

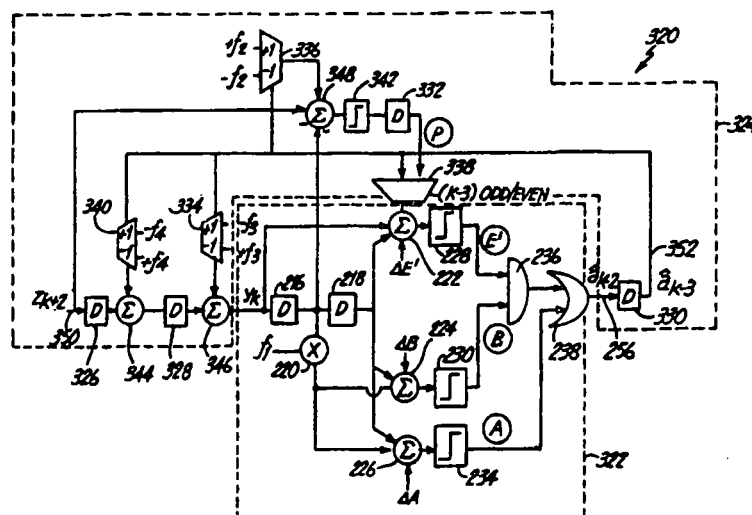
PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureaupos copy
9905308-4

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H04B	A2	(11) International Publication Number: WO 98/52287
		(43) International Publication Date: 19 November 1998 (19.11.98)
(21) International Application Number: PCT/US98/09752 (22) International Filing Date: 13 May 1998 (13.05.98) (30) Priority Data: 60/046,410 14 May 1997 (14.05.97) US (71) Applicant: SEAGATE TECHNOLOGY, INC. [US/US]; 920 Disc Drive, Scotts Valley, CA 95066 (US). (72) Inventors: SHAFIEE, Hamid, R.; P.O. Box 201143, Bloomington, MN 55420 (US). RUB, Bernardo; 6608 Scandia Road, Edina, MN 55439 (US). (74) Agents: KELLY, Joseph, R.; Westman, Champlin & Kelly, P.A., Suite 1600 - International Centre, 900 Second Avenue South, Minneapolis, MN 55402-3319 (US) et al.		(81) Designated States: CN, DE, GB, JP, KR, SG. Published Without international search report and to be republished upon receipt of that report.  *162162*  *G00001*

(54) Title: SIGNAL SPACE DETECTOR FOR CHANNELS UTILIZING A CODE HAVING TIME VARYING CONSTRAINTS



(57) Abstract

Data is detected from a disc (112) in a disc drive (110) and provided as a sampled read signal including data samples provided in a plurality of time intervals. A signal space detector (320) is configured to detect the data, wherein the data is encoded according to a code having a time varying maximum transition run constraint which varies between a first and a second constraint over a plurality of time intervals. The detector (320) is configured to receive an input sample including a first plurality of terms indicative of one of a plurality of possible data symbols. One of the plurality of possible data symbols is eliminated based on the first constraint when the input sample then being detected is constrained by the first constraint, to provide a second plurality of remaining possible data symbols. An estimated data value is determined which corresponds to the input sample then being detected, by determining which of the second plurality of remaining possible data symbols is within a predetermined range of the input symbol.

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	Kazakhstan	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		