9-FlexPIFA™ Series

Flexible PIFA Antenna
902-928MHz

FEATURES AND BENEFITS

- Quick and easy installation
- Adhesive holds to surface during humidity exposure and hot/cold cycles
- RoHS-compliant
- Patent Number: 9450307
- Can be installed in the following ways:
  - On different non-conductive surfaces and thicknesses
  - On flat or semi-curved surfaces
  - Near metals or the human body

SPECIFICATIONS	
Frequency (MHz)	902-928
Peak Gain (dBi)	-0.1
Average Efficiency (dB)	> -3.6
VSWR (MHz)	< 2.5:1
Impedance (Ω)	50
Polarization	Linear

MECHANICAL SPECIFICATIONS		
Antenna Type	Flexible Planar Inverted F Antenna (FlexPIFA)	
Dimensions – mm (inches)	88 x 40 x 6.2 (3.47 x 1.58 x 0.25)	
Weight – g (oz.)	11 (0.38)	
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
EFB9020A3S-15MHF1	150 mm	MHF1
EFB9020A3S-15MH4L	150 mm	MHF4L

Note: Specifications are based on the 150mm 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.

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MECHANICAL DRAWING

Physical Dimensions (in mm) of the EFB9020A with a 150 mm Long Cable

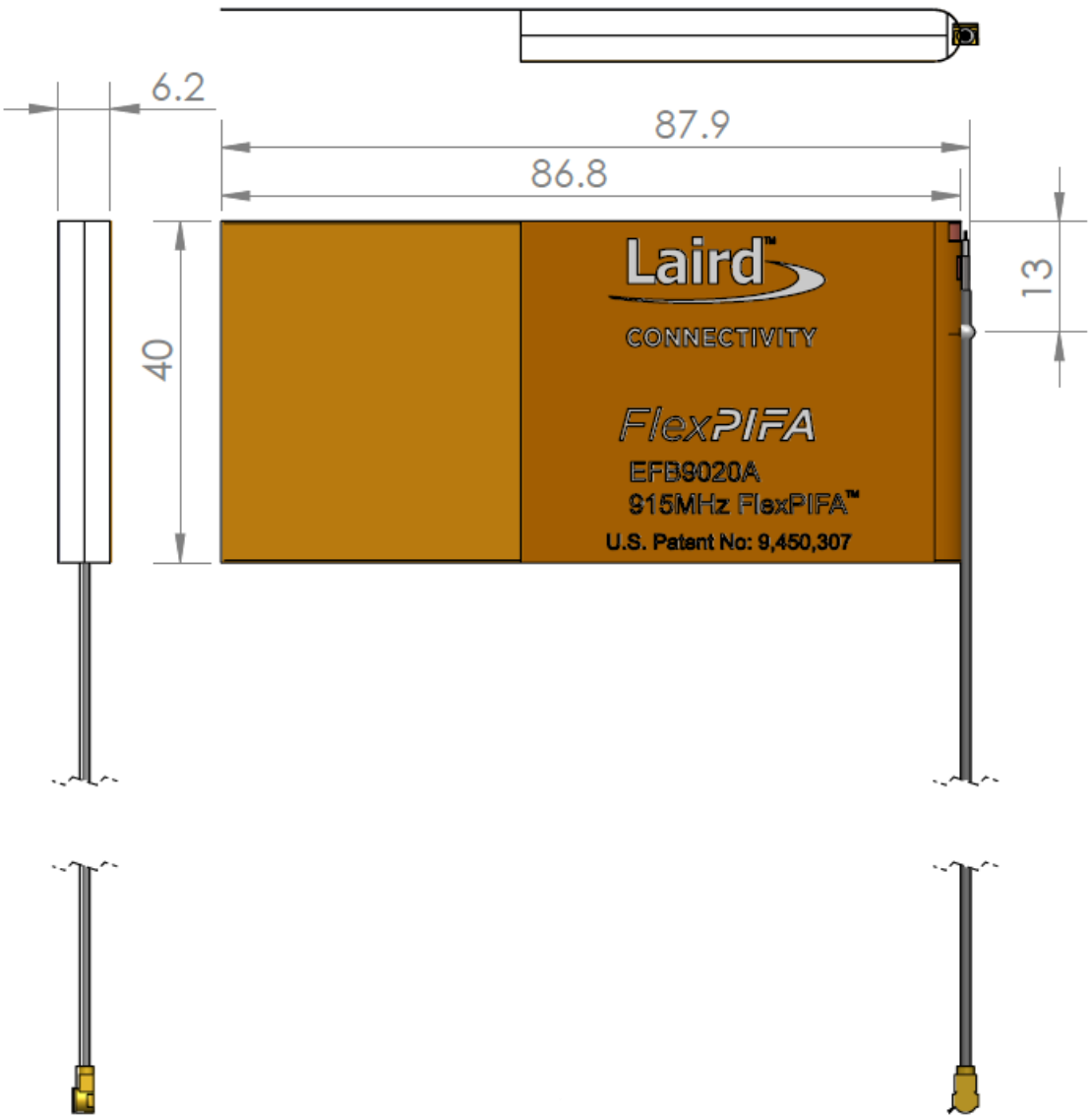

Figure 1: 9-FlexPIFA mechanical drawing of EFB9020A Antenna

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FLAT SURFACE ANTENNA MEASUREMENTS

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

VSWR

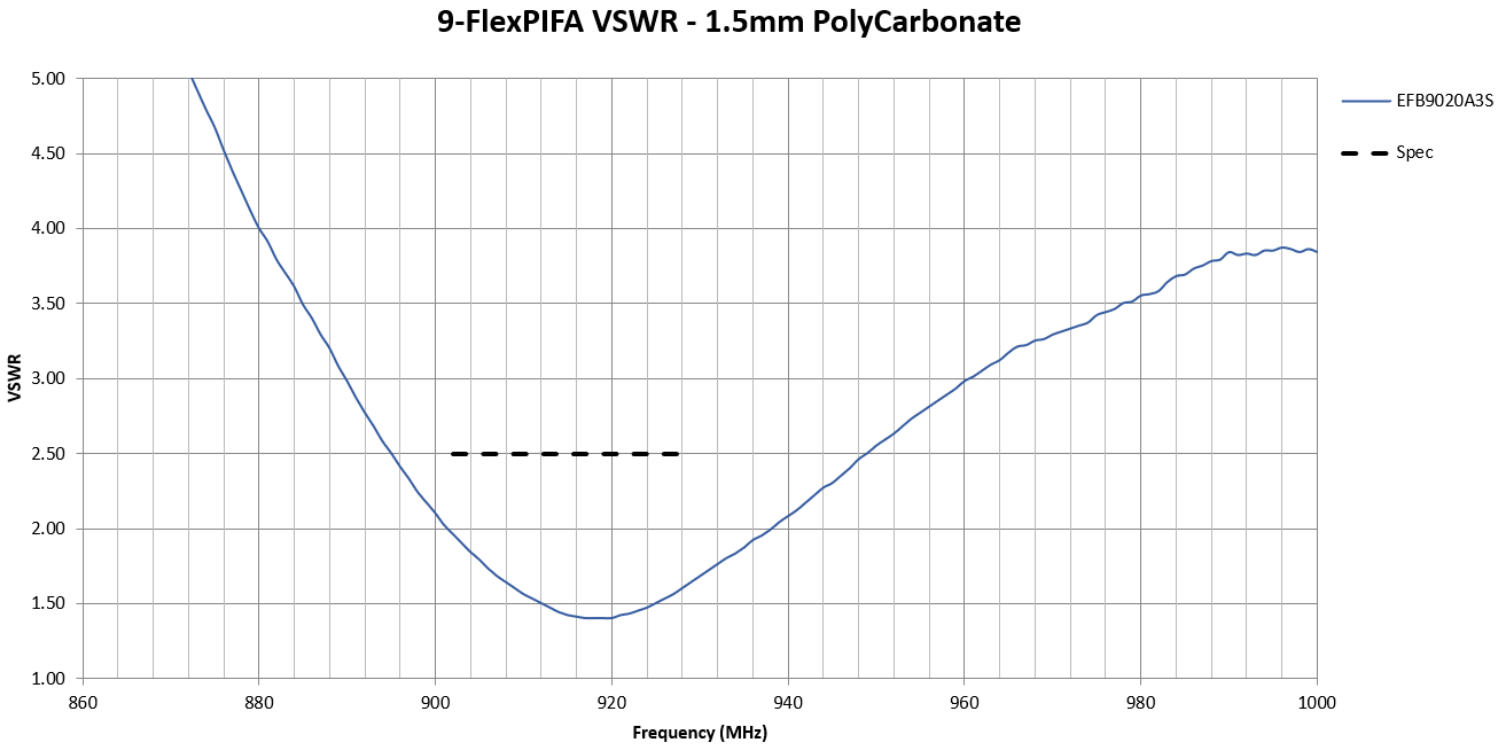

Figure 2: Antenna VSWR measured on a 1.5 mm-thick plate of polycarbonate with a nominal value of 1.56

RETURN LOSS

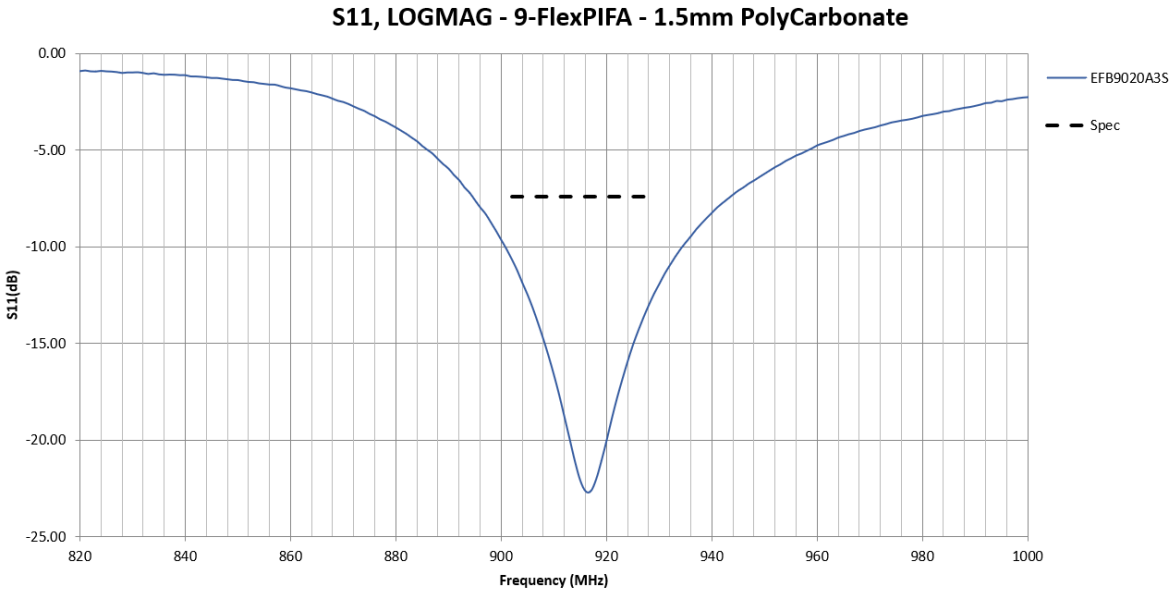

Figure 3: Antenna Return Loss measured on a 1.5 mm-thick plate of polycarbonate with a nominal value of -16.8dB

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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.

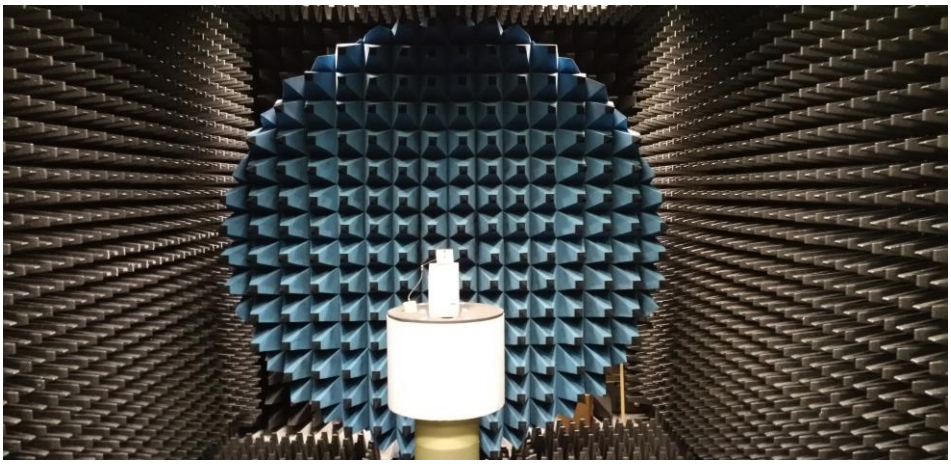

Figure 4: Howland Company 3100 Antenna chamber

Antenna Radiation Performance

9-FlexPIFA centered on a 1.5 mm-thick plate of polycarbonate

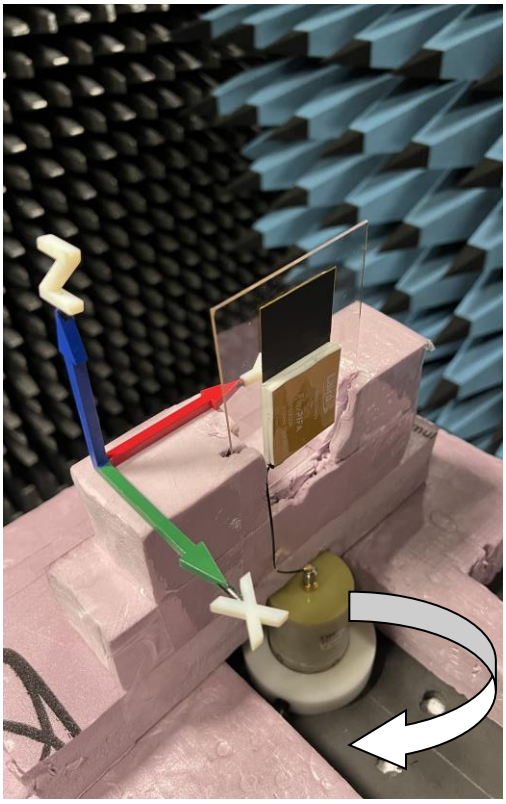

Figure 5: Flat surface setup

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EFFICIENCY

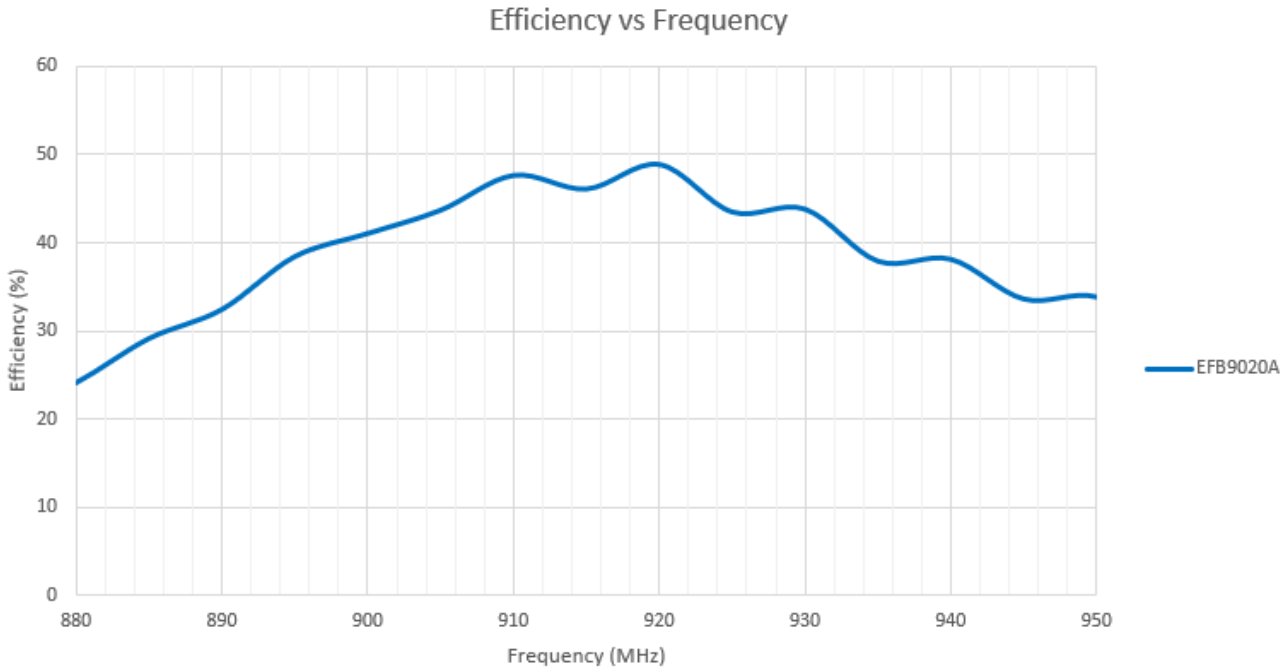

Figure 6: Antenna Efficiency measured on a 1.5 mm-thick plate of polycarbonate with a nominal value of -3.4dB across the operating frequency

ANTENNA GAIN

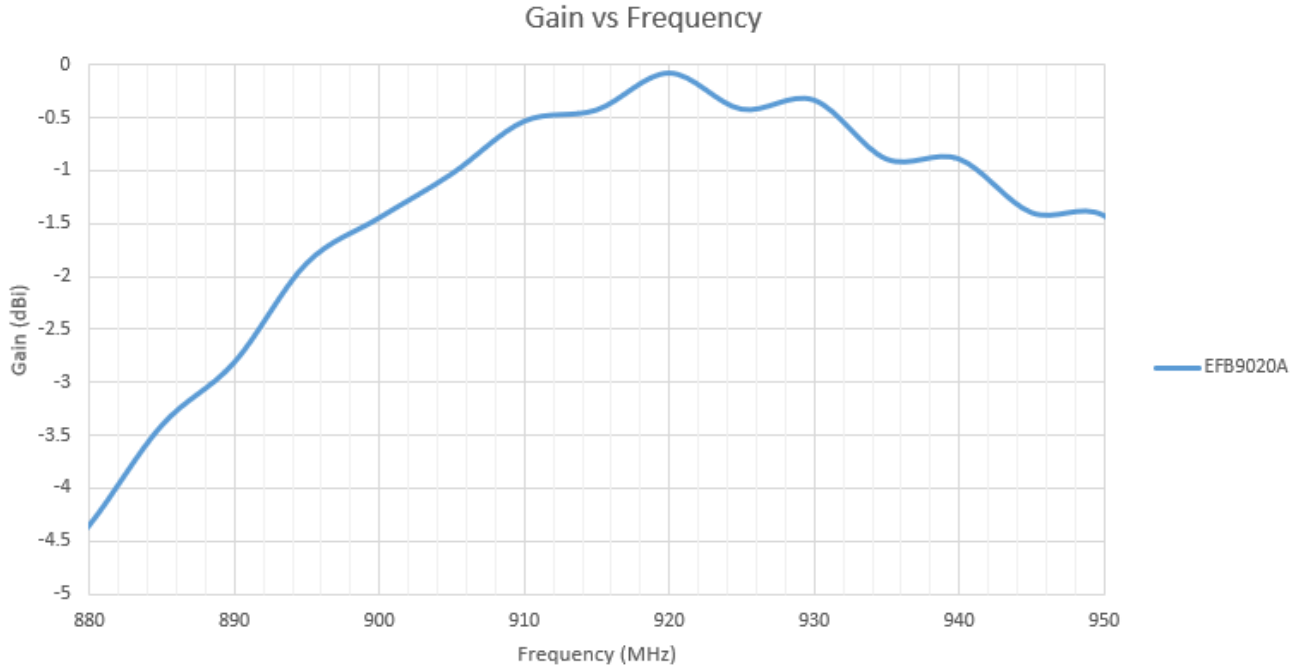

Figure 7: Antenna Gain measured on a 1.5 mm-thick plate of polycarbonate with a nominal value of -0.6dBi across the operating frequency

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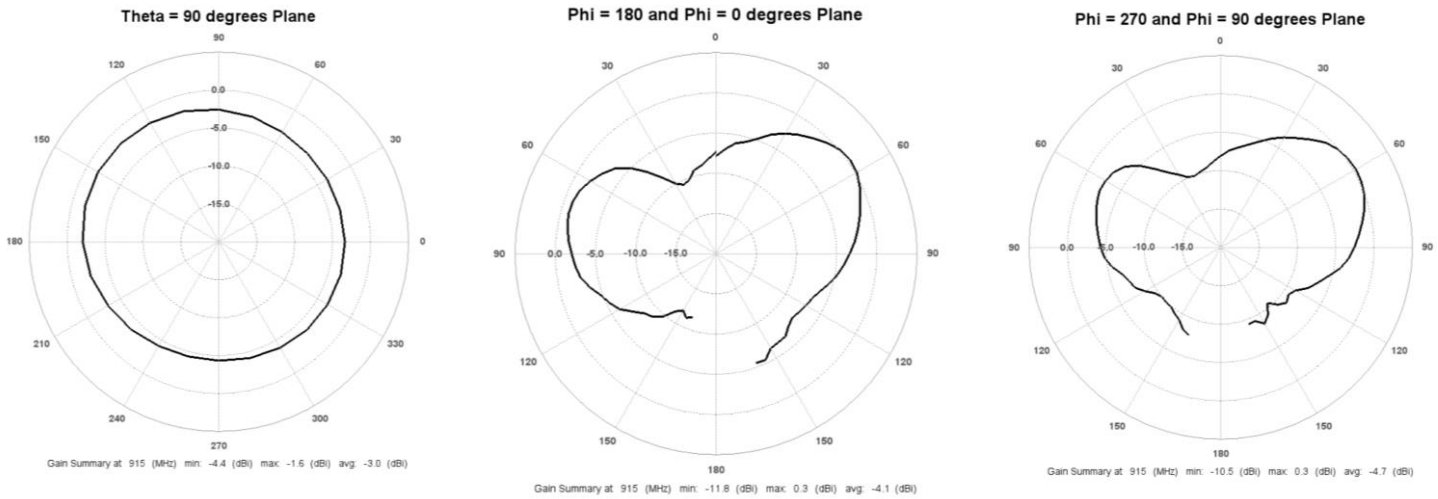
RADIATION PATTERNS – 2D Plots

2D Plots at 915 MHz



RADIATION PATTERNS – 3D Plots

3D Plots at 915 MHz

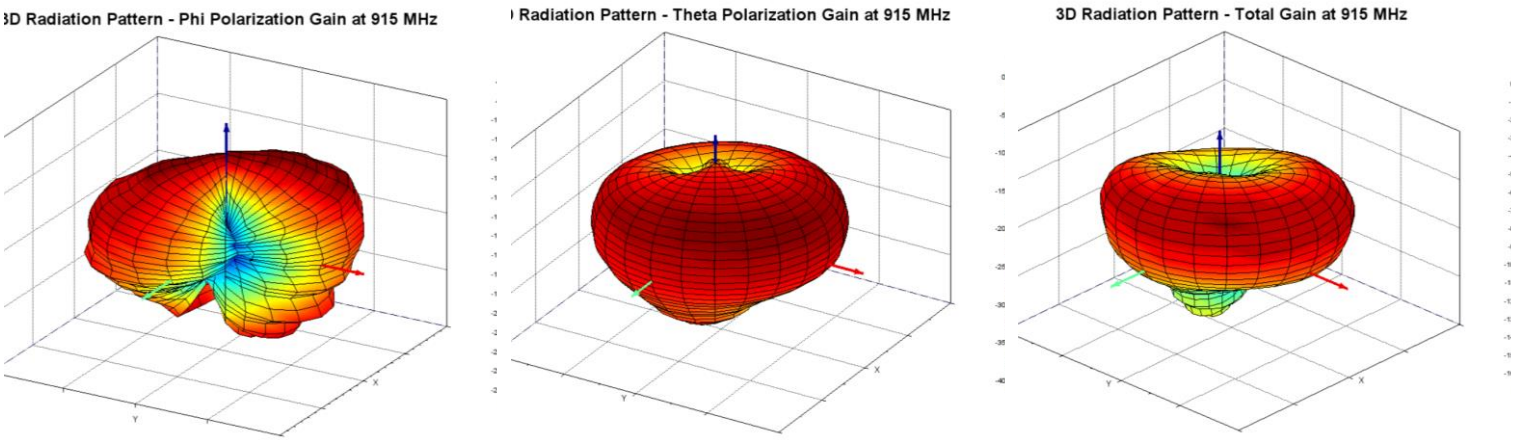


Figure 8: Phi polarization, Theta polarization and, and total gain plots – 915 MHz

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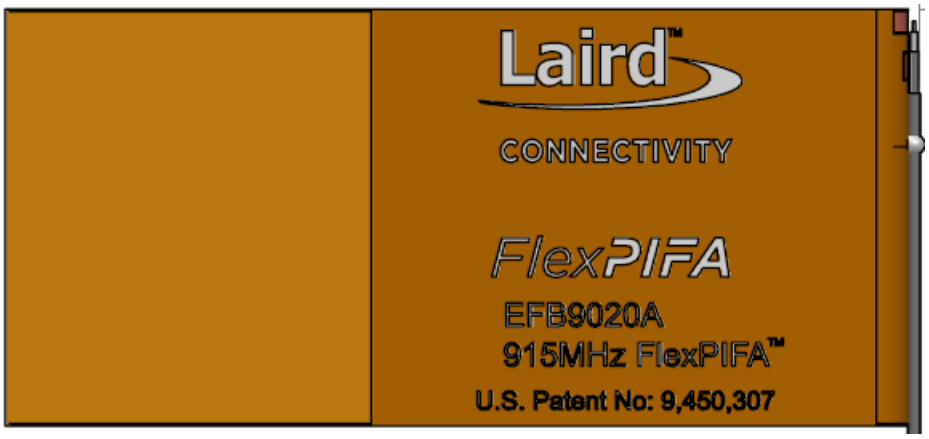
Rev 5.0 - Initial Production Release



ADDITIONAL ASSISTANCE

Please contact your local Laird Connectivity sales representative or our support team for further assistance:

Support Center	https://www.lairdconnect.com/resources/support	
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