Bandwidth-Saving IO Solutions for a Solar Farm Lighting Control System
2010-07-07

Location / Country : Greece

Product Solutions:
 ioLogik E2210
Smart Ethernet Remote I/O with 12 DIs, 8 DOs

Introduction

Project Introduction
A company in the renewable energy industry needed to find an I/O device which can operate within the demanding requirements of renewable energy systems. Renewable photovoltaic systems are one of the most sustainable and reliable energy technologies available today, and today more and more countries are deploying solar farms to harness the power of the sun to generate a clean power with low CO2 emissions.

As an expert in the design, development, installation, and maintenance of photovoltaic systems since 1998, the company provides a solar farm remote monitoring service via satellite communications. However, satellite bandwidth is very limited. Their ideal I/O device must be able to operate in a low-bandwidth environment and support scheduling functions for better light management.

System Requirements
- I/O device that can overcome low bandwidth limitations
- Scheduling function support for lighting systems
- SNMP protocol support for remote device monitoring and control

Moxa Solution
To control their lighting system, the renewable energy provider deployed Moxa’s ioLogik E2210 Active Ethernet I/O, which uses active architecture to operate in a low bandwidth network environment. Compared to a traditional Ethernet I/O solution that uses a passive polling architecture, the ioLogik E2210’s active, event-based alarm messages consume less bandwidth and is ideal for the bandwidth confines of satellite communications. Instead of relying on constant device polling, users can define SNMP trap messages for events. When a pre-defined event triggers a trap message, the ioLogik E2210 will proactively send out an SNMP trap.

To improve the lighting control, the customer needed a schedule function that turns the lights on and off. They were able to quickly define an on/off schedule for the system’s LED lamps without any programming using Moxa’s Click&Go™ configuration feature. Thanks to Click&Go™ defining I/O event schedules is as easy as arranging meeting times in Microsoft Outlook—system engineers no longer need to write complex control logic.

In additional, the ioLogik E2210 supports the SNMP protocol, which made the integration with the customer’s existing Network Management System (NMS) a breeze that was simpler than ever before!

System Diagram:
Product Applied:

- ioLogik E2210
- Supports SNMP protocol
- Schedule function for I/O control
- Active architecture to work in low bandwidth networks

Why Moxa

- Low network bandwidth consumption
- Simple to integrate with NMS
- Define and configure an on/off schedule in minutes