



AANI-AP-0158

Request Samples



Check Inventory



27.2 x 27.2 x 9.3 mm

RoHS Compliant

MSL Level = N/A

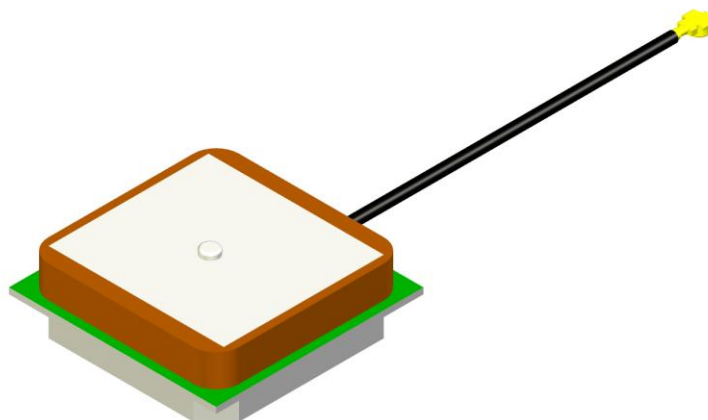
Features

- 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





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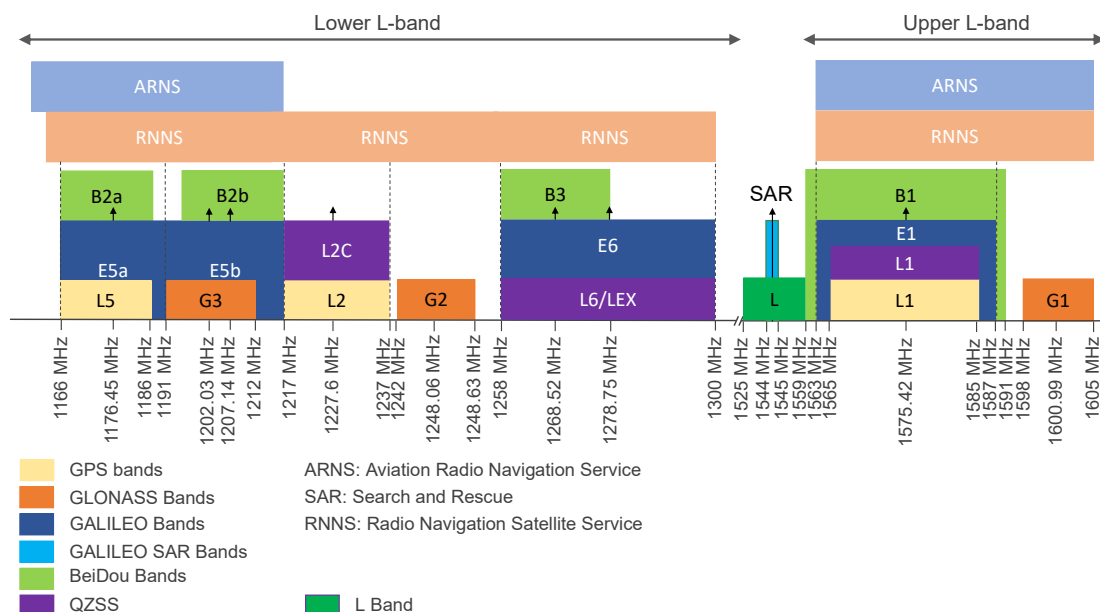
27.2 x 27.2 x 9.3 mm

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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
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)	2.3	4.0	4.7	dBic	On 70 × 70 mm ground plane
	1598-1606MHz(G1)	4.3	4.6	4.8		
	1559-1592MHz(B1)	1.3	3.8	4.8		
Efficiency	1563-1588MHz(L1/E1)	74	87	94	%	
	1598-1606MHz(G1)	92	93	94		
	1559-1592MHz(B1)	62	84	94		
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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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%

GNSS L1 Internal Active Patch Antenna



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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](#)

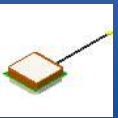


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GNSS L1 Internal Active Patch Antenna



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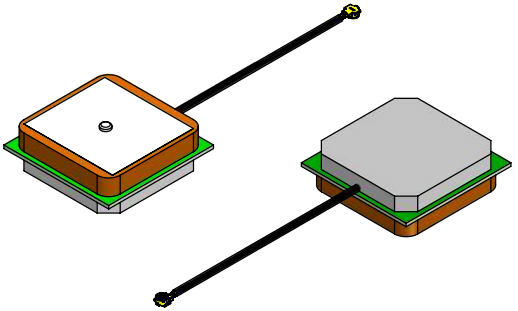
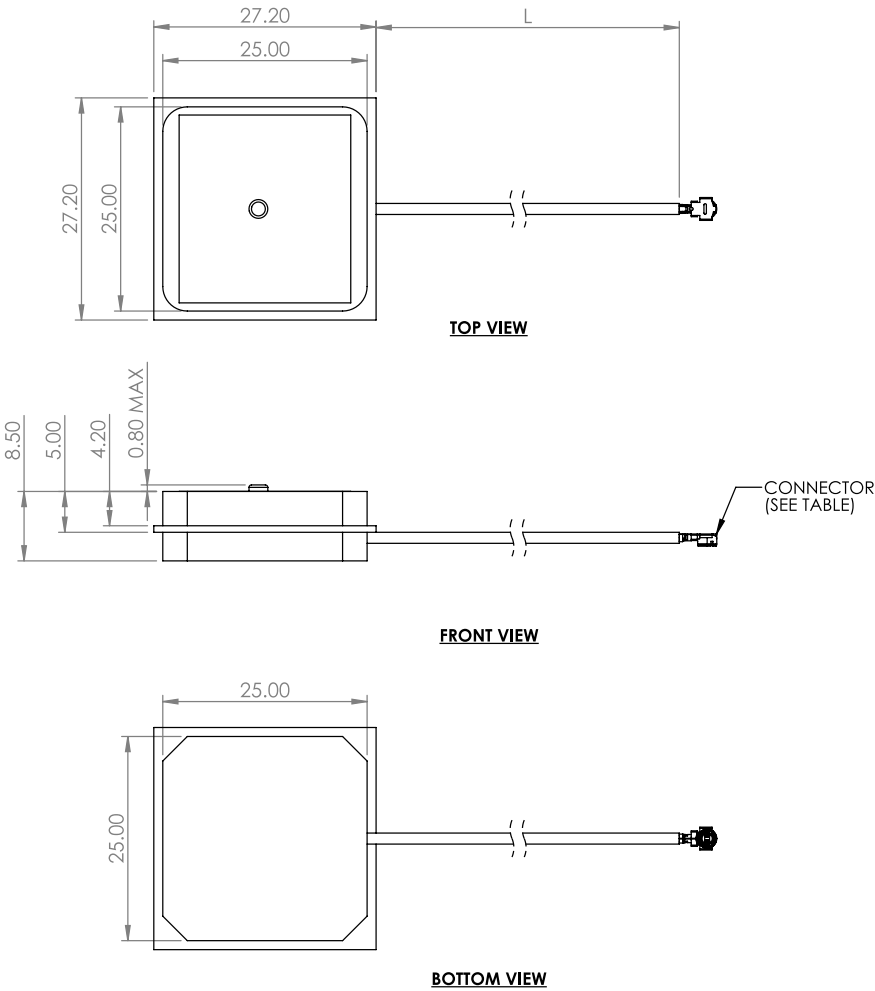


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27.2 x 27.2 x 9.3 mm
RoHS Compliant
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Product Dimension



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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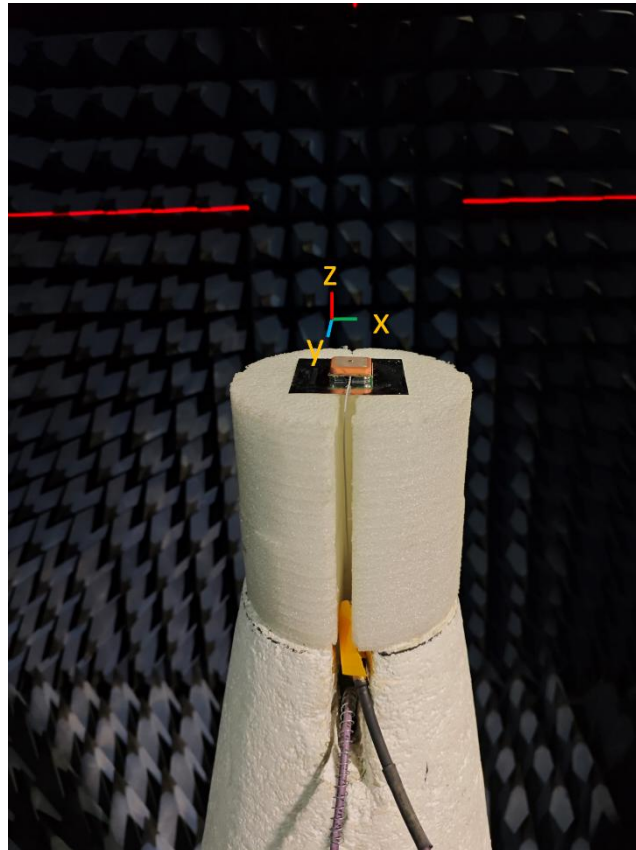


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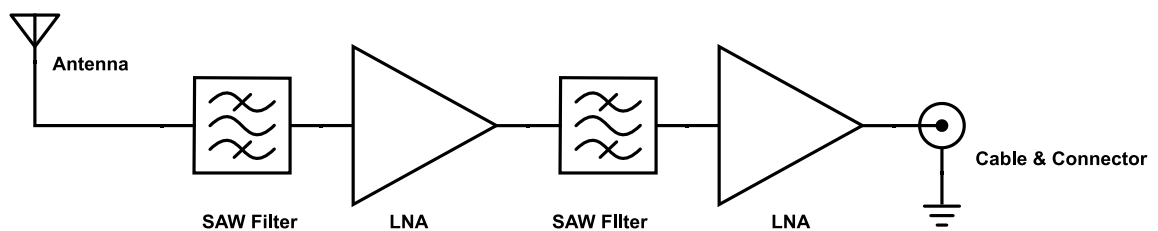


27.2 x 27.2 x 9.3 mm
RoHS Compliant
MSL Level = N/A

Measurement Setup



GNSS Block Diagram

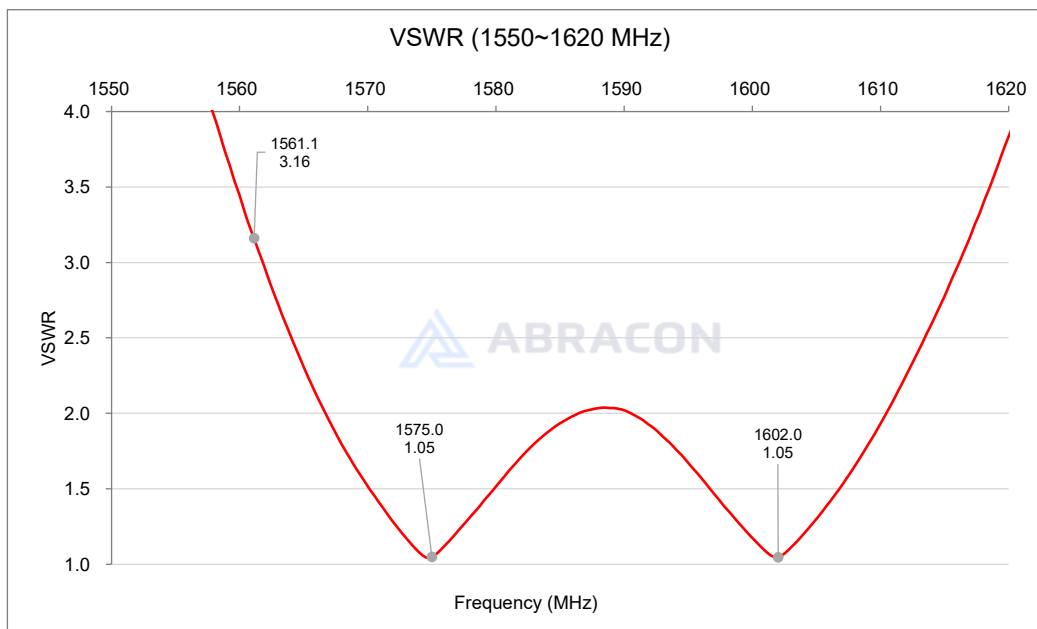
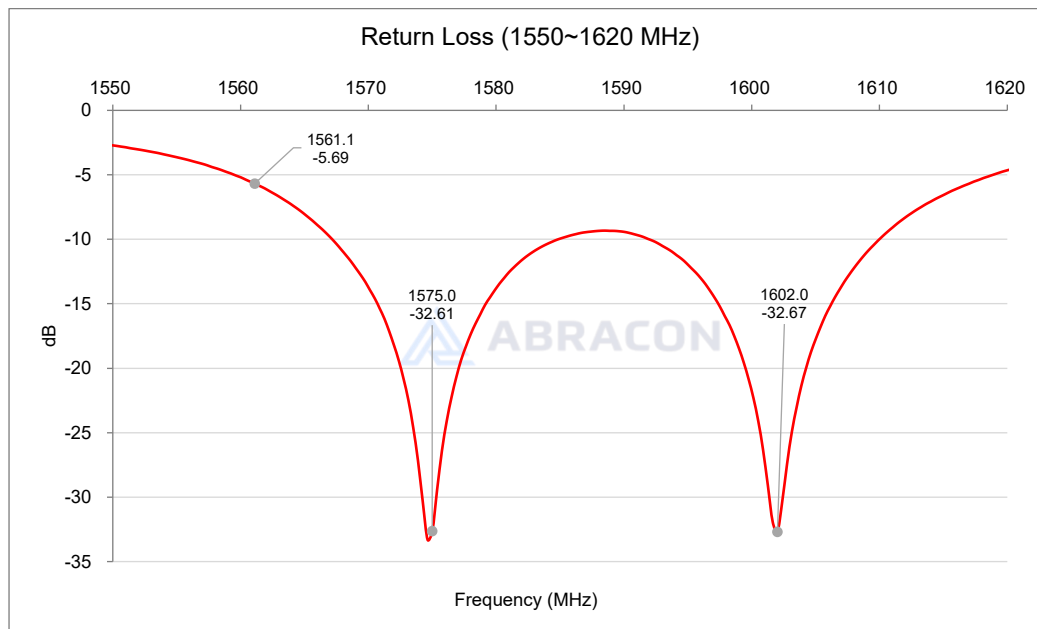


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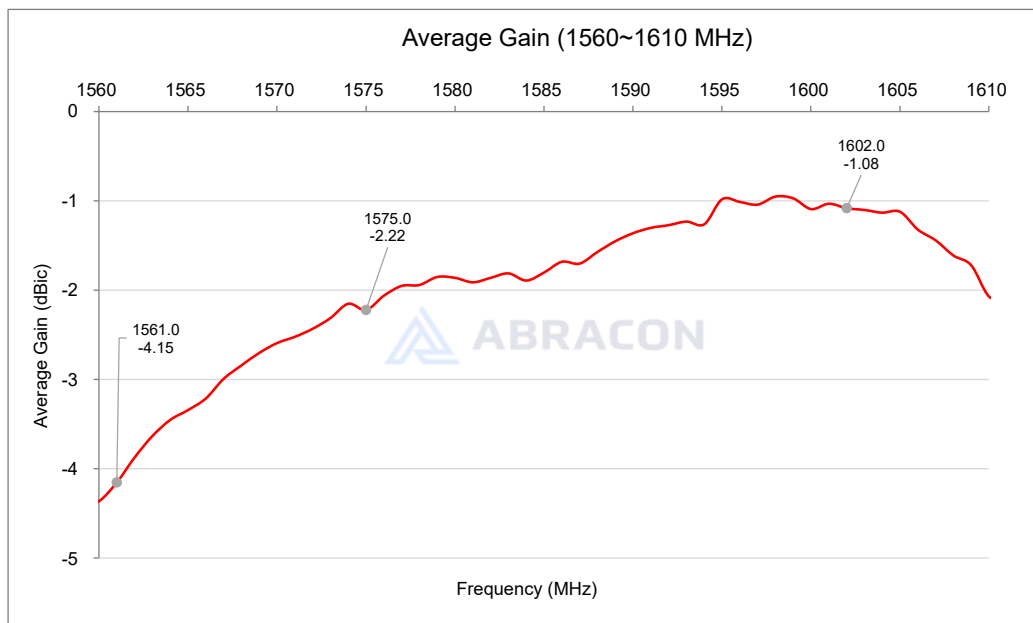
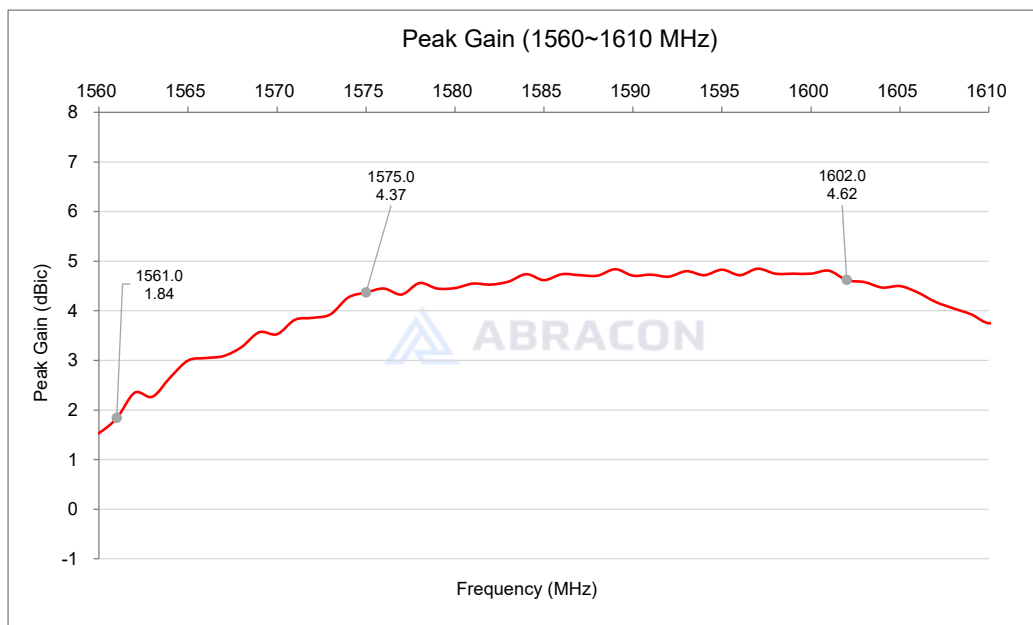
**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****Reflection Characteristics – Return Loss & VSWR**

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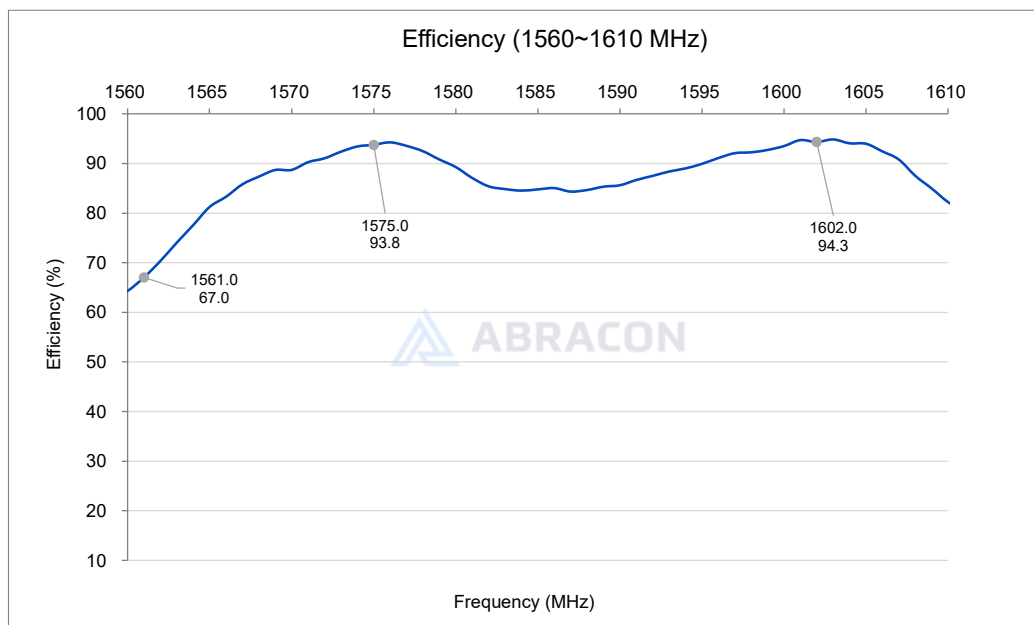
**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****Radiation Characteristics –Passive Gain**

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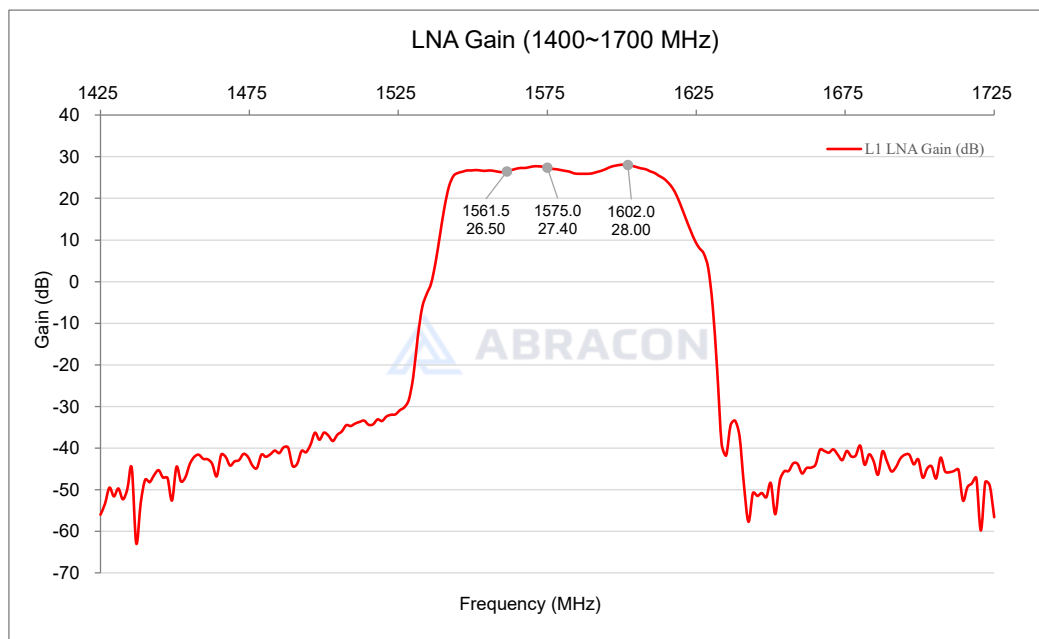
**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A****Radiation Characteristics –Passive Efficiency**

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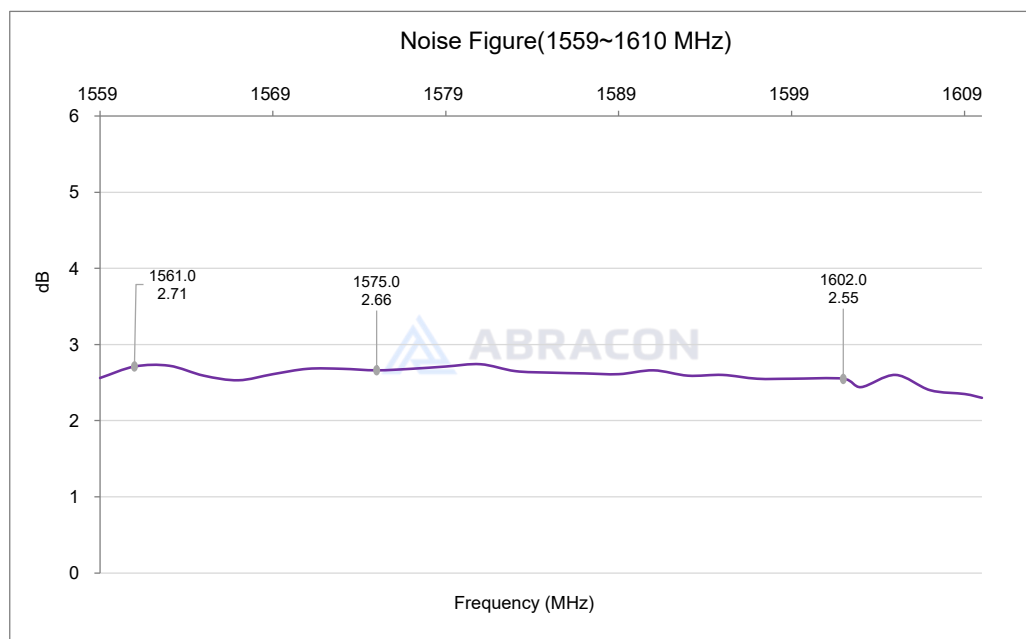
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**27.2 x 27.2 x 9.3 mm****RoHS Compliant****MSL Level = N/A**

LNA Characteristics –Noise Figure





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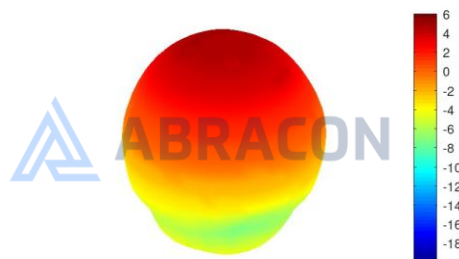
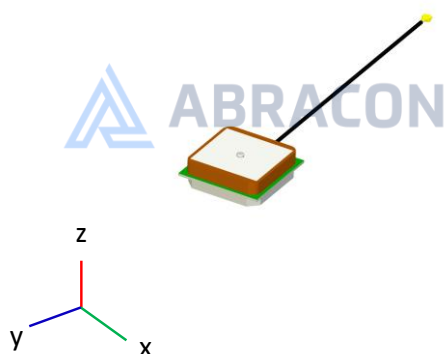
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RoHS Compliant

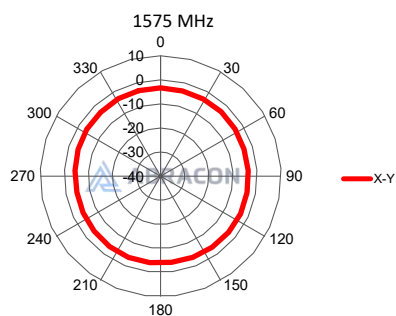
MSL Level = N/A

Radiation Characteristics – 3D & 2D Pattern

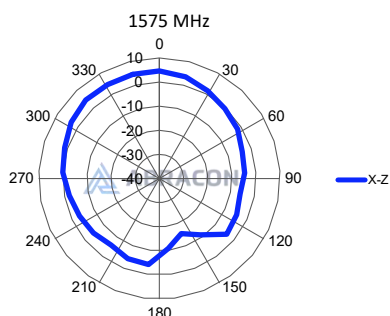
1575MHz



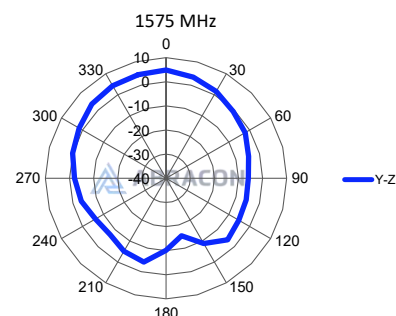
XY plane



XZ plane



YZ plane



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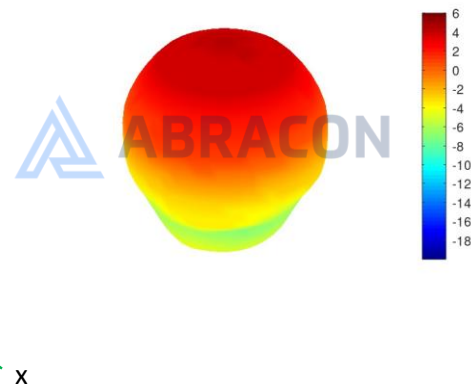
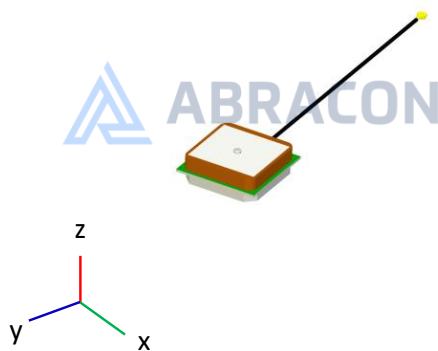


27.2 x 27.2 x 9.3 mm

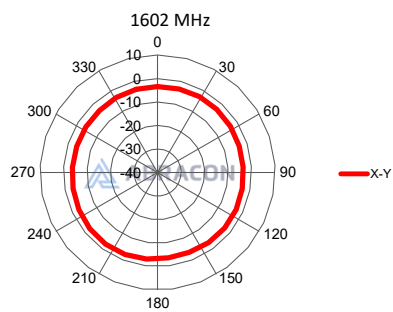
RoHS Compliant

MSL Level = N/A

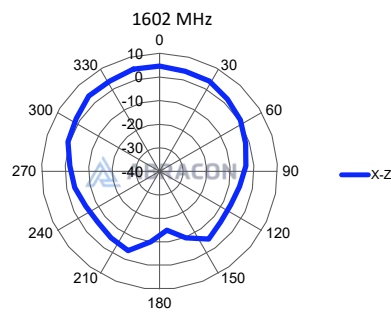
1602MHz



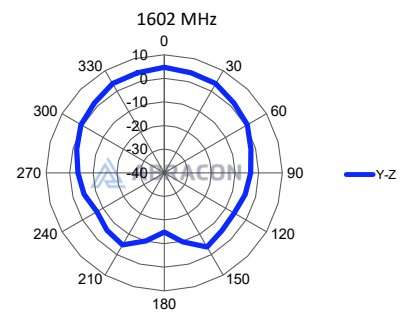
XY plane



XZ plane



YZ plane



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Packaging

20 pcs per tray

4 trays per vacuum bag

10 vacuum bag per carton

800 pcs antennas per carton

Dimensions: 500 x 260 x 250 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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