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Dual Band Wi-Fi Antenna 02102140-07691-1, 02102140-07691-2, 02102140-07691-3, 02102140-07691-4

Engineering Data Sheets

Galtronics Embedded Antenna

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Revision History (Required)

Revisions	Date	Note
S1	1/21/2022	Initial draft
S2	9/1/2022	Add -3 & -4 PNs
S3	11/28/2022	Simplified Figure 6

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 Dual Band Wi-Fi Antenna

The Galtronics antenna is a Dual Band Wi-Fi antenna that operates in 2400-2500 MHz and 5150-5825 MHz bands. It provides highly efficient radiation with good cost benefit. The antenna can be mounted on a customer device by double sided tape or designing pockets/clips to hold the antenna and connected to the radio through a U.FL connector.

2. Features

- Operates in 2400-2500 MHz and 5150-5825 MHz bands
- U.FL connector interface

3. Specifications and Interface

Table 1 Specifications and Interface

Standard	Wi-Fi Dual-Band
Frequency Range	2400-2500 MHz and 5150-5825 MHz
Peak Gain	2.6dBi in 2500 MHz Band and 3.6dBi in 5150 MHz Band
VSWR	1.7:1
Feed Impedance	50Ω
Power Handling	30 dBm
Interface	U.FL
Antenna Dimensions	33.6 mm x 15.6 mm x 0.6 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

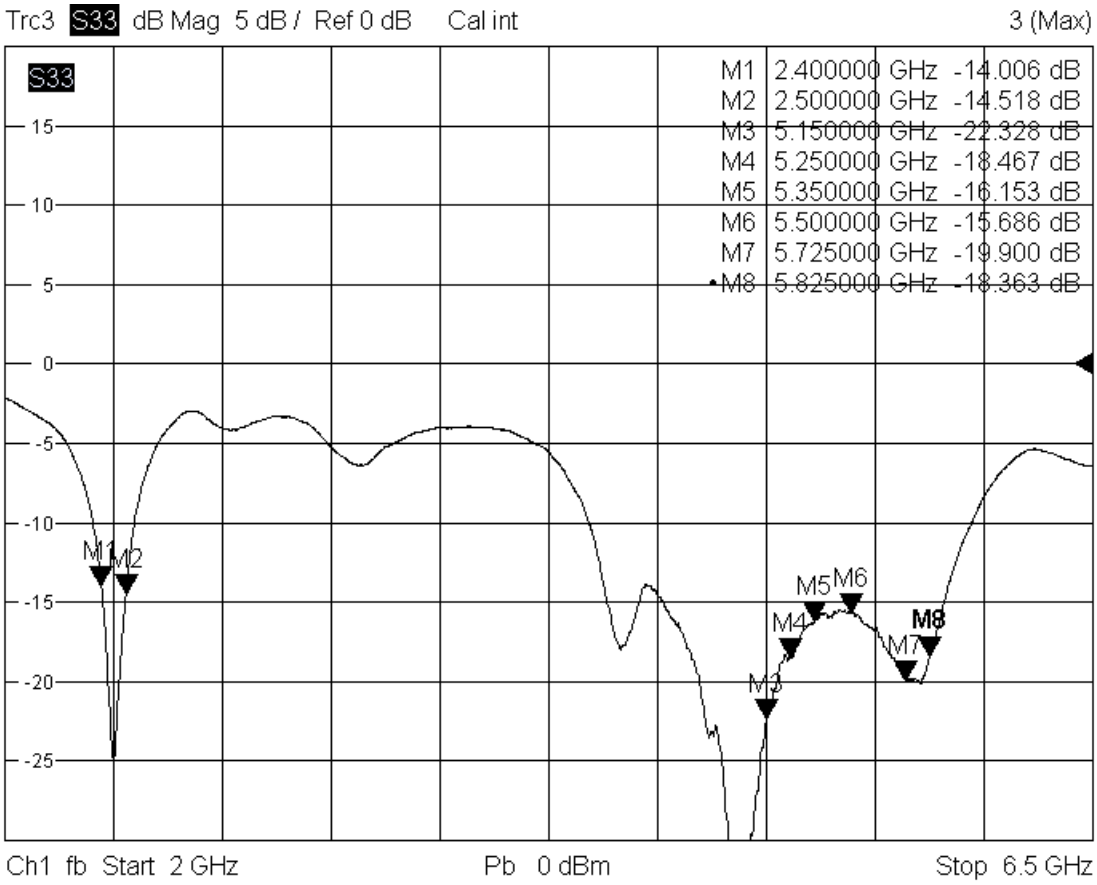


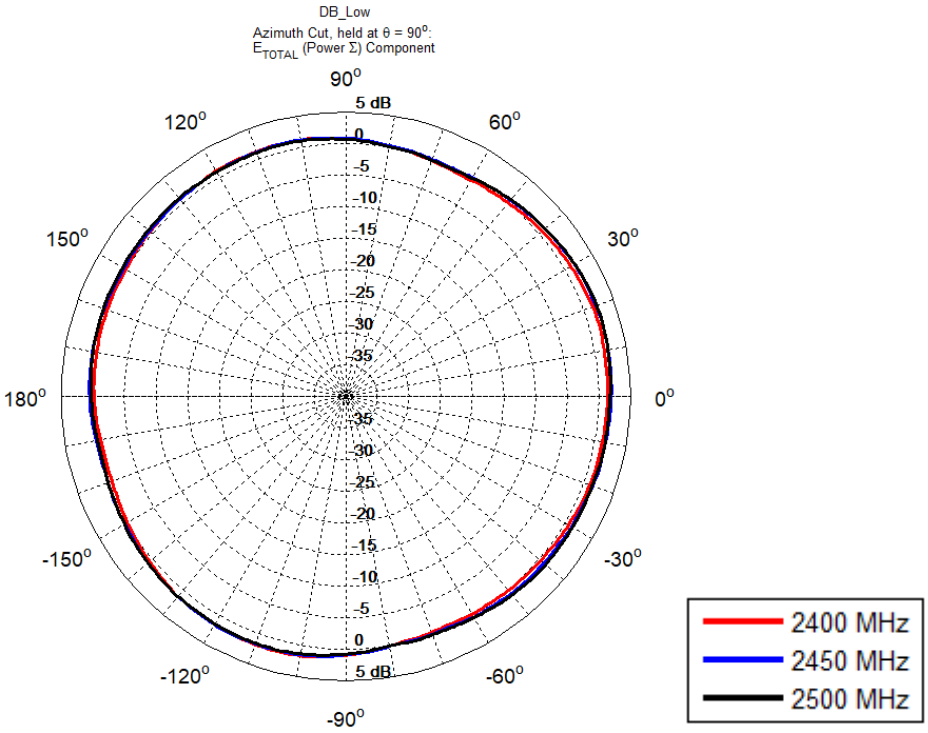
Figure 2 Return Loss

5. Gain, Directivity and Efficiency

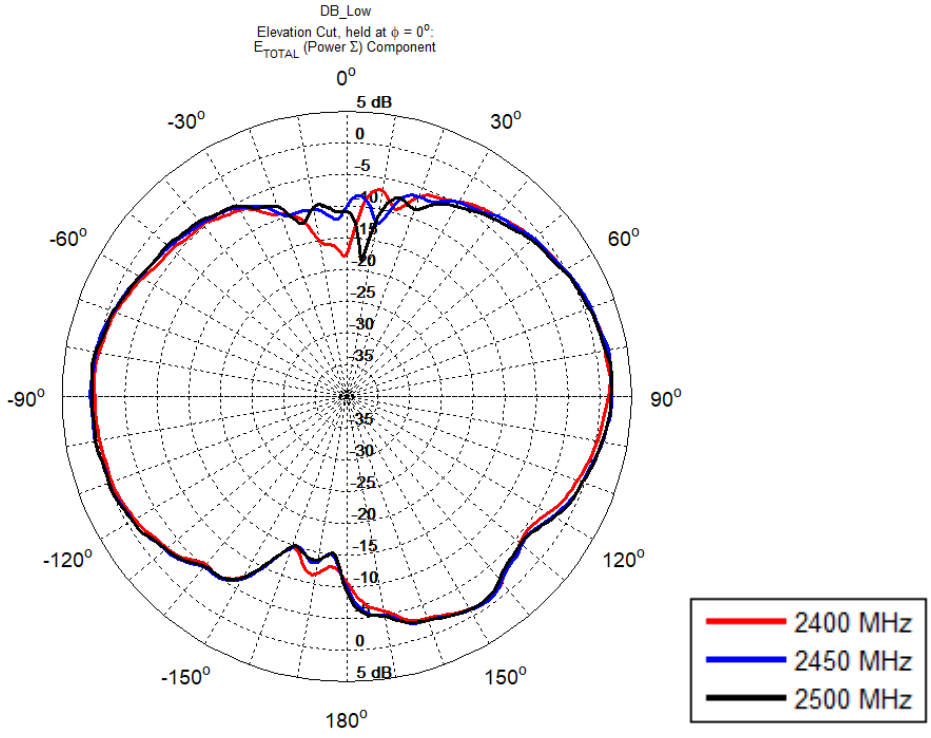
Table 2 Peak Gain, Directivity & Efficiency

	Freq (MHz)	Peak Gain (dBi)	Directivity (dB)	Efficiency
DB Low	2400	2.198	3.442	75.09 %
	2450	2.485	3.389	81.22 %
	2500	2.626	3.594	80.01 %
	Average			78.77 %
	Freq (MHz)	Peak Gain (dBi)	Directivity (dB)	Efficiency
DB High	5150	3.600	4.501	81.26 %
	5250	3.535	4.364	82.63 %
	5350	3.360	4.296	80.61 %
	5500	3.323	4.179	82.11 %
	5725	3.210	4.257	78.58 %
	5825	3.333	4.299	80.05 %
	Average			80.87 %

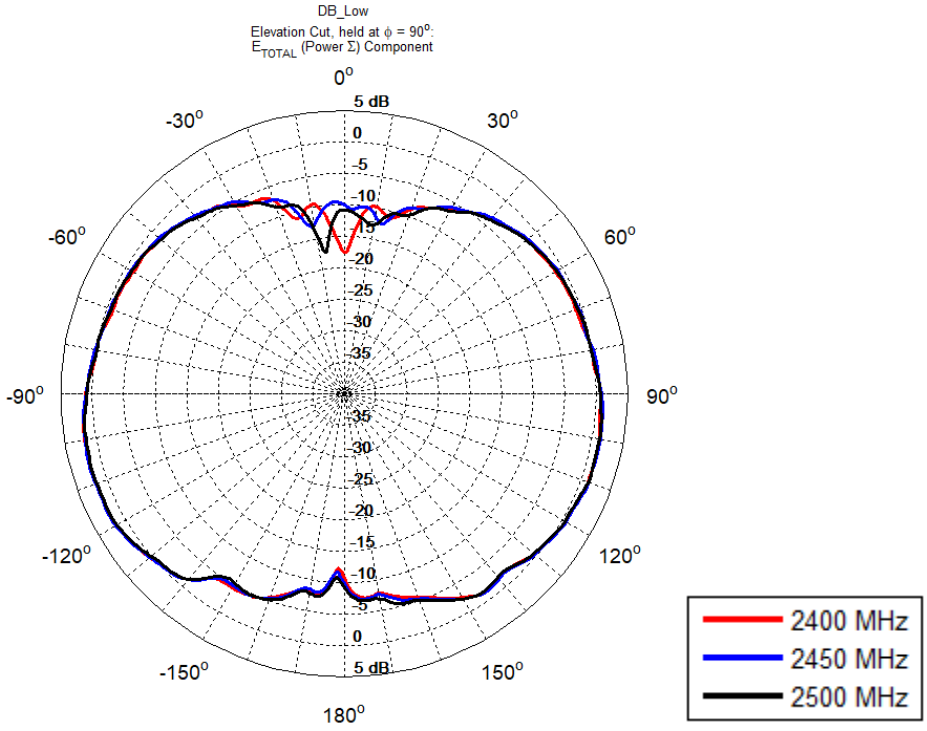
7. Radiation Pattern



(A). Azimuth plane (XY plane) radiation pattern of 2.4 GHz band

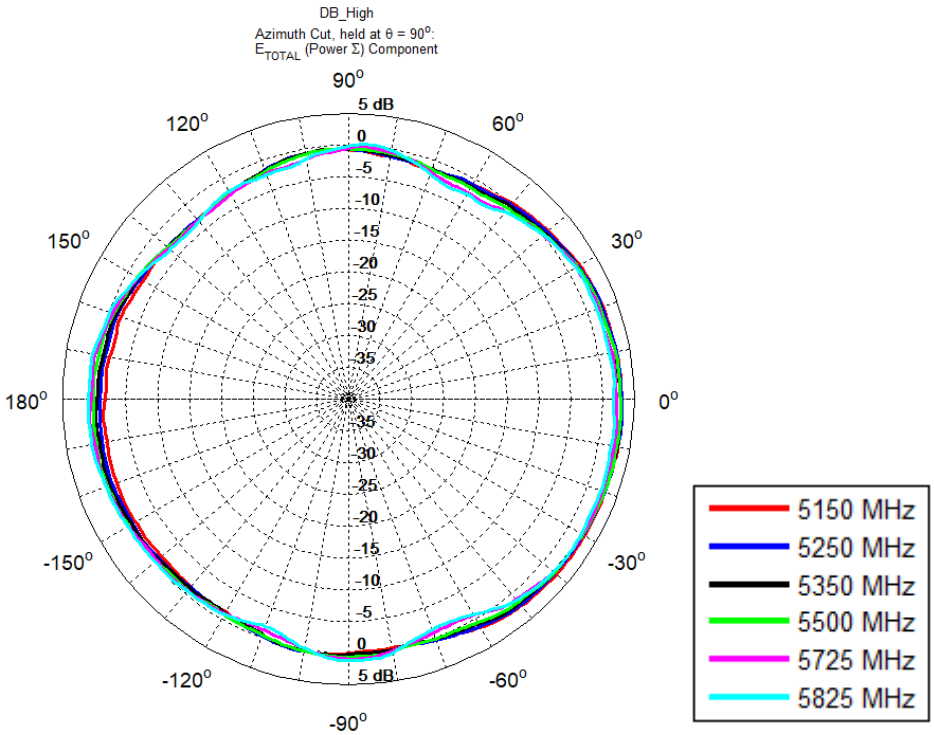


(B). Elevation 1 plane (XZ plane) radiation pattern of 2.4 GHz band

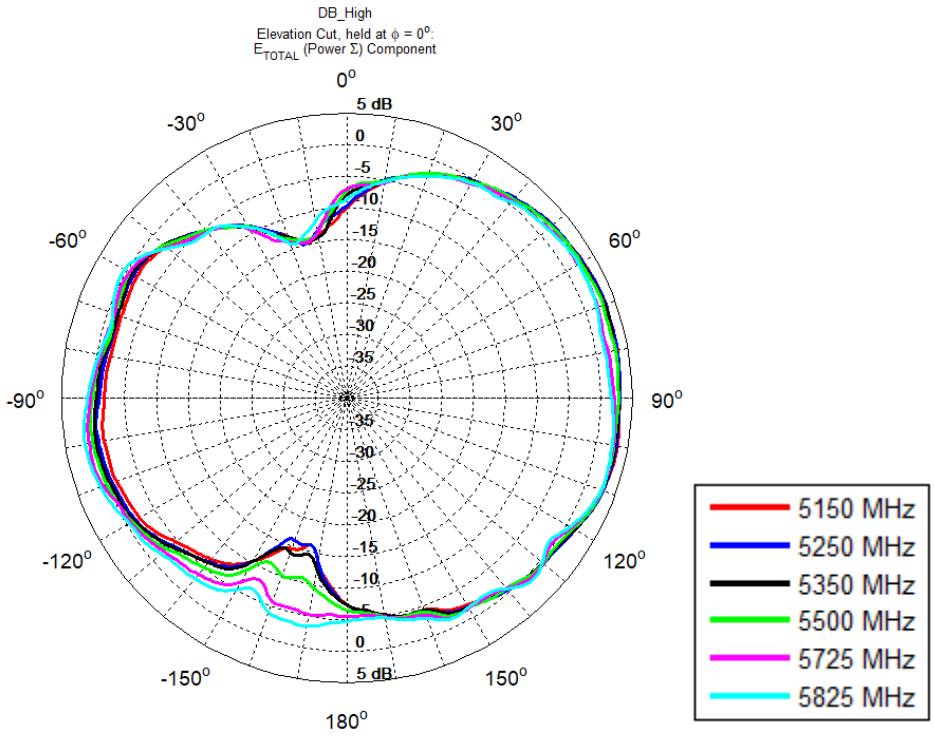


(C). Elevation 2 plane (YZ plane) radiation pattern of 2.4 GHz band

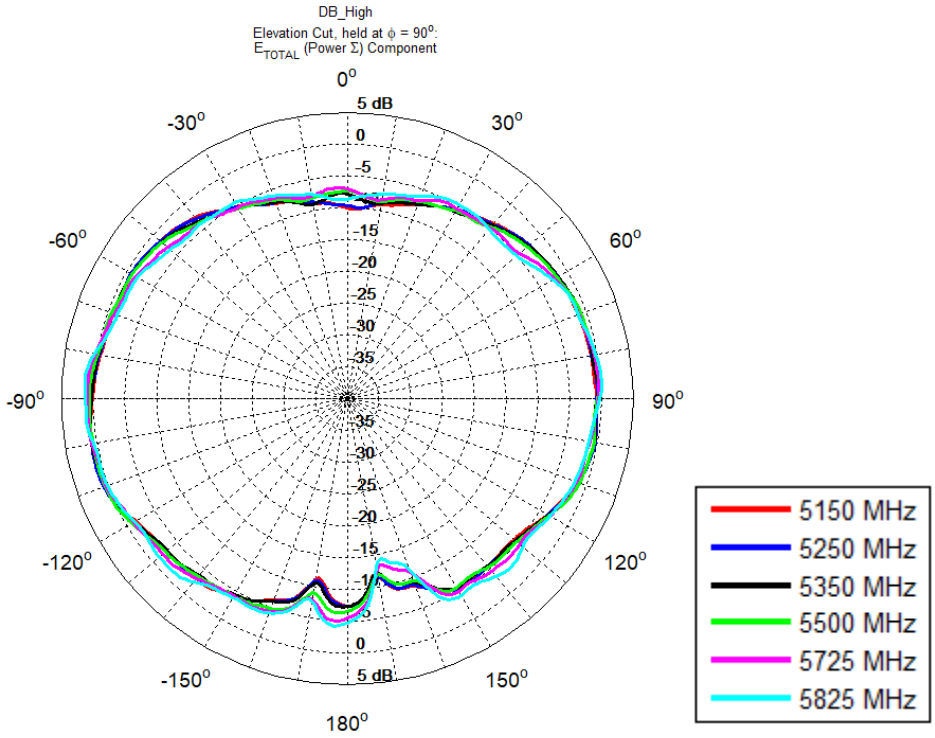
Figure 4 Radiation Patterns in 2.4 GHz Band



(A). Azimuth plane (XY plane) radiation pattern of 5GHz band



(B). Elevation 1 plane (XZ plane) radiation pattern of 5GHz band



(C). Elevation 2 plane (YZ plane) radiation pattern of 5GHz band

Figure 5 Radiation Patterns in 5 GHz Band