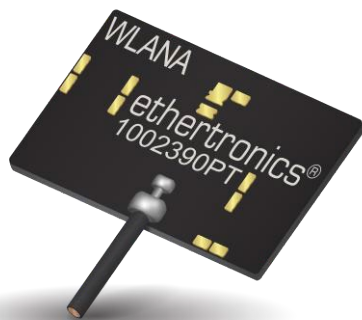


Part No. 1002390PT

Wi-Fi Tunable PCB 5 GHz Embedded Antenna

5 GHz

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



KYOCERA AVX 1002390PT is a versatile off-board PCB antenna ideal for 5 GHz Wi-Fi applications where off-board implementation is advantageous and necessary.

1002390PT 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.

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

Electrical Specifications

Typical Performance using 100 mm cable tested on PC-ABS

Frequency	5.150 – 5.825 GHz
Peak Gain	5.4 dBi
Average Efficiency	76%
VSWR Match	2.0 :1 max
Feed Point Impedance	50 ohms unbalanced
Polarization	Linear
Power Handling	2 Watt CW

PCB Wi-Fi Tunable Embedded Antenna with Cable

5.150 - 5.825 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.

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

Mechanical Specifications & Ordering Part Number

Ordering Part #	1002390PT-AA10L0050	1002390PT-AA10L0100	1002390PT-AA10L0280
Dimensions (mm)	9.8 x 17.5 x 0.4 PCB (Height up to 1.80 at soldering point)		
Weight (grams)	0.45	0.60	1.15
Cable/Connector (mm)	Length: 50, Diameter: 1.13, Color: Black; u.FI compatible connector	Length: 100, Diameter: 1.13, Color: Black; u.FI compatible connector	Length: 280, Diameter: 1.13, Color: Black; u.FI compatible connector
Mounting	3M Adhesive on bottom side of antenna		
Packaging	PE bags		

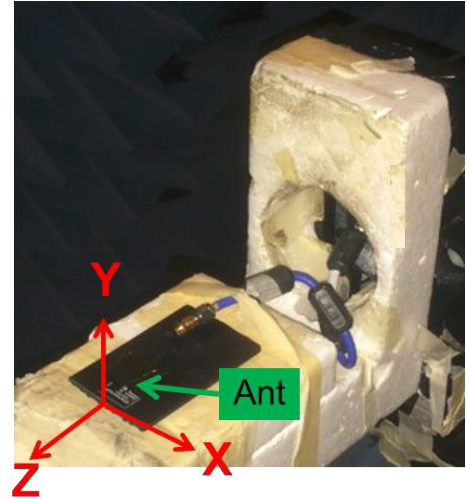
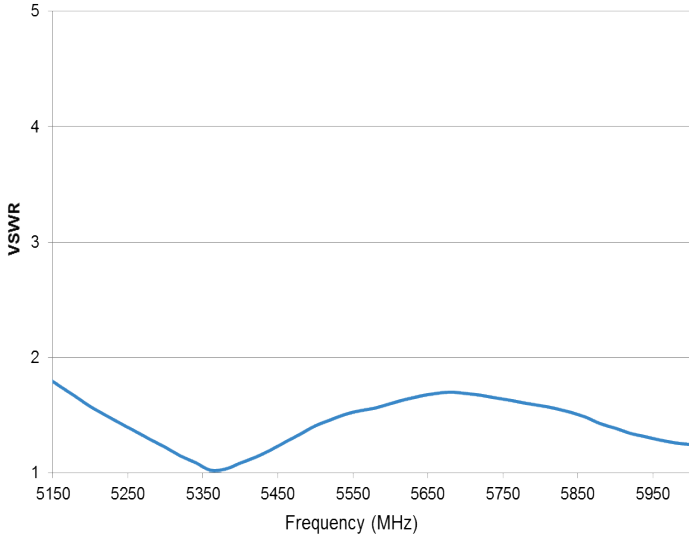
*Additional variations available with different cable lengths, colors and connectors.

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

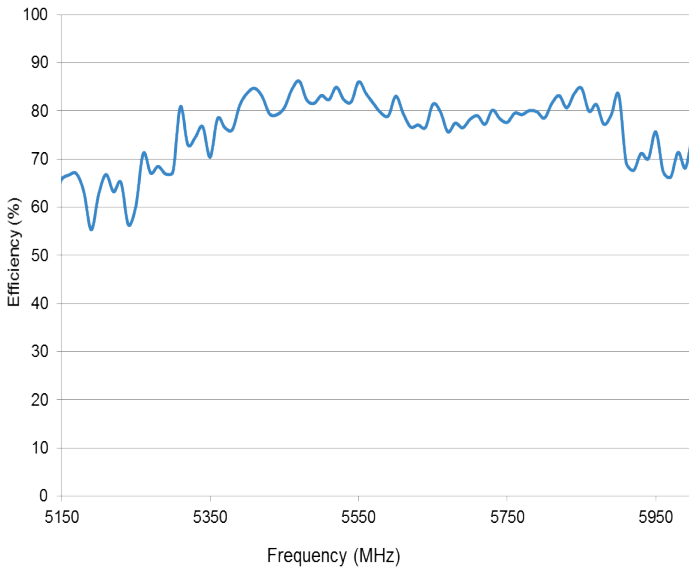
Typical VSWR, Efficiency and Peak Gain plots

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

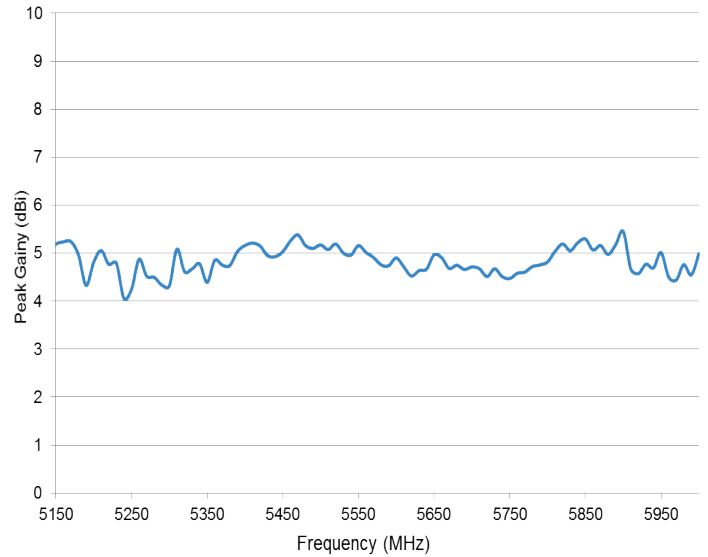
5 GHz VSWR



5 GHz Efficiency



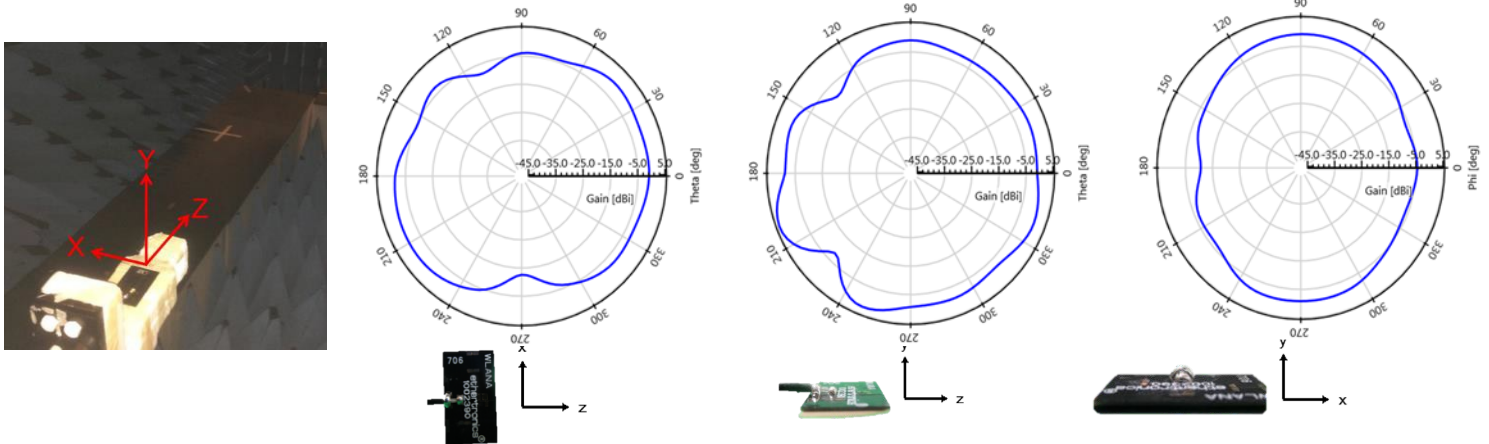
5 GHz Peak Gain



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Radiation Patterns Plots

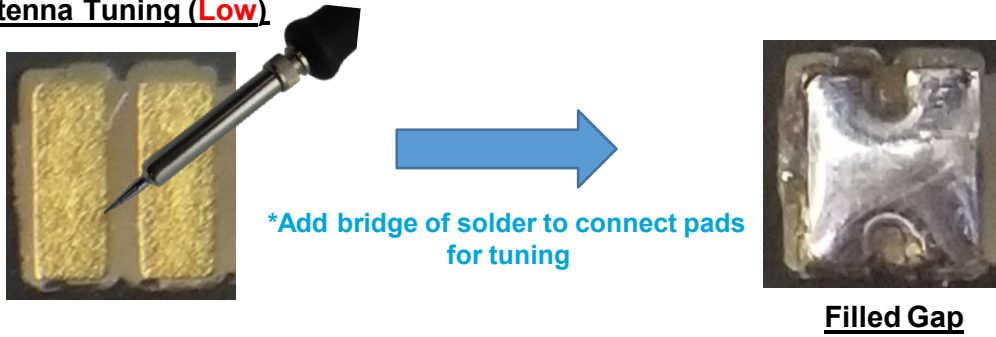
Measured with PC/ABS loading and 100 mm cable
 Typical Performance @ 5210 MHz



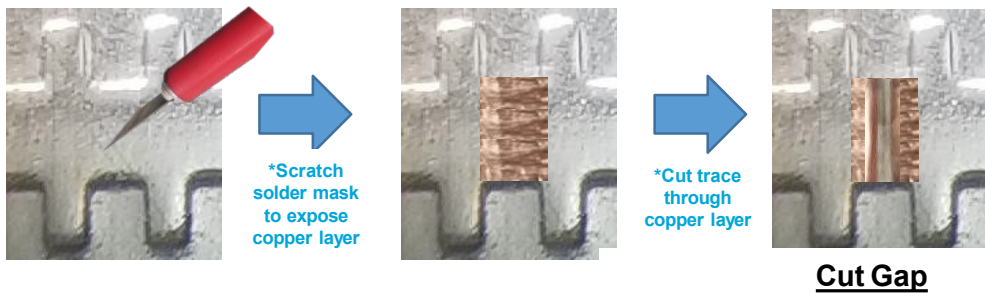
Antenna Tuning Procedure

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)



Antenna Tuning (High)

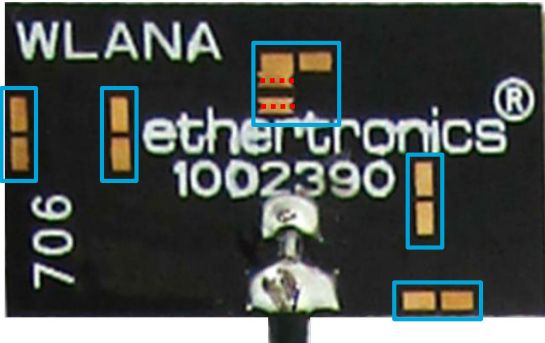


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Antenna Tuning

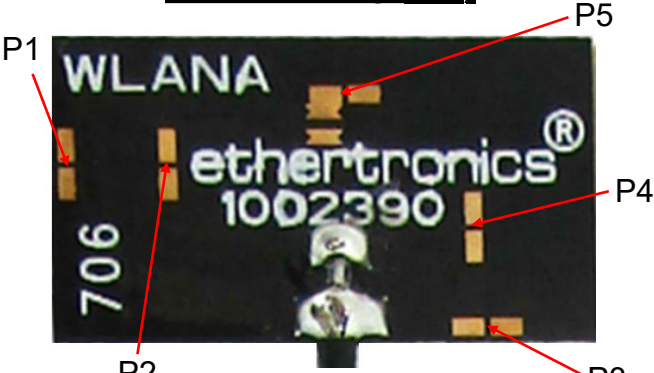
This antenna has unique features enabling limited range RF tuning by solder bridging or cutting specified area. Ease of tuning for any application on the fly with a soldering iron and knife. Tuning optional if required.

Antenna Tuning Structure



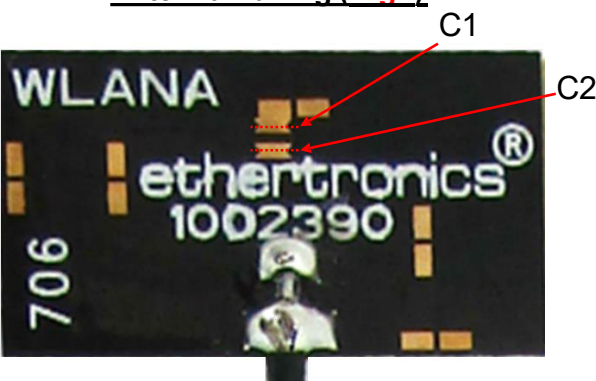
*Area highlighted used for antenna tuning

Antenna Tuning (Low)



*Add bridge of solder to connect pads for tuning

Antenna Tuning (High)

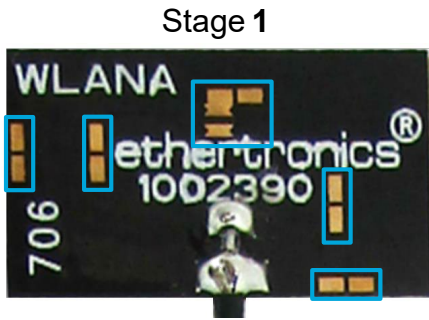


*Cut Pads for tuning

5 GHz KYOCERA AVX Embedded Antenna Specifications
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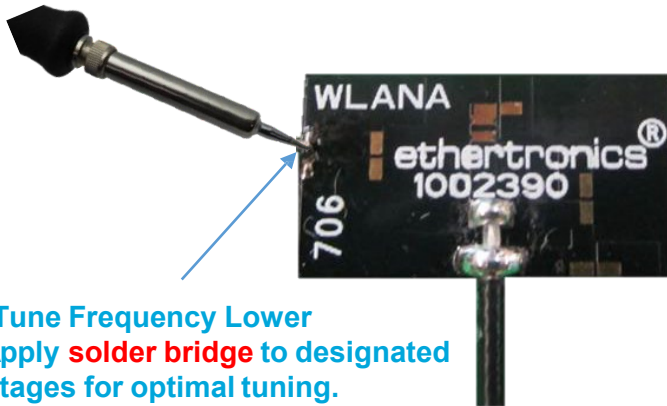
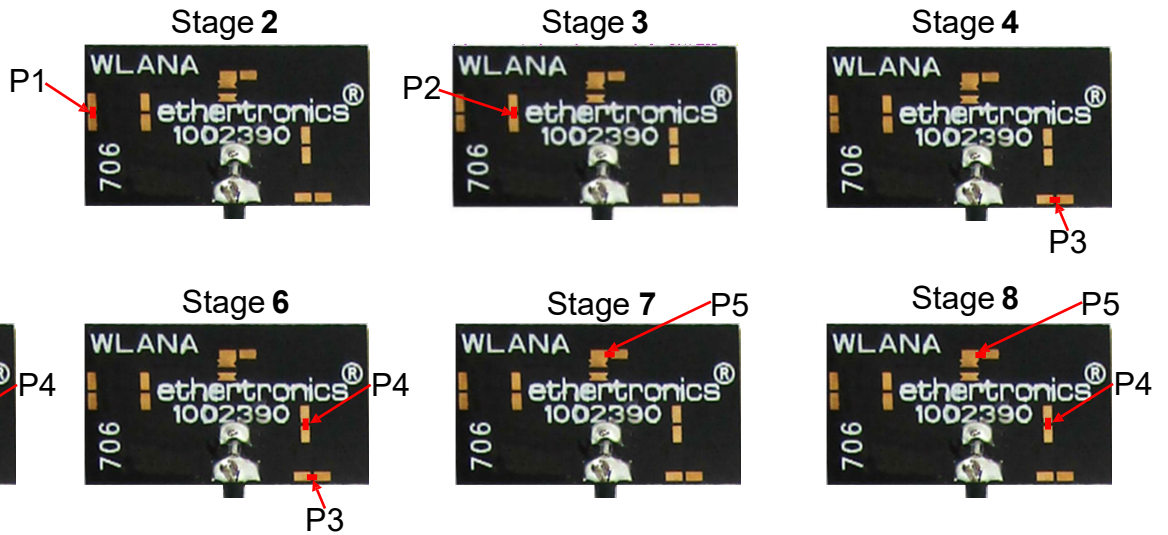
Tuning Options (Low)

Stages 2-8 (Tuning antenna "Low" with solder bridge)

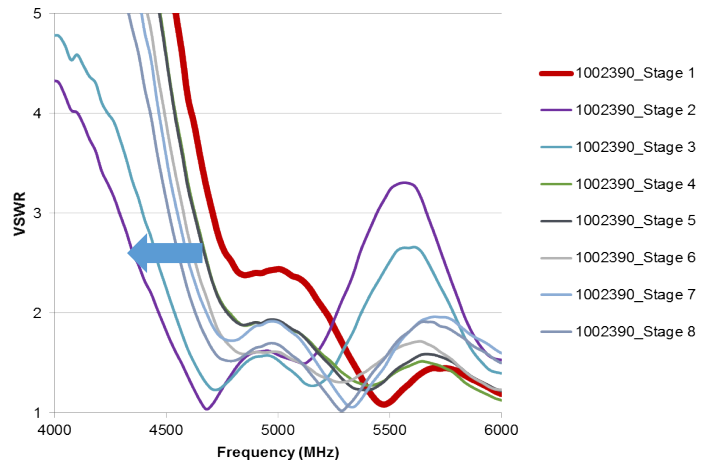


Stages	PADS	Cable Length 50mm	Cable Length 100mm	Cable Length 280mm
		Frequency shift (MHz)		
1	OPEN	0	0	0
2	P1	-1080	-820	-780
3	P2	-980	-760	-420
4	P3	-40	-80	-40
5	P4	-70	-100	-60
6	P3 + P4	-150	-200	-130
7	P5	-100	-150	-70
8	P4 + P5	-200	-210	-90
9	C1	+110	+60	+30
10	C2	+330	+370	+120

Stage 2-8
(Tuning Antenna Low)



***Tune Frequency Lower**
 Apply **solder bridge** to designated Stages for optimal tuning.

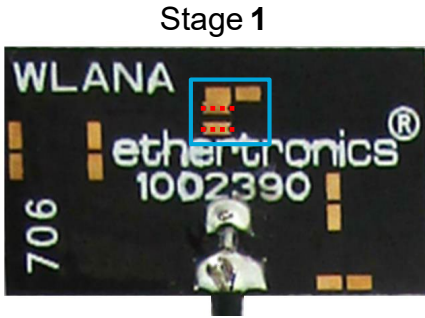


*Measured in free space with PC/ABS loading and 100 mm cable

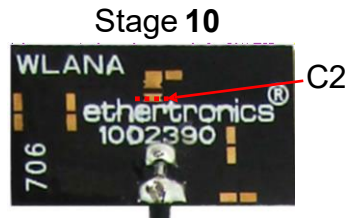
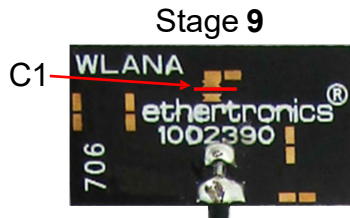
5 GHz KYOCERA AVX Embedded Antenna Specifications
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

Tuning Stages (High)

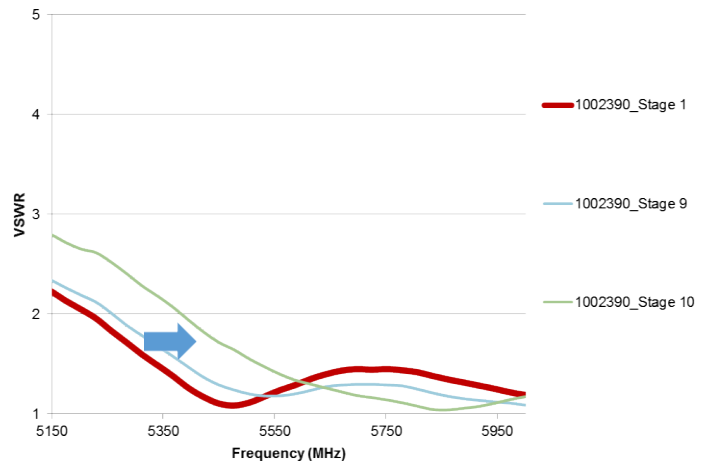
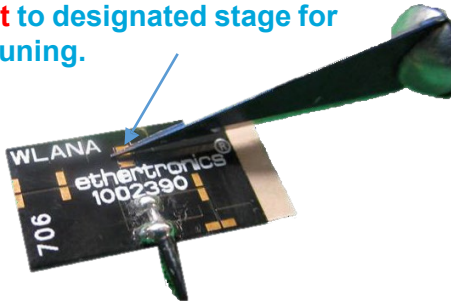
Stages 9-10 (Tuning antenna "High" **applying cut** on designated area)



Stages	PADS	Cable Length 50mm	Cable Length 100mm	Cable Length 280mm
		Frequency shift (MHz)		
1	OPEN	0	0	0
2	P1	-1080	-820	-780
3	P2	-980	-760	-420
4	P3	-40	-80	-40
5	P4	-70	-100	-60
6	P3 + P4	-150	-200	-130
7	P5	-100	-150	-70
8	P4 + P5	-200	-210	-90
9	C1	+110	+60	+30
10	C2	+330	+370	+120



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



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

5 GHz KYOCERA AVX Embedded Antenna Specifications
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Mechanical Dimensions

Typical antenna dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)	D (mm)	Connector Orientation
1002390PT-AA10L0050	17.5 ± 0.3	9.8 ± 0.3	1.8 (max)	50 ± 3.0	Face Down
1002390PT-AA10L0100	17.5 ± 0.3	9.8 ± 0.3	1.8 (max)	100 ± 3.0	Face Down
1002390PT-AA10L0280	17.5 ± 0.3	9.8 ± 0.3	1.8 (max)	280 ± 3.0	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"

