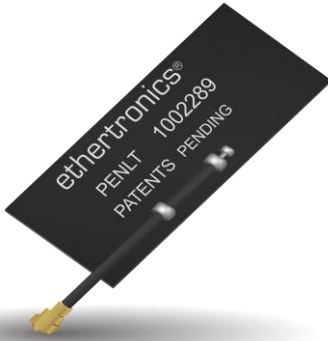


# Part No.1002289

## LTE / Cellular Wide Band FPC Embedded Antenna

700 / 750 / 850 / 900 / 1800 / 1900 / 2100 / 2700 MHz

Supports: Broadband LTE (OCTA-BAND), LTE CAT-M, NB-IoT, SigFox, LoRa, Cellular LPWA, RPMA, Firstnet



### LTE / Cellular FPC Embedded Antenna

Low Band : 698 - 960 MHz  
High Band: 1710 - 2690 MHz

#### KEY BENEFITS

##### 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' technology helps you deliver more advanced ergonomic designs without adverse impact on product performance.

##### RoHS Compliant

Products are the latest RoHS version compliant.

#### APPLICATIONS

- Medical applications
- Home automation
- Smart metering
- M2M, Industrial devices
- IoT
- Firstnet
- Automotive
- Healthcare
- Point of Sale
- Tracking
- NB-IoT
- Sigfox
- LoRa
- Cellular LPWA
- RPMA
- LTE CAT-M

Ethertronics LTE cellular embedded antenna 1002289 address the challenges facing today's product designers. Based on a flexible substrate for easier integration, high performance and isolation characteristics, this antenna offers better connectivity. In addition, 1002289 supports all the worldwide cellular bands for LTE with backward compatibility.

#### Electrical Specifications

Typical Characteristics, using 75 x 140 mm ground plane with 25 mm cable Antenna is mounted directly on plastic material

Frequency (MHz)	698 - 960 MHz	1710 - 2690 MHz
Average Efficiency (Longer Edge)	74%	58%
Average Efficiency (Shorter Edge)	67%	63%
VSWR Match	2.5:1 max	
Feed Point Impedance	50 ohms unbalanced	
Polarization	Linear	
Power Handling	2 Watts CW	
Radiation Pattern	Omni-directional	

#### Mechanical Specifications & Ordering Part Number

Ordering Part #	1002289	1002289F0-AA10L0100
Dimensions (mm)	53.6 x 25.1 x 0.2 (1.6 high at cable solder connection)	
Weight (grams)	0.86	1.1
Connector / Cable (mm)	U.FL compatible connector Length: 25, Cable diameter: 1.13, Color: Black	U.FL compatible connector Length: 100, Cable diameter: 1.13, Color: Black
Mounting	using 3M468 Adhesive	

\*Additional variations with different cable lengths, colors and connectors are available.



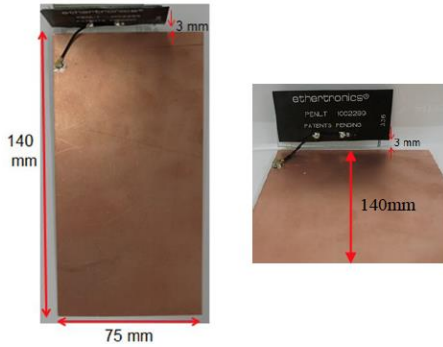
LTE / Cellular Band Ethertronics' Embedded Antenna Specifications.  
Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

**Test Setup**

Typical performance with 25 mm cable

**Antenna Location 1**

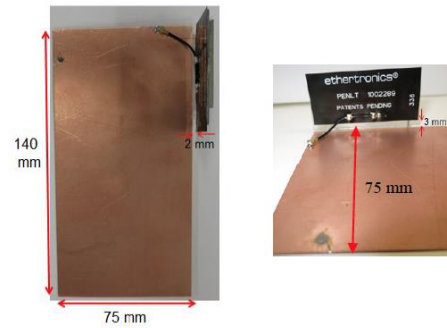
Antenna located at the end of the long edge of the PCB



In this position, the antenna is located 3 mm away from the PCB and 3 mm above the PCB

**Antenna Location 2**

Antenna located at the end of the short edge of the PCB

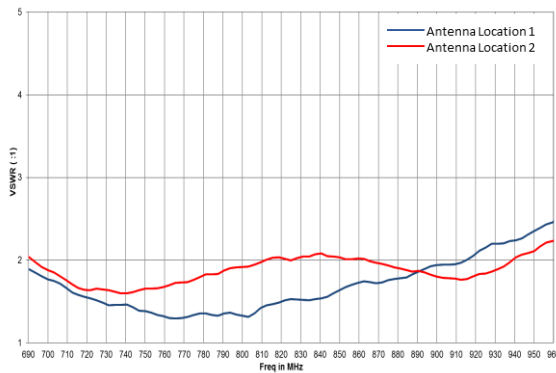


In this position, the antenna is located 2 mm away from the PCB and 3 mm above the PCB

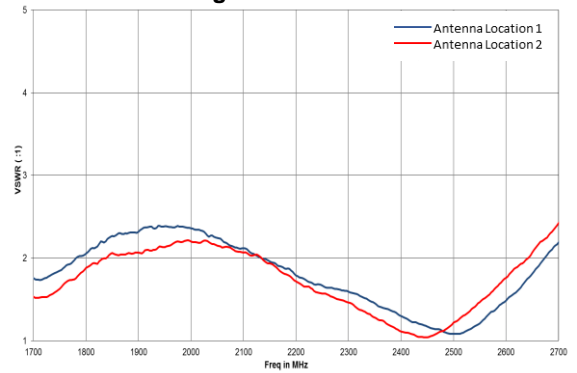
**VSWR and Efficiency Plots**

Typical performance with 25 mm (Location 1 & Location 2)

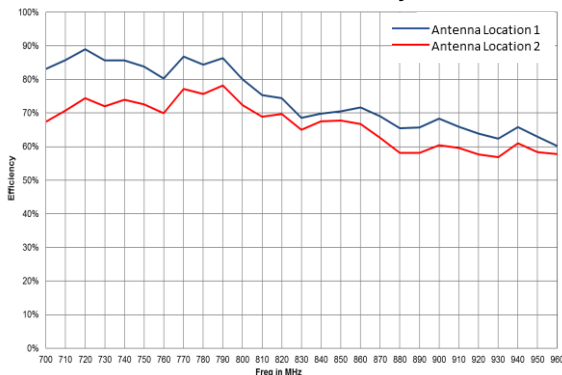
**Low Band VSWR**



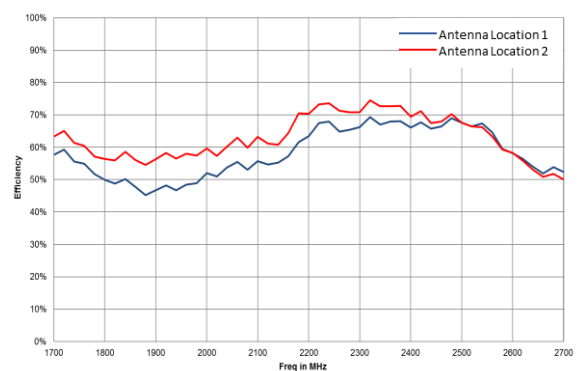
**High Band VSWR**



**Low Band Efficiency**



**High Band Efficiency**



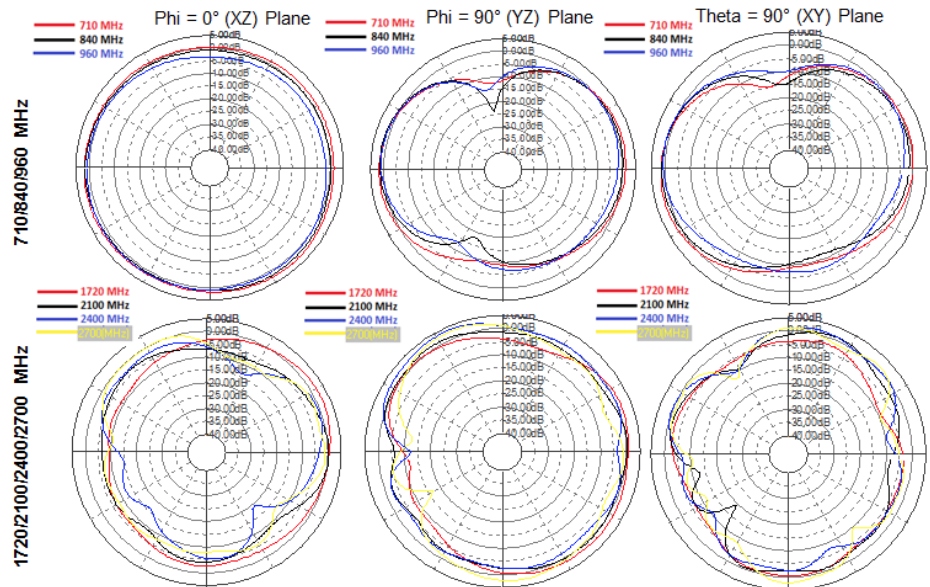
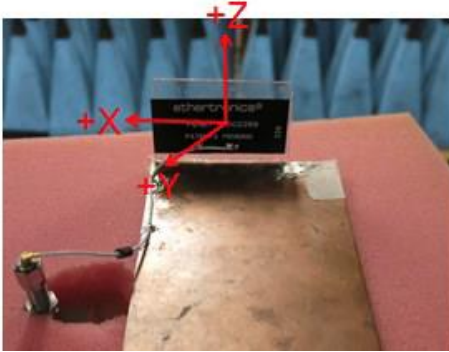


LTE / Cellular Band Ethertronics' Embedded Antenna Specifications.  
Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

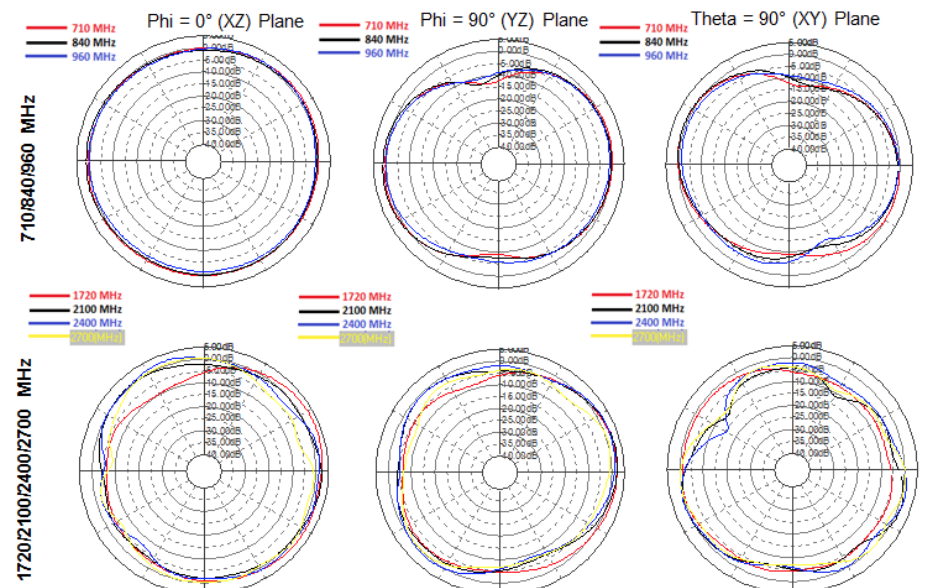
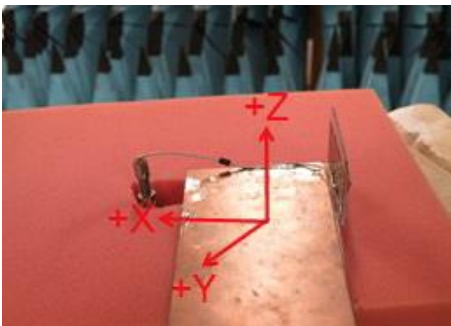
**Radiation Patterns**

Typical performance with 25 mm cable

**Antenna Location 1**



**Antenna Location 2**





LTE / Cellular Band Ethertronics' Embedded Antenna Specifications.  
Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

### Mechanical Dimensions

Typical antenna dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
1002289	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	7.6 ± 3.0	1.6 (max)	25 ± 3.0
1002289F0-AA10L0100	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	100.0 ± 3.5	1.6 (max)	117.4 ± 3.0

\*Total Height of 1.6 mm includes the cable solder connection

\*Height "C" of 0.2 mm includes FPC + adhesive thicknesses

