

## PATENT ASSIGNMENT

Electronic Version v1.1  
 Stylesheet Version v1.1

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>Fang-Shi Jordan LAI</td> <td>05/28/2010</td> </tr> <tr> <td>Yung-Fu LIN</td> <td>05/28/2010</td> </tr> <tr> <td>Kuo-Ming WANG</td> <td>05/27/2010</td> </tr> <tr> <td>Hsu-Feng HSUEH</td> <td>05/27/2010</td> </tr> <tr> <td>Cheng-Yen WENG</td> <td>05/28/2010</td> </tr> </tbody> </table>		Name	Execution Date	Fang-Shi Jordan LAI	05/28/2010	Yung-Fu LIN	05/28/2010	Kuo-Ming WANG	05/27/2010	Hsu-Feng HSUEH	05/27/2010	Cheng-Yen WENG	05/28/2010
Name	Execution Date												
Fang-Shi Jordan LAI	05/28/2010												
Yung-Fu LIN	05/28/2010												
Kuo-Ming WANG	05/27/2010												
Hsu-Feng HSUEH	05/27/2010												
Cheng-Yen WENG	05/28/2010												
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													
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13365710</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13365710								
Property Type	Number												
Application Number:	13365710												
CORRESPONDENCE DATA													
Fax Number:	(703)518-5499												
Phone:	7036841111												
Email:	tsmc@ipfirm.com												
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>													
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-R104UA												
NAME OF SUBMITTER:	Randy A. Noranbrock												
Total Attachments: 1 source=efiledassgn#page1.tif													

OP \$40.00 13365710

### 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) Fang-Shi Jordan LAI
- 2) Yung-Fu LIN
- 3) Kuo-Ming WANG
- 4) Hsu-Feng HSUEH
- 5) Cheng Yen WENG

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

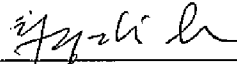
**DAC CALIBRATION**

- (a) for which an application for United States Letters Patent was filed on 6-7-10, and identified by United States Patent Application No. 12/795,225; 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)   
Name: Fang-Shi Jordan LAI
- 2) Yung-Fu Lin  
Name: Yung-Fu LIN
- 3) Kuo-Ming Wang  
Name: Kuo-Ming WANG
- 4) Hsu-Feng Hsueh  
Name: Hsu-Feng HSUEH
- 5) Cheng Yen Weng  
Name: Cheng-Yen WENG

- Date: 5/28/10
- Date: 5/28/2010
- Date: 5/27/2010
- Date: 5/27/2010
- Date: 5/28/2010