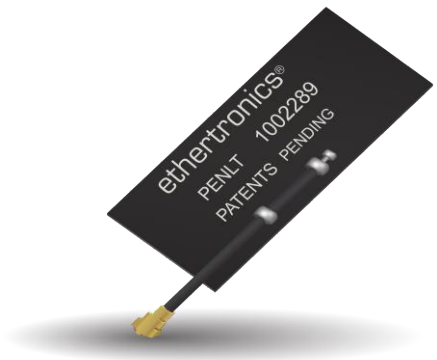
Part No.1002289

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

KYOCERA AVX 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

KYOCERA AVX 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.

The 1002289 is offered in many standard cable lengths ranging up to 200mm. Ordering part number guide is located at end of document for selection ease.

Electrical Specifications

Typical Characteristics, using 75 x 140 mm ground plane with 7.6 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%
Peak Gain (Longer Edge)	2.9 dBi	4.3 dBi
Peak Gain (Shorter Edge)	1.8 dBi	4.2 dBi
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
Dimensions (mm)	53.6 x 25.1 x 0.2 (1.6 high at cable solder connection)
Weight (grams)	0.86
Connector / Cable (mm)	U.FL compatible connector Length: 7.6, Cable diameter: 1.13, Color: Black
Mounting	using 3M468 Adhesive

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

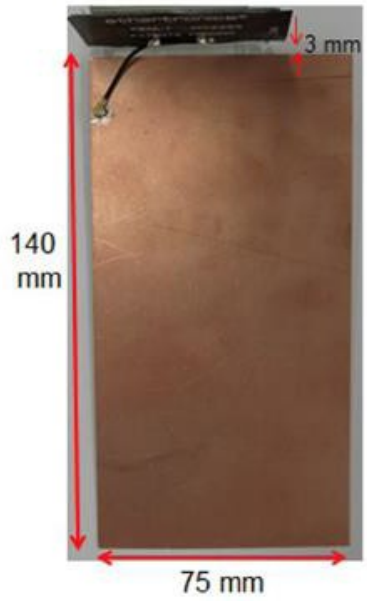
LTE / Cellular Band KYOCERA AVX Embedded Antenna Specifications.
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

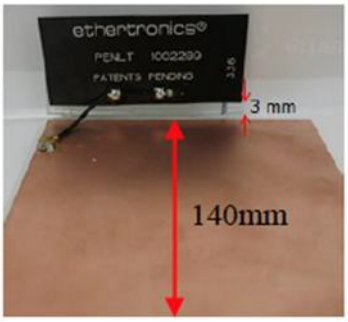
Test Setup

Typical performance with 7.6 mm cable

Antenna Location 1

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

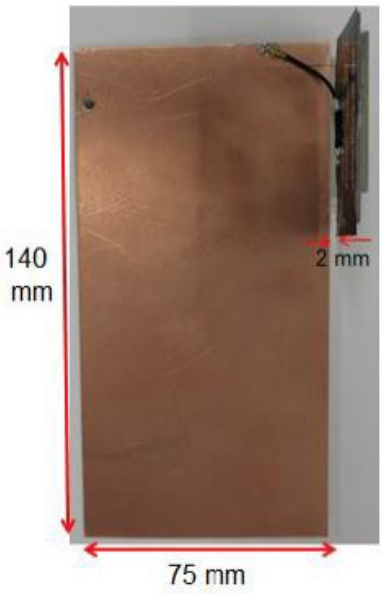


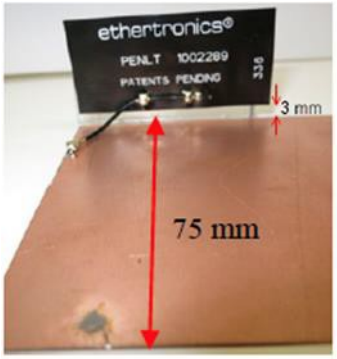


In this position, the antenna is located 3 mm away from the PCB and 3 mm above the PCB

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

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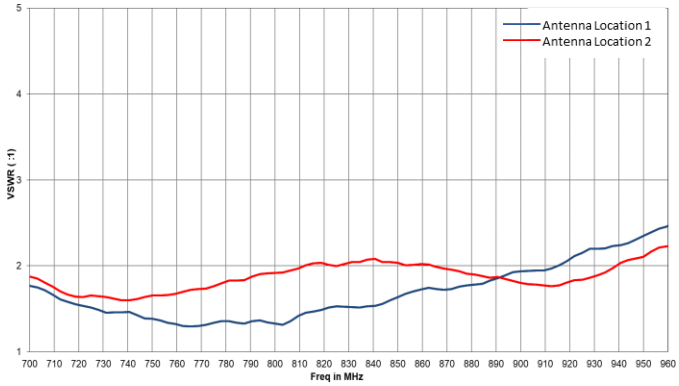
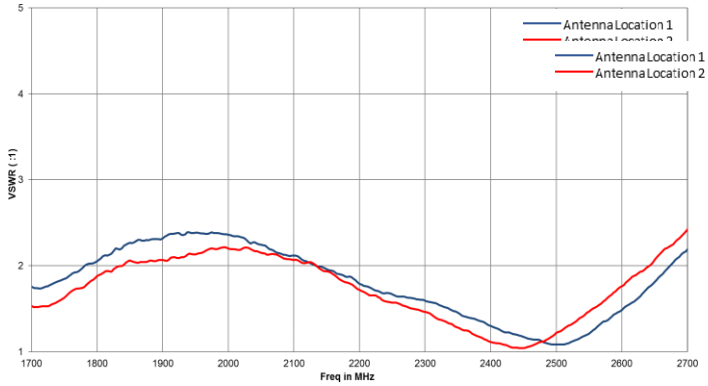
VSWR, Efficiency and Peak Gain Plots

Typical performance with 7.6 mm (Location 1 & Location 2)

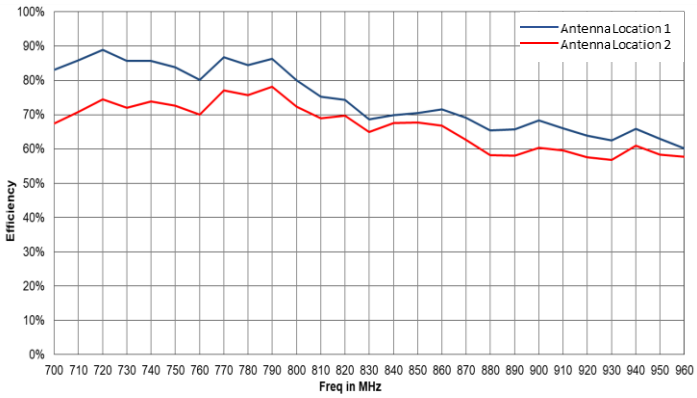
Low Band VSWR



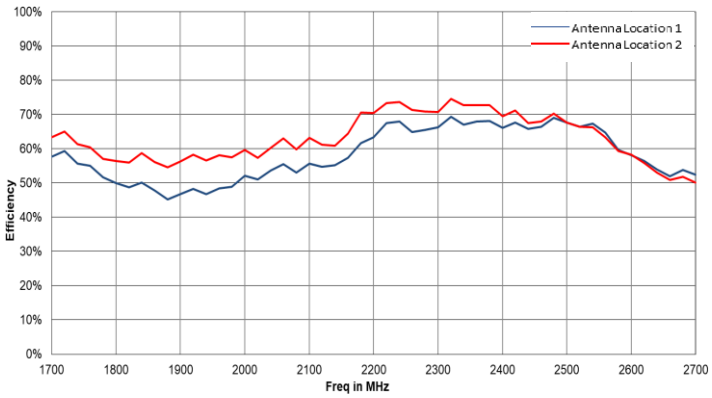
High Band VSWR



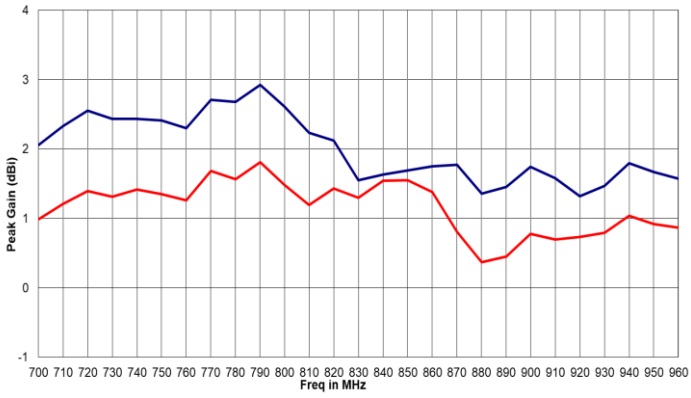
Low Band Efficiency



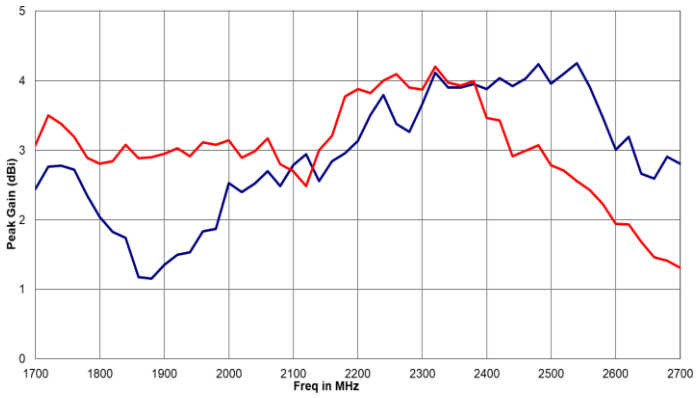
High Band Efficiency



Low Band Peak Gain



High Band Peak Gain



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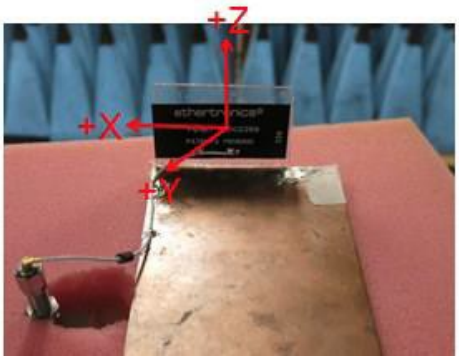
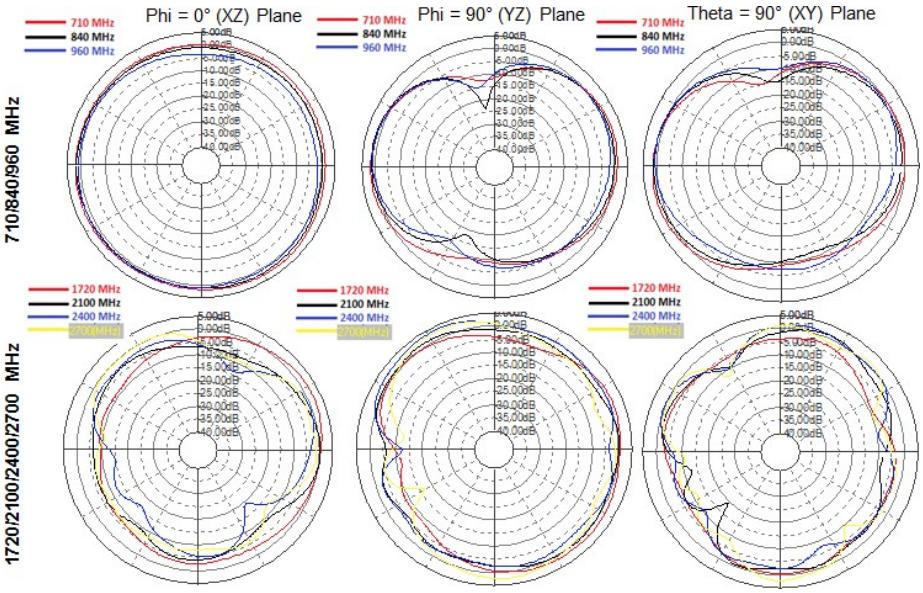
Radiation Patterns

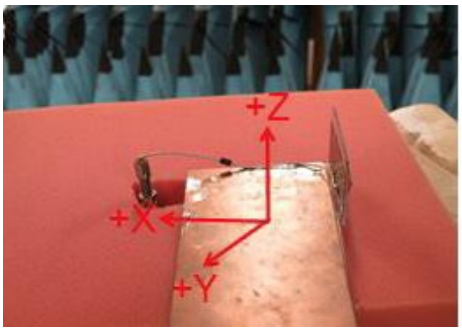
Typical performance with 7.6 mm cable

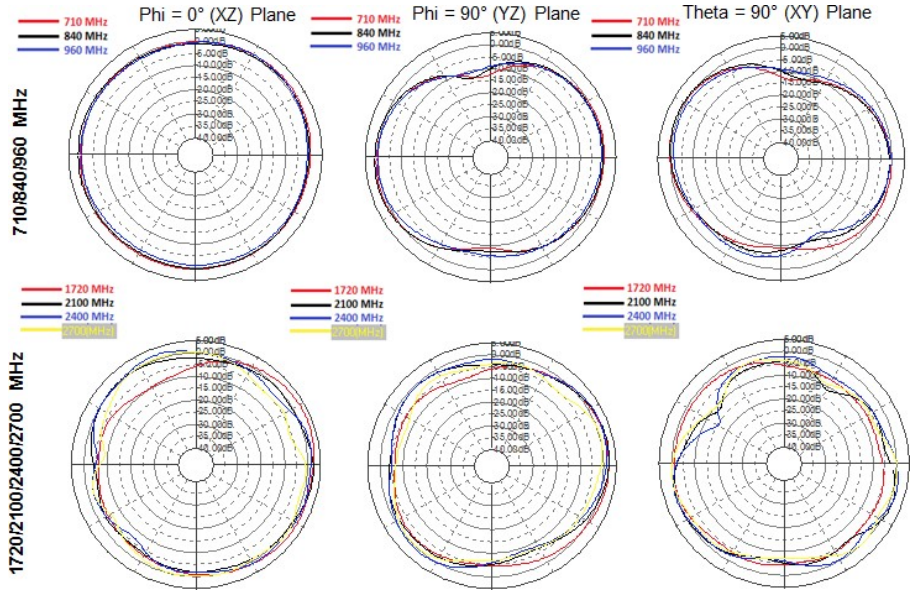
Antenna Location 1





Antenna Location 2





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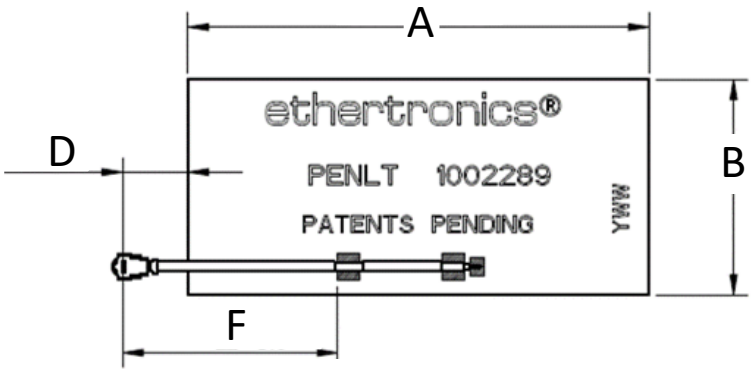
Mechanical Dimensions

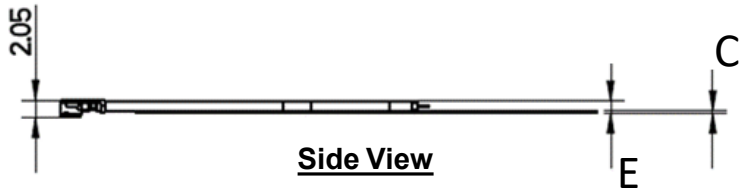
Typical antenna dimensions (mm)

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

***Total Height of 1.6 mm includes the cable solder connection**
***Height "C" of 0.2 mm includes FPC + adhesive thicknesses**



Top View



Side View

Bottom View

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Ordering Part Numbers

Typical antenna dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)	D (mm) Cable Length	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-AA10L0025	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	25.0 ± 3.0	1.6 (max)	42.4 ± 3.0
1002289F0-AA10L0050	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	50.0 ± 3.0	1.6 (max)	67.4 ± 3.0
1002289F0-AA10L0065	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	65.0 ± 3.0	1.6 (max)	82.4 ± 3.0
1002289F0-AA10L0075	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	75.0 ± 3.0	1.6 (max)	92.4 ± 3.0
1002289F0-AA10L0080	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	80.0 ± 3.0	1.6 (max)	97.4 ± 3.0
1002289F0-AA10L0100	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	100.0 ± 3.0	1.6 (max)	117.4 ± 3.0
1002289F0-AA10L0110	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	110.0 ± 3.0	1.6 (max)	127.4 ± 3.0
1002289F0-AA10L0120	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	120.0 ± 3.5	1.6 (max)	137.4 ± 3.0
1002289F0-AA10L0150	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	150.0 ± 4.0	1.6 (max)	167.4 ± 3.0
1002289F0-AA10L0160	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	160.0 ± 4.0	1.6 (max)	177.4 ± 3.0
1002289F0-AA10L0200	53.6 ± 0.3	25.1 ± 0.3	0.2 ± 10%	200.0 ± 4.0	1.6 (max)	217.4 ± 3.0

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