



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : H03M 5/14, G11B 20/14, H04L 25/49	A1	(11) International Publication Number: WO 00/16484 (43) International Publication Date: 23 March 2000 (23.03.00)
--	----	---

(21) International Application Number: PCT/US99/21173

(22) International Filing Date: 13 September 1999 (13.09.99)

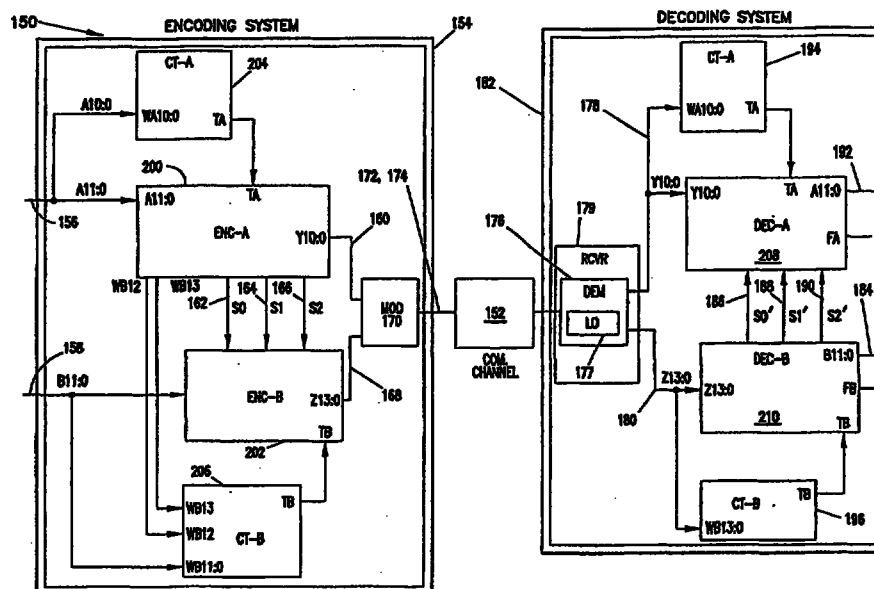
(30) Priority Data:
60/100,264 14 September 1998 (14.09.98) US(71) Applicant: SEAGATE TECHNOLOGY, INC. [-/US]; 920
Disc Drive, Scotts Valley, CA 95066 (US).(72) Inventors: TSANG, Kinhing, P.; 10310 28th Avenue North,
Plymouth, MN 55441 (US). RUB, Bernardo; 6608 Scandia
Road, Edina, MN 55439 (US).(74) Agents: CHAMPLIN, Judson, K.; Westman, Champlin &
Kelly, P.A., International Centre, Suite 1600, 900 Second
Avenue South, Minneapolis, MN 55402-3319 (US) et al.

(81) Designated States: CN, DE, GB, JP, KR, SG.

Published

*With international search report.
Before the expiration of the time limit for amending the
claims and to be republished in the event of the receipt of
amendments.*

(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 (S0, S1, S2) as a function of four or fewer bits of the 24 bit sequence, and encodes the sequence into 11 and 14 bit codewords. After transmission, the 11 bit and 14 bit codewords are decoded using recovered state variables (S0', S1', S2'). 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).