

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>Chih-Chang LIN</td> <td>07/12/2010</td> </tr> <tr> <td>Chan-Hong CHERN</td> <td>07/12/2010</td> </tr> <tr> <td>Steven SWEI</td> <td>07/12/2010</td> </tr> <tr> <td>Ming-Chieh HUANG</td> <td>07/12/2010</td> </tr> <tr> <td>Tien-Chun YANG</td> <td>07/12/2010</td> </tr> </tbody> </table>		Name	Execution Date	Chih-Chang LIN	07/12/2010	Chan-Hong CHERN	07/12/2010	Steven SWEI	07/12/2010	Ming-Chieh HUANG	07/12/2010	Tien-Chun YANG	07/12/2010
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Tien-Chun YANG	07/12/2010												
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>13718235</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13718235								
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Application Number:	13718235												
CORRESPONDENCE DATA													
Fax Number:	7035185499												
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>													
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Address Line 4:	Alexandria, VIRGINIA 22314												
ATTORNEY DOCKET NUMBER:	T5057-Y240B												
NAME OF SUBMITTER:	Randy A. Noranbrock												
Total Attachments: 1 source=efiledassgn#page 1.tif													

OP \$40.00 13718235

Docket No.: T5057-Y240

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) Chih-Chang LIN
- 2) Chan-Hong CHERN
- 3) Steven SWEI
- 4) Ming-Chieh HUANG
- 5) Tien-Chun YANG

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



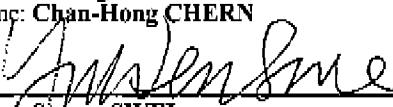
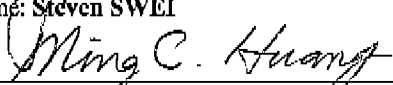
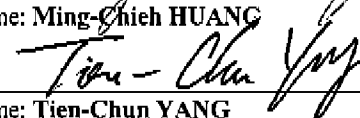
PHASE-LOCK ASSISTANT CIRCUITRY

- (a) for which an application for United States Letters Patent was filed on 7-13-10, and identified by United States Patent Application No. 12/835,130 ; 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)  Date: 7/12/2010
Name: Chih-Chang LIN
- 2)  Date: 7/12/2010
Name: Chan-Hong CHERN
- 3)  Date: 7/12/2010
Name: Steven SWEI
- 4)  Date: 07/12/2010
Name: Ming-Chieh HUANG
- 5)  Date: 7/12/2010
Name: Tien-Chun YANG

PATENT