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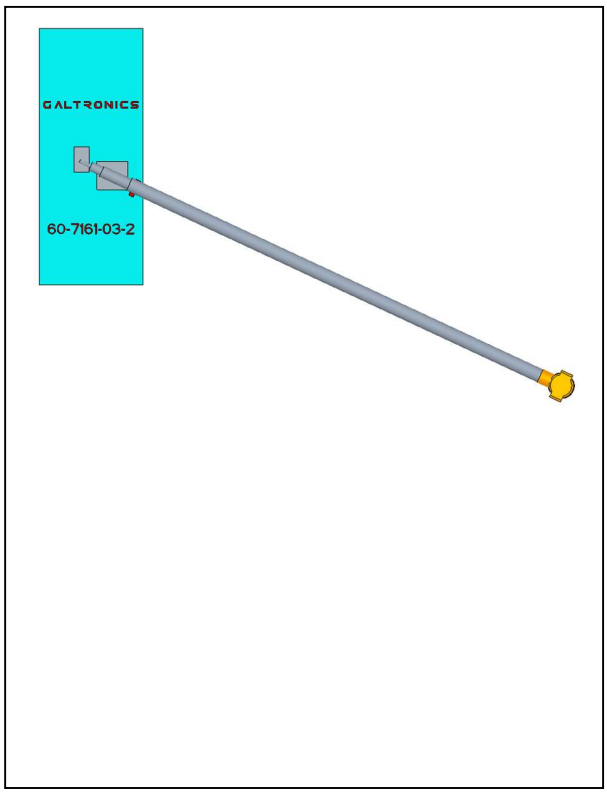

Figure 1 Galtronics 02102073-08050-2 Wi-Fi 2.4GHz Band Antenna

Wi-Fi 2.4GHz Band Antenna

02102073-08050-2

Engineering Data Sheets

Galtronics Embedded Antenna

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Revision History (Required)

Revisions	Date	Note
S1	Apr 28, 2024	Initial draft
S2	May 21,2024	Tuned antenna
S3	May 22,2024	Upgrade drawing

Disclaimers

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

Contents

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1. Galtronics Wi-Fi 2.4GHz Antenna

The Galtronics 02102073-08050-2 antenna is a balanced dipole type Wi-Fi 2.4GHz Antenna that operates in 2400-2500 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 2400-2500MHz band
- Peak gain: 2.65 dBi in 2400 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 2.4GHz Band
Frequency Range	2400 – 2500 MHz
Peak Gain	2.65 dBi in 2400 MHz band
VSWR	2:1
Feed Impedance	50Ω
Power Handling	30 dBm
Interface	U.FL
Antenna Dimensions	25.2 x 10.2 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

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 178 mm long cable (Cable Total Length is 185mm).

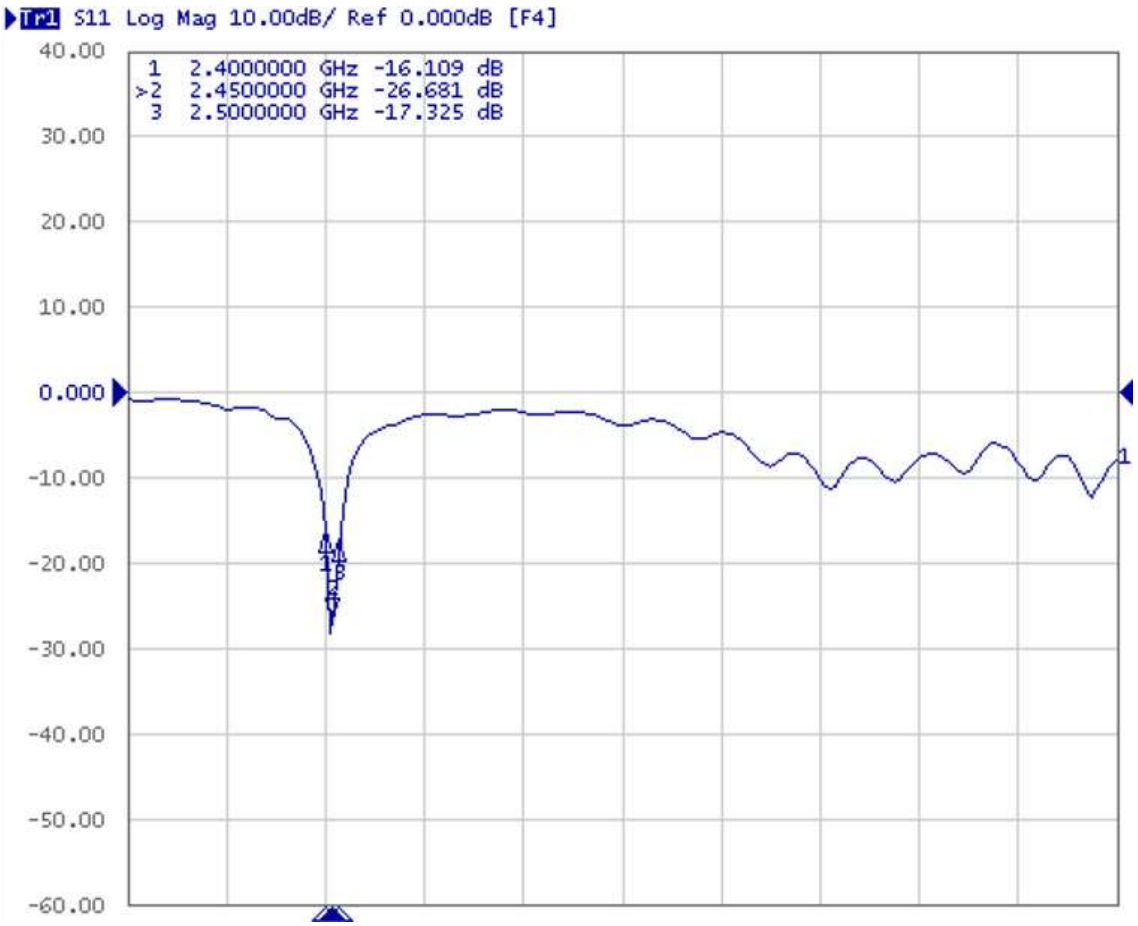


Figure 2 Return Loss

5. Gain, Directivity and Efficiency

Table 1. Peak Gain, Directivity and Efficiency

	Freq (MHz)	Peak Gain (dBi)	Antenna Directivity (dBi)	Terminal Efficiency
2. 4GHz	2400	2.65	4.26	69.14%
	2450	2.65	4.28	68.64%
	2500	2.54	4.19	68.30%
	Average			68.69%

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°).

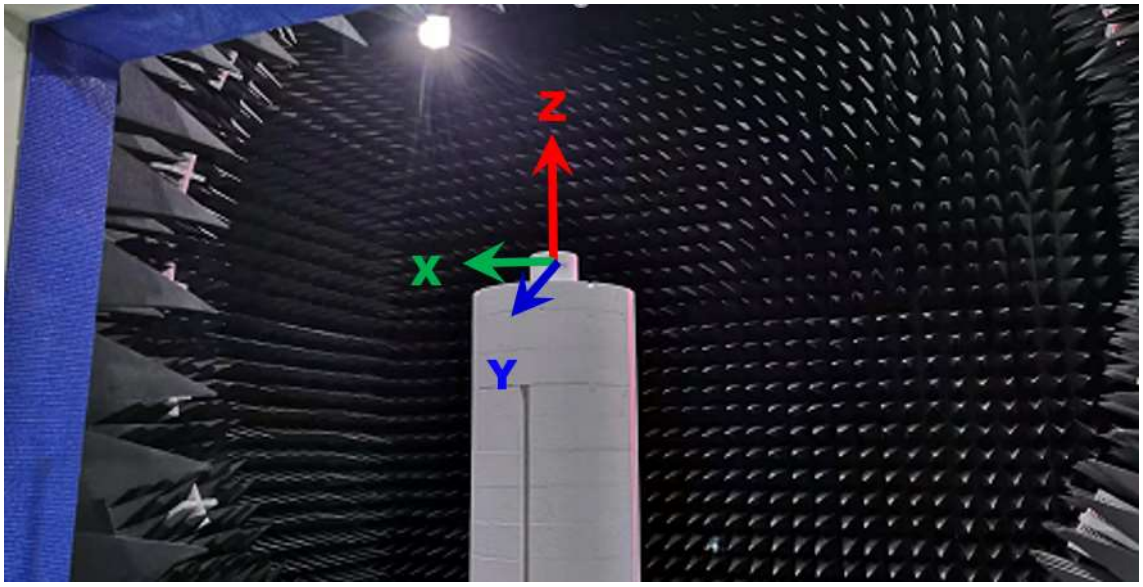
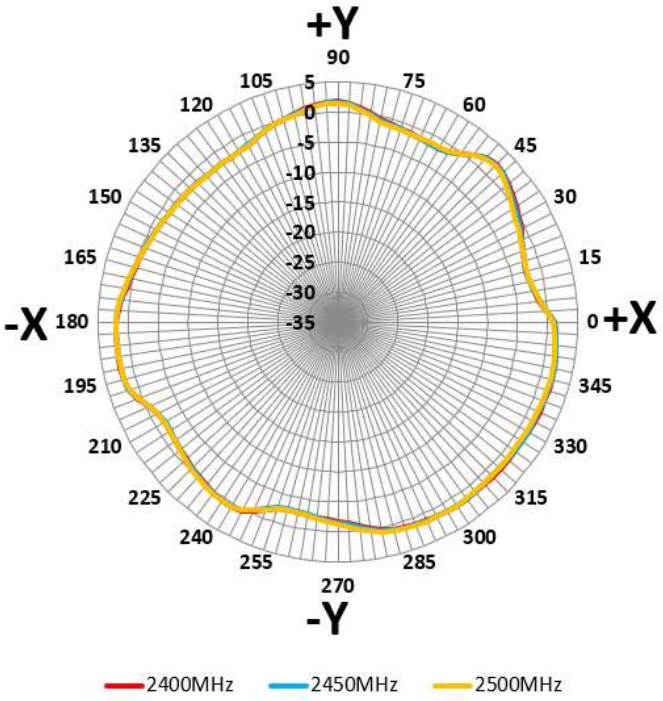
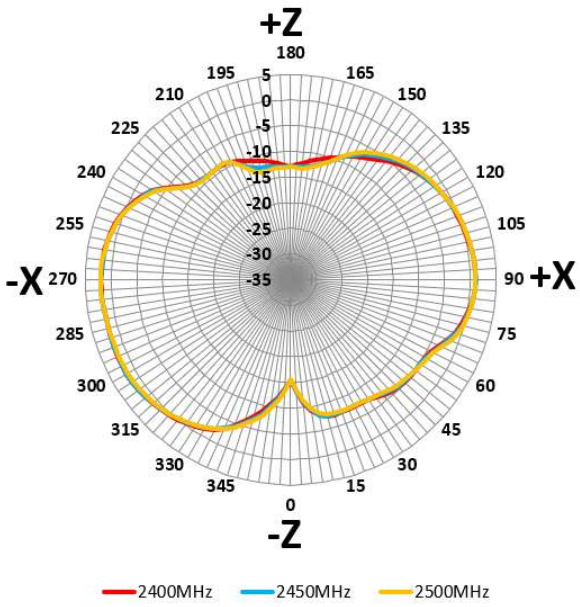


Figure 3 Measurement Orientation

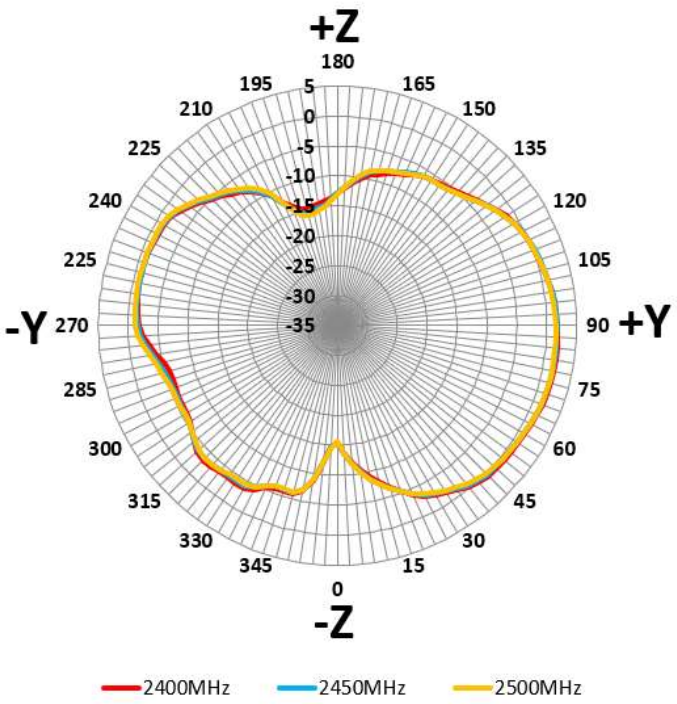
Figure 3 (A), (B) and (C) show the radiation pattern in three major planes.



(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 2.4GHz Antenna