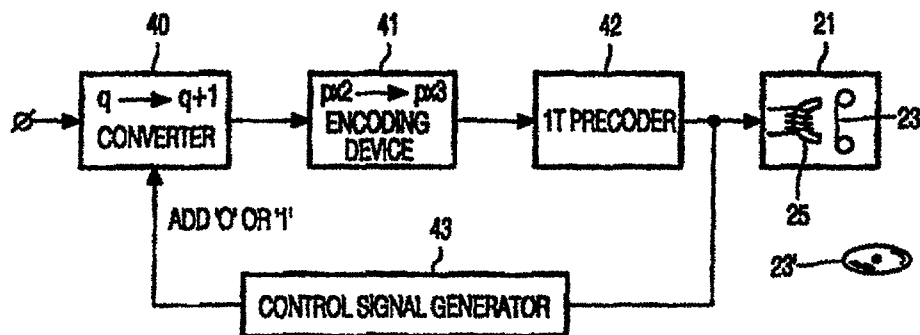




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H03M 5/14	A1	(11) International Publication Number: WO 99/33183 (43) International Publication Date: 1 July 1999 (01.07.99)
(21) International Application Number: PCT/IB98/01986 (22) International Filing Date: 7 December 1998 (07.12.98) (30) Priority Data: 97204050.5 22 December 1997 (22.12.97) EP 98200402.0 10 February 1998 (10.02.98) EP (71) Applicants: KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL). SONY CORPORATION [JP/JP]; 6-7-35, Kitashinagawa, Shinagawa-ku, Tokyo, Tokyo 141-0001 (JP). (72) Inventors: KAHLMAN, Josephus; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). NAKAGAWA, Toshiyuki; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). SHIMPUKU, Yoshihide; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). NARAHARA, Tatsuya; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). NAKAMURA, Kousuke; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). (74) Agent: VAN DER KRUK, Willem; Internationaal Octrooibureau B.V., P.O. Box 220, NL-5600 AE Eindhoven (NL).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: DEVICE FOR ENCODING/DECODING n -BIT SOURCE WORDS INTO CORRESPONDING m -BIT CHANNEL WORDS, AND VICE VERSA

**(57) Abstract**

A device is disclosed for encoding a stream of databits of a binary source signal (S) into a stream of databits of a binary channel signal (C), wherein the bitstream of the source signal is divided into n -bit source words (x_1, x_2), which device comprises converting means (CM) adapted to convert said source words into corresponding m -bit channel words (y_1, y_2, y_3). The converting means (CM) are further adapted to convert n -bit source words into corresponding m -bit channel words, such that the conversion for each n -bit source word is parity preserving (table I) (Fig. 1). The relations hold that $m > n \geq 1$, $p \geq 1$, and that p can vary. Preferably, $m = n + 1$. The device is adapted to convert the 8-bit bitsequence '00010001' in the source signal into the 12-bit bitsequence '100010010010' and to convert the 8-bit bitsequence '10010001' into the 12-bit bitsequence '000010010010', in order to limit the repeated minimum transition runlength in the channel signal. Also other 8-bit sequences require a specific encoding into 12-bit bitsequences in order to limit the k -constraint of the channel signal to 7. Further, a decoding device is disclosed for decoding the channel signal obtained by means of the encoding device.