MODAL ANAYSIS OF BGS ARPIT PAYLOAD (Without Antenna)

Material – Al 6061 (E = 69 GPa, Poisson's ratio = 0.33, Density = 2700 kg/m^3)

Boundary Conditions: All DOF to be constrained at 4 Nos of M4 screws

Element: Course Mesh (Tetrahedron and Hexahedron)

Number of Modes Extracted = 5

Sl. No	Natural Frequency in Hz	Deformation in mm	Mode Shapes	Max Deformation Position
1	959.69	5.967	Bending	At the centre of the top cover
2	1320.2	4.2416	Bending	At the Main PCB
3	1438.9	5.6827	Twisting	At the top cover
4	2081.7	5.7716	Combination of bending and twisting	At the Main PCB
5	2122.1	6.4354	Complex Mode	At the top cover

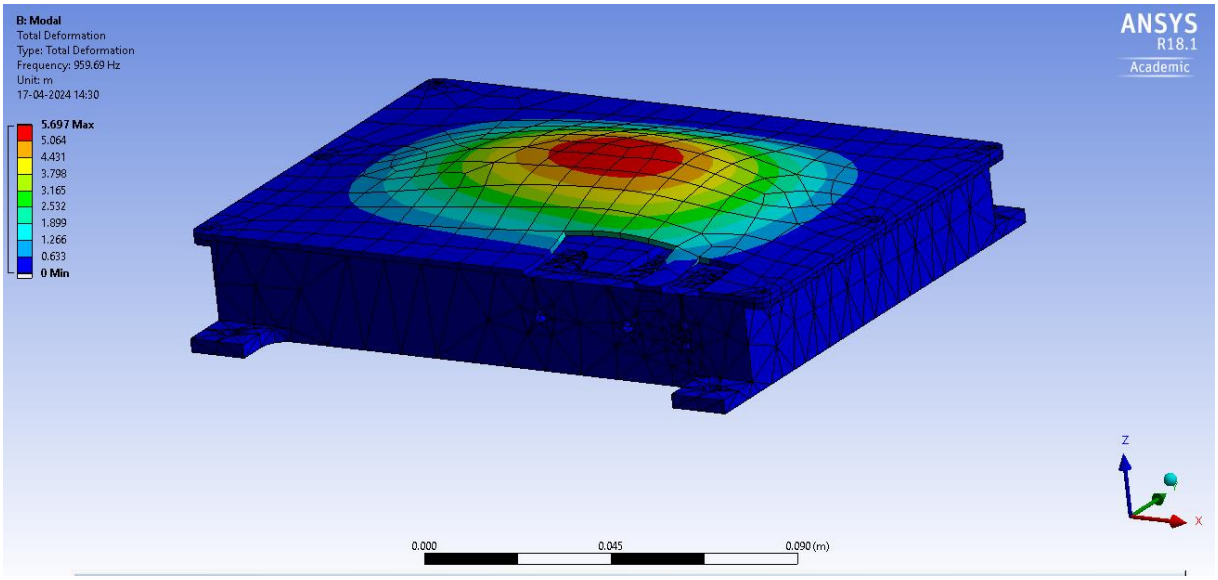

Figure 1: Mode 1

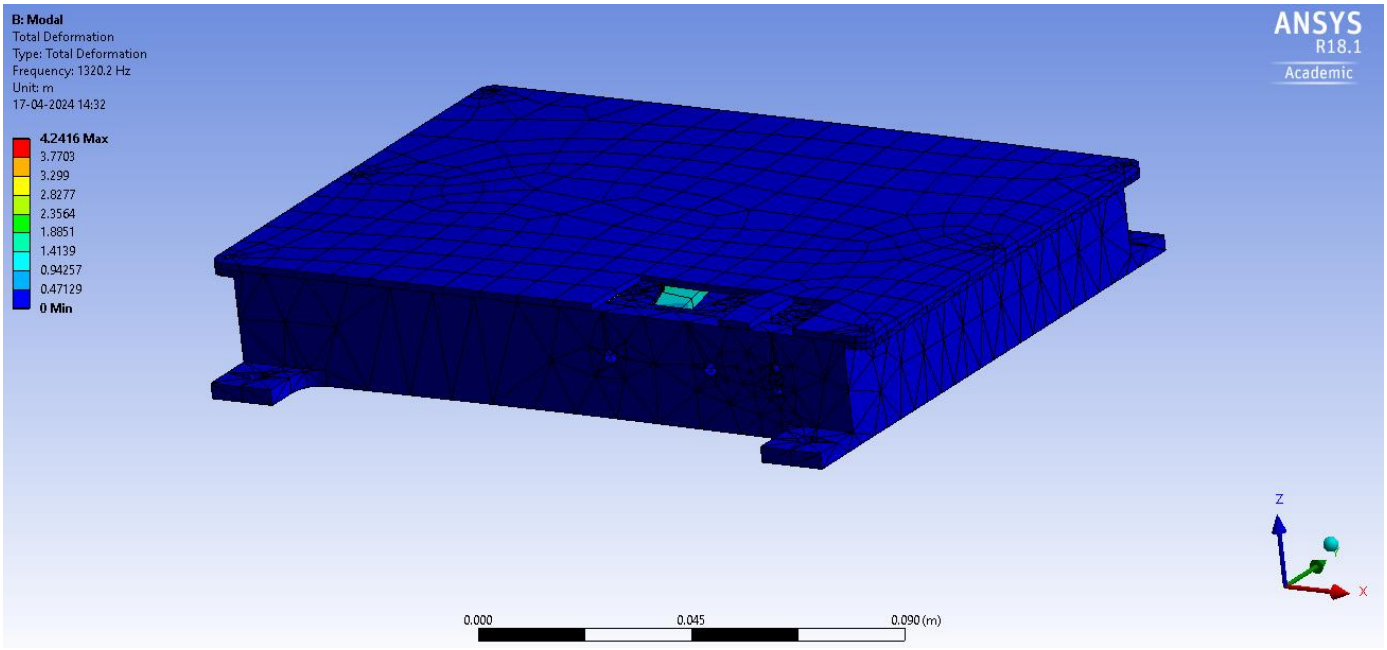

Figure 2: Mode 2 with top cover

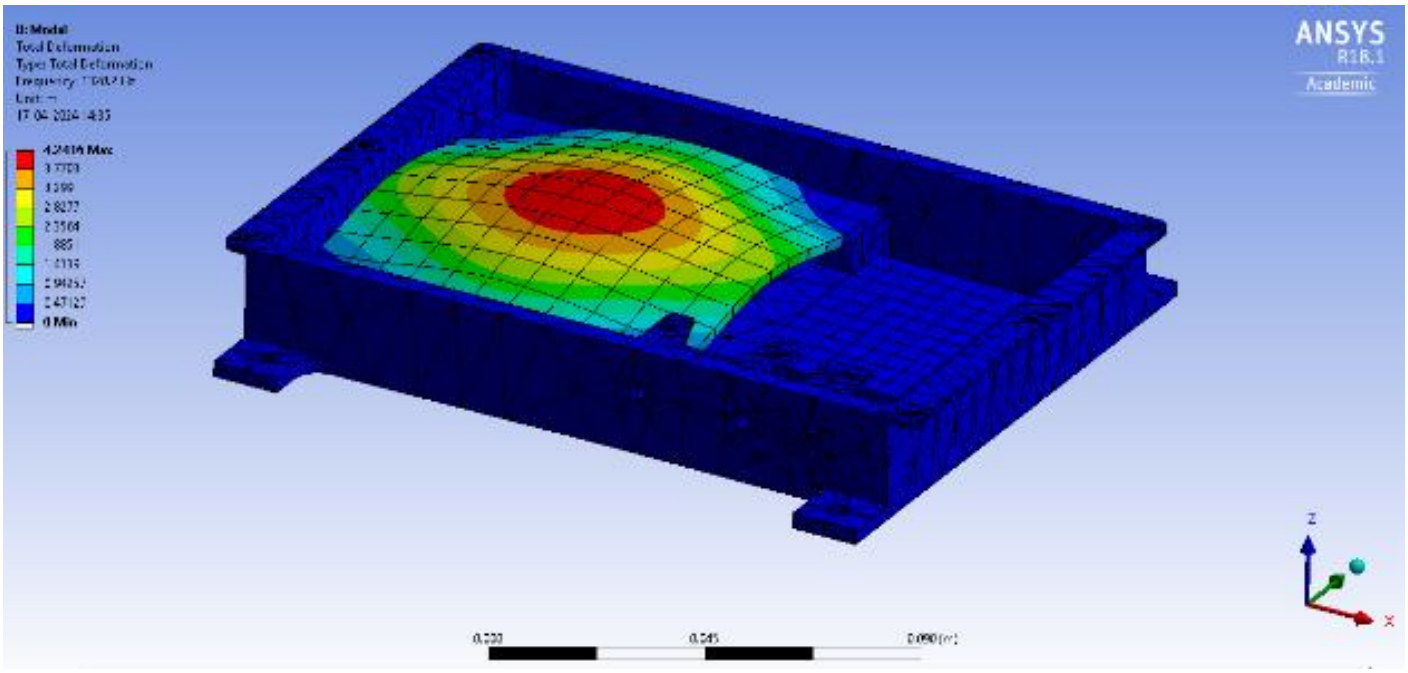

Figure 3: Mode 2 without top cover

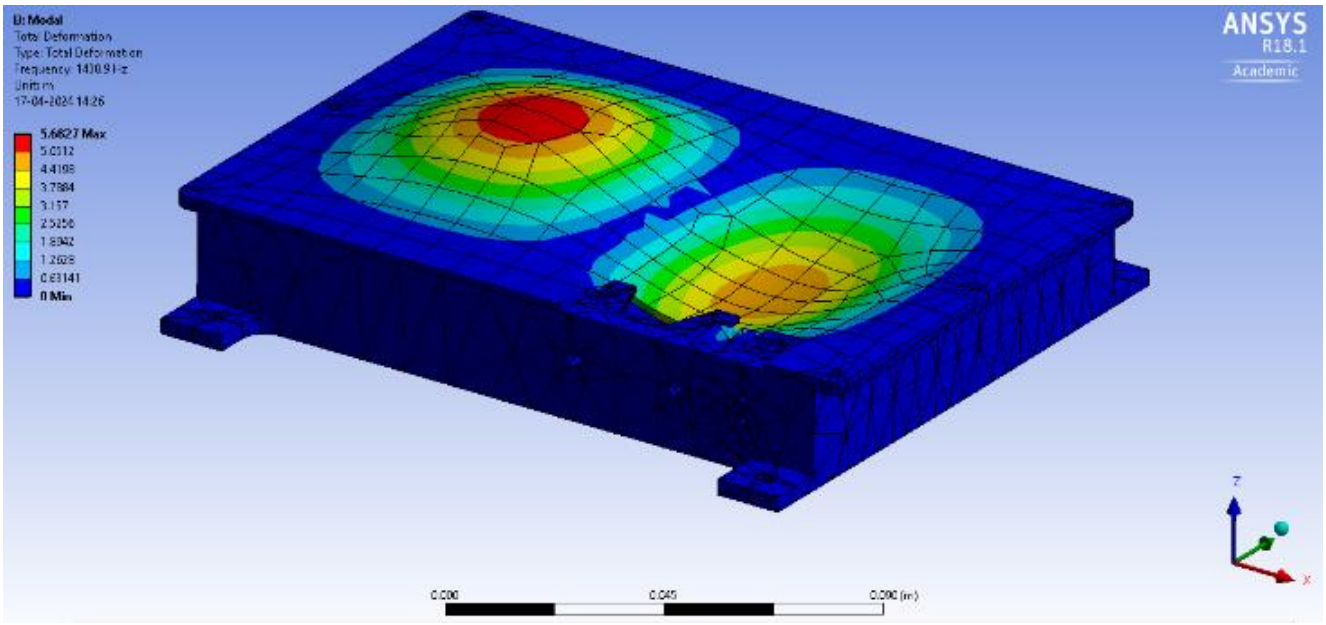

Figure 4: Mode 3

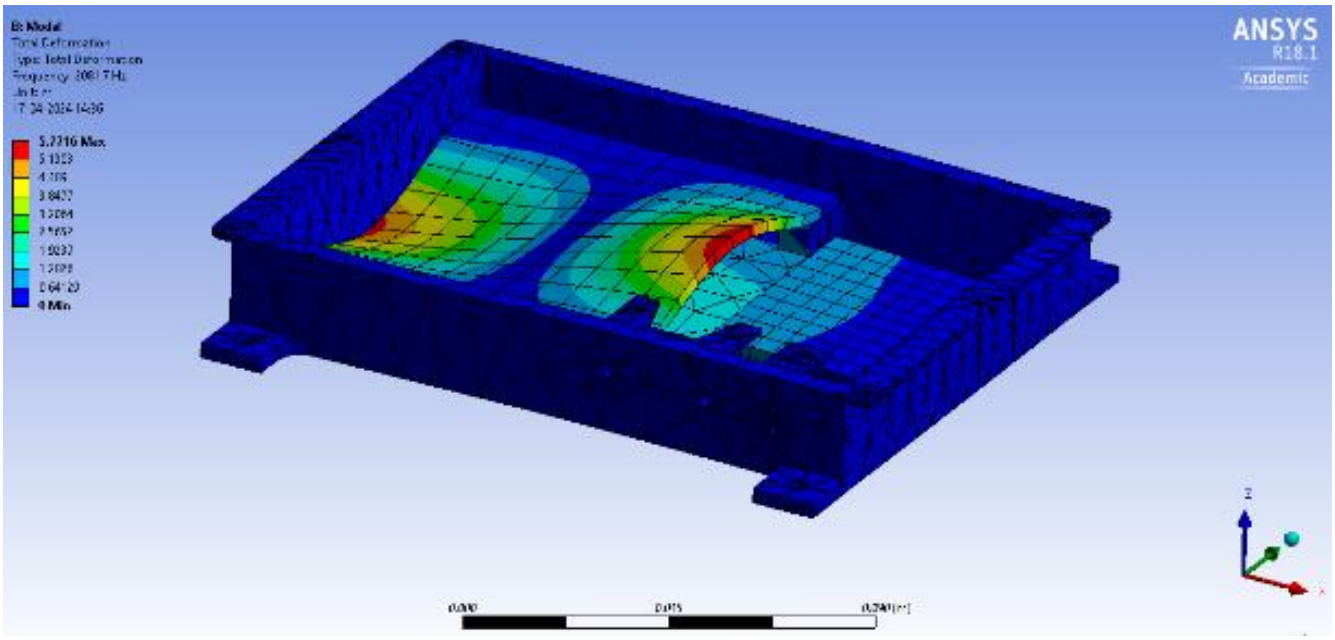

Figure 5: Mode 4 without top cover

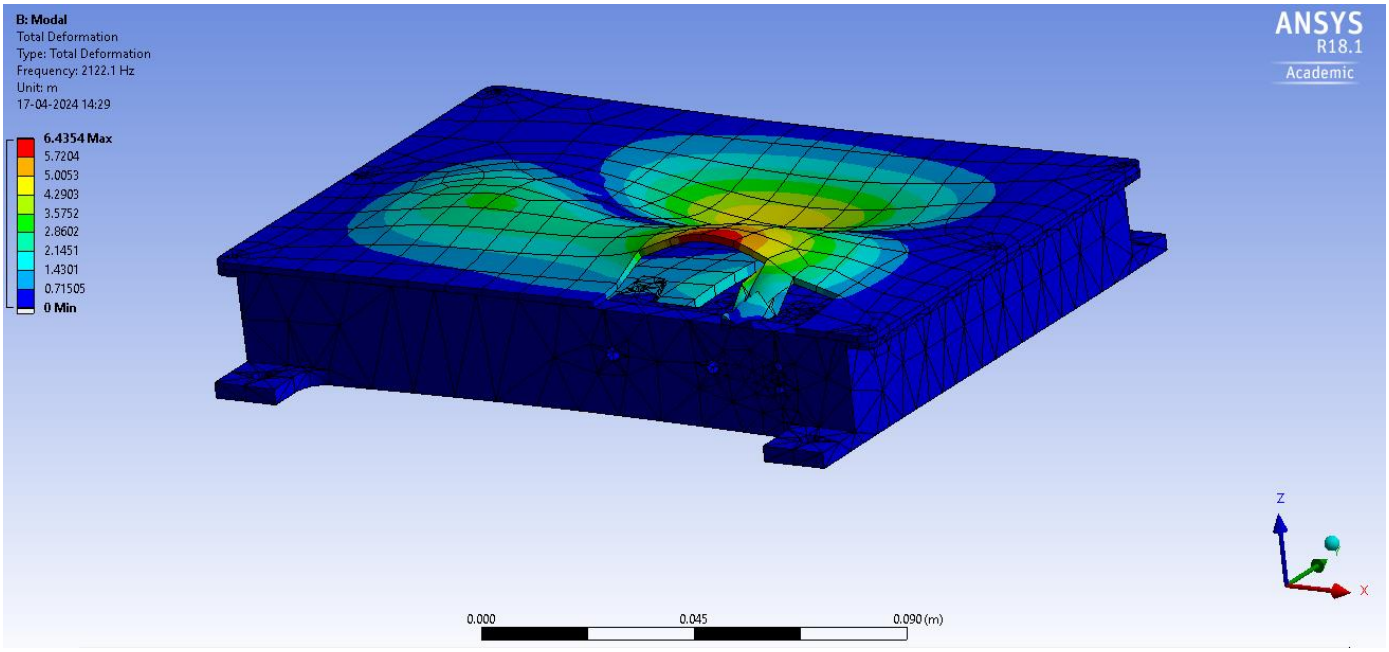

Figure 6: Mode 5