Moxa Ruggedized Ethernet Switches Control Lighting on Shanghai WorldExpo
2010-10-06

Location / Country : China

Product Solutions:
EDS-316 Series

16-port unmanaged Ethernet switches

EDS-518A Series

16+2G-port Gigabit managed Ethernet switches

EDS-G509 Series

9G-port full Gigabit managed Ethernet switches

EDS-P308 Series

8-port IEEE 802.3af PoE unmanaged Ethernet switches

Introduction
Project Introduction

Six lighted pillars in 2010's Shangai World Expo were the work of Shanghai Grandar Light Art & Technology, a Chinese provider of LED lighting solutions and products. Each pillar used 60,000 LED lights to present a dynamic display of colorful images and slogans. The individual LED lights must respond without delay to a central control signal in order to present a single combined image. The pillars need a network with substantial bandwidth in order to meet their performance requirements. In addition, the cabinets for the control units are located outside of the pillars, so the switches must also be rugged enough to operate in harsh outdoor environments. Because of a previous successful partnership with Moxa in a project for the Beijing National Aquatics Center, Shanghai Grandar Light Arts & Technology decided to partner with Moxa again for this high-profile project.

System Requirements

• Ethernet networks with high bandwidth for real-time data transmission
• Industrial-grade devices with rugged design capable of operating in extreme temperatures

System Diagram
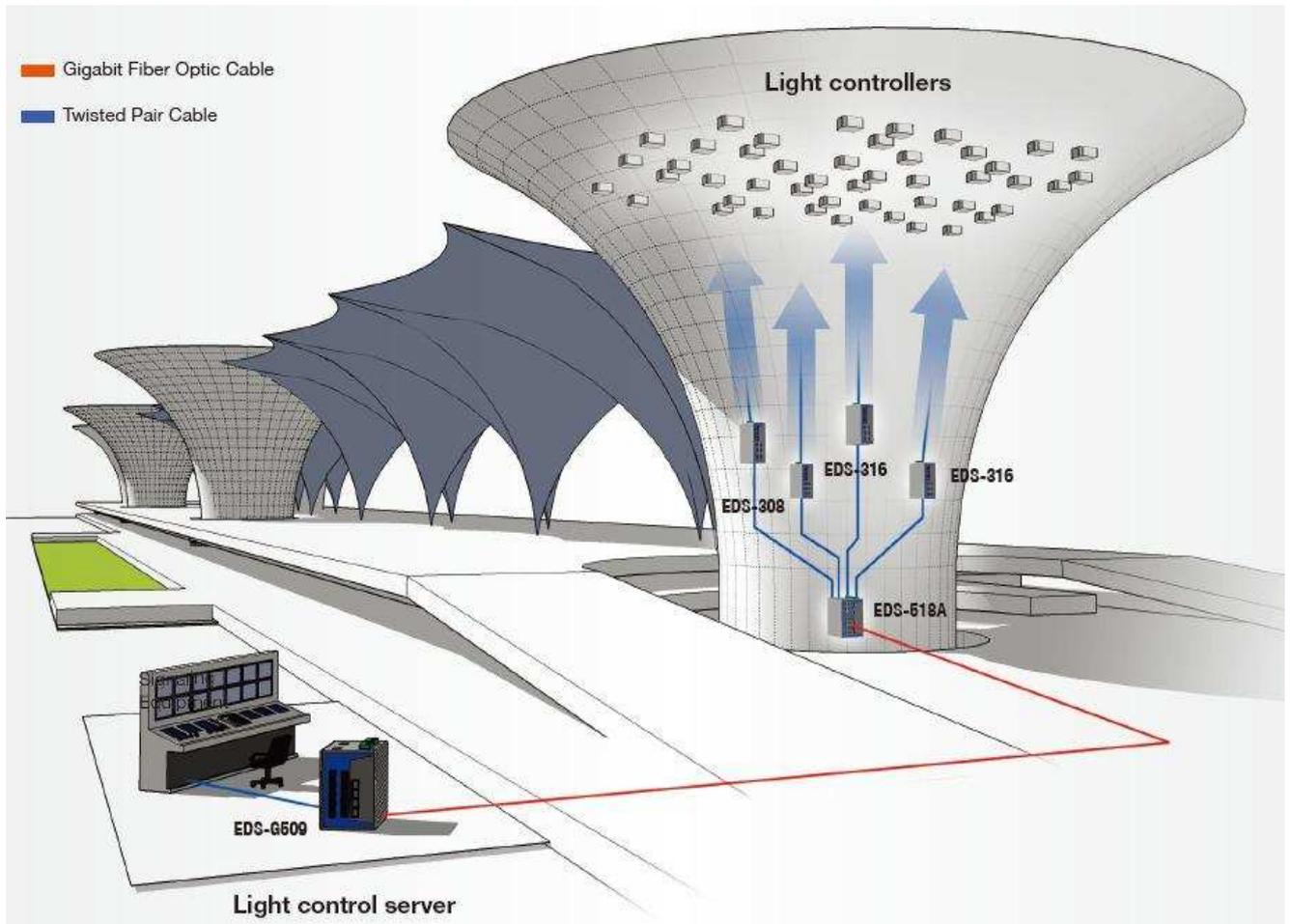
Moxa Solution

A number of Moxa EDS-308 and EDS-316 industrial Ethernet switches were deployed on top of each pillar to communicate with the light controllers. These ruggedized switches with high temperature tolerance (-40 to 75°C) are able to confront the harsh temperature changes outdoors. Both are equipped with redundant dual 24 VDC power inputs, and a built-in relay warning function alerts network engineers when power failures or port breaks occur. The high-density ports of the compact sized EDS-316 switches reduce the switches' required installation base when connecting to the large number of light controllers, providing the customer with a cost-effective networking solution.

EDS-518A switches were installed at the bottom of the pillars to connect the Ethernet backbone with the EDS-308/316 switches. The EDS-518A comes with two Gigabit ports, providing sufficient bandwidth for a massive amount of data communications. The two Gigabit ports serve as uplinks to the control room to ensure that all the data can be delivered simultaneously in real time. In the control room, Moxa's EDS-G509 switches with nine Gigabit ports provide a full Gigabit backbone with higher performance. Gigabit speed ensures that large amounts of data are transmitted across a network quickly and without delay.

Why Moxa

• The high bandwidth capability of the EDS-518A Gigabit Ethernet switch provides an ideal solution for an uplink to a Gigabit backbone and downlink to several field site switches.
• The wide temperature range of the EDS-308/316 and EDS-518A allows for reliable operation under extreme temperature conditions.
• The high port density of the EDS-316 enables a more cost-effective networking solution by reducing the number of switches needed.
• Moxa's rugged, high-performance products and reliable services, as well as successful cooperation in previous projects have earned great trust from Shanghai Grandar Light Art & Technology.