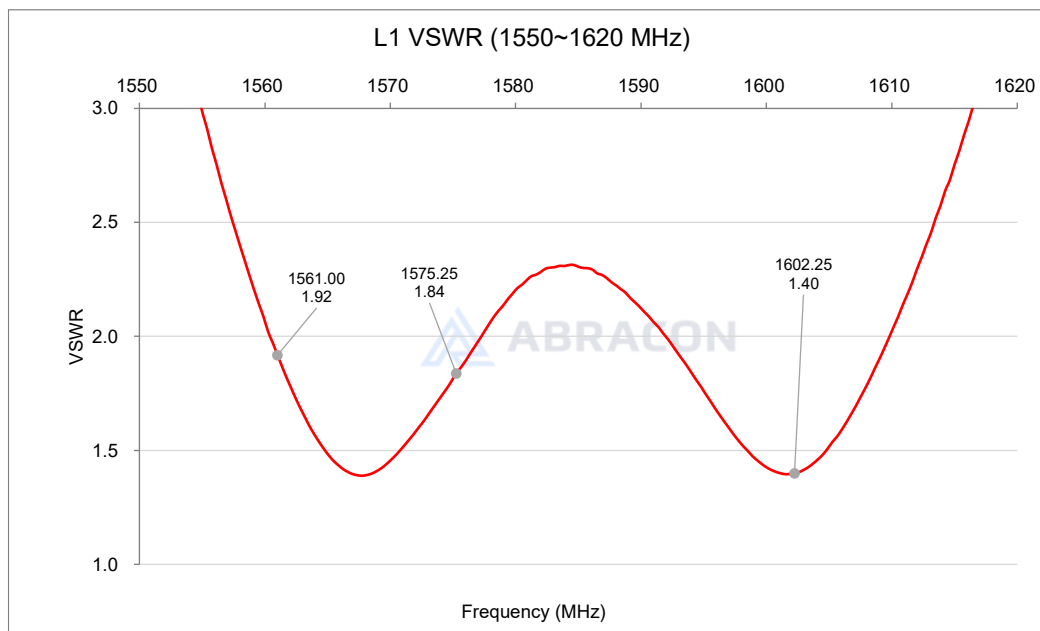
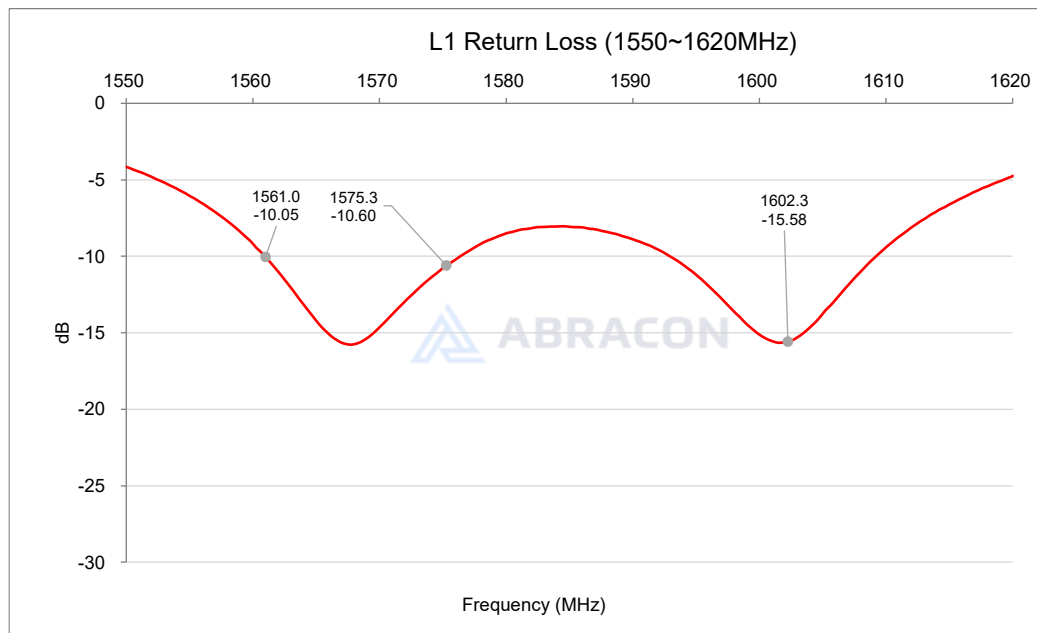


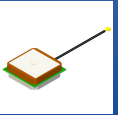
**AANI-AP-0158**

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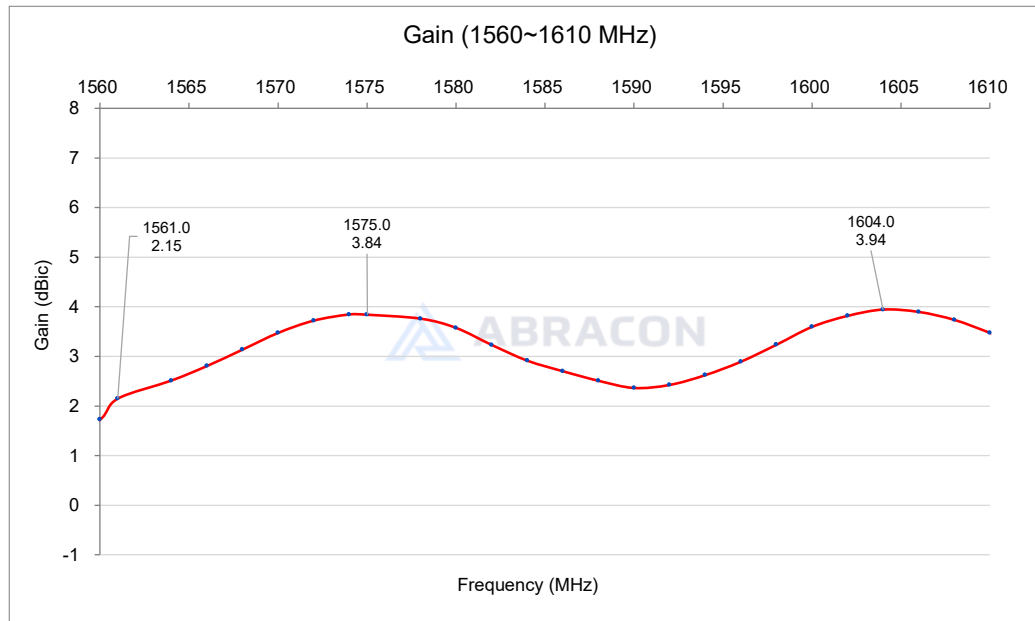
**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****Reflection Characteristics – Return Loss & VSWR**

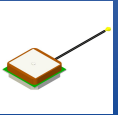
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**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****Radiation Characteristics –Passive Peak Gain**



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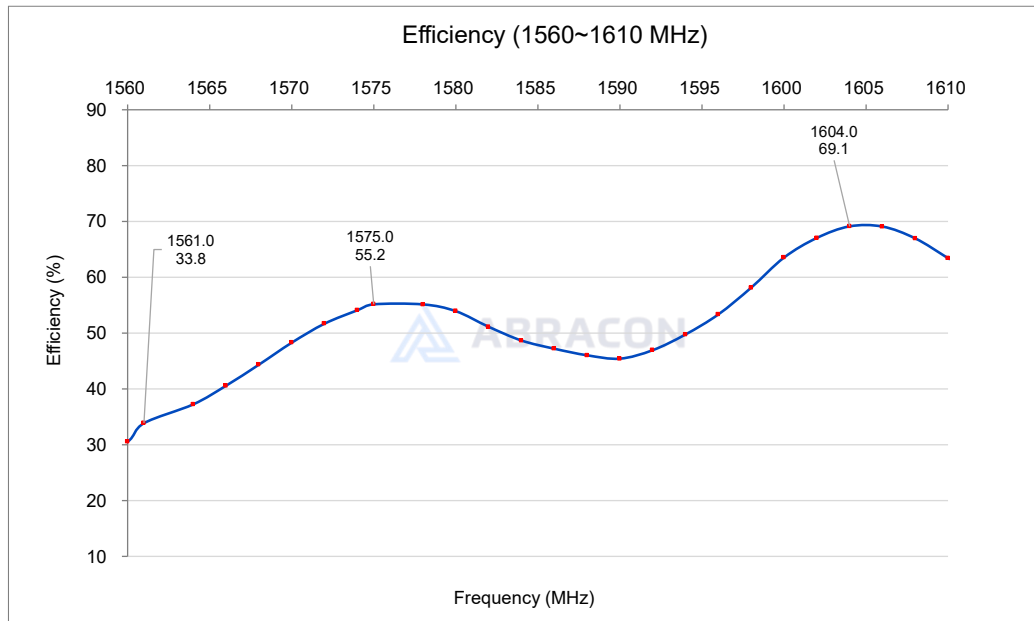


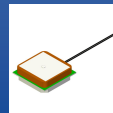
Check Inventory



27.2 x 27.2 x 9.3 mm
RoHS Compliant
MSL Level = N/A

Radiation Characteristics –Passive Efficiency

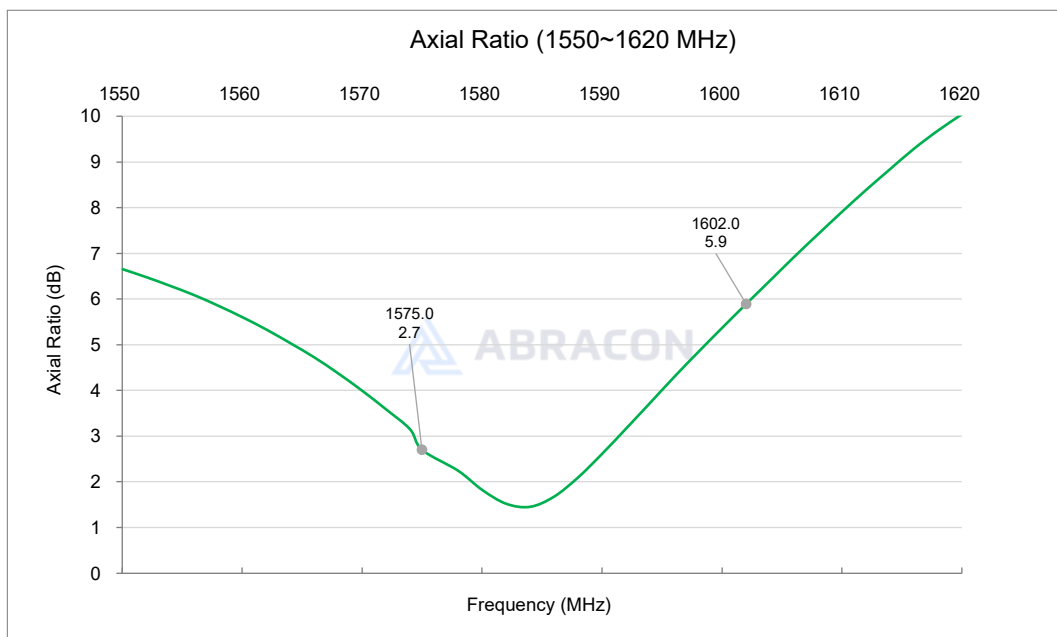


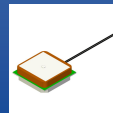
**AANI-AP-0158**

Request Samples



Check Inventory

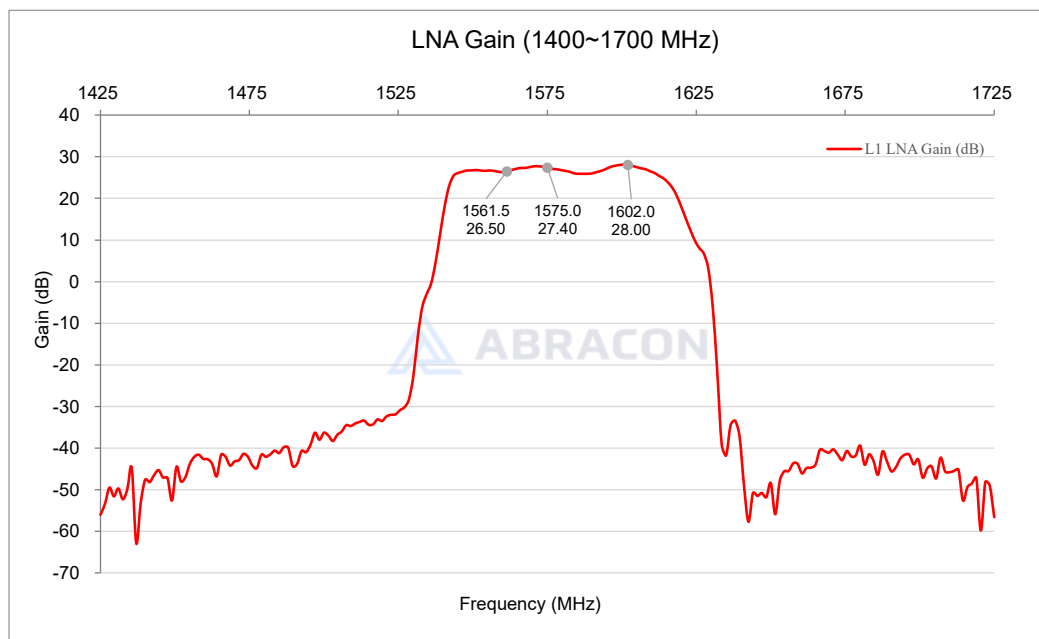
**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****Radiation Characteristics –Axial Ratio**

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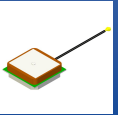
Request Samples



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**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****LNA Characteristics –LNA Gain**

LNA Gain & Power Consumption		
Voltage	LNA Gain (Typ.)	Power Consumption
3.0 V	26 dB	15 mA
4.0 V	27 dB	20 mA
5.0 V	28 dB	25 mA

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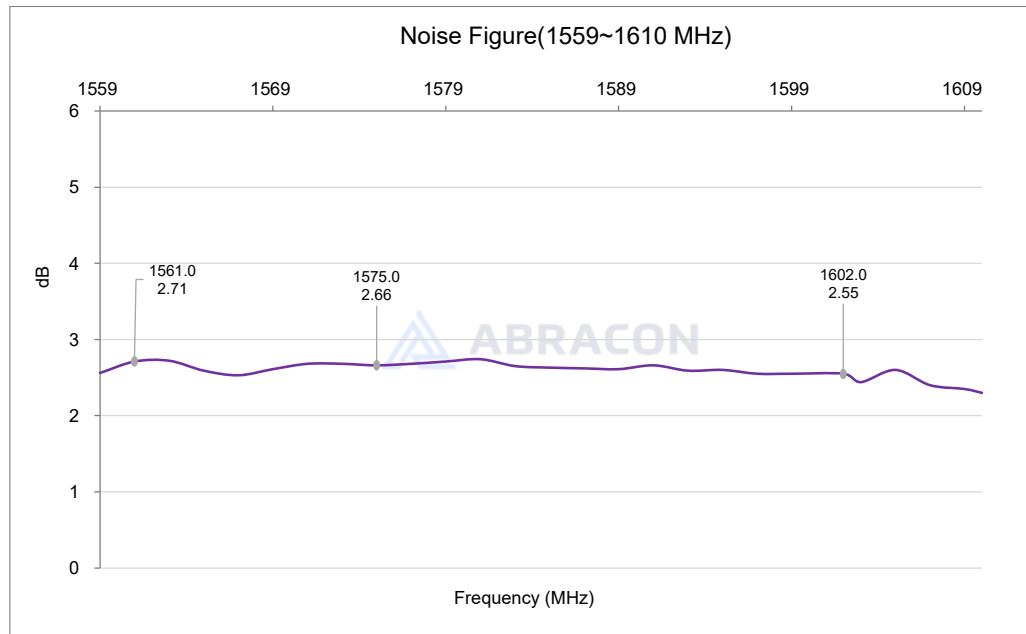
Request Samples

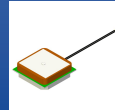


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**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A**

LNA Characteristics –Noise Figure





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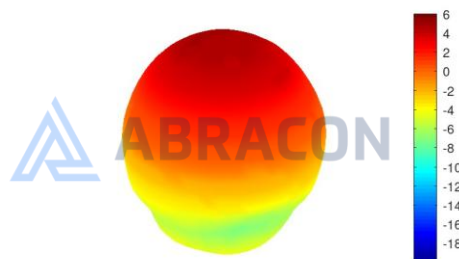
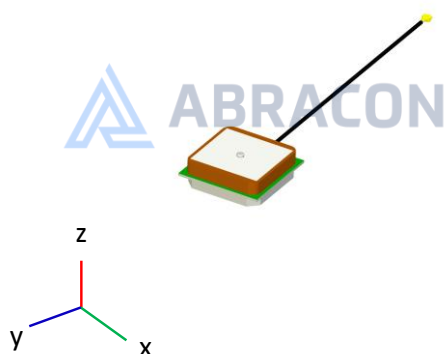
27.2 x 27.2 x 9.3 mm

RoHS Compliant

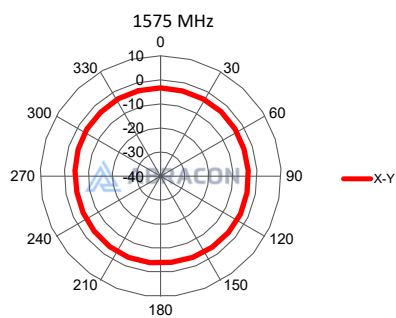
MSL Level = N/A

Radiation Characteristics – 3D & 2D Pattern

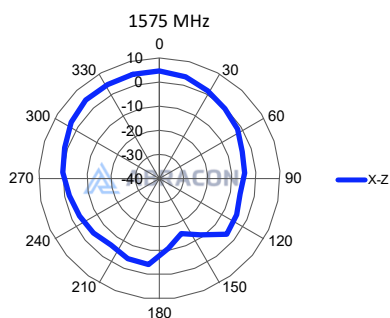
1575MHz



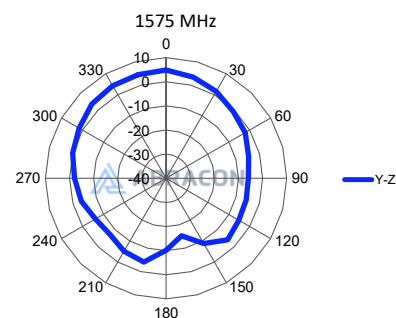
XY plane



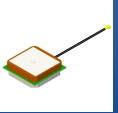
XZ plane



YZ plane



GNSS L1 Internal Active Patch Antenna



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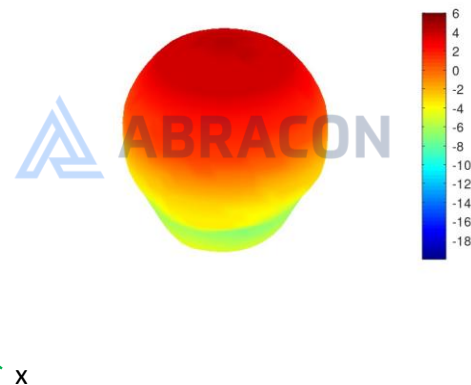
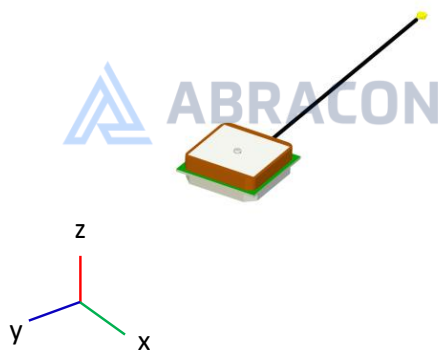


27.2 x 27.2 x 9.3 mm

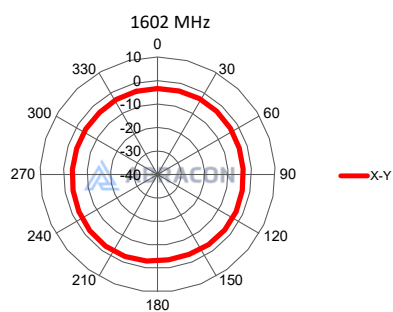
RoHS Compliant

MSL Level = N/A

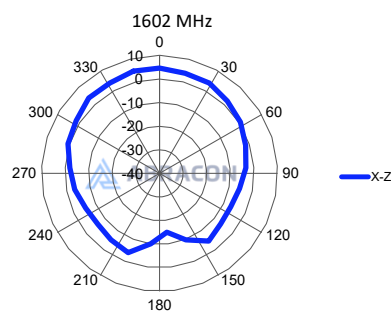
1602MHz



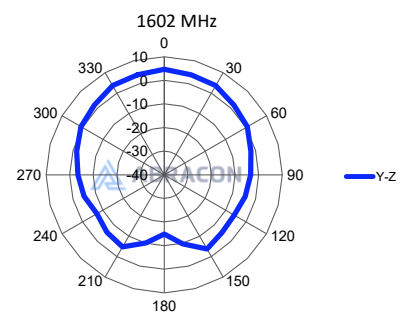
XY plane



XZ plane



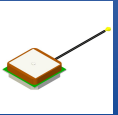
YZ plane



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ABRACON IS
ISO9001-2015
CERTIFIED



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27.2 x 27.2 x 9.3 mm

RoHS Compliant

MSL Level = N/A

Packaging

1000 pcs antennas per carton

Dimensions: 345 x 275 x 210 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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