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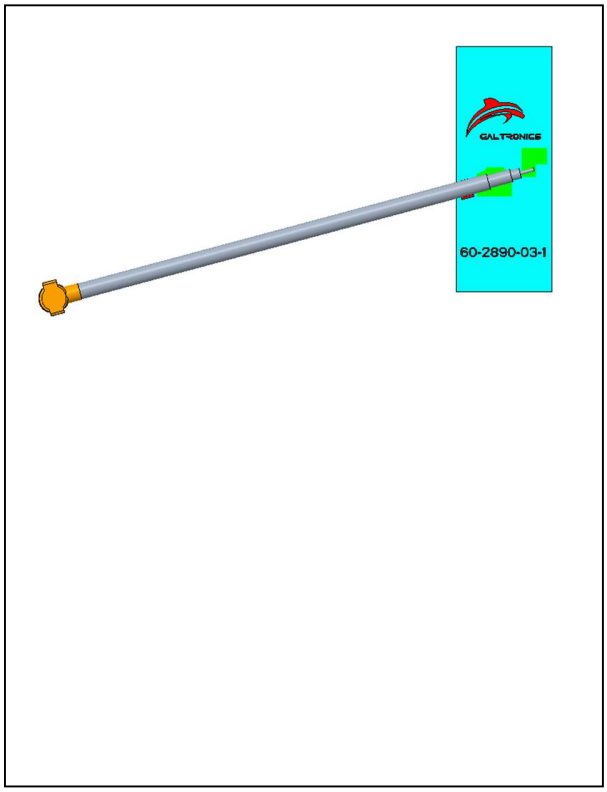

Figure 1 Galtronics 02102142-08050-1 Wi-Fi 5GHz Band Antenna

Wi-Fi 5GHz Band Antenna

02102142-08050-1

Engineering Data Sheets

Galtronics Embedded Antenna

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Revision History (Required)

Revisions	Date	Note
S1	Apr 28, 2024	Initial draft

Disclaimers

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1. Galtronics Wi-Fi 5GHz Band Antenna

The Galtronics 02102142-08050-1 antenna is a balanced dipole type Wi-Fi 5GHz Antenna that operates in 5150-5850 MHz band. It provides high efficient radiation with good cost benefit. The antenna can be mounted on a customer device with double sided adhesive foam tape or antenna carrier and connected to the radio through a cable with U.FL connector.

2. Features

- Operates in 5150-5850MHz band
- Peak gain: 2.17 dBi in 5000 MHz band
- High efficiency
- U.FL connector interface
- Mounted by double sided adhesive foam tape or antenna carrier

3. Specifications and Interface

Standard	Wi-Fi 5GHz Band
Frequency Range	5150 – 5850 MHz
Peak Gain	2.17 dBi in 5000 MHz band
VSWR	2:1
Feed Impedance	50Ω
Power Handling	30 dBm
Interface	U.FL
Antenna Dimensions	20.86 x 8.18 x 1.04 mm (L x W x T)
Temperature Range	Operating: -20° C to +60° C (-4° F to +140° F) Storage: -20° C to +60° C (-4° F to +140° F)
Humidity Range	Operating: 10% to 85% non-condensing Storage: 5% to 90% non-condensing

4. Return Loss

The antenna was tested with antenna mounted on a 100 x 100 x 2.3mm ABS evaluation board with 1.6mm thickness double-sided tape and a 307mm long cable (Cable Total Length is 314mm).

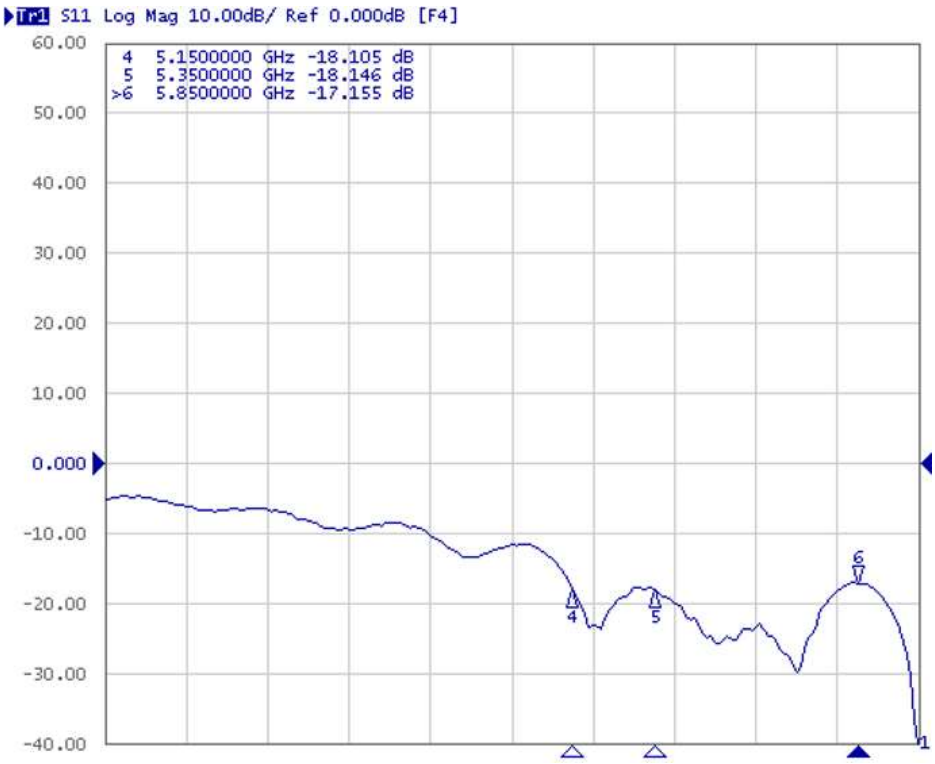


Figure 2 Return Loss

5. Gain, Directivity and Efficiency

Table 1. Peak Gain, Directivity and Efficiency

	Freq (MHz)	Peak Gain (dBi)	Antenna Directivity (dBi)	Terminal Efficiency
5GHz	5150	1.53	3.27	67.01%
	5250	1.53	3.31	66.32%
	5350	2.17	3.89	67.30%
	5750	1.92	3.56	68.54%
	5850	2.16	3.92	66.76%
	Average			67.18%

6. Radiation Pattern

Figure 3 shows the antenna measurement coordinate system in anechoic chamber. Azimuth plane is XY plane (Theta=0°), Elevation 1 plane is XZ plane (Phi=0°) and Elevation 2 plane is YZ plane (Phi=90°).

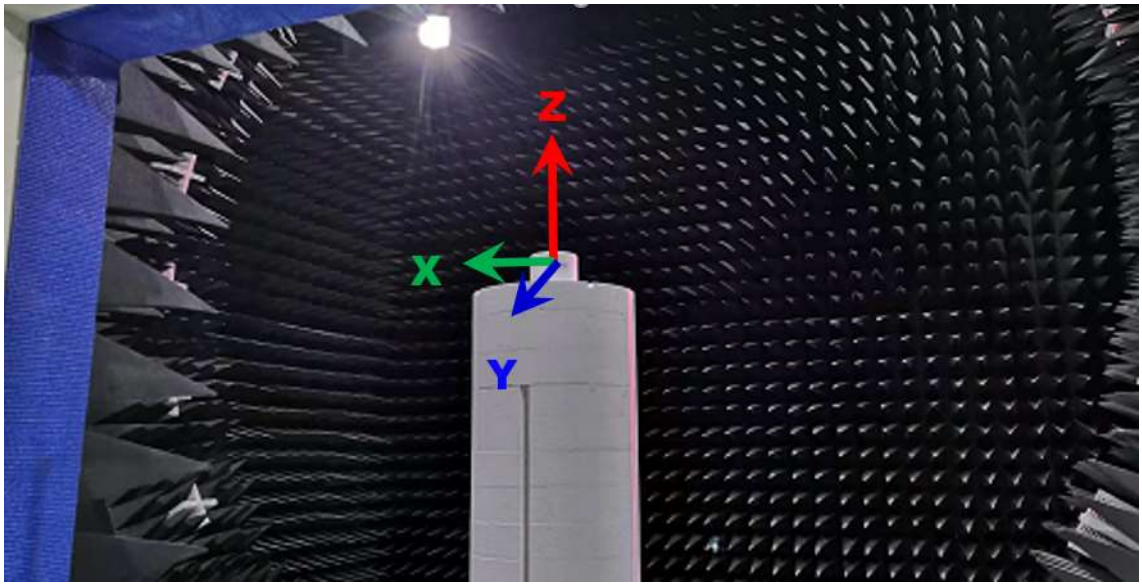
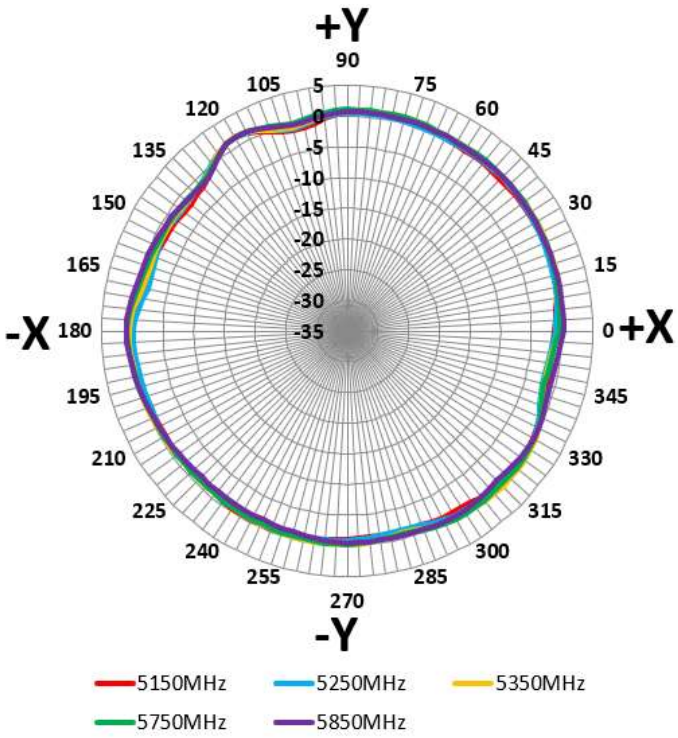
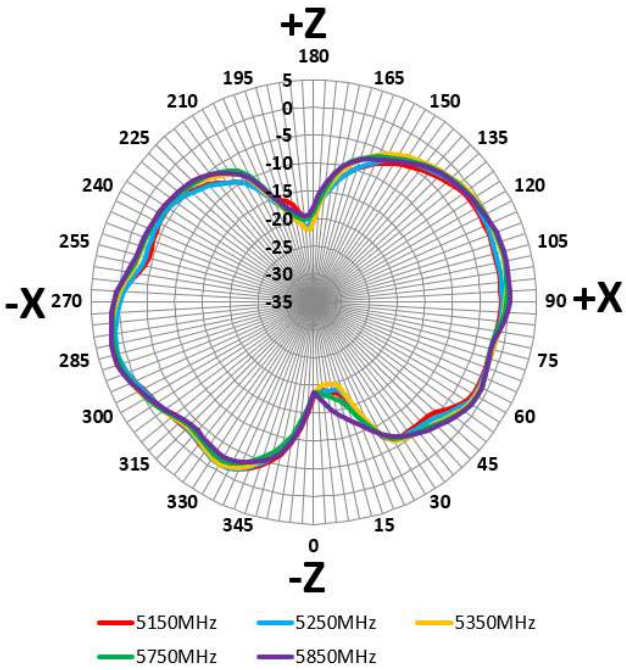


Figure 3 Measurement Orientation

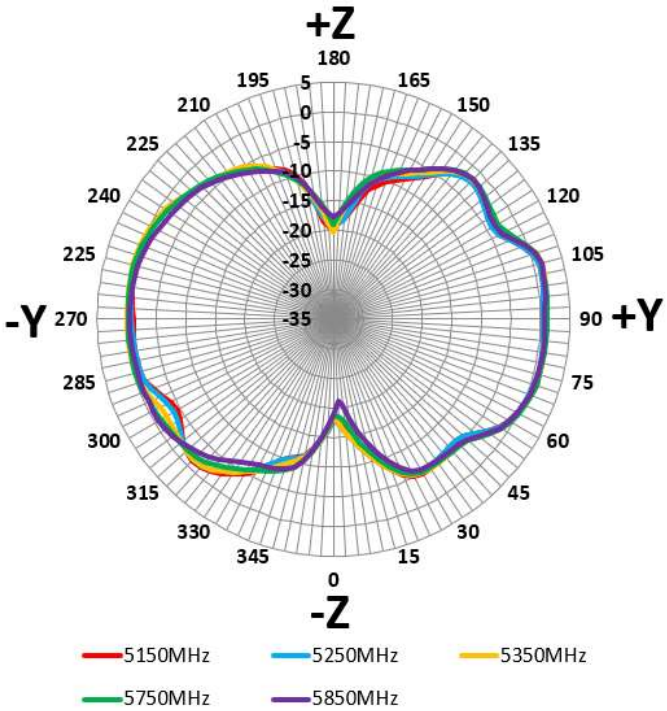
Figure 3 (A), (B) and (C) show the radiation pattern in three major planes.



(A). Azimuth plane (XY plane) radiation pattern



(B). Elevation 1 plane (XZ plane) radiation pattern



(C). Elevation 2 plane (YZ plane) radiation pattern

Figure 4 Radiation Patterns of Wi-Fi 5GHz Antenna