

Systems and Methods for Format Efficient Timing Recovery In a Read Channel

ABSTRACT OF THE DISCLOSURE

Various embodiments of the present invention provide systems, methods and media formats for processing user data derived from a storage medium. As an example, a system is described that includes a storage medium with a series of data. The series of data includes a servo data and a user data region. The user data region includes a first synchronization pattern and a second synchronization pattern located a distance from the first synchronization pattern. A storage buffer is provided that is operable to receive at least a portion of the series of data. A retiming circuit calculates an initial phase offset and frequency offset for a defined bit within the storage buffer using a first location of the first synchronization pattern and a second location of the second synchronization pattern. An error correction loop circuit re-samples the series of data from the storage buffer based at least in part on the initial phase offset and a frequency offset.

Figure 2