

AANI-AP-0200

Request Samples



Check Inventory



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

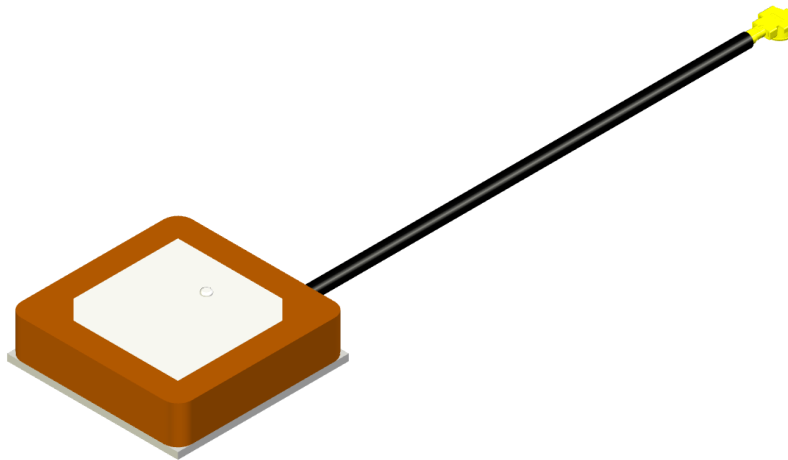
Features

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

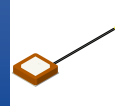
Applications

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

Product Image



Full-Constellation Internal Active GNSS L1 Patch Antenna



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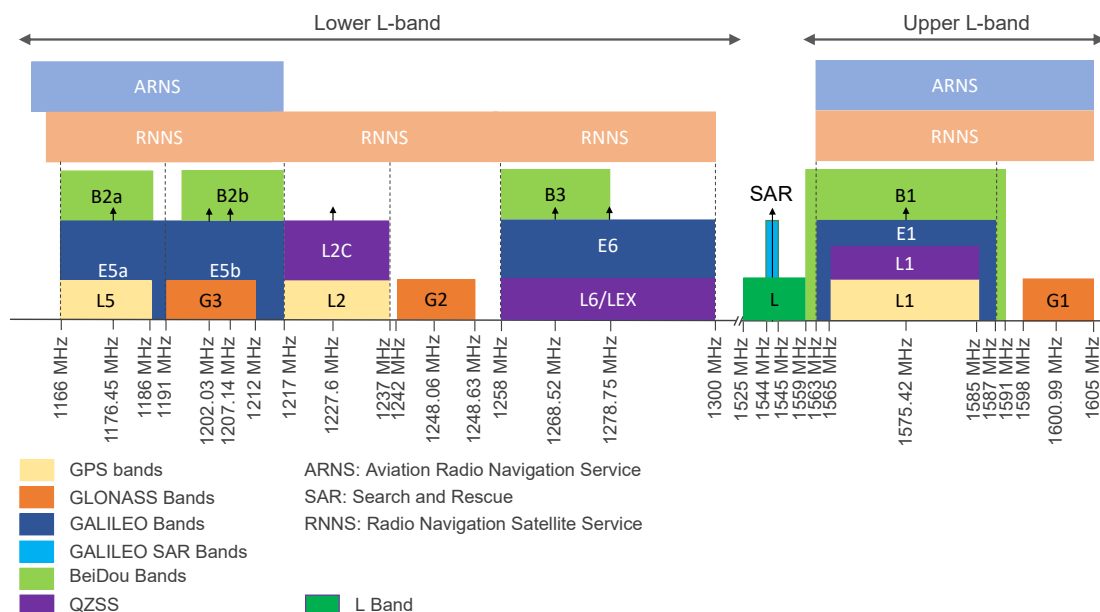
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GNSS Frequency Bands Covered

GPS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	
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	



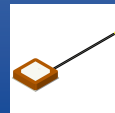
Frequency allocation: GNSS systems, upper L bands and lower L bands



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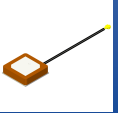


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Electrical Specification

Parameters		Min.	Typ.	Max.	Units	Note
Antenna						
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	%	
LNA						
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

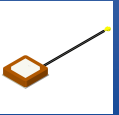
Parameter	Specification
Antenna Dimension	18 x 18 x 6.6 mm
Mounting Type	Adhesive Mount
RF Connector ⁽¹⁾	u.FL/IPEX-1/MHF1
Cable Length ⁽¹⁾	Ø 1.13mm x 100 mm

(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%

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 & MHF1connector	u.FL/IPEX-1/MHF1
AANI-AP-0200-2	Full-Constellation Internal Active GNSS L1 Patch Antenna with 150 mm cable & MHF1connector	u.FL/IPEX-1/MHF1
AANI-AP-0200-3	Full-Constellation Internal Active GNSS L1 Patch Antenna with 60 mm cable & MHF1connector	u.FL/IPEX-1/MHF1

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

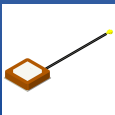


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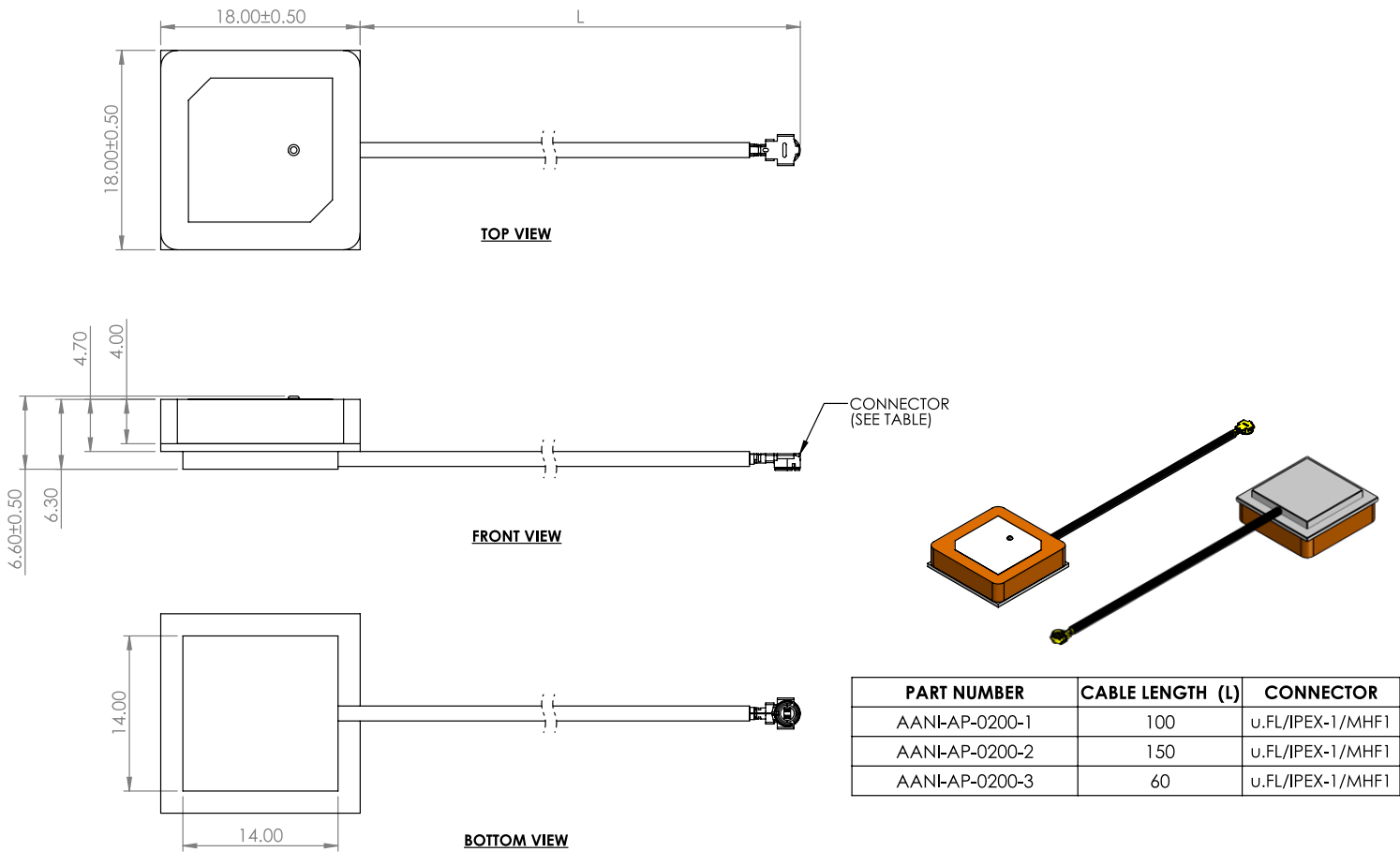


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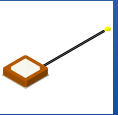
18 x 18 x 6.6 mm
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Product Dimension



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



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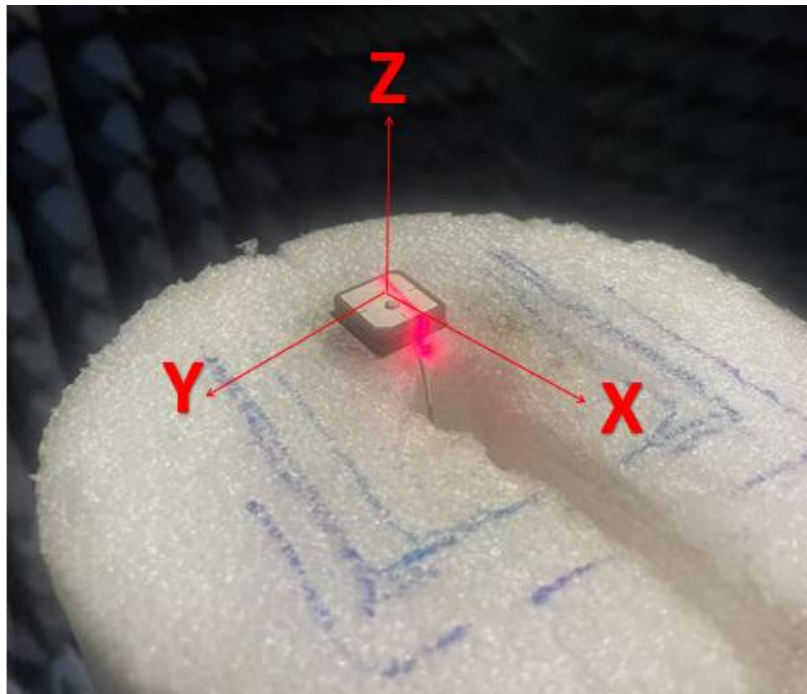


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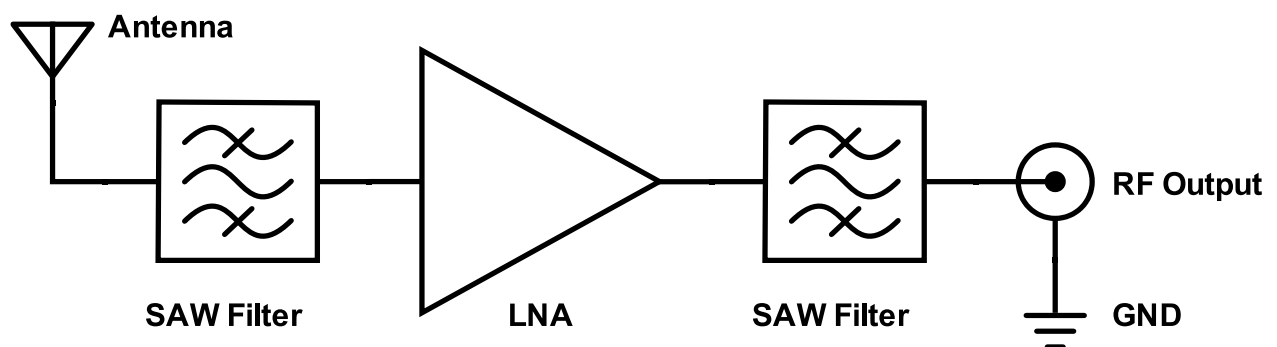


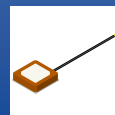
18 x 18 x 6.6 mm
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MSL Level = N/A

Measurement Setup



GNSS Block Diagram





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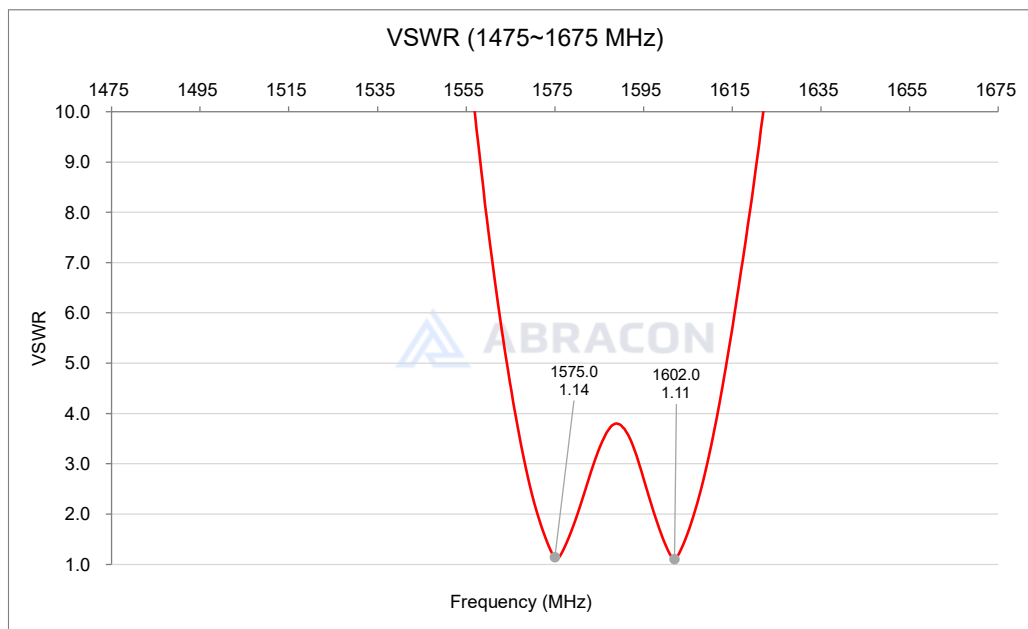
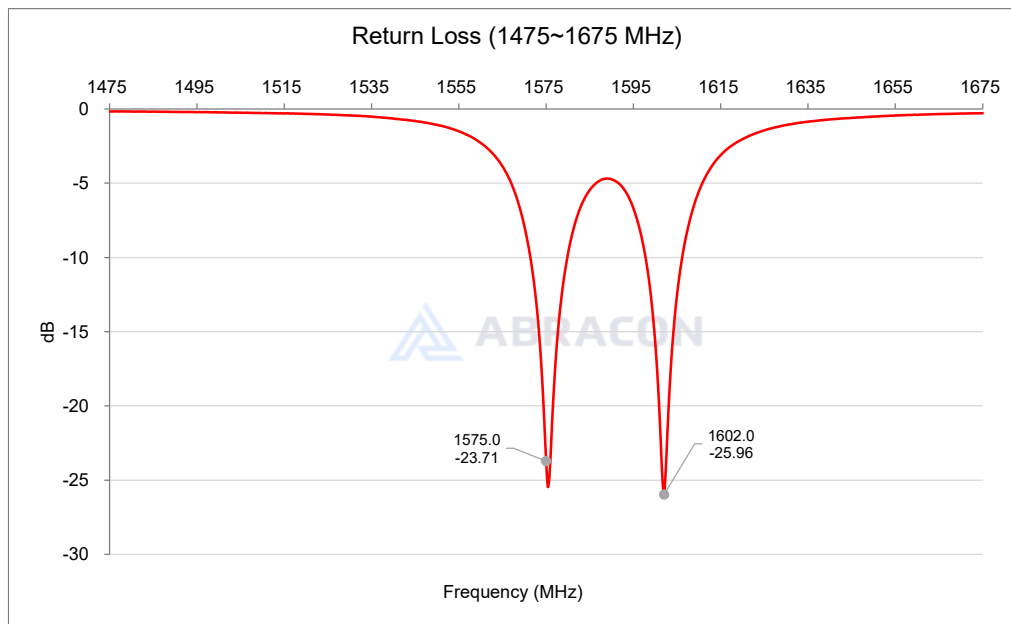


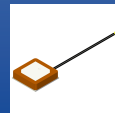
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MSL Level = N/A

Reflection Characteristics – Return Loss & VSWR





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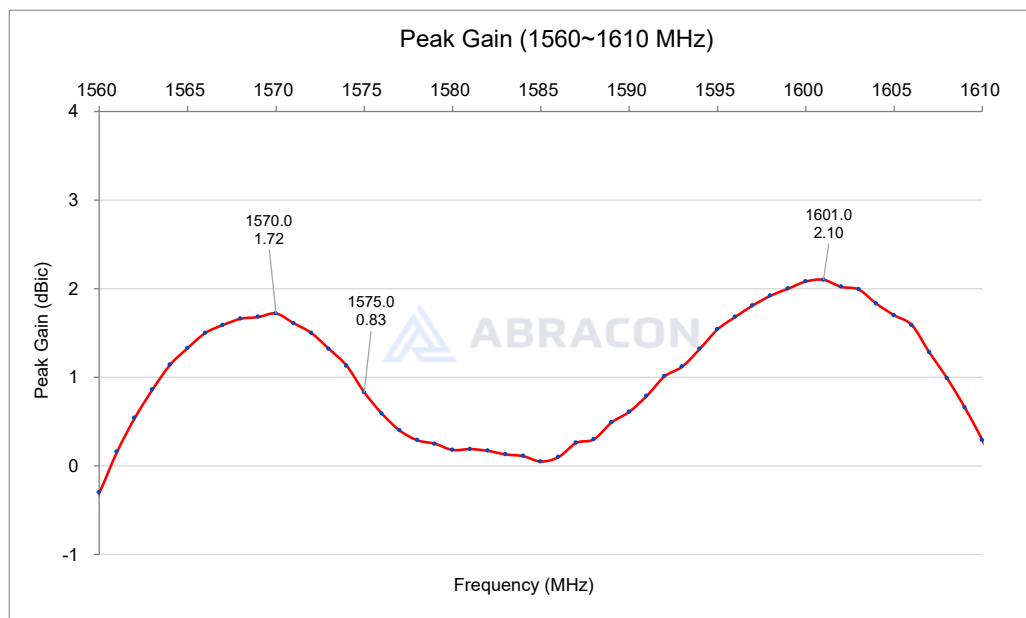


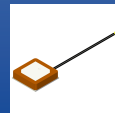
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18 x 18 x 6.6 mm
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MSL Level = N/A

Radiation Characteristics –Passive Peak Gain





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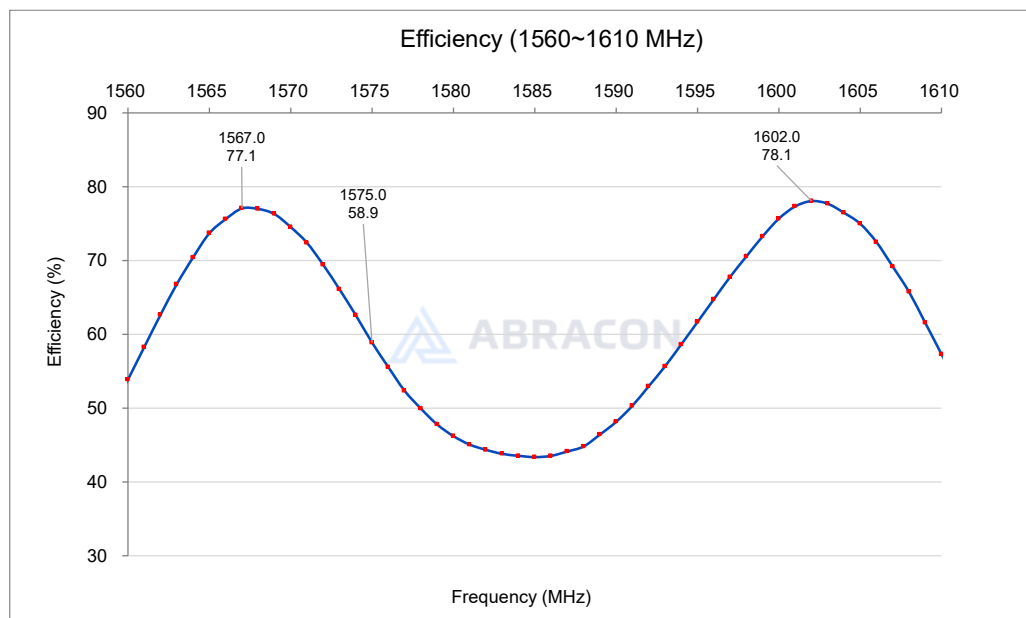


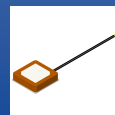
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18 x 18 x 6.6 mm
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Radiation Characteristics –Passive Efficiency





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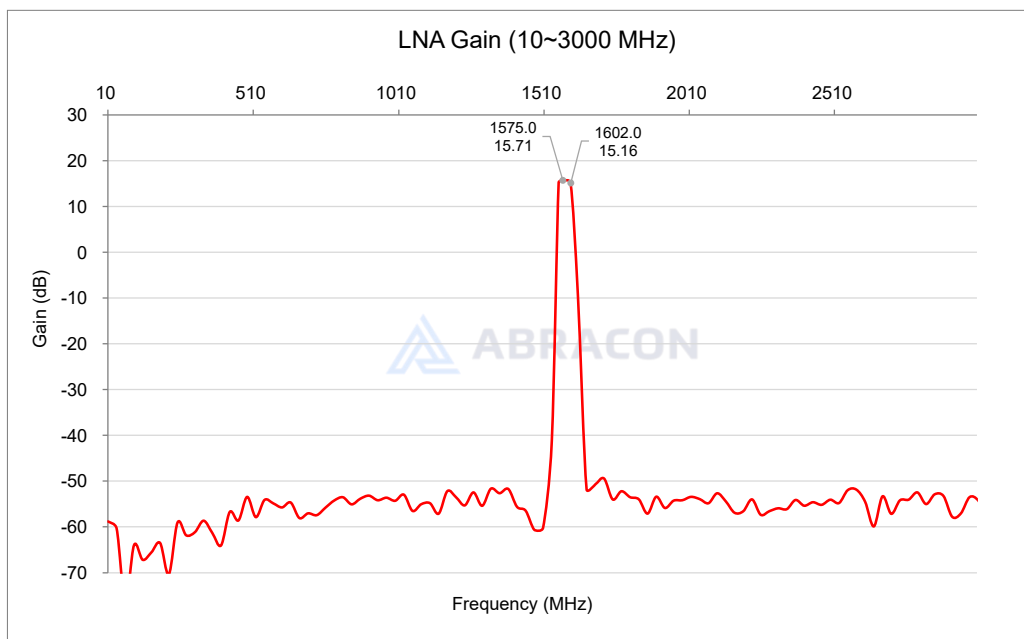


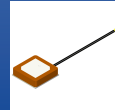
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MSL Level = N/A

LNA Characteristics –LNA Gain





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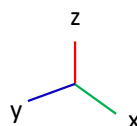
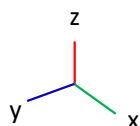
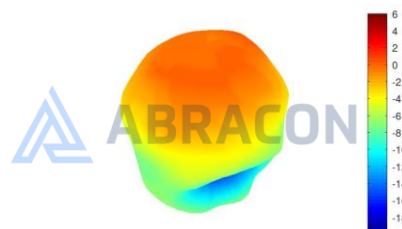
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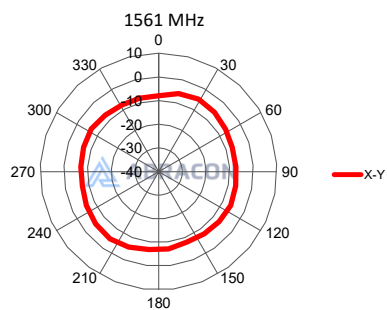
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MSL Level = N/A

Radiation Characteristics – 3D & 2D Pattern

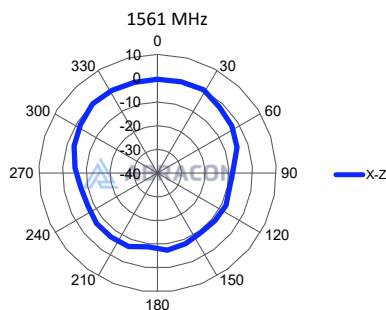
1561MHz



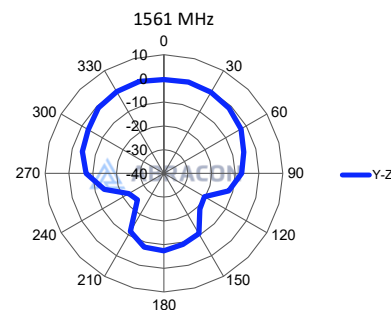
XY plane



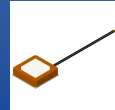
XZ plane



YZ plane



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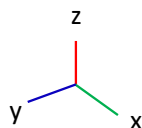
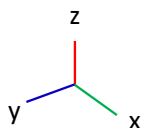


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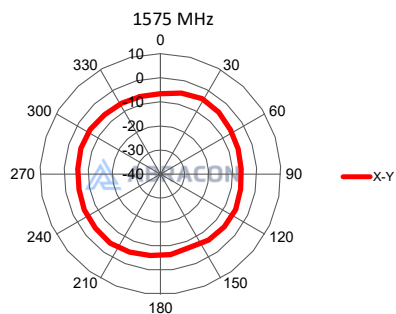


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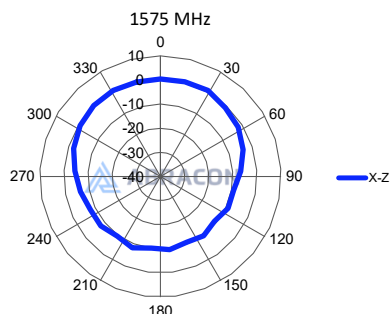
1575MHz



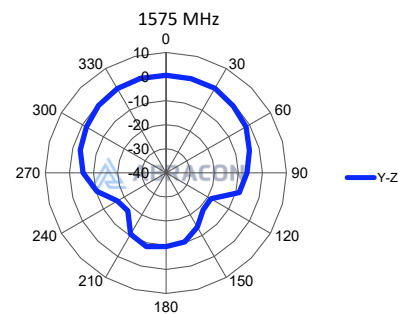
XY plane



XZ plane



YZ plane

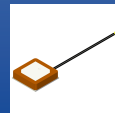


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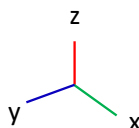
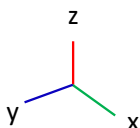
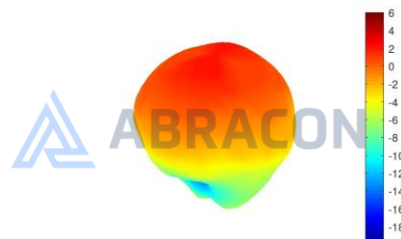


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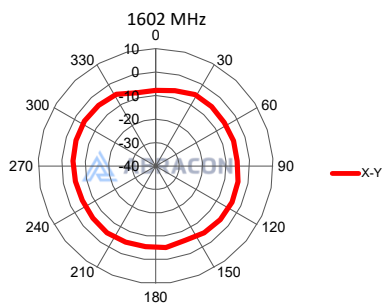


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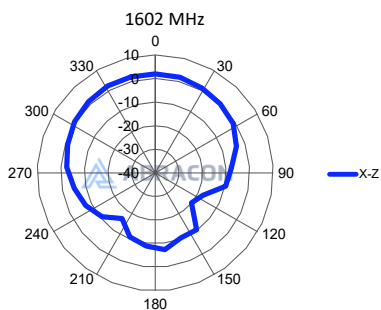
1602MHz



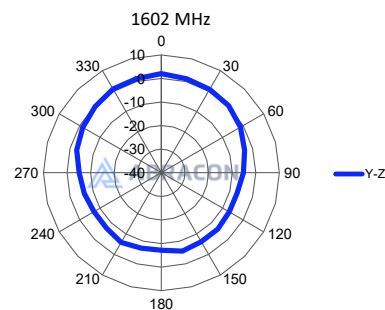
XY plane



XZ plane



YZ plane



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