



FEATURES AND BENEFITS

- Quick and easy installation
- Adhesive holds to surface during humidity exposure and hot/cold cycles
- RoHS-compliant
- Radiation direction maximized on adhesive side for outward-facing orientation
- Patent Number: 9450307
- Can be installed in the following ways:
 - On different non-conductive surfaces and thicknesses
 - On flat or semi-curved surfaces
 - On the front or top face of an enclosure interior (alternative placement to FlexPIFA)

SPECIFICATIONS	
Frequency (MHz)	902-928
Peak Gain (dBi)	+0.5
Average Efficiency (dB)	> -3.4
VSWR (MHz)	< 2.5:1
Impedance (Ω)	50
Polarization	Linear

MECHANICAL SPECIFICATIONS	
Antenna Type	Inverted Flexible Planar Inverted F Antenna (i-FlexPIFA)
Dimensions – mm (inches)	88 x 40 x 6.2 (3.47 x 1.58 x 0.25)
Weight – g (oz.)	17 (0.58)
Color	Clear yellow
Adhesive	3M 100MP
Connector Mating Height (max) – mm	MHF1 (U.FL) 2.5 MHF4L 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
EFG9020A3S-15MHF1	150 mm	MHF1
EFG9020A3S-15MH4L	150 mm	MHF4L

Note: Specifications are based on the 150 mm cable length, standard antenna version with MHF1 / U.FL connector. Varying the cable length or type or connector will cause variations in these antenna specifications.

MECHANICAL DRAWING

Physical Dimensions (in mm) of the EFG9020A with a 150 mm Long Cable

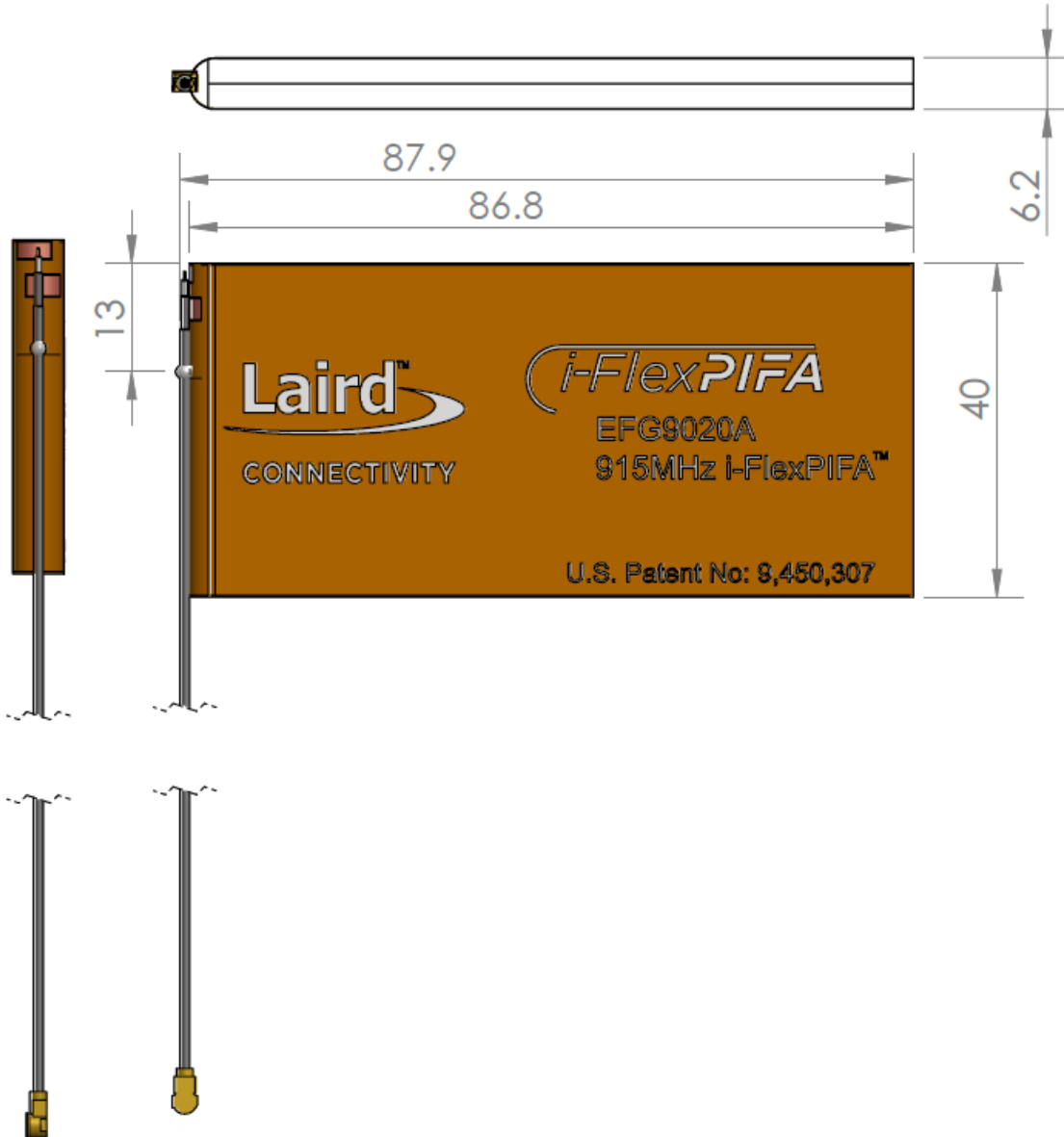


Figure 1: i9-FlexPIFA mechanical drawing of EFG9020A Antenna

FLAT SURFACE ANTENNA MEASUREMENTS

Flat surface measurements were performed with the antenna centered on a 1.5 mm-thick plate of polycarbonate.

VSWR

i9-FlexPIFA VSWR - 1.5mm PolyCarbonate

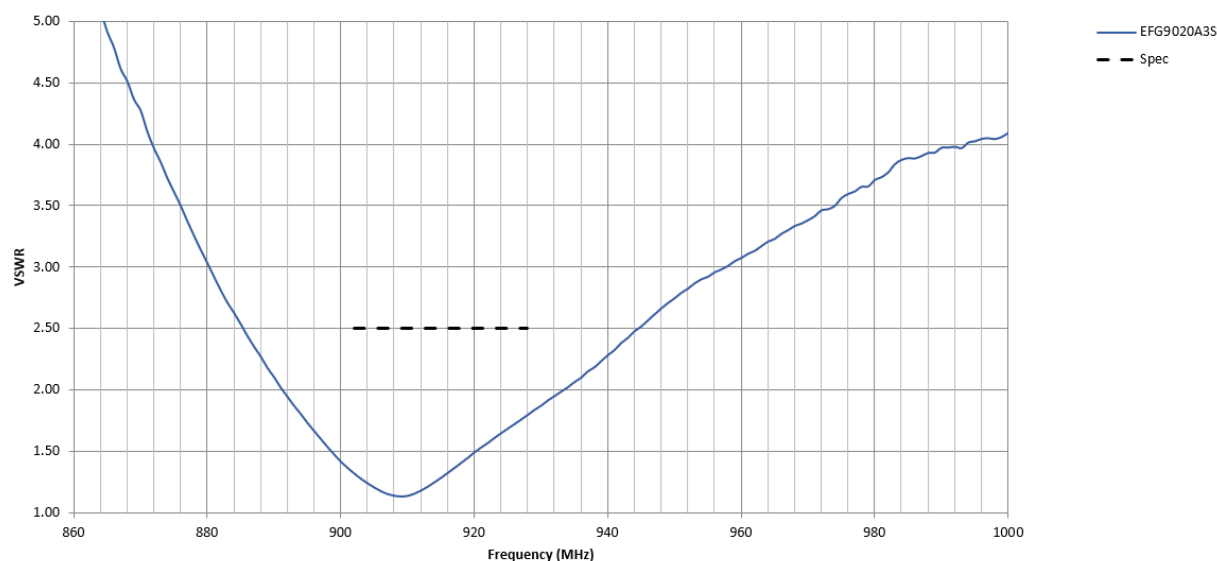


Figure 2: Antenna VSWR measured on a 1.5 mm-thick plate of polycarbonate with a nominal value of 1.38

RETURN LOSS

S11, LOGMAG - i9-FlexPIFA - 1.5mm PolyCarbonate

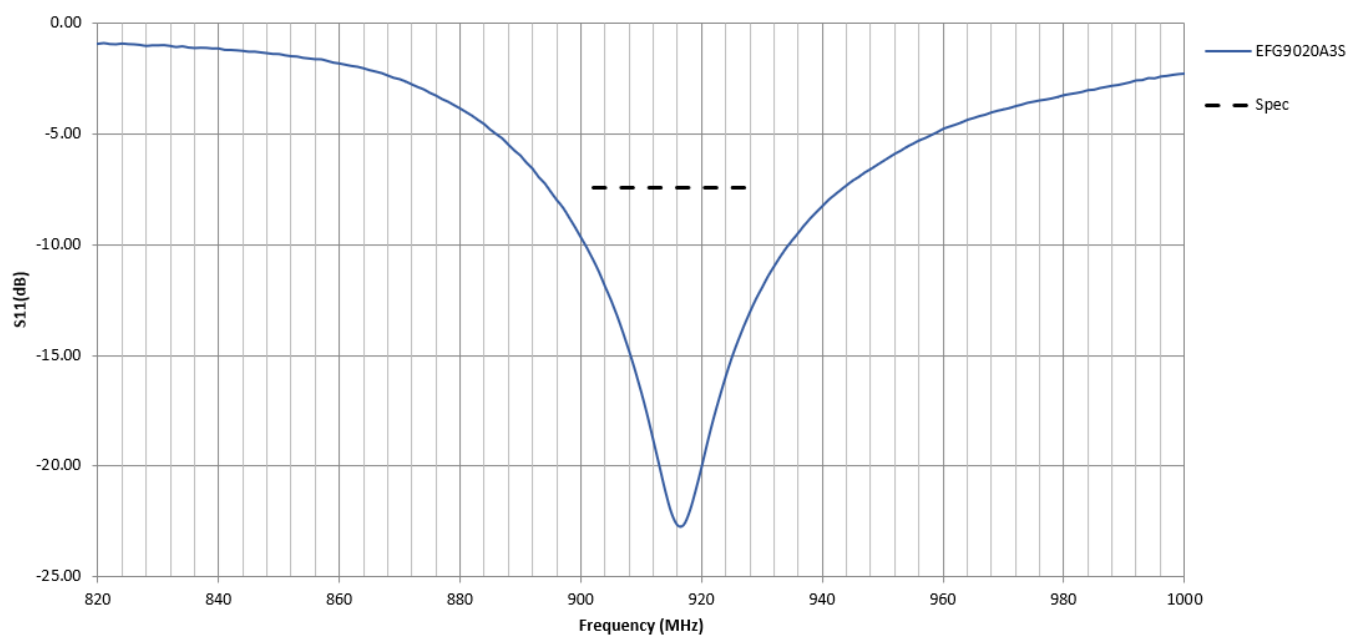


Figure 3: Antenna Return Loss measured on a 1.5 mm-thick plate of polycarbonate with a nominal value of -16.8dB

ANTENNA CHAMBER TEST SETUP

Antenna measurements such as VSWR and S11 were measured with an Agilent E5071C vector network analyzer. Radiation patterns were measured with a Rohde & Schwarz ZNB8-4PORT vector network analyzer in a Howland Company 3100 chamber equivalent. Phase center is nine inches above the Phi positioner.

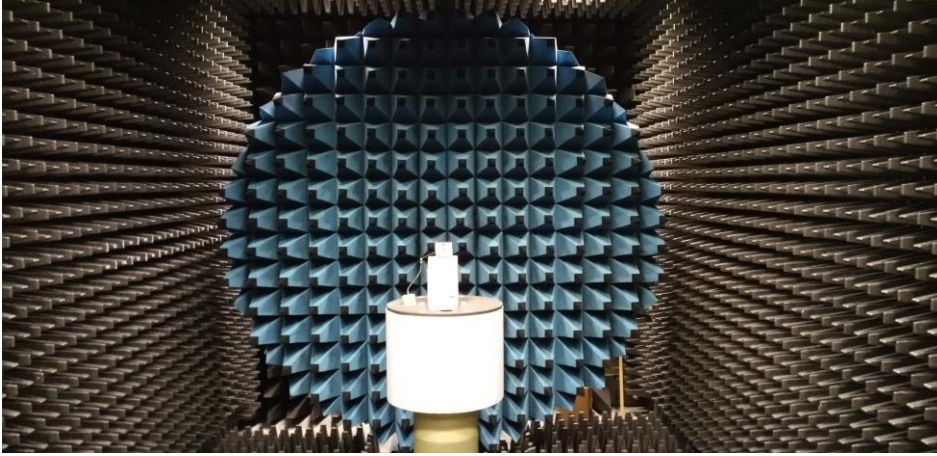


Figure 4: Howland Company 3100 Antenna chamber

ANTENNA RADIATION PERFORMANCE

FlexPIFA centered on a 1.5 mm-thick plate of polycarbonate

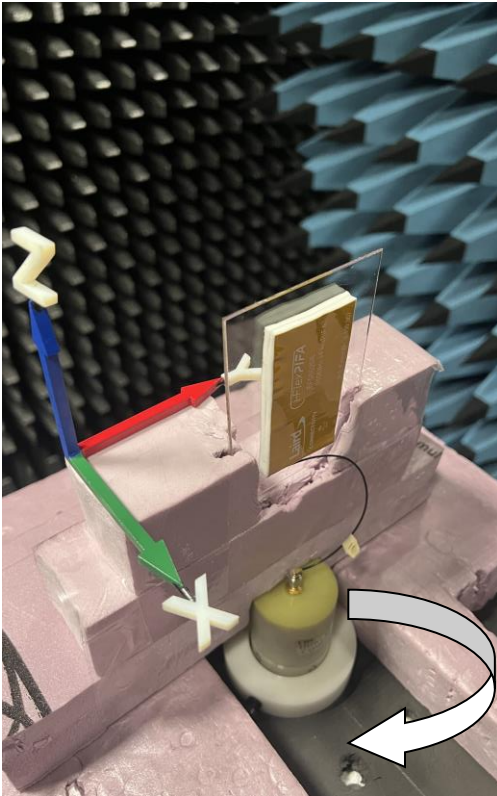


Figure 5: Flat surface setup

EFFICIENCY

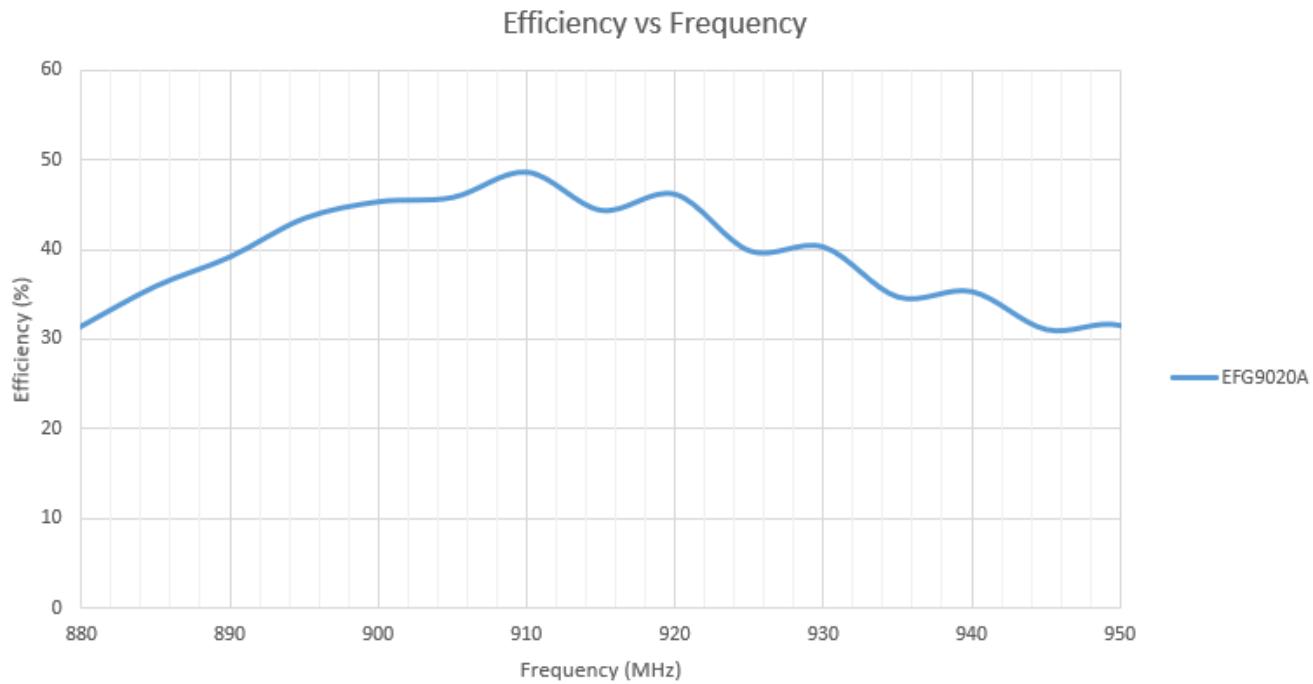


Figure 6: Antenna Efficiency measured on a 1.5 mm-thick plate of polycarbonate with a nominal value of -3.5dB across the operating frequency

ANTENNA GAIN

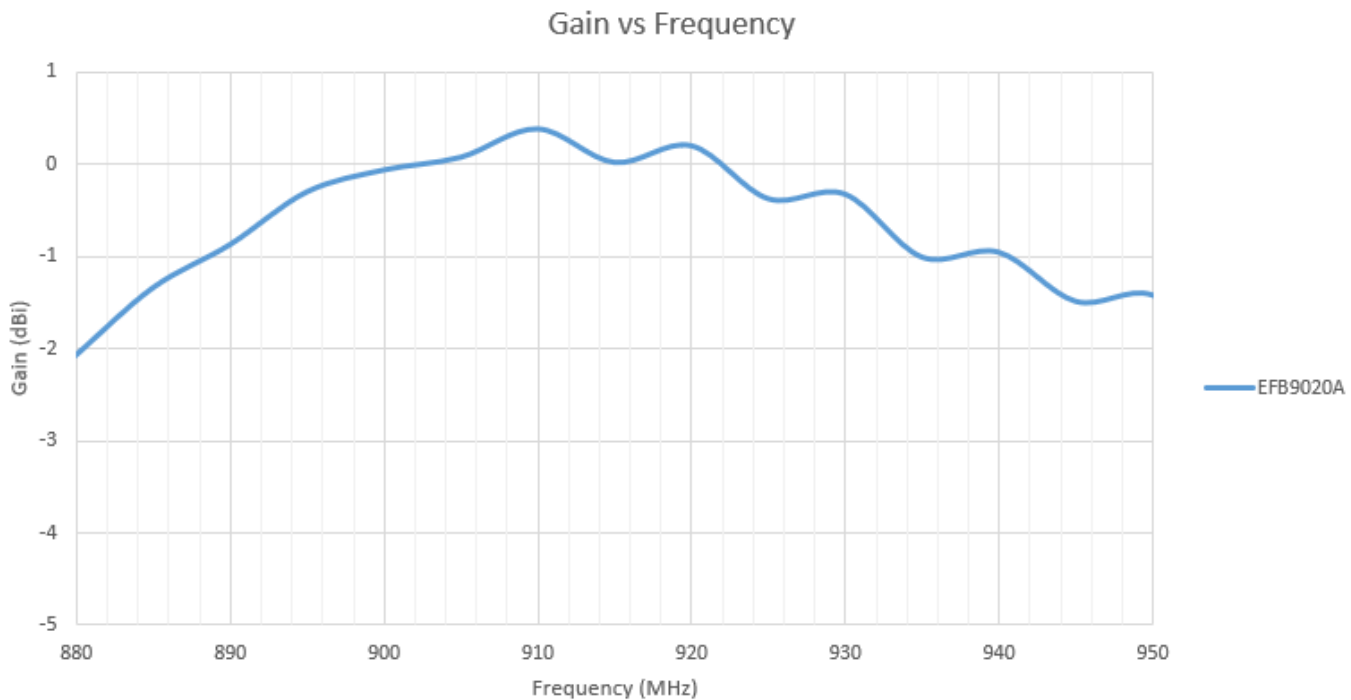
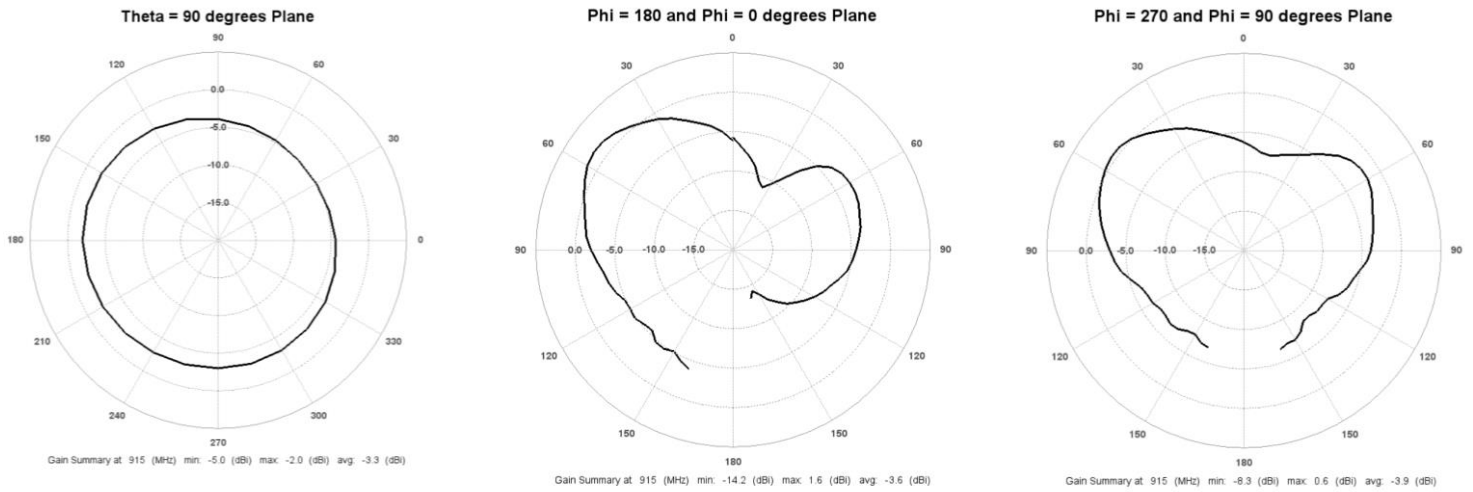


Figure 7: Antenna Gain measured on a 1.5 mm-thick plate of polycarbonate with a nominal value of -0.01dBi across the operating frequency

RADIATION PATTERNS – 2D Plots

2D Plots at 915 MHz



RADIATION PATTERNS – 3D Plots

3D Plots at 915 MHz

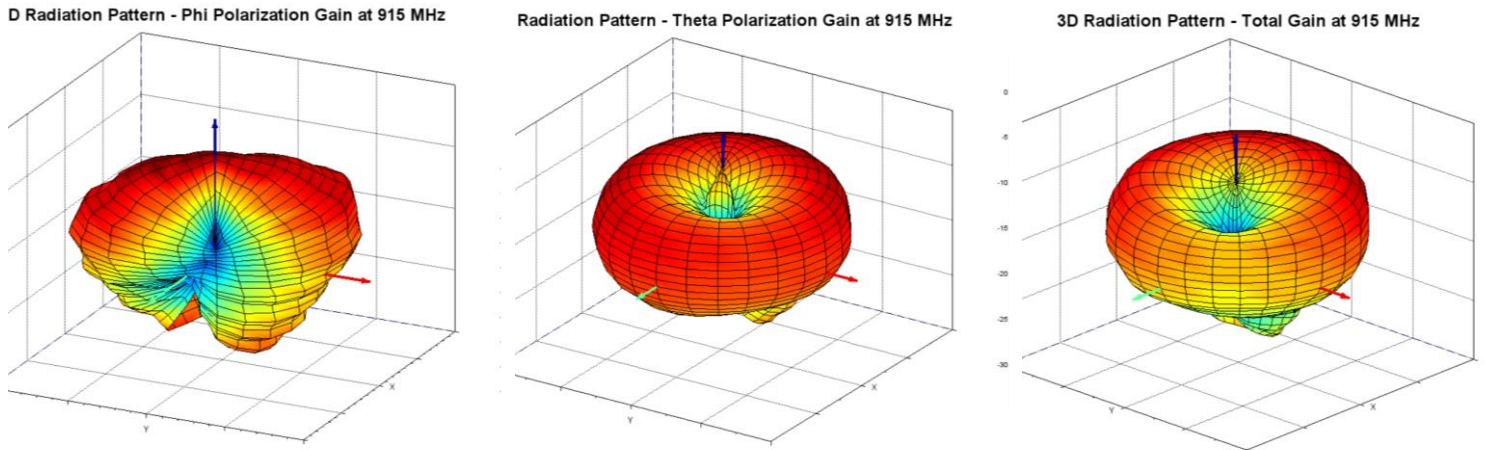


Figure 8: Phi polarization, Theta polarization and, and total gain plots – 915 MHz

Rev 4.0 - Initial Production Release



ADDITIONAL ASSISTANCE

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