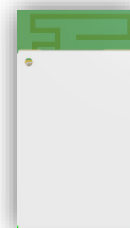


1. Description

BDE-ANT-209B is an integrated PCB trace antenna designed for BDE-BDM209B module.

The dimension of the antenna area is 12mm x 4mm x 0.6mm.



2. Specifications

Table 1. Antenna Specifications

Electrical	
Frequency (MHz)	2400 - 2500
Efficiency	28.9%
Peak Gain	-0.2dBi
Impedance	50 ohm
Polarization	Linear
Radiation	Omni-directional
Mechanical	
Dimension	12mm x 4mm x 0.6mm
PCB Substrate	FR4
Environmental	
Temperature Range	-40°C to 85°C

3. Antenna Characteristics

The antenna characteristics data are measured with the module sitting on the evaluation board as Figure 1 shows.

The dimension of the evaluation board is 68mm x 80mm x1.6mm.

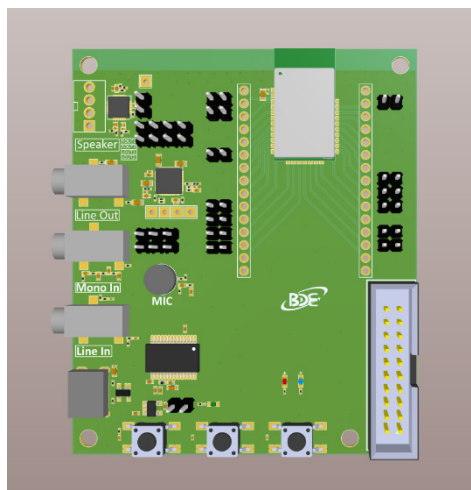


Figure 1. Module Placement

3.1 Return Loss

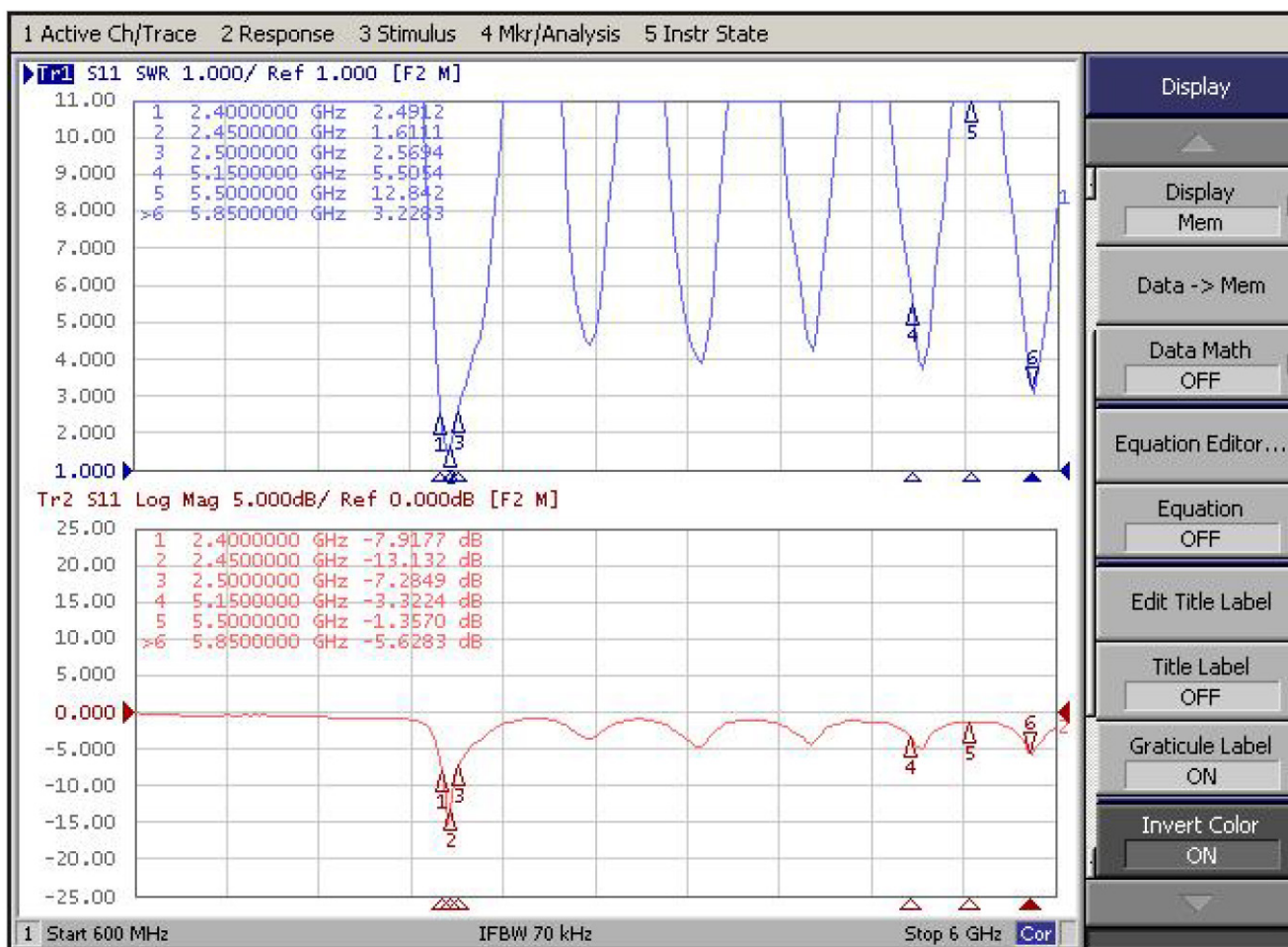


Figure 2. Return Loss

3.2 Radiation Pattern

The test setup of measuring radiation pattern is shown as Figure 3.

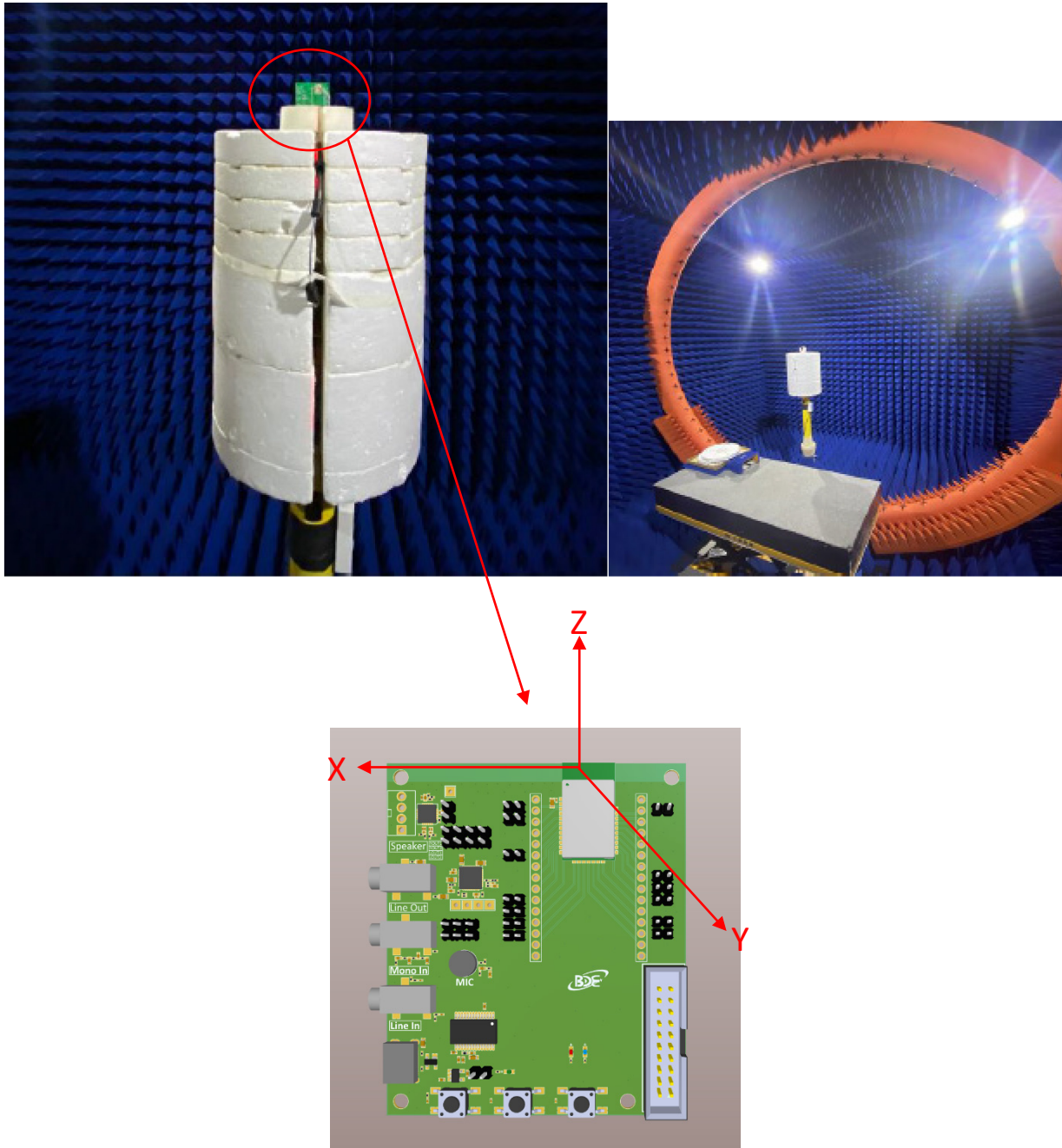


Figure 3. Test Setup

The radiation pattern is recorded as below figures.

2440.0MHz H+V, Eff: 28.9%

Back View

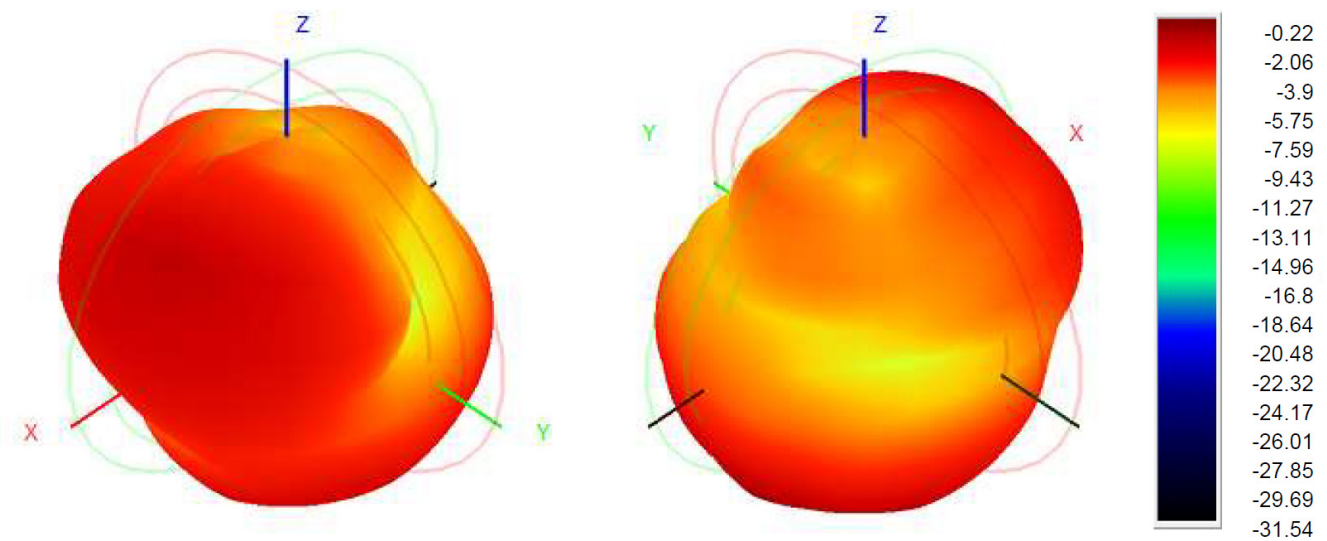


Figure 4. 3D Radiation Pattern at 2440MHz

2440.0MHz Total(E1-XZ), Max= -0.22dBi

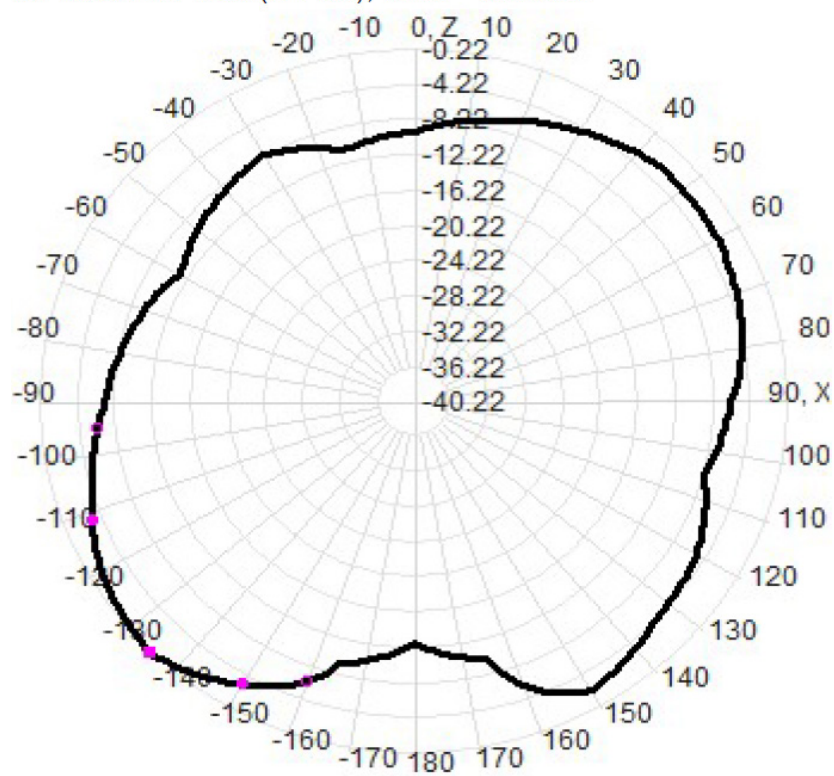


Figure 5. XZ-Plane Radiation Pattern at 2440MHz

2440.0MHz Total(E2-YZ), Max= -3.19dBi

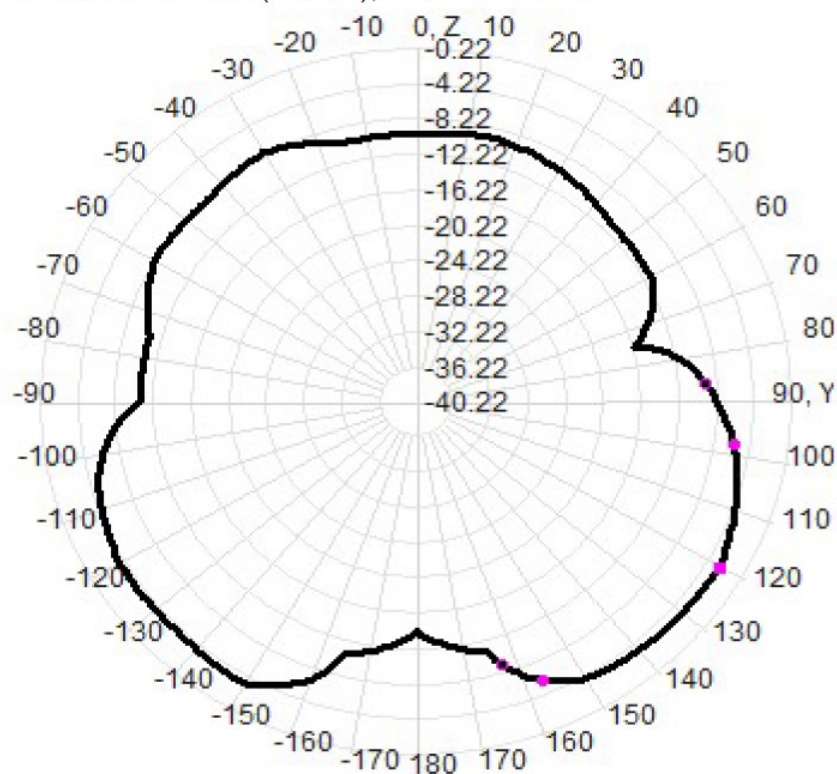


Figure 6. YZ-Plane Radiation Pattern at 2440MHz

Total(H-XY), Max= -5.39dBi, CirD=6.04

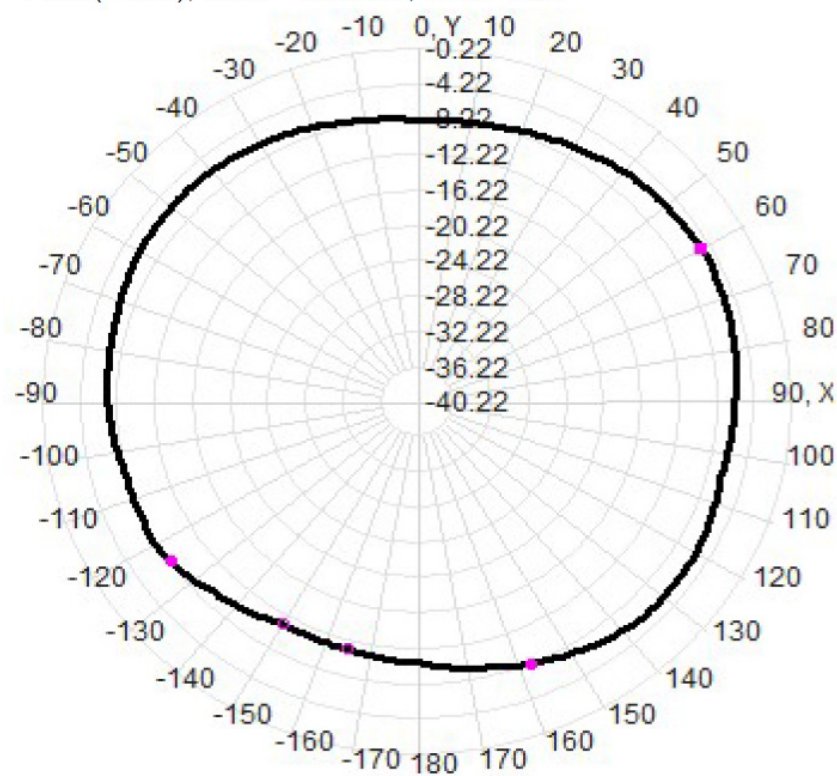


Figure 7. XY-Plane Radiation Pattern at 2440MHz

3.3 Efficiency and Gain

Frequency (MHz)	Efficiency (%)	Gain (dBi)
2400	21.7	-1.4
2410	24.9	-1.1
2420	26.9	-0.4
2430	27.4	-0.3
2440	28.9	-0.2
2450	27.6	-0.3
2460	26.5	-0.7
2470	26.0	-1.0
2480	26.0	-0.9
2490	24.9	-1.1
2500	23.3	-1.1

4. Revision History

Revision	Description	Date
V1.0	Initial release	2024/11/14

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