Optical Data Storage and Retrieval System and Method

Abstract

A first write encoder encodes digital data in a first, high-density format. A second write encoder encodes digital data in a second, low-density (i.e., ANSI) format. A first read decoder decodes digital data from the first format. A second read decoder decodes digital data from the second format. A disk drive receives a replaceable 90 millimeter optical disk. A read/write head reads encoded data from and writes encoded data to a 90 millimeter optical disk received by the drive. In a first mode, the first write encoder is connected between a source of digital data and the read/write head, and the first read decoder is connected between the read/write head and the utilizing apparatus. In a second mode, the second write encoder is connected between the source and the read/write head, and the second read decoder is connected between the read/write head and the utilizing apparatus. Control electronics switch between the first and second modes, depending upon the format in which data is recorded on the disk received by the disk drive. An 8/9 GCR encoder and a laser pulse generator are used in the first write encoder to record data on the optical media to increase the storage capacity. Improvement in timing is accomplished with write compensation and signal equalization.

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