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(54) Title: MIXED–SIGNAL SINGLE–CHIP INTEGRATED SYSTEM ELECTRONICS FOR MAGNETIC HARD DISK DRIVES

(57) Abstract

An integrated HDD system provides, in a single integrated circuit, RDC, servo logic, ATA interface, microprocessor, and other formerly discrete components in one highly integrated system design. The integrated circuit is rendered using a single integrated circuit technology type (e.g., digital CMOS) for all components. Analog and digital circuits are combined in such a way as to eliminate or reduce noise or interference in digital circuits from analog circuit components. The invention takes advantage of existing circuit design modules provided in the integrated circuit as "hard block" components which are unchanged by integrated circuit design software. Changes in operability of the overall integrated circuit may be readily achieved by altering "soft block" components to customize or tailor the design for a particular hard drive. Individual elements may have their outputs and inputs MUXed together such that individual elements can be selectively switched (during testing modes) such that the integrated circuit emulates or behaves in the same or similar manner as one of the prior art components.