

# Latest Advances in Fiber Optic Technology and CCTV

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# Analog Systems

- Analog systems were the first technology to be employed in fiber optic systems
  - Slow speed optical transmitters and receivers
  - Analog systems are very difficult to reliably support the transmission of multiple baseband signals

# Analog Digital Systems

- Non-linear distortion
- Bandwidth limitations
- Increasingly difficult to find linear, high-speed emitters

# Digital Systems

- Digital fiber optic systems send 1's and 0's to represent the baseband signals
- Standard and complex A/D and D/A schemes can be used, including compression
- LED's and lasers operate much better turning "on" and "off" instead of linearly

# Digital Systems

- Digital systems add no additional baseband signal distortion
  - Distortion occurs before A/D and D/A conversions
- Performance and fidelity over long distances
- Versatile signal multiplexing is achievable

# Pure Digital, One Fiber™

## The State of the Art

- Combines the performance of digital technology with the economies of single fiber transmission
- Many signals of different types can be multiplexed into one data stream
  - Video, audio, data, contact closure

# Pure Digital, One Fiber™

## The State of the Art

- One-way or two-way transmission using just one fiber
- Multimode and single mode models available
- Expandable or “dedicated function” versions

# Pure Digital, One Fiber™

## The State of the Art

- High performance at a lower price
- Low maintenance: adjustment-free
- Obsoletes AM and FM technology

# CCTV Technology

- Camera Technology
- Future of recording
- Network Video

# Camera Technology

- Hyper-head Chips allow for greater sensitivity
- Digital Signal Processing provides deeper colors and quality hardware control
- On screen menus and data control ports enable users to fine tune their cameras

# Things to look for in a video camera

- High signal to noise ratio
- A low LUX rating
- High resolution
- Both video and DC auto iris control
- Automatic white balance
- DSP
- Day / Night capabilities

# Choosing a location for a camera

- Always evaluate the available light source to make sure there will be enough light to reproduce the image
  - Color cameras will lose definition and become grainy if the light drops below their lux requirements
- Typically mount a camera higher so that it is out of harms way

# Choosing a location for a camera

- Be mindful of where South is, pointing a camera in a fixed Southern position will cause a loss in image quality due to the camera's iris closing
- Be sure you know what you want to be able to see:
  - i.e. object distance from the camera, and the Height and Width of the target

# Choosing a location for a camera

- Make sure your camera's mount is designed to support your camera load
- Outdoor installations should always be surge protected and properly grounded
- It is best to place cameras in enclosures when ever possible

# Future of recording

- Video tape is rapidly becoming obsolete
- Digital recording is becoming more prevalent and more reliable
- Digital recorder technology is getting more affordable
- Research, and know what you are expecting from your digital recorder

# Network Video

- Is a rapidly improving solution
- It is going to become more prevalent in larger systems
- It employs better access control and security
- It enables most users to be able to use some existing infrastructure

# Other

- Buy products other people are using
- Ask lots of questions
- Employ at least two different professionals to consult on system design
- Get numerous quotes
- Always request DEMOS