

AANI-AH-0152

Request Samples



Check Inventory



Ø 24 x 47 mm

RoHS Compliant

MSL Level = N/A

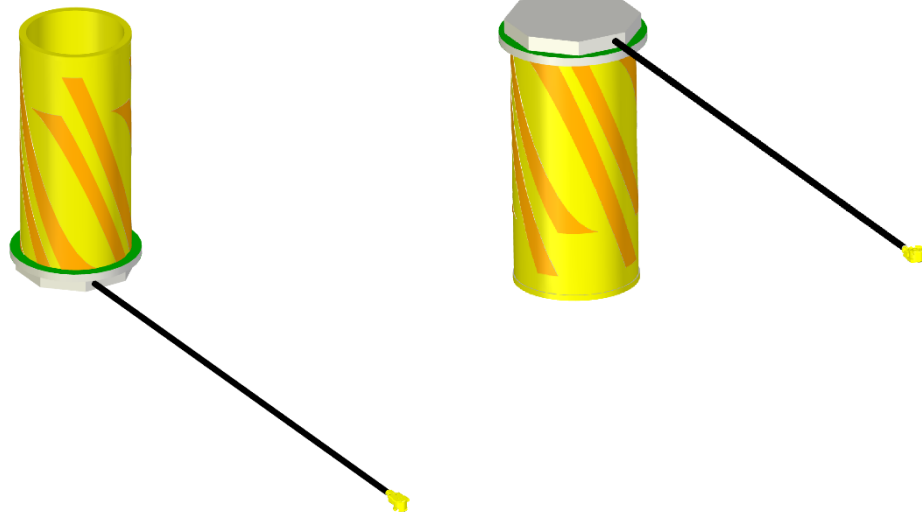
Features

- Multiband Multi-Constellation Active GNSS Antenna
 - GPS: L1/L2
 - GLONASS: G1/G2
 - GALILEO: E1
 - BEIDOU: B1I/B1C/B2b
 - SBAS: L1
- Ultra-Lightweight (7g)
- High LNA Gain of 33 ± 2 dB with Low Noise Figure
- Broad Radiation Beamwidth
- Stable Phase Center for Centi-Meter Accuracy
- Robust Anti-Interference Capability (Pre-Filter Included)
- Customization Options Available to Meet Specific Needs

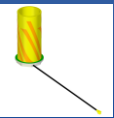
Applications

- UAVs and Drones
- Robotics and Autonomous Driving
- Real-Time Kinematic (RTK)
- Intelligent Transportation
- Precision Land Survey Positioning
- Precision Agriculture

Product Image



L1/L2 GNSS Embedded Quad Helix Antenna



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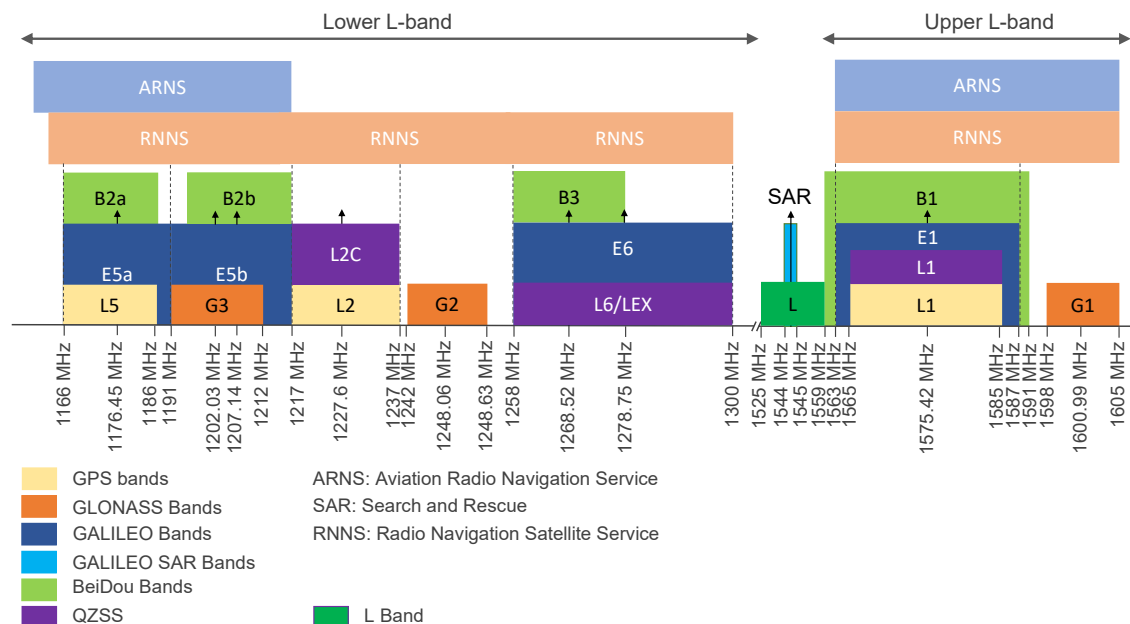
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GNSS Frequency Bands Covered

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	B1C 1575.42MHz	B2b 1207.14MHz	B2a 1176.45MHz	B3 1268.52MHz	B1I 1561MHz
	■	■	□	□	■
L-Band	L-Band 1542MHz				
	□				
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		
	■		□		



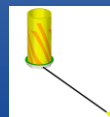
Frequency allocation: GNSS systems, upper L bands and lower L bands



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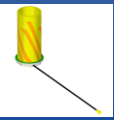
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Electrical Specification

Parameters		Typ.			Units	Note
Antenna						
Frequency		GPS: L1/L2 GLONASS: G1/G2 GALILEO: E1 BEIDOU: B1I/B2b/B2c QZSS: L1/L2 SBAS: L1				
VSWR		≤ 2			-	
Polarization		RHCP			-	(Right Hand Circular Polarization)
Nominal Impedance		50			Ω	
Gain RHCP (maximum)	1575.42MHz (L1)	4.9			dBic	
	1227.60MHz (L2)	4.4				
Axial Ratio	1575.42MHz (L1)	0.7			dB	
	1227.60MHz (L2)	0.6				
PCO	L1	27.5			mm	
	L2	27.5				
PCV		< 1.5			mm	
LNA						
Noise Figure		≤ 1.5			dB	
Gain		33 ± 2			dB	
VSWR		≤ 2.0			-	
Group Delay Ripple		≤ 15			ns	
Operating Voltage		3.3	5	12	V	
Current Consumption		34	34	34	mA	

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

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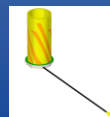
Mechanical Specification

Parameter	Specification
Antenna Dimension	Ø 24 x 47 mm
Weight	7g
RF Connector	I-PEX MHF® I (fully customizable)
RF Cable Type	Ø 1.13mm
Cable Length	Ø100 ± 2 mm (fully customizable)

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
RoHS Compliance	Yes
ESD Circuit Protection	15kV Air Discharge
Relative Humidity	Up to 95%

L1/L2 GNSS Embedded Quad Helix Antenna



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Ordering Information

Part Number	Description	Connector Option
AANI-AH-0152-1	L1/L2 GNSS Embedded Quad Helix Antenna with 100 mm cable & MHF1 connector	MHF1
AANI-AH-0152-2	L1/L2 GNSS Embedded Quad Helix Antenna with 100 mm cable & MMCX connector	MMCX
AANI-AH-0152-3	L1/L2 GNSS Embedded Quad Helix Antenna with 100 mm cable & SMA connector	SMA

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

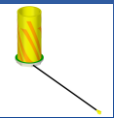


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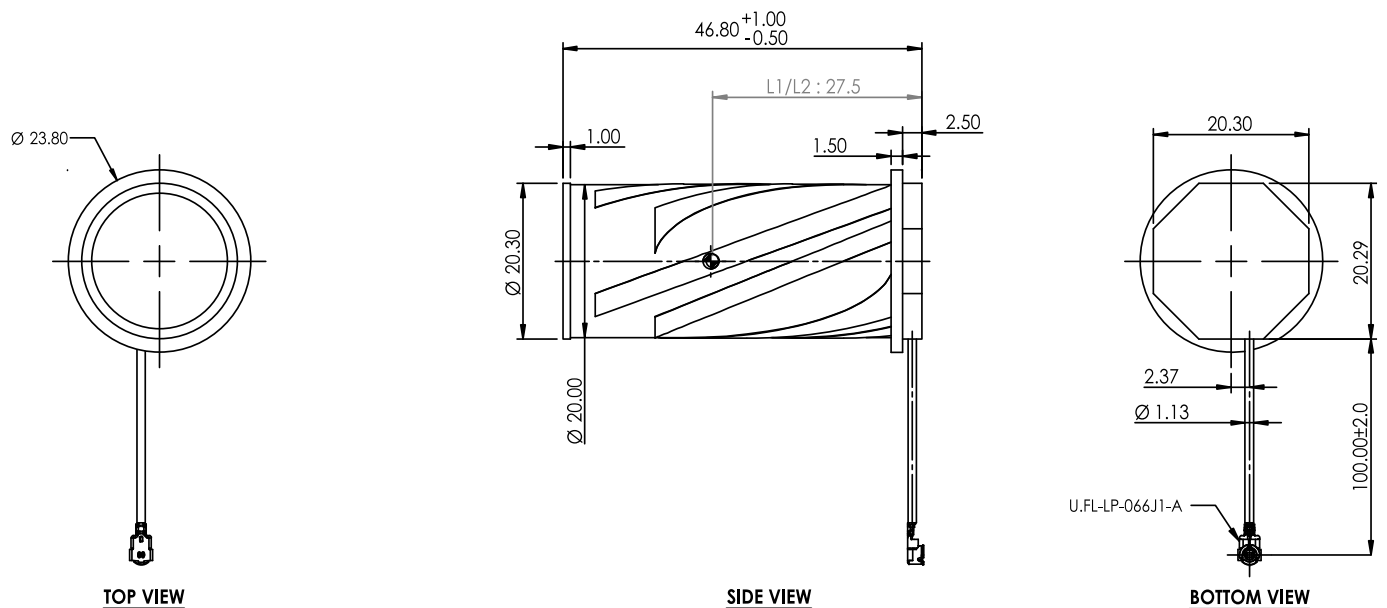
Ø 24 x 47 mm

RoHS Compliant

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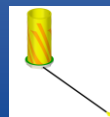
Product Dimension

AANI-AH-0152-1



Antenna phase center offset: L1/L2:27.5mm

Unit: mm



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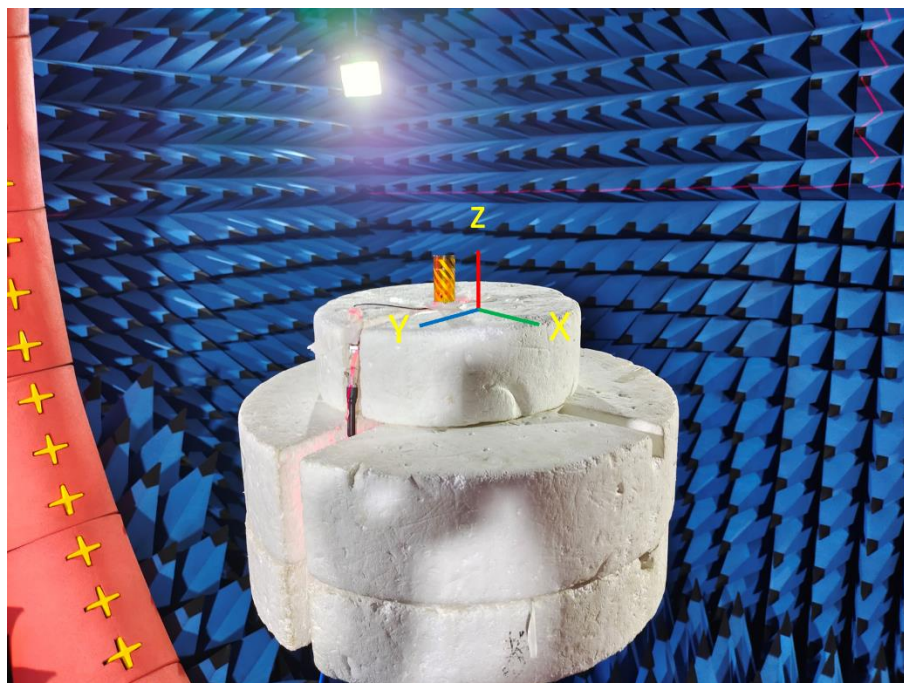


Ø 24 x 47 mm

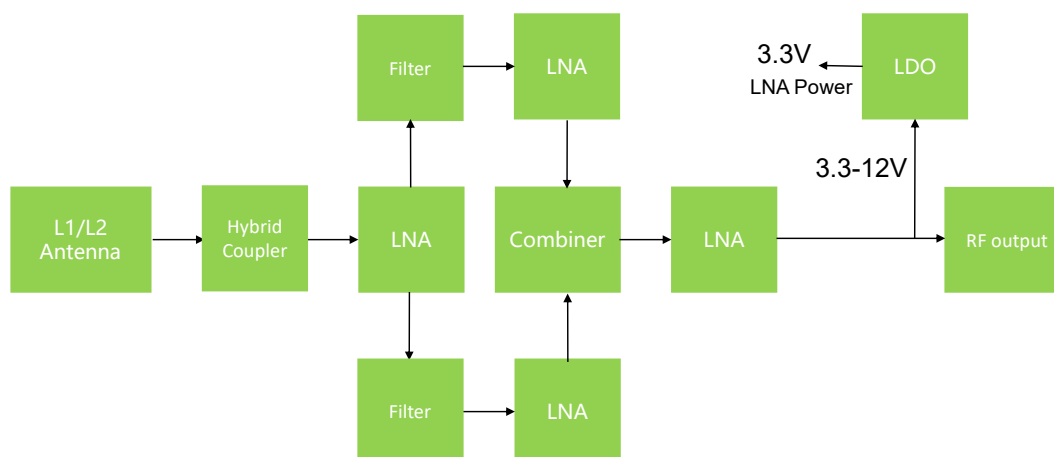
RoHS Compliant

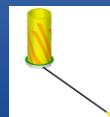
MSL Level = N/A

Measurement Setup



GNSS Block Diagram





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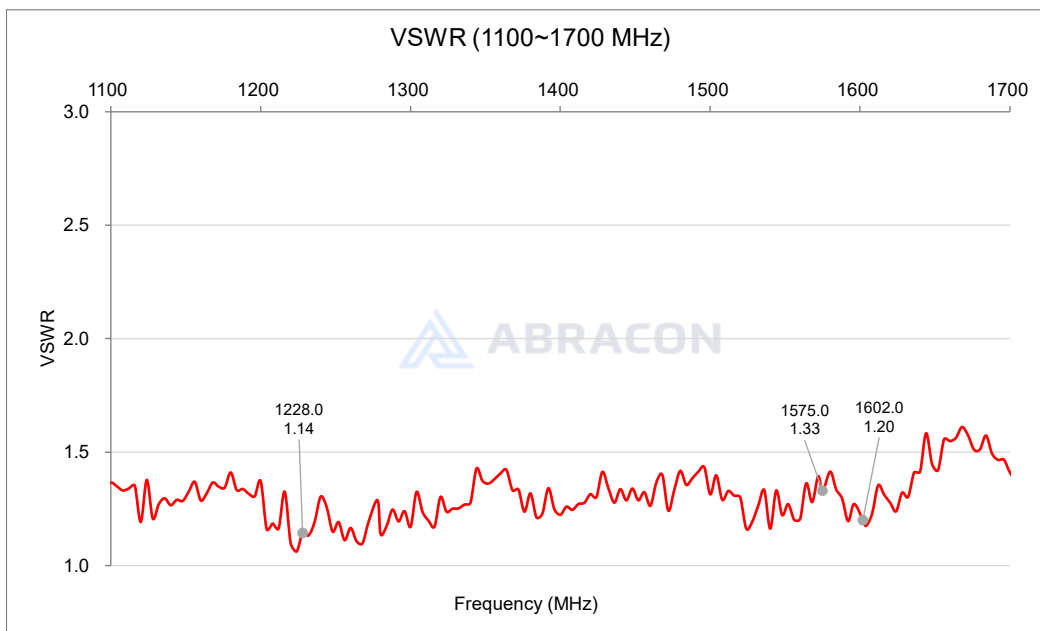
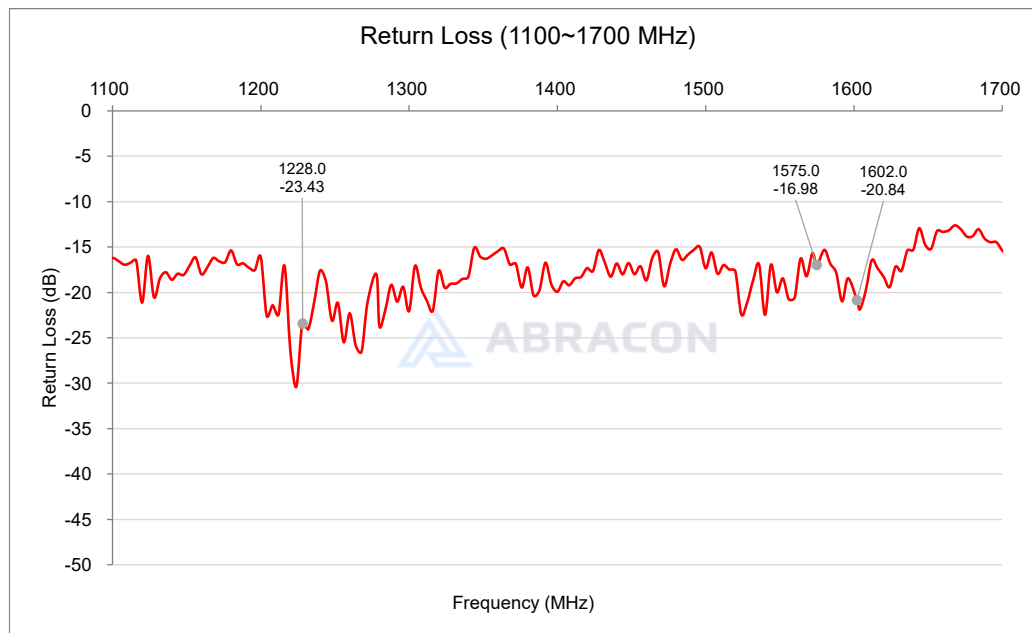


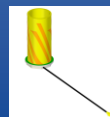
Ø 24 x 47 mm

RoHS Compliant

MSL Level = N/A

Reflection Characteristics – Return Loss & VSWR





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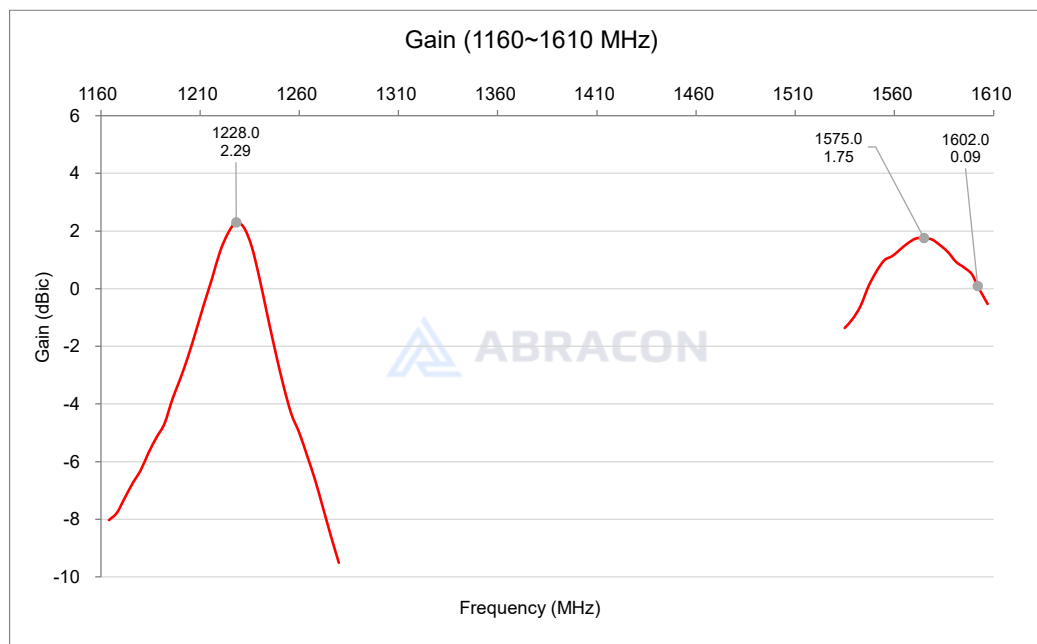


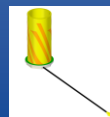
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RoHS Compliant

MSL Level = N/A

Radiation Characteristics –Passive Peak Gain





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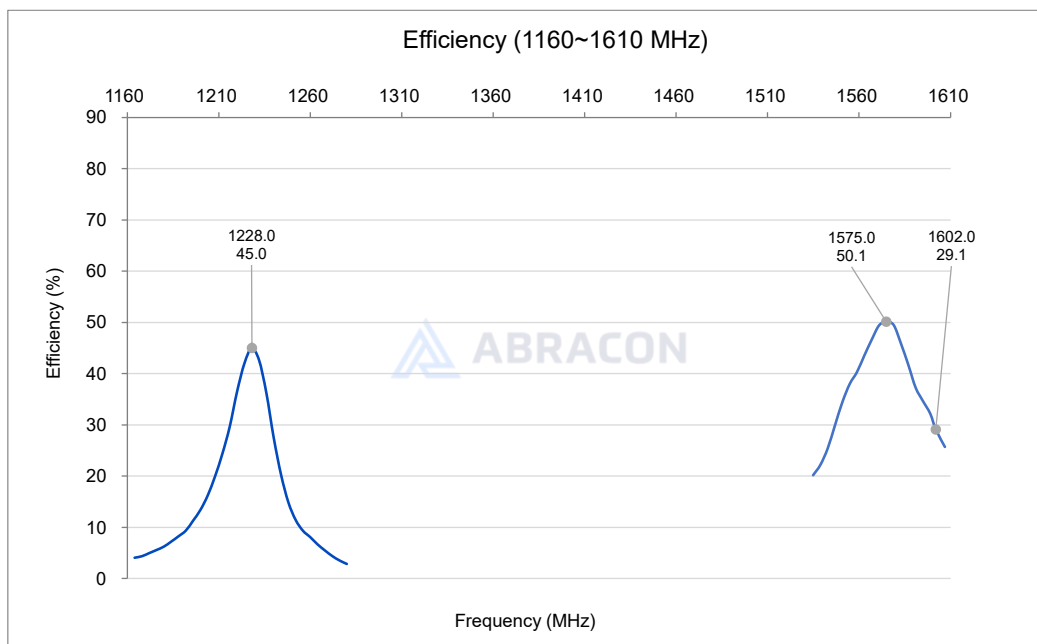


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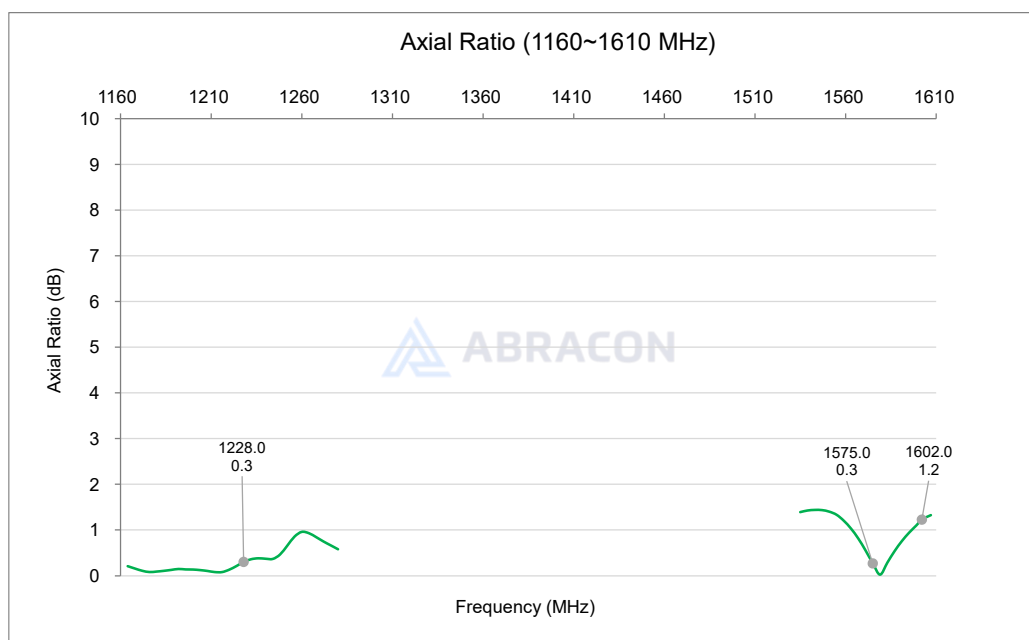
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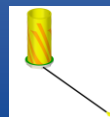
MSL Level = N/A

Radiation Characteristics –Efficiency



Axial Ratio





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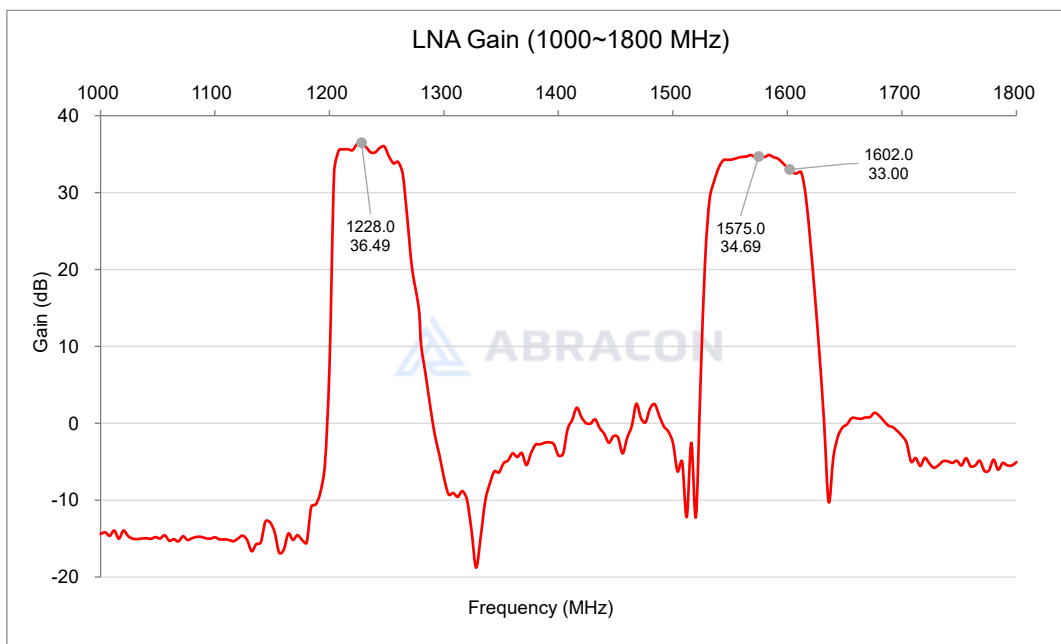


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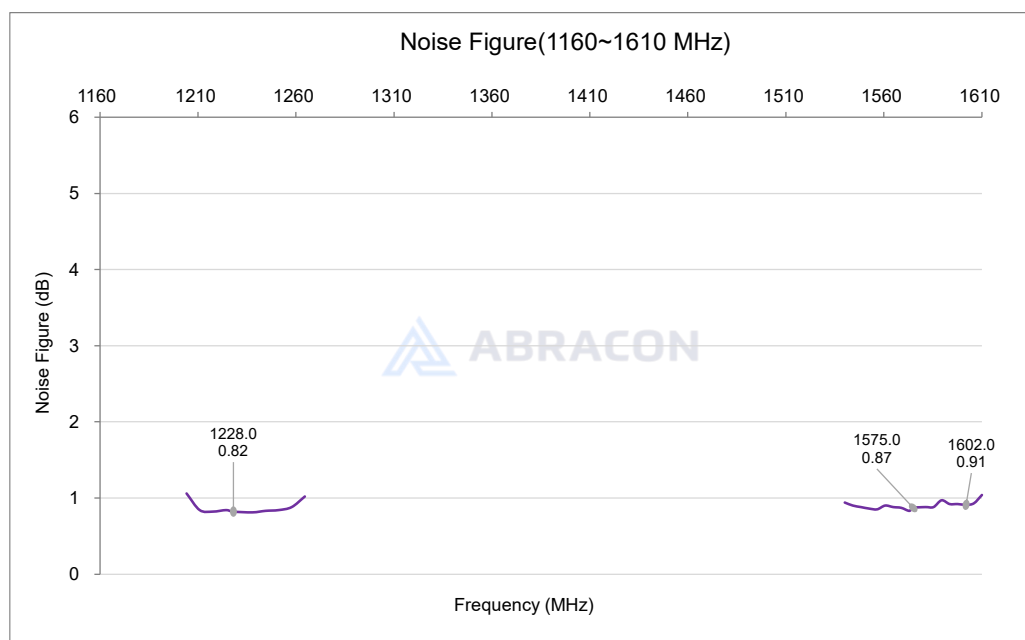
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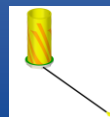
MSL Level = N/A

Radiation Characteristics –LNA Gain



Noise Figure





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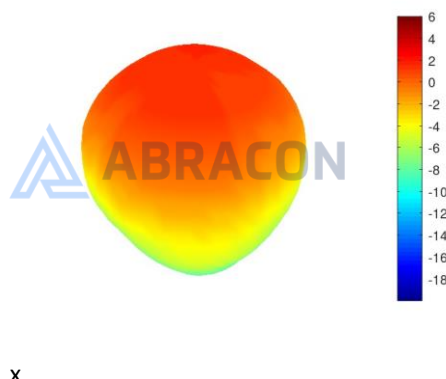
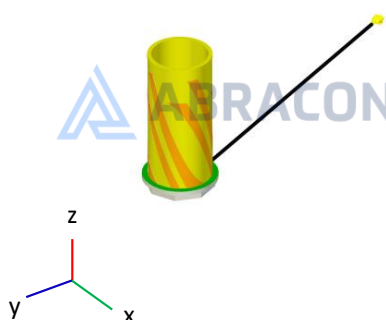
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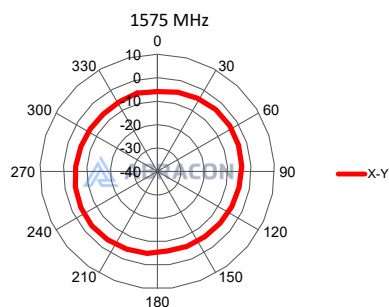
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Radiation Characteristics – 3D & 2D Pattern

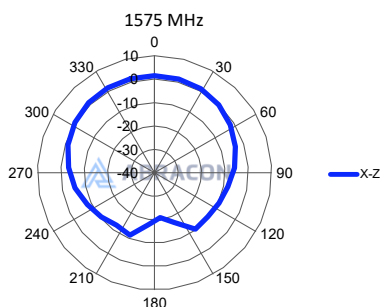
1575MHz (L1 Band)



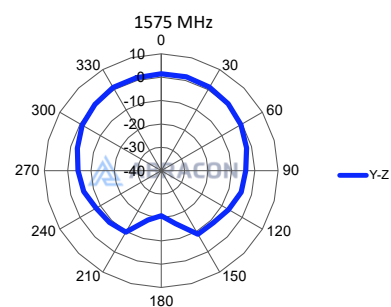
XY plane



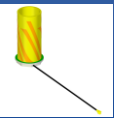
XZ plane



YZ plane



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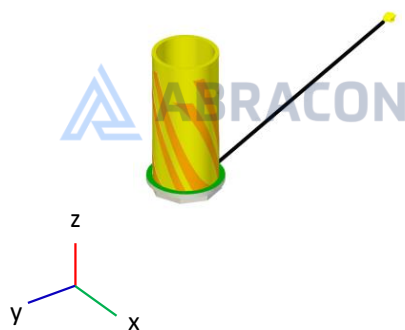


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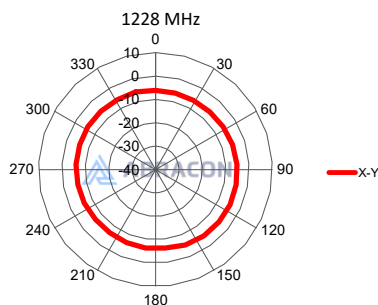
RoHS Compliant

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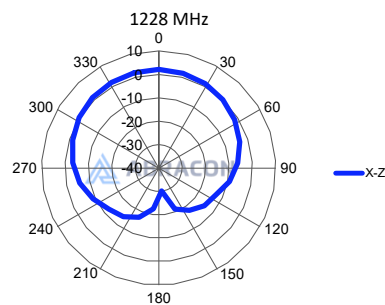
1228MHz (L2 Band)



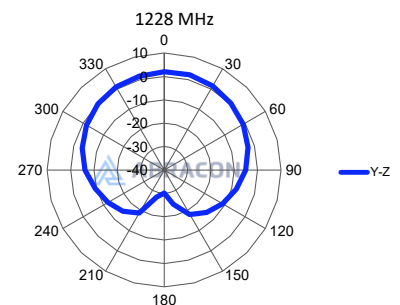
XY plane



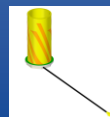
XZ plane



YZ plane



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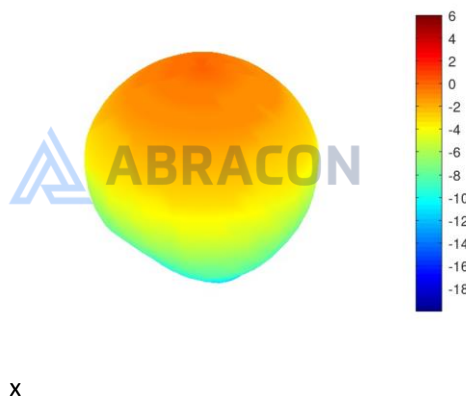
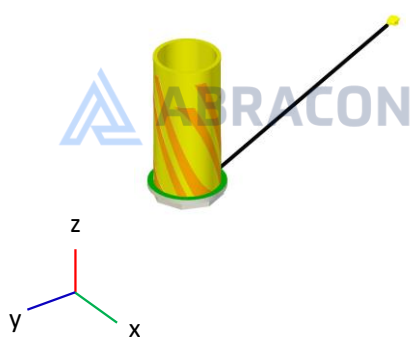


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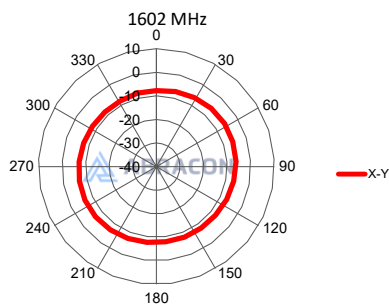
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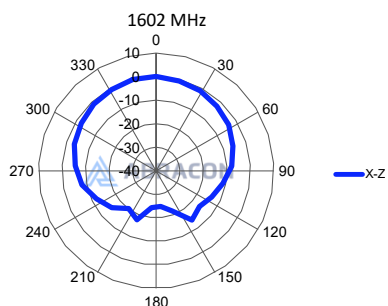
1602MHz (G1 Band)



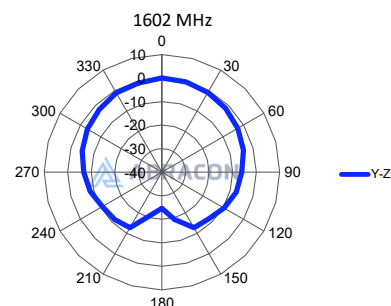
XY plane



XZ plane



YZ plane



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