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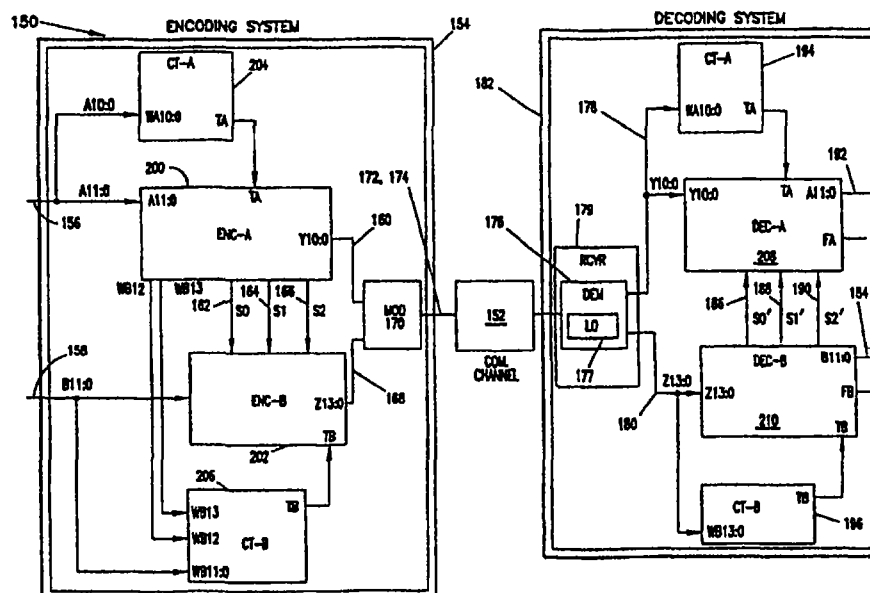
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(54) Title: ENCODING AND DECODING TECHNIQUES FOR DATA IN 24 BIT SEQUENCES



## (57) Abstract

Encoding (150) and decoding (182) systems and methods for digital data in 24 bit sequences. An encoder (150) generates state variables (50, 51, 52) as a function of four or fewer bits of the 24 bit sequence, and encodes the sequence into 11 and 14 bit codeword. After transmission, the 11 bit and 14 bit codewords are decoded using recovered state variables (50', 51', 52'). The encoding places a run length limit (RLL) of  $k=7$  on a 25 bit codeword comprised of the 11 and 14 bit codewords to limit runs of zeros. Each of the 11 bit and 14 bit codewords are preferably also encoded with a run length limit of interleaved bits is  $i=7$ . The encoding and decoding systems and methods can be applied to a magnetic disc drive (100).