

Fiber Optics In The Courtroom



⊗ The courthouse & courtroom environments have various AV applications suited for fiber including intra and inter-courtroom video & audio communications, remote arraignment, witness testimony, remote court reporting and media feeds.

⊗ A number of newer courtrooms now have fiber optic AV connections at the judge's bench and attorney's tables, as well as at the witness stand, document camera, jury box, gallery and other locations within the courtroom. Each of these locations may have only video while some include video, audio and possibly data. In many applications, these signals are sent from the courtroom to a central AV room where they are switched or routed to various locations within the courtroom. In order to ensure the

highest quality video as it is routed around the courthouse, fiber becomes an obvious choice. In addition, the type of signals being transmitted may vary and fiber, being signal-type agnostic, is the perfect transmission medium for these varied signals.

⊗ Each video & audio source location (Judge, attorney, document camera, etc.) sends and receives its respective signals over fiber to and from the main AV room. Once in the main AV switch room, the signals can be viewed or listened to locally to verify operation and quality, recorded and then routed back to the courtroom for viewing by the jury, gallery, etc. This main AV switch can also bring in video and audio from other locations such as remote testimony and arraignment locations.

⊗ Fiber provides the perfect infrastructure for transmitting these various signals and, with the proper equipment, allows video format conversion (e.g., RGBHV to RGB or DVI) directly in the fiber transmission equipment giving further flexibility and signal-proofing to the fiber network.

⊗ As the need and demand for higher quality courtroom video continues to grow, fiber will take a major role in transporting these signals with quality far beyond any available copper-based system. The same fiber infrastructure can not only handle such signals as audio, NTSC video, data, RGBHV, DVI, HDSDI but can also transport multiple channels of these various signals in real-time over the same, single fiber. Using both time and wavelength-division multiplexing, a very large number of signals can be transported over one fiber to minimize fiber count and maximize signal throughput efficiency.

⊗ Fiber optics has a number of inherent advantages over copper-based systems. The courtroom environment takes advantage of many of these to provide a high performance transport system. These key benefits include:

- **Smaller & Lighter than copper**
- **Pack more in existing duct work**
- **More information than Copper**
- **Video Quality independent of distance**
- **Higher Data Rates**
- **No Ground Loops**

⊗ These features make fiber a perfect transmission medium for both new courthouses/courtrooms as well as upgrading existing courtroom venues.

⊗ Related fiber products include:

Meridian Pt #	Description
ST/SR-1RG-0	RGBHV/DVI video Transmitter/Receiver, 1 multimode fiber
DT/DR-1RG2A-0	RGBHV/DVI & 2-ch audio Transmitter/Receiver, 2 multimode fibers
DXA/DXB-1V2A1G-2	Bi-directional video, audio, data, 1 multimode fiber, video conferencing product
DT/DR-1S1G/1G-2	S-video Tx/Rx w/bi-directional data, 1 multimode fiber
ST/SR-1HD-1	SDI/HDSDI video Transmitter/Receiver, 1 multimode fiber.

Alberta Courthouse, Calgary Canada, 2008

Located in Calgary, Alberta Canada, the new high-tech courthouse was constructed and commissioned in 2008. The courthouse consists of 74 new courtrooms incorporating the latest in fiber optic technology for video, voice and data. A few of the courtroom applications utilizing Meridian Technologies' fiber equipment include:

- ***Intra & Inter-courtroom communications (Judge, lawyer, witness)***
- ***Evidence presentation***
- ***Remote witness testimony***
- ***Jury & gallery video displays***
- ***Media feeds***

Meridian Technologies' **DigiFlex, DigiSlim & DigiView** product series were chosen as the fiber transmission equipment for this application. These products included the following:

- ***RGBHV***
- ***Audio/Data***
- ***S-Video & Data***
- ***Video, audio, data***

Meridian Technologies supplied all of the fiber optic transmission equipment for the video, audio and data communications in all the courtrooms as well as the various switch and AV rooms.

Each courtroom utilizes fiber optic RGB video and audio equipment for both intra and inter-courtroom communications. Signals from several courtrooms are consolidated into various switch closets where they are routed for intra and inter-courtroom transmission for simultaneous communications. Selected signals from each closet are sent to the main AV room where they are switched and routed to other courtrooms, recorders, media feeds, etc.

The fiber infrastructure utilizes 50/125um OM2 fiber to optimize the fiber bandwidth & signal throughput while minimizing the equipment costs by using multimode fiber capable transmission equipment.

Michael Barry, Meridian's managing director, states that "The Alberta courthouse represents a significant transition from traditional methods for handling video, voice and data in the courtroom to the more advanced fiber optic technologies now available for these applications. Fiber provides the next-generation infrastructure that allows the courthouse to use and continually enhance its technology to ensure that it remains current with the state-of-the-art advancements in fiber products." Mr. Barry continues with "...Meridian is pleased to have been selected as the fiber equipment supplier for this courthouse and continues to work with this and other courthouses to promote fiber as the technology of choice for these high-profile and performance systems".

Meridian Technologies has provided fiber transmission solutions to a number of other courthouses and is a premier provider of fiber optic transmission equipment for courthouse, security, audio/video, government, military and transportation systems. Meridian's website is www.meridian-tech.com which provides information on these and many other fiber products. They can also be reached at sales@meridian-tech.com or by phone (516-285-1000).



New Alberta Courthouse complex