



Green Power Global

Solar Power Station Applications

Project Background

All solar power stations include three major devices—a power inverter, a PLC, and meters. The power inverter converts the energy generated by the plant to power for end-users, and the PLC controls the base’s sun tracking system. Although some inverters and meters are serial devices, these days PLCs are often Ethernet devices, and consequently the station needs to connect both serial and Ethernet devices to the Ethernet backbone network or the control center.

Power generation systems must be stable and reliable, which is why Ethernet redundancy in the Ethernet backbone is essential. In addition, solar farms are normally located in wide open locations such as deserts, which means that the devices should be able to endure wide variations in temperature.

Moxa’s Solution

With the NPort® S8000, you can connect all of your Ethernet and serial devices to the control center easily and economically with a single device. The NPort® S8000 is a compact and rugged all-in-one Ethernet switch and serial device server.

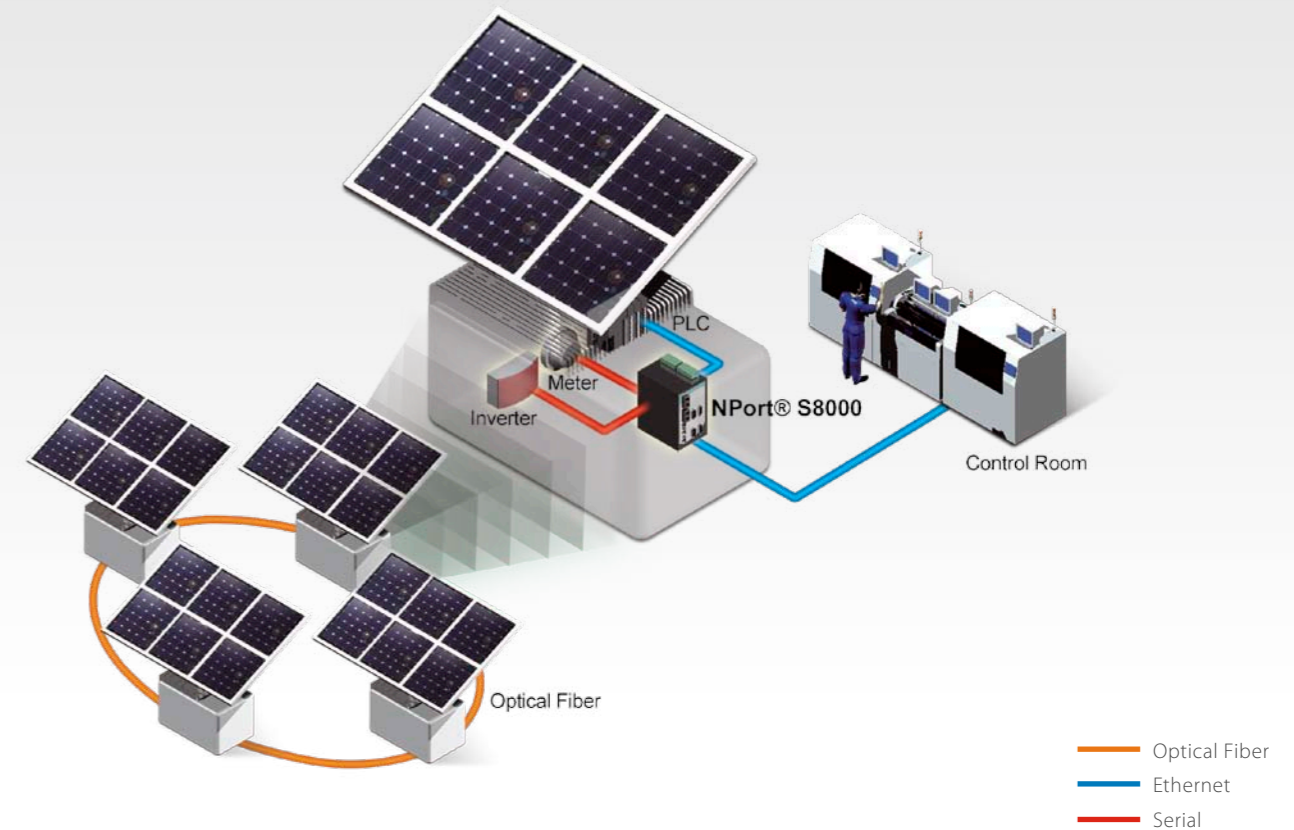
The NPort® S8000 provides Ethernet redundancy and ring structure to increase the reliability and availability of your system. Not only does the NPort® S8000 support the standard STP/RSTP ring protocol but it also supports Moxa’s proprietary Turbo Ring protocol, which has the world’s fastest recovery time of under 20 milliseconds.

With the NPort® S8000’s dual power inputs and complete hardware protection, your network’s stability is ensured. Aside from being certified to meet the UL508 international safety standards, the hardware is also fully equipped with surge protection for serial, Ethernet, and power to guard against voltage spikes. In

addition, the NPort® S8000 has level 4 ESD protection and 2 KV of isolation protection on each serial port.

The NPort® S8000 is perfectly suited for critical applications, and is the best solution for this type of solar power system.

Application Topology



Benefits

- ◆ All-in-one design (integrated switch and serial device server) for flexibility and to simplify industrial network connections
- ◆ Two fiber ports, 3 Ethernet ports, and 4 3-in-1 serial ports greater flexibility
- ◆ Ring Redundancy at the device level for reliable connections
- ◆ Wide operating temperature from -40 to 75°C
- ◆ Rugged design with complete hardware protection (UL508, full surge protection, Level 4 ESD, 2 KV of isolation on each serial port)
- ◆ Compact size and cost effective solution

Products Implemented



NPort® S8000 Series

- 4-port RS-232/422/485 serial device server
- Serial QoS for configuring serial data transmission priority
- 2 KV (DC) isolation protection for each serial port
- Adjustable pull high/low resistor for RS-485 ports
- 5-port managed Ethernet switch built in
- Two fiber Ethernet ports and three Ethernet ports
- Ethernet redundancy with Turbo Ring (recovery time < 20 ms) or RSTP/STP (IEEE 802.1w/D) supported
- QoS, IGMP-snooping/GMRP, VLAN, LACP, SNMPv1/v2c/v3, RMON supported
- Surge protection for serial, power, and Ethernet