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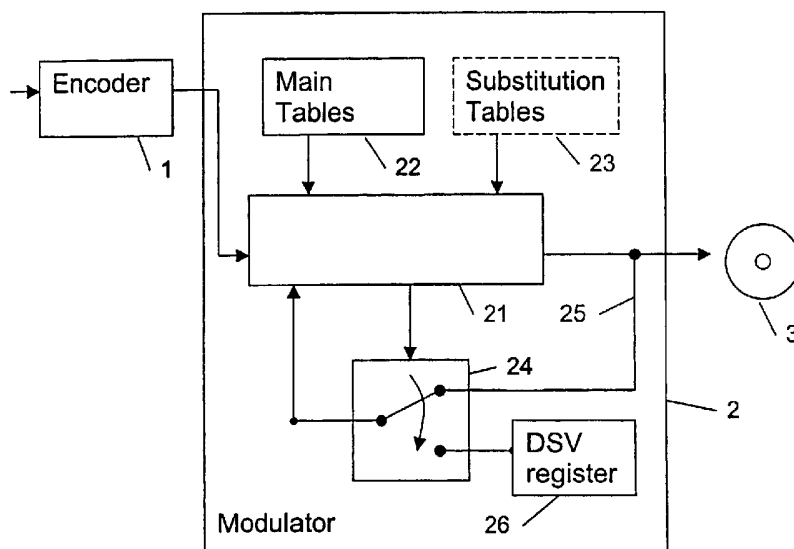
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(54) Title: METHOD AND APPARATUS FOR ENCODING DATA BITS



(57) Abstract: The invention relates to a method and an apparatus for encoding data bits of a data bitstream into channel bits of a channel bitstream to be recorded on a rewritable optical medium, wherein the digital sum value (DSV) of said channel bitstream is controlled. In order to provide a method and an apparatus for encoding as well as an optical recording medium which do not require any change in the electronics or software of a reproducing apparatus it is proposed according to the invention that the digital sum value of said channel bitstream is varied if a new part of channel bitstream is started to be recorded on the recording medium or if an old part of a channel bitstream is started to be rewritten at an identical location on the recording medium. Thus the method according to the invention is also applicable to any existent rewritable optical medium.

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INTERNATIONAL SEARCH REPORT

International Application No.
PCT/IB 02/02533

A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 34952 A (BRONDIJK ROBERT A ; SPRUIT JOHANNES H M (NL); IJTSMA POPE (NL); DEN) 15 June 2000 (2000-06-15) page 8, line 11 - line 28 ---	1-10
X	EP 0 892 395 A (HEWLETT PACKARD CO) 20 January 1999 (1999-01-20)	1-3,5-10
Y	column 4, line 8 - column 5, line 12 ---	4
Y	EP 0 974 957 A (MATSUSHITA ELECTRIC IND CO LTD) 26 January 2000 (2000-01-26) cited in the application	4
A	page 5, line 11-18 page 10, line 3-10 page 11, line 33 - line 56; claim 1; figures 1,15,23,25 --- -/--	1-3,5-10

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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PCT/IB 02/02533

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 045 391 A (KONINKL PHILIPS ELECTRONICS NV) 18 October 2000 (2000-10-18) abstract -----	1-10
A	SCHOUHAMER IMMINK K A: "EFMPLUS: THE CODING FORMAT OF THE MULTIMEDIA COMPACT DISC" IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, IEEE INC. NEW YORK, US, vol. 41, no. 3, 1 August 1995 (1995-08-01), pages 491-497, XP000539497 ISSN: 0098-3063 -----	

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB 02/02533

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0034952	A	15-06-2000	AU 1559900 A	26-06-2000
			BR 9907760 A	24-10-2000
			CA 2320125 A1	15-06-2000
			WO 0034952 A1	15-06-2000
			EP 1055237 A1	29-11-2000
			JP 2002532817 T	02-10-2002
EP 0892395	A	20-01-1999	US 6091698 A	18-07-2000
			DE 69809647 D1	09-01-2003
			EP 0892395 A2	20-01-1999
			JP 11086288 A	30-03-1999
EP 0974957	A	26-01-2000	JP 3023310 B2	21-03-2000
			JP 9320054 A	12-12-1997
			EP 0997876 A2	03-05-2000
			EP 0955630 A1	10-11-1999
			EP 0974957 A2	26-01-2000
			EP 0997877 A2	03-05-2000
			EP 0997878 A2	03-05-2000
			EP 0997879 A2	03-05-2000
			EP 0997880 A2	03-05-2000
			EP 0997881 A2	03-05-2000
			EP 0997882 A2	03-05-2000
			EP 0997883 A2	03-05-2000
			EP 0997884 A2	03-05-2000
			EP 0997885 A2	03-05-2000
			EP 0997886 A2	03-05-2000
			EP 0997887 A2	03-05-2000
			EP 0997888 A2	03-05-2000
			JP 10334469 A	18-12-1998
			DE 69701596 D1	11-05-2000
			DE 69701596 T2	16-11-2000
			DE 69701639 D1	11-05-2000
			DE 69701639 T2	28-12-2000
			DE 69708690 D1	10-01-2002
			DE 69708690 T2	01-08-2002
			DE 69708698 D1	10-01-2002
			DE 69708698 T2	01-08-2002
			DE 69708699 D1	10-01-2002
			DE 69708699 T2	01-08-2002
			DE 69708701 D1	10-01-2002
			DE 69708701 T2	01-08-2002
			DE 69708702 D1	10-01-2002
			DE 69708702 T2	01-08-2002
			DE 69708929 D1	17-01-2002
			DE 69708929 T2	01-08-2002
			DE 69709180 D1	24-01-2002
			DE 69709180 T2	27-06-2002
			DE 69709181 D1	24-01-2002
			DE 69709181 T2	27-06-2002
			DE 69709182 D1	24-01-2002
			DE 69709182 T2	18-07-2002
			DE 69709688 D1	21-02-2002
			DE 69709688 T2	12-09-2002
			DE 69709689 D1	21-02-2002
			DE 69709689 T2	29-08-2002
			DE 69709791 D1	21-02-2002
			DE 69709791 T2	20-06-2002

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB 02/02533

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0974957 A		DE 69711096 D1 DE 69711096 T2 DE 69715262 D1 EP 0814463 A2	18-04-2002 26-09-2002 10-10-2002 29-12-1997
EP 1045391 A	18-10-2000	EP 1045391 A1 BR 0006043 A CN 1300426 T WO 0063908 A1 EP 1088308 A1 HU 0103323 A2 JP 2002542569 T PL 344870 A1	18-10-2000 13-03-2001 20-06-2001 26-10-2000 04-04-2001 28-01-2002 10-12-2002 19-11-2001