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(54) Title: MEDIA STORAGE DEVICE WITH EMBEDDED DATA FILTER FOR DYNAMICALLY PROCESSING DATA DURING READ AND WRITE OPERATIONS

(57) Abstract

A media storage device includes an embedded filter for manipulating universal clock based streams of data as they are written to or read from the media storage device. The media storage device will also manipulate streams of data which are not being written to or read from the media storage device. Preferably the embedded filter within the media storage device is an isochronous data pipe which will receive programmed instructions from an external controller and manipulates streams of data according to the programmed instructions in real time, coordinated with the universal clock. Alternatively, the isochronous data pipe includes fixed firmware for performing the appropriate manipulations. The media storage device is also preferably coupled to an IEEE 1394–1995 serial bus structure. As streams of data are received by the media storage device during a write operation, those streams of data can be manipulated into a different format by the embedded filter before they are stored on the media within the media storage device. As streams of data are being transmitted from the media storage device during a read operation, those streams of data can be manipulated into a different format by the embedded filter before they are transmitted onto the IEEE 1394–1995 serial bus structure. In both instances, the universal clock can be used to synchronize the data streams. The media storage device will also utilize the embedded filter to manipulate streams of data being transmitted between two other devices on the IEEE 1394–1995 serial bus structure.

