

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference MICS0428PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2018/027822	International filing date (<i>day/month/year</i>) 16 April 2018 (16.04.2018)	(Earliest) Priority Date (<i>day/month/year</i>) 31 August 2017 (31.08.2017)
Applicant MICRON TECHNOLOGY, INC		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

the international application in the language in which it was filed

a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 2

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b. none of the figures is to be published with the abstract.

A. CLASSIFICATION OF SUBJECT MATTER**G11C 7/10(2006.01)i, G11C 8/12(2006.01)i, G06F 1/32(2006.01)i**

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 7/10; G11C 7/00; G11C 8/14; G11C 5/14; G11C 8/10; G11C 29/00; G11C 8/12; G06F 1/32

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & keywords: data bus, one-hot, interface, memory, convert, pattern, parallel, phase, nibble, decode, repeater, junction

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 8024642 B2 (LUIS A. LASTRAS-MONTANO) 20 September 2011 See column 9, lines 30-64; column 12, line 19 - column 13, line 8; claims 1, 11; and figure 10.	1,5-7,9-10,13-15 ,20
A		2-4,8,11-12,16-19
Y	US 8982660 B2 (YONGCHANG HUANG et al.) 17 March 2015 See column 3, lines 44-67; claims 1, 3, 7, 10; and figure 2.	1,5-7,9-10,13-15 ,20
A	US 2009-0180337 A1 (TAKUYA NAKANISHI et al.) 16 July 2009 See paragraphs [0118]-[0129]; claim 1; and figure 7.	1-20
A	US 2009-0172480 A1 (JOSEPH M. JEDDELOH) 02 July 2009 See paragraphs [0014]-[0017]; claim 1; and figure 1.	1-20
A	US 2016-0125920 A1 (SAMSUNG ELECTRONICS CO., LTD.) 05 May 2016 See paragraphs [0058]-[0063]; claim 1; and figure 4A.	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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 the actual completion of the international search

10 August 2018 (10.08.2018)

Date of mailing of the international search report

10 August 2018 (10.08.2018)

Name and mailing address of the ISA/KR

International Application Division

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2018/027822

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 8024642 B2	20/09/2011	US 2009-0063759 A1	05/03/2009
US 8982660 B2	17/03/2015	CN 103456350 A US 2013-0322199 A1	18/12/2013 05/12/2013
US 2009-0180337 A1	16/07/2009	JP 2009-170078 A US 2010-0265776 A1 US 2011-0280089 A1 US 2012-0230121 A1 US 7746710 B2 US 8004909 B2 US 8194474 B2 US 8520452 B2	30/07/2009 21/10/2010 17/11/2011 13/09/2012 29/06/2010 23/08/2011 05/06/2012 27/08/2013
US 2009-0172480 A1	02/07/2009	US 7895485 B2	22/02/2011
US 2016-0125920 A1	05/05/2016	KR 10-2016-0051543 A US 9711192 B2	11/05/2016 18/07/2017