



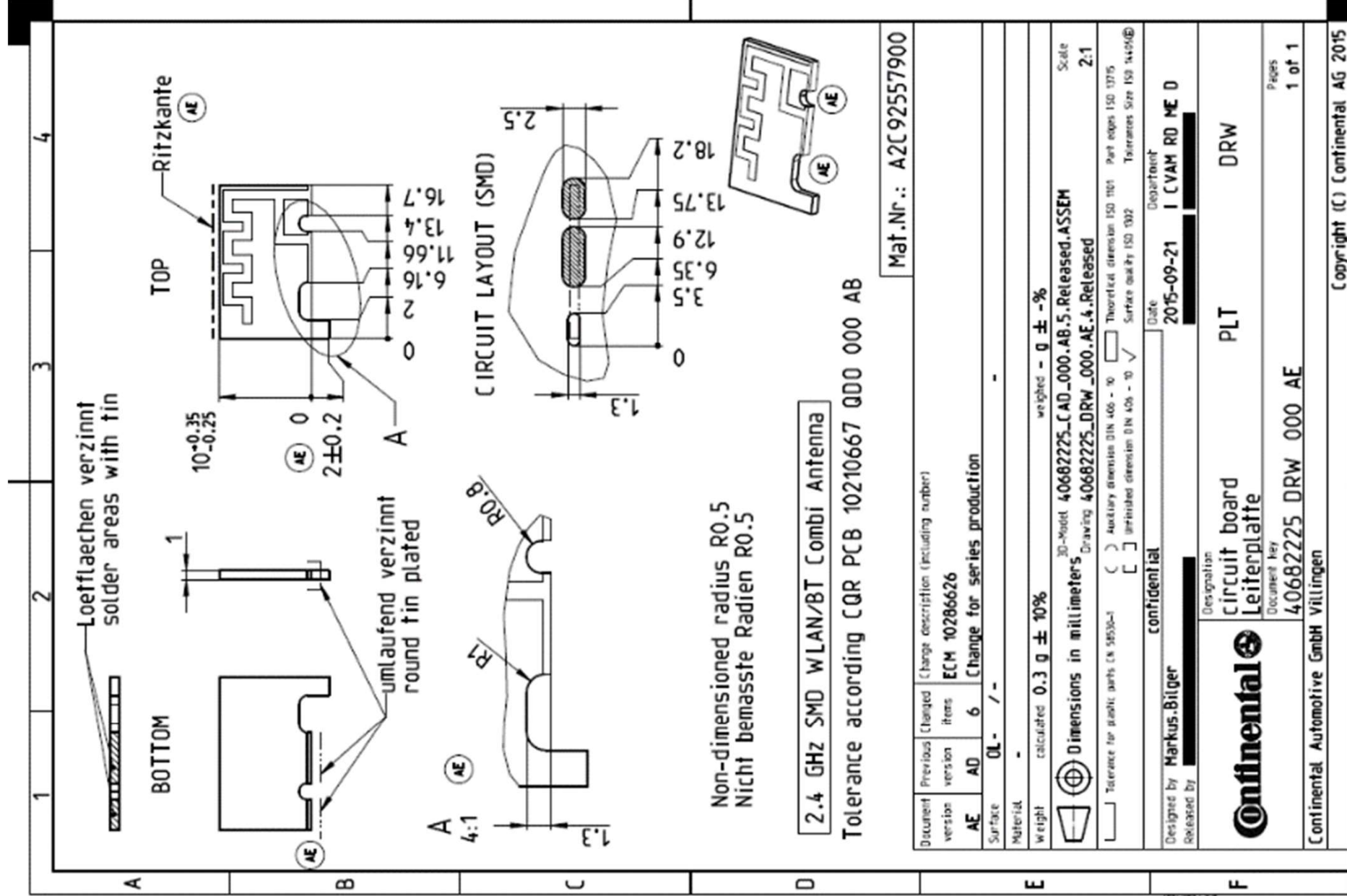
## Zonar TCU

### Internal Bluetooth/WiFi antenna characteristics

Dec 2022

[www.continental-corporation.com](http://www.continental-corporation.com)

Interior Division



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# Bluetooth/WiFi Antenna Position of Antenna in the Device

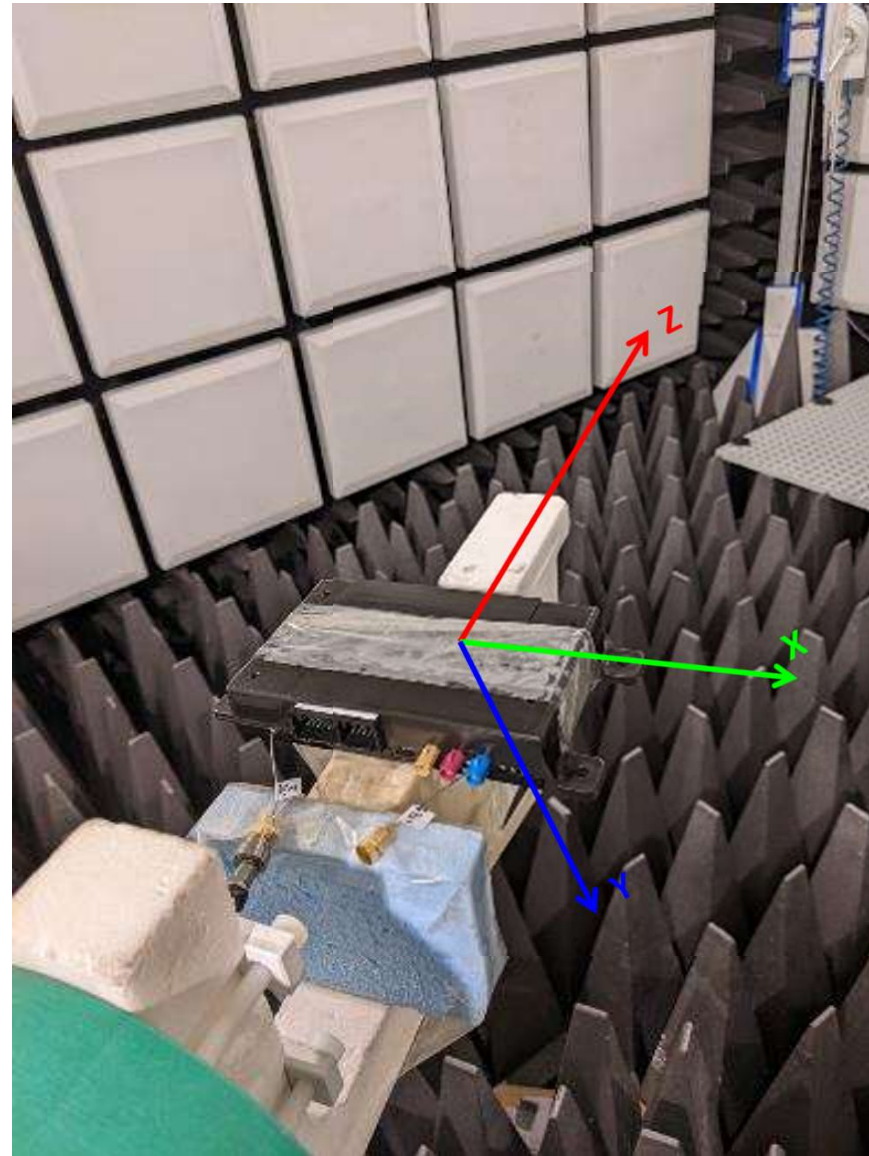
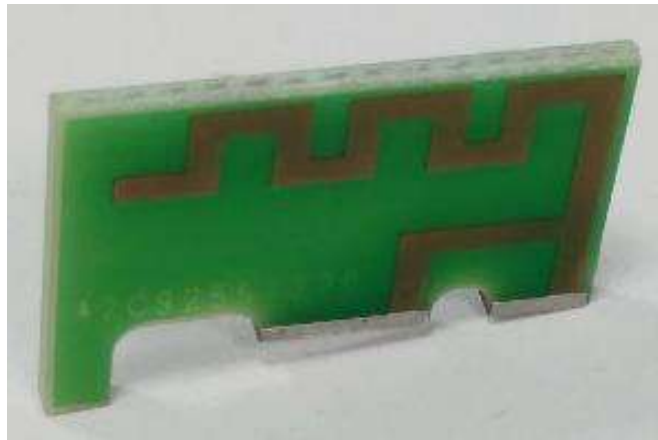


Bluetooth/WiFi antenna Position inside the device (left), Picture of antenna (right)

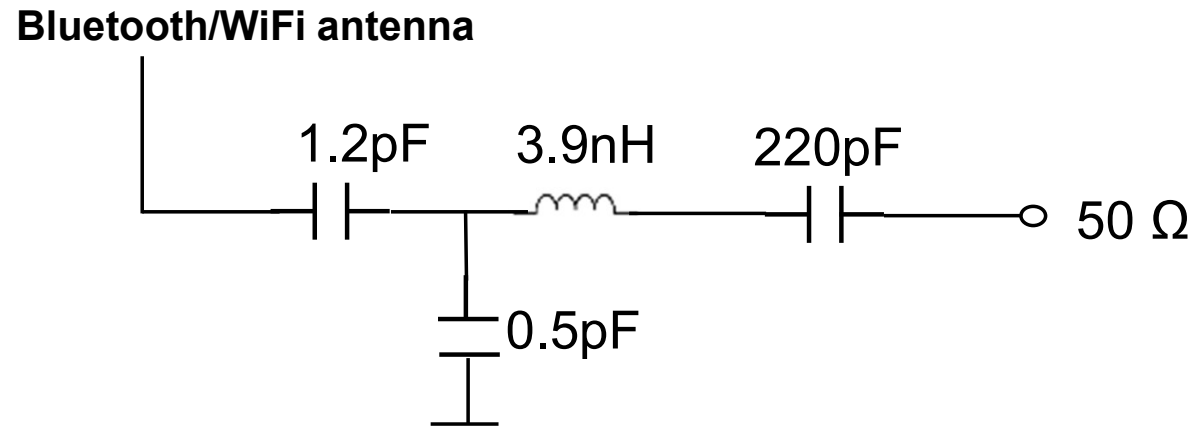


# Anechoic chamber setup

Bluetooth/WiFi Antenna

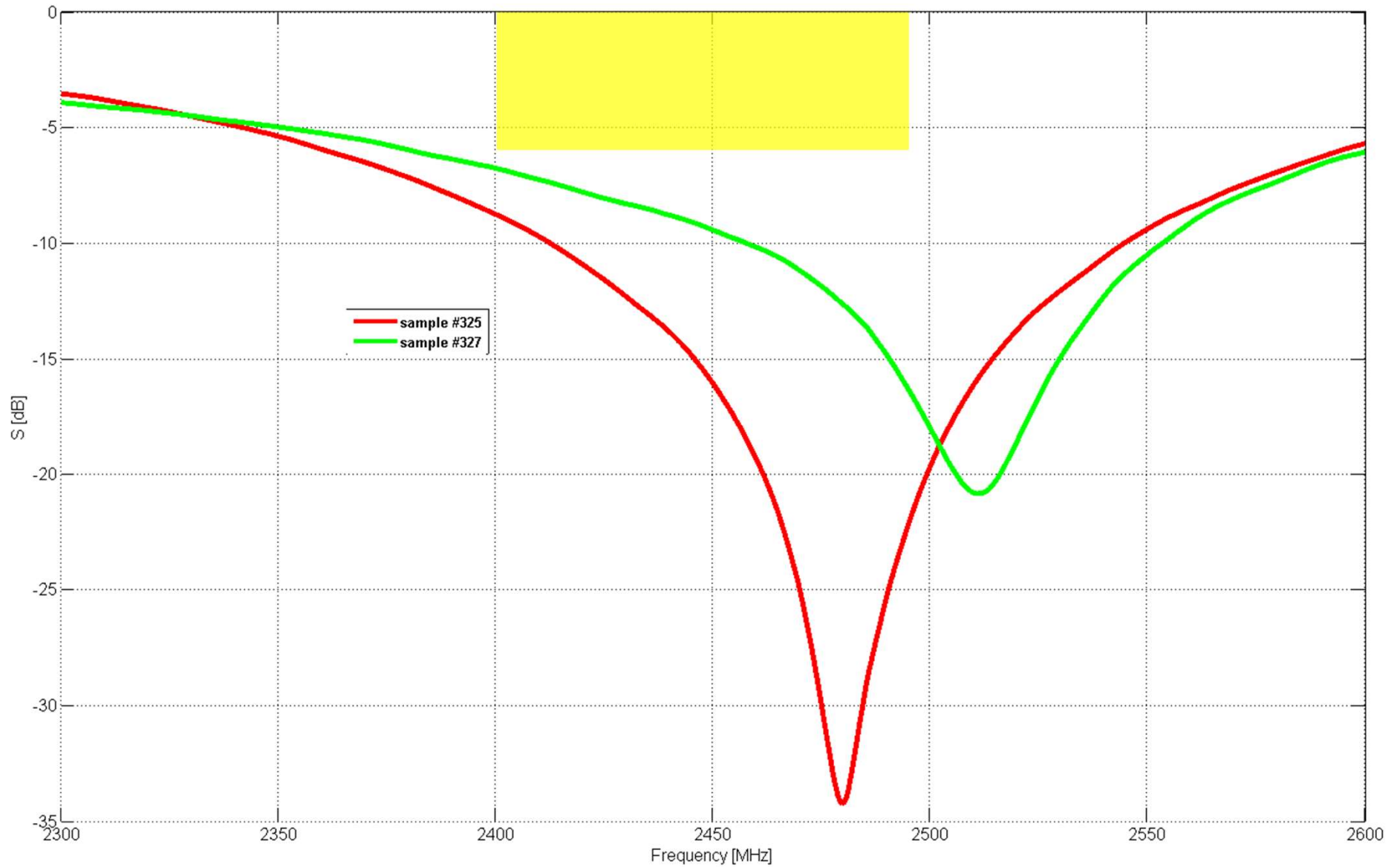


# Bluetooth/WiFi – matching circuit topology

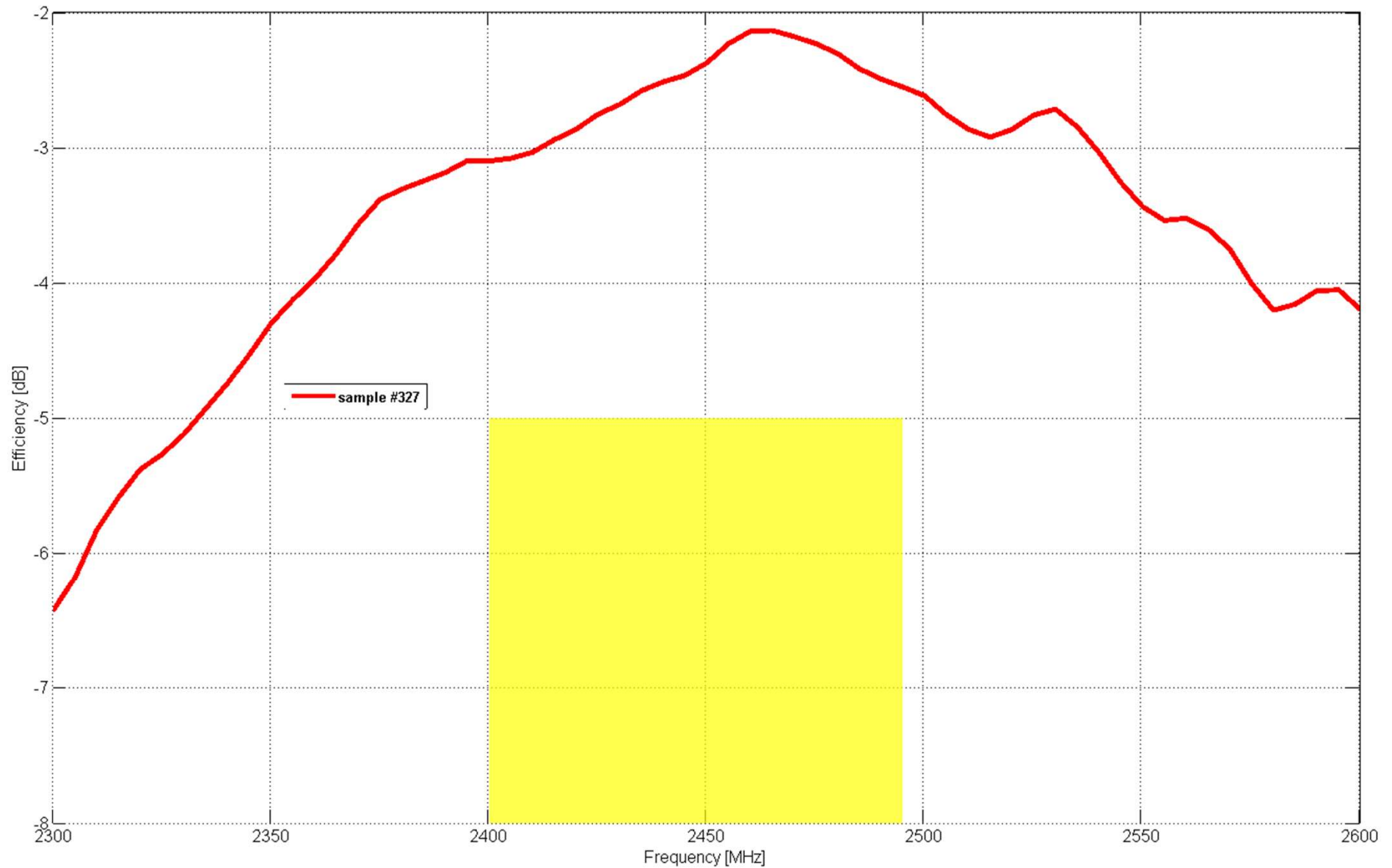


0.5 pF: A2C01778300  
1.2 pF: A2C01778400  
220pF: A2C02373300  
3.9nH: A2C01364600

# Bluetooth/WiFi – Input reflection coefficient

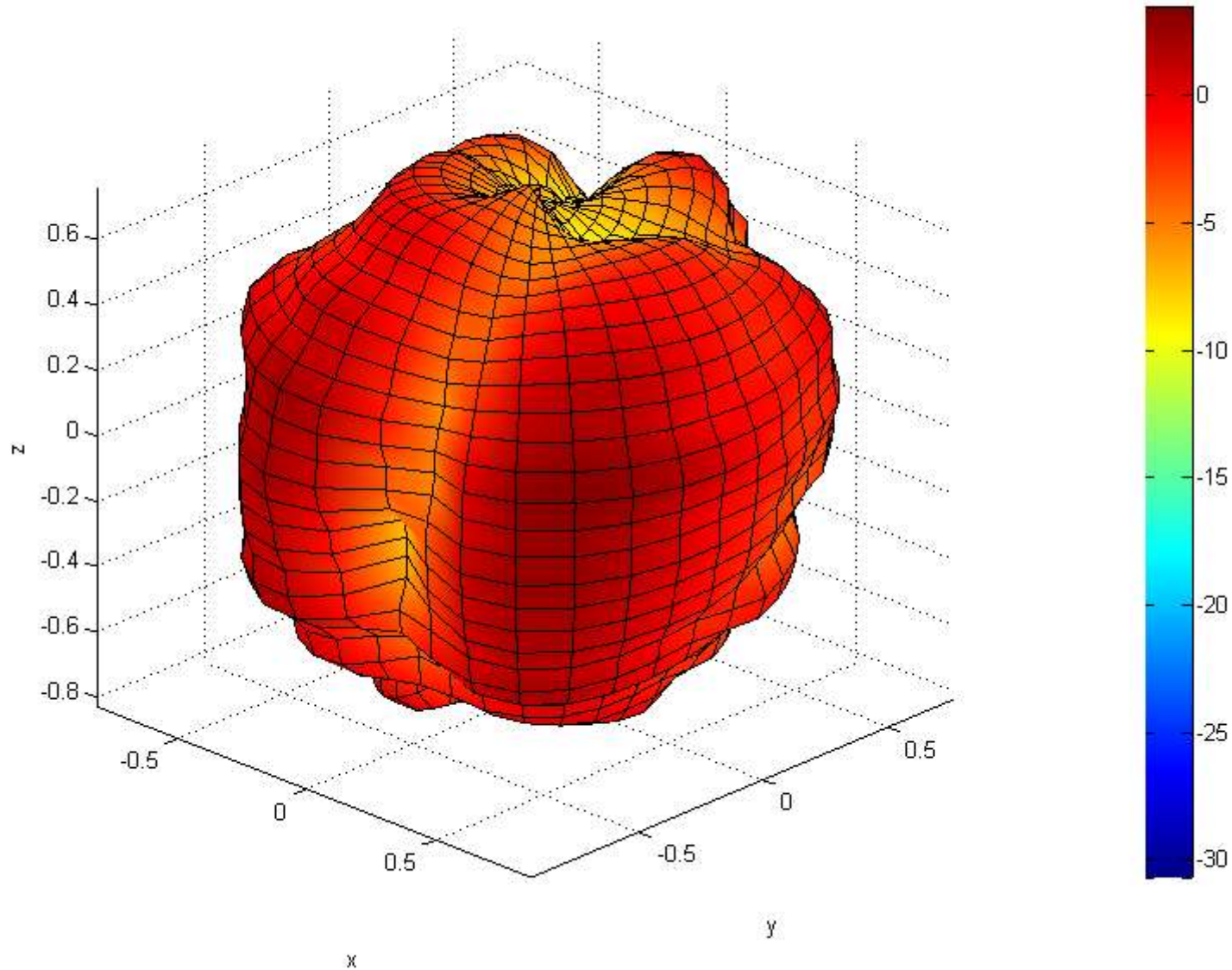


# Bluetooth/WiFi – Radiation Efficiency



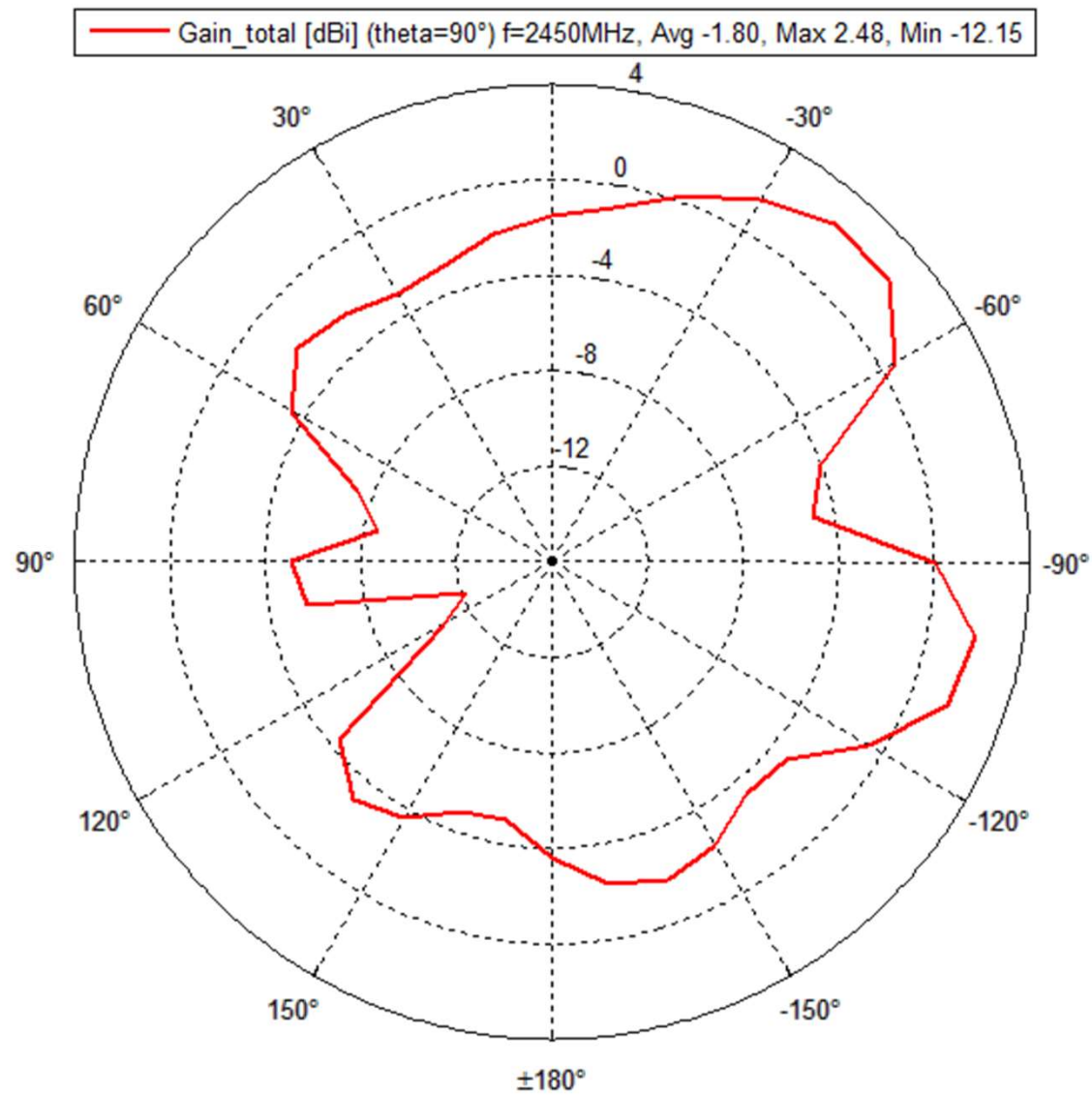
# Bluetooth/WiFi – 3D Total Gain plot

f=2450MHz Gain\_total [dBi] Max: 3.38dBi Min: -30.70dBi Efficiency: 58.26% (-2.3dB) corr: 0.00dB

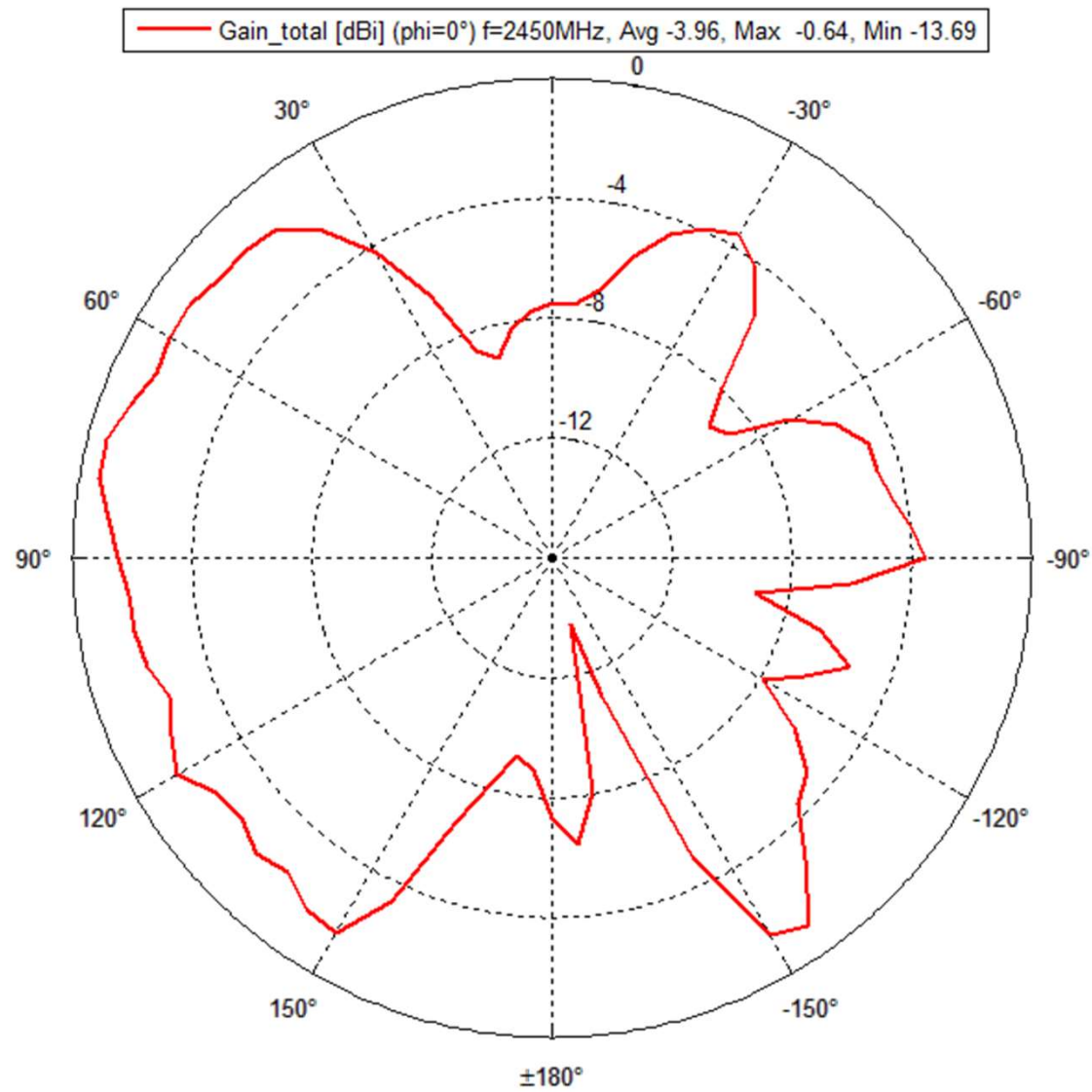




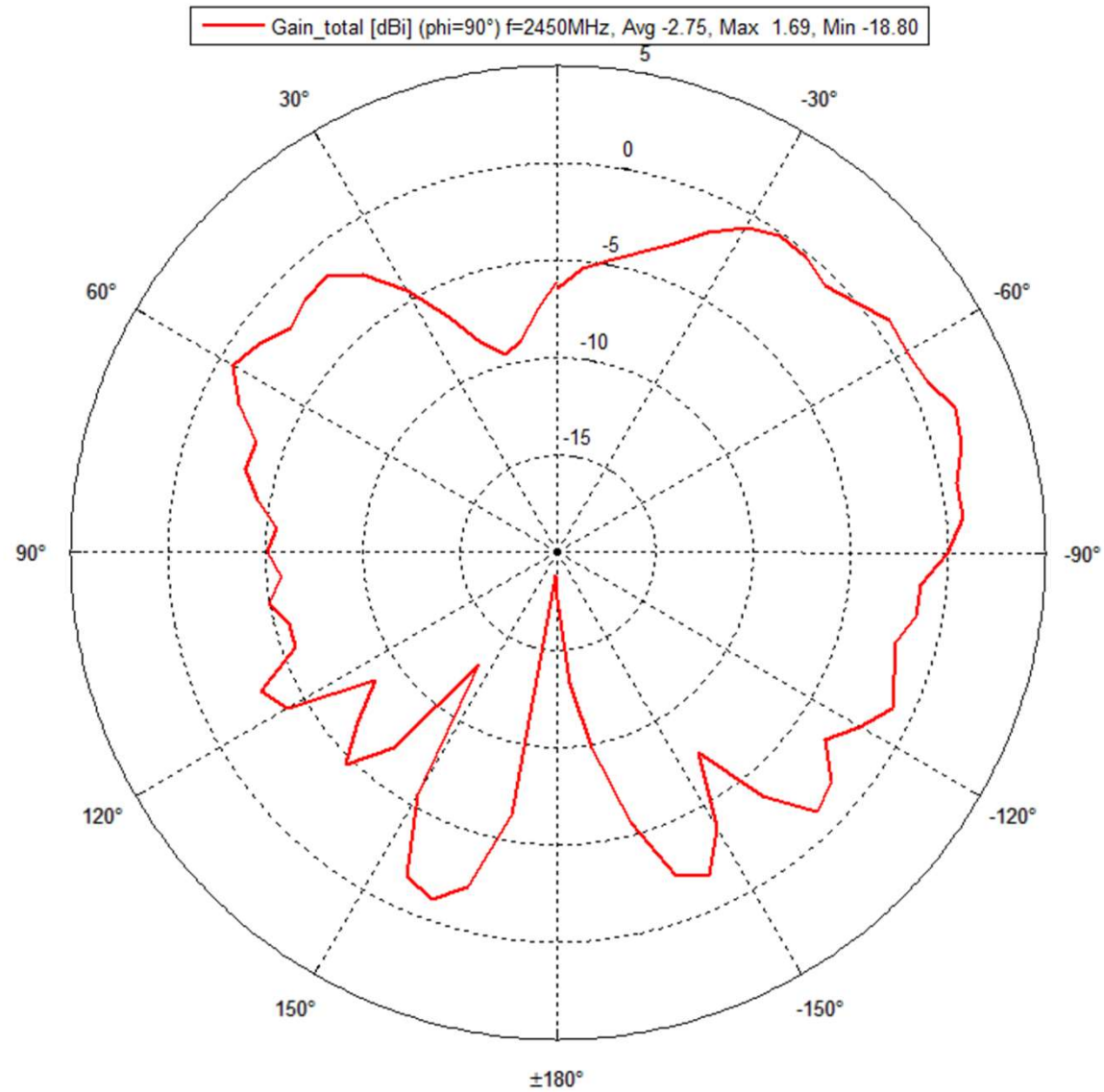
# Bluetooth/WiFi – 2D Total Gain XY plane



# Bluetooth/WiFi – 2D Total Gain XZ plane



# Bluetooth/WiFi – 2D Total Gain YZ plane



# Bluetooth/WiFi – Max & Average gain

Freq [MHz]	Max Gain [dBi]	Avg Gain [dBi]
2400	+2.42	-3.07
2410	+2.37	-3.01
2420	+2.48	-2.84
2430	+2.77	-2.66
2440	+3.1	-2.49
2450	+3.38	-2.35
2460	+3.66	-2.11
2470	+3.37	-2.15
2480	+3.37	-2.28
2490	+3.11	-2.47
2500	+2.73	-2.59