

Part No. X9003088-3GDSMB

External Cellular / ISM / LoRa Antenna

824 – 960 / 1710 – 2170 MHz

Supports: M2M Applications, IoT, Metering, Industry Automation & Controls, Energy Monitoring, 2G, 3G, LoRa, Indoor applications



KYOCERA AVX series of External Antennas deliver on the key needs of device designers for higher functionality and performance in IoT environment.

This antenna offers high gain in small form factor ideal to use for reference kits and demo boards. The antenna can be mounted easily to the device via an SMA.

External Cellular / ISM / LoRa Antenna

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KEY BENEFITS

Quicker Time-to-Market

Standard part means fewer design changes with, simple implementation

Easy Assembly using RP-SMA or SMA

Best in Class Performance

External antennas are designed to maintain high efficiency in a variety of device configurations

Great Flexibility

Standard connector to makes easy set-up

Environmental Compliance

Products are the latest RoHS version compliant.

APPLICATIONS

- Cellular
- Telematics
- Healthcare
- M2M, Industrial devices
- Smart Grid
- IoT
- Metering

Electrical Specifications

Typical Characteristics antenna measured in Free Space and with a 77x130 mm PCB.

Frequency (MHz)	Free Space	
	824 – 960	1710 – 2170
VSWR	<5.3:1	<7.3:1
Average Efficiency	15%	23%
Peak Gain	-1.0 dBi	-0.0 dBi
Polarization	Linear	
Feed Point Impedance	50 ohm	

Frequency (MHz)	With 77x130 mm PCB (short edge corner)		With 77x130 mm PCB (long edge corner)	
	824 – 960	1710 – 2170	824 – 960	1710 – 2170
VSWR	<3.2:1	<5.2:1	<3.4:1	<4.5:1
Average Efficiency	60%	62%	67%	52%
Peak Gain	2.0 dBi	5.6 dBi	2.1 dBi	3.7 dBi
Polarization	Linear			
Feed Point Impedance	50 ohm			

External Cellular / ISM / LoRa KYOCERA AVX Antenna Specifications.
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

Mechanical Specifications & Ordering Part Number

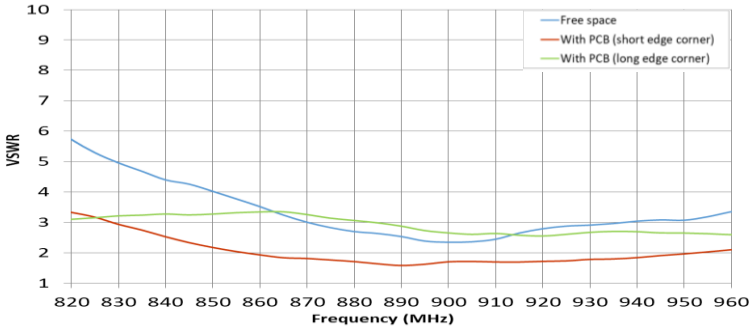
Ordering Part Number	X9003088-3GDSMB
Dimensions (mm)	49.5 ± 1.0 height 8.2 ± 0.5 diameter
Connector Type	SMA Male (90° SMA Male PN X9001558)
Weight (grams)	4.3
Color	Black
Operating Temperature (°C)	-20 to +60
Radome Material	PP

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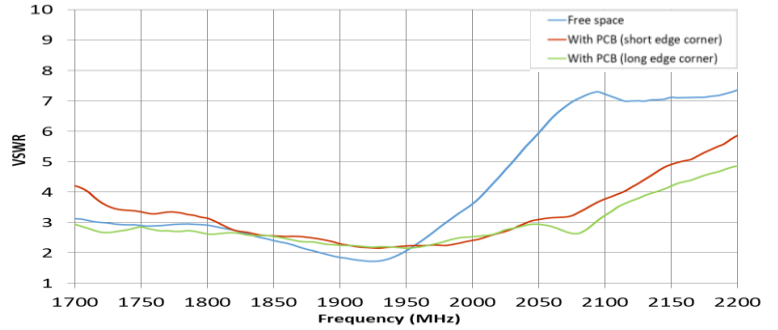
VSWR, Efficiency and Peak Gain Plots

Typical performance measured in Free Space and with 77 x130 mm PCB

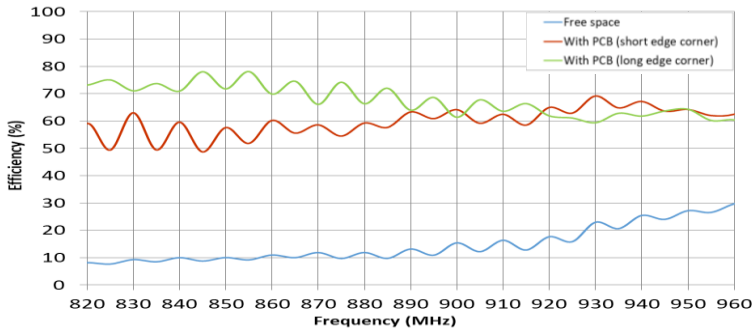
Low Band VSWR



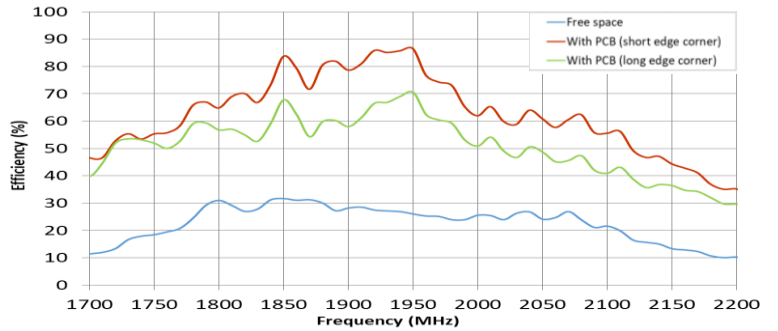
High Band VSWR



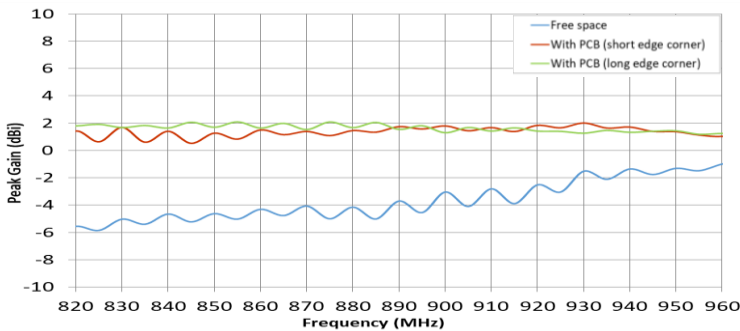
Low Band Efficiency



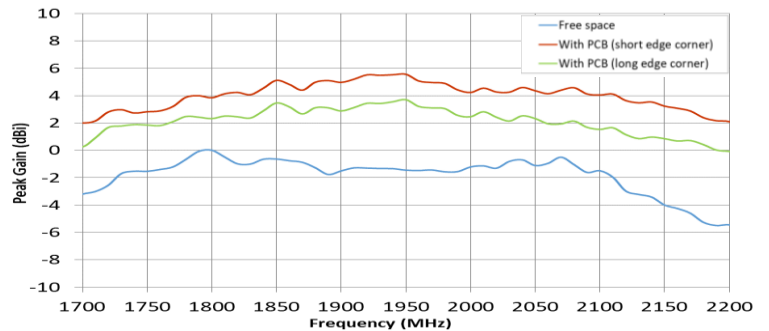
High Band Efficiency



Low Band Peak Gain



High Band Peak Gain



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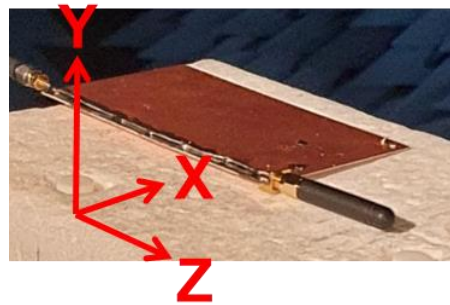
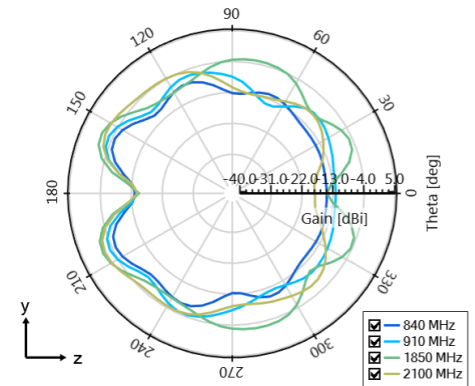
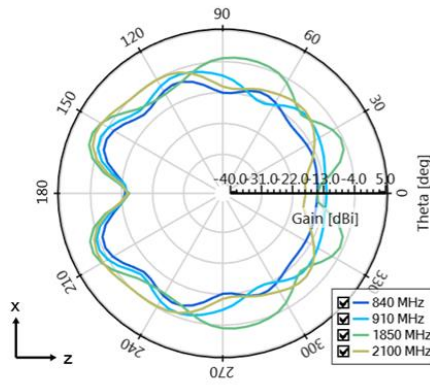
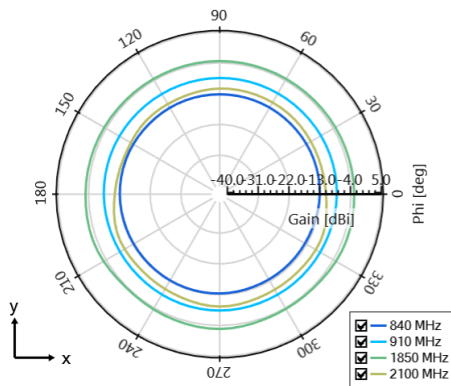
Antenna Radiation Patterns – Low / High Band

Typical performance X9003088 performance in Free Space & with PCB on short edge.



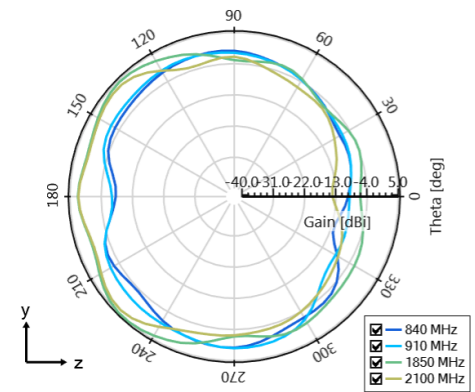
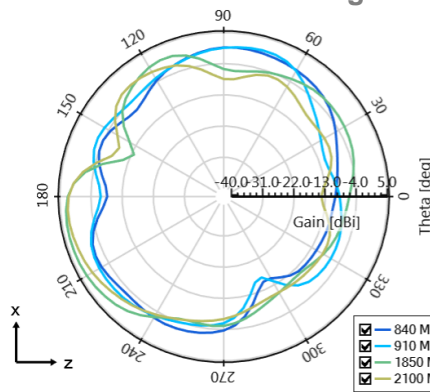
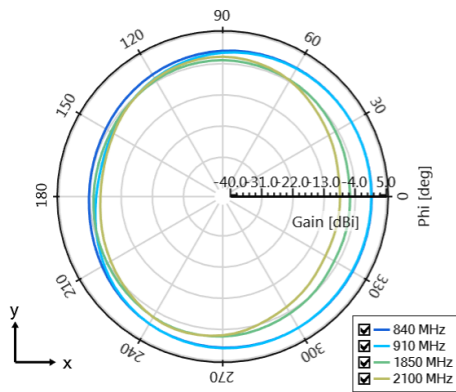
Free-space

Free-space measured at 840, 910, 1850, 2100 MHz



With PCB on short edge

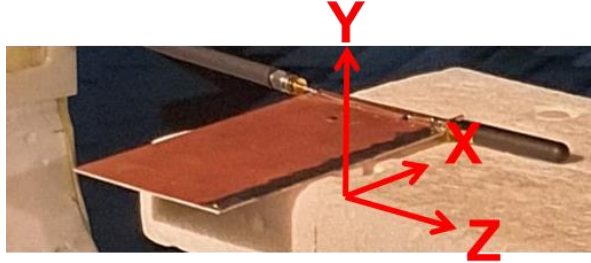
With PCB on short edge measured at 840, 910, 1850, 2100 MHz



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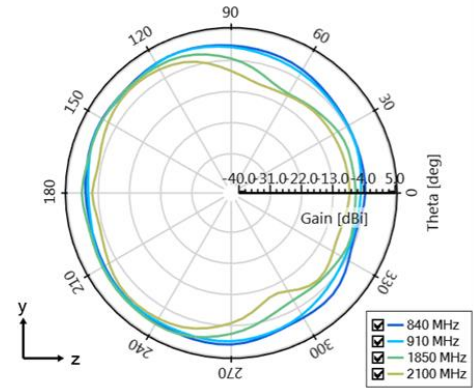
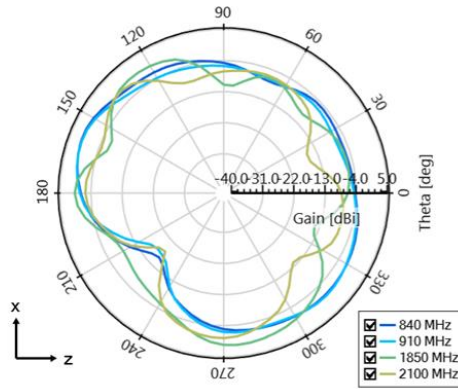
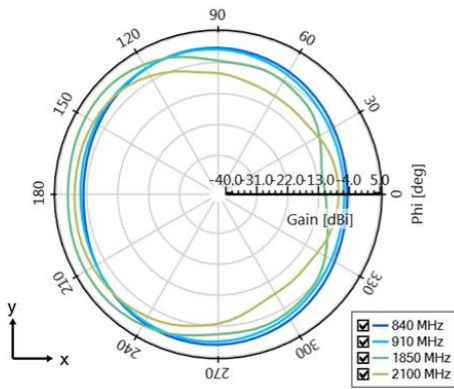
Antenna Radiation Patterns – Low / High Band

Typical performance X9003088 performance with PCB on long edge.



With PCB on long edge

With PCB on long edge measured at 840, 910, 1850, 2100 MHz



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Mechanical Specifications

Typical antenna dimensions in mm

Part Number	A	Ø	Connector
X9003088-3GDSMB	49.5 ± 1.0	8.2 ± 0.5	SMA MALE
X9003088-3GDRMB	49.5 ± 1.0	8.2 ± 0.5	RP-SMA

