



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## Prestta™ Standard 802.11a 5GHz



Ethertronics' Prestta series of Isolated Magnetic Dipole™ (IMD) embedded antennas address the challenges facing today's product designers. IMD's high performance and isolation characteristics offer better connectivity and minimal interference. Prestta antennas can be used in a variety of applications in-cluding:

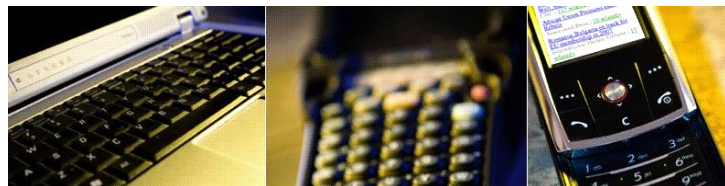
- Handsets
- Video Bridges
- Gateway, Access Points
- Tablets
- M2M
- Automatic Meter Reading
- Healthcare
- Point of Sale

### TECHNOLOGY ADVANTAGES



**Stays in Tune**  
IMD antenna technology provides superior RF field containment, resulting in less interaction with surrounding components. Ethertronics IMD antennas **resist de-tuning**; providing a robust radio link regardless of the usage position.

Prestta antennas use patented IMD technology in a stamped metal configuration to provide high performance. IMD antennas requires a smaller design keep-out area, carry lower program development risk which yields a quicker time-to-market, without sacrificing RF performance.



### KEY BENEFITS

#### DESIGN ADVANTAGES

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

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

##### Greater Flexibility with Unique Form Factors

- Ethertronics' IMD technology helps you deliver more advanced ergonomic designs without adverse impact on product performance.
- SMD mountable design enables faster and lower cost manufacturing.

##### RoHS Compliant

- Ethertronics' antennas are fully compliant with the European RoHS Directive 2011/65/EU.

#### END USER ADVANTAGES

##### Unique Form Factors Support Advanced Industrial Designs

- Smaller, more efficient IMD embedded antennas break through restrictive design rules and provide new freedom in component placement.

##### Superior Range

- Better antenna function means longer range and greater sensitivity to critically precise signals—delivering greater customer satisfaction while building brand loyalty.

#### SERVICE AND SUPPORT

##### Extensive RF Experience

- Our Prestta antennas are supported by documentation, and when needed, by the expertise of RF engineers who have integrated hundreds of antenna designs into wireless devices.

##### Global Operations & Design Support

- Ethertronics' global operations supports an integrated network of design centers that can take projects from concept to production.

## PRELIMINARY PRODUCT BRIEF: 802.11a Antenna

### Ethertronics' 802.11a Internal (Embedded) Antenna Specifications. Below are the typical specs for a 802.11a MiMo 2x2 application.

#### Electrical Specifications

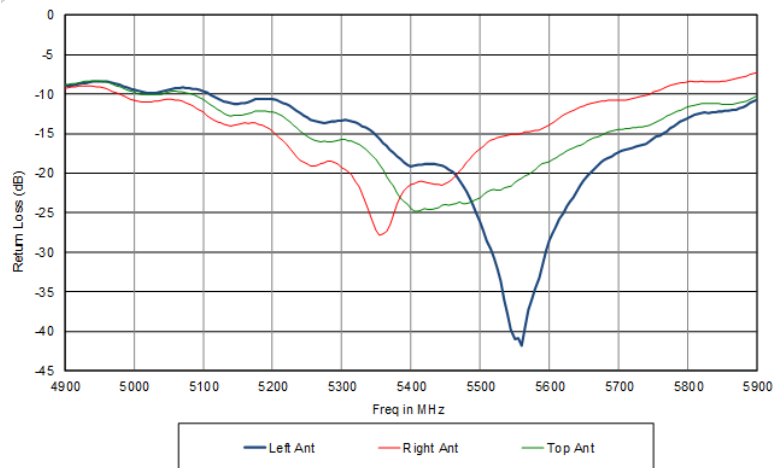
Typical Characteristics  
Measurements taken on a  
3"x3" ground plane.

	<b>Top Antenna</b> P/N 1001430 4900-5900 MHz	<b>Left Antenna</b> P/N 1001430 4900-5900 MHz	<b>Right Antenna</b> P/N 1001388 4900-5900 MHz
Peak Gain	< 7dBi	< 6 dBi	< 5dBi
Average Efficiency	70%	65 %	60 %
Return Loss in dB	-8dB max	-8dB max	-8dB max
Feed Point Impedance	50 ohms unbalanced	50 ohms unbalanced	50 ohms unbalanced
Power Handling	2 Watt CW	2 Watt CW	2 Watt CW
Polarization	Linear	Linear	Linear

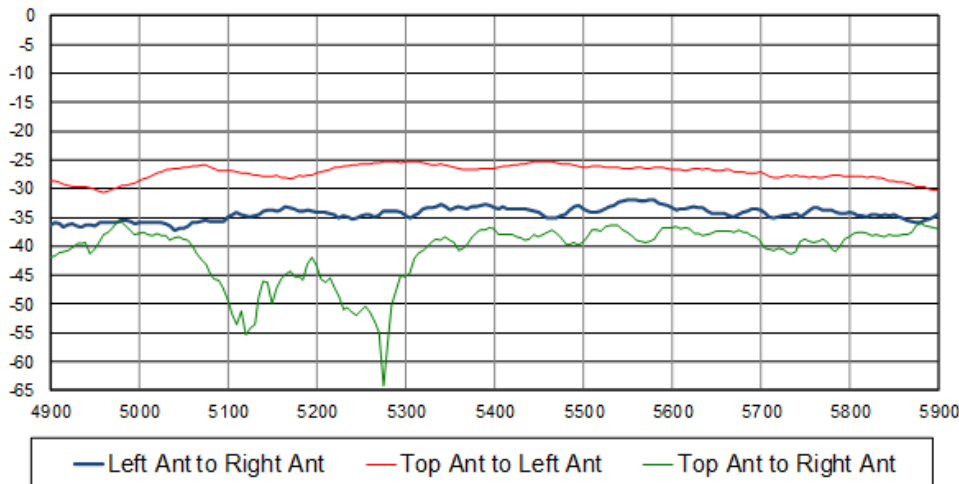
#### Mechanical Specifications

Maximum Dimensions	9.80mm x 4.2 mm x 2.2 mm
Mechanical Mounting	Antenna Assembly is Surface Mounted onto main PCB.
RF Mounting	RF and Ground feed pads are Surface Mounted onto main PCB. Ground Clearance is required under antenna (15x2.9mm <sup>2</sup> )

#### Typical Board Setup and Return Loss in dB

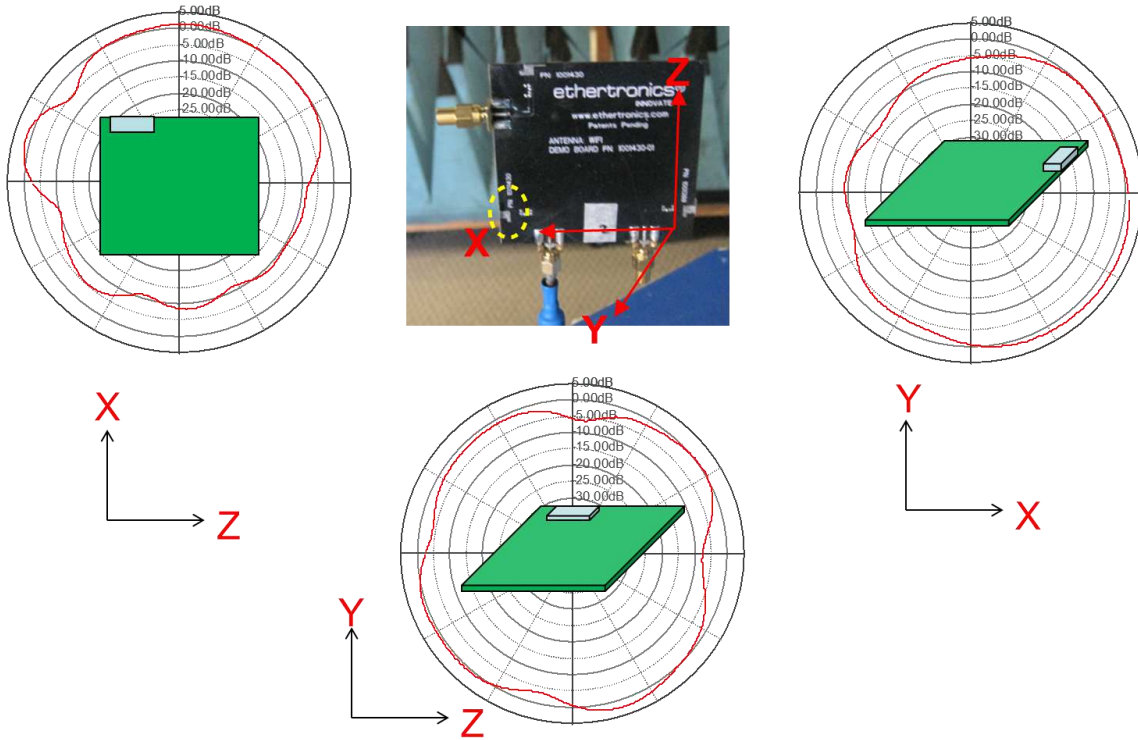


#### Typical Isolation in dB between each antenna

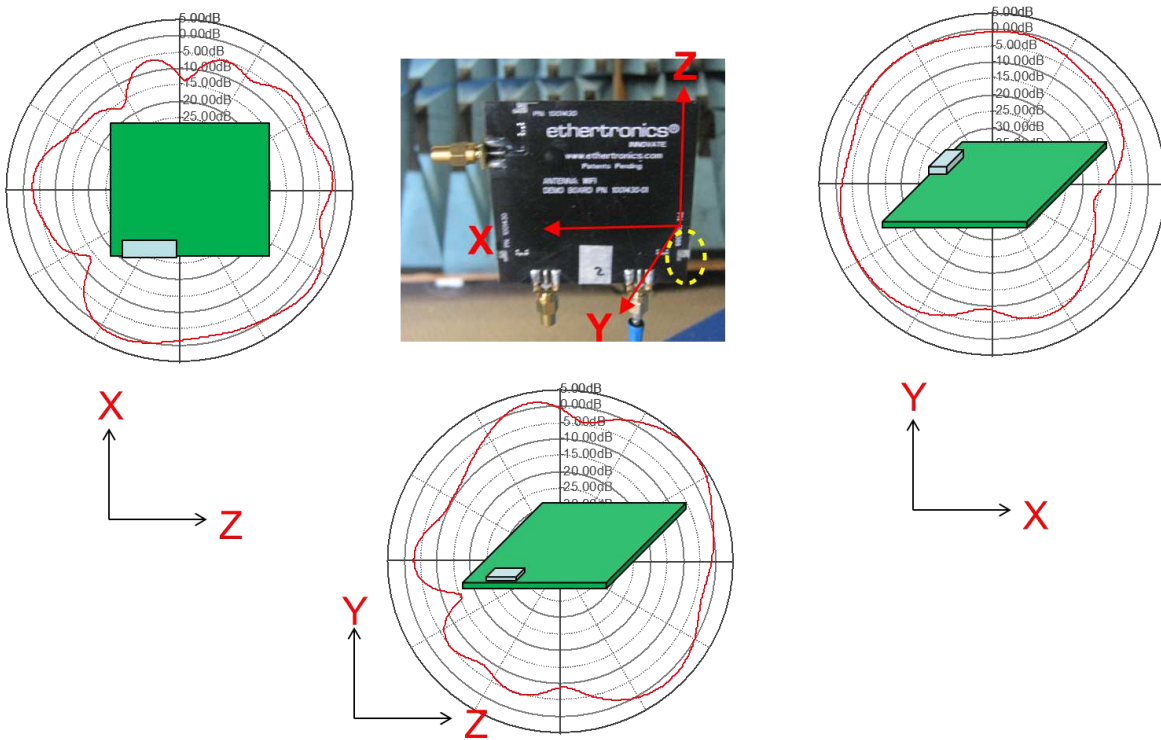


Isolation between each of the three antennas is below -25dB.

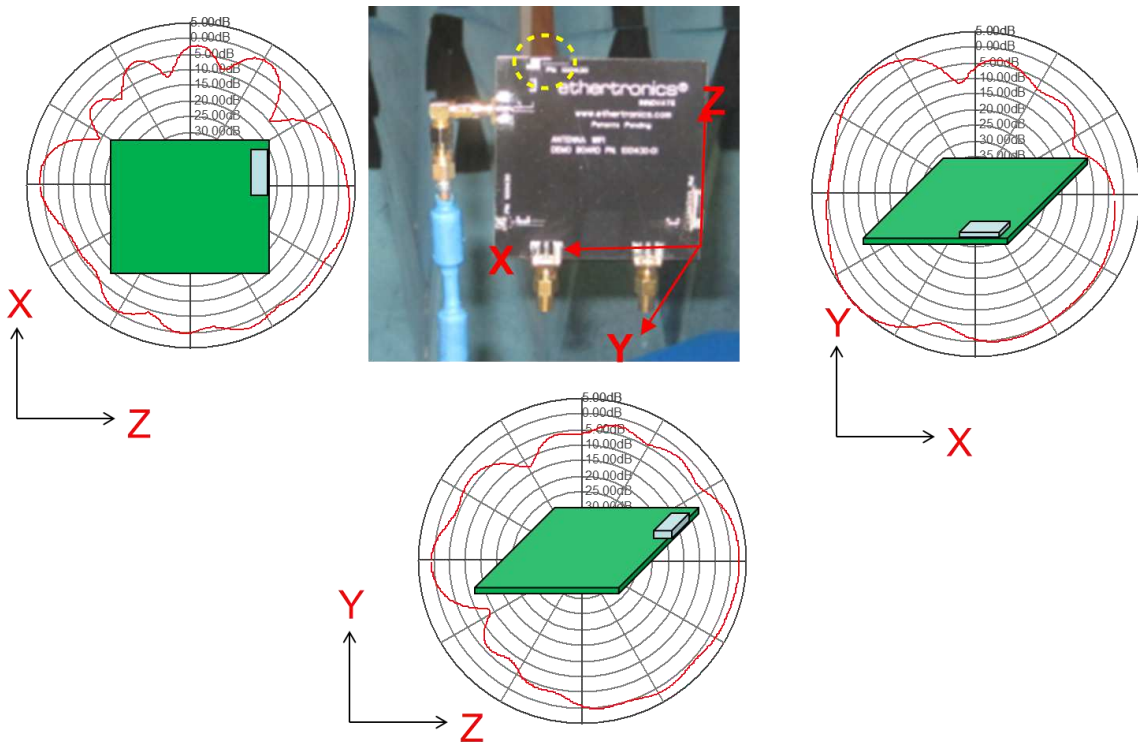
**LEFT** Antenna Radiation Patterns @ 5250MHz, Demo board PCB size is 3" x 3"



**RIGHT** Antenna Radiation Patterns @ 5250MHz, Demo board PCB size is 3" x 3"



# TOP Antenna Radiation Patterns @ 5250MHz, Demo board PCB size is 3" x 3"



## Antenna Set Configuration

REV	DATE	DESCRIPTION	APPROVED BY	DATE
A	2011-11-08	RELEASE FOR PRODUCTION	MANUEL RODRIGUEZ	FRANCISCO SANCHEZ
B	2012-02-28	REVISE DEMO BOARD	MANUEL RODRIGUEZ	FRANCISCO SANCHEZ

**NOTES: (UNLESS OTHERWISE SPECIFIED)**

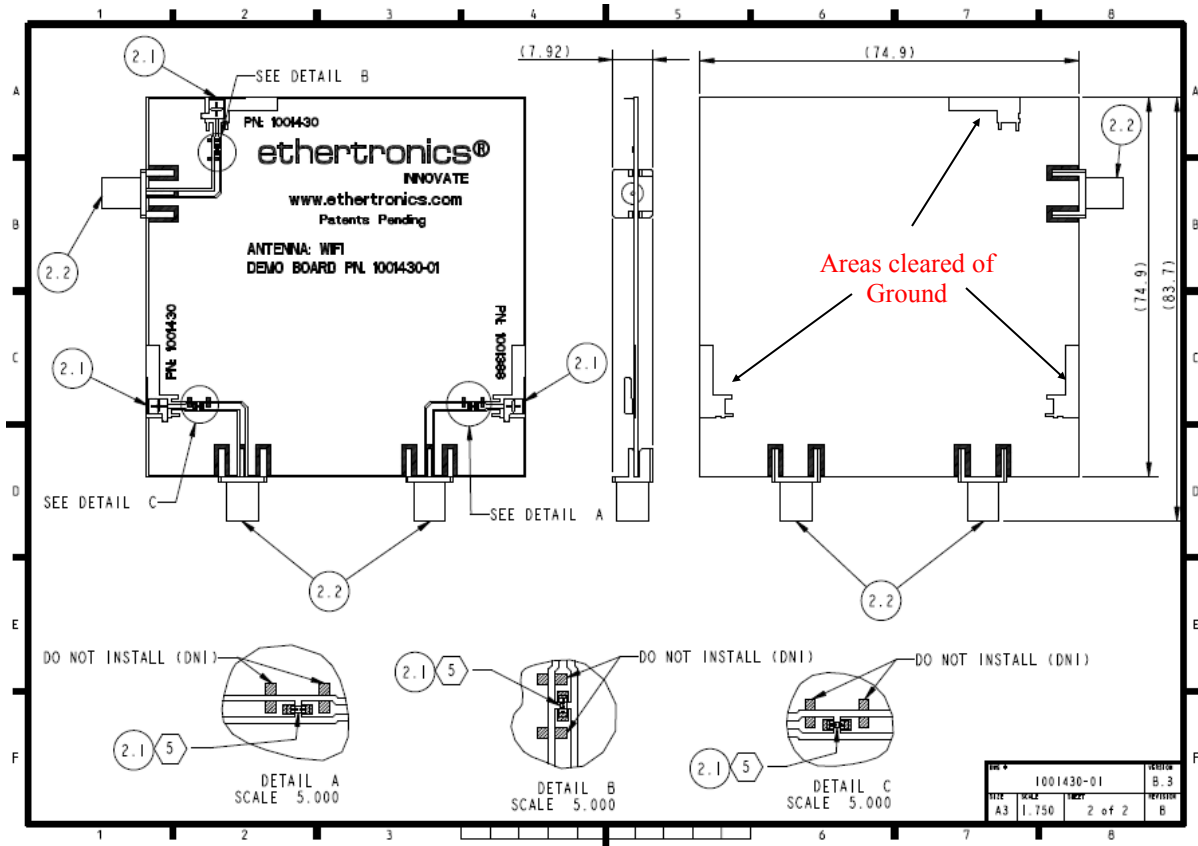
- COMPONENTS: SEE BILL OF MATERIALS ON SHEET 1.
- ASSEMBLY PROCEDURE:
  - SMT THE ANTENNAS AND COMPONENTS TO THE BOARD AS SHOWN ON SHEET 2. USE LEAD FREE SOLDER ONLY.
  - SOLDER THE CONNECTORS TO TOP AND BOTTOM OF PCB AS SHOWN ON SHEET 2. USE LEAD FREE SOLDER ONLY.
  - PLACEMENT OF PARTS ACCORDING TO THE LATEST IPC-610 STANDARDS. ALL SOLDERING REQUIRED THE USE OF LEAD FREE (Pb FREE) SOLDER.
- COSMETIC REQUIREMENT: MARKING SHALL BE READABLE AND PART SHALL BE FREE OF APPEARANCE DEFECTS.
- ASSEMBLY SHALL BE CLEAN AND FREE OF ALL FOREIGN MATTER.
- PART MARKING: AS INDICATED ON COMPONENTS.
- DIMENSIONAL TOLERANCES: SEE TOLERANCE BLOCK.
- FIRST ARTICLE: FIRST ARTICLE MEASUREMENT SHALL BE PERFORMED FOR ALL DRAWING DIMENSIONS ON 5 RANDOMLY SELECTED PARTS. THE FIRST ARTICLE DATA ALONG WITH THE NUMBERED FIRST ARTICLE SAMPLES SHALL BE FORWARDED TO ETHERTRONICS, INC. QUALITY ENGINEERING.
- PART SHALL MEET ALL CHARACTERISTICS OF THE 3D DATA BASE AND THE 3D DATA BASE SHALL TAKE PRECEDENCE UNLESS OTHERWISE SPECIFICALLY STATED IN THIS DRAWING.
- PACKAGING REQUIREMENT: CUSTOM TRAYS SHALL BE CLEAN AND FREE OF ALL FOREIGN MATTER, SHALL BE REVIEWED BY ETHERTRONICS, INC.
- PACKAGE LABELING REQUIREMENT: REFER TO 1000325 LABEL SPECIFICATION.
- NO CHANGE SHALL BE ALLOWED ON TOOLING OR MATERIAL SPECIFICATION WITHOUT PRIOR EXPLICIT WRITTEN APPROVAL BY ETHERTRONICS, INC. ENGINEERING, PURCHASING AND CONTRACTS DEPARTMENT.
- ALL DIMENSIONS ARE IN MILLIMETER.
- PART MUST BE COMPLIANT WITH THE REQUIREMENTS OF EU DIRECTIVE 2002/95/EC (ROHS), ADDITIONALLY THEY SHALL NOT CONTAIN INTENTIONALLY ADDED MATERIALS REQUIRING REMOVAL FROM SEPARATELY COLLECTED WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT PER EU DIRECTIVE 2002/96/EC (WEEE).

1001430  
1001430  
1001388

ITEM	PART NO	REV	DESCRIPTION	QTY	REMARKS
1	1001388	A	ANTENNA, WLANA L J0720	1	N / A
2	1001430	A	ANTENNA, WLANA R J0720	2	N / A
3	1001492	B	PCB, J0720	1	COLOR: BLACK
4	1000334	A	CONNECTOR SMA, JACK 16GRZ 0.9	3	142-0701-891 JOHNSON EMERSON OR EQUIVALENT (FOR 0.8mm BOARD)
5	1000666	A	RES, 0 OHM 1005	3	R87521ETPPL ROA, OR EQUIVALENT

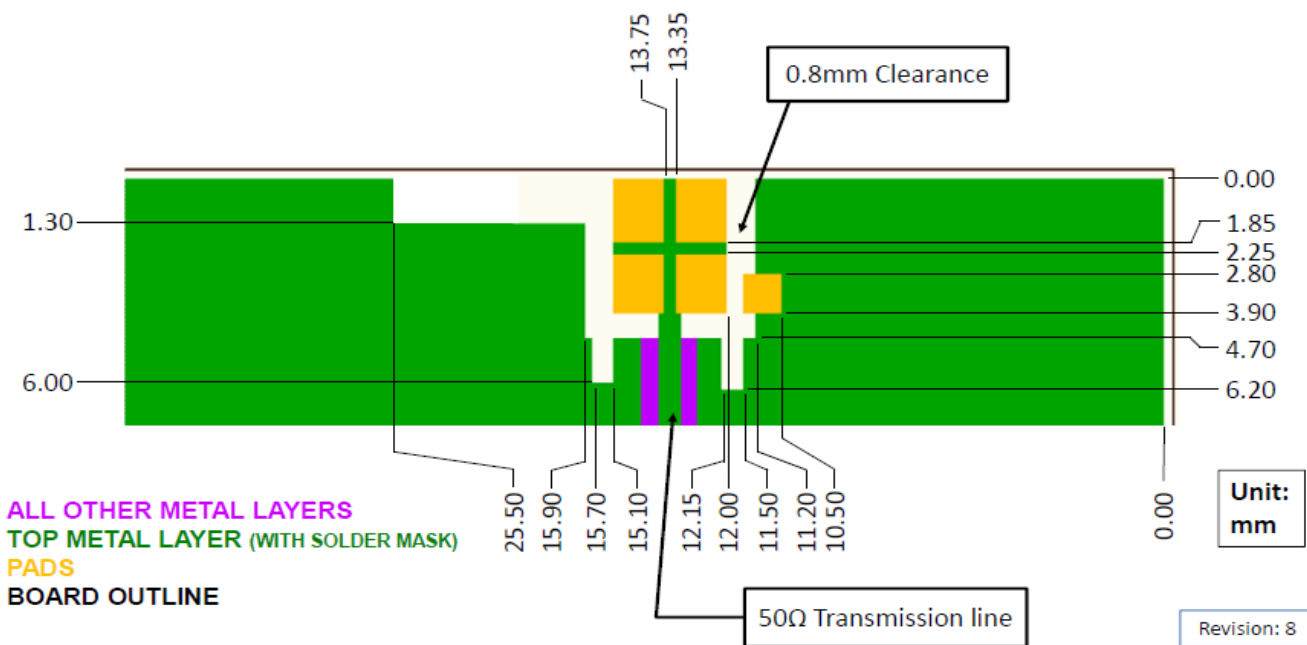
ETHERTRONICS			
14250 ETHERTRONICS DRIVE, SAN DIEGO, CA 92121-1108	5505 SCHRANTZ ROAD SAN DIEGO, CA 92124788	ORDER BY: MANUEL RODRIGUEZ	DATE: 2011-11-08
TOLERANCE: X, X : ±0.30mm		DESIGNED BY: JERRY JIM	DATE: 2011-11-08
PRODUCT DESIGN: JERRY JIM	DATE: 2011-11-08	REVIEWED BY: FREDERICK WALKERS	DATE: 2011-11-08
REV: 0.9	SCALE: 1:500	APPROVED BY: FRANCISCO SANCHEZ	DATE: 2011-11-08
PART NO: 1001430-01		REV: 0	RELEASED: Released

## Dimensions on the Demo Board and Clearance areas



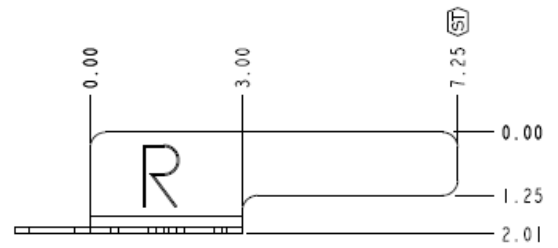
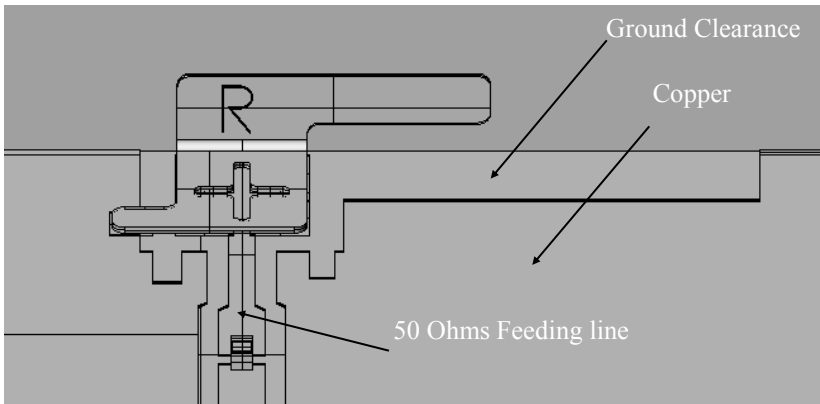
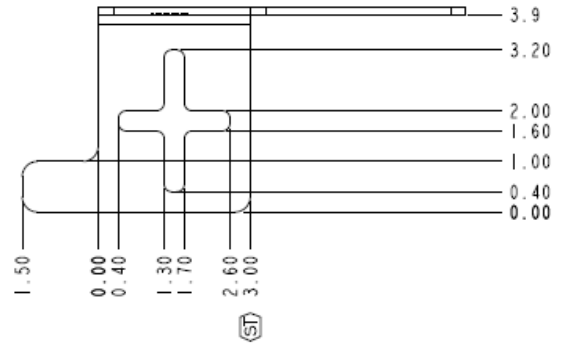
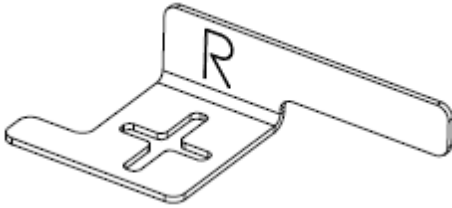
## PCB Layout Dimensions

PCB Layout for PN 1001388 (Mirror image apply for PN 1001430)

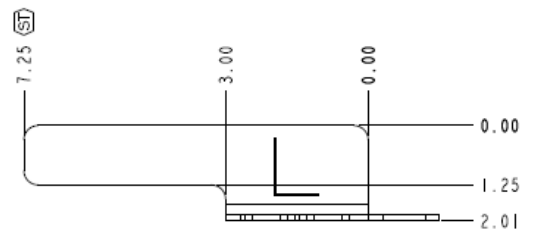
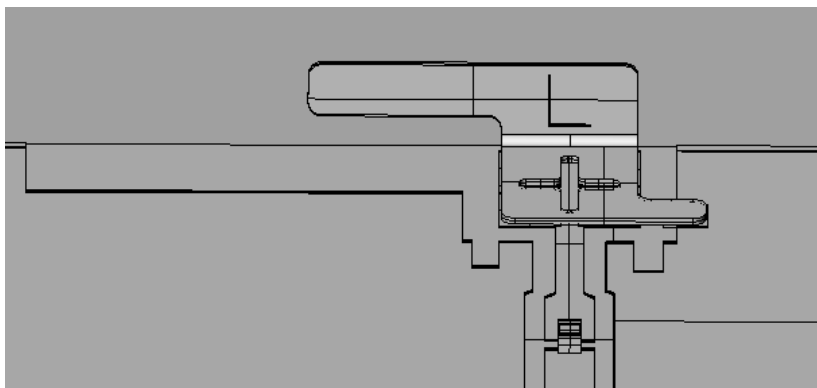
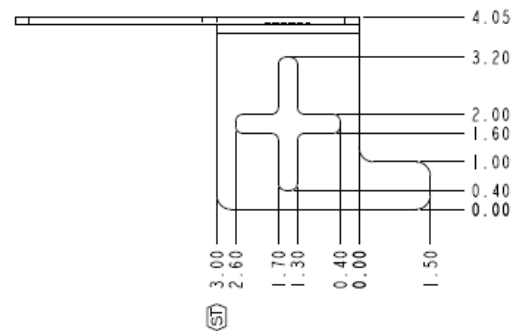
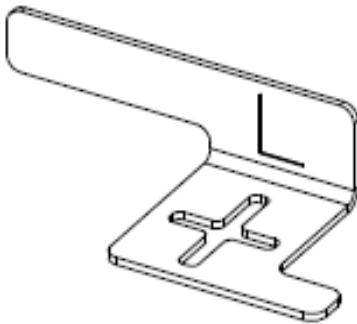


## Antenna Dimensions

### 1001430



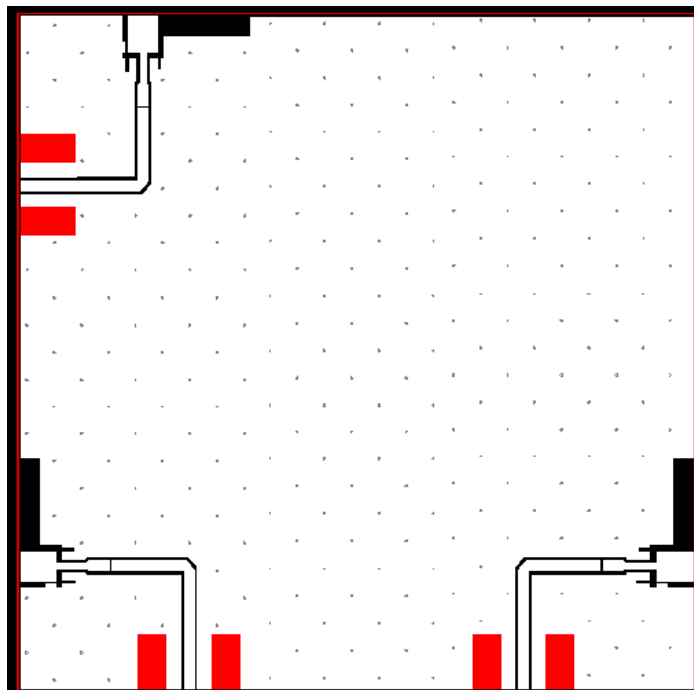
### 1001388



**PRODUCT: 802.11a Antenna**

To optimize designs using Ethertronics' Prestta™ Application antenna, the PCB should use the recommended land pattern shown in the Figures below. The land patterns are composed of a 50 ohm line connected to each antenna feed point (1 feed, 1 ground). The feed line can either be connected to a 50 ohm transmission line or a 50 ohm coaxial cable. Ground clearance around and under the antenna, as shown in the PCB layout below, is recommended in order

**TOP Metallic Layer Layout**



**BOTTOM Metallic Layer Layout**

