

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4319385

<b>SUBMISSION TYPE:</b>	CORRECTIVE ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	Corrective Assignment to correct the COUNTRY OF THE ASSIGNEE previously recorded on Reel 035155 Frame 0001. Assignor(s) hereby confirms the ASSIGNEE COUNTRY TO BE CHANGED FROM JAPAN TO TAIWAN.
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
YU-FENG CHEN	01/29/2015
CHEN-SHIEN CHEN	01/27/2015
SHENG-YU WU	01/29/2015
TIN-HAO KUO	01/27/2015
YEN-LIANG LIN	01/27/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
<b>Street Address:</b>	NO.8, LI-HSIN RD.6
<b>Internal Address:</b>	SCIENCE-BASED INDUSTRIAL PARK
<b>City:</b>	HSINCHU
<b>State/Country:</b>	TAIWAN
<b>Postal Code:</b>	211-8588
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	14609023
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(435)252-1360
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	4352521360
<b>Email:</b>	trhone@mabr.com
<b>Correspondent Name:</b>	R. BURNS ISRAELSEN
<b>Address Line 1:</b>	MASCHOFF BRENNAN
<b>Address Line 2:</b>	1389 CENTER DR. SUITE 300
<b>Address Line 4:</b>	PARK CITY, UTAH 84098
<b>ATTORNEY DOCKET NUMBER:</b>	T1516.10090US01
<b>NAME OF SUBMITTER:</b>	R. BURNS ISRAELSEN
<b>SIGNATURE:</b>	/R. Burns Israelsen, Reg. No. 42685/

PATENT

<b>DATE SIGNED:</b>	03/15/2017
<b>Total Attachments: 5</b> source=T1516.10090US01 Assignment Acknowledgment 4845-2000-8738 v.1#page1.tif source=T1516.10090US01 Notice of Recordation Marked up#page1.tif source=T1516.10090US01 Notice of Recordation Marked up#page2.tif source=T1516-10090US01-Assignment#page1.tif source=T1516-10090US01-Assignment#page2.tif	

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3263510

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
YU-FENG CHEN	01/29/2015
CHEN-SHIEN CHEN	01/27/2015
SHENG-YU WU	01/29/2015
TIN-HAO KUO	01/27/2015
YEN-LIANG LIN	01/27/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
<b>Street Address:</b>	NO.8, LI-HSIN RD.6
<b>Internal Address:</b>	SCIENCE-BASED INDUSTRIAL PARK
<b>City:</b>	HSINCHU
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	211-8588
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	14609023
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	435-252-1360
<b>Email:</b>	tkellogg@mabr.com
<b>Correspondent Name:</b>	R. BURNS ISRAELSEN
<b>Address Line 1:</b>	MASCHOFF BRENNAN
<b>Address Line 2:</b>	1389 CENTER DRIVE, SUITE 300
<b>Address Line 4:</b>	PARK CITY, UTAH 84098
<b>ATTORNEY DOCKET NUMBER:</b>	T1516.10090US01
<b>NAME OF SUBMITTER:</b>	R. BURNS ISRAELSEN
<b>SIGNATURE:</b>	/R. BURNS ISRAELSEN/ REG.#42,685
<b>DATE SIGNED:</b>	03/12/2015

**ASSIGNMENT**

This assignment agreement is applicable to an invention entitled (Invention Title)  
Semiconductor Device, Integrated Circuit Using The Same, and Manufacturing Method  
 Thereof

The PATENT RIGHTS referred to in this agreement are:

- (check one) ☐ a patent application for this invention, executed by the ASSIGNOR(S) concurrently with this assignment.
- ☒ U.S. patent application Serial No. 14/609,023, filed January 29, 2015
- ☐ a U.S. patent application based on PCT International Application No. \_\_\_\_\_ filed on (date) \_\_\_\_\_ (U.S. patent application Serial No. \_\_\_\_\_, if known).
- ☐ U.S. patent No. \_\_\_\_\_, issued \_\_\_\_\_.

The PATENT RIGHTS also include all divisions, reissues, continuations and extensions of the patents and patent applications identified above.

The PATENT RIGHTS assigned under this agreement are:

- (check one) ☒ U.S. patent rights only.
- ☐ Worldwide patent rights. In this case, the assignee shall have the right to claim the benefit of the filing date of any U.S. or foreign patent application for this invention.

The ASSIGNOR(S) referred to in this agreement is (or are) the inventor(s) whose signatures appear on page 2 of this Assignment and any Supplemental Sheet(s).

The ASSIGNEE referred to in this agreement is:

(Name of Assignee) TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.  
 (Address) NO.8, LI-HSIN RD.6, SCIENCE-BASED INDUSTRIAL PARK, HSINCHU, TAIWAN 300, R.O.C.

The ASSIGNEE is:

- (check one) ☐ An individual.
- ☐ A Partnership.
- ☒ A Corporation of TAIWAN, R.O.C. (specify state or country)
- ☐ (other) \_\_\_\_\_

The ASSIGNOR(S), in consideration of \$10.00 paid by the ASSIGNEE, and other good and valuable consideration, receipt of which is acknowledged, hereby assign(s) the following rights to the ASSIGNEE, its successors and assigns:

the full and exclusive right to the invention;

the entire right, title and interest in and to the PATENT RIGHTS;

the right to sue and recover for any past infringement; and

the right to claim priority under 35 USC 119, 35 USC 120, or any other applicable provisions, based on any earlier patent applications for this invention.

THIS IS PAGE 2 OF AN ASSIGNMENT FROM THE INVENTOR(S) TO  
 ASSIGNEE: TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.  
 INVENTION TITLE: Semiconductor Device, Integrated Circuit Using The Same, and  
 Manufacturing Method Thereof

As to all U.S. patent applications assigned under this agreement, the ASSIGNOR(S) hereby authorize(s) and request(s) the Commissioner of Patents and Trademark to issue all Letters Patent to the ASSIGNEE as the assignee of the entire right, title and interest, for the sole use and enjoyment of said ASSIGNEE, its successors and assigns.

Further, the ASSIGNOR(S) agree(s) to communicate to said ASSIGNEE, or its representatives, any fact known to the ASSIGNOR(S) with respect to said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, substitute, renewal, reexamination and reissue applications, execute all necessary assignment papers to cause and all Letter Patent to be issued to said ASSIGNEE, make all rightful oaths and generally do everything necessary or desirable to aid said ASSIGNEE, its successors and assigns, to obtain and enforce proper protection for said invention.

The ASSIGNOR(S) authorize(s) the attorneys and agents who have the power of attorney in this application to check any appropriate boxes and to insert the Serial Number and filing date in this document after it has been executed.

<u>Yu-Feng CHEN</u>	<u>yu-feng chen</u>	<u>2015.1.27</u>
Name of sole or first inventor	Signature	Date
<u>Chen-Shien CHEN</u>	<u>Chen Shien Chen</u>	<u>2015.1.27</u>
Name of second inventor, if any	Signature	Date
<u>Sheng-Yu WU</u>	<u>Sheng-Yu Wu</u>	<u>2015.1.27</u>
Name of third inventor, if any	Signature	Date
<u>Tin-Hao KUO</u>	<u>Tin-Hao KUO</u>	<u>2015.1.27</u>
Name of fourth inventor, if any	Signature	Date
<u>Yen-Liang LIN</u>	<u>Yen-Liang Lin</u>	<u>2015.1.27</u>
Name of fifth inventor, if any	Signature	Date