Error Detection Using CRC Code

IP Status: Issued US Patent; **Application #:** 11/242,874

Detecting Error Events with Fewer Bits

An error detection method uses cyclic redundancy check (CRC) code to read a codeword reproduced by the perpendicular magnetic recording (PMR) medium. This approach generates CRC parity bits based on a generator polynomial for a source information sequence recorded on PMR medium, records a codeword in which those parity bits are added to the source information sequence, and reads the recorded codeword and an error event. This method can detect error events using a small number of bits.

Specific Error Events of Known Types

Traditional error detection and correction methods attempt to detect or correct as many erroneous bits as possible within a codeword, regardless of the pattern of the error events. This new approach, however, is less concerned about the total number of erroneous bits it detects, and focuses instead on detecting specific error events of known types. The technique uses CRC coding to detect a prescribed set of error events later corrected by post-Viterbi processing. In addition, it develops CRC code generator polynomials for correcting specific error events in perpendicular recording.

BENEFITS AND FEATURES:

- Cyclic redundancy check (CRC) code reads a codeword reproduced by perpendicular magnetic recording (PMR) medium
- Generates CRC parity bits based on a generator polynomial for a source information sequence recorded on PMR medium
- Records and reads the codeword and an error event
- Detects specific error events of known types
- Can detect error events using a small number of bits
- Detects a prescribed set of error events later corrected by post-Viterbi processing
- CRC code generator polynomials correct specific error events in perpendicular recording

APPLICATIONS:

- Detecting prescribed error events

Phase of Development - Concept

Interested in Licensing?
The University relies on industry partners to scale up technologies to large enough production capacity for commercial purposes. The license is available for this technology and would be for the sale, manufacture or use of products claimed by the issued patents. Please contact Kevin Nickels to share your business needs and technical interest in this error detection technology and if you are interested in licensing the technology for further research and development.

Researchers: Jihoon Park Electrical and Computer Engineering,Jun Lee Storage System Division, Samsung, Korea

Technology ID
z05040

Category
Software & IT/Algorithms
Software & IT/Communications & Networking

View online

Explore other available products test at Technology Commercialization