Antenna specifications

All CART and CART S headsets are using the antenna 1001932FT-AA10L0100 from Kyocera (part number 430.0000.03). It is a FPC Wi-Fi tunable embedded antenna with cable. The mechanical dimensions of that antenna are available in the datasheet or in Figure 1. The CART headsets unit do not support simultaneous transmission.

Mechanical Dimensions & Ordering Part Numbers

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

Part Number	A	B	C	D Cable Length	Cable Tolerance
1001932FT-AA10L0100	(35.2)	(8.5)	(1.6)	100.0	± 3.0
1001932FT-AA10L0XXX	(35.2)	(8.5)	(1.6)	25.0 ≤ XXX < 149.0	± 3.0
1001932FT-AA10L0XXX	(35.2)	(8.5)	(1.6)	149.0 ≤ XXX < 299.0	± 4.0
1001932FT-AA10L0XXX	(35.2)	(8.5)	(1.6)	299.0 ≤ XXX ≤ 500.0	± 5.0

*"()" Indicated the dimension is for reference only.

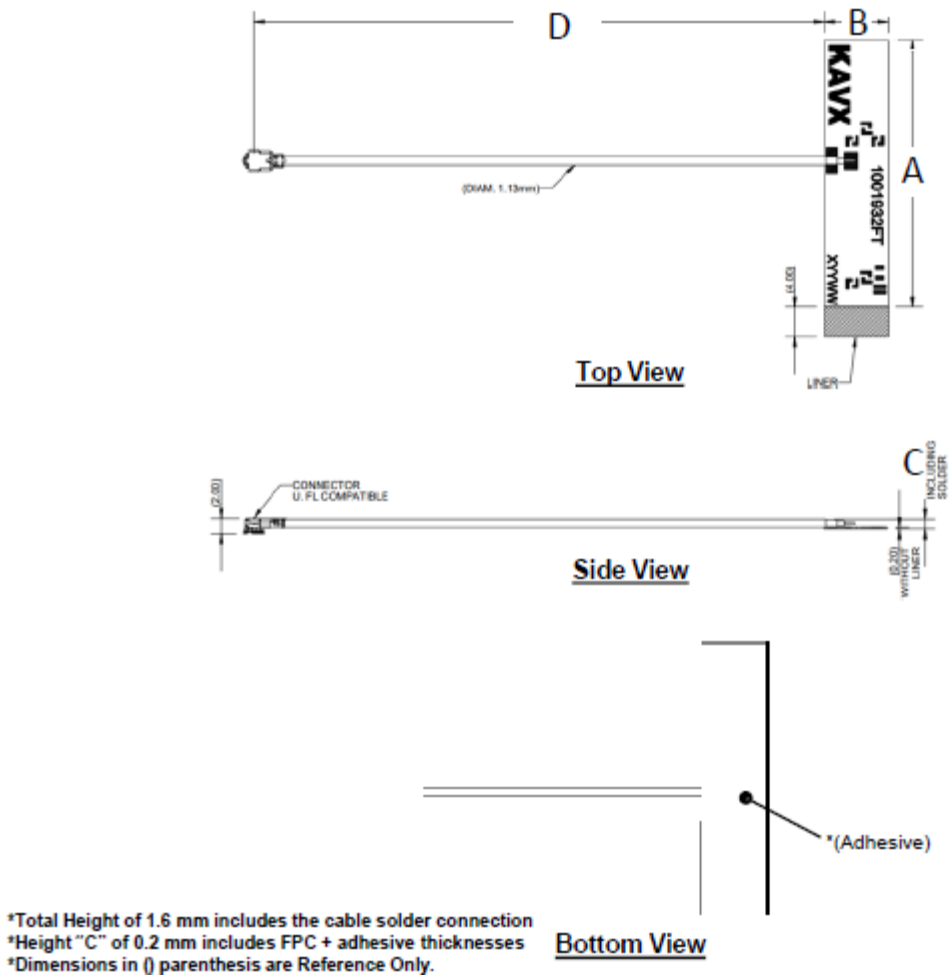


Figure 1: Antenna mechanical dimensions (model of the antenna used in the headset is framed in red)

Copyright: ArViCom Sarl

Table 1 provides the electrical specifications of the antenna.

Table 1: Antenna electrical specifications

Frequency (GHz)	**2.400 –2.485**	**4.900 –5.825**
Peak Gain	2.5 dBi	4.4 dBi
Average Efficiency	60%	71%
VSWR Match	2:1 max	2:1 max
Feed Point Impedance	50 ohms unbalanced	
Polarization	Linear	

Copyright: ArViCom Sarl

Part No. 1001932FT

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

2.4 GHz, 5 GHz, 6 GHz, 7 GHz

Supports: Wi-Fi applications, Bluetooth, Zigbee, WLAN

FPC Wi-Fi Tunable Embedded Antenna with Cable

2400 MHz - 2485 MHz,
4900 MHz – 5825 MHz,
5925 MHz – 7125 MHz

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 1001932FT 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.

KEY BENEFITS

Stay-in-Tune

KYOCERA AVX's 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
- Gateway, Access Point
- Smart Grid
- Telematics
- Tracking
- Healthcare Applications (FDA ClassI)
- M2M, Industrial devices

Electrical Specifications

Frequency (GHz)	2.400 – 2.485	4.900 – 5.825	5.925 – 7.125
Peak Gain	2.5 dBi	4.4 dBi	6.11 dBi
Average Efficiency	60%	71%	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		
Additional Resources	Download Simulation Files		

Mechanical Specifications

Ordering Part #	1001932FT-AA10L0100
Dimensions (mm)	35.2 x 8.5 x 0.2
Weight (grams)	0.6
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 Resources	Download 3D FIT File

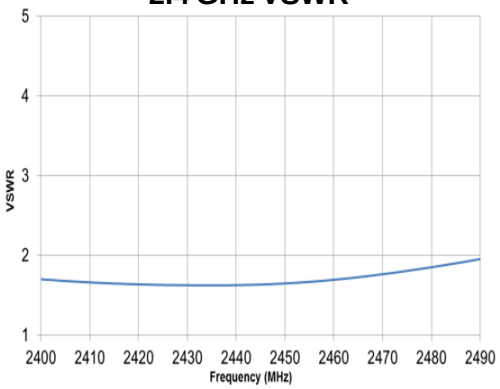
*Additional variations with different cable lengths, colors and connectors are available.

WLAN / BT / Zigbee / Wi-Fi 6E Tunable Embedded FPC Antenna Specifications.
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

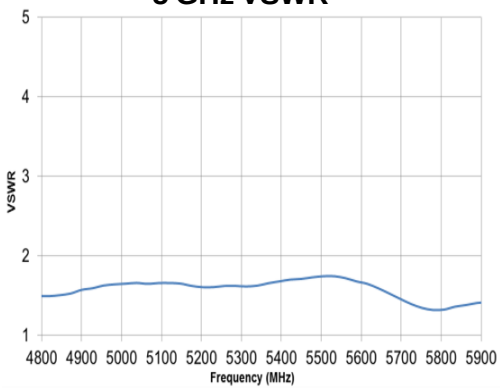
VSWR, Efficiency and Peak Gain Plots

Typical Performance using 100 mm cable tested on PC-ABS

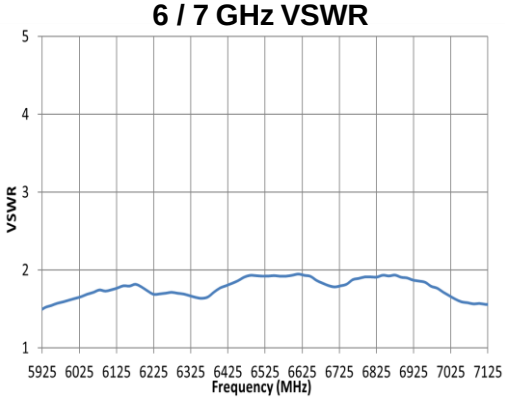
2.4 GHz VSWR



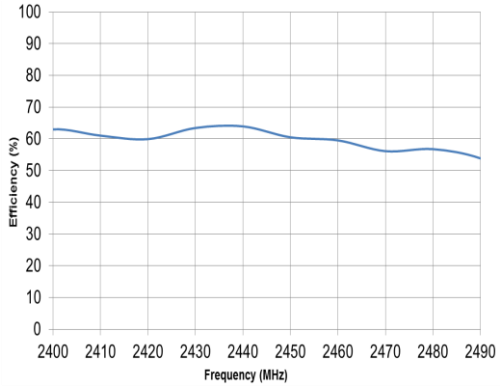
5 GHz VSWR



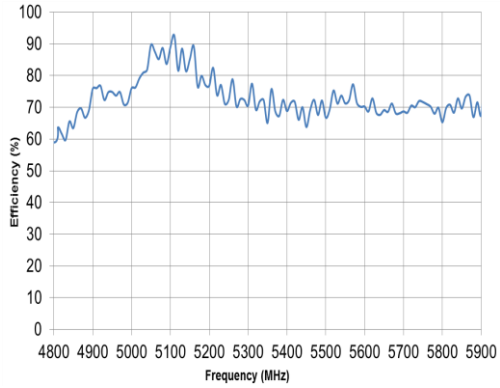
6 / 7 GHz VSWR



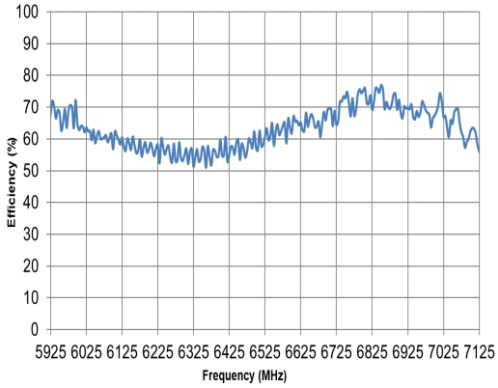
2.4 GHz Efficiency



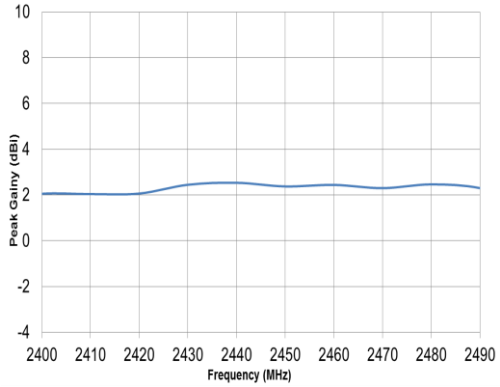
5 GHz Efficiency



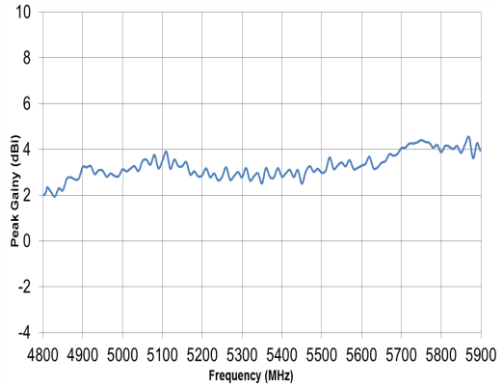
6 / 7 GHz Efficiency



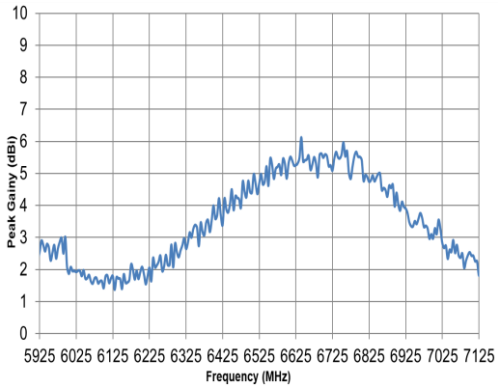
2.4 GHz Peak Gain



5 GHz Peak Gain



6 / 7 GHz Peak Gain



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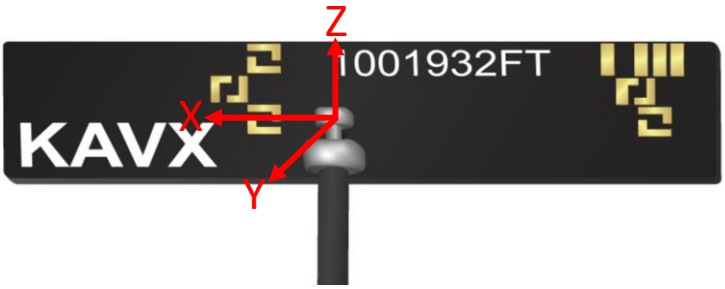
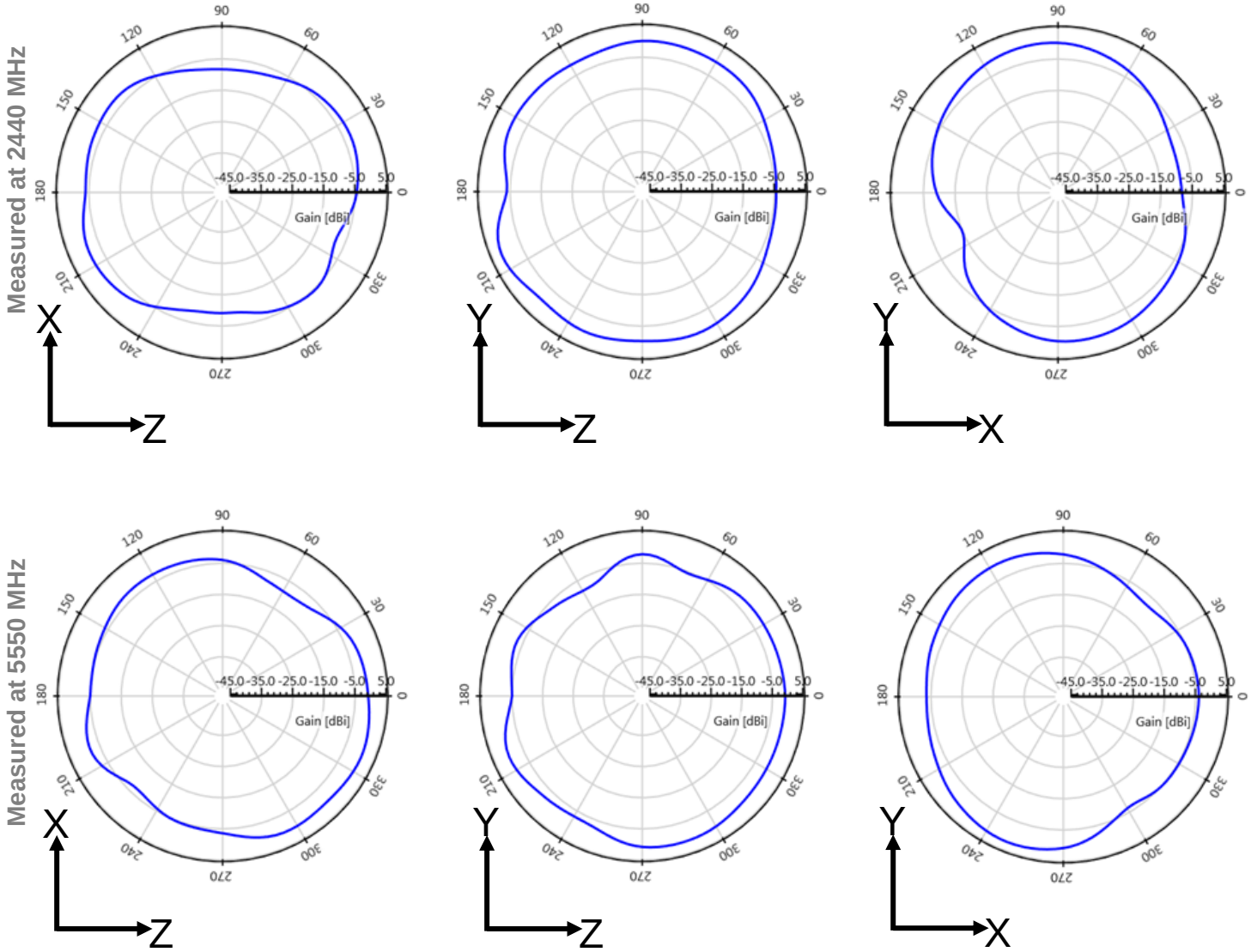
WLAN / BT / Zigbee / Wi-Fi 6E Tunable Embedded FPC Antenna Specifications.
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

Antenna Radiation Patterns

Typical Performance using 100 mm cable tested on PC-ABS
Measured @ 2440, 5550 MHz





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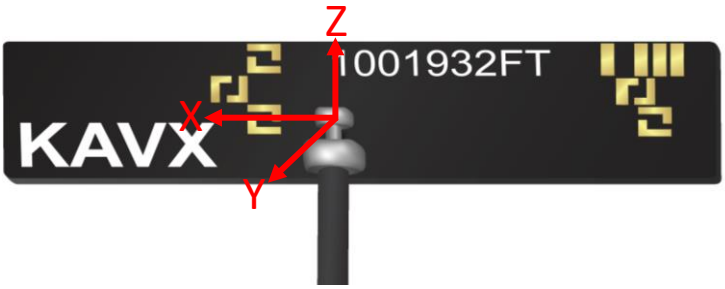
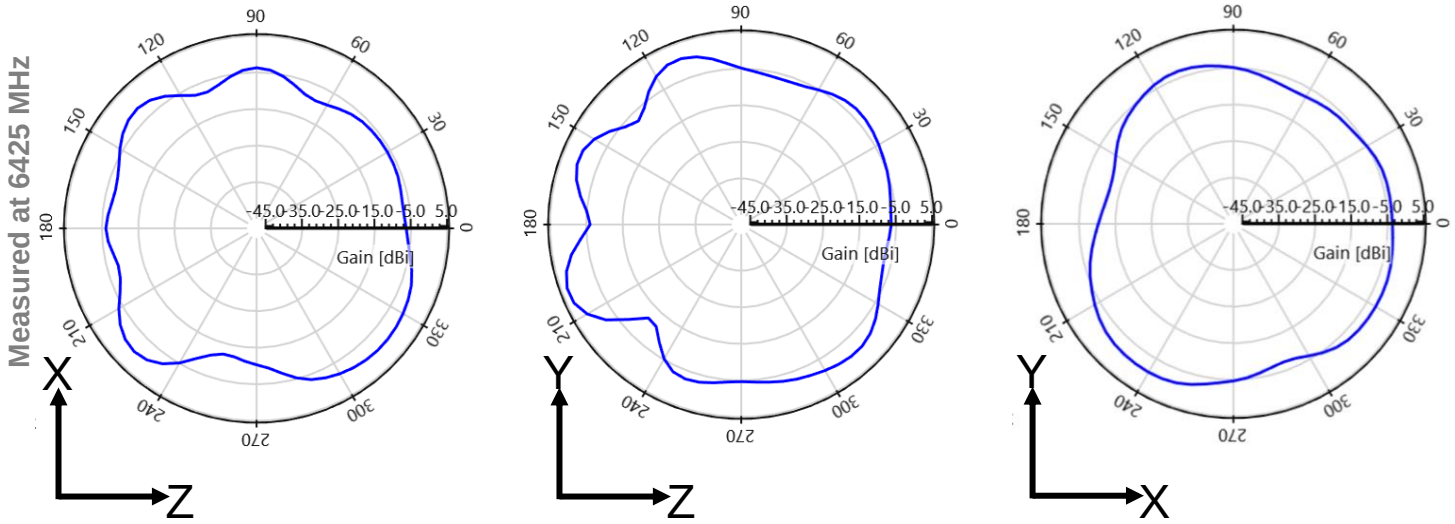
Antenna Radiation Patterns

Typical Performance using 100 mm cable tested on PC-ABS
Measured @ 6425 MHz





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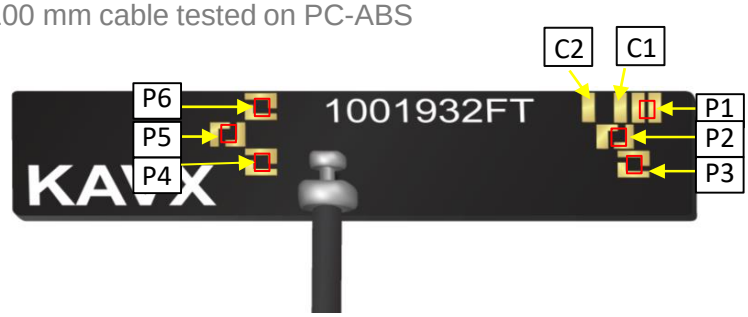
Antenna Tuning Options

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: (Ref: Baseline)	~200 MHz shift low	~250 MHz shift low	~350 MHz shift low	~370 MHz shift low

Options for Tuning: "2.4GHz (Higher)"

MODE	C1	C2
PADS	Cut: C1	Cut: C2
Outcome: (Ref: Baseline)	~170 MHz shift high	~300 MHz shift high

Options for Tuning: "5GHz (Lower)"

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

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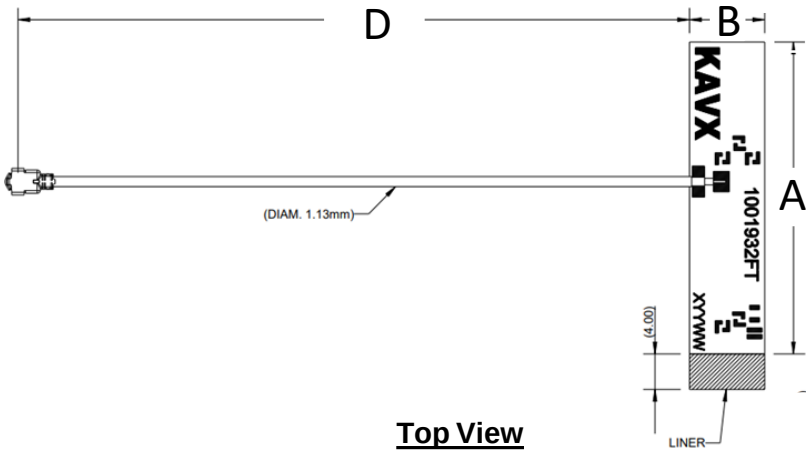
Mechanical Dimensions & Ordering Part Numbers

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

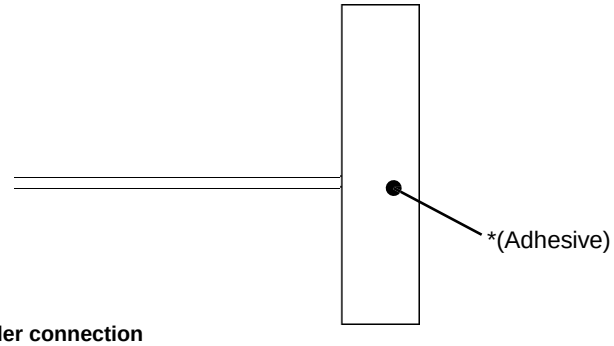
Part Number	A	B	C	D Cable Length	Cable Tolerance
1001932FT-AA10L0100	(35.2)	(8.5)	(1.6)	100.0	± 3.0
1001932FT-AA10L0XXX	(35.2)	(8.5)	(1.6)	25.0 ≤ XXX < 149.0	± 3.0
1001932FT-AA10L0XXX	(35.2)	(8.5)	(1.6)	149.0 ≤ XXX < 299.0	± 4.0
1001932FT-AA10L0XXX	(35.2)	(8.5)	(1.6)	299.0 ≤ XXX ≤ 500.0	± 5.0

*"()" Indicated the dimension is for reference only.



Top View

Side View



Bottom View

***Total Height of 1.6 mm includes the cable solder connection**
***Height "C" of 0.2 mm includes FPC + adhesive thicknesses**
***Dimensions in () parenthesis are Reference Only.**

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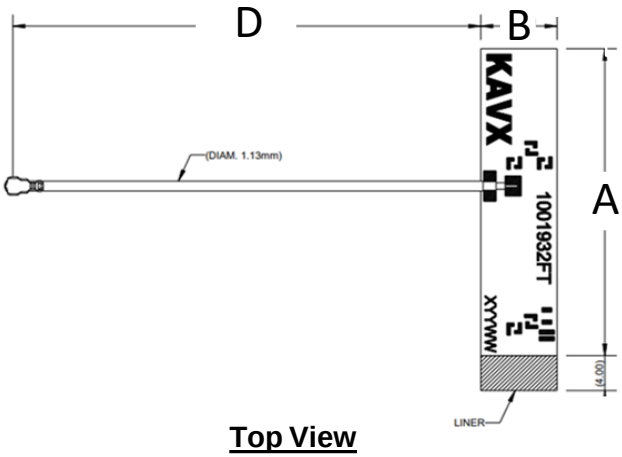
Mechanical Dimensions & Ordering Part Numbers

Typical antenna dimensions in mm. MHF4L connector.

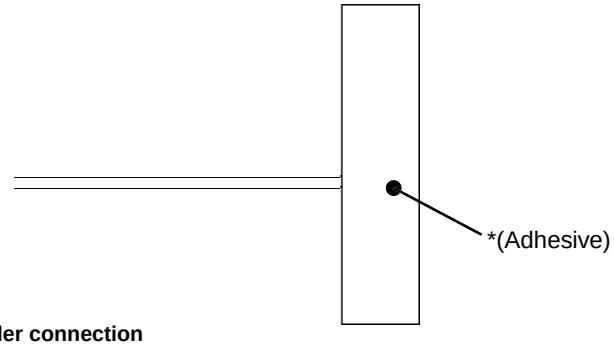
Part Number	A	B	C	D Cable Length	Cable Tolerance
1001932FT-AC10L0XXX	(35.2)	(8.5)	(1.6)	25.0 ≤ XXX < 149.0	± 3.0
1001932FT-AC10L0XXX	(35.2)	(8.5)	(1.6)	149.0 ≤ XXX < 299.0	± 4.0
1001932FT-AC10L0XXX	(35.2)	(8.5)	(1.6)	299.0 ≤ XXX ≤ 500.0	± 5.0

*"()" Indicated the dimension is for reference only.



Top View

Side View



Bottom View

***Total Height of 1.6 mm includes the cable solder connection**
***Height "C" of 0.2 mm includes FPC + adhesive thicknesses**
***Dimensions in () parenthesis are Reference Only.**

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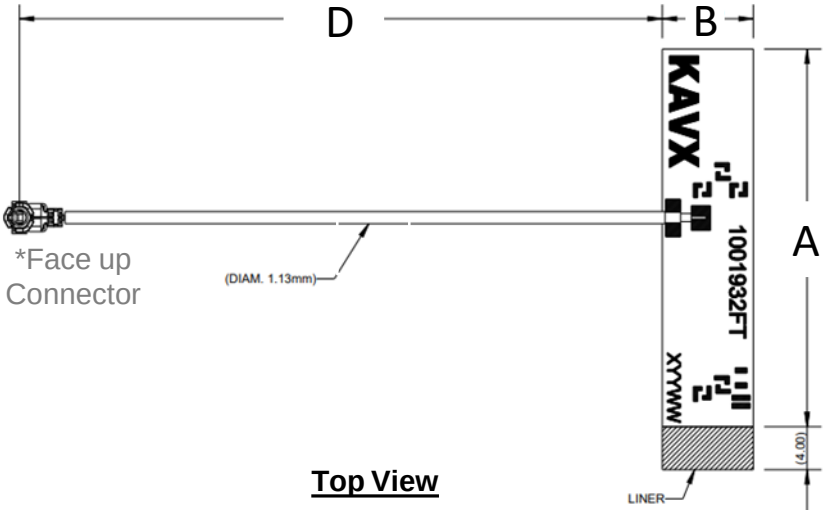
Mechanical Dimensions & Ordering Part Numbers

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

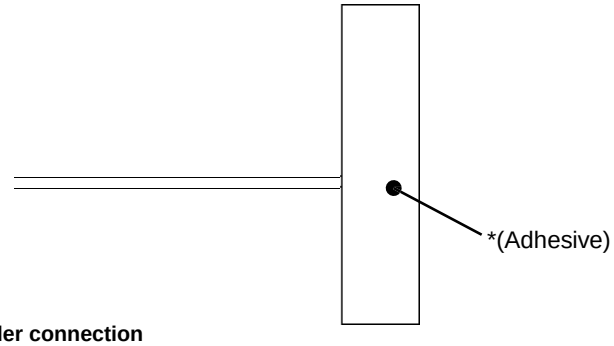
Part Number	A	B	C	D Cable Length	Cable Tolerance
1001932FT-AA10L0060U	(35.2)	(8.5)	(1.6)	60.00	± 3.0

*"()" Indicated the dimension is for reference only.



Top View

Side View



Bottom View

***Total Height of 1.6 mm includes the cable solder connection**
***Height "C" of 0.2 mm includes FPC + adhesive thicknesses**
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Additional Resources – 1001932FT

3D FIT File:
https://www.kyocera-avx.com/download/antennas/ME-FIT/1001932FT_ME_fit.zip

Simulation Files:
CST **:** https://www.kyocera-avx.com/download/antennas/CST/1001932FT_061224_CST-23r1.zip

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