06 JAN 2003

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :
G11B 20/14, H03M 5/14

A1

(11) International Publication Number: WO 99/67784

(43) International Publication Date: 29 December 1999 (29.12.99)

(21) International Application Number: PCT/US99/13126

(22) International Filing Date: 10 June 1999 (10.06.99)

(30) Priority Data:

60/090,546	24 June 1998 (24.06.98)	US
09/330,114	10 June 1999 (10.06.99)	US

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

Published
With international search report

(71) Applicant: SEAGATE TECHNOLOGY, INC [US/US]; 920 Disc Drive, Scotts Valley, CA 95066 (US).

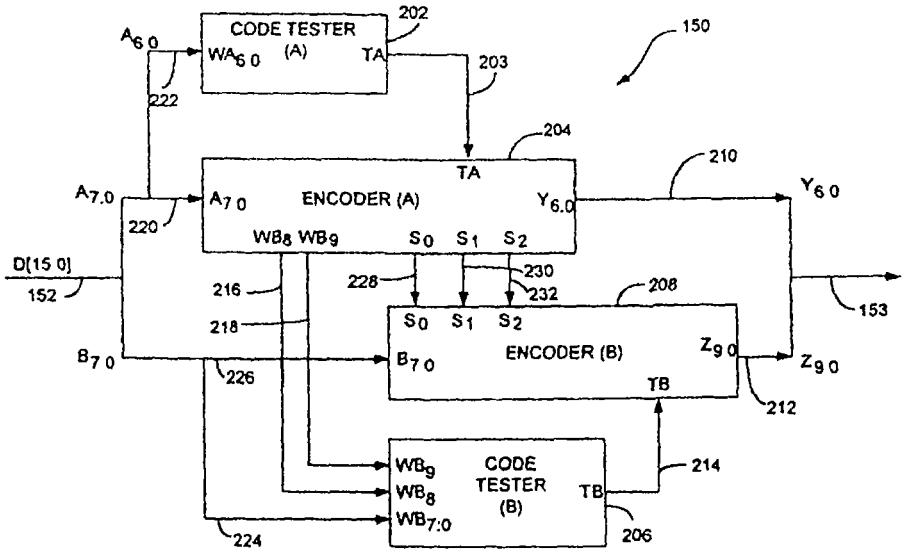
(72) Inventors: TSANG, Kinhing, Paul, 10310 28th Avenue North, Plymouth, MN 55441 (US). RUB, Bernardo; 6608 Scandia Road, Edina, MN 55439 (US)

(74) Agents: DAVID, D., Brush, Westman, Champlin & Kelly, P.A., Suite 1600, International Centre, 900 Second Avenue South, Minneapolis, MN 55402-3319 (US) et al.

162162

G00002

(54) Title: EFFICIENT RUN LENGTH LIMITED CODE WITH SHORT INTERLEAVED CONSTRAINT



(57) Abstract

Encoder (150) divides successive data words (152) into first and second portions. The first portion of each successive data word (152) is mapped into a corresponding first code pattern and a corresponding state variable according to a selected code. A second portion of each successive data word (152) is mapped into a corresponding second code pattern that is associated with the state variable, according to the selected code. The first and second code patterns are combined to form each of the successive code words (153), which are concatenated to form an encoded bit stream having a plurality of bit positions. The encoder imposes constraints on the selected code such that the encoded bit stream has a maximum of seven consecutive same binary symbols in adjacent ones of the plurality of bit positions and a maximum of five consecutive same binary symbols in every other one of the plurality of bit positions.

06 JAN 2003

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		