



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G11B 20/14, 20/10, H03M 5/14	A1	(11) International Publication Number: WO 98/29872 (43) International Publication Date: 9 July 1998 (09.07.98)																								
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> (21) International Application Number: PCT/US97/24004 (22) International Filing Date: 31 December 1997 (31.12.97) (30) Priority Data: 08/774,412 31 December 1996 (31.12.96) US (71) Applicant: QUANTUM CORPORATION [US/US]; 500 McCarthy Boulevard, Milpitas, CA 95035 (US). (72) Inventors: FISHER, Kevin, D.; 728 Alester Avenue, Palo Alto, CA 94303 (US). FITZPATRICK, James; 492 Arboleda Drive, Los Altos, CA 94024 (US). (74) Agents: CHUN, Debra, A. et al.; Quantum Corporation, 500 McCarthy Boulevard, Milpitas, CA 95035 (US). </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> (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 <i>With international search report.</i> </td> </tr> </table>			(21) International Application Number: PCT/US97/24004 (22) International Filing Date: 31 December 1997 (31.12.97) (30) Priority Data: 08/774,412 31 December 1996 (31.12.96) US (71) Applicant: QUANTUM CORPORATION [US/US]; 500 McCarthy Boulevard, Milpitas, CA 95035 (US). (72) Inventors: FISHER, Kevin, D.; 728 Alester Avenue, Palo Alto, CA 94303 (US). FITZPATRICK, James; 492 Arboleda Drive, Los Altos, CA 94024 (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 <i>With international search report.</i>																						
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(54) Title: A RATE 24/25 MODULATION CODE FOR PRML RECORDING CHANNELS <table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px 10px;">A'1[8:4]</td> <td style="padding: 5px 10px;">B1[7:0]</td> <td style="padding: 5px 10px;">A1'[3:0]</td> <td style="border-right: 1px solid black; padding: 5px 10px;">C1[7:0]</td> <td style="padding: 5px 10px;">A'2[8:4]</td> <td style="padding: 5px 10px;">B2[7:0]</td> <td style="padding: 5px 10px;">A2'[3:0]</td> <td style="border-right: 1px solid black; padding: 5px 10px;">C2[7:0]</td> </tr> <tr style="height: 10px;"> <td style="border-right: 1px solid black;"></td> <td></td> <td></td> <td style="border-right: 1px solid black;"></td> <td></td> <td></td> <td></td> <td style="border-right: 1px solid black;"></td> </tr> <tr> <td style="border-right: 1px solid black; text-align: center;">5</td> <td style="text-align: center;">8</td> <td style="text-align: center;">4</td> <td style="border-right: 1px solid black; text-align: center;">8</td> <td style="text-align: center;">5</td> <td style="text-align: center;">8</td> <td style="text-align: center;">4</td> <td style="border-right: 1px solid black; text-align: center;">8</td> </tr> </table> rate 24/25 (0,12/8)			A'1[8:4]	B1[7:0]	A1'[3:0]	C1[7:0]	A'2[8:4]	B2[7:0]	A2'[3:0]	C2[7:0]									5	8	4	8	5	8	4	8
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(57) Abstract Rate 24/25 modulation encoding methods and apparatus improve efficiency in a PRML magnetic recording channel. The rate 24/25 code word uses rate 8/9 RLL encoding of one byte of user data, combined with interleaved unencoded bytes to achieve improved code rates with reasonable global run length constraint. Use of the rate 8/9 RLL (0,3) subcode results in a rate 24/25 RLL (0,11) code, while a rate 8/9 (0,6/5) subcode results in a rate 24/25 RLL (0,14/13) code.																										