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A Low Cost, High Speed, Digital Serial Bus

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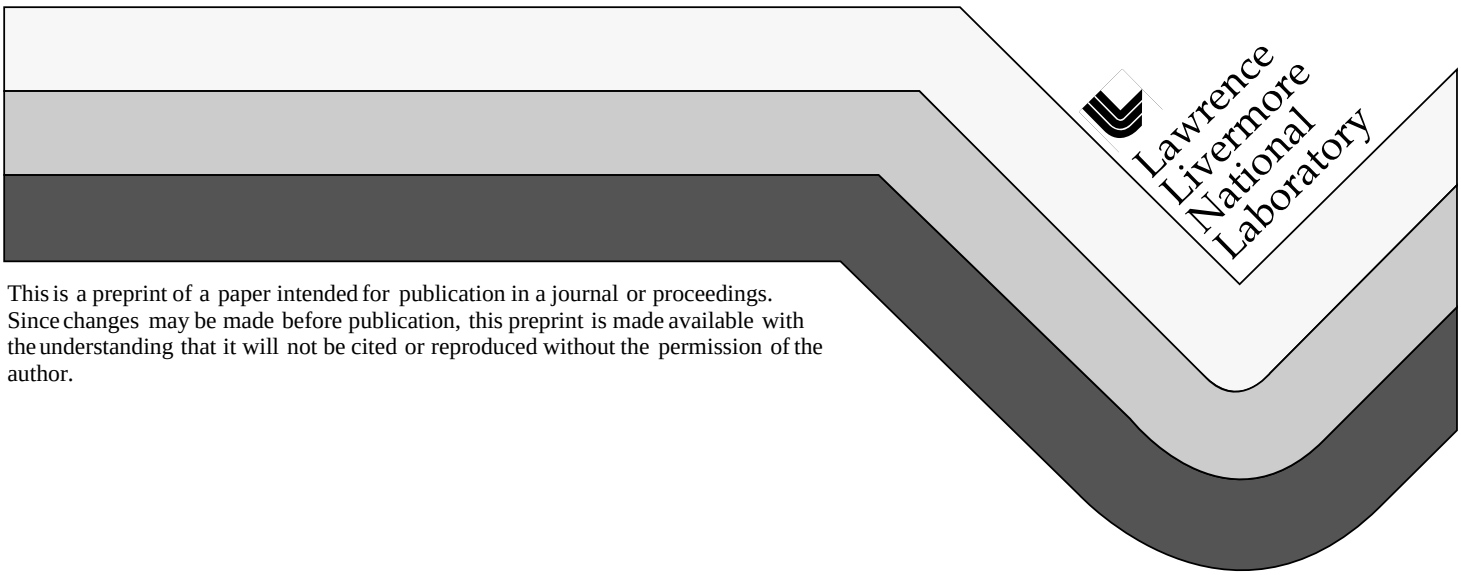

IEEE 1394/ Firewire
A Low Cost, High Speed, Digital Serial Bus

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Does the world need yet another I/O bus standard? If you need fast and cheap serial video communication, then the answer is yes. As technology advances, so too must data transport mechanisms advance. You can't expect RS-232 to support real-time digital video, and if you can't afford expensive professional serial video interfaces, (such as Sony's Serial Digital Interface), Firewire may be a good solution. IEEE 1394, or commonly known as Firewire, is a general purpose serial bus that meets many of the I/O needs of today's video and multimedia developers. For those of you who only read the first paragraph, here's Firewire in a nutshell: It provides a guaranteed transfer rate of 100Mbps or 200Mbps of digital data (such as video direct from camera to computer), over an inexpensive, non-proprietary serial bus. Here is a list of its features:

Digital interface: No analog converters to degrade the video signal.

Physically small, strong connector: A thin six wire (power + 2 signal pairs) shielded cable with a Nintendo GameBoy™ connector (kid tested).

Easy to use: No need to be a SCSI-expert. There are no terminators, device ID's, or complex setups. ID's are determined in real time, and up to 64 devices may reside on a bus.

Hot pluggable: You read that right! Up to 1023 buses may be bridged together, which may be daisy-chained or arranged in a tree structure.

Inexpensive: Priced for consumers, but used by professionals.

Scalable architecture: Mix 100, 200, 400Mbps (and beyond) devices on a bus.

Guaranteed bandwidth: For just-in-time delivery of video or data, eliminating the need for extensive buffering.

Non-proprietary: No licensing, stands a good chance of being here tomorrow.

Connect to various interfaces: Migration path to PCI-based cards, Centronix parallel ports (IEEE 1284), or SCSI-3.

Firewire has both asynchronous and isochronous data transfer modes. Desktop video systems use the isochronous mode to transfer real-time data at a guaranteed bandwidth, direct from camera into the computer, eliminating the need for a analog-to-digital capture card. Another data path might be from camera to digital video disk recorders, eliminating intermediate recording of the video to tape.

Products with Firewire connections are arriving on the market all the time. For example, Sony's DV line of newsroom video products deliver better quality video than Betacam-SP. Sony has a consumer grade camcorder available with a Firewire connection. Skipstone Inc. is offering a Macintosh version of its PC card. Along with Sony and Skipstone, Matsushita, Philips, IBM, Apple, Microsoft, Maxtor, and others are firmly behind IEEE 1394 as a standard for digital video exchange.

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