

## Part No. 1001388 / 1001430

### 5 GHz Single Band or UWB Stamped Metal Embedded Antenna

5 GHz / 6 – 8.5 GHz

Supports: Wi-Fi applications, WLAN, UWB



1001388



1001430

#### 5 GHz Single Band or UWB Stamped Metal Embedded Antenna

4900– 5900 MHz or  
6000 – 8500 MHz

#### KEY BENEFITS

##### Stay-in-Tune

KYOCERA AVX antenna technology provides superior RF field containment, resulting in less interaction with surrounding components.

##### 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
- Cellular, Headsets, Tablets
- Gateway, Access Point
- Handheld
- Tracking Healthcare Applications (FDA Class I)
- M2M, Industrial devices
- Smart Grid

KYOCERA AVX 1001388 & 1001430 are the World's SMALLEST 5 GHz High Performance Stamped Metal antennas. These antennas are designed for WLAN MIMO enabled devices including routers, media players, and other mobile communications devices.

The 1001430 UWB Antenna version is characterized by its corner placement on the PCB which makes it ideal for IoT Applications.

#### Real-World Performance and Implementation

KYOCERA AVX Stamped metal antennas are designed to produce optimal performance and 3D radiation patterns, offering increased coverage range without compromising on footprint dimensions.

#### Greater Flexibility

KYOCERA AVX first-in-class technology enables the advance concept designs that deliver superior performance in reception critical applications.

#### Electrical Specifications

Typical performance on 75 x 75 mm PCB

| Frequency (MHz)      | 5150 - 5825        |         | 6000 - 8500 |
|----------------------|--------------------|---------|-------------|
| Part Number #        | 1001388            | 1001430 | 1001430     |
| Peak Gain            | 3.5 dBi            | 4.5 dBi |             |
| Average Efficiency   | 73%                | 72%     |             |
| Return Loss in dB    | < -10 dB           |         |             |
| Feed Point Impedance | 50 ohms unbalanced |         |             |
| Polarization         | Linear             |         |             |
| Power Handling       | 2.0 Watt CW        |         |             |

Refer to Appendix 1

#### Mechanical Specifications & Ordering Part Number

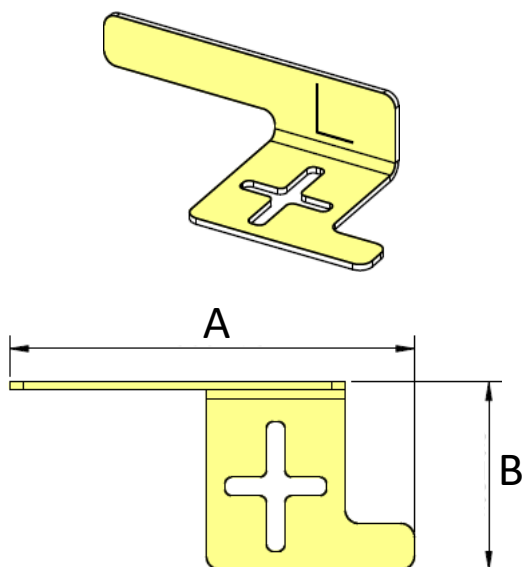
| Ordering Part #      | 1001388                                 | 1001430            |
|----------------------|-----------------------------------------|--------------------|
| Dimensions (mm)      | 8.75 x 4.05 x 2.01                      | 8.75 x 4.05 x 2.01 |
| Mounting Type        | SMT                                     |                    |
| Weight (grams)       | 0.025                                   |                    |
| Packaging            | Tape & Reel, 2K pcs/Reel                |                    |
| Demo Board           | 1003666-01 (Wi-Fi)<br>1001430-04 (UWB)  |                    |
| Additional Resources | <a href="#">Download DXF and Gerber</a> |                    |

5 GHz Stamped Metal KYOCERA AVX Embedded Antenna Specifications  
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

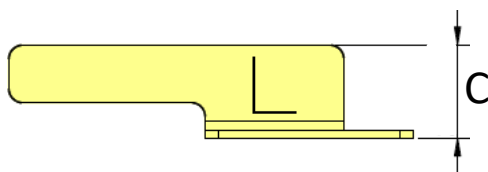
### Antenna Dimensions (1001388)

Typical antenna dimensions (mm)

| Part Number | A (mm)         | B (mm)         | C (mm)         |
|-------------|----------------|----------------|----------------|
| 1001388     | $8.75 \pm 0.3$ | $4.05 \pm 0.3$ | $2.01 \pm 0.3$ |

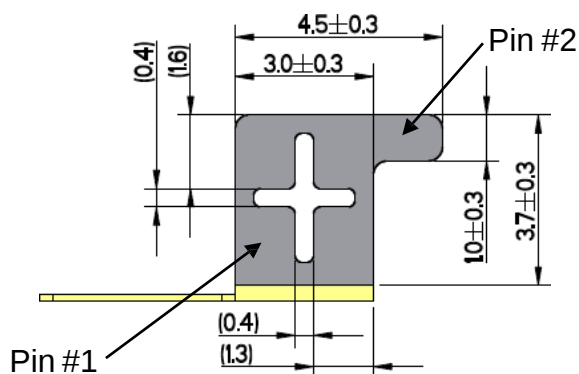


**Top View**



**Height**

| Pin# | Description |
|------|-------------|
| 1    | Feed        |
| 2    | Ground      |



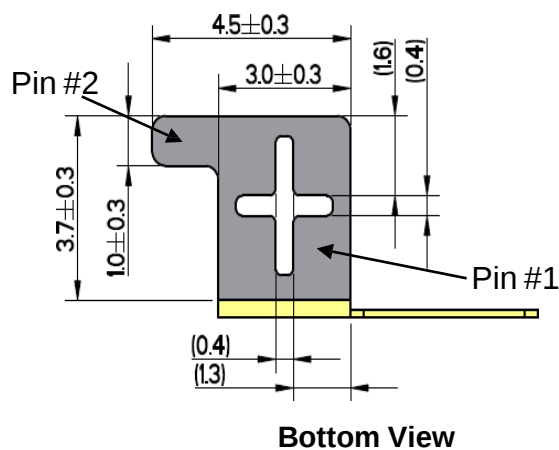
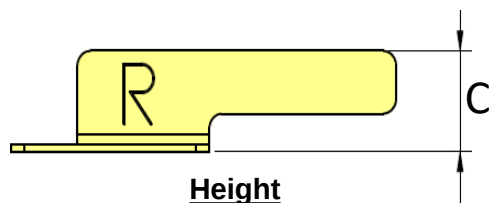
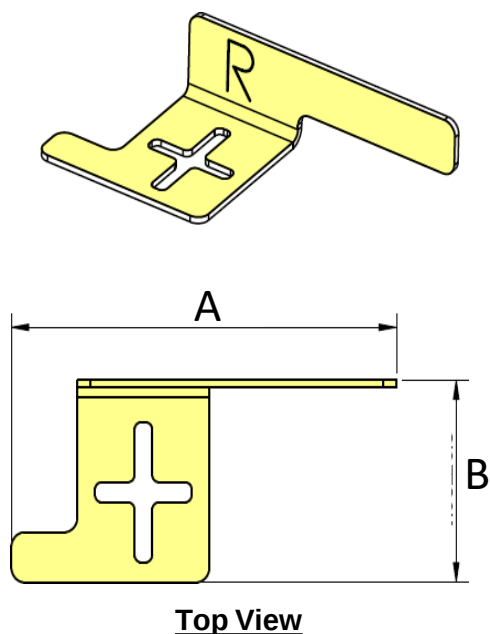
**Bottom View**

5 GHz or UWB Stamped Metal KYOCERA AVX Embedded Antenna Specifications  
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### Antenna Dimensions (1001430)

Typical antenna dimensions (mm)

| Part Number | A (mm)         | B (mm)         | C (mm)         |
|-------------|----------------|----------------|----------------|
| 1001430     | $8.75 \pm 0.3$ | $4.05 \pm 0.3$ | $2.01 \pm 0.3$ |



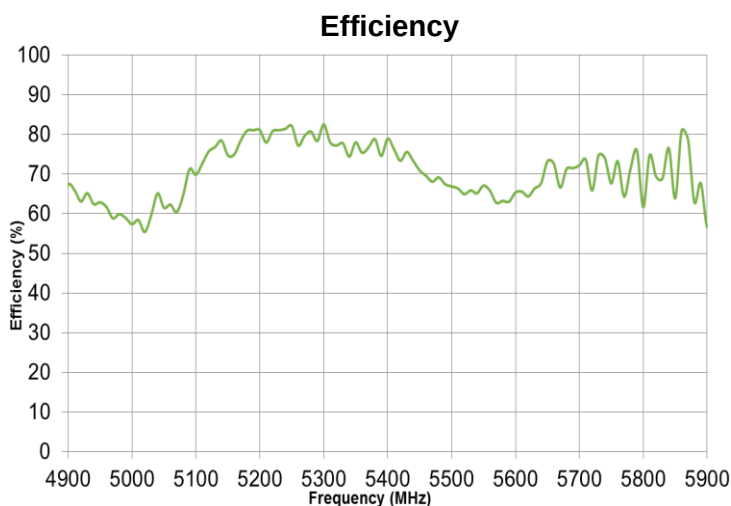
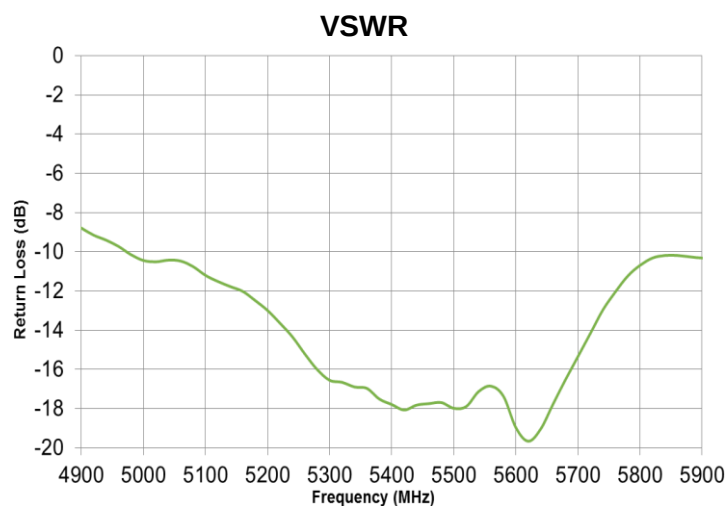
| Pin# | Description |
|------|-------------|
| 1    | Feed        |
| 2    | Ground      |

## 5 GHz Stamped Metal KYOCERA AVX Embedded Antenna Specifications

KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

### Return Loss and Efficiency Plots (1001388)

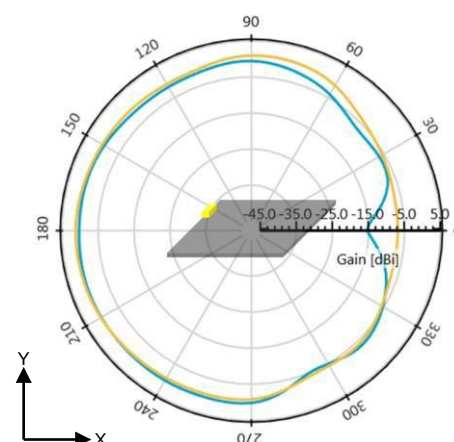
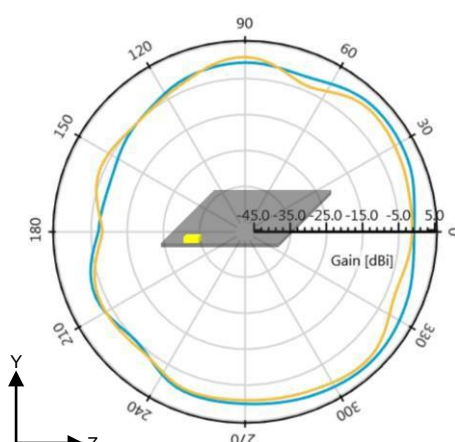
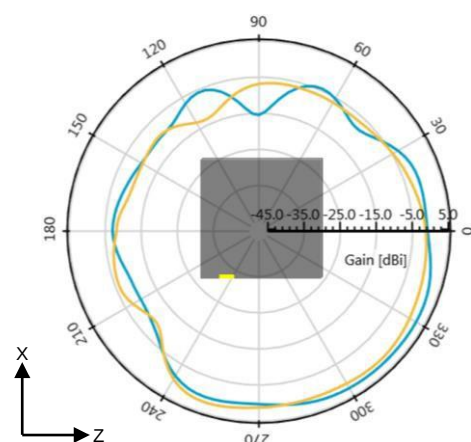
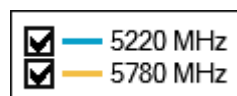
Typical performance on 75 x 75 mm PCB



### Antenna Radiation Patterns (1001388)

Typical performance on 75 x 75 mm PCB

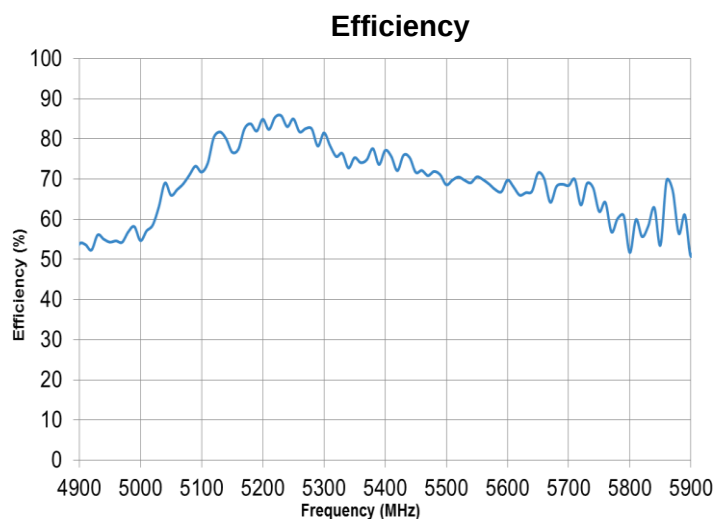
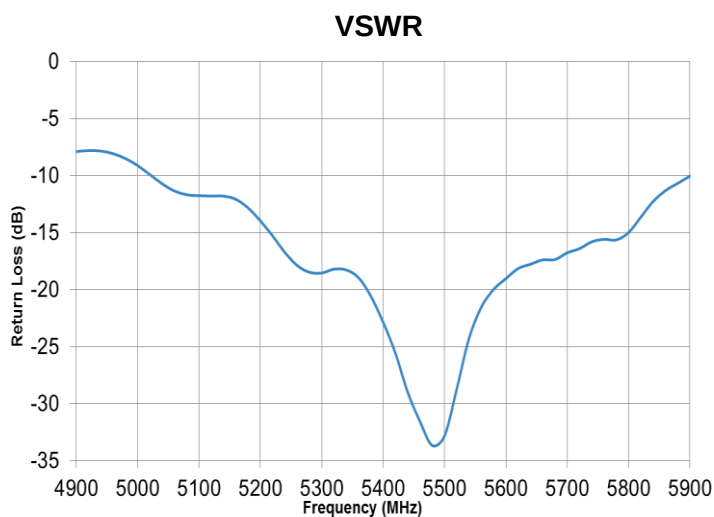
Measured @ 5220, 5780 MHz



**5 GHz Stamped Metal KYOCERA AVX Embedded Antenna Specifications**  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

**Return Loss and Efficiency Plots (1001430)**

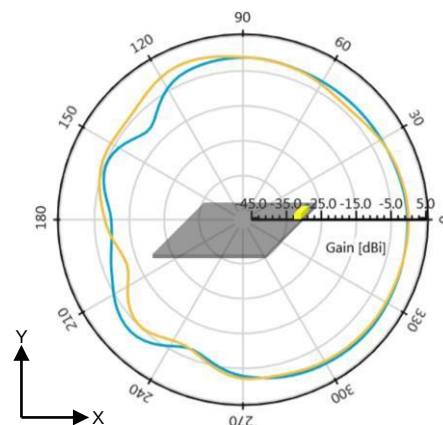
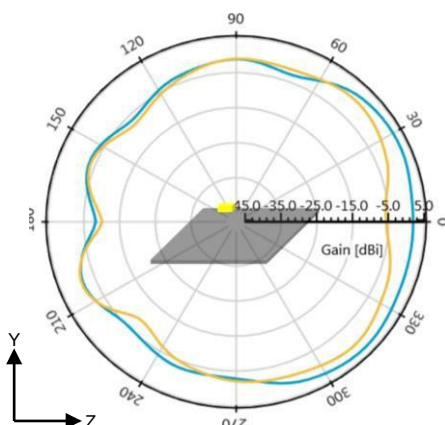
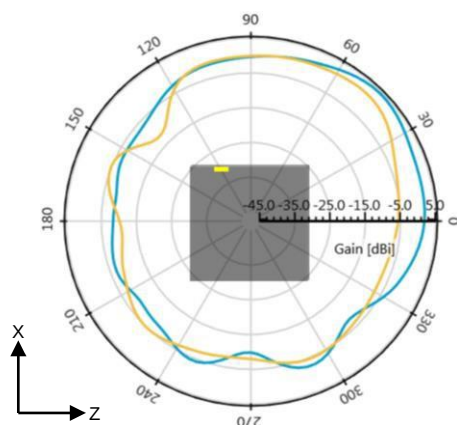
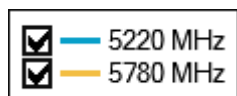
Typical performance on 75 x 75 mm PCB



**Antenna Radiation Patterns (1001430)**

Typical performance on 75 x 75 mm PCB

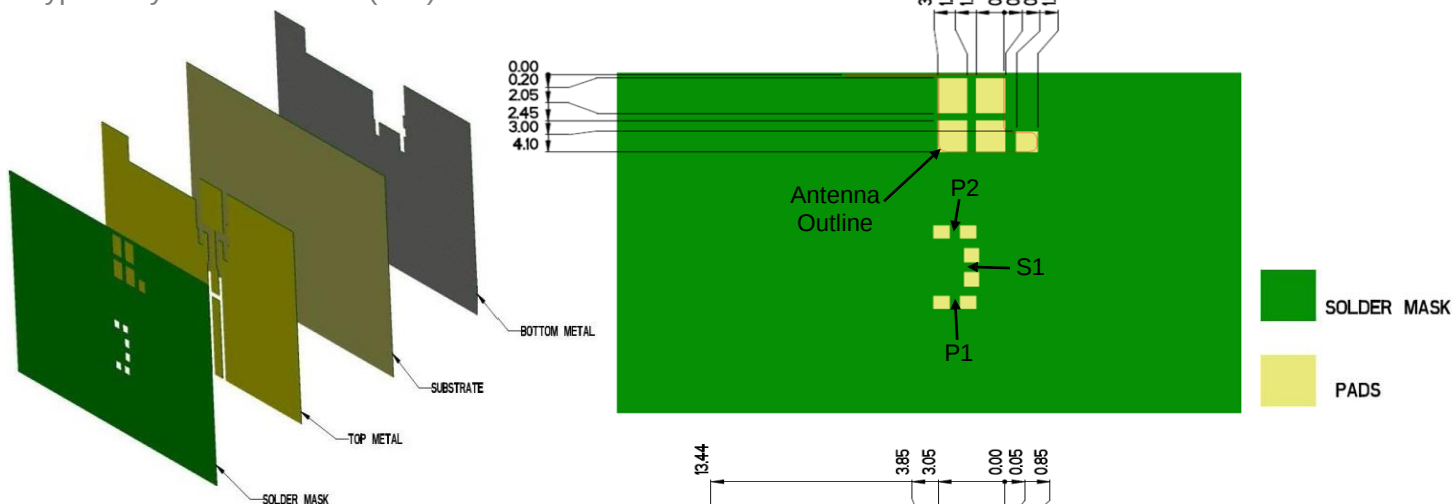
Measured @ 5220, 5780 MHz



5 GHz Stamped Metal KYOCERA AVX Embedded Antenna Specifications  
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### Antenna Layout (1001388)

Typical layout dimensions (mm)



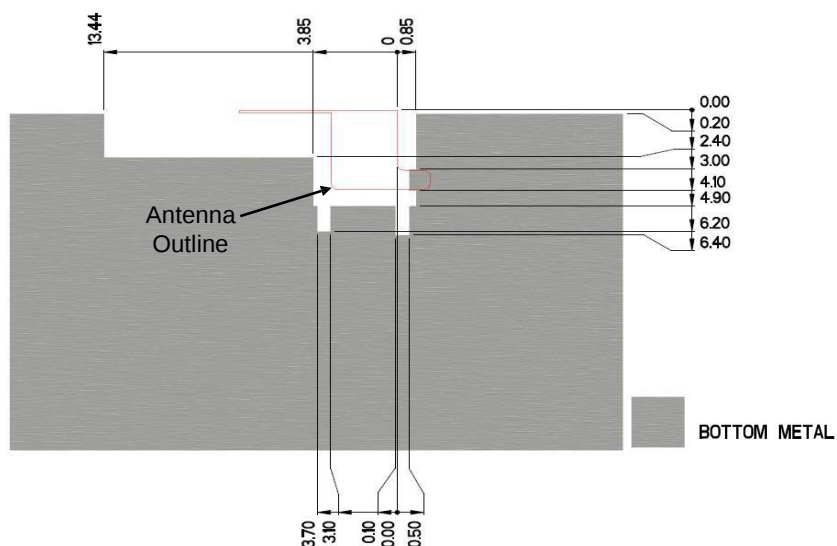
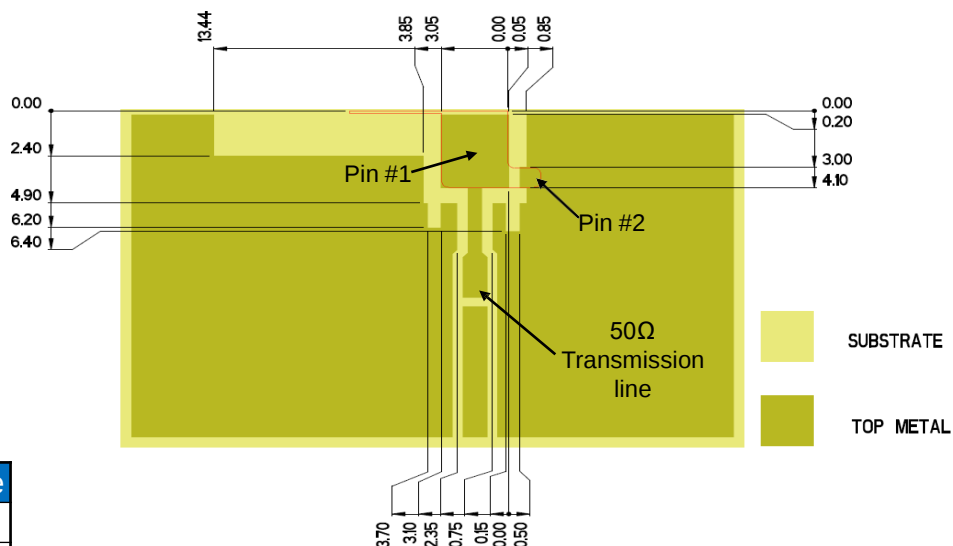
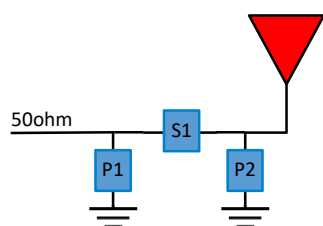
### Pin Descriptions

| Pin# | Description |
|------|-------------|
| 1    | Feed        |
| 2    | Ground      |

### Matching Pi Network (Demo Board)

| Component | Value | Tolerance |
|-----------|-------|-----------|
| P1        | DNI   | DNI       |
| S1        | 0Ω    | N/A       |
| P2        | DNI   | DNI       |

\*Actual matching values depend on customer design

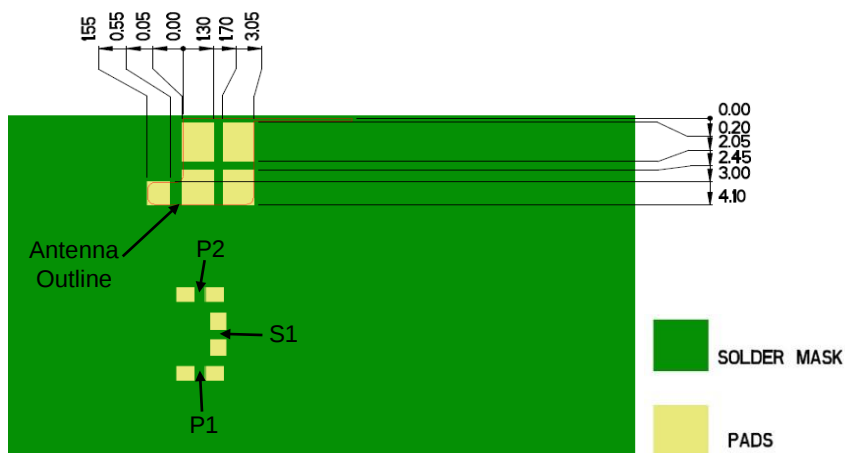
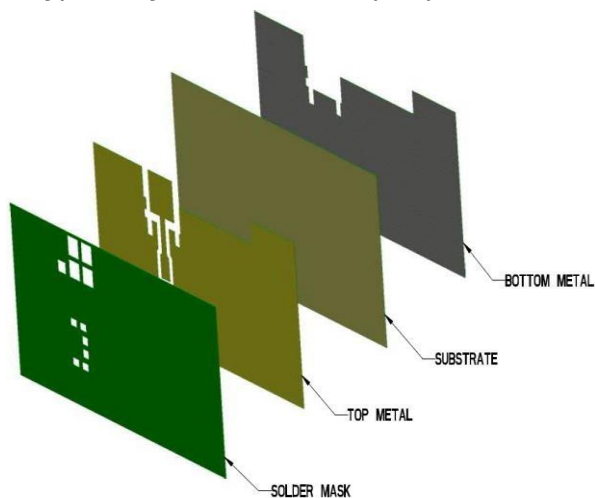


## 5 GHz Stamped Metal KYOCERA AVX Embedded Antenna Specifications

KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

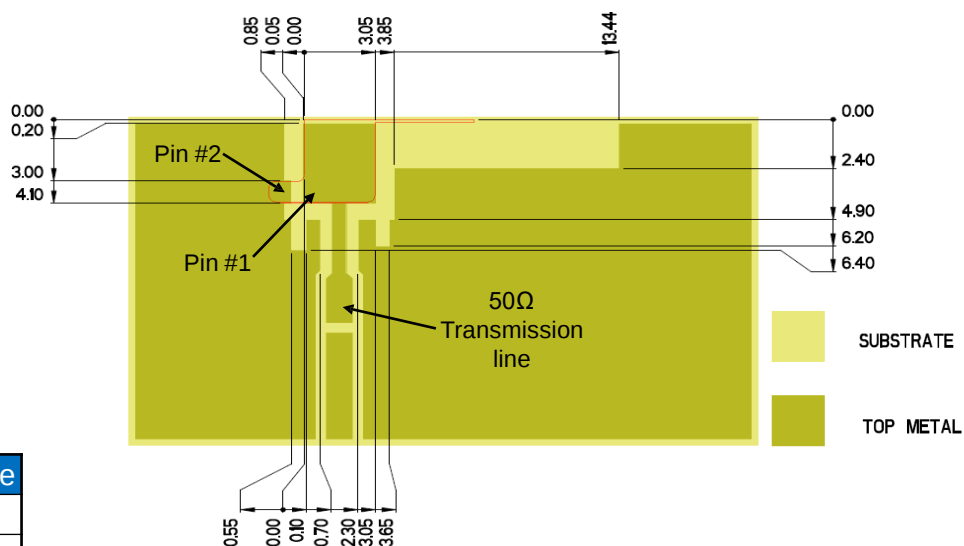
### Antenna Layout (1001430)

Typical layout dimensions (mm)



### Pin Descriptions

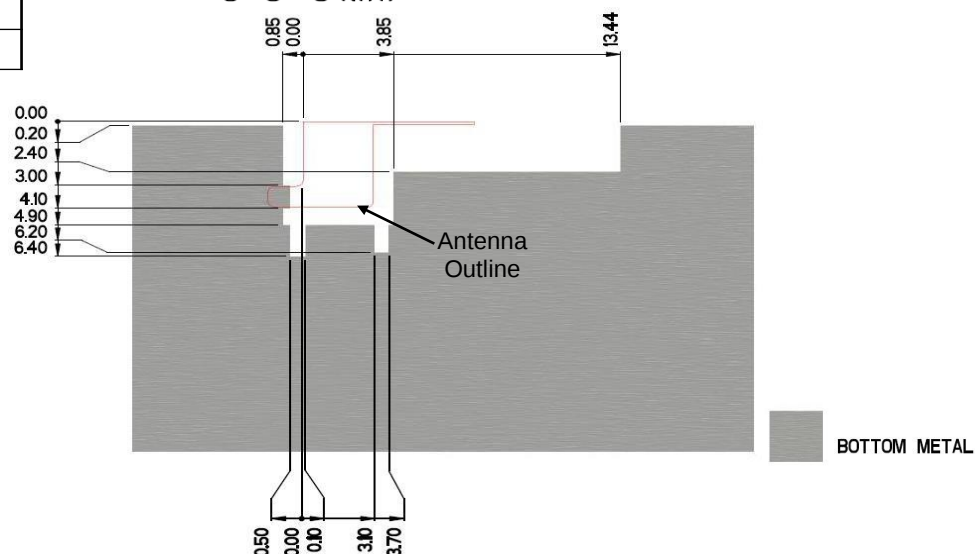
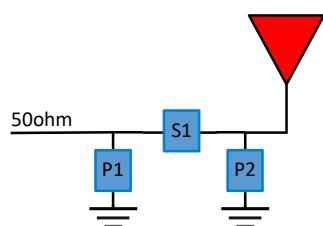
| Pin# | Description |
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| 2    | Ground      |



### Matching Pi Network (Demo Board)

| Component | Value | Tolerance |
|-----------|-------|-----------|
| P1        | DNI   | DNI       |
| S1        | 0Ω    | N/A       |
| P2        | DNI   | DNI       |

\*Actual matching values depend on customer design

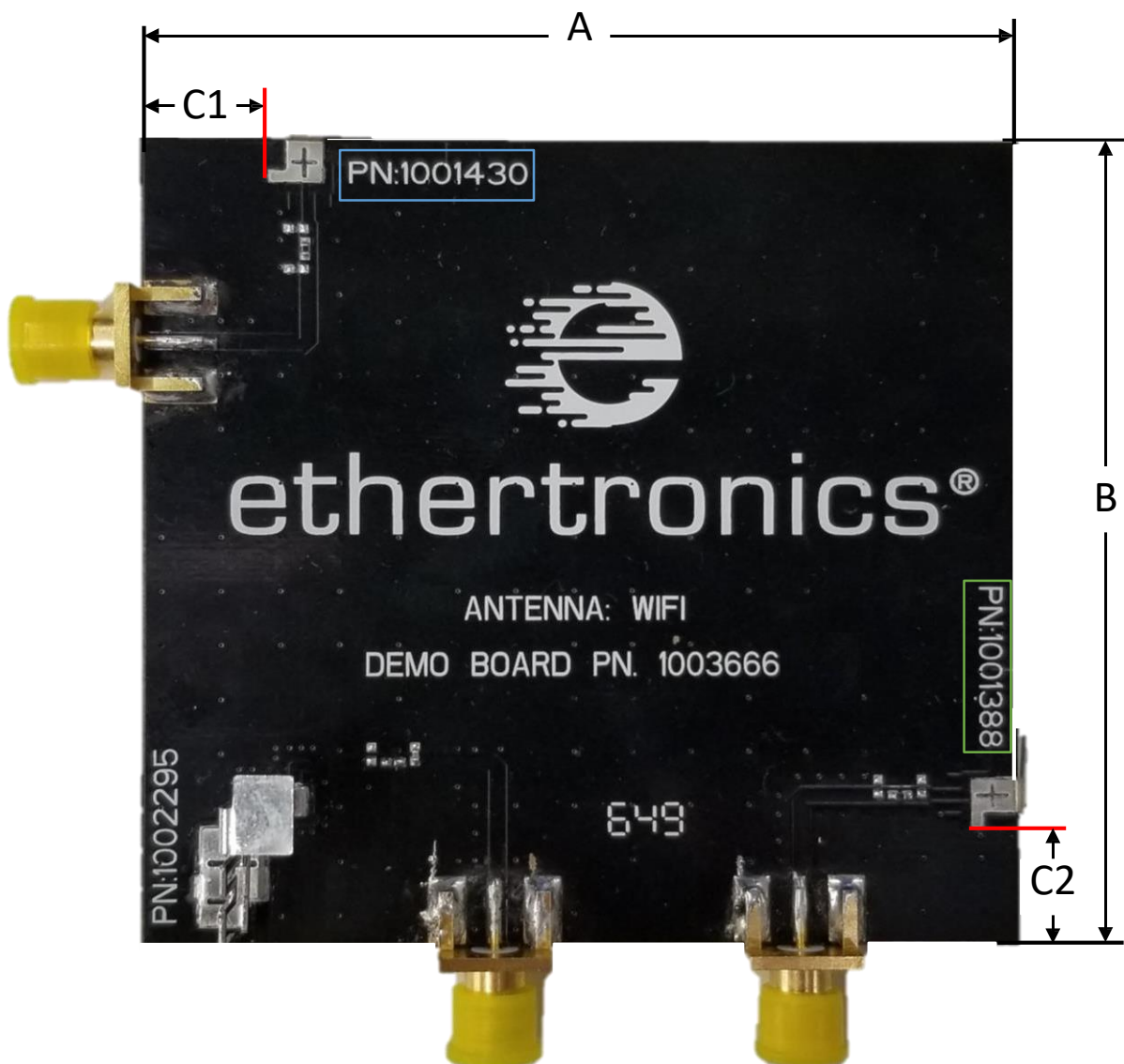


5 GHz Stamped Metal KYOCERA AVX Embedded Antenna Specifications  
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### Antenna Demo Board

Typical layout dimensions (mm)

| Part Number | A (mm) | B (mm) | C1 (mm) | C2 (mm) |
|-------------|--------|--------|---------|---------|
| 1003666-01  | 75.0   | 75.0   | 10.5    | 10.5    |



# Appendix 1

Appendix 1 gives instructions on how to achieve UWB coverage through layout modification.

(6000 – 8500 MHz )

| Frequency (MHz)      | 6000 – 8500 MHz    |
|----------------------|--------------------|
| Peak Gain            | 4.28 dBi           |
| Average Efficiency   | 61.5%              |
| Return Loss Match    | < -5.5 dB          |
| Polarization         | Linear             |
| Power Handling       | 2W                 |
| Feed Point Impedance | 50 ohms unbalanced |
| Radiation Pattern    | Omnidirectional    |

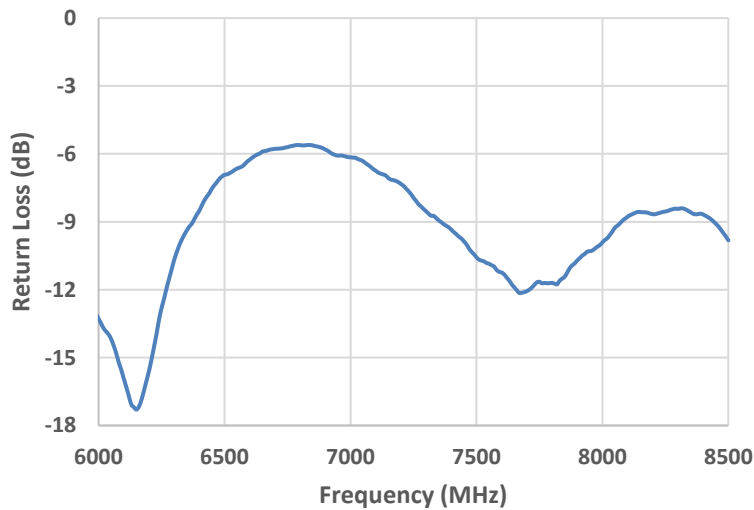
\*Data shown above has Appendix 1 matching applied on 65 x 35 mm PCB.

UWB Stamped Metal KYOCERA AVX Embedded Antenna Specifications  
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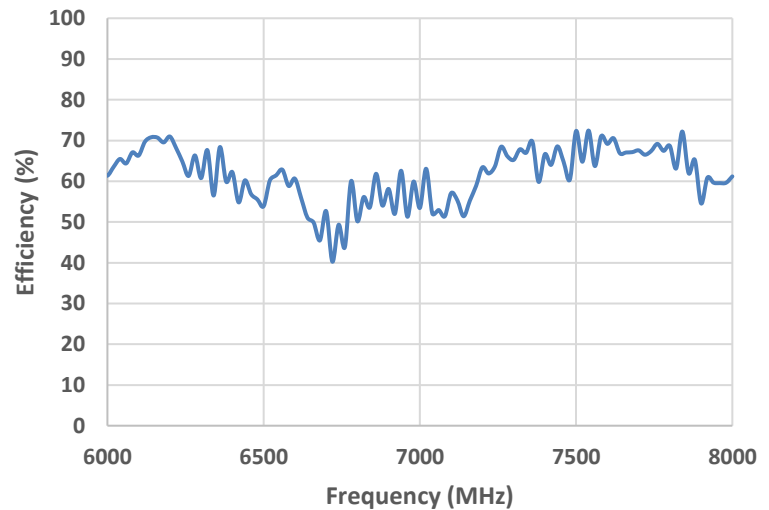
Return Loss and Efficiency Plots (1001430)

Typical performance on 65 x 35 mm PCB

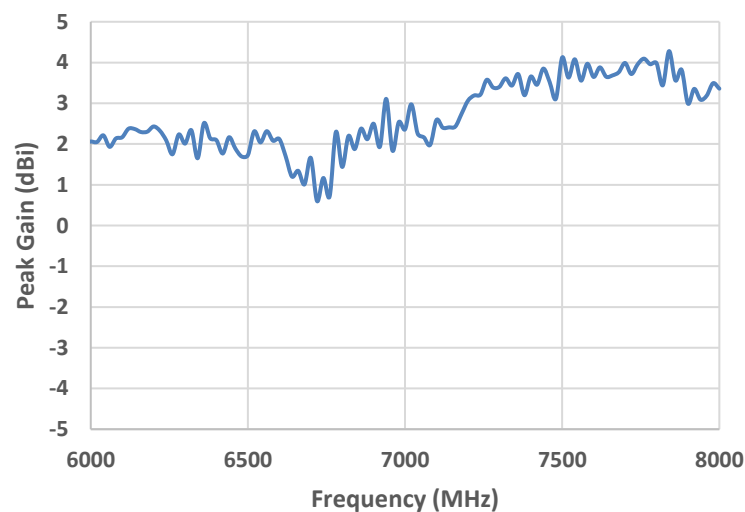
Return Loss (6000 – 8500 MHz)



Efficiency (6000 – 8000 MHz)



Peak Gain (6000 – 8000 MHz)

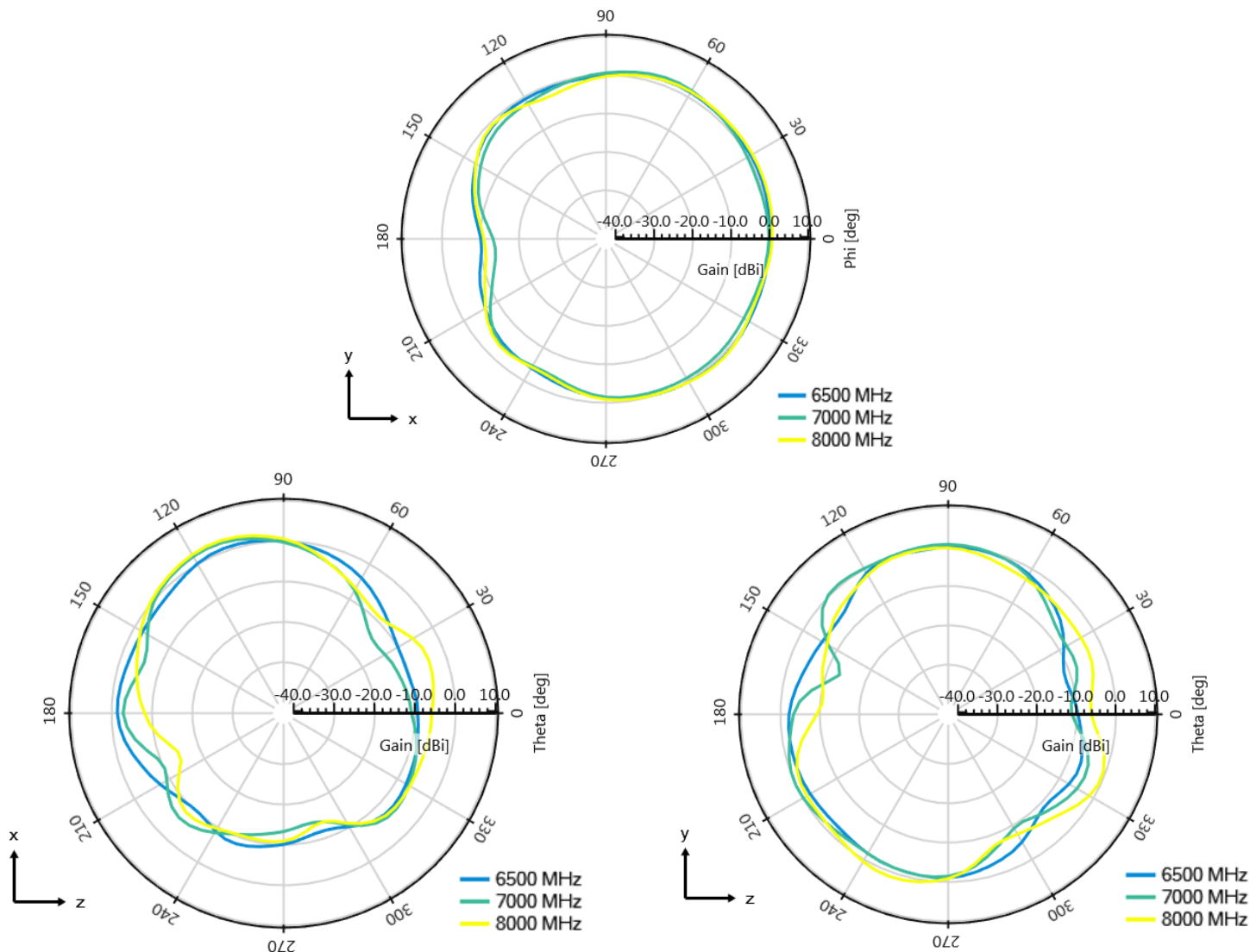
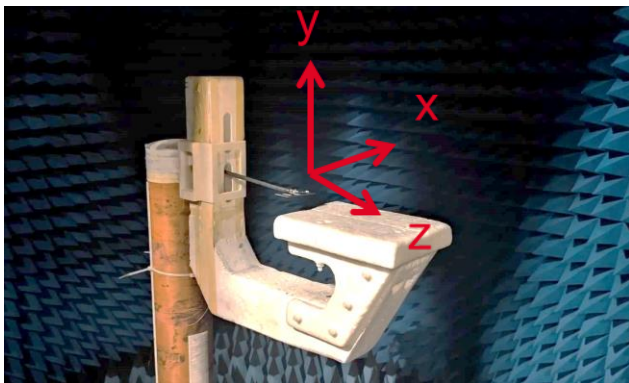


**UWB Stamped Metal KYOCERA AVX Embedded Antenna Specifications**  
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**Antenna Radiation Patterns (1001430)**

Typical performance on 65 x 35 mm PCB

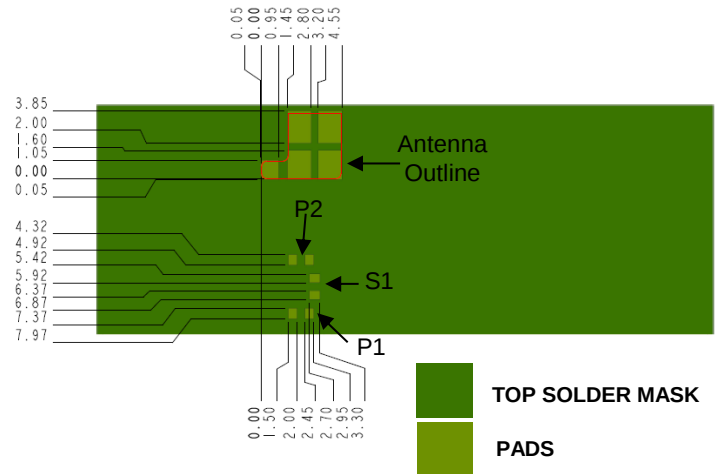
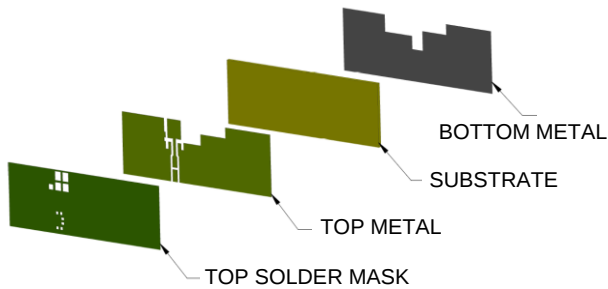
Measured @ 6500, 7000, 8000 MHz



**UWB Stamped Metal KYOCERA AVX Embedded Antenna Specifications**  
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### Antenna Layout (1001430)

Typical layout dimensions (mm)



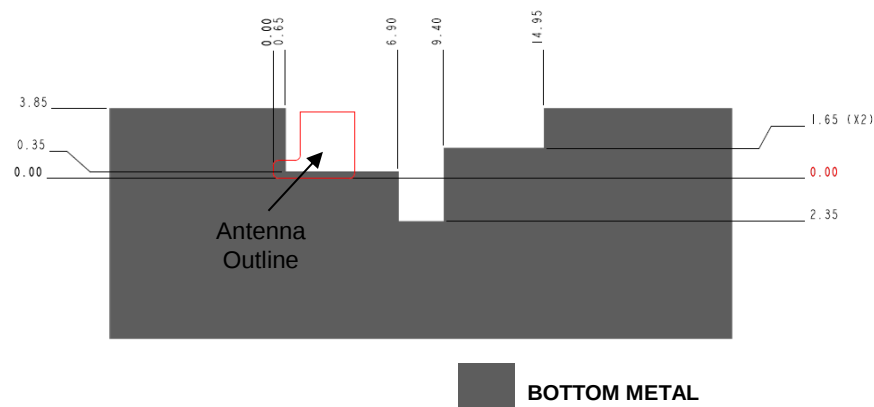
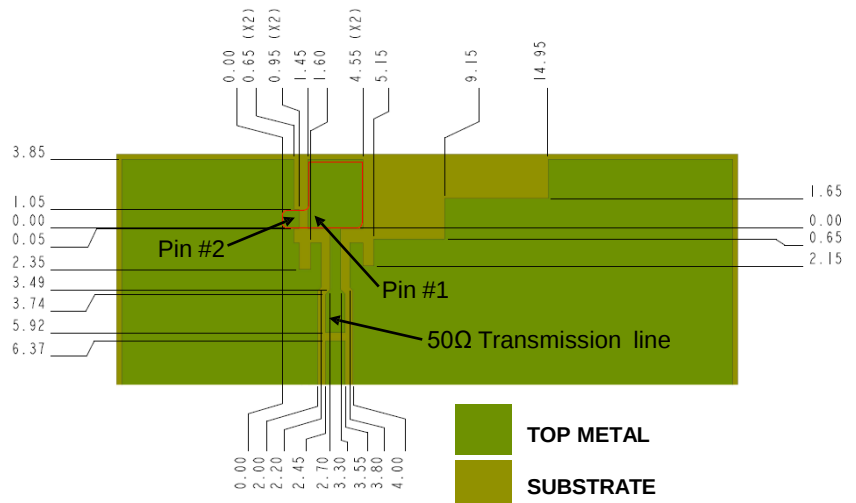
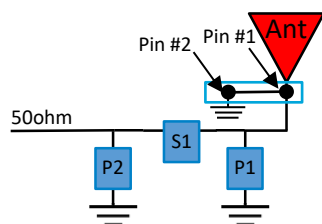
### Pin Descriptions

| Pin# | Description |
|------|-------------|
| 1    | Feed        |
| 2    | Ground      |

### Matching Pi Network (Demo Board)

| Component | Value | Tolerance |
|-----------|-------|-----------|
| P1        | DNI   | DNI       |
| S1        | 0Ω    | N/A       |
| P2        | DNI   | DNI       |

\*Actual matching values depend on customer design

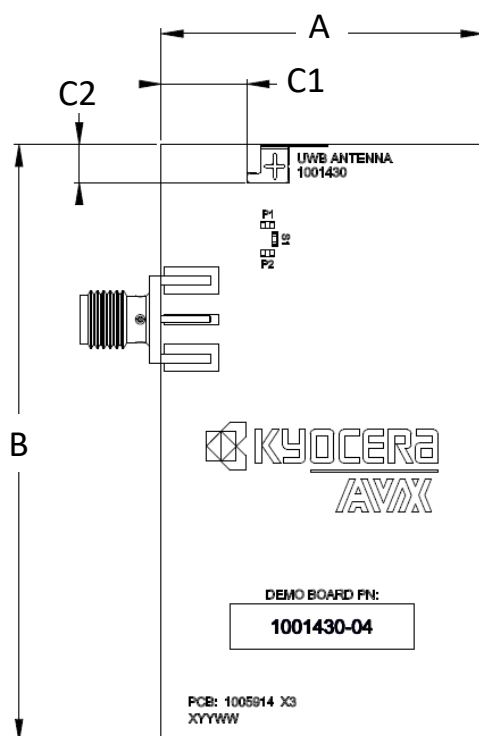


UWB Stamped Metal KYOCERA AVX Embedded Antenna Specifications  
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### Antenna Demo Board

Typical layout dimensions (mm)

| Part Number | A (mm) | B (mm) | C1 (mm) | C2 (mm) |
|-------------|--------|--------|---------|---------|
| 1001430-04  | 35.0   | 65.0   | 9.35    | 4.15    |



**Front View:**

5 GHz or UWB Stamped Metal KYOCERA AVX Embedded Antenna Specifications  
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### Additional Resources – 1001430 Single Band Stamped Metal Embedded Antenna ( Right )

**DXF File:**

[https://www.kyocera-avx.com/download/antennas/3D-DXF/1001430-01\\_3D-DXF.zip](https://www.kyocera-avx.com/download/antennas/3D-DXF/1001430-01_3D-DXF.zip)

**Gerber File:**

[https://www.kyocera-avx.com/download/antennas/GERBER/1001430\\_GERBERS.zip](https://www.kyocera-avx.com/download/antennas/GERBER/1001430_GERBERS.zip)

### Additional Resources – 1001388 Single Band Stamped Metal Embedded Antenna ( Left )

**DXF File:**

[https://www.kyocera-avx.com/download/antennas/3D-DXF/1001388-01\\_3D-DXF.zip](https://www.kyocera-avx.com/download/antennas/3D-DXF/1001388-01_3D-DXF.zip)

**Gerber File:**

[https://www.kyocera-avx.com/download/antennas/GERBER/1001388\\_GERBERS.zip](https://www.kyocera-avx.com/download/antennas/GERBER/1001388_GERBERS.zip)