



Remote solar power systems face demanding extremes of heat and cold. Our custom high capacity energy storage designs are proven safe and tough.

Solar Cell Energy Storage

Small to moderate sized solar energy arrays must make use of efficient, safe energy storage systems. Applications with high current, low duty cycle demand can tax standard battery storage systems. Orchid Technologies was selected to perform the custom design of a high current, low duty cycle energy delivery and lithium ion battery management system. Our custom, scalable design provided battery management and power delivery in increments of 2000 Watts each. Multiple units can be combined to satisfy a variety of high peak load requirements.

Scalable Energy Management

Each energy controller supports six high capacity lithium ion batteries. Each battery is capable of providing about 350 watt hours of energy. High current DC paths were fashioned using thick four-ounce copper circuit board lamination layers. Multiple energy managers may be combined to support a variety of peak load requirements. Programmable digital circuitry on each energy manager supports load balancing, error detection, and safety features.

Fanless, Compact, and Rugged

It's a tough world for remote solar energy system managers. Arctic and desert environmental extremes are typical. Required operating temperatures range from minus 40 to plus 105 degrees Celsius. At low temperatures, materials are subject to cracking and degradation. At high temperatures, any additional heat produced by the circuitry itself causes trouble. Conservative component selection together with ruggedized circuit board assembly techniques allow our energy manager design to achieve high reliability without forced air heating or cooling.

Orchid Technologies: Power Management

The development of custom electronic products for our OEM clients is Orchid's entire business. The development of high energy storage managers with rapid design cycles, demanding technical requirements, and unforgiving schedules sets us apart. Call Orchid Technologies today!



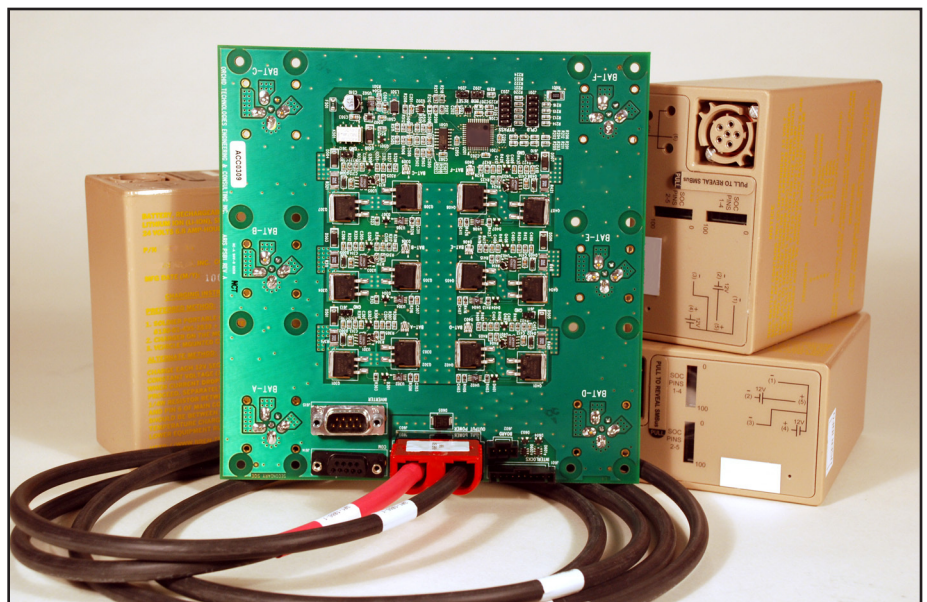
"Manage a few thousand watts of DC energy storage, provide under voltage, over voltage, under current and over current lock outs – oh, and operate without the need for any cooling. And meet our cost targets too. Nicely done once again, that's why we know we can count on you!"

- Systems Project Manager



**ORCHID TECHNOLOGIES
ENGINEERING & CONSULTING, INC.**

Copyright © 2010 Orchid Technologies Engineering & Consulting Inc, all rights reserved. OTEC and the Orchid Technologies logo are trade makes of Orchid Technologies engineering & consulting, Inc. All other marks are the property of their respective owners.



Custom Engineering From Concept to Production

147 Main Street, Maynard, MA 01754 www.orchid-tech.com 978-461-2000 fax:978-461-2003