

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>Yue-Der CHIH</td> <td>03/29/2012</td> </tr> <tr> <td>Chun-Jung LIN</td> <td>04/02/2012</td> </tr> <tr> <td>Kai-Chun LIN</td> <td>03/29/2012</td> </tr> <tr> <td>Hung-Chang YU</td> <td>03/30/2012</td> </tr> </tbody> </table>		Name	Execution Date	Yue-Der CHIH	03/29/2012	Chun-Jung LIN	04/02/2012	Kai-Chun LIN	03/29/2012	Hung-Chang YU	03/30/2012		
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<table border="1"> <tr> <td>Name:</td> <td>Taiwan Semiconductor Manufacturing Co., Ltd.</td> </tr> <tr> <td>Street Address:</td> <td>No. 8, Li-Hsin Road 6</td> </tr> <tr> <td>Internal Address:</td> <td>Science-Based Industrial Park</td> </tr> <tr> <td>City:</td> <td>Hsin-Chu</td> </tr> <tr> <td>State/Country:</td> <td>TAIWAN</td> </tr> <tr> <td>Postal Code:</td> <td>300-77</td> </tr> </table>		Name:	Taiwan Semiconductor Manufacturing Co., Ltd.	Street Address:	No. 8, Li-Hsin Road 6	Internal Address:	Science-Based Industrial Park	City:	Hsin-Chu	State/Country:	TAIWAN	Postal Code:	300-77
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CORRESPONDENCE DATA													
Fax Number:	(215)689-4905												
Phone:	215-979-1000												
Email:	jsjulianti@duanemorris.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:	DUANE MORRIS LLP (TSMC) IP DEPARTMENT												
Address Line 1:	30 SOUTH 17TH STREET												
Address Line 4:	PHILADELPHIA, PENNSYLVANIA 19103-4196												
ATTORNEY DOCKET NUMBER:	N1085-00830												
NAME OF SUBMITTER:	Stephan P. Gribok												
Total Attachments: 3 source=executedassign#page1.tif source=executedassign#page2.tif source=executedassign#page3.tif													

CH \$40.00 13438006

Serial No. 13/438,006
filed April 3, 2012

ATTORNEY DOCKET NO.: 2011.0602/1085.830

ASSIGNMENT AND AGREEMENT

For value received, we, **Yue-Der CHIH, Chun-Jung LIN, Kai-Chun LIN and Hung-Chang YU**, hereby transfer 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 **REFERENCE CELL CONFIGURATION FOR SENSING RESISTANCE STATES OF MRAM BIT CELLS**, described in a non-provisional application 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 we 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.

We 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 us, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

We 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.

We 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.: 2011.0602/1085.830

We agree that, when requested, we 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: ✓ 3/29/2012

✓ Yue-Der CHIH
Yue-Der CHIH

Residence:

3F, No. 6, Lane 178, Kun-Ton Road, Hsin-Chu City, Taiwan, R.O.C.

Inventor No. 2

Dated: ✓ 4/2/2012

✓ Chun-Jung LIN
Chun-Jung LIN

Residence:

1F., No. 10, Lane 36, Hubin 1st Road, HsinChu City 30079, Taiwan, R.O.C.

Inventor No. 3

Dated: ✓ 2012/3/29

✓ Kai-Chun LIN
Kai-Chun LIN

Residence:

12F., No. 88, Lane 185, Xinzhuang Street, East District, Hsin-Chu City 300, Taiwan, R.O.C.

ATTORNEY DOCKET NO.: 2011.0602/1085.830

Inventor No. 4

Dated: 3/30/2012

Hung-Chang YU
Hung-Chang YU

Residence:

9F-11, No. 131, Bei-Hsin Street, Hsin-Chu 300, Taiwan, R.O.C.