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	SUBMISSION TYPE:		NEW ASSIGNMENT			
NATURE OF CONVEYANCE:		ASSIGNMEN	ASSIGNMENT			
CONVEYING PARTY	DATA					
		Name			Execution Date	
JUI-CHE TSAI				08/16/2018		
CHENG HUNG LEE					08/16/2018	
SHIH-LIEN LINUS LU					08/16/2018	
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City:	HSINC	HSINCHU				
State/Country:	TAIWA	TAIWAN				
Postal Code:	300	300				
PROPERTY NUMBER	S Total:					
Property Type		Number				
Application Number:		17076965				
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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,

- Shih-Lien Linus LU () Jui-Che TSAI 3}
- 2) Cheng Hung LEE

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, Hsinchi Science Park, Hsinchu 300, Taiwan R.O.C.

its successors and assigns (hereinafter designated "ASSIGNEE") the entire right, fitle and interest for the United States of America as defined in 35 U.S.C. 100 in the invention entitled

MEMORY CIRCUIT AND METHOD OF OPERATING SAME

for which an application for United States Letters Patent was filed on <u>2018-11-29</u>, and identified by (a) United States Patent Application No. 16/204,396 ; or

for which an application for United States Letters Patent was executed on ______, (b)

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) Jui - Che 7 Name: Jui-Che TKAT

2) Chang hung Lee

Jame Shih Jim Linns I.J.

Date:

2018/9/16 2018/8/16

Auguet 16, 2018

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