

**AANI-AH-0126**

Request Samples



Check Inventory



Ø46 x 21.9 mm  
RoHS Compliant  
MSL Level = N/A

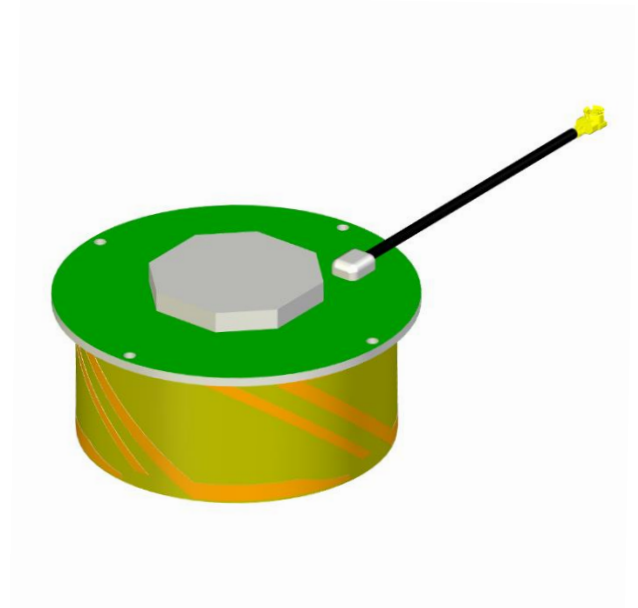
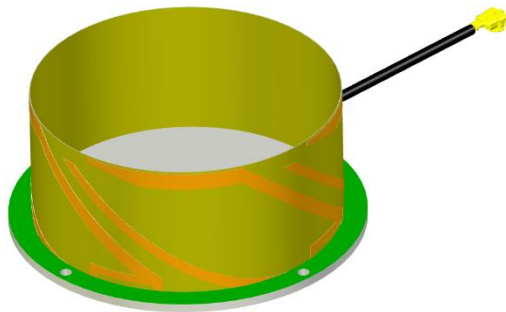
## Features

- Multiband Multi-Constellation Active GNSS Antenna
  - GPS: L1/L2/L5
  - GLONASS: G1/G2/G3
  - GALILEO: E1/E5a/E5b/E6
  - BEIDOU: B1I/B2I/B3I/B1C/B2a/B2b
  - IRNSS: L5
  - SBAS: L1/L5
  - L-Band
- Extremely-Low Profile (Ø 46 x 21.9 mm)
- Ultra-Lightweight (8g)
- High LNA Gain of 33±2 dB with Low Noise Figure
- Broad Beamwidth Ensures Low-Elevation Satellite Tracking
- Centimeter Phase Center Repeatability
- Robust Anti-Interference Capability (Pre-Filter Included)
- Customization Options Available to Meet Specific Needs

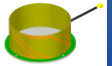
## Applications

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

## Product Image



# Full-Band Full-Constellation High-Precision GNSS Helix Antenna with the Lowest Profile



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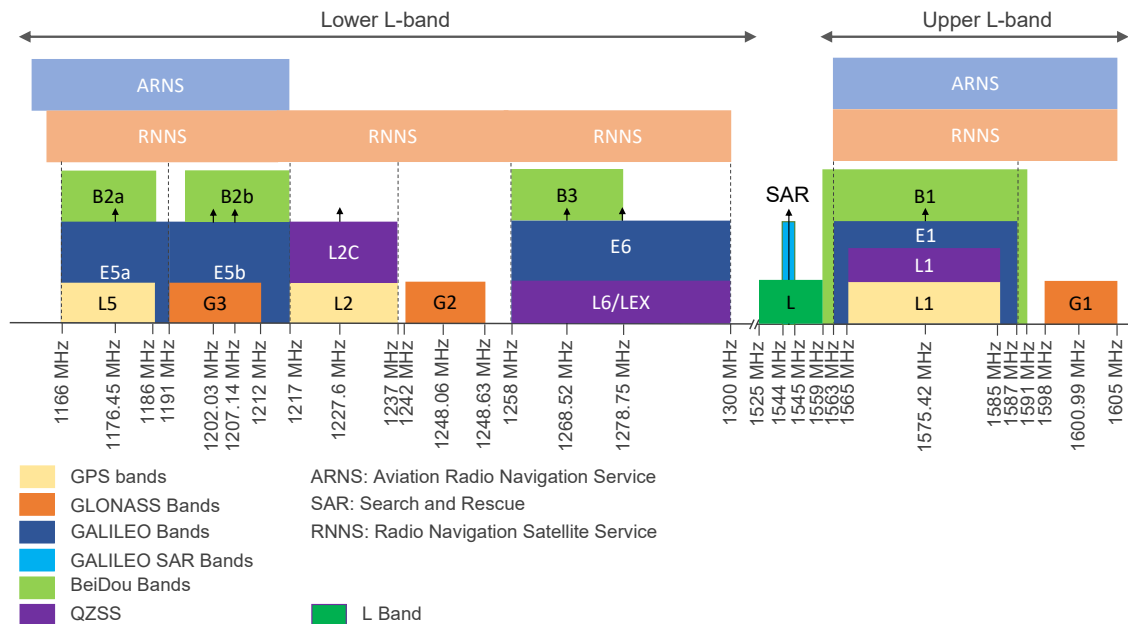
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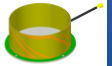
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RoHS Compliant  
MSL Level = N/A

## NSS Frequency Bands Covered

System	Band	Frequency Range	Frequency	Frequency	Frequency	
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
		■		■		■
BeiDou	B1C	1575.42MHz	B2b	1207.14MHz	B2a	1176.45MHz
		■		■		■
L-Band	L-Band	1542MHz				
		■				
QZSS	L1	1575.42MHz	L2	1227.6MHz	L5	1176.45MHz
		■		■		■
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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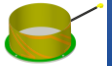


Ø46 x 21.9 mm  
**RoHS Compliant**  
 MSL Level = N/A

**Electrical Specification**

Parameters		Typ.			Units	Note
<b>Antenna</b>						
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 (maximum)	1575.42MHz (L1)	3.3		dBic		
	1227.60MHz (L2)	3.0				
	1176.45MHz (L5)	-1.1				
	L-Band	2.4				
Axial Ratio	1575.42MHz (L1)	1.7		dB		
	1227.60MHz (L2)	0.4				
	1176.45MHz (L5)	0.1				
	L-Band	2.1				
PCO	L1	11.7		mm		
	L2	14.7				
PCV	< 1.5			mm		
<b>LNA</b>						
Noise Figure	≤ 2			dB		
Gain	33 ± 2			dB		
Passband Gain Ripple	± 2			dB		
VSWR	≤ 2.0			-		
Operating Voltage	3.3	5	12	V		
Current Consumption	24	24	24	mA		
Group Delay Ripple	≤ 15			ns		

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



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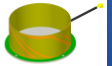
**Mechanical Specification**

Parameter	Specification
Antenna Dimension	Ø 46 x 21.9 mm
Weight	8g
Mounting Type	Screw Mount (4M 1.6)
RF Connector	I-PEX MHF® I (fully customizable)
RF Cable Type	Ø 1.37 mm
Cable Length	100 ± 2 mm (fully customizable)

**Environmental Specification**

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

# Full-Band Full-Constellation High-Precision GNSS Helix Antenna with the Lowest Profile



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## Ordering Information

Part Number	Description	Connector Option
AANI-AH-0126-1	Full-Band Full-Constellation High-Precision GNSS Helix Antenna with the Lowest Profile 100 mm cable, and MHF1 connector	MHF1
AANI-AH-0126-2	Full-Band Full-Constellation High-Precision GNSS Helix Antenna with the Lowest Profile 100 mm cable, and MMCX connector	MMCX
AANI-AH-0126-3	Full-Band Full-Constellation High-Precision GNSS Helix Antenna with the Lowest Profile 100 mm cable, and SMA connector	SMA

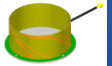
Note: Different cable and connector configurations that are not listed may be available upon request via [Abracon online support](#)



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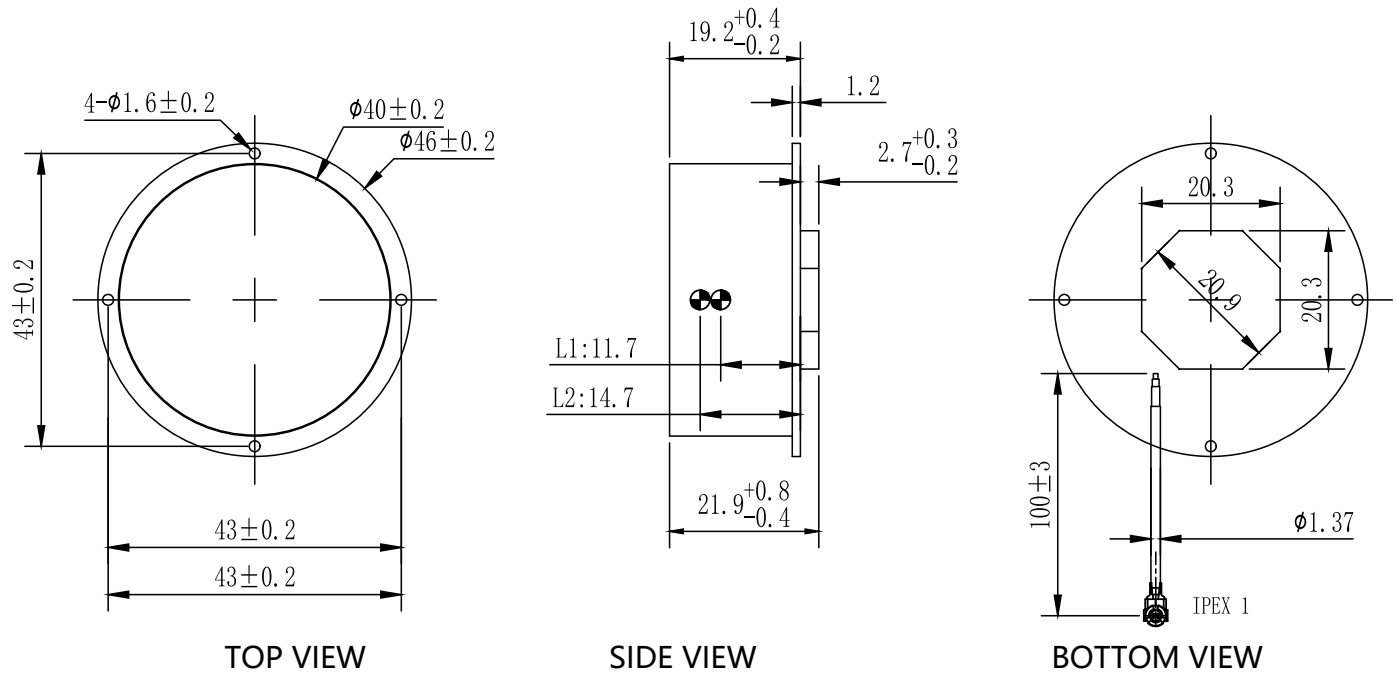
Check Inventory



**Ø46 x 21.9 mm**  
**RoHS Compliant**  
**MSL Level = N/A**

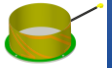
**Product Dimension**

AANI-AH-0126-1



Antenna phase center offset: L1: 11.7mm, L2:14.7mm

Unit: mm



AANI-AH-0126

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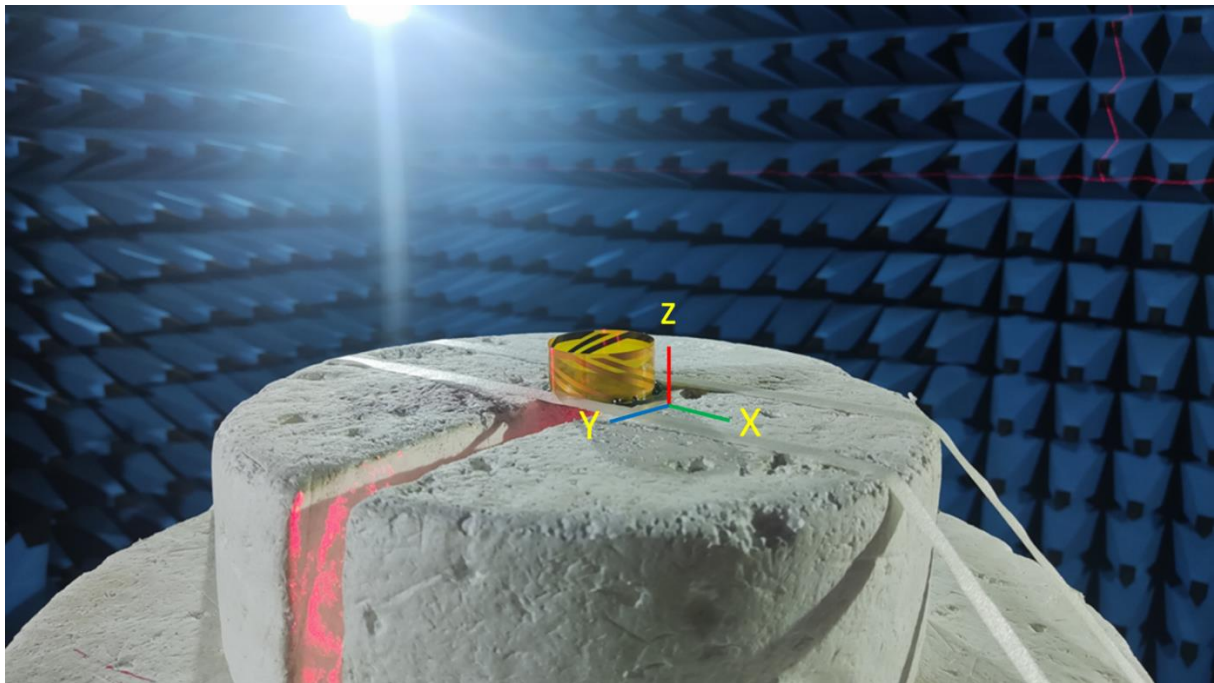


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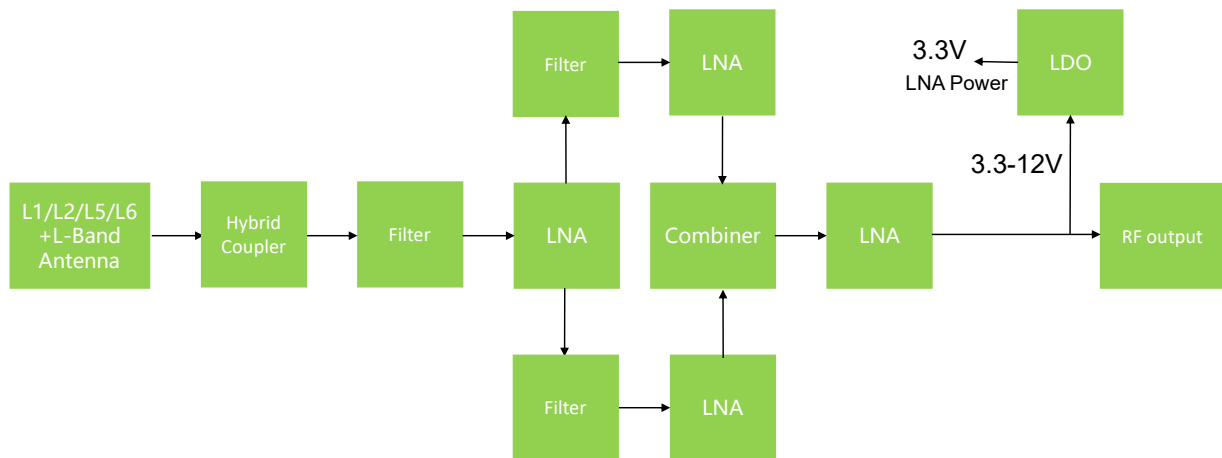


Ø46 x 21.9 mm  
RoHS Compliant  
MSL Level = N/A

Measurement Setup



GNSS Block Diagram





AANI-AH-0126

Request Samples

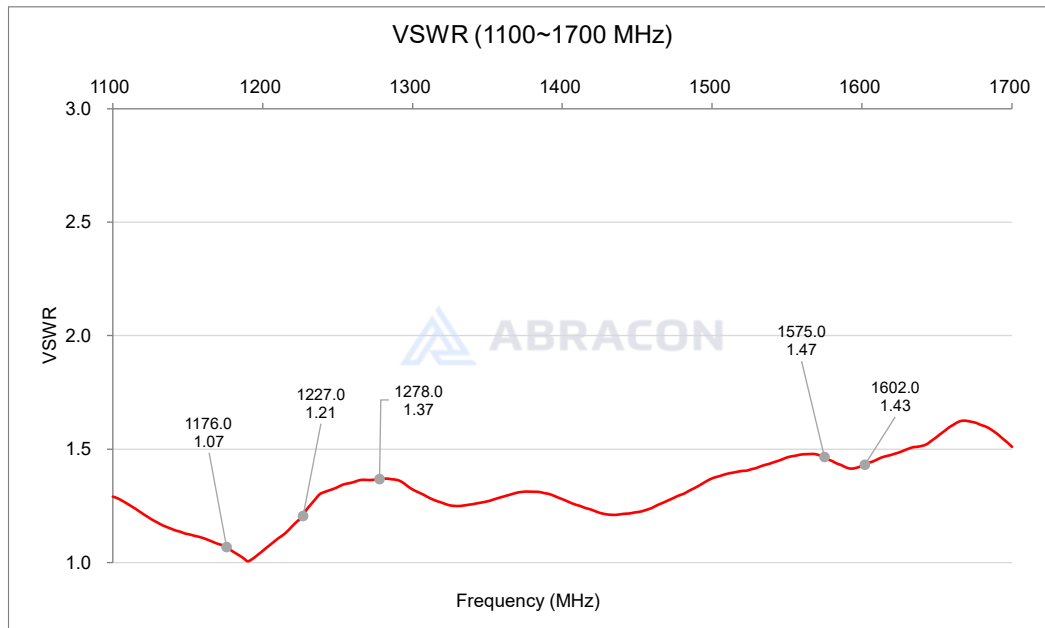
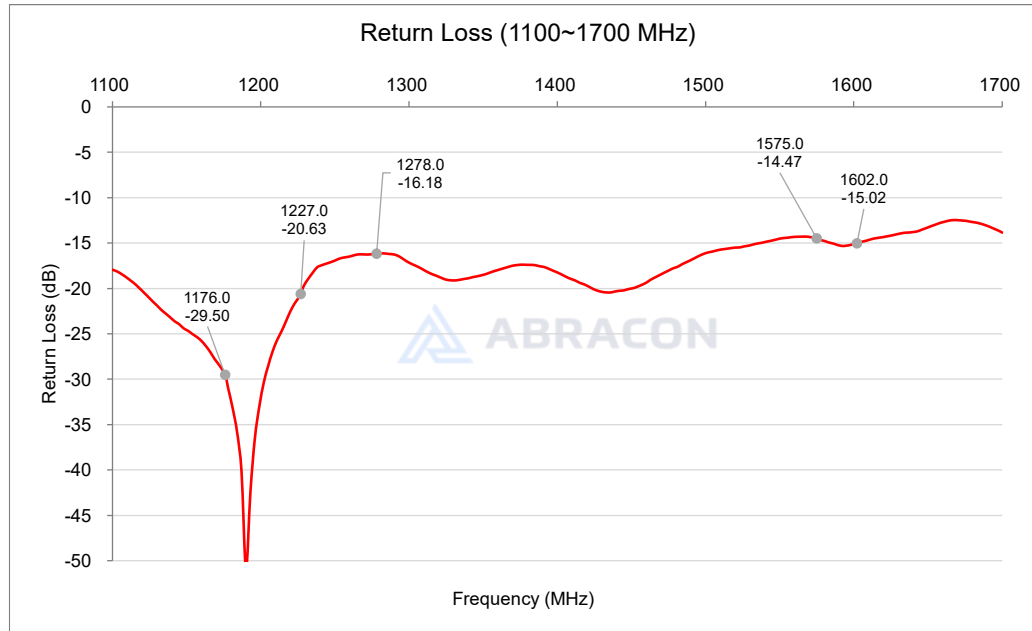


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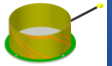


Ø46 x 21.9 mm  
RoHS Compliant  
MSL Level = N/A

Reflection Characteristics – Return Loss & VSWR







AANI-AH-0126

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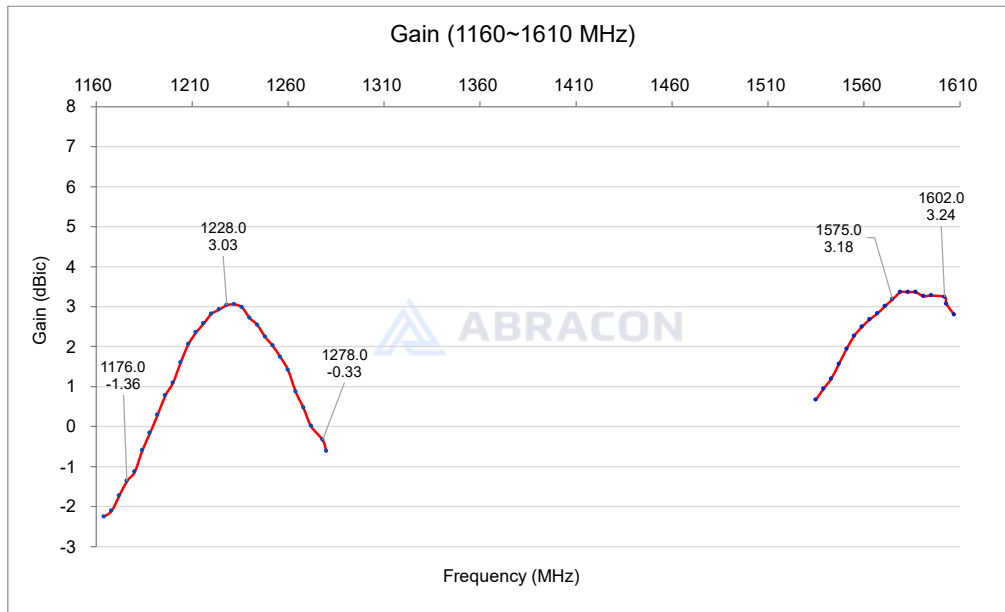


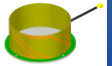
Check Inventory



Ø46 x 21.9 mm  
RoHS Compliant  
MSL Level = N/A

### Radiation Characteristics –Passive Peak Gain





AANI-AH-0126

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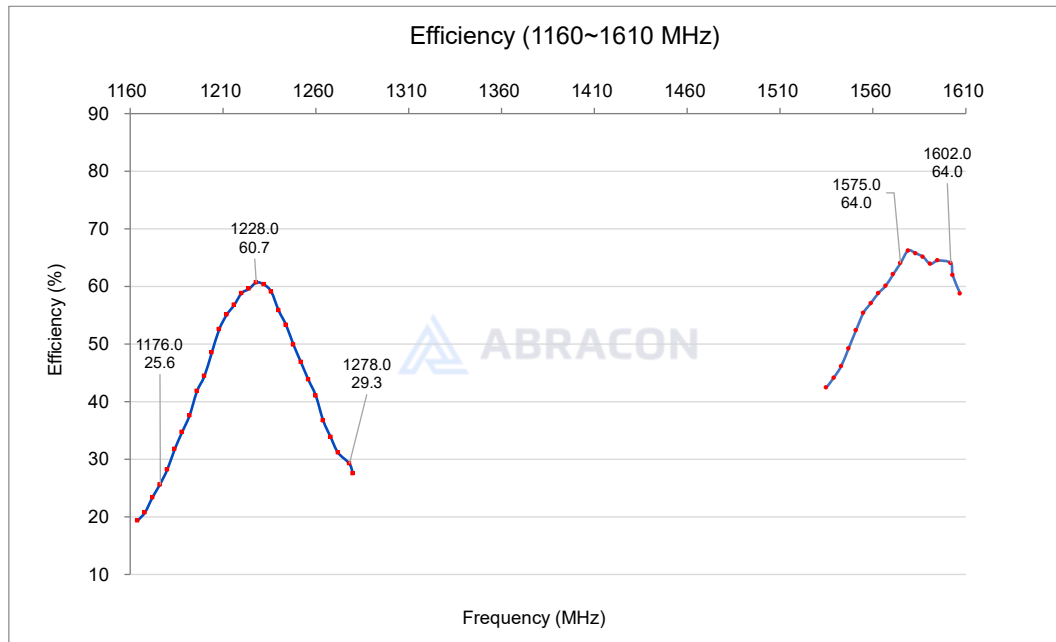


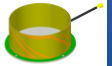
Check Inventory



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RoHS Compliant  
MSL Level = N/A

### Radiation Characteristics –Passive Efficiency





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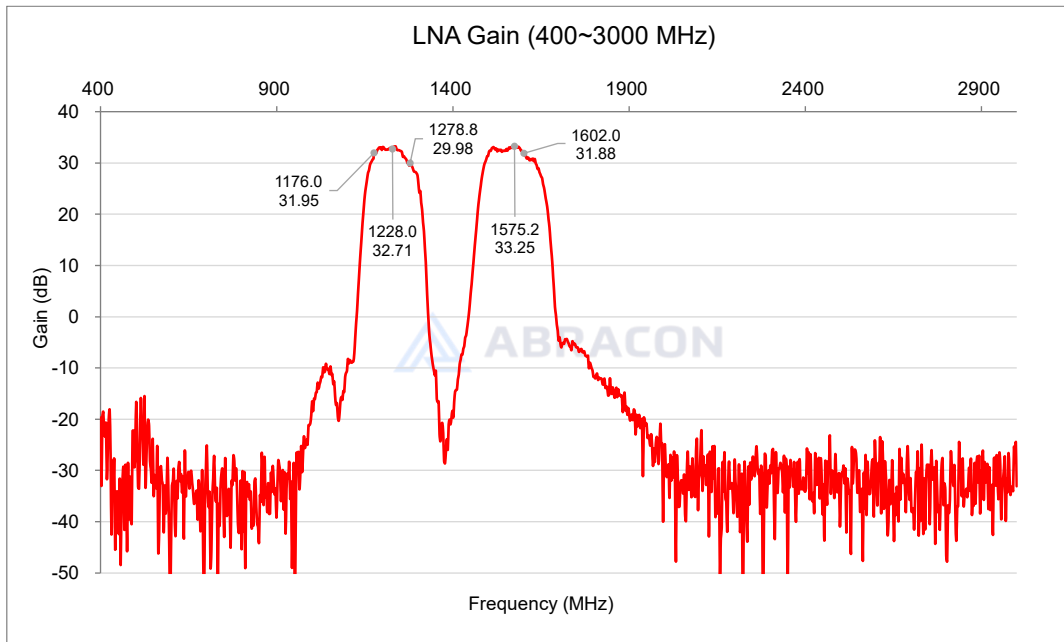


Check Inventory



Ø46 x 21.9 mm  
RoHS Compliant  
MSL Level = N/A

### Radiation Characteristics –LNA Gain





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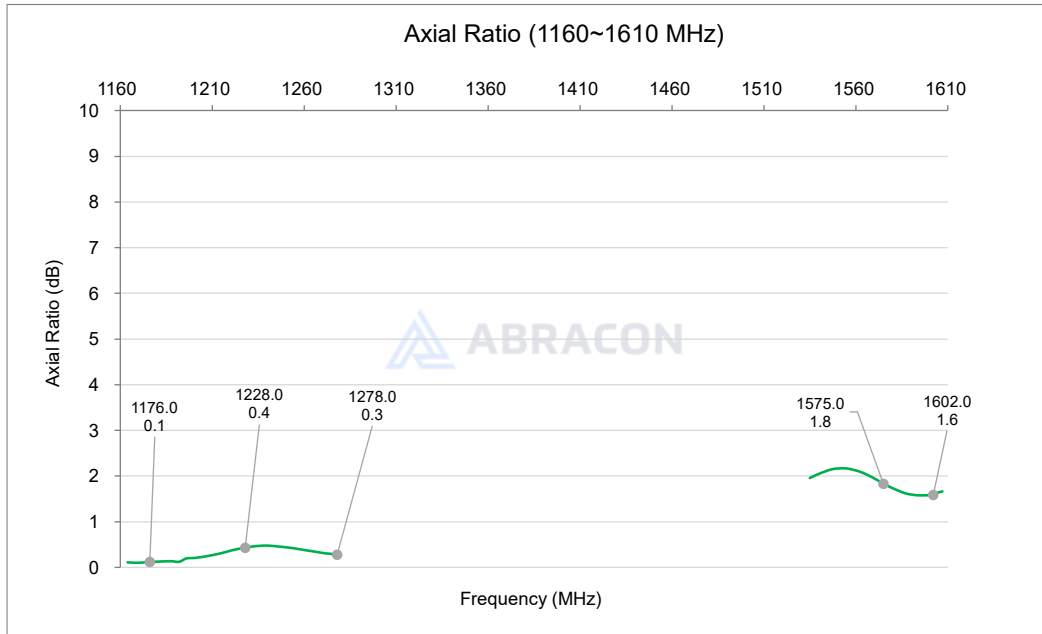


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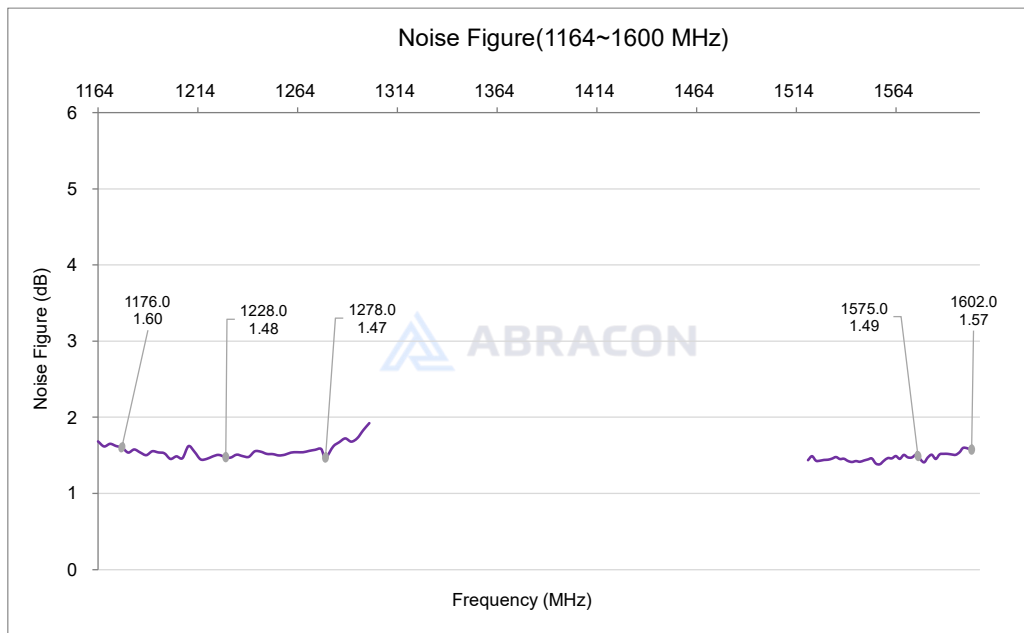


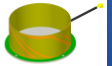
Ø46 x 21.9 mm  
RoHS Compliant  
MSL Level = N/A

**Axial Ratio**



**Noise Figure**





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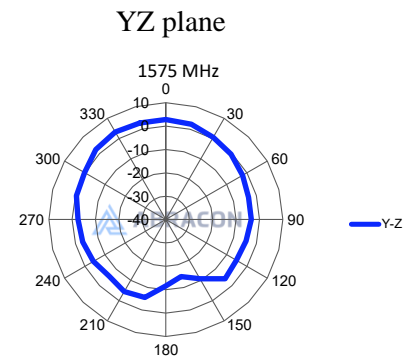
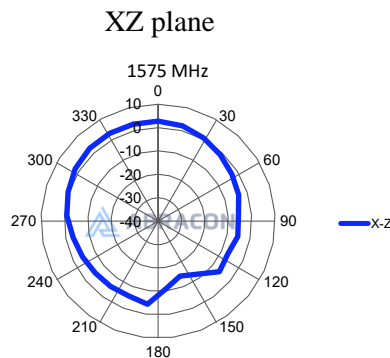
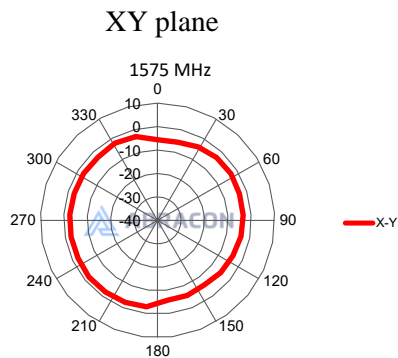
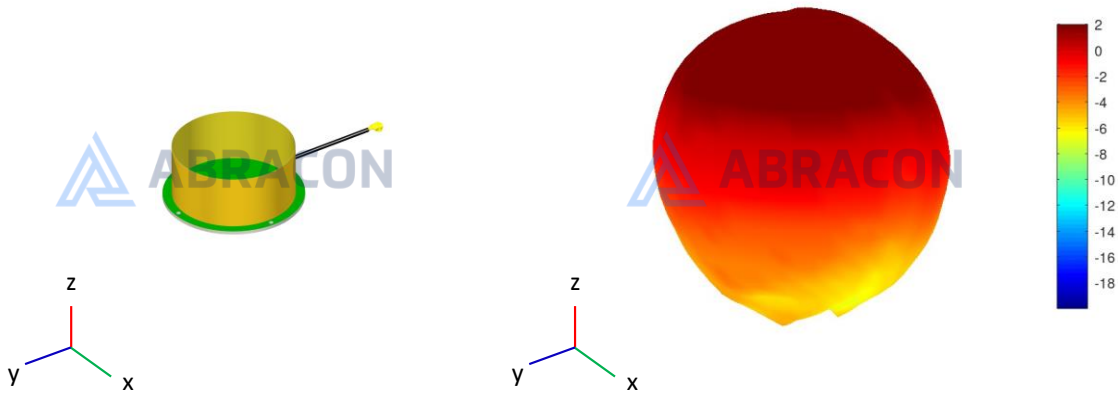
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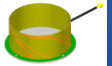


Ø46 x 21.9 mm  
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MSL Level = N/A

Radiation Characteristics – 3D & 2D Pattern

1575MHz (L1 Band)





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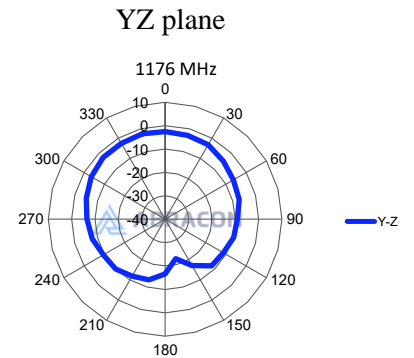
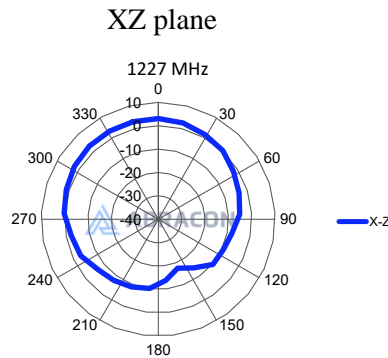
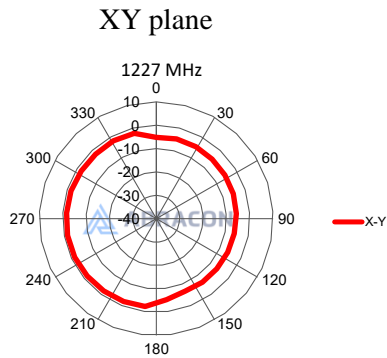
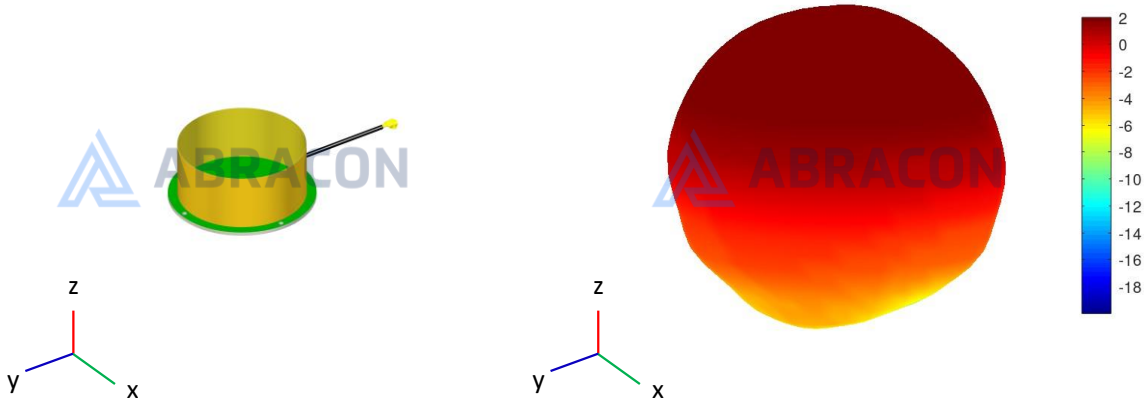


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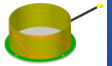


Ø46 x 21.9 mm  
RoHS Compliant  
MSL Level = N/A

1227MHz (L2 Band)



# Full-Band Full-Constellation High-Precision GNSS Helix Antenna with the Lowest Profile



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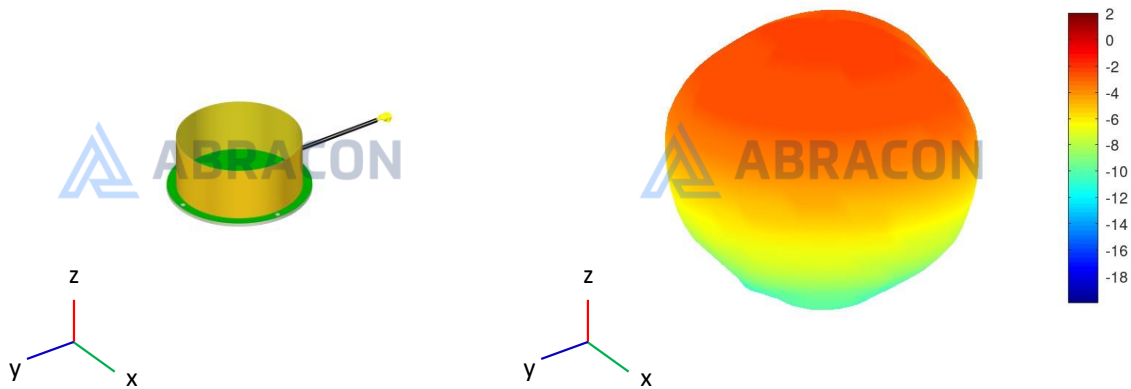


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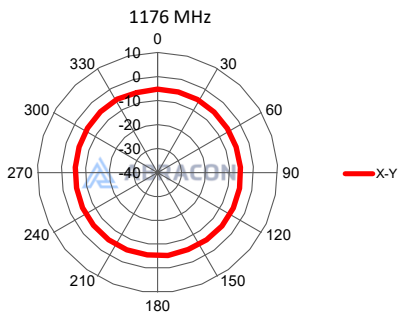


**Ø46 x 21.9 mm**  
**RoHS Compliant**  
**MSL Level = N/A**

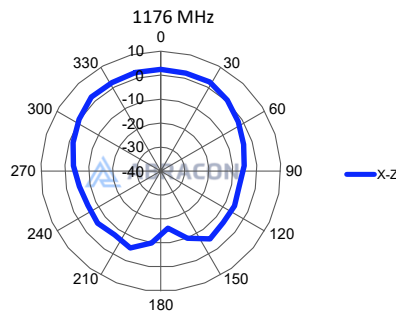
1176MHz (L5 Band)



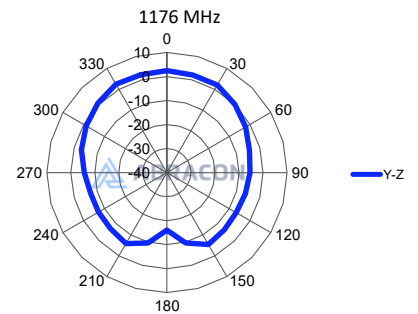
XY plane

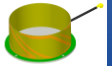


XZ plane



YZ plane





**AANI-AH-0126**

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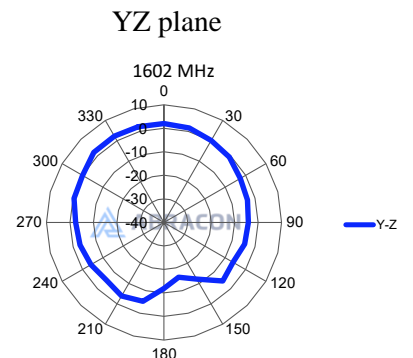
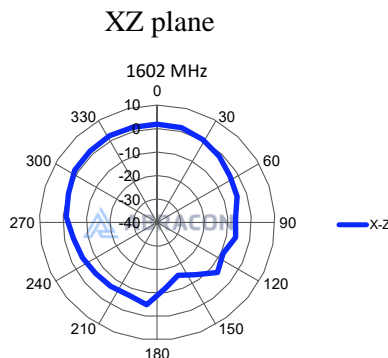
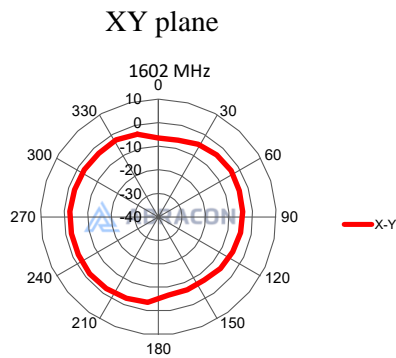
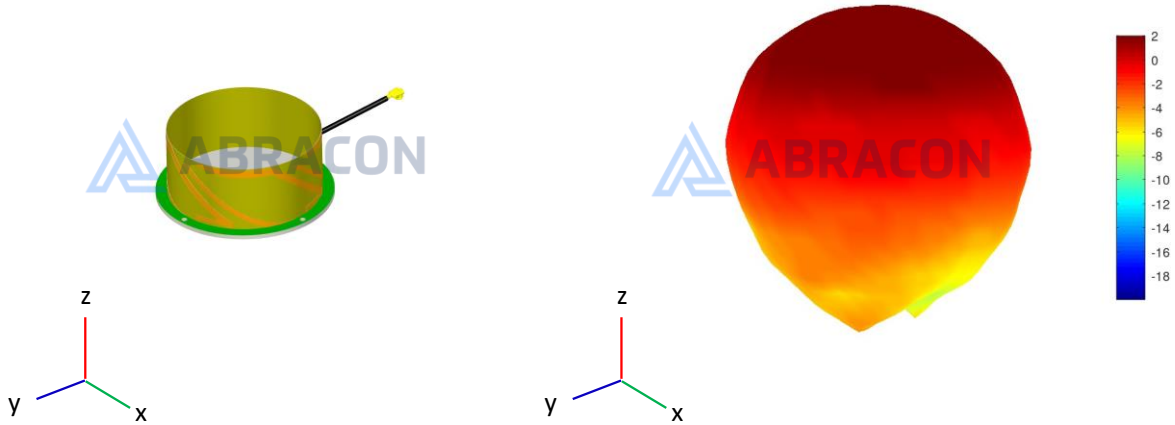


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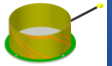
Ø46 x 21.9 mm  
**RoHS Compliant**  
 MSL Level = N/A

1602MHz (G1 Band)





# Full-Band Full-Constellation High-Precision GNSS Helix Antenna with the Lowest Profile



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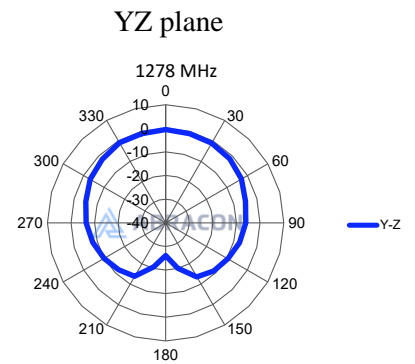
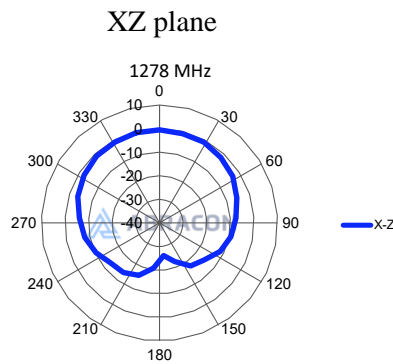
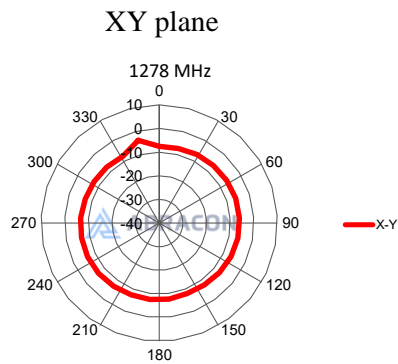
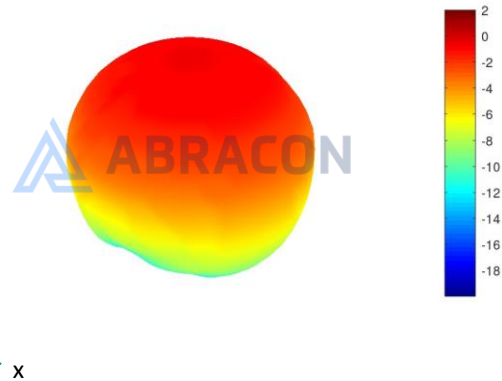
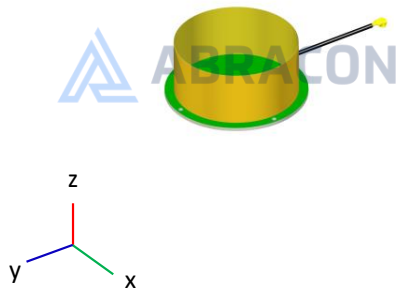


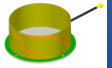
Check Inventory



**Ø46 x 21.9 mm**  
**RoHS Compliant**  
**MSL Level = N/A**

1278MHz (L6 Band)





**AANI-AH-0126**

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RoHS Compliant  
MSL Level = N/A

### Packaging

50 pcs antennas per carton

Dimensions: 445 x 330 x 240 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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