

# TXI Aggregate Group Uses Magnum Hardened P62F Switch to Migrate Quarry Control Systems to Ethernet

## An Industrial Ethernet Application

### TECHNOLOGY TODAY

Industrial Control applications are taking advantage of Ethernet to network dispersed control stations. As Ethernet is adapted to run in industrial environments, the benefits are large. Fiber provides a noise-free medium and handles long distances; the 10/100 auto-sensing capability of most Ethernet LAN cards provides convenience; and the ability to connect directly to corporate information systems, where Ethernet has been the standard for years, eliminates the time and cost of moving data from one type of network to another.

### ABOUT TXI

TXI's Aggregate Group, headquartered in Dallas, Texas, is one of the largest suppliers of aggregate – native stone, gravel and sand – in North Texas. Their modern plants furnish a full spectrum of aggregate material from fine sands to custom blends of gravel, either natural or crushed. TXI Aggregate Group prides itself on adopting innovative technologies that are both environmentally sound and able to enhance the group's commitment to provide cost-competitive aggregate materials.

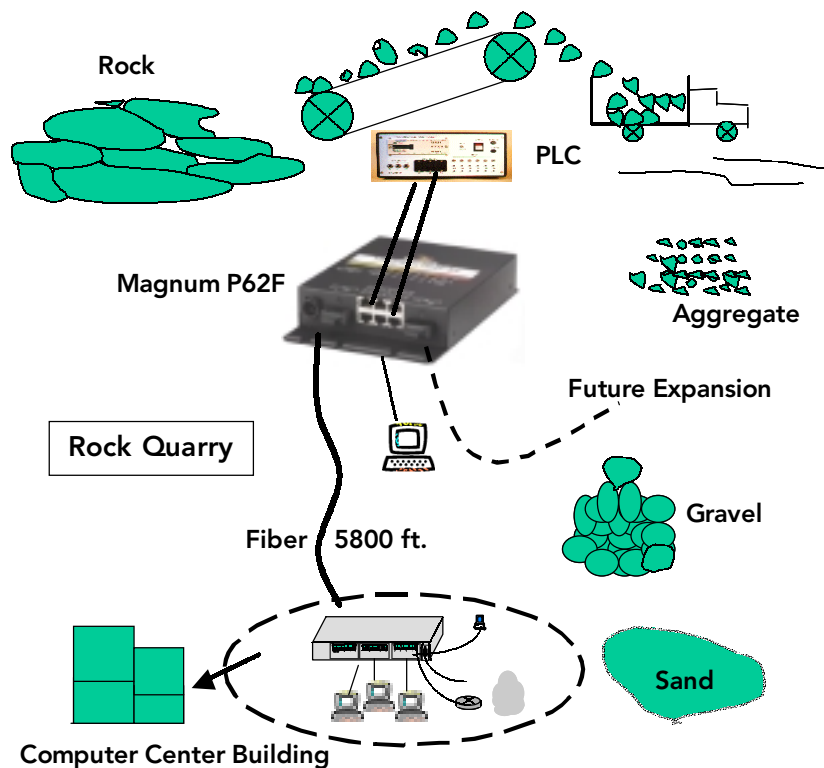
### THE CHALLENGE

TXI saw the benefits of connecting its installed programmable logic control (PLC) system using fiber-based Ethernet in its rock quarry at Bridgeport, Texas. Fiber cabling provided an interference-free medium for connecting instrumentation in different areas of the site, and would speed up accurate communications among various control stations in the quarry. However, the system to be installed required the ability to withstand the wide temperature range of the North Texas climate, as well as resist the dirt, dust, and irregular dynamite blasts at the quarry site.

TXI retained Z Technologies Industrial Automation Inc., of Ft. Worth, Texas, to find a solution. Z Technologies is a full service process control engineering company providing cost-effective automation of industrial processes. Z Technologies offers solutions from designing to implementing control networks that sense, monitor, control and communicate in industrial applications.

### THE SOLUTION

Z Technologies and TXI chose GarrettCom's Magnum P62F Hardened Switch for the deployment of the new Ethernet network. The compact P62F is designed to thrive in rugged environments with a minimum of fuss. Other alternatives required housing an Ethernet switch in a refrigerated box, which would have wasted energy and increased both complexity and cost.



## Rock Quarry

### TXI Aggregate Group

#### THE RESULT

TXI has installed the first leg of its networking project, running a fiber line between the P62F installed at the crusher and the computers installed at the office. The installation is providing the high reliability and imperviousness to dust, dirt, and noise that are required on the busy site. TXI plans to expand the Ethernet network throughout the entire installation.

The Magnum P62F Switch offers numerous benefits. It is an off-the-shelf solution to noisy, dirty, outdoor environments that offers:

- Ambient temperature rating of  $-40^{\circ}$  to  $160^{\circ}\text{F}$  to withstand Texas weather without additional insulating housing
- A sealed unit in a compact housing, impervious to dust and dirt
- Fiber media that is resistant to electrical noise, handles the long distances between quarry locations
- Built-in fiber ports that support easy installation of daisy-chained units as the application expands
- Flexibility to interconnect PCs or laptops as well as industrial control devices from same Ethernet switch
- AC power supply, which allowed TXI to utilize available power at the site (most hardened products are available with only DC power)

#### MAGNUM P62F SWITCH

The Magnum P62F Hardened Switch is specifically designed to operate in industrial environments and out of doors. Its case is engineered as a heat sink, which allows it to be deployed in environments where temperatures can extend far beyond the range of human comfort and normal electronics. It has six 10/100Mb switched RJ-45 ports and two 100Mb fiber ports that allow daisy-chained configurations of the P62Fs to be deployed over long distances.

The Magnum P62F can be configured to connect to  $-48\text{VDC}$ ,  $24\text{VDC}$ , standard AC power, or  $125\text{VDC}$  power sources. Operation from AC power and  $125\text{VDC}$  power is achieved using a Magnum PSX unit, a specially designed power source for extended temperature applications.

#### ABOUT GARRETTCOM

GarrettCom, Inc., is the leading manufacturer of industrial and carrier-class Ethernet LAN products. GarrettCom offers a comprehensive line of ETSI and NEBS-certified switches and hubs for use in telecommunications, industrial, and automated environments. GarrettCom markets its products through a network of resellers, OEMs, system integrators, and distributors worldwide. For more information on GarrettCom and its products, visit [www.GarrettCom.com](http://www.GarrettCom.com).

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