



162162



G00002

**SYSTEMS, APPARATUS, AND METHODS TO DETERMINE THERMAL
DECAY CHARACTERIZATION FROM A EQUALIZED
SIGNAL-TO-NOISE RATIO OF A MAGNETIC DISC DRIVE DEVICE**

5

ABSTRACT OF THE DISCLOSURE

The thermal decay of data written to a magnetic mass storage medium is determined by measuring and analyzing the time-domain equalized-signal-to-noise ratio (ESNR) and equalized signal-to-total-distortion noise ratio (ESTDR) of written data. In some embodiments, a test track and a reference track are initialized from data. Subsequently, the reference track is re-initialized from the test data, and the time-domain ESNR and/or ESTDR measurements are made of the test track and the reference track, at predetermined time intervals. Later, the time-domain ESNR and ESTDR measurements are analyzed to determine the thermal decay of the data written. In another embodiment of the present invention, the ESNR and/or ESTDR measurements includes reading the data through a non-return-to-zero bus in phases, in which the phases are selected in sequence.

20

FIG. 1