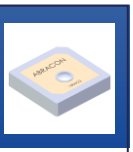
GPS/GLONASS/Galileo/Beidou Patch Antenna



APARM1804-SG3

Request Samples Check Inventory

18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

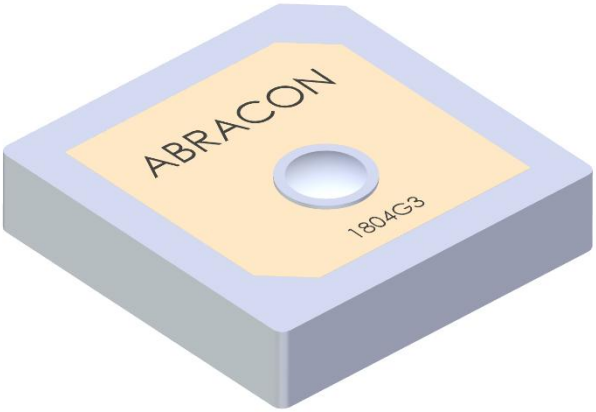
Features

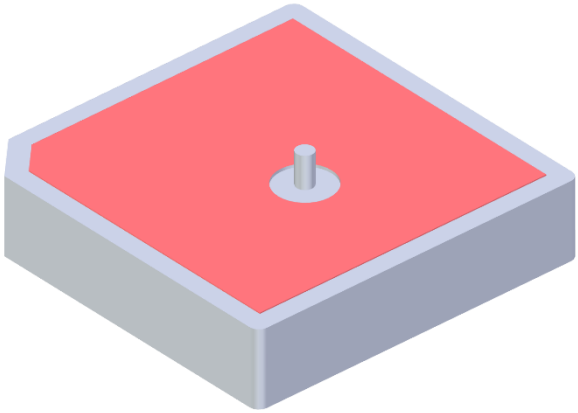
- GPS/GLONASS/Galileo/Beidou Patch Antenna
- Compact Size: 18.0 x 18.0 x 4.0 mm
- Peak Gain: 2.9 dBic
- Antenna Efficiency: 81%
- RHCP Polarization
- Through Hole Mounting
- Light Weight: 7.5 g

Applications

- GNSS Modules
- UAVs and Drones
- Asset Tracking & Telematics
- Intelligent Transportation
- Precision Agriculture
- Geolocation and Tracking

Product Image





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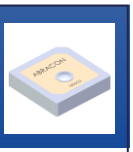
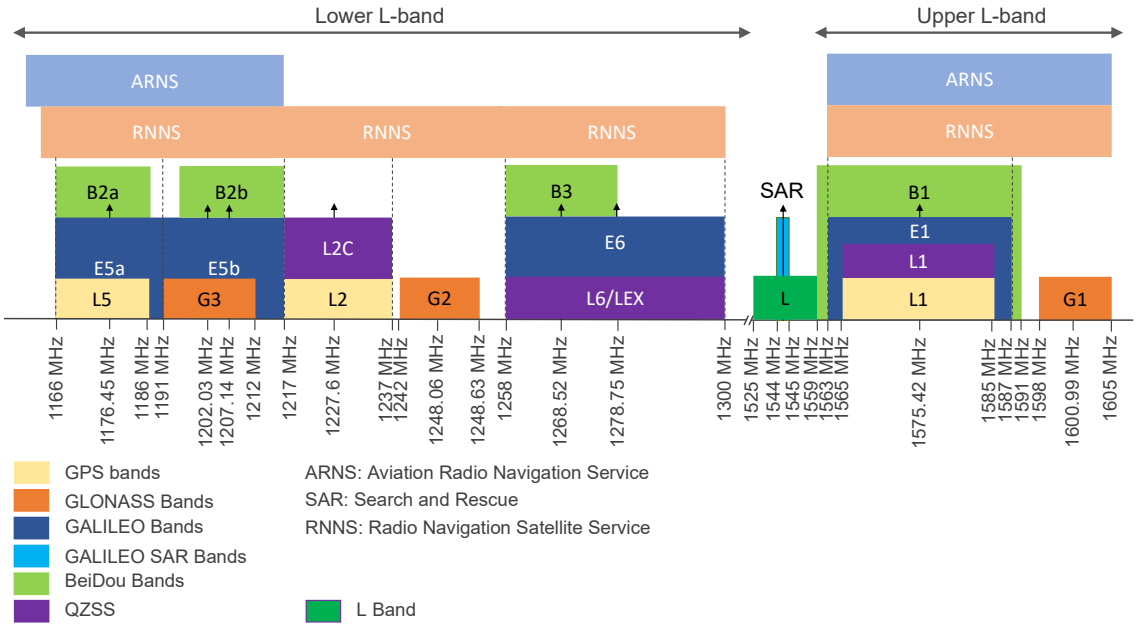


APARM1804-SG3

Request Samples Check Inventory

18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

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	B1I 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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18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Electrical Specification

Parameters	Typ.			Units	Note
Frequency	1561 (B1I)	1575.42 (L1/E1)	1602 (G1)	MHz	
VSWR	< 2.0			-	
Peak Gain	1.8	2.7	2.9	dBic	
Average Gain	-1.7	-1.5	-0.9	dBic	
Maximum Efficiency	67.8	70.1	81.1	%	
Average Efficiency	67.5	67.5	79.1	%	
Polarization	RHCP			-	(Right Hand Circular Polarization)
Nominal Impedance	50			Ω	

Note: All measurements were performed using the evaluation board in a free-space environment. Actual performance may vary depending on factors such as the ground plane, specific application, and surrounding environment.

Mechanical Specification

Parameter	Specification
Antenna Dimension	18.0 x 18.0 x 4.0 mm
Evaluation Board Dimension	70 x 70 mm
Mounting Type	Through Hole & Adhesive
Mounting Location	PCB Center Mounting
Material(s)	Ceramic
Weight	7.5 g

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +105°C
RoHS Compliance	Yes

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APARM1804-SG3

Request Samples Check Inventory

18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Ordering Information

Part Number	Description
APARM1804-SG3	GPS/GLONASS/Galileo/Beidou Patch Antenna
APARM1804-SG3-EVB	GPS/GLONASS/Galileo/Beidou Patch Antenna EVB

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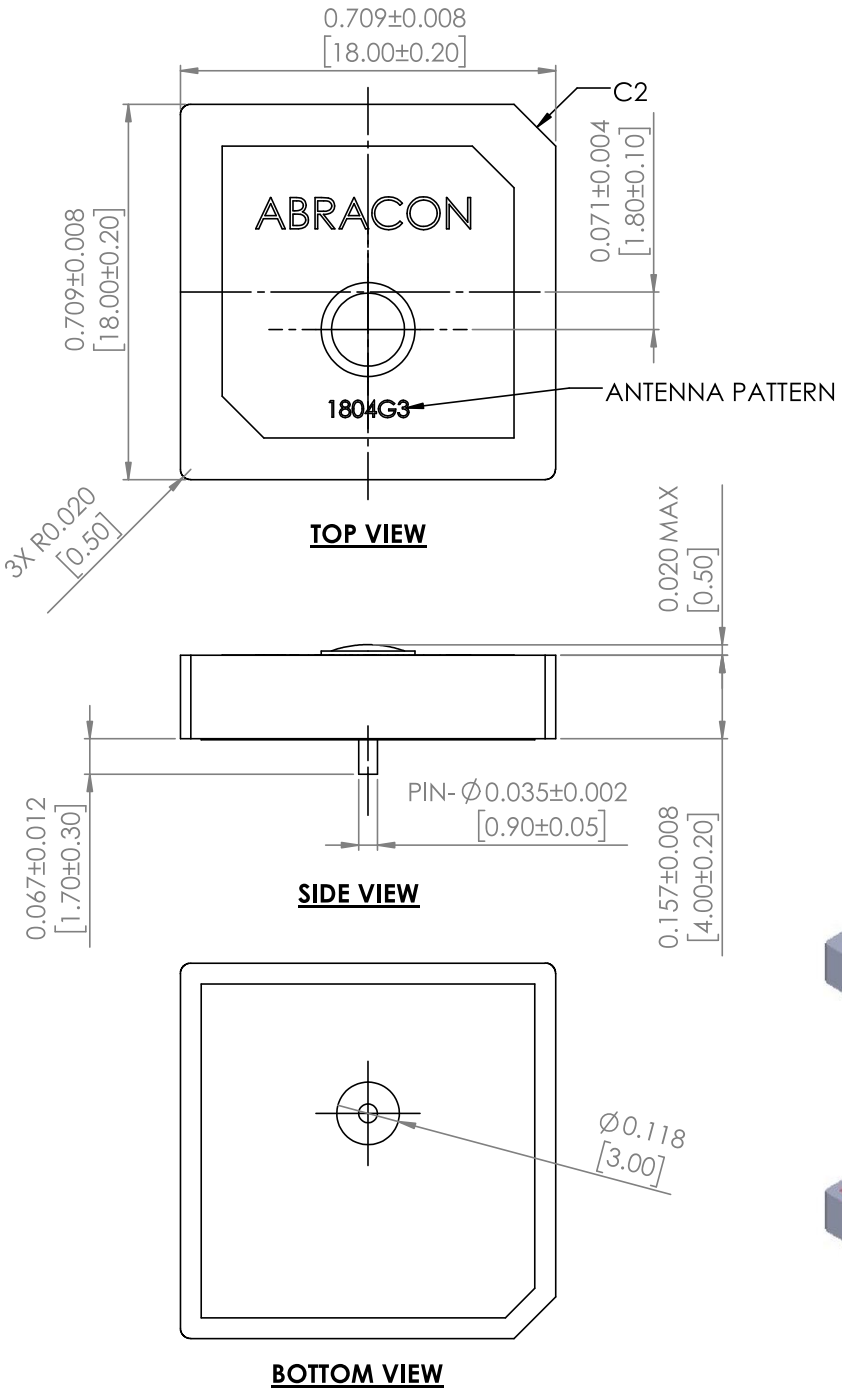
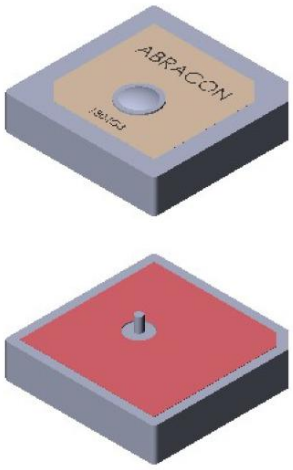
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Product Dimensions





Unit: mm

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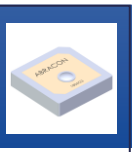


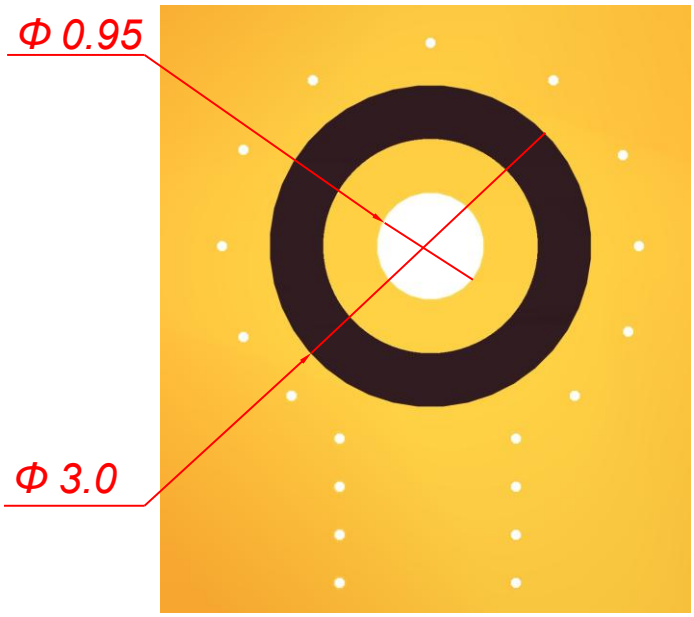
APARM1804-SG3

Request Samples Check Inventory

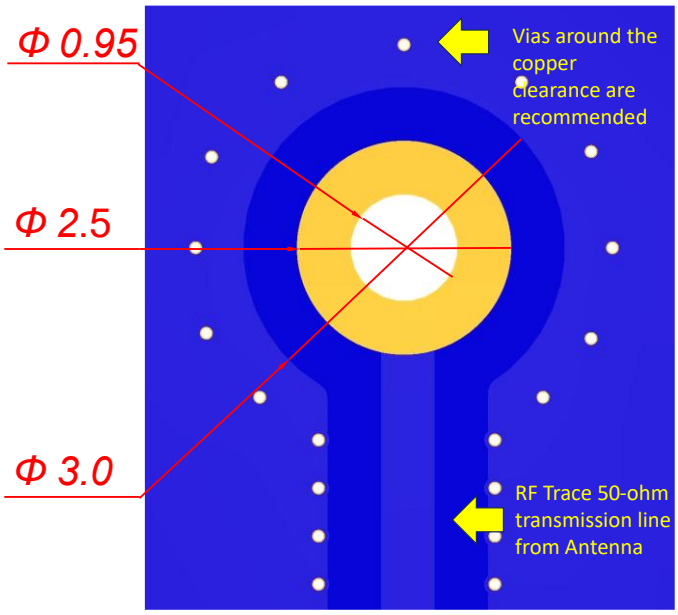
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Antenna Footprint & PCB Layout Guide

Top



Bottom



Unit: mm

Note: Antenna welding does not support reflow soldering, please use manual soldering, the recommended soldering time is ≤ 3s, and the temperature is 390 ± 20℃.

For technical assistance, please contact Abracon online support through our online support platform.

Transmission Line

The transmission line should be kept as short as possible and be designed to have a characteristic impedance of 50Ω. Abracon recommends using a Co-Planar Waveguide with Ground (CPWG), which dimensions can be derived by any trusted calculator, using the correct input for PCB materials and layer stack-up.

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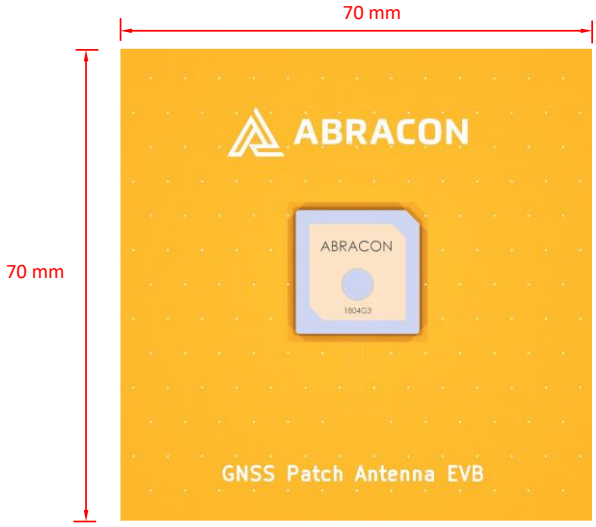
GPS/GLONASS/Galileo/Beidou Patch Antenna

APARM1804-SG3

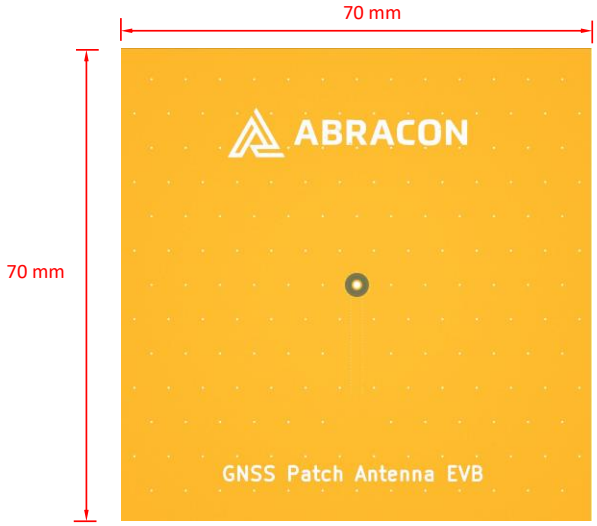
Request Samples | Check Inventory

18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

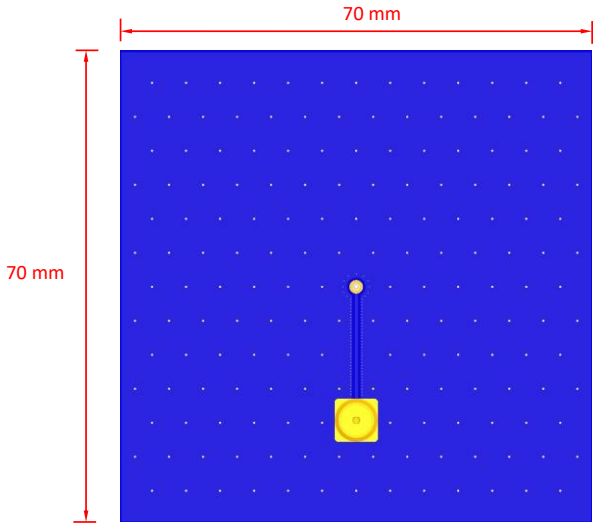
Integration Guide



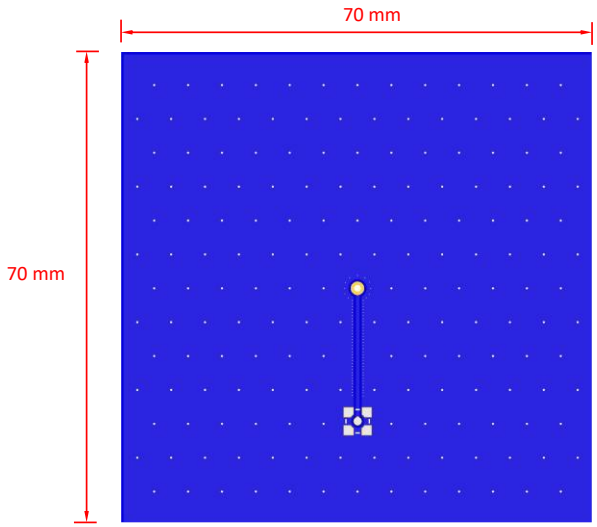
Top with Antenna



Top without Antenna



Bottom with Connector



Bottom without Connector

Unit: mm

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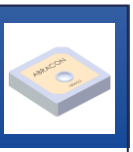
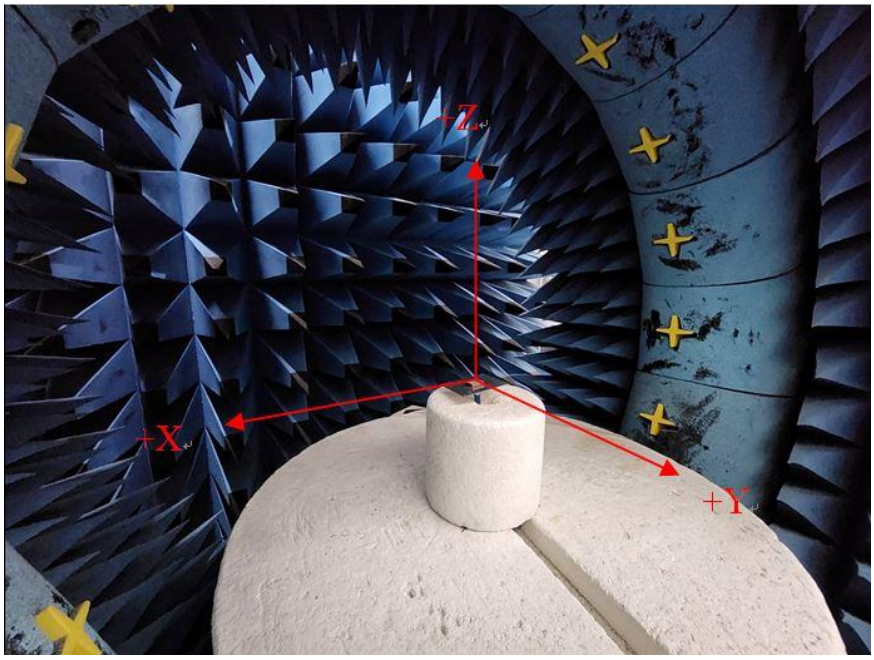


APARM1804-SG3

Request Samples Check Inventory

18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Measurement Setup



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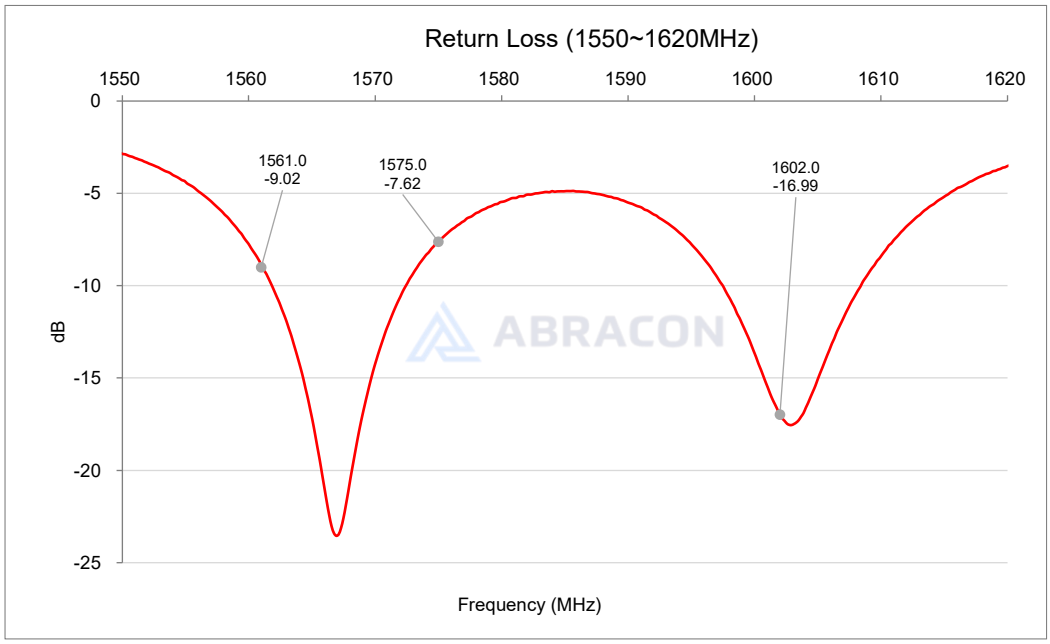
GPS/GLONASS/Galileo/Beidou Patch Antenna

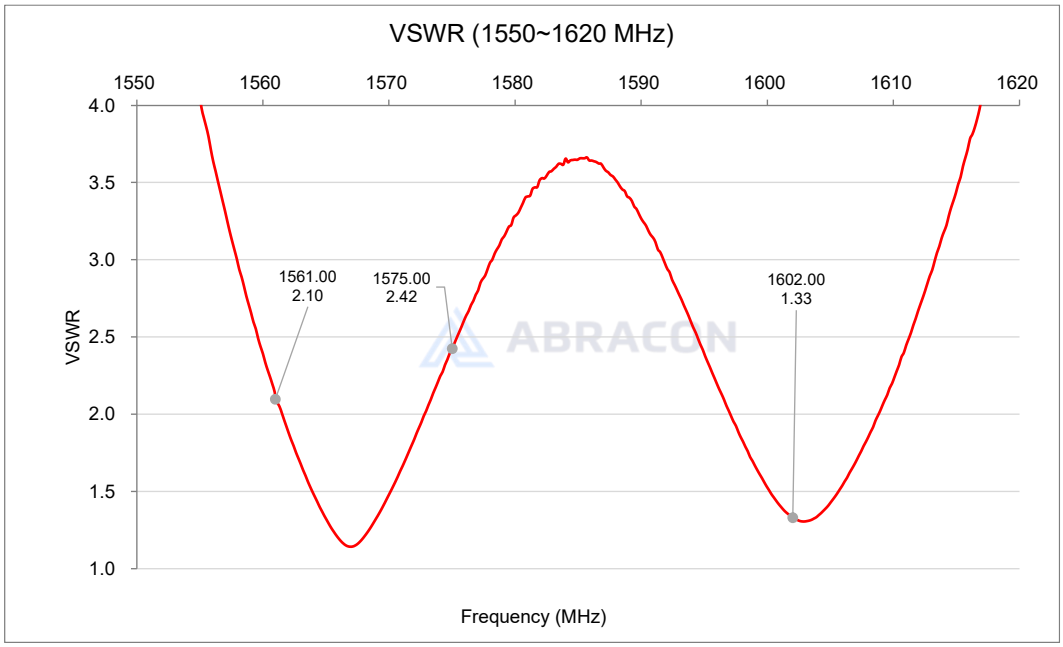
APARM1804-SG3

Request Samples Check Inventory

18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Reflection Characteristics – Return Loss & VSWR





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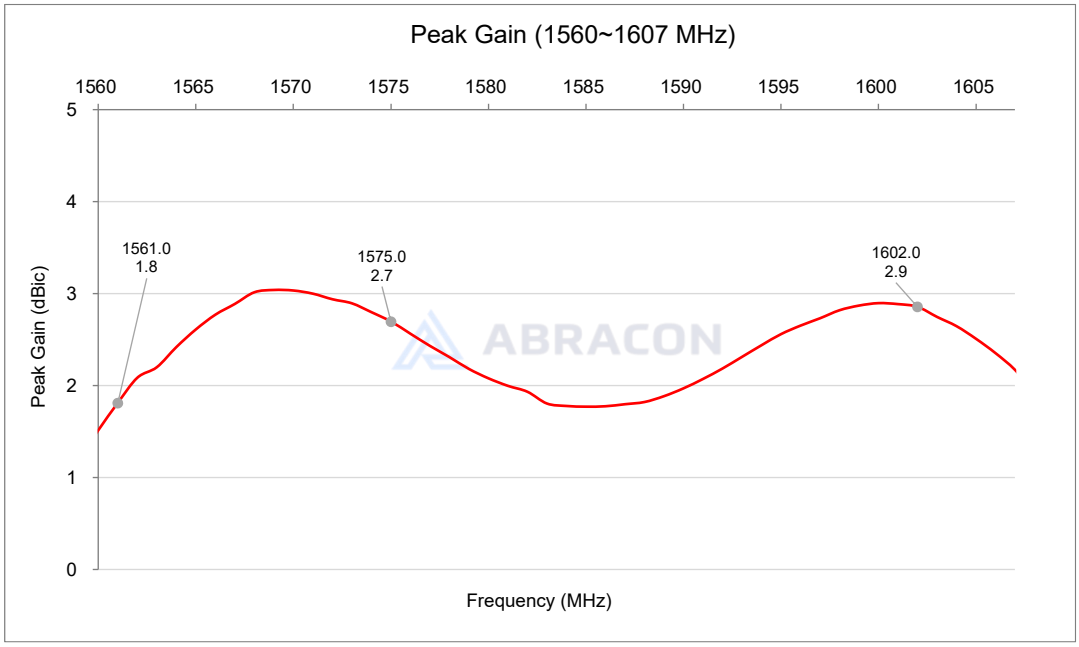
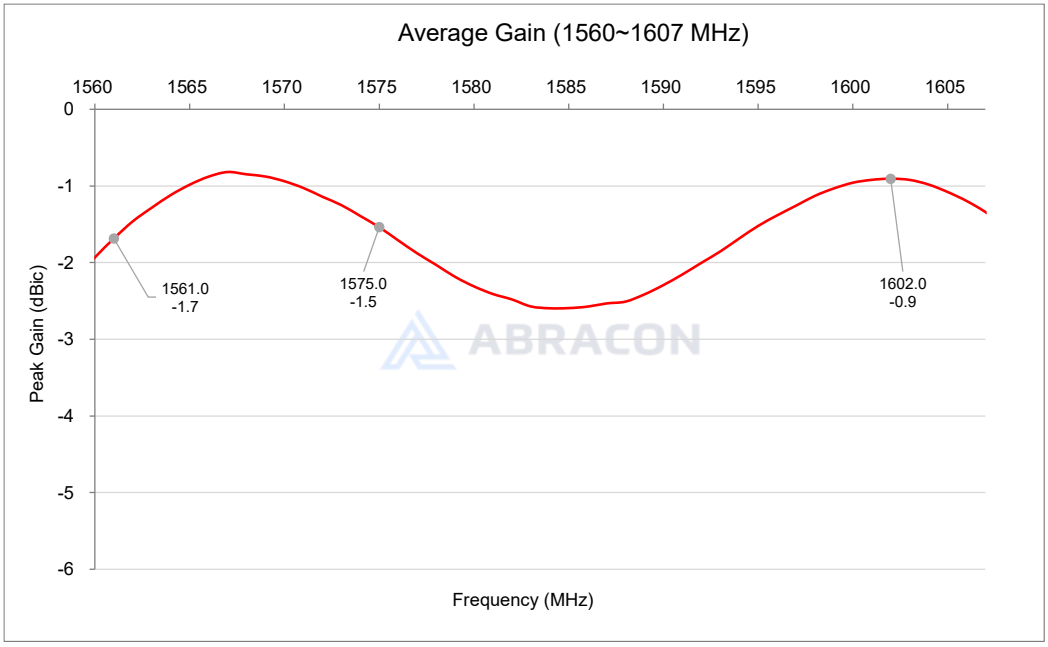
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Radiation Characteristics – Peak Gain & Average Gain





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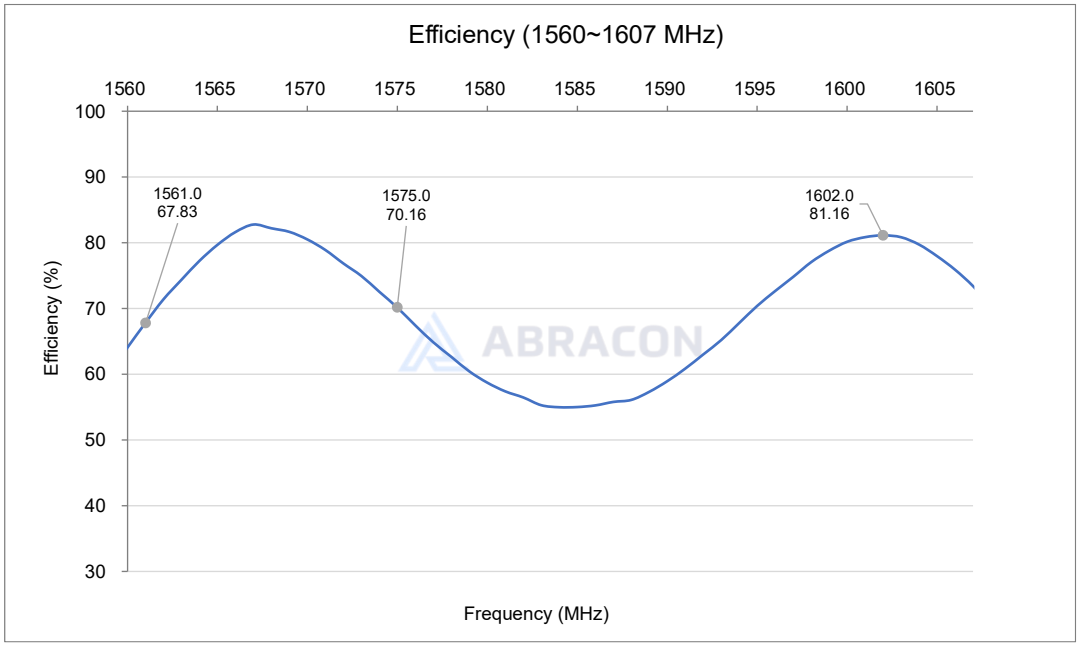
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Radiation Characteristics – Total Efficiency (%)



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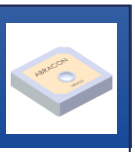

APARM1804-SG3

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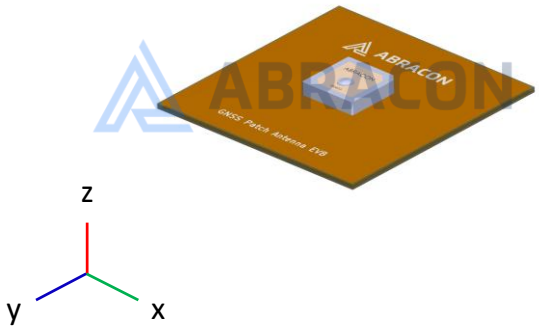
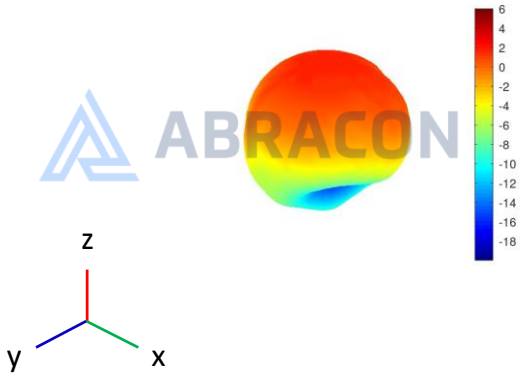
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

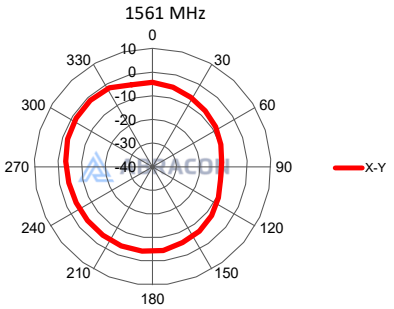
Radiation Characteristics – 3D & 2D Pattern

1561MHz

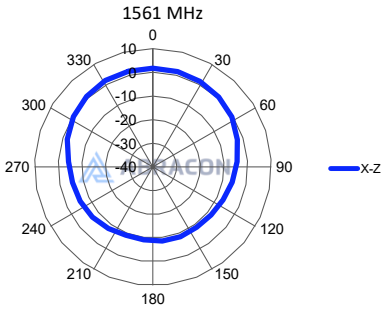




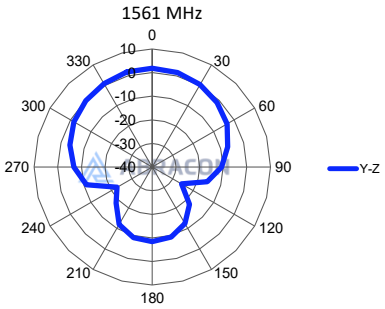
XY plane



XZ plane



YZ plane



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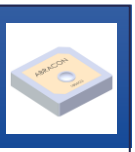

APARM1804-SG3

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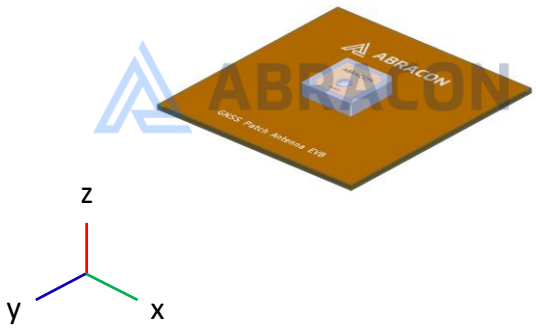
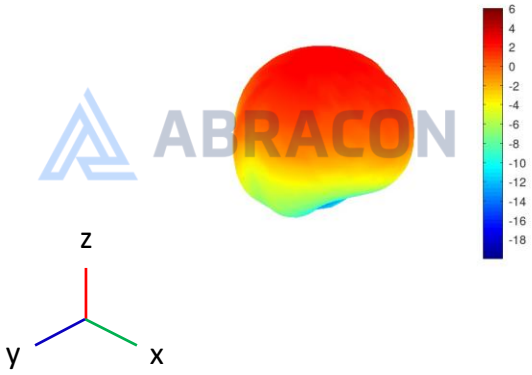
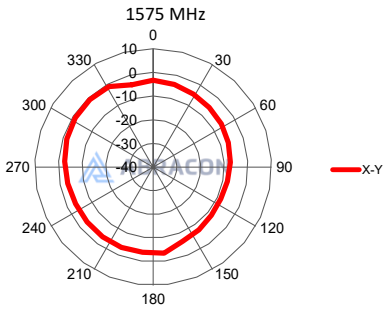
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

1575MHz

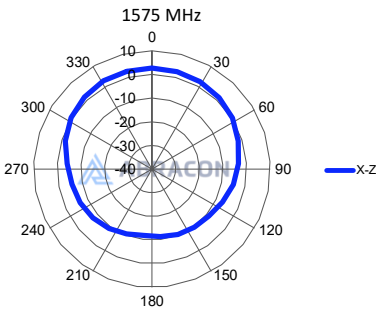




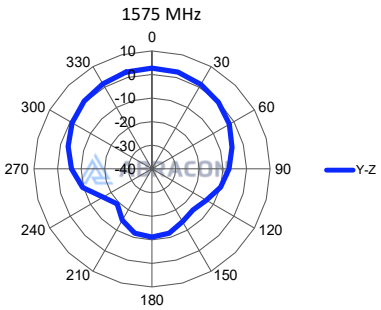
XY plane



XZ plane



YZ plane



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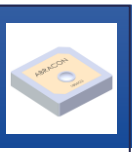

APARM1804-SG3

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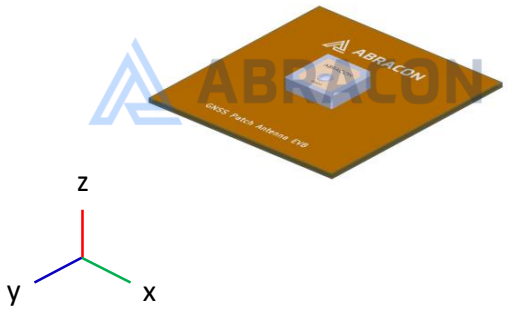
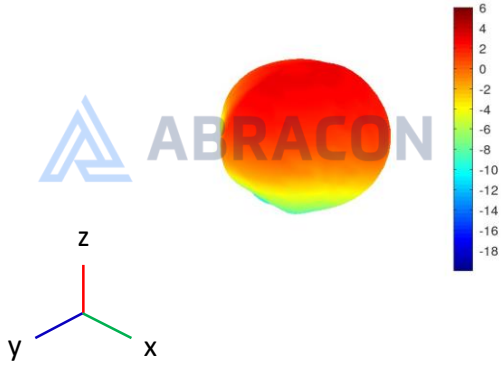
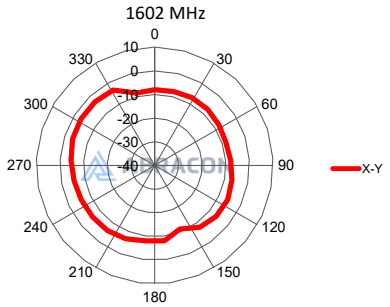
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

1602MHz





XY plane



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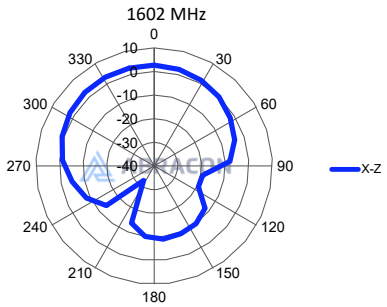

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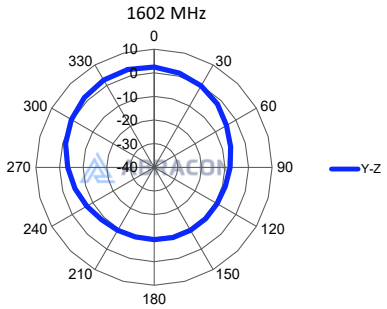

ABRACON

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APARM1804-SG3

Request Samples Check Inventory

18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

Packaging

25 pcs per tray

200 pcs per inner box

800 pcs per carton

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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