

The Role of Fiber in Video Networks

Benefits of fiber optic cabling in video networks

- Reducing noise and interference
- Increased transmission distance

Fiber's Role in Video Security and Surveillance Networks

For video security and surveillance professionals, analog video-based CCTV systems have been the tried-and-true technology for many years. However, these same professionals are the first to recognize the migration of Ethernet into new applications beyond the typical office LAN and how Ethernet is playing a role and introducing new challenges to video security networking.

For years, Transition Networks has been talking about the benefit of fiber optic cabling and how media converters can provide a cost effective method of deploying fiber in local area networks and overcome the limitations and drawbacks of copper UTP cabling. These same benefits can be realized by security and surveillance professionals when they integrate fiber into their video networks.

The coaxial cabling utilized in analog CCTV networks suffers from transmission distance issues. The accepted distance for coax is 185 meters. While this has worked well in the past, the demands for increasing the surveillance coverage have pushed camera locations beyond the standard distances. As for Ethernet and IP cameras, this distance is even more restrictive at 100 meters. Offering transmission over greater distances, fiber cabling is starting to play a significant role in surveillance networks. Fiber cabling supports transmission distances up to 2km on multimode fiber without the need for repeaters or signal boosters - with even greater distances available on single mode fiber.

Indoor applications with florescent lights, electric motors, and other sources of electromagnetic interference (EMI) along with sources of radio frequency interference (RFI) can cause disruptions and poor picture quality issues for video over Coax and UTP cabling. The transmission from cameras located outdoors is susceptible to these same conditions as well as the effect from electrical/lightening storms. Due to the nature of how data is transmitted over fiber optic cabling, it does an excellent job of blocking this electrical interference and protecting the quality of the data.

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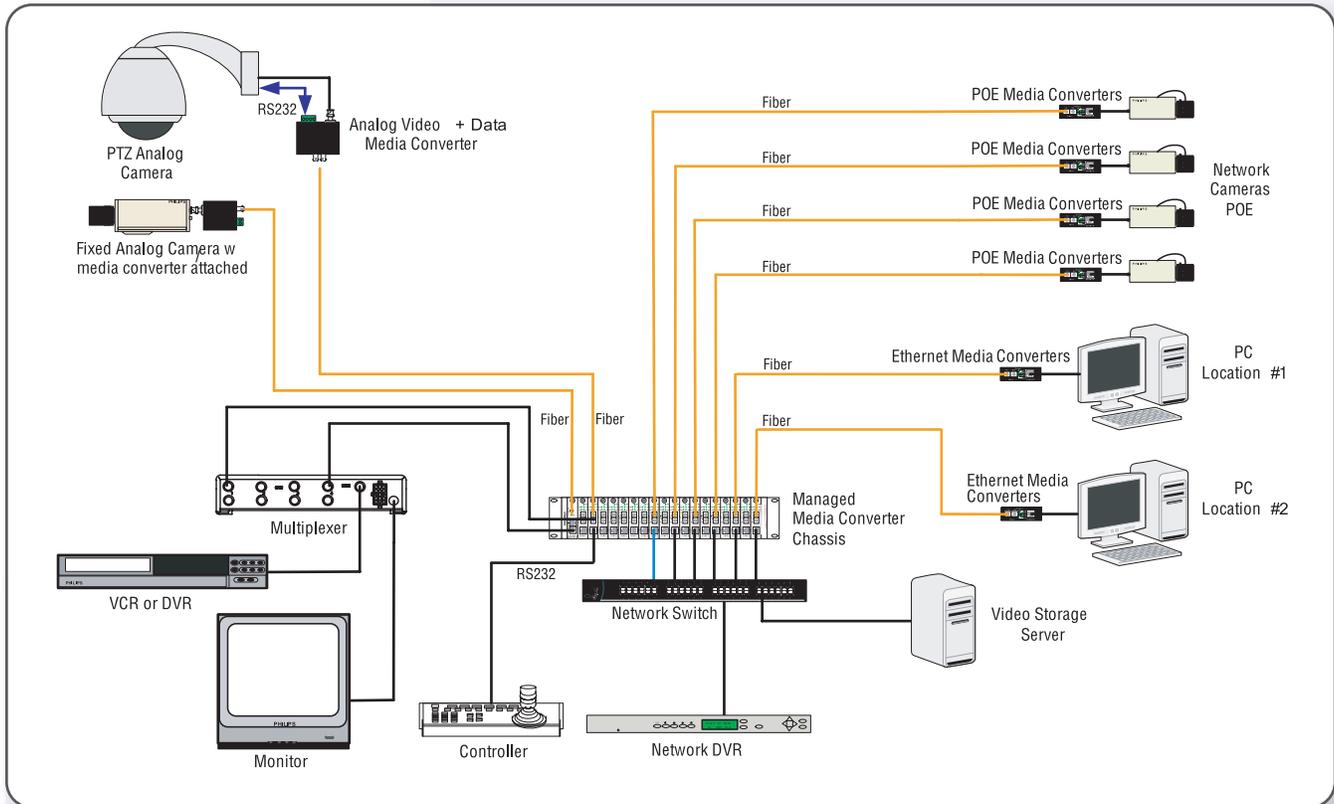


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Figure 1



Featured Products

JVD-TX-01
CVIDF
SVIDF
SPOEB

To aid in the deployment of fiber in these security and surveillance networks, Transition Networks has specifically designed a copper to fiber media converter for analog video applications. These converters are available to support both fixed-focus cameras as well as pan-tilt-zoom (PTZ) cameras. As IP cameras begin to replace analog cameras, traditional Ethernet media converters can be used for the fiber integration. Most IP cameras also support power-over-Ethernet (PoE) technology which makes installation of the cameras easier since the camera can be powered over the UTP Ethernet cable. PoE switches, PoE injectors, and PoE media converters are all available to create the functional network needed in today's hybrid video security and surveillance applications.

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