Part No. 1002089
LTE & NTN PCB Antenna with SMA Connector

700 / 750 / 850 / 900 / 1800 / 1900 / 2100 / 2700 MHz

Supports: Broadband LTE (OCTA-BAND), LTE CAT-M, NB-IoT, SigFox, LoRa, Cellular LPWA, RPMA, Firstnet

LTE & NTN PCB Antenna with SMA Connector

Low Band : 698-960 MHz
High Band: 1710-2700 MHz
Band 255: 1525 – 1626.5 MHz
Band 256/23: 1980 – 2200 MHz

KEY BENEFITS

Reduced Costs and Time-to-Market

Standard antenna eliminates design fees and cycle time associated with a custom solution; getting products to market faster.

Greater Flexibility with Unique Form Factors

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

Environmental Compliance

Comply with latest RoHS requirements

APPLICATIONS

- Home automation
- Smart metering
- M2M, Industrial devices
- IoT
- Firstnet
- Healthcare Applications (FDA Class I)
- Point of Sale
- Tracking
- Sigfox
- LoRa
- Cellular LPWA
- RPMA

Stays in Tune

KYOCERA AVX LTE antennas use patented IMD technology in a trace configuration to provide high performance. IMD antennas requires a smaller design keep-out area, carry lower program development risk which yields a quicker time-to-market, without sacrificing RF performance.

IMD antenna technology provides superior RF field containment, resulting in less interaction with surrounding components. KYOCERA AVX IMD antennas resist detuning; providing a robust radio link regardless of the usage position.

This antenna also covers NTN Band 255/256/23.

Electrical Specifications

Typical characteristics in housing using a 127 x 290 mm ground plane

LTE - Frequency	700 - 960 MHz	1710-2700 MHz
Average Efficiency	78 %	76 %
VSWR	< 3.0:1	< 2.0:1
Peak Gain	4 dBi	2.2 dBi
Polarization	Linear	
Power Handling	2 Watts CW	
Feed Point Impedance	50 ohms unbalanced	
Radiation Pattern	Omnidirectional	

NTN - Freq	1525 -1660.5 MHz	1980-2200 MHz	2000-2200 MHz
Average Efficiency	66 %	77 %	77 %
VSWR	< 3.0:1	< 2.0:1	< 2.0:1
Peak Gain	2.5 dBi	2.3 dBi	2.3 dBi
Polarization	Linear		
Power Handling	2 Watts CW		
Feed Point Impedance	50 ohms unbalanced		
Radiation Pattern	Omnidirectional		

Mechanical Specifications & Ordering Part Number

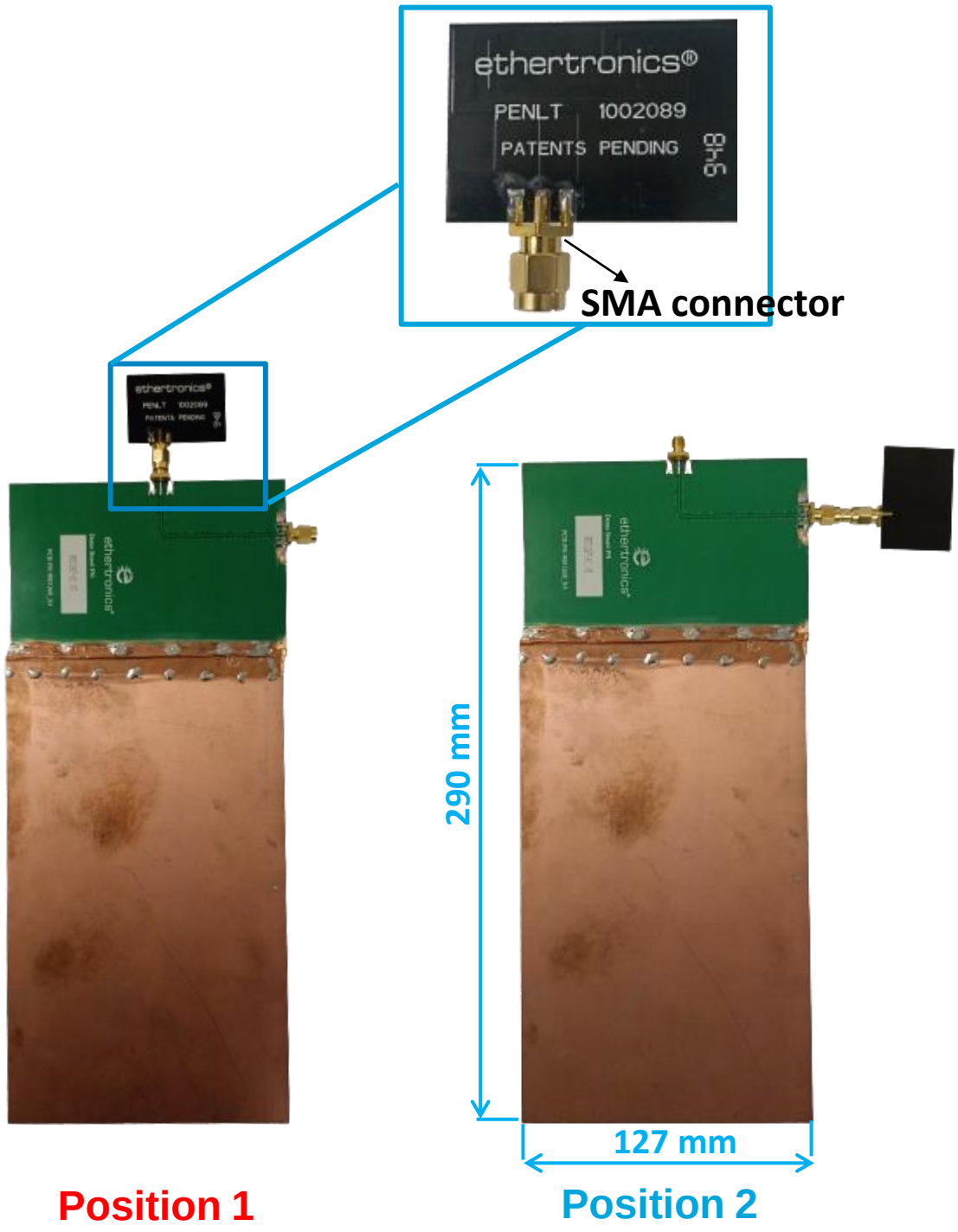
Ordering Part Number	1002089
Dimensions (mm)	45.0 x 43.8 x 9.9
Weight (grams)	5.6
Antenna Assembly on the PCBA	Using SMA (Male) connector

1002089 LTE & NTN PCB Antenna Specifications

KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

Antenna setup

Typical performances on 127 x 290 mm PCB



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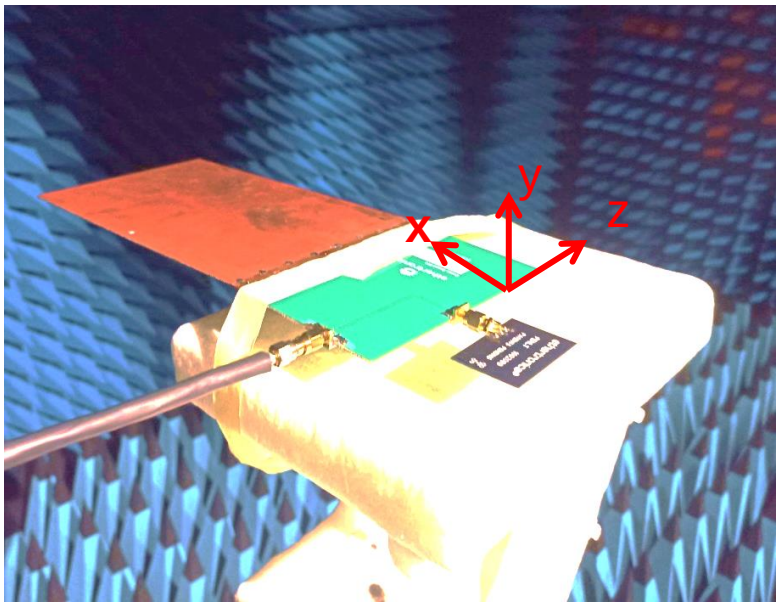
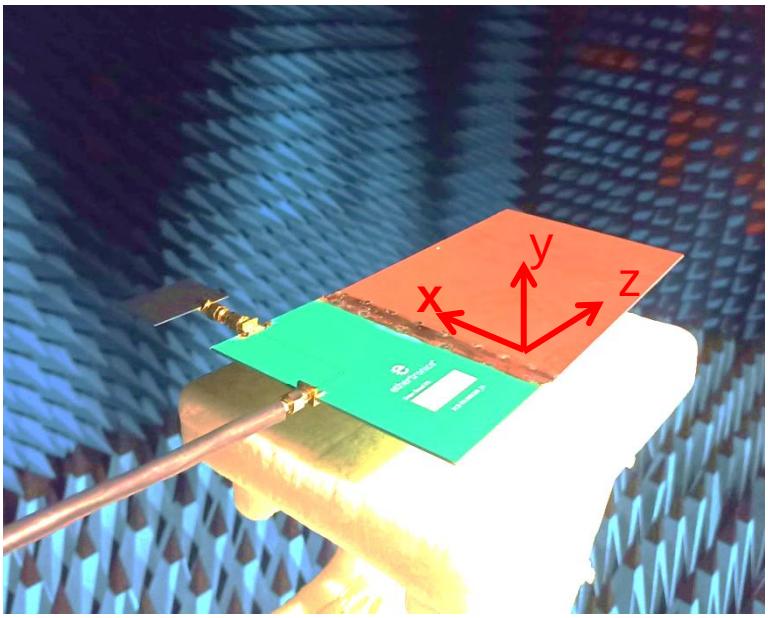
Test Environment Setup

Typical performances on 127 x 290 mm PCB

Position 1



Position 2



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1002089 LTE & NTN PCB Antenna Specifications
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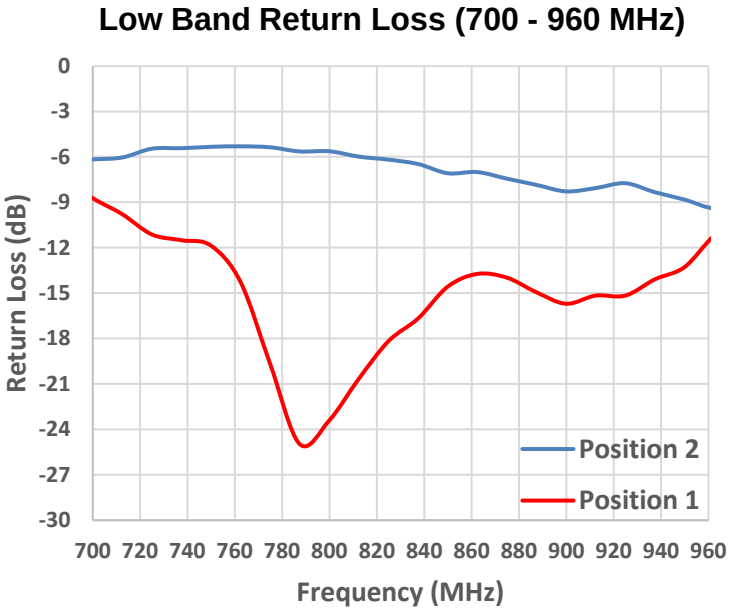
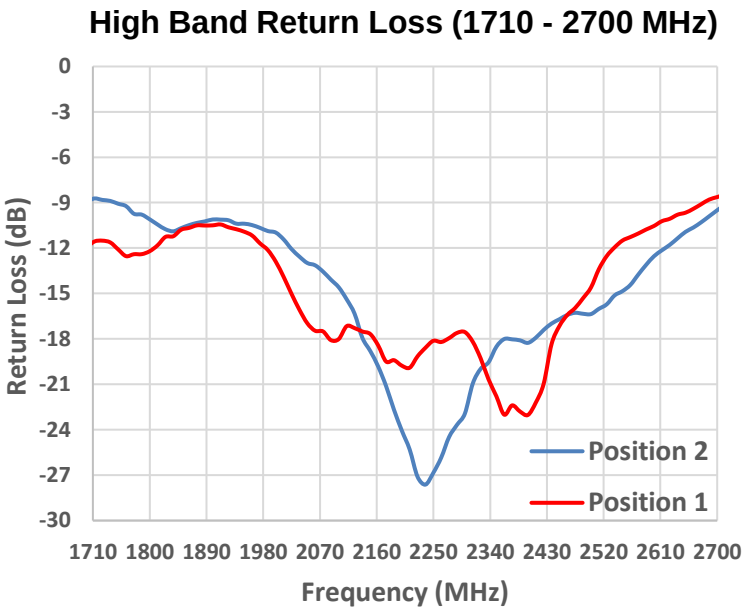
Return Loss Plots - LTE

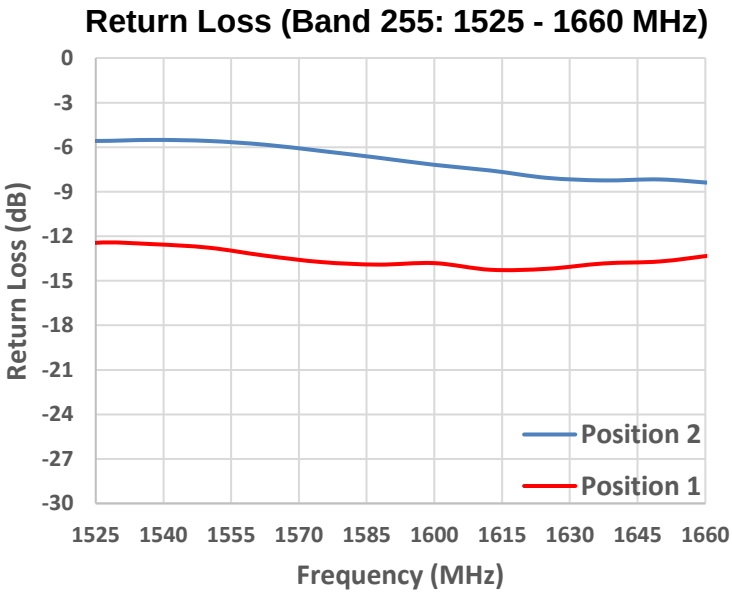
Typical performances on 127 x 290 mm PCB

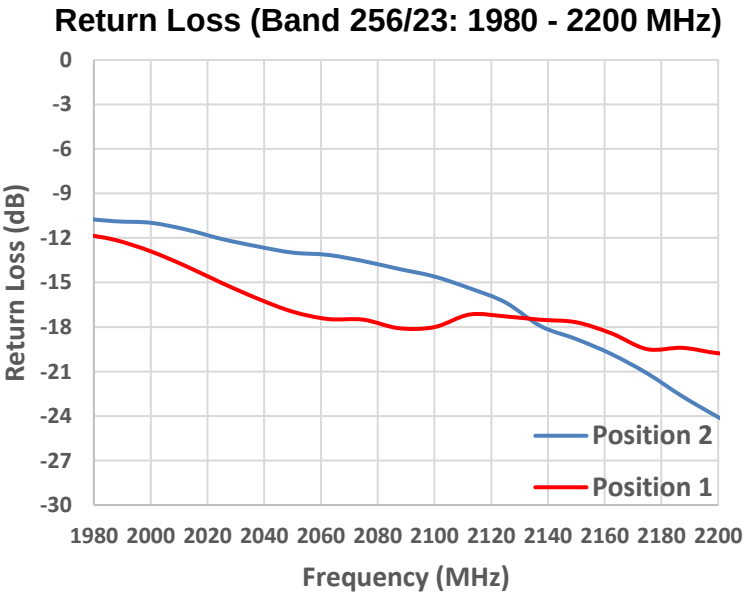




Return Loss Plots - NTN

Typical performances on 127 x 290 mm PCB





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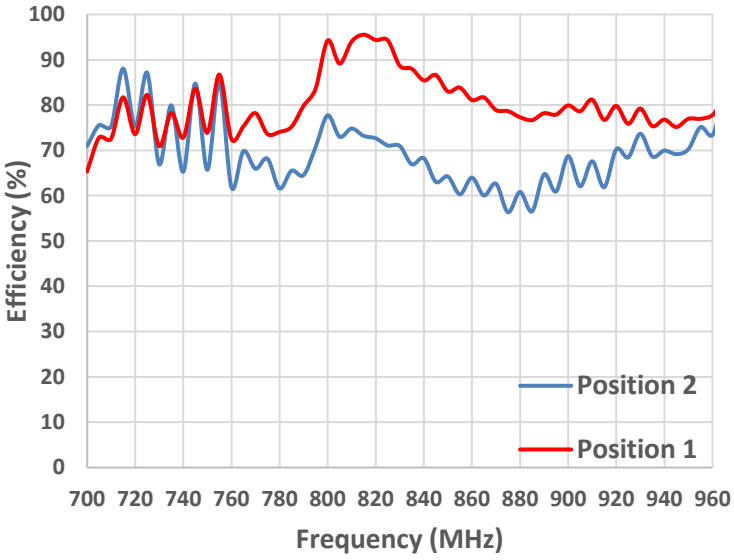
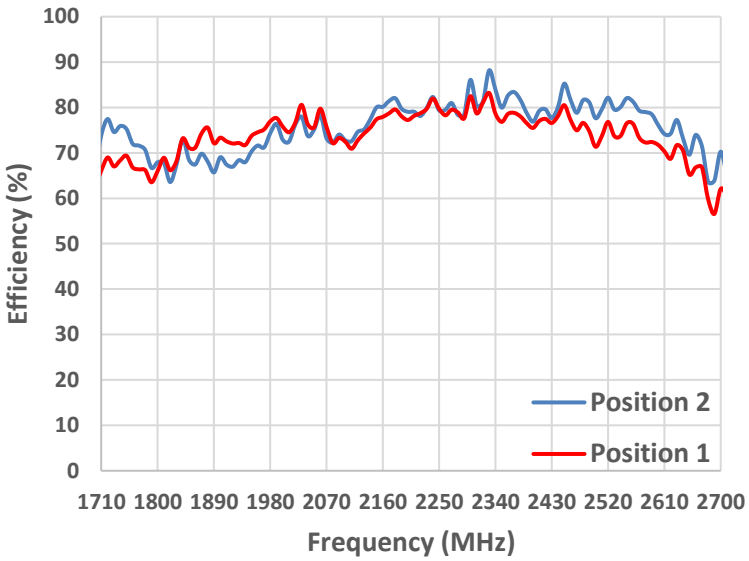
Efficiency Plots - LTE

Typical performances on 127 x 290 mm PCB

Low Band Efficiency (700 - 960 MHz)



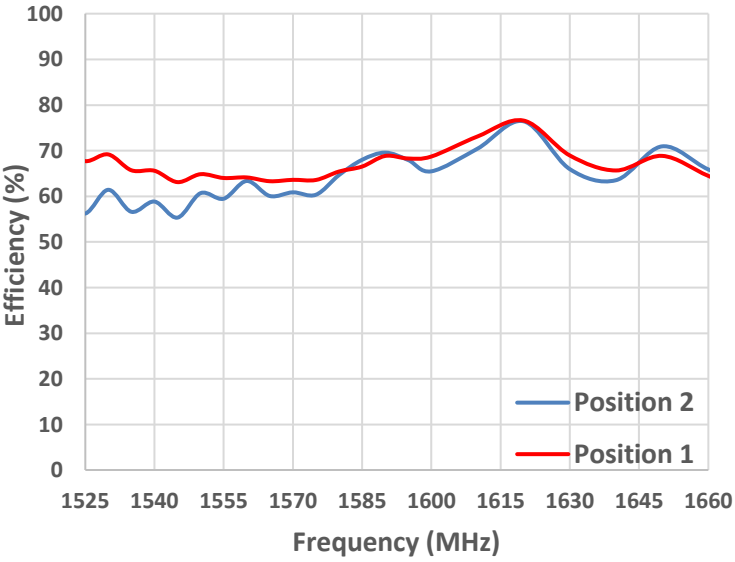
High Band Efficiency (1710 - 2700 MHz)



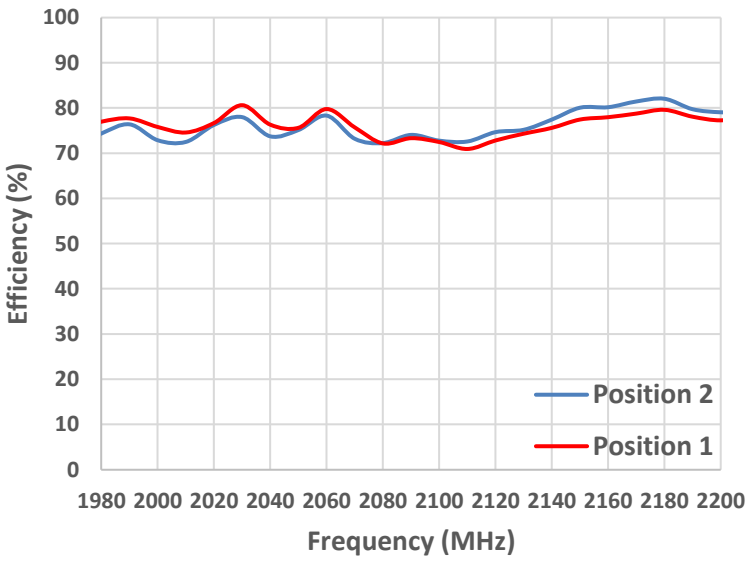
Efficiency Plots - NTN

Typical performances on 127 x 290 mm PCB

Efficiency (Band 255: 1525 - 1660 MHz)



Efficiency (Band 256/23: 1980 - 2200 MHz)



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1002089 LTE & NTN PCB Antenna Specifications
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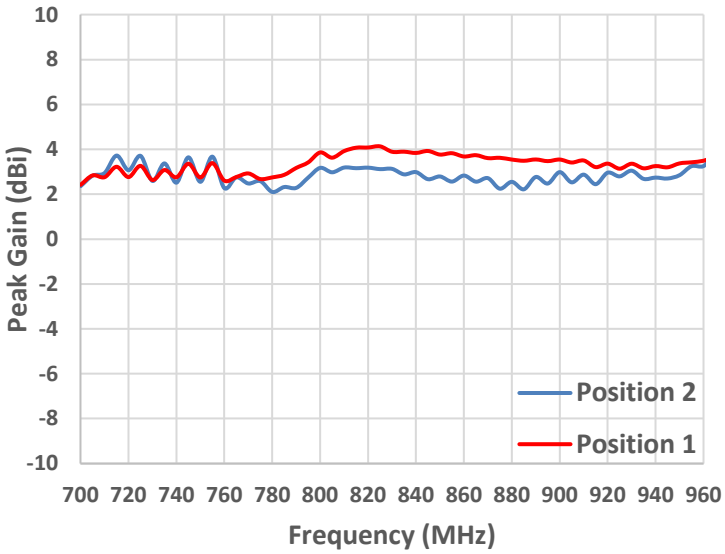
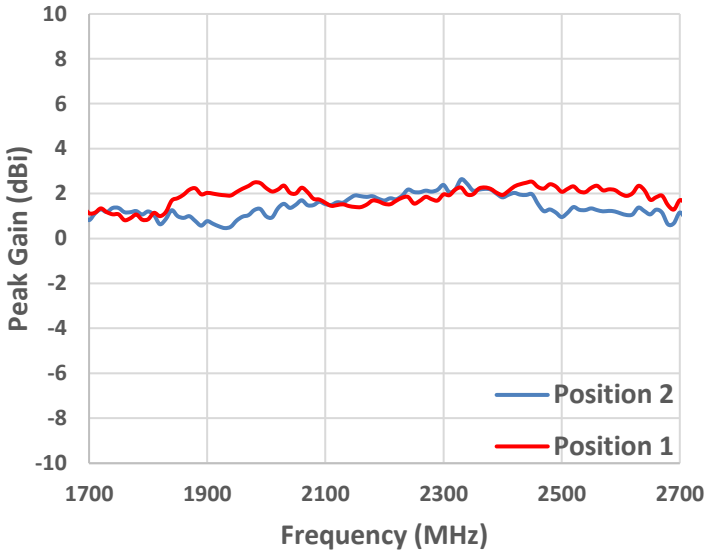
Peak Gain Plots - LTE

Typical performances on 127 x 290 mm PCB

Low Band Peak Gain (700 - 960 MHz)



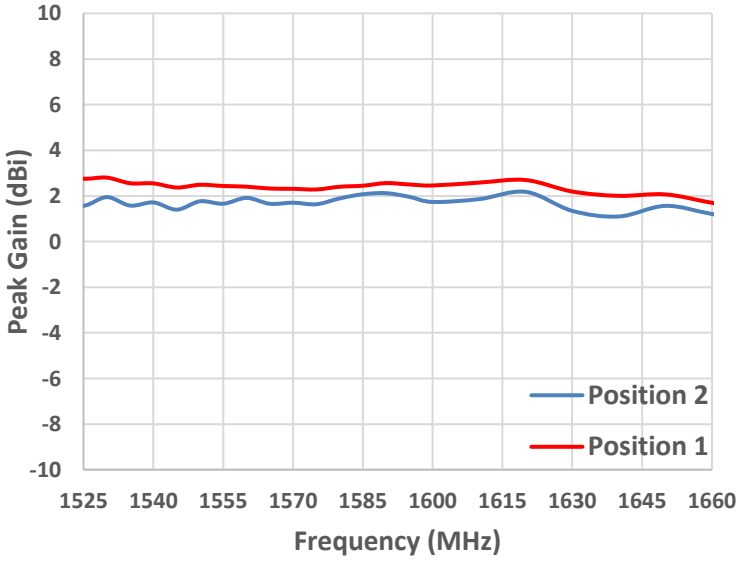
High Band Peak Gain (1710 - 2700 MHz)



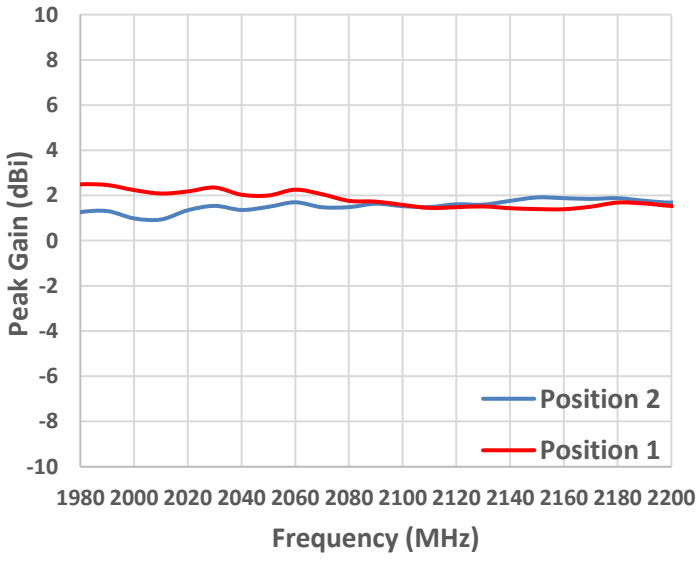
Peak Gain Plots - NTN

Typical performances on 127 x 290 mm PCB

Peak Gain (Band 255: 1525 - 1660 MHz)



Peak Gain (Band 256/23: 1980 - 2200 MHz)



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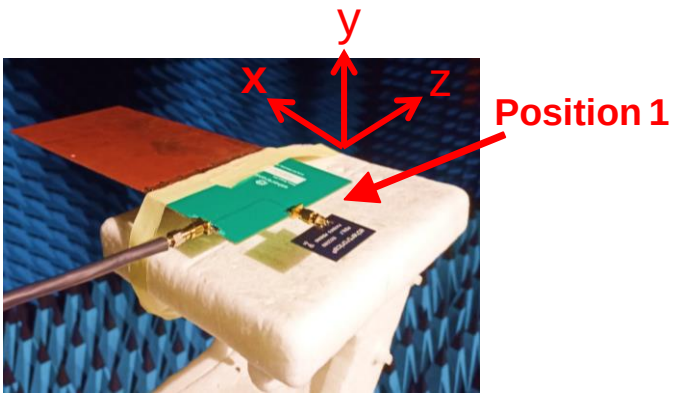
1002089 LTE & NTN PCB Antenna Specifications

KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

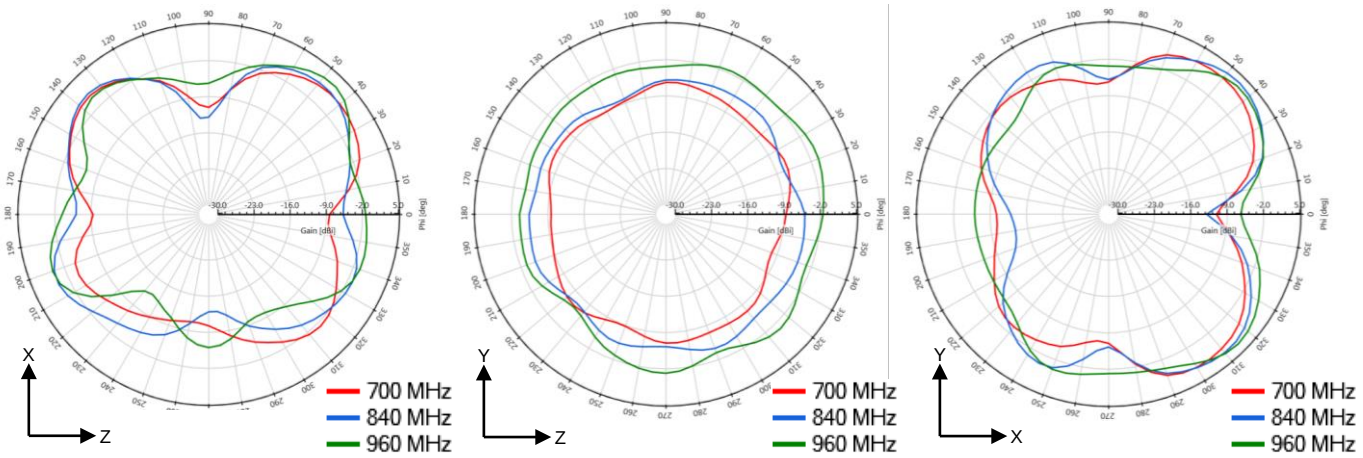
Antenna Radiation Patterns (Position 1)

Typical performances measured on 135 x 200 mm PCB

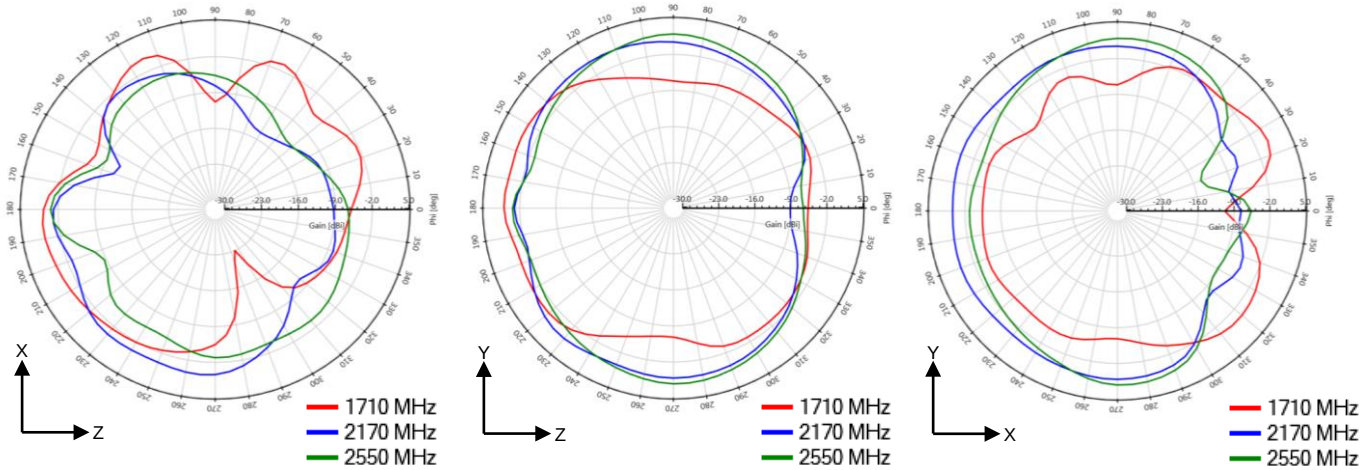
Measured @ 700, 840, 960, 1710, 2170, 2550 MHz



LTE Low Band



LTE High Band



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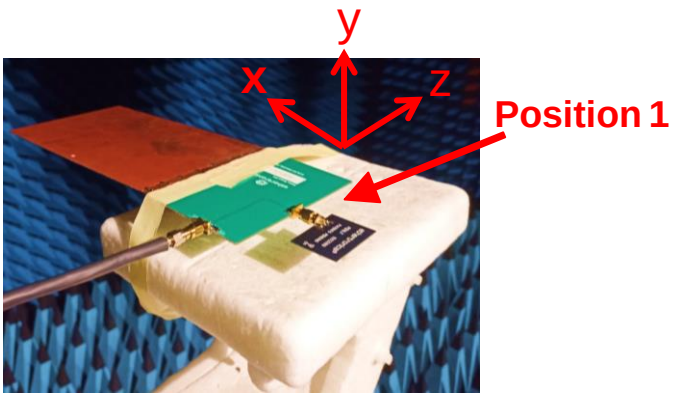
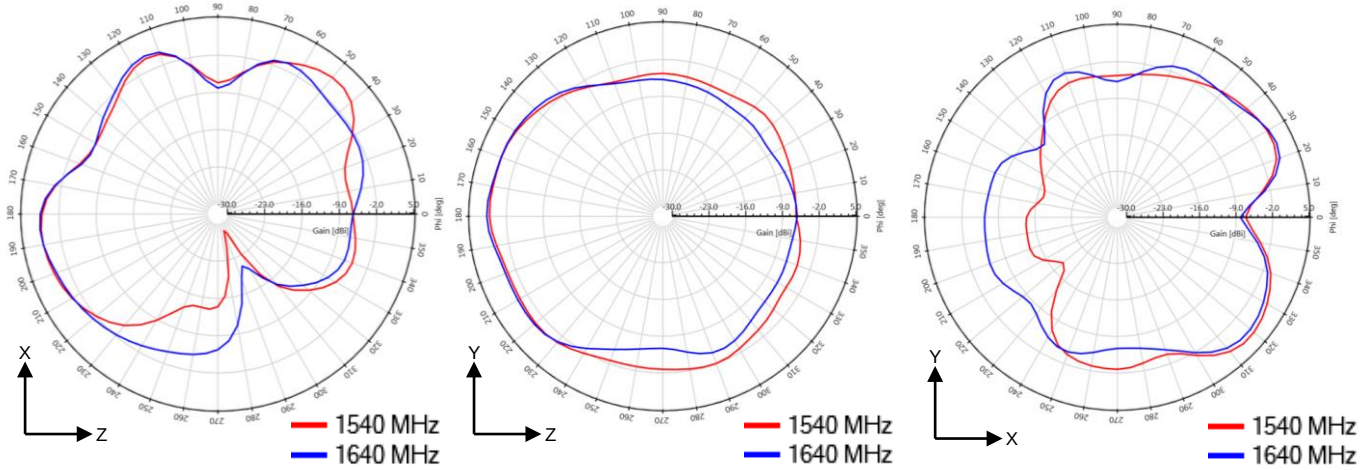
Antenna Radiation Patterns (Position 1)

Typical performances measured on 135 x 200 mm PCB

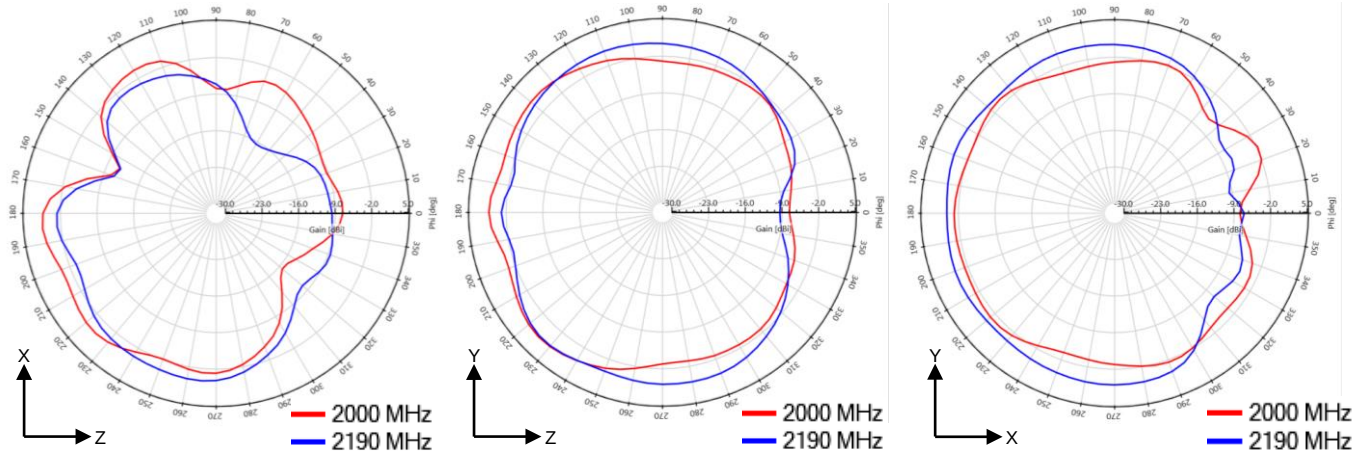
Measured @ 1540, 1640, 960, 2000, 2190, 2550 MHz



NTN Band 255



NTN Band 256/23



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1002089 LTE & NTN PCB Antenna Specifications

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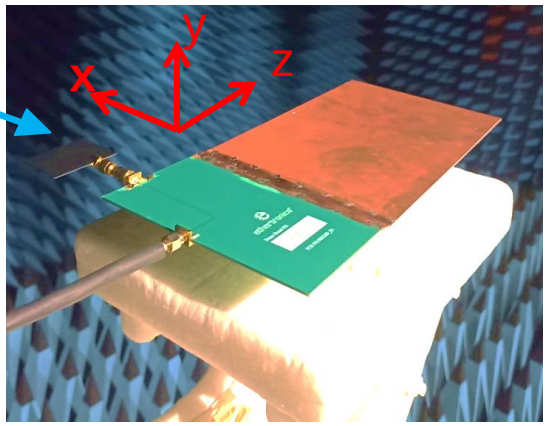
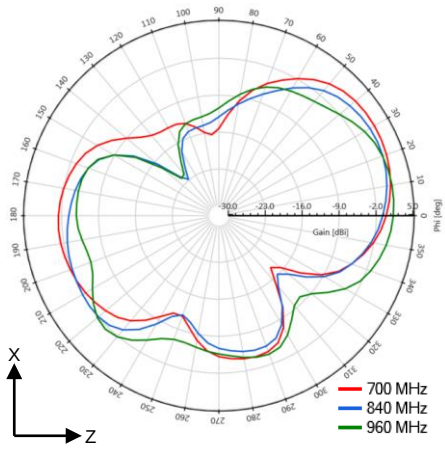
Antenna Radiation Patterns (Position 2)

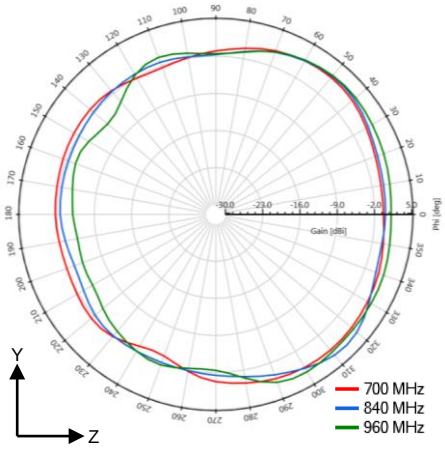
Typical performances measured on 135 x 200 mm PCB
Measured @ 700, 840, 960, 1710, 2170, 2550 MHz

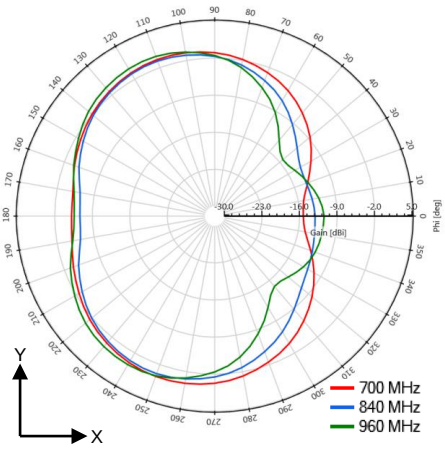
Position 2



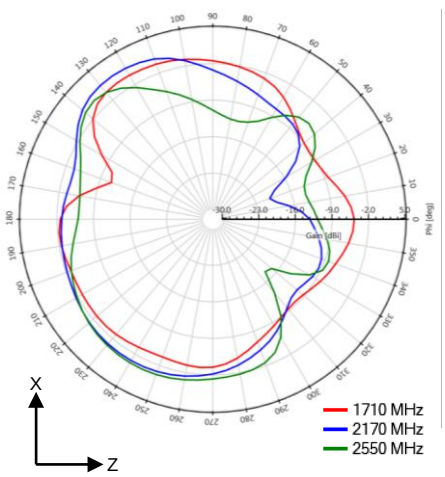
LTE Low Band

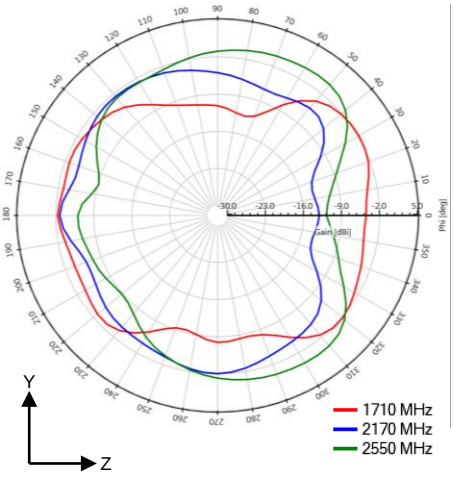


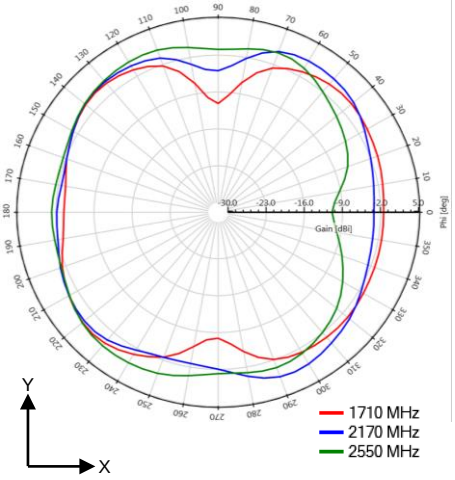




LTE High Band







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1002089 LTE & NTN PCB Antenna Specifications

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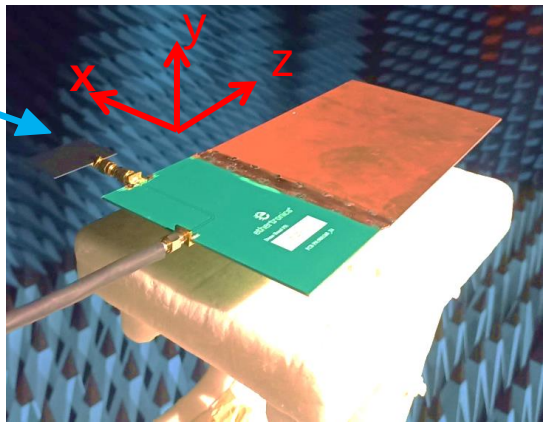
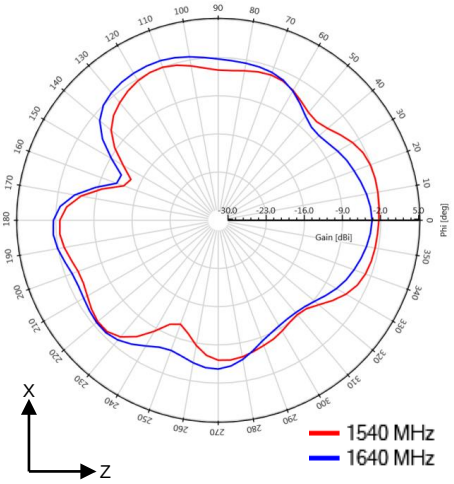
Antenna Radiation Patterns (Position 2)

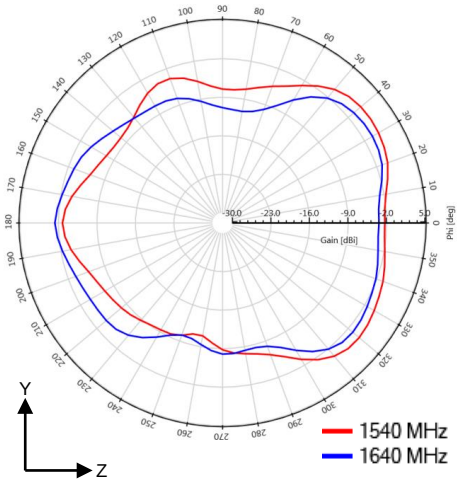
Typical performances measured on 135 x 200 mm PCB
Measured @ 1540, 1640, 960, 2000, 2190, 2550 MHz

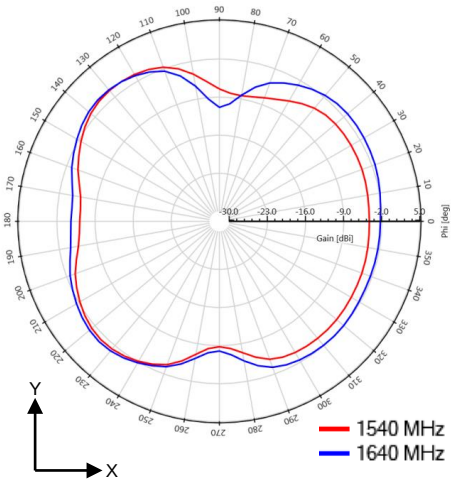
Position 2



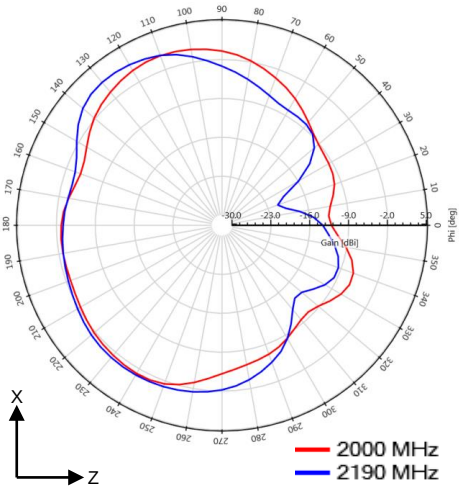
NTN Band 255

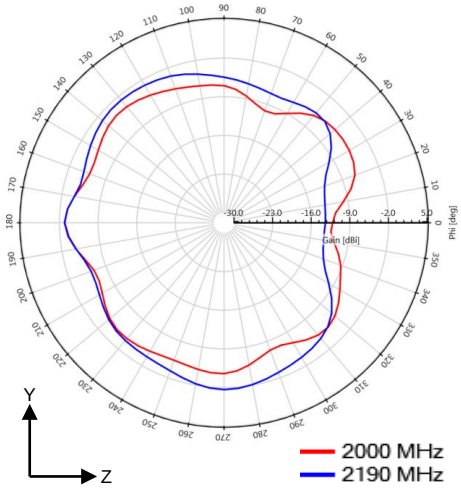


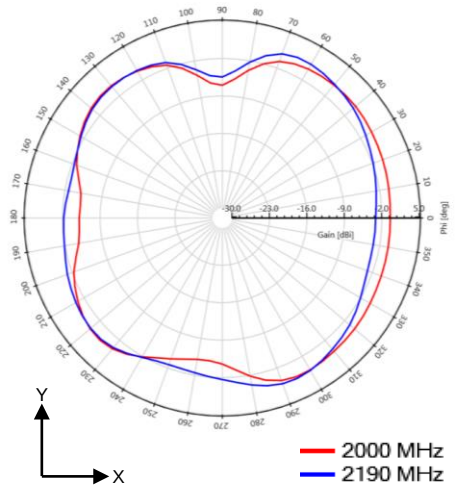




NTN Band 256/23







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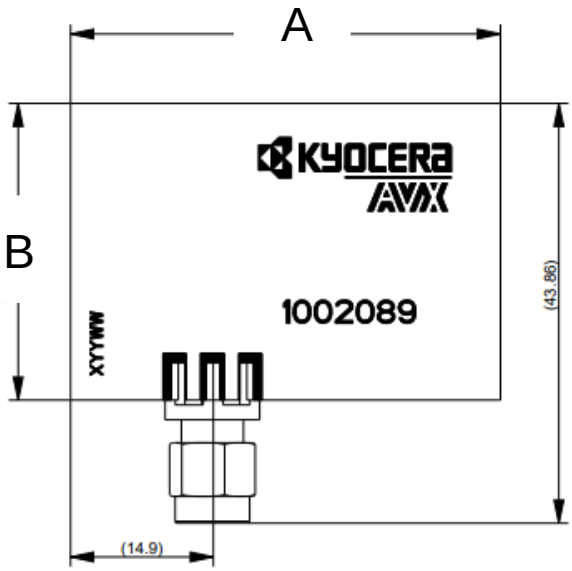
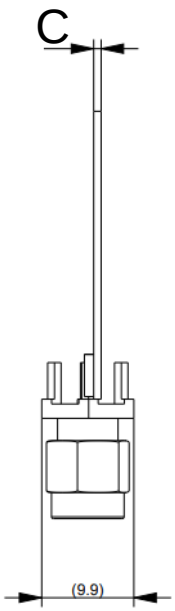
Mechanical Dimensions

Typical antenna dimensions (mm)

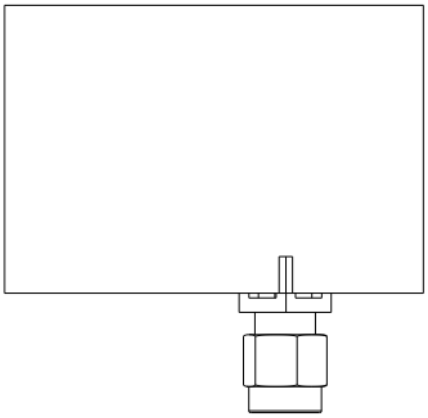
Part Number	A (mm)	B (mm)	C (mm)	Connector
1002089	45.0 ± 0.2	31.0 ± 0.2	0.8	SMA (Male)



Top View



Side View



Bottom View

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