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(54) Title: METHOD AND APPARATUS FOR DETERMINING BIT ERROR RATE IN A SAMPLED DATA SYSTEM

(57) Abstract

A system determines bit error rate in a sampled data system having a disc (112) formed of a magnetic medium and a data head (126) for writing data on the disc (112) and retrieving data from the disc (112). A pattern is written on the disc (112) which includes isolated instances (248) associated with a predetermined event. The pattern is retrieved from the disc (112) and the isolated instances (248) are combined to obtain a representative instance $s_{av}(n)$ having a reduced media noise component. The representative instance $s_{av}(n)$ is combined with each of the isolated instances (248) to obtain noise sequences. An autocorrelation component (R) is obtained based on the instances read from the disc (112) and the noise sequences. A channel filter is developed having an impulse response $h(n)$ based on the representative instance and based on the channel requirements for a predetermined channel model. A representative instance is passed through the filter to obtain a filter output sample (smp), and an error value indicative of the bit error rate is determined based on the filter output sample and the autocorrelation component (R).

