9804196-5

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H03M 13/00 — A1

(11) International Publication Number: **WO 98/12819**

(43) International Publication Date: 26 March 1998 (26.03.98)

(21) International Application Number: PCT/US97/16408

(22) International Filing Date: 16 September 1997 (16.09.97)

(30) Priority Data:
08/714,937 17 September 1996 (17.09.96) US

(71) Applicant: QUANTUM CORPORATION [US/US]; 500 McCarthy Boulevard, Milpitas, CA 95035 (US).

(72) Inventor: WENG, Lih-Jyh; 95 Ardmore Road, Needham, MA 01545 (US).

(74) Agents: CHUN, Debra, A. et al.; Quantum Corporation, 500 McCarthy Boulevard, Milpitas, CA 95035 (US).

(81) Designated States: AU, CA, CN, JP, KR, SG, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
With international search report.

(54) Title: IMPROVED MULTIPLE-BURST-CORRECTION SYSTEM

(57) Abstract

A multiple-solid-burst error correcting system (10) determines the number and locations of solid burst errors in a high-rate Reed-Solomon or BCH code by determining (106) the greatest common divisor and the non-common factors of the error locator polynomial and a mapping error locator polynomial. The roots common to both polynomials are included in the greatest common divisor and correspond to adjacent error locations contained in the solid bursts. The roots of the error locator polynomial's non-common factors correspond to the first locations of the solid bursts, and the roots of the mapping error locator polynomial's non-common factors correspond to one location beyond the solid burst end locations. The roots of only the non-common factors are used (112) to determine the locations in the solid bursts and all locations between associated first and last locations are labelled.

