

PolySat's Next Generation Avionics Design

Greg Manyak

Electrical Engineering Department
California Polytechnic State University San Luis Obispo, USA
gregmanyak@gmail.com

John M. Bellardo

Computer Science Department
California Polytechnic State University
San Luis Obispo, USA
bellardo@calpoly.edu

Abstract—The CubeSat platform provides a unique challenge for flight software design due to the incredible size and power constraints. A number of tradeoffs must be made to balance effectiveness, fault tolerance, and cost. These basic requirements have been combined with the lessons learned

from Cal Poly's past 8-bit avionics system to design a significant revision based around a 32-bit microprocessor running Linux. This work analyzes both generations of avionics design, including a discussion of major design principles that are relevant to other CubeSat missions.

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