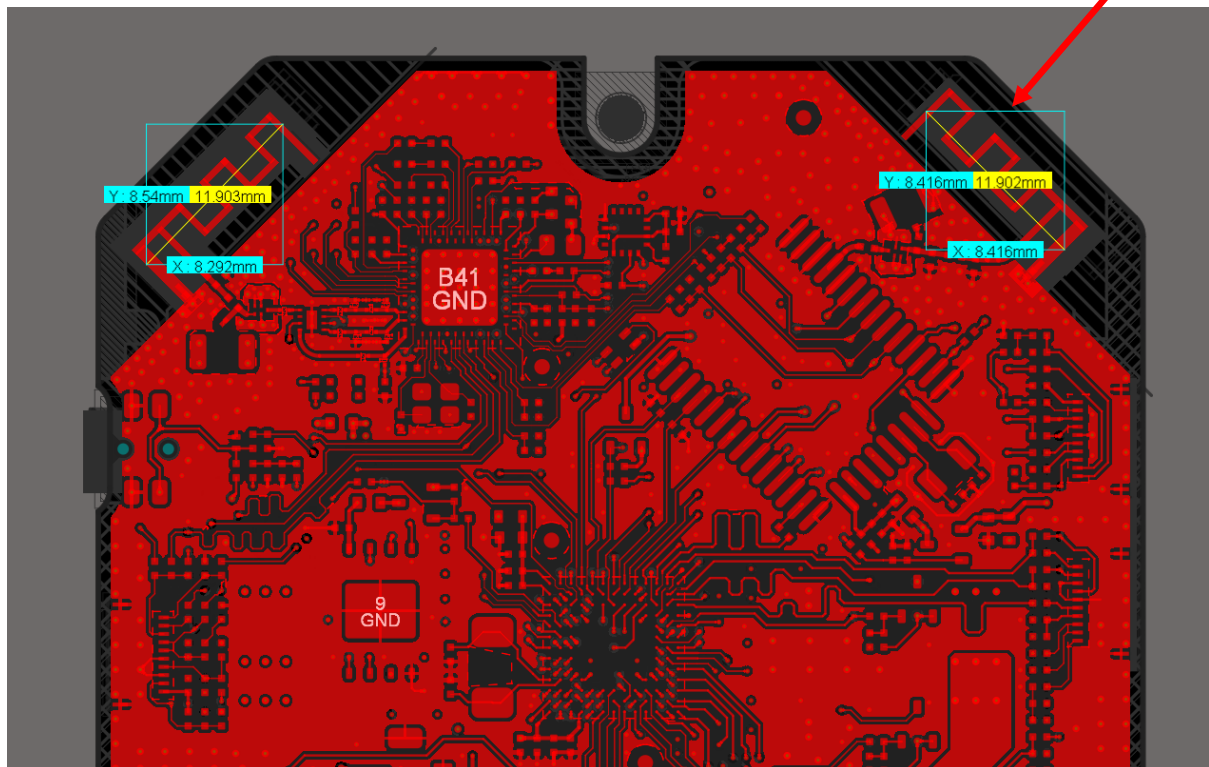


BLE/THREAD Antenna Dimensions

BLE/THREAD



BLE/THREAD Antenna Size of XY: 11.902mm with X-axis: 8.416mm & Y-axis: 8.416mm

BLE/THREAD Antenna Study

Date: November 12, 2024

Location: Willow Run Test Labs., Inc.

Engineer: John Nantz

Equipment:

Description	Manufacturer	Calibration Info.
Semi-anechoic Tapered Chamber	Willow Run Test Labs., Inc.	On use
FSV30 Signal Analyzer	Rohde & Schwarz	April 2025
Quad Ridge Horn	Singer A6100	August 2025
CAB018WHT 3.5mm Coax	WRTL	March 2025

Max gain: Horizontal Polarization: 3.3 dBi, Vertical Polarization: 0.9 dBi

YX Cut



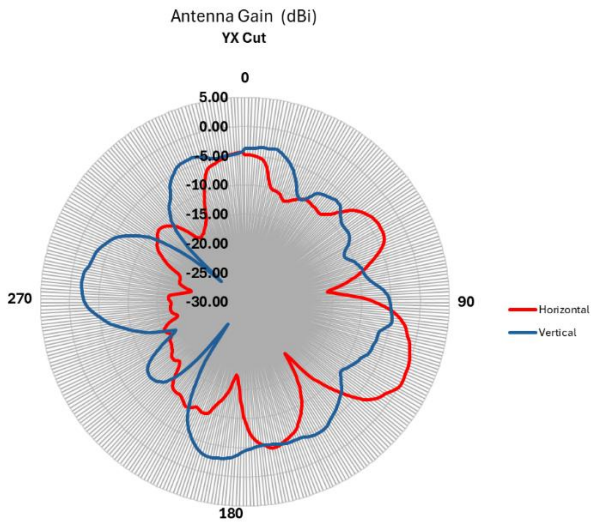
YZ Cut



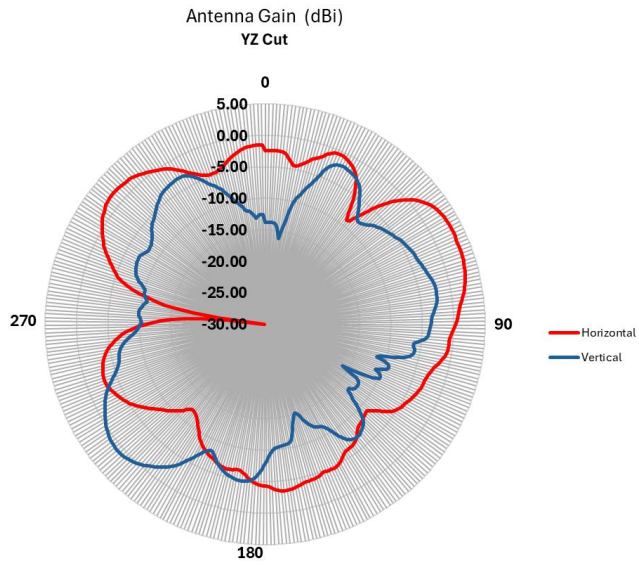
ZX Cut



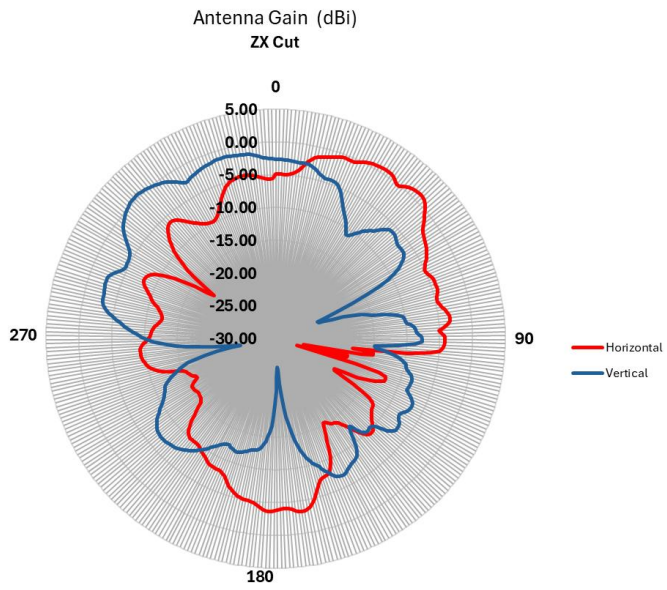
Parameter	Gain (dBi)	
	Horizontal	Vertical
Min	-20.69	-25.20
Max	0.23	-1.89

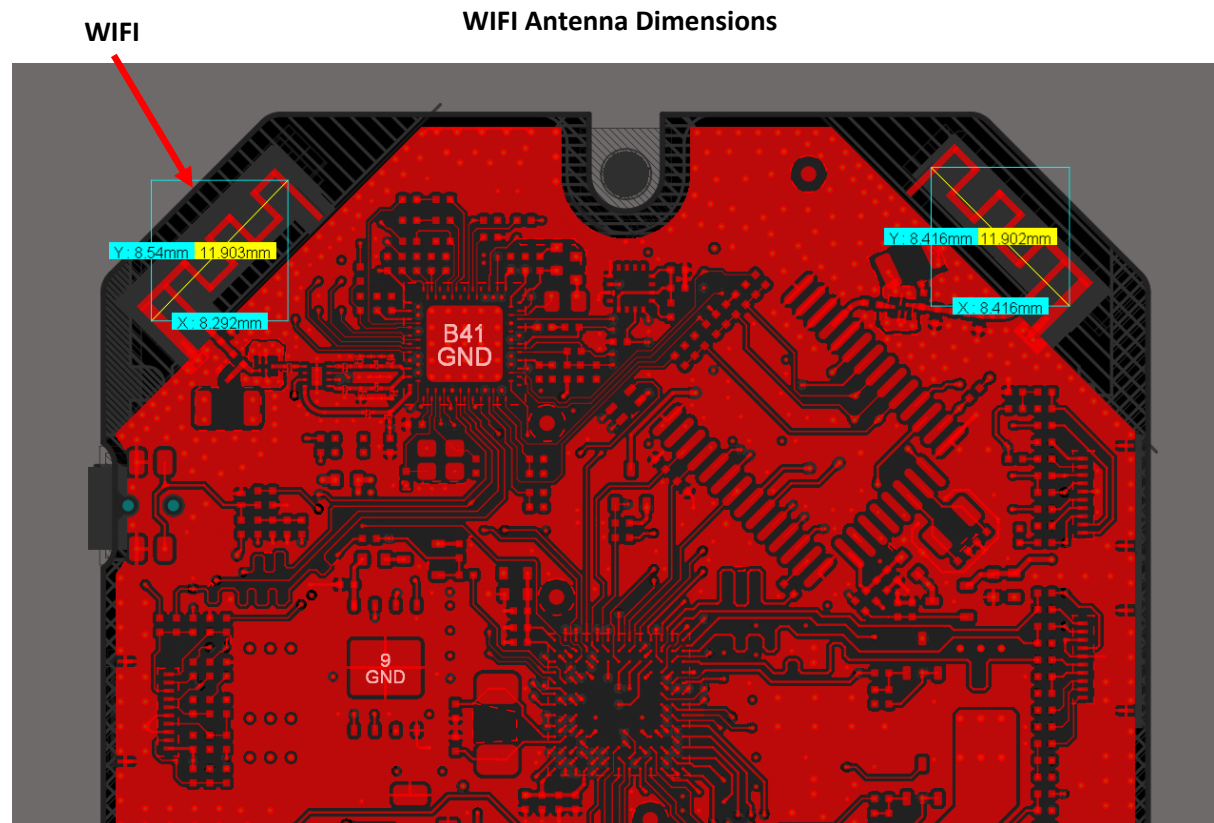


Parameter	Gain (dBi)	
	Horizontal	Vertical
Min	-29.84	-16.20
Max	3.33	0.87



Parameter	Gain (dBi)	
	Horizontal	Vertical
Min	-26.57	-25.64
Max	1.15	0.53





WIFI Antenna size of XY: 11.903mm with X axis: 8.292mm & Y-axis: 8.54mm

WIFI Antenna Study

Date: November 12, 2024

Location: Willow Run Test Labs., Inc.

Engineer: John Nantz

Equipment:

Description	Manufacturer	Calibration Info.
Semi-anechoic Tapered Chamber	Willow Run Test Labs., Inc.	On use
FSV30 Signal Analyzer	Rohde & Schwarz	April 2025
Quad Ridge Horn	Singer A6100	August 2025
CAB018WHT 3.5mm Coax	WRTL	March 2025

Max gain: Horizontal Polarization: -0.6 dBi, Vertical Polarization: 1.5 dBi

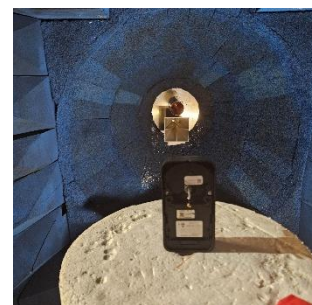
YX Cut



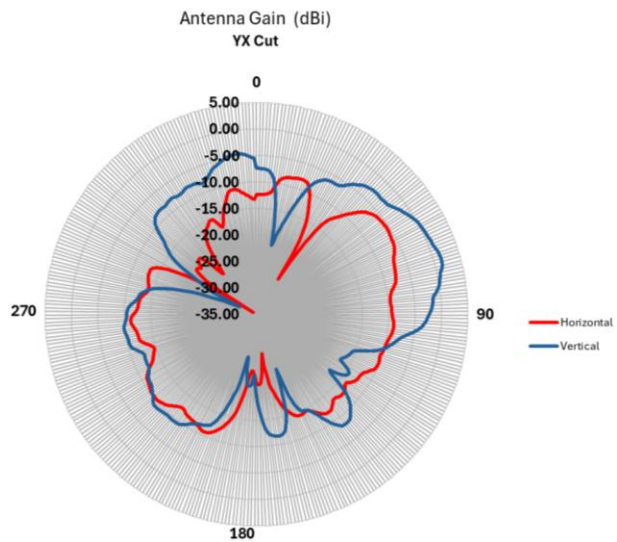
YZ Cut



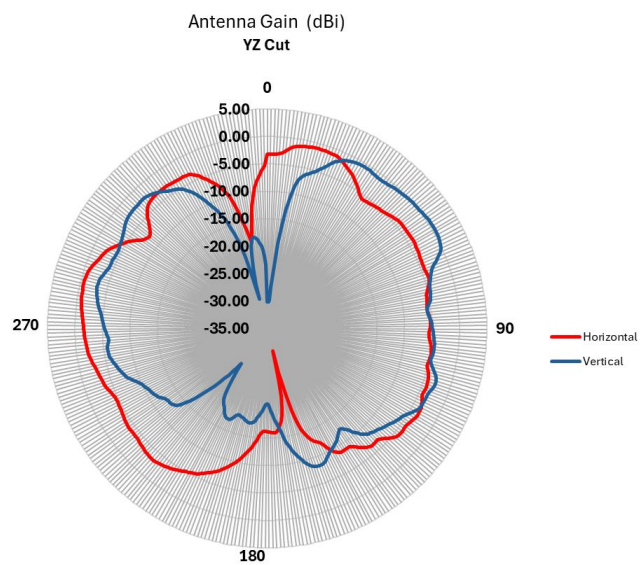
ZX Cut



Parameter	Gain (dBi)	
	Horizontal	Vertical
Min	-34.28	-31.56
Max	-5.48	1.51



Parameter	Gain (dBi)	
	Horizontal	Vertical
Min	-30.83	-30.11
Max	-0.58	0.48



Parameter	Gain (dBi)	
	Horizontal	Vertical
Min	-35.03	-32.21
Max	-0.72	-1.78

