

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>04/25/2013</td> </tr> <tr> <td>Kai-Chun LIN</td> <td>04/25/2013</td> </tr> <tr> <td>Hung-Chang YU</td> <td>04/25/2013</td> </tr> </tbody> </table>		Name	Execution Date	Yue-Der CHIH	04/25/2013	Kai-Chun LIN	04/25/2013	Hung-Chang YU	04/25/2013
Name	Execution Date								
Yue-Der CHIH	04/25/2013								
Kai-Chun LIN	04/25/2013								
Hung-Chang YU	04/25/2013								
RECEIVING PARTY DATA									
Name:	Taiwan Semiconductor Manufacturing Co., Ltd.								
Street Address:	No. 8, Li-Hsin Road 6								
Internal Address:	Hsinchu Science Park								
City:	Hsin-Chu								
State/Country:	TAIWAN								
Postal Code:	300-77								
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>13804773</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13804773				
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Application Number:	13804773								
CORRESPONDENCE DATA									
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Signature:	/Arvind Jairam/								

Date:

05/01/2013

Total Attachments: 2

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ASSIGNMENT AND AGREEMENT

For value received, we, Yue-Der CHIH, 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, Hsinchu Science 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 **METHOD AND APPARATUS FOR MRAM SENSE REFERENCE TRIMMING**, described in a non-provisional application S.N. 13/804,773 filed March 14, 2013, which claims priority to U.S. provisional patent application S.N. 61/777,170 filed March 12, 2013, 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.

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: ✓ 4/15/2013

✓ Yue-Der Chih
Yue-Der CHIH

Residence:

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

Inventor No. 2

Dated: ✓ 4/15/2013

✓ Kai-chun Lin
Kai-Chun LIN

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Inventor No. 3

Dated: ✓ 4/25/2013

✓ Hung-Chang Yu
Hung-Chang YU

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