

# Part No.P522310F0

## LTE Cellular FPC Embedded Antenna

700 / 750 / 850 / 900 / 1800 / 1900 / 2000 / 2100 MHz  
Supports: Broadband LTE (OCTA-BAND), LTE CAT-M, NB-IoT, LoRa



KYOCERA AVX LTE cellular embedded antenna P522310F0 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, P522310F0 supports all the worldwide cellular bands for LTE with backward compatibility.

The P522310F0 is offered in many standard cable lengths ranging up to 200mm. Ordering part number guide is located at end of document for selection ease.

### LTE Cellular FPC Embedded Antenna

Low Band : 698 - 960 MHz  
High Band: 1710 - 2170 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.

##### Environmental Compliance

Products are the latest RoHS version compliant.

#### APPLICATIONS

- Healthcare applications (FDA Class I)
- Home automation
- Tracking
- Smart metering
- IoT, Industrial devices

### Electrical Specifications

Typical Characteristics, using 75 x 135 mm ground plane with 18 mm cable.

Frequency (MHz)	698 - 960	1710 - 2170
Average Efficiency (Vertical Ground)	60%	61%
Peak Gain (Vertical Ground)	2.3 dBi	2.8 dBi
VSWR Match	2.5:1 max	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

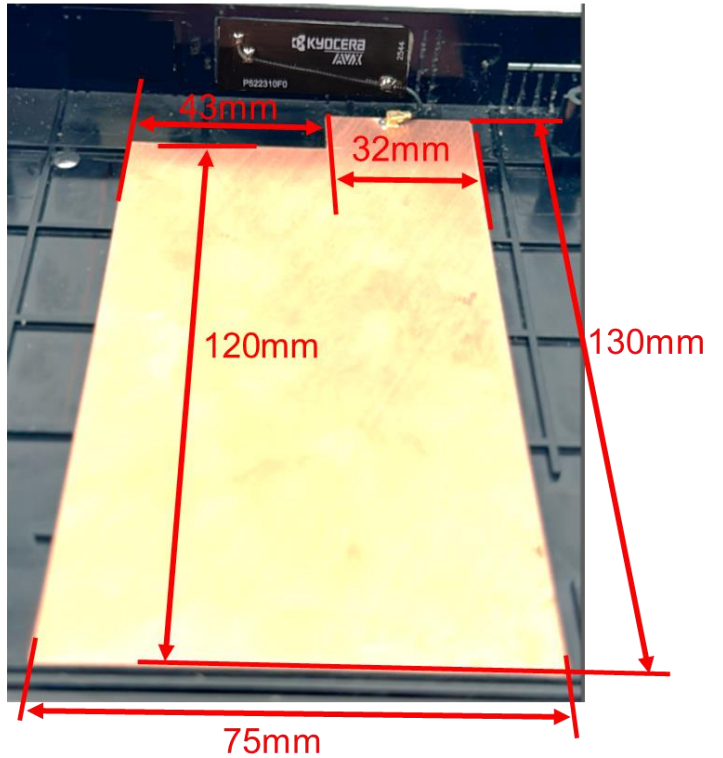
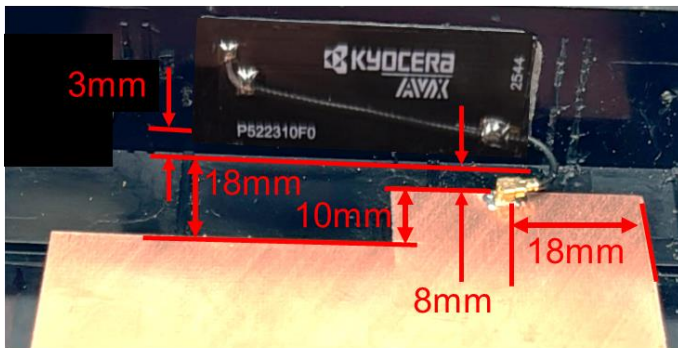
Ordering Part #	P522310F0-AA10L0018
Dimensions (mm)	41.0 x 15.5 x 0.12
Weight (grams)	0.7
Connector / Cable (mm)	U.FL compatible connector Length: 18.0, Cable diameter: 1.13, Color: Black
Mounting	using 3M468 Adhesive
Additional Resources	<a href="#">Download 3D FIT Files</a>

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

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

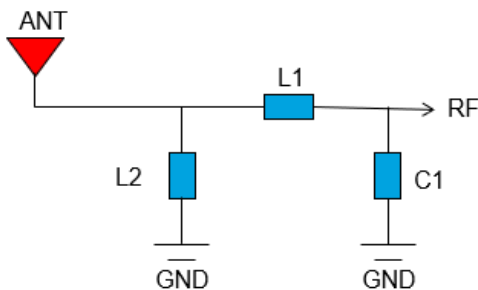
### Antenna Placement and Test Setup

Typical performance with 18 mm cable



- The antenna is located 8mm away from PCB and 3mm above the PCB.
- The cable length from the edge of FPC antenna is 18mm long (U.FL cable)

### Antenna Matching Component

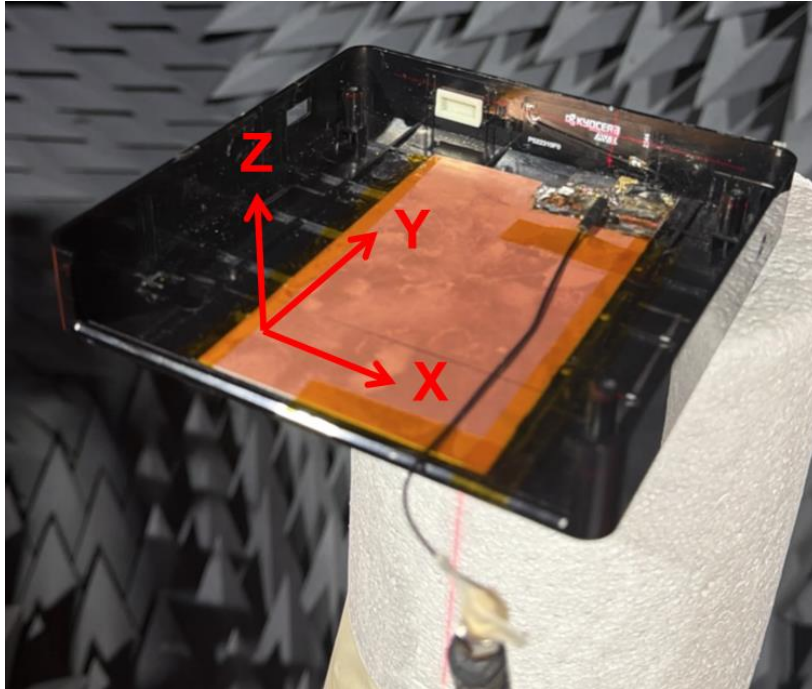


	L1	C1	L2
<b>New Matching Components</b>	0.56 nH	9.1 nH	DNI
<b>Tolerance</b>	±0.05nH	±2%	DNI
<b>Manufacturer Part #</b>	L0402R56AHNTR	LQG15HS9N1G02D	DNI
<b>Manufacturer</b>	KYOCERA AVX	KYOCERA AVX	DNI

LTE & NTN Cellular fpcKYOCERA AVX Embedded Antenna Specifications.  
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### Test Setup

Mounted vertical with plastic loading and 75x130 mm ground plane

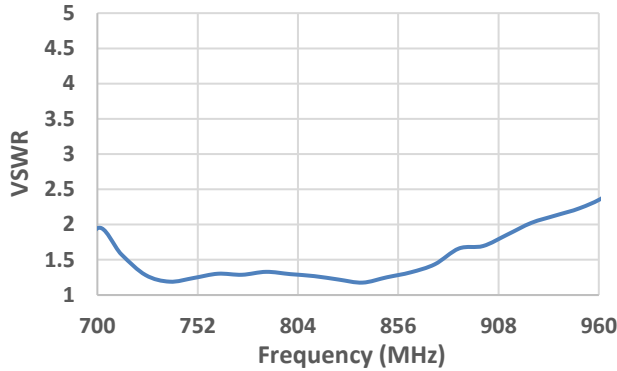


LTE / Cellular Band KYOCERA AVX Embedded Antenna Specifications.  
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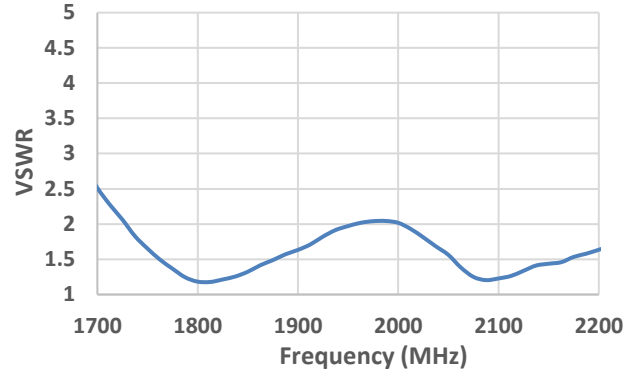
### LTE VSWR, Efficiency

Typical performance with 18 mm

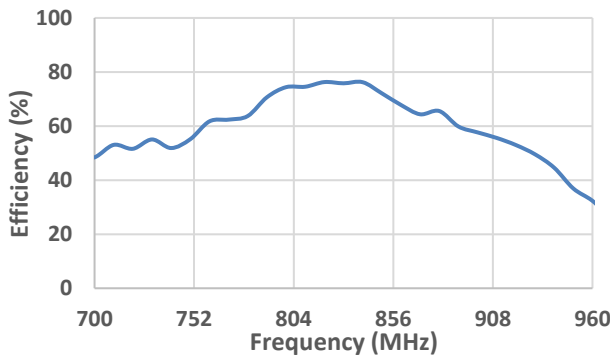
**Low Band VSWR (700- 960 MHz)**



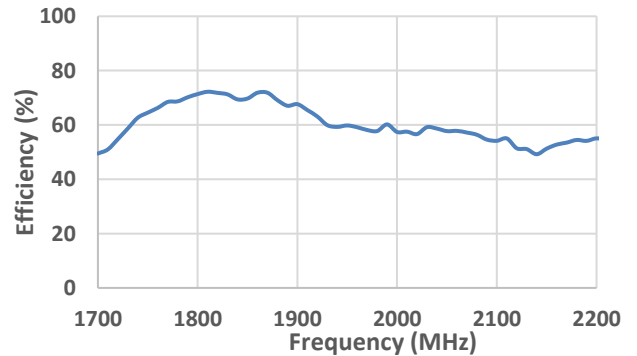
**High Band VSWR (1700- 2200 MHz)**



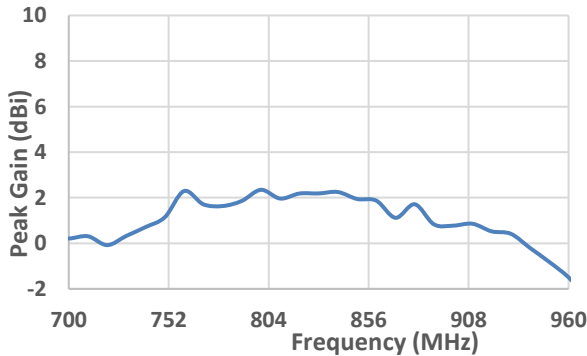
**Low Band Efficiency (700-960 MHz)**



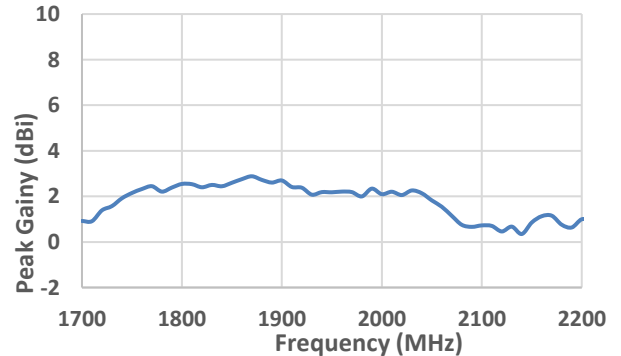
**High Band Efficiency (1700-2200 MHz)**



**Low Band Peak Gain (700-960 MHz)**

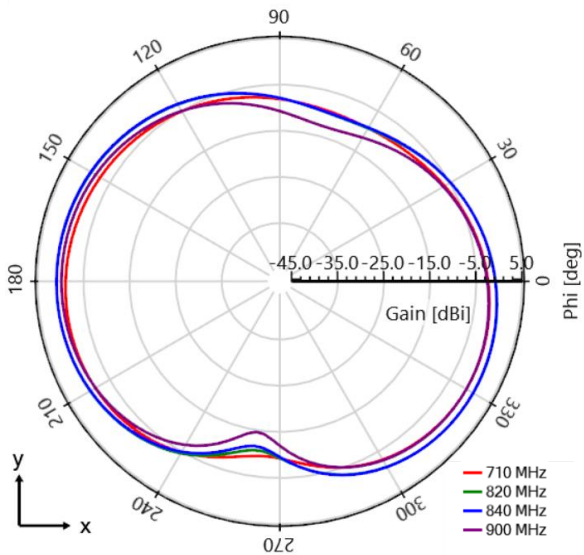
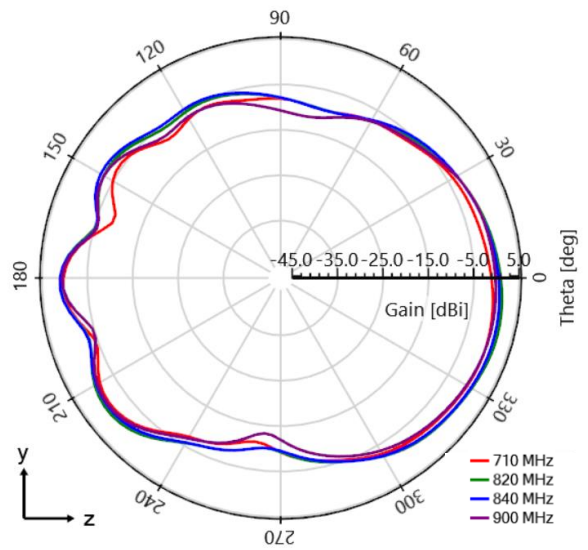
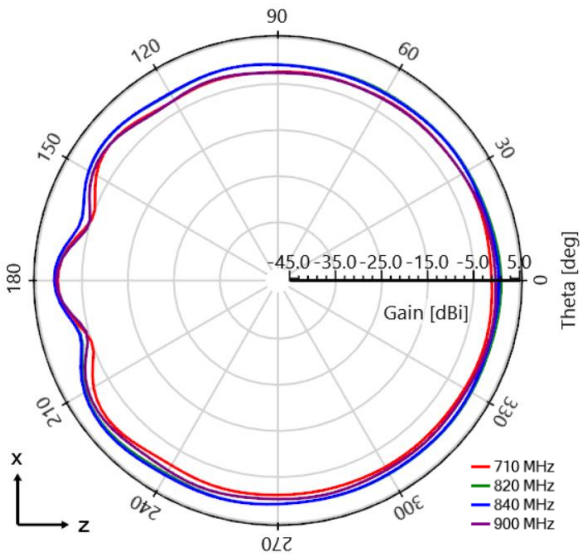
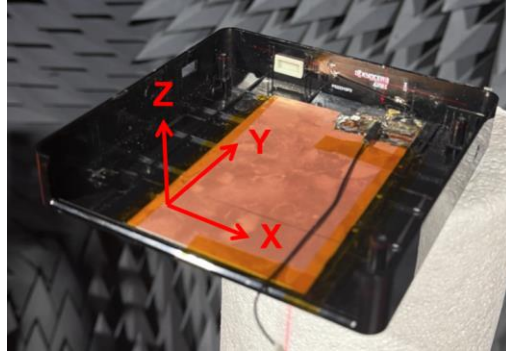


**High Band Peak Gain (1700-2200 MHz)**



**LTE Cellular fpcKYOCERA AVX Embedded Antenna Specifications.**  
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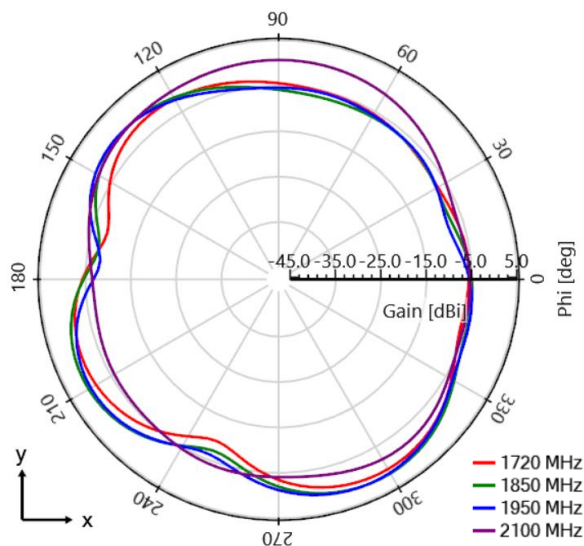
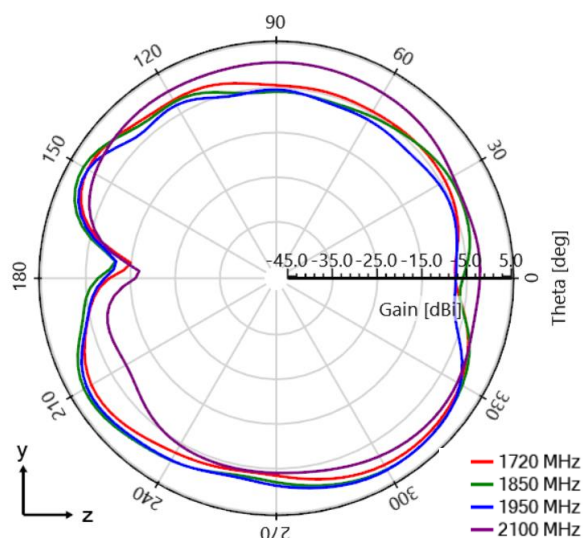
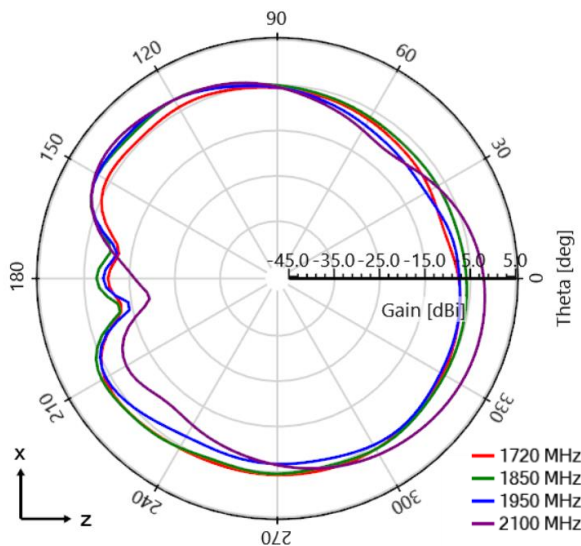
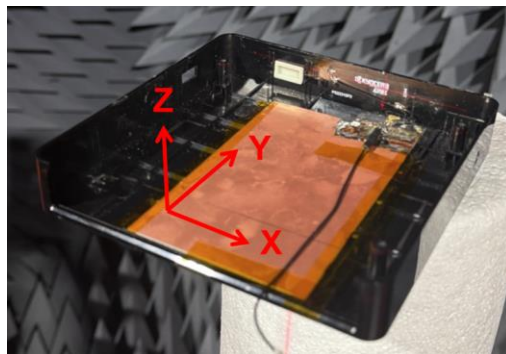
**LTE Low Band Radiation Pattern**  
 Typical performance with 18 mm cable



LTE Cellular fpcKYOCERA AVX Embedded Antenna Specifications.  
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### LTE High Band Radiation Pattern

Typical performance with 18 mm cable



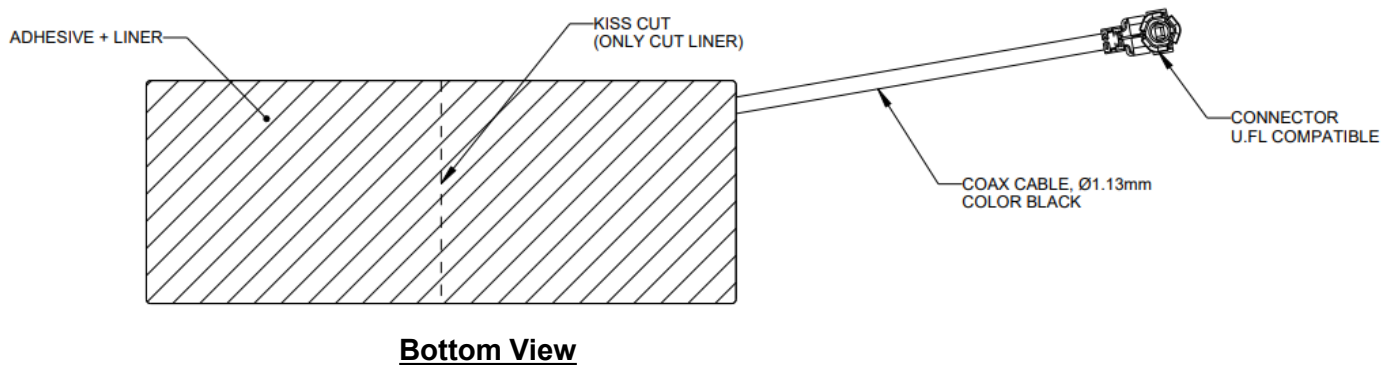
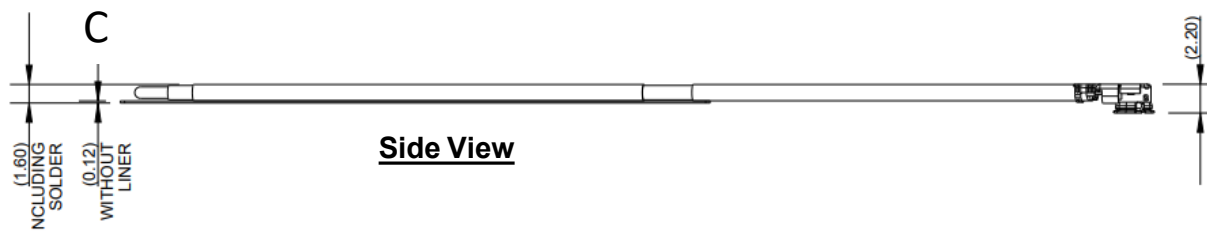
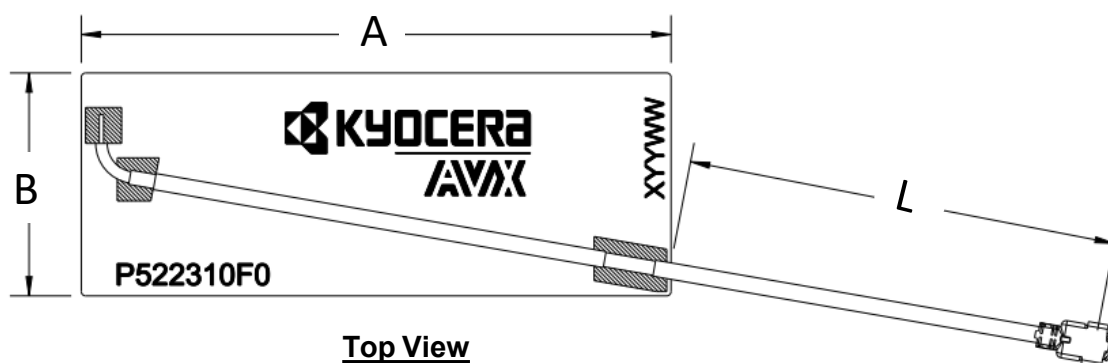
LTE / Cellular FPC KYOCERA AVX Embedded Antenna Specifications.  
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### Mechanical Dimensions

Typical antenna dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)	L (mm)	Connector
P522310F0-AA10L0018	41	15.5	0.12	18	MHF I (U.FL Compatible)

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



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### Additional Resources - P522310F0

**3D FIT File:**

[https://www.kyocera-avx.com/download/antennas/ME-FIT/P522310F0\\_ME\\_fit.zip](https://www.kyocera-avx.com/download/antennas/ME-FIT/P522310F0_ME_fit.zip)