FlexPIFA

3-dBi Antenna with U.FL Cable 2.4 GHz/5.5 GHz

FEATURES AND BENEFITS

- Dual band antenna – 2.4 GHz and 5.5 GHz
- Quick and easy installation
- Adhesive holds to surface during humidity exposure and hot/cold cycles
- RoHS-compliant
- Can be installed in the following ways:
  - On different non-conductive surfaces and thicknesses
  - Near metals or the human body
  - On flat or curved surfaces

SPECIFICATIONS		
Frequency (MHz)	2400 - 2480	4900 - 5900
Peak Gain (dBi)	+2.5	+3.0
Average Gain (dBi)	> -2.5	> -3.4
VSWR (MHz)	<2.5:1	<3.0:1
Impedance (Ω)	50	
Antenna Type	Flexible Planar Inverted F (FlexPIFA)	
Polarization	Linear	

MECHANICAL SPECIFICATIONS		
Dimensions – mm (inches)	38.5 x 12.7 x 2.5 (1.52 x 0.5 x 0.098)	
Weight – g (oz.)	1.13 (0.040)	
Color	Clear yellow	
Adhesive	3M 100MP	
Connector Mating Height (max) – mm	MHF1 (U.FL) MHF4L	2.5 1.4

ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature – °C (°F)	-40 to +85°C (-40 to +185°F)
Material Substance Compliance	RoHS

CONFIGURATION

PART NUMBER	CABLE LENGTH	CONNECTOR
001-0016	100 mm	U.FL
001-0021	100 mm	MHF4L
EFB2455A3S-16MHF1	160 mm	MHF4L

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Flat Surface Antenna measurements

Return Loss

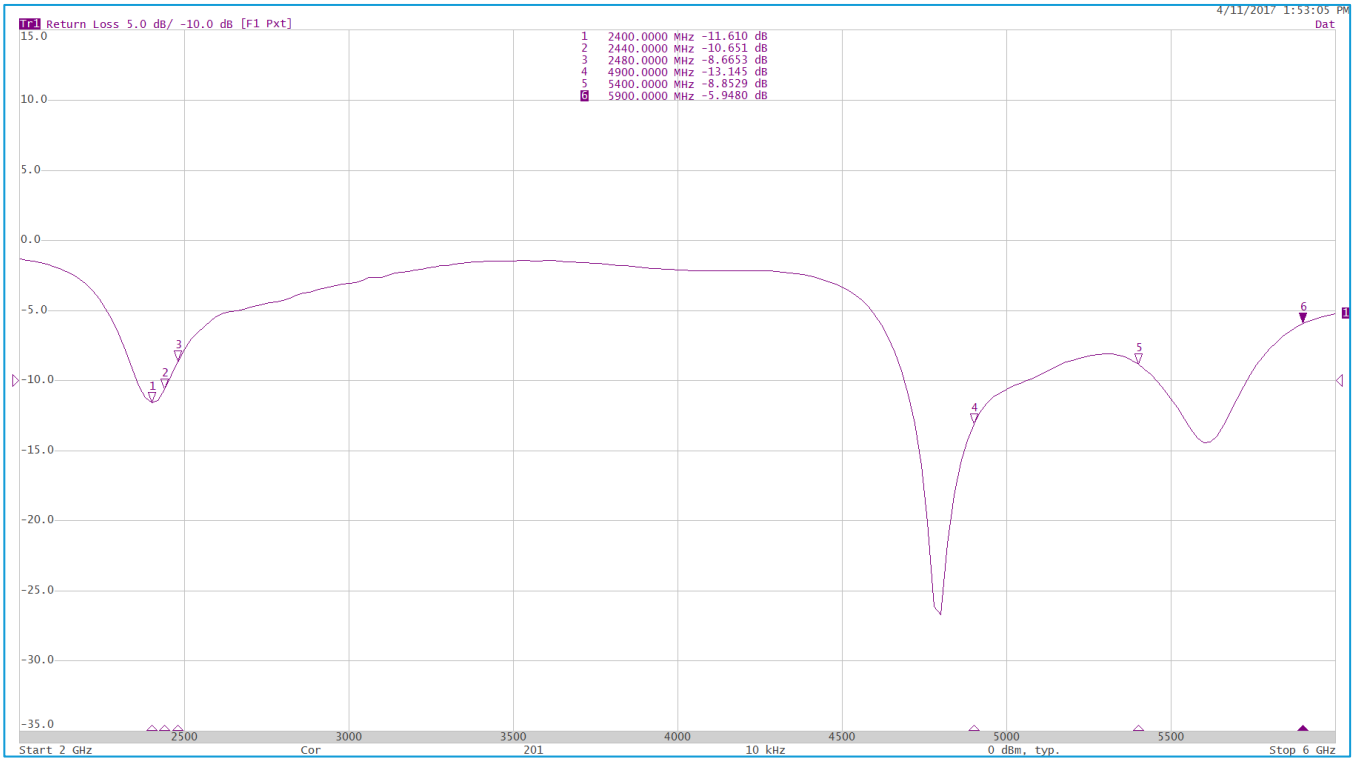

Figure 3: Antenna RL measured on a 1.5 mm-thick plate of polycarbonate

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Flat surface Antenna Radiation Performance

FlexPIFA centered on a 1.5 mm-thick plate of polycarbonate

Antenna Measurement Set-Up

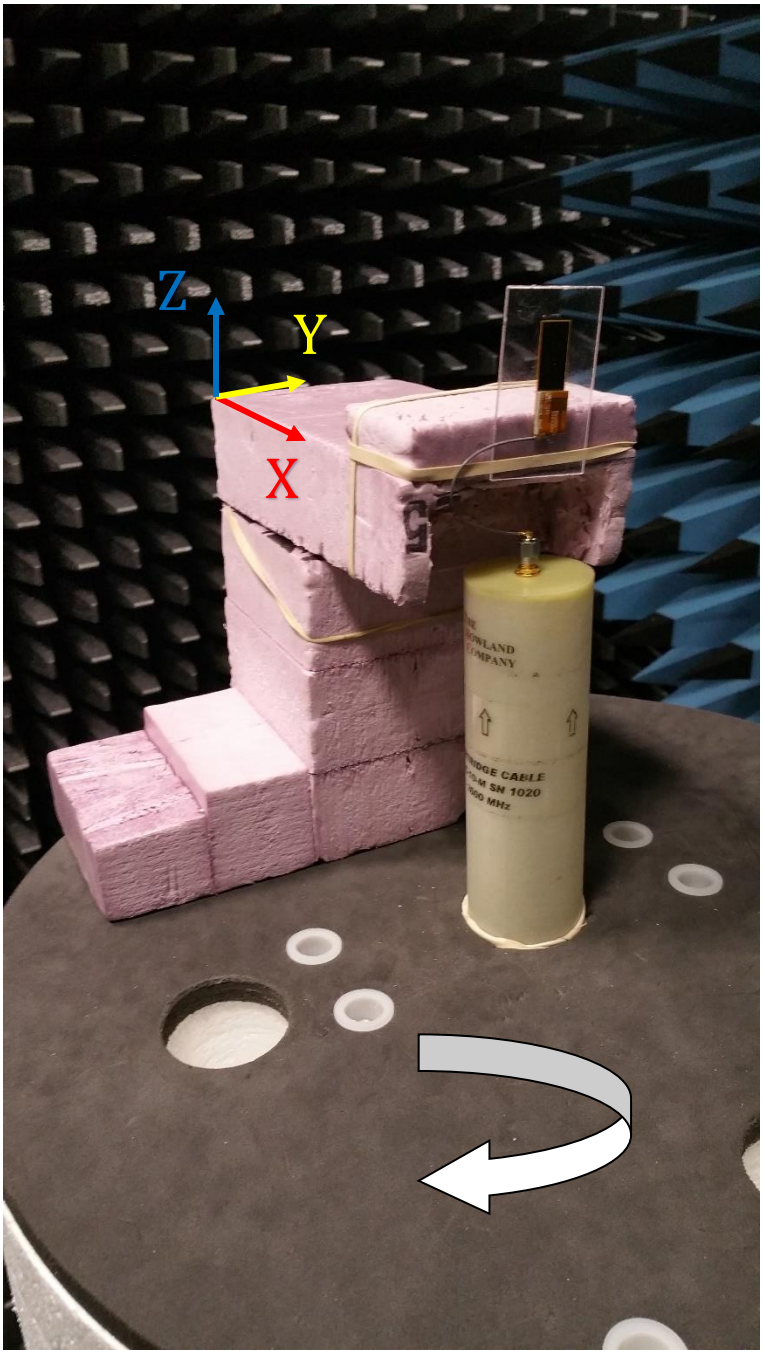

Figure 4: Flat surface setup

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2.4 GHz Band

Azimuthal Conical Cuts at 2440 MHz

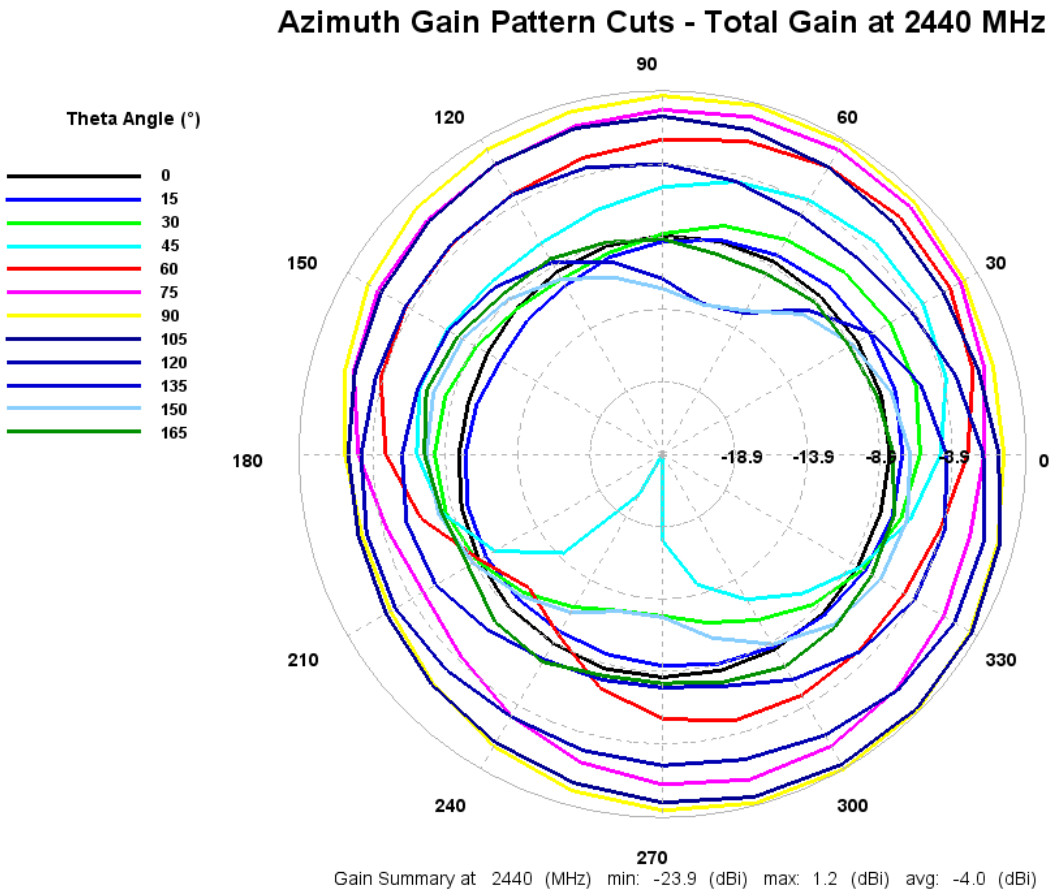

Figure 5: Total gain pattern

3D Plots at 2440 MHz

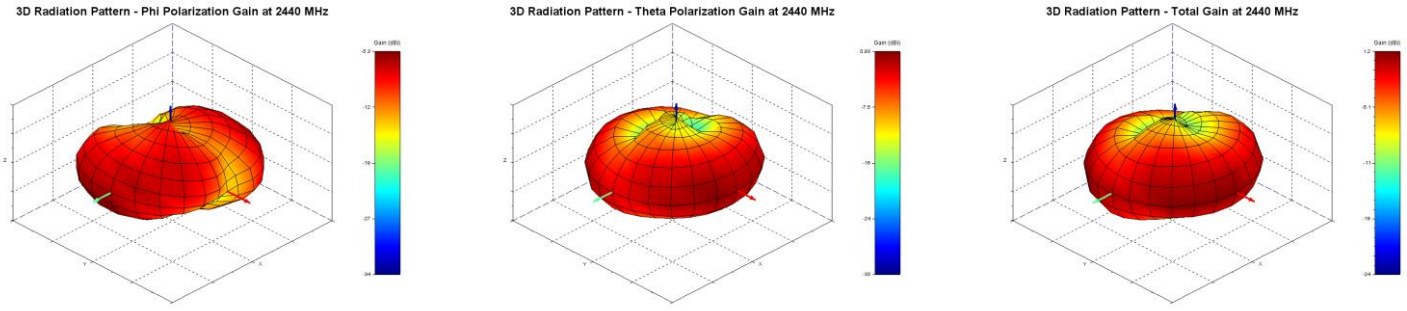

Figure 6: Phi, Theta, and total gain plots

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5 GHz Band

Azimuthal Conical Cuts at 4900 MHz

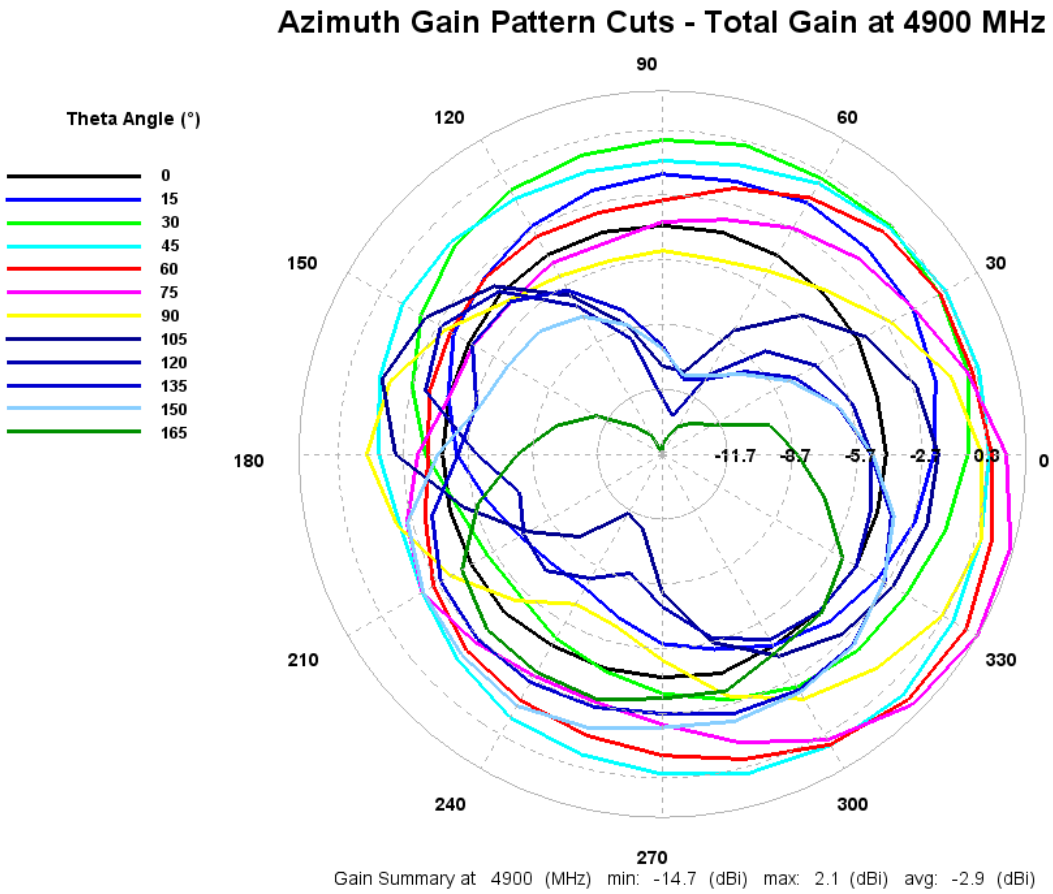

Figure 7: Total gain pattern

3D Plots at 4900 MHz

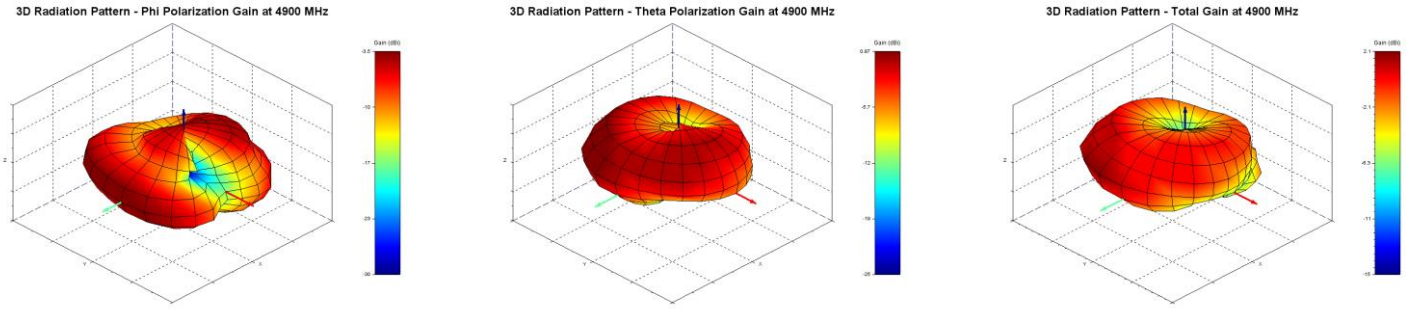

Figure 8: Phi, Theta, and total gain plots

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Azimuthal Conical Cuts at 5400 MHz

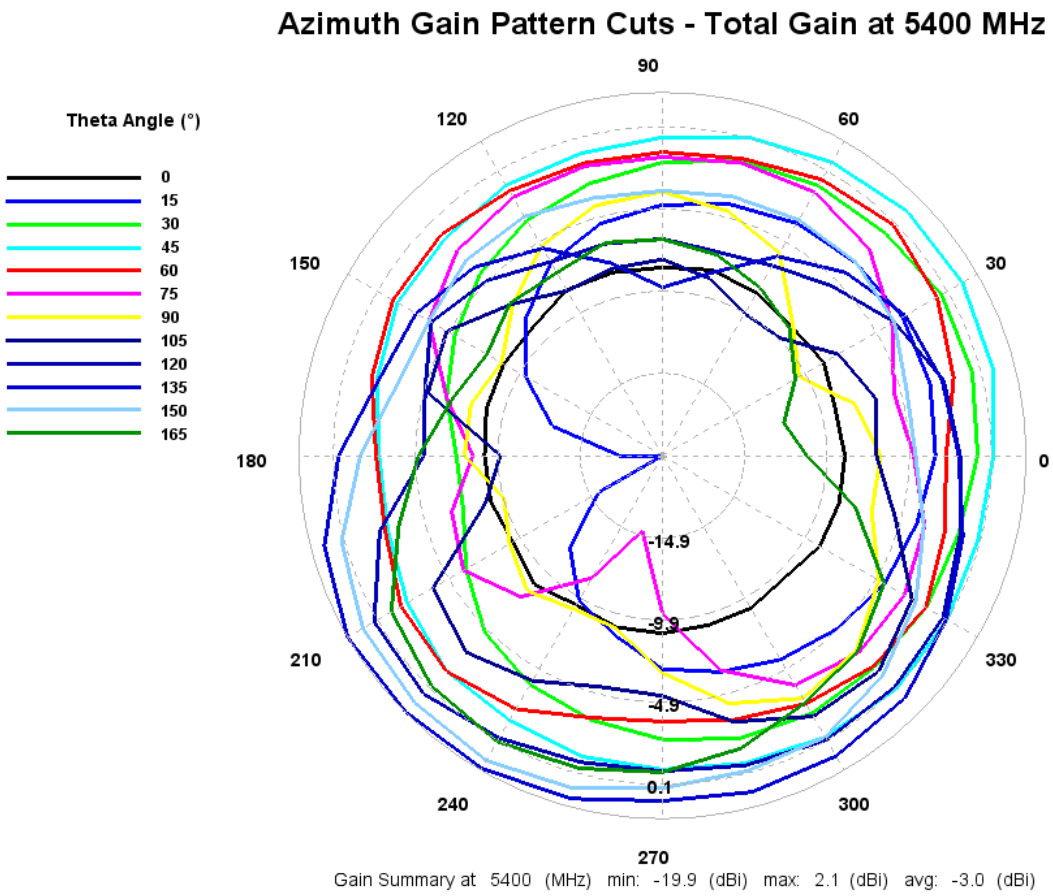

Figure 9: Total gain pattern

3D Plots at 5400 MHz

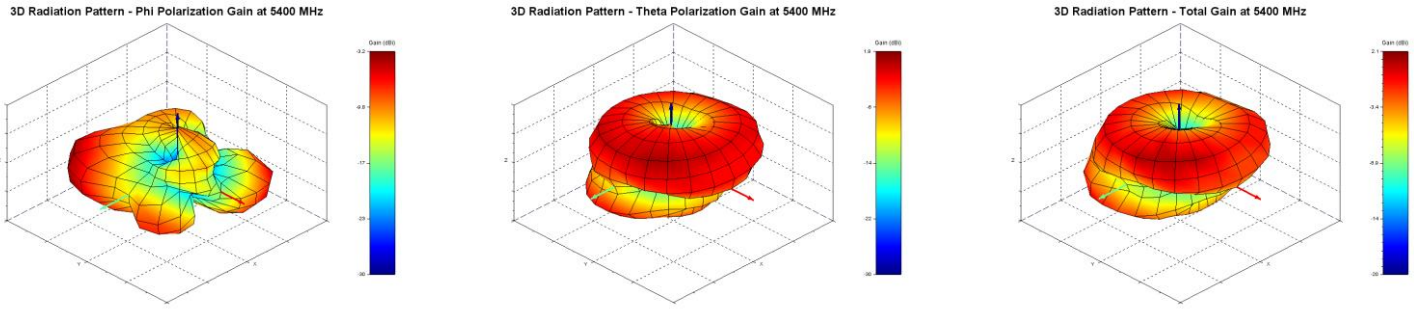

Figure 10: Phi, Theta, and total gain plots

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Azimuthal Conical Cuts at 5900 MHz

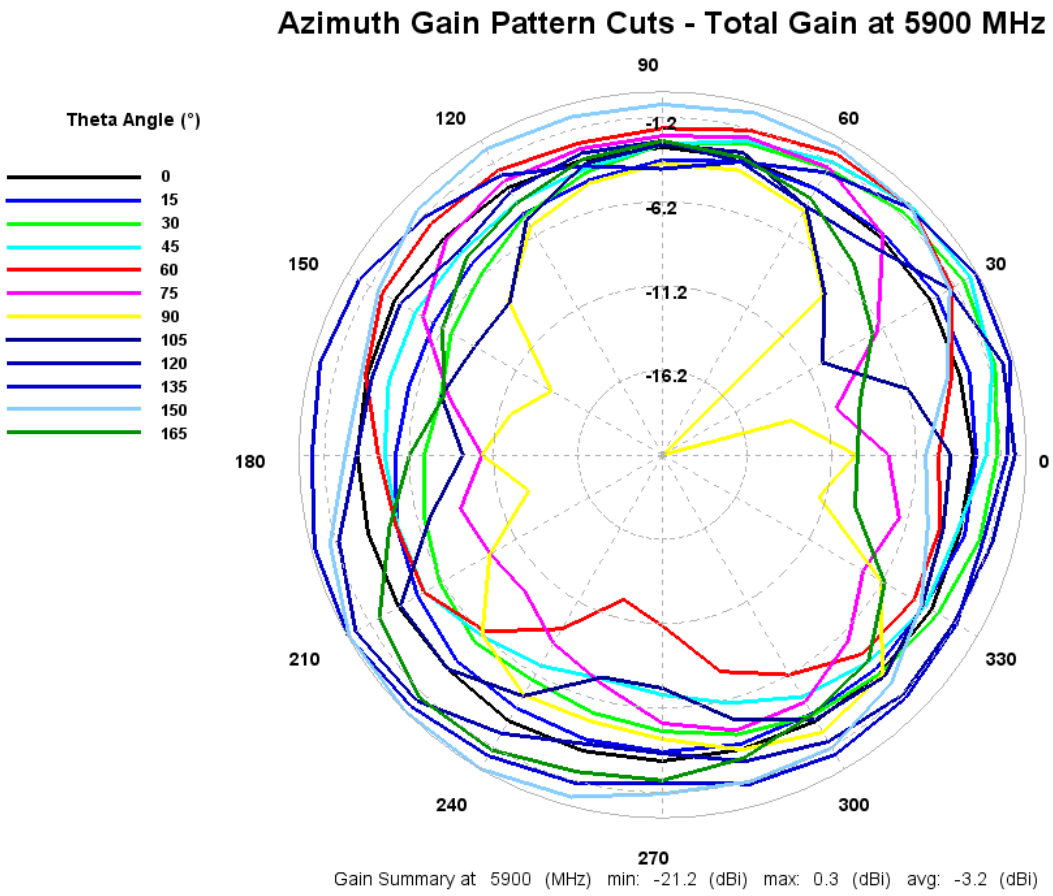

Figure 11: Total gain pattern

3D Plots at 5900 MHz

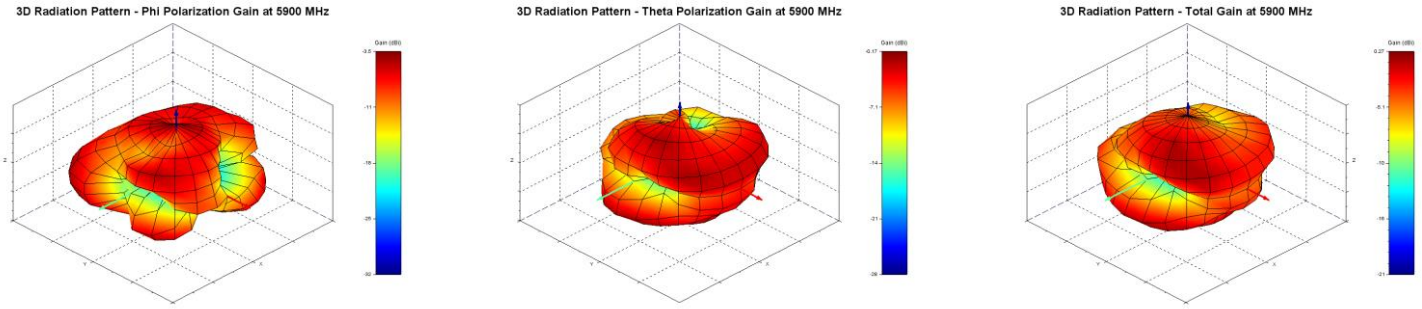

Figure 12: Phi, Theta, and total gain plots

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Curved surface Antenna Radiation Performance

FlexPIFA outside 60 mm outer diameter PVC tube

Antenna Measurement Set-Up

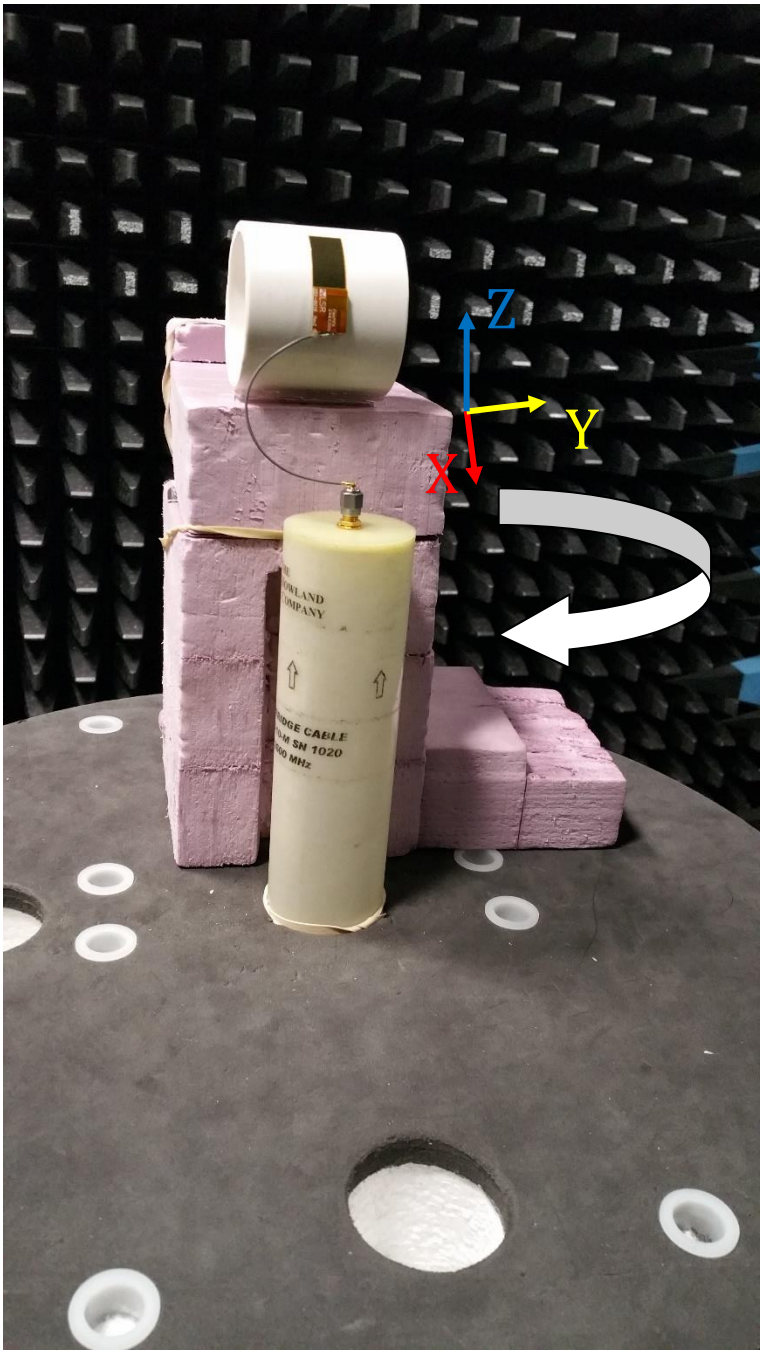

Figure 13: Outer diameter setup

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2.4 GHz Band

Azimuthal Conical Cuts at 2440 MHz

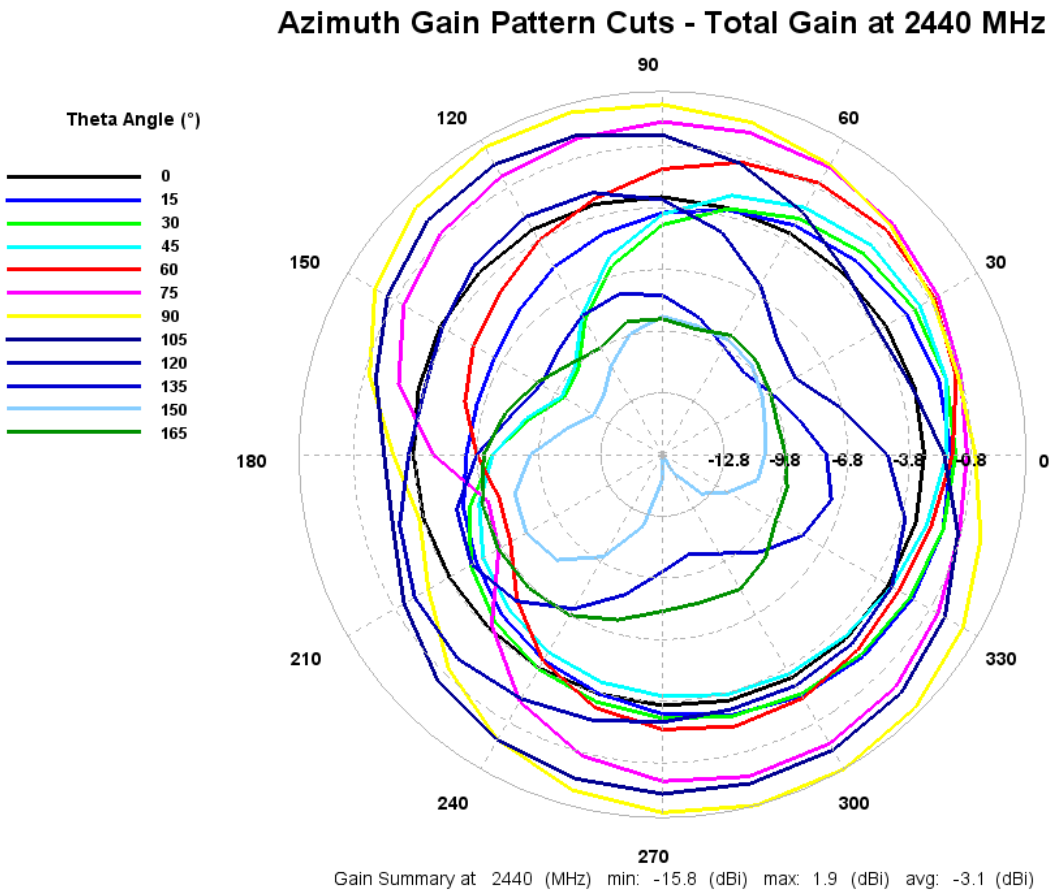

Figure 14: Total gain pattern

3D Plots at 2440 MHz

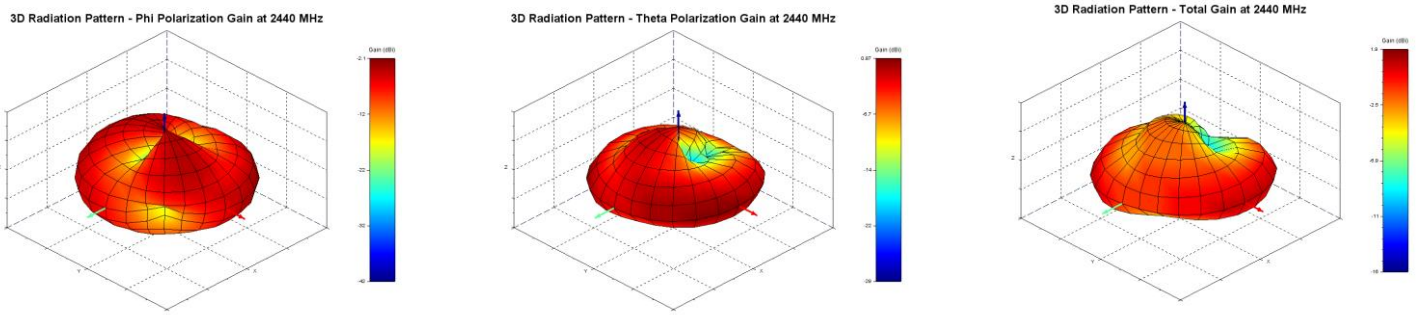

Figure 15: Phi, Theta, and total gain plots

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5 GHz Band

Azimuthal Conical Cuts at 4900 MHz

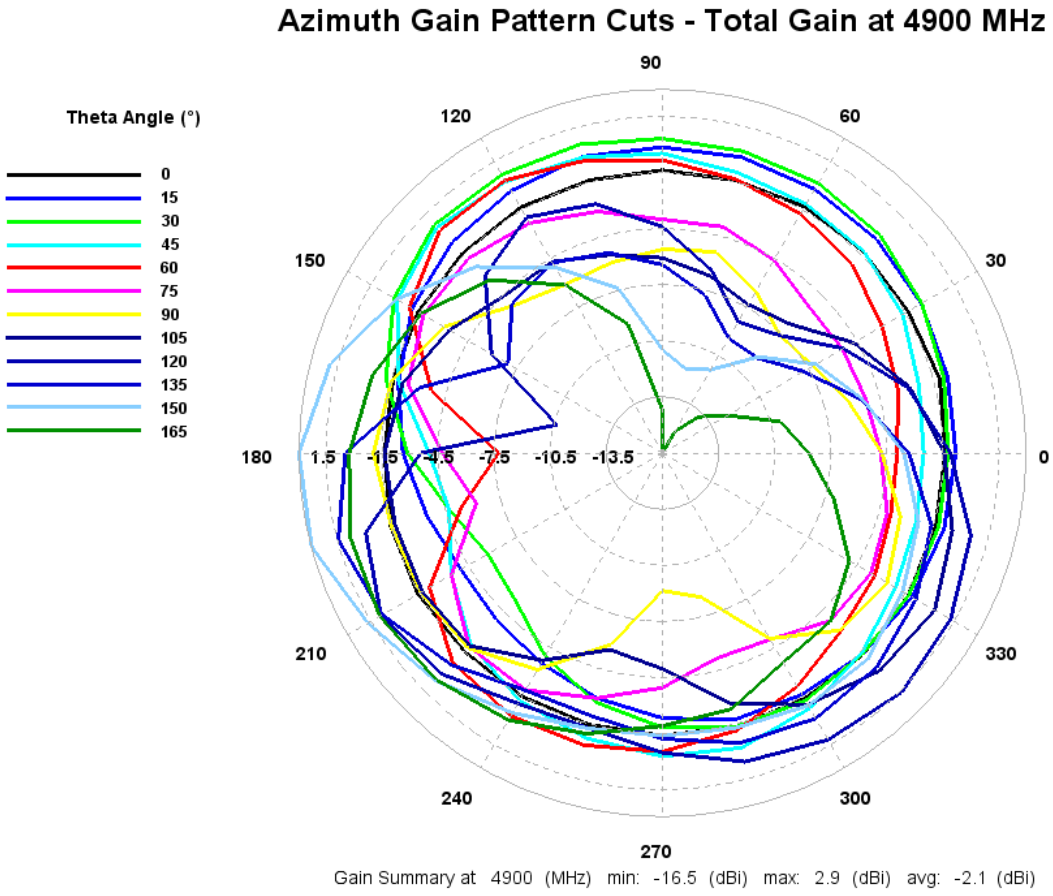

Figure 16: Total gain pattern

3D Plots at 4900 MHz

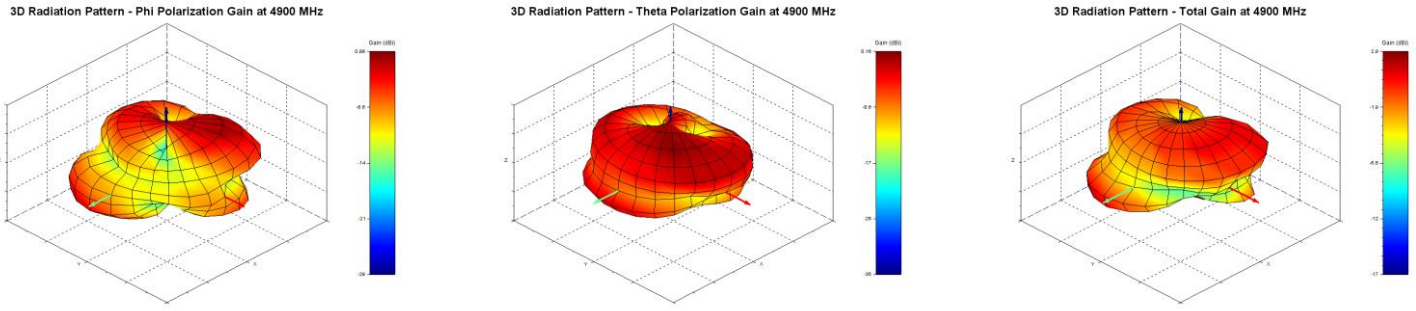

Figure 17: Phi, Theta, and total gain plots

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Azimuthal Conical Cuts at 5400 MHz

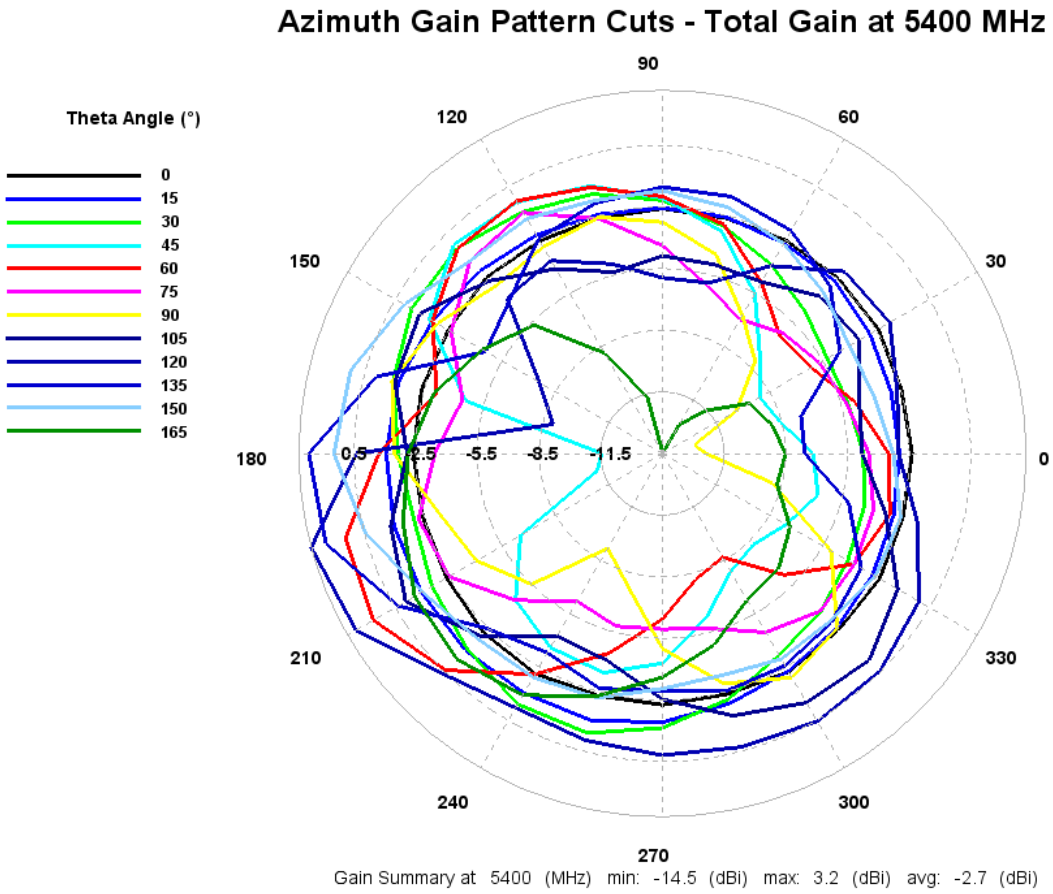

Figure 18: Total gain pattern

3D Plots at 5400 MHz

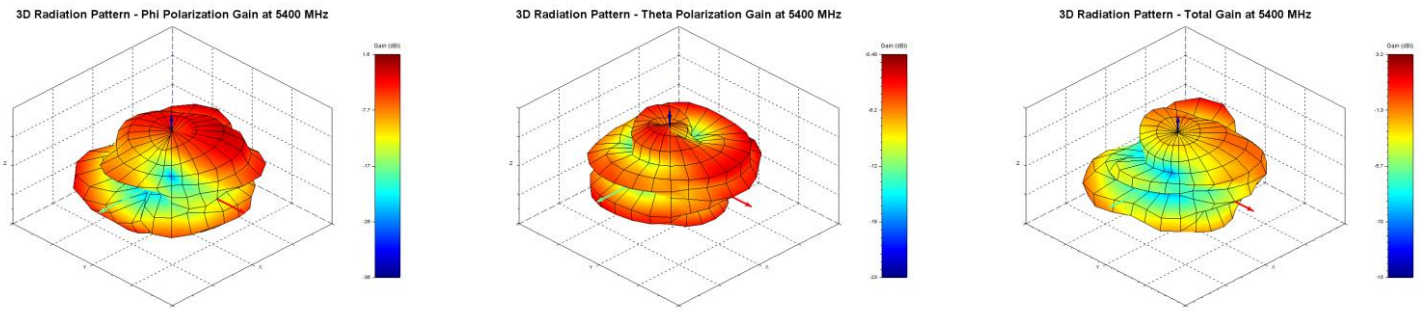

Figure 19: Phi, Theta, and total gain plots

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Azimuthal Conical Cuts at 5900 MHz

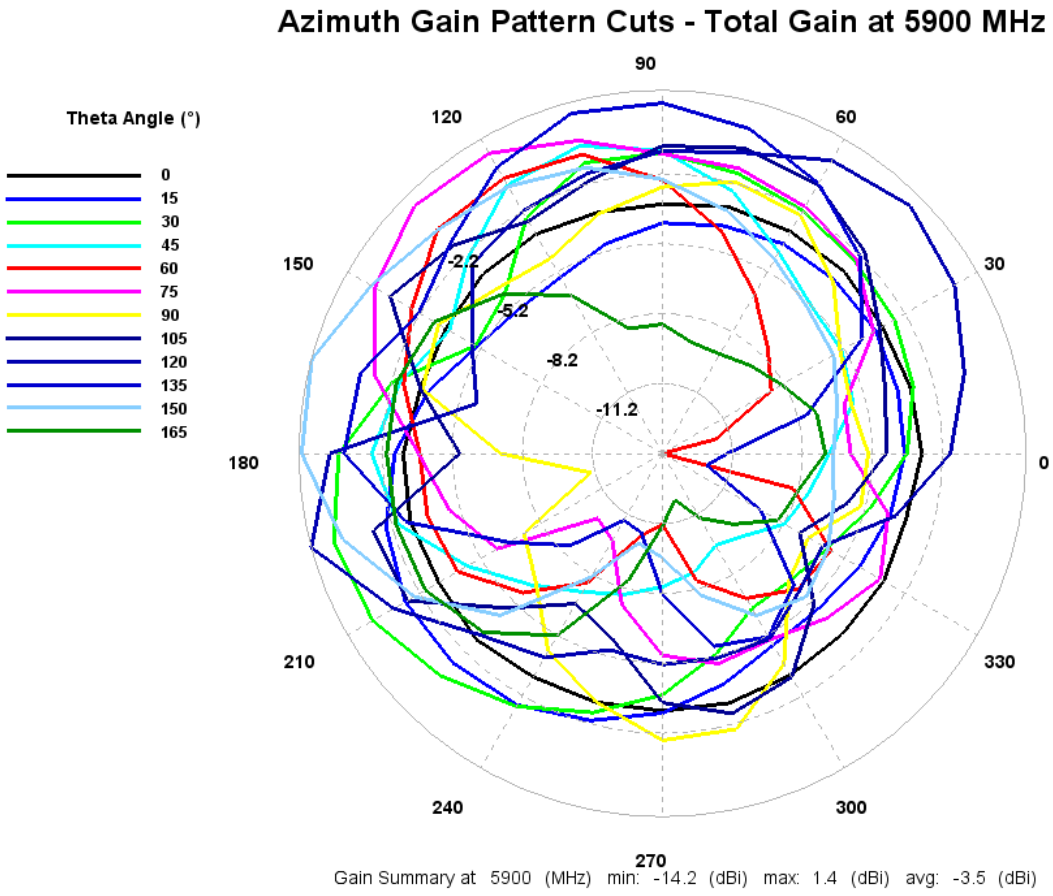

Figure 20: Total gain pattern

3D Plots at 5900 MHz

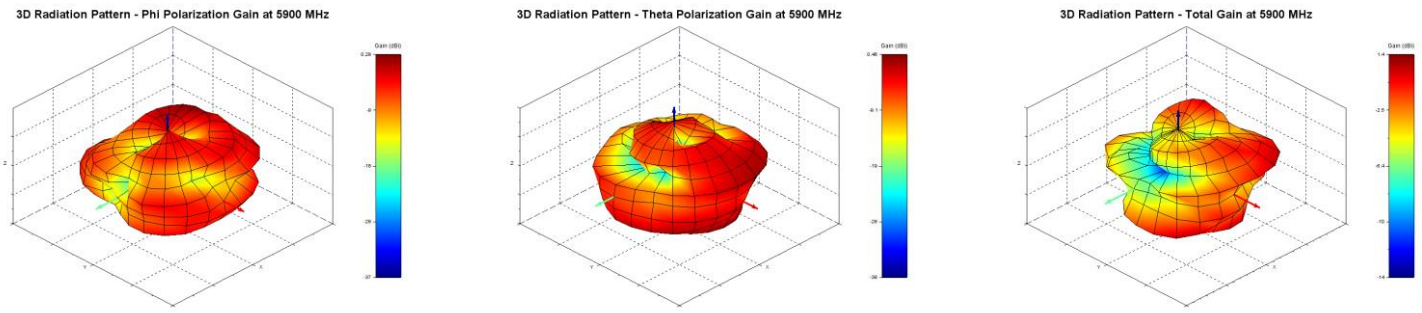

Figure 21: Phi, Theta, and total gain plots

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FlexPIFA inside 52 mm inner diameter PVC tube

Antenna Measurement Setup

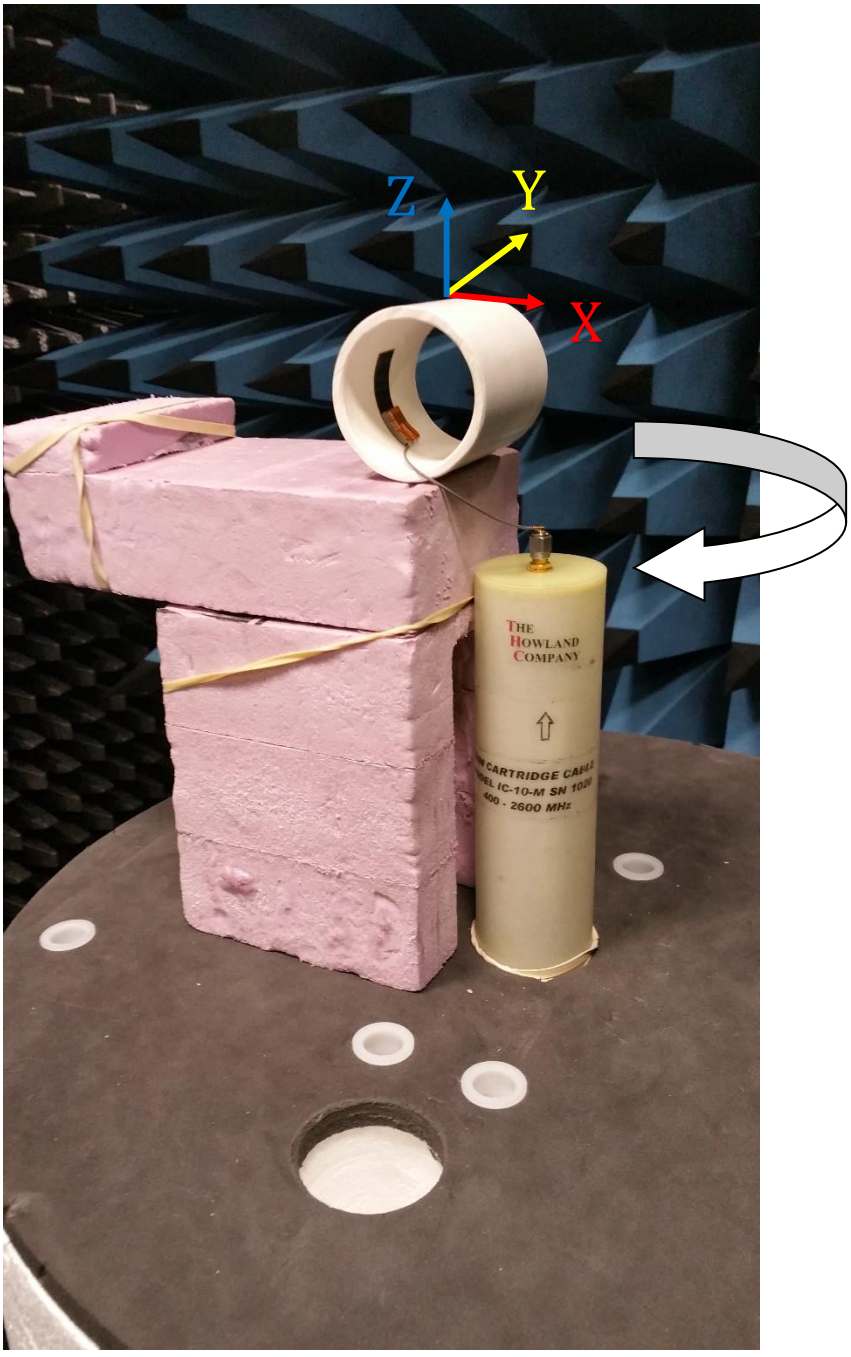

Figure 22: Inner diameter setup

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2.4 GHz Band

Azimuthal Conical Cuts at 2440 MHz

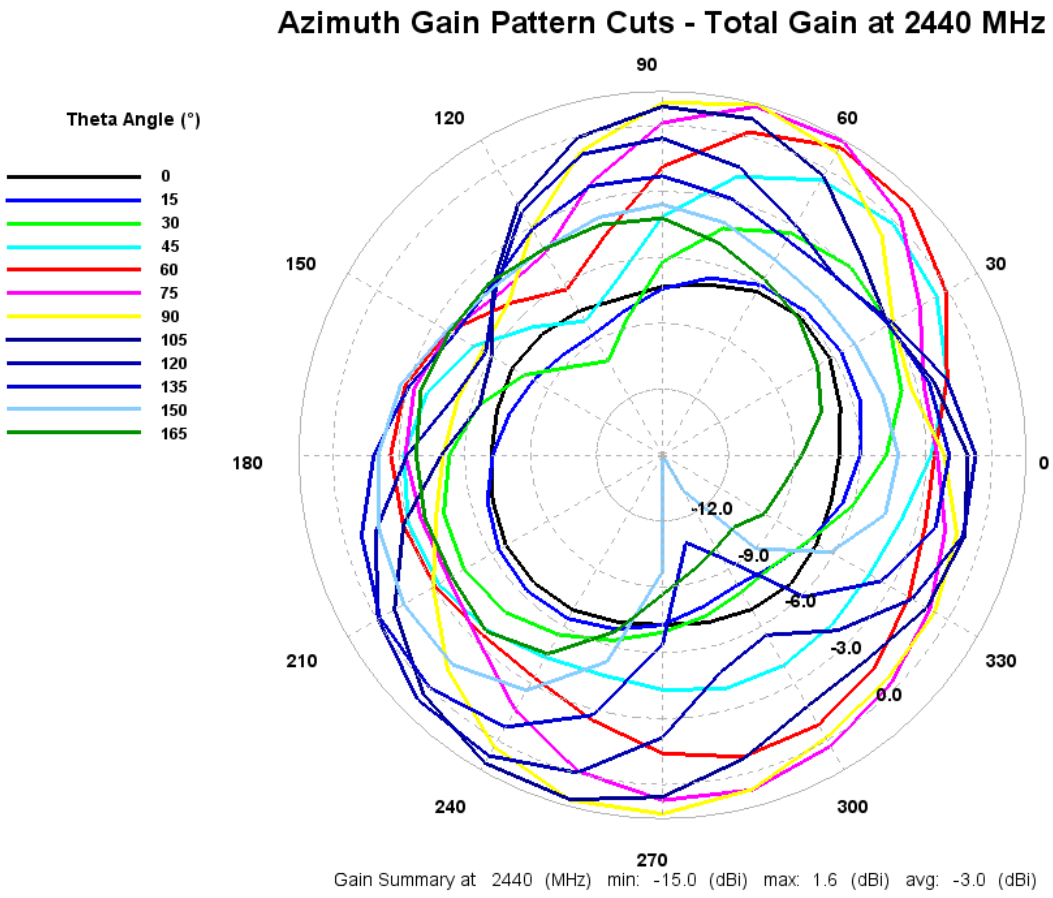

Figure 23: Total gain pattern

3D Plots at 2440 MHz

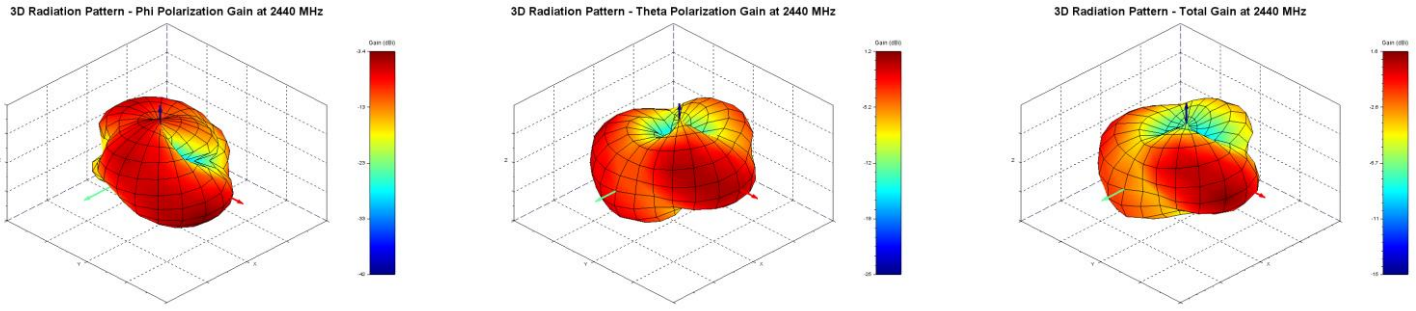

Figure 24: Phi, Theta, and total gain plots

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5 GHz Band

Azimuthal Conical Cuts at 4900 MHz

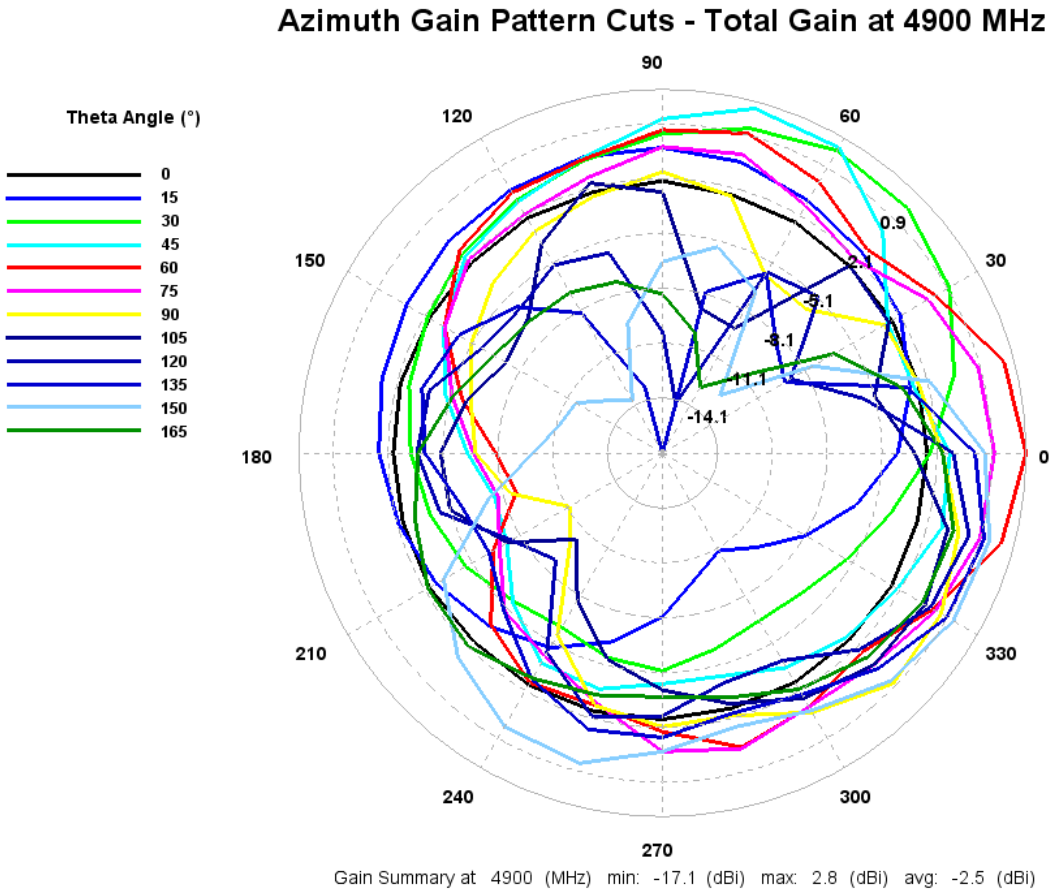

Figure 25: Total gain pattern

3D Plots at 4900 MHz

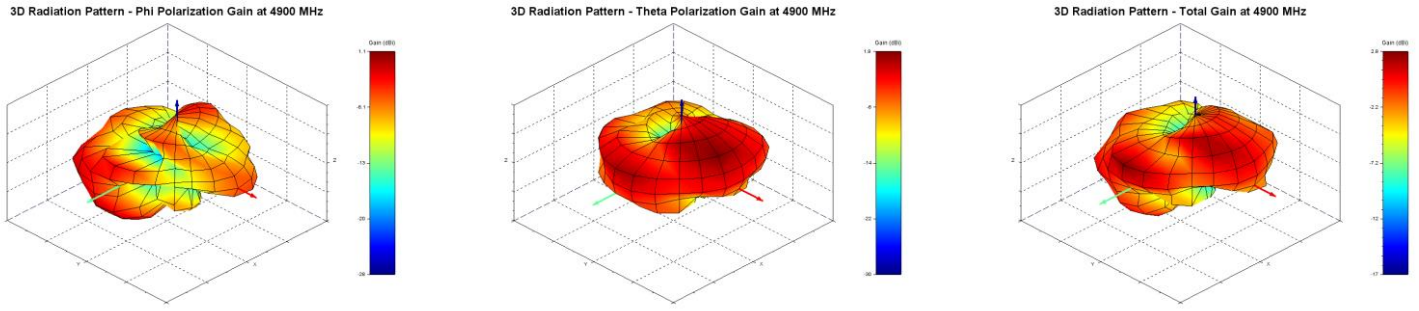

Figure 26: Phi, Theta, and total gain plots

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Azimuthal Conical Cuts at 5400 MHz

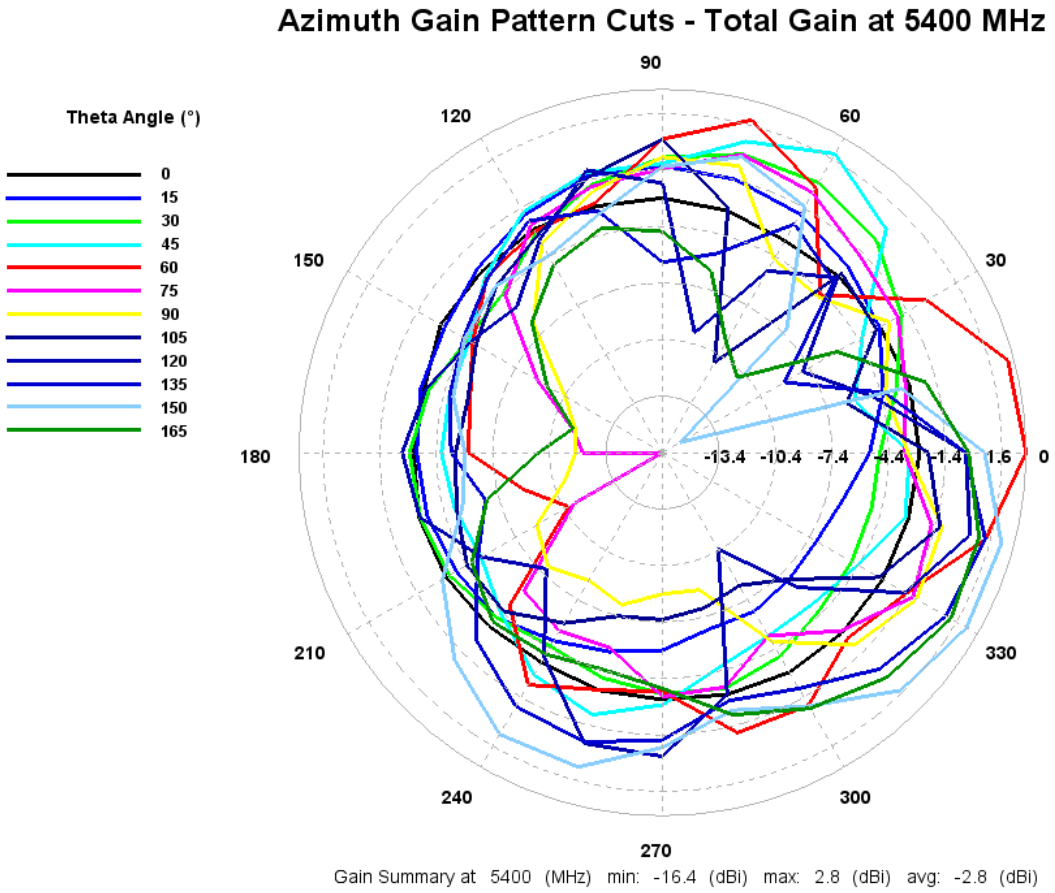

Figure 27: Total gain pattern

3D Plots at 5400 MHz

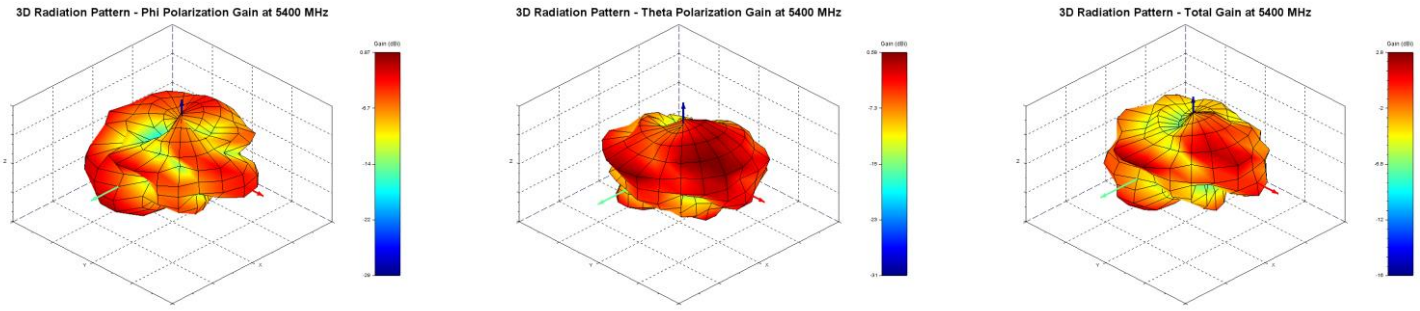

Figure 28: Phi, Theta, and total gain plots

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Azimuthal Conical Cuts at 5900 MHz

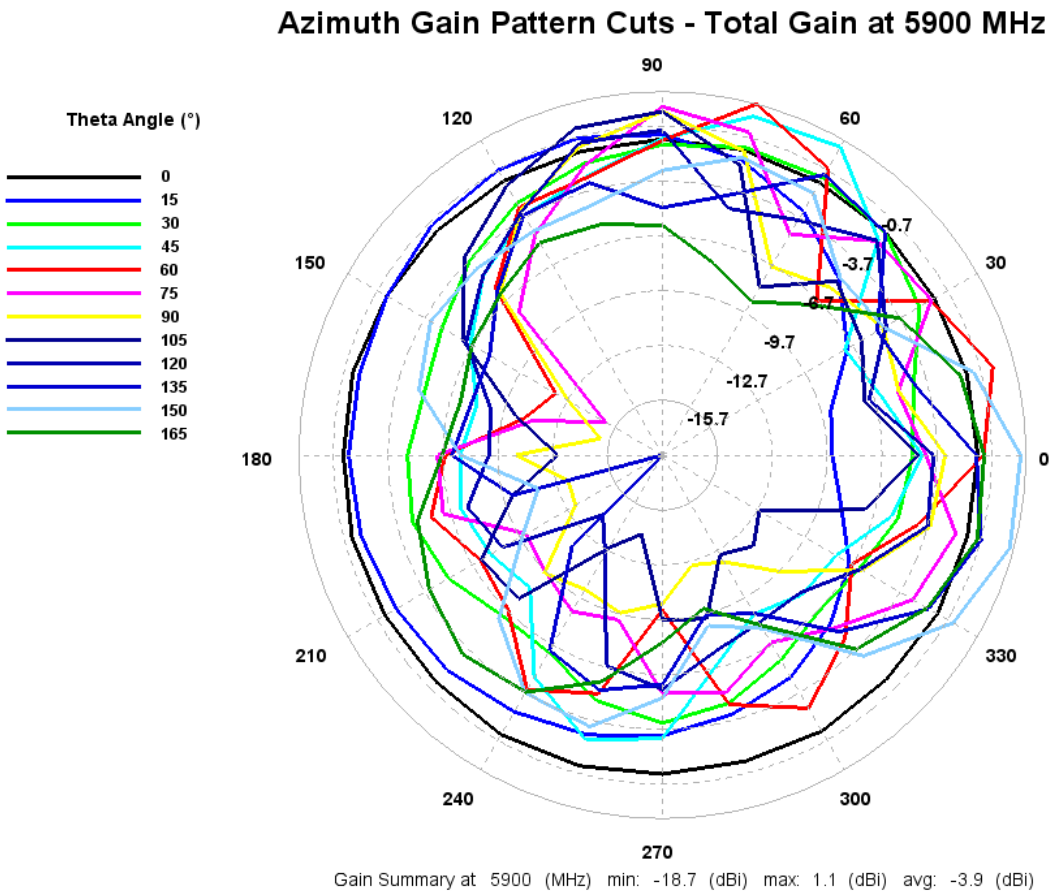

Figure 29: Total gain pattern

3D Plots at 5900 MHz

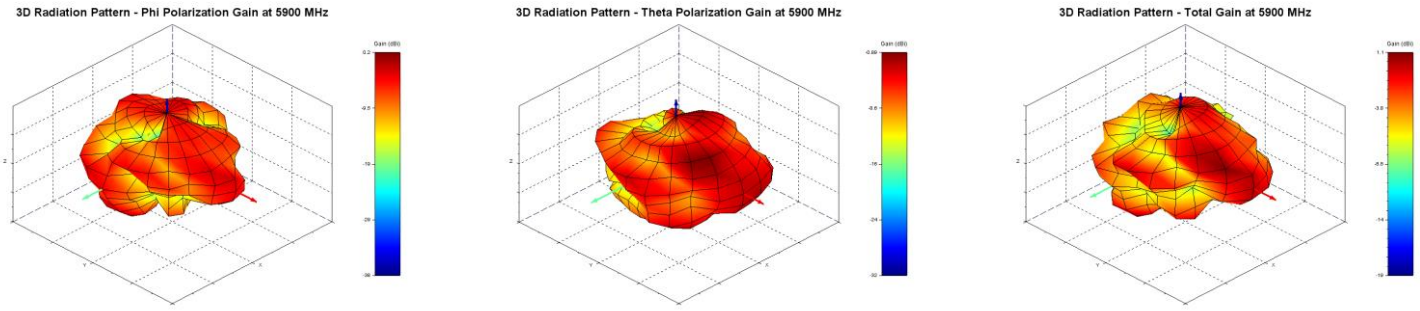

Figure 30: Phi, Theta, and total gain plots

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