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(54) Title: METHOD USING MATCHED FILTERS FOR DETERMINING HEAD POSITIONER MICRO-JOG IN HARD DISK DRIVE EMPLOYING MAGNETO-RESISTIVE HEADS

(57) Abstract

Determining a micro-jog parameter in a disk drive that employs a magneto-resistive (MR) transducer head assembly and a partial response (PRML) detector includes improved accuracy in measuring on-track signal strength by use of a matched filter technique. The matched filter includes circuitry (424) for emulating a partial response signal expected to be produced by a selected test bit pattern prerecorded on the selected track. The matched filtering technique provides improved accuracy in measuring the detected signal strength as it provides an extremely narrow digital filter (428-430, 432) focused on the test bit pattern frequency. Improved determination of the micro-jog distance further includes measuring interference from adjacent tracks, the best error rate being achieved at micro-jog positions intermediate the maximum on-track signal strength and the minimum off-track interference. A novel digital detector for accurately measuring adjacent track interference also is disclosed.

