

Figure 1 Galtronics 02102142-08042C 5Ghz Band Antenna

Wi-Fi 5GHz Band Antenna

02102142-08042C

Engineering Data Sheets

Galtronics Embedded Antenna

8930 S. Beck Avenue Suite #103
Tempe, Arizona 85284-2891 USA
Tel: 1-480-496-5100
Fax: 1-480-598-2766

WE'RE MAKING WAVES**Revision History (Required)**

Revisions	Date	Note
S1	Jan 4, 2024	Initial draft
S2	Jan 9, 2024	Updated
S3	Jan 10,2024	Updated
S4	Jan 16,2024	Updated
S5	Jan 17,2024	Updated

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1. Galtronics Wi-Fi 5GHz Antenna

The Galtronics 02102142-08042C antenna is a balanced dipole type Wi-Fi 5GHz Antenna that operates in 5150-5900 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 5150-5900MHz band
- Peak gain: 3.63 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 – 5900 MHz
Peak Gain	3.63 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 0.84 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

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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 38mm long cable (Cable Total Length is 45mm).



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	3.63	5.12	70.95%
	5250	3.55	4.96	72.29%
	5350	3.63	4.79	76.54%
	5750	3.12	4.42	74.16%
	5850	3.44	4.95	70.62%
Average				72.91%

6. Radiation Pattern

Figure 3 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 ($\Phi=90^\circ$).

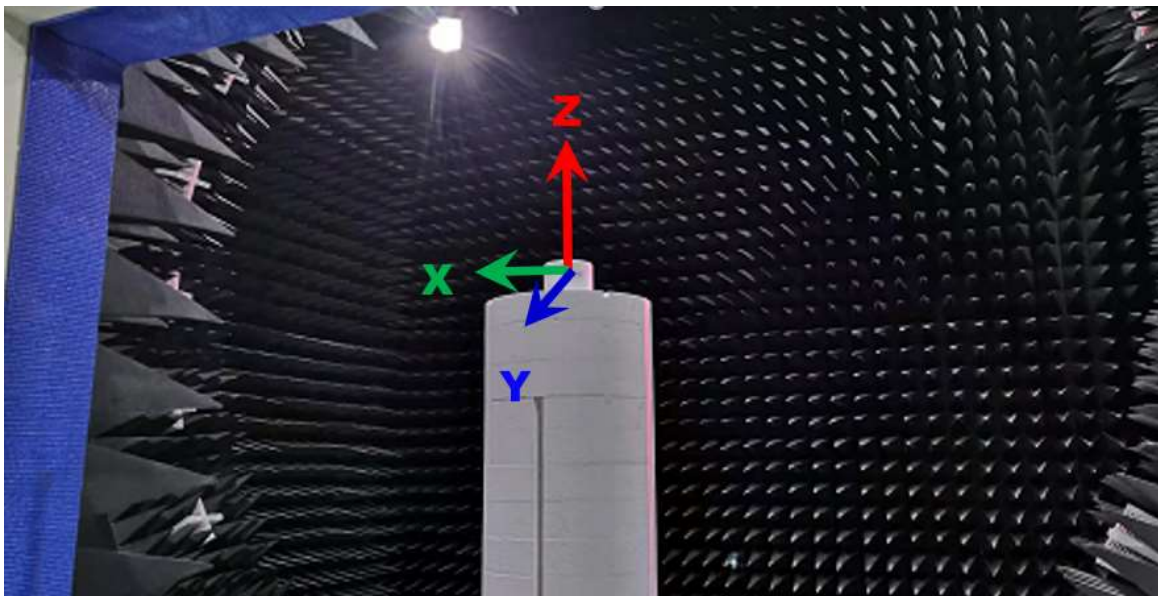
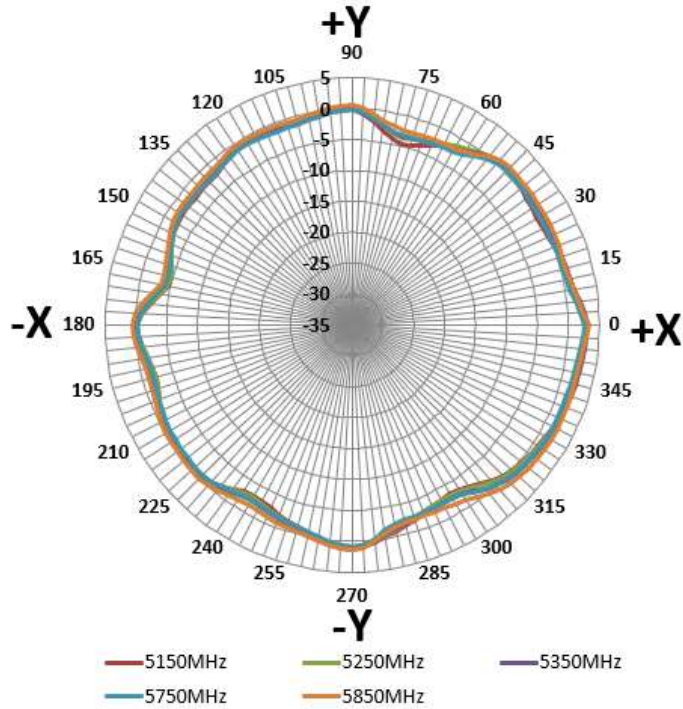


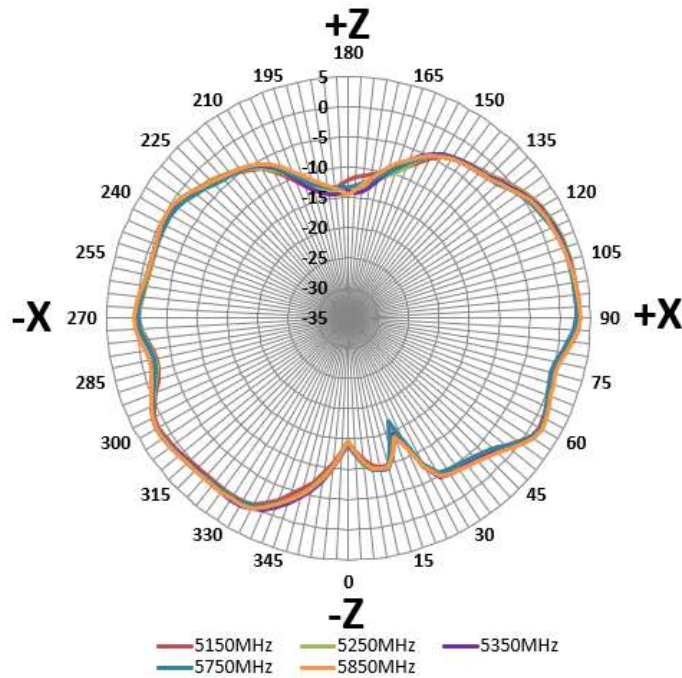
Figure 3 Measurement Orientation

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

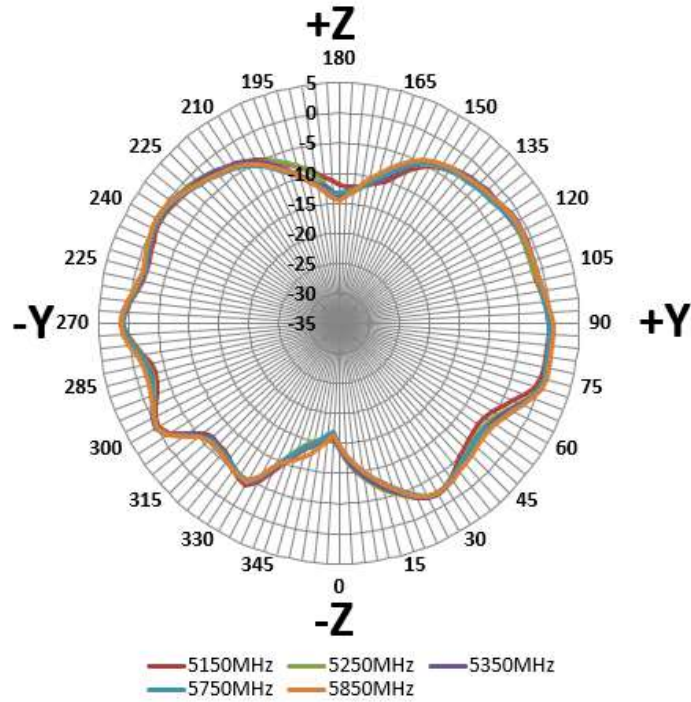


(A). Azimuth plane (XY plane) radiation pattern



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

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

Figure 4 Radiation Patterns of Wi-Fi 5GHz Antenna