

## Part No. 1001932PT

### WLAN / BT / Zigbee / Wi-Fi 6E Tunable Embedded PCB Antenna

2.4 GHz, 5 GHz, 6 GHz, 7 GHz

Supports: Wi-Fi applications, Agriculture, Bluetooth, Zigbee, WLAN, Smart Home, Healthcare, Digital Signage



#### PCB Wi-Fi Tunable Embedded Antenna with Cable

2.4 GHz; 5 GHz; 6 GHz; 7 GHz

#### KEY BENEFITS

##### Stay-in-Tune

KYOCERA AVX antenna technology provides superior RF field containment, resulting in less interaction with surrounding components.

**Quicker Time-to-Market** By optimizing antenna size, performance and emissions, customer and regulatory specifications are more easily met.

##### Environmental Compliance

Products are the latest RoHS version compliant.

#### APPLICATIONS

- Embedded design
- Cellular, Headsets, Tablets
- Gateway, Access Point
- Handheld
- Telematics
- Tracking
- Healthcare
- M2M, Industrial devices
- Smart Grid
- OBD-II

KYOCERA AVX WLAN antennas deliver on the key needs of device designers for higher functionality and performance in smaller/thinner designs. These innovative antennas provide compelling advantages for a 2.4 GHz, 5.0 GHz, 6.0 GHz, and 7.0 GHz enabled devices.

#### Real-World Performance and Implementation

Antennas may look alike on the outside, but the important difference is inside. Other antennas may contain simple PIFA or monopole designs that interact with their surroundings, complicating layout or changing performance with use position. KYOCERA AVX antennas utilize patented Isolated Magnetic Dipole (IMD) technology to deliver a unique size and performance combination.

The 1001932PT is offered in many standard cable lengths ranging from 25 mm up to 500 mm. Standard connector options offered in MHF and MHF4L compatibility. Ordering part number guide is located at end of document for selection ease.

#### Electrical Specifications

| Frequency (GHz)      | 2.400 – 2.485      | 4.900 – 5.825 | 5.925 – 7.125 |
|----------------------|--------------------|---------------|---------------|
| Peak Gain            | 2.03 dBi           | 4.45 dBi      | 6.11 dBi      |
| Average Efficiency   | 61%                | 82%           | 63%           |
| VSWR Match           | 2:1 max            | 2:1 max       | 2:1 max       |
| Feed Point Impedance | 50 ohms unbalanced |               |               |
| Polarization         | Linear             |               |               |
| Power Handling       | 2.0 Watt CW        |               |               |

#### Mechanical Specifications

| Ordering Part #      | 1001932PT-AA10L0100                                                        |
|----------------------|----------------------------------------------------------------------------|
| Dimensions (mm)      | 35.2 x 8.5 x 0.4                                                           |
| Weight (grams)       | 0.8                                                                        |
| Cable/Connector (mm) | Length: 100, Diameter: 1.13, Color: Black; MHF (U.FL compatible) connector |
| Mounting             | Adhesive on bottom side of antenna                                         |
| Packaging            | PE bags                                                                    |

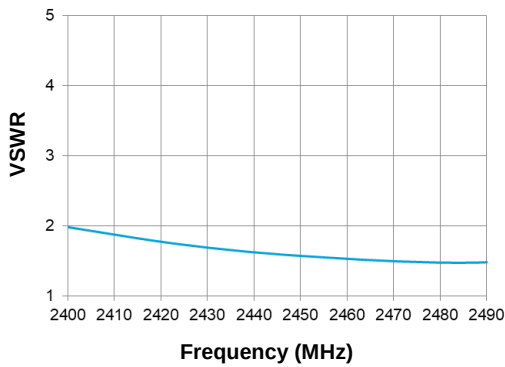
\*Additional variations with different cable lengths, colors and connectors are available.

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KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

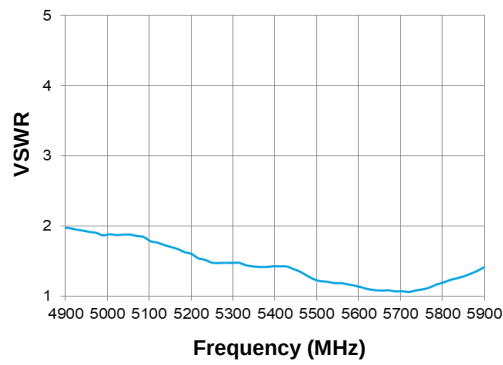
## VSWR, Efficiency and Peak Gain Plots

Typical Performance using 100 mm cable tested on PC-ABS

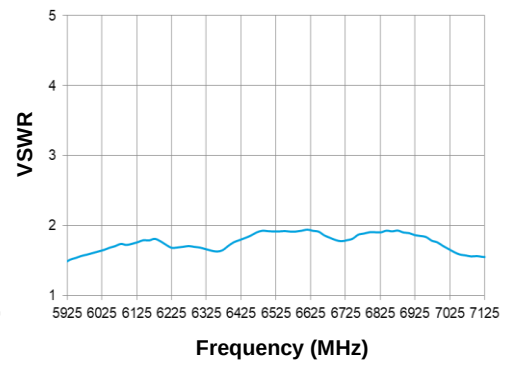
**2.4 GHz VSWR**



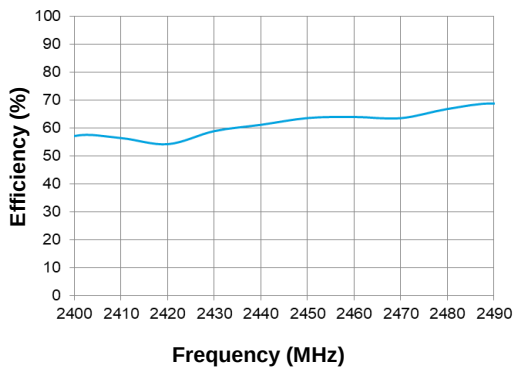
**5 GHz VSWR**



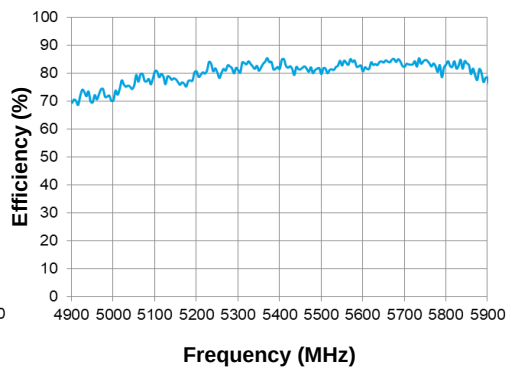
**6 / 7 GHz VSWR**



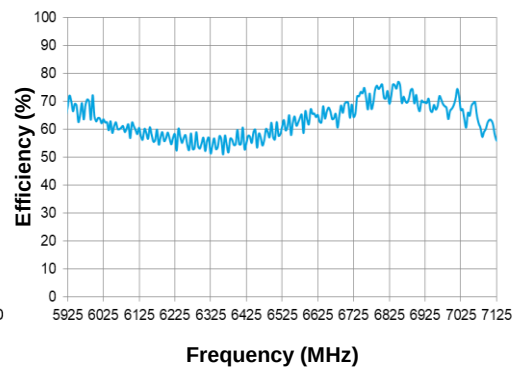
**2.4 GHz Efficiency**



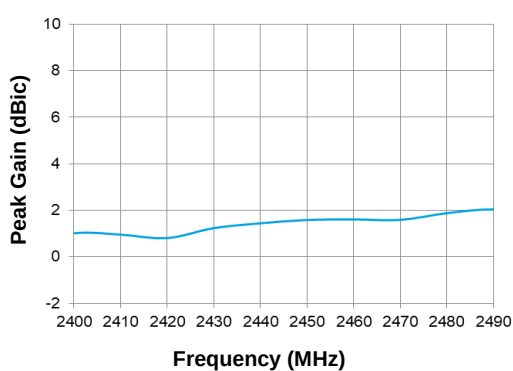
**5 GHz Efficiency**



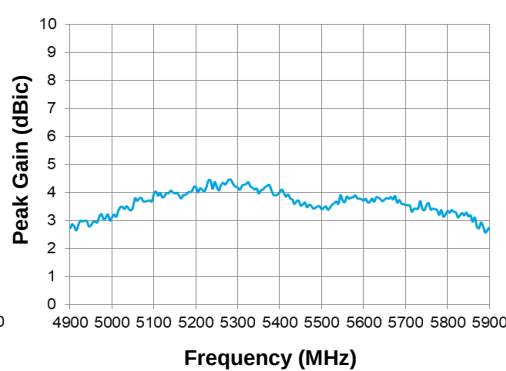
**6 / 7 GHz Efficiency**



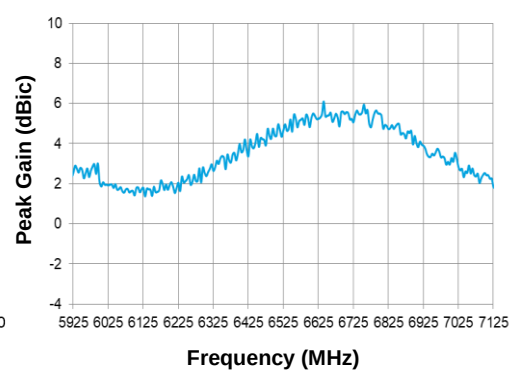
**2.4 GHz Peak Gain**



**5 GHz Peak Gain**



**6 / 7 GHz Peak Gain**

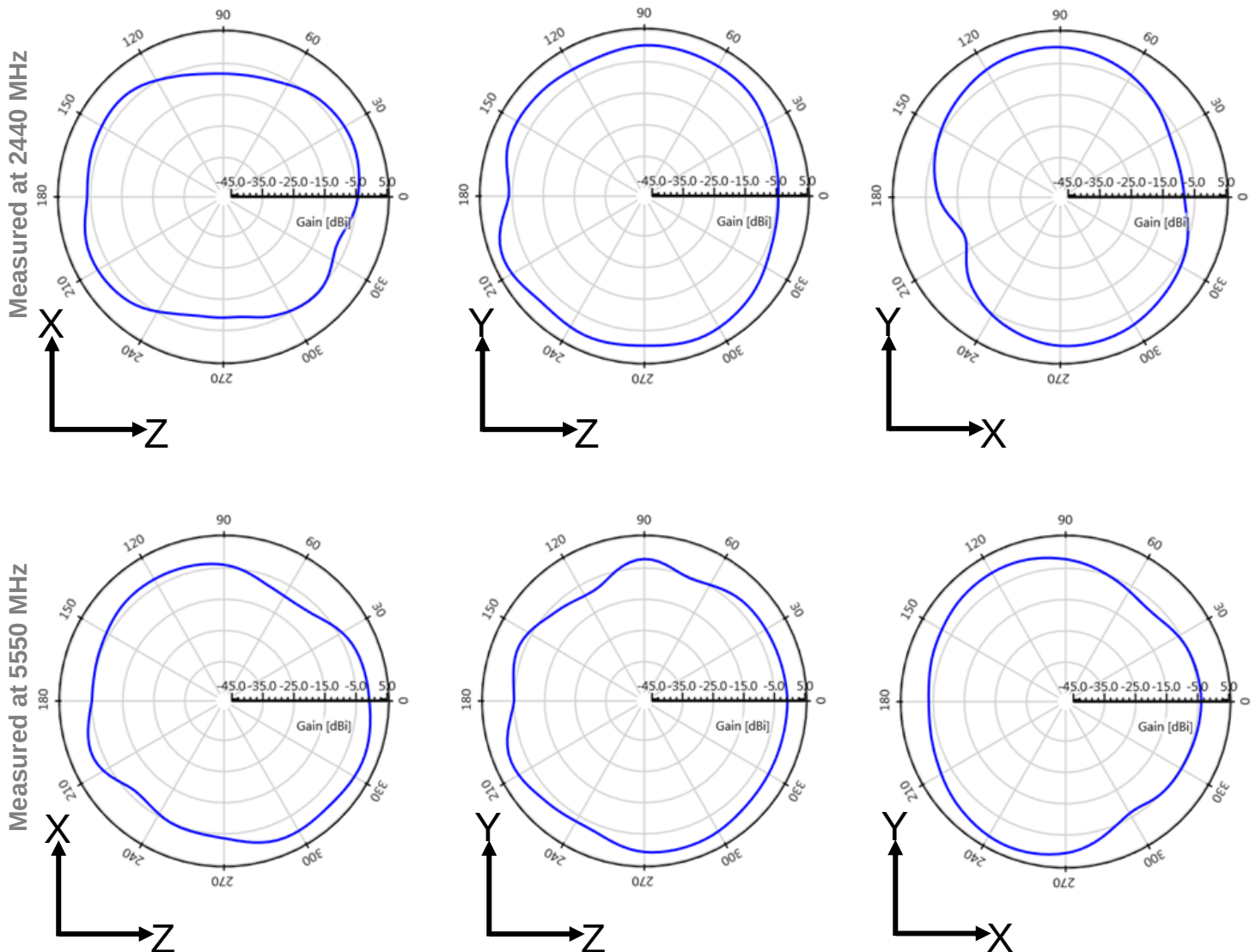


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### Antenna Radiation Patterns

Typical Performance using 100 mm cable tested on PC-ABS

Measured @ 2440, 5550 MHz

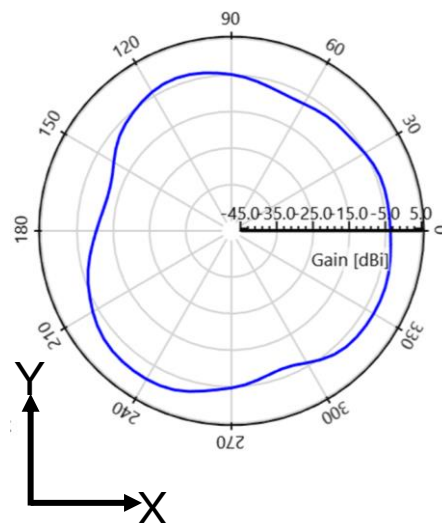
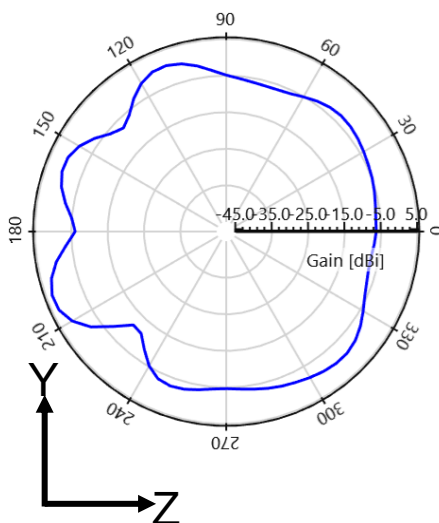
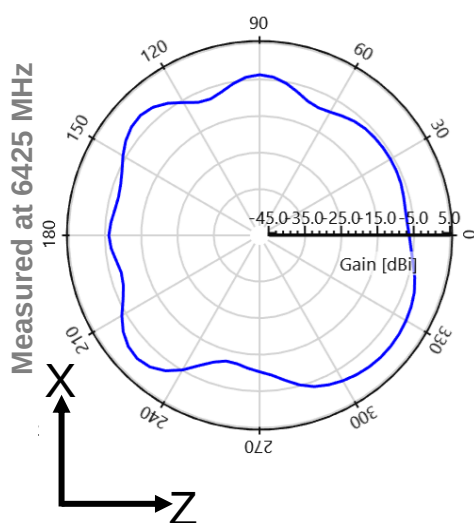


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### Antenna Radiation Patterns

Typical Performance using 100 mm cable tested on PC-ABS

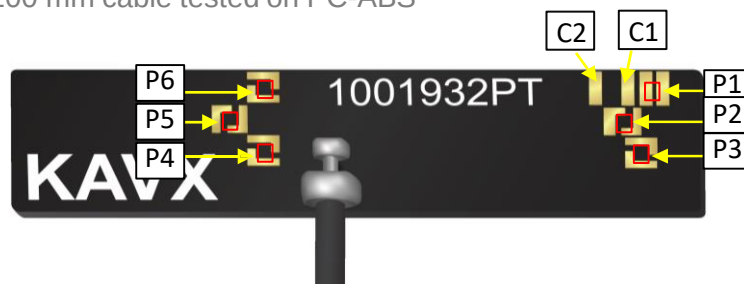
Measured @ 6425 MHz



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## Antenna Tuning Options

Typical Performance using 100 mm cable tested on PC-ABS



\*This antenna has unique features enabling limited range RF tuning by leaving P1 - P6 and C1 - C2 connected by “solder bridge” or disconnected with a “cut” to the trace. Refer to detailed tuning options below.

Ref: Baseline = Typical Performance using 100 mm cable tested on PC-ABS

### Options for Tuning: "2.4GHz (Lower)"

| MODE                        | T1                    | T2                    | T3                    | T4                    |
|-----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| PADS                        | Connect: P2           | Connect: P1           | Connect: P2+P3        | Connect: P1+P3        |
| Outcome:<br>(Ref: Baseline) | ~200 MHz<br>shift low | ~250 MHz<br>shift low | ~350 MHz<br>shift low | ~370 MHz<br>shift low |

### Options for Tuning: "2.4GHz (Higher)"

| MODE                        | C1                     | C2                     |
|-----------------------------|------------------------|------------------------|
| PADS                        | Cut: C1                | Cut: C2                |
| Outcome:<br>(Ref: Baseline) | ~170 MHz<br>shift high | ~300 MHz<br>shift high |

### Options for Tuning: "5GHz (Lower)"

| MODE                        | T5                    | T6                     | T7                    | T8                     |
|-----------------------------|-----------------------|------------------------|-----------------------|------------------------|
| PADS                        | Connect: P4           | Connect: P4+P5         | Connect: P6           | Connect: P5+P6         |
| Outcome:<br>(Ref: Baseline) | ~200 MHz<br>shift low | ~1500 MHz<br>shift low | ~500 MHz<br>shift low | ~1900 MHz<br>shift low |

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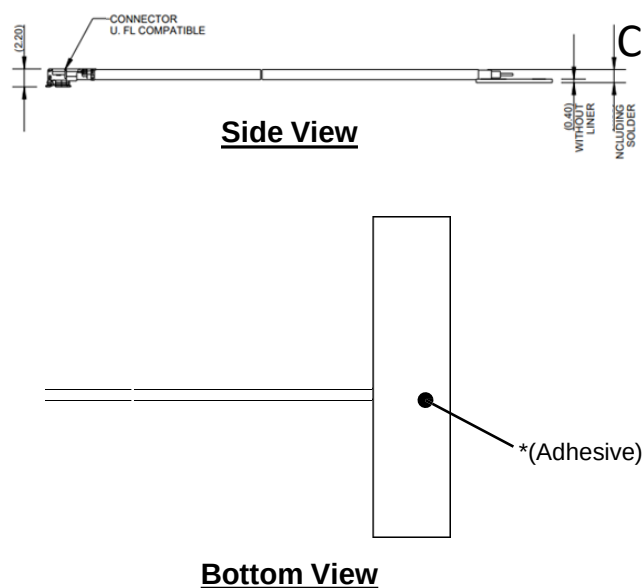
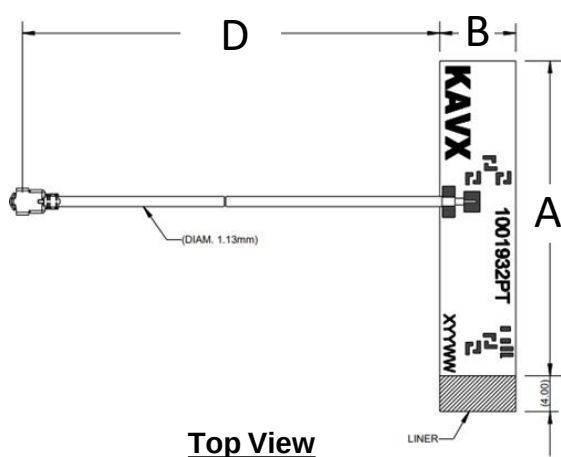
## Mechanical Dimensions & Ordering Part Numbers

Typical antenna dimensions in mm MHF (U.FL compatible) connector

| Part Number         | A      | B     | C     | D           |
|---------------------|--------|-------|-------|-------------|
| 1001932PT-AA10L0025 | (35.2) | (8.5) | (1.9) | 25.0 ± 3.0  |
| 1001932PT-AA10L0050 | (35.2) | (8.5) | (1.9) | 50.0 ± 3.0  |
| 1001932PT-AA10L0075 | (35.2) | (8.5) | (1.9) | 75.0 ± 3.0  |
| 1001932PT-AA10L0100 | (35.2) | (8.5) | (1.9) | 100.0 ± 3.0 |
| 1001932PT-AA10L0150 | (35.2) | (8.5) | (1.9) | 150.0 ± 4.0 |
| 1001932PT-AA10L0200 | (35.2) | (8.5) | (1.9) | 200.0 ± 4.0 |

\*“( ) ” Indicated the dimension is for reference only.

| Part Number         | Cable Length        | Cable Tolerance |
|---------------------|---------------------|-----------------|
| 1001932PT-AA10L0XXX | 25.0 ≤ XXX < 149.0  | ± 3.0           |
| 1001932PT-AA10L0XXX | 149.0 ≤ XXX < 299.0 | ± 4.0           |
| 1001932PT-AA10L0XXX | 299.0 ≤ XXX ≤ 500.0 | ± 5.0           |



\*Total Height “C” of 1.9 mm includes the cable solder connection

\*Height of 0.4 mm includes PCB + adhesive thicknesses

\*Dimensions in ( ) parenthesis are Reference Only.

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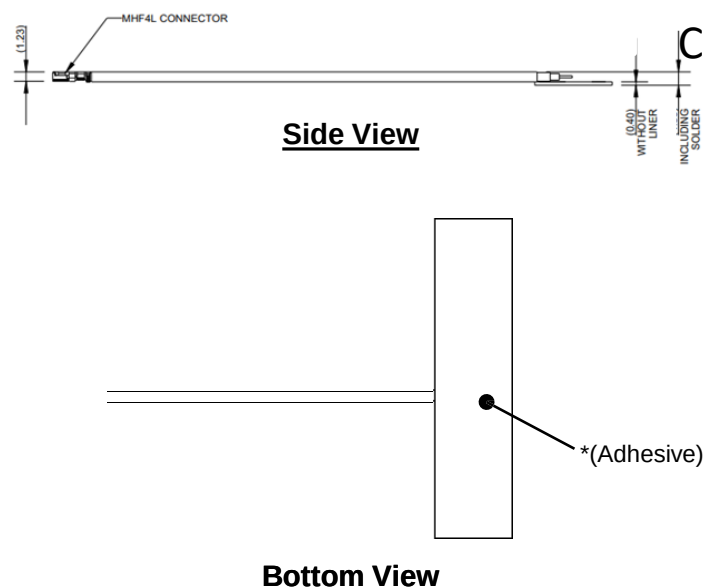
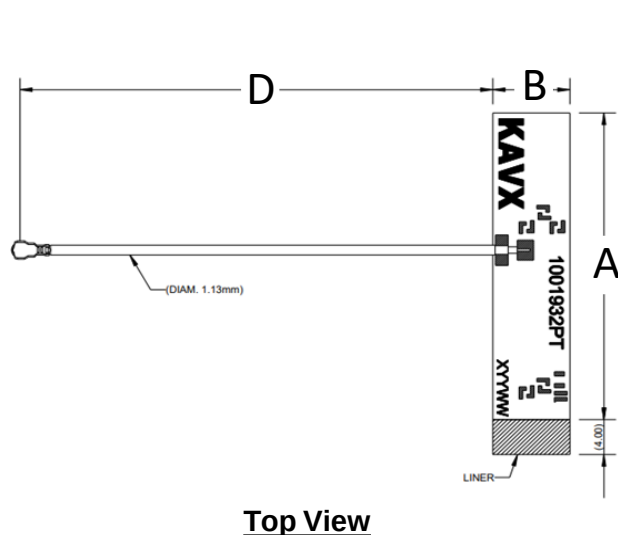
## Mechanical Dimensions & Ordering Part Numbers

Typical antenna dimensions in mm MHF4L connector.

| Part Number         | A      | B     | C     | D           |
|---------------------|--------|-------|-------|-------------|
| 1001932PT-AC10L0025 | (35.2) | (8.5) | (1.9) | 25.0 ± 3.0  |
| 1001932PT-AC10L0050 | (35.2) | (8.5) | (1.9) | 50.0 ± 3.0  |
| 1001932PT-AC10L0075 | (35.2) | (8.5) | (1.9) | 75.0 ± 3.0  |
| 1001932PT-AC10L0100 | (35.2) | (8.5) | (1.9) | 100.0 ± 3.0 |
| 1001932PT-AC10L0150 | (35.2) | (8.5) | (1.9) | 150.0 ± 4.0 |
| 1001932PT-AC10L0200 | (35.2) | (8.5) | (1.9) | 200.0 ± 4.0 |

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| Part Number         | Cable Length        | Cable Tolerance |
|---------------------|---------------------|-----------------|
| 1001932PT-AC10L0XXX | 25.0 ≤ XXX < 149.0  | ± 3.0           |
| 1001932PT-AC10L0XXX | 149.0 ≤ XXX < 299.0 | ± 4.0           |
| 1001932PT-AC10L0XXX | 299.0 ≤ XXX ≤ 500.0 | ± 5.0           |



\*Total Height “C” of 1.9 mm includes the cable solder connection

\*Height of 0.4 mm includes PCB + adhesive thicknesses

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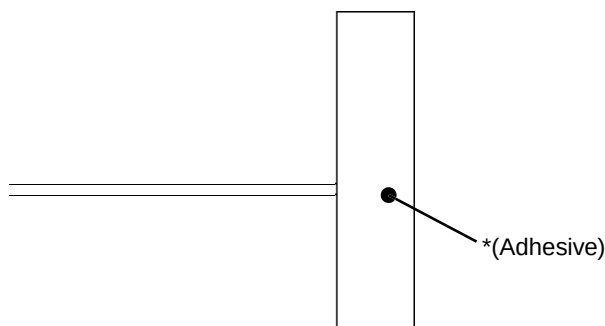
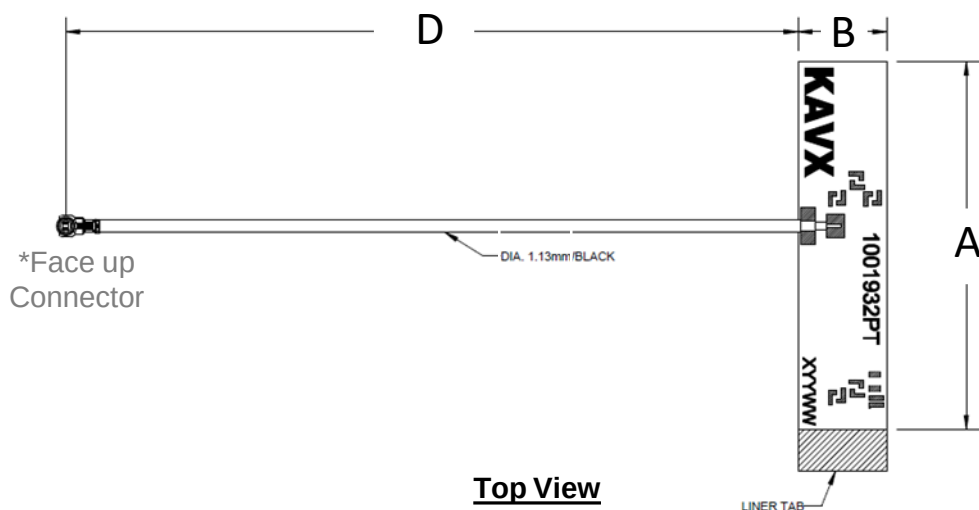
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## Mechanical Dimensions & Ordering Part Numbers

Typical antenna dimensions in mm MHF4L connector. Face up connector orientation

| Part Number          | A      | B     | C     | D<br>Cable Length | Cable<br>Tolerance |
|----------------------|--------|-------|-------|-------------------|--------------------|
| 1001932PT-AC10L0070U | (35.2) | (8.5) | (1.9) | 70.00             | ± 3.0              |

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\*Height of 0.4 mm includes PCB + adhesive thicknesses

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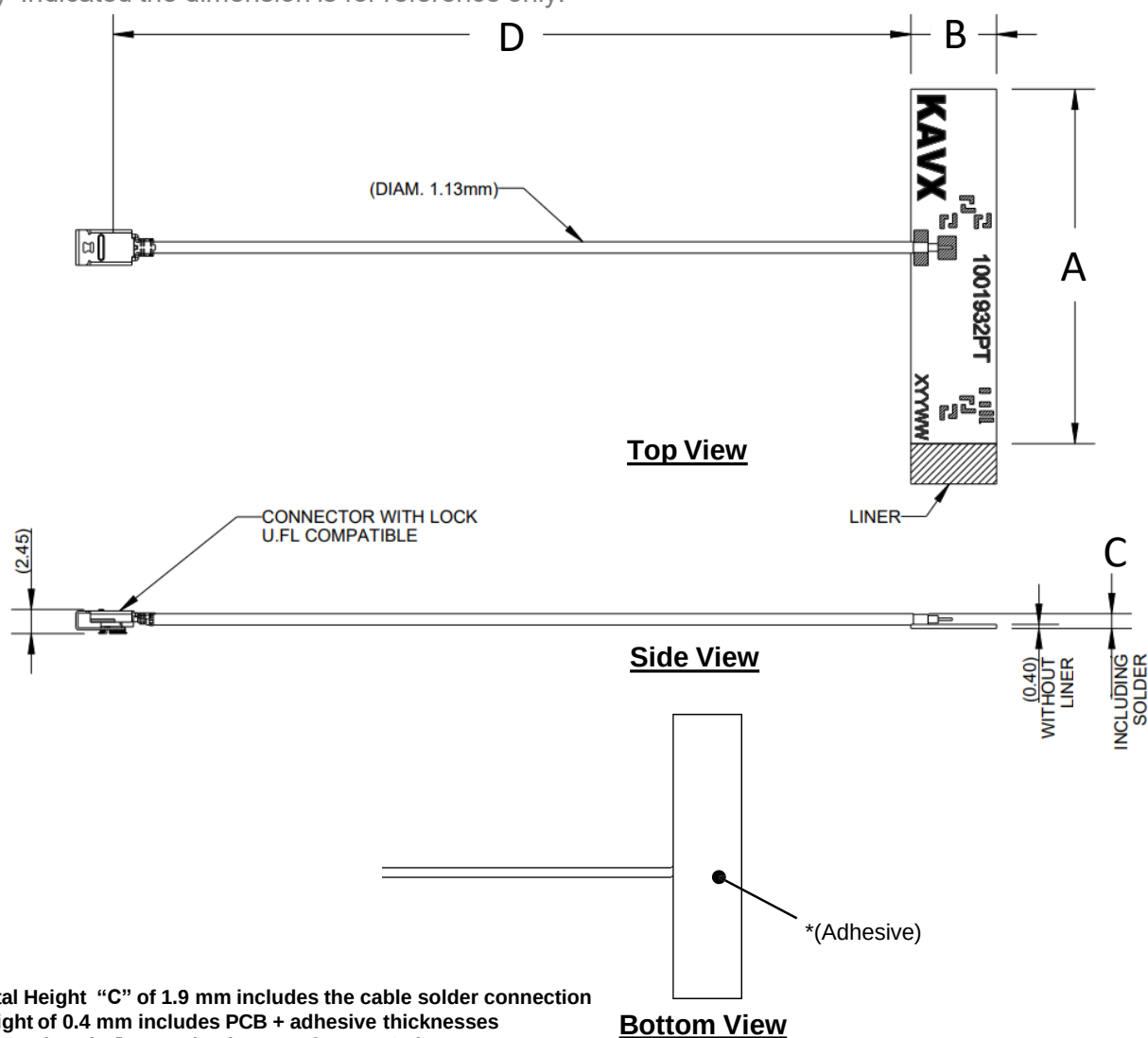
## Mechanical Dimensions & Ordering Part Numbers

Typical antenna dimensions in mm LOCK MHF (U.FL compatible) connector.

| Part Number         | A      | B     | C     | D Cable Length |
|---------------------|--------|-------|-------|----------------|
| 1001932PT-AD10L0025 | (35.2) | (8.5) | (1.9) | 25.0 ± 3.0     |
| 1001932PT-AD10L0050 | (35.2) | (8.5) | (1.9) | 50.0 ± 3.0     |
| 1001932PT-AD10L0075 | (35.2) | (8.5) | (1.9) | 75.0 ± 3.0     |
| 1001932PT-AD10L0100 | (35.2) | (8.5) | (1.9) | 100.0 ± 3.0    |
| 1001932PT-AD10L0150 | (35.2) | (8.5) | (1.9) | 150.0 ± 4.0    |
| 1001932PT-AD10L0200 | (35.2) | (8.5) | (1.9) | 200.0 ± 4.0    |

| Cable Length        | Cable Tolerance |
|---------------------|-----------------|
| 25.0 ≤ XXX < 149.0  | ± 3.0           |
| 149.0 ≤ XXX < 299.0 | ± 4.0           |
| 299.0 ≤ XXX ≤ 500.0 | ± 5.0           |

\*\*“( ) ” Indicated the dimension is for reference only.



\*Total Height "C" of 1.9 mm includes the cable solder connection

\*Height of 0.4 mm includes PCB + adhesive thicknesses

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