

Title: AIRMINI BLUETOOTH ANTENNA DATA
INFORMATION

Project/Product MONACO

1. Purpose

This document contains the Bluetooth antenna data information for the Monaco project and applies to the following device with the model name:

Model Name / Product Code	Marketing Name
38113	AIRMINI AUTOSET W AMER

2. References

2.1 SiLabs BT122 Data Sheet

3. Antenna Specification

The AirMini includes a ceramic chip antenna integrated into the SiLabs BT122 Bluetooth module. The specifications below are extracted from the data sheet [Ref 2.1] supplied by the antenna manufacturer.

3.1 Measured Antenna Efficiency

The measured antenna efficiency (dB) as a function of frequency is shown in the figure below.

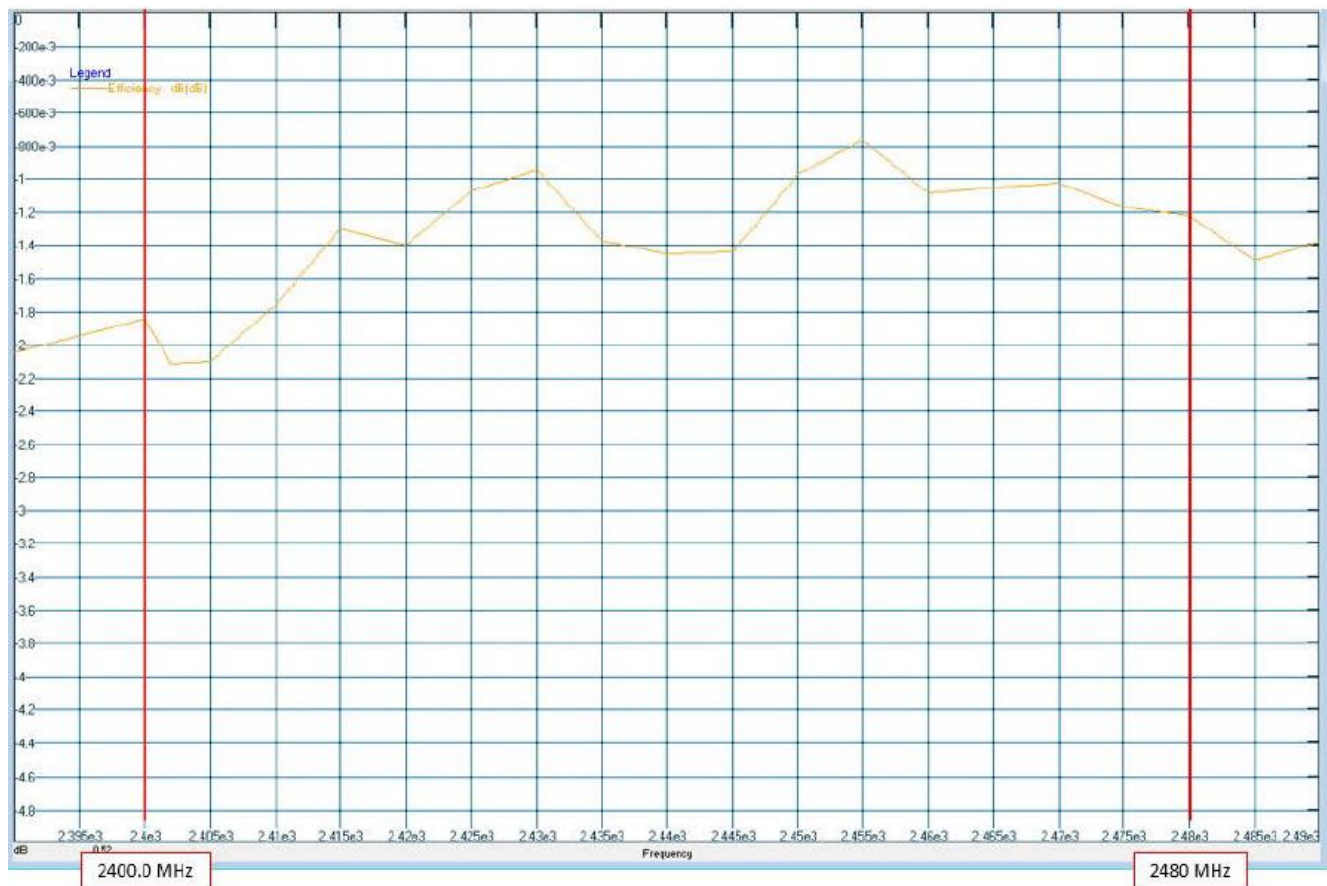


Figure 1. Antenna Efficiency Related to Frequency

3.2 Measured Antenna Peak Gain

The measured antenna Peak Gain (dBi) as a function of frequency is shown in the figure below. Peak gain from plot is 2.1dBi.



Figure 2. Antenna Gain Related to Frequency

3.3 Impact of the Size of GND Plane

The simulated impact to the operating range with different size of GND plane is shown in the figure below.

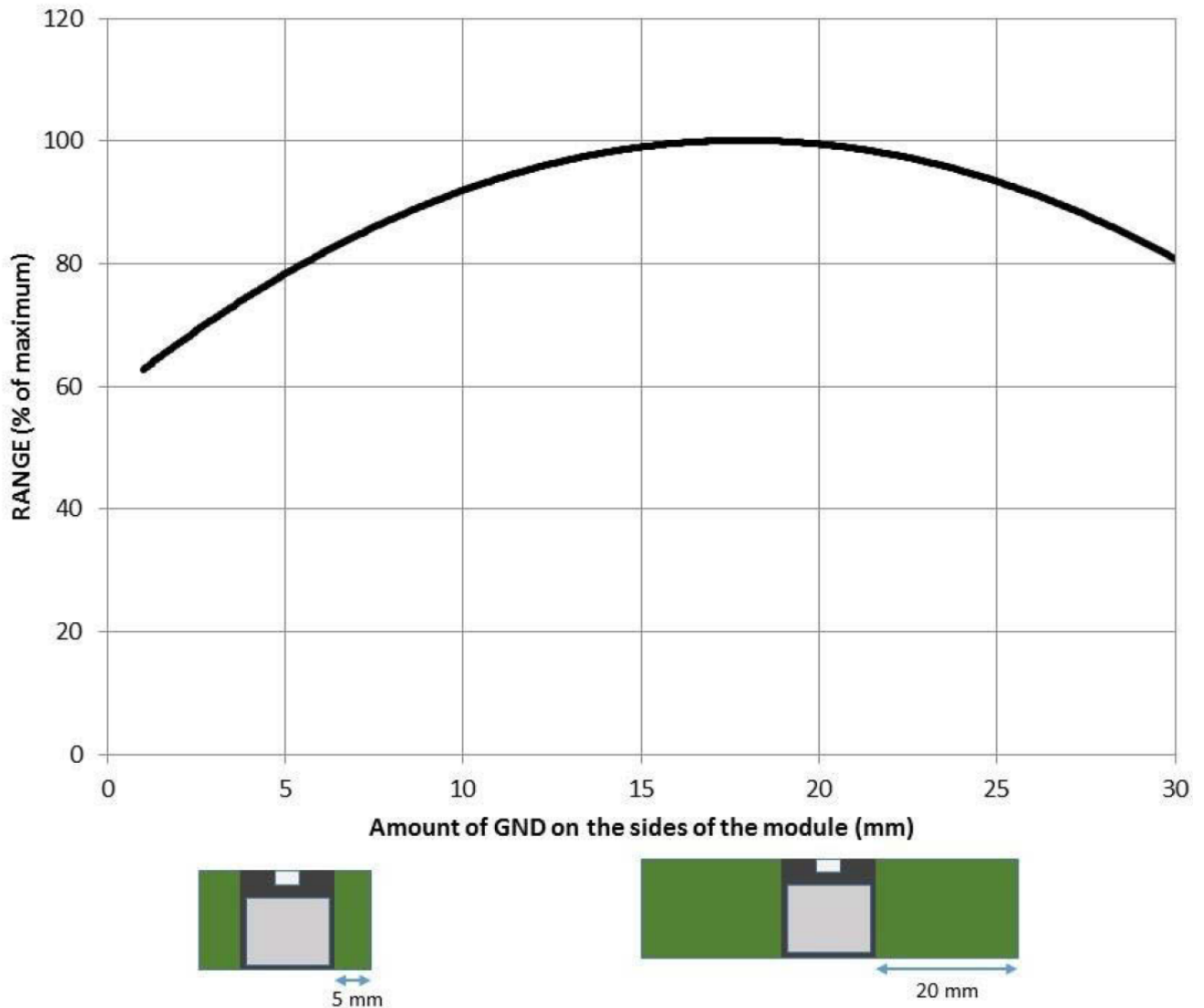


Figure 3. Impact of the Size of GND Plane to Range of BT122

3.4 Measured 2D Radiation Patterns

Typical radiation patterns of the BT122 module. 2D plots are shown in the figures below.

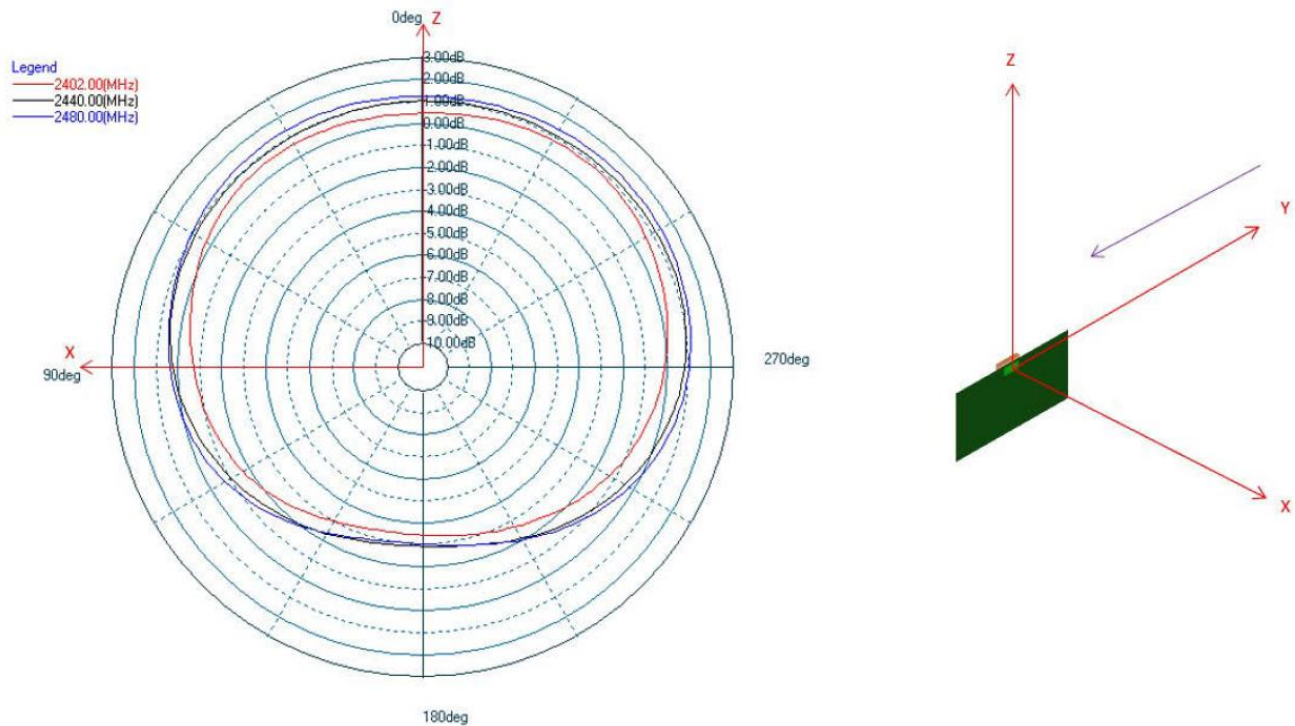


Figure 4. Typical 2D Radiation Pattern for BT122, Phi 0 Gain Cut (dBi)

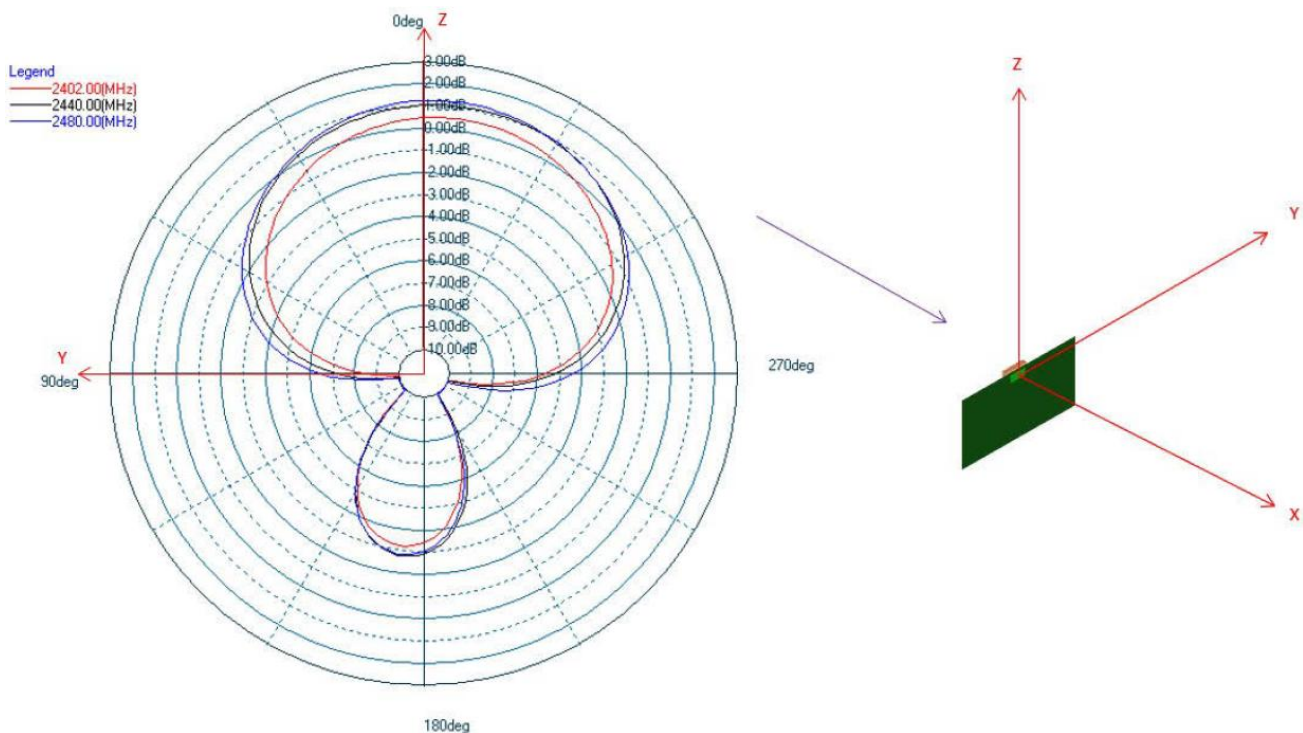


Figure 5. Typical 2D Radiation Pattern for BT122, Phi 90 Gain Cut (dBi)

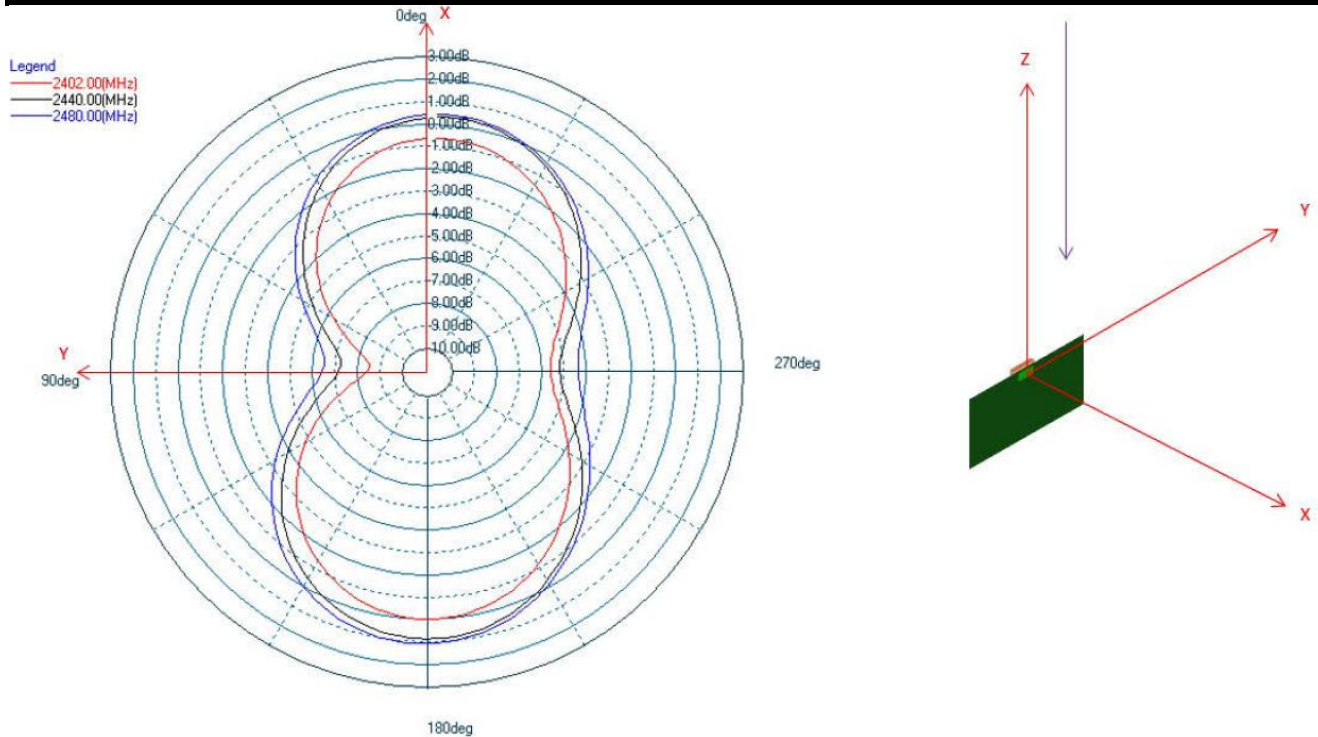


Figure 6. Typical 2D Radiation Pattern for BT122, Theta 90 Gain Cut (dBi)

3.5 Measured 3D Radiation Patterns

Typical radiation patterns of the BT122 module. 3D plots are shown in the figures below.

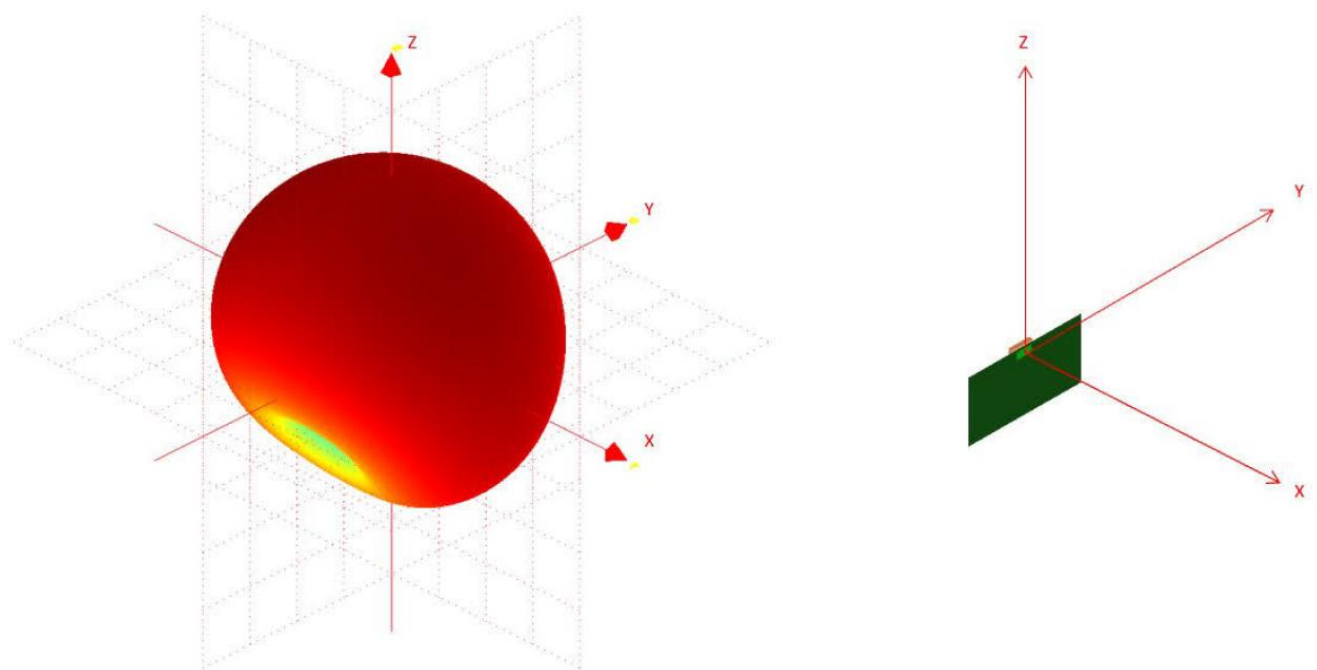


Figure 7. Typical 3D Radiation Gain Pattern for BT122 at 2440 MHz (View 1)

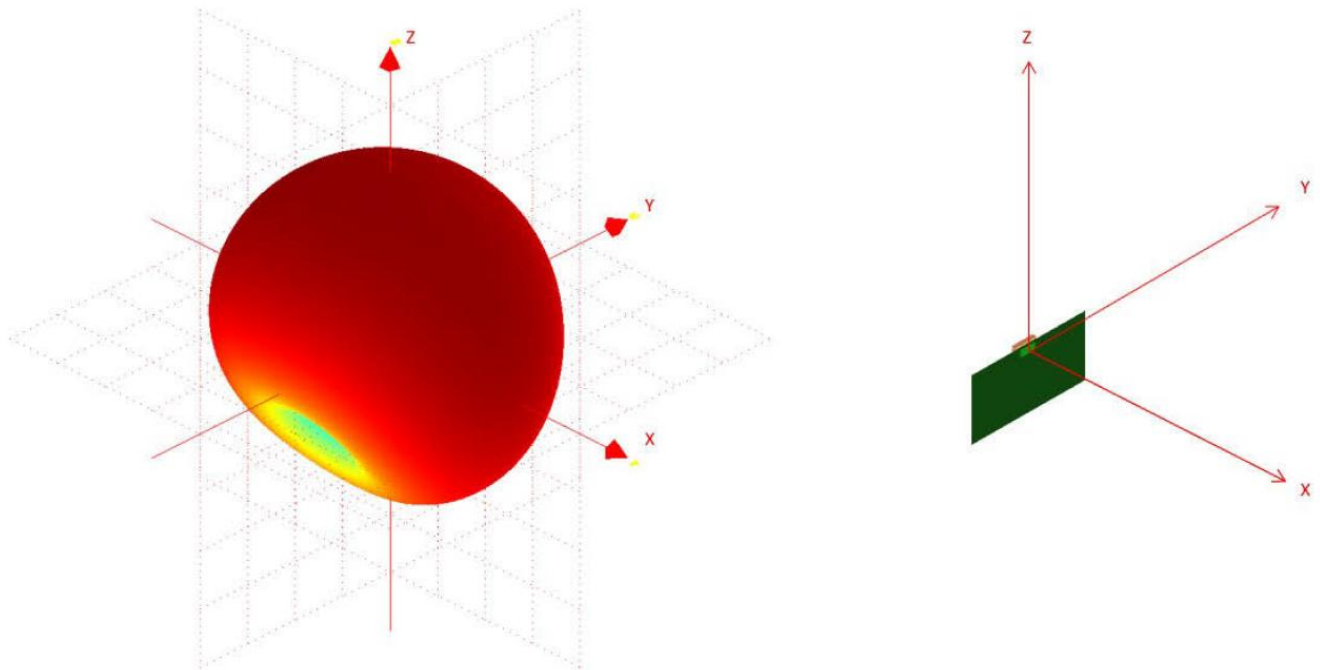


Figure 8. Typical 3D Radiation Gain Pattern for BT122 at 2440 MHz (View 2)