**501796175 01/24/2012**

# PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

| | |
|---|---|
| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|---|---|
| Lee-Chung LU | 01/06/2012 |
| Li-Chun TIEN | 01/05/2012 |
| Hui-Zhong ZHUANG | 01/05/2012 |
| Mei-Hui HUANG | 01/04/2012 |

RECEIVING PARTY DATA

| | |
|---|---|
| Name: | TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD. |
| Street Address: | No. 8, Li-Hsin Rd. VI, Hsinchu Science Park |
| City: | Hsinchu |
| State/Country: | TAIWAN |
| Postal Code: | 300 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---|---|
| Application Number: | 13267310 |

OP $40.00 13267310

CORRESPONDENCE DATA

| | |
|---|---|
| Fax Number: | (703)518-5499 |
| Phone: | 7036841111 |
| Email: | tsmc@ipfirm.com |

*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.*

| | |
|---|---|
| Correspondent Name: | Lowe Hauptman Ham & Berner, LLP (TSMC) |
| Address Line 1: | 1700 Diagonal Road, Suite 300 |
| Address Line 4: | Alexandria, VIRGINIA 22314 |

| | |
|---|---|
| ATTORNEY DOCKET NUMBER: | T5057-R521 |
| NAME OF SUBMITTER: | Randy A. Noranbrock |

Total Attachments: 1
source=efiledassgn2012-01-24#page1.tif

Docket No. T5057-R521

# ASSIGNMENT

In consideration of the premises and other good and valuable consideration in hand paid, the receipt and sufficiency of which is hereby acknowledged, the undersigned,

1) **Lee-Chung LU**
2) **Li-Chun TIEN**
3) **Hui-Zhong ZHUANG**
4) **Mei-Hui HUANG**

who has made a certain new and useful invention, hereby sells, assigns and transfers unto

**TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.** having a place of business at **No. 8, Li-Hsin Rd. VI, Hsinchu Science Park, Hsinchu 300, Taiwan R.O.C.**

its successors and assigns (hereinafter designated "ASSIGNEE") the entire right, title and interest for the United States of America as defined in 35 U.S.C. 100 in the invention entitled

**INTEGRATED CIRCUITS AND METHODS OF DESIGNING THE SAME**

(a) for which an application for United States Letters Patent was filed on October 6, 2011, and identified by United States Patent Application No. 13/267,310 ; or

(b) for which an application for United States Letters Patent was executed on ___________,

and the undersigned hereby authorizes and requests the United States Commissioner of Patents and Trademarks to issue any and all United States Letters Patent which may be granted therefore and any and all extensions, divisions, reissues, continuations, or continuations-in-part thereof, and the right to all benefits under the International Convention for the Protection of Industrial Property to the said ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives; the undersigned agrees that the attorneys of record in said application shall hereafter act on behalf of said ASSIGNEE;

AND the undersigned hereby agrees to transfer a like interest, and to render all necessary assistance in making application for and obtaining original, divisional, reissued or extended Letters Patent of the United States, upon request of the said ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements, and applications for patent based thereon, growing out of or related to the said invention; and to execute any papers by the said ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

SIGNED on the date indicated aside my signature:

| | |
|---|---|
| 1) Lee Chung Lu<br>Name: Lee-Chung LU | 1/6/2012<br>Date: |
| 2) Li Chun Tien<br>Name: Li-Chun TIEN | 1/5, 2012<br>Date: |
| 3) Hui-Zhong ZHUANG<br>Name: Hui-Zhong ZHUANG | 01/05/2012<br>Date: |
| 4)<br>Name: Mei-Hui HUANG | 01/04/2012<br>Date: |