

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	JHON JHY LIAW	07/31/2014
<b>RECEIVING PARTY DATA</b>		
<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.	
<b>Street Address:</b>	NO. 8, LI-HSIN ROAD 6	
<b>Internal Address:</b>	HSINCHU SCIENCE PARK	
<b>City:</b>	HSIN-CHU	
<b>State/Country:</b>	TAIWAN	
<b>Postal Code:</b>	300-77	
<b>PROPERTY NUMBERS Total: 1</b>		
	<b>Property Type</b>	<b>Number</b>
	Application Number:	14458293
<b>CORRESPONDENCE DATA</b>		
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<b>SIGNATURE:</b>	/Daniel J. Tarr/	
<b>DATE SIGNED:</b>	08/13/2014	
<b>Total Attachments: 2</b>		
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Serial No. 14/458,293  
filed August 13, 2014

ATTORNEY DOCKET NO.: 2011.1154-2014-0629CIP/1085.01421

### ASSIGNMENT AND AGREEMENT

For value received, I, **Jhon Jhy Liaw**, hereby transfers to **Taiwan Semiconductor Manufacturing Co., Ltd.**, with its principal place of business located at No. 8, Li-Hsin Road 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, Republic of China, and its successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to **SEMICONDUCTOR MEMORY AND METHOD OF MAKING THE SAME**, described in a non-provisional application claiming priority thereto and under any and all Letters Patent and any divisions, continuations, continuations-in-part, reexamination certificates, reissues, and extensions thereof, or claiming priority therefrom that may be granted in the United States for said inventions; and I also concurrently hereby sell, assign and transfer to Taiwan Semiconductor Manufacturing Co., Ltd. the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

I authorize Taiwan Semiconductor Manufacturing Co., Ltd. to make application for such protection in its own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from me, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

I hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of Taiwan Semiconductor Manufacturing Co., Ltd. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

I request that any and all patents for said inventions be issued to Taiwan Semiconductor Manufacturing Co., Ltd. in the United States and in all countries foreign to the United States, or to such nominees as Taiwan Semiconductor Manufacturing Co., Ltd. may designate.

ATTORNEY DOCKET NO.: 2011.1154-2014-0629CIP/1085.01421

I agree that, when requested, I shall, without charge to Taiwan Semiconductor Manufacturing Co., Ltd. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Inventor No. 1

Dated: 7/31 2014

Jhon Jhy Liaw

Jhon Jhy Liaw

Residence:

No. 15, Lane 447, Xuefu East Road, Zhudong Township, Hsinchu County, 310, Taiwan,  
R.O.C.