(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 5 December 2002 (05.12.2002)

PCT

(10) International Publication Number WO 2002/097799 A3

(51) International Patent Classification⁷: H03H 11/04

G11B 20/10,

(74) Agents: BRADEN, Stanton, C. et al.; Siemens Corporation - Intellectual Property Dept., 186 Wood Ave. South, Iselin, NJ 08830 (US).

(21) International Application Number:

PCT/US2002/016328

(81) Designated States (national): CN, JP, KR.

(22) International Filing Date: 22 May 2002 (22.05.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

09/865,861 25 May 2001 (25.05.2001) US

(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

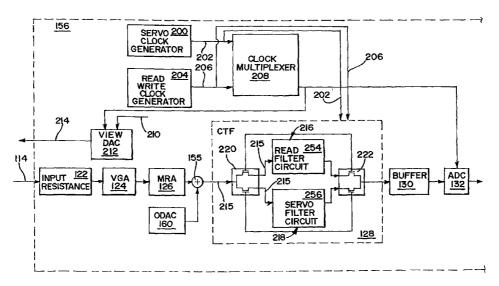
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (71) Applicant: INFINEON TECHNOLOGIES AG [DE/DE]; St.-Martin-Str. 53, 81669 Munich (DE).
- (88) Date of publication of the international search report: 26 February 2004

(72) Inventor: CYRUSIAN, Sasan; 612 Acorn Court, Scotts Valley, CA 95066 (US).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND APPARATUS FOR OPERATING A CONTINUOUS TIME FILTER OF A READ/WRITE CHANNEL FOR A HARD DISK DRIVE



(57) **Abstract:** A method and apparatus for operating a continous time filter (CTF)(128) of a read/write channel (108) for a hard disk drive (100). The apparatus includes an input muliplexer (220) that receives an analog signal (215) and transmits the analog signal (215) to a read filter (254) when the CTF (128) is in read mode and to a servo filer circuit (256) when the CTF (128) is in servo mode. The apparatus also includes an output multiplexer (222) that receives a read filter output signal (225) from the read filter circuit (254) when the CTF (128) is in read mode and a servo filter output signal (227) from the servo filter circuit (256) when the CTF (128) is in servo mode. The method includes receiving the analog signal (215) by the input miltiplexer (220) and routing the analog signal (215) to the read filter circuit (254) when the CTF (128) is in read mode and routing the analog signal (215) to the servo filter circuit (256) when the CTF (128) is in servo mode.



INTERNATIONAL SEARCH REPORT

Internati al Application No PCT/US 02/16328

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G11B20/10 H03H11/04

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

B. FIELDS SEARCHED

 $\begin{array}{ccc} \text{Minimum documentation searched (classification system followed by classification symbols)} \\ IPC & 7 & G11B & H03H \\ \end{array}$

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

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Calegory	Citation of document, with indication, where appropriate, of the relevant passages	ricievant to cidim No.
A	EP 0 808 046 A (SYMBIOS LOGIC INC)	1,11,20
	19 November 1997 (1997-11-19)	
	column 6, line 49 - line 56; figure 2A	
Α	US 5 956 196 A (WILSON RONALD E ET AL)	1,11,20
	21 September 1999 (1999-09-21)	
	column 17, line 8 - line 18; figure 10	
Α	US 5 796 535 A (BEHRENS RICHARD T ET AL)	1,11,20
	18 August 1998 (1998-08-18)	
	abstract	
	column 9, line 50 -column 10, line 43;	
	figures 3,4	
Α	US 5 642 244 A (CONTRERAS RICHARD ET AL)	1,11,20
	24 June 1997 (1997-06-24)	
	column 2, line 26 - line 45	
	column 3, line 5 -column 9, line 46	

_/		
Patent family members are listed in annex.		
 "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family 		
Date of mailing of the international search report 13/01/2004		
Authorized officer Jepsen, J		

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 02/16328

C.(Continua	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	101/03 02/10320	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
A	US 4 722 010 A (NAKAJIMA SHOUJI ET AL) 26 January 1988 (1988–01–26) figure 9	1,11,20	
A	26 January 1988 (1988-01-26)	1,11,20	

INTERNATIONAL SEARCH REPORT

PCT/05 02/16328

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0808046	Α	19-11-1997	US EP JP NO	6437932 B1 0808046 A2 10083626 A 972209 A	20-08-2002 19-11-1997 31-03-1998 17-11-1997
US 5956196	Α	21-09-1999	NONE		
US 5796535	Α	18-08-1998	US US US US	6078444 A 6646822 B1 6108151 A 5966258 A	20-06-2000 11-11-2003 22-08-2000 12-10-1999
US 5642244	Α	24-06-1997	NONE		
US 4722010	Α	26-01-1988	JP JP EP KR	62042305 A 62003411 A 0200191 A2 9001594 B1	24-02-1987 09-01-1987 05-11-1986 15-03-1990
US 6178056	B1	23-01-2001	US US US US US US	6411452 B1 6487032 B1 6519104 B1 6262857 B1 6278568 B1 6441981 B1	25-06-2002 26-11-2002 11-02-2003 17-07-2001 21-08-2001 27-08-2002