504396644 06/05/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 EPAS ID: PAT4443341 Stylesheet Version v1.2

SUBMISSION TYPE: NEW ASSIGNMENT NATURE OF CONVEYANCE: ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Hsin-Wen Chen	06/01/2017
Chi-Chang Shuai	06/01/2017
Hung-Chan Lin	06/01/2017
Ting-Hao Chang	06/01/2017
Hsien-Hung Tsai	06/01/2017

RECEIVING PARTY DATA

Name:	UNITED MICROELECTRONICS CORP.
Street Address:	No.3, Li-Hsin Road 2, Science-Based Industrial Park
City:	Hsin-Chu City
State/Country:	TAIWAN

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15613288

CORRESPONDENCE DATA

Fax Number: (703)997-4517

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 3027291562

Email: Patent.admin.uspto.cr@naipo.com

Correspondent Name: WINSTON HSU

Address Line 1: 5F., NO.389, FUHE RD., YONGHE DIST.,

Address Line 4: **NEW TAIPEI CITY, TAIWAN**

ATTORNEY DOCKET NUMBER: NAUP2983USA NAME OF SUBMITTER: KATE YEH **SIGNATURE:** /KATE YEH/ **DATE SIGNED:** 06/05/2017

Total Attachments: 10 source=2872976#page1.tif source=2872976#page2.tif source=2872976#page3.tif

> **PATENT REEL: 042586 FRAME: 0173** 504396644

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PATENT REEL: 042586 FRAME: 0174

Array of dynamic random access memory cells
As the below named inventor, I hereby declare that: This declaration is directed to:
☑ The attached application, or
□ United States application number filed on, or
□ PCT international application numberfiled on
The above-identified application was made or authorized to be made by me.
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
I hereby acknowledge that any willful false statement made in this declaration is punishable under18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.
In consideration of the payment by UNITED MICROELECTRONICS having a postal address of CORP.
No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.
(referred to as "ASSIGNEE"below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.
I hereby sell, assign and transfer to ASSIGNEE and the successors and assignees of the ASSIGNEE the entire right, title and interest in and to any and all improvements which are disclosed in the invention as above-identified application and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuations, continuation-in-part, divisions, renewals, substitutes, or extensions thereof, and as to Letters Patent any reissue or re-examination thereof.
I hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;
I further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to I and will testify as to the same in any interference, litigation proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal
representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the proposes thereof. IN WINTNESS WHEREOF, I have hereunto set hand and seal this

Page 1 of 10

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use this form for each additional inventor.

NPO#NAU-P2983-USA:0 CUST#UMCD-2016-0793

Title of Invention:

F#NPO-P0002E-US1201 DSB0-106U003253

(Date of signing)

JUN 0 1 2017

LEGAL NAME OF INVENTOR(ASSIGNOR)							
Inventor:	Hsin-Wen Chen	Date:	JUN 0 1 2017				
Signature:	Him Wen Chen			_			

Page 2 of 10

Title	of	Inv	enti	on:
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Array of dynamic random access memory cells

As the below named inventor, I here This declaration is directed to:	by declare that:			
☑ The attached application, or				
☐ United States application nur	mber	file	d on	, or
□ PCT international application	number		filed on	
The above-identified application was	made or authorize	d to be made by m	e.	
I believe that I am the original inventage application.	or or an original joir	it inventor of a clai	med invention in	the
I hereby acknowledge that any willfuunder18 U.S.C. 1001 by fine or impri	I false statement ma sonment of not mo	ade in this declarat re than five (5) yea	tion is punishable irs, or both.)
In consideration of the payment by	UNITED MICRO	ELECTRONICS	having a pos	stal address of
No.3, Li-Hsin Road 2, Science	-Based Industri	al Park, Hsin-C	 hu City 300, T	aiwan, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	l of the sum of On d valuable conside	e Dollar (\$ 1.00), t ration.	he receipt of whic	ch is hereby
I hereby sell, assign and transfer to A the entire right, title and interest in ar invention as above-identified applica invention by the above application or substitutes, or extensions thereof, an	nd to any and all im tion and, in and to, rany continuations,	provements which all Letters Patent t continuation-in-pa	are disclosed in o be obtained for rt, divisions, rene	the · said ewals.
I hereby covenant that no assignmer entered into which would conflict with	nt, sale, agreement n this assignment;	or encumbrance h	as been or will be	e made or
I further covenant that ASSIGNEE wand documents relating to said invented known and accessible to I and will terelated thereto and will promptly executed.	tion and said Letter stify as to the same	s Patent and legal in any interferenc	equivalents as negation proce	nav be
representatives any and all papers, in maintain, issue and enforce said app equivalents thereof which may be ne IN WINTNESS WHEREOF, I have he	lication, said invent cessary or desirabl	ion and said Lette e to carry out the p	rs Patent and said proposes thereof.	d (Date of signing)
Note: An application data sheet (PTC inventive entity, must accompany this	D/SB/14 or equivale s form. Use this for	nt), including nam n for <u>each additio</u> r	ing the entire	

Page 3 of 10

NPO#NAU-P2983-USA:0 CUST#UMCD-2016-0793

LEGAL NA	EGAL NAME OF INVENTORIASSIGNORY								
Inventor:	Chi-Chang Shuai	Date:	JUN 0 1 2017						
Signature:	Chi-chong Shuar								

Page 4 of 10

NPO#NAU-P2983-USA:0 CUST#UMCD-2016-0793

Array of dynamic random acc	ess memory cells		
As the below named inventor, I herel This declaration is directed to:	by declare that:		
☑ The attached application, or			
☐ United States application nur	mber	filed on	, or
□ PCT international application	number	filed on	_
The above-identified application was	made or authorized to be made I	—— ————— ру me.	
I believe that I am the original inventorapplication.	or or an original joint inventor of a	claimed invention in the	
I hereby acknowledge that any willful under18 U.S.C. 1001 by fine or impri			
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No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hsi	 n-Chu City 300, Taiwar	n, R.O.C
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an		0), the receipt of which is he	ereby
I hereby sell, assign and transfer to A the entire right, title and interest in ar invention as above-identified application or substitutes, or extensions thereof, an	nd to any and all improvements w tion and, in and to, all Letters Pato any continuations, continuation-i	hich are disclosed in the ent to be obtained for said n-part, divisions, renewals,	
I hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or encumbran n this assignment;	ce has been or will be made	e or
I further covenant that ASSIGNEE wi and documents relating to said inven known and accessible to I and will te	tion and said Letters Patent and I	egal equivalents as may be	cts

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use this form for each additional inventor.

representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the proposes thereof.

related thereto and will promptly execute and deliver to ASSIGNEE or its legal

IN WINTNESS WHEREOF, I have hereunto set hand and seal this

Page 5 of 10

NPO#NAU-P2983-USA:0 CUST#UMCD-2016-0793

Title of Invention:

F#NPO-P0002E-US1201 DSB0-106U003253

(Date of signing)

IIIN 0 1 2017

LEGAL NAME OF INVENTOR(ASSIGNOR)							
Inventor:	Hung-Chan Lin	Date:	JUN 0 1 2017				
Signature:	Aung Chan Lin						

Page 6 of 10

Title	of	ln	ven	tio	n:			

Array of dynamic random access memory cells

As the below named inventor, I here This declaration is directed to:	eby declare that:			
☑ The attached application, or				
☐ United States application number		filed on		, or
□ PCT international application number		file	filed on	
The above-identified application was	s made or authorized to	be made by me.		
I believe that I am the original inventage application.	tor or an original joint in	ventor of a claime	ed invention in	the
I hereby acknowledge that any willfuunder18 U.S.C. 1001 by fine or imp	ul false statement made risonment of not more tl	in this declaration han five (5) years	n is punishable , or both.	e
In consideration of the payment by	UNITED MICROEL CORP.	ECTRONICS	having a po	stal address of
No.3, Li-Hsin Road 2, Science	e-Based Industrial I	Park, Hsin-Chu	City 300, 1	aiwan, R.O.C.
(referred to as "ASSIGNEE"below) t acknowledged, andfor other good a	o I of the sum of One D nd valuable consideration	ollar (\$ 1.00), the on.	receipt of whi	ch is hereby
I hereby sell, assign and transfer to the entire right, title and interest in a invention as above-identified applica invention by the above application o substitutes, or extensions thereof, a	ind to any and all impro [,] ation and, in and to, all l or any continuations, coi	vements which ar _etters Patent to b ntinuation-in-part,	e disclosed in be obtained fo divisions, ren	the r said ewals,
I hereby covenant that no assignme entered into which would conflict wit	nt, sale, agreement or e th this assignment;	encumbrance has	been or will b	e made or
I further covenant that ASSIGNEE wand documents relating to said invented in and will to I and will to related thereto and will promptly exe	ntion and said Letters Pestify as to the same in	atent and legal ed any interference,	quivalents as l	may be
representatives any and all papers, maintain, issue and enforce said ap equivalents thereof which may be no IN WINTNESS WHEREOF, I have t	plication, said invention ecessary or desirable to	and said Letters carry out the pro	Patent and sa	id (Date of signing)
Note: An application data sheet (PTinventive entity, must accompany th	O/SB/14 or equivalent), is form. Use this form for	including naming or each additional	the entire inventor.	

Page 7 of 10

NPO#NAU-P2983-USA:0 CUST#UMCD-2016-0793

LEGAL NAI	ME OF INVENTOR(ASSIGN	514)		
Inventor:	Ting-Hao Chang	Date:	JUN 0 1 2017	
Signature:	Ting-Hao	Chang		

Page 8 of 10

NPO#NAU-P2983-USA:0 CUST#UMCD-2016-0793

Title	~£	1-0-1-	4:-	
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Array of dynamic random access memory cells

As the below named inventor, I here This declaration is directed to:	by declare that:			
☑ The attached application, or				
☐ United States application nu	mber	_filed o	n,	or
□ PCT international application	number	filed	on	
The above-identified application was	made or authorized to be made l	by me.		
I believe that I am the original invent application.	or or an original joint inventor of a	claimed	invention in the	
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr				
In consideration of the payment by	UNITED MICROELECTRON CORP.	NICS	having a postal addr	ess of
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(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Dollar (\$ 1.0 od valuable consideration.	0), the r	eceipt of which is here	eby
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I hereby covenant that no assignmer entered into which would conflict with	nt, sale, agreement or encumbran n this assignment;	ce has b	een or will be made o	or
I further covenant that ASSIGNEE w and documents relating to said inven known and accessible to I and will te related thereto and will promptly exe	ition and said Letters Patent and I stify as to the same in any interfe	legal equ rence, lit	ivalents as may be	S
representatives any and all papers, i maintain, issue and enforce said app equivalents thereof which may be ne IN WINTNESS WHEREOF, I have he	plication, said invention and said L deessary or desirable to carry out t	etters Pathe	atent and said	signing)
Note: An application data sheet (PTC inventive entity, must accompany this	D/SB/14 or equivalent), including i s form. Use this form for <u>each add</u>	naming t ditional ir	he entire nventor.	

Page 9 of 10

NPO#NAU-P2983-USA:0 CUST#UMCD-2016-0793

LEGAL NAI	ME OF INVENTOR(ASSIGNOR)			
Inventor:	Hsien-Hung Tsai	Date:	JUN 0 1 2017	
Signature:	Hsten Hung Tsai			

Page 10 of 10

NPO#NAU-P2983-USA:0 CUST#UMCD-2016-0793

RECORDED: 06/05/2017

F#NPO-P0002E-US1201 DSB0-106U003253

PATENT REEL: 042586 FRAME: 0184