RS262 – LoRa - 902-928 MHz

PCBA Monopole Antenna

Datasheet

1 Specifications

Specifications	
Frequency (MHz)	902-928
Peak Gain (dBi)	+0.9
Average Efficiency (dB)	> -1.9
VSWR (MHz)	< 2.5:1
Impedance (Ω)	50
Polarization	Linear

Mechanical Specifications	
Antenna Type	PCBA Monopole Antenna (Loaded Stub "L")
Dimensions – mm (inches)	85.0 x 42.0 x 1.5 (3.34 x 1.66 x 0.06)
Weight – g (oz.)	15.0 (0.53)
Color	Blue

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

2 Flat Surface Antenna measurements

Flat surface measurements were performed with the antenna/PCBA mounted in ABS enclosure.

2.1 VSWR

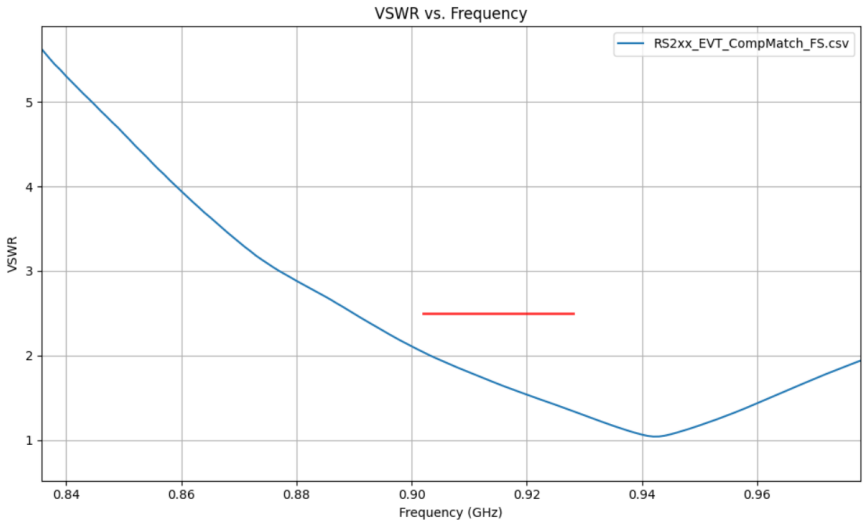

Figure 2: Antenna VSWR measured in an ABS enclosure

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3 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.

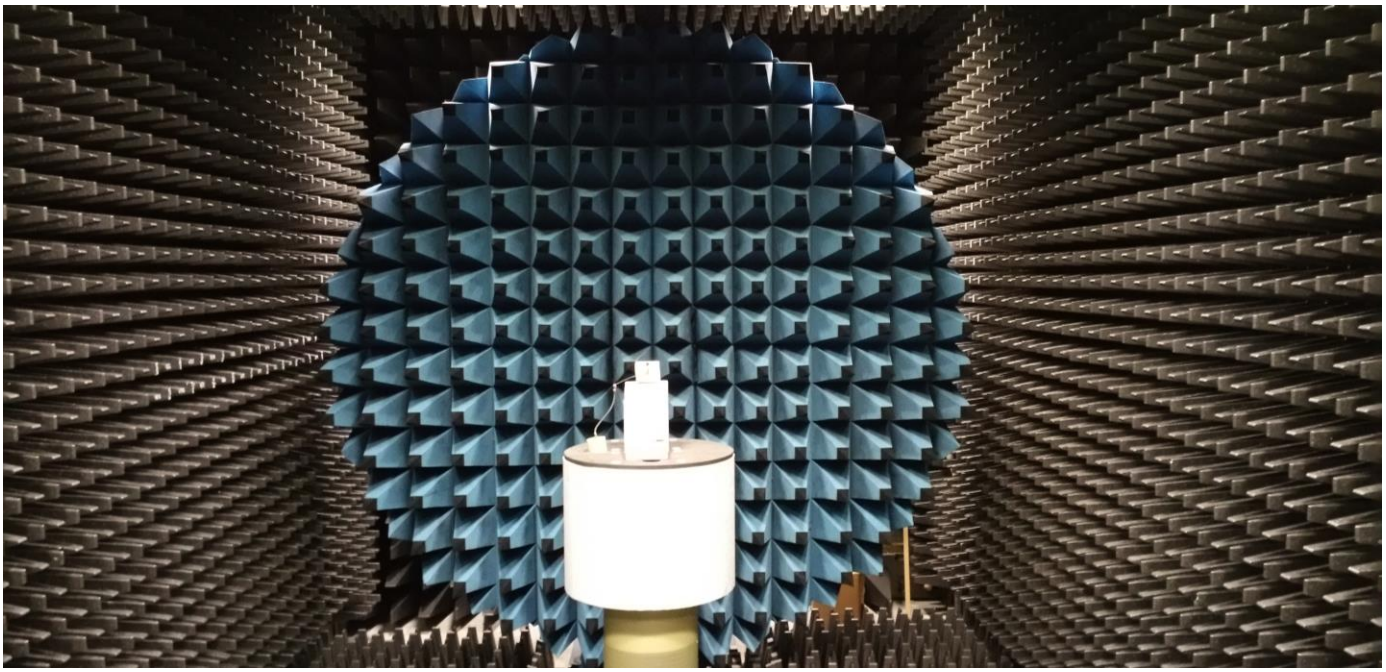

Figure 4: Howland Company 3100 Antenna chamber

4 Antenna Radiation Performance

4.1 RS262 centered 8in. Above Pedestal

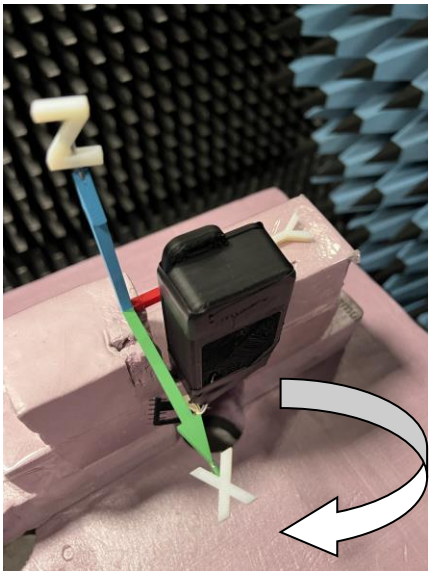

Figure 5: Flat surface setup

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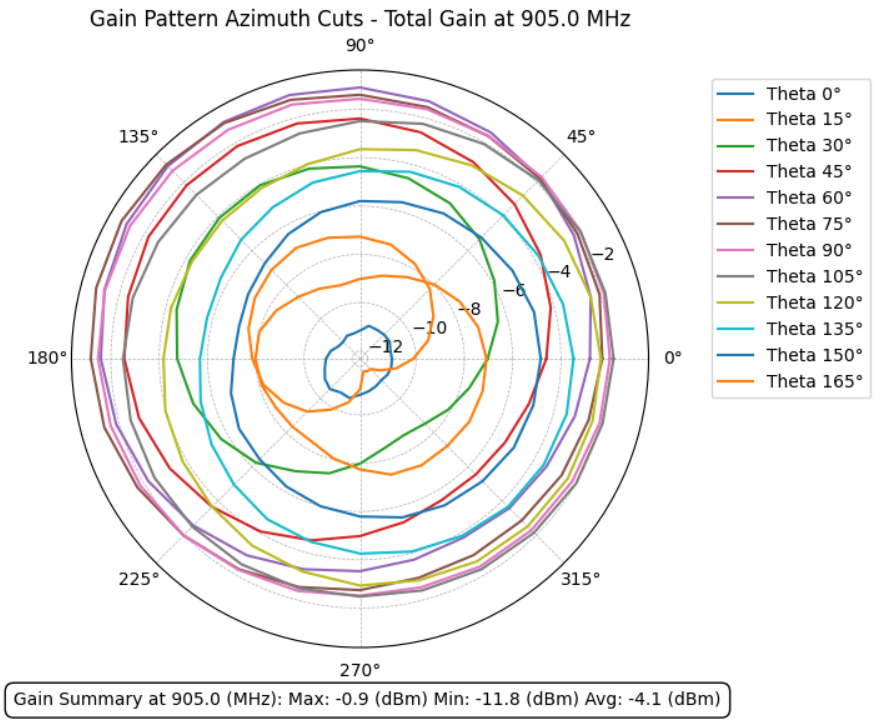
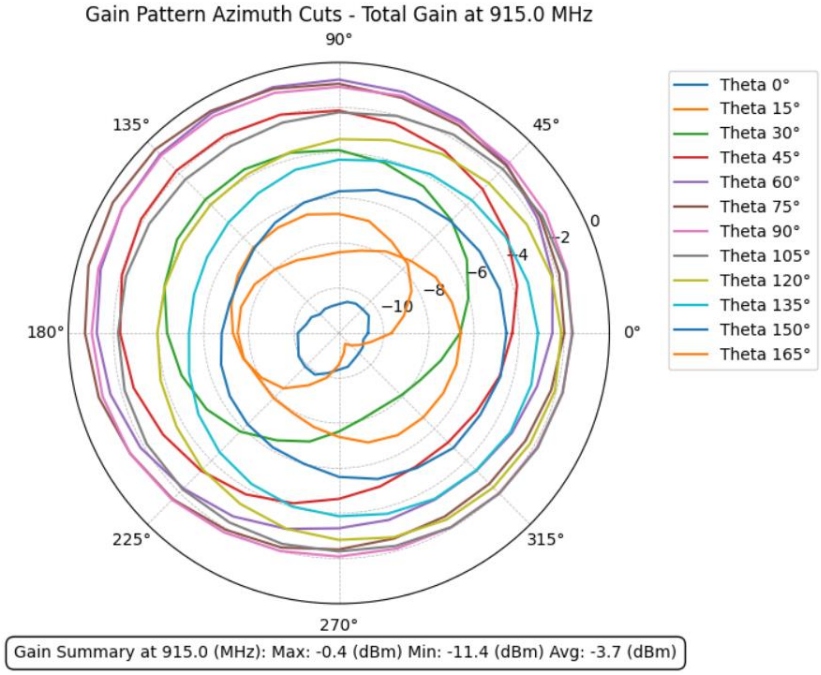
4.2 Radiation Patterns – 2D Plots

4.2.1 2D Azimuth Cuts at 905 MHz



4.2.2 2D Azimuth Cuts at 915 MHz



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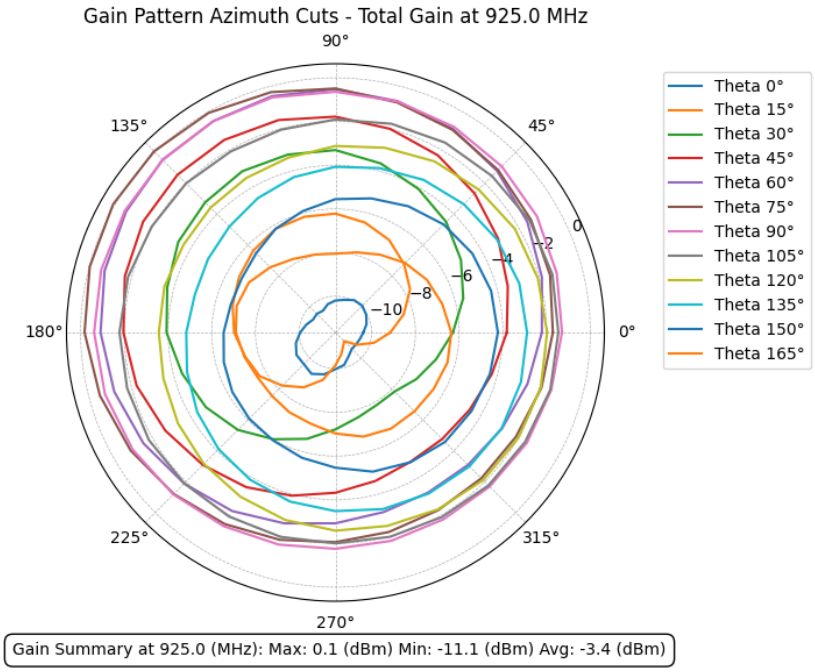
4.2.3 2D Azimuth Cuts at 925MHz



Gain Summary at 925.0 (MHz): Max: 0.1 (dBm) Min: -11.1 (dBm) Avg: -3.4 (dBm)

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4.3 Radiation Patterns – 3D Plots

4.3.1 3D Plots at 905MHz

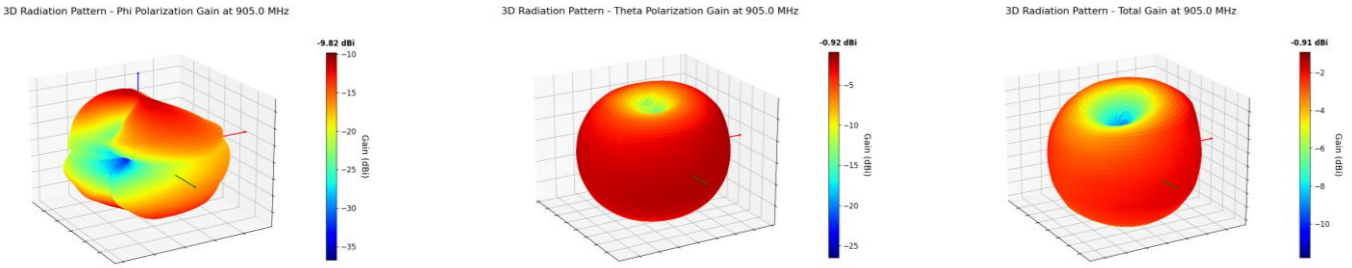

Figure 6: Phi polarization, Theta polarization and, and total gain plots – 905 MHz

4.3.2 3D Plots at 915 MHz

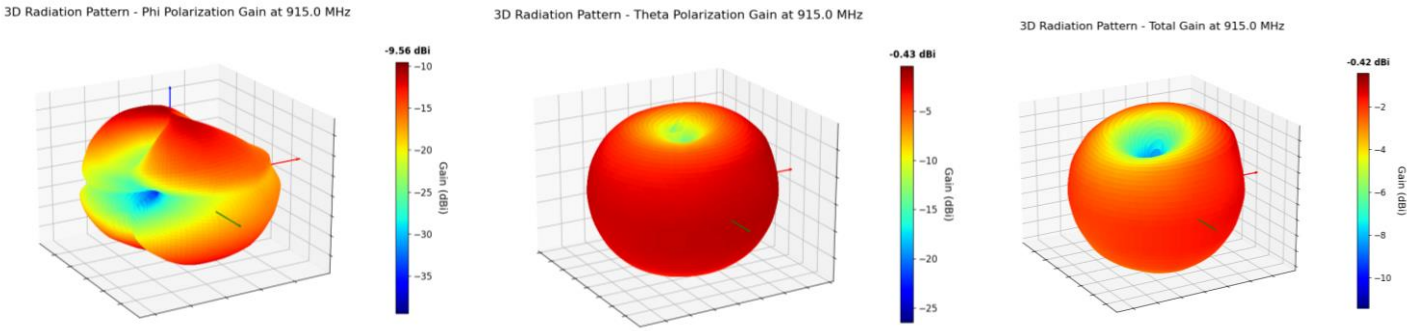

Figure 7: Phi polarization, Theta polarization and, and total gain plots – 915 MHz

4.3.3 3D Plots at 925 MHz

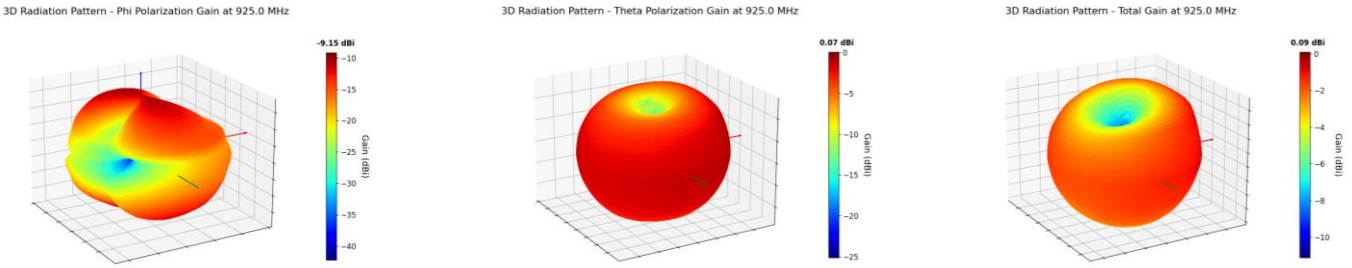

Figure 8: Phi polarization, Theta polarization and, and total gain plots – 925 MHz

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4.4 Efficiency

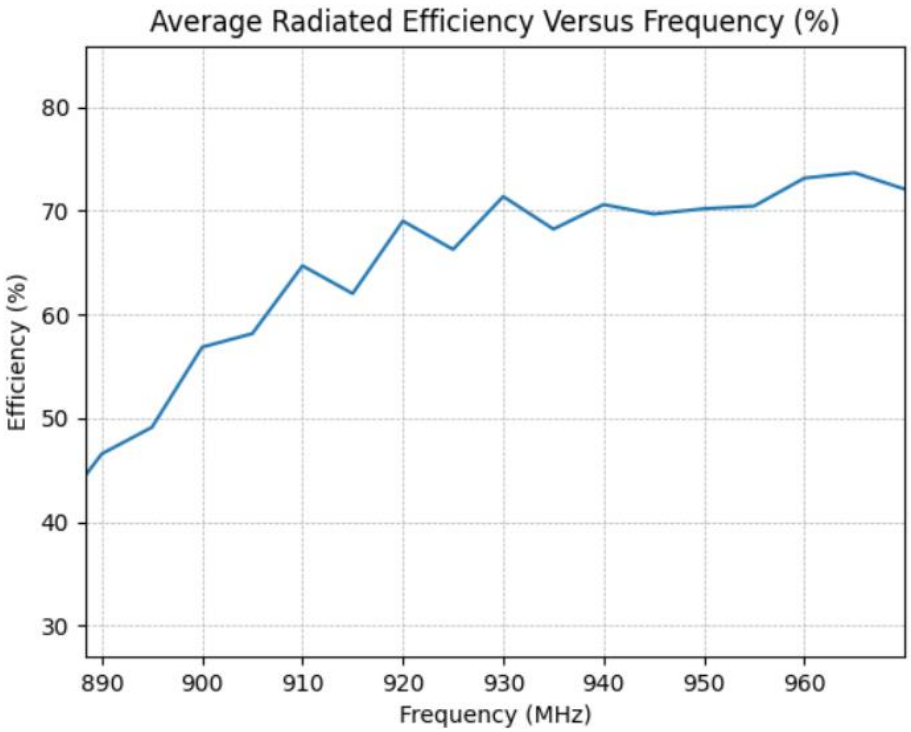

Figure 7: Antenna Efficiency measured in plastic enclosure

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4.5 Antenna Gain

Total Gain vs Frequency (as per IEEE definition)

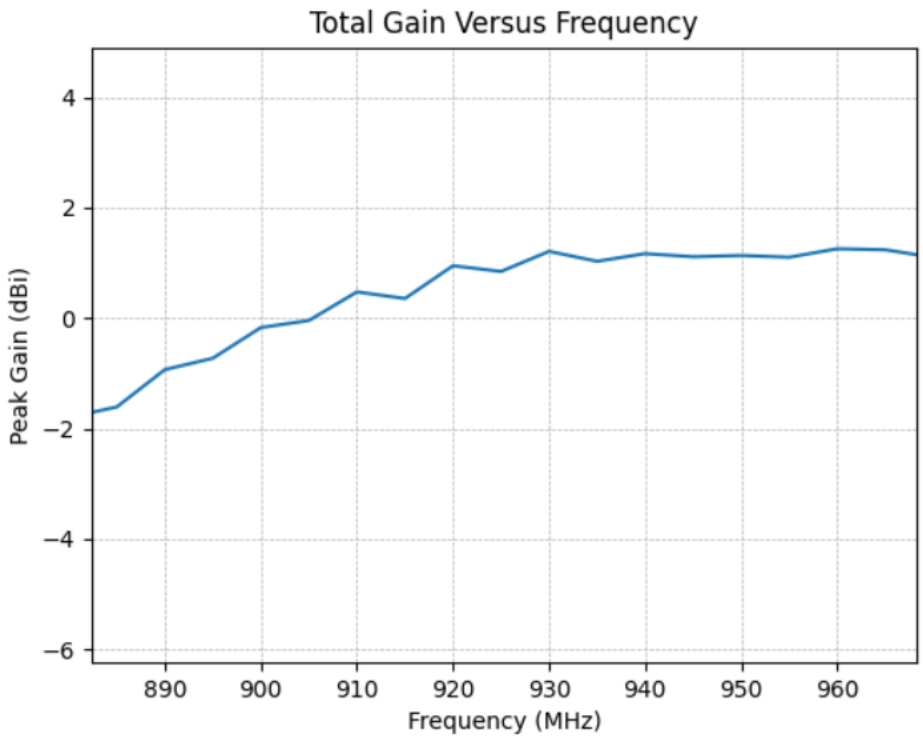

Figure 8: Total Gain vs Frequency, calculated as per the IEEE definition, summing the partial gains from two orthogonal polarizations.

Peak Gain from Theta and Phi Polarization vs Frequency

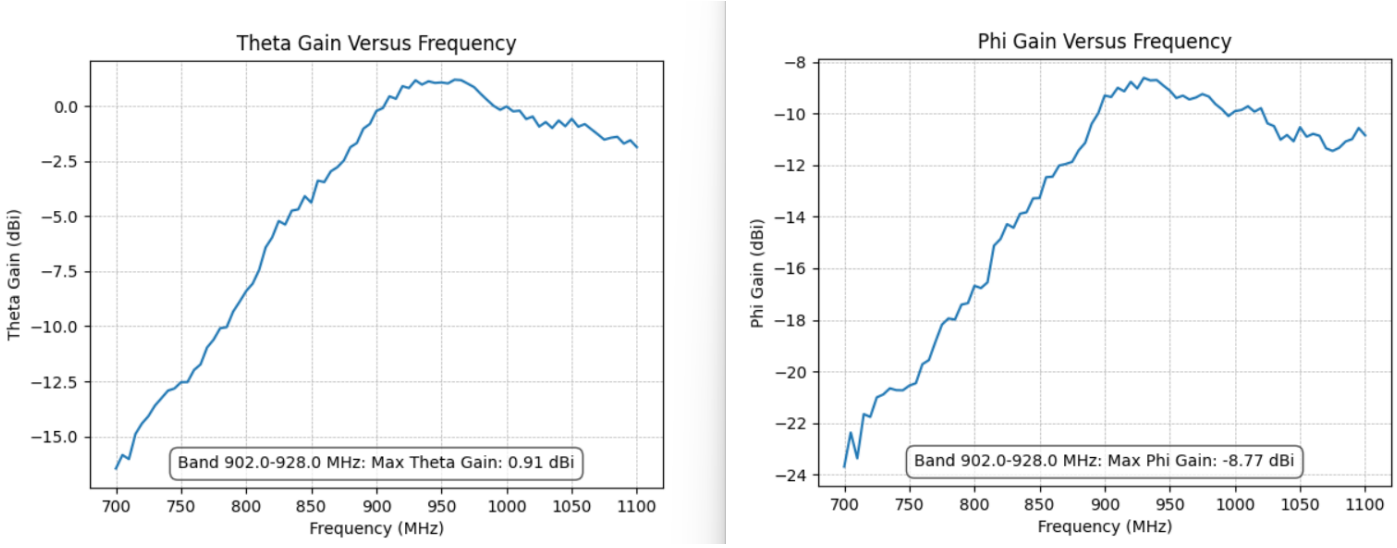

Figure 9: Peak Theta Polarization Gain and Phi Polarization Gain vs Frequency, measured in an ABS enclosure.

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5 Additional Information

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

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