

Wi-Fi 5GHz Antenna

02102142-07905M

Engineering Data Sheets

Galtronics Embedded Antenna

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Revision History (Required)

Revisions	Date	Note
S1	Oct 18, 2023	Initial draft
S2	Dec 12, 2023	Updated

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1. Galtronics Wi-Fi 5GHz Antenna

The Galtronics 02102142-07905M 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: 4.8 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	4.8 dBi in 5000 MHz band
VSWR	2:1
Feed Impedance	50 Ω
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 mounted inside the housing with 1.6mm thickness double-sided tape, and cable loss is included in test results.

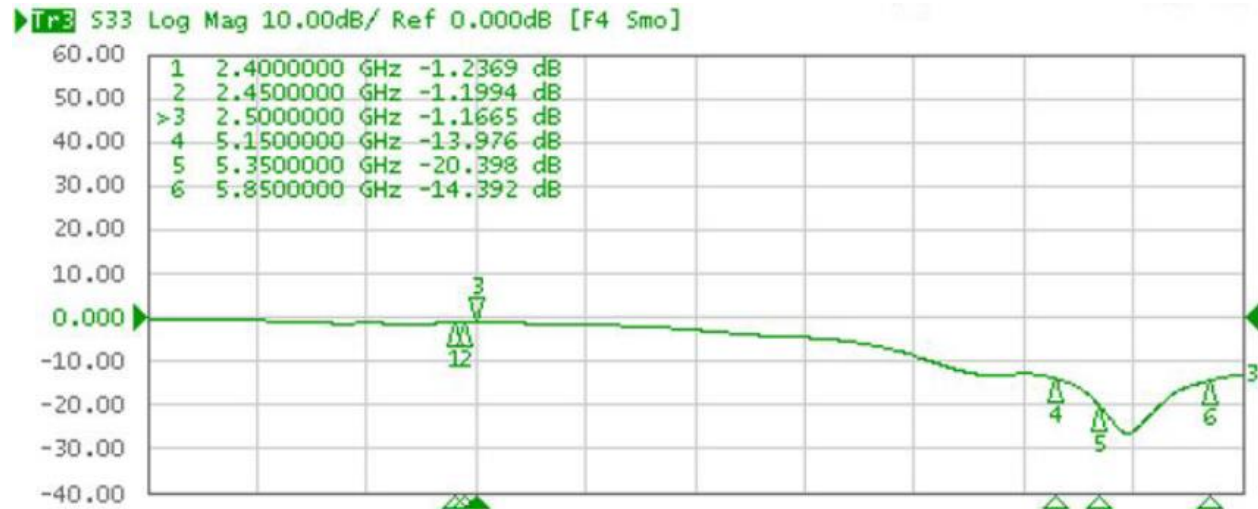


Figure 1 Return Loss

5. Gain, Directivity and Efficiency

Table 1. Peak Gain, Directivity and Efficiency

	Freq (MHz)	Peak Gain (dBi)	Antenna Directivity (dBi)	Terminal Efficiency (%)
5GHz	5150	4.2	5.7	71.97%
	5250	4.3	5.9	70.13%
	5350	4.7	6.0	73.43%
	5750	4.7	6.0	74.95%
	5850	4.8	6.1	73.37%
	Average			72.77%

6. Radiation Pattern

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

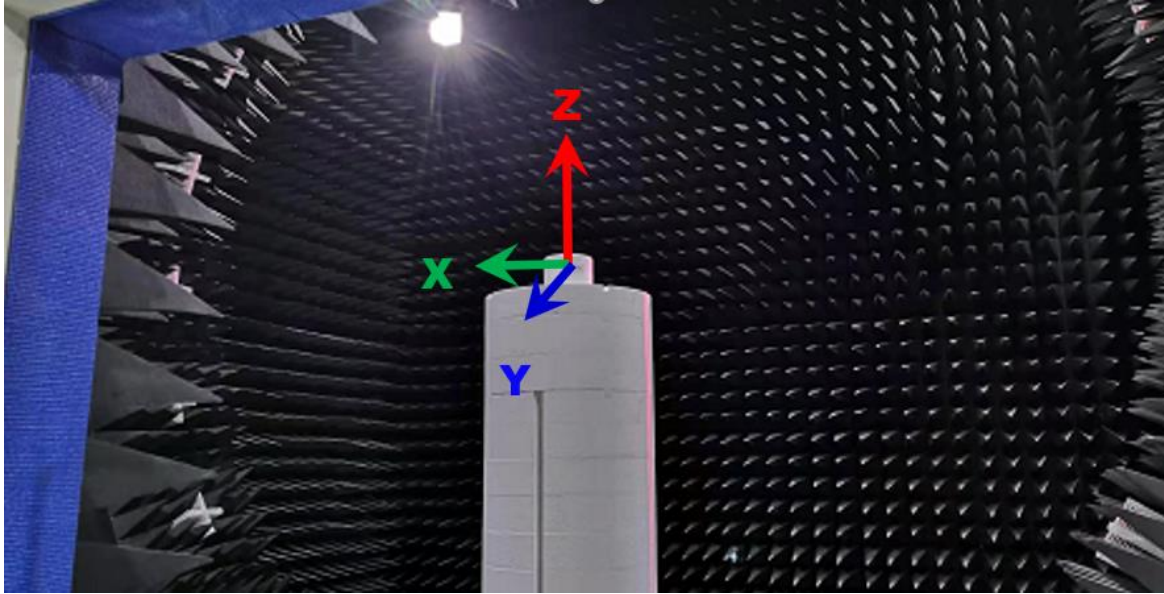
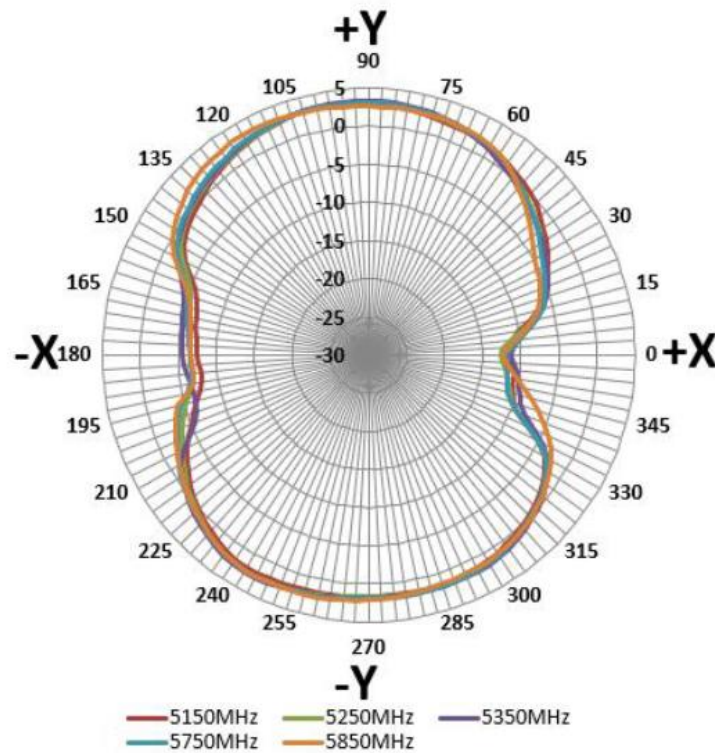


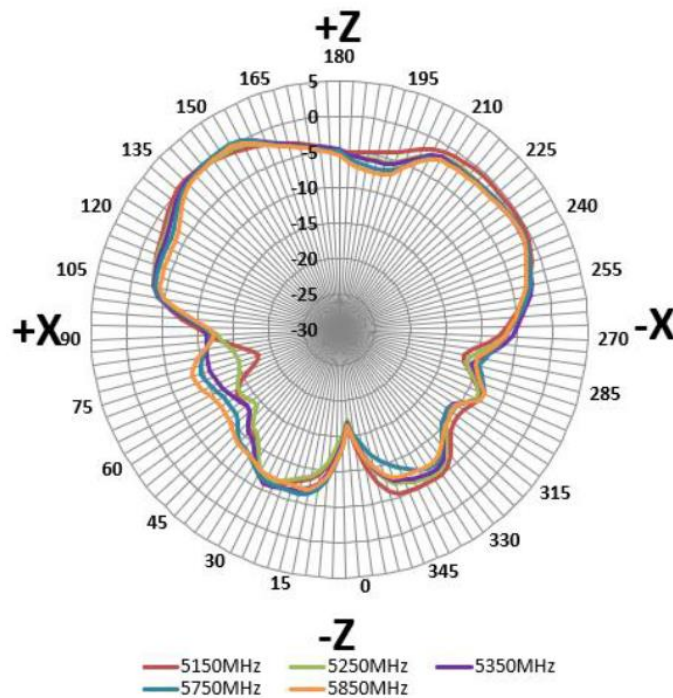
Figure 2 Measurement Orientation

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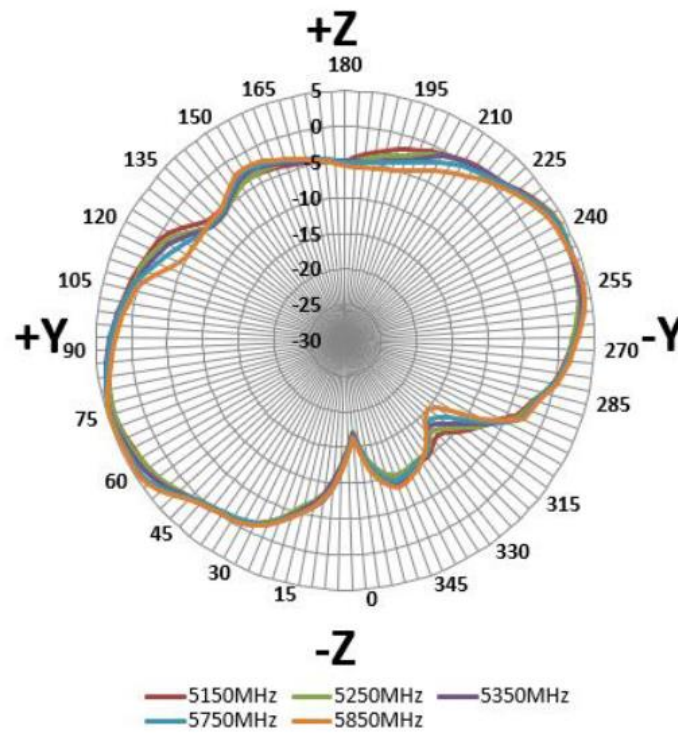
Figure 3 (A), (B) and (C) show the radiation pattern in three major planes.



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



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



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

Figure 3 Radiation Patterns of Wi-Fi 5GHz Antenna