MGM210L Antenna Information

3.3 Antenna

MGM210L modules include a meandered inverted-F antenna (MIFA) with the characteristics seen below.

Table 3.1. Antenna Efficiency and Peak Gain

Parameter	With optimal layout	Note
Efficiency	-2 to -2.5 dB	Antenna efficiency, gain and radiation pattern are highly dependent on the application PCB layout and mechanical design. Refer to Section 7. Design Guidelines for PCB layout and antenna integration guidelines to achieve optimal performance.
Peak gain	0.5 dBi	

The MGM210L should be placed at the edge of the end-application PCB as seen below. The copper clearance area under the antenna must be void of traces or components to prevent parasitic loading or undesired coupling of signals or noise to the antenna. The width of the GND pour on the end-application PCB should match at least the width of the antenna (e.g. 12.5 mm or greater) to have negligible effect on antenna performance.

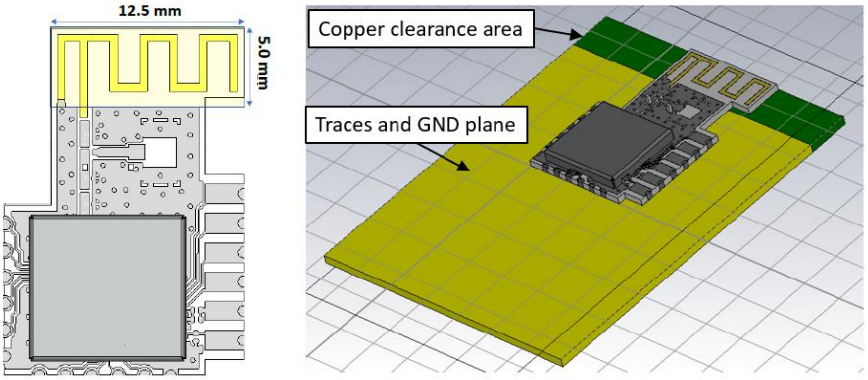

Figure 7.1. Inverted-F Antenna Clearance

MGM210L modules do not support the use of an external, alternative antenna. The U.FL connector land pattern on the top layer of the module should not be used, populated or tampered with.

4.2.1 Antenna Radiation and Efficiency

Typical MGM210L antenna radiation patterns and efficiency under optimal operating conditions are plotted in the figure below. Antenna gain and radiation patterns have a strong dependence on the size and shape of the application PCB the module is mounted on and, also, on the proximity of any mechanical design to the antenna.

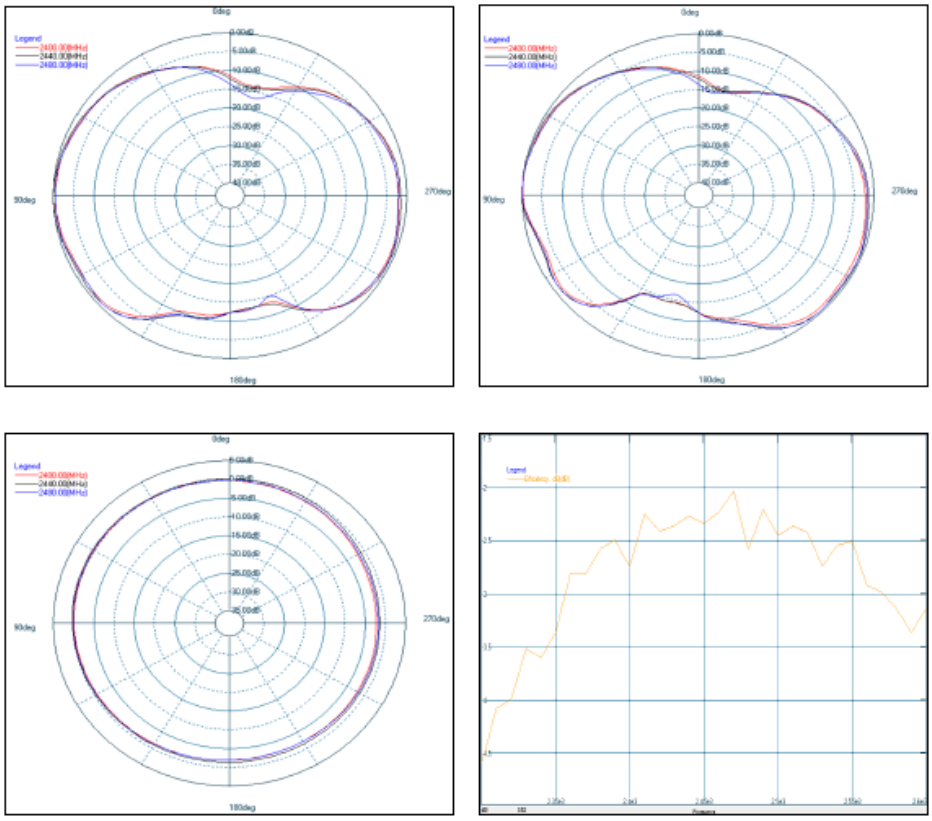

Figure 4.1. Typical 2D Antenna Radiation Patterns and Efficiency

Top Left: Phi 0º, Top Right: Phi 90º, Bottom Left: Theta 90º, Bottom Right: Radiation Efficiency