

Multi-Constellation GNSS L1 Magnetic Mount Antenna



AANE-AP-0172

Request Samples



Check Inventory



49 x 37.5 x 17 mm
RoHS Compliant
MSL Level = N/A

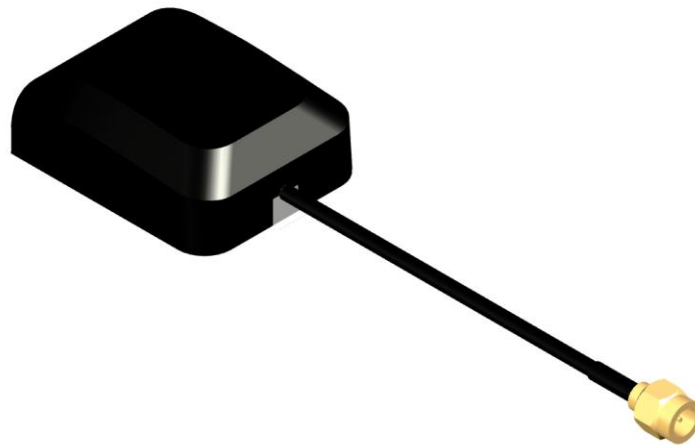
Features

- Multi-Constellation Active GNSS Antenna
- Low Profile with Size 49 x 37.5 x 17 mm
- High LNA Gain of 28 ± 2 dB
- IP67 Weather-Proof Housing
- Pre-Filtering for Enhanced Anti-Jamming Performance
- Low Current Consumption
- Custom Cable & Connector Options Available

Applications

- IoT / M2M
- GPS/GLONASS/Galileo/BeiDou applications
- Fleet Management and Asset Tracking
- Telematics
- Unmanned Aerial Vehicle (UAV)
- Precision Agriculture

Product Image



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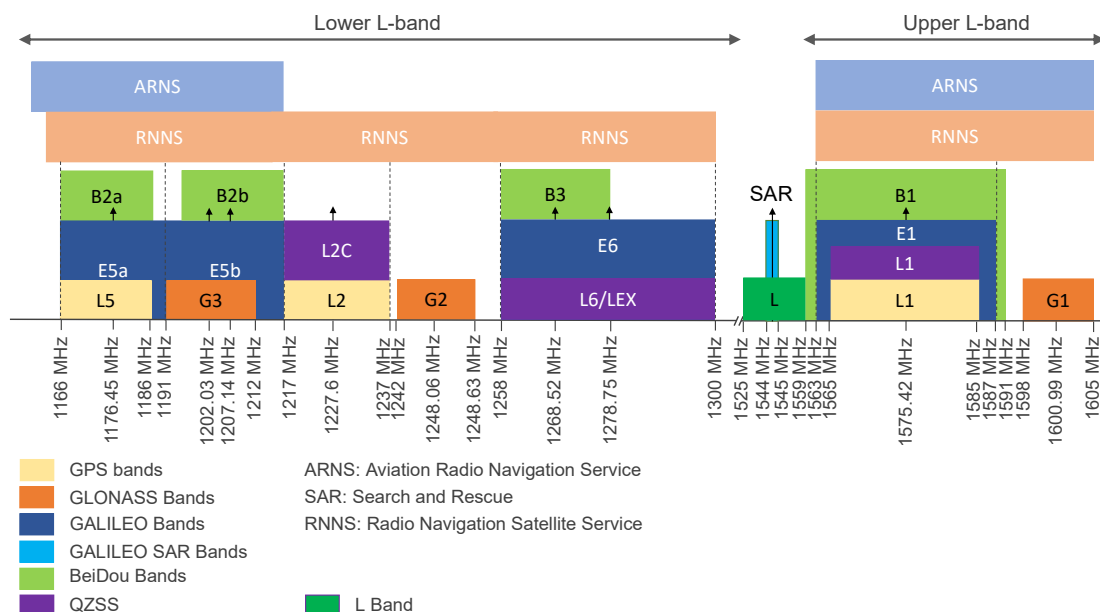
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GNSS Frequency Bands Covered

	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
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	49 x 37.5 x 17 mm
Housing Material	UV Resistant ABS
Mounting Type ⁽¹⁾	Magnetic Mount
RF Connector ⁽¹⁾	SMA(M)
Cable Type ⁽¹⁾	RG-174
Cable Length ⁽¹⁾	1M

(1): Fully customizable mounting type, RF Cable, and Connector

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
IP Rating (housing)	IP67
RoHS Compliance	Yes
Relative Humidity	Up to 95%

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Ordering Information

Part Number	Description	Connector Option
AANE-AP-0172-1	Multi-Constellation GNSS L1 Magnetic Mount Antenna 1000 mm cable & SMA connector	SMA
AANE-AP-0172-2	Multi-Constellation GNSS L1 Magnetic Mount Antenna 2000 mm cable & SMA connector	SMA
AANE-AP-0172-3	Multi-Constellation GNSS L1 Magnetic Mount Antenna 3000 mm cable & SMA connector	SMA
AANE-AP-0172-4	Multi-Constellation GNSS L1 Magnetic Mount Antenna 3000 mm cable & FAKRA-C SIGNAL BLUE connector	FAKRA-C SIGNAL BLUE

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



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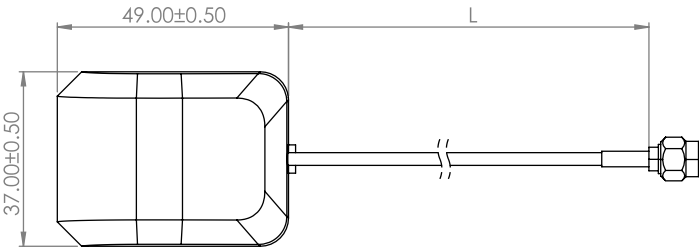


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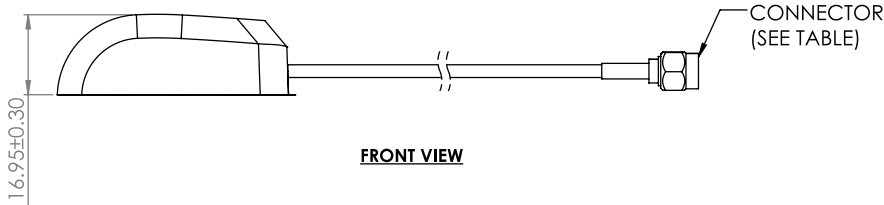


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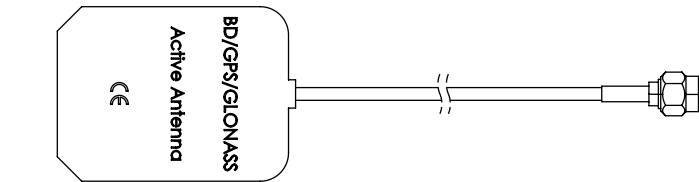
Product Dimension



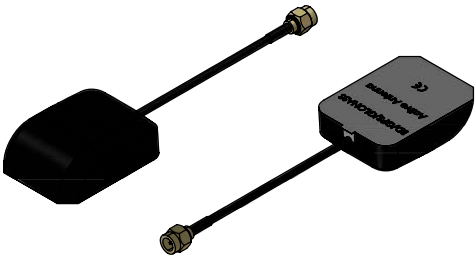
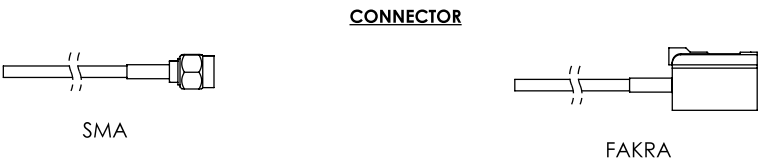
TOP VIEW



FRONT VIEW



BOTTOM VIEW



PART NUMBER	CABLE LENGTH (L)	CONNECTOR
AANE-AP-0172-1	1000	SMA
AANE-AP-0172-2	2000	SMA
AANE-AP-0172-3	3000	SMA
AANE-AP-0172-4	3000	FAKRA

Unit: mm



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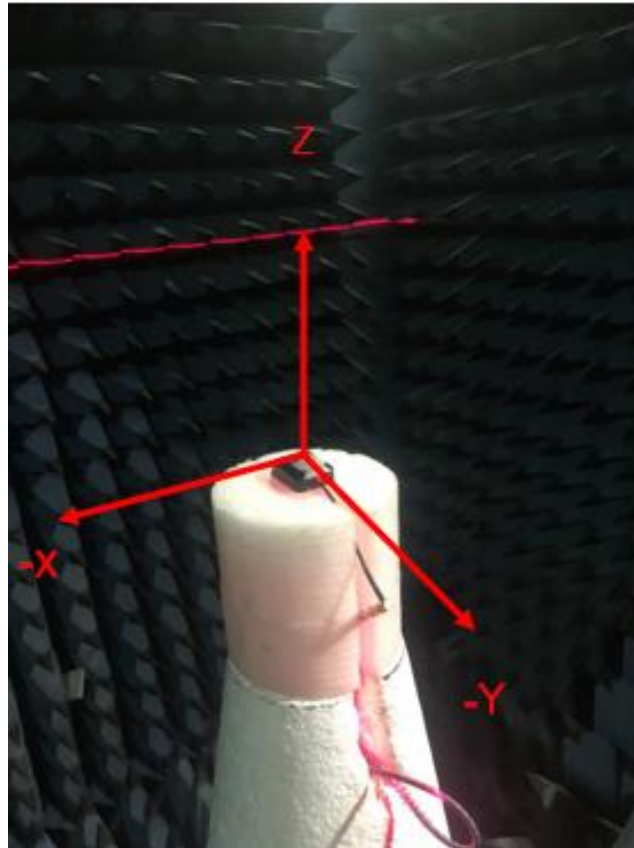


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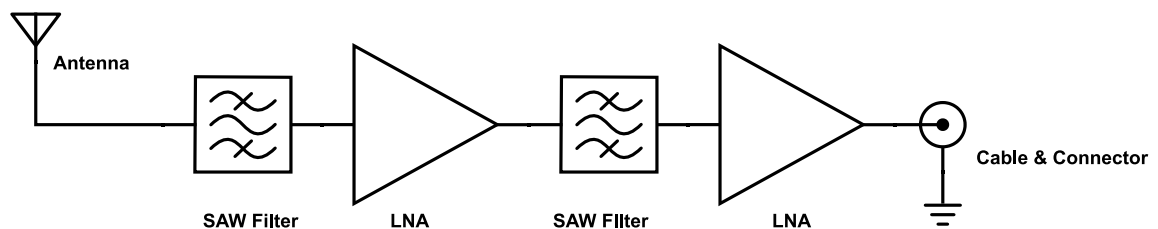


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Measurement Setup



GNSS Block Diagram





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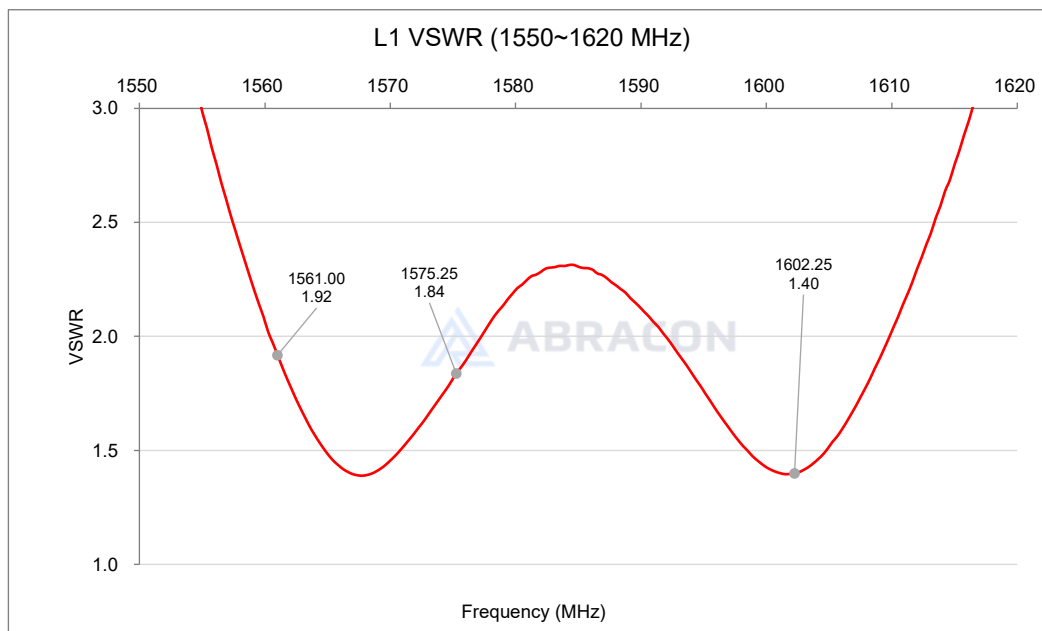
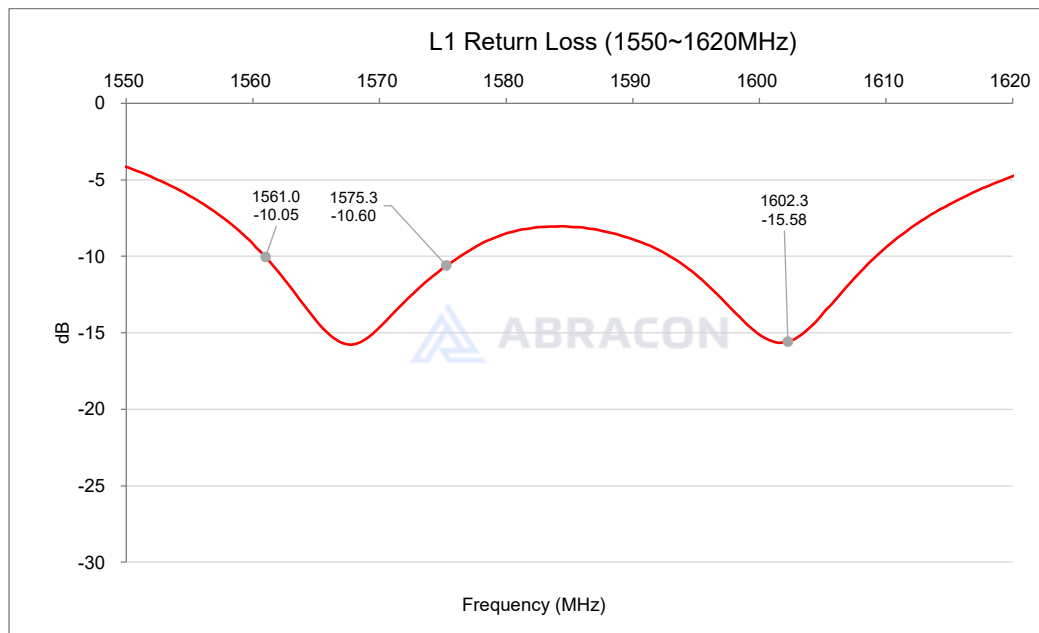


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Reflection Characteristics – Return Loss & VSWR





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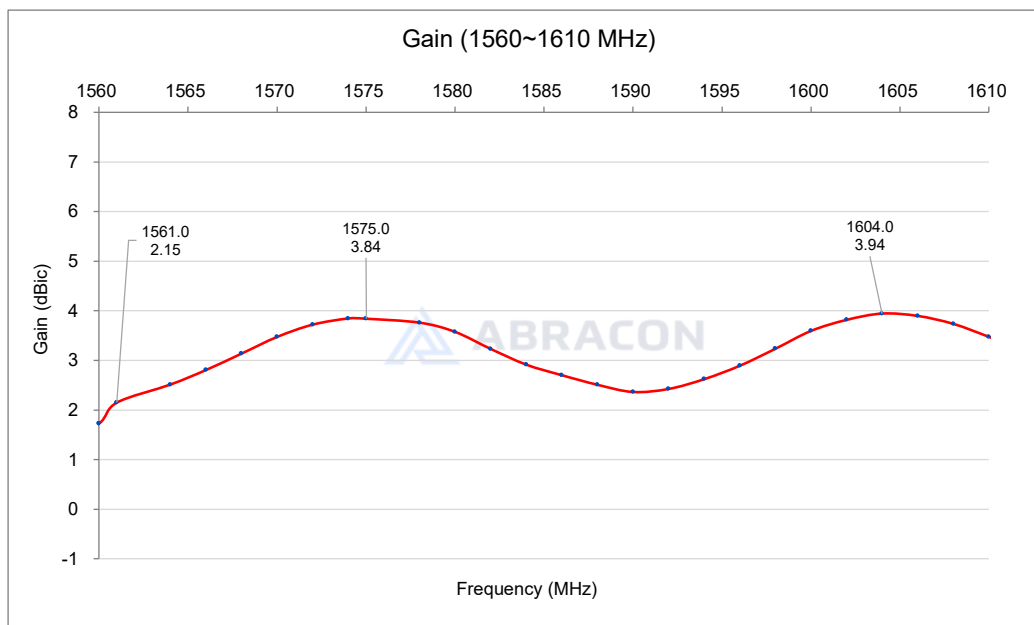


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49 x 37.5 x 17 mm
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Radiation Characteristics –Passive Peak Gain





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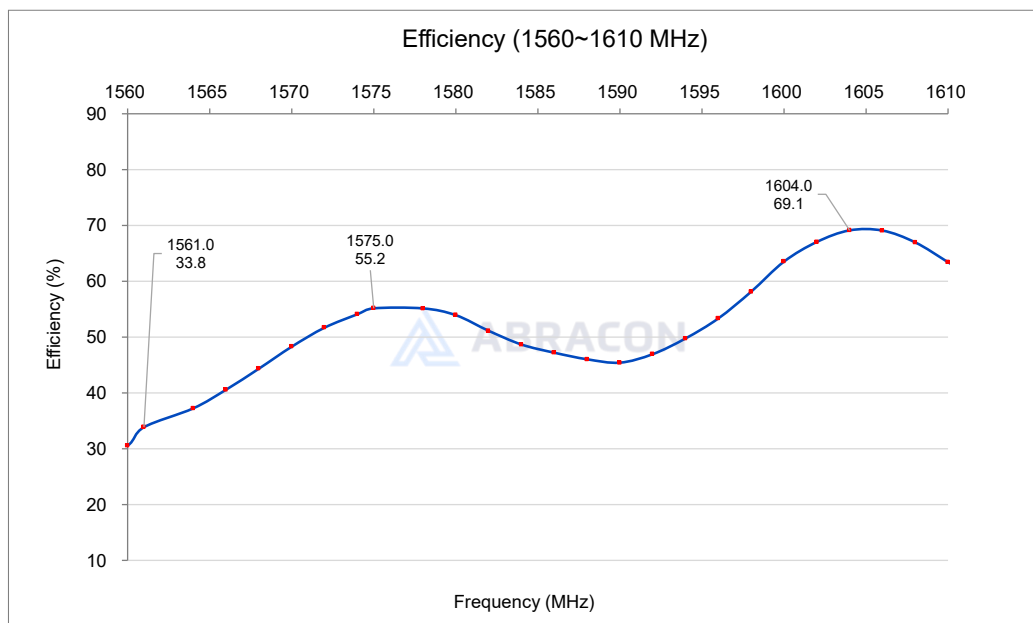


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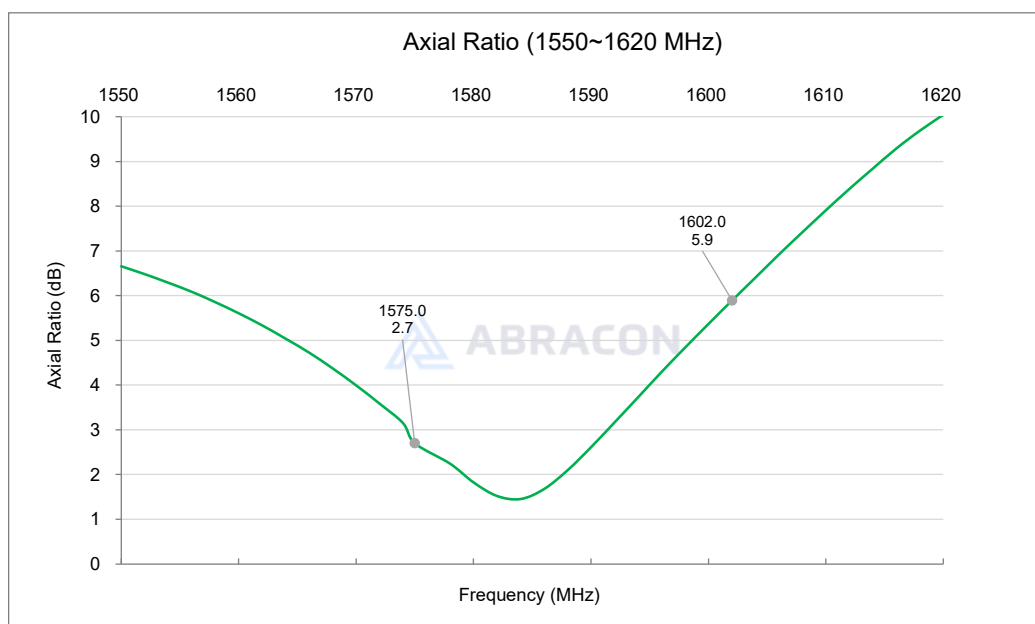


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Radiation Characteristics – Passive Efficiency



GNSS Radiation Characteristics – Axial Ratio



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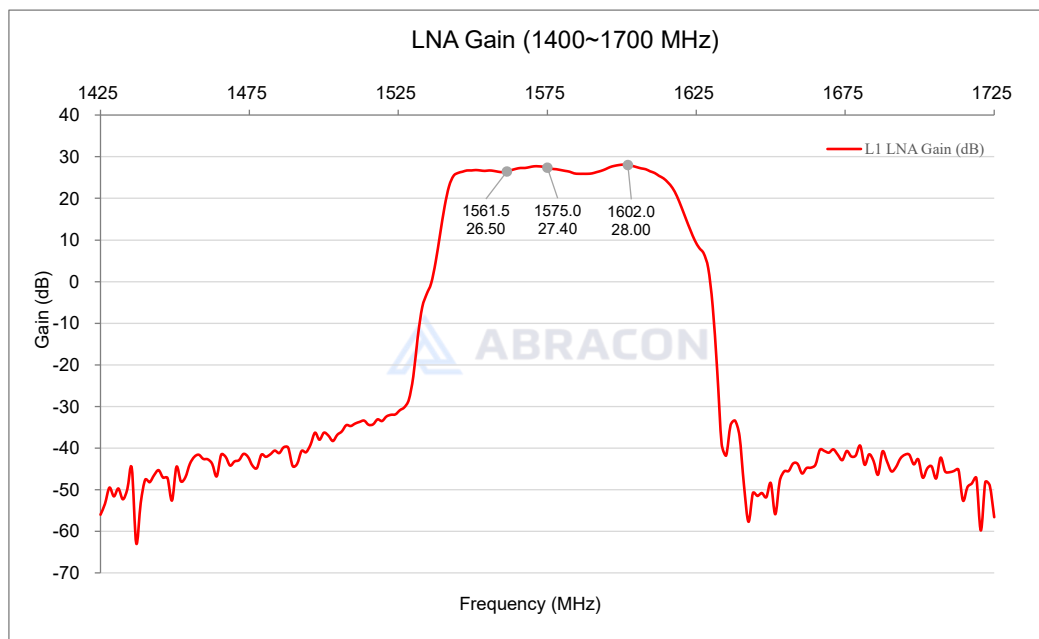


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LNA Characteristics –LNA Gain



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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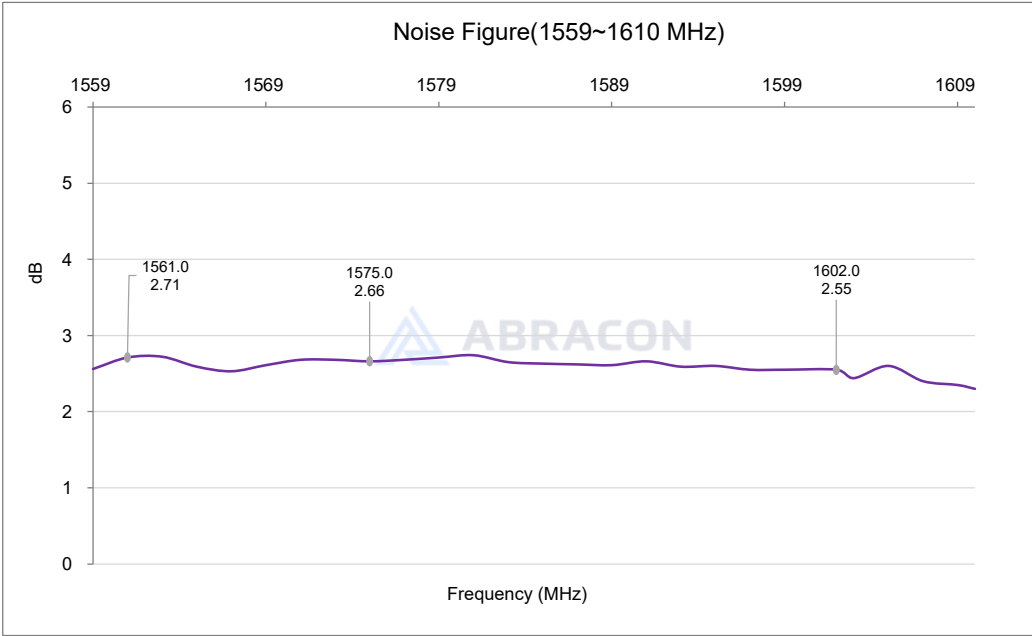


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LNA Characteristics –Noise Figure





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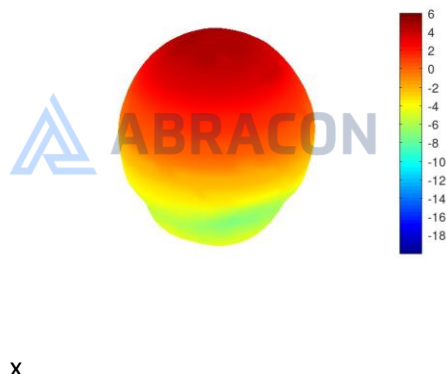
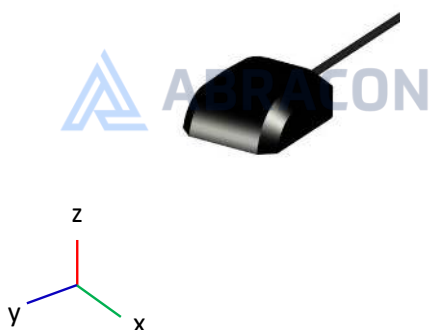
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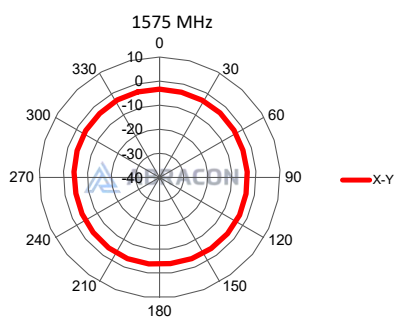
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Radiation Characteristics – 3D & 2D Pattern

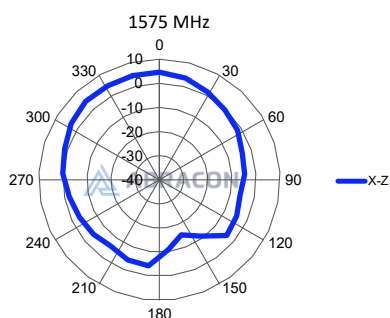
1575MHz



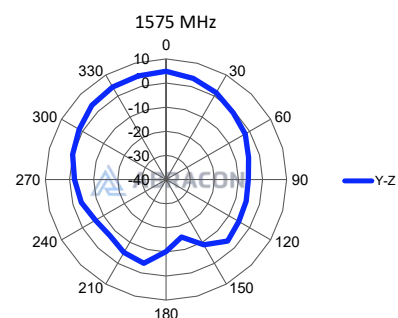
XY plane



XZ plane



YZ plane



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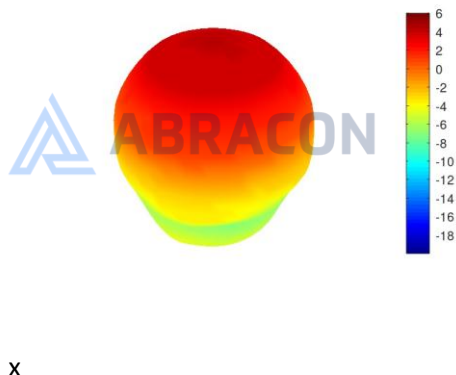
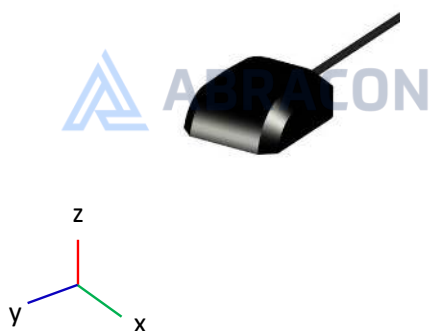


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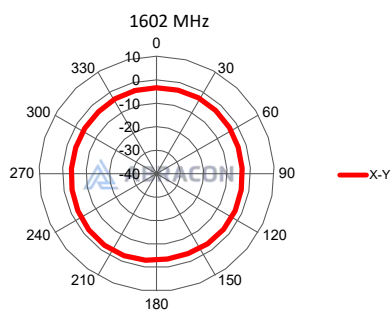


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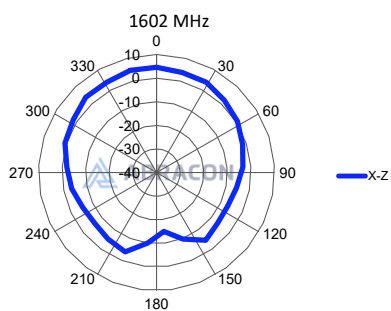
1602MHz



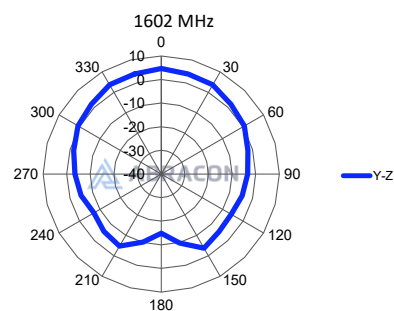
XY plane



XZ plane



YZ plane



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Packaging

1000 pcs antennas per carton

Dimensions: 630 x 460 x 105 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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