

# CUSTOMER SUCCESS STORY

ESOLAR POWERS UP DESIGN BY USING ALTIUM DESIGNER TO CREATE DIGITAL CONTROLLERS THAT MANAGE SOLAR POWER STATIONS.



## The Need

eSolar generated energy has long been an under-used natural resource. However, with worldwide pressures to develop greener power alternatives, there has been a recent surge in solar technologies. Headlining this push is eSolar, a US company which provides utility-scale solar power generation facilities. eSolar applies mass production techniques to create a unique power plant architecture that is flexible, powerful, and affordable.

Considering the unique design of eSolar's stations, there was a need to focus on developing an intuitive system that could address, communicate with, and control each individual mirror among the thousands of mirrors installed in a typical power plant. As a result, eSolar needed to develop a multifaceted, compact digital controller that could drive motors and manage power and communications with several mirrors, all over a proprietary communication channel.

**" I looked at several alternatives to Altium and found each one to be lacking in its capabilities on one area of design or another. Altium Designer was the first package I worked with that had strong capabilities in both schematic capture and board layout. While all other vendors offered an integrated solution, Altium Designer was the only one to truly unify the design process. "**

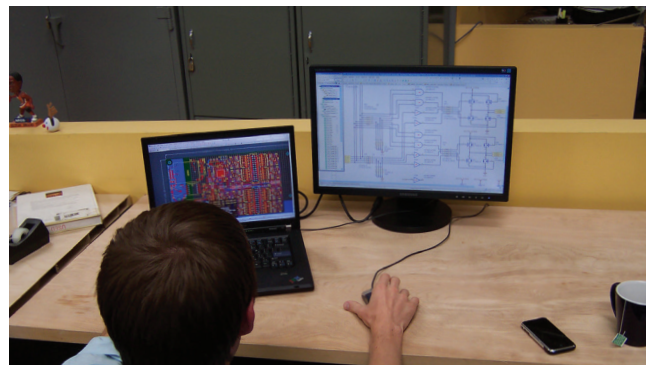
Carter Moursund, Vice President of Engineering, eSolar



## The Challenge

The development of the digital controllers posed various challenges. After evaluating several competing systems, eSolar found that although many systems offered integrated solutions, each lacked one capability or another. They were not unified systems. Finding an all-inclusive toolset that could ease the steep learning curve of a new product proved to be difficult.

In addition, the digital controllers needed to be highly sophisticated. The unique system of interconnected modules added complexities to their design requirements. Networking the several functions of the controllers with the numerous heliostats needed a strict control environment that could accurately work with the mirrors for premium performance.



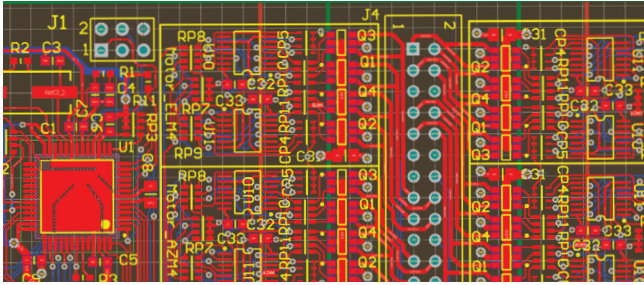
## The Solution

Choosing Altium Designer as its EDA solution, eSolar found it could avoid the time-consuming, expensive training cycles that frequently cause development downtime. Engineers could start the project without delay because of the logical user interface and easy-to-use tools and wizards found in Altium Designer.

The unique unified environment of Altium Designer, which combines software, hardware and programmable hardware design in one system, offers greater development flexibility. Being able to combine the various design disciplines, eSolar found that there were no restrictions on the way it could move, delete or change the controller during any

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part of the development stage. This process also provides an added advantage: eSolar noticed the unified system offered a clearly defined documentation process, one that could manage all its project requirements within a single component database.



## The Results

Altium Designer shaved weeks off the costly training cycles associated with a new product. By introducing intelligence into its control systems, eSolar was also able to drastically reduce installation costs and increase the efficiency of its solar power generating stations. The result? A sophisticated and commercially viable energy alternative that is competitive with the dominant fossil fuel industries.

## Product Information

eSolar delivers turnkey solar power generation facilities to utilities and renewable resource owner-operators. Generation assets are constructed using individual modules to create a scalable architecture that leverages the cost advantages of mass manufactured components. This system allows for phased facility development, financing, and construction to be customized for projects from 5 MW to over 500 MW. To scale to larger capacities, multiple modules are deployed at same site. These modules may be constructed in series to conserve cost, or in parallel to deliver maximum generating capacity quickly. Once deployed, modules form a redundant system, ensuring low maintenance costs and high system reliability.

## About eSolar

eSolar builds large scale solar thermal power projects around the world and is committed to producing affordable products for the benefit of the environment as well as investors. For customers interested in any of eSolar's technology, project development or project investment opportunities, please follow the web link below. eSolar is based in Pasadena, CA.

## ABOUT ALTIUM

Altium Limited (ASX:ALU) creates electronics design software. Altium's unified electronics design environment links all aspects of electronics product design in a single application that is priced as affordable as possible. This enables electronics designers to innovate, harness the latest devices and technologies, manage their projects across broad design 'ecosystems', and create connected, intelligent designs.

Founded in 1985, Altium has offices in San Diego, Sydney, Karlsruhe, Shanghai, Tokyo, Kiev, with value added resellers worldwide. For more information, visit [www.altium.com](http://www.altium.com). You can also follow and engage with Altium via Facebook, Twitter and YouTube.