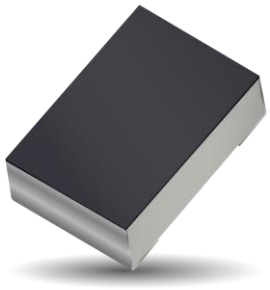
Part No. 9001978

Wi-Fi Dual Band or BT Chip Antenna or UWB Antenna

2.4 GHz, 5.0 GHz, 6.0 GHz - 8.5 GHz

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



KYOCERA AVX series of chip antennas deliver on the key needs of device designers for higher functionality and performance in smaller/thinner designs.

This antenna designed for Wi-Fi, BT, or UWB applications exhibits the high efficiency in a small footprint and delivers the key needs to the device engineers for the higher functionality and better performance in a smaller and thinner designs.

For further optimization to custom design and for support to integrate and test this antenna performance in your device, contact our Customer Support Team.

Layout:
9001978-03: Wi-Fi Dual Band
9001978-01: BT
9001978-04:UWB

KEY BENEFITS

Greater Flexibility with Unique Form Factors

KYOCERA AVX technology helps you deliver more advanced ergonomic designs without adverse impact on product performance.

Quicker Time-to-Market

By optimizing antenna size, performance and emissions, customer and regulatory specifications are more easily met.

Environmental Compliance

Comply with latest RoHS requirements

APPLICATIONS

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

Electrical Specifications

Typical performance on 55 x 25 mm PCB

Frequency (MHz)	2400 – 2485	5150 – 5850	2400 – 2485 (BT ONLY)	6000 – 8500 (UWB ONLY)
Peak Gain	3.0 dBi	3.0 dBi	Refer to Appendix 1	Refer to Appendix 2
Average Efficiency	65%	50%		
VSWR	2.1:1 max	7:1 max		
Feed Point Impedance	50 ohms unbalanced			
Polarization	Linear			
Power Handling	0.5 Watt CW			

Mechanical Specifications & Ordering Part Number

Ordering Part Number	9001978
Size (mm)	1.00 x 0.55 x 0.40
Mounting	Surface mounted to the PCB
Weight (grams)	0.003
Packaging	Tape & Reel 9001978 – 5,000 pieces per reel
Demo Board	9001978-03 (Wi-Fi Dual Band) 9001978-01 (BT) Appendix 1 9001978-04 (UWB) Appendix 2
Operational Temperature Range	-55 °C to +125 °C
Storage Temperature / Humidity Condition	15 °C to +35 °C / ≤ 65%

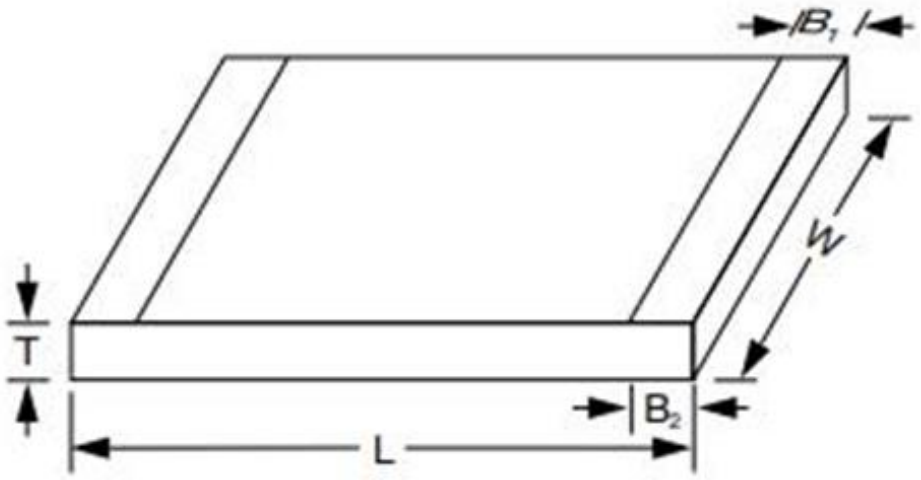
Wi-Fi Dual Band or BT KYOCERA AVX Embedded Chip Antenna Specification
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

Antenna Dimensions

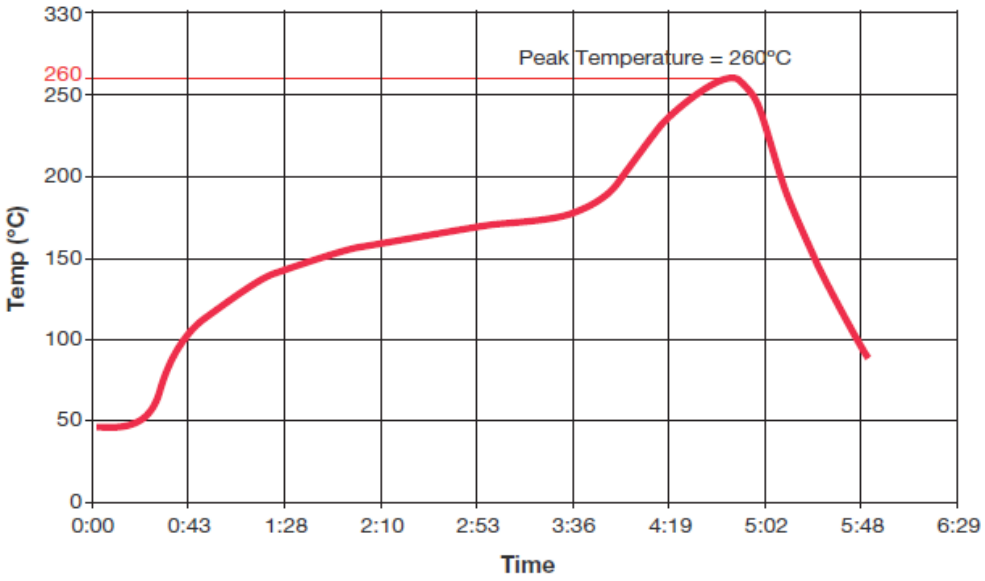
Typical antenna dimensions (mm)

Part Number	L	W	T	B_1	B_2
9001978	1.00±0.1	0.55±0.07	0.40±0.1	0.00+0.1	0.20±0.1

*Antenna can be mounted both ways.



Lead Free Solder SMT Reflow Temperature Profile



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Wi-Fi Dual Band or BT KYOCERA AVX Embedded Chip Antenna Specification
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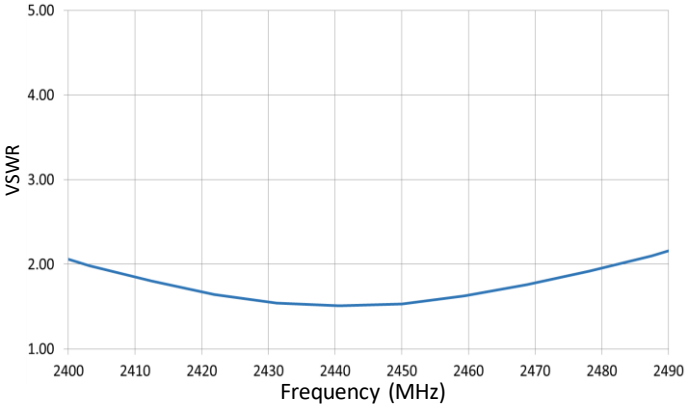
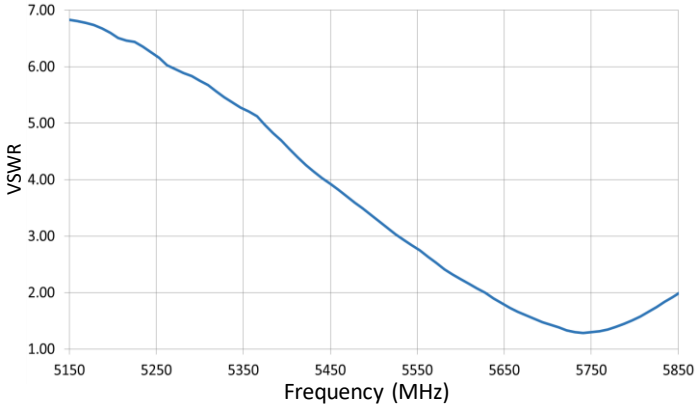
VSWR, Efficiency, and Peak Gain Plots

Typical Performance on 55 x 25 mm PCB

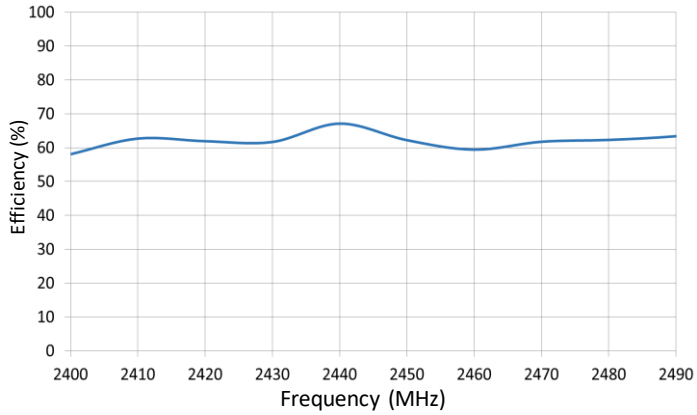
VSWR (2.400 – 2.490) GHz



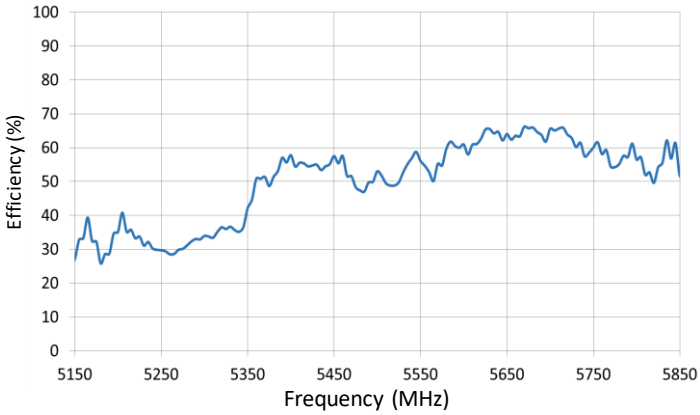
VSWR (5.150 – 5.850) GHz



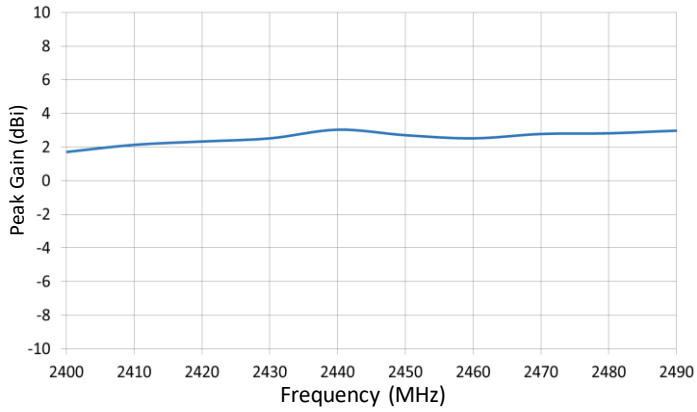
Efficiency (2.400 – 2.490) GHz



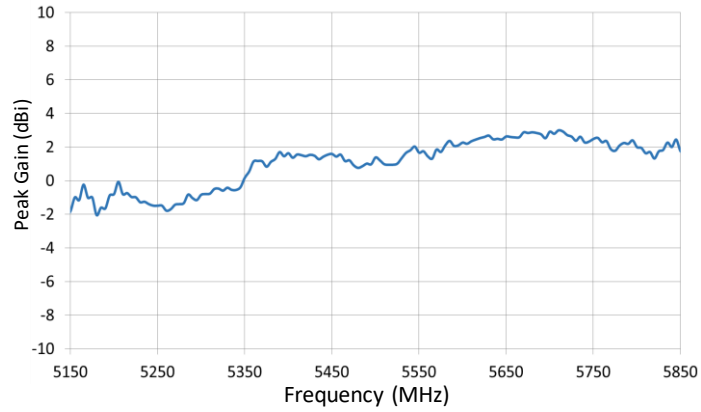
Efficiency (5.150 – 5.850) GHz



Peak Gain (2.400 – 2.490) GHz



Peak Gain (5.150 – 5.850) GHz



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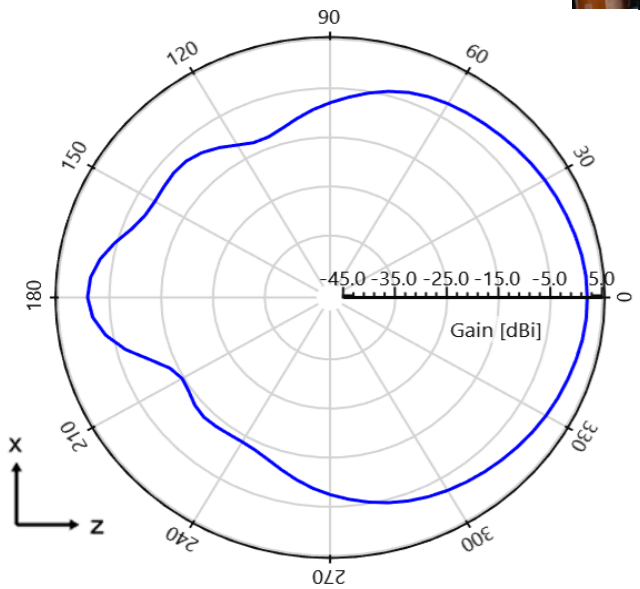
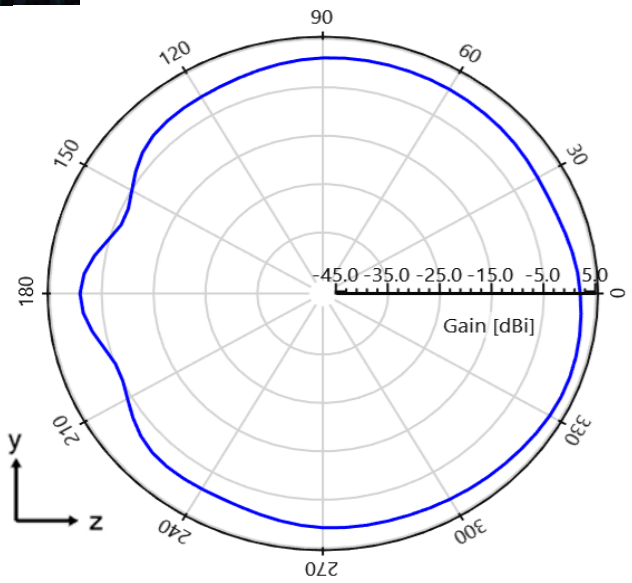
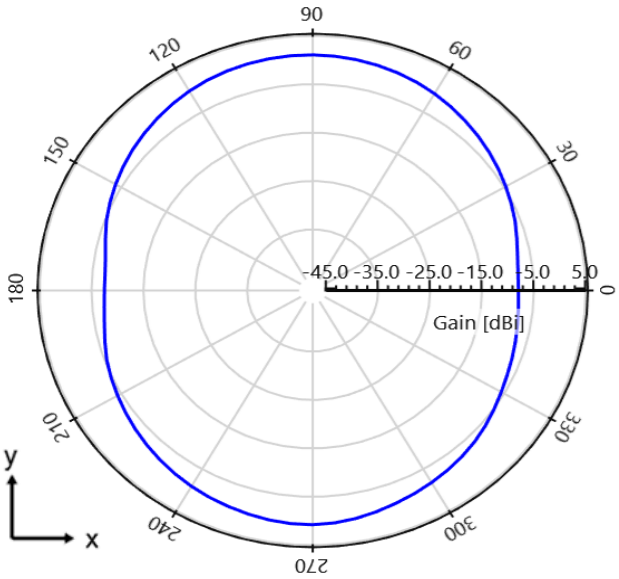
Wi-Fi Dual Band or BT KYOCERA AVX Embedded Chip Antenna Specification
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

Antenna Radiation Patterns

Typical Performance on 55 x 25 mm PCB
Measured @ 2.440 GHz







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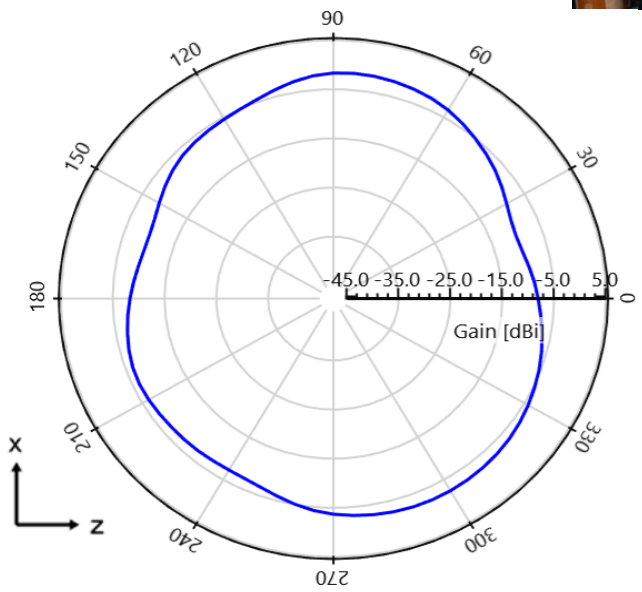
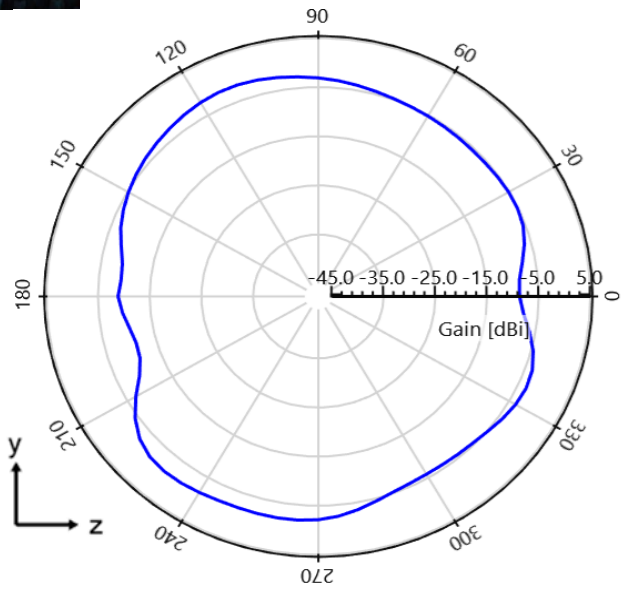
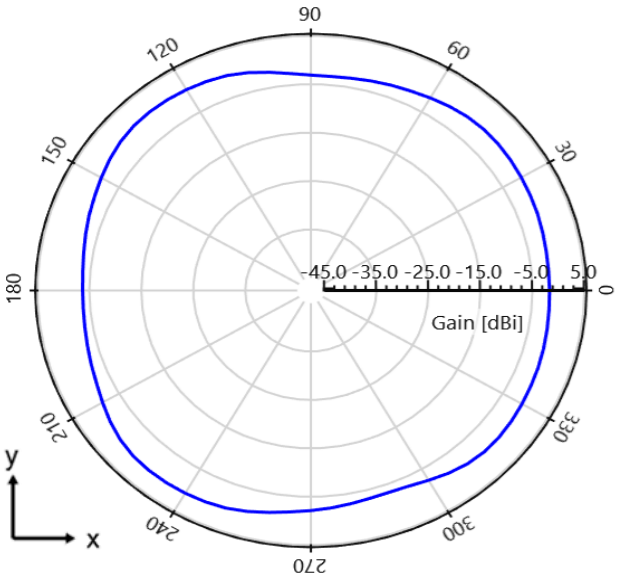
Antenna Radiation Patterns

Typical Performance on 55 x 25 mm PCB
Measured @ 5.550 GHz







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Wi-Fi Dual Band or BT KYOCERA AVX Embedded Chip Antenna Specification
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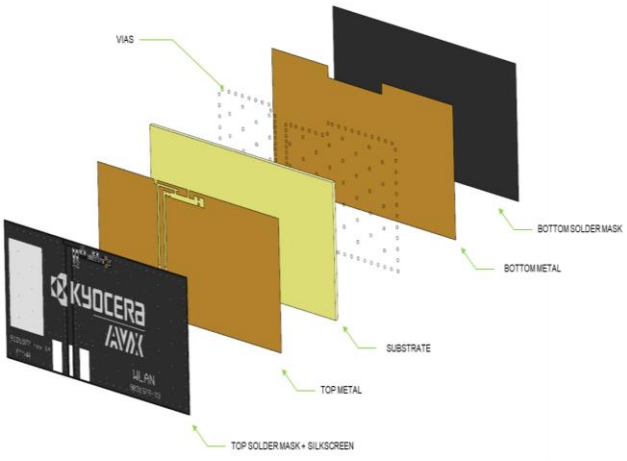
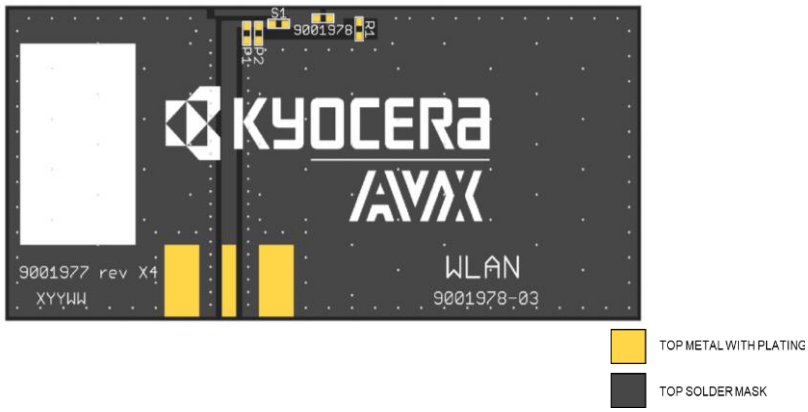
Antenna Layout (9001978-03)

Typical layout dimensions (mm)

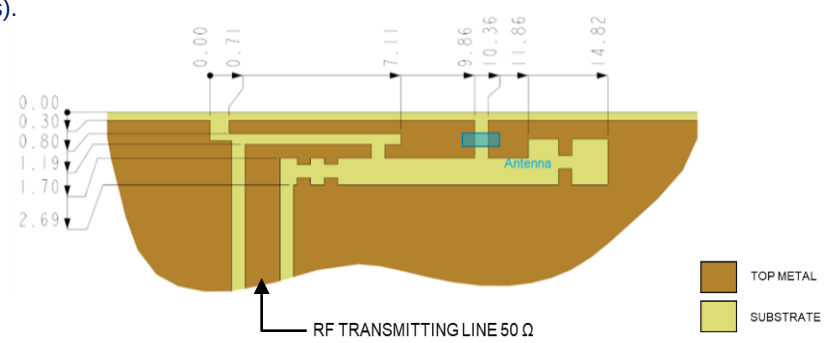




* VIAS: Diam. 0.2mm, (no vias on transmission lines).
Via holes must be covered by solder mask

Pin Description

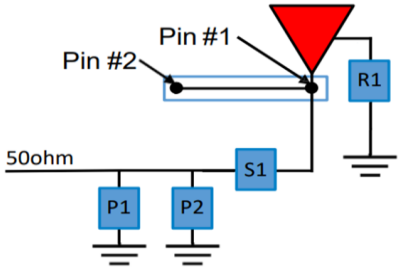
Pin#	Description
1	Feed
2	Ground

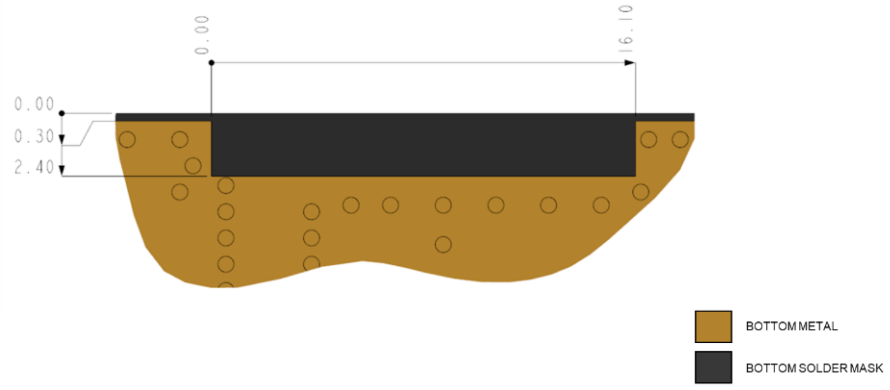


Matching Pi Network (Demo Board)

Component	Value	Tolerance
P1	1.8nH	±0.05nH
S1	2.4pF	±0.1pF
P2	N/A	N/A
R1	N/A	N/A

*Actual matching values depend on customer design





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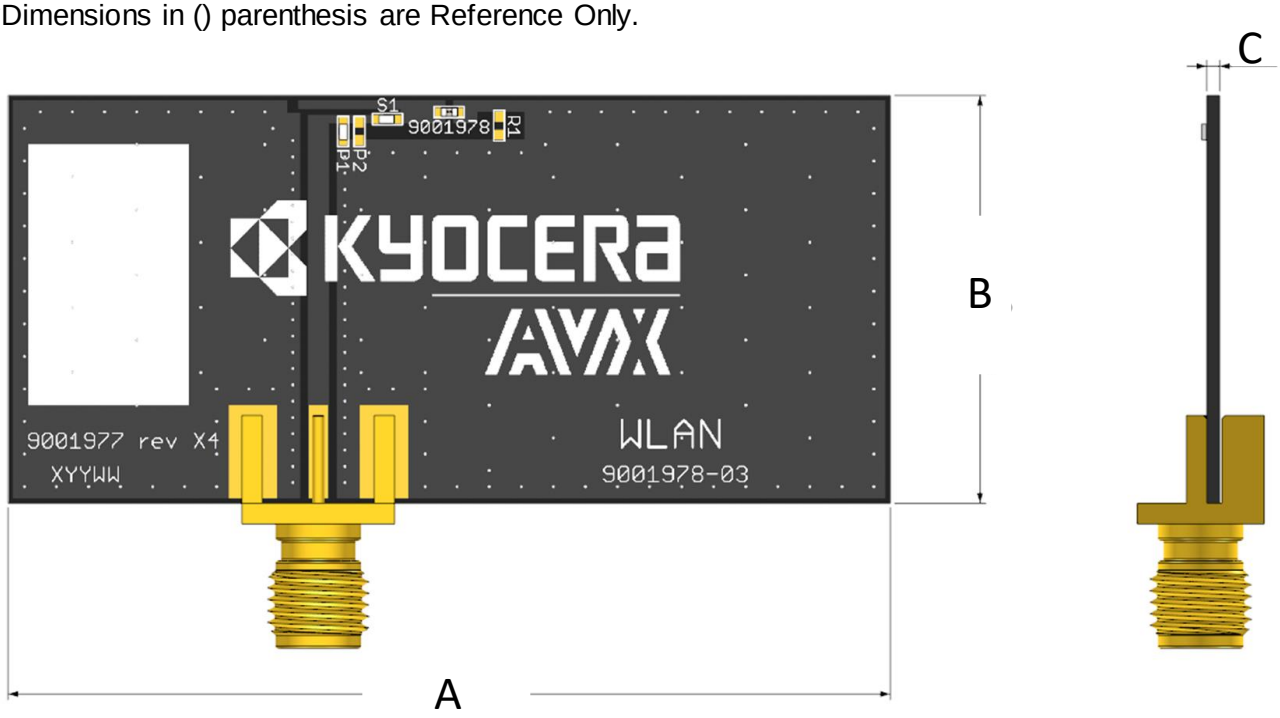
Antenna Demo Board (9001978-03)

Typical layout dimensions (mm)

Part Number	A	B	C
9001978-03	(55.0)	(25.0)	(0.80)

*Dimensions in () parenthesis are Reference Only.



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Appendix 1

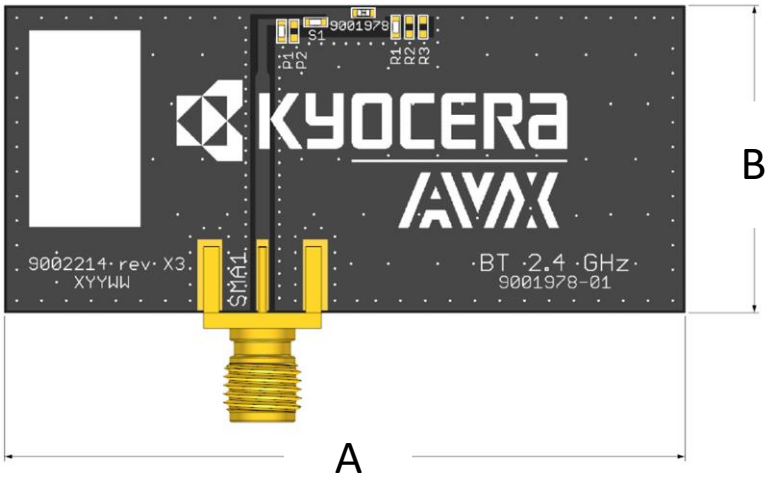
Appendix 1 gives instructions on how to match antenna through impedance matching network for BT (2400-2485 MHz) only.

Frequency (MHz)	2400-2485
Peak Gain (dBi)	3.45
Efficiency (%)	68
VSWR	<2.5:1
Feed Point Impedance	50 Ω unbalanced

*Data shown above has Appendix 1 matching applied on 55 x 25 mm pcb.

Part Number	A (mm)	B (mm)
9001978-01	(55)	(25)

*Dimensions in () parenthesis are Reference Only.



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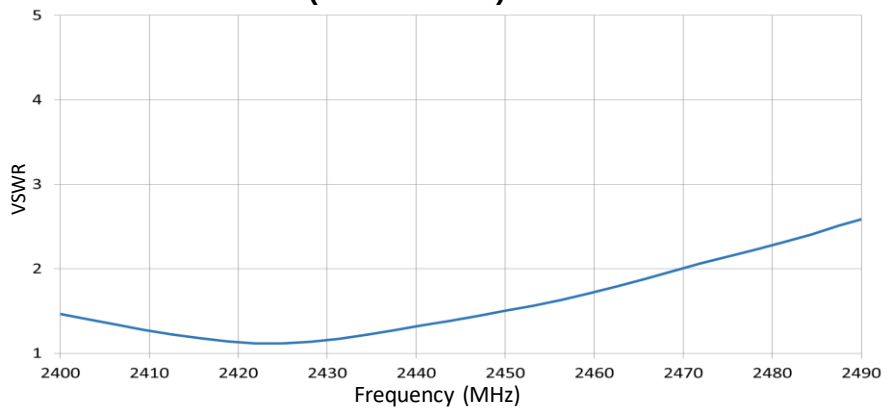
Appendix 1 BT KYOCERA AVX Embedded Chip Antenna Specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

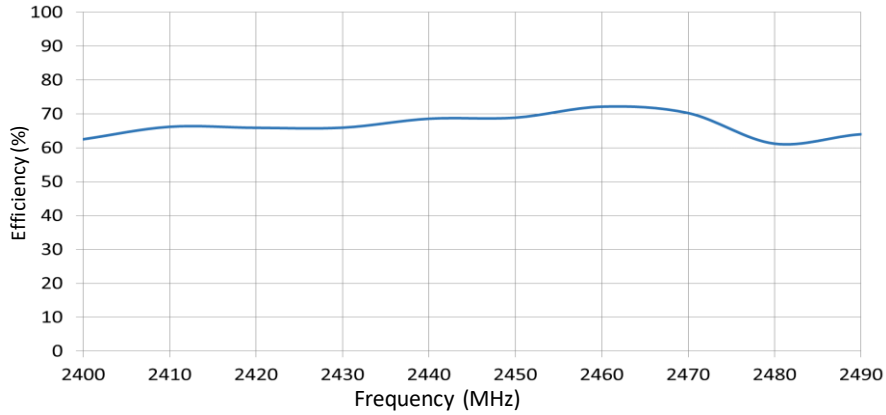
VSWR, Efficiency, and Peak Gain Plots

Typical Performance on 55 x 25 mm PCB

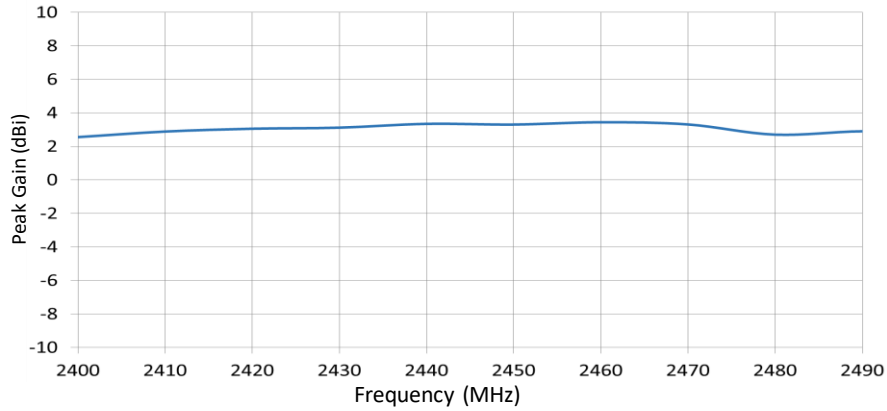
VSWR
(2.400 – 2.490) GHz



Efficiency
(2.400 – 2.490) GHz



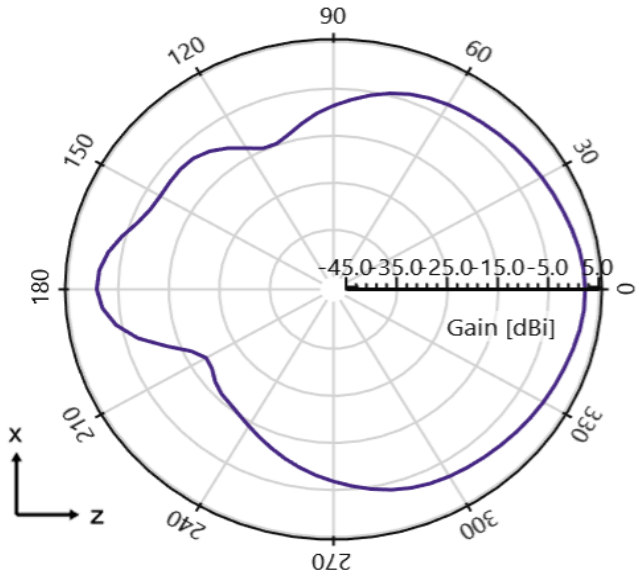
Peak Gain
(2.400 – 2.490) GHz

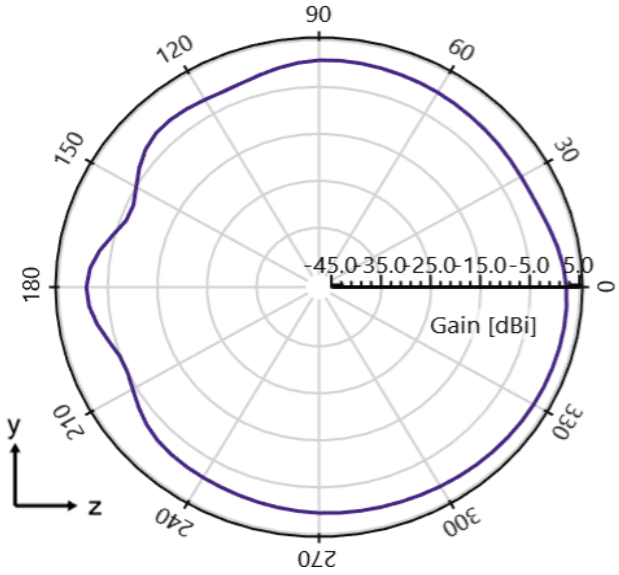


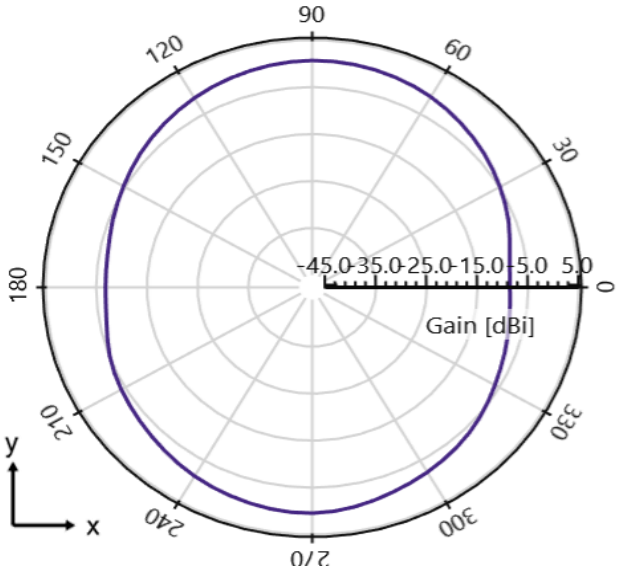
Appendix 1 BT KYOCERA AVX Embedded Chip Antenna Specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

Antenna Radiation Patterns

Typical Performance on 55 x 25 mm PCB
Measured @ 2.440 GHz







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Appendix 1 BT KYOCERA AVX Embedded Chip Antenna Specifications
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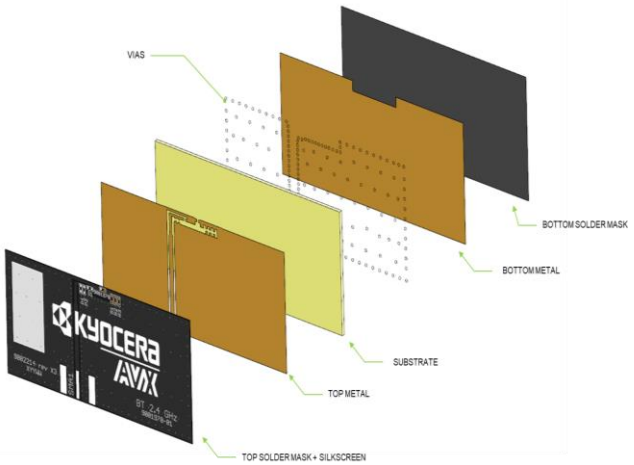
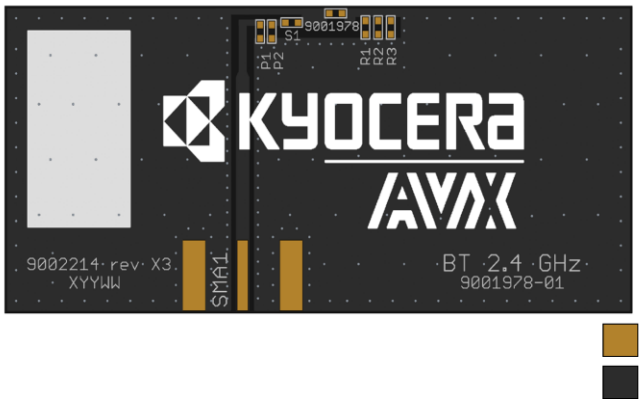
Antenna Layout (9001978-01)

Typical layout dimensions (mm)

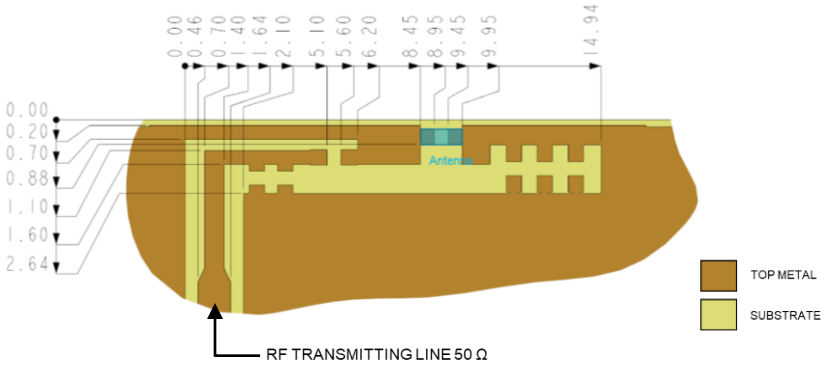




* VIAS: Diam. 0.2mm, (no vias on transmission lines).
Via holes must be covered by solder mask

Pin Description

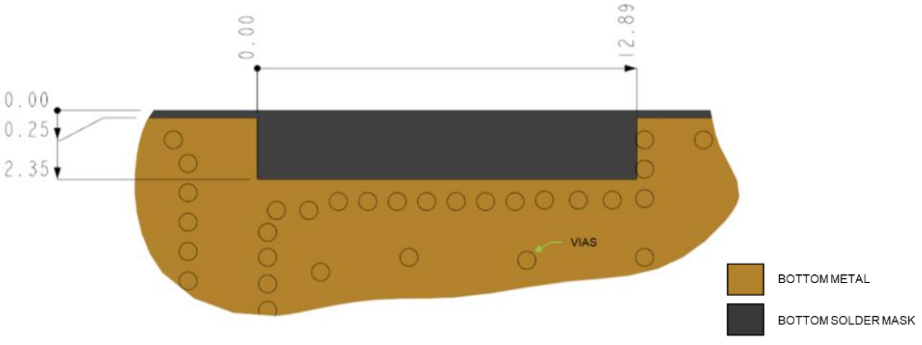
Pin#	Description
1	Feed
2	Ground



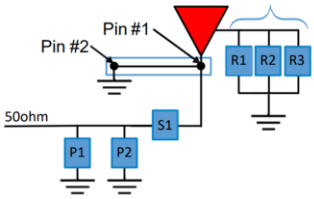
Matching Pi Network (Demo Board)

Component	Value	Tolerance
P1	4.7nH	±0.1nH
S1	0Ω	N/A
P2	N/A	N/A
R1	0Ω	N/A
R2	N/A	N/A
R3	N/A	N/A

*Actual matching values depend on customer design



*0Ω may be added to shift frequency higher



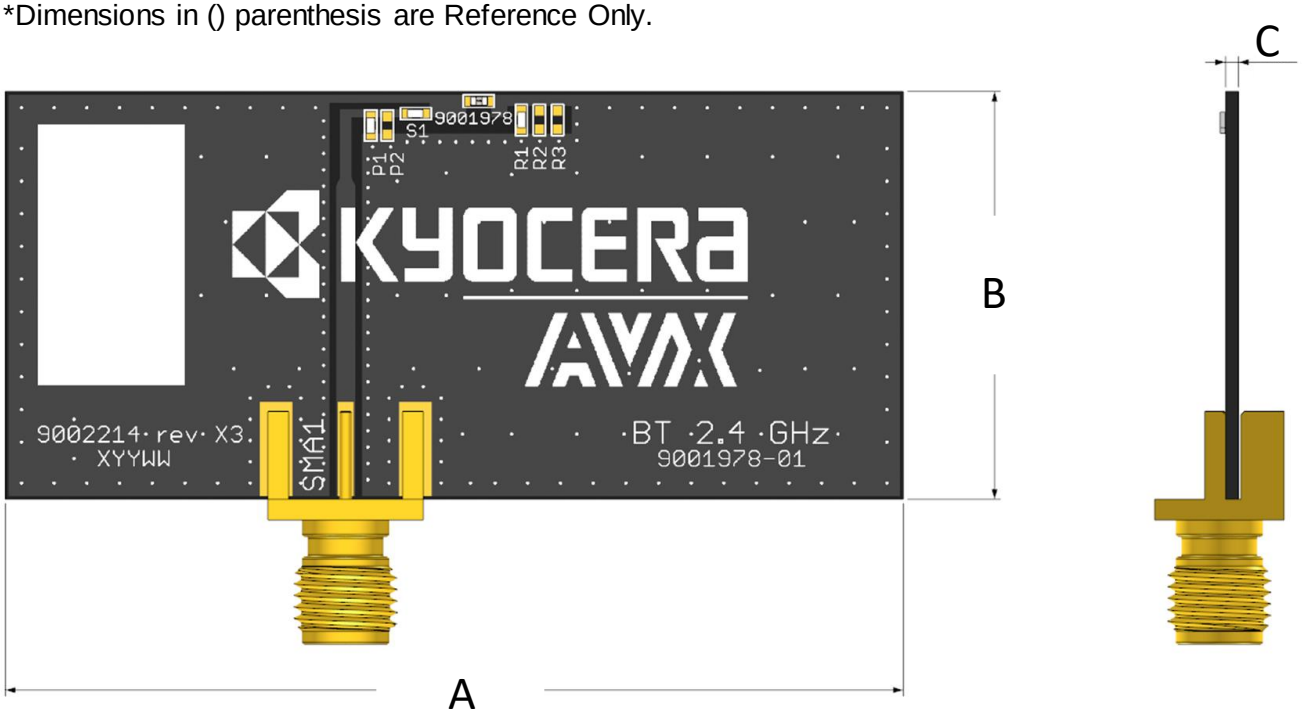
Appendix 1 BT KYOCERA AVX Embedded Chip Antenna Specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

Antenna Demo Board (9001978-01)

Typical layout dimensions (mm)

Part Number	A	B	C
9001978-01	(55.0)	(25.0)	(0.80)

*Dimensions in () parenthesis are Reference Only.



Appendix 2

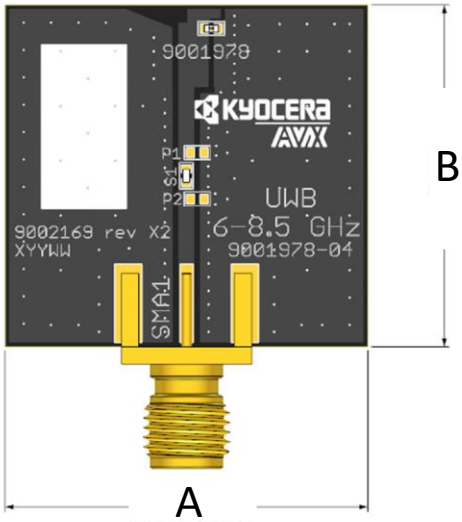
Appendix 2 gives instructions on how to match antenna through updated layout and impedance matching network for UWB (6000-8500 MHz)

Frequency (MHz)	6000 - 8500
Peak Gain (dBi)	5.7
Efficiency (%)	80
VSWR	<2.6:1
Feed Point Impedance	50 Ω unbalanced

*Data shown above has Appendix 2 matching applied on 26.5 x 25.0 mm pcb.

Part Number	A (mm)	B (mm)
9001978-04	(26.5)	(25.0)

*Dimensions in () parenthesis are Reference Only.

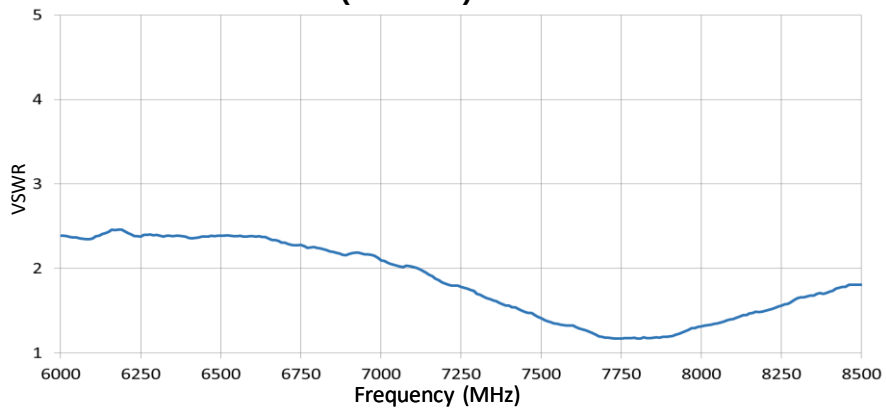


Appendix 2 UWB KYOCERA AVX Embedded Chip Antenna Specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

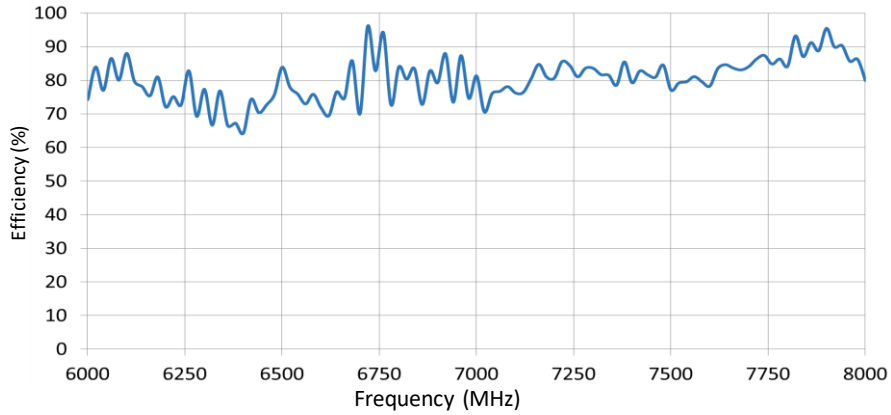
VSWR, Efficiency, and Peak Gain Plots (9001978-04)

Typical Performance on 26.5 x 25.0 mm PCB

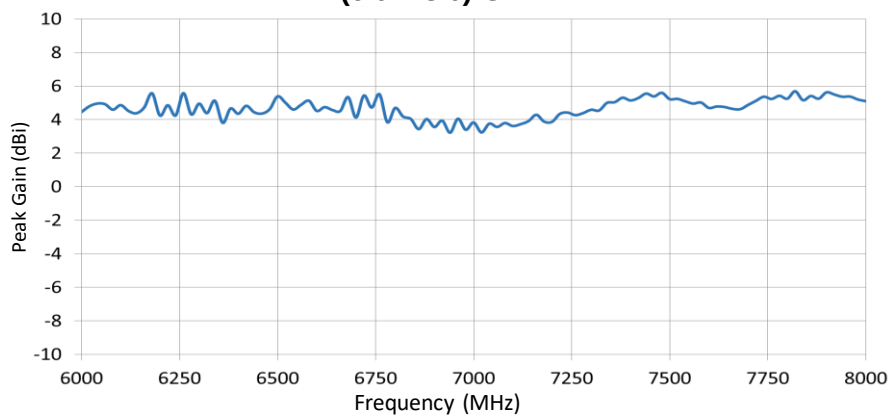
VSWR
(6.0 – 8.5) GHz



Efficiency
(6.0 – 8.0) GHz



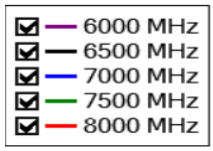
Peak Gain
(6.0 – 8.0) GHz

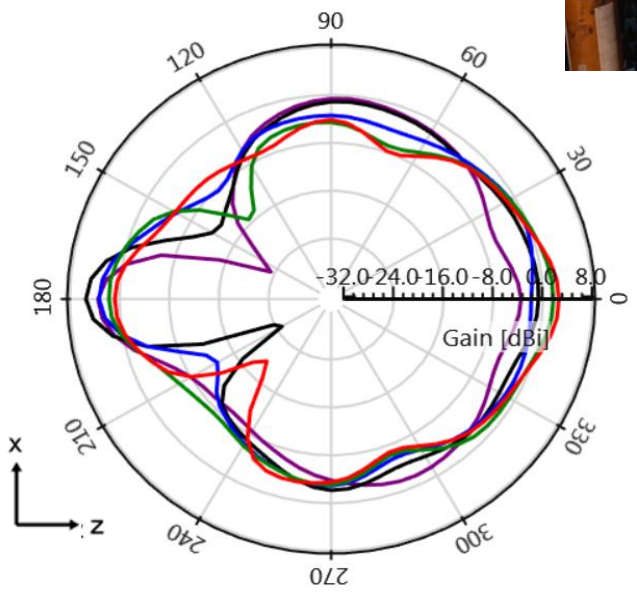


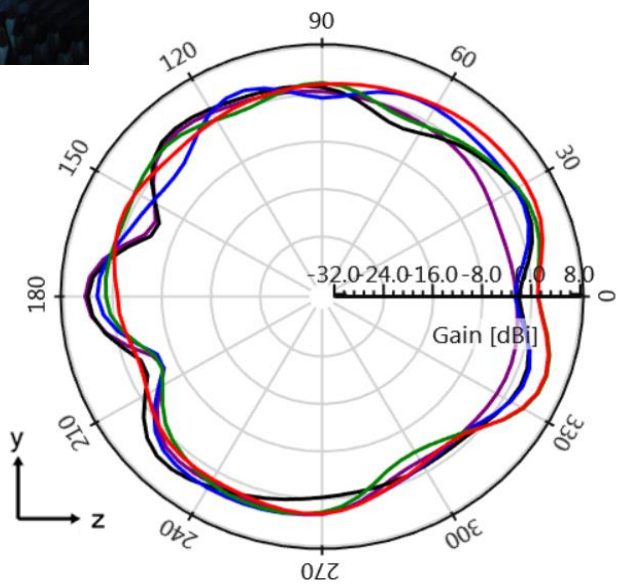
Appendix 2 UWB KYOCERA AVX Embedded Chip Antenna Specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

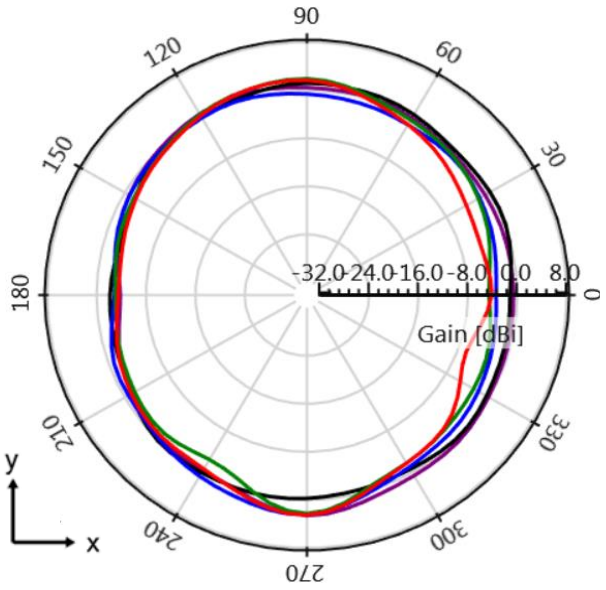
Antenna Radiation Patterns (9001978-04)

Typical Performance on 26.5 x 25.0 mm PCB
Measured @ 6000, 6500, 7000, 7500, 8000 MHz









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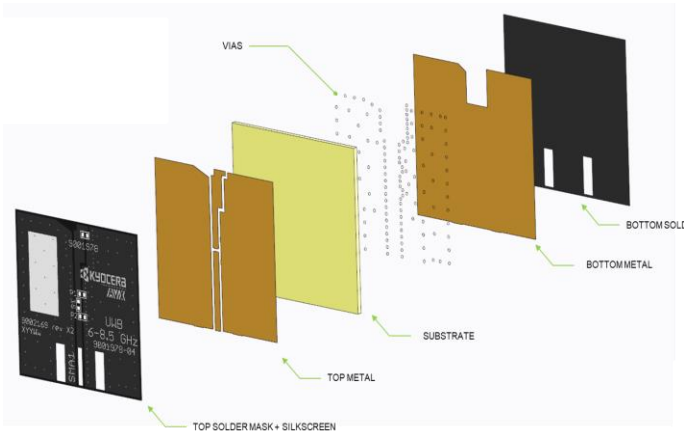
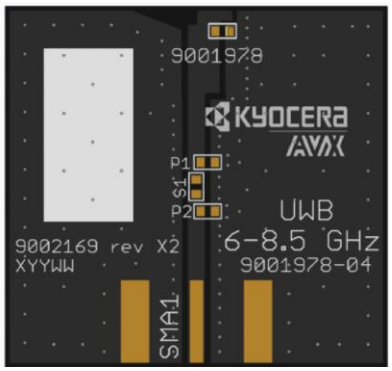
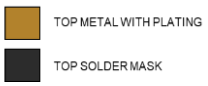
Appendix 2 UWB KYOCERA AVX Embedded Chip Antenna Specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

Antenna Layout (9001978-04)

Typical layout dimensions (mm)







* VIAS: Diam. 0.2mm, (no vias on transmission lines).
Via holes must be covered by solder mask

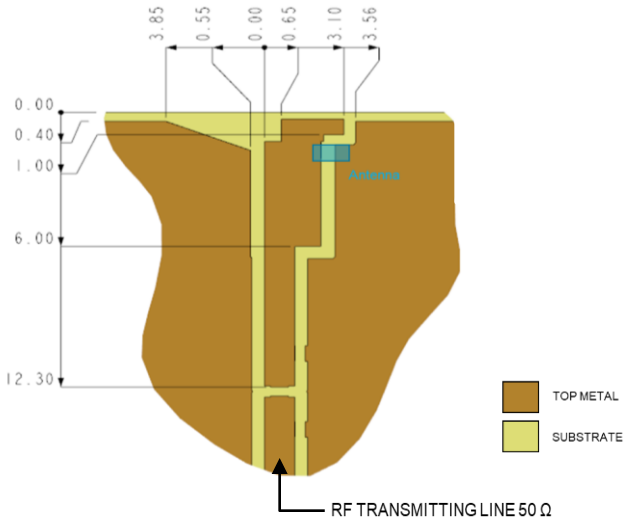
Pin Description

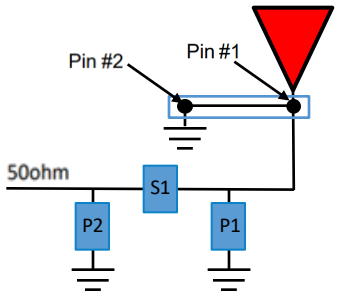
Pin#	Description
1	Feed
2	Ground

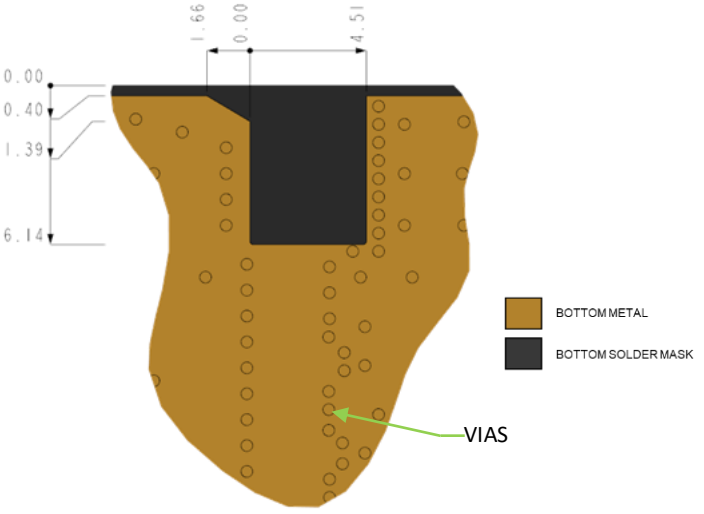
Matching Pi Network (Demo Board)

Component	Value	Tolerance
P1	DNI	N/A
S1	0Ω	N/A
P2	DNI	N/A

*Actual matching values depend on customer design







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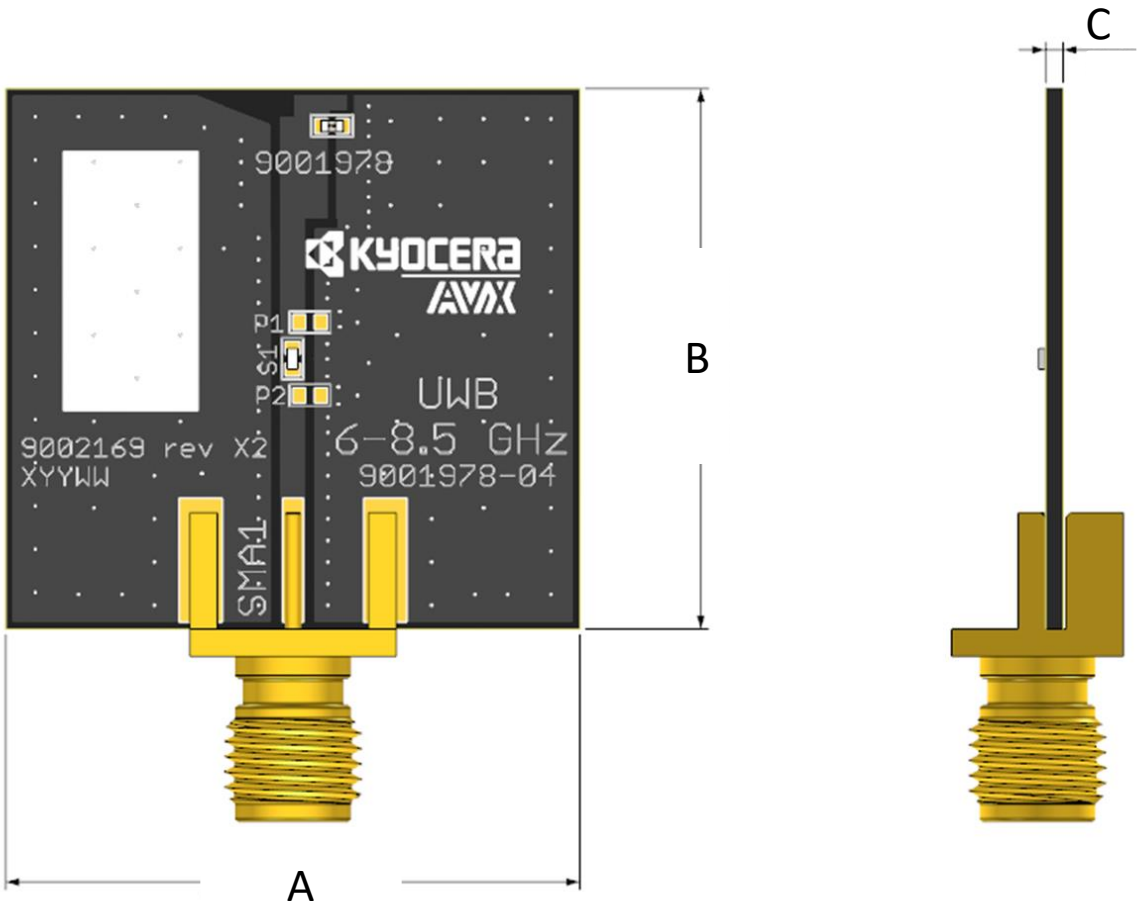
Appendix 2 UWB KYOCERA AVX Embedded Chip Antenna Specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

Antenna Demo Board (9001978-04)

Typical layout dimensions (mm)

Part Number	A	B	C
9001978-04	(26.5)	(25.0)	(0.80)

*Dimensions in () parenthesis are Reference Only.



单击下面可查看定价，库存，交付和生命周期等信息

>>AVX