

# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples



Check Inventory



25.1 x 25.1 x 4.0 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Features

- Complies with Automotive Qualification (AEC-Q200)
- Complies with IATF 16949 Certification
- Multiband GNSS patch with GPS/GLONASS/BeiDou/Galileo
- Low Return Loss
- RHCP polarization
- Wide operating temperature (-40°C to +105°C)
- Peak Gain of 4.2 dBi
  - GPS: 2.4 dBi
  - GLONASS: 4.2 dBi
  - BeiDou: 3.4 dBi

## Applications

- GNSS applications
- Automotive
- IoT, M2M, V2X
  - Industrial IoT
  - Infrastructure IoT
  - Consumer IoT
- Navigation
- Logistics
- Geofencing
- Remote monitoring
- Surveying and mapping systems

## Product Image



# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples



Check Inventory



25.1 x 25.1 x 4.0 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Electrical Specifications

Parameter	Specification			Unit
Operating Band	GPS / Galileo	GLONASS	BeiDou	
Operating Frequency	1575.42 ± 1.023	1602 ± 5	1561.098 ± 2.046	MHz
Return Loss <sub>max</sub>	-10			dB
Gain	2.4	4.2	3.4	
Impedance	50			Ω
Polarization	RHCP			

### Note :

- Ground Plane size: 70 x 70 mm
- Actual Electrical Value will depend on the size of ground plane in use

## Mechanical Specifications

Parameter	Specification
Antenna Dimension	25.1 x 25.1 x 4.0 mm
Material	Ceramic
Termination	Silver
Mounting Type	Through-Hole + Adhesive Tape

## Environmental Specifications

Parameter	Specification
Operating Temperature	-40°C to +105 °C
Storage Temperature	
Frequency Temperature Coefficient (T <sub>f</sub> )	-40 °C to +105 °C (0 ± 20 ppm/ °C )
RoHS / RoHS II Compliant	Yes
MSL	1
Environmentally Friendly	Pb free
Relative Humidity	0~95%

# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples



Check Inventory

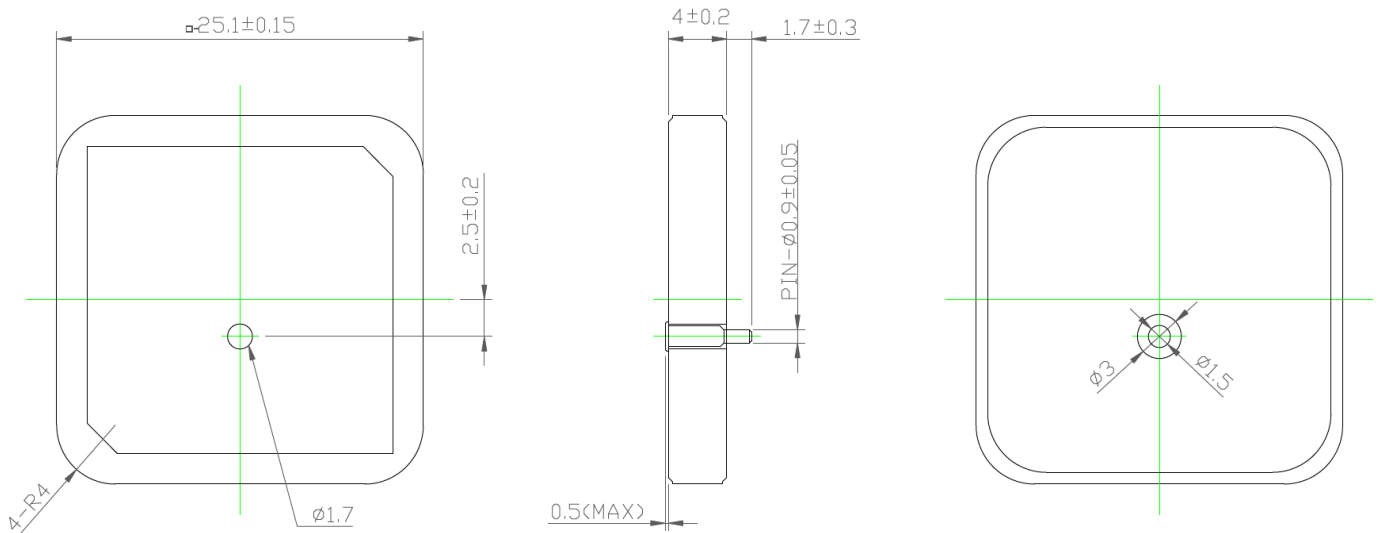


25.1 x 25.1 x 4.0 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Product Marking



## Product Dimension



Unit : mm



5101 Hidden Creek Ln Spicewood TX 78669  
Phone: 512-371-6159 | Fax: 512-351-8858  
For terms and conditions of sales, please visit:  
[www.abracon.com](http://www.abracon.com)

REVISED: 06-29-21

ABRACON IS  
ISO9001-2015  
CERTIFIED

# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples



Check Inventory



25.1 x 25.1 x 4.0 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

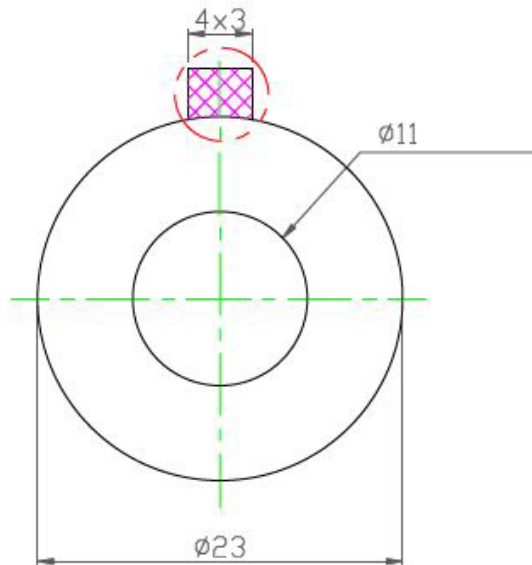
## Layout Dimensions



TOL: ±0.20  
UNIT: mm

Unit : mm

## Tape Dimensions



Double – coated thin adhesive tape | Thickness : 0.12 mm

Unit : mm



5101 Hidden Creek Ln Spicewood TX 78669  
Phone: 512-371-6159 | Fax: 512-351-8858  
For terms and conditions of sales, please visit:  
[www.abracon.com](http://www.abracon.com)

REVISED: 06-29-21

ABRACON IS  
ISO9001-2015  
CERTIFIED

# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples

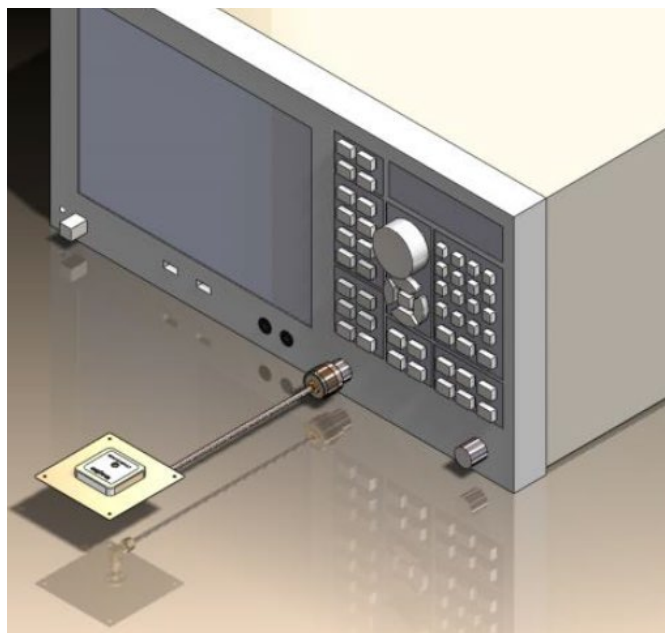


Check Inventory



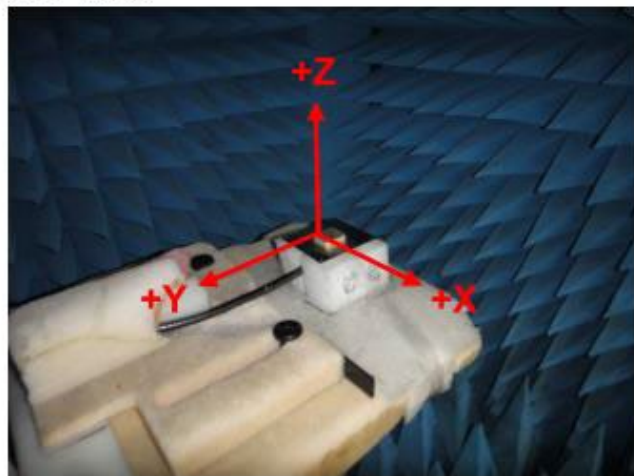
25.1 x 25.1 x 4.0 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## VNA Test Measurement – Set up

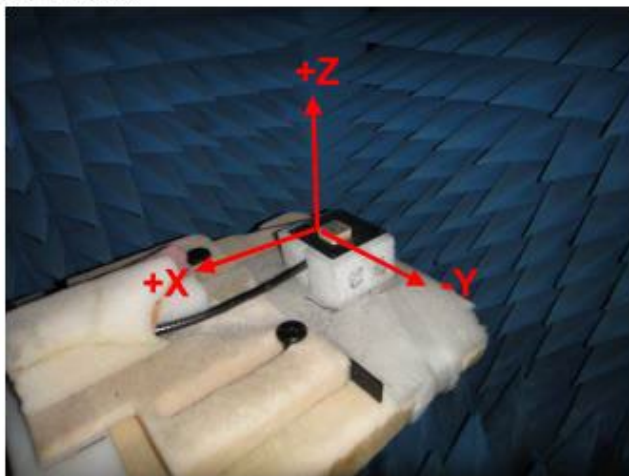


## Radiation Measurement – Set up

XZ-Plane



YZ-Plane



# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples

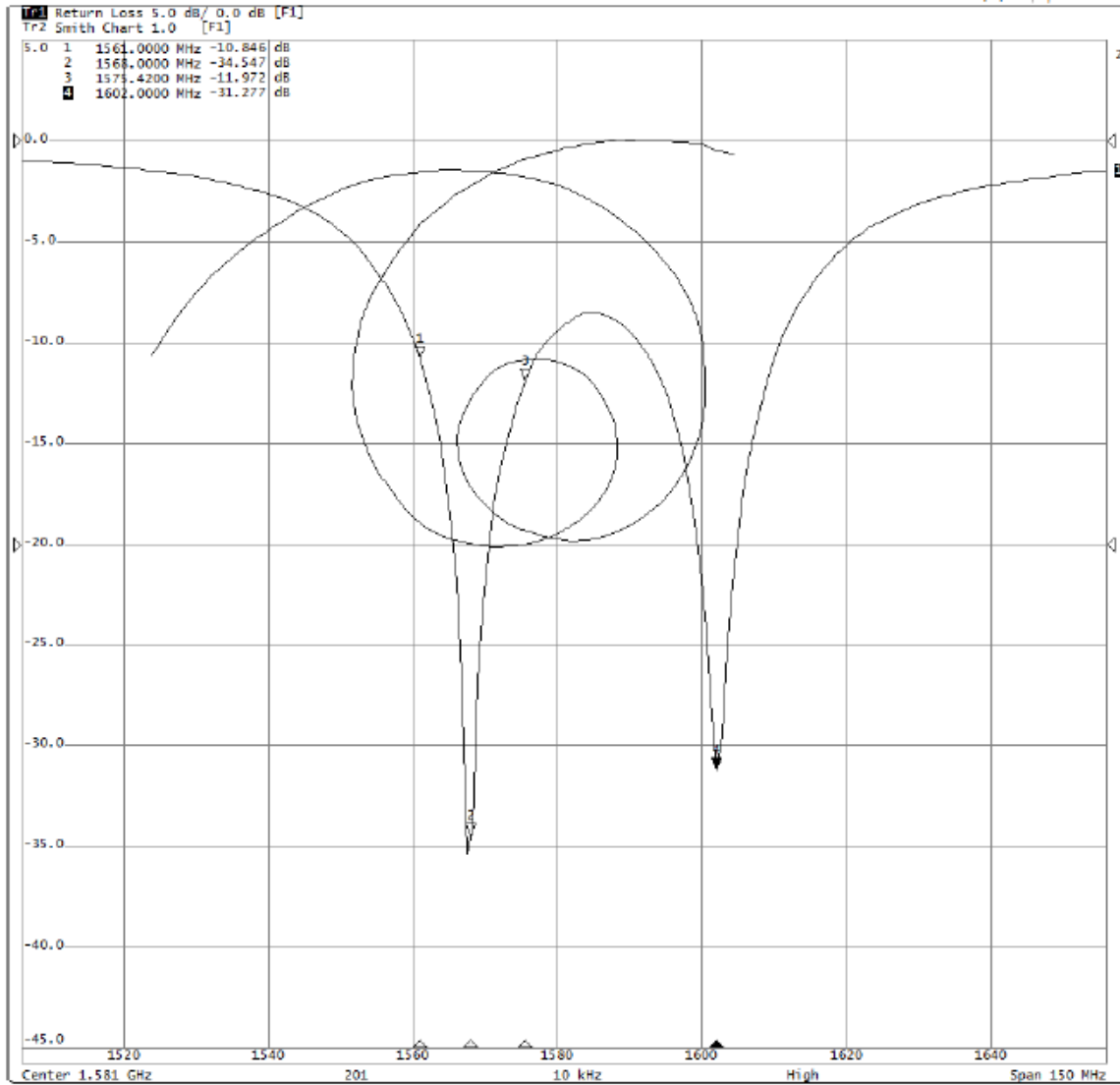


Check Inventory



25.1 x 25.1 x 4.0 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Test Measurement – Return Loss



# GNSS Chip Antenna - Automotive Qualified



**APRA2504G3Z**

Request Samples



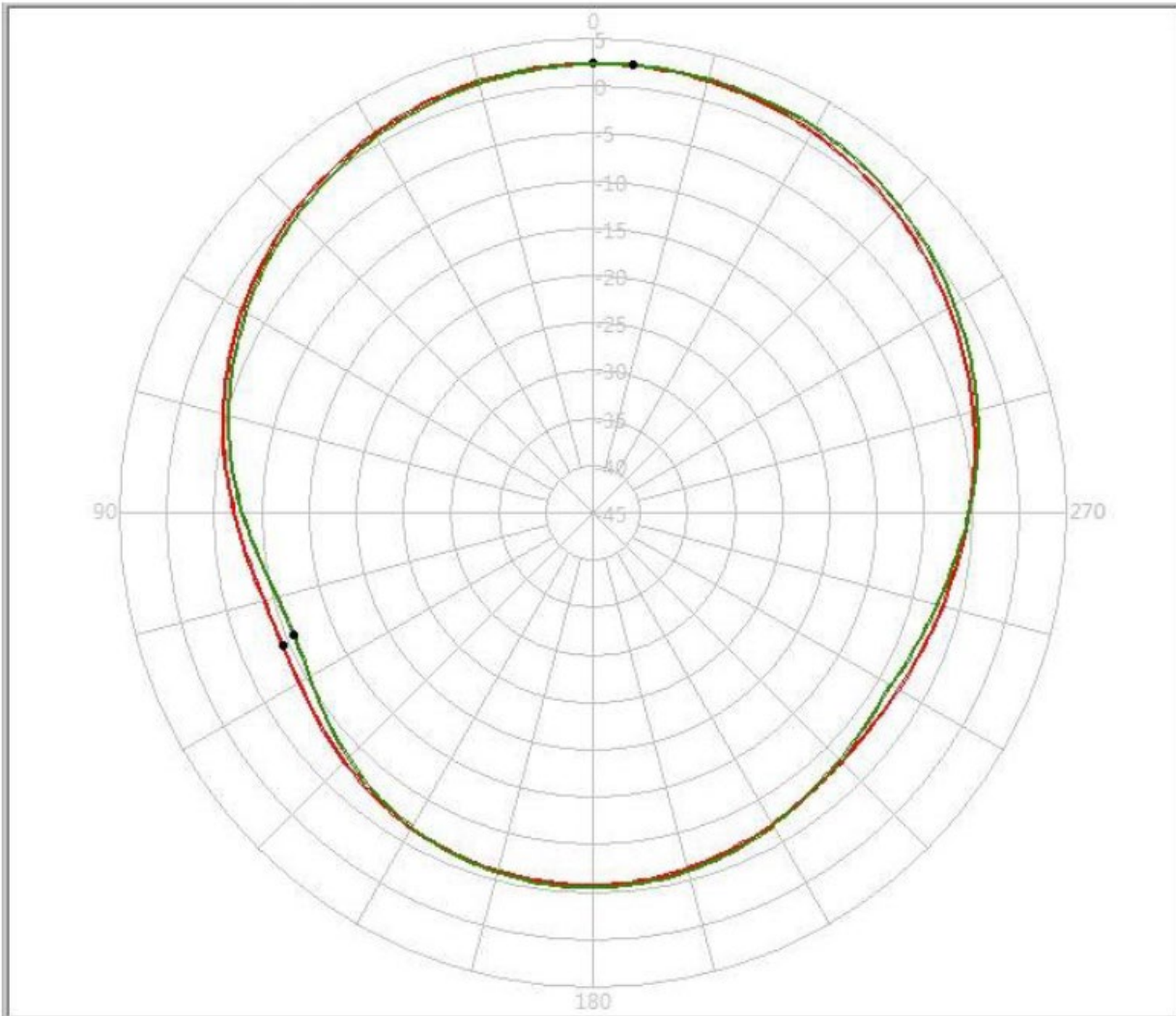
Check Inventory



25.1 x 25.1 x 4.0 mm  
**RoHS/RoHS II Compliant**  
 MSL Level = 1

## Radiation Measurement — 2D Pattern

### XZ + YZ Plane : GPS



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	APRA2504G3Z	XZ	1575.42	2.39 / 0.00	-9.38 / 112.94	-2.26	V+H
2	APRA2504G3Z	YZ	1575.42	2.38 / 354.99	-10.88 / 112.31	-2.25	V+H

# GNSS Chip Antenna - Automotive Qualified



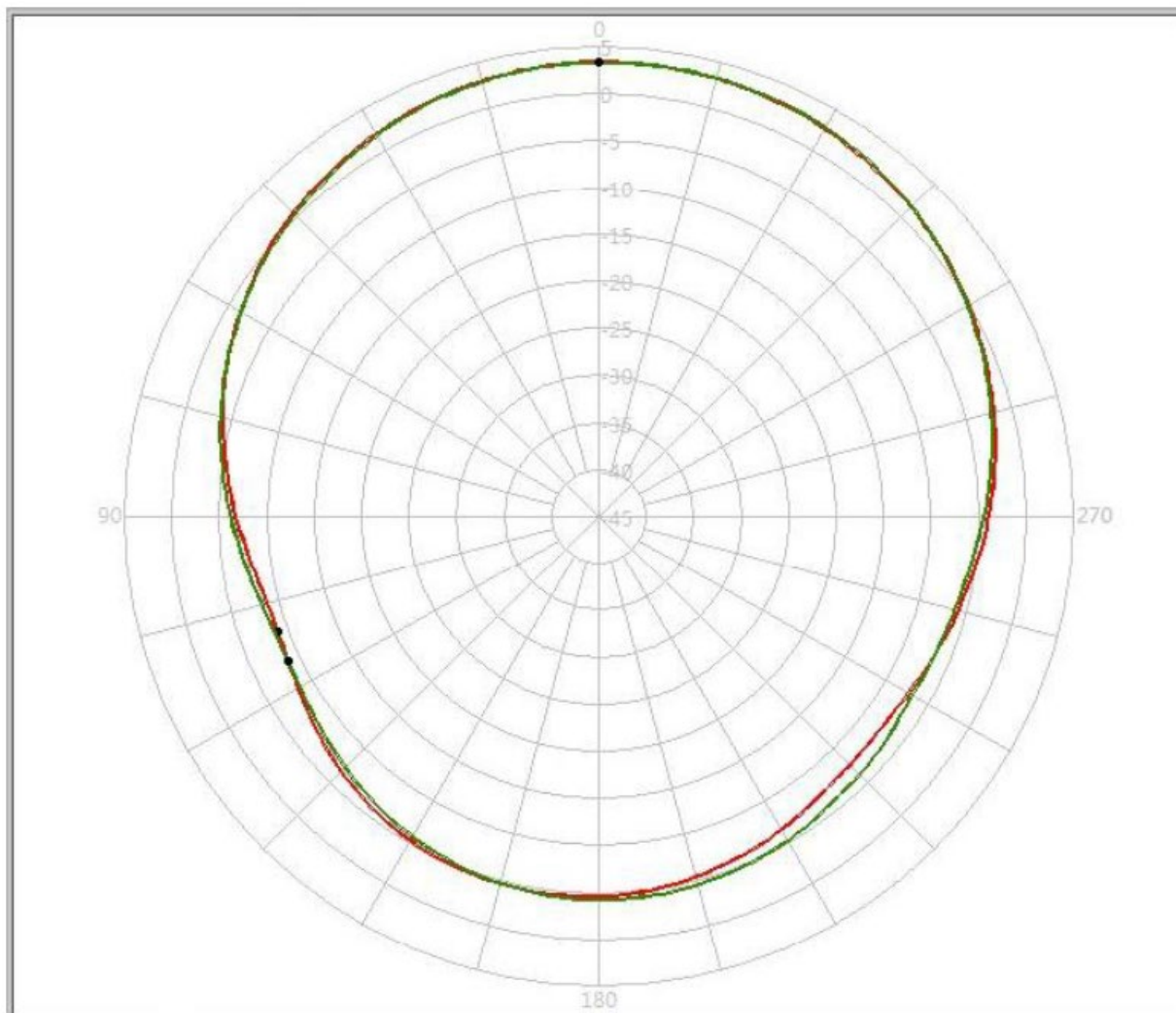
**APRA2504G3Z**

Request Samples

Check Inventory

25.1 x 25.1 x 4.0 mm  
**RoHS/RoHS II Compliant**  
 MSL Level = 1

## XZ + YZ – Plane : BeiDou



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	APRA2504G3Z	XZ	1562.00	3.41 / 0.00	-8.98 / 109.92	-1.20	V+H
2	APRA2504G3Z	YZ	1562.00	3.36 / 0.00	-8.76 / 115.32	-1.19	V+H

# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples

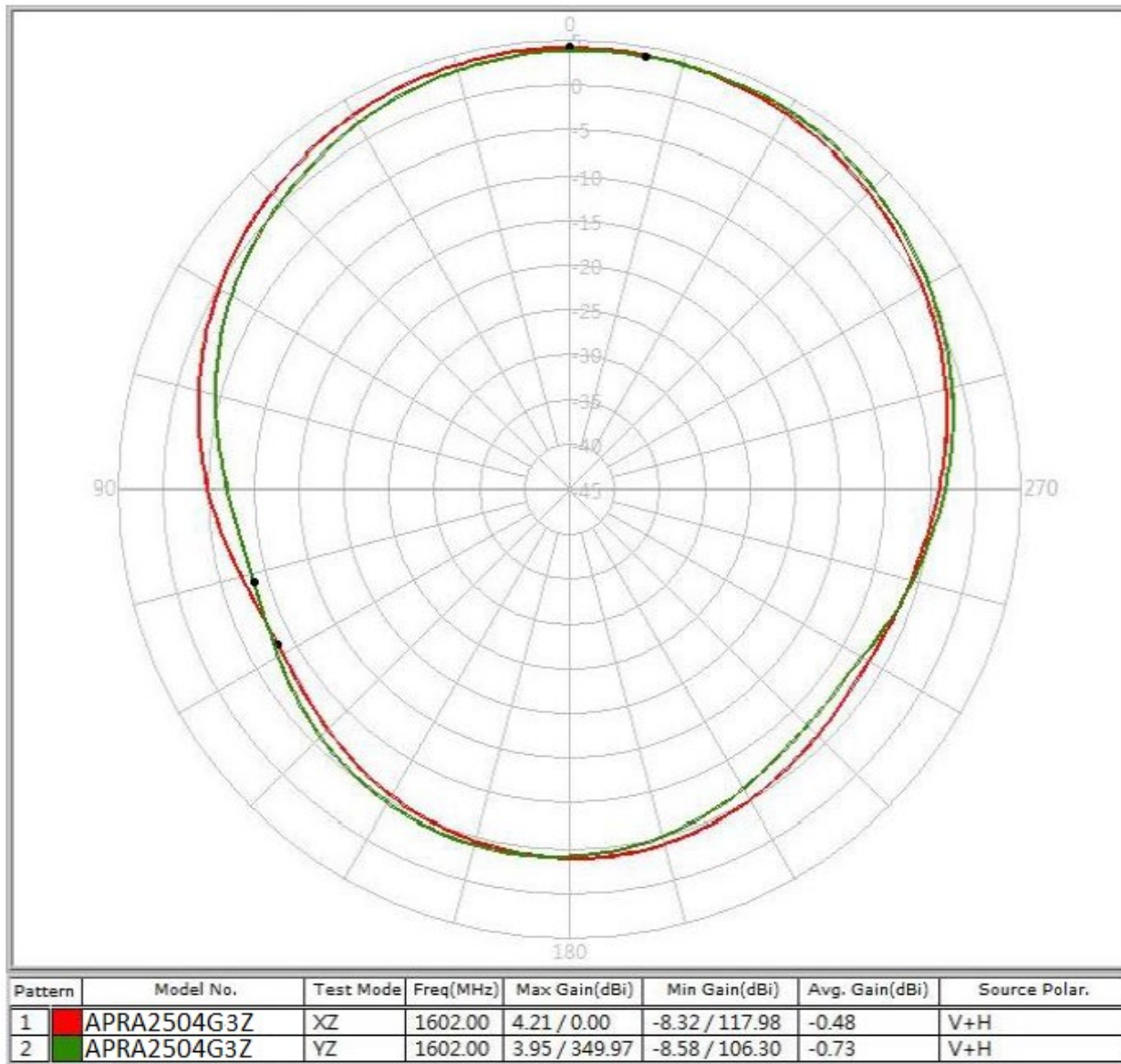


Check Inventory



25.1 x 25.1 x 4.0 mm  
**RoHS/RoHS II Compliant**  
 MSL Level = 1

## XZ + YZ – Plane : GLONASS



# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples



Check Inventory



25.1 x 25.1 x 4.0 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Soldering Condition

---

- Soldering should be done in 6 seconds by a feed pin of maximum temperature +400 °C.

## Precautions

---

- Do not direct solder onto the silver electrode of the antenna pattern.
- Do not use the patch antenna in a corrosive gaseous atmosphere for example sulfur gas, chlorine gas.

# GNSS Chip Antenna - Automotive Qualified



APRA2504G3Z

Request Samples



Check Inventory

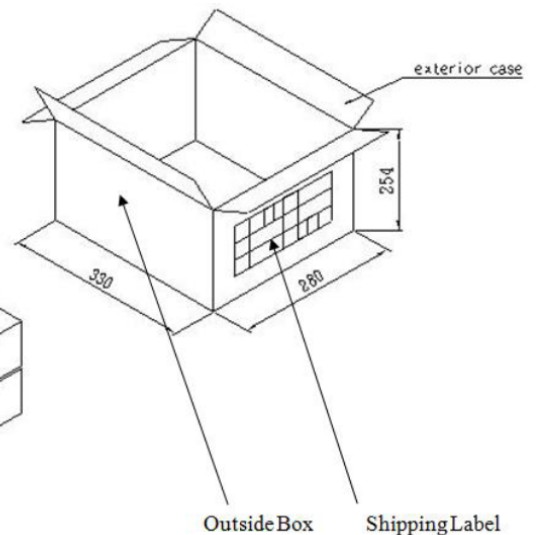
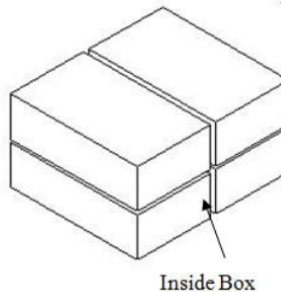
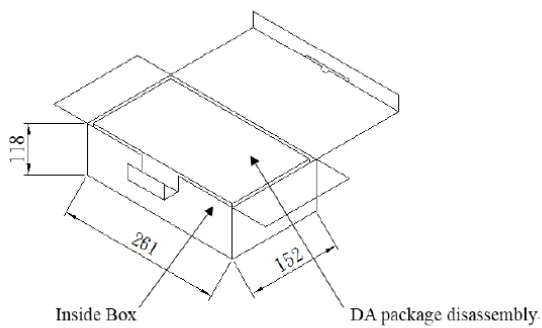
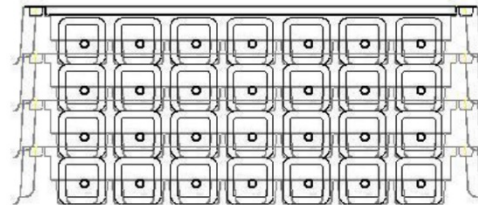
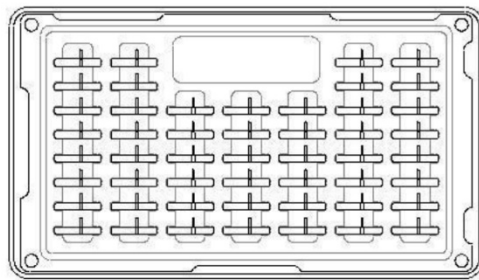


25.1 x 25.1 x 4.0 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Packaging Information

Dimensions of the Outer Carton : 330 x 280 x 254 mm (200 x 4 = 800 pcs each)

Dimensions of the Inner Carton : 261 x 152 x 118 mm (200 pcs each)



**ATTENTION:** Abracon LLC's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependent Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon LLC is required. Please contact Abracon LLC for more information.



5101 Hidden Creek Ln Spicewood TX 78669  
Phone: 512-371-6159 | Fax: 512-351-8858  
For terms and conditions of sales, please visit:  
[www.abracon.com](http://www.abracon.com)

REVISED: 06-29-21

ABRACON IS  
ISO9001-2015  
CERTIFIED