STPMID TCU
Antenna data for certification

Jan 2024

Interior Division

Anechoic chamber setup
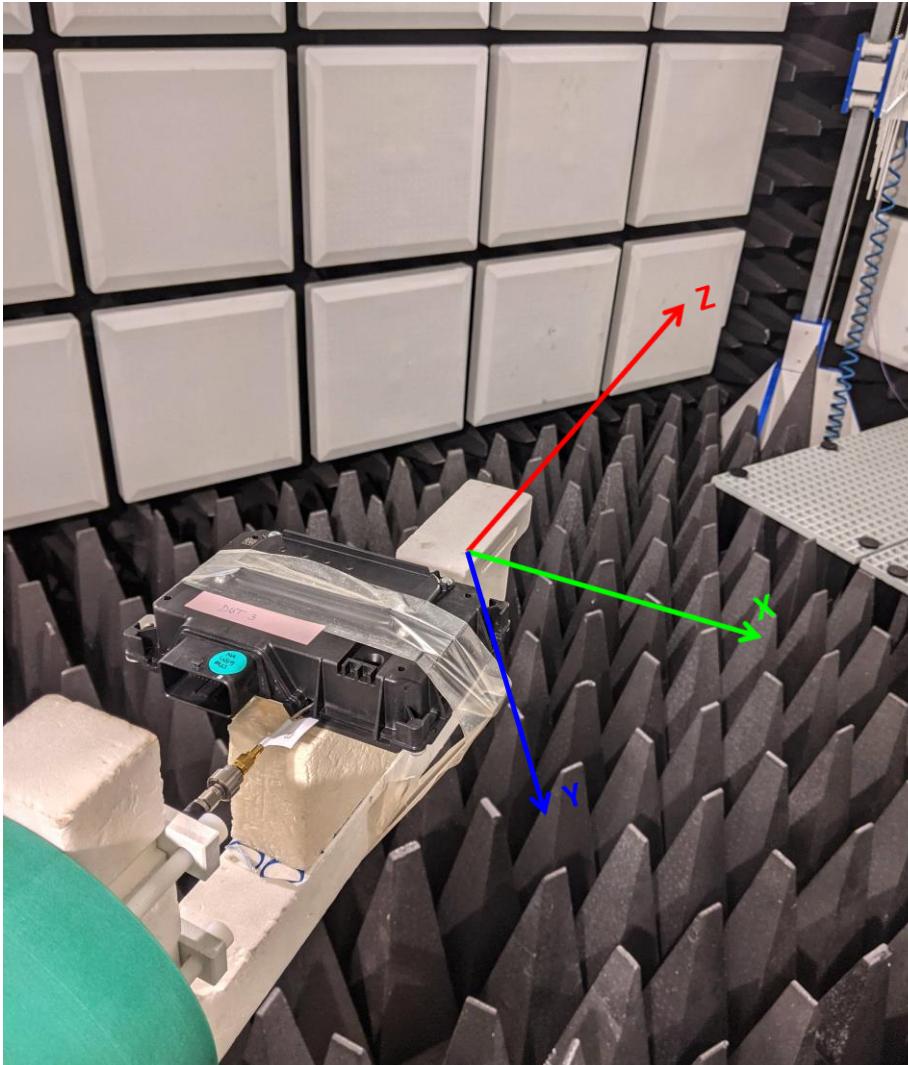
Primary LTE Antenna – Peak Gain values in uplink NA bands

Band	Frequency	Max Gain
LTE Band 2	1850.0 MHz	+4.1 dBi
	1880.0 MHz	+4.2 dBi
	1910.0 MHz	+4.3 dBi
LTE Band 4	1710.0 MHz	+3.8 dBi
	1732.5 MHz	+4.1 dBi
	1755.0 MHz	+4.2 dBi
LTE Band 5	824.0 MHz	+0.2 dBi
	836.5 MHz	+0.1 dBi
	849.0 MHz	0 dBi
LTE Band 7	2500.0 MHz	+3.0 dBi
	2535.0 MHz	+3.1 dBi
	2570.0 MHz	+3.3 dBi
LTE Band 12	699.0 MHz	-0.7 dBi
	707.5 MHz	-0.5 dBi
	716.0 MHz	-0.4 dBi
LTE Band 13	777.0 MHz	-0.5 dBi
	782.0 MHz	-0.4 dBi
	787.0 MHz	-0.1 dBi
LTE Band 17	704.0 MHz	-0.7 dBi
	710.0 MHz	-0.4 dBi
	716.0 MHz	-0.2 dBi

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Internal

Bluetooth antenna – Peak Gain values

Band	Frequency	Peak Gain
2.4 – 2.48 GHz	2400 MHz	+2.5 dBi
	2410 MHz	+2.7 dBi
	2420 MHz	+2.8 dBi
	2430 MHz	+2.7 dBi
	2440 MHz	+2.7 dBi
	2450 MHz	+2.7 dBi
	2460 MHz	+2.5 dBi
	2470 MHz	+2.2 dBi
	2480 MHz	+2.3 dBi

GNSS antenna – Peak Gain values

Band	Frequency	Peak Gain
GPS/ GALILEO	1560 MHz	+1.4 dBi
	1570 MHz	+1.9 dBi
	1575 MHz	+2.0 dBi
	1580 MHz	+1.8 dBi
	1585 MHz	+1.6 dBi
	1590 MHz	+1.2 dBi
GLONASS	1595 MHz	+0.8 dBi
	1600 MHz	+0.5 dBi
	1605 MHz	+0.5 dBi
	1610 MHz	+0.3 dBi

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Internal

WiFi/Bluetooth 3D/2D Total Gain @2.40GHz

C1_S#5_H1_WiFi_2021_05_21_13_41_48_a3Ds21data
f=2400MHz Gain_total [dBi] Max: 2.51dBi Min: -24.11dBi Efficiency: 39.07% (-4.1dB) corr: 0.00dB
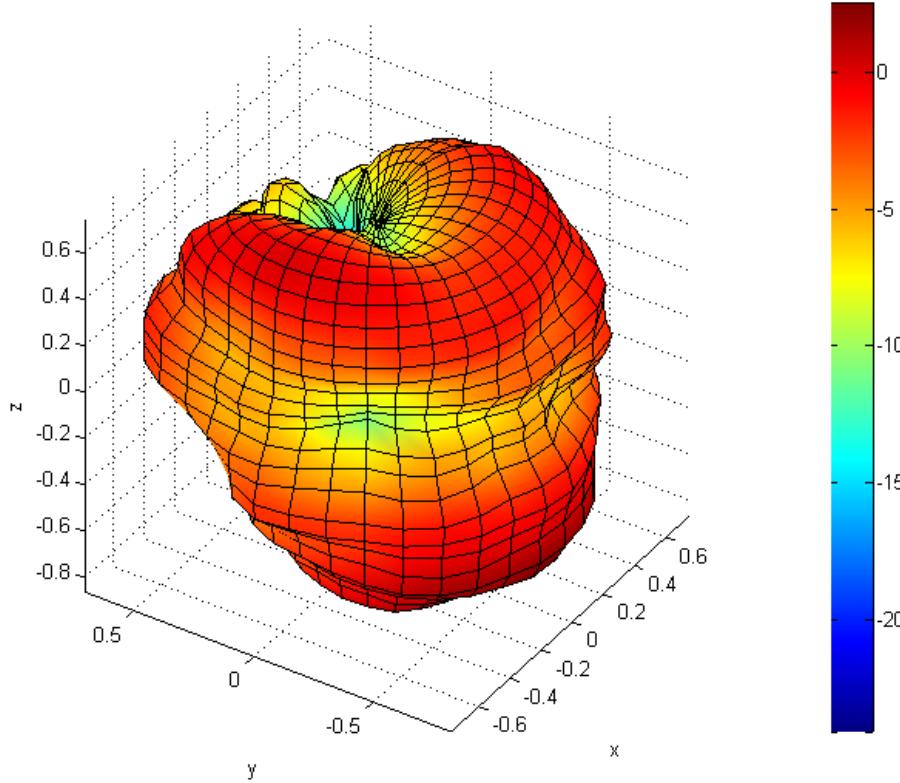
Gain_total [dBi] (theta=90°) f=2400MHz, Avg -5.53, Max -2.17, Min -13.99
Gain_total [dBi] (phi=0°) f=2400MHz, Avg -4.69, Max 0.20, Min -15.49
Gain_total [dBi] (phi=90°) f=2400MHz, Avg -3.67, Max 2.49, Min -16.35
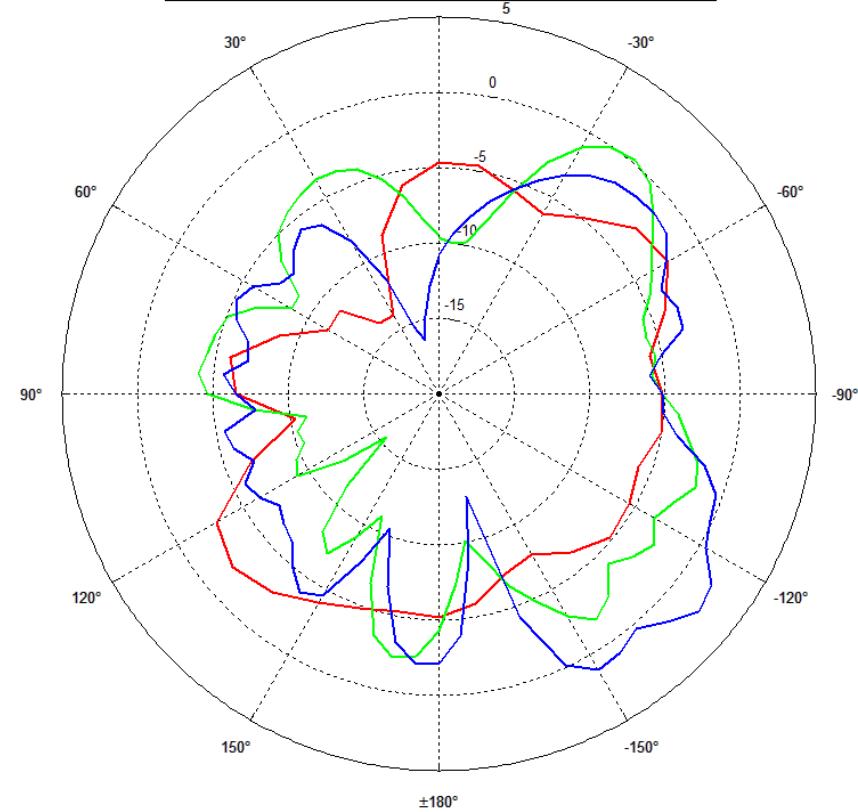
WiFi/Bluetooth 3D/2D Total Gain @2.44GHz

C1_S#5_H1_WiFi_2021_05_21_13_41_48_a3Ds21data
f=2440MHz Gain_total [dBi] Max: 2.70dBi Min: -26.29dBi Efficiency: 42.07% (-3.8dB) corr: 0.00dB
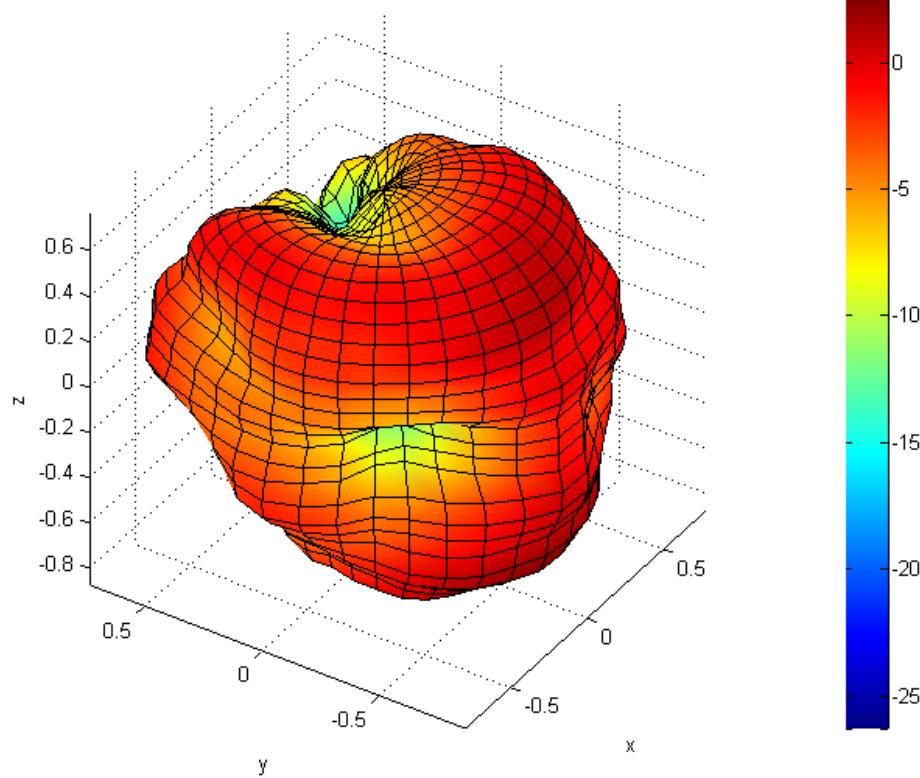
Gain_total [dBi] (theta=90°) f=2440MHz, Avg -4.82, Max -1.27, Min -16.10
Gain_total [dBi] (phi=0°) f=2440MHz, Avg -4.78, Max -1.06, Min -14.72
Gain_total [dBi] (phi=90°) f=2440MHz, Avg -2.73, Max 2.64, Min -14.76

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Internal
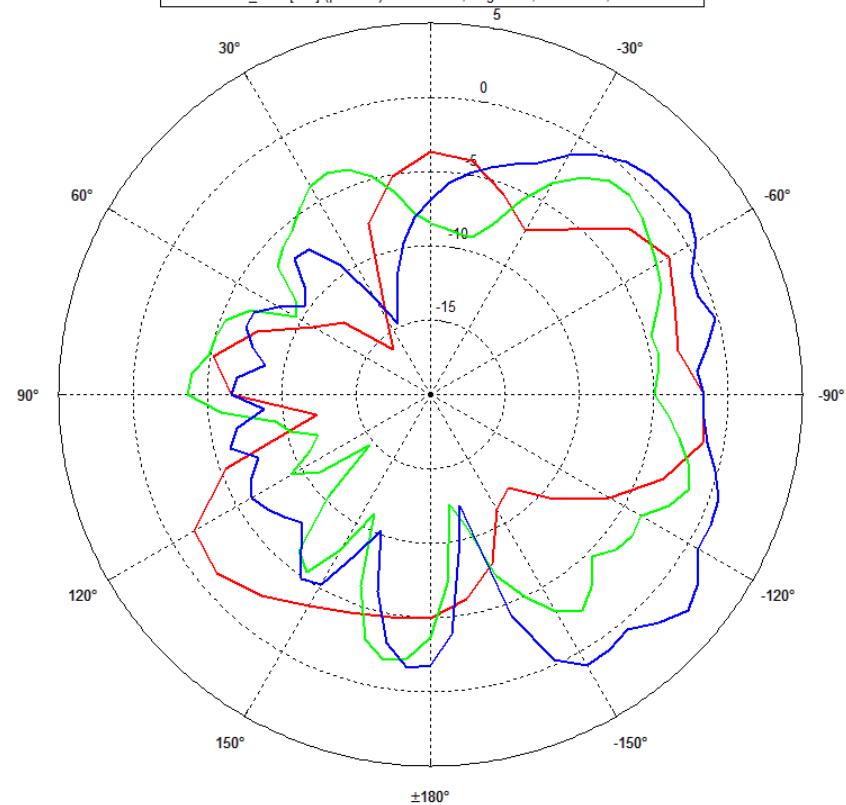
WiFi/Bluetooth 3D/2D Total Gain @2.48GHz

C1_S#5_H1_WiFi_2021_05_21_13_41_48_a3Ds21data
f=2480MHz Gain_total [dBi] Max: 2.34dBi Min: -20.17dBi Efficiency: 37.13% (-4.3dB) corr: 0.00dB
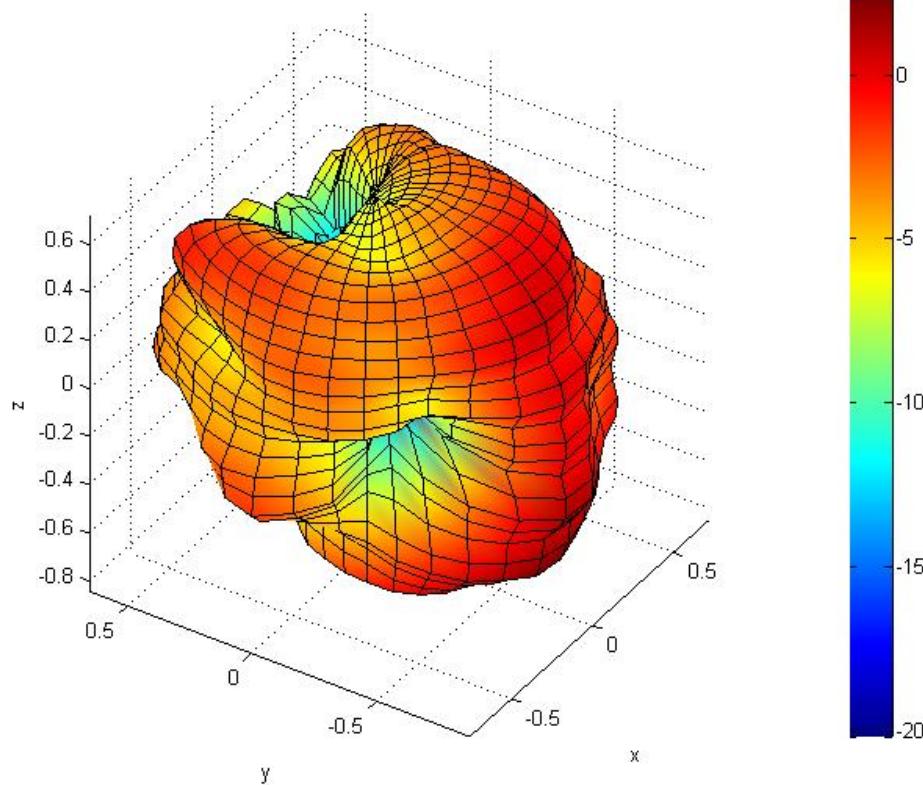
Gain_total [dBi] (theta=90°) f=2480MHz, Avg -4.80, Max 0.10, Min -14.99
Gain_total [dBi] (phi=0°) f=2480MHz, Avg -5.20, Max -1.52, Min -18.51
Gain_total [dBi] (phi=90°) f=2480MHz, Avg -2.93, Max 2.34, Min -20.17

Internal