

# Part No. 9003212C0-AA12L0100

## GPS L1/L5 Patch Antenna (Active)

1164 MHz - 1214 MHz , 1559 MHz – 1610 MHz

Supports: GNSS systems, Global antenna embedded systems, Satellite positioning systems



KYOCERA AVX series of Patch Antennas deliver on the key needs of device designers for higher functionality and performance in IoT environment.

This Stacked Patch Active GPS Antenna covers L1/L5 bands. This antenna can easily be mounted into devices via its cable with MHF connector.

### GPS L1/L5 Patch Antenna (Active)

1164 MHz -1189 MHz (GPS L5)  
 1559 MHz – 1610 MHz (GPS L1)

#### 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

- Telematics
- M2M / IoT
- Industrial devices
- Security (Defense, Marine)
- Geo-tracking
- Autonomous Vehicles
- Agriculture
- Metering
- RTK
- Navigation Devices
- Vehicle tracking/fleet management system

### Electrical Specifications

Typical Characteristics antenna measured in Free Space with a cable of 100 mm

Frequency (MHz)	1164 – 1189	1559 – 1610
VSWR	2	2
Peak Gain	27 dBi	32 dBi
Gain Zenith	27 dBi	32 dBi
Axial Ratio	10 dB	7 dB

### Mechanical Specifications & Ordering Part Number

Ordering Part Number	9003212C0-AA12L0100
Dimensions (mm)	25 x 25 x 12.12
Mounting Type	Adhesive (TESA 4965)
Connector Type	IPEX MHFI
Cable length	100
Weight (grams)	23
Variant	9003212C0-AC12L0100 (MHF 4L version)
Packaging	Tray

GPS L1/L5 KYOCERA AVX Active Patch Antenna Specifications.  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

### Filter/ LNA Electrical Summary

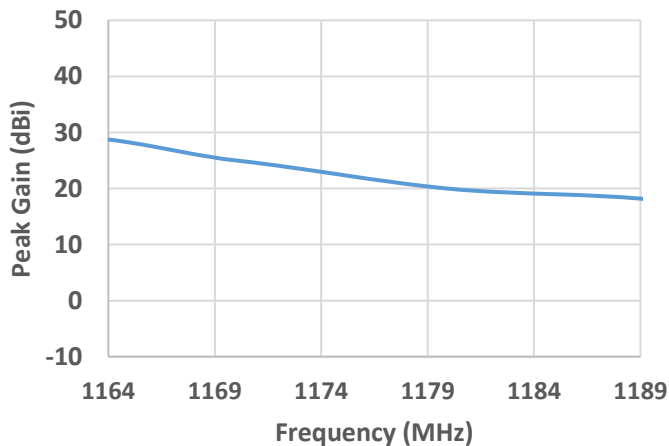
Typical performance measured with 100mm cable length in Free Space

Bands (MHz)	1164 - 1189	1559 - 1610
LNA/ Filter Gain	30.0 ± 3.0 dB	30.0 ± 3.0 dB
Operation Voltage (Vcc)	3.0 ~ 5.0 V	3.0 ~ 5.0 V
Current (lin)	24.0 ± 3.0 nA	24.0 ± 3.0 nA
Output VSWR	2.0 typ	2.0 typ
Operation Temperature	-40~ +85 °C	-40~ +85 °C

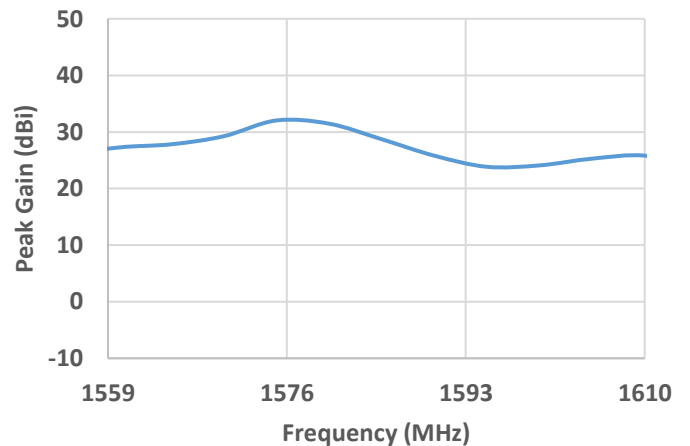
### Peak Gain Plots

Typical performance measured in Free Space

Peak Gain (1164-1189 MHz)



Peak Gain (1559-1610 MHz)

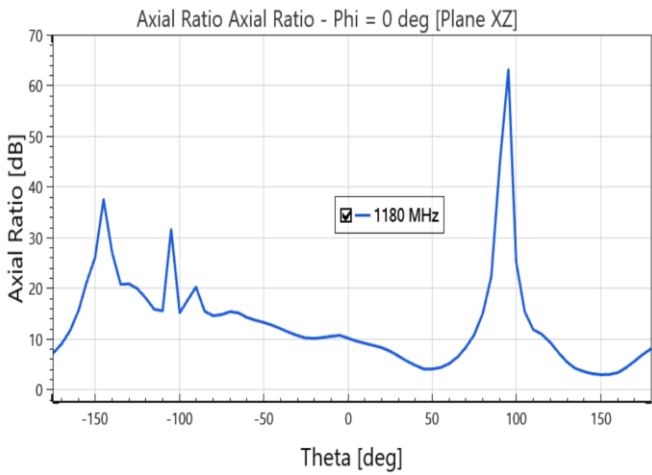


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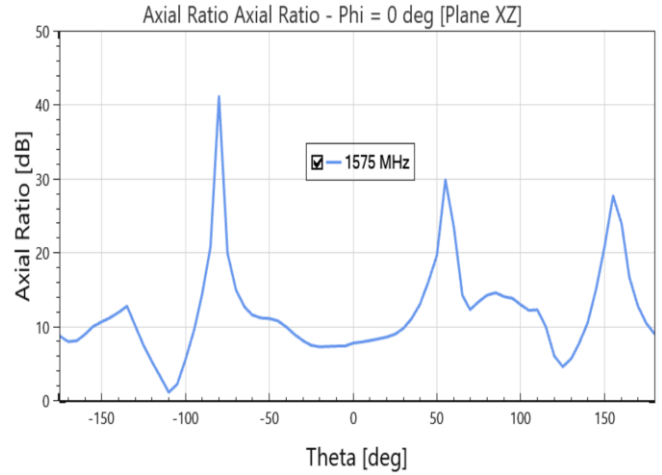
**Gain Zenith Data, Axial Ratio Data**

Typical performance measured with 100mm cable length in Free Space

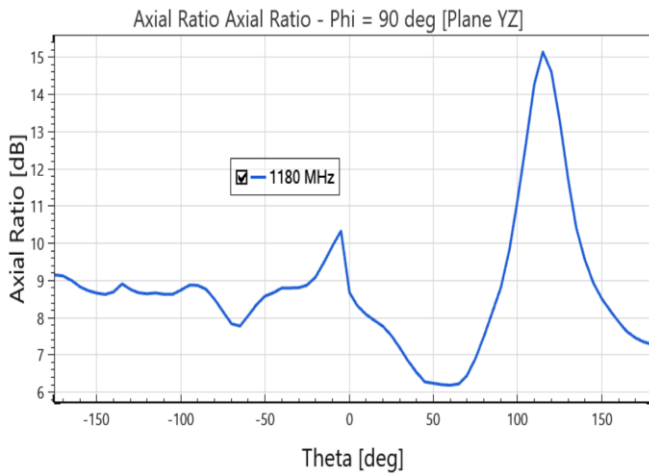
**Axial Ratio Data (1164 -1189 MHz) - 0 deg**



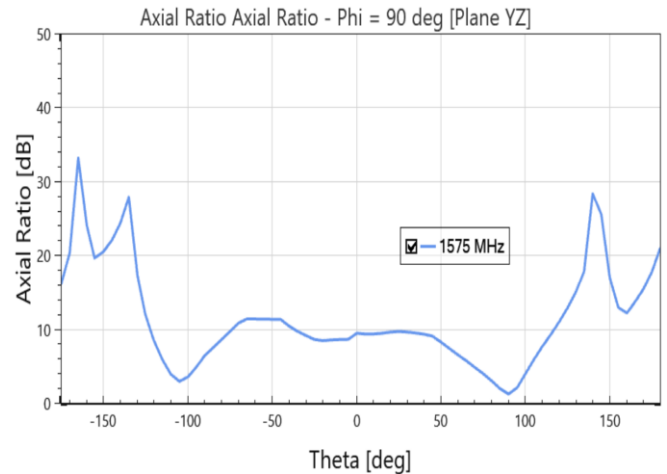
**Axial Ratio Data (1559 -1610 MHz) - 0 deg**



**Axial Ratio Data (1164 -1189 MHz) - 90 deg**



**Axial Ratio Data (1559 -1610 MHz) - 90 deg**

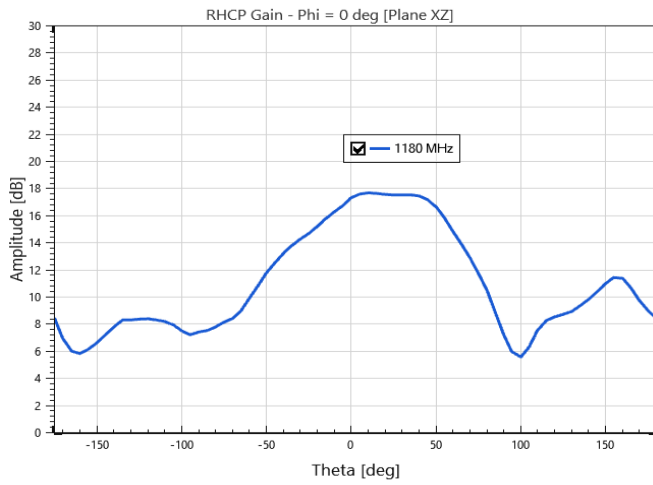


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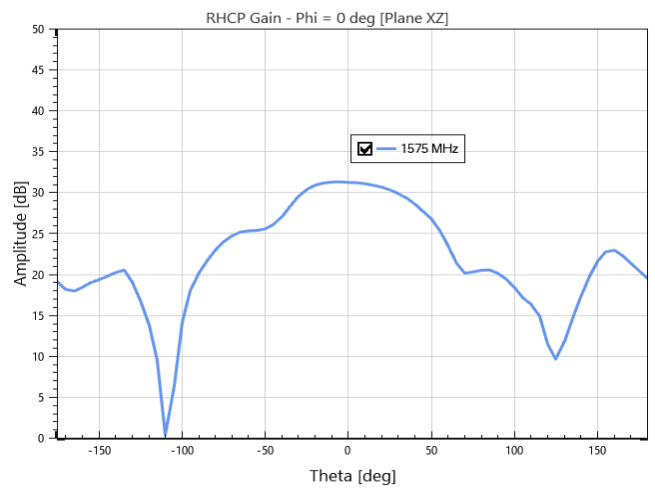
**Gain Zenith**

Typical performance measured with 100mm cable length in Free Space

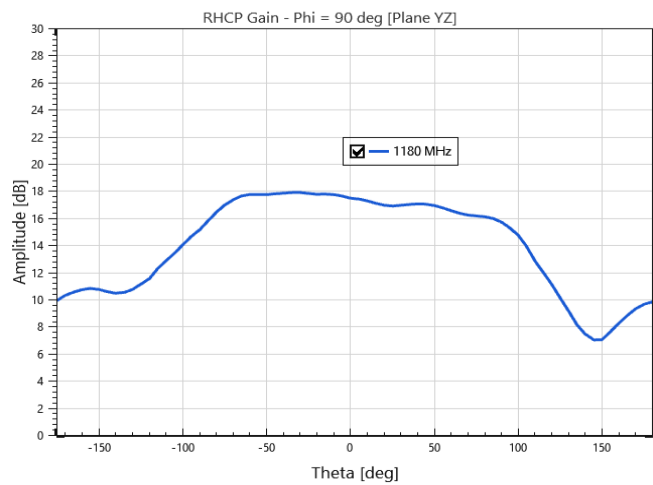
**Gain Zenith Data (1164 -1189 MHz)- 0 deg**



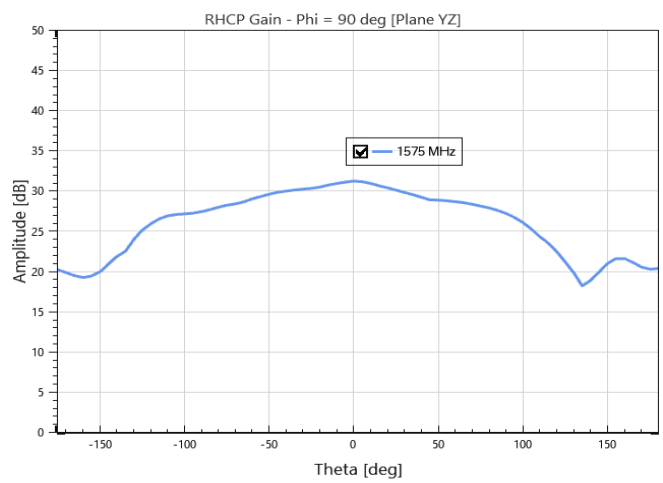
**Gain Zenith Data (1559-1610 MHz)- 0 deg**



**Gain Zenith Data (1164 -1189 MHz)- 90 deg**



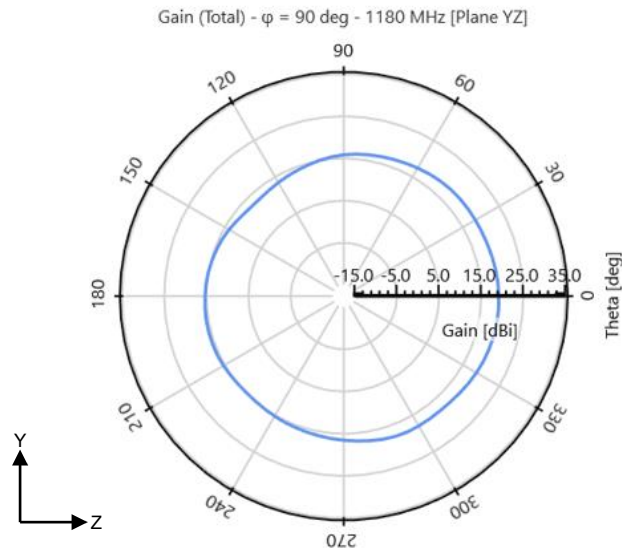
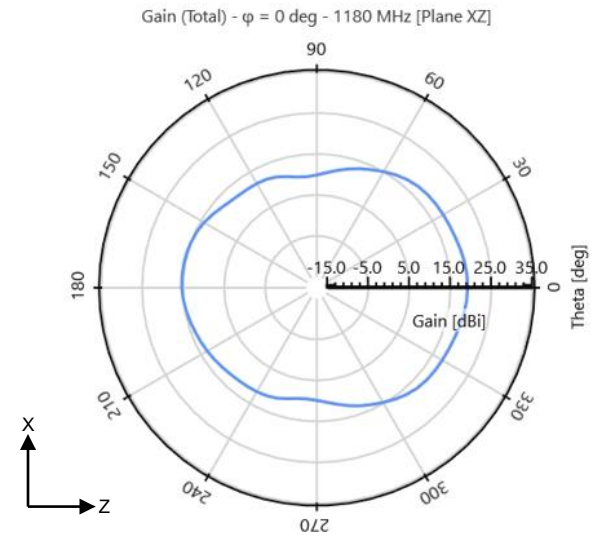
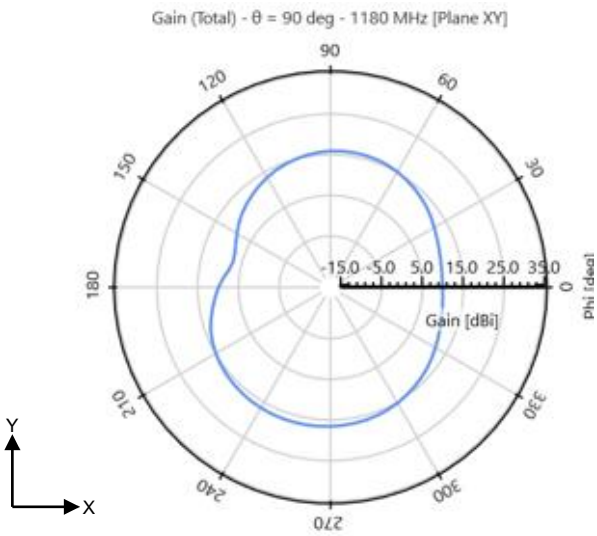
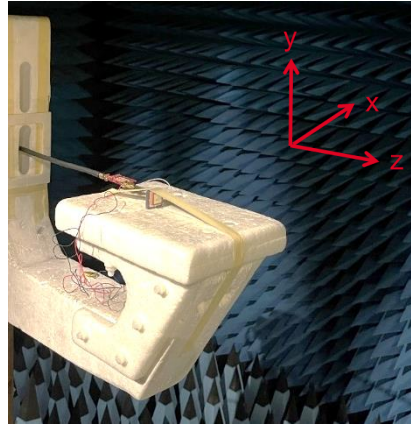
**Gain Zenith Data (1559-1610 MHz)- 90 deg**



**GPS L1/L5 KYOCERA AVX Active Patch Antenna Specifications.**  
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**Antenna Radiation Patterns – L5 Band**

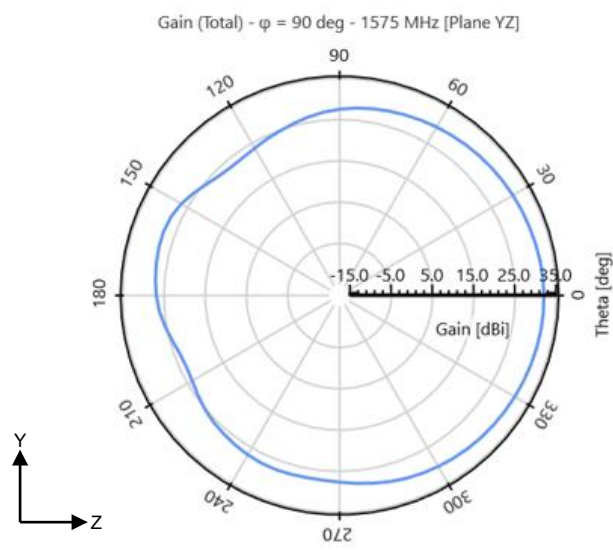
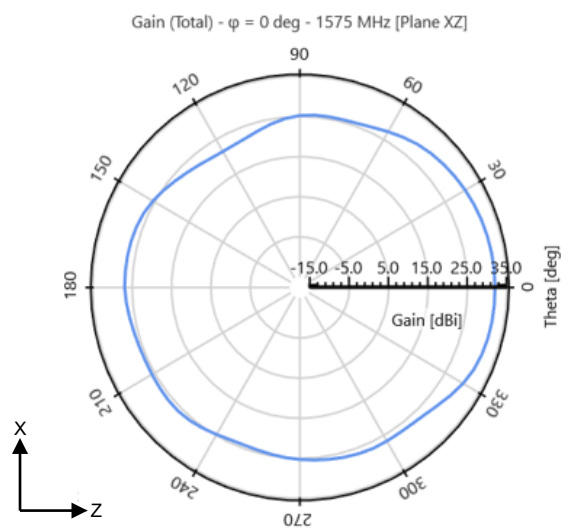
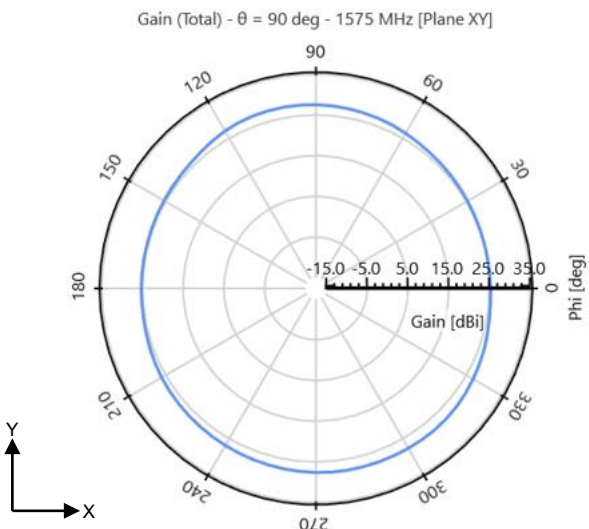
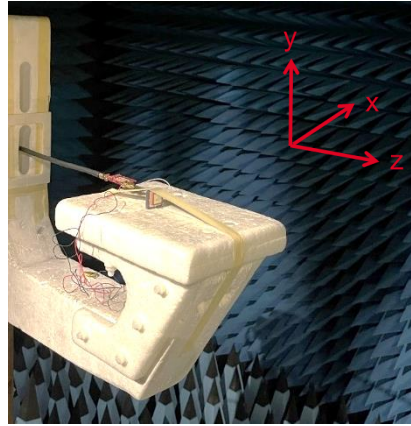
Typical performance measured with 100mm cable length in Free Space at 1180 MHz



**GPS L1/L5 KYOCERA AVX Active Patch Antenna Specifications.**  
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**Antenna Radiation Patterns – L1 Band**

Typical performance measured with 100mm cable length in Free Space at 1575 MHz



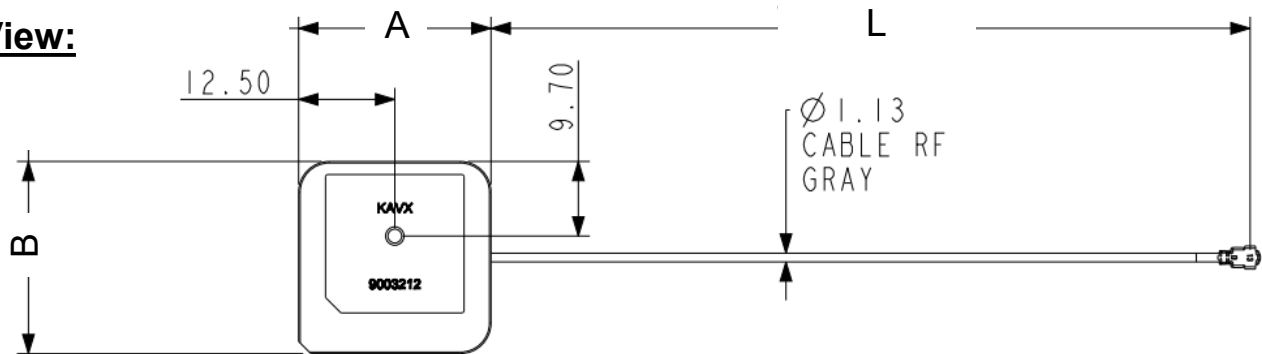
GPS L1/L5 KYOCERA AVX Active Patch Antenna Specifications.  
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**Mechanical Specifications**

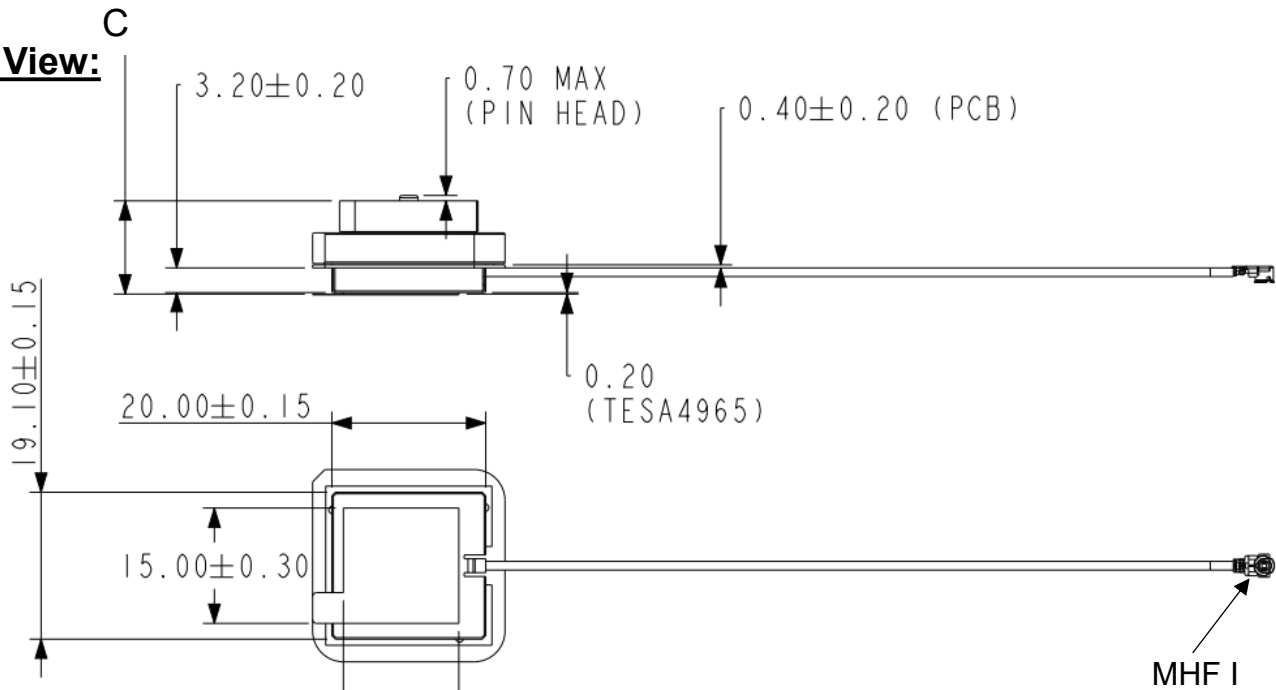
Typical antenna dimensions in mm

Part Number	A	B	C	L (Cable length)	Connector
9003212C0-AA12L0100	25	25	12.12	100 ± 5.0	MHF1
9003212C0-AC12L0100	25	25	12.12	100 ± 5.0	MHF4L

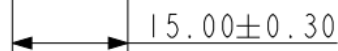
**Top View:**



**Side View:**



**Bottom View:**



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**Mechanical Specifications**

Typical antenna dimensions in mm

