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ABSTRACT

HIGH EFFICIENCY DISK FORMAT AND SYNCHRONIZATION SYSTEM

A disk drive system provides all required synchronization, positioning, validation, and data functions within each disk sector. All of these functions are provided within two zones, a header section and a data section. The header section includes a preamble, a synchronization character and an address field, as well as servo information for track following. The data section of each sector includes a data preamble, a data synchronization character, a bad sector bit map, the data and data redundancy information. The header section of at least one sector in a track includes a short DC-erase field, a transitionless segment which is used in synchronization. To synchronize a read/write head to the disk, the system first detects the DC-erase field. The system next searches for the header preamble and synchronization character. If it finds them within predetermined times, it then looks for a valid sector address to complete the synchronization. If the system does not detect the preamble and synchronization character within the predetermined times, it looks for another DC-erase field and continues the synchronization process. After the preamble and synchronization character are found, the desired sector is located by reading the addresses of the succeeding sectors.

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