PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
YI-TANG LIN	08/26/2013
CHUN HSIUNG TSAI	08/26/2013
CLEMENT HSINGJEN WANN	08/29/2013

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LIMITED
Street Address:	8, LI-HSIN ROAD 6
Internal Address:	HSINCHU SCIENCE PARK
City:	HSINCHU
State/Country:	TAIWAN
Postal Code:	300-78

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16113406

CORRESPONDENCE DATA

Fax Number: (214)200-0853

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.

Phone: 2146515000

Email: ipdocketing@haynesboone.com

HAYNES AND BOONE, LLP IP SECTION **Correspondent Name:**

2323 VICTORY AVENUE Address Line 1:

Address Line 2: SUITE 700

Address Line 4: DALLAS, TEXAS 75219

TTORNEY DOCKET NUMBER: 2013-0561/24061.3409US03	
NAME OF SUBMITTER:	KYLE HOWARD
SIGNATURE:	/Kyle Howard/
DATE SIGNED:	08/27/2018

Total Attachments: 1

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PATENT REEL: 046712 FRAME: 0578

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ASSIGNMENT

\boxtimes	which is executed on
X	which is identified by Jones Day docket no. 181877-625010
	which was filed on August, 2013, Application No
	We hereby authorize and request attorney(s) at Jones Day, to insert here in parentheses (Application number
	, filed) the filing date and application number of said application when known

and WHEREAS, Taiwan Semiconductor Manufacturing Company Limited, a corporation organized and existing under the laws of Republic of China, and having an office for the transaction of business at No. 8, Li-Hsin Rd. VI, Hsinchu Science Park, Hsinchu, Taiwan, ASSIGNEE, is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and all right to sue for infringement including past infringement.

AND WE HEREBY authorize and request the Commissioner for Patents and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date Ang. 26 ,2013 Yi — Tang Lin

Date 08/26/2013 ,2013 CHUN HSIUNG TSAI

Date 8/29/2013 ,2013 CLEMENT HSINGJEN WANN

Page 1 of 1

TSMC2013-0561 Assignment

PATENT REEL: 046382 FRAME: 0390

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