

# Part No. 9003160

## GPS Ceramic Patch Antenna

1.575 GHz

Supports: Tracking, Smart Home, Agriculture, Healthcare, Digital Signage, Wearables, Industrial Devices



KYOCERA AVX series of GPS Ceramic Patch Antennas deliver on the key needs of device designers for higher functionality and performance in M2M designs. These innovative antennas provide compelling advantages for GPS enabled M2M applications such as vehicle tracking

### Best in Class Performance

Circularly Polarized patch antennas are designed to maintain high efficiency in a variety of device configurations. Minimal ground clearance and component “keep out” area. High selectivity eliminates the need for additional filters and frees up board space

### GPS Ceramic Patch Antenna

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#### KEY BENEFITS

##### Reduced Costs and Time-to-Market

Standard antenna eliminates design fees and cycle time associated with a custom solution; getting products to market faster.

##### Quicker Time-to-Market

By optimizing antenna size, performance and emissions, customer and regulatory specifications are more easily met.

##### Environmental Compliance

Products are the latest RoHS version compliant.

#### APPLICATIONS

- Embedded design
- POS, Headsets, Tablets
- Gateway, Access Point
- Handheld
- Telematics
- Tracking
- Healthcare
- M2M, Industrial devices
- Smart Grid
- OBD-II

### Electrical Specifications

Typical Characteristics, on 50 x 50 mm ground plane

Frequency	1.575 GHz
Center Frequency $f_0$	1575 ± 3.0 MHz
Return Loss	< -6.0 dB
Gain 0° XZ-Plane	1.0 dBic
Polarization	R.H.C.P
Impedance	50 ohm
Axial Ratio	3.0 dB

### Mechanical Specifications & Ordering Part Number

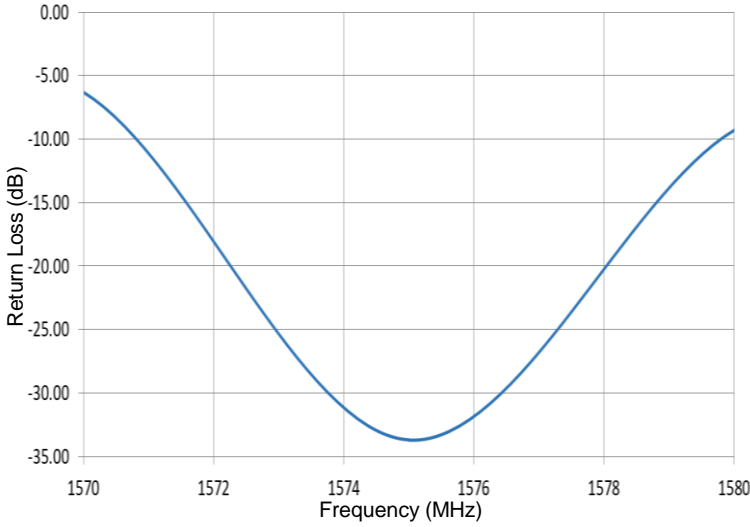
Ordering Part Number	9003160
Size (mm)	18.4 x 18.4 x 2.0
Mounting (mm)	Adhesive (Nitto 5000NS 17 x 17 x 0.16) & 1 through-hole Soldered Pin
Weight (grams)	3.3
Packaging	Plastic Tray

1.575 GHz Ceramic Patch KYOCERA AVX Embedded Antenna Specifications  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

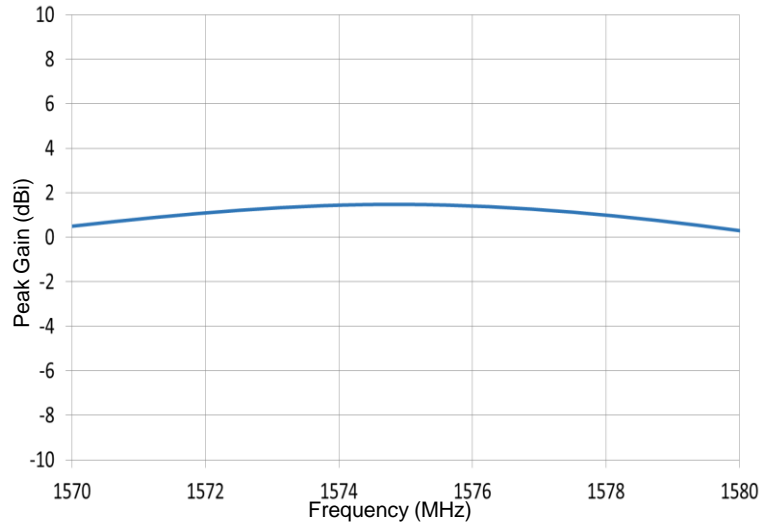
VSWR and Peak Gain Plots

Typical performance on 50 x 50 mm PCB

Return Loss



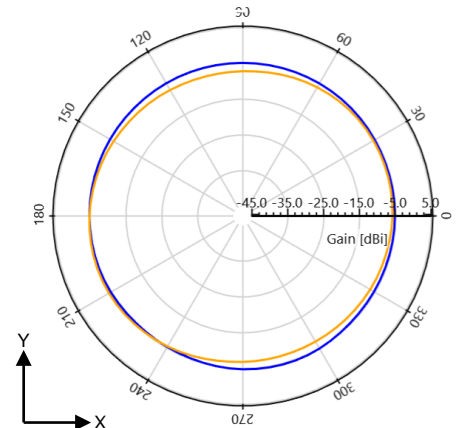
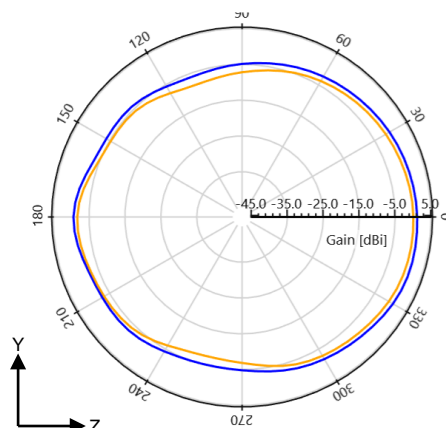
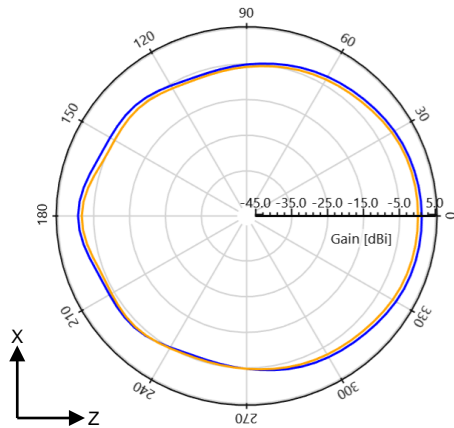
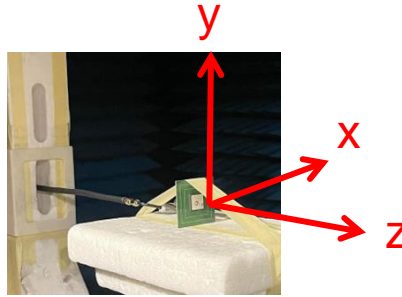
Peak Gain



Antenna Radiation Patterns

Typical performance on 50 x 50 mm PCB  
 Measured @ 1575, 1580 MHz

- 1575 MHz
- 1580 MHz

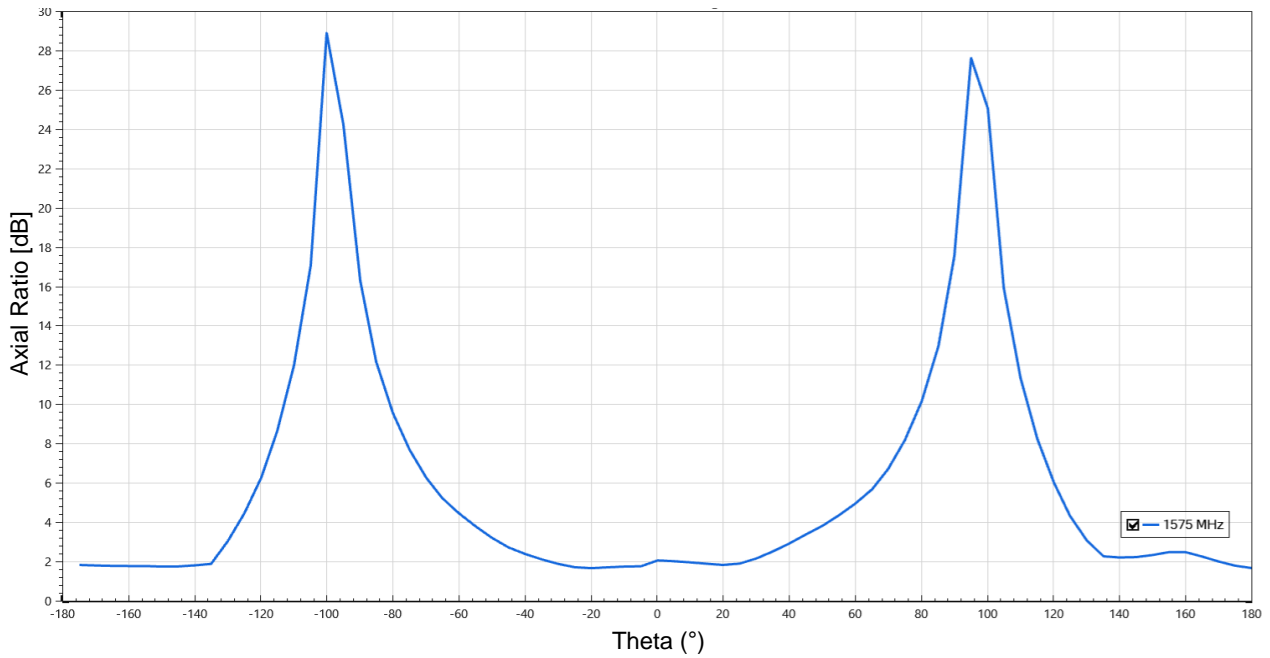


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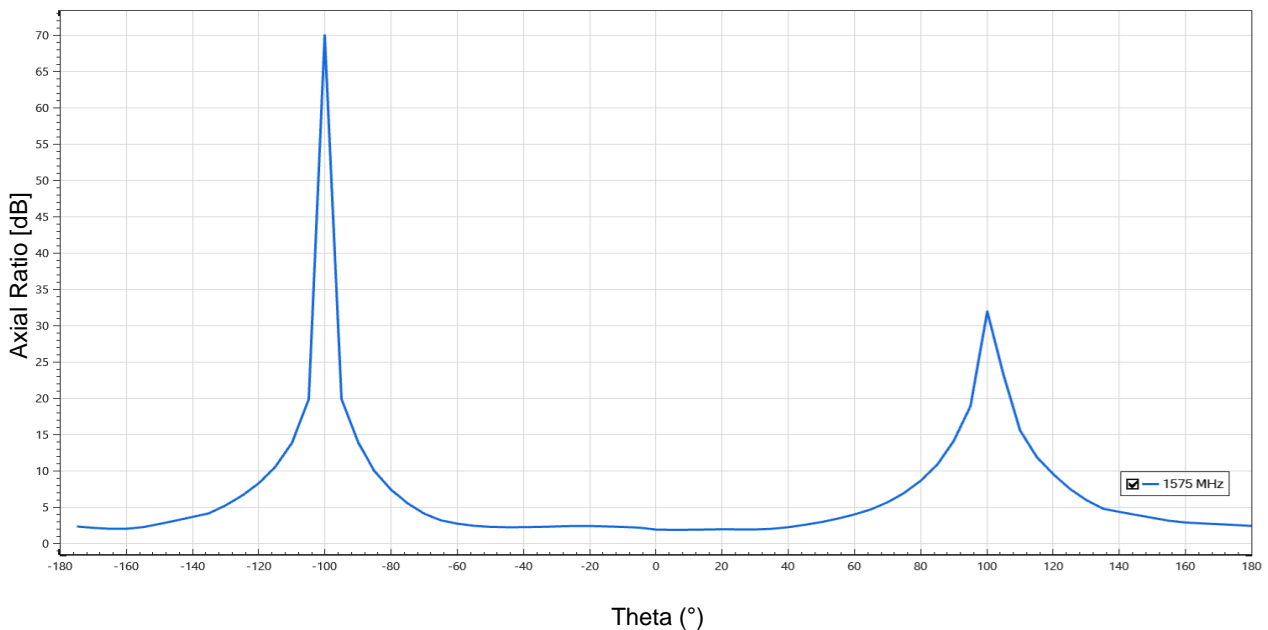
**Axial Ratio Plots**

Typical performance on 50 x 50 mm PCB  
 Measured at 1575 MHz

**Phi = 0**



**Phi = 90**

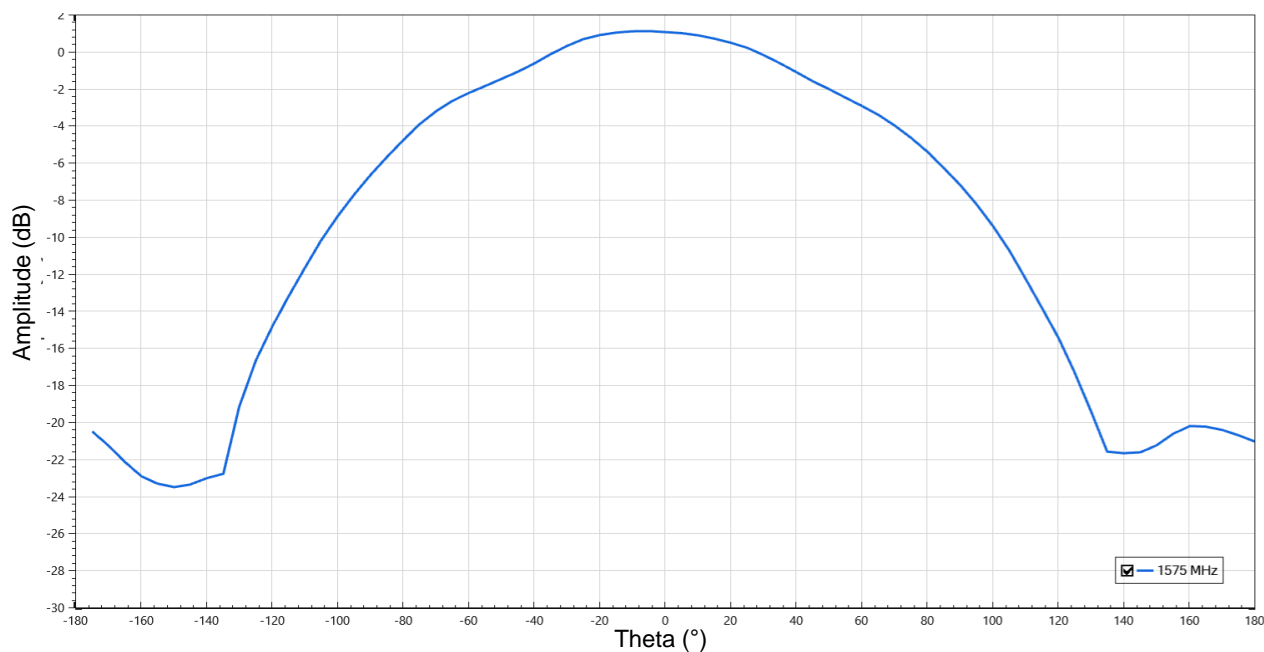


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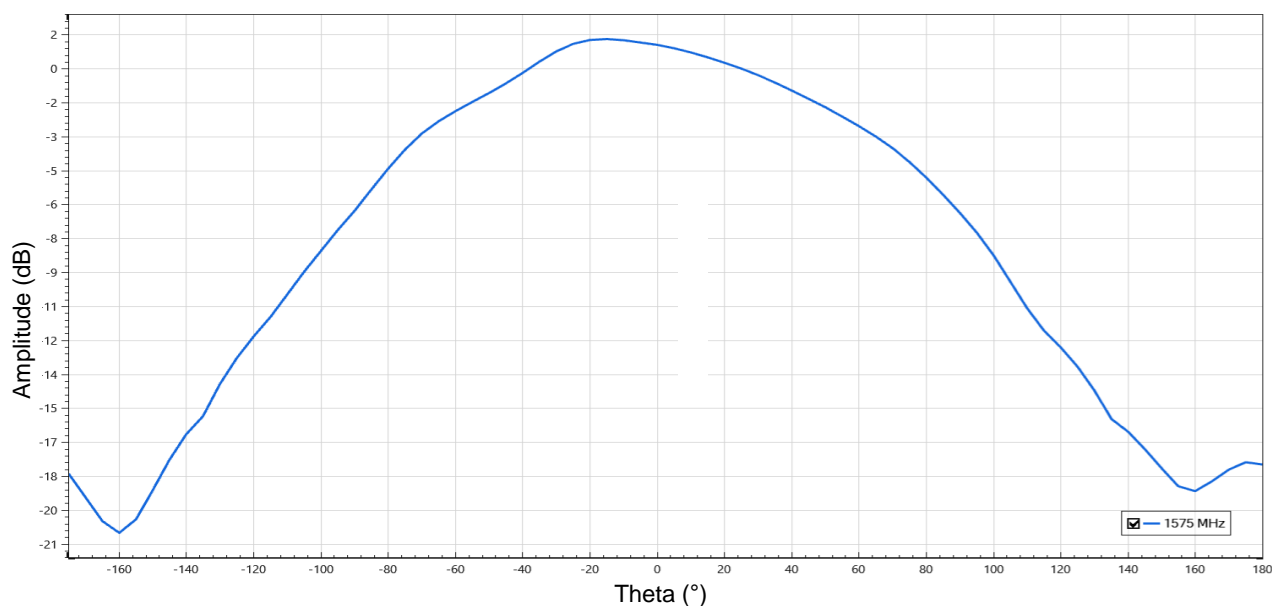
**RHCP Plots**

Typical performance on 50 x 50 mm PCB  
 Measured at 1575 MHz

**Phi = 0**



**Phi = 90**



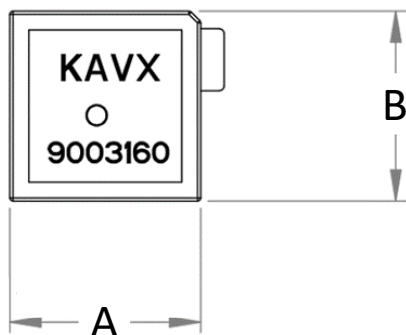
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**Mechanical Dimensions**

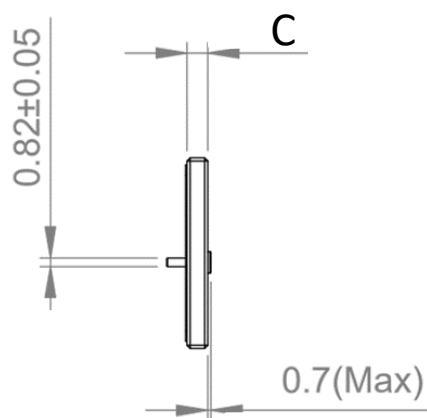
Typical performance on 50 x 50 mm PCB

Part Number	A (mm)	B (mm)	C (mm)
9003160	18.4 ± 0.2	18.4 ± 0.2	2.0 ± 0.2

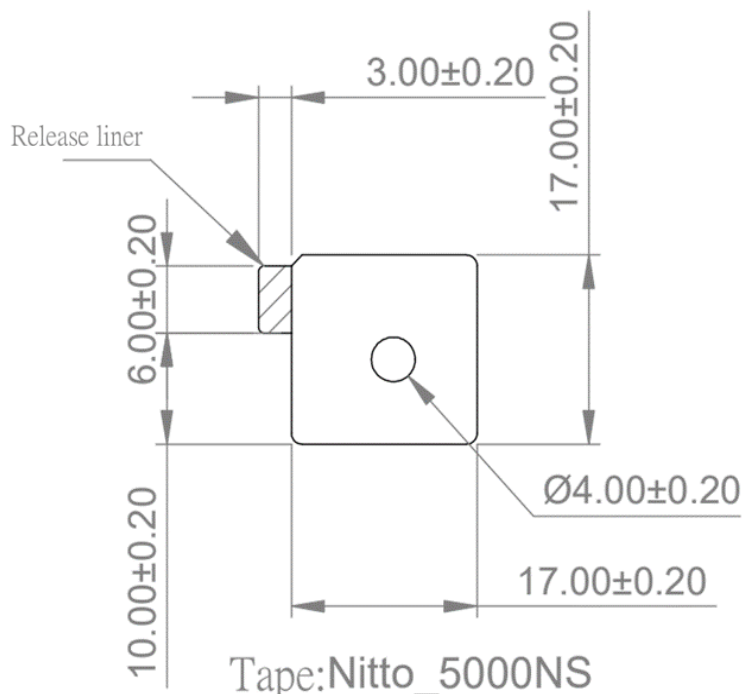
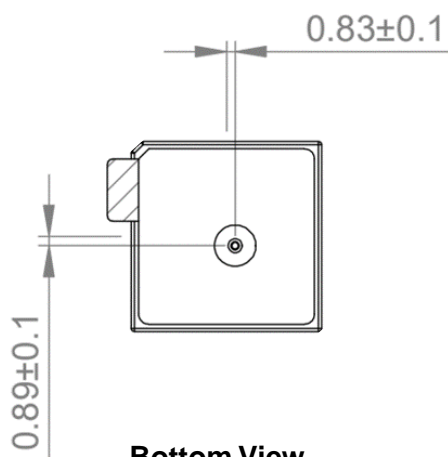
**Top View**



**Side View**



**Bottom View**



Tape: Nitto\_5000NS

**Adhesive Liner View (Bottom)**