

## PATENT ASSIGNMENT

Electronic Version v1.1  
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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>Mu-Shan LIN</td> <td>03/13/2013</td> </tr> </tbody> </table>		Name	Execution Date	Mu-Shan LIN	03/13/2013
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Mu-Shan LIN	03/13/2013				
RECEIVING PARTY DATA					
Name:	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.				
Street Address:	No. 8, Li-Hsin Rd. VI				
Internal Address:	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>13838406</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13838406
Property Type	Number				
Application Number:	13838406				
CORRESPONDENCE DATA					
Fax Number:					
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>					
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NAME OF SUBMITTER:	Randy A. Noranbrock				
Total Attachments: 1 source=2013-03-27_AssignmentAsFiled#page 1.tif					

OP \$40.00 13838406

## 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) **Mu-Shan LIN**

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

### DUTY CYCLE DETECTION AND CORRECTION CIRCUIT IN AN INTEGRATED CIRCUIT

- (a) for which an application for United States Letters Patent was filed on MARCH 15, 2013, and identified by United States Patent Application No. 131838,406; 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) ✓ Mu-Shan Lin  
Name: Mu-Shan LIN

✓ 3/13/2013  
Date: