

Table 3.1. Antenna Efficiency and Peak Gain

Parameter	With optimal layout	Note
Efficiency	-1 to -2 dB	Antenna efficiency, gain and radiation pattern are highly dependent on the application PCB layout and mechanical design. Refer to for PCB layout and antenna integration guidelines for optimal performance.
Peak gain	1 dBi	

6.5 2D Radiation Pattern Plots

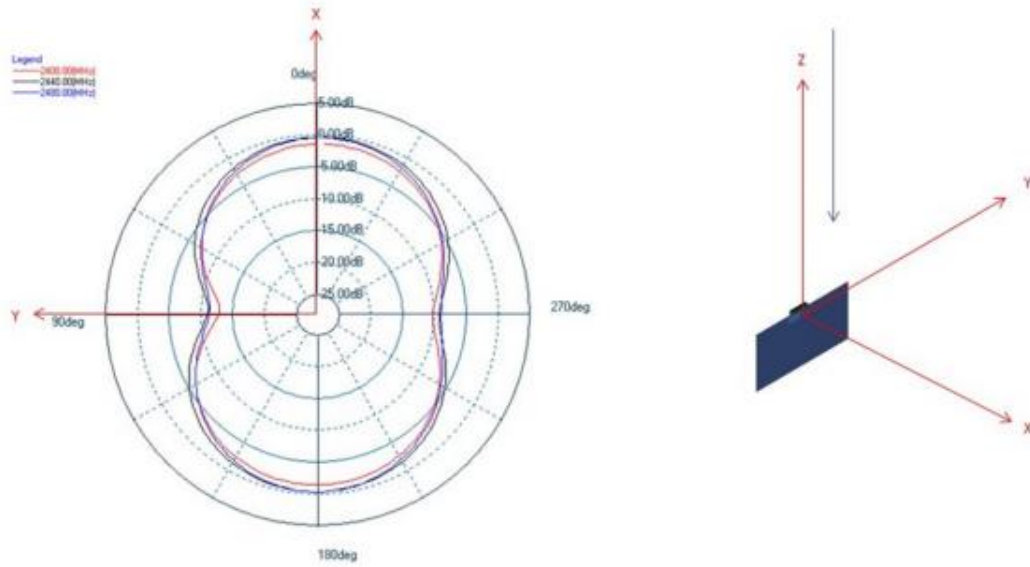


Figure 6.6. Typical 2D Radiation Pattern – Front View

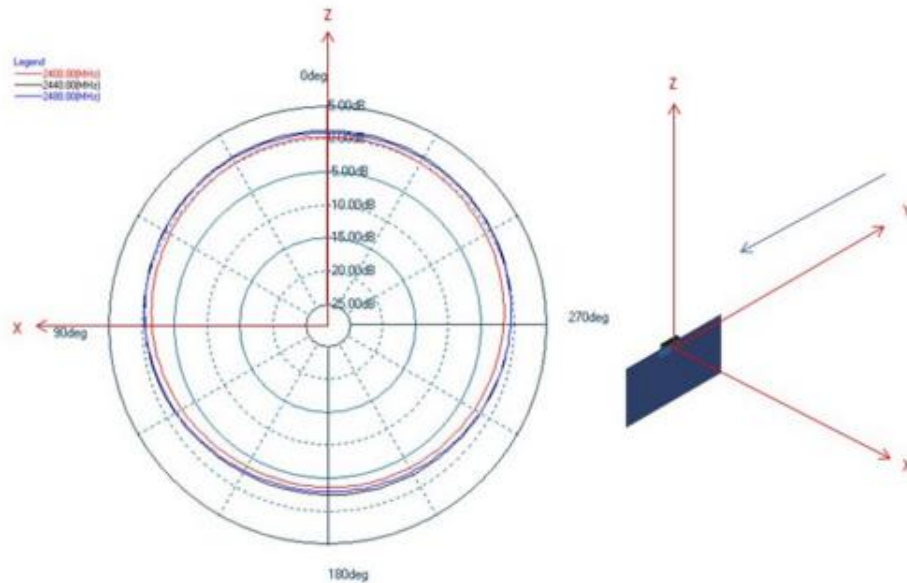


Figure 6.7. Typical 2D Radiation Pattern – Side View

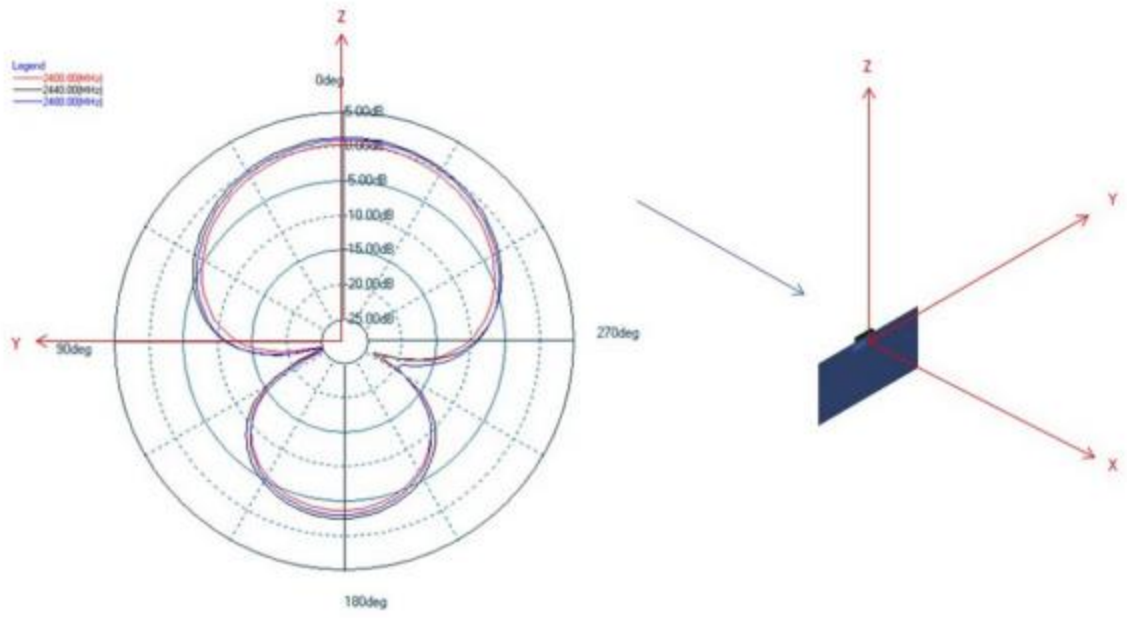


Figure 6.8. Typical 2D Radiation Pattern – Top View

8.2 BGM13S Recommended PCB Land Pattern

This section describes the recommended PCB land pattern for the BGM13S. The antenna copper clearance area is shown in [Figure 8.2 BGM13S Recommended Antenna Clearance](#) on page 126, while the X-Y coordinates of pads relative to the origin are shown in [Table 8.1 BGM13S Pad Coordinates and Sizing](#) on page 127. The origin is the center point of pin number 47. It is very important to align the antenna area relative to the module pads precisely.

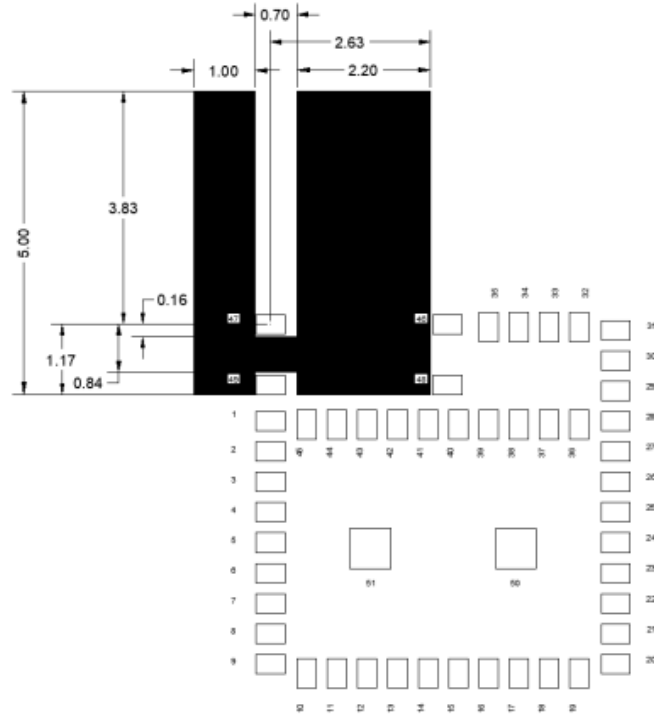


Figure 8.2. BGM13S Recommended Antenna Clearance