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

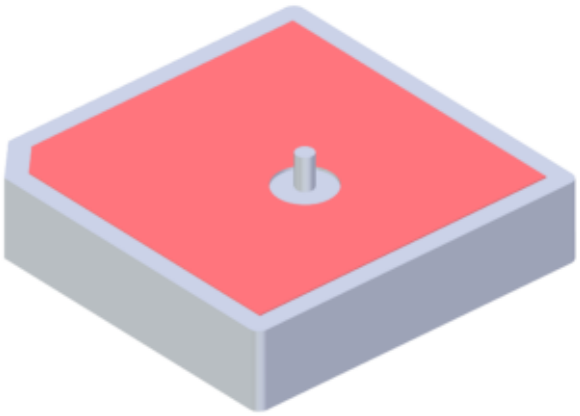
- GPS/GLONASS/Galileo/Beidou Patch Antenna
- Compact Size: 18.0 x 18.0 x 4.0 mm
- Peak Gain: 2.9 dBic
- Antenna Efficiency: 81%
- RHCP Polarization
- Through Hole Mounting
- Light Weight: 7.5 g

Applications

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

Product Image





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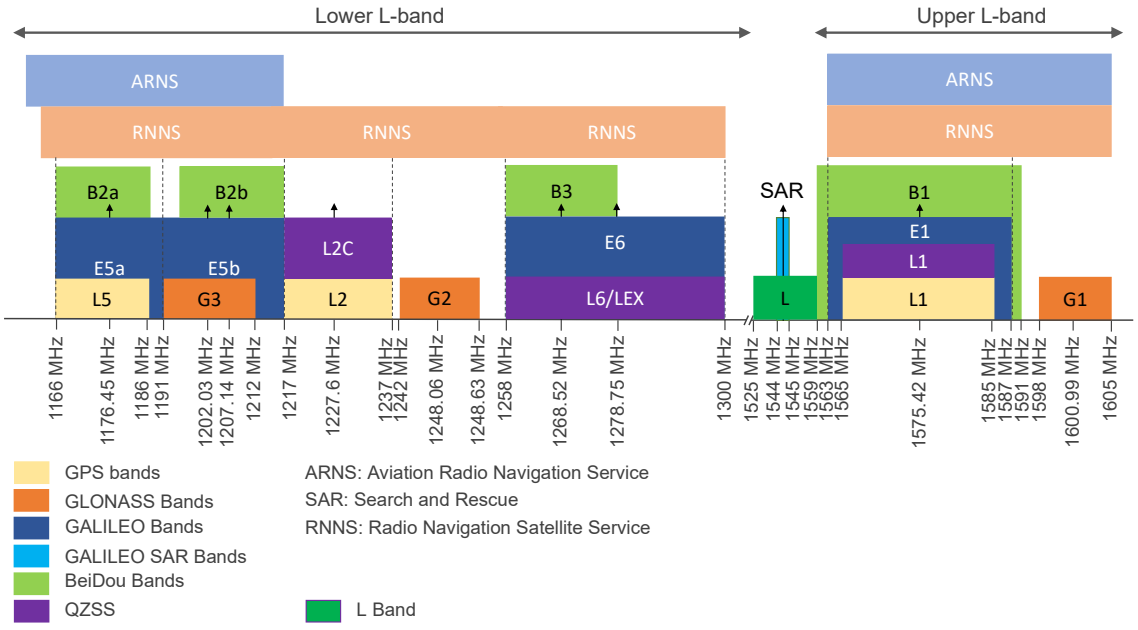


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RoHS Compliant
MSL Level = N/A

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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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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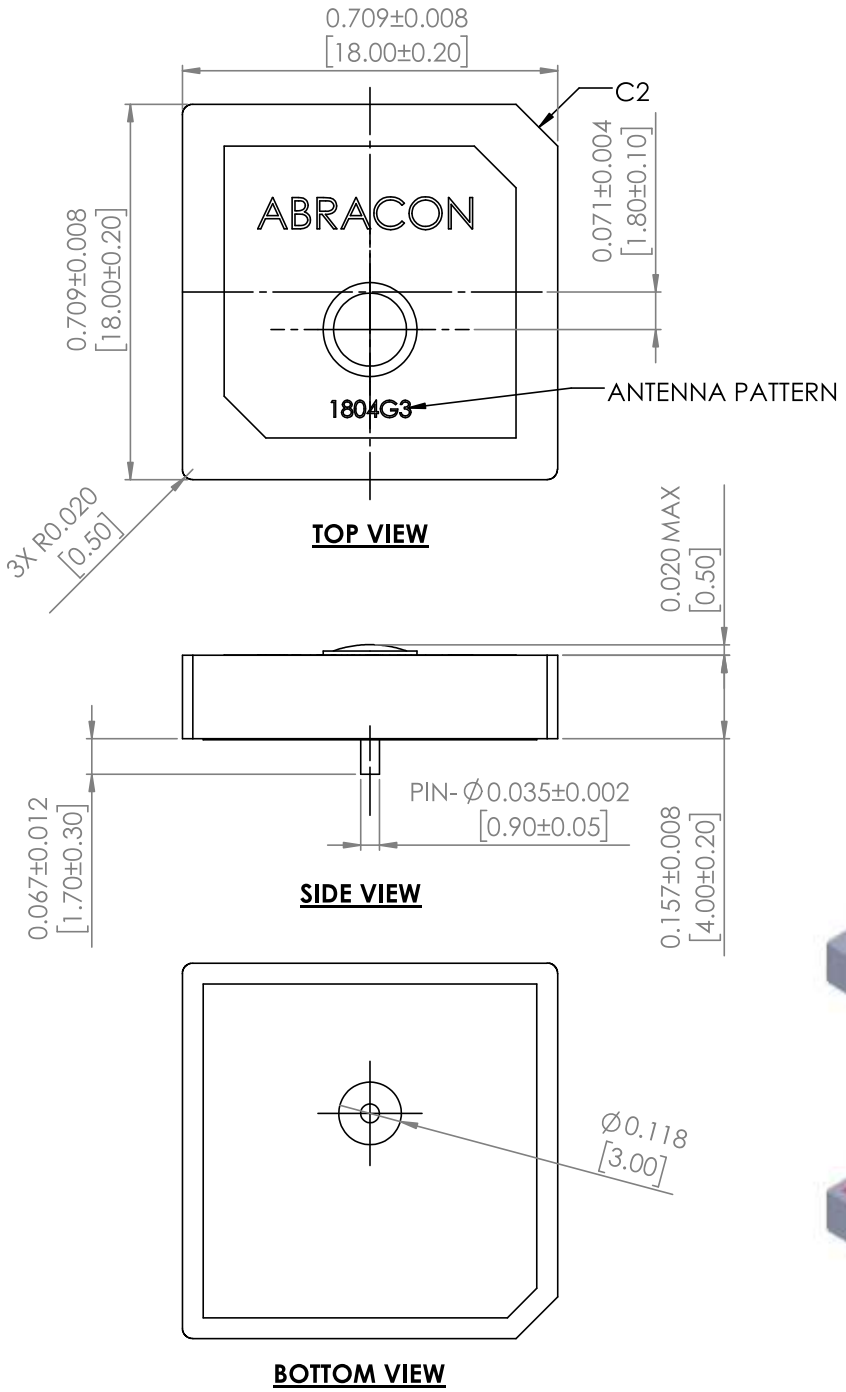


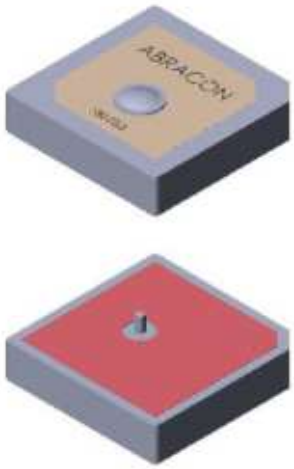
APARM1804-SG3

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RoHS Compliant
MSL Level = N/A

Product Dimensions





Unit: mm

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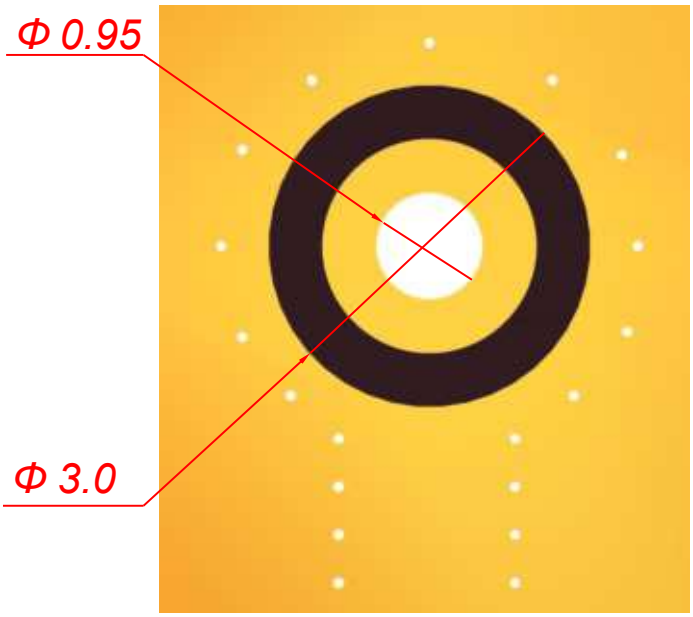
APARM1804-SG3

Request Samples | Check Inventory

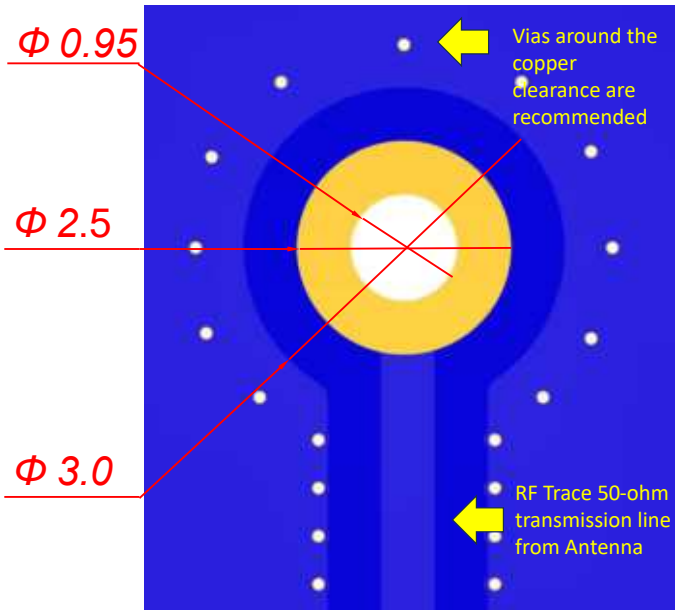
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

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.

GPS/GLONASS/Galileo/Beidou Patch Antenna

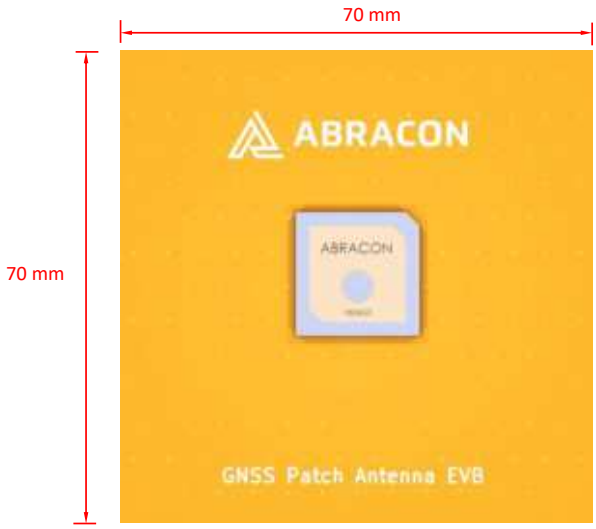


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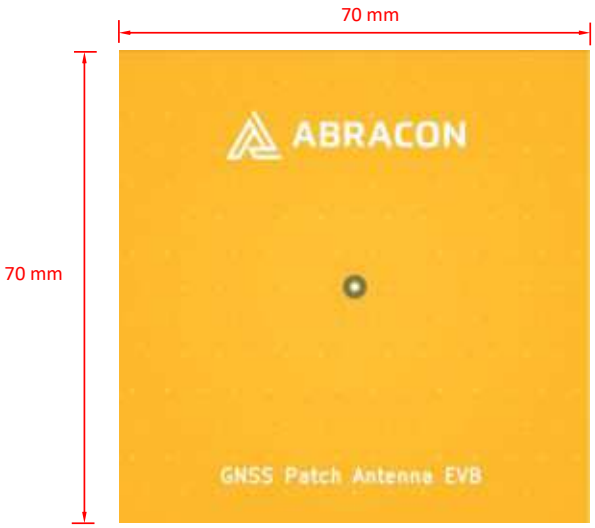
Request Samples | Check Inventory

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

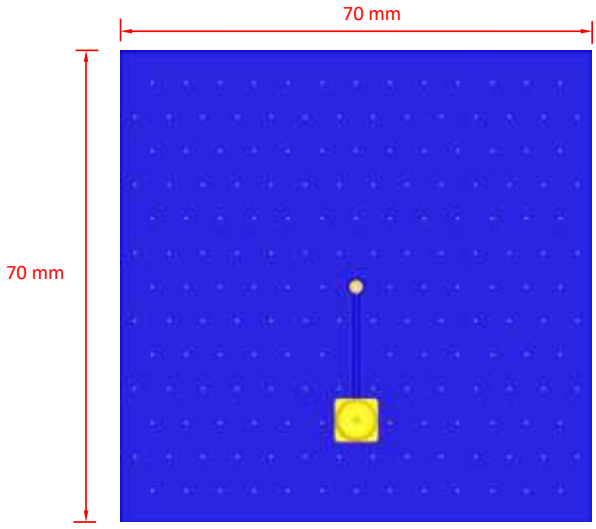
Integration Guide



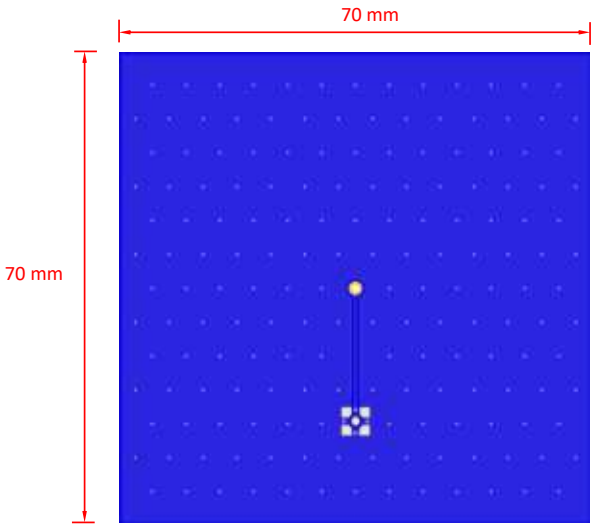
Top with Antenna



Top without Antenna



Bottom with Connector



Bottom without Connector

Unit: mm

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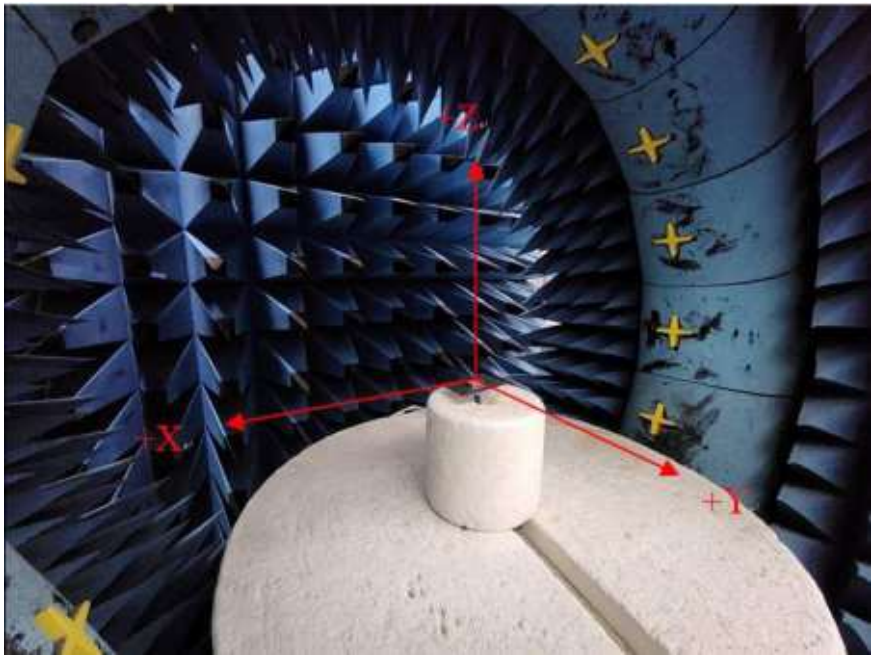
GPS/GLONASS/Galileo/Beidou Patch Antenna

APARM1804-SG3

Request Samples | Check Inventory

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RoHS Compliant
MSL Level = N/A

Measurement Setup



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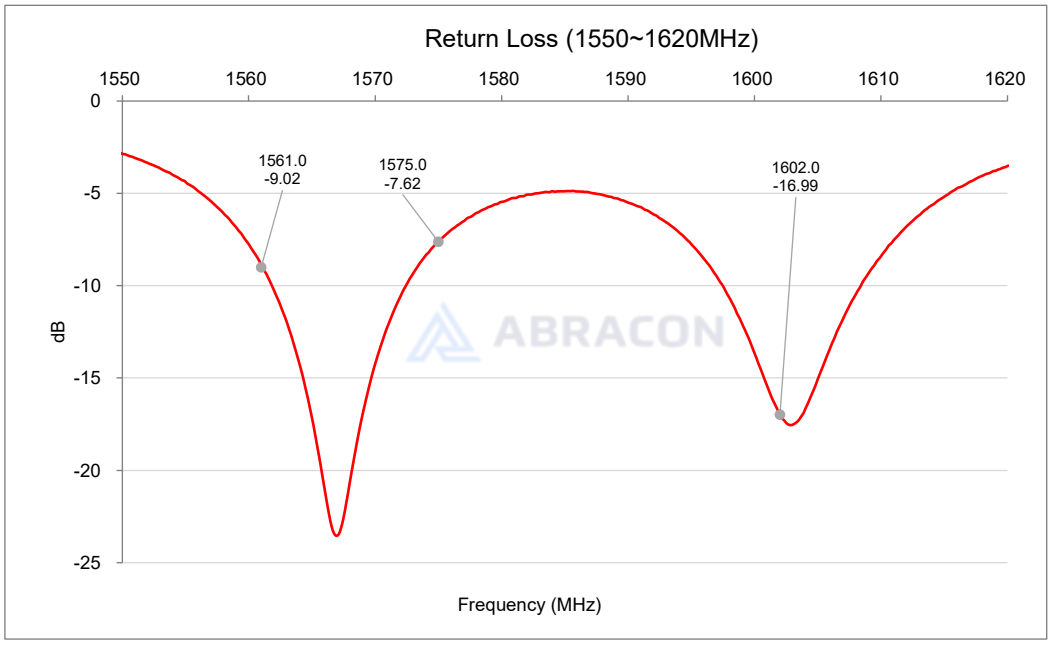


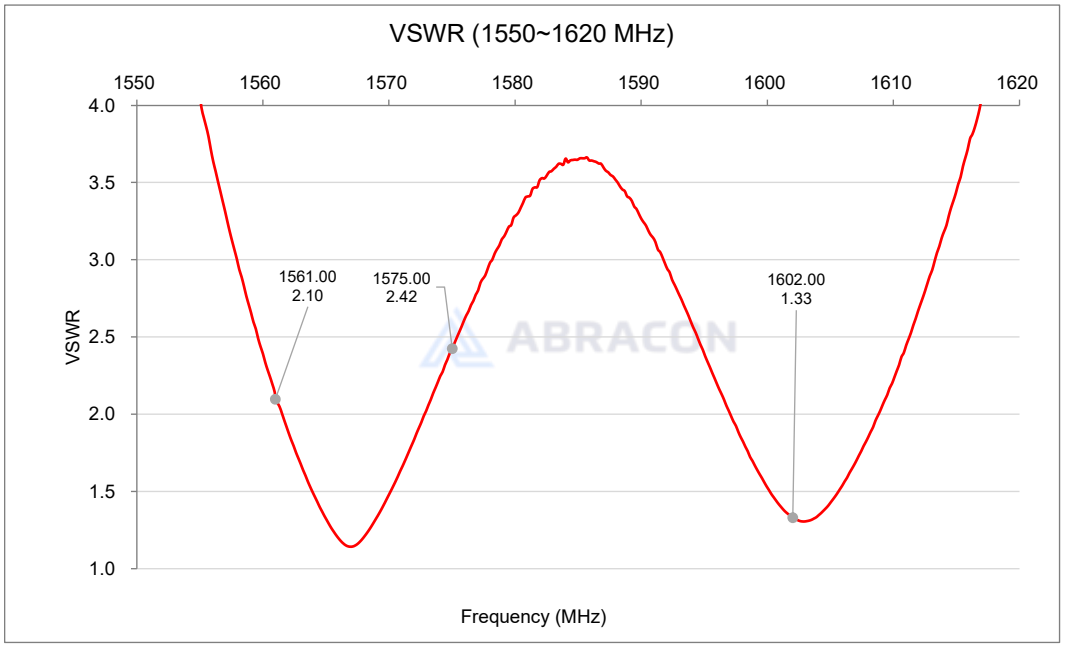
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Reflection Characteristics – Return Loss & VSWR





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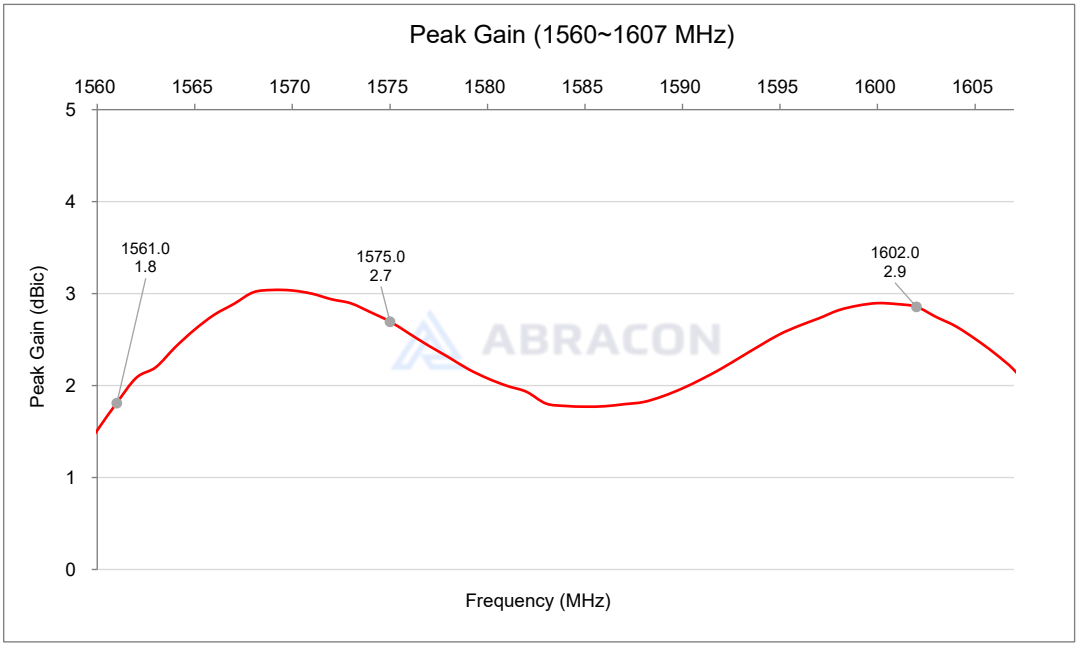


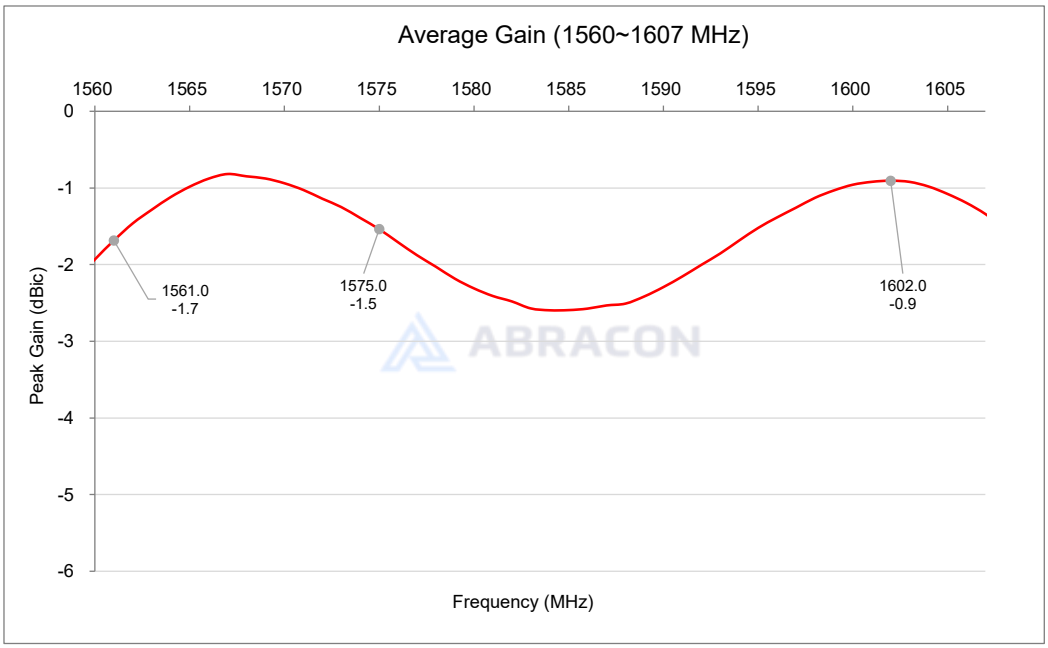
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RoHS Compliant
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Radiation Characteristics – Peak Gain & Average Gain





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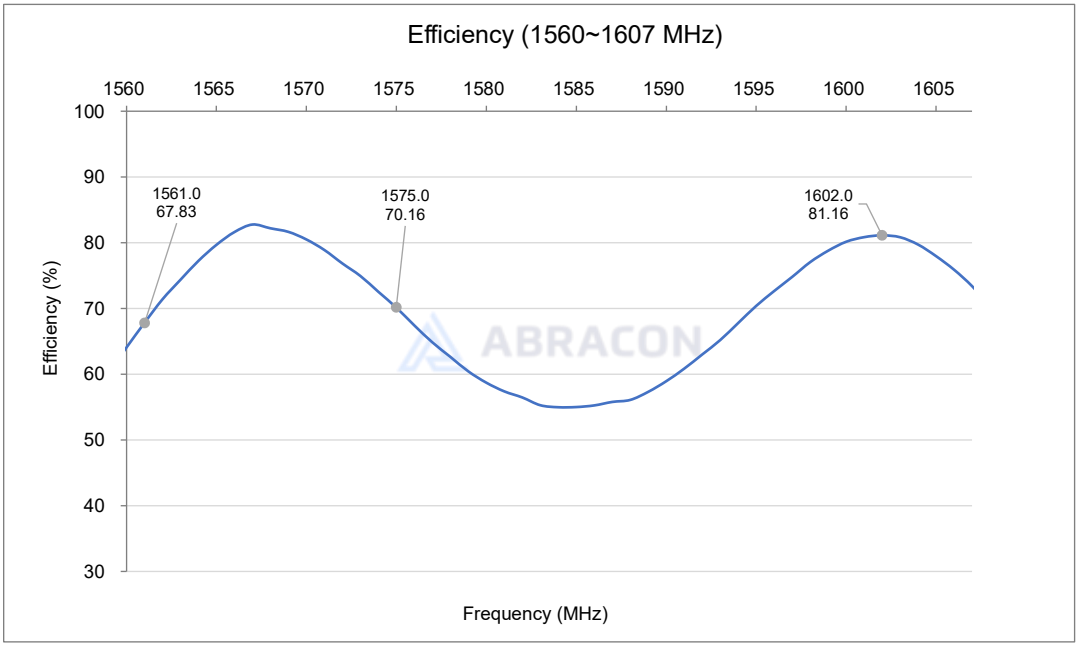


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MSL Level = N/A

Radiation Characteristics – Total Efficiency (%)



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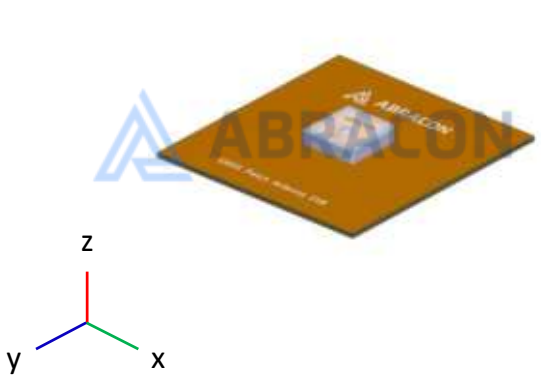
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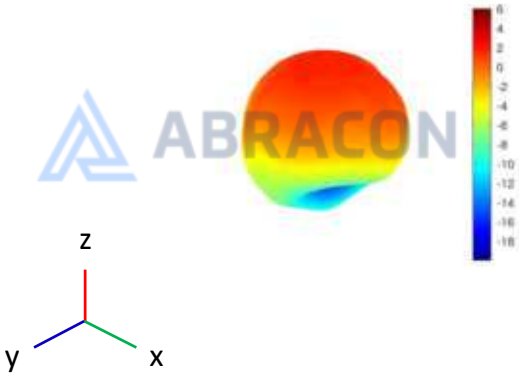
Request Samples | Check Inventory

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RoHS Compliant
MSL Level = N/A

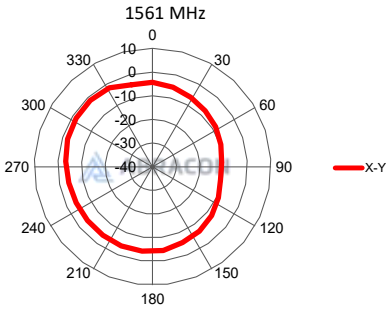
Radiation Characteristics – 3D & 2D Pattern

1561MHz

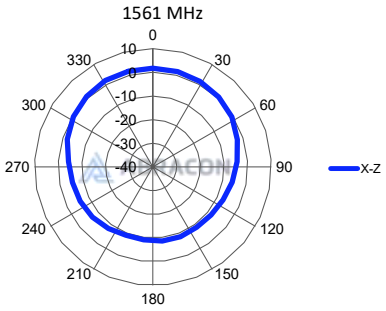




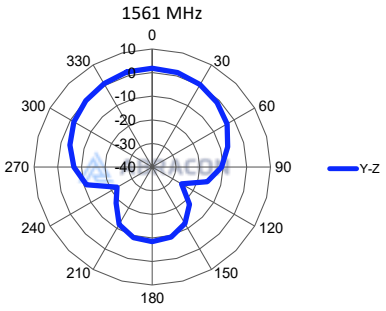
XY plane



XZ plane



YZ plane



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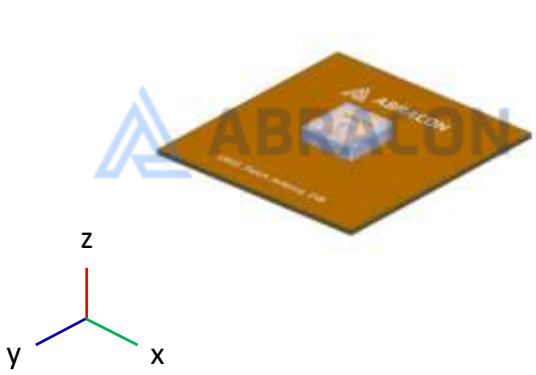


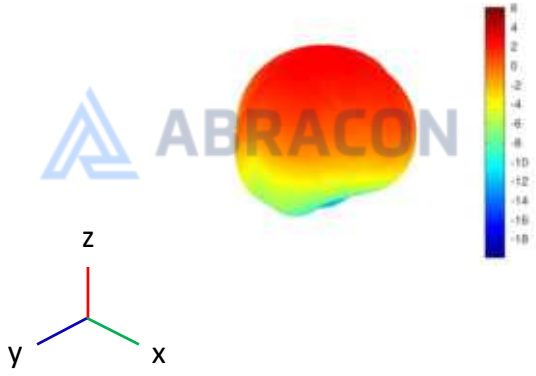
APARM1804-SG3

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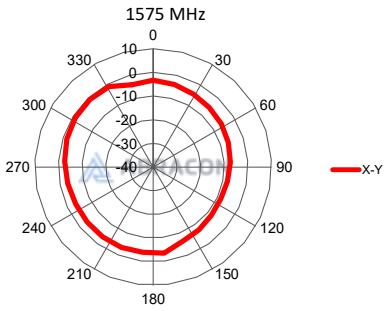
18.0 x 18.0 x 4.0 mm
RoHS Compliant
MSL Level = N/A

1575MHz

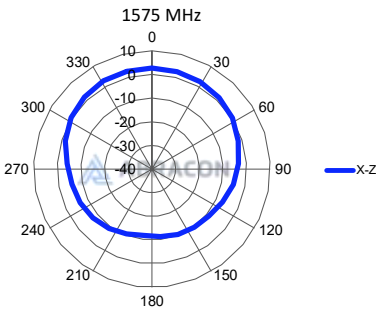




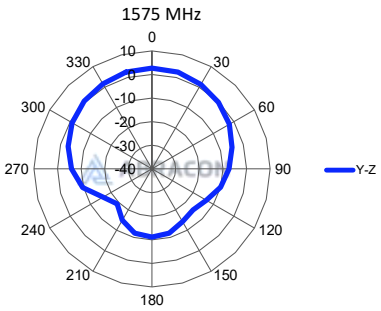
XY plane



XZ plane



YZ plane



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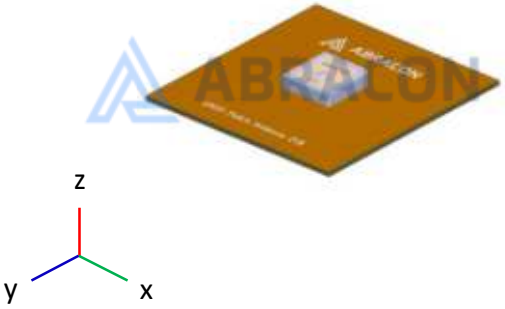


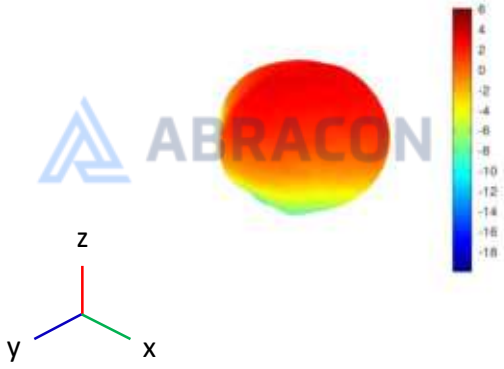
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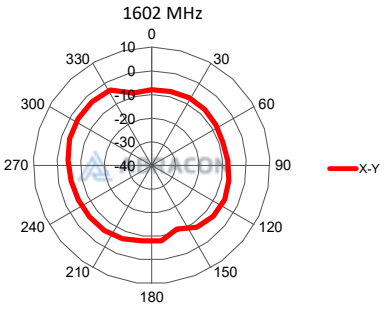
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RoHS Compliant
MSL Level = N/A

1602MHz

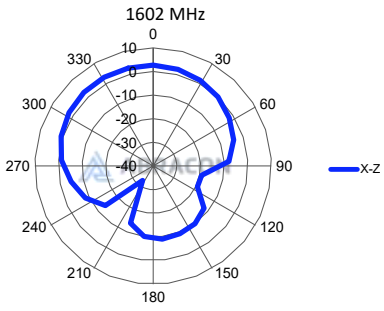




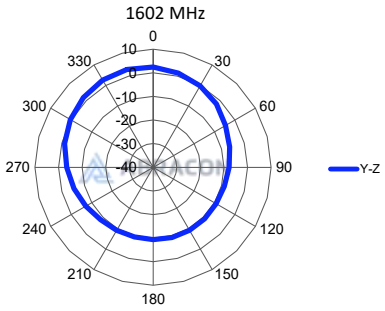
XY plane



XZ plane



YZ plane



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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

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