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(71) Applicant (for all designated States except US): **QUALCOMM INCORPORATED** [US/US]; Attn: International Ip Administration, 5775 Morehouse Drive, San Diego, CA 92121 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KRISHNA-MURTHY, Anand** [IN/US]; 1114 Macalpine Circle, Morrisville, NC 27560 (US). **MUMFORD, Clint Wayne** [US/US]; 2311 Bristers Spring Way, Apex, NC 27523 (US). **MAMILETI, Lakshmikanth** [US/US]; 108 Flora Springs Drive, Cary, NC 27519 (US). **PATEL, Sanjay B.** [US/US]; 101 Gillespie Court, Cary, NC 27513 (US).

(74) Agents: **OGROD, Gregory D.** et al.; Attn: International Ip Administration, 5775 Morehouse Drive, San Diego, CA 92121 (US).

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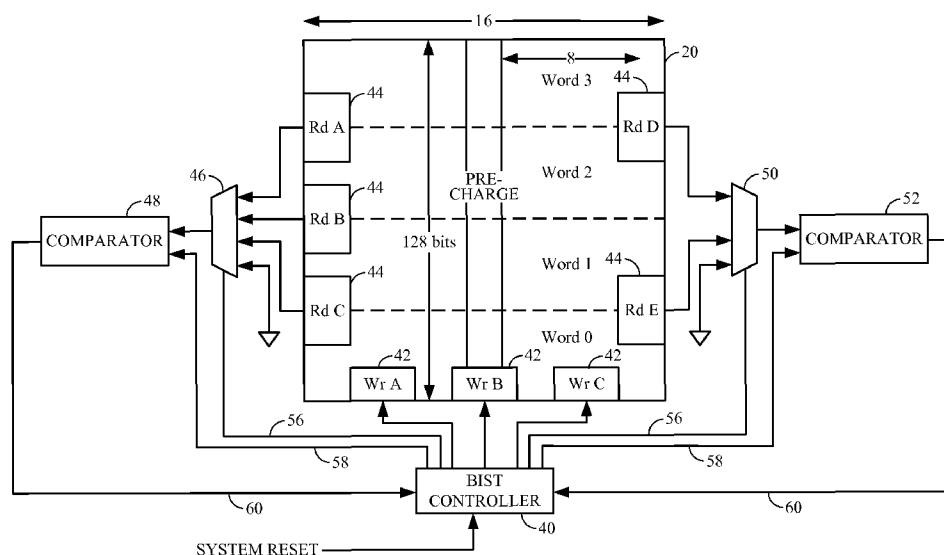
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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: AT-SPEED MULTI-PORT MEMORY ARRAY TEST METHOD AND APPARATUS



(57) Abstract: A multi-port memory array is tested by simultaneously writing data to the array via two or more write ports, and/or simultaneously reading data from the array via two or more read ports, at the processor operating frequency. Comparing the data read from the array to that written to the array may be performed sequentially or in parallel. Comparator circuits are effectively disabled during normal processor operations. By simultaneously writing and/or reading data via multiple ports, latent electrical marginalities may be exposed. In addition, writing test patterns using multiple write ports and reading the patterns using multiple read ports significantly reduces test time during semiconductor manufacturing tests.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. G11C29/34

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)
G11C

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MATSUMURA T: "AN EFFICIENT TEST METHOD FOR EMBEDDED MULTI-PORT RAM WITH BIST CIRCUITRY"	8,18
Y	RECORDS OF THE INTERNATIONAL WORKSHOP ON MEMORY TECHNOLOGY, DESIGN AND TESTING, XX, XX, 7 August 1995 (1995-08-07), pages 62-67, XP002069406 page 62, right-hand column, line 6 - page 63, right-hand column, line 9 page 65, left-hand column, lines 1,2; figure 4 ----- -/--	9-17, 19-21

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

☒ See patent family annex.

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Name and mailing address of the ISA/

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

Authorized officer

Wolff, Norbert

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/120974 A1 (ADAMS R DEAN [US] ET AL) 26 June 2003 (2003-06-26) abstract paragraphs [0017], [0067] - [0069]; figure 2A paragraphs [0079] - [0085]; figures 3A-3C paragraph [0117]; figure 5 -----	1-7, 9-17, 19-26
Y	US 6 671 842 B1 (PHAN TUAN [US] ET AL) 30 December 2003 (2003-12-30) column 1, lines 8-10 column 2, line 21 - line 41; claim 1 -----	1-7, 22-26

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2003120974	A1	26-06-2003	NONE	
US 6671842	B1	30-12-2003	NONE	