

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory



25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

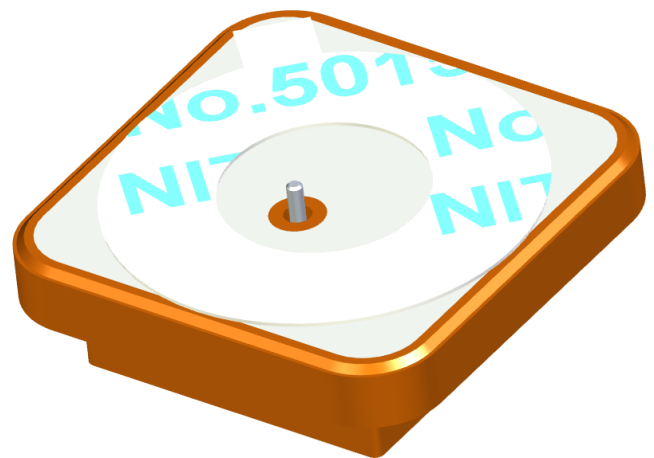
Features

- Multiband Multi-Constellations GNSS Support
 - GPS: L1/L5
 - GLONASS: G1
 - Beidou: B1/B2a
 - Galileo: E1/E5a
 - QZSS: L1/L5
 - SBAS: L1/L5
- Size: 25.0 x 25.0 x 8.0 mm
- Peak Gain: 4.3dBic (L1), 1.6dBic (L5)
- High Efficiency: 72% (L1), 56% (L5)
- Light Weight: 18g

Applications

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

Product Image



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory



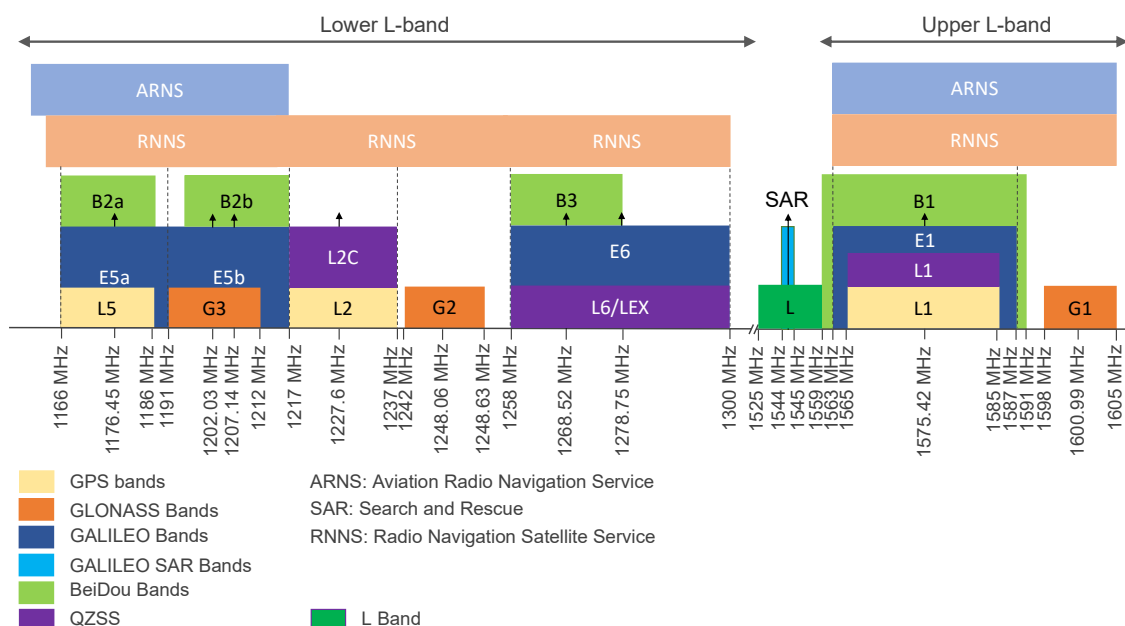
25.0 x 25.0 x 8.0 mm

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	E5b 1201.5MHz	E5a 1176.45MHz	E6 1278.75MHz
	■	□	■	□
BeiDou	B1 1561MHz	B2 1207.14MHz	B2a 1176.45MHz	B3 1268.52MHz
	■	□	■	
QZSS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	L6 1278.75MHz
	■	□	■	□
IRNSS/NAVIC			L5 1176.45MHz	
			■	
SBAS	L1/E1 1575.42MHz		L5/B2a/E5a 1176.45MHz	
	■		■	



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



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory



25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Electrical Specification

Parameters	Typ.	Units	Note
Antenna			
Frequency	GPS: L1/L5 GLONASS: G1 Beidou: B1/B2a Galileo: E1/E5a QZSS: L1/L5 SBAS: L1/E1/L5/B2a/E5a	-	
VSWR	< 2.0	-	
Polarization	RHCP	-	(Right Hand Circular Polarization)
Nominal Impedance	50	Ω	
Peak Gain ⁽¹⁾	4.3	dBic	L1/E1 (1575.42 MHz)
	4.7		G1 (1602 MHz)
	1.6		L5/B2a (1176.45 MHz)
Efficiency ⁽¹⁾	72	%	L1/E1 (1575.42 MHz)
	81		G1 (1602 MHz)
	56		L5/B2a (1176.45 MHz)
Axial Ratio ⁽¹⁾	8.7	dB	L1/E1 (1575.42 MHz)
	11		G1 (1602 MHz)
	3.1		L5/B2a (1176.45 MHz)

Note (1): With 70 × 70 mm Ground Plane

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory



25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Mechanical Specification

Parameter	Specification
Antenna Dimension	25.0 x 25.0 x 8.0 mm
Evaluation board Dimension	70 x 70 mm
Mounting Type	Through hole & Adhesive
Mounting Location	PCB Center Mounting
Material(s)	Ceramic
Weight	18 g

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +105°C
Relative Humidity	Non-condensing 65°C 95% RH
RoHS Compliance	Yes



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory

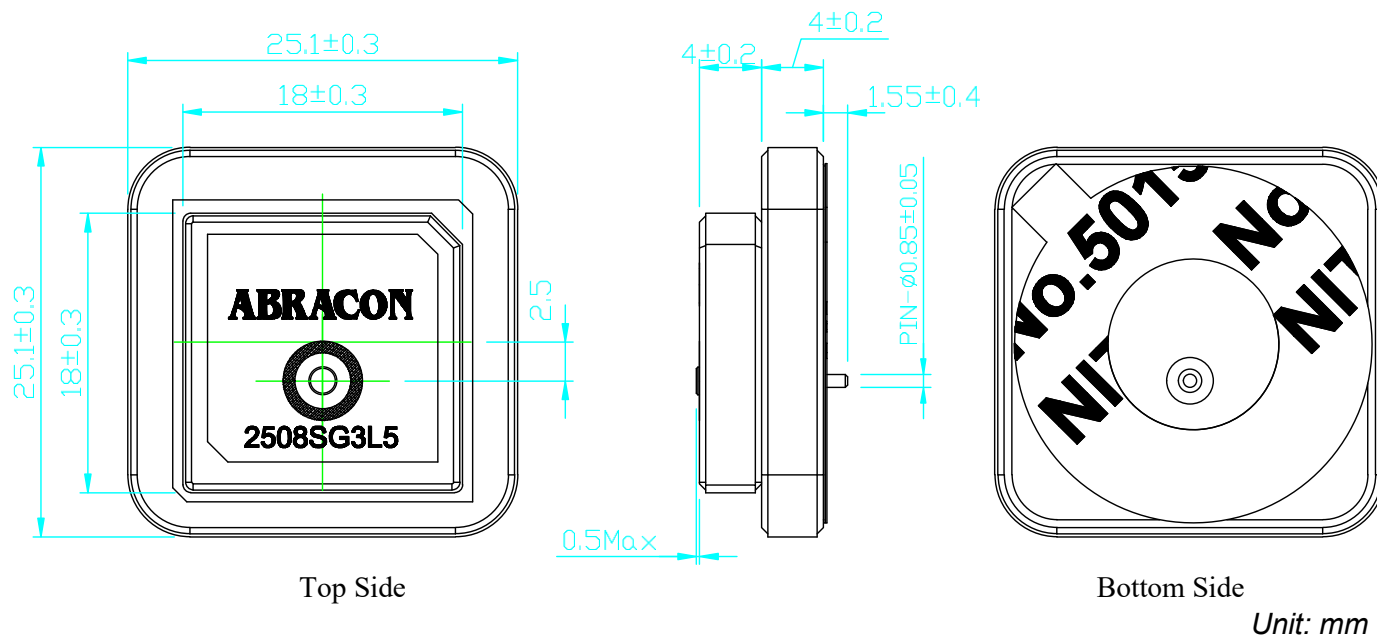


25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Product Dimensions



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory

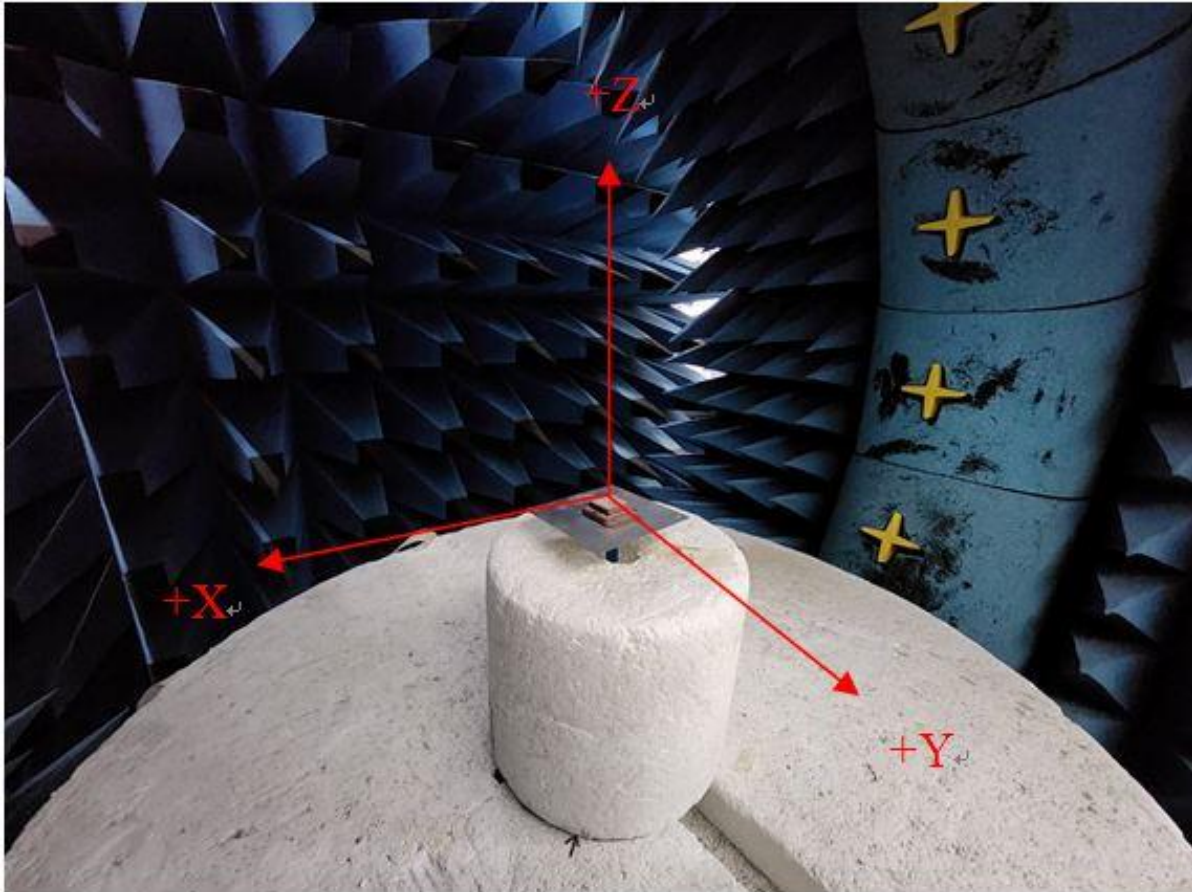


25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Measurement Setup



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED



APARM2508S-SG3L5

Request Samples



Check Inventory

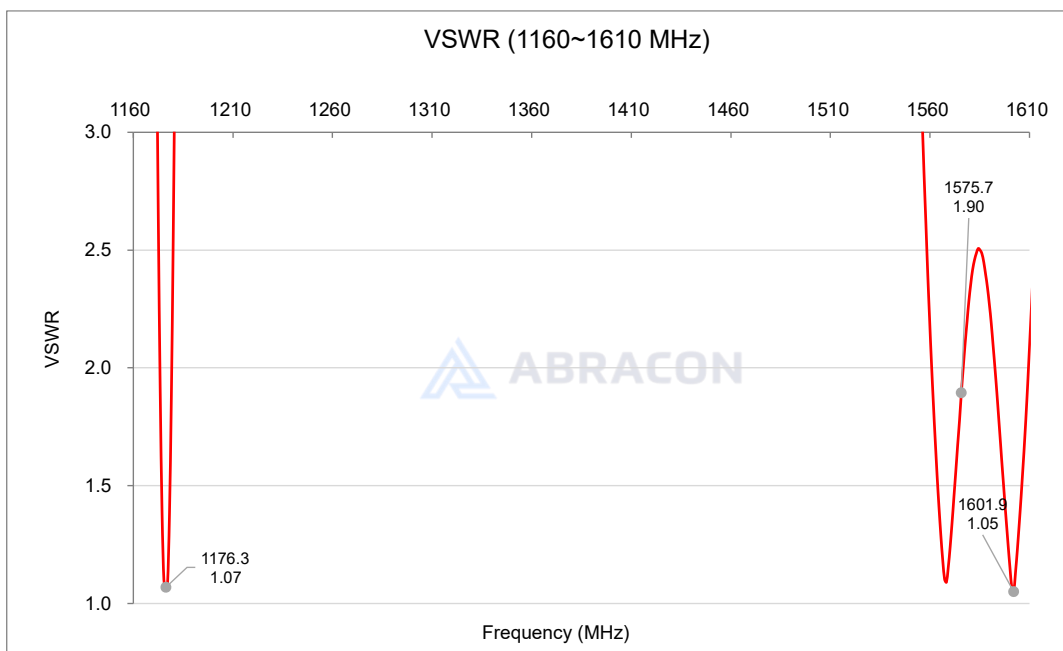
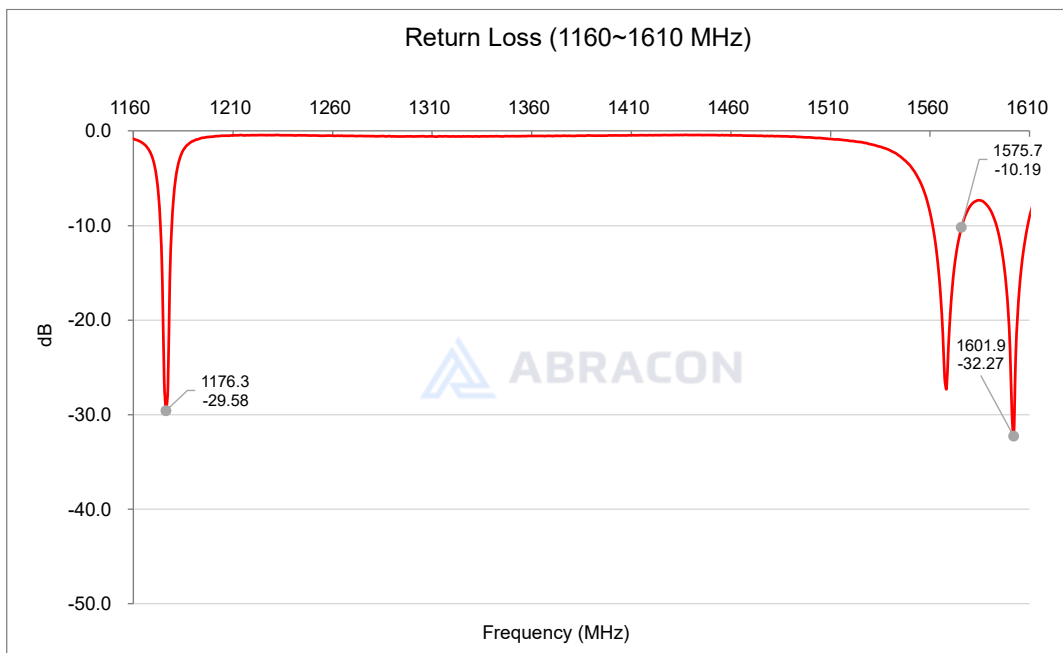


25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Reflection Characteristics – Return Los & VSWR





APARM2508S-SG3L5

Request Samples



Check Inventory

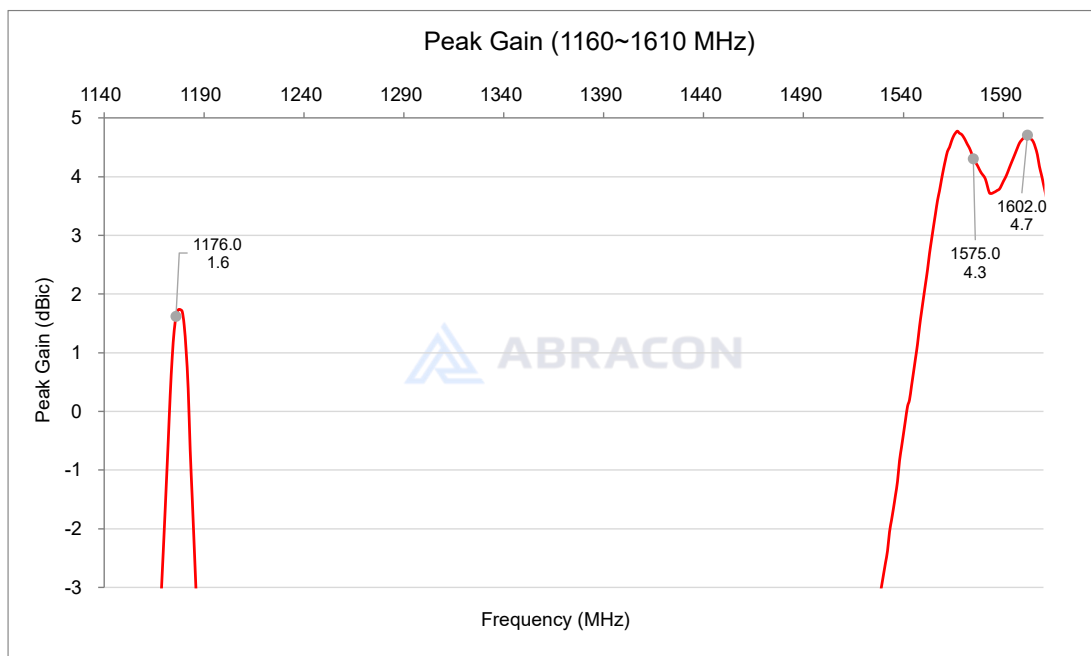


25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Radiation Characteristics – Peak Gain



GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory

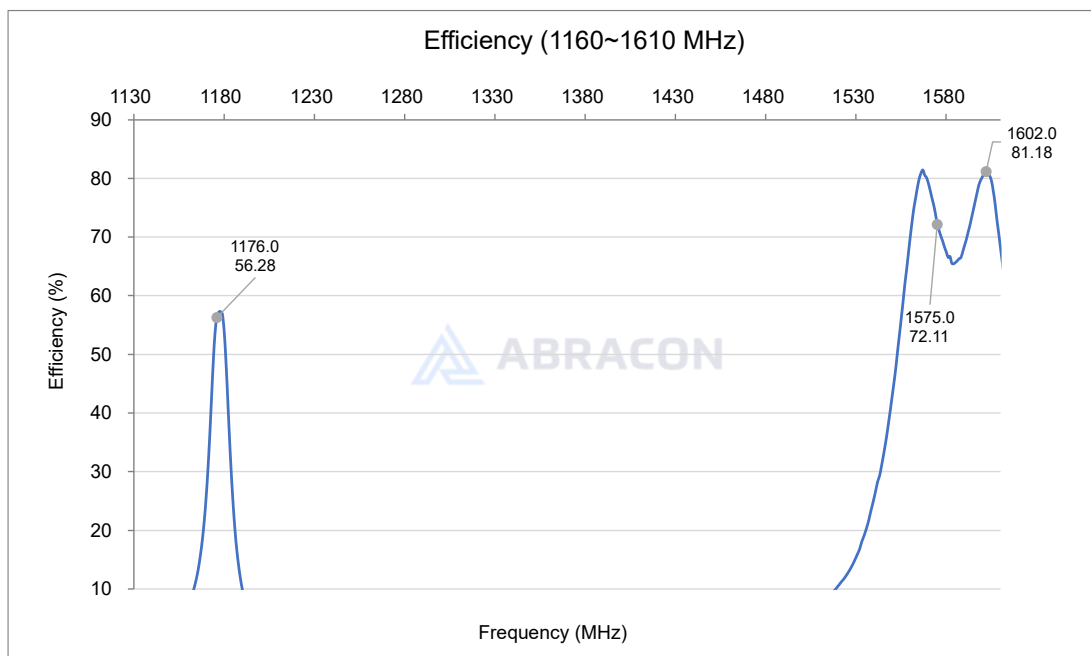


25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Radiation Characteristics – Total Efficiency (%)



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory

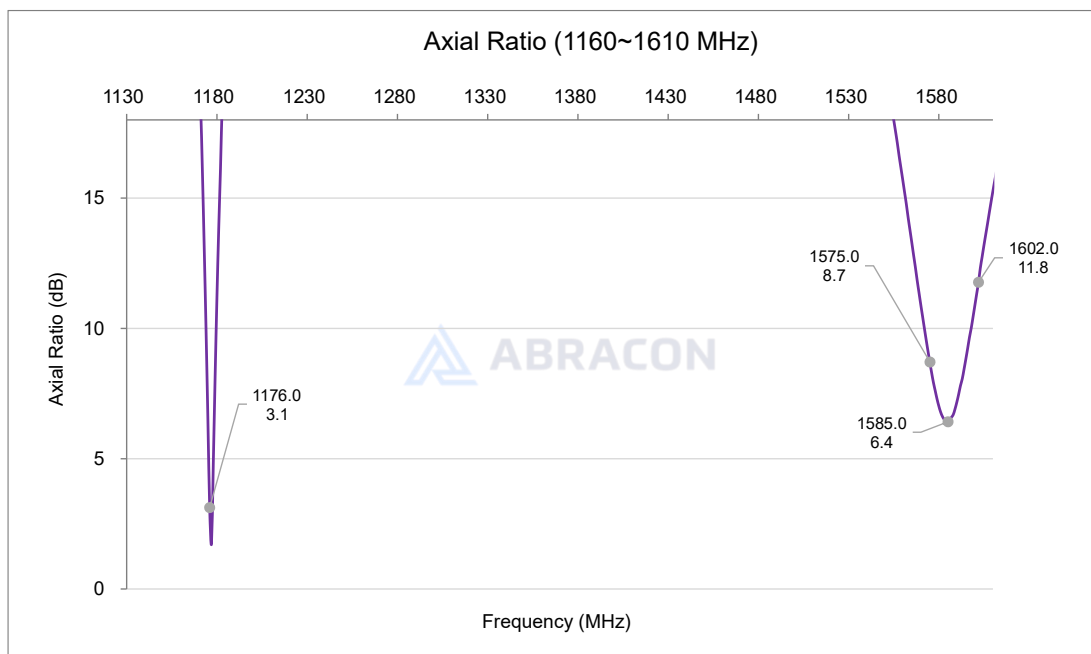


25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Radiation Characteristics – Axial Ratio (dB)



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED



APARM2508S-SG3L5

Request Samples



Check Inventory



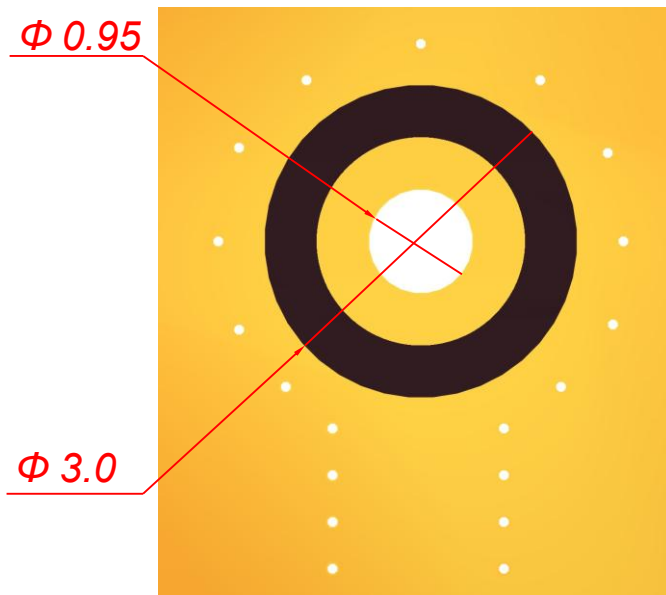
25.0 x 25.0 x 8.0 mm

RoHS Compliant

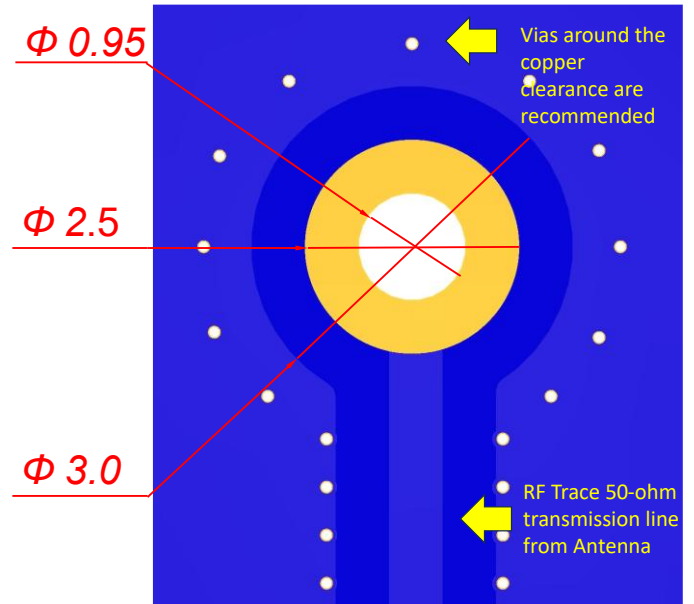
MSL Level = N/A

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 $\leq 3s$, and the temperature is $390 \pm 20^\circ C$.

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.

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory

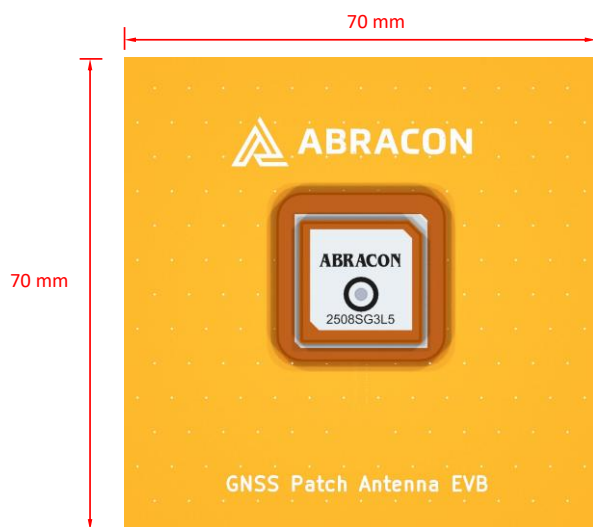


25.0 x 25.0 x 8.0 mm

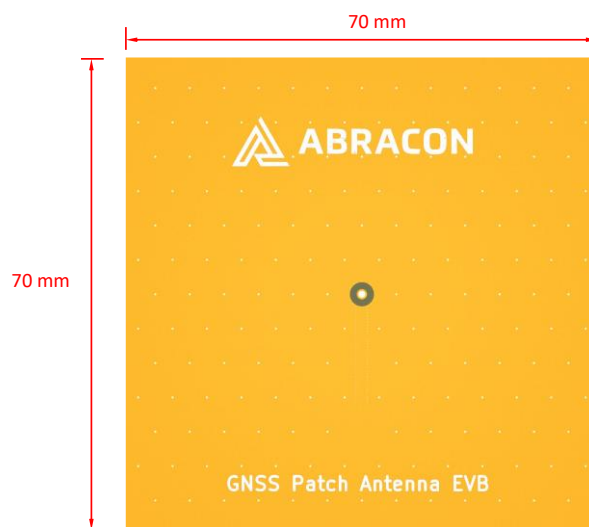
RoHS Compliant

MSL Level = N/A

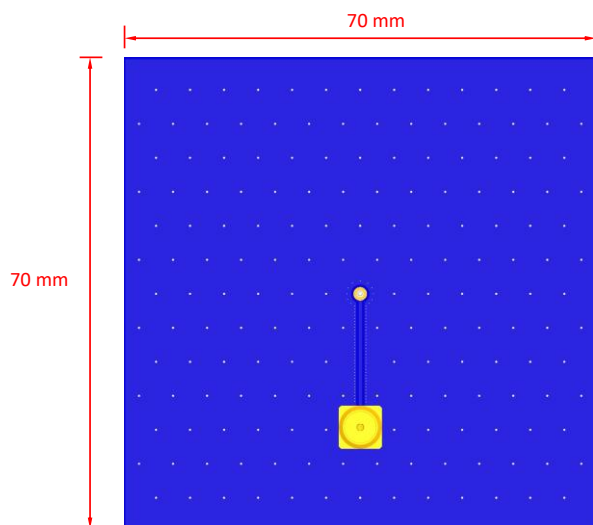
Integration Recommendation



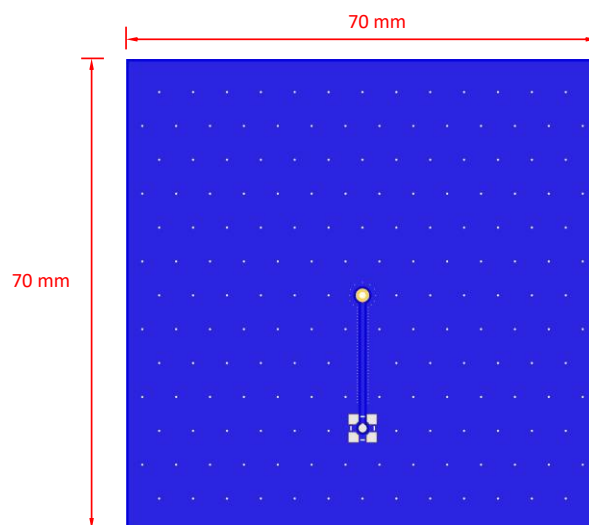
Top with Antenna



Top without Antenna



Bottom with Connector



Bottom without Connector

Unit: mm

The transmission line is located at the bottom of the antenna evaluation board.



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory



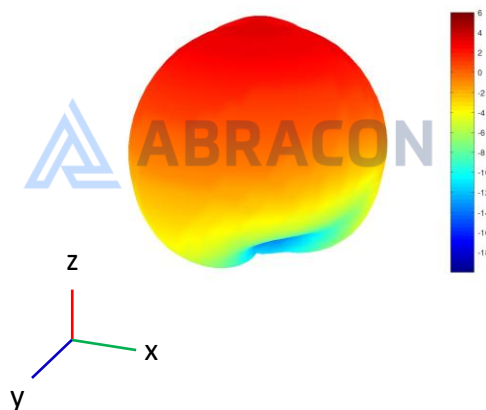
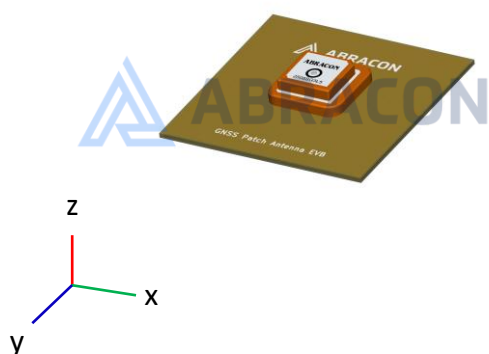
25.0 x 25.0 x 8.0 mm

RoHS Compliant

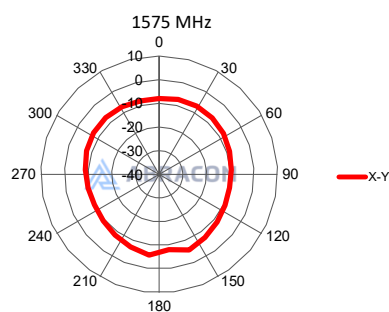
MSL Level = N/A

Radiation Characteristics – 3D & 2D Pattern

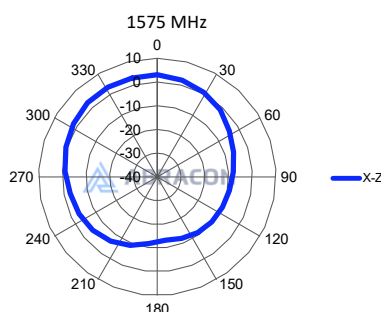
1575MHz



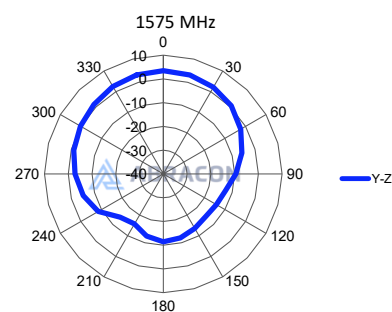
XY plane



XZ plane



YZ plane



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED

GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory

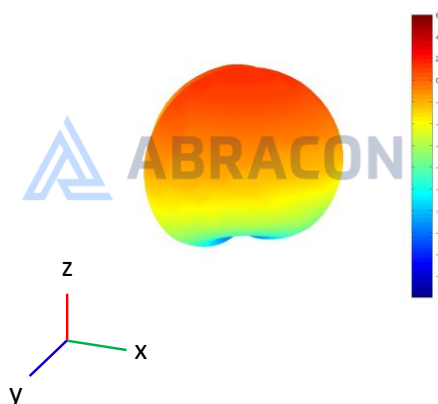
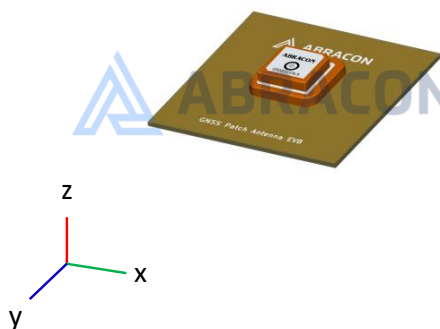


25.0 x 25.0 x 8.0 mm

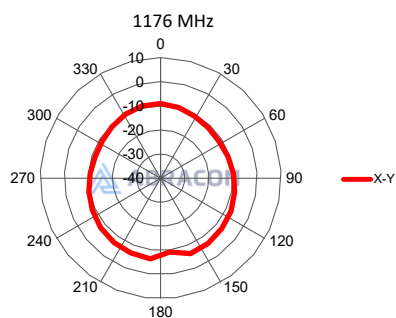
RoHS Compliant

MSL Level = N/A

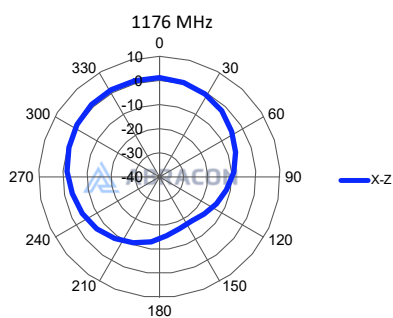
1176MHz



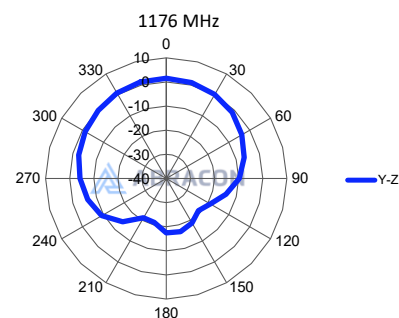
XY plane



XZ plane



YZ plane



GNSS L1/L5 Ceramic Patch Antenna



APARM2508S-SG3L5

Request Samples



Check Inventory



25.0 x 25.0 x 8.0 mm

RoHS Compliant

MSL Level = N/A

Packaging

175 pcs per tray

700 pcs per carton

Dimensions of the carton: 330 x 280 x 254 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.



12117 Bee Caves Rd, Bldg-3, Suite 200 Bee
Cave, TX 78738
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08-20-25

ABRACON IS
ISO9001-2015
CERTIFIED