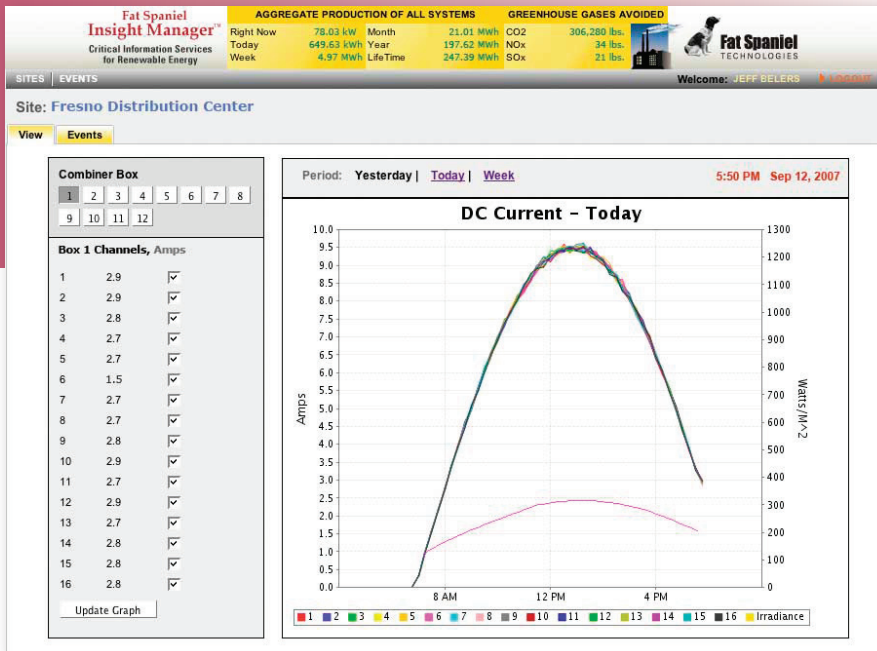




STRING MONITORING FOR SOLAR ELECTRIC SYSTEMS: DETECT FAULTS, MAXIMIZE OUTPUT



Fat Spaniel Technologies provides an effective way to monitor string performance and pinpoint problems.

String-level Visibility

Large solar electric systems can contain thousands of modules and hundreds of strings. As a commercial system installer or PPA service provider, it's in your interest to ensure each of those modules is functioning properly for maximum output and maximum customer satisfaction. Failures in solar modules and strings can go unnoticed for long periods of time – weeks, months, or even years – driving down system output and cutting into profitability. Testing each string regularly can be costly and time-consuming. How can you identify faulty modules and strings efficiently and cost effectively?

Fat Spaniel's String Monitoring Service can provide continuous visibility into the health of your solar electric system, keeping tabs on performance and detecting problems at the individual string combiner box level. The string performance data is Internet-accessible through Web views, reports, data downloads and email / SMS-based alerts.

Smart Monitoring with Smart Combiner Boxes

The Fat Spaniel String Monitoring Service provides near real-time monitoring of the DC current generated by each string of solar modules. Working with selected combiner box manufacturers, Fat Spaniel "enables"

Critical Monitoring and Reporting Services for Renewable Energy Systems

Benefits

- Maximize long-term system output and return on investment
- Remotely monitor individual string performance 24x7, from any Web browser
- Use Fat Spaniel Insight Manager portal to manage ALL your sites, including string monitoring
- Pinpoint and fix "small" failures before they become major issues
- Increase customer satisfaction with improved service and higher uptime
- Off-the-shelf combiner box hardware reduces long-term project risk vs. proprietary solutions
- Use these views as effective sales tools to sell more systems to new customers
- Increase the return on Power Purchase Agreements – creating a more valuable asset for project investors

For more information, please contact your installer or visit www.fatspaniel.com

Our sales and technical specialists will also be glad to help you at sales@fatspaniel.com or call 1.408.279.5262

these boxes by adding highly reliable, off-the-shelf monitoring hardware. These “smart” boxes communicate with the Fat Spaniel Monitoring System, which monitors string performance through Insight Manager™, a multi-site management portal.

At-A-Glance Views for Quick Problem Detection

The Fat Spaniel String Monitoring service displays a list of all combiner boxes at each site. Users can click on individual boxes to display the current reading in numeric form as well as to compare string performance versus irradiance for the current day in graphical form. Graphs can also be viewed for the previous day and week. Under-performing strings can easily be identified and repaired.

Proactive Alerts

Identifying non-performing strings in a large installation with thousands of modules can be like finding a needle in a haystack. Too much data can obscure performance issues. Taking advantage of the Fat Spaniel Insight Manager alert engine, the String Monitoring Service supports automatic notification via short message service (SMS) or email to notify installers and PPA providers of a performance issue with specific strings. Maximum output is assured.

Off-the-Shelf Hardware Cuts Risk

By using off-the-shelf combiner box hardware and offering a choice of combiner box suppliers, Fat Spaniel has reduced the risk that over the 20+ years of life of a project that the system owner will be saddled with a dead-end proprietary solution. Less risk means a more valuable asset.

Also, Fat Spaniel has teamed with its combiner box partners to ensure that they can provide you with boxes that are pre-assembled and configured for easy installation and trouble-free service for many years.

Basic Renewable Energy Monitoring Includes:

- Supports 6 to 24 strings per combiner box
- Touch Safe™ fuse holders are standard
- ETL listed to UL1741
- Requires Fat Spaniel Revenue-Grade Monitoring Service
- **Requires Fat Spaniel Insight Manager portal**

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