

GNSS Patch 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 3.5 dBi
 - GPS: 1.5 dBi
 - GLONASS: 3.5 dBi
 - BeiDou: 2.5 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



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Electrical Specifications

Parameter	Specification			Unit
Operating Band	BeiDou	GPS / Galileo	GLONASS	
Operating Frequency	1561.098 ± 2.046	1575.42 ± 1.023	1602 ± 5	MHz
Center Frequency	1586 ± 3			
Bandwidth	65			
Gain	2.5	1.5	3.5	dBi
Max VSWR	3.0			
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 _f)	-40°C to +105°C (0 ± 20 ppm/ °C)
RoHS / RoHS II Compliant	Yes
MSL	1
Environmentally Friendly	Pb free
Relative Humidity	0~95%

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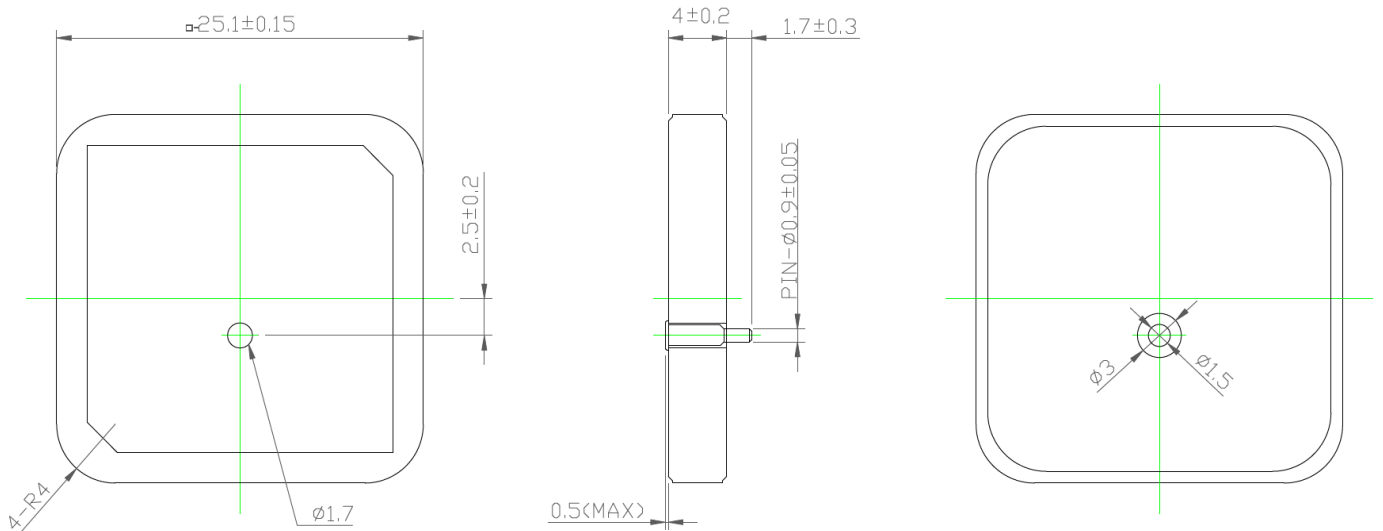


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Product Marking



Product Dimension



Unit : mm



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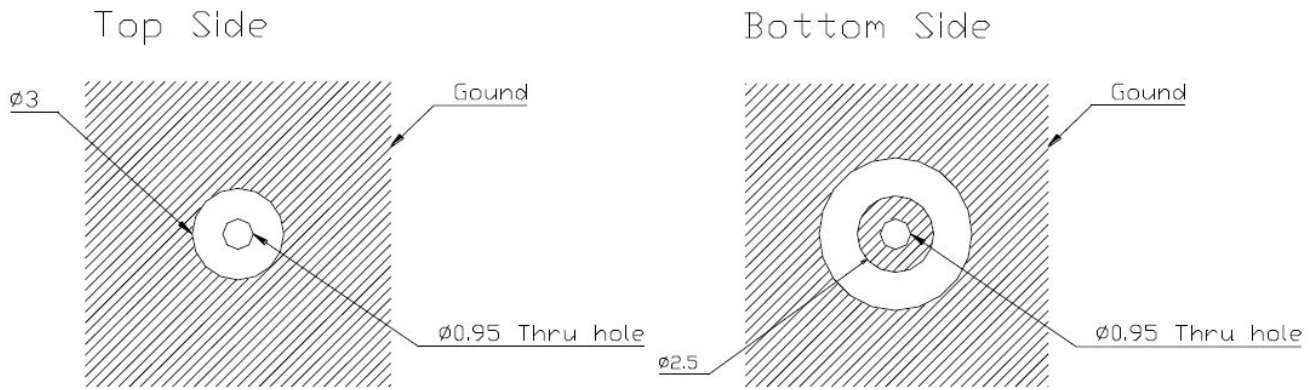


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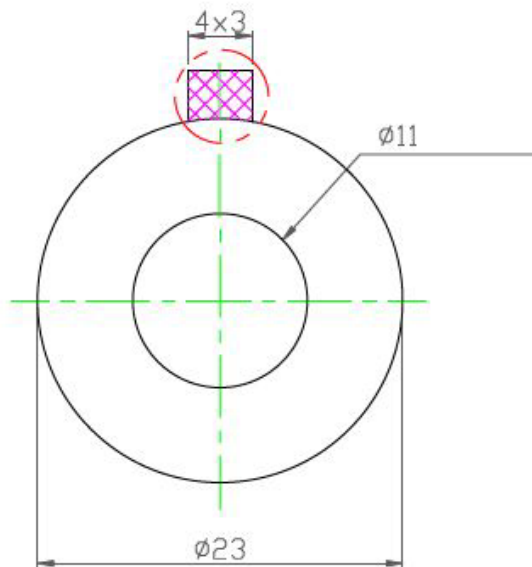
Layout Dimensions



TOL: ±0.20
UNIT: mm

Unit : mm

Tape Dimensions



Double – coated thin adhesive tape | Thickness : 0.12 mm

Unit : mm



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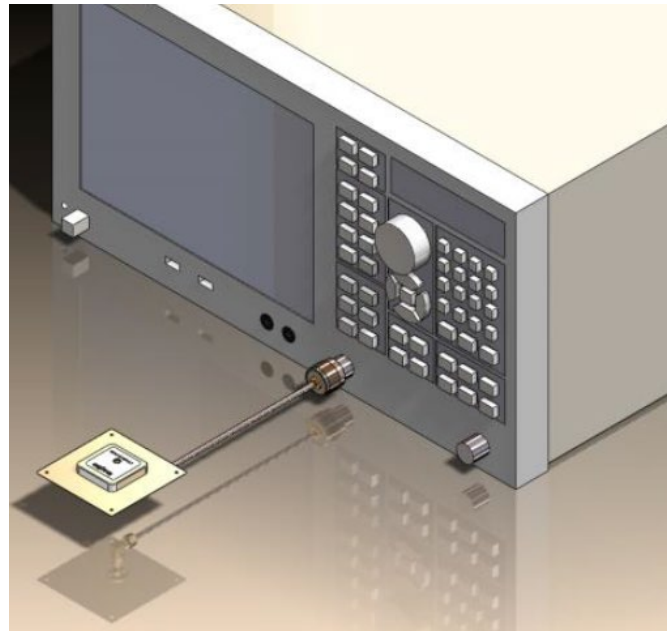


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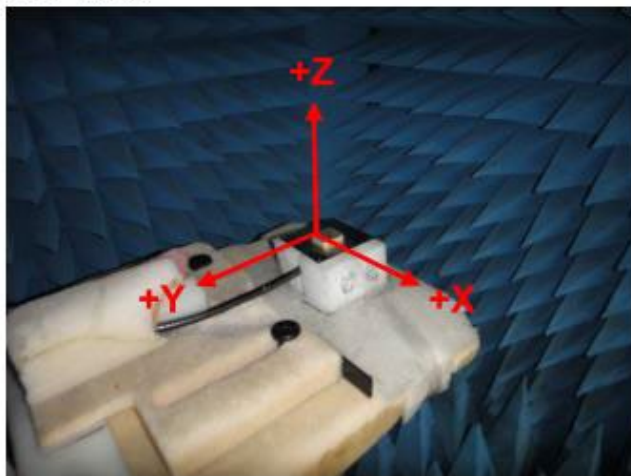
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VNA Test Measurement – Set up

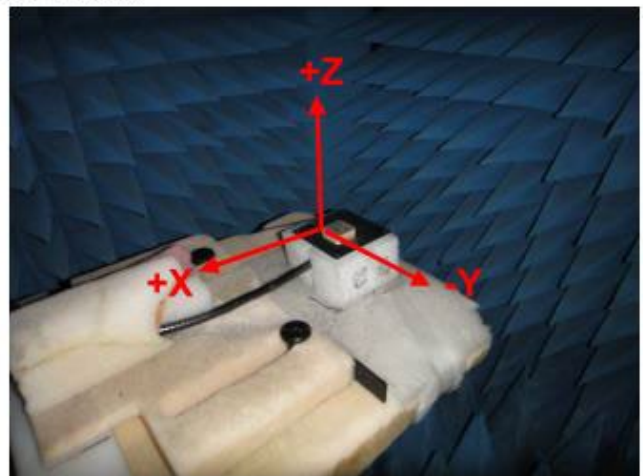


Radiation Measurement – Set up

XZ-Plane



YZ-Plane



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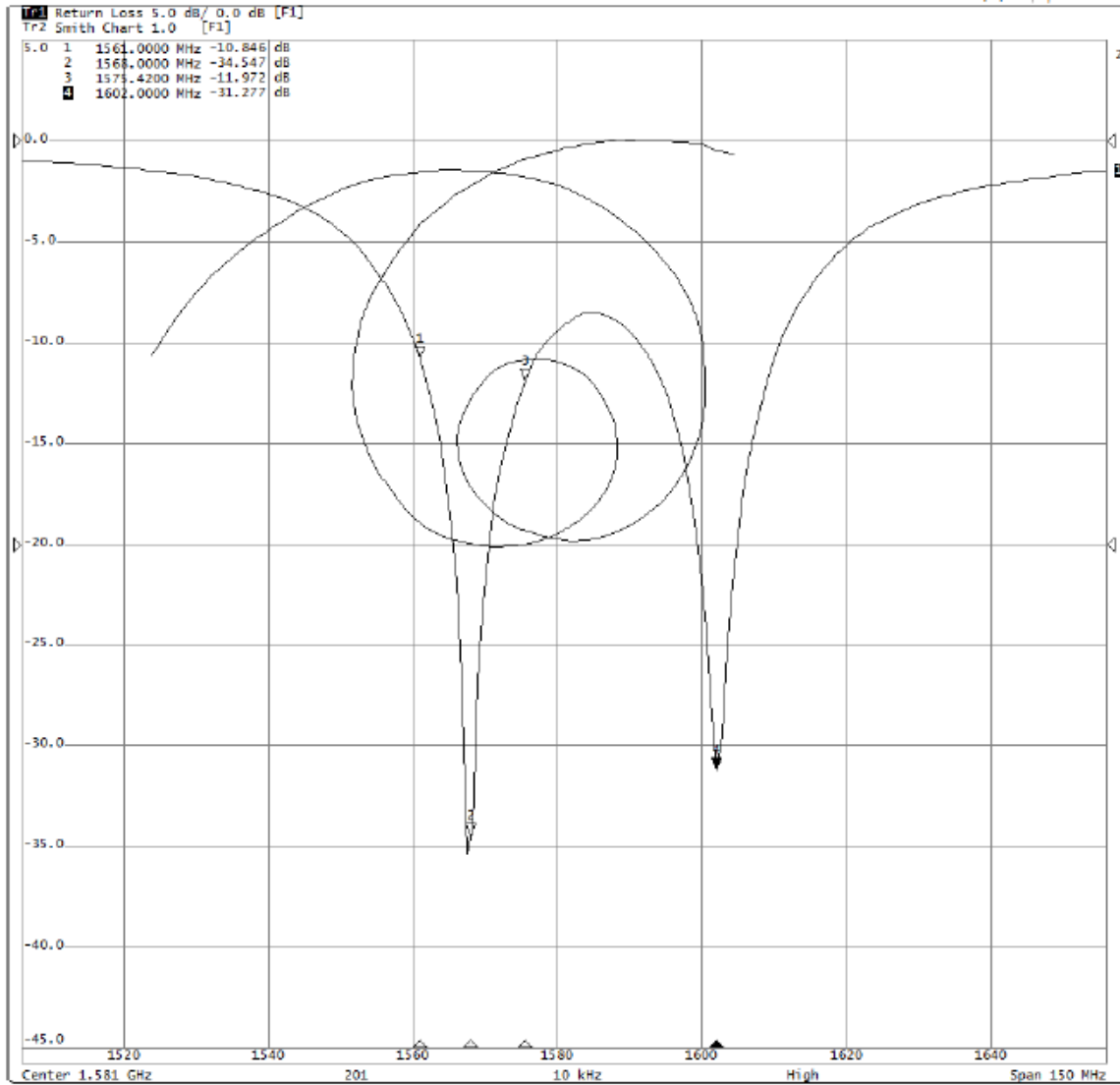


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Test Measurement – Return Loss



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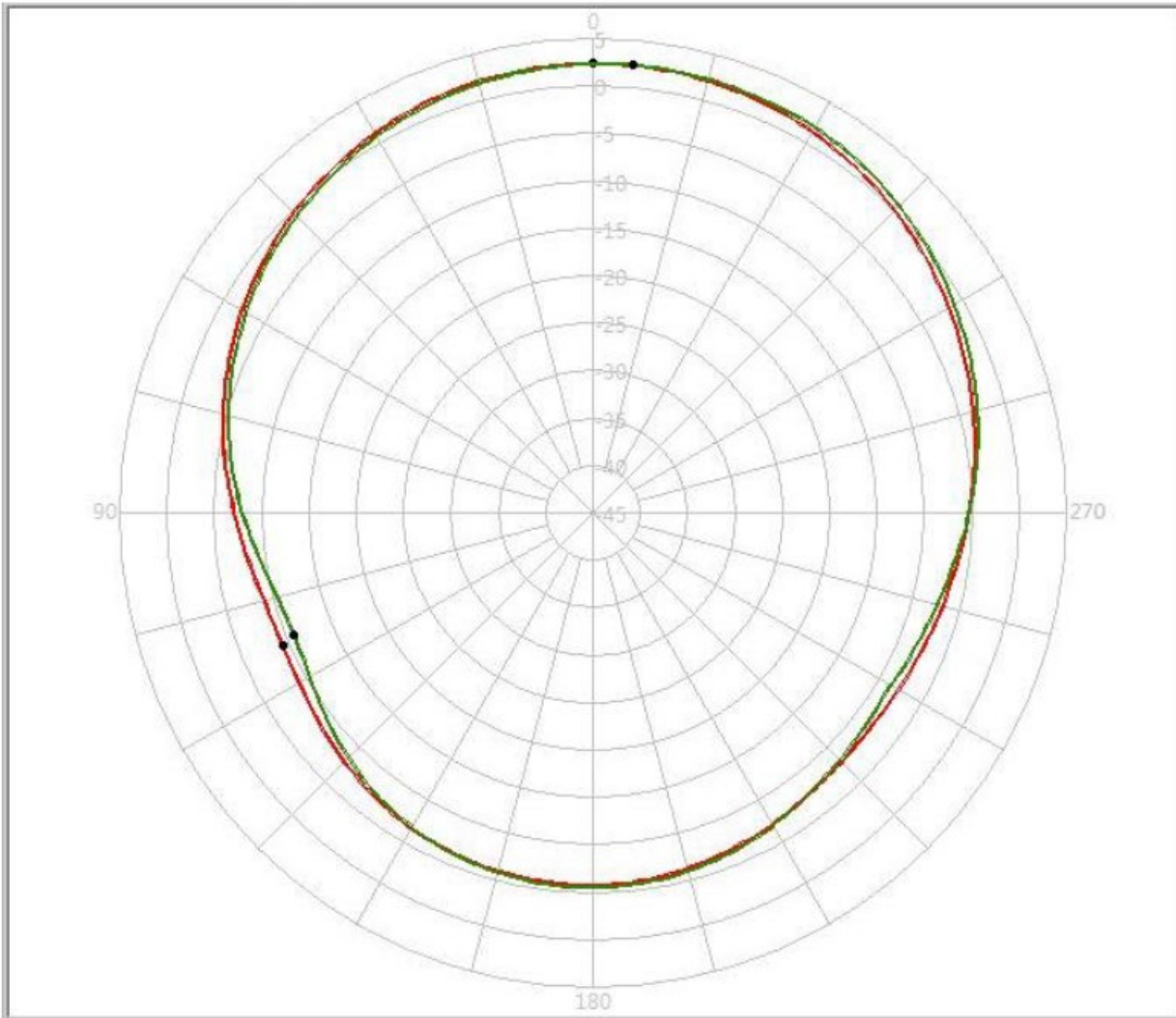
Check Inventory



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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

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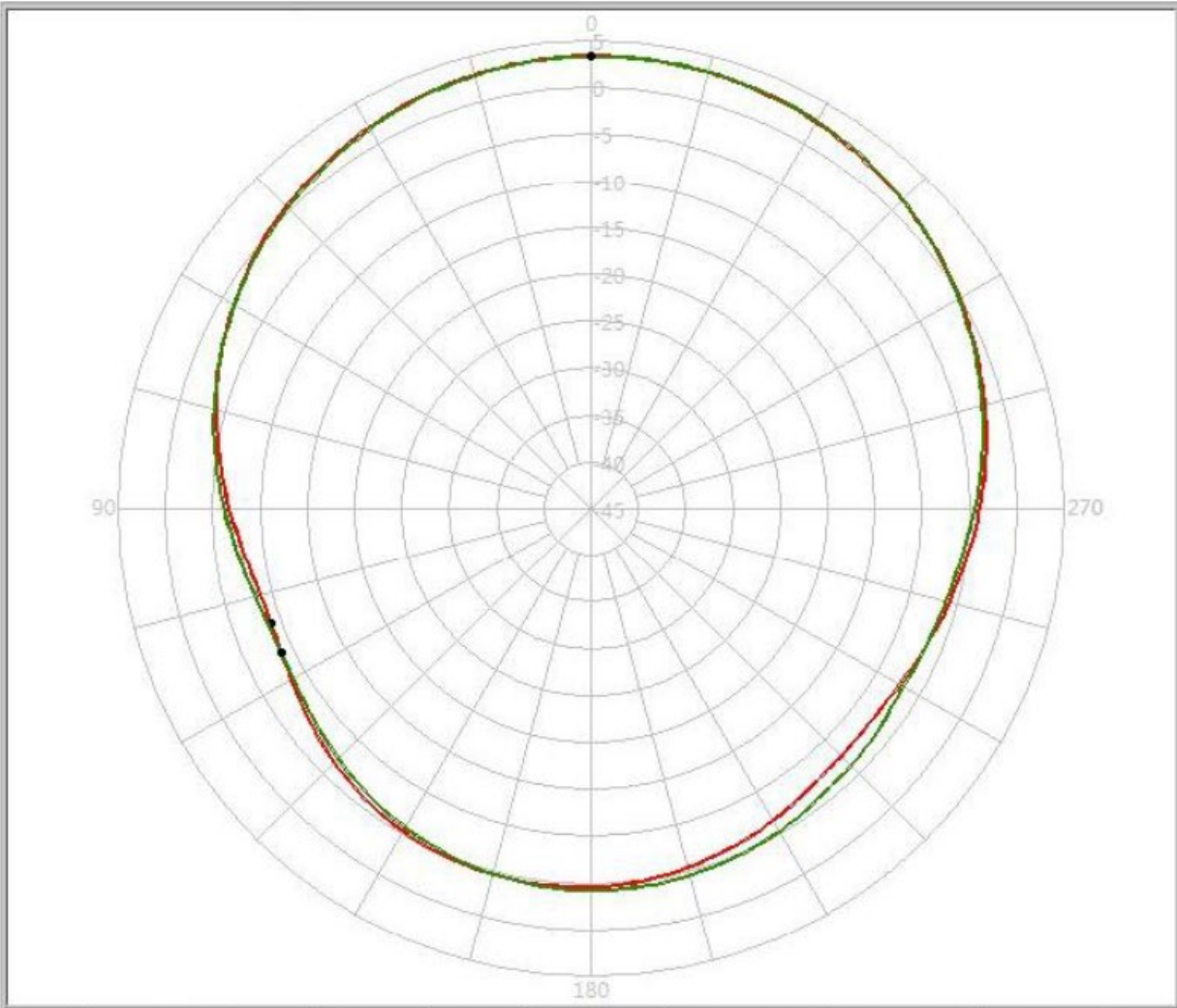


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XZ + YZ - Plane : BeiDou



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



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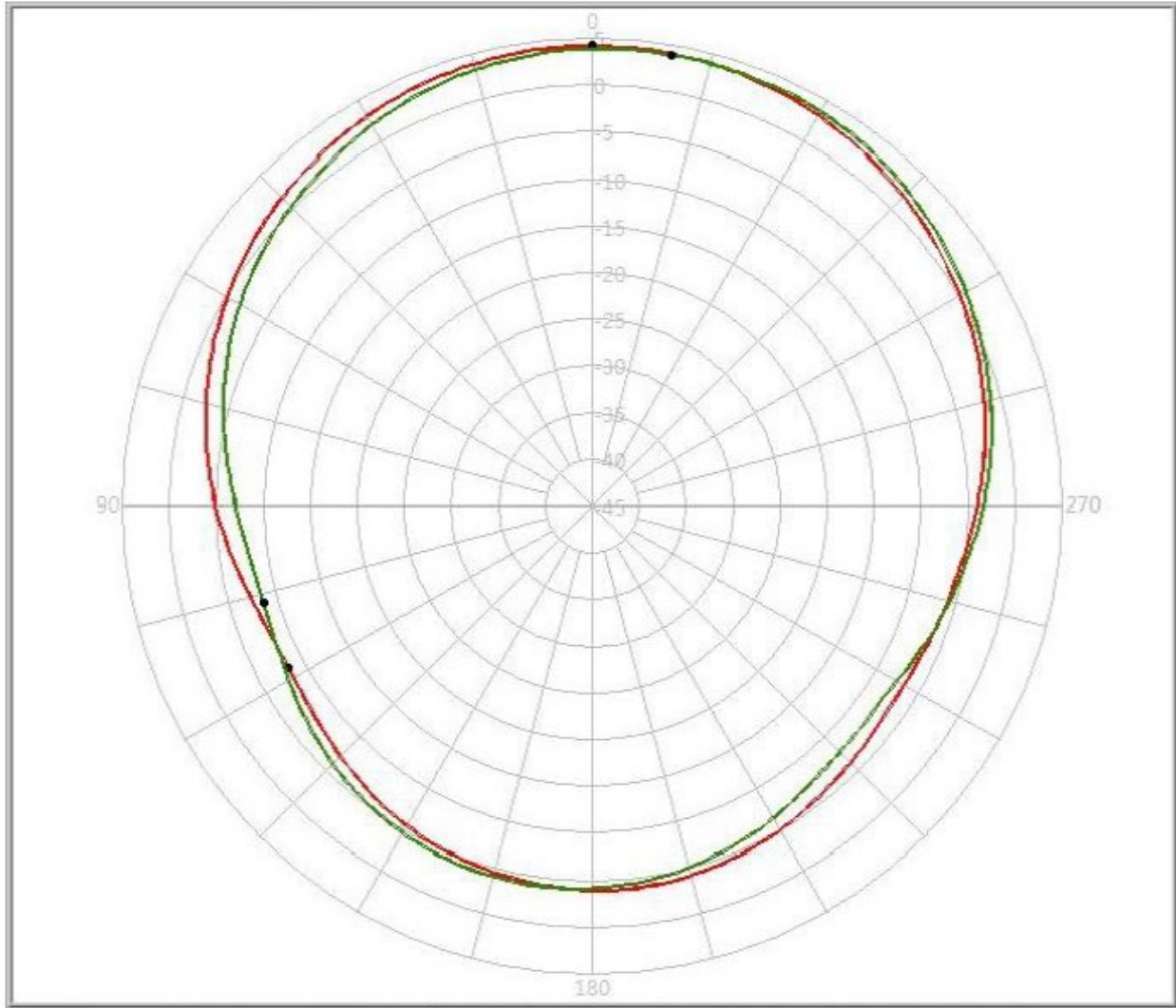
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XZ + YZ – Plane : GLONASS



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	APRA2504G3Z	XZ	1602.00	4.21 / 0.00	-8.32 / 117.98	-0.48	V+H
2	APRA2504G3Z	YZ	1602.00	3.95 / 349.97	-8.58 / 106.30	-0.73	V+H



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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.

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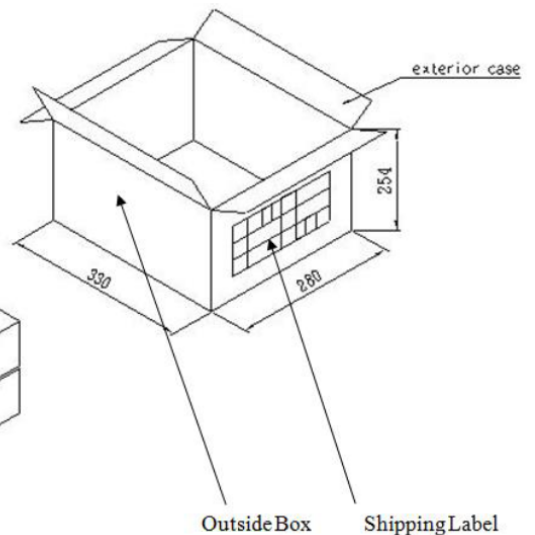
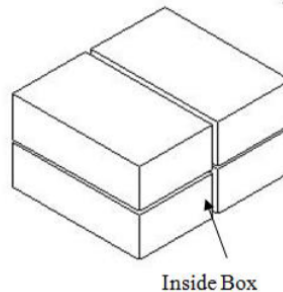
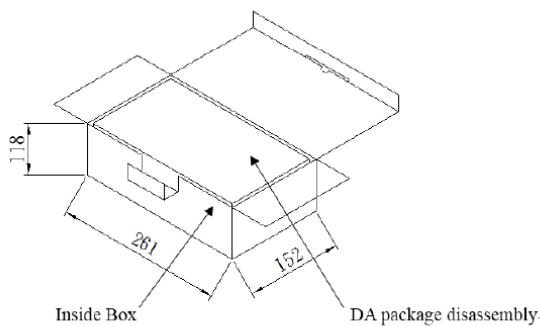
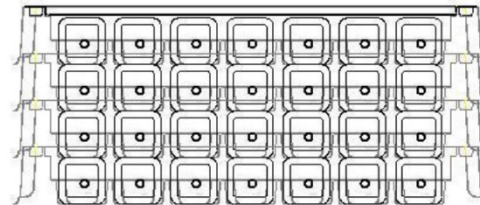
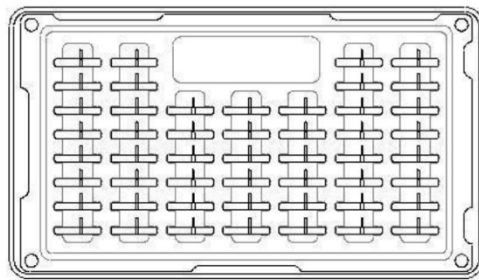


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Packaging Information

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)



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