Modular CubeSat
The world's first adaptable satellite system

Advisor: Kenneth Mease

Goals

Successfully build, test and launch a modular CubeSat platform.

Start the next generation of satellite development at UCI.

Keep satellite cost under $5000

Objectives

Integrate a Motorola Z smartphone into a satellite platform.

Communicate over large distances using simple antenna designs.

Perform power management for a week long mission.

Utilize COTS parts for efficient and cost friendly design.

Tape Measure Antenna

Allows for cheap and effective communication between the Earth and the satellite.

Aluminum Frame

Provides structural support and allows the satellite to survive the high g-force loads during launch.

Microcontroller

Acts as the communications hub for the satellite and watches for any anomalies with the smartphone.

Radio Transmitter

Provides 3W of power to the antennas at 438 MHz and allows for high data rate communication.

Motorola Z

The heart of the satellite. Contains the modular component interface and provides telemetry data to the transmitter.

The Big Picture

Modularity will allow anyone to design and build a personal satellite.

Cheaper space research due to lower development costs.

Allow more schools to participate in CubeSat development.

Team Members

Team Lead: Nima Mohseni
Software Lead: Areg Hunanyan
Circuit Design: Ben Kueffler
Communications: Omead Pooladzandi
Communications: Anh Le
Phone Integration: Arte Ebrahimi

December	January	March	April	May

Prototype Assembly and Testing

Flight Model Assembly

Breadboard Testing

Balloon Test

Qualification Testing

Qualification Tests 1%
Prototype 22%
Prototype Testing 13%
Flight Model 50%

$9,350