

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 September 2001 (20.09.2001)

PCT

(10) International Publication Number
WO 01/69603 A3

(51) International Patent Classification⁷: G11C 16/08

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(21) International Application Number: PCT/US01/07982

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(22) International Filing Date: 12 March 2001 (12.03.2001)

(25) Filing Language: English

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

(26) Publication Language: English

(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).

(30) Priority Data:
09/526,239 15 March 2000 (15.03.2000) US

Published:
— with international search report

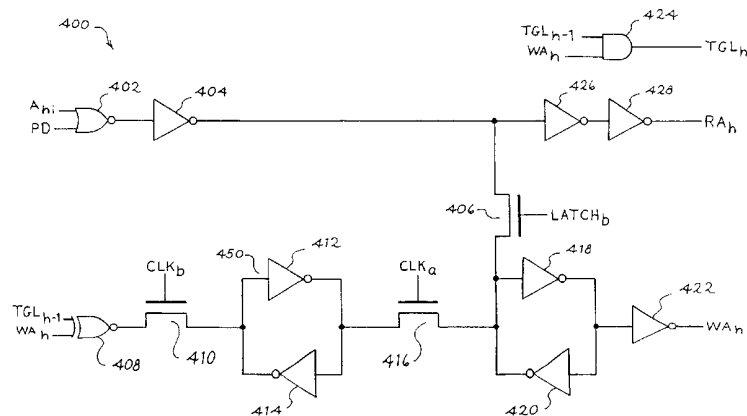
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(88) Date of publication of the international search report:
21 February 2002

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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: MULTIPLE BANK SIMULTANEOUS OPERATION FOR A FLASH MEMORY



(57) Abstract: An address buffering and decoding architecture for a multiple bank (or N bank) simultaneous operation flash memory is described. For the duration of a read operation at one bank of the N banks, a write operation can only be performed on any one of the other N-1 banks. For the duration of a write operation at one bank of the N banks, a read operation can only be performed on any one of the other N-1 banks. The address buffering and decoding architecture includes a control logic circuit (218), an address selection circuit located at each of the N banks, and address buffer circuitry (220). The control logic circuit (218) is used to generate N read select signals to select one bank of the N banks for a read operation and N write select signals to selection another bank of the N banks for a write operation. Each address select circuit is configured to receive from the control logic circuit (218) a respective one of the N read select signals and a respective one of the N write select signals. The address buffer circuitry (220) is used to simultaneously provide a write address and a read address in order to access core memory cells. Respective first portions of the write and read addresses are provided to the control logic circuit (218) to generate the respective N read select signals and N write select signals. Respective second portions of the write and read addresses are provided to the respective address selection circuit.



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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/07982

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G11C16/08</p> <p>According to International Patent Classification (IPC) or to both national classification and IPC</p>																				
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC 7 G11C</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, PAJ, IBM-TDB</p>																				
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 5 867 430 A (CHANG CHUNG K ET AL) 2 February 1999 (1999-02-02) cited in the application</td> <td>1, 9, 10</td> </tr> <tr> <td>Y</td> <td>column 1, line 65 -column 2, line 41; figure 1</td> <td>1</td> </tr> <tr> <td>Y</td> <td>EP 0 745 995 A (SGS THOMSON MICROELECTRONICS) 4 December 1996 (1996-12-04) abstract; claim 1; figures 1,2</td> <td>1</td> </tr> <tr> <td>A</td> <td>WO 99 35650 A (HAZEN PETER K ;ALEXIS RANJEET (US); BROWN CHARLES W (US); INTEL CO) 15 July 1999 (1999-07-15) page 3, line 1 -page 6, line 18; claims 1-5; figures 2,3</td> <td>1, 9, 10</td> </tr> <tr> <td></td> <td style="text-align: center;">-/--</td> <td></td> </tr> </tbody> </table>			Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 5 867 430 A (CHANG CHUNG K ET AL) 2 February 1999 (1999-02-02) cited in the application	1, 9, 10	Y	column 1, line 65 -column 2, line 41; figure 1	1	Y	EP 0 745 995 A (SGS THOMSON MICROELECTRONICS) 4 December 1996 (1996-12-04) abstract; claim 1; figures 1,2	1	A	WO 99 35650 A (HAZEN PETER K ;ALEXIS RANJEET (US); BROWN CHARLES W (US); INTEL CO) 15 July 1999 (1999-07-15) page 3, line 1 -page 6, line 18; claims 1-5; figures 2,3	1, 9, 10		-/--	
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<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.</p>																				
<p>° Special categories of cited documents :</p> <table border="0"> <tr> <td>*A* document defining the general state of the art which is not considered to be of particular relevance</td> <td>*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</td> </tr> <tr> <td>*E* earlier document but published on or after the international filing date</td> <td>*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</td> </tr> <tr> <td>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>*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.</td> </tr> <tr> <td>*O* document referring to an oral disclosure, use, exhibition or other means</td> <td>*Z* document member of the same patent family</td> </tr> <tr> <td>*P* document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			*A* document defining the general state of the art which is not considered to be of particular relevance	*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	*E* earlier document but published on or after the international filing date	*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	*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*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.	*O* document referring to an oral disclosure, use, exhibition or other means	*Z* document member of the same patent family	*P* document published prior to the international filing date but later than the priority date claimed									
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<p>Date of the actual completion of the international search</p> <p style="text-align: center;">18 September 2001</p>		<p>Date of mailing of the international search report</p> <p style="text-align: center;">25/09/2001</p>																		
<p>Name and mailing address of the ISA</p> <p>European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016</p>		<p>Authorized officer</p> <p style="text-align: center;">Wolff, N</p>																		

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
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Information on patent family members

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