

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5509118

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
CHIEN-KUO SU	11/01/2016
CHENG HUNG LEE	11/10/2016
CHITING CHENG	10/25/2016
HUNG-JEN LIAO	11/01/2016
JONATHAN TSUNG-YUNG CHANG	10/25/2016
YEN-HUEI CHEN	11/10/2016
PANKAJ AGGARWAL	07/14/2017
JHON JHY LIAW	11/03/2016
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	
Property Type	Number
Application Number:	16404463
CORRESPONDENCE DATA	
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ATTORNEY DOCKET NUMBER:	T5057-1201UC
NAME OF SUBMITTER:	RANDY A. NORANBROCK
SIGNATURE:	/Randy A. Noranbrock/

PATENT

DATE SIGNED:	05/06/2019
Total Attachments: 3 source=EfiledAssgn#page1.tif source=EfiledAssgn#page2.tif source=EfiledAssgn#page3.tif	

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) Chien-Kuo SU | 5) Jonathan Tsung-Yung CHANG |
| 2) Cheng Hung LEE | 6) Yen-Huei CHEN |
| 3) Chiting CHENG | 7) Pankaj AGGARWAL |
| 4) Hung-Jen LIAO | 8) Jhon Jhy LIAW |

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

MEMORY MACRO AND METHOD OF OPERATING THE SAME

(a) for which an application for United States Letters Patent was filed on 2017-02-16, and identified by United States Patent Application No. 15/434,541; 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) Chien-Kuo Su
Name: Chien-Kuo SU

11/1/2016
Date:

2) Cheng Hung Lee
Name: Cheng Hung LEE

11/10/2016
Date:

3) Chiting Cheng
Name: Chiting CHENG

10/25/2016
Date:

4) Hung Jen Liao
Name: Hung-Jen LIAO

11/1/2016
Date:

5) [Signature]
Name: Jonathan Tsung-Yung CHANG

10/25/2016
Date:

6) Yen-Huei CHEN
Name: Yen-Huei CHEN

11/10/2016
Date:

7) [Signature]
Name: Pankaj AGGARWAL

[Signature]
Date:

8) Jhon Jhy LIAW
Name: Jhon Jhy LIAW

11/3/2016
Date:

T5057-1201U

3) _____
Name: Chiting CHENG

Date:

4) _____
Name: Hung-Jen LIAO

Date:

5) _____
Name: Jonathan Tsung-Yung CHANG

Date:

6) _____
Name: Yen-Huei CHEN

Date:

7) *Attki appeared on behalf of Pankaj Aggarwal*
Name: Pankaj AGGARWAL

Date: *14th July '2017*

8) _____
Name: Jhon Jhy LIAW

Date: