

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>Mohammad AL-SHYOUKH</td> <td>07/12/2013</td> </tr> <tr> <td>Percy NEYRA</td> <td>07/12/2013</td> </tr> </tbody> </table>		Name	Execution Date	Mohammad AL-SHYOUKH	07/12/2013	Percy NEYRA	07/12/2013
Name	Execution Date						
Mohammad AL-SHYOUKH	07/12/2013						
Percy NEYRA	07/12/2013						
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>13944386</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13944386		
Property Type	Number						
Application Number:	13944386						
CORRESPONDENCE DATA							
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ATTORNEY DOCKET NUMBER:	T5057-892						
NAME OF SUBMITTER:	Randy A. Noranbrock						
Signature:	/Randy A. Noranbrock/						
Date:	07/17/2013						
Total Attachments: 1 source=EfiledAssgn#page1.tif							

OP \$40.00 13944386

Docket No. T5057-892
TSMC2013-0490

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) **Mohammad AL-SHYOUKH**
- 2) **Percy NEYRA**

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

START-UP CIRCUIT AND METHOD FOR AC-DC CONVERTERS

- (a) for which an application for United States Letters Patent was filed on July 17, 2013, and identified by United States Patent Application No. 13/944,386; 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: **Mohammad AL-SHYOUKH**

July 12, 2013

Date:

2) 
Name: **Percy NEYRA**

July 12, 2013

Date: