

## Part No. 1002295

### Wi-Fi / BT Single Band Stamped Metal Embedded Antenna

**2.4 GHz**

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



#### Stamped Metal Wi-Fi/BT Embedded Antenna

2.400 – 2.485 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
Peak Gain	4.4 dBi
Average Efficiency	79%
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 #	1002295
Dimensions (mm)	16.1 x 15.7 x 10.55
Mounting Type	SMT (P&P)
Weight (grams)	0.70
Packaging	Tape & Reel, 150 pcs/Reel
Demo Board	1003666-01

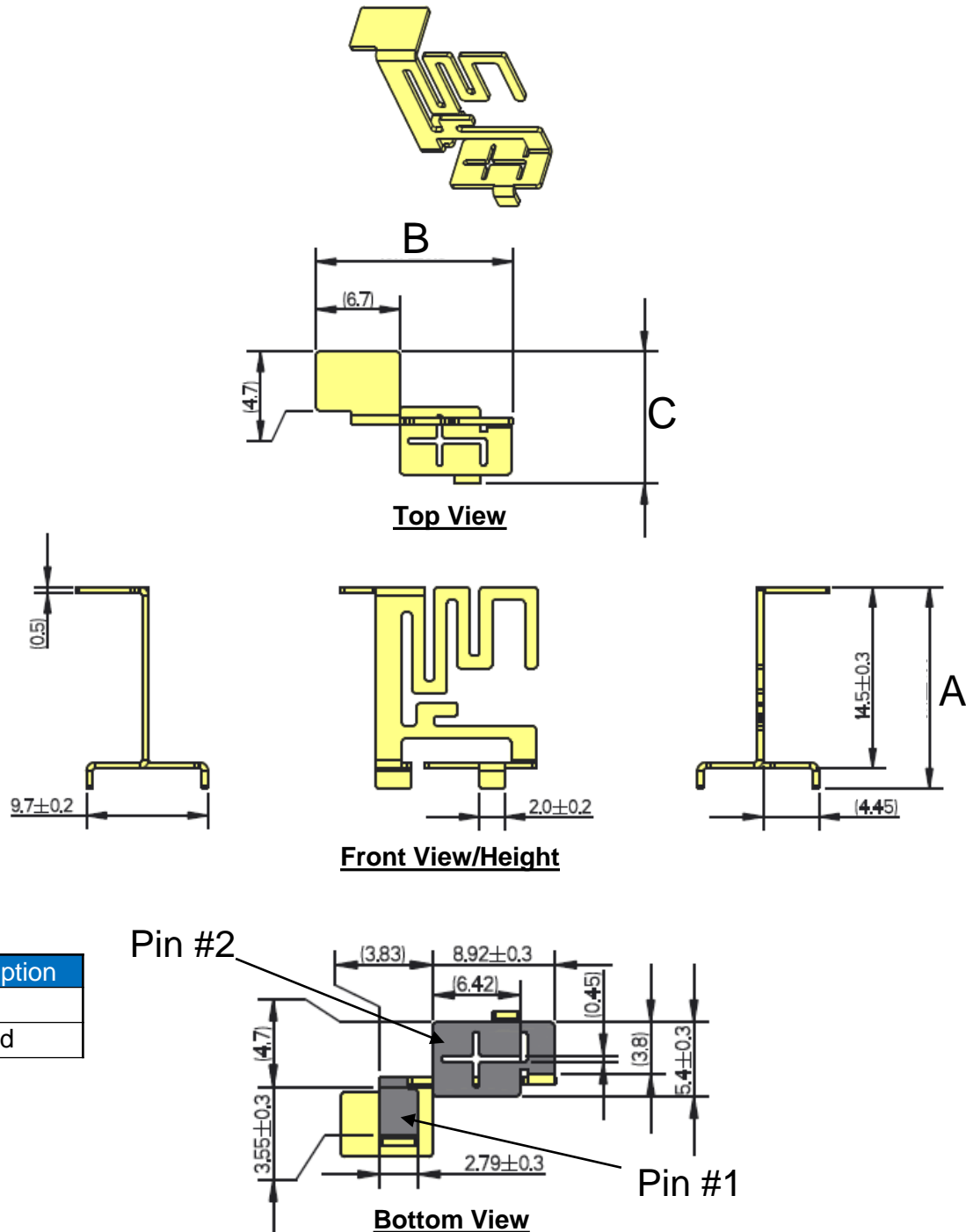


2.4 GHz Stamped Metal Ethertronics' Embedded Antenna Specifications  
Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

### Antenna Dimensions

Typical antenna dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)
1002295	$16.1 \pm 0.4$	$15.7 \pm 0.3$	$10.55 \pm 0.4$

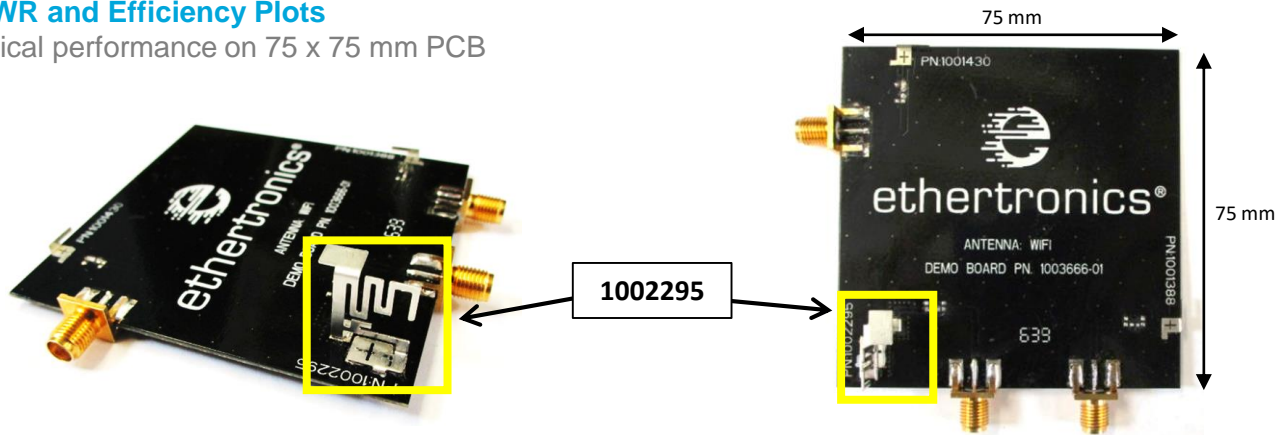




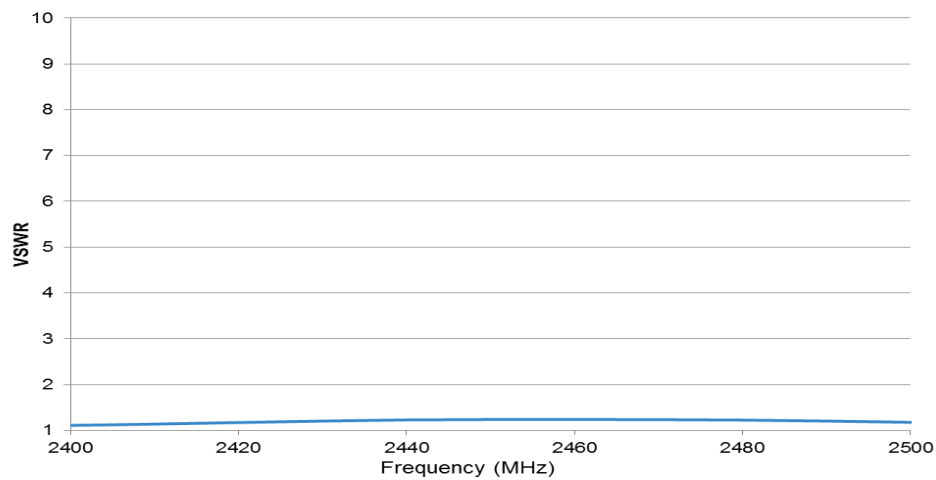
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VSWR and Efficiency Plots

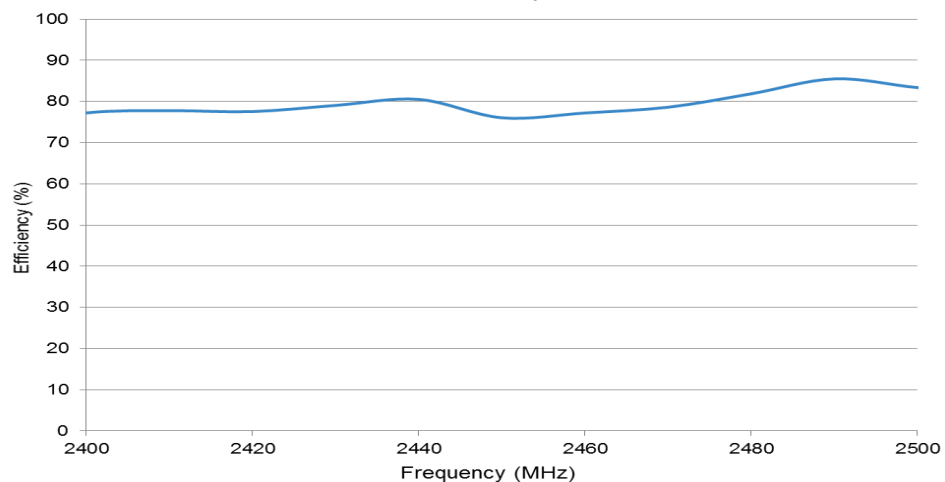
Typical performance on 75 x 75 mm PCB



VSWR



Efficiency

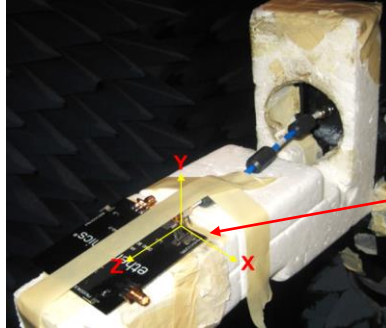




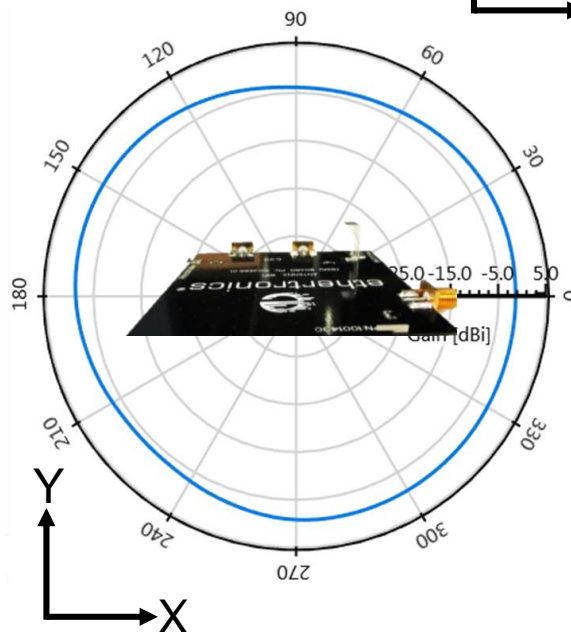
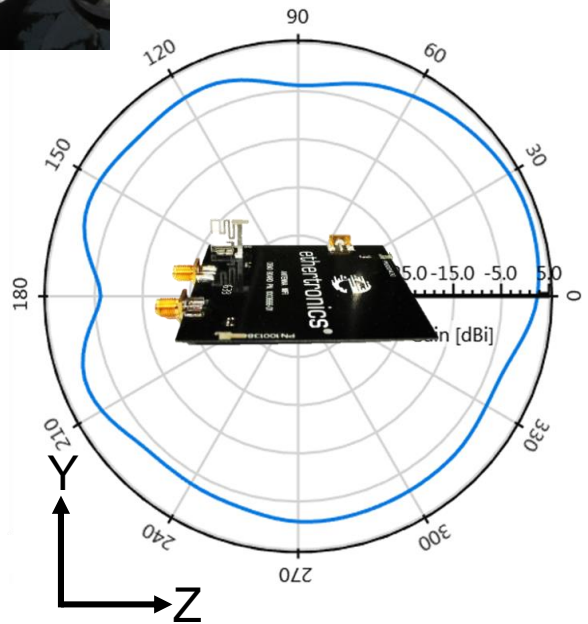
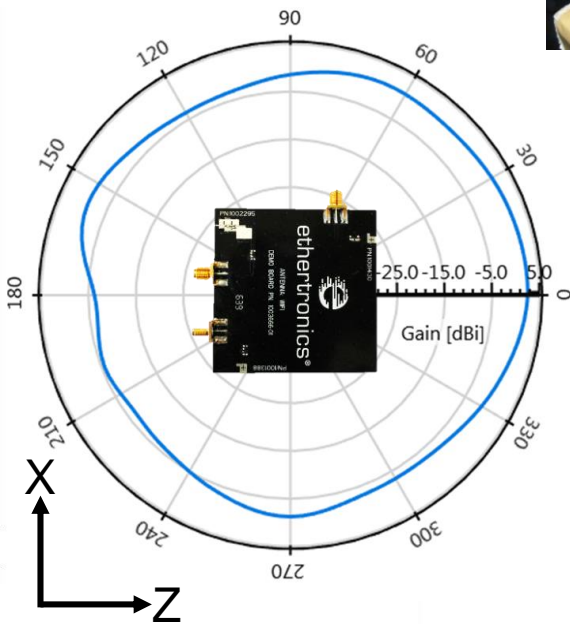
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**Antenna Radiation Patterns**

Typical performance on 75 x 75 mm PCB  
Measured at 2450 MHz



1002295



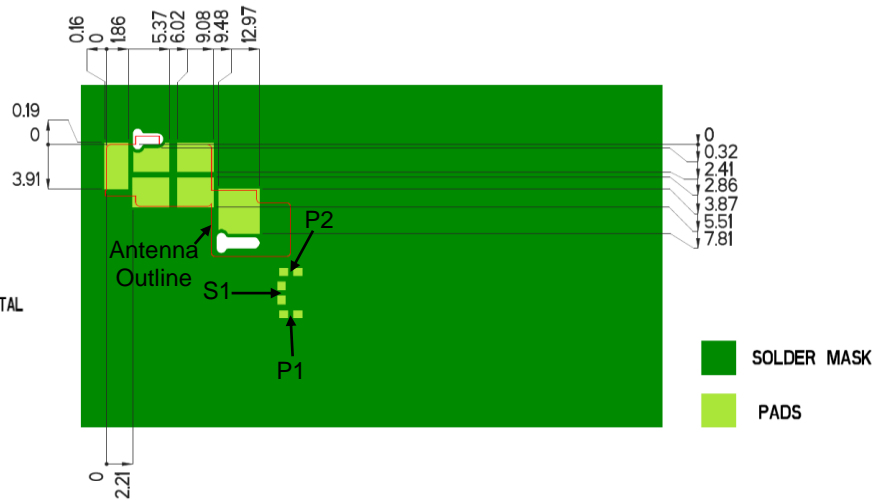
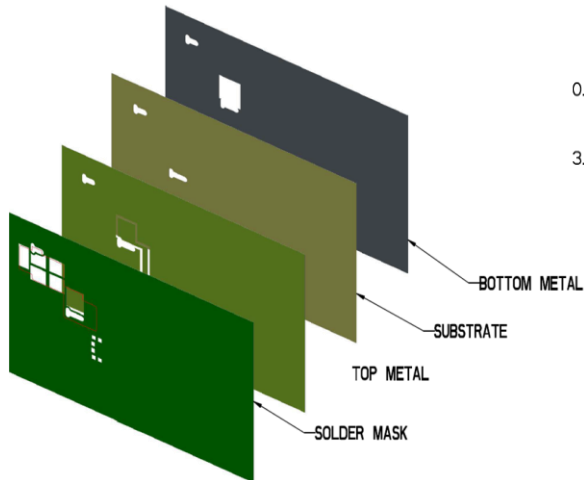


## 2.4 GHz Stamped Metal Ethertronics' Embedded Antenna Specifications

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### Antenna Layout

Typical layout dimensions (mm)



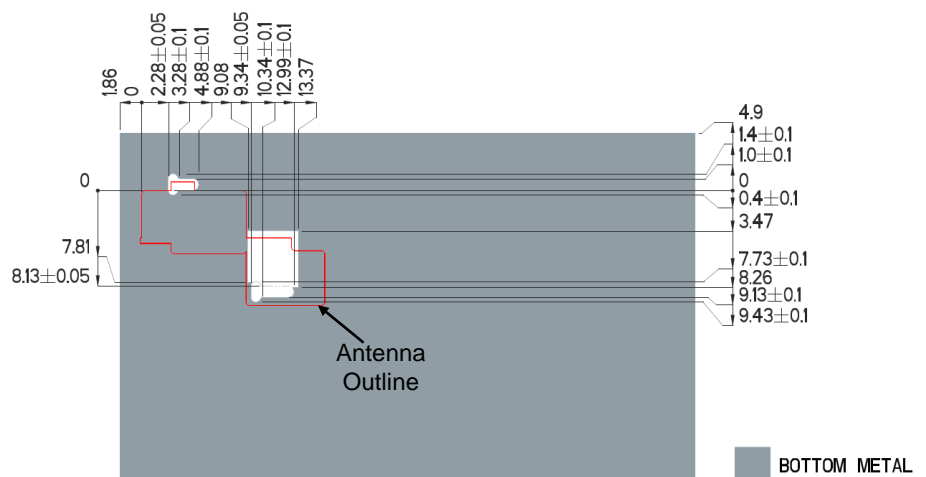
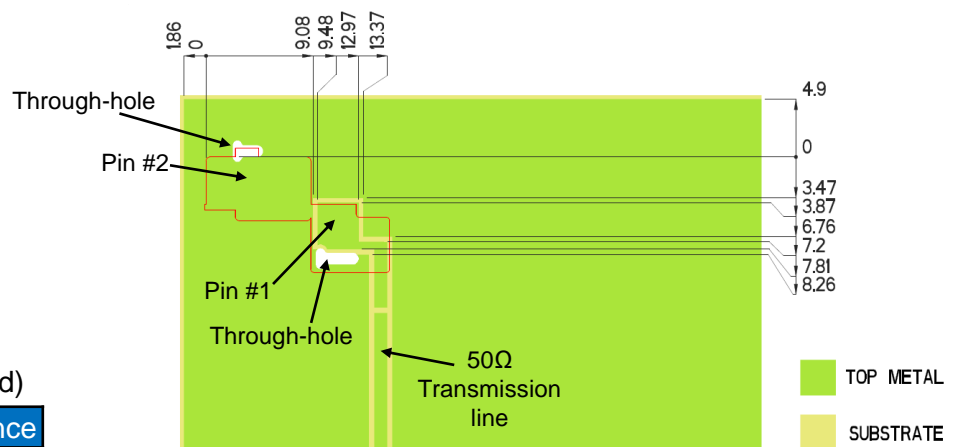
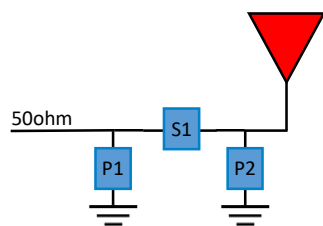
### Pin Descriptions

Pin#	Description
1	Feed
2	Ground

### Matching Pi Network (Demo Board)

Component	Value	Tolerance
P1	0.5pF	±0.05pF
S1	1nH	±0.1nH
P2	DNI	DNI

\*Actual matching values depend on customer design



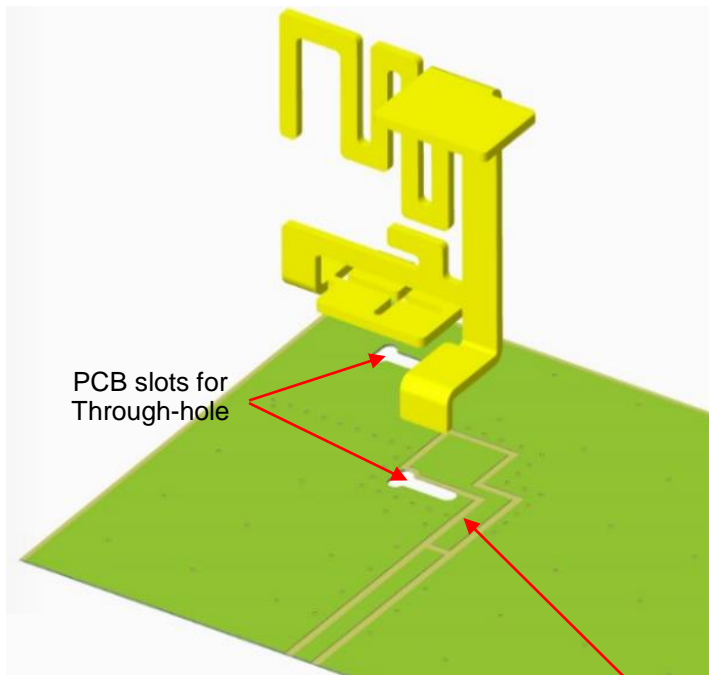


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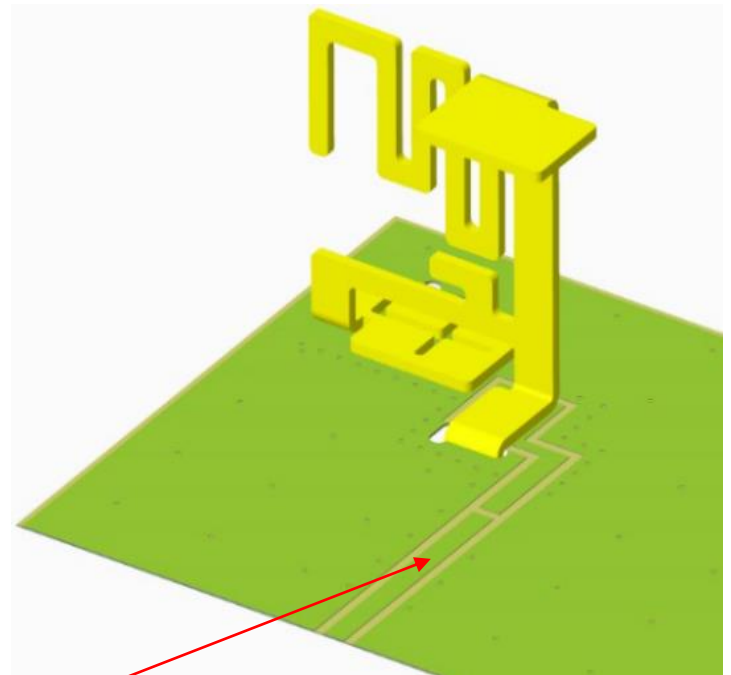
**Antenna Layout cont. (SMT Mounting, Through-hole for Stabilization)**

Typical layout dimensions (mm)

**Exploded View**



**Assembled View**



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

**Bottom View**





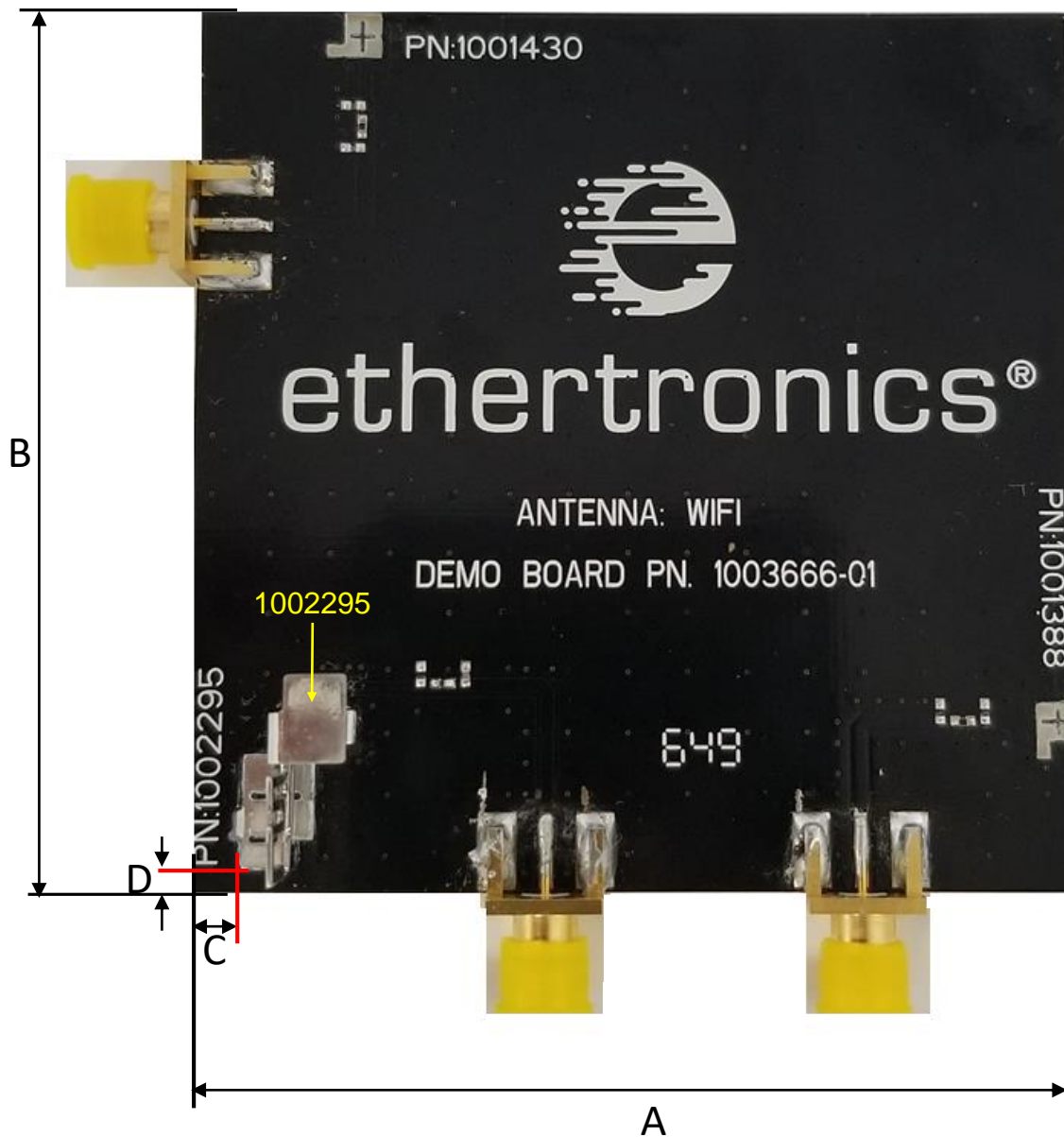


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### Antenna Demo Board

Typical layout dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)	D (mm)
1000366-01	75.0	75.0	4.9	1.86



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