

ARTIFACT SHEET

Enter artifact number below. Artifact number is application number + artifact type code (see list below) + sequential letter (A, B, C ...). the first artifact folder for an artifact type receives the letter A, the second B, etc.. Examples: 59123456PA, 59123456PB, 59123456ZA, 59123456ZB

18540888ZA

Indicate quantity of a single type of artifact received but not scanned. Create individual artifact folder/box and artifact number for each Artifact Type.

☐

CD(s)/DVD(s) containing:
Computer Program Listing
Doc Code: Computer

Number Of Disc(s)

☐

Artifact Type Code: P

Sequence listing
Doc Code Artifact

☐

Artifact Type Code: S

Unspecified content
Doc Code: Artifact

☐

Artifact Type Code: U

Table
Doc Code: Artifact

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Artifact Type Code: T

☐

Set(s) Color Documents or B/W Photographs
Doc Code: Artifact Artifact Type Code: C

☐

Confidential Information Disclosure Statement or Other Documents marked Proprietary, Trade Secrets, Subject to Protective Order, Material Submitted under MPEP 724.02, etc.
Doc Code: Artifact Artifact Type Code: X

☐

1

Other documents, including Microfilm(s), Video Tape(s), Model(s), Bound Document(s), Color NPL, Returned Patent Grants, etc.
Description:
Doc Code: Artifact Artifact Type Code: Z

May 12, 2022



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/540,888	12/15/2023	Der-Min Yuan	ETRP0423USA3	6527
27765 7590 11/26/2024 NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION 5F., NO.389, FUHE RD., YONGHE DIST. NEW TAIPEI CITY, 234645 TAIWAN			EXAMINER FARROKH, HASHEM	
			ART UNIT 2138	PAPER NUMBER
			NOTIFICATION DATE 11/26/2024	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patent.admin.uspto.Rev@naipo.com

mis.ap.uspto@naipo.com

APPLICATION NO.	ISSUE DATE	PATENT NO.
18/540,888	26-Nov-2024	12154652

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
5F., NO.389, FUHE RD., YONGHE DIST.
NEW TAIPEI CITY, 234645
TAIWAN

EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at <https://patentcenter.uspto.gov>

The electronic patent grant is the official patent grant under 35 U.S.C. 153. For more information, please visit <https://www.uspto.gov/electronicgrants>



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/540,888	11/26/2024	12154652	ETRP0423USA3	6527

27765

7590

11/06/2024

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION

5F., NO.389, FUHE RD., YONGHE DIST.

NEW TAIPEI CITY,

TAIWAN

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at <https://patentcenter.uspto.gov/>. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at <https://certifiedcopycenter.uspto.gov/index.html>. The Certified Copy Center may be reached at (800)972-6382.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Center (<https://patentcenter.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PATENT CENTER site <https://patentcenter.uspto.gov> for additional inventors):

Der-Min Yuan, New Taipei City, TAIWAN;
Yen-An Chang, Miaoli County, TAIWAN;
Wei-Ming Huang, Hsinchu County, TAIWAN;

APPLICANT(s) (Please see PATENT CENTER site <https://patentcenter.uspto.gov> for additional applicants):

Etron Technology, Inc., Hsinchu, TAIWAN;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit [SelectUSA.gov](https://www.SelectUSA.gov).

PART B – FEE(S) TRANSMITTAL

Complete and send this form, together with the applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By fax, send to: (571) 273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate §FEE ADDRESS; for maintenance fee notifications. Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27765

7590

10/08/2024

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Anna Lu	(Typed or printed name)
/Anna Lu/	(Signature)
10/18/2024	(Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
18/540,888	12/15/2023	Der-Min Yuan	ETRP0423USA3	6527

TITLE OF INVENTION: **DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT**

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	01/08/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
FARROKH, HASHEM	2138	711-105000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363)

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. Winston Hsu

2.

3.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE or COUNTRY)

Etron Technology, Inc.

Hsinchu, Taiwan

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government4a. Fees Submitted: ☒ Issue Fee ☐ Publication Fee (if required)

4b. Method of Payment (Please first reapply any previously paid fee shown above):

- ☒ Electronic Payment via Patent Center or EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)
- ☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 50-3105

5. Change of Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27.
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid Certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken as a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken as a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Winston Hsu/

Date 10/16/2024

Typed or printed name Winston Hsu

Registration No. 41526



ELECTRONIC PAYMENT RECEIPT

APPLICATION # 18/540,888	RECEIPT DATE / TIME 10/18/2024 12:13:04 AM Z ET	ATTORNEY DOCKET # ETRP0423USA3
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Title of Invention

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6527	FILED BY	Anna Lu
PATENT CENTER #	67603963	AUTHORIZED BY	Winston Hsu
CUSTOMER #	27765	FILING DATE	12/15/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Der-Min Yuan

Payment Information

PAYMENT METHOD DA / 503105	PAYMENT TRANSACTION ID E20240H113237511	PAYMENT AUTHORIZED BY Anna Lu
PRE-AUTHORIZED ACCOUNT 503105	PRE-AUTHORIZED CATEGORY 37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)	

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2501	UTILITY ISSUE FEE	480.00	1	480.00
TOTAL AMOUNT:				\$480.00

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement

Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/540,888

RECEIPT DATE / TIME
10/18/2024 12:13:04 AM Z ET

ATTORNEY DOCKET #
ETRP0423USA3

Title of Invention

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 6527

FILED BY Anna Lu

PATENT CENTER # 67603963

FILING DATE 12/15/2023

CUSTOMER # 27765

FIRST NAMED
INVENTOR Der-Min Yuan

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Winston Hsu

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
5437390.pdf	1	Issue Fee Payment (PTO-85B)	855 KB

Warning: The attached file contains comments or annotations. Comments are not recommended and may cause processing problems with the document.

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
5437390.pdf	5E5E0BF35718CEC1231A449BDBBD2B042673C430AA5807878 FC4F875F3C2AAF1E30EE92F8DFC1726F4C917986262959F5F 187C582787D6F54A9866B320AA1EAB

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described in MPEP 503.

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New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
18/540,888	12/15/2023	2138	664	ETRP0423USA3	6	3

CONFIRMATION NO. 6527

CORRECTED FILING RECEIPT



0000000079227857

27765

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
5F., NO.389, FUHE RD., YONGHE DIST.
NEW TAIPEI CITY,
TAIWAN

Date Mailed: 10/11/2024

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Der-Min Yuan, New Taipei City, TAIWAN;
Yen-An Chang, Miaoli County, TAIWAN;
Wei-Ming Huang, Hsinchu County, TAIWAN;

Applicant(s)

Etron Technology, Inc., Hsinchu, TAIWAN;

Assignment For Published Patent Application

Etron Technology, Inc, Hsinchu, TAIWAN

Power of Attorney: The patent practitioners associated with Customer Number 27765

Domestic Priority data as claimed by applicant

This application is a CON of 17/213,133 03/25/2021 PAT 11,894,098
which is a CON of 16/151,347 10/04/2018 PAT 10,998,017
which is a CON of 13/922,242 06/19/2013 ABN
which claims benefit of 61/672,287 07/17/2012
and claims benefit of 61/768,406 02/23/2013

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 12/28/2023

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/540,888**

Projected Publication Date: 04/04/2024

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Preliminary Class

711

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor

community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

**NOTICE OF ALLOWANCE AND FEE(S) DUE**27765 7590 10/08/2024
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
5F., NO.389, FUHE RD., YONGHE DIST.
NEW TAIPEI CITY,
TAIWAN

EXAMINER

FARROKH, HASHEM

ART UNIT

PAPER NUMBER

2138

DATE MAILED: 10/08/2024

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/540,888	12/15/2023	Der-Min Yuan	ETRP0423USA3	6527

TITLE OF INVENTION: DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0.00	\$0.00	\$480	01/08/2025

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27765 7590 10/08/2024

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
5F., NO.389, FUHE RD., YONGHE DIST.
NEW TAIPEI CITY,
TAIWAN

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/540,888	12/15/2023	Der-Min Yuan	ETRP0423USA3	6527

TITLE OF INVENTION: DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0.00	\$0.00	\$480	01/08/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
FARROKH, HASHEM	2138	711-105000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. _____

2. _____

3. _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required)

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via the USPTO patent electronic filing system ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/540,888	12/15/2023	Der-Min Yuan	ETRP0423USA3	6527
27765	7590	10/08/2024	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION 5F., NO.389, FUHE RD., YONGHE DIST. NEW TAIPEI CITY, TAIWAN			FARROKH, HASHEM	
			ART UNIT	PAPER NUMBER
			2138	

DATE MAILED: 10/08/2024

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).

<https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

Routine uses of the information in this record may include disclosure to:

- 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
- 2) a federal, state, local, or international agency, in response to its request;
- 3) a contractor of the USPTO having need for the information in order to perform a contract;
- 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
- 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
- 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
- 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
- 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
- 9) the Office of Personnel Management (OPM) for personnel research purposes; and
- 10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 18/540,888	Applicant(s) Yuan et al.	
	Examiner HASHEM FARROKH	Art Unit 2138	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to TD filed on 09/23/2024.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-6 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some* c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____. 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	5. ☐ Examiner's Amendment/Comment 6. ☒ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
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/HASHEM FARROKH/ Primary Examiner, Art Unit 2138	
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Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION:

2. This office action is in response to the communication(s) filed on 09/23/2024. There are a total of 20 claims pending in the application. No claims have been amended, canceled; or added.

TERMINAL DISCLAIMER (TD):

3. The terminal disclaimer filed on 09/23/2024 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Application 17/213,133, now US Patent 11,894,098 B2, has been reviewed and is accepted. The terminal disclaimer has been recorded.

RESPONSE TO REMARKS:

3. The pending claims 1-6 in the previous office action were rejected under non-statutory double patenting rejection. The filing and approval the Terminal Disclaimer (TD) overcomes the non-statutory double patenting rejection.

REASON FOR ALLOWANCE:

4. Claims 1-6 are considered to be allowable.

The invention is directed to a dynamic random access memory (DRAM) including double data rate (DDR I, DDR II, and DDR III) memory formed on a single chip. The memory comprises three distinct circuits (e.g., units) comprising a memory core unit, an I/O unit, and peripheral unit. Each unit operates under distinct voltage range of less than 1.1 V. The prior art of record does not teach or render obvious combination features or limitations recited in the independent claims 1, 2, and 3. The dependent claims 4-6 are allowable by virtue of their dependency from the independent claim 3 and incorporates all limitations included in the base claim 3.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

DIRECTION OF FUTURE CORRESPONDENCES:

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HASHEM FARROKH whose telephone number is (571)272-4193. The examiner can normally be reached Monday through Friday from 8:30 am - 5:00 pm.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Tim Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HASHEM FARROKH/
Primary Examiner, Art Unit 2138

Search Notes 	Application/Control No. 18/540,888	Applicant(s)/Patent Under Reexamination Yuan et al.
	Examiner HASHEM FARROKH	Art Unit 2138

CPC - Searched*		
Symbol	Date	Examiner
G06F12/0238 OR G06F12/063 OR G06F12/0692 OR G06F12/0866 OR G06F12/0882 OR G06F13/4221 OR G06F13/4278 OR G06F3/061 OR G06F3/0653 OR G06F3/0656 OR G11C11/40615 OR G11C11/4074 OR G11C7/1075 OR Y02D10/00	06/28/2024	HF

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
711	154	06/28/2024	HF

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor/Assignee Search	06/28/2024	HF
EAST Text, CPC, Facet Search	06/28/2024	HF
IP Search	06/28/2024	HF
Google Search	06/28/2024	HF
Inventor/Assignee Search Updated	09/30/2024	HF
EAST Text, CPC, Facet Search Updated	09/30/2024	HF

/HASHEM FARROKH/ Primary Examiner, Art Unit 2138	
---	--

<i>Search Notes</i> 	Application/Control No. 18/540,888	Applicant(s)/Patent Under Reexamination Yuan et al.
	Examiner HASHEM FARROKH	Art Unit 2138

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G11C7/1075	G11C7/00	09/30/2024	HF
G11C11/4074	G11C11/00	09/30/2024	HF
G06F12/0882	G06F12/00	09/30/2024	HF

/HASHEM FARROKH/ Primary Examiner, Art Unit 2138	
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Issue Classification 	Application/Control No. 18/540,888	Applicant(s)/Patent Under Reexamination Yuan et al.
	Examiner HASHEM FARROKH	Art Unit 2138

CPC						
Symbol				Type	Version	
G11C	/	7	/	1075	F	2013-01-01
G11C	/	11	/	4074	I	2013-01-01
G06F	/	12	/	0882	A	2013-01-01
G06F	/	3	/	0653	A	2013-01-01
G06F	/	12	/	0238	A	2013-01-01
G06F	/	13	/	4278	A	2013-01-01
G06F	/	3	/	061	A	2013-01-01
G06F	/	3	/	0656	A	2013-01-01
G06F	/	12	/	0692	A	2013-01-01
G06F	/	12	/	063	A	2013-01-01
G06F	/	12	/	0866	A	2013-01-01
G06F	/	13	/	4221	A	2013-01-01
G11C	/	11	/	40615	A	2013-01-01
Y02D	/	10	/	00	A	2018-01-01

CPC Combination Sets							
Symbol				Type	Set	Ranking	Version
	/		/				

Use images from artifact folder? ☒ Yes ☐ No			
NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	6	
/HASHEM FARROKH/ Primary Examiner, Art Unit 2138	30 September 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 18/540,888	Applicant(s)/Patent Under Reexamination Yuan et al.
	Examiner HASHEM FARROKH	Art Unit 2138

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G11C	/	7	/ 10
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
711	105

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

Use images from artifact folder? ☒ Yes ☐ No			
NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	6	
/HASHEM FARROKH/ Primary Examiner, Art Unit 2138	30 September 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 18/540,888	Applicant(s)/Patent Under Reexamination Yuan et al.
	Examiner HASHEM FARROKH	Art Unit 2138

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1														
	2														
	3														
	4														
	5														
	6														

Use images from artifact folder? ☒ Yes ☐ No			
NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	6	
/HASHEM FARROKH/ Primary Examiner, Art Unit 2138	30 September 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Bibliographic Data

Application No: 18/540,888

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged: /HASHEM FARROKH/

Examiner's Signature

Initials

Title:

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN
EMBEDDED DISPLAY PORT

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/15/2023	711	2138	ETRP0423USA3
RULE			

APPLICANTS

Etron Technology, Inc, Hsinchu, TAIWAN

INVENTORS

Der-Min Yuan,

Yen-An Chang,

Wei-Ming Huang,

CONTINUING DATA

This application is a CON of 17213133 03/25/2021 PAT 11894098

17213133 is a CON of 16151347 10/04/2018 PAT 10998017

16151347 is a CON of 13922242 06/19/2013ABN

13922242 has PRO of 61768406 02/23/2013

13922242 has PRO of 61672287 07/17/2012

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

12/28/2023

** SMALL ENTITY **

STATE OR COUNTRY

ADDRESS

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION

5F., NO.389, FUHE RD., YONGHE DIST.

NEW TAIPEI CITY,

TAIWAN

FILING FEE RECEIVED

\$664

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L172	64	((DRAM OR DDR\$2) near2 (chip OR die OR ASIC OR ((integrsted ADJ circuit) OR IC))) SAME ((peripheral) near2 (circuit OR unit OR portion)) SAME ((input\$1output OR I/\$1O) ADJ circuit)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/30 09:59 AM
L173	1	((DRAM OR DDR\$2) near2 (chip OR die OR ASIC OR ((integrsted ADJ circuit) OR IC))) SAME ((peripheral) near2 (circuit OR unit OR portion)) SAME ((input\$1output OR I/\$1O) ADJ circuit).clm.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/30 09:59 AM
L174	9	((dynamic\$1random\$1access\$1memory OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR ?DRAM OR DDR\$4 OR LPDDR) SAME (lower OR less OR smaller OR blow) SAME ("1.1V" OR "1.1 V" OR ("1.1" ADJ volt))).clm.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/30 10:03 AM
L175	81	((dynamic\$1random\$1access\$1memory OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR ?DRAM OR DDR\$4 OR LPDDR) SAME (lower OR less OR smaller OR blow) SAME ("1.1V" OR "1.1 V" OR ("1.1" ADJ volt)))	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/30 10:04 AM
L176	6	174 AND ("CHANG; YEN-AN".ine. OR "HUANG; WEI-MING".ine. OR "YUAN; DER-MIN".ine.)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/30 10:05 AM
L177	11	175 AND ((Etron ADJ Technology).as.)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/30 10:06 AM
L178	41	175 AND	(US-PGPUB; USPAT;	OR	ON	ON	2024/09/30

		((G06F12/0238 OR G06F12/063 OR G06F12/0692 OR G06F12/0866 OR G06F12/0882 OR G06F13/4221 OR G06F13/4278 OR G06F3/061 OR G06F3/0653 OR G06F3/0656 OR G11C11/40615 OR G11C11/4074 OR G11C7/1075 OR Y02D10/00).cpc. OR 711/105.ccls. OR (G06F12/02 OR G06F12/06 OR G06F12/0866 OR G06F12/0882 OR G06F13/42 OR G06F3/06 OR G11C11/406 OR G11C11/4074 OR G11C7/10).ipc.)	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)				10:07 AM
L179	11	178 AND (@ad<"20130223")	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/30 10:10 AM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

**TERMINAL DISCLAIMER TO OBIATE A DOUBLE PATENTING
REJECTION OVER A "PRIOR" PATENT**Docket Number (Optional)
ETRP0423USA3

In re Application of: Der-Min Yuan et al.

Application No.: 18/540,888

Filed: 12/15/2023

For: DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

The applicant, Etron Technology, Inc., owner of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 11894098 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for any during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the applicant does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. ☒ The undersigned is an attorney or agent of record. Reg. No. 67314

/Roger Chen/ 09/20/2024
Signature Date

Roger Chen
Typed or printed name

Agent of Record Voice Mail:3027291562
Title Telephone Number

- ☒ Terminal disclaimer fee under 37 CFR 1.20(d) included. USD 170.00

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 5 1. (original): A dynamic random access memory (DRAM), comprising:
 a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is
 supplied with a first voltage within a first voltage range to make the DRAM
 core cell operate at the first voltage, and the DRAM core cell is a volatile
 memory cell, wherein the first voltage is lower than 1.1V; and
10 an input/output circuit comprised in the DRAM, wherein the input/output circuit
 is electrically connected to the DRAM core cell, and the input/output circuit
 is supplied with a third voltage to make the input/output circuit operate at
 the third voltage, wherein the third voltage is lower than 1.1V, and
 wherein the DRAM core cell and the input/output circuit are formed on a single
15 chip, the input/output circuit is external to the DRAM core cell, and the first
 voltage is different from the third voltage.
2. (original): A dynamic random access memory (DRAM), comprising:
 a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is
20 supplied with a first voltage within a first voltage range to make the DRAM
 core cell operate at the first voltage, and the DRAM core cell is a volatile
 memory cell, wherein the first voltage is lower than 1.1V; and
 an input/output circuit comprised in the DRAM, wherein the input/output circuit
 is electrically connected to the DRAM core cell, and the input/output circuit
25 is supplied with a third voltage to make the input/output circuit operate at
 the third voltage, wherein the third voltage is lower than 1.1V;
 wherein the DRAM core cell and the input/output circuit are formed on a single
 chip, the input/output circuit is external to the DRAM core cell, and the first
 voltage is greater than the third voltage.
- 30

3. (original): A dynamic random access memory (DRAM), comprising:
a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is
supplied with a first voltage to make the DRAM core cell operate at the first
voltage, and the DRAM core cell is a volatile memory cell; and
5 an input/output circuit comprised in the DRAM, wherein the input/output circuit
is electrically connected to the DRAM core cell, and the input/output circuit
is supplied with a third voltage to make the input/output circuit operate at
the third voltage, wherein the third voltage is lower than 1.1V;
wherein the first voltage is greater than the third voltage, and the DRAM is
10 capable to be applied to an embedded display port (eDP).
4. (original): The dynamic random access memory of claim 3, wherein the first
voltage is lower than 1.1V.
- 15 5. (original): The dynamic random access memory of claim 3, further comprising:
a peripheral circuit comprised in the DRAM, wherein the peripheral circuit is
electrically connected to the DRAM core cell, and the peripheral circuit is
supplied with a second voltage to make the peripheral circuit operate at the
second voltage, wherein the second voltage is lower than 1.1V.
20
6. (original): The dynamic random access memory of claim 5, wherein the first
voltage is different from the second voltage.

REMARKS/ARGUMENTS

Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file.

1. Double Patenting

Claims 1-6 of the present invention are rejected on the ground of nonstatutory double patenting as being unpatenable over claims 1-9 of U.S. Patent No. US 11894098B2.

Response:

To overcome the rejection based on nonstatutory double patenting, the applicant wishes to submit a terminal disclaimer of the instant application in compliance with 37 CFR 1.321(c) or 1.321(d) without disclaimer as to the merits of the claims filed in the present invention. In light of this, acceptance of the terminal disclaimer is therefore respectfully requested, and the applicant respectfully requests reconsideration of the rejection under double patenting of claims 1-6 of the present invention.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,

/Roger Chen/

Date: 09/20/2024

- 5 Roger Chen, Patent Agent No. 67,314
5F., No.389, Fuhe Rd., Yonghe Dist., New Taipei City, Taiwan
Voice Mail: 302-729-1562
e-mail : RogerChen@naipo.com
- 10 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time and DST 12 hours behind.)

**DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED
DISPLAY PORT**

Appl. No.	: 18/540,888	Confirmation No.	6527
First Named Inventor	: Der-Min Yuan		
Filed	: December 15, 2023		
TC/A.U.	: 2138		
Examiner	: FARROKH, HASHEM		
Docket No.	: ETRP0423USA3		
Customer No.	: 27765		

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

AMENDMENT

In response to the Office action of July 03, 2024, please amend the above-identified
5 application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2
of this paper.

Remarks/Arguments begin on page 4 of this paper.



ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/540,888

RECEIPT DATE / TIME
09/23/2024 01:51:51 AM Z ET

ATTORNEY DOCKET #
ETRP0423USA3

Title of Invention

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 6527

FILED BY Anna Lu

PATENT CENTER # 67250620

FILING DATE 12/15/2023

CUSTOMER # 27765

FIRST NAMED
INVENTOR Der-Min Yuan

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Roger Chen

Documents

TOTAL DOCUMENTS: 4

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
5410905.pdf	2	Applicant Arguments/Remarks Made in an Amendment	785 KB
5410904.pdf	1	Amendment/Request for Reconsideration-After Non- Final Rejection	106 KB
5410903.pdf	2	Claims	109 KB
5410307.pdf	1	Terminal Disclaimer Filed	157 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
5410905.pdf	2A6C9CB4FC9C9A66BD768D368EAED9C23D3D01DE865035A

C210E2D4E83C78A65B58EEEECA9CC8EB5085DD781ADD4BD7
1184057792923B4008606CD2A5960AD32E

5410904.pdf

F6E34972F3B356FE67FF4A0E355EB6114492053999CAABE6E
AB292EA5567B9DE75F05D4E0A3C6418B8D07221A49B5F81AF
8DC55EB185BCF3AF63502FE5664938

5410903.pdf

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F9E2A1FC3C6149E21C56A7FAEFFEC39

5410307.pdf

E11F94896F152018B2BC809E88740AE8F64638FE9E7B30C502
1E800AB23EABF3AEE3A7972049BDEB44A6E1FBEE258F15F9
582971FC2B670CF246A5352014C6A8

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



ELECTRONIC PAYMENT RECEIPT

APPLICATION # 18/540,888	RECEIPT DATE / TIME 09/23/2024 01:51:51 AM Z ET	ATTORNEY DOCKET # ETRP0423USA3
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Title of Invention

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6527	FILED BY	Anna Lu
PATENT CENTER #	67250620	AUTHORIZED BY	Roger Chen
CUSTOMER #	27765	FILING DATE	12/15/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Der-Min Yuan

Payment Information

PAYMENT METHOD DA / 503105	PAYMENT TRANSACTION ID E20249M252326205	PAYMENT AUTHORIZED BY Anna Lu
PRE-AUTHORIZED ACCOUNT 503105	PRE-AUTHORIZED CATEGORY 37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)	

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2814	STATUTORY DISCLAIMER, INCLUDING TERMINAL DISCLAIMER	170.00	1	170.00
TOTAL AMOUNT:				\$170.00

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Application Number * 18/540,888 *	Application/Control No. 18/540,888	Applicant(s)/Patent under Reexamination Yuan et al.	
	Examiner FARROKH, HASHEM	Art Unit 2138	
Document Code - DISQ		Internal Document - DO NOT MAIL	

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed: <u>23 September 2024</u>	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
/PAMELA A YOUNG/ Technology Center: <u>OPLC</u> Telephone: <u>(571)272-3622</u> _____

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 18/540,888		Filing Date 12/15/2023		☐ To be Mailed					
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO													
APPLICATION AS FILED - PART I													
		(Column 1)		(Column 2)									
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)					
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A							
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A							
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A							
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 = *				x \$40 =							
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 = *				x \$192 =							
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).											
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))													
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL							
APPLICATION AS AMENDED - PART II													
		(Column 1)		(Column 2)		(Column 3)							
AMENDMENT	09/23/2024		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))		* 6		Minus ** 20		= 0		x \$40 =		0		
	Independent (37 CFR 1.16(h))		* 3		Minus *** 3		= 0		x \$192 =		0		
	☐ Application Size Fee (37 CFR 1.16(s))												
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
										TOTAL ADD'L FEE		0	
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))		*		Minus **		=		x \$0 =				
	Independent (37 CFR 1.16(h))		*		Minus ***		=		x \$0 =				
	☐ Application Size Fee (37 CFR 1.16(s))												
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
										TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.										LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".										/EFREM WARREN/			
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".													
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.													

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/540,888	12/15/2023	Der-Min Yuan	ETRP0423USA3	6527
27765 7590 07/03/2024 NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION 5F., NO.389, FUHE RD., YONGHE DIST. NEW TAIPEI CITY, TAIWAN			EXAMINER FARROKH, HASHEM	
			ART UNIT 2138	PAPER NUMBER
			NOTIFICATION DATE 07/03/2024	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patent.admin.uspto.Rev@naipo.com

mis.ap.uspto@naipo.com

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAIL ACTION

2. The instant application having application No. 18/540,888 has a total of 6 claims pending in the application; there are 3 independent claim and 3 dependent claims, all of which are ready for examination by the examiner.

IFORMATION CONCENING DRAWING:

3. Application's drawing submitted on 12/15/2023 are acceptable for examination purposes.

ACKNOWLEDGEMENT OF REFERENCES CITED BY APPLICANT

Information Disclosure Statement

4. As required by **M.P.E.P. 2001.06(b)** and **37 C.F.R. 1.98(d)**, since the instant application has been identified as a continuation application of an earlier filed application and is relied upon for an earlier filing date under **35 U.S.C. 120**, the examiner has reviewed the prior art cited in the earlier related application as required by **M.P.E.P. 707.05** and **904** and as stated in **M.P.E.P. 2001.06(b)**, no separate citation of the same prior art need be made by the applicants in the instant application.

IFORMATION CONCENING IDS:

5. The information disclosure statement (IDS) submitted on 12/29/2023 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the Examiner. A copy (copies) of PTOL-1449s initialed and signed by the examiner is/are attached to the instant office action.

RELEVANT PRIOR ART CITED BY THE EXAMINER:

6. The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure.

Mohammad et al. (US 2009/0122620 A1) teaches "... a conventional six transistor (6T) SRAM cell 100. While the inventive concepts are described as being included in SRAM, the inventive concepts may be included in other types of memory including, but not limited to, SDRAM..." (par. 0025).

TAKAHASHI et al. (US 2010/0290300 A1) teaches "... DRAM cell operating at VDD voltage 0.8 V..." (Fig. 8).

Shaw (US 2005/0133852 A1) teaches "...primary objective is to provide an improved semiconductor memory device in which peripheral circuits can readily follow further higher integration of memory cells..." (par. 0013).

INFORMATION CONCERNING CLAIMS:

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*,

686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 et seq. for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The filing of a terminal disclaimer by itself is not a complete reply to a nonstatutory double patenting (NSDP) rejection. A complete reply requires that the terminal disclaimer be accompanied by a reply requesting reconsideration of the prior Office action. Even where the NSDP rejection is provisional the reply must be complete. See MPEP § 804, subsection I.B.1. For a reply to a non-final Office action, see 37 CFR 1.111(a). For a reply to final Office action, see 37 CFR 1.113(c). A request for reconsideration while not provided for in 37 CFR 1.113(c) may be filed after final for consideration. See MPEP §§ 706.07(e) and 714.13.

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The actual filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal

Disclaimer may be filled out completely online using web-screens. An eTerminal

Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/apply/applying-online/eterminal-disclaimer.

7. *Claims 1-6 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 11,894,098 B2 (hereinafter patent).*

Although the claims at issue are not identical, they are not patentably distinct from each other because some minor change/reordering of limitations and/or phrases in the claims does not make the claims of instant application patentably distinct from the patent claims.

8. *The claims of the instant application are compared with claim of the patent in the table below:*

US Patent 11,894,098 B2	US Application 18/540,888
3. A dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell; an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is	1. A dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage , and the DRAM core cell is a volatile memory cell, and an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is

supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V; and a peripheral circuit comprised in the DRAM, wherein the peripheral circuit is electrically connected to the DRAM core cell, and the peripheral circuit is supplied with a second voltage to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V and the first voltage is different from the second voltage; wherein the DRAM core cell and the input/output circuit are formed on a single chip, and the input/output circuit is external to the DRAM core cell, and wherein the first voltage is different from the third voltage. 4. The dynamic random access memory of claim 3, wherein the first voltage is lower than 1.1V.	supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V, and wherein the DRAM core cell and the input/output circuit are formed on a single chip, the input/output circuit is external to the DRAM core cell, and the first voltage is different from the third voltage. wherein the first voltage is lower than 1.1V;
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3. A dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell; an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V; and a peripheral circuit comprised in the DRAM, wherein the peripheral circuit is electrically connected to the DRAM core cell, and the peripheral circuit is supplied with a second voltage to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V and the first voltage is different from the second voltage; wherein the DRAM core cell and the input/output circuit are formed on a single chip, and the input/output circuit is external to the DRAM core cell, and wherein the first voltage is different from the third voltage.	2. A dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, and an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V; wherein the DRAM core cell and the input/output circuit are formed on a single chip, the input/output circuit is external to the DRAM core cell, and the first voltage is greater than the third voltage.
---	---

4. The dynamic random access memory of claim 3, wherein the first voltage is lower than 1.1V.	wherein the first voltage is lower than 1.1V;
6. A dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell; and an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V; wherein the first voltage is greater than the third voltage, and the DRAM operating with the first voltage and the third voltage is capable of being applied to an embedded display port (eDP).	3. A dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell; and an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V; wherein the first voltage is greater than the third voltage, and the DRAM is capable to be applied to an embedded display port (eDP).
4. The dynamic random access memory of claim 3,	4. The dynamic random access memory of claim 3,

wherein the first voltage is lower than 1.1V.	wherein the first voltage is lower than 1.1V.
1. A dynamic random access memory (DRAM), comprising: a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V; and a peripheral circuit comprised in the DRAM, wherein the peripheral circuit is electrically connected to the DRAM core cell, and the peripheral circuit is supplied with a second voltage within a second voltage range to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V, and wherein the DRAM core cell and the peripheral circuit are formed on a single chip, and the peripheral circuit is external to the DRAM core cell, and wherein the first voltage is different from the second voltage.	5. The dynamic random access memory of claim 3, further comprising: a peripheral circuit comprised in the DRAM, wherein the peripheral circuit is electrically connected to the DRAM core cell, and the peripheral circuit is supplied with a second voltage to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V
9. The dynamic random access memory of claim 8, wherein the first voltage is different from the second voltage.	6. The dynamic random access memory of claim 5, wherein the first voltage is different from the second voltage.

DIRECTION OF FUTURE CORRESPONDENCES:

9. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to HASHEM FARROKH whose telephone number is (571)272-4193. The examiner can normally be reached Monday through Friday from 8:30 am - 5:00 pm.*

10. *If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Tim Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.*

11. *Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.*

*/HASHEM FARROKH/
Primary Examiner, Art Unit 2138*

<i>Notice of References Cited</i>	Application/Control No. 18/540,888		Applicant(s)/Patent Under Reexamination Yuan et al.	
	Examiner HASHEM FARROKH		Art Unit 2138	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-20090122620-A1	2009-05-14	Mohammad; Baker	G11C11/413	365/189.11
*	B	US-20100290300-A1	2010-11-18	TAKAHASHI; Hiroyuki	G11C11/4094	365/207
*	C	US-20050133852-A1	2005-06-23	Shau, Jeng-Jye	G11C11/404	257/E21.639
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No. 18/540,888	Applicant(s)/Patent Under Reexamination Yuan et al.
	Examiner HASHEM FARROKH	Art Unit 2138

CPC - Searched*		
Symbol	Date	Examiner
G06F12/0238 OR G06F12/063 OR G06F12/0692 OR G06F12/0866 OR G06F12/0882 OR G06F13/4221 OR G06F13/4278 OR G06F3/061 OR G06F3/0653 OR G06F3/0656 OR G11C11/40615 OR G11C11/4074 OR G11C7/1075 OR Y02D10/00	06/28/2024	

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
711	154	06/28/2024	

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor/Assignee Search	06/28/2024	HF
EAST Text, CPC, Facet Search	06/28/2024	HF
IP Search	06/28/2024	HF
Google Search	06/28/2024	HF

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L142	2	"18540888"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/27 04:46 PM
L143	2	("11894098").pn.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/27 04:47 PM
L146	486174	(dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 02:43 PM
L147	925643	((dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 02:44 PM
L149	9	((dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM) SAME voltage SAME ((lower OR smaller OR less OR below) near5 "1.1")	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 02:48 PM
L150	13	((dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR DDR\$4) SAME voltage SAME ((lower OR smaller OR less OR below) near5 "1.1")	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 02:56 PM
L151	9	input\$1output SAME voltage SAME ((lower OR smaller OR less OR below) near5 "1.1")	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 02:59 PM
L152	635	((dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR DDR\$4) SAME (operat\$3 near5 voltage near5 range)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:06 PM
L153	0	152 AND ((lower OR	(US-PGPUB; USPAT;	OR	ON	ON	2024/06/28

		smaller OR less OR below) near5 "1.1")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)				03:09 PM
L154	212	("CHANG; YEN-AN".ine. OR "HUANG; WEI-MING".ine. OR "YUAN; DER-MIN".ine.)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:12 PM
L155	3	("ETRON TECHNOLOGY, INC".ase.)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:13 PM
L156	561714	(G06F12/0238 OR G06F12/063 OR G06F12/0692 OR G06F12/0866 OR G06F12/0882 OR G06F13/4221 OR G06F13/4278 OR G06F3/061 OR G06F3/0653 OR G06F3/0656 OR G11C11/40615 OR G11C11/4074 OR G11C7/1075 OR Y02D10/00).cpc. OR 711/105.ccls. OR (G06F12/02 OR G06F12/06 OR G06F12/0866 OR G06F12/0882 OR G06F13/42 OR G06F3/06 OR G11C11/406 OR G11C11/4074 OR G11C7/10).ipc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:26 PM
L157	883	(Etron ADJ Technology).as.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:27 PM
L158	63	((DRAM OR DDR\$4) near2 (chip OR die OR ((integrsted ADJ circuit) OR IC))) SAME ((peripheral) near2 (circuit OR unit OR portion)) SAME ((input\$1output OR I/\$1O) ADJ circuit)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:39 PM
L159	13	((dynamic\$1random\$1a ccess\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR DDR\$4) SAME voltage SAME ((lower OR	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:41 PM

		smaller OR less OR below) near5 "1.1")					
L160	7	((dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR DDR\$4) SAME voltage SAME ((lower OR smaller OR less OR below) near5 than near5 "1.1")	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:47 PM
L161	66	(((((dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR DDR\$4)) near2 (chip OR die OR ((integrated ADJ circuit) OR IC))) SAME ((peripheral) near2 (circuit OR unit OR portion OR logic)) SAME ((input\$1output OR I/\$1O) ADJ (circuit OR unit OR portion OR logic)))	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:49 PM
L162	1	(((((dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR DDR\$4)) near2 (chip OR die OR ((integrated ADJ circuit) OR IC))) SAME ((peripheral) near2 (circuit OR unit OR portion OR logic)) SAME ((input\$1output OR I/\$1O) ADJ (circuit OR unit OR portion OR logic))).clm.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:50 PM
L163	2	(((((dynamic\$1random\$1access\$1memory) OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR DDR\$4)) near2 (chip OR die OR ((integrated ADJ circuit) OR IC))) AND ((peripheral) near2 (circuit OR unit OR portion OR logic)) AND ((input\$1output OR I/\$1O) ADJ (circuit OR unit OR portion OR	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:51 PM

		logic))) .clm.					
L164	12	((dynamic\$1random\$1access\$1memory OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR ?DRAM OR DDR\$4 OR LPDDR) SAME ("1.1V" OR "1.1 V" OR ("1.1" ADJ volt))) .clm.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:57 PM
L165	432	((dynamic\$1random\$1access\$1memory OR (dynamic ADJ random ADJ access ADJ memory) OR DRAM OR ?DRAM OR DDR\$4 OR LPDDR) SAME ("1.1V" OR "1.1 V" OR ("1.1" ADJ volt)))	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:57 PM
L166	6	154 AND 164	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:57 PM
L167	10	165 AND 157	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 03:59 PM
L168	162	165 AND ((G06F12/0238 OR G06F12/063 OR G06F12/0692 OR G06F12/0866 OR G06F12/0882 OR G06F13/4221 OR G06F13/4278 OR G06F3/061 OR G06F3/0653 OR G06F3/0656 OR G11C11/40615 OR G11C11/4074 OR G11C7/1075 OR Y02D10/00).cpc. OR 711/105.ccls. OR (G06F12/02 OR	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 04:01 PM

		G06F12/06 OR G06F12/0866 OR G06F12/0882 OR G06F13/42 OR G06F3/06 OR G11C11/406 OR G11C11/4074 OR G11C7/10).ipc.)					
L169	34	168 AND (@ad<"20130223")	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 04:01 PM
L170	114	("7295036" "6551896" "6097070" "6570787" "6363014" "5928336" "7894294" "7692979" "7594129" "20110292448" "20060259679" "20110252253" "20060192282" "20030031043" "20060120138" "20060140004" "20050010746" "20130135955" "20110069562" "20100095137" "20100074043" "20100005439" "20090122620" "20060047985" "20120182076" "20100008172" "20130046941" "20130132660" "20050133852" "20090067217" "20080117700" "20100290300").pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 04:25 PM
L171	5	165 AND 170	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/06/28 04:26 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

☐ 1 - 50

☐ 1. Semiconductor integrated circuit device having dram and manufacture of the dram

PROBLEM TO BE SOLVED: To provide a semiconductor integrated circuit device having a highly reliable DRAM which can be manufactured by a simple manufacturing process and a method of manufacturing the same. Kind Code: A1 A DRAM in which a voltage of a difference between a word line voltage and a bit...

HITACHI LTD

JPH11150242A : Japan Applications : 1998-08-02 : 4

☐ 2. Semiconductor integrated circuit

PURPOSE: To provide a low-cost semiconductor IC device provided with a DRAM which can be operated stably.

CONSTITUTION: The semiconductor IC device comprises an n-first well formed in a semiconductor substrate, a DRAM memory cell array made by forming memory cells into a matrix on the first well,...

PANASONIC HLDG CORP

KR20020620218A : Korea Applications : 2002-03-14 : 4

☐ 3. Semiconductor ic device

(57) Abstract: Provided is a low-cost semiconductor integrated circuit device including a DRAM capable of performing a stable operation. **SOLUTION:** An n-type first well formed in a semiconductor substrate, a DRAM memory cell array in which memory cells are formed in a matrix on the first well, and a...

PANASONIC HLDG CORP

JP2002083842A : Japan Applications : 2002-03-22 : 4

☐ 4. Semiconductor memory control method and semiconductor memory device

A method of controlling a semiconductor memory device that requires a refresh operation for holding data written in memory cells, the semiconductor memory device comprising: an internal VPP voltage generating circuit for generating a word line voltage for use in driving a word line, the word line...

PS4 LUXCO SARL

DE10218518B4 : Germany Patents : 2007-08-16 : 4

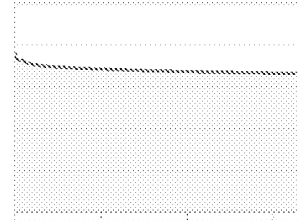
☐ 5. Semiconductor memory

(57) [PROBLEMS] To provide a highly reliable semiconductor memory device in which noise generated from a booster circuit does not affect a DRAM circuit. **SOLUTION:** A plurality of DRAM chips 9 excluding a power supply voltage conversion circuit which is a circuit driven by a large current, and a power...

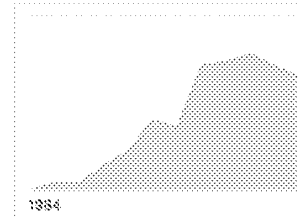
NIPPON STEEL CORP

JPH1196753A : Japan Applications : 1999-04-09 : 4

Relevance



Publication Date



First Cur Assignees by Relevance

HITACHI LTD (126)
 PANASONIC HLDG CORP (30)
 PS4 LUXCO SARL (7)
 NIPPON STEEL CORP (2)
 NUVOTON TECH CORP J... (3)
 MICRON MEMORY JAPA... (19)
 LONGITUDE LICENSING L... (18)
 TOSHIBA CORP (162)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A 2138
	Examiner Name	N/A Hashem Farrokh
	Attorney Docket Number	ETRP0423USA3

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7295036	B1	2007-11-13	Zaveri	
	2	6551896	B2	2003-04-22	Hosoda	
	3	6097070	A	2000-08-01	Mandelman	
	4	6570787	B1	2003-05-27	Wang	
	5	6363014	B1	2002-03-26	Fastow	
	6	5928336	A	1999-07-27	Takeuchi	
	7	7894294	B2	2011-02-22	Pyeon	
	8	7692979	B2	2010-04-06	Fuji	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

	9	7594129	B2	2009-09-22	Otani	
U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20110292448	A1	2011-12-01	OHASHI	
	2	20060259679	A1	2006-11-16	Schumann	
	3	20110252253	A1	2011-10-13	RUI	
	4	20060192282	A1	2006-08-31	Suwa	
	5	20030031043	A1	2003-02-13	Pochmuller	
	6	20060120138	A1	2006-06-08	Liaw	
	7	20060140004	A1	2006-06-29	Shukuri	
	8	20050010746	A1	2005-01-13	Chen	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

	9	20130135955	A1	2013-05-30	McCombs	
	10	20110069562	A1	2011-03-24	Conte	
	11	20100095137	A1	2010-04-15	Bieswanger	
	12	20100074043	A1	2010-03-25	Kang	
	13	20100005439	A1	2010-01-07	SHIKATA	
	14	20090122620	A1	2009-05-14	Mohammad	
	15	20060047985	A1	2006-03-02	Otani	
	16	20120182076	A1	2012-07-19	Kim	
	17	20100008172	A1	2010-01-14	Yano	
	18	20130046941	A1	2013-02-21	Ma	
	19	20130132660	A1	2013-05-23	Li	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

20	20050133852	A1	2005-06-23	Shau	
21	20090067217	A1	2009-03-12	Sunwoo	
22	20080117700	A1	2008-05-22	Nakamura	
23	20100290300	A1	2010-11-18	TAKAHASHI	

.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number	Country Code	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	
	1	102187323	CN	A	2011-09-14			Abstract
	2	201123198	TW		2011-07-01			Abstract

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	
	1	Iyer, S.S.; IBM Corp., East Fishkill, NY, USA; Kalter, H.L., "Embedded DRAM technology: opportunities and challenges", Spectrum, IEEE (Volume: 36, Issue: 4), Apr. 1999, IEEE, pages 56-64	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

EXAMINER SIGNATURE			
Examiner Signature	/HASHEM FARROKH/	Date Considered	06/28/2024
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Roger Chen/	Date (YYYY-MM-DD)	2023-12-25
Name/Print	Roger Chen	Registration Number	67314



arXiv

<https://arxiv.org/abs/1708.02984> PDF

Understanding Reduced-Voltage Operation in Modern ...

by KK Chang · 2017 · Cited by 215 — For example, Vendor A's DIMMs can no longer operate reliably (i.e., error-free) when the voltage is below 1.1V. We tested a small subset of ...

People also ask

What is the operating voltage of DRAM?

What is the voltage of DDR4 VPP?

What is the DRAM VTT voltage?

How much power does a DRAM consume?

[Feedback](#)

tree.com

<https://tree.com/patent/201702984>

Dynamic random access memory applied to an embedded display

... voltage, where the second predetermined voltage is lower than 1.1V. The input/output unit is electrically connected to the memory core unit and the peripheral ...

Missing: volts | Show results with: volts



JEDEC

<https://www.jedec.org/sites/default/files/files/101-102.pdf> PDF

Low Power DRAM Evolution

Low Power DRAM evolved from a lower- voltage, lower-performance version of PC-DRAM designed for mobile packages to become one of the highest.

23 pages

Missing: volts | Show results with: volts



Reddit · r/AskElectronics

3 years ago

Where do all the standard voltages come from?

1.5, 3.3, 5, 9, 12, where do these numbers come from? Were these just picked by someone at some point and it stuck? do they work better for some reason? ...

219 167

upinano · 3 years ago

1.5V comes from the chemistry of alkaline pile batteries. NiCd and NiMH are 1.2V, which ...

151



Carnegie Mellon University

<https://www.pdl.cmu.edu/PDL-FTP/associated/24.pdf> PDF

24 What Your DRAM Power Models Are Not Telling You

by D LEE — During precharge, the latches in the row buffer are disabled, disconnecting the DRAM cells from the peripheral circuitry, and the voltage of the bitlines is set ...

41 pages

Missing: volts | Show results with: volts



Justia
<https://patents.justia.com/assignee/etron-technologies...>

Patents Assigned to Etron Technologies, Inc.

Abstract: A DRAM chip includes a DRAM cell and a first voltage source. The DRAM cell includes an access transistor, and one terminal of the access transistor is ...

Missing: volts | Show results with: volts



ResearchGate
<https://www.researchgate.net/publication/links/PDF>

DRAM Circuit Design: A Tutorial

Feb 20, 2016 — ... voltage greater than 5 V to turn the NMOS access devices fully ON (more on this later), and the substrate held at a potential less than zero.

214 pages



Google Patents
<https://patents.google.com/patent/>

Sustainable dram having principle power supply voltage unified ...

This invention discloses sustainable DRAM with principle power supply voltage which is unified with an external logic circuit. The DRAM circuit is ...

Missing: volts | Show results with: volts



TechInsights
<https://www.techinsights.com/blog/memory/micro...>

Micron DDR5 DIMM Technology

All the major DRAM players are moving forward to a faster DRAM, DDR5. DDR5 improves power management (1.1V vs. 1.2V for DDR4) as well. One of DDR5 DIMM products ...



ScienceDirect.com
<https://www.sciencedirect.com/science/article/pii/>

Voltage Reduced Self Refresh (VRSR) for optimized ...

by D Chinnakkonda · 2023 — As supply voltage reduces, the amount of charge stored in a cell decrease resulting in lower retention time. Typically, DRAM employs internal voltage...

More results



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/540,888	12/15/2023	Der-Min Yuan	ETRP0423USA3

CONFIRMATION NO. 6527

27765

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
5F., NO.389, FUHE RD., YONGHE DIST.
NEW TAIPEI CITY,
TAIWAN

PUBLICATION NOTICE



OC000000070665652

Date Mailed: 04/04/2024

Title:DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Publication No.US-2024-0112707-A1

Publication Date:04/04/2024

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/> PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/540,888

RECEIPT DATE / TIME
12/29/2023 08:00:35 AM Z ET

ATTORNEY DOCKET #
ETRP0423USA3

Title of Invention

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 6527

FILED BY Joy Lai

PATENT CENTER # 63742231

FILING DATE -

CUSTOMER # 27765

FIRST NAMED
INVENTOR Der-Min Yuan

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Roger Chen

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
5142166.pdf	2	Transmittal Letter	195 KB
5142168.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	34 KB

Warning: This is not a USPTO supplied IDS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
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5142166.pdf	34987C73B2177AE29BE4BC0E267DC4223E6F12E057429FB2D D7860C39EFC1531ABD3B09639619B74E18719D133E9EA389A C4BE470B048FA04F082DAB3E4FCB94
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5142168.pdf	37DE073AD939CED46768B15539DBCC825FD60EA3835FD265 EF5621024FBC2FB572610AA8BC82C6274AC773A4AA65BC2F6 05484E8DFD804B9A7F0CDB884A8A30F
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	18540888
Filing Date	2023-12-15
First Named Inventor	Der-Min Yuan
Art Unit	N/A
Examiner Name	N/A
Attorney Docket Number	ETRP0423USA3

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7295036	B1	2007-11-13	Zaveri	
	2	6551896	B2	2003-04-22	Hosoda	
	3	6097070	A	2000-08-01	Mandelman	
	4	6570787	B1	2003-05-27	Wang	
	5	6363014	B1	2002-03-26	Fastow	
	6	5928336	A	1999-07-27	Takeuchi	
	7	7894294	B2	2011-02-22	Pyeon	
	8	7692979	B2	2010-04-06	Fuji	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

	9	7594129	B2	2009-09-22	Otani	
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U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20110292448	A1	2011-12-01	OHASHI	
	2	20060259679	A1	2006-11-16	Schumann	
	3	20110252253	A1	2011-10-13	RUI	
	4	20060192282	A1	2006-08-31	Suwa	
	5	20030031043	A1	2003-02-13	Pochmuller	
	6	20060120138	A1	2006-06-08	Liaw	
	7	20060140004	A1	2006-06-29	Shukuri	
	8	20050010746	A1	2005-01-13	Chen	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

	9	20130135955	A1	2013-05-30	McCombs	
	10	20110069562	A1	2011-03-24	Conte	
	11	20100095137	A1	2010-04-15	Bieswanger	
	12	20100074043	A1	2010-03-25	Kang	
	13	20100005439	A1	2010-01-07	SHIKATA	
	14	20090122620	A1	2009-05-14	Mohammad	
	15	20060047985	A1	2006-03-02	Otani	
	16	20120182076	A1	2012-07-19	Kim	
	17	20100008172	A1	2010-01-14	Yano	
	18	20130046941	A1	2013-02-21	Ma	
	19	20130132660	A1	2013-05-23	Li	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

	20	20050133852	A1	2005-06-23	Shau	
	21	20090067217	A1	2009-03-12	Sunwoo	
	22	20080117700	A1	2008-05-22	Nakamura	
	23	20100290300	A1	2010-11-18	TAKAHASHI	

--

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number	Country Code	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	
	1	102187323	CN	A	2011-09-14			Abstract
	2	201123198	TW		2011-07-01			Abstract

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	
	1	Iyer, S.S.; IBM Corp., East Fishkill, NY, USA; Kalter, H.L., "Embedded DRAM technology: opportunities and challenges", Spectrum, IEEE (Volume: 36, Issue: 4), Apr. 1999, IEEE, pages 56-64	

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	18540888
Filing Date	2023-12-15
First Named Inventor	Der-Min Yuan
Art Unit	N/A
Examiner Name	N/A
Attorney Docket Number	ETRP0423USA3

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	18540888
	Filing Date	2023-12-15
	First Named Inventor	Der-Min Yuan
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ETRP0423USA3

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Roger Chen/	Date (YYYY-MM-DD)	2023-12-25
Name/Print	Roger Chen	Registration Number	67314

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor: Der-Min Yuan

Appl. No.: 18/540,888

Filing Date: 12/15/2023

Examiner: N/A

Art Unit: N/A

Docket No.: ETRP0423USA3

Title: DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN
EMBEDDED DISPLAY PORT

To: Commissioner for Patents
P.O. BOX 1450
Alexandria, VA 22313-1450

Subject: Information disclosure statement

Dear Sir,

Applicant respectfully requests, pursuant to 37 C.F.R. § 1.56, 1.97, and 1.98, that the references listed on the attached PTO-SB08 form, and previously cited in U.S. Patent Application Serial No. 17/213,133 filed 03/25/2021 and/or its earlier application(s), be considered and cited in the examination of the above-identified continuation patent application. Pursuant to 37 C.F.R. § 1.98(d), copies of the references previously cited in the above application are not being furnished. Consistent with the provisions of 37 C.F.R. § 1.97(h), this submission does not constitute an admission or representation that the submitted reference(s) is/are material to the patentability of the subject matter disclosed in the application.

Applicant believes no fees are due at this time; however, the Commissioner is hereby authorized to charge any additional fees to Deposit Account No. 503105 to effectuate this filing.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicant's attorney at 302-729-1562.

Sincerely yours,

/Roger Chen/

Date: 12/25/2023

Roger Chen, Patent Agent No. 67,314

5F., No.389, Fuhe Rd., Yonghe Dist., New Taipei City, Taiwan

Voice Mail: 302-729-1562

e-mail : RogerChen@naipo.com

Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time and DST 12 hours behind.)



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
18/540,888	12/15/2023		664	ETRP0423USA3	6	3

CONFIRMATION NO. 6527

FILING RECEIPT



0000000066362416

27765
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
5F., NO.389, FUHE RD., YONGHE DIST.
NEW TAIPEI CITY,
TAIWAN

Date Mailed: 12/29/2023

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Der-Min Yuan, New Taipei City, TAIWAN;
Yen-An Chang, Miaoli County, TAIWAN;
Wei-Ming Huang, Hsinchu County, TAIWAN;

Applicant(s)

Etron Technology, Inc, Hsinchu, TAIWAN;

Assignment For Published Patent Application

Etron Technology, Inc, Hsinchu, TAIWAN

Power of Attorney: The patent practitioners associated with Customer Number 27765

Domestic Priority data as claimed by applicant

This application is a CON of 17/213,133 03/25/2021
which is a CON of 16/151,347 10/04/2018 PAT 10,998,017
which is a CON of 13/922,242 06/19/2013 ABN
which claims benefit of 61/672,287 07/17/2012
and claims benefit of 61/768,406 02/23/2013

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 12/28/2023

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/540,888**

Projected Publication Date: 04/04/2024

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOT GRANTED

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community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 18/540,888			
APPLICATION AS FILED - PART I									
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)		
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	64		N/A			
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	280		N/A			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	320		N/A			
TOTAL CLAIMS (37 CFR 1.16(i))	6	minus 20 = 0	x	= 0	OR				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 =	x	= 0					
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0					
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0					
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	664		TOTAL			
APPLICATION AS AMENDED - PART II									
AMENDMENT A	(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	OR OTHER THAN SMALL ENTITY	
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	x	=
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
					TOTAL ADD'L FEE		TOTAL ADD'L FEE		
AMENDMENT B	(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	OR OTHER THAN SMALL ENTITY	
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	x	=
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
					TOTAL ADD'L FEE		TOTAL ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.									



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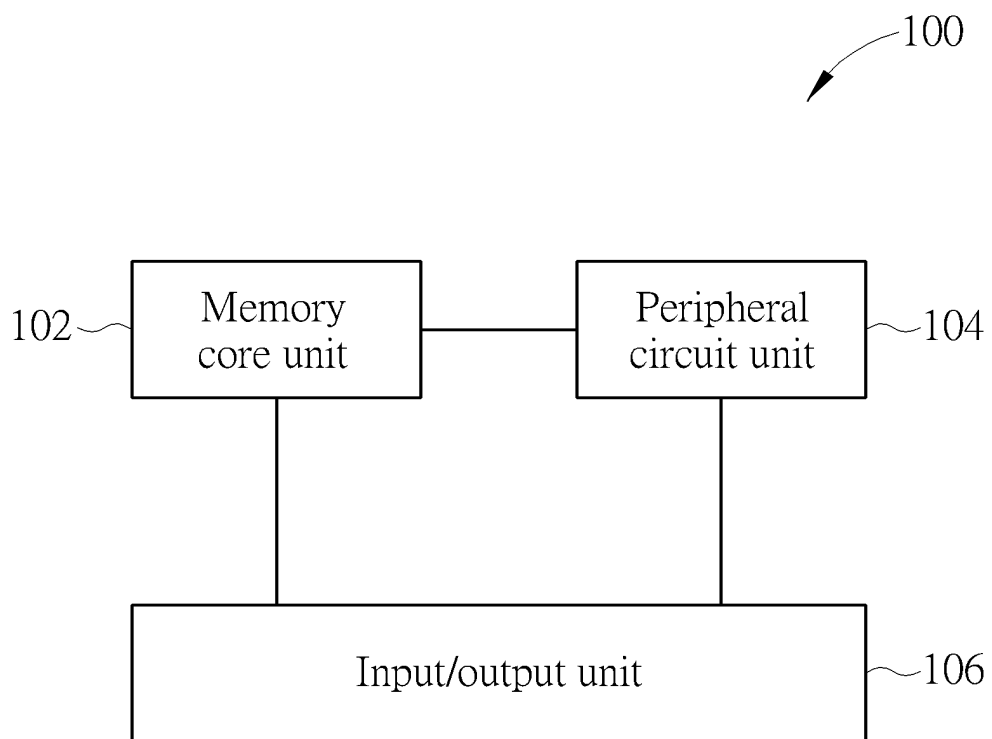
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Derrick Brent

Deputy Under Secretary of Commerce for Intellectual Property and
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Figure

Abstract of Disclosure

A dynamic random access memory applied to an embedded display port includes a memory core unit, a peripheral circuit unit, and an input/output unit. The memory core unit is used for operating in a first predetermined voltage. The peripheral circuit unit is electrically connected to the memory core unit for operating in a second predetermined voltage, where the second predetermined voltage is lower than 1.1V. The input/output unit is electrically connected to the memory core unit and the peripheral circuit unit for operating in a third predetermined voltage, where the third predetermined voltage is lower than 1.1V.

Claims

What is claimed is:

1. A dynamic random access memory (DRAM), comprising:

a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V; and

an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V, and

wherein the DRAM core cell and the input/output circuit are formed on a single chip, the input/output circuit is external to the DRAM core cell, and the first voltage is different from the third voltage.

2. A dynamic random access memory (DRAM), comprising:

a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage within a first voltage range to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell, wherein the first voltage is lower than 1.1V; and

an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein the third voltage is lower than 1.1V;

wherein the DRAM core cell and the input/output circuit are formed on a single chip, the input/output circuit is external to the DRAM core cell, and the first voltage is greater than the third voltage.

3. A dynamic random access memory (DRAM), comprising:

a DRAM core cell comprised in the DRAM, wherein the DRAM core cell is supplied with a first voltage to make the DRAM core cell operate at the first voltage, and the DRAM core cell is a volatile memory cell; and

an input/output circuit comprised in the DRAM, wherein the input/output circuit is electrically connected to the DRAM core cell, and the input/output circuit is supplied with a third voltage to make the input/output circuit operate at the third voltage, wherein

the third voltage is lower than 1.1V;
wherein the first voltage is greater than the third voltage, and the DRAM is capable to be applied to an embedded display port (eDP).

4. The dynamic random access memory of claim 3, wherein the first voltage is lower than 1.1V.
5. The dynamic random access memory of claim 3, further comprising:
a peripheral circuit comprised in the DRAM, wherein the peripheral circuit is electrically connected to the DRAM core cell, and the peripheral circuit is supplied with a second voltage to make the peripheral circuit operate at the second voltage, wherein the second voltage is lower than 1.1V.
6. The dynamic random access memory of claim 5, wherein the first voltage is different from the second voltage.

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____. The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>Der-Min Yuan</u> Date (Optional): _____ Signature: <u><i>Der-Min Yuan</i></u> Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.	

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
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Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT
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As the below named inventor, I hereby declare that:

This declaration is directed to: ☒ The attached application, or
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filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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LEGAL NAME OF INVENTOR

Inventor: Yen-An Chang Date (Optional): _____

Signature: Yen-An Chang

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Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT
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As the below named inventor, I hereby declare that:

This declaration is directed to: ☒ The attached application, or
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The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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Inventor: Wei-Ming Huang Date (Optional) : _____

Signature: Wei Ming Huang

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APPLICATION #
18/540,888

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Title of Invention

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 6527

FILED BY Vickie Lee

PATENT CENTER # 63625605

FILING DATE -

CUSTOMER # 27765

FIRST NAMED
INVENTOR Der-Min Yuan

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Winston Hsu

Documents

TOTAL DOCUMENTS: 8

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
5133796.pdf	2	Internet Communications Authorization	405 KB
5133845.pdf	9	Application Data Sheet	1740 KB
5133790.pdf	3	Oath or Declaration filed	236 KB
5133787.pdf	2	Power of Attorney	384 KB
5133758.pdf	1	Drawings-only black and white line drawings	44 KB
5133757-ABST.docx	1	Abstract	21 KB

5133756-CLM.docx	2	Claims	22 KB
5133755-SPEC.docx	6	Specification	26 KB

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Doc Code: ECOMM.AUTH/ECOMM.WTDW

Doc Description: Internet Communications Authorized/Internet Communications Authorization Withdrawn

PTO/SB/439 (11-15)

**AUTHORIZATION FOR INTERNET
COMMUNICATIONS IN A PATENT
APPLICATION OR REQUEST TO
WITHDRAW AUTHORIZATION FOR
INTERNET COMMUNICATIONS**

Application No.	N/A
Filing Date	N/A
First Named Inventor	Der-Min Yuan
Art Unit	N/A
Examiner Name	N/A
Practitioner Docket No.	ETRP0423USA3

To: Commissioner for Patents
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I am the

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☒ attorney or agent of record. Registration number 41526.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/Winston Hsu/
Signature

12/15/2023
Date

Winston Hsu
Typed or printed name

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Title

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Cross Reference To Related Applications

[0001] This application is a continuation application of U.S. Application No. 17/213,133, filed on March 25th, 2021, which is a continuation application of U.S. Application No. 16/151,347, filed on October 4th, 2018, which is a continuation application of U.S. Application No. 13/922,242, filed on June 19th, 2013, which claims the benefit of U.S. Provisional Application No. 61/672,287, filed on July 17th, 2012, and claims the benefit of U.S. Provisional Application No. 61/768,406, filed on February 23rd, 2013. The contents of these applications are incorporated herein by reference.

Background of the Invention

1. Field of the Invention

[0002] The present invention relates to a dynamic random access memory, and particularly to a dynamic random access memory applied to an embedded display port.

2. Description of the Prior Art

[0003] An embedded display port (eDP) published by the Video Electronics Standards Association (VESA) is used for acting as a standard display panel interface to connect external devices. For example, the embedded display port can act as an interface between a video card and a notebook panel. In addition, the embedded display port version 1.3 published by the Video Electronics Standards Association adds a panel self refresh (PSR) function, where the panel self refresh function can make a graphic processing unit (GPU) turn off connection between the graphic processing unit and a liquid crystal panel when a frame displayed on the liquid crystal panel is frozen. Thus, power consumption of the graphic processing unit can be significantly reduced and battery endurance ability can be extended.

[0004] In addition, a timing controller supporting the panel self refresh function of the liquid crystal display needs to include a frame buffer (e.g. a dynamic random access memory). When the graphic processing unit turns off the connection between the graphic processing unit and the liquid crystal panel, the frame buffer needs to store a last frame before the graphic processing unit turns off the connection between the graphic processing unit and the liquid crystal panel. Therefore, when no data transmission exists between the graphic processing unit and the liquid crystal panel, the timing controller can directly output the last frame stored in the frame buffer.

[0005] Although the panel self refresh function can make power consumption of the graphic processing unit be significantly reduced, power consumption of the timing controller is increased due to operation of the frame buffer. Therefore, how to design the frame buffer to reduce the power consumption of the timing controller becomes an important issue of memory manufacturers.

Summary of the Invention

[0006] An embodiment provides a dynamic random access memory applied to an embedded display port. The dynamic random access memory includes a memory core unit and a peripheral circuit unit. The memory core unit is used for operating in a first predetermined voltage. The peripheral circuit unit is electrically connected to the memory core unit for operating in a second predetermined voltage, where the second predetermined voltage is lower than 1.1V.

[0007] Another embodiment provides a dynamic random access memory applied to an embedded display port. The dynamic random access memory includes a memory core unit, a peripheral circuit unit, and an input/output unit. The memory core unit is used for operating in a first predetermined voltage. The peripheral circuit unit is electrically connected to the memory core unit for operating in a second predetermined voltage, where the second predetermined voltage is lower than 1.1V. The input/output unit is electrically connected to the peripheral circuit unit and the memory core unit for operating in a third predetermined voltage, where the third predetermined voltage is lower than 1.1V.

[0008] The present invention provides a dynamic random access memory applied to an embedded display port. The dynamic random access memory makes a memory core unit, a peripheral circuit unit, and an input/output unit thereof operate in lower voltages. Compared to the prior art, power consumption of the dynamic random access memory of the present invention is much lower than power consumption of a dynamic random access memory operating in operation voltages specified by the Joint Electron Device Engineering Council. Thus, when the dynamic random access memory of the present invention is applied to an embedded display port, the present invention can make system power consumption (e.g. power consumption of a graphic processing unit) be significantly reduced, not make power consumption of a timing controller be increased due to operation of a frame buffer, and extend battery endurance ability of a portable device.

[0009] These and other objectives of the present invention will no doubt become obvious to those of ordinary skill in the art after reading the following detailed description of the preferred

embodiment that is illustrated in the various figures and drawings.

Brief Description of the Drawings

[0010] The figure is a diagram illustrating a dynamic random access memory applied to embedded display port according to an embodiment.

Detailed Description

[0011] Please refer to the figure. The figure is a diagram illustrating a dynamic random access memory 100 applied to an embedded display port according to an embodiment, where the dynamic random access memory 100 acts as a frame buffer of a timing controller of a liquid crystal display, and the dynamic random access memory 100 is compatible with a single data rate (SDR) specification, a double data rate (DDR I) specification, a double data rate two (DDR II) specification, or a double data rate three (DDR III) specification. As shown in the figure, the dynamic random access memory 100 includes a memory core unit 102, a peripheral circuit unit 104, and an input/output unit 106, where the peripheral circuit unit 104 is electrically connected to the memory core unit 102, and the input/output unit 106 is electrically connected to the peripheral circuit unit 104 and the memory core unit 102. Please refer to Table I. Table I illustrates operation voltages (specified by the Joint Electron Device Engineering Council (JEDEC)) of a dynamic random access memory operating in the DDR I specification, a low power DDR I specification, the DDR II specification, and a low power DDR II specification.

	memory core unit 102	peripheral circuit unit 104	input/output unit 106
DDR I	3.3V±0.3V or 2.5V±0.2V	3.3V±0.3V or 2.5V±0.2V	3.3V±0.3V or 2.5V±0.2V
Low Power DDR I	1.8V±0.1V	1.8V±0.1V	1.8V±0.1V
DDR II	1.8V±0.1V	1.8V±0.1V	1.8V±0.1V
Low Power DDR II	1.7V~1.95V	1.14V~1.30V	1.14V~1.30V

Table I

[0012] If the dynamic random access memory 100 is designed to have low power consumption to reduce power consumption of the timing controller, the dynamic random access memory 100 needs to have low operation power consumption (e.g. power consumption for the dynamic random access memory 100 outputting storage frames to the timing controller) and low standby power

consumption. But, the operation voltages specified by the Joint Electron Device Engineering Council (as shown in Table I) can not satisfy requirements (that is, the low operation power consumption and the low standby power consumption) of the embedded display port (eDP) version 1.3.

[0013] Please refer to Table II. Table II illustrates operation voltage ranges of the dynamic random access memory 100 operating in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification according to an embodiment.

	memory core unit 102	peripheral circuit unit 104	input/output unit 106
operation voltage ranges	< 1.1V	< 1.1V	< 1.1V

Table II

[0014] As shown in Table II, operation voltages of the memory core unit 102 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are a first predetermined voltage, where the first predetermined voltage is lower than 1.1V; operation voltages of the peripheral circuit unit 104 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are a second predetermined voltage, where the second predetermined voltage is lower than 1.1V; and operation voltages of the input/output unit 106 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are a third predetermined voltage, where the third predetermined voltage is lower than 1.1V.

[0015] As shown in Table II, because the operation voltages of the memory core unit 102 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are the first predetermined voltage, the dynamic random access memory 100 has lower memory core power consumption; because the operation voltages of the peripheral circuit unit 104 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are the second predetermined voltage, the dynamic random access memory 100 has lower access power consumption; and the operation voltages of the input/output unit 106 in the DDR I specification, the low power DDR I

specification, the DDR II specification, and the low power DDR II specification are the third predetermined voltage, the dynamic random access memory 100 has lower input/output power consumption. In addition, the input/output unit 106 is compatible with an interface provided by the prior art, so power consumption of the dynamic random access memory 100 is much lower than power consumption of the dynamic random access memory operating in the operation voltages specified by the Joint Electron Device Engineering Council.

[0016] Please refer to Table III. Table III illustrates operation voltage ranges of the dynamic random access memory 100 operating in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification according to another embodiment.

	memory core unit 102	peripheral circuit unit 104	input/output unit 106
operation voltage ranges	1.8V±0.1V	< 1.1V	< 1.1V

Table III

[0017] As shown in Table III, operation voltages of the memory core unit 102 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are a first predetermined voltage, where the first predetermined voltage is equal to 1.8V±0.1V; operation voltages of the peripheral circuit unit 104 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are a second predetermined voltage, where the second predetermined voltage is lower than 1.1V; and operation voltages of the input/output unit 106 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are a third predetermined voltage, where the third predetermined voltage is lower than 1.1V.

[0018] As shown in Table III, because the operation voltages of the memory core unit 102 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are the first predetermined voltage, the dynamic random access memory 100 has higher charge pump efficiency; because the operation voltages of the peripheral circuit unit 104 in the DDR I specification, the low power DDR I specification, the DDR II

specification, and the low power DDR II specification are the second predetermined voltage, the dynamic random access memory 100 has lower access power consumption; and the operation voltages of the input/output unit 106 in the DDR I specification, the low power DDR I specification, the DDR II specification, and the low power DDR II specification are the third predetermined voltage, the dynamic random access memory 100 has lower input/output power consumption. In addition, the input/output unit 106 is also compatible with an interface provided by the prior art, so power consumption of the dynamic random access memory 100 is much lower than power consumption of the dynamic random access memory operating in the operation voltages specified by the Joint Electron Device Engineering Council.

[0019] To sum up, the dynamic random access memory applied to an embedded display port makes the memory core unit, the peripheral circuit unit, and the input/output unit operate in lower voltages. Compared to the prior art, power consumption of the dynamic random access memory of the present invention is much lower than power consumption of a dynamic random access memory operating in the operation voltages specified by the Joint Electron Device Engineering Council. Thus, when the dynamic random access memory of the present invention is applied to an embedded display port, the present invention can make system power consumption (e.g. power consumption of a graphic processing unit) be significantly reduced, not make power consumption of the timing controller be increased due to operation of the frame buffer, and extend battery endurance ability of a portable device.

[0020] Although the present invention has been illustrated and described with reference to the embodiments, it is to be understood that the invention is not to be limited to the disclosed embodiments, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.



ELECTRONIC PAYMENT RECEIPT

APPLICATION #
18/540,888

RECEIPT DATE / TIME
12/15/2023 01:18:20 AM Z ET

ATTORNEY DOCKET #
ETRP0423USA3

Title of Invention

DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 6527

FILED BY Vickie Lee

PATENT CENTER # 63625605

AUTHORIZED BY Winston Hsu

CUSTOMER # 27765

FILING DATE -

CORRESPONDENCE ADDRESS -

FIRST NAMED INVENTOR Der-Min Yuan

Payment Information

PAYMENT METHOD
DA / 503105

PAYMENT TRANSACTION ID
E2023BE220525502

PAYMENT AUTHORIZED BY
Vickie Lee

PRE-AUTHORIZED ACCOUNT
503105

PRE-AUTHORIZED CATEGORY
37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2111	UTILITY PATENT APPL. SEARCH FEE	280.00	1	280.00
4011	BASIC FILING FEE- UTILITY	64.00	1	64.00
2311	EXAMINATION OF ORIGINAL PATENT APPLICATION	320.00	1	320.00
TOTAL AMOUNT:				\$664.00

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	N/A
Filing Date	N/A
First Named Inventor	Der-Min Yuan
Title	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT
Art Unit	N/A
Examiner Name	N/A
Attorney Docket Number	ETRP0423USA3

SIGNATURE of Applicant or Patent Practitioner

Signature	/Winston Hsu/	Date (Optional)	12/15/2023
Name	Winston Hsu	Registration Number	41526
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			
NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.			
☐ *Total of _____ forms are submitted.			

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

- ☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 27765
- OR
- ☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

- ☒ The address associated with the above-mentioned Customer Number
- OR
- ☐ The address associated with Customer Number:
- OR

Firm or Individual Name				
Address				
City		State		Zip
Country				
Telephone		Email		

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Etron Technology, Inc.

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	<u>Tony Wang</u>	Date (Optional)	<u>DEC 22 2017</u>
Name	Tony Wang		
Title	Associate Vice President		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	ETRP0423USA3
		Application Number	
Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Der-Min		Yuan		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	New Taipei City	Country of Residence ⁱ	TW		
Mailing Address of Inventor:					
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Address 2					
City	New Taipei City	State/Province			
Postal Code		Country ⁱ	TW		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Yen-An		Chang		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	Miaoli County	Country of Residence ⁱ	TW		
Mailing Address of Inventor:					
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Address 2					
City	Miaoli County	State/Province			
Postal Code		Country ⁱ	TW		
Inventor 3					Remove
Legal Name					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	ETRP0423USA3
		Application Number	
Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		

Prefix	Given Name	Middle Name	Family Name	Suffix
	Wei-Ming		Huang	
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service				
City	Hsinchu County	Country of Residence ⁱ	TW	

Mailing Address of Inventor:				
Address 1	6F., No.79, Sanchong 1st Rd., Zhudong Township			
Address 2				
City	Hsinchu County	State/Province		
Postal Code		Country ⁱ	TW	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add				

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).		
☐ An Address is being provided for the correspondence Information of this application.		
Customer Number	27765	
Email Address	winstonhsu@naipo.com	Add Email Remove Email

Application Information:

Title of the Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		
Attorney Docket Number	ETRP0423USA3	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	1	Suggested Figure for Publication (if any)	

Filing By Reference:		
Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").		
For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).		
Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country ⁱ

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	ETRP0423USA3
		Application Number	
Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		

Publication Information:
☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	27765		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove		
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
	Continuation of	17213133	2021-03-25		
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17213133	Continuation of	16151347	2018-10-04	10998017	2021-05-04
Prior Application Status	Abandoned		Remove		
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
16151347	Continuation of	13922242	2013-06-19		
Prior Application Status	Expired		Remove		
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13922242	Claims benefit of provisional	61672287	2012-07-17		

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	ETRP0423USA3
		Application Number	
Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13922242	Claims benefit of provisional	61768406	2013-02-23
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)	Remove
Additional Foreign Priority Data may be generated within this form by selecting the Add button.				Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. ☐ NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.
--

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	ETRP0423USA3
		Application Number	
Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	ETRP0423USA3
		Application Number	
Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant 1			Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
Clear			
☒ Assignee	☐ Legal Representative under 35 U.S.C. 117	☐ Joint Inventor	
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	Etron Technology, Inc.		
Mailing Address Information For Applicant:			
Address 1	No. 6, Technology Road 5		
Address 2			
City	Hsinchu	State/Province	
Country	TW	Postal Code	
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. Add			

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	ETRP0423USA3
		Application Number	
Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		

Assignee 1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
			Remove
If the Assignee or Non-Applicant Assignee is an Organization check here.			☒
Organization Name	Etron Technology, Inc.		
Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1		No. 6, Technology Road 5	
Address 2			
City	Hsinchu	State/Province	
Country ⁱ	TW	Postal Code	
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.			Add

Signature:[Remove](#)

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is **not** checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Winston Hsu/		Date (YYYY-MM-DD)	2023-12-15	
First Name	Winston	Last Name	Hsu	Registration Number	41526
Additional Signature may be generated within this form by selecting the Add button.				Add	

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	ETRP0423USA3
		Application Number	
Title of Invention	DYNAMIC RANDOM ACCESS MEMORY APPLIED TO AN EMBEDDED DISPLAY PORT		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- 1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
- 2 A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- 3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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- 6 A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
- 7 A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8 A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
- 9 A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.