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Wi-Fi 5GHz Antenna

02102142-08042E2

Engineering Data Sheets

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Revision History (Required)

Revisions	Date	Note
S1	Jan 4, 2024	Initial draft

Disclaimers

The document is proprietary, which may be changed without notice. Please communicate with Galtronics sale team to verify before finalizing your product design.

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1. Galtronics Wi-Fi 5GHz Antenna

The Galtronics 02102142-08042E2 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: 4.46 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	4.46 dBi in 5000 MHz band
VSWR	2:1
Feed Impedance	50Ω
Power Handling	30 dBm
Interface	U.FL
Antenna Dimensions	21.00 x 11.80 x 0.64 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 and cable loss is included in test results.

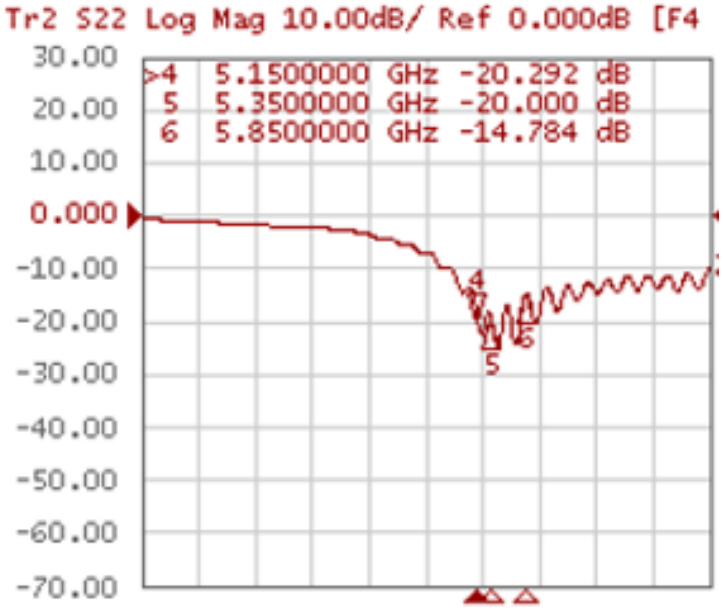


Figure 1 Return Loss

5. Gain, Directivity and Efficiency

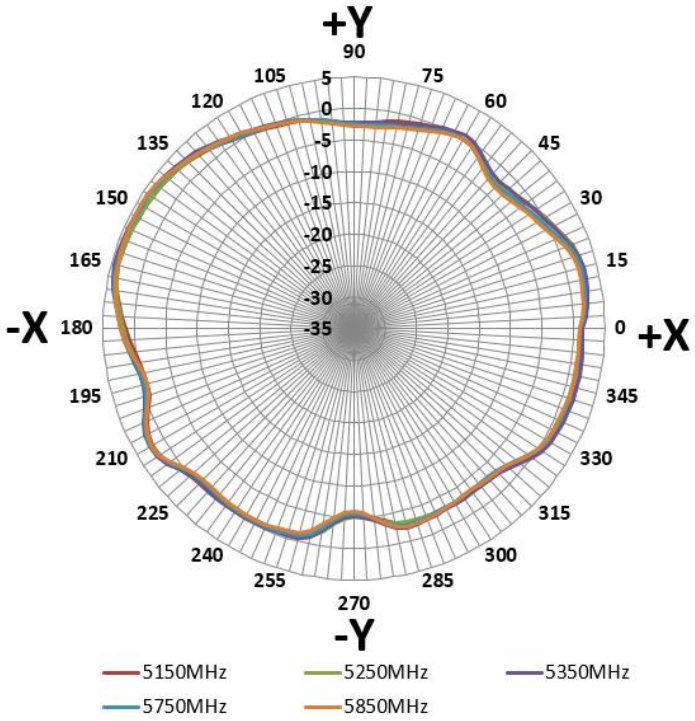
Table 1. Peak Gain, Directivity and Efficiency

	Freq (MHz)	Peak Gain (dBi)	Antenna Directivity (dBi)	Terminal Efficiency (%)
5GHz	5150	3.97	5.40	71.96%
	5250	4.09	5.67	69.54%
	5350	4.46	5.93	71.34%
	5750	4.11	5.82	67.48%
	5850	4.31	5.83	70.41%
	Average			70.15%

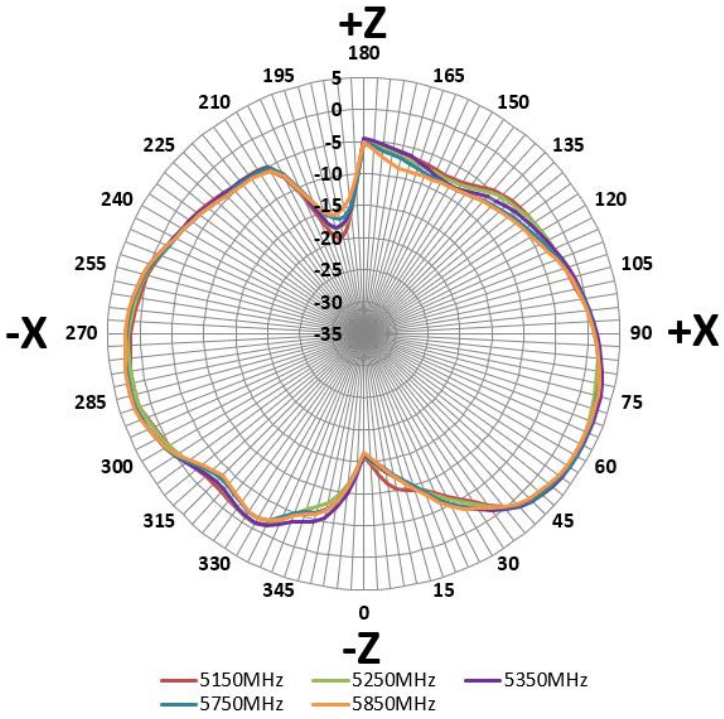
6. Radiation Pattern

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°).

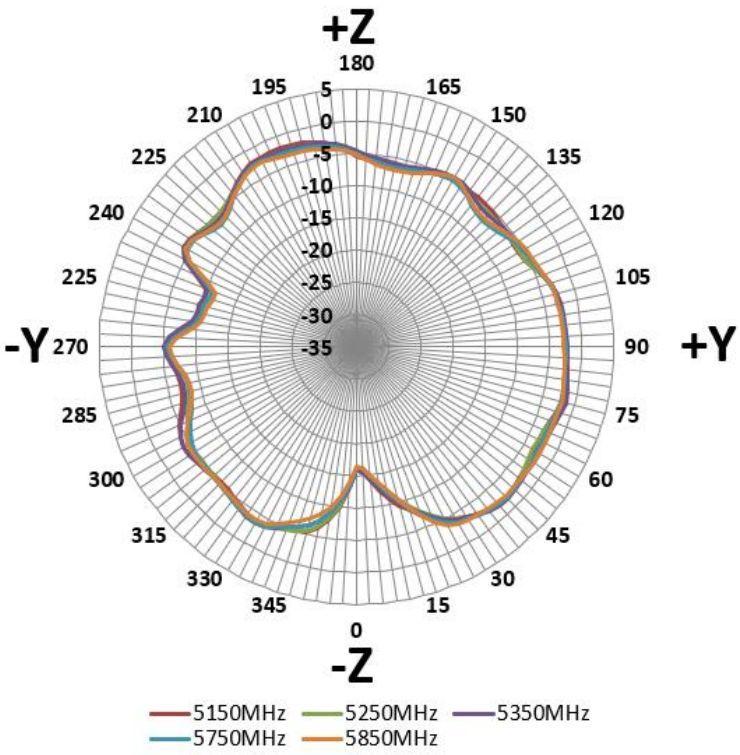
Figure 2 (A), (B) and (C) show the radiation pattern in three major



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



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



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

Figure 2 Radiation Patterns of Wi-Fi 5GHz Antenna