ethertronics

**PRODUCT BRIEF: CELLULAR**

**Part No. P522306, P522307, P522308, P522309, P522310**

# Prestta™ Standard Penta-Band Cellular Embedded Antenna

850/900/1800/1900/2100 MHz


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 including:

- M2M
- Automotive
- Automatic Meter Reading
- Healthcare
- Point of Sale
- Tracking

## 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 2002/95/EC.

## 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.

**ETHERTRONICS**
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## Example: Ethertronics' Penta-Band Internal (Embedded) Antenna Specifications.

### Below are the typical specs for a Penta-Band application (subject to change).

## Electrical Specifications

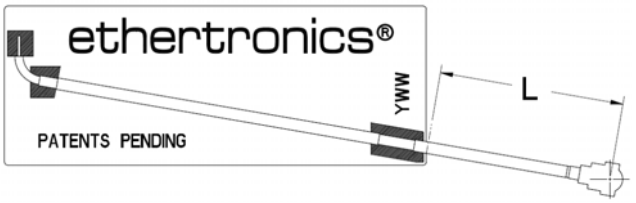
Typical Characteristics

Measurements taken with no ground plane or a 65 x 110 mm ground plane.

Antenna mounted directly on PC + ABS housing material.

| Cellular Antenna (MHz) | 824-849, 869-894 | 880-915, 925-960 | 1710-1785, 1805-1880 | 1850-1910, 1930-1990 | 1920- 1980, 2110-2170 |
|---|---|---|---|---|---|
| Peak Gain (no ground) | -0.2dBi | -0.6dBi | 3.4dBi | 3.2dBi | 1.9dBi |
| Peak Gain (horizontal ground) | 2.5dBi | 1.7dBi | 1.7dBi | 3.2dBi | 3.8dBi |
| Peak Gain (vertical ground | 3.0dBi | 2.4dBi | 2.3dBi | 2.7dBi | 3.4dBi |
| Average Efficiency (no ground) | 45% | 40% | 60% | 45% | 45% |
| Average Efficiency (horizontal ground) | 73% | 62% | 63% | 66% | 62% |
| Average Efficiency (vertical ground) | 78% | 67% | 60% | 60% | 60% |
| VSWR Match | 3.0:1 max | | | | |
| Feed Point Impedance | 50 ohms unbalanced (other if required) | | | | |
| Radiation Pattern | Omni-directional | | | | |
| Power Handling | 2 Watt cw | | | | |
| Polarization | Linear | | | | |

## Mechanical Specifications

| | |
|---|---|
| Maximum Dimensions | 41.0 0x 15.00x.12 mm (1.25m high at cable solder connection) |
| Cable / Connector | Contact Ethertronics for details |
| Cable Length | **P522306**—Antenna with 200mm cable, EP, U.FL receptacle compatible<br>**P522307**—Antenna with 100mm cable, MMCX Plug, Male Right Angle connector<br>**P522308**—Antenna with 200mm cable, MMCX Plug, Male Right Angle connector<br>**P522309**—Antenna with 100mm cable, EP, U.FL receptacle compatible<br>P522310—Antenna with 18mm cable, EP, U.FL receptacle compatible<br>  |

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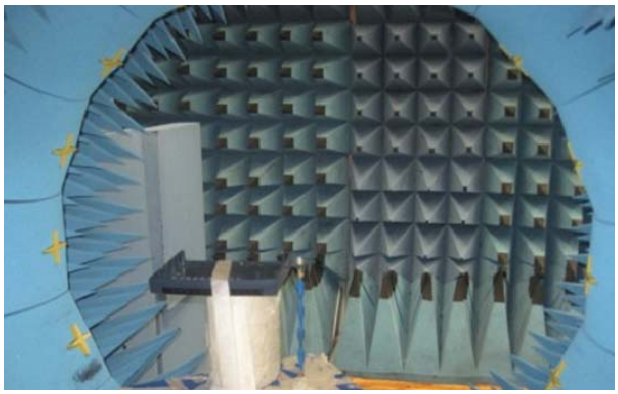
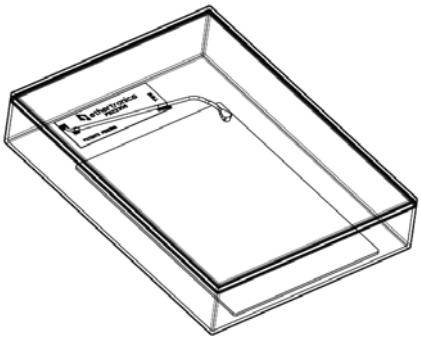
### Test Set-up

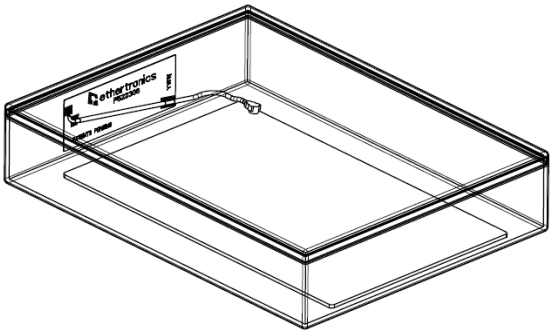
Antenna mounted directly on PC + ABS housing material.



No Ground

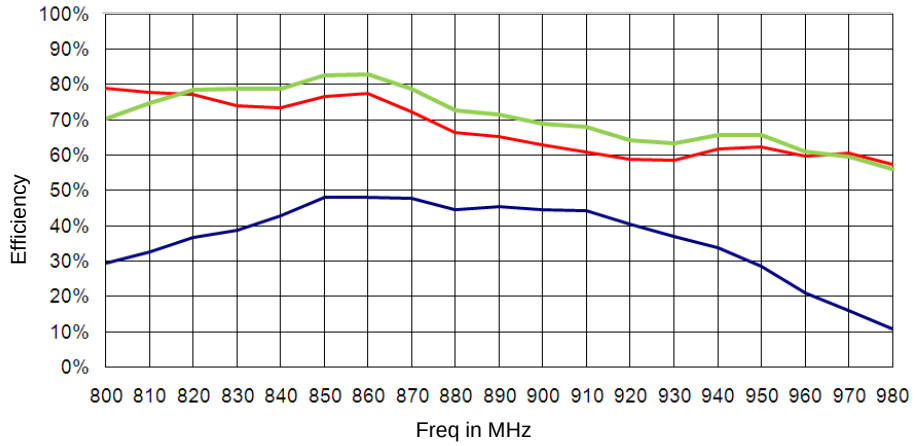


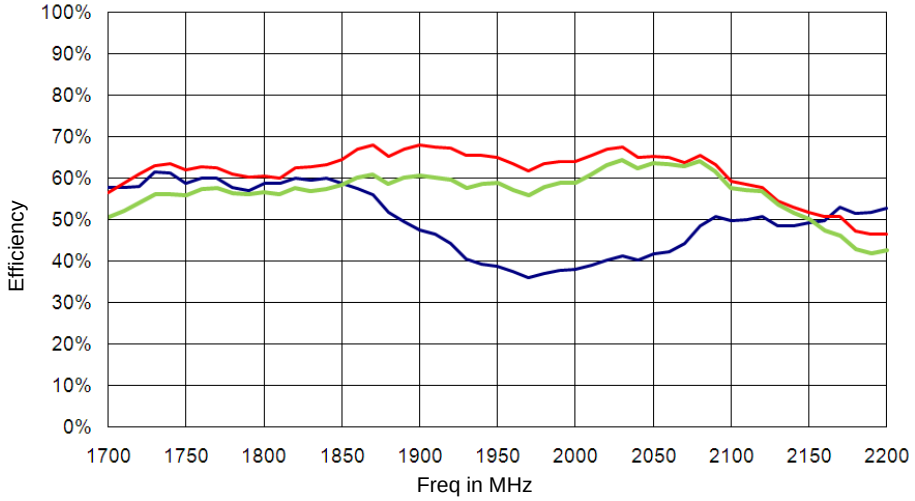
Horizontal Ground



Vertical Ground

### Typical Efficiency



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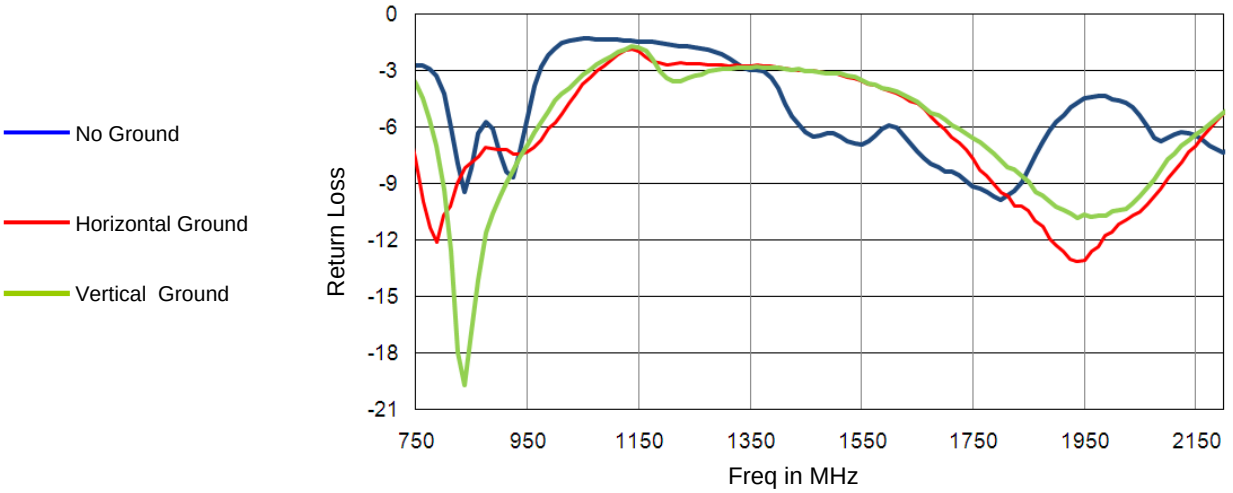
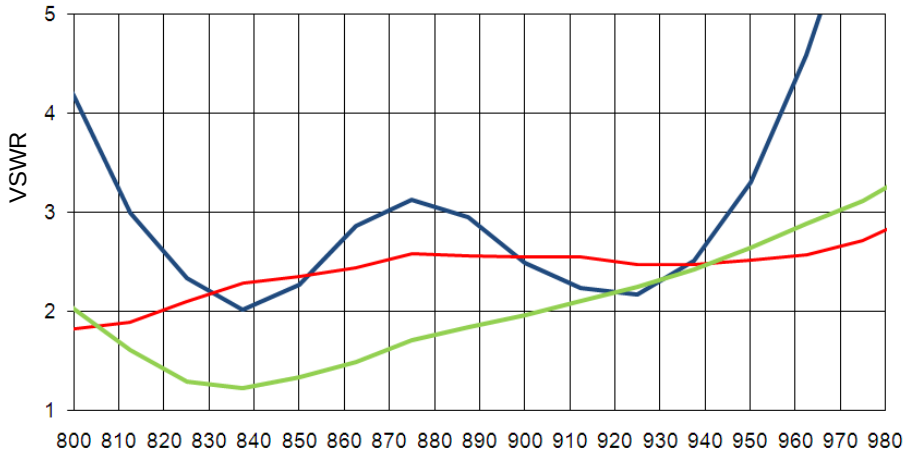
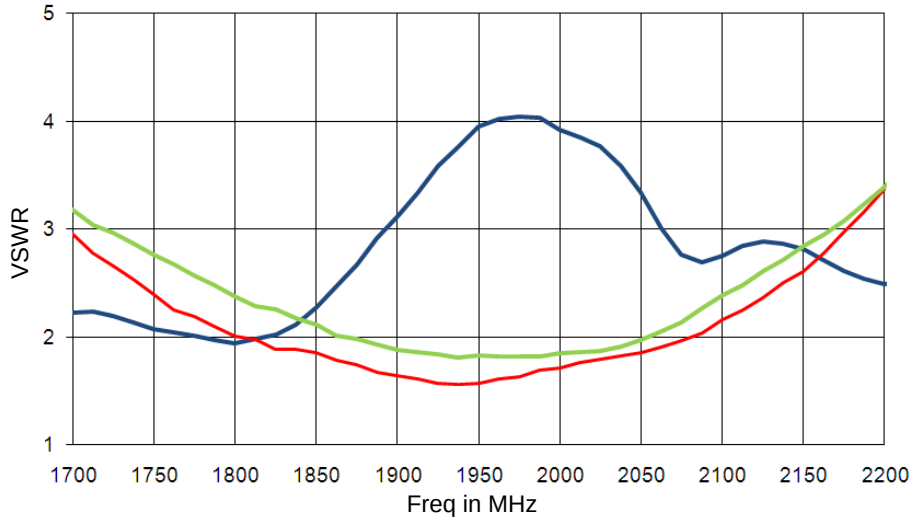
### Typical Return Loss




### VSWR



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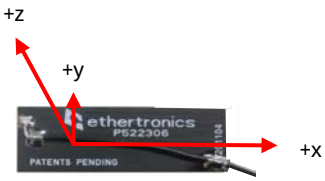
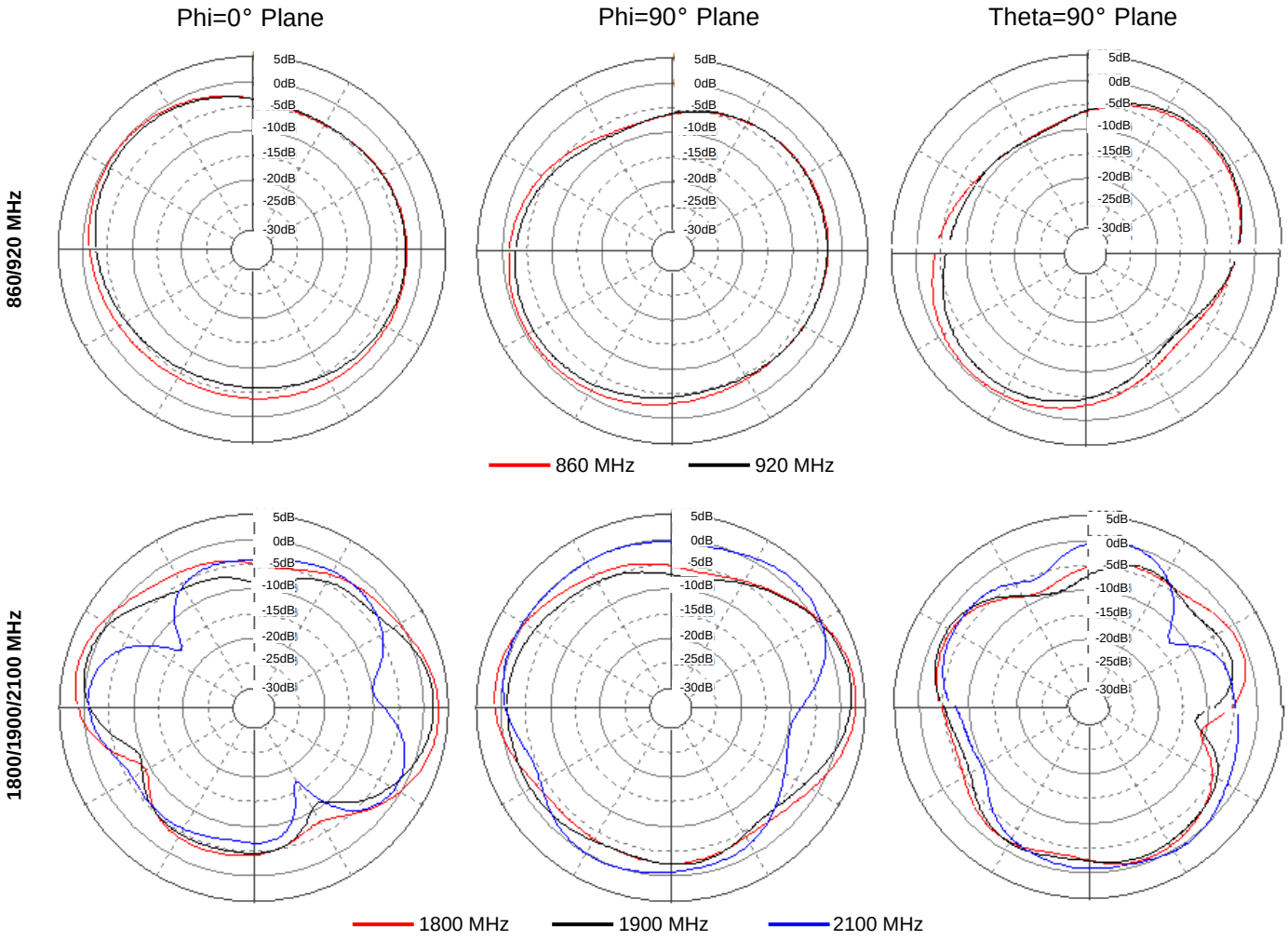
## Antenna Radiation Patterns




## No Ground



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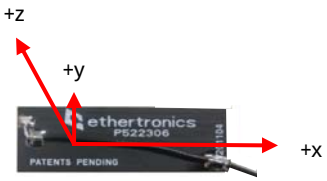
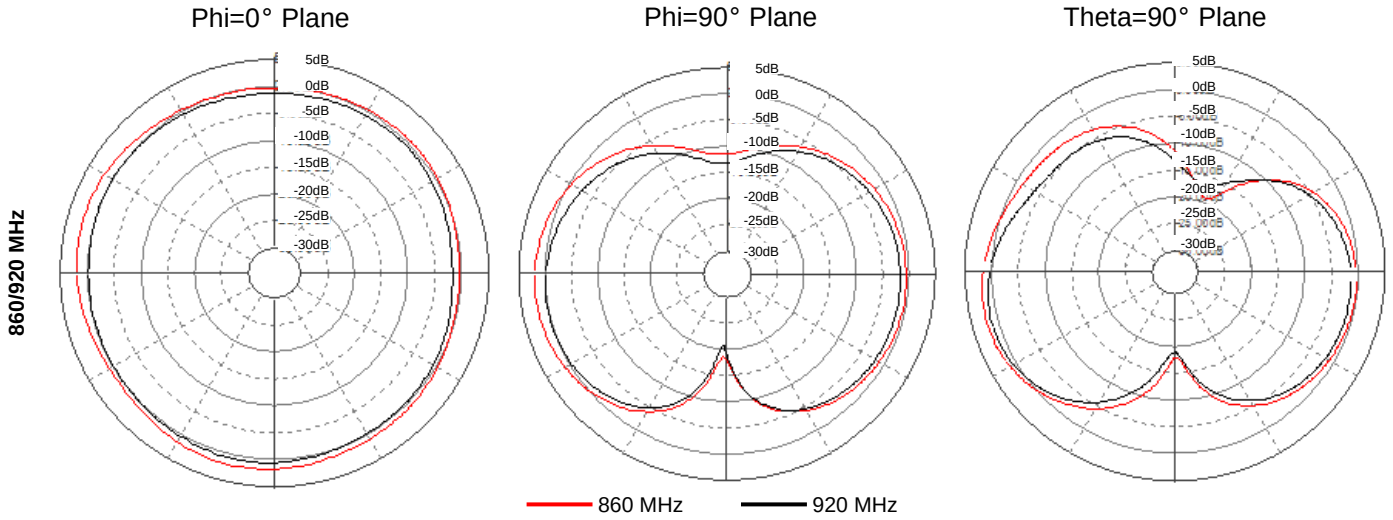
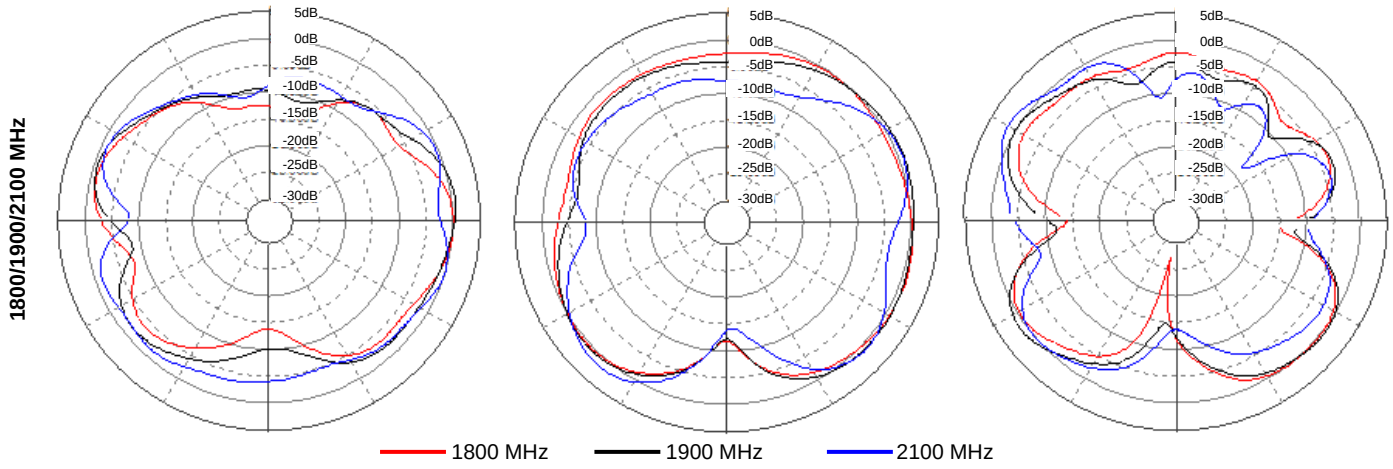



## Horizontal Ground



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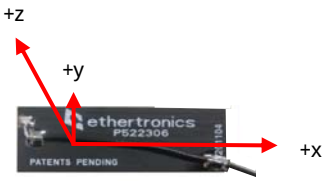


## Vertical Ground