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| BLUEsat UNSW Student Satellite Project  Document BLUE.2011.3.0 |
| Battery Charge Regulator |
| Progress Report Aug 2012 |
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# Introduction

The Battery Charge Regulator (BCR) system is an essential subsystem of the BLUEsat microsatellite. It takes power directly from the solar cells and regulates the amount of current that is supplied to the batteries and the rest of the satellite.

To date there has been no successful implementation of a Battery Charge system that would be suitable for use on the satellite in Low Earth Orbit. Previous implementations of the BCR have either lacked consideration for the performance of the Solar Panel array in Low Earth Orbit (LEO) or failed performance under testing with battery cells and the load that the electrical systems on the satellite would provide.

Poor documentation has required that the current generation of BLUEsat (as of November 2011) rely on word-of-mouth to piece together the machinations behind the designs of previous prototypes of the BCR and therefore to properly analyse why they failed. This document is an attempt to consolidate all previous information about the Battery Charge Regulators and put forward a new design for scrutiny.

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