

Part No. 1002298

Wi-Fi / BT Dual Band Stamped Metal Embedded Antenna

2.4 / 5 GHz

Supports: Wi-Fi applications, Agriculture, Automotive, Bluetooth, Zigbee, WLAN, Smart Home, Healthcare, Digital Signage



Stamped Metal Wi-Fi / BT Embedded Antenna

2.4 GHz; 5 GHz

KEY BENEFITS

Stay-in-Tune

Ethertronics 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.

Reliability

Products are the latest RoHS version compliant.

APPLICATIONS

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

Ethertronics' Stamped Metal antennas deliver on the key needs of device designers for higher functionality and performance in smaller/thinner designs. These innovative antennas provide compelling advantages for WLAN enabled devices, media players, routers, and other wireless devices.

Greater Flexibility

Ethertronics' first-in-class technology enables you to develop concept designs that are more advanced and that deliver superior performance in reception critical applications.

Electrical Specifications

Typical performance on 75 x 75 mm PCB

| Frequency | 2.400 – 2.485 GHz | 5.150 – 5.825 GHz |
|----------------------|--------------------|-------------------|
| Peak Gain | 3.6 dBi | 5.1 dBi |
| Average Efficiency | 78% | 70% |
| VSWR Match | 2.0 :1 max | |
| Feed Point Impedance | 50 ohms unbalanced | |
| Polarization | Linear | |
| Power Handling | 0.5 Watt CW | |

Mechanical Specifications & Ordering Part Number

| Ordering Part # | 1002298 |
|-----------------|---------------------------|
| Dimensions (mm) | 17.95 x 16.1 x 10.55 |
| Mounting Type | SMT (P&P) |
| Weight (grams) | 0.85 |
| Packaging | Tape & Reel, 150 pcs/Reel |
| Demo Board | 1003666-02 |

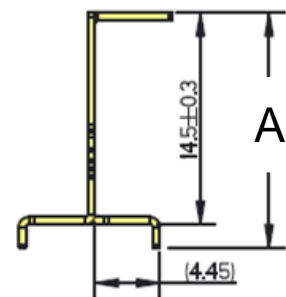
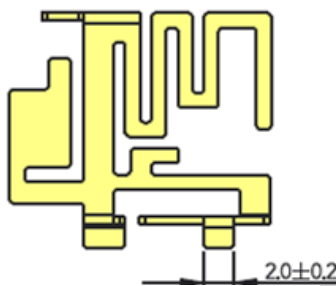
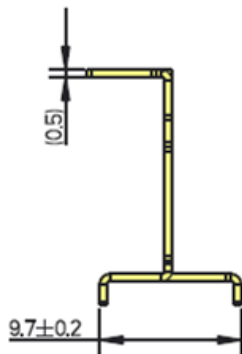
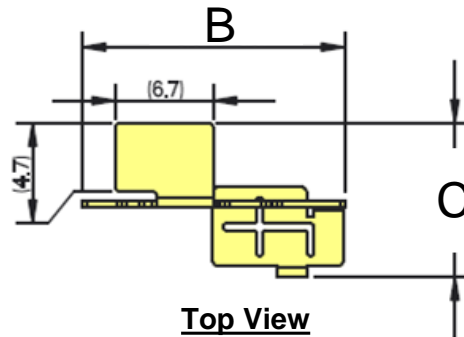
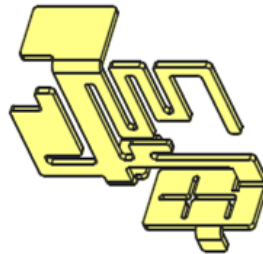


2.4 GHz / 5 GHz Stamped Metal Ethertronics' Embedded Antenna Specifications
Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

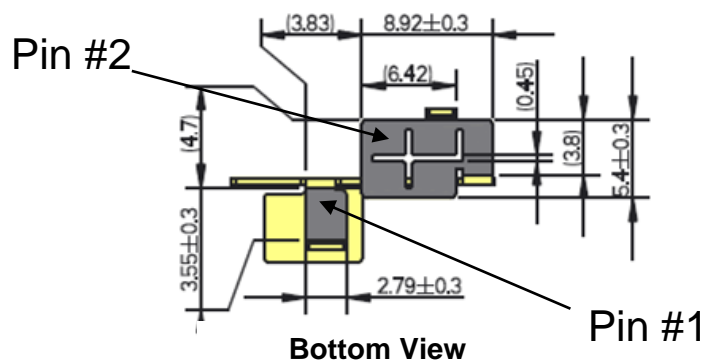
Antenna Dimensions

Typical antenna dimensions (mm)

| Part Number | A (mm) | B (mm) | C (mm) |
|-------------|-------------|------------|-------------|
| 1002298 | 17.95 ± 0.3 | 16.1 ± 0.4 | 10.55 ± 0.4 |



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

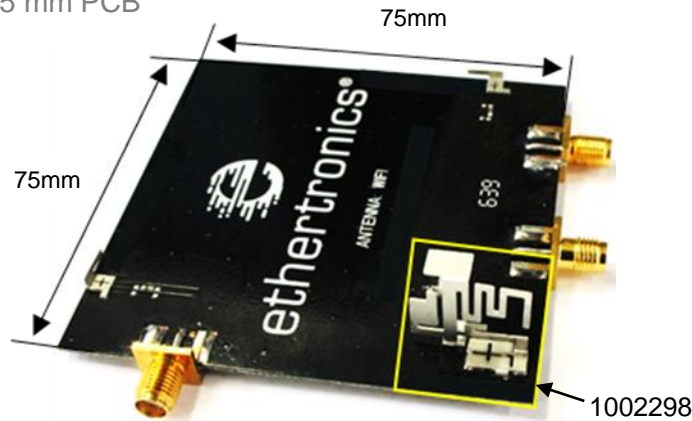




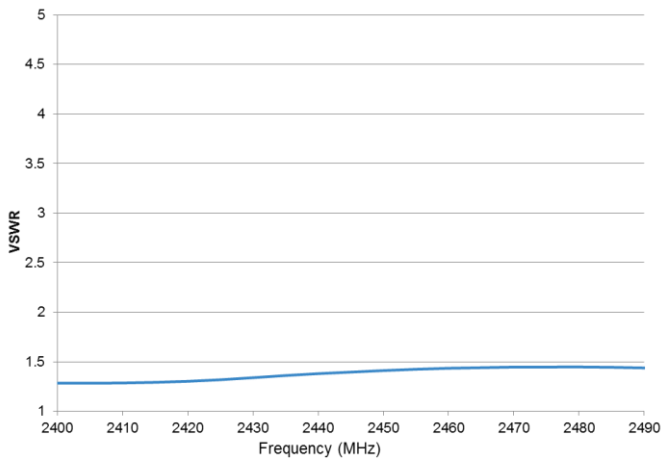
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VSWR and Efficiency Plots

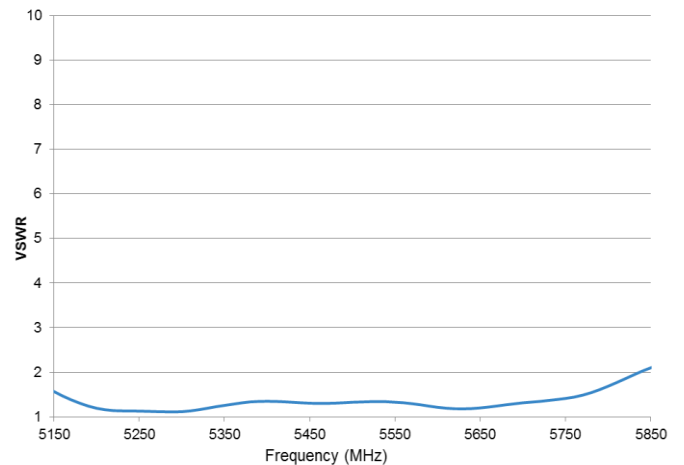
Typical performance on 75 x 75 mm PCB



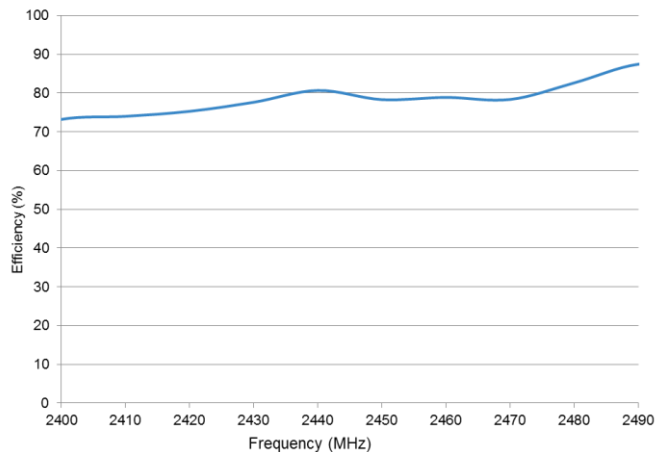
2.4 GHz VSWR



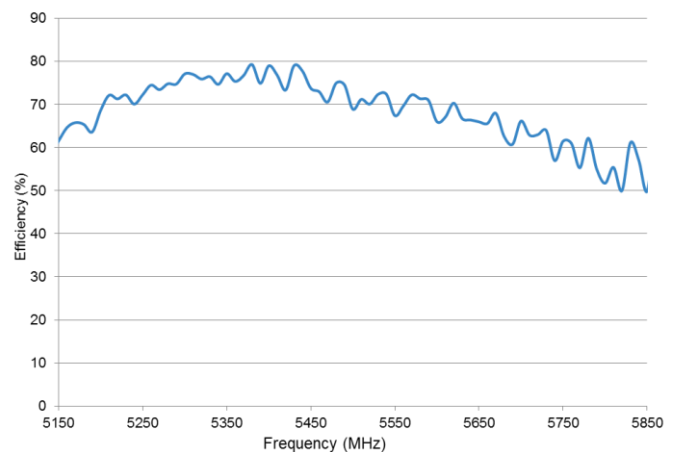
5 GHz VSWR



2.4 GHz Efficiency



5 GHz Efficiency

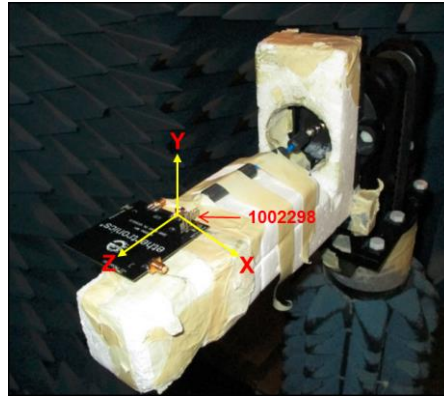




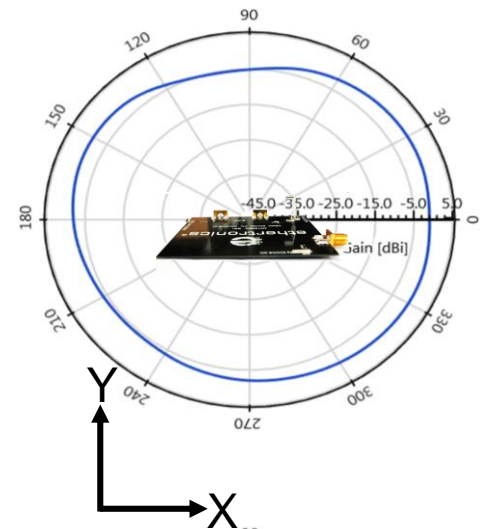
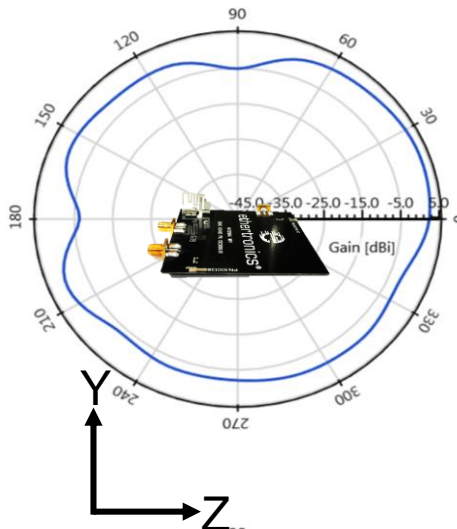
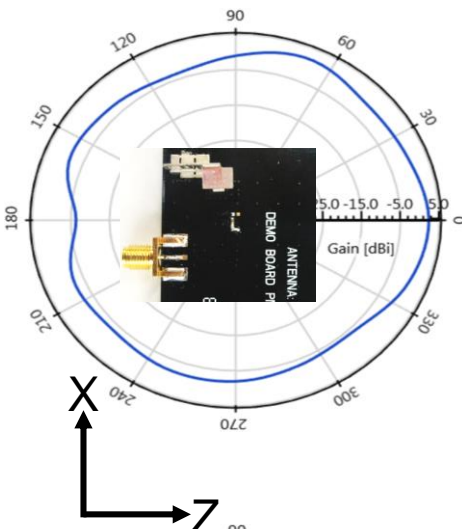
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Antenna Radiation Patterns

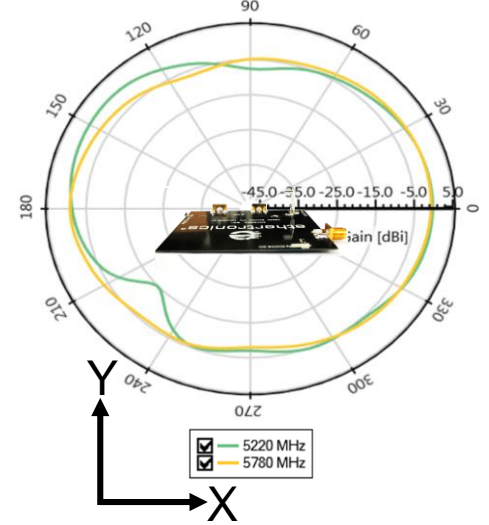
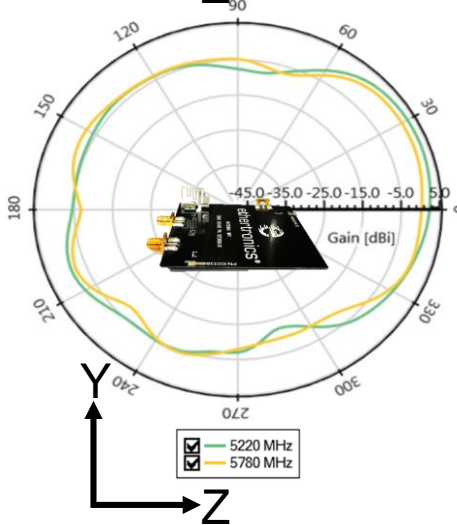
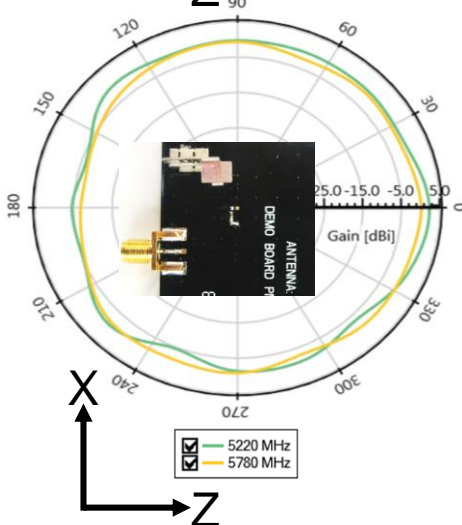
Typical performance on 75 x 75 mm PCB
Measured @ 2.450, 5.220, 5.780 GHz



Measured at 2.45 GHz



Measured at 5.220 & 5.780 GHz

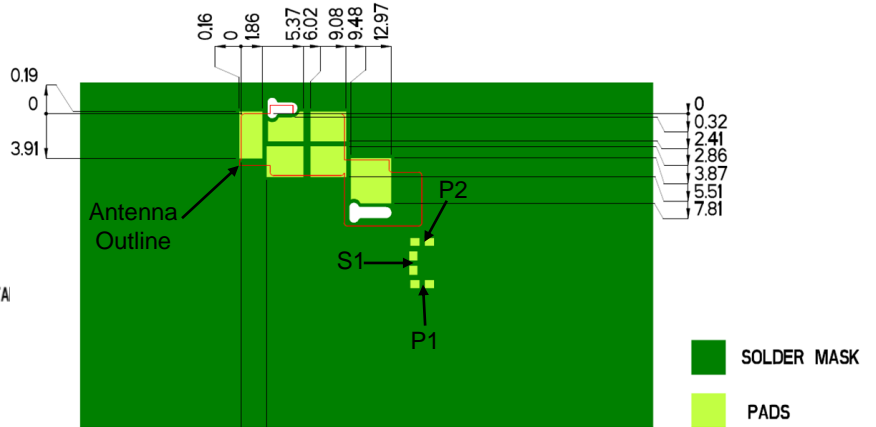
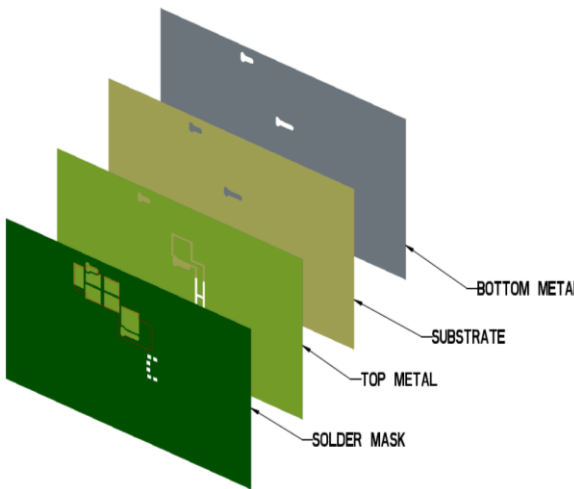




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Antenna Layout

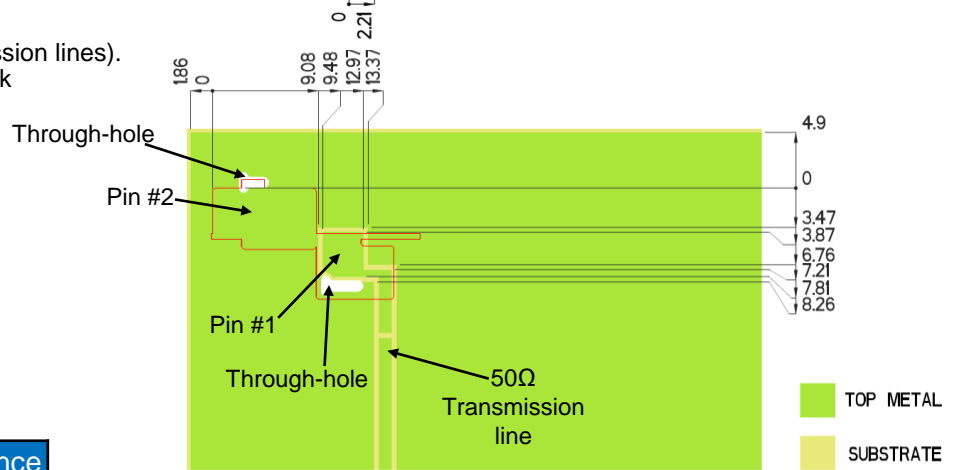
Typical layout dimensions (mm)



* VIAS: Diam. 0.2mm, (no vias on transmission lines).
Via holes must be covered by solder mask

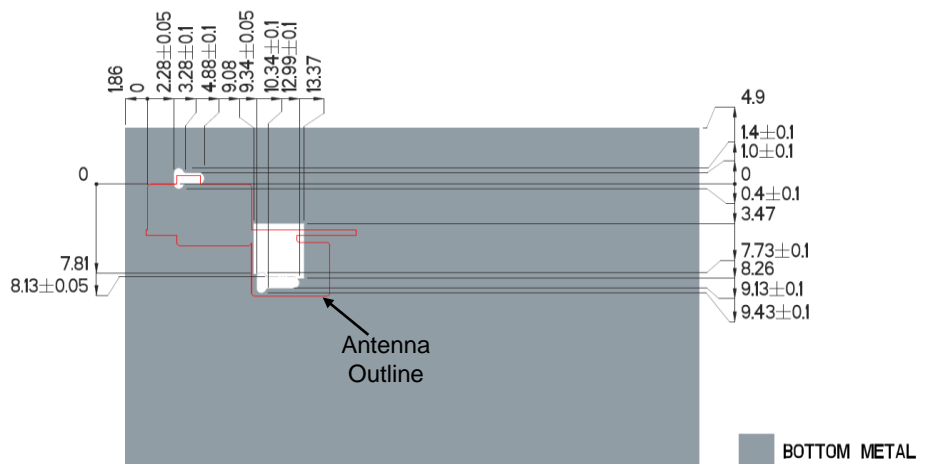
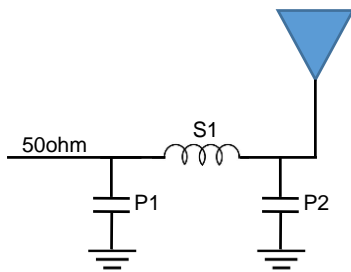
Pin Descriptions

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



Matching Pi Network

| Component | Value | Tolerance |
|-----------|-------|-----------|
| P1 | DNI | N/A |
| S1 | 0.8nH | ±0.1nH |
| P2 | 0.2pF | ±0.05pF |



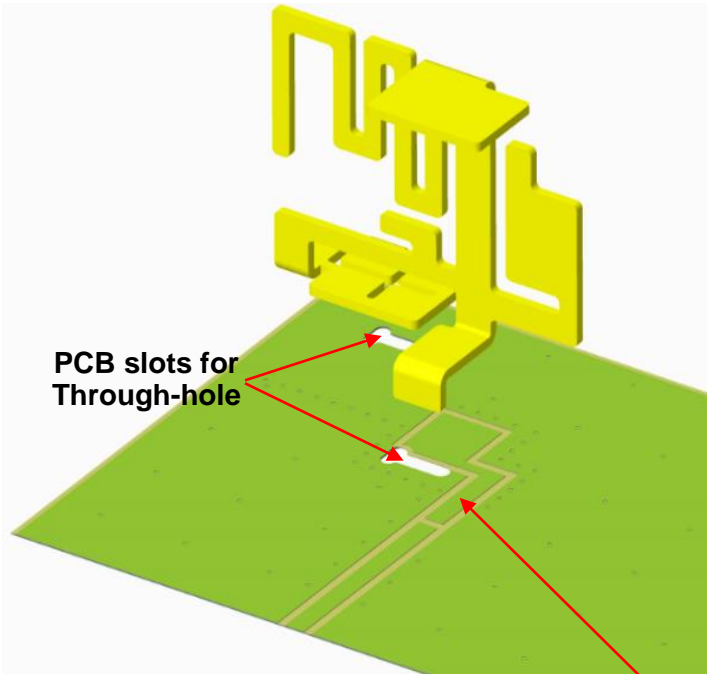


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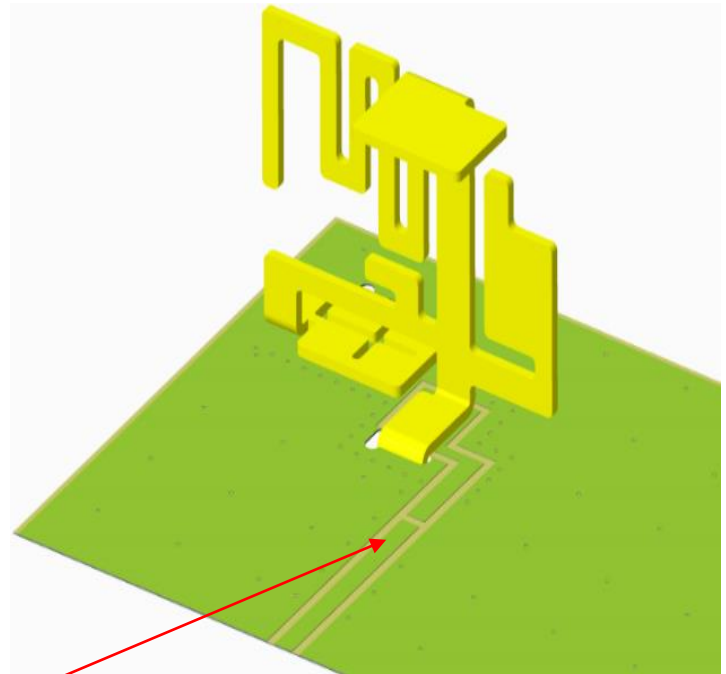
Antenna Layout cont. (SMT Mounting, Through-hole for Stabilization)

Typical layout dimensions (mm)

Exploded View



Assembled View



PCB slots for
Through-hole

A 50 ohm transmission line needs to be
designed and connected at this location

Bottom View





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Antenna Demo Board

Typical layout dimensions (mm)

| Part Number | A (mm) | B (mm) | C (mm) | D (mm) |
|-------------|--------|--------|--------|--------|
| 1003666-02 | 75.0 | 75.0 | 4.9 | 1.86 |

