



American Fibertek Inc. White Paper:

Network Connectivity for Legacy Security Systems

Many facilities throughout the world have fire alarm, burglar alarm and surveillance systems that were installed before the coming of the Internet Age. For many, there is not the financial ability to replace these systems with more up to date equipment nor may there be pressing need as they properly perform their intended purpose. That does not mean that they can not be 'connected' and 'IP enabled' for a very reasonable cost.

All of the types of systems above perform monitoring functions for safety of life, limb and property. Gathering of status and data in a timely manner can be crucial to providing security and safety. By utilizing relatively inexpensive devices, these systems can be 'upgraded' to provide immediate communications to the personnel responsible for them.

As these systems generate alarms routed to auxiliary relays, they also typically provide serial data streams. There are network connectivity devices that can take dry contact alarms and serial data streams such as RS232 and pass these through Ethernet networks. With proper access to internet routing, these alarms and data streams can be sent anywhere in the world where there is internet access. They can even trigger emails and text messages to mobile devices infinitely faster than the human reaction times associated with central station monitoring.

In the case of one company, the burglar alarm triggers a phone call to a central station that then sets up a call to the local police and a call list of management personnel. It typically takes 20 to 30 minutes before a manager is informed of the situation. This is after the police authorities have come and gone. With devices we discuss here, an SMS text message could

be sent via a mail server distribution list to all managers simultaneously and notification on their smart phones would appear within seconds.

As a practical example, we can use the Net IO series of products from American Fibertek, Inc. These devices provide the network connectivity for alarm contact in, auxiliary relay out, and a full duplex serial data channel. Devices within the series are available for single channels or multiple channels of inputs and output. In the case of model N-111, there is one of each of the three.

The device is configured through its own web server using any common web browser. Once on your network with a unique IP Address the device may be programmed for the task. It is very straight forward to connect an auxiliary alarm relay from any system to the alarm in of the Net IO. The alarm can be Normally Open or Closed as the setup of the Net IO device includes this function on the Alarm Setup page. On that same setup page are the functions for email address for notifications upon alarm. The device itself has user entry fields for a name and location allowing multiple devices to be easily identified.

To send a text message, an email is sent to your mobile service provider's domain in the following format: <telephone number>@domain. In the case of Verizon Wireless, this would be similar to 2125551212@vtext.com. You can find the proper domain for your phone by visiting your service provider's web site. There are also lists of common service providers' SMS domains on the internet. Use your favorite search engine to find them.

While the data stream from an access control system could be overwhelming, a small company burglar system may only have a couple of notices in a given day, such as when the alarm is set at the end of the day and when the alarm is deactivated at the beginning of the day and of course "break in" alarms. A serial data channel from a legacy system can be connected to the Net IO. This would allow that stream to be transmitted in a standard internet protocol RFC2217. There are shareware software packages that can add RFC2217 serial ports to your personal or work computers allowing this data stream to connect virtually to anyplace with network access. Many software packages for IP video contain drivers for this type of network data stream allowing further integration into modern systems.

As with any network connected device, without a router to the internet, the signals would all be limited to the local LAN. With internet access via a router, these signals could be sent anywhere across the country or in the world.

In conclusion, there is no reason why tight budgets and limited funding could or should prevent legacy type systems from joining in the advantages of information age of connectivity. With minimal investment, there are ways to bring these systems onto the network and gain the speed advantages of the modern information age.