



AANE-AH-0155

Request Samples



Check Inventory



Ø 40 x 82.6 mm
RoHS Compliant
MSL Level = N/A

Features

- Multiband Multi-Constellation Active GNSS Antenna
 - GPS: L1/L2/L5/ L-Band
 - GLONASS: G1/G2/G3
 - GALILEO: E1/E5a/E5b/E6
 - BEIDOU: B1I/B2I/B3I/B1C/B2a/B2b
 - QZSS: L1/L2/L5/L6
 - IRNSS: L5
 - SBAS: L1/L5
- Extremely Light (45g) with IP67 Housing
- Broad Beamwidth Ensures Low-Elevation Satellite Tracking
- Stable Phase Center for Millimeter-Level Accuracy
- Robust Anti-Interference Capability (Pre-Filter Included)
- High LNA Gain of 33±2 dB with Low Noise Figure

Applications

- Precision Land Survey Positioning
- Surveying and Mapping Systems
- Precision GNSS Positioning
- Autonomous Driving and UAVs
- Mission-Critical GNSS Timing
- Geofencing

Product Image



FULL-BAND (L1/L2/L5/L6 + L BAND) FULL-CONSTELLATION GNSS HELIX ANTENNA



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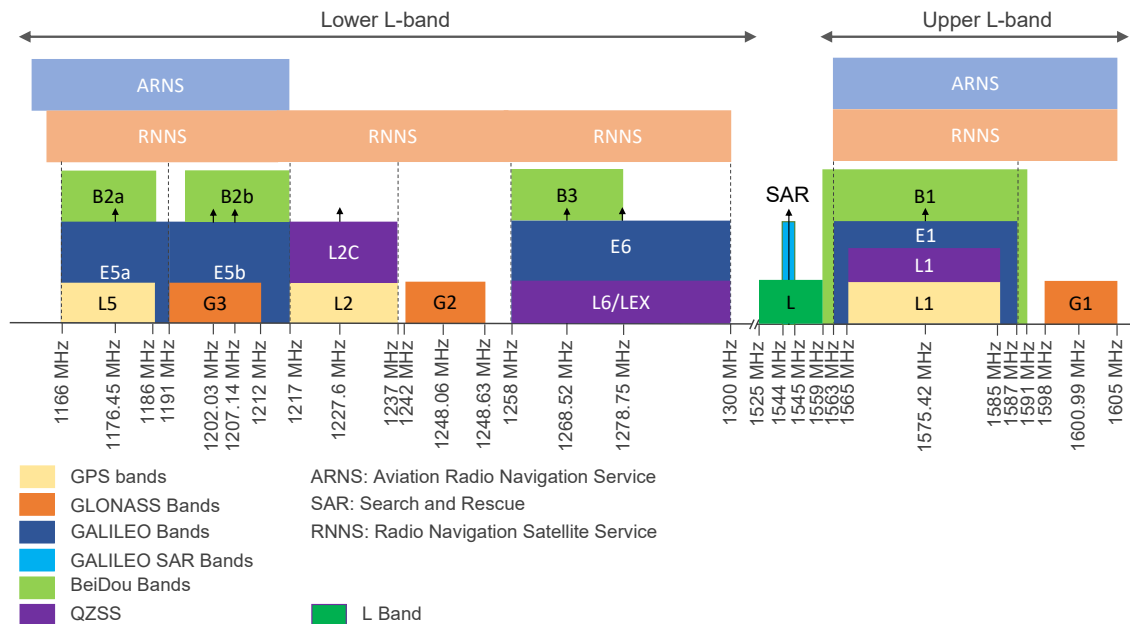
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GNSS Frequency Bands Covered

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		
	■		■		



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Electrical Specification

Parameters		Min.	Typ.	Max.	Units	Note
Antenna						
Frequency		GPS: L1/L2/L5 GLONASS: G1/G2/G3 GALILEO: E1/E5a/E5b BEIDOU: B1I/B2I/B3I/B1C/B2a/B2b QZSS: L1/L2/L5/L6 IRNSS: L5 SBAS: L1/L5 L-Band				
VSWR		≤ 2			-	
Polarization		RHCP			-	(Right Hand Circular Polarization)
Nominal Impedance		50			Ω	
Gain RHCP	1575.42MHz (L1)	1.6	2.7	3.3	dBic	
	1227.60MHz (L2)	2.7	3.8	4.3		
	1176.45MHz (L5)	-4.0	-2.5	-0.9		
	1278.75MHz (L6)	-1.6	0.4	2.6		
	L-Band	0.9	2.1	2.9		
Axial Ratio	1575.42MHz (L1)	1.2			dB	
	1227.60MHz (L2)	0.2				
	1176.45MHz (L5)	0.3				
	1278.75MHz (L6)	0.5				
	L-Band	1.7				
PCO	L1	32			mm	
	L2	42				
PCV		< 1.5			mm	
LNA						
Noise Figure		≤ 1.5			dB	
Gain	1166-1278MHz	31.0	32.6	33.8	dB	
	1520-1610MHz	29.6	31.4	32.4		
VSWR		≤ 2.0			-	
Out of Band Rejection (±100MHz)		≥ 30			dB	
Group Delay Ripple		≤ 15			ns	
Operating Voltage		3.3	5	12	V	
Current Consumption		27	28	27	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 40 x 82.6 mm
Weight	45g
Mounting Type	Screw Mount 3-NO. 3-48UNC*DP6mm
RF Connector	SMA (M)

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +85°C
IP Rating	IP67 (when mounted)
RoHS Compliance	Yes
ESD Circuit Protection	15kV Air Discharge
Relative Humidity	Up to 95%

FULL-BAND (L1/L2/L5/L6 + L BAND) FULL-CONSTELLATION GNSS HELIX ANTENNA



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Ordering Information

Part Number	Description	Connector Option
AANE-AH-0155-1	FULL-BAND (L1/L2/L5/L6 + L BAND) FULL-CONSTELLATION GNSS HELIX ANTENNA with SMA (M) connector	SMA (M)

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

FULL-BAND (L1/L2/L5/L6 + L BAND) FULL-CONSTELLATION GNSS HELIX ANTENNA



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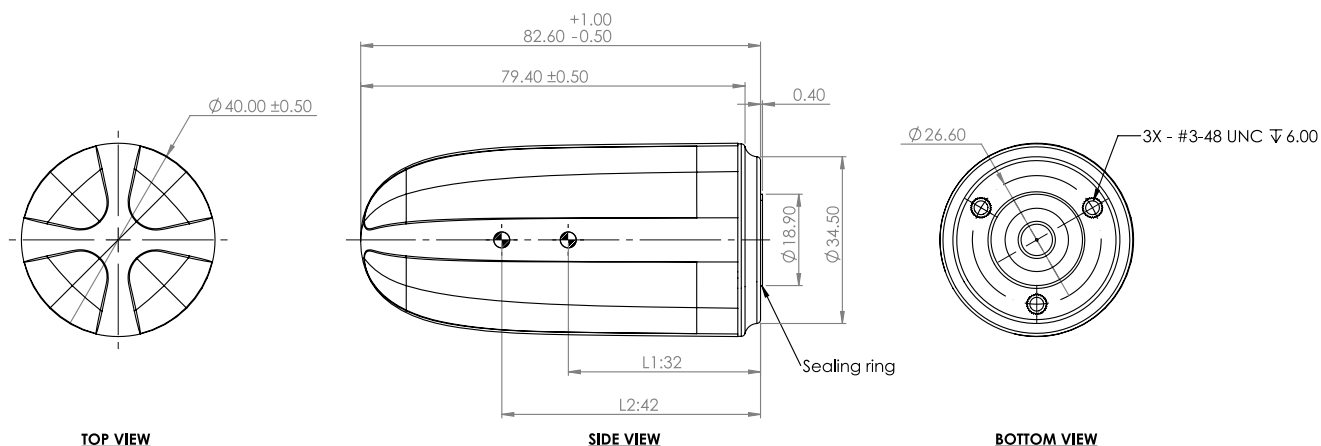


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Product Dimension



Antenna phase center offset: L1: 32mm, L2: 42mm

Unit: mm

FULL-BAND (L1/L2/L5/L6 + L BAND) FULL-CONSTELLATION GNSS HELIX ANTENNA



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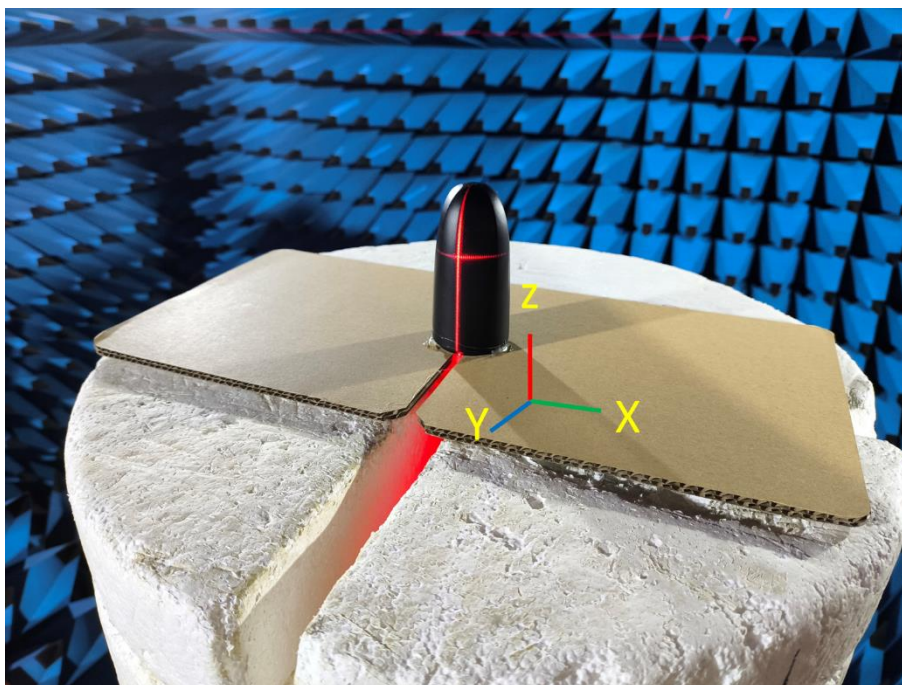


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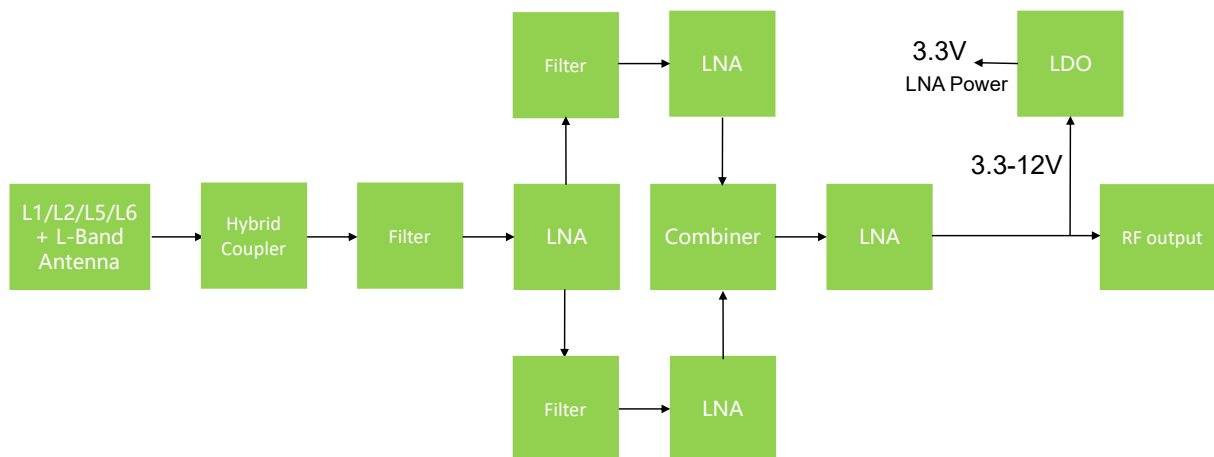


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Measurement Setup



GNSS Block Diagram





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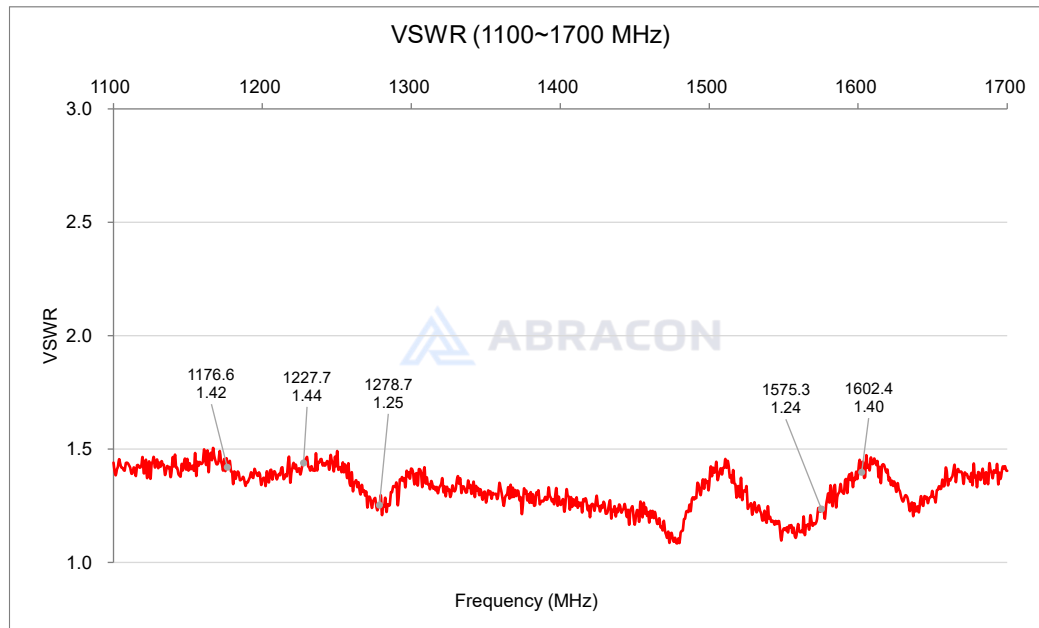
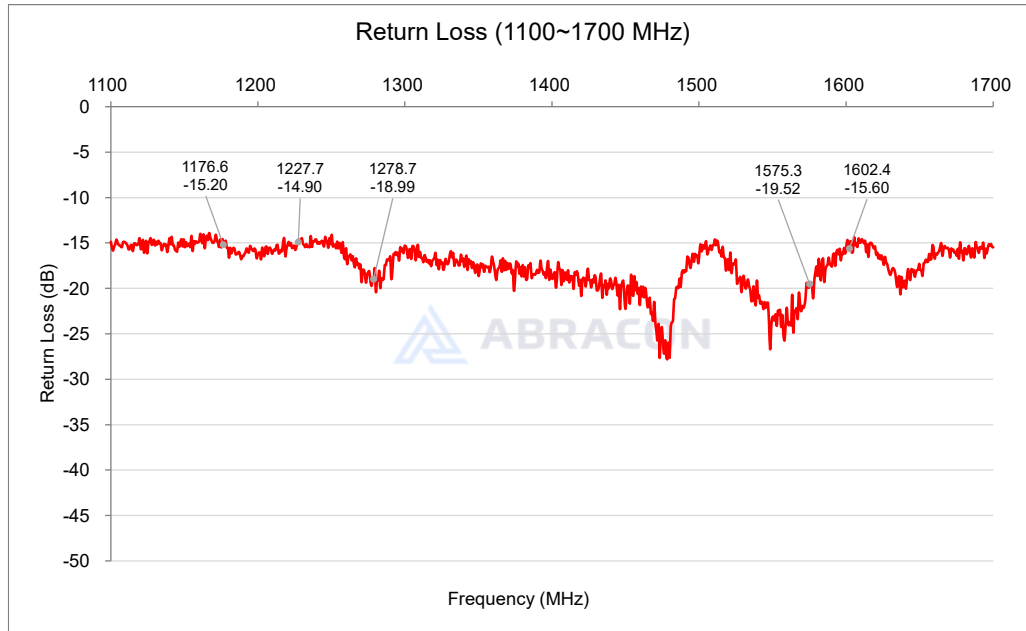


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Reflection Characteristics – Return Loss & VSWR





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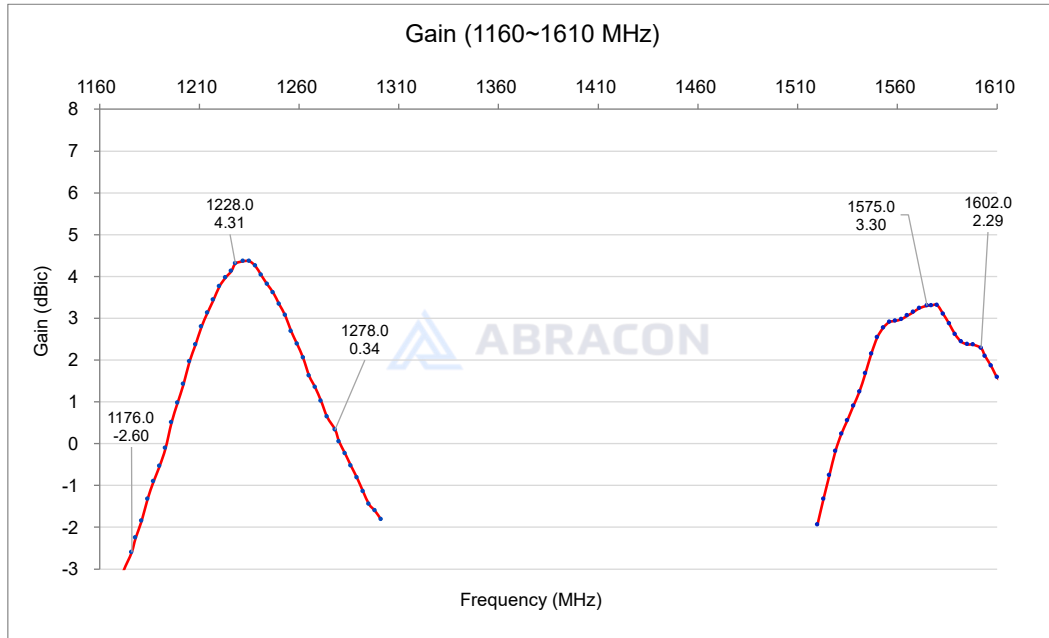


Check Inventory



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Radiation Characteristics –Passive Peak Gain





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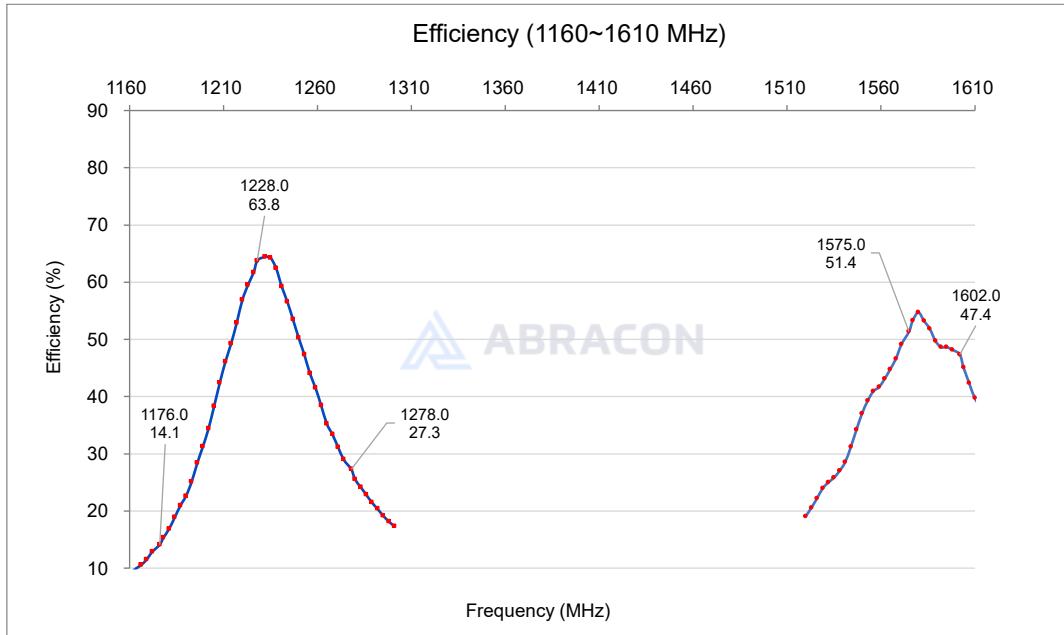


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Radiation Characteristics –Passive Efficiency





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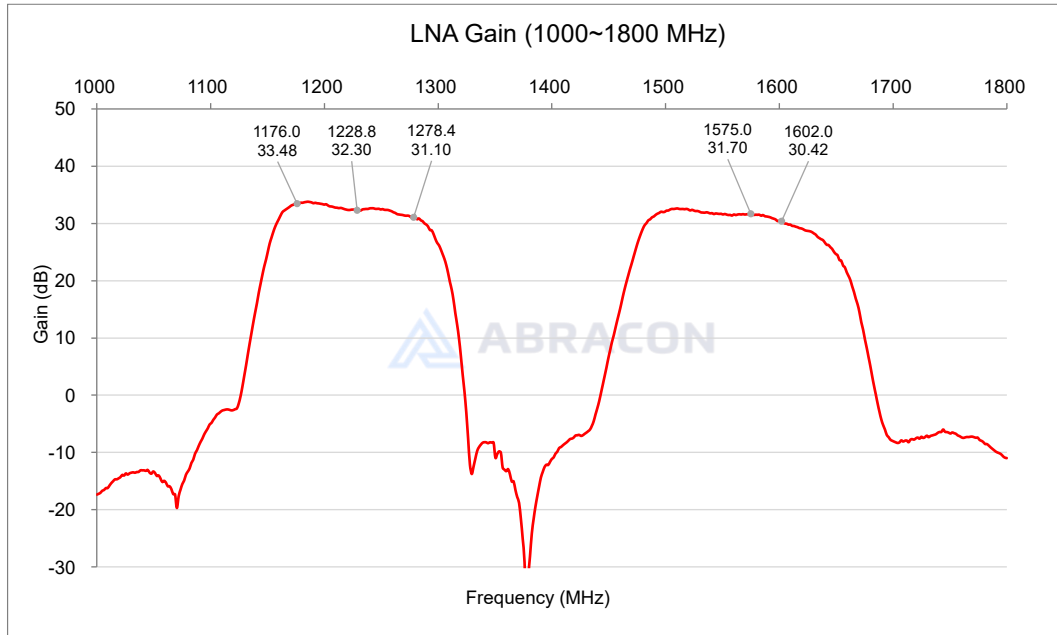


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Radiation Characteristics –LNA Gain





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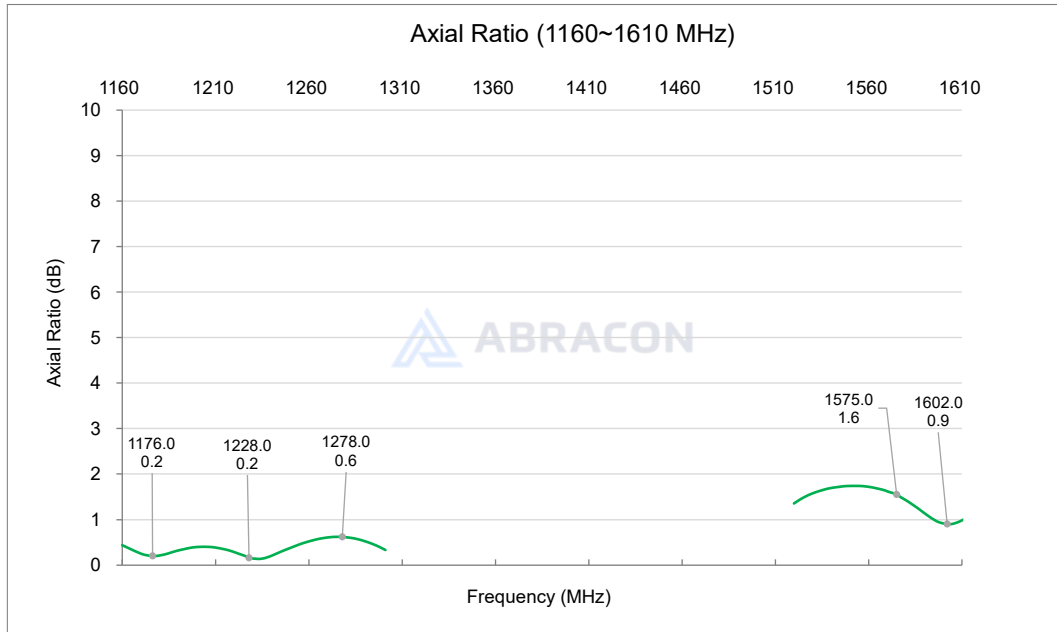


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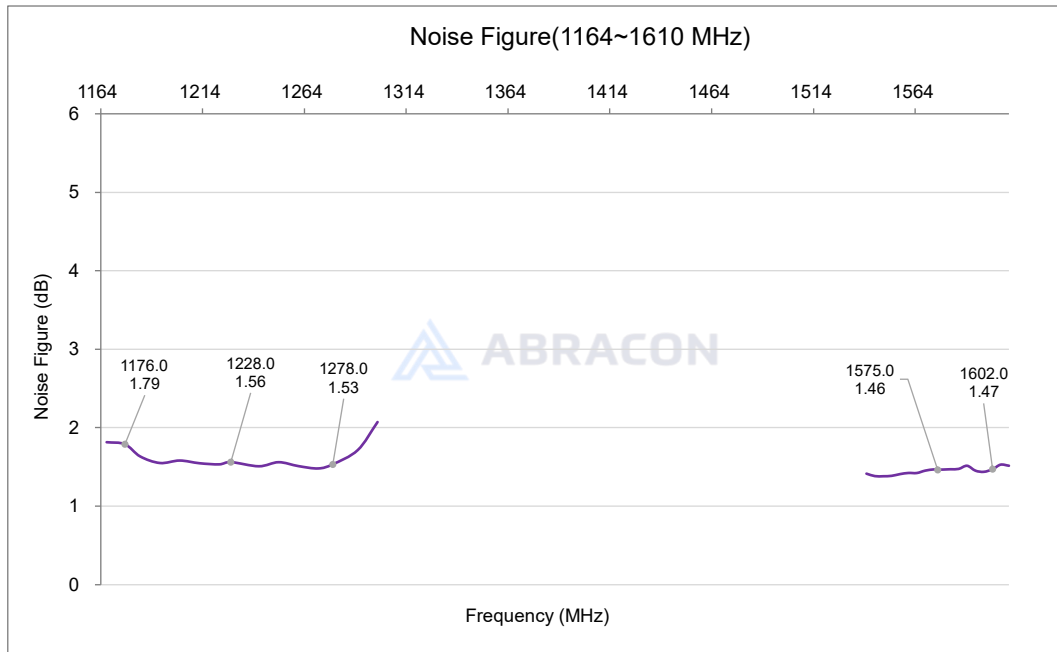


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MSL Level = N/A

Axial Ratio



Noise Figure





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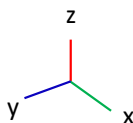
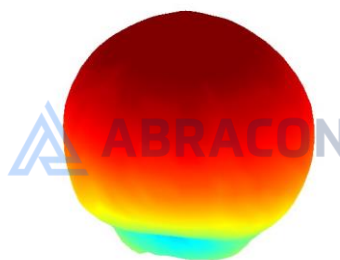
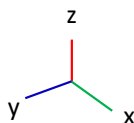
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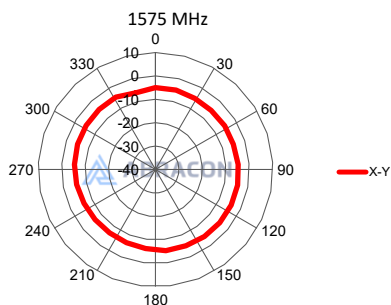
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RoHS Compliant
MSL Level = N/A

Radiation Characteristics – 3D & 2D Pattern

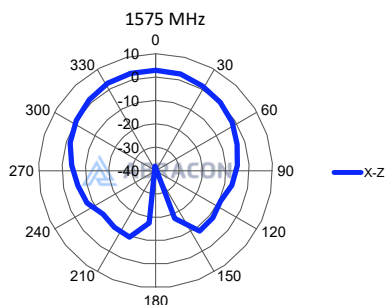
1575MHz (L1 Band)



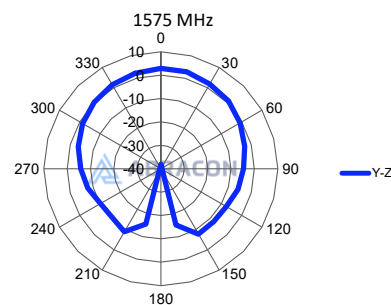
XY plane



XZ plane



YZ plane



FULL-BAND (L1/L2/L5/L6 + L BAND) FULL-CONSTELLATION GNSS HELIX ANTENNA



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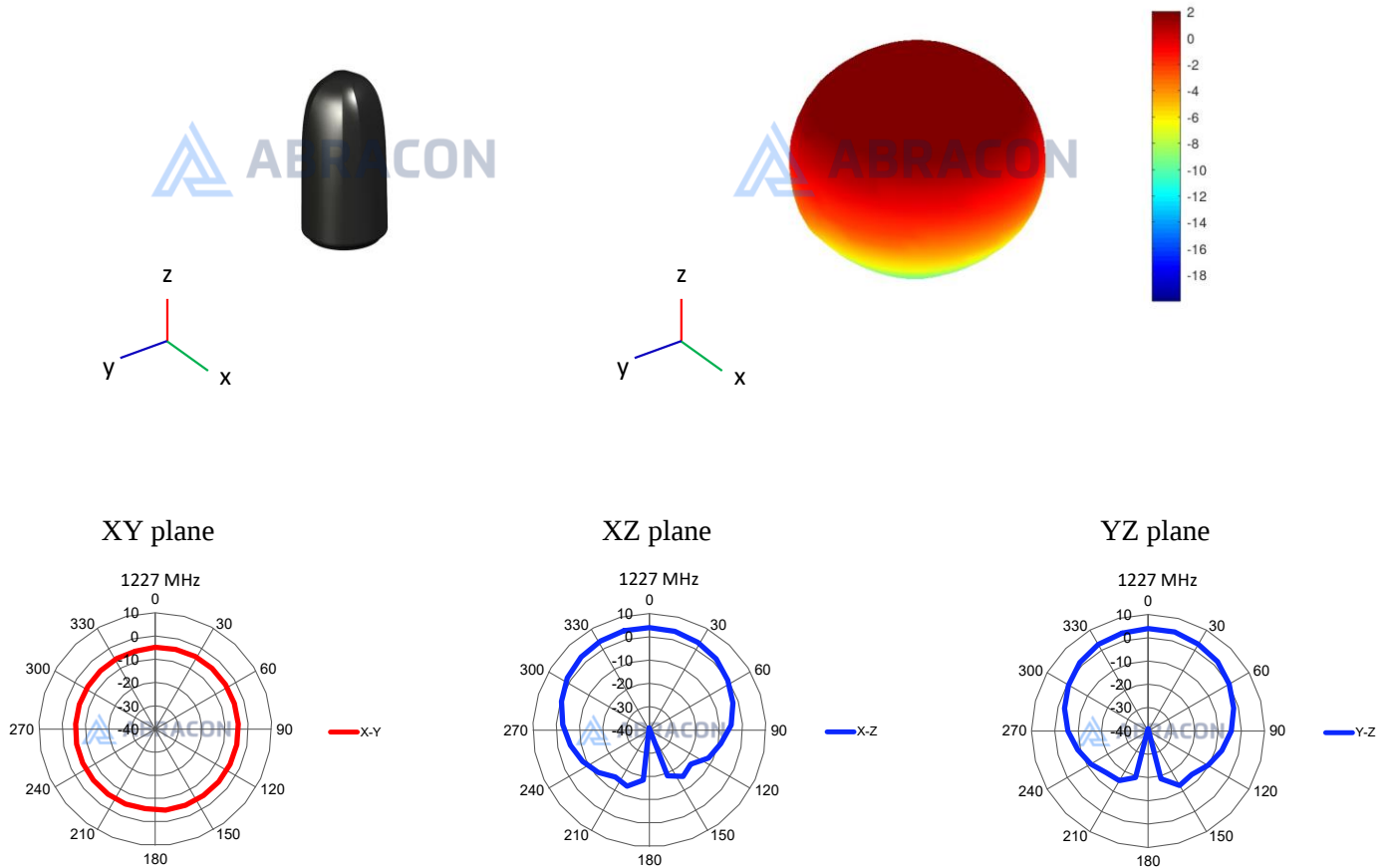


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1227MHz (L2 Band)



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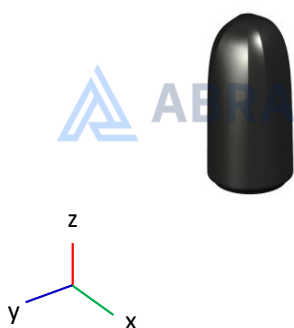


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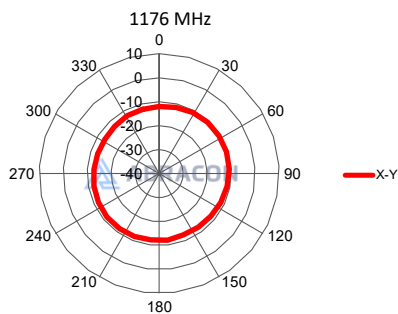


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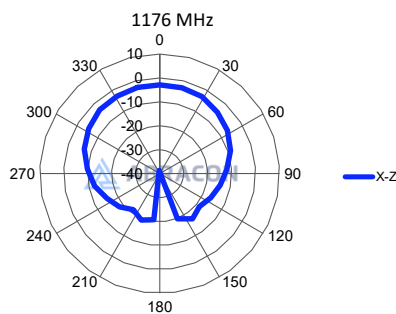
1176MHz (L5 Band)



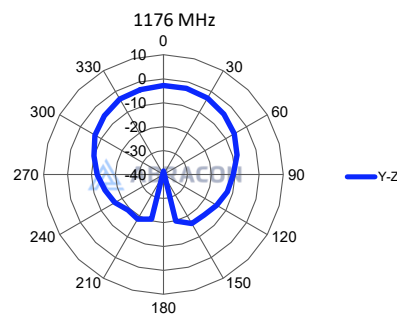
XY plane



XZ plane



YZ plane



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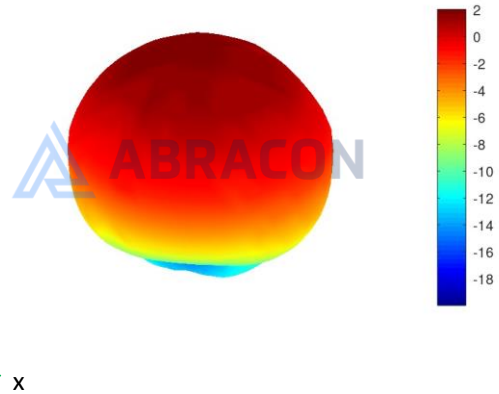
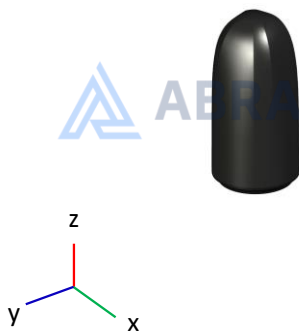


Check Inventory

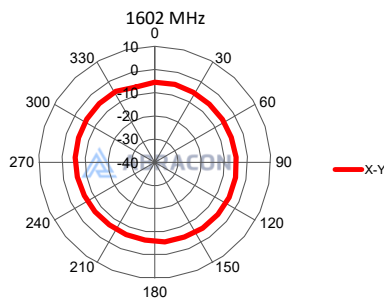


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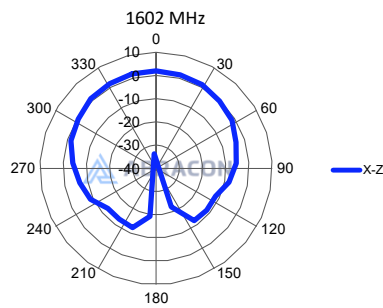
1602MHz (G1 Band)



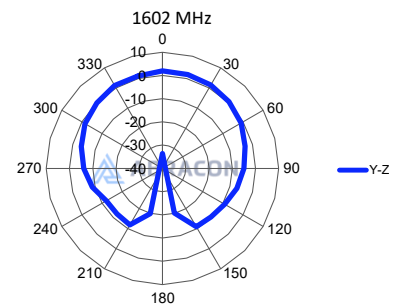
XY plane



XZ plane



YZ plane



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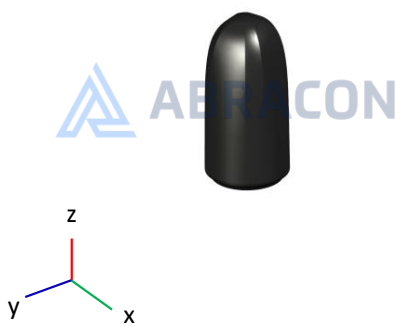


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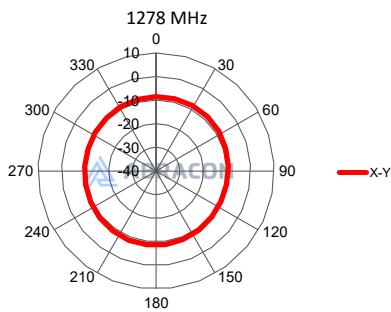


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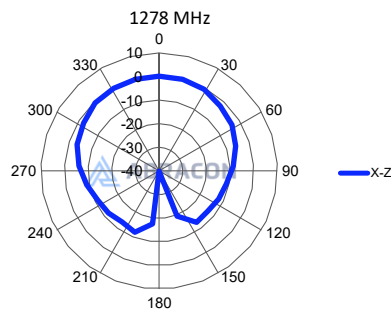
1278MHz (L6 Band)



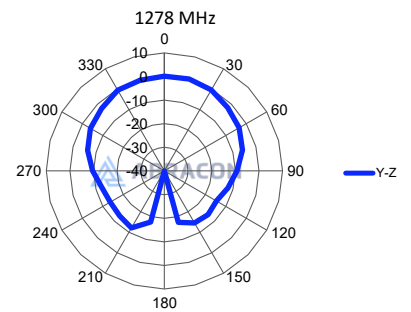
XY plane



XZ plane



YZ plane



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Packaging

50 pcs antennas per carton

Dimension of the Carton: 450 x 330 x 220 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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