

Ring Scanner BT Antenna Performance Report

Model: RingScanner_BT_Antenna_FPC_Amphenol
Antenna type: PIFA

2023/04/27

James

Amphenol

Outline

- Description for Antenna Environment
 - BT Antenna of Mockup Test Fixture
- Antenna Performance
 - Return Loss
 - Efficiency & Peak Gain
 - 2D Radiation Pattern
- Conclusion

Antenna Photos

Antenna type: PIFA

Free Space



Scanner



With hand

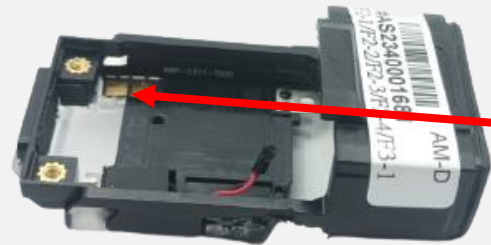
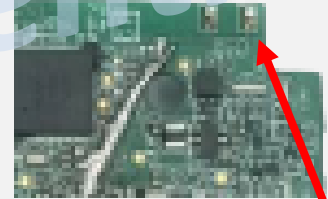
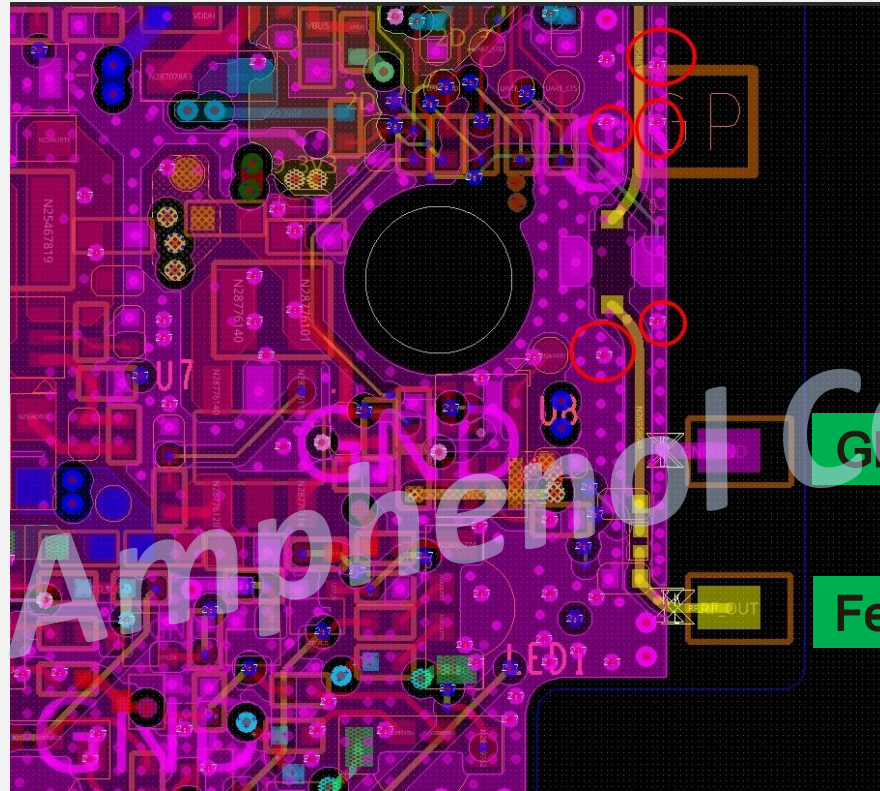


BT antenna



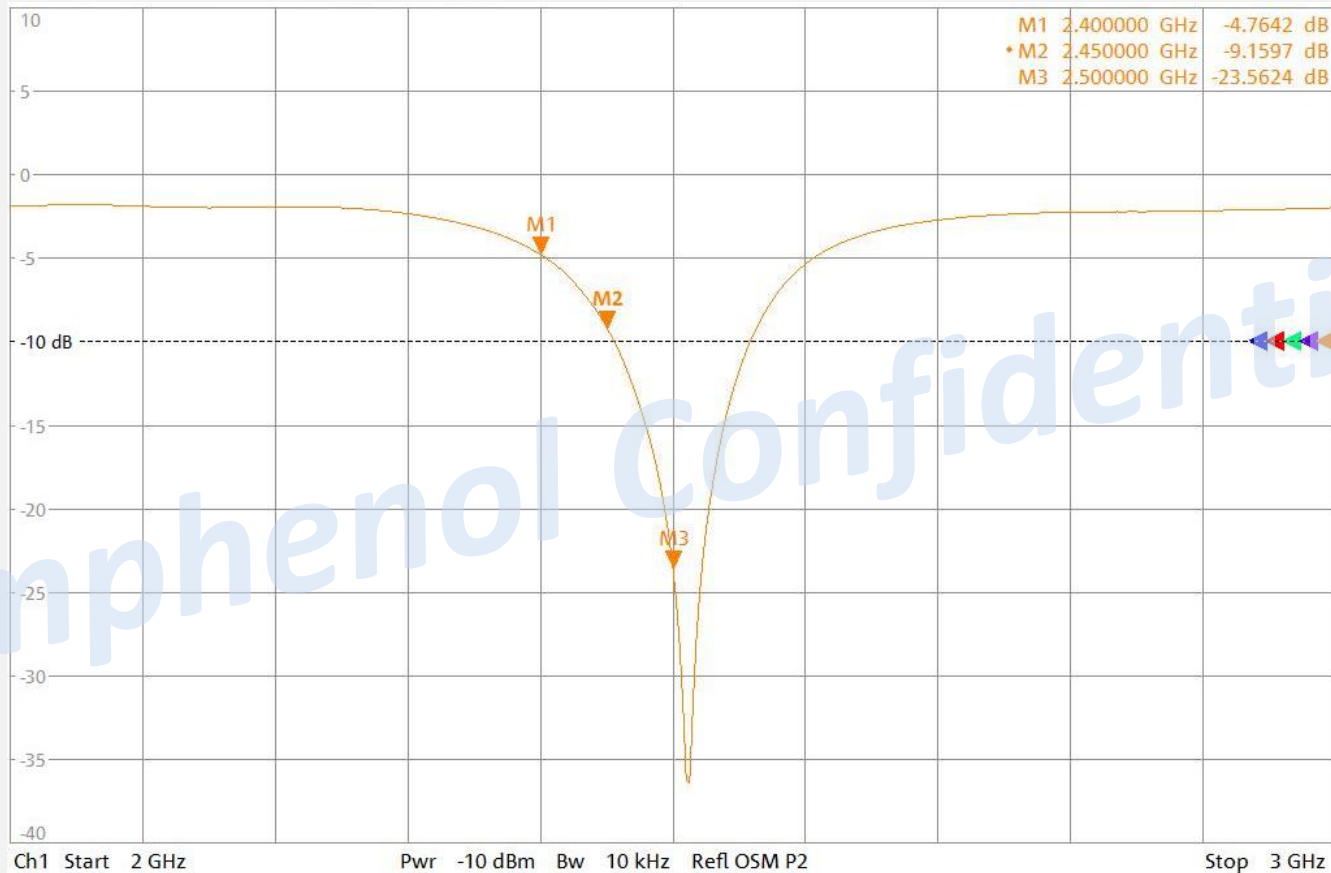
Battery

Antenna Photos

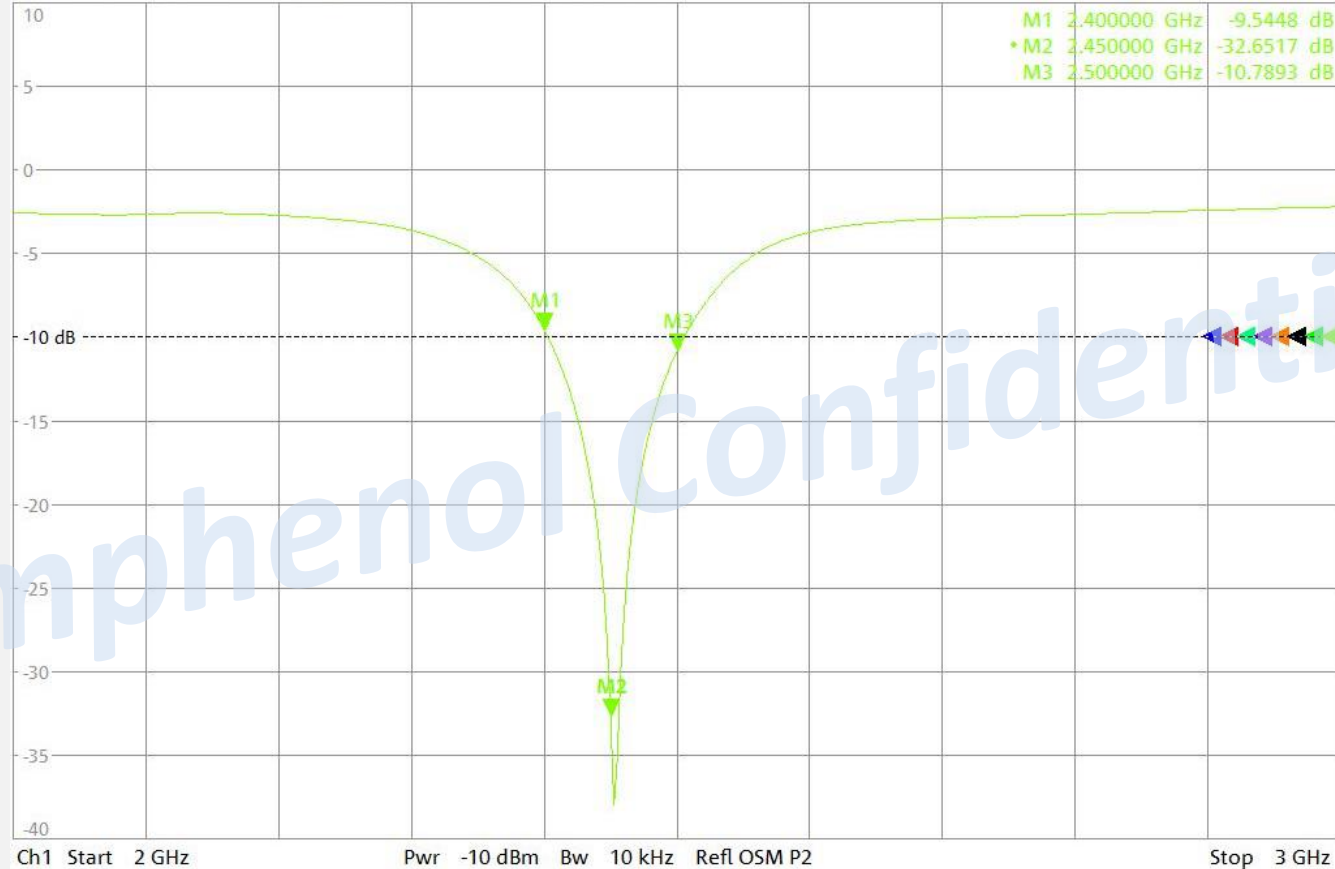


Connect

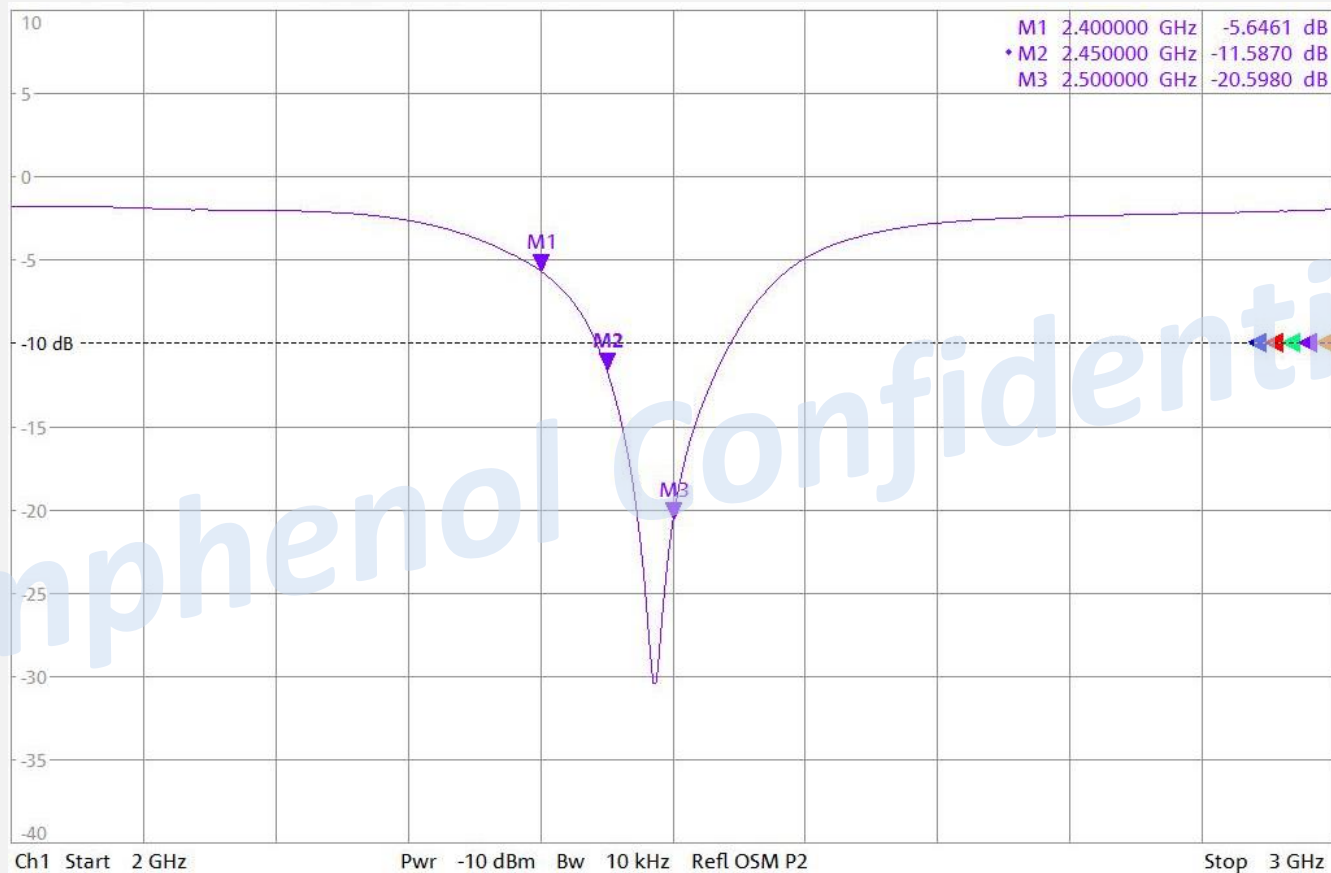
Return Loss: Original (Free Space)



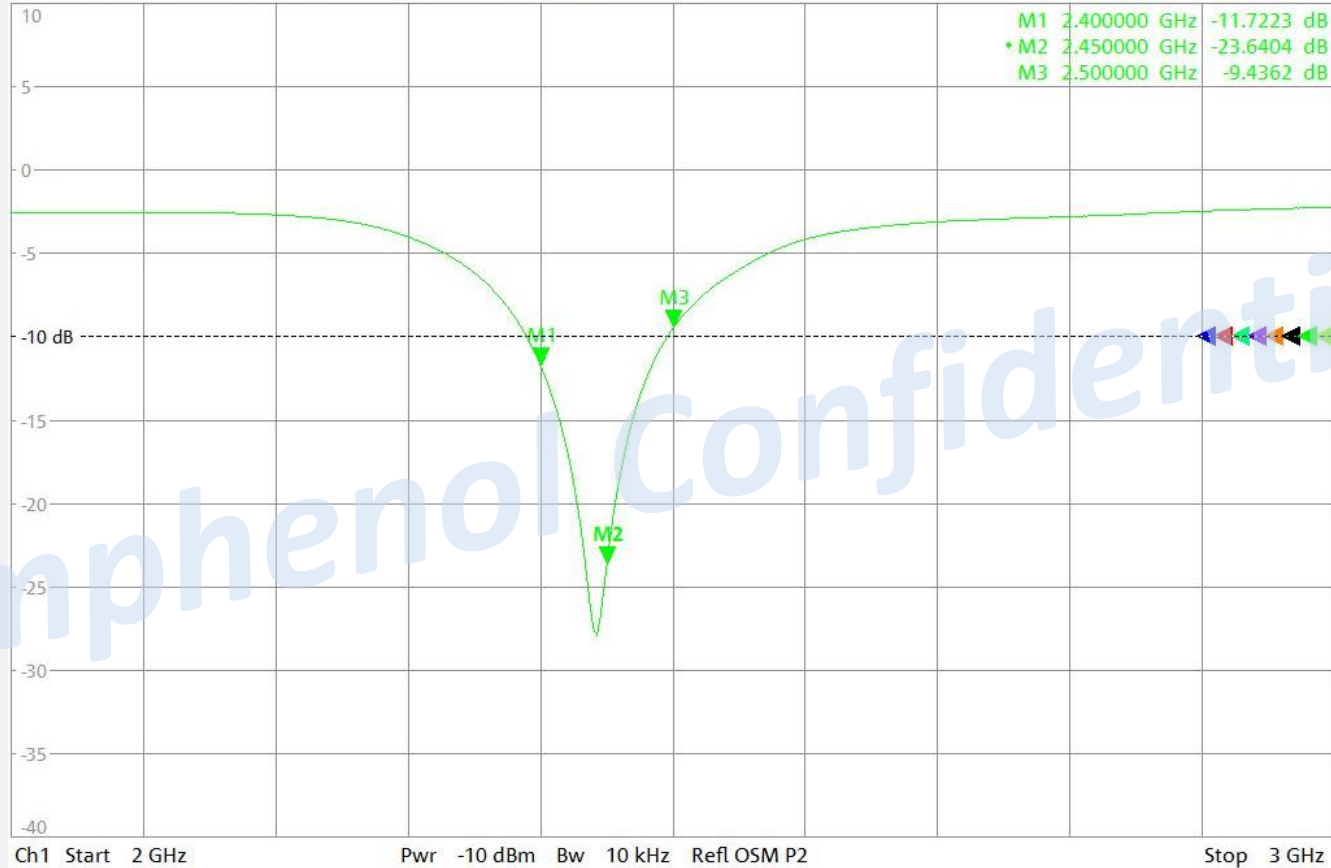
Return Loss: Retune (Free Space)



Return Loss: Original (With Hand)



Return Loss: Retune (With Hand)



Efficiency & Peak Gain

	Original (Free Space)			Retune (Free Space)		
Frequency(MHz)	Efficiency (dB)	Efficiency (%)	Peak Gain (dBi)	Efficiency (dB)	Efficiency (%)	Peak Gain (dBi)
2400	-6.35	23.12	-1.77	-5.55	27.84	-1.49
2412	-6.36	23.11	-2.39	-5.62	27.38	-1.75
2442	-4.84	32.75	-0.21	-5.10	30.88	-1.14
2450	-4.98	31.70	-0.57	-5.38	28.95	-0.99
2484	-4.72	33.72	-0.75	-5.95	25.42	-1.78
2500	-4.62	34.46	-0.15	-5.81	26.26	-1.94

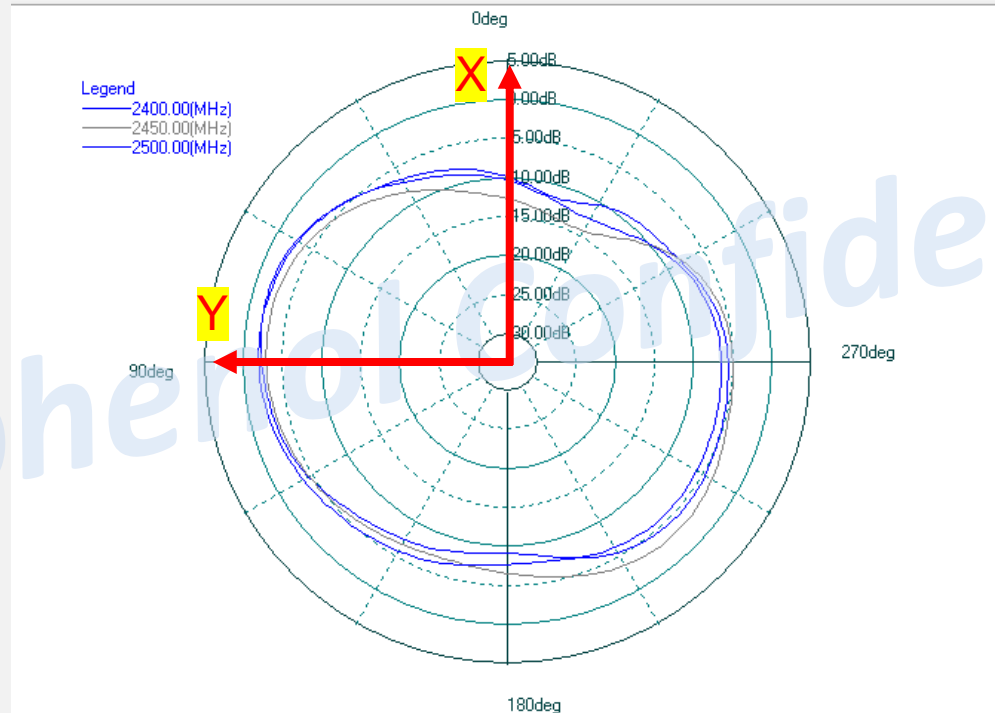
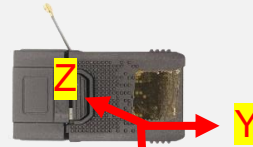
Efficiency & Peak Gain

	Original (With Hand)			Retune (With Hand)		
Frequency(MHz)	Efficiency (dB)	Efficiency (%)	Peak Gain (dBi)	Efficiency (dB)	Efficiency (%)	Peak Gain (dBi)
2400	-8.87	12.97	-4.85	-7.41	18.13	-2.20
2412	-8.71	13.43	-4.23	-7.49	17.83	-2.48
2442	-7.18	19.14	-1.83	-7.33	18.48	-2.36
2450	-7.09	19.51	-1.57	-7.68	17.06	-2.38
2484	-6.48	22.44	-1.29	-8.44	14.33	-3.14
2500	-6.61	21.80	-1.87	-8.45	14.28	-3.82

2D Radiation Pattern (Retune)

Free Space

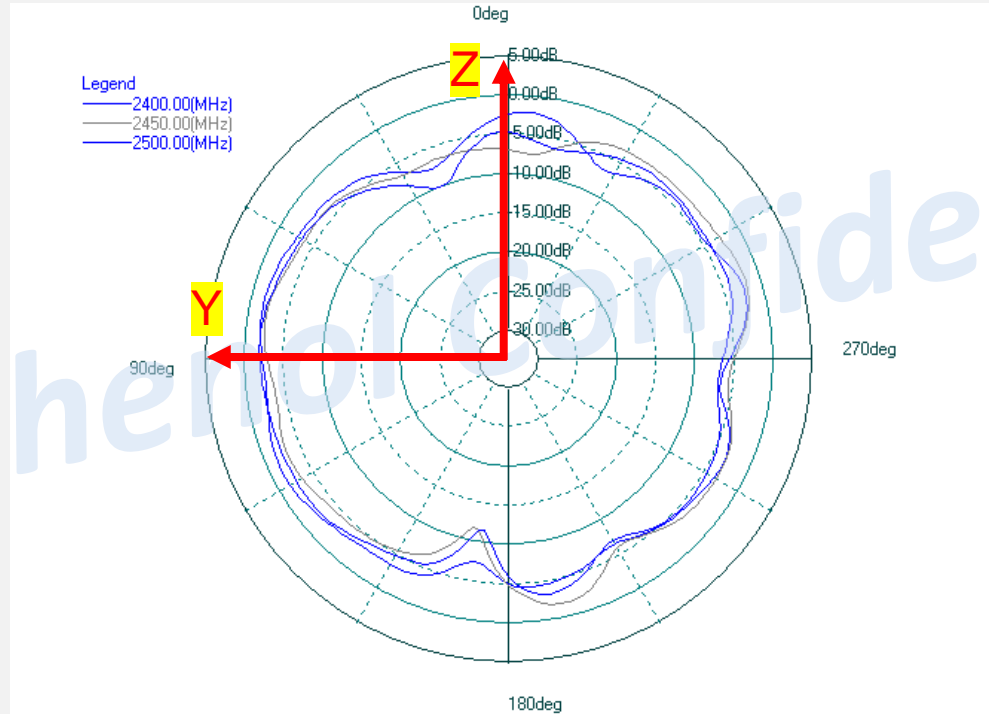
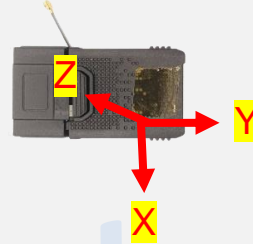
X-Y Plane (Theta 90)



2D Radiation Pattern (Retune)

Free Space

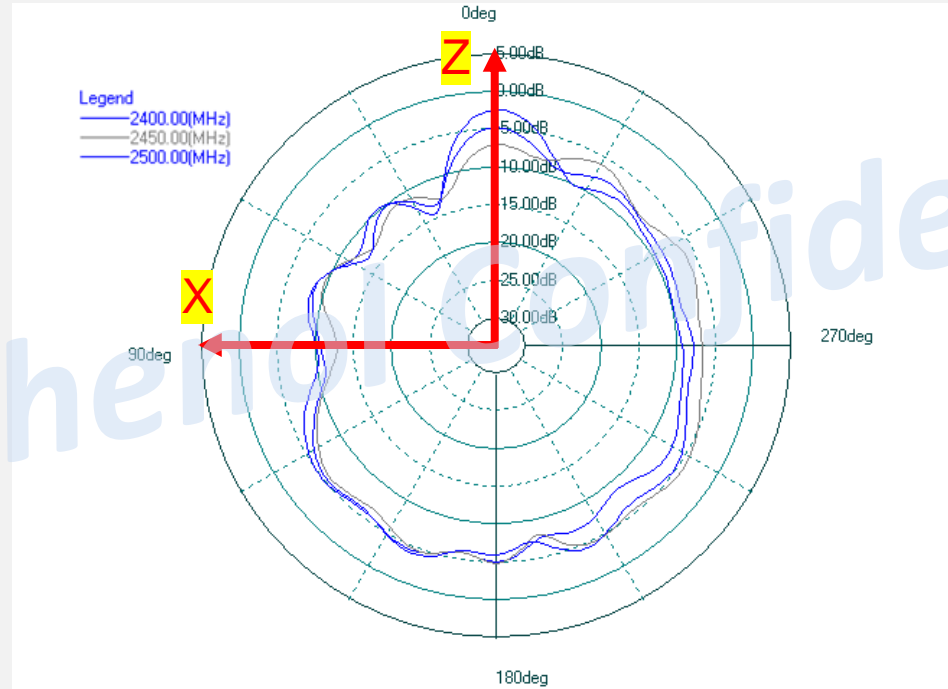
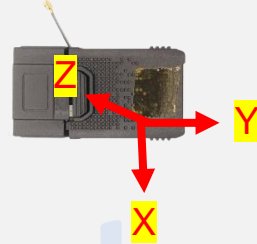
Y-Z Plane (Phi 90)



2D Radiation Pattern (Retune)

Free Space

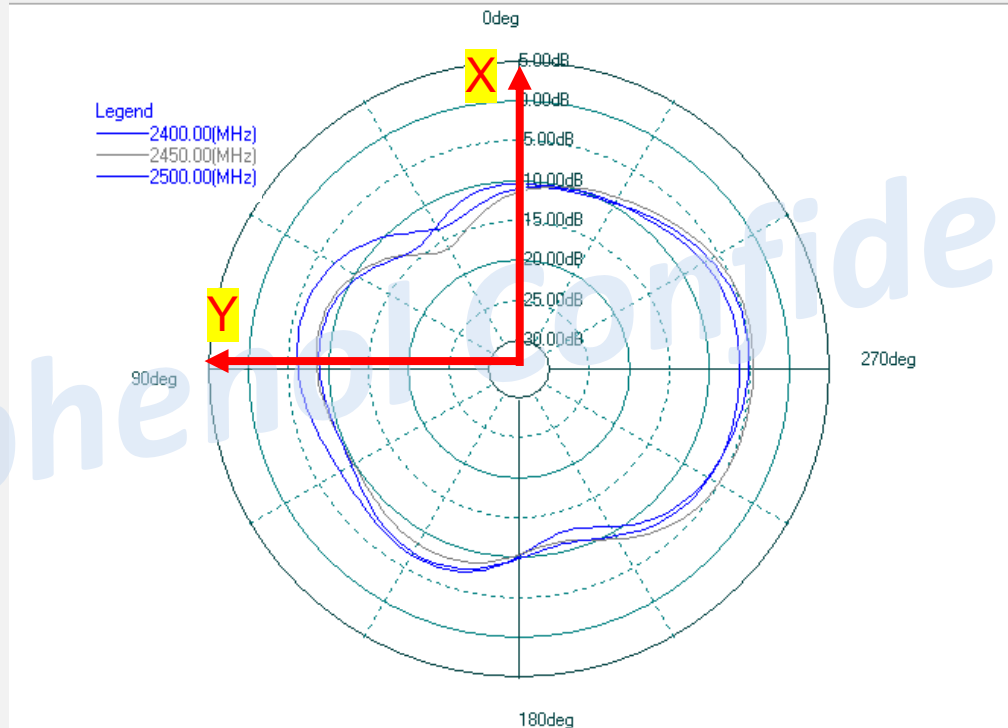
X-Z Plane (Phi 0)



2D Radiation Pattern (Retune)

With Hand

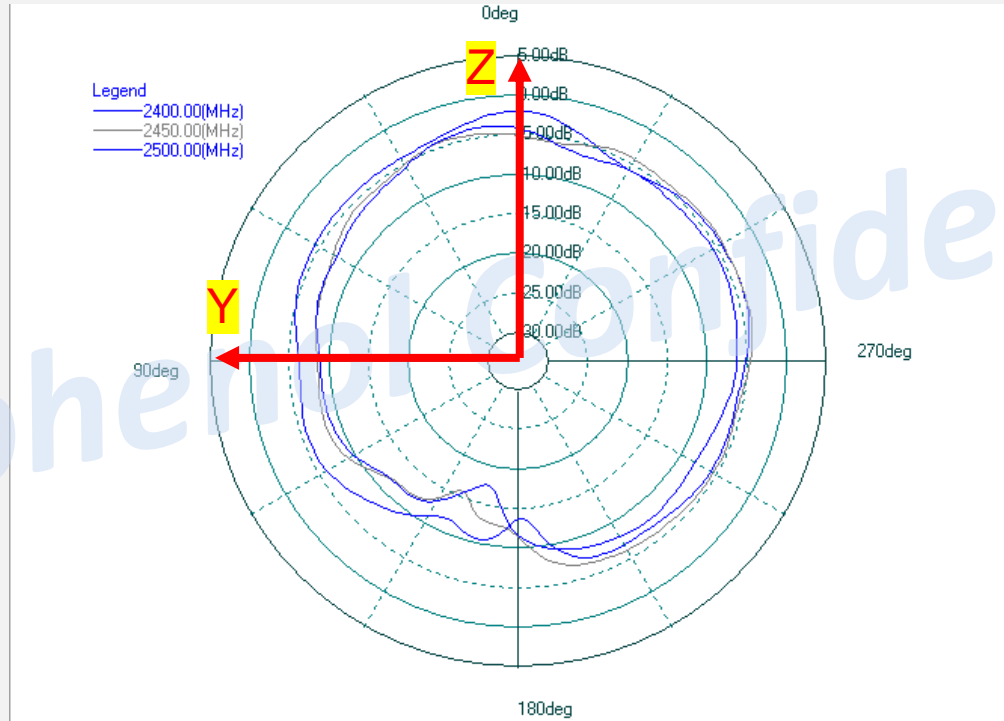
X-Y Plane (Theta 90)



2D Radiation Pattern (Retune)

With Hand

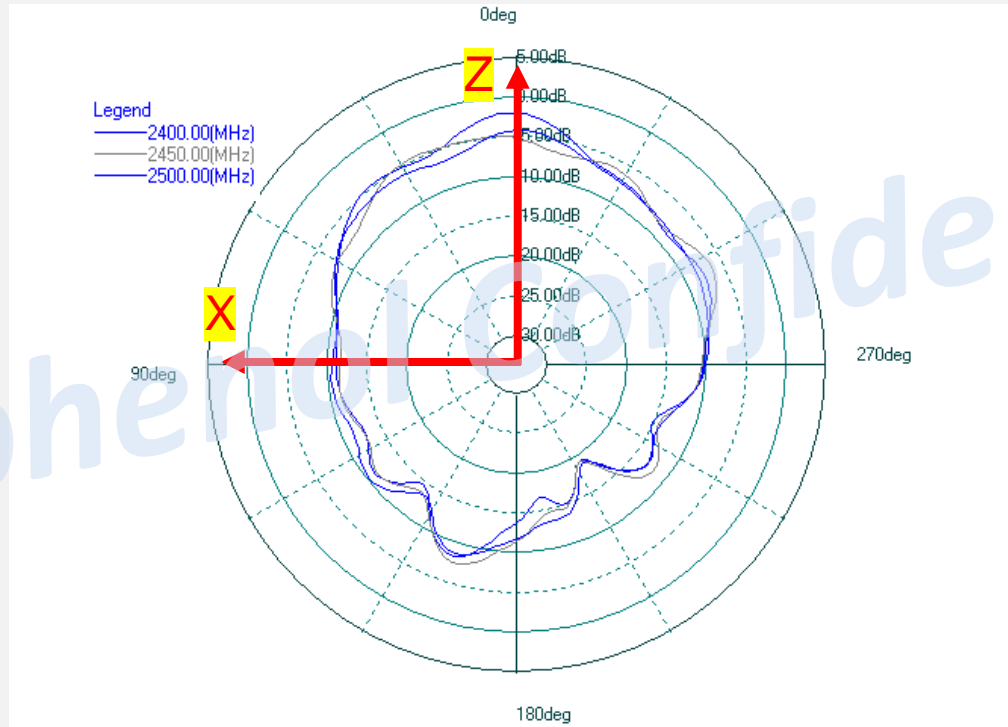
Y-Z Plane (Phi 90)



2D Radiation Pattern (Retune)

With Hand

X-Z Plane (Phi 0)



Conclusion

- Ring Scanner BT antenna performance, the efficiency results is about 27.84% at free space; 18.13% with hand in 2.4GHz.
- Peak gain results is about -1.49dBi at free space; -2.20dBi with hand in 2.4GHz.

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CONTACT INFORMATION

www.amphenol-atc.com