

NANE10X84WTMW2R45G3F

WIFI 6E / 7 External Whip Antenna



Description

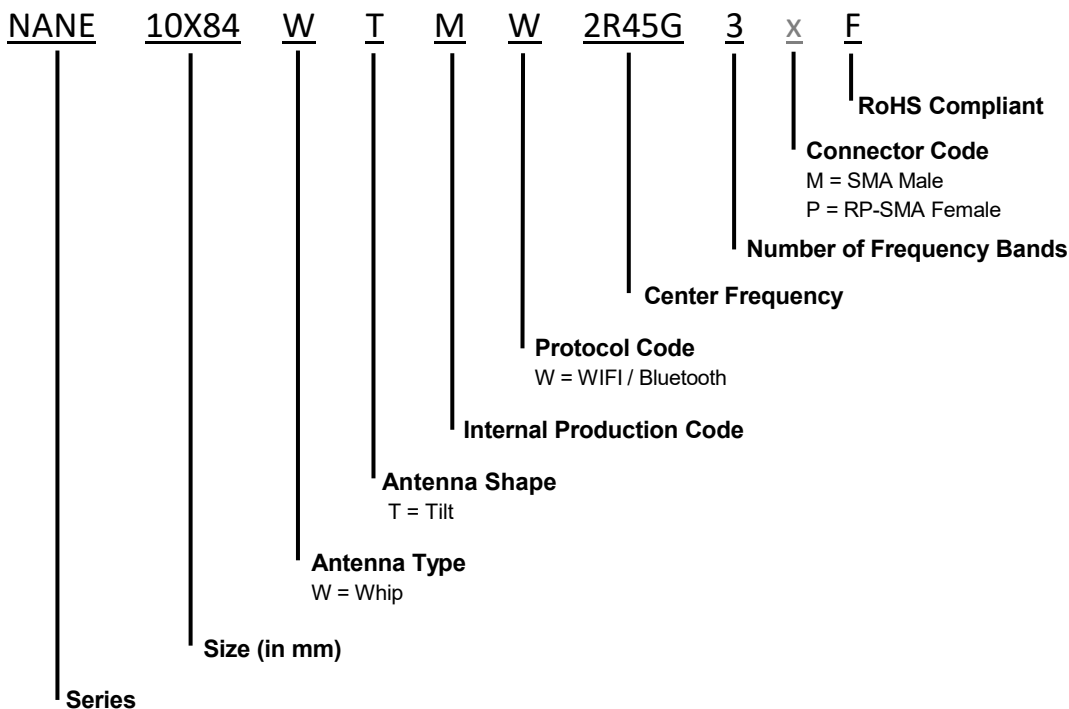
NANE10X84WTMW2R45G3F is the base part number for an External Whip antenna designed for WIFI / Bluetooth applications. It operates within the frequency ranges of 2400 ~ 2500, 5150 ~ 5850, 5925 ~ 7125 MHz and making it perfect for networking routers, gateways, IoT devices and 2.4 GHz ISM applications

Features

- 2.4 ~ 7.1 MHz WIFI Protocols
- Up to 90° flexibility
- RoHs Compliant



Part Number Breakdown



Part Numbers Options

Part Number	Protocol	Connector
NANE10X84WTMW2R45G3MF	WIFI	SMA Male
NANE10X84WTMW2R45G3RF	WIFI	RP-SMA Male

The table represents assembled part numbers available on www.niccomp.com. For options not listed above please contact NIC

NANE10X84WTMW2R45G3F

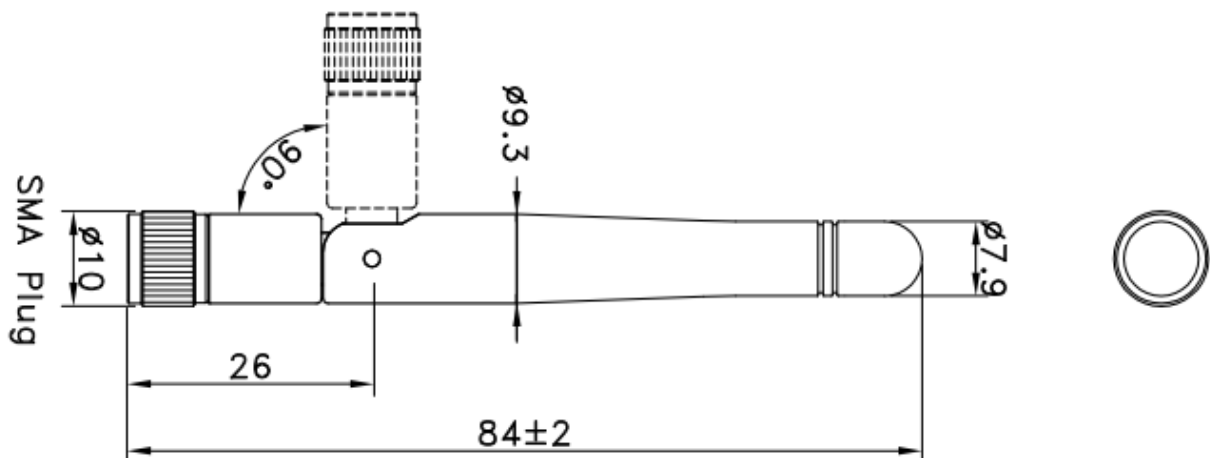
WIFI 6E / 7 External Whip Antenna



Specifications

Electrical			
Frequency Range	2400 ~ 2500 MHz	5150 ~ 5850 MHz	5925 ~ 7125 MHz
Peak Gain	2.0 dBi	3.0 dBi	3.3 dBi
Average Gain	-1.7 dBi	-1.4 dBi	-1.6 dBi
V.S.W.R	1.4	1.5	2.7
Efficiency	67%	73%	70%
Polarization	Linear		
Radiation	Omni directional		
Max Power	1 W		
Electrical Type	Dipole		
Impedance	50 Ω		
Environmental			
Operating Temperature	-30°C~+70°C		
Weight	8 g		
Color	Black		
ROHS Compliant	Yes		

Dimensions

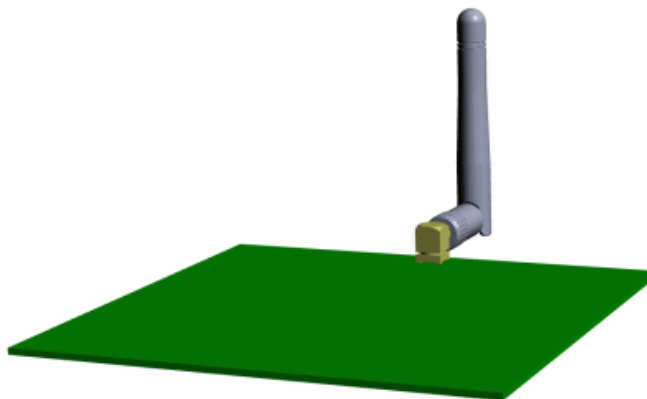


Antenna Orientation

The antenna's straight orientation characterizes use of an antenna attached to an enclosure-mounted connector which is connected by cable to the VNA. Although the antenna is a dipole not requiring a ground plane for function, characterization with an adjacent ground plane (120 mm x 120 mm) provides insight into antenna performance when attached directly to a printed circuit board mounted connector. The two orientations represent the most common end-product use cases



Straight, without ground plane



On edge of ground plane, bent 90 degrees

Straight Mount without Ground Plane

The below charts represent data taken with straight antenna orientation, as shown below



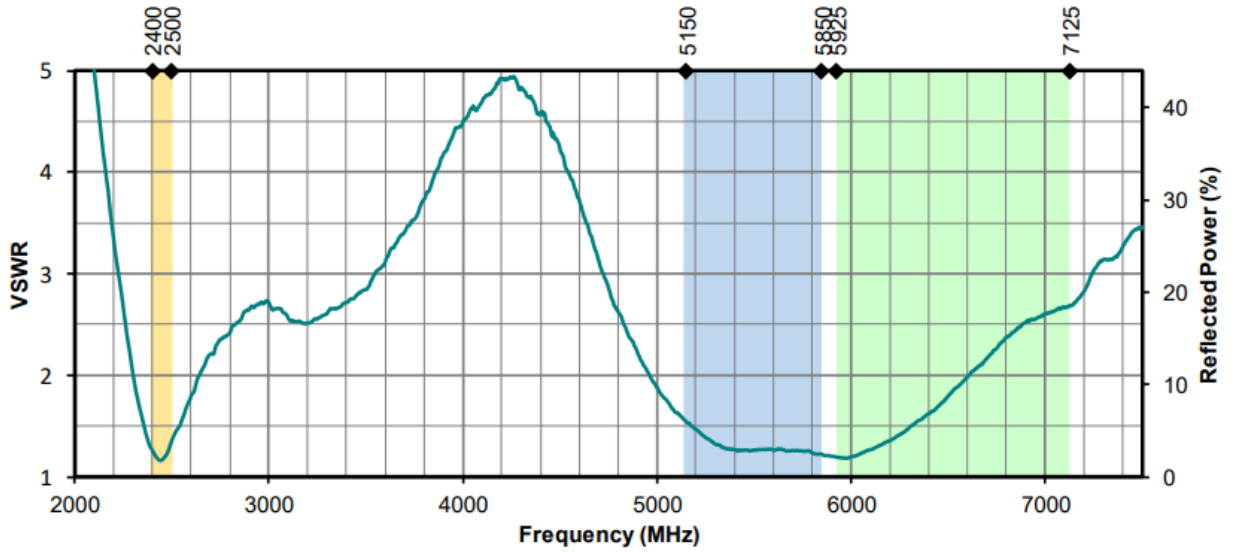
Straight, without ground plane

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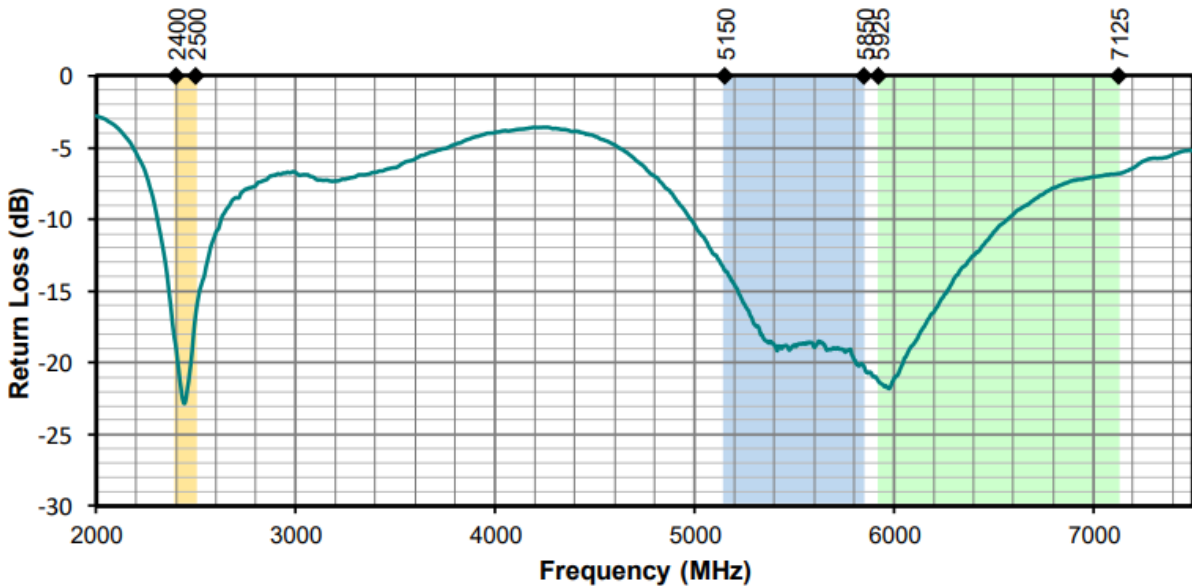
WIFI 6E / 7 External Whip Antenna



VSWR



Return Loss

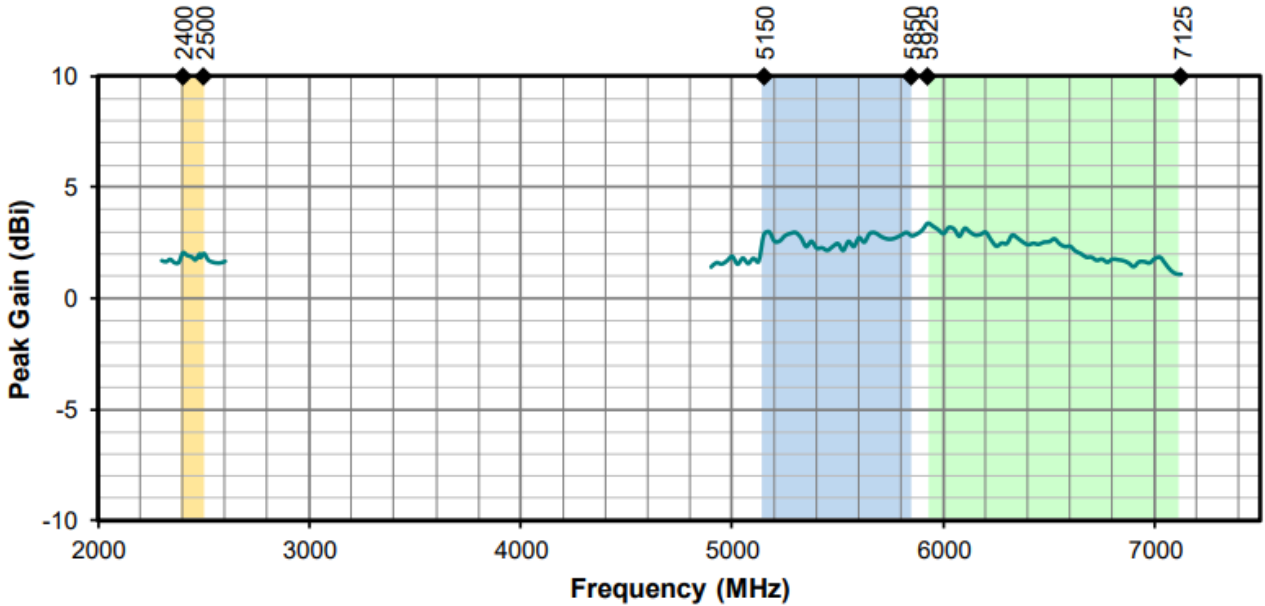


NANE10X84WTMW2R45G3F

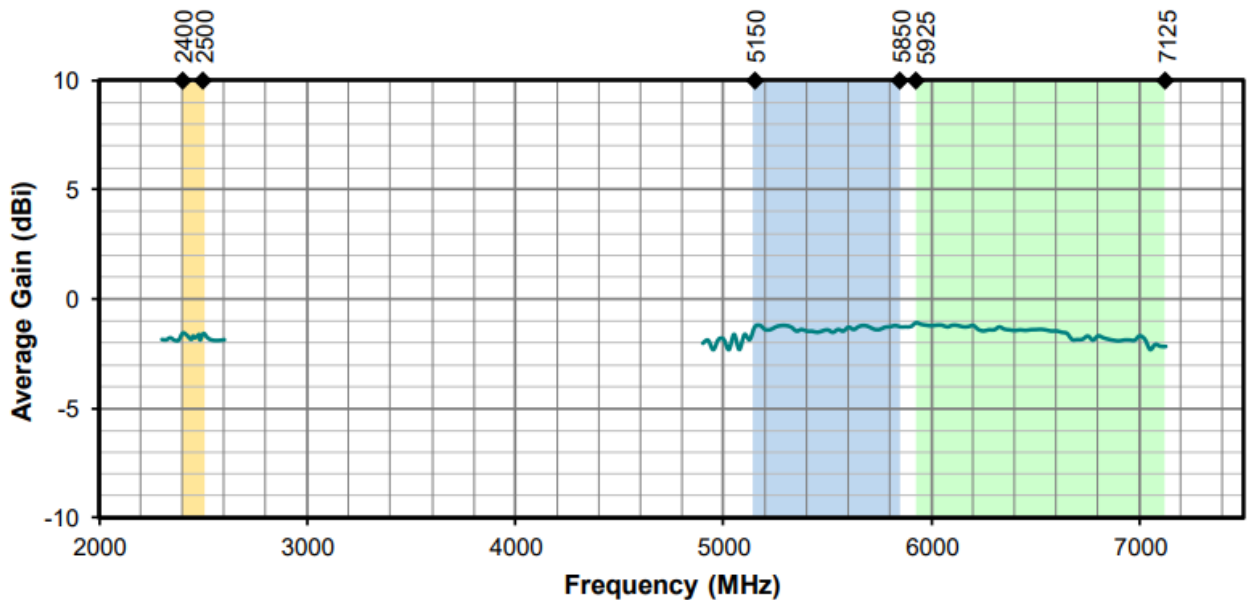
WIFI 6E / 7 External Whip Antenna



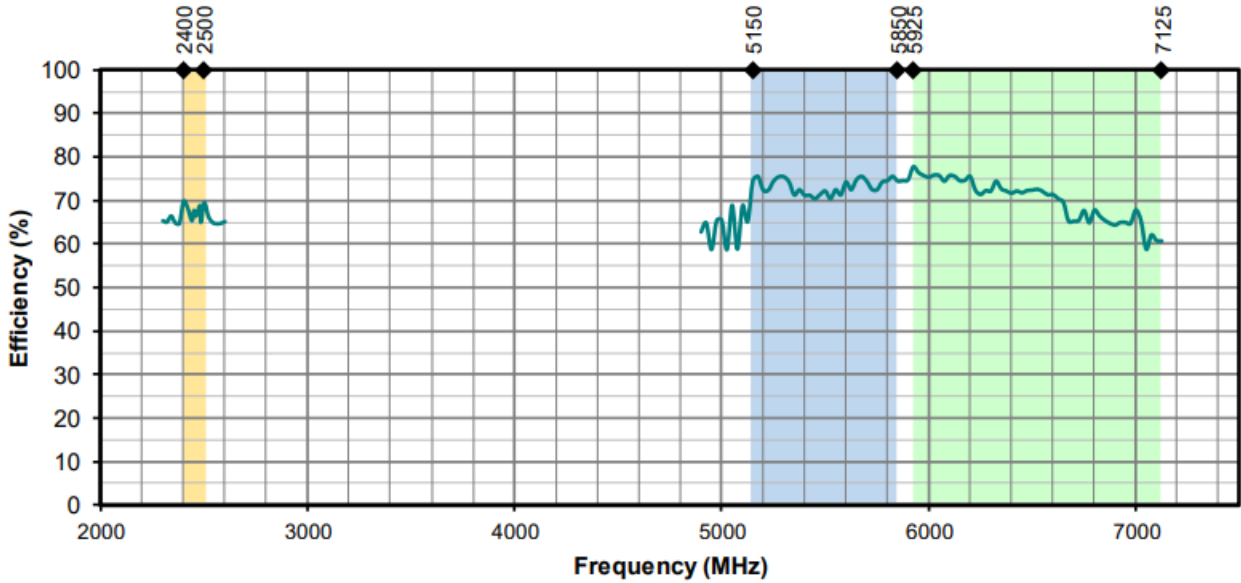
Peak Gain



Average Gain



Radiation Efficiency



Radiation Patterns

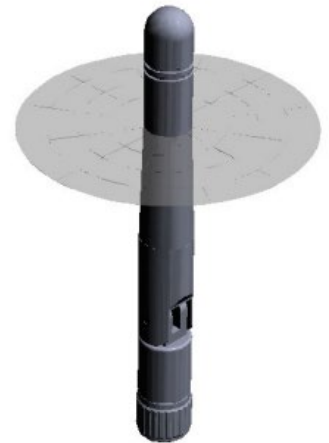
Antenna radiation patterns for a straight orientation are shown below using polar plots covering 360 degrees. The antenna graphic at the top of the page provides reference to the plane of the column of plots below it.



XZ-Plane Gain



YZ-Plane Gain



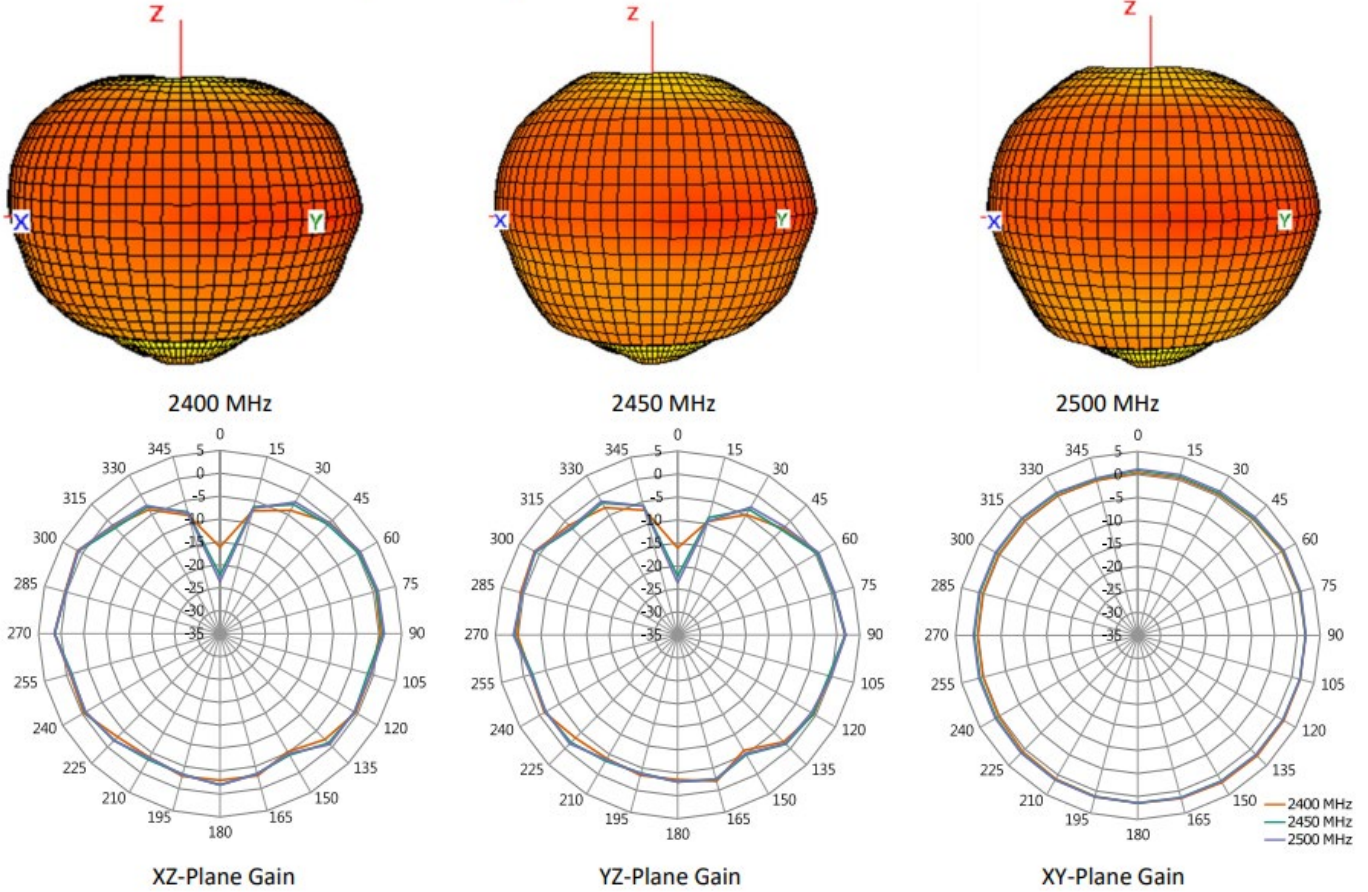
XY-Plane Gain

NANE10X84WTMW2R45G3F

WIFI 6E / 7 External Whip Antenna



2400 MHz ~ 2500 MHz (2450 MHz)



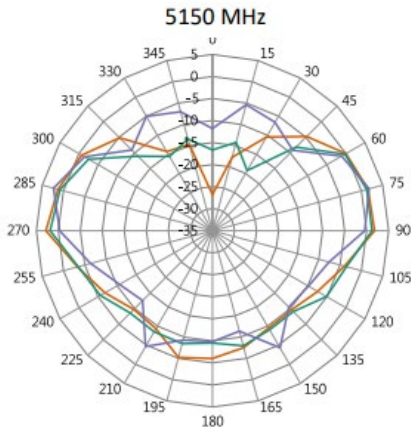
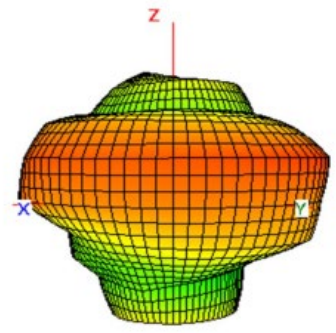
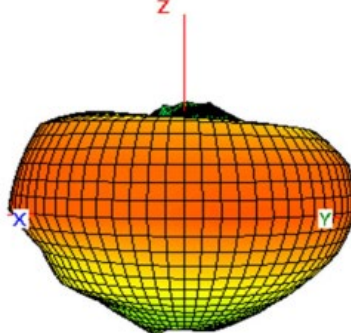
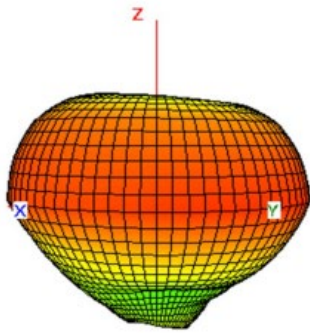
Antenna Radiation Patterns, Straight without ground plane

NANE10X84WTMW2R45G3F

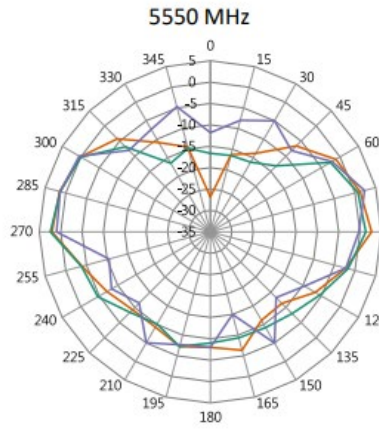
WIFI 6E / 7 External Whip Antenna



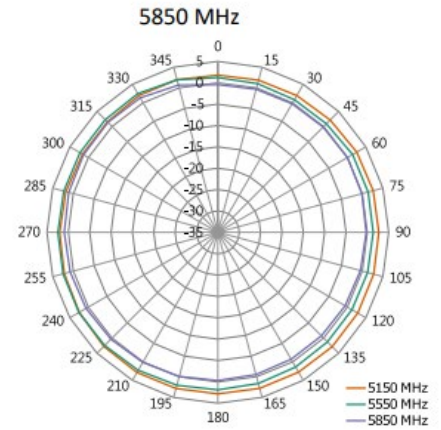
5150 MHz ~ 5850 MHz (5550 MHz)



XZ-Plane Gain



YZ-Plane Gain



XY-Plane Gain

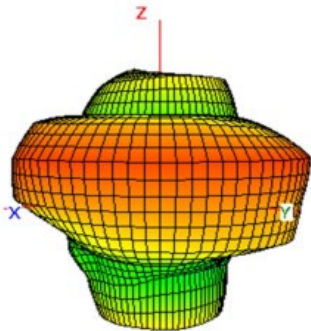
Antenna Radiation Patterns, Straight without ground plane

NANE10X84WTMW2R45G3F

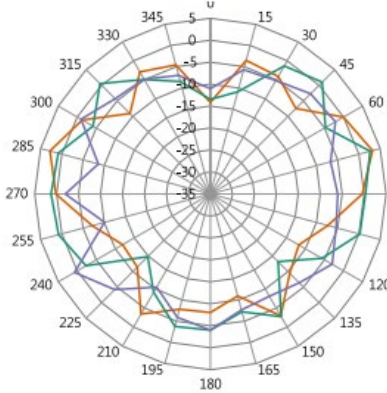
WIFI 6E / 7 External Whip Antenna



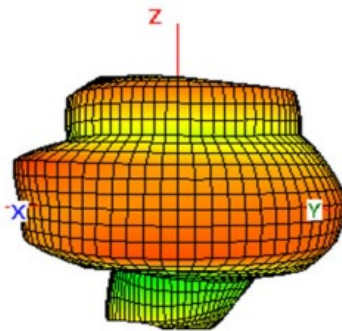
5925 MHz ~ 7125 MHz (6525 MHz)



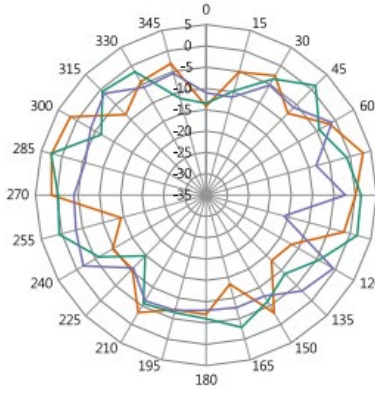
5925 MHz



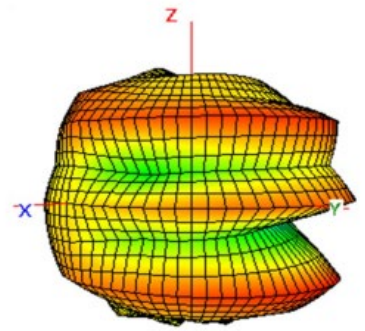
XZ-Plane Gain



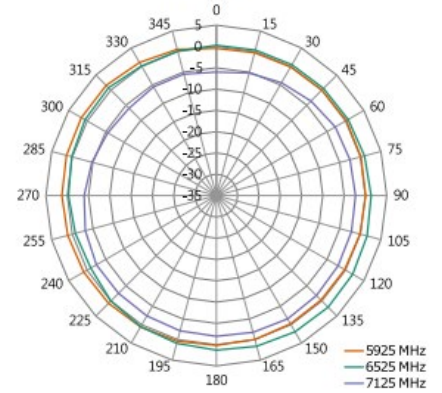
6525 MHz



YZ-Plane Gain



7125 MHz



XY-Plane Gain

Antenna Radiation Patterns, Straight without ground plane

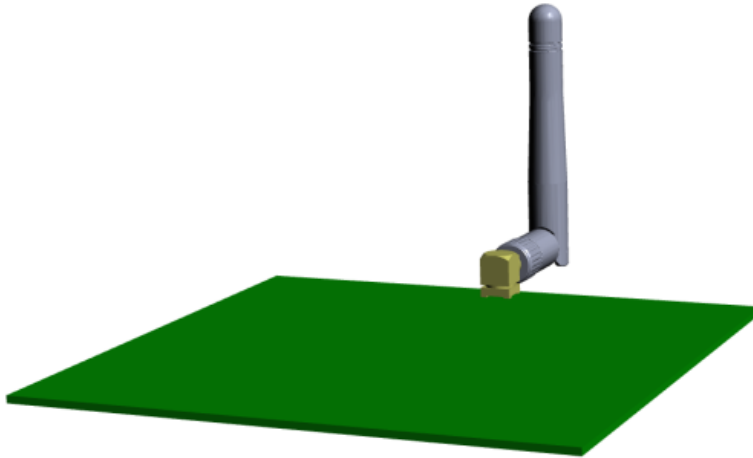
NANE10X84WTMW2R45G3F

WIFI 6E / 7 External Whip Antenna



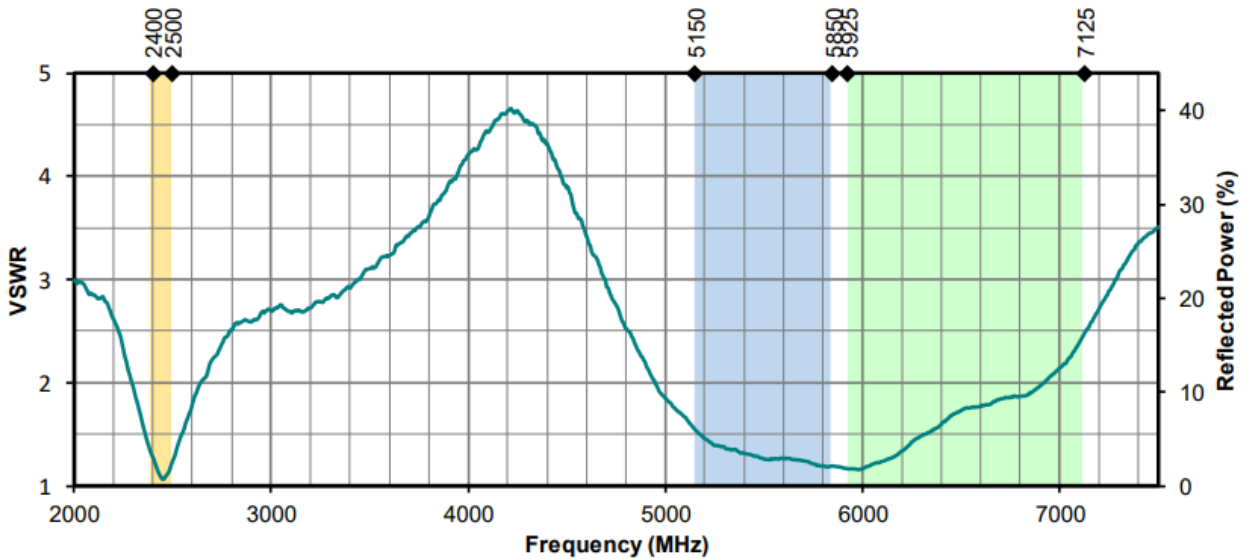
Straight Mount without Ground Plane

The below charts represent data taken with the antenna oriented at the edge of the ground plane, bent 90 degrees (Edge-Bent)



On edge of ground plane, Bent 90 Degrees

VSWR

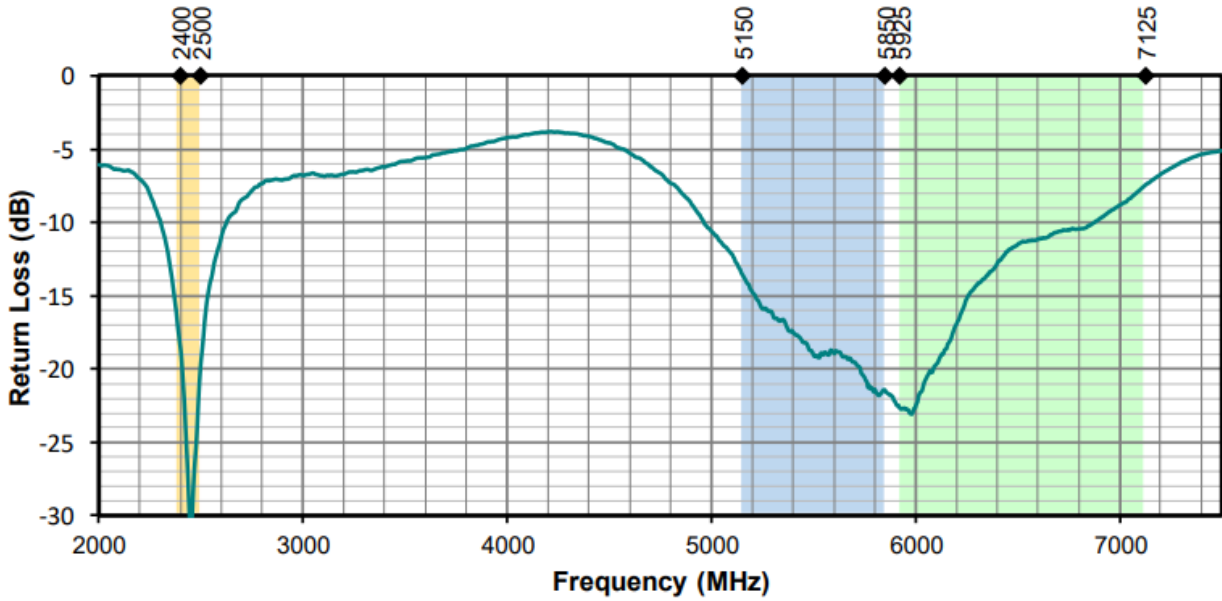


NANE10X84WTMW2R45G3F

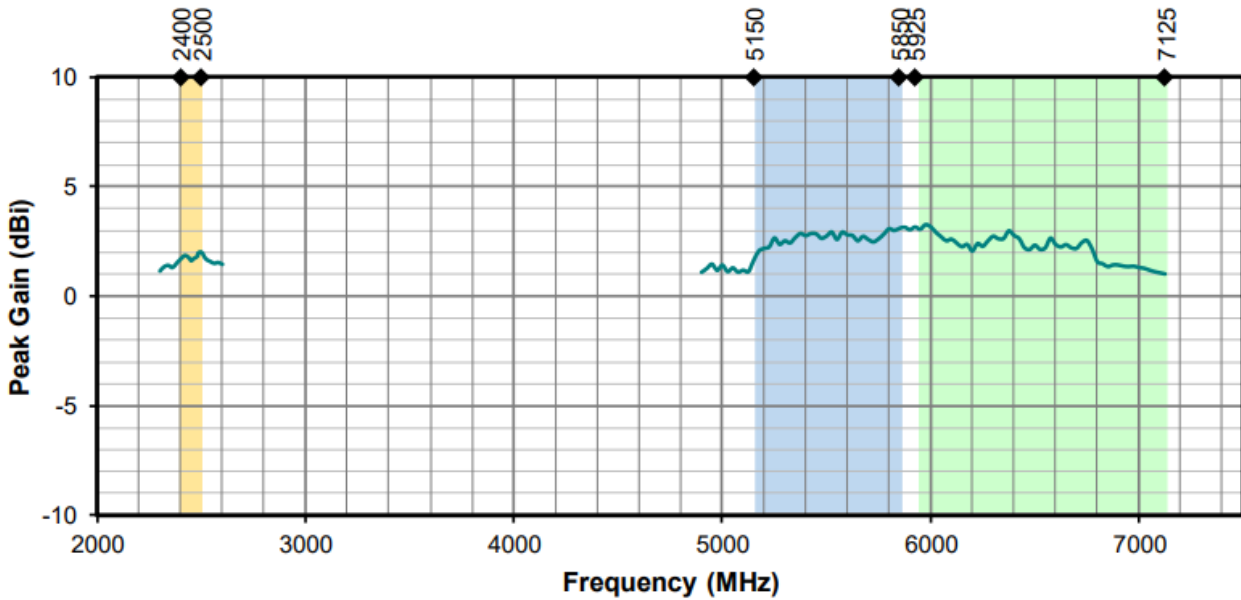
WIFI 6E / 7 External Whip Antenna



Return Loss



Peak Gain

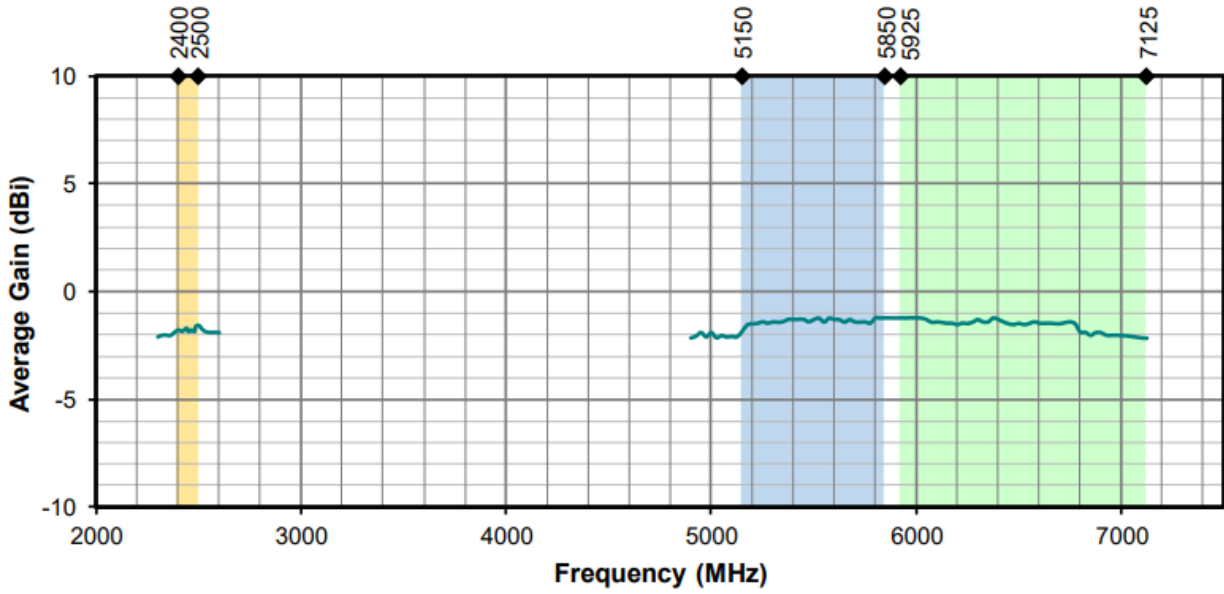


NANE10X84WTMW2R45G3F

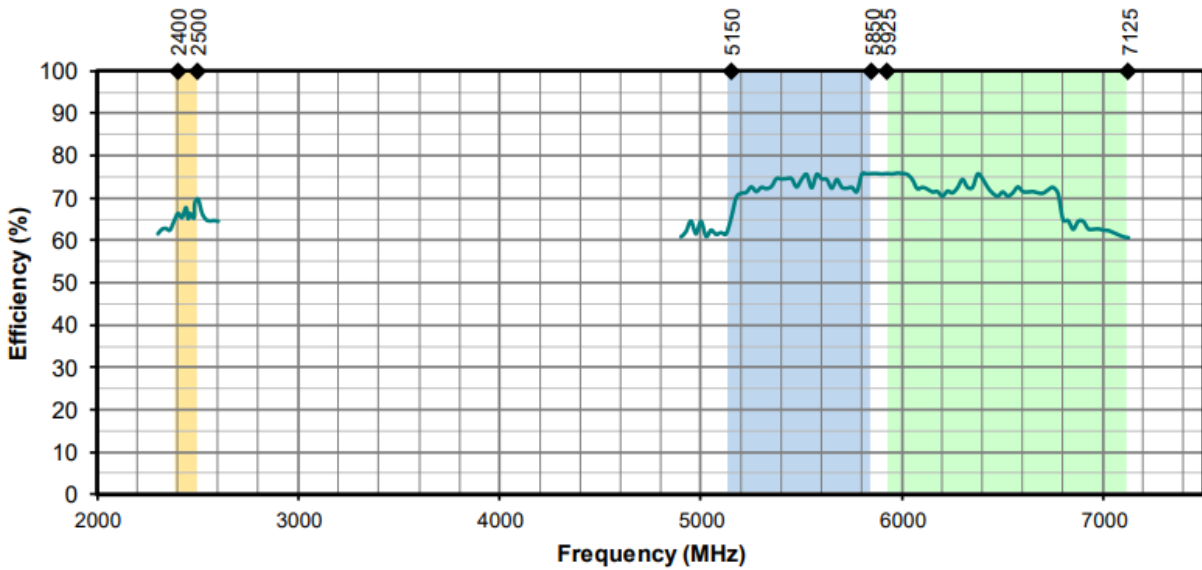
WIFI 6E / 7 External Whip Antenna



Average Gain

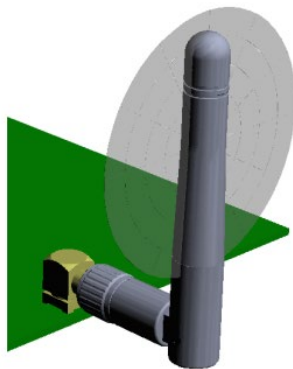


Radiation Efficiency

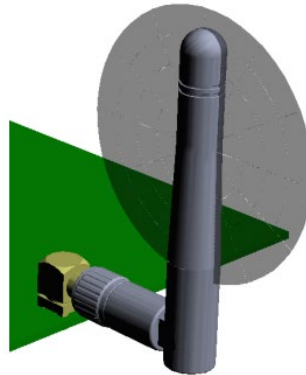


Radiation Patterns

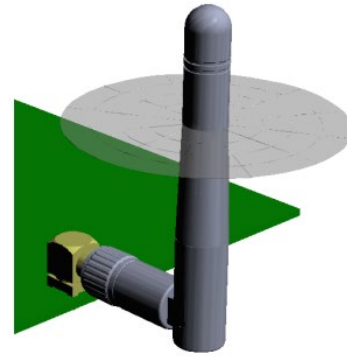
Antenna radiation patterns for a 90 bent orientation are shown below using polar plots covering 360 degrees. The antenna graphic at the top of the page provides reference to the plane of the column of plots below it..



XZ-Plane Gain

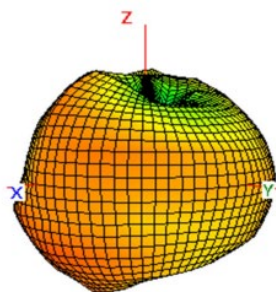


YZ-Plane Gain

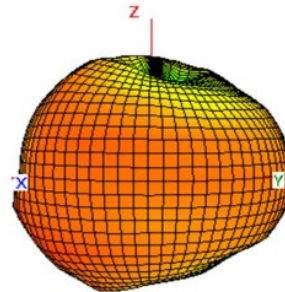


XY-Plane Gain

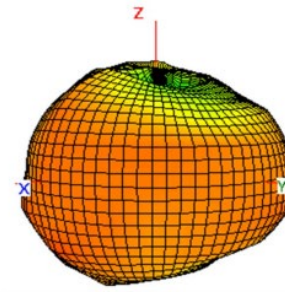
2400 MHz ~ 2500 MHz (2450 MHz)



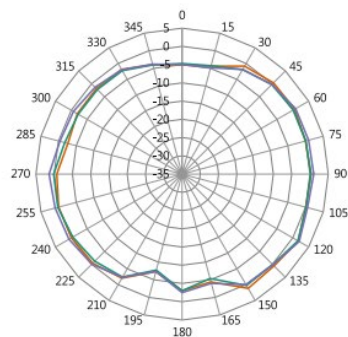
2400 MHz



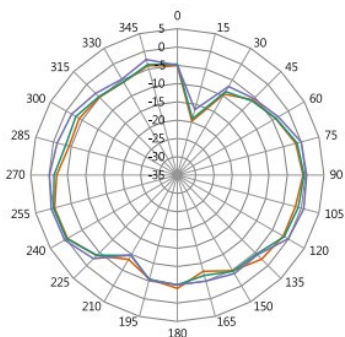
2450 MHz



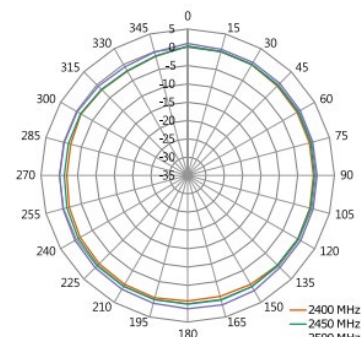
2500 MHz



XZ-Plane Gain



YZ-Plane Gain



XY-Plane Gain

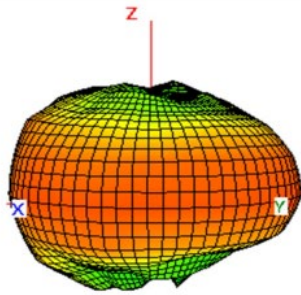
Antenna Radiation Patterns, Edge Bent 90 Degrees

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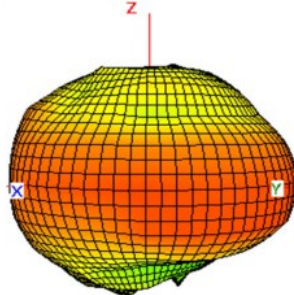
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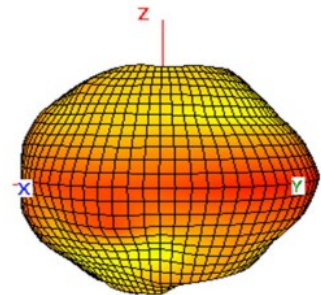
5150 MHz ~ 5850 MHz (5550 MHz)



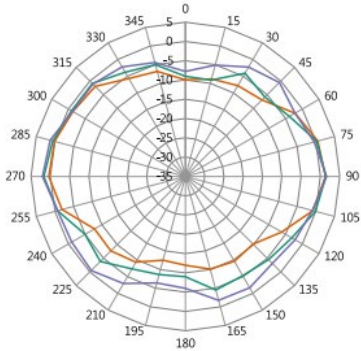
5150 MHz



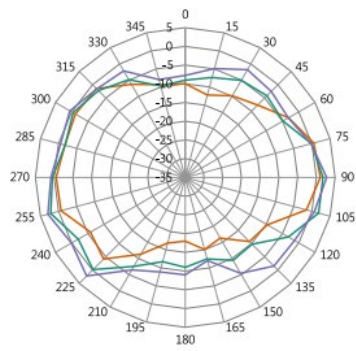
5550 MHz



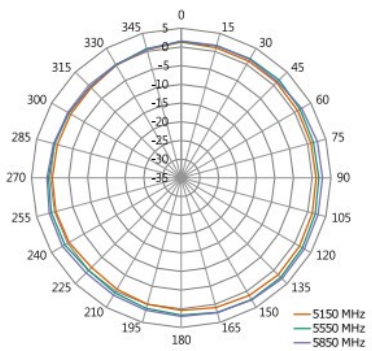
5850 MHz



XZ-Plane Gain



YZ-Plane Gain



XY-Plane Gain

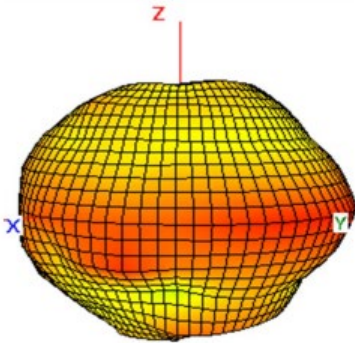
Antenna Radiation Patterns, Edge Bent 90 Degrees

NANE10X84WTMW2R45G3F

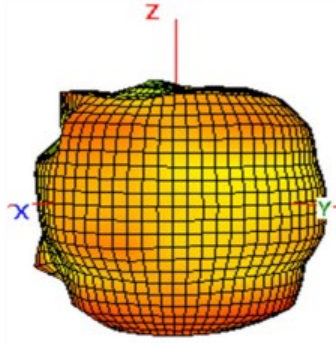
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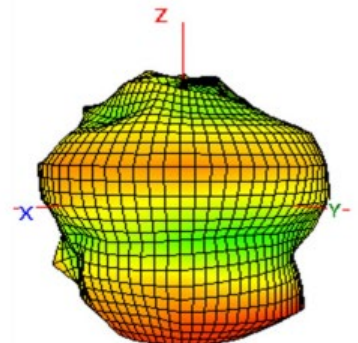
5925 MHz ~ 7125 MHz (6525 MHz)



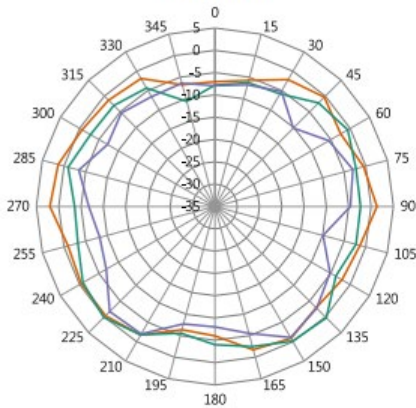
5925 MHz



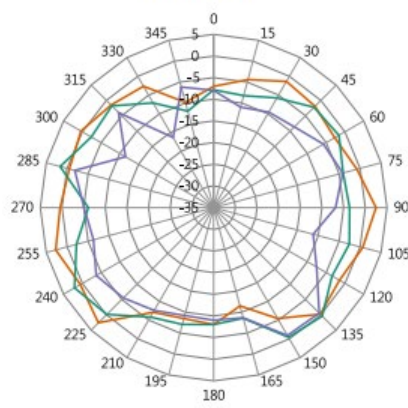
6525 MHz



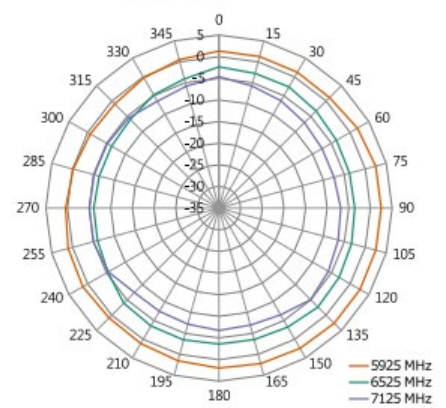
7125 MHz



XZ-Plane Gain



YZ-Plane Gain



XY-Plane Gain

Antenna Radiation Patterns, Edge Bent 90 Degrees