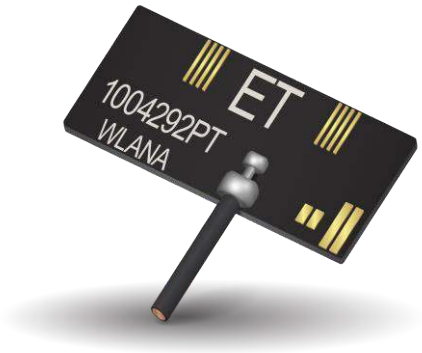
Part No. 1004292PT
Wi-Fi Tunable PCB 5 GHz Embedded Antenna

5 GHz

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



PCB Wi-Fi Tunable Embedded Antenna with Cable

5.150 - 5.825 GHz

KYOCERA AVX 1004292PT is a versatile off-board PCB antenna ideal for 5 GHz Wi-Fi applications where off-board implementation is advantageous and necessary. 1004292PT is ideal for systems requiring a multiple antenna solution.

1004292PT offers easy on-the-go tuning capability right on the antenna face, that is ideal for prototyping. The tuned antenna can then be hardwired by KYOCERA AVX for mass production. Standard connector options available: U.FL and MHF4L.

Custom cable and connector options are available. Please contact us for more information.

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.

Reliability
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

Electrical Specifications

Typical Performance using 100 mm cable tested on PC-ABS

Frequency	5.150 – 5.825 GHz
Peak Gain	4.8 dBi
Average Efficiency	70%
VSWR Match	2.0 :1 max
Feed Point Impedance	50 ohms unbalanced
Polarization	Linear
Power Handling	2 Watt CW

Mechanical Specifications & Ordering Part Number

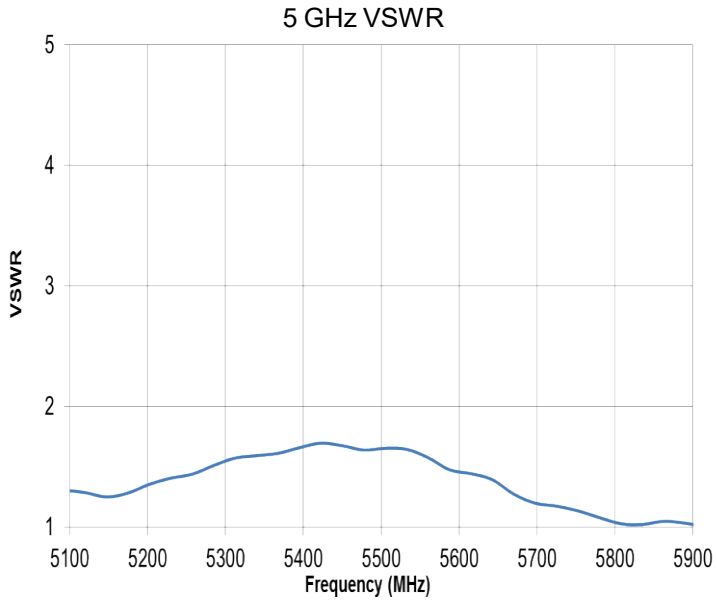
Ordering Part #	1004292PT-AA10L0100
Dimensions (mm)	22.0 x 8.0 x 0.4
Weight (grams)	0.9
Cable/ Connector (mm)	Length: 100, Diameter: 1.13, Color: Black; U.FL compatible connector (MHF4L options available)
Mounting	Adhesive on bottom side of antenna
Packaging	PE bags

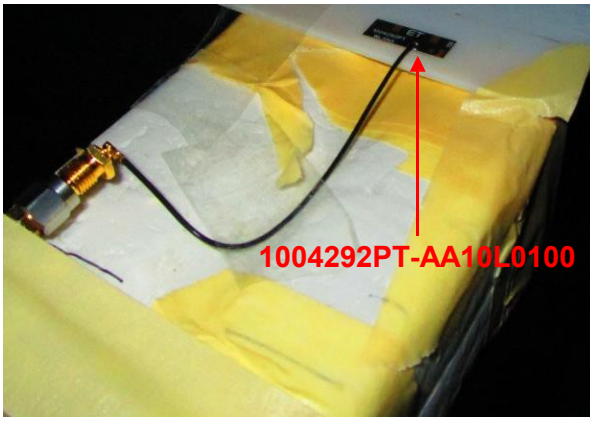
*Additional variations available with different cable lengths, colors and connectors.

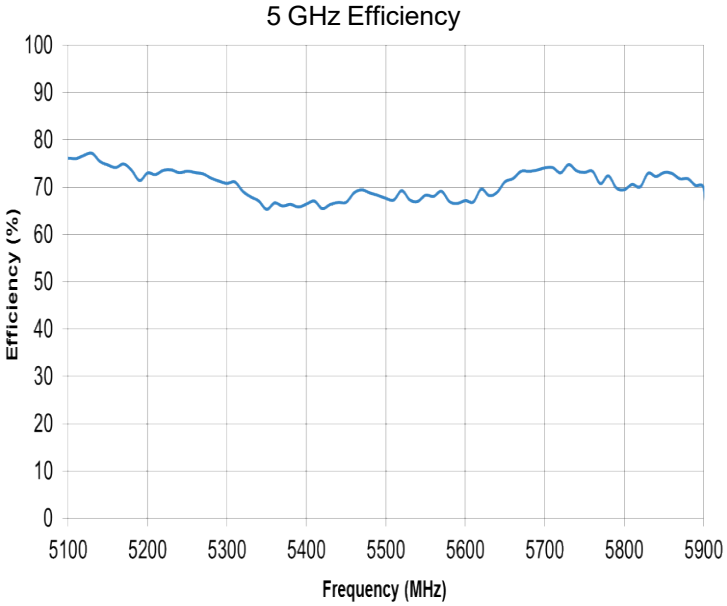
5 GHz KYOCERA AVX Embedded Antenna Specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

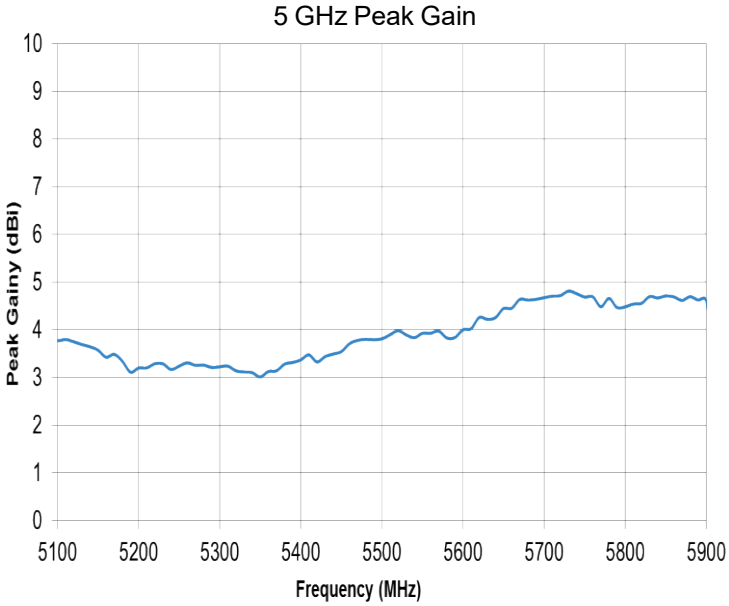
Typical VSWR, Efficiency and Peak Gain plots

Measured in free space with PC/ABS loading and 100 mm cable









tel +(1) 858.550.3820
email: eth.info@KYOCERA-AVX.com

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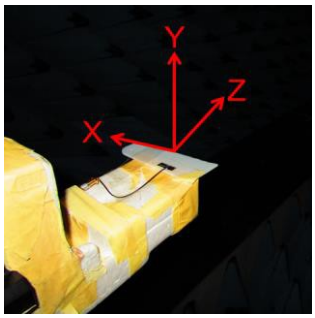
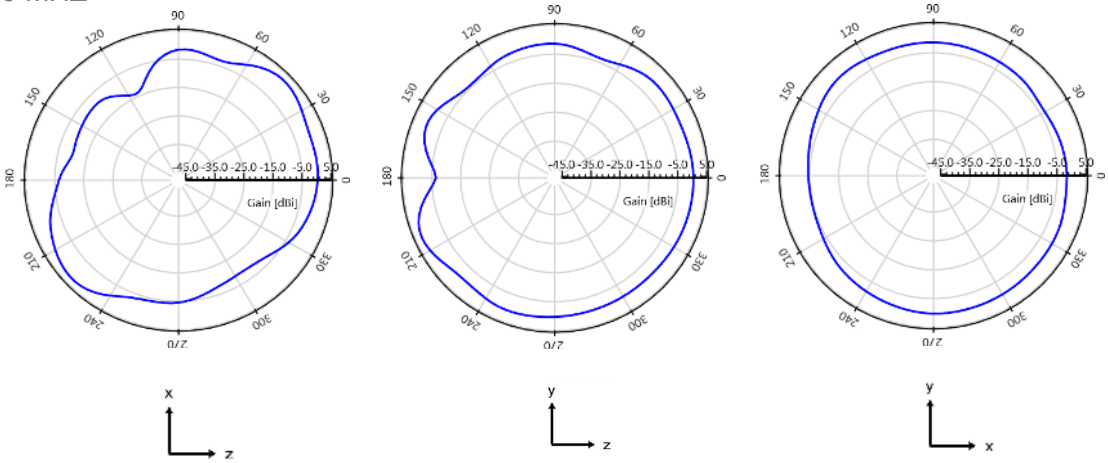
Radiation Patterns Plots

Measured with PC/ABS loading and 100 mm cable
Typical Performance @ 5200 MHZ





Antenna Tuning Procedure

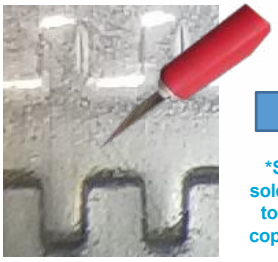
This antenna has unique features enabling limited range RF tuning by solder bridging or cutting specified area. Ease of tuning for any application on the fly with a soldering iron and knife. Tuning optional if required.

Antenna Tuning (Low)

*Add bridge of solder to connect pads for tuning

Filled Gap

Antenna Tuning (High)



*Scratch solder mask to expose copper layer

*Cut trace through copper layer

Cut Gap

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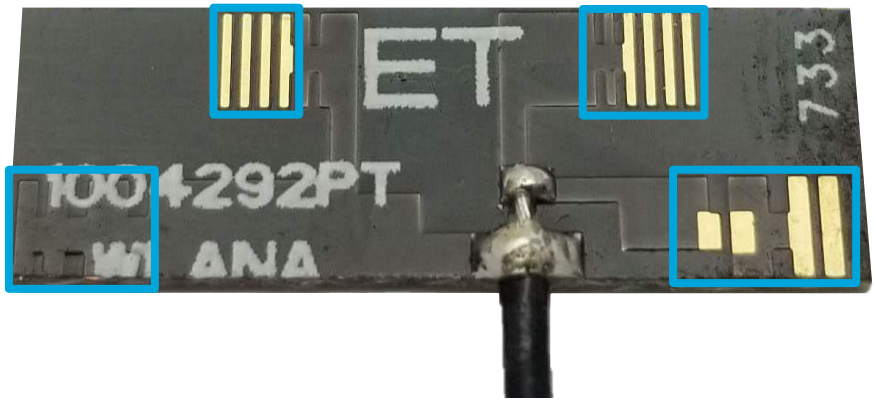
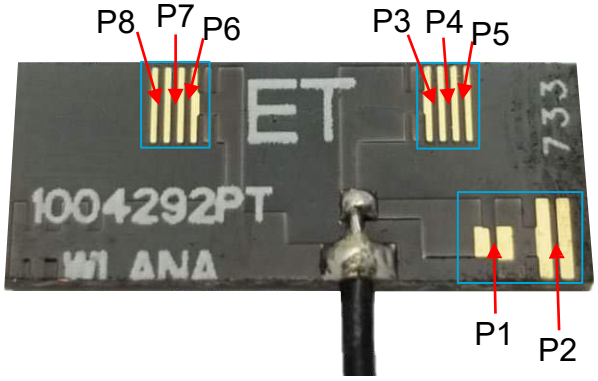
Antenna Tuning

This antenna has unique features enabling limited range RF tuning by solder bridging or cutting specified area. Ease of tuning for any application on the fly with a soldering iron and knife.

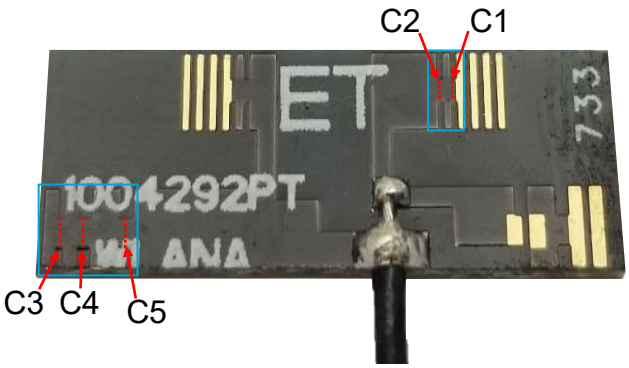
Antenna Tuning Structure



*Solder bridge between pads for frequency tuning



*Cut Pads for frequency tuning



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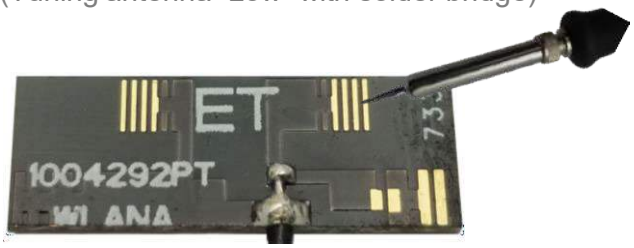
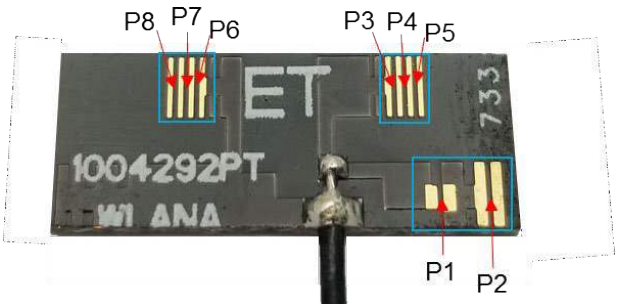
Tuning Options (Low)

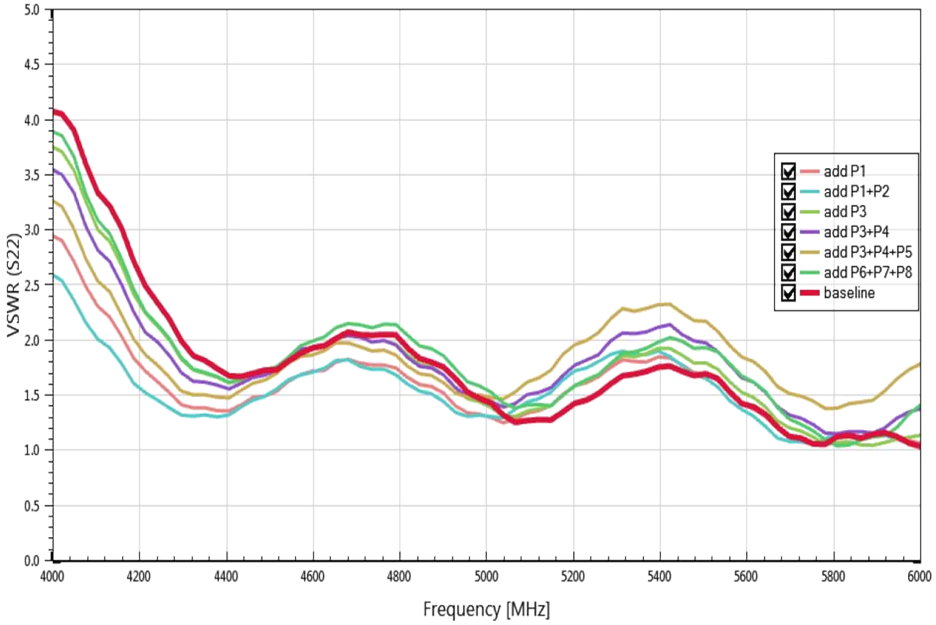
Stages 2-7 (Tuning antenna "Low" with solder bridge)





***Tune Frequency Lower**
Apply Solder Bridge to designated Stages for optimal tuning.

	Stage	Pads	Frequency Shift (MHz)
	Stage 1 (Baseline)	DNI	N/A
Shift Low	Stage 2	P1	-134
	Stage 3	P1+P2	-190
	Stage 4	P3	-27
	Stage 5	P3+P4	-62
	Stage 6	P3+P4+P5	-109
	Stage 7	P6+P7+P8	-29
Shift High	Stage 8	C1	17
	Stage 9	C2	32
	Stage 10	C3	36
	Stage 11	C4	107
	Stage 12	C5	222

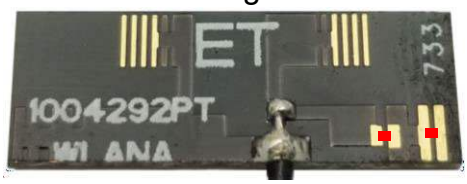


*Measured in free space with PC/ABS loading and 100 mm cable

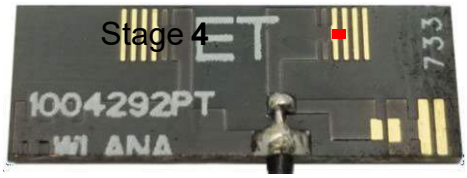
Stage **1**

Stage **2**

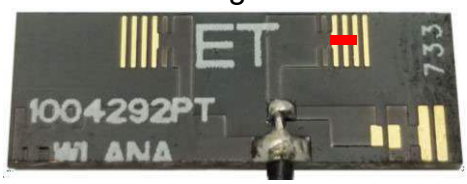
Stage **3**



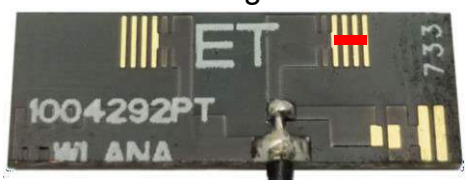
Stage **4**



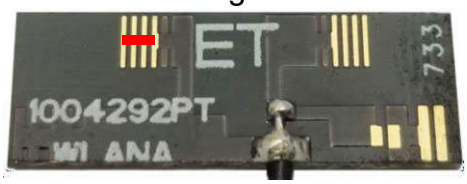
Stage **5**



Stage **6**



Stage **7**



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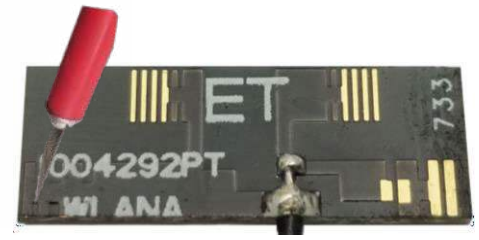
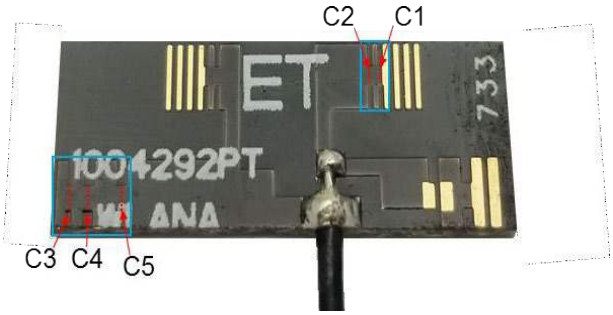
Tuning Options (High)

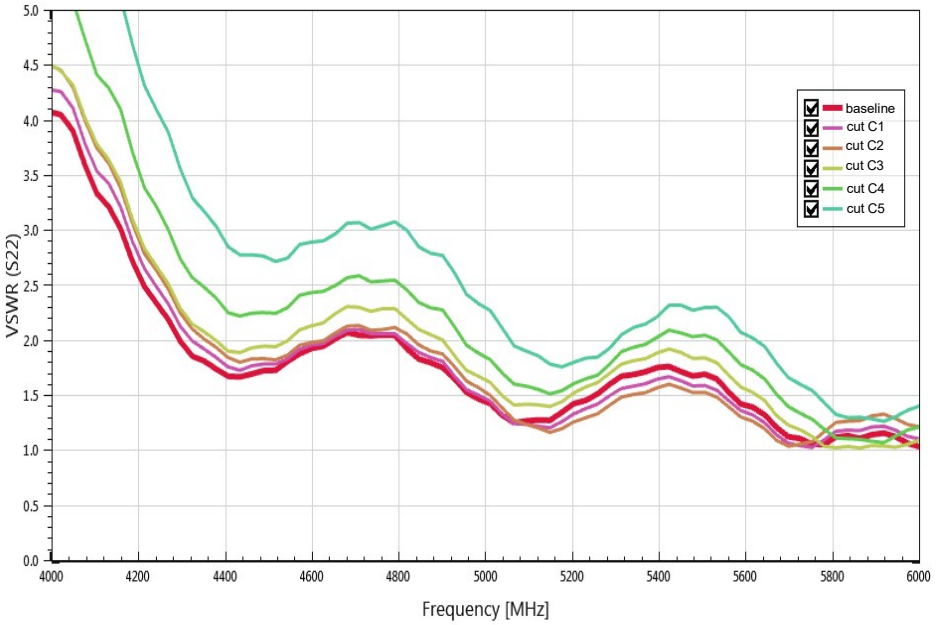
Stages 8-12 (Tuning antenna "High" applying cut on designated area)





***Ex: Tune Frequency Higher**
Apply Cut to designated stage for optimal tuning.

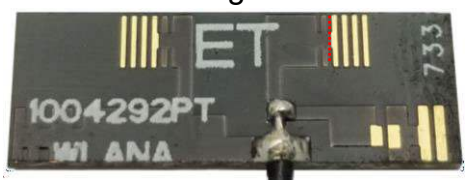
	Stage	Pads	Frequency Shift (MHz)
	Stage 1 (Baseline)	DNI	N/A
Shift Low	Stage 2	P1	-134
	Stage 3	P1+P2	-190
	Stage 4	P3	-27
	Stage 5	P3+P4	-62
	Stage 6	P3+P4+P5	-109
	Stage 7	P6+P7+P8	-29
Shift High	Stage 8	C1	17
	Stage 9	C2	32
	Stage 10	C3	36
	Stage 11	C4	107
	Stage 12	C5	222



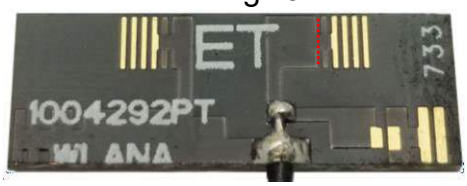
*Measured in free space with PC/ABS loading and 100 mm cable

Stage **1**

Stage **8**

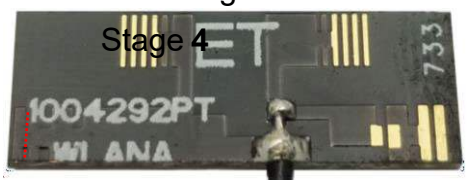


Stage **9**



Stage **10**

Stage **4**



Stage **11**

Stage **12**

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Mechanical Dimensions (U.FL compatible)

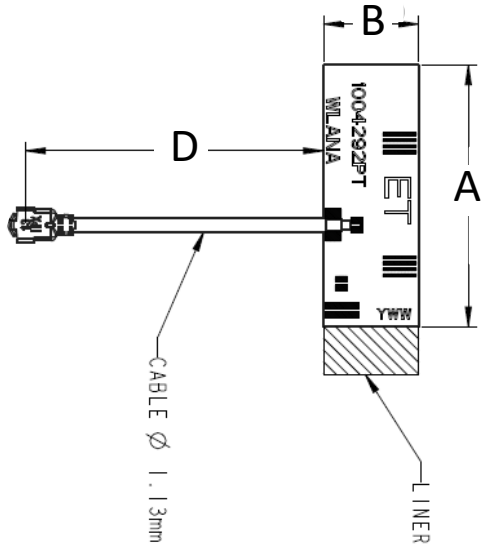
Typical antenna dimensions mm
Dimensions in () parenthesis are Reference Only.

Part Number	A	B	C	D	Connector compatibility	Connector orientation
1004292PT-AA10L0025	(22.0)	(8.0)	(0.4)	25.0 ± 3.0	U.FL	Face Down
1004292PT-AA10L0050	(22.0)	(8.0)	(0.4)	50.0 ± 3.0	U.FL	Face Down
1004292PT-AA10L0075	(22.0)	(8.0)	(0.4)	75.0 ± 3.0	U.FL	Face Down
1004292PT-AA10L0100	(22.0)	(8.0)	(0.4)	100.0 ± 3.0	U.FL	Face Down
1004292PT-AA10L0150	(22.0)	(8.0)	(0.4)	150.0 ± 4.0	U.FL	Face Down
1004292PT-AA10L0200	(22.0)	(8.0)	(0.4)	200.0 ± 4.0	U.FL	Face Down

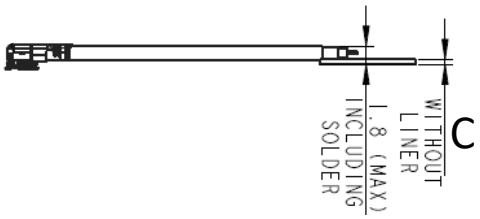
***Total Height of 1.8 mm includes the cable solder connection**
Thickness of 0.4 mm includes PCB + adhesive thicknesses

***Connector shown in photo below is "Face Down"**

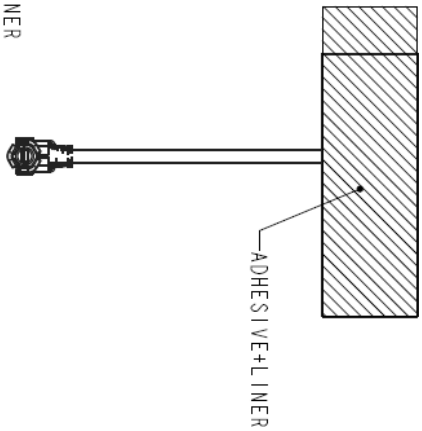
Top View



Side View



Bottom View



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Mechanical Dimensions (MHF4L compatible)

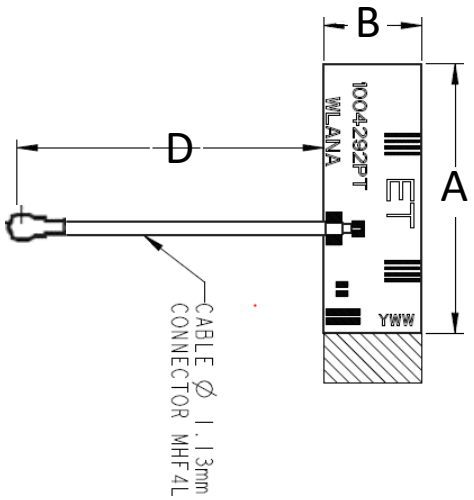
Typical antenna dimensions mm
Dimensions in () parenthesis are Reference Only.

Part Number	A	B	C	D	Connector	Connector orientation
1004292PT-AC10L0025	(22.0)	(8.0)	(0.4)	25.0 ± 3.0	MHF4L	Face Down
1004292PT-AC10L0050	(22.0)	(8.0)	(0.4)	50.0 ± 3.0	MHF4L	Face Down
1004292PT-AC10L0075	(22.0)	(8.0)	(0.4)	75.0 ± 3.0	MHF4L	Face Down
1004292PT-AC10L0100	(22.0)	(8.0)	(0.4)	100.0 ± 3.0	MHF4L	Face Down
1004292PT-AC10L0150	(22.0)	(8.0)	(0.4)	150.0 ± 4.0	MHF4L	Face Down
1004292PT-AC10L0200	(22.0)	(8.0)	(0.4)	200.0 ± 4.0	MHF4L	Face Down

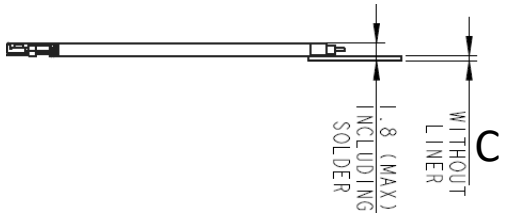
***Total Height of 1.8 mm includes the cable solder connection**
Thickness of 0.4 mm includes PCB + adhesive thicknesses

***Connector shown in photo below is "Face Down"**

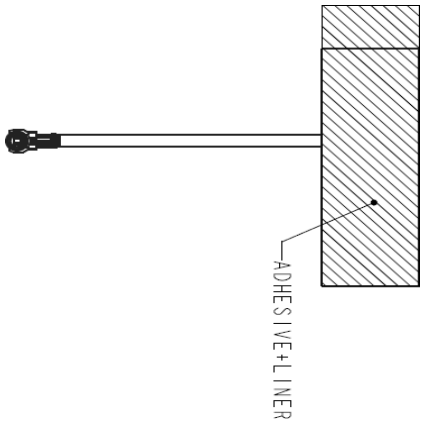
Top View



Side View



Bottom View



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