

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT														
NATURE OF CONVEYANCE:	ASSIGNMENT														
CONVEYING PARTY DATA															
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Huang-Yu Chen</td> <td>07/03/2013</td> </tr> <tr> <td>Yuan-Te Hou</td> <td>07/03/2013</td> </tr> <tr> <td>Yu-Hsiang Kao</td> <td>07/03/2013</td> </tr> <tr> <td>Ken-Hsien Hsieh</td> <td>07/04/2013</td> </tr> <tr> <td>Ru-Gun Liu</td> <td>07/04/2013</td> </tr> <tr> <td>Lee-Chung Lu</td> <td>07/03/2013</td> </tr> </tbody> </table>		Name	Execution Date	Huang-Yu Chen	07/03/2013	Yuan-Te Hou	07/03/2013	Yu-Hsiang Kao	07/03/2013	Ken-Hsien Hsieh	07/04/2013	Ru-Gun Liu	07/04/2013	Lee-Chung Lu	07/03/2013
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<table border="1"> <tr> <td>Name:</td> <td>Taiwan Semiconductor Manufacturing Company, Ltd.</td> </tr> <tr> <td>Street Address:</td> <td>No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park</td> </tr> <tr> <td>City:</td> <td>Hsin-Chu</td> </tr> <tr> <td>State/Country:</td> <td>TAIWAN</td> </tr> <tr> <td>Postal Code:</td> <td>300-77</td> </tr> </table>		Name:	Taiwan Semiconductor Manufacturing Company, Ltd.	Street Address:	No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park	City:	Hsin-Chu	State/Country:	TAIWAN	Postal Code:	300-77				
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CORRESPONDENCE DATA															
Fax Number: 2142000853 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> Phone: 972-739-8635 Email: ipdocketing@haynesboone.com Correspondent Name: HAYNES AND BOONE, LLP IP Section Address Line 1: 2323 Victory Avenue Address Line 2: Suite 700 Address Line 4: Dallas, TEXAS 75219															
ATTORNEY DOCKET NUMBER:	24061.2452														

NAME OF SUBMITTER:	Linda Ingram
Signature:	/Linda Ingram/
Date:	07/15/2013
Total Attachments: 3 source=2452_Assignment#page1.tif source=2452_Assignment#page2.tif source=2452_Assignment#page3.tif	

ASSIGNMENT

WHEREAS, we,

- | | | | |
|-----|-----------------|----|---|
| (1) | Huang-Yu Chen | of | No. 403, Xuefu E. Road
Zhudong Township
Hsinchu County 310, Taiwan, R.O.C. |
| (2) | Yuan-Te Hou | of | No. 16, Alley 3, Lane 61, Wuling Road
North District
Hsinchu City 300, Taiwan, R.O.C. |
| (3) | Yu-Hsiang Kao | of | 9F-2, 90, Daxue Road, North District
Hsinchu City 300, Taiwan, R.O.C. |
| (4) | Ken-Hsien Hsieh | of | 5F, No. 49, Section 2, Roosevelt Road
Da-an District
Taipei City 106, Taiwan, R.O.C. |
| (5) | Ru-Gun Liu | of | No. 90, Chenggong 5 th Street
Zhubei City, Hsinchu County 302
Taiwan, R.O.C. |
| (6) | Lee-Chung Lu | of | 3F, No. 23, Lane 581, MingShui Road
Taipei, 104, Taiwan, R.O.C. |

have invented certain improvements in

LAYOUT OPTIMIZATION FOR INTEGRATED CIRCUIT DESIGN

for which we have executed an application for Letters Patent of the United States of America,

 of even date filed herewith; and
 X filed on July 15, 2013, and assigned application number 13/941,941; and

WHEREAS, we authorize the attorney of record to update this document to include Patent Office information as deemed necessary (i.e., filing date, serial number, etc.);

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd., ("TSMC"), No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park Hsin-Chu, Taiwan 300-77, Republic of China. is desirous of obtaining the entire right, title, and interest in, to and under the said invention and the said application in the United States of America and in any and all countries foreign thereto;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and other good and valuable consideration, we have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said TSMC, its successors, legal representatives, and assigns, the entire right, title, and interest in, to and under the said invention, and the said application, and all divisional, renewal, substitutional, and continuing applications thereof, and all Letters Patent of the United States of America which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may be filed for said invention in any country or countries

Docket No.: 2013-0158/24061.2452

Customer No.: 000042717

foreign to the United States of America, and all extensions, renewals, and reissues thereof, and all prior patents and patent applications from which a filing priority of the above-described patent application may be obtained, including the right to collect past damages; and we hereby authorize and request the Commissioner of Patents of the United States of America, and any official of any country or countries foreign to the United States of America, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said invention to the said TSMC, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant 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 said TSMC, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceedings, sign all lawful papers, execute all divisional, renewal, substitutional, continuing, and reissue applications, make all rightful declarations and/or oaths and generally do everything possible to aid the said TSMC, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said invention in all countries.

Inventor Name: Huang-Yu Chen

Residence Address: No. 403, Xuefu E. Road, Zhudong Township
Hsinchu County 310, Taiwan, R.O.C.

Dated: 2013/07/03

Huang-Yu Chen
Inventor Signature

Inventor Name: Yuan-Te Hou

Residence Address: No. 16, Alley 3, Lane 61, Wuling Road, North District
Hsinchu City 300, Taiwan, R.O.C.

Dated: 2013/07/03

Hou Yuan-Te
Inventor Signature

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Residence Address: 9F-2, 90, Daxue Road, North District, Hsinchu City 300, Taiwan, R.O.C.

Dated: 2013/07/03

Yu-Hsiang Kao
Inventor Signature

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Inventor Name: Ken-Hsien Hsieh

Residence Address: 5F, No. 49, Section 2, Roosevelt Road
Daan District, Taipei City 106, Taiwan, R.O.C.

Dated: 7/4 / 2013

Ken-Hsien Hsieh
Inventor Signature

July 4, 2013.

Inventor Name: Ru-Gun Liu

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Zhubei City, Hsinchu County 302, Taiwan, R.O.C.

Dated: July 4, 2013.

Ru-Gun Liu
Inventor Signature

Inventor Name: Lee-Chung Lu

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Dated: 7/3 / 2013

Lee-Chung Lu
Inventor Signature