

Small Satellites (13)

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REQUIREMENT AND CRITICAL DESIGN PARAMETER ANALYSIS OF A NEW GENERATION  
MICROSATELLITE PLATFORM**Abstract**

Small satellite has shown the unique potential in space technology. With the development of the CubeSat standard, hundreds of small satellites has been launched into space for research, education or commercial purpose in 21th century. However, confined by the same standard, most CubeSats in orbit has no  $\Delta V$  capability for orbital maintenance, maneuver and formation flight. Moreover, the constraints of CubeSat volume and power budgets lead to severe restrictions on payload design, performance and lifetime, which have became to a major limitation of satellite application. In this paper, the background, motivation and necessity of developing a new generation 10~100 kg level microsatellite platform will be introduced, the top level and system level requirements of the satellite will be discussed. Based on previous piggyback launches of CubeSat missions and new expendable launch vehicles, the critical design parameters of the new microsatellite platform will be analyzed and optimized.