



AANI-AP-0158

Request Samples



Check Inventory



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

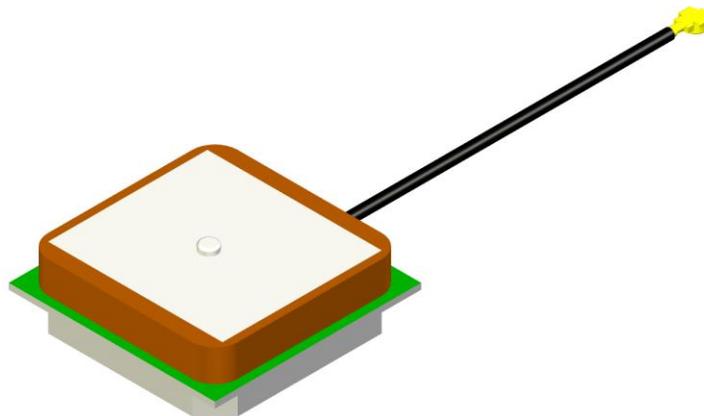
Features

- 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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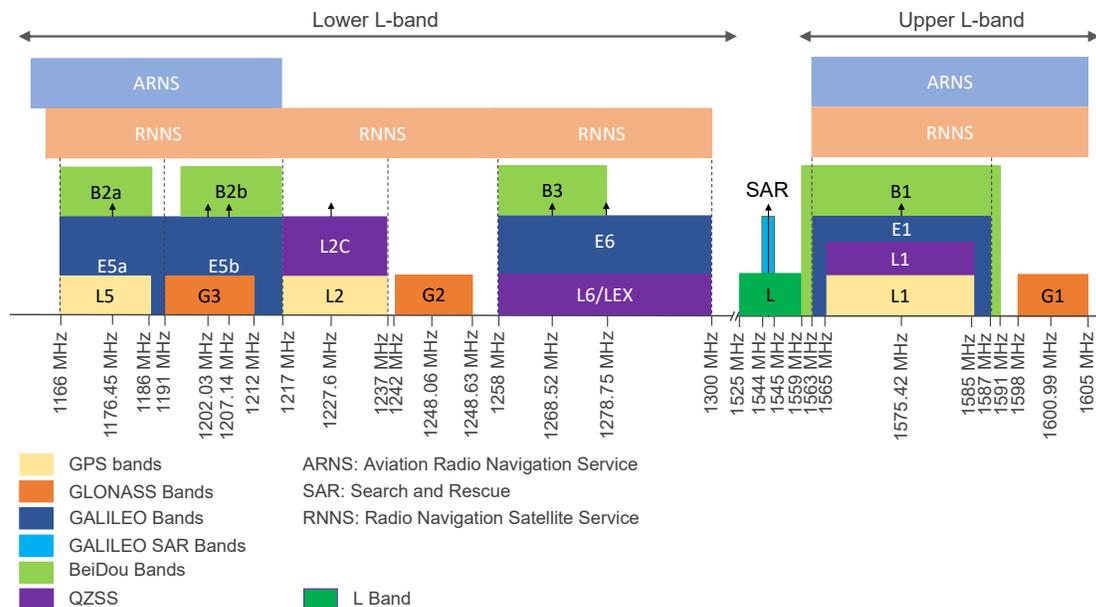
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GNSS Frequency Bands Covered

System	Band	Frequency	Symbol
GPS	L1	1575.42MHz	■
	L2	1227.6MHz	□
GLONASS	G1	1598.06-1609.31MHz	■
	G2	1242.93-1251.68MHz	□
Galileo	E1	1575.42MHz	■
	E5a	1176.45MHz	□
BeiDou	B1	1561MHz	■
	B2	1207.14MHz	□
QZSS	L1	1575.42MHz	■
	L2	1227.6MHz	□
IRNSS/NAVIC	L5	1176.45MHz	□
	L6	1278.75MHz	□
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)	2.1	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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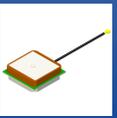
Mechanical Specification

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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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](#)

GNSS L1 Internal Active Patch Antenna



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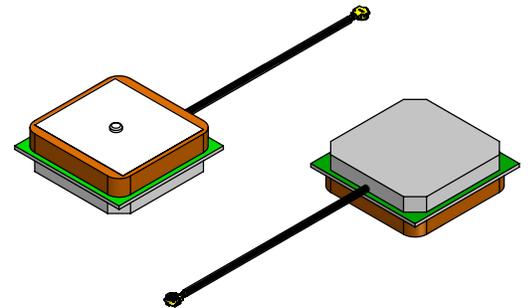
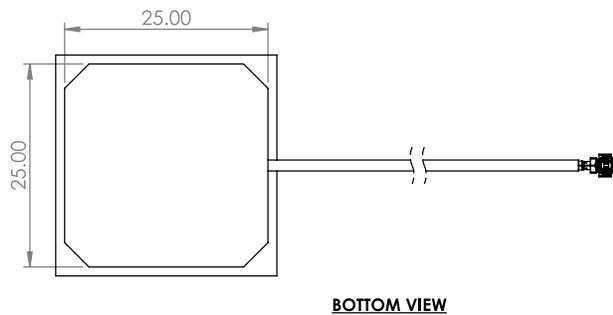
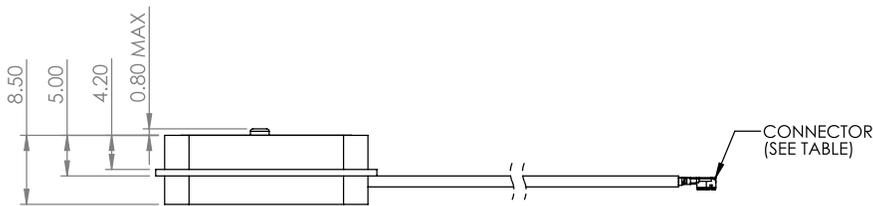
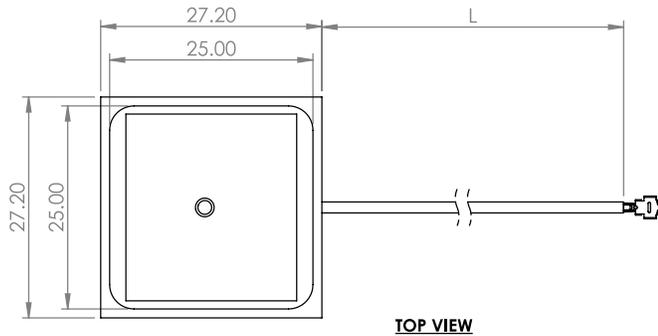


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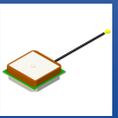
27.2 x 27.2 x 9.3 mm
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Product Dimension



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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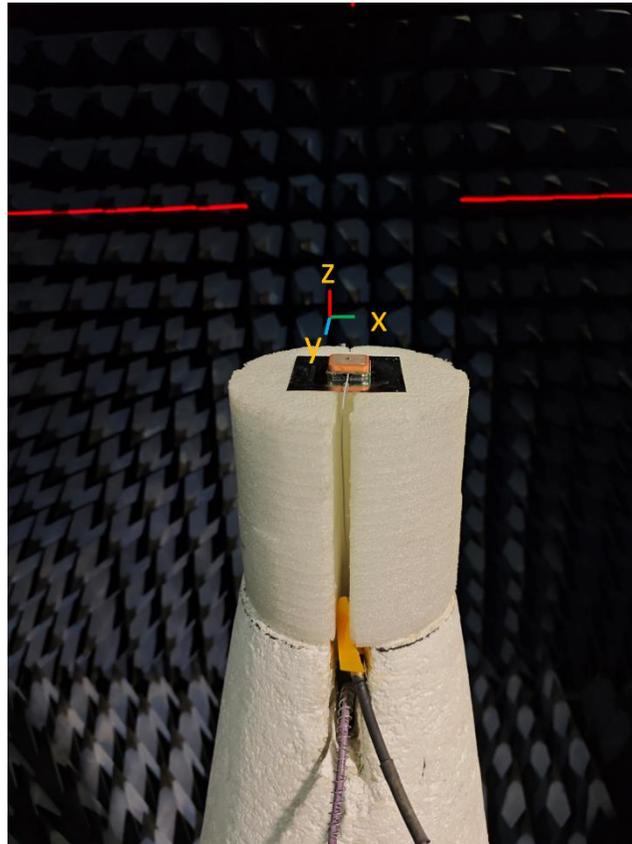


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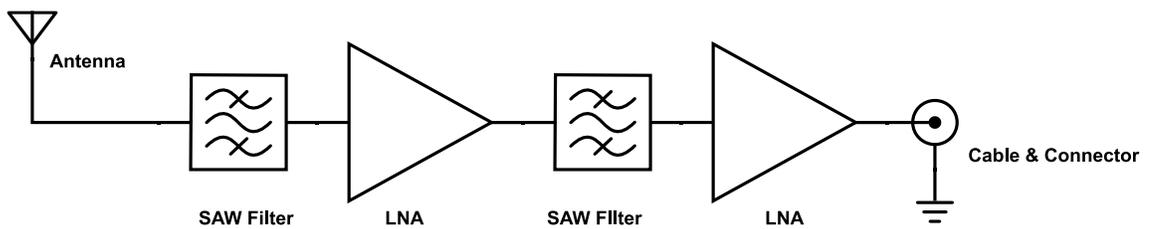


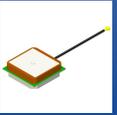
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Measurement Setup



GNSS Block Diagram





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Request Samples

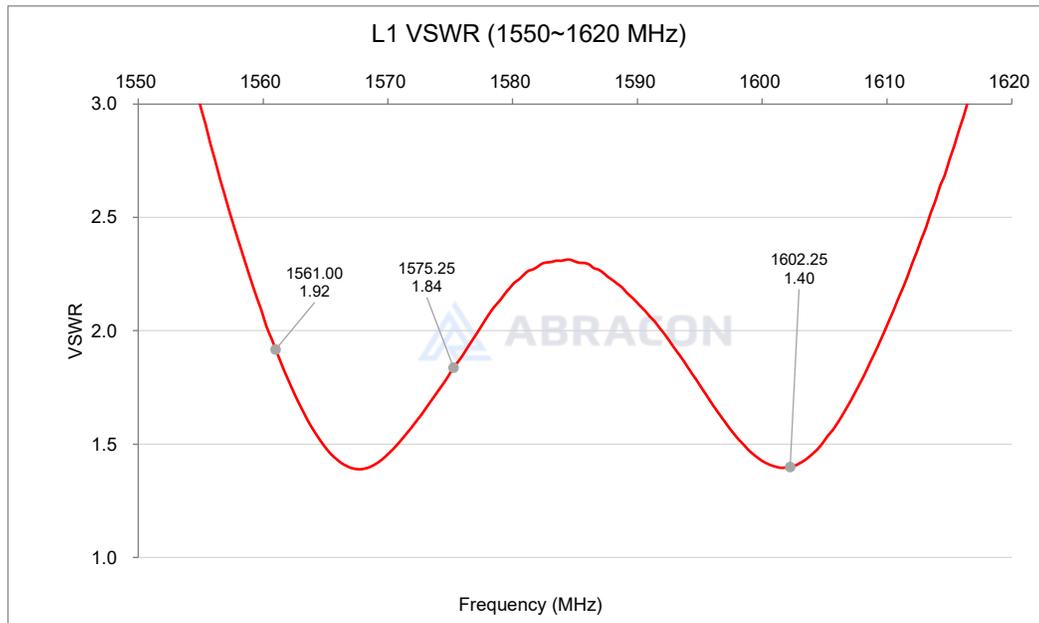
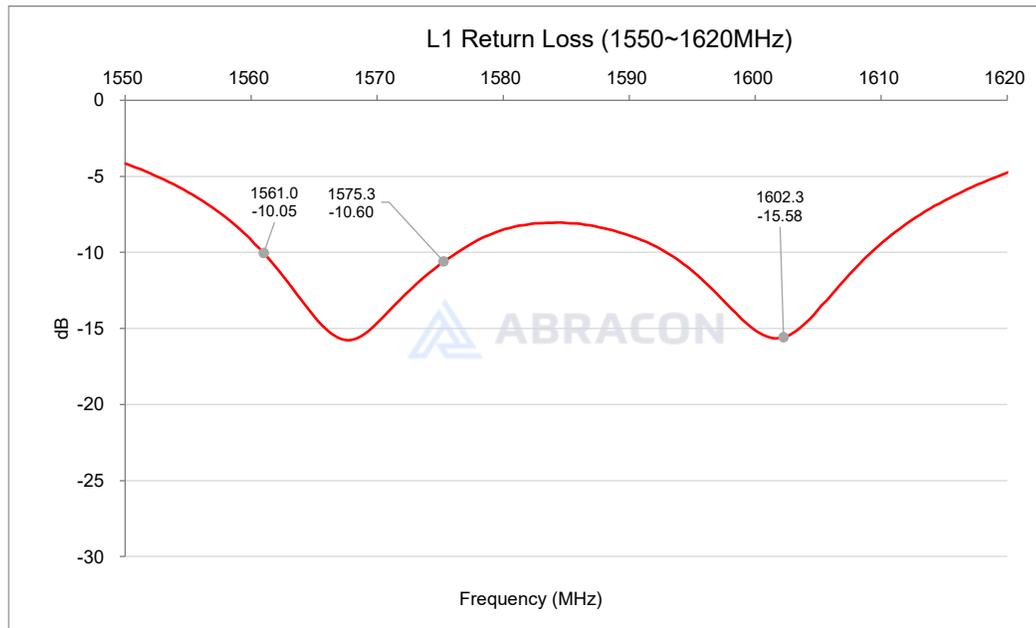


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27.2 x 27.2 x 9.3 mm
RoHS Compliant
MSL Level = N/A

Reflection Characteristics – Return Loss & VSWR





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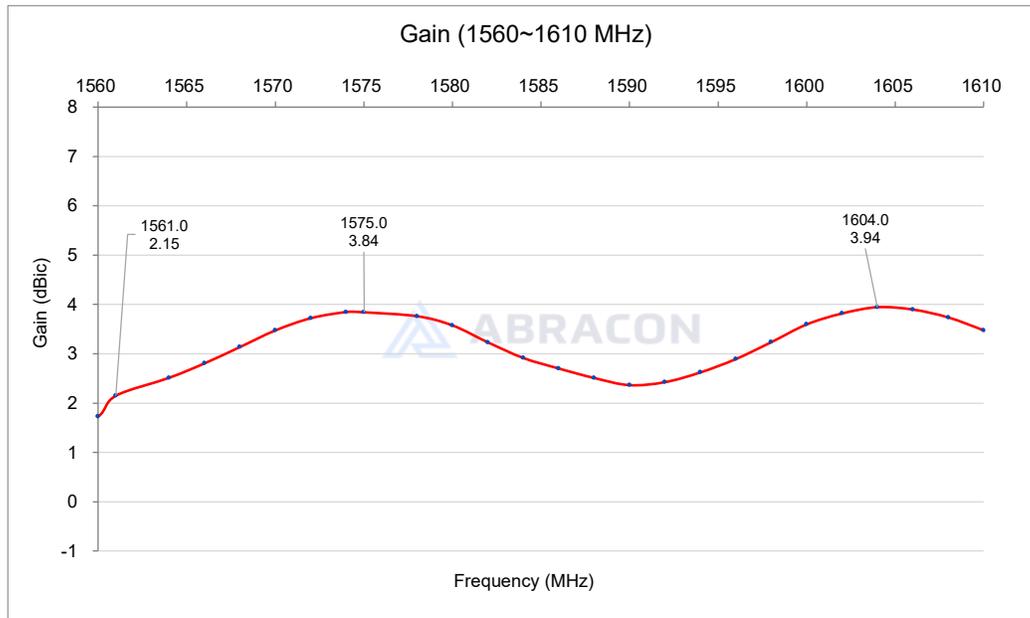


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27.2 x 27.2 x 9.3 mm
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MSL Level = N/A

Radiation Characteristics –Passive Peak Gain





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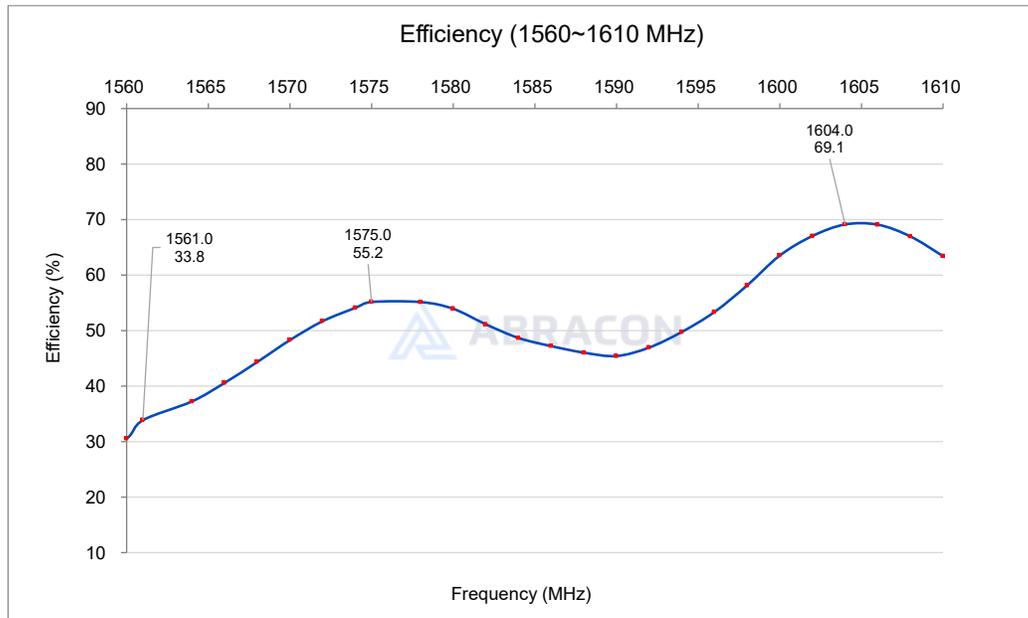


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Radiation Characteristics –Passive Efficiency





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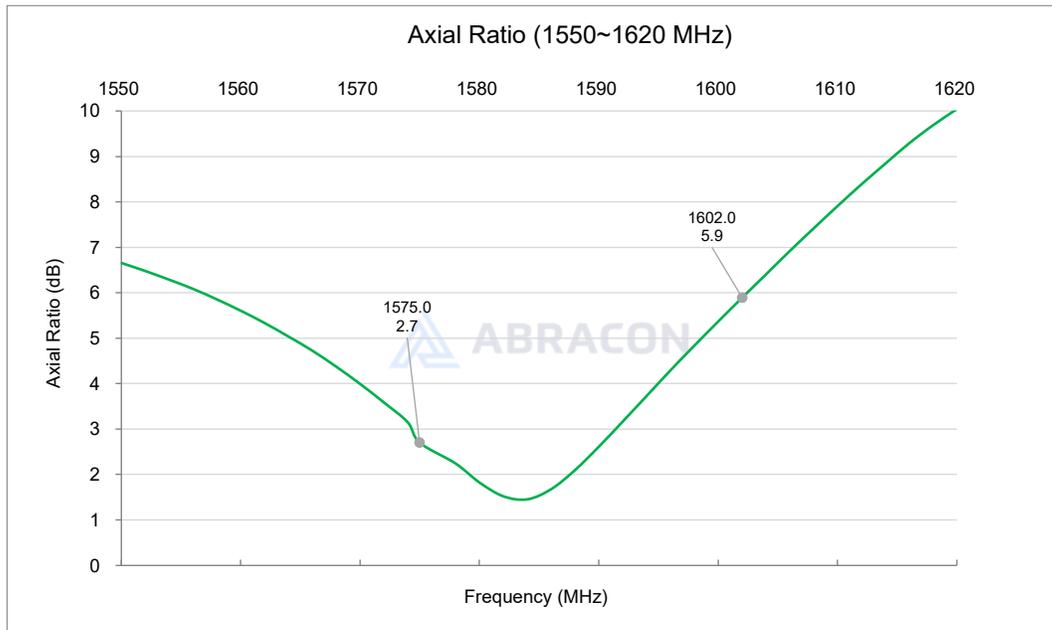


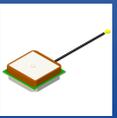
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MSL Level = N/A

Radiation Characteristics –Axial Ratio





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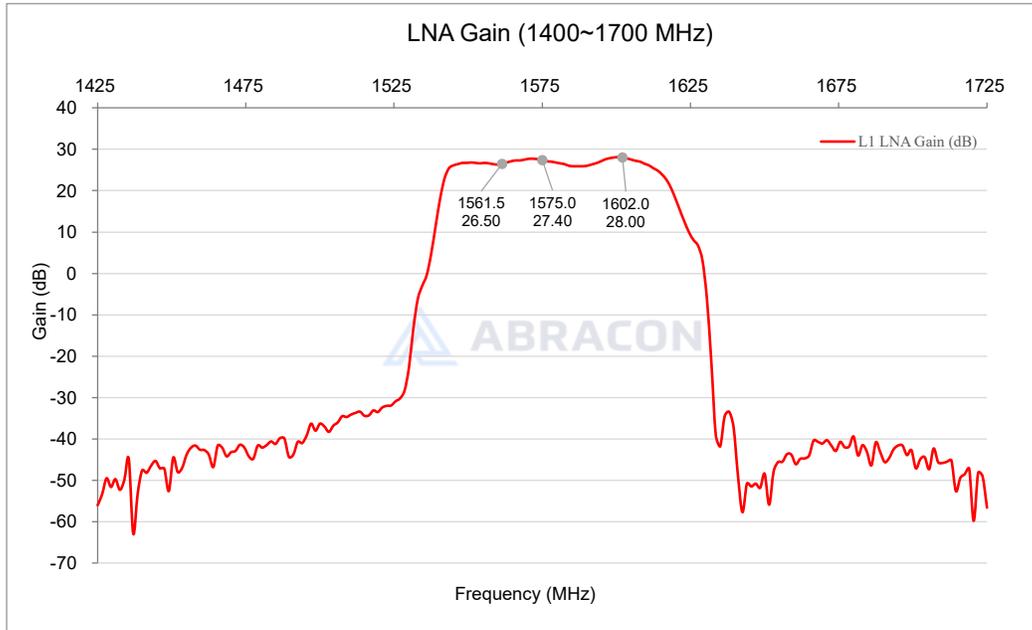


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 MSL Level = N/A

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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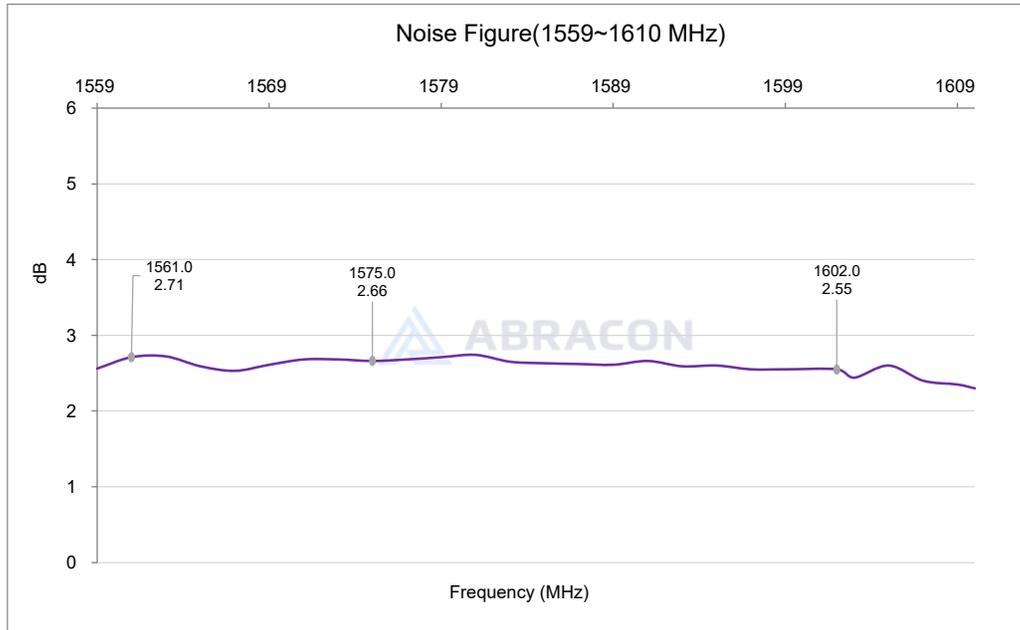


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LNA Characteristics –Noise Figure





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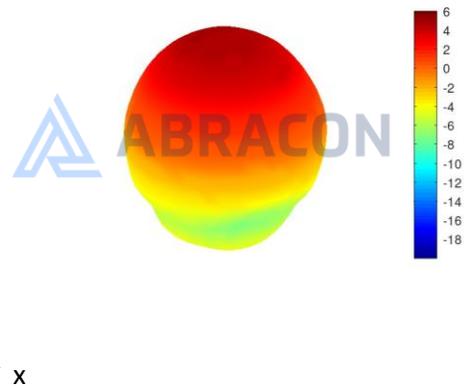
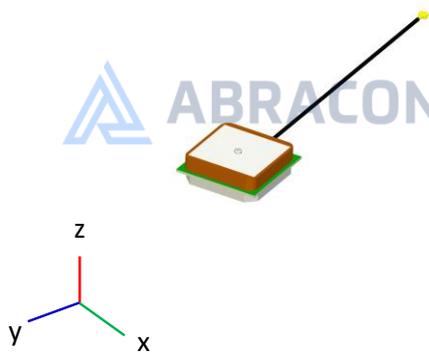
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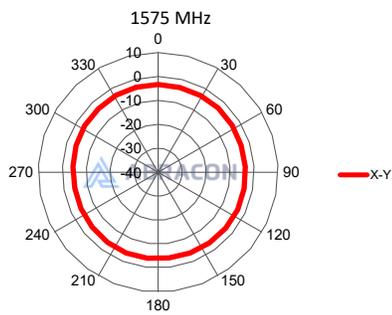
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MSL Level = N/A

Radiation Characteristics – 3D & 2D Pattern

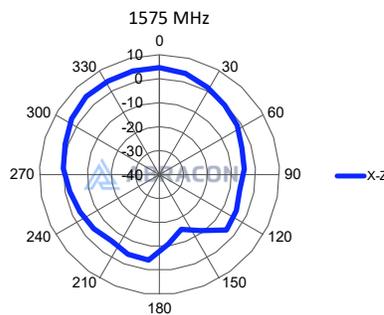
1575MHz



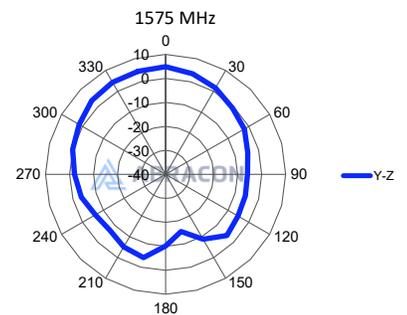
XY plane



XZ plane



YZ plane





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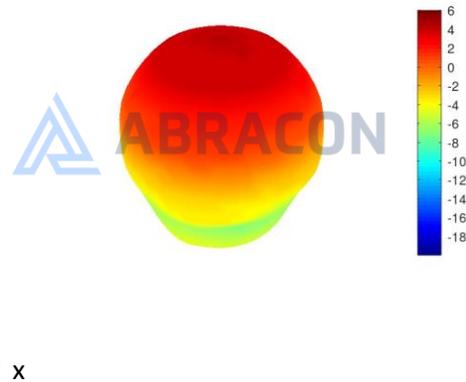
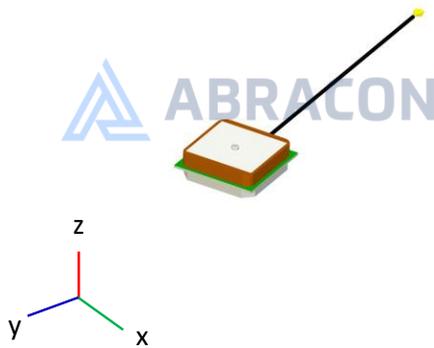


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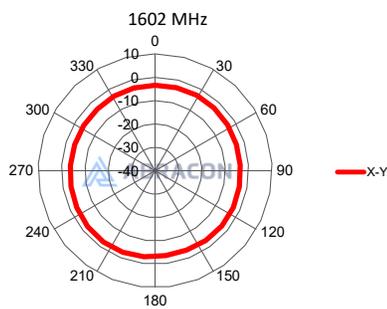


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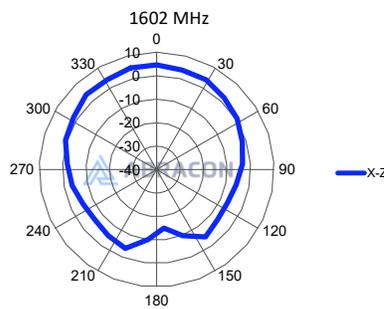
1602MHz



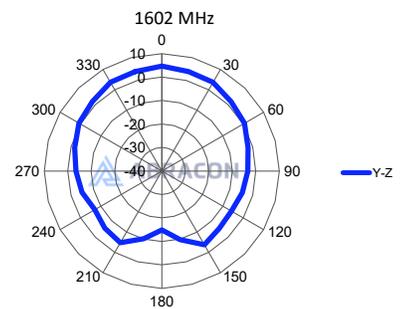
XY plane

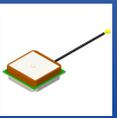


XZ plane



YZ plane





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Packaging

1000 pcs antennas per carton

Dimensions: 345 x 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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