#### 506368463 11/23/2020

### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6415219

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
ILIA OVSIANNIKOV	08/16/2019
ALI SHAFIEE ARDESTANI	08/16/2019
JOSEPH H. HASSOUN	08/16/2019
LEI WANG	08/18/2019
SEHWAN LEE	08/27/2019
JOONHO SONG	08/20/2019
JUN-WOO JANG	08/20/2019
YIBING MICHELLE WANG	08/16/2019
YUECHENG LI	08/22/2019

### **RECEIVING PARTY DATA**

Name:	SAMSUNG ELECTRONICS CO., LTD.
Street Address:	129, SAMSUNG-RO, YEONGTONG-GU
City:	SUWON-SI, GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF
Postal Code:	16677

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16446610

### **CORRESPONDENCE DATA**

Fax Number: (626)577-8800

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: 626-795-9900 Email: pto@lrrc.com

LEWIS ROCA ROTHGERBER CHRISTIE LLP Correspondent Name:

Address Line 1: PO BOX 29001

Address Line 4: GLENDALE, CALIFORNIA 91209

ATTORNEY DOCKET NUMBER: 159644/MJC/LDF/RAV NAME OF SUBMITTER: RACHEL A. VILLALOBOS

SIGNATURE:	/Rachel A. Villalobos/
DATE SIGNED:	11/23/2020
Total Attachments: 30	
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# COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM<sup>3</sup>

The ur	idersigr	ed acknowledges that this doc	ument is being used both a	s an assignment of the
invent	ion and	as the declaration (37 CFR 1.6	3) for a Utility or Design App	dication.
WHER	EAS, the	undersigned, hereinafter refe	erred to collectively as Assig	nor, has invented:
Title:	NEUI	IAL PROCESSOR		
for wh patent		gnor is about to make or has n	nade United States or Interr	national application for
WHER	EAS, as	a below named inventor(s), I/(	we) hereby declare that:	
Sectio	n I. Dei	claration		
This de	claratio	on is directed to:		
		The attached U.S. non-provis	lonal patent application, or	
	$\boxtimes$	U.S. non-provisional patent a 2019, or	pplication number <u>16/446,</u> 6	510, filed on <u>Jun<b>e</b> 19,</u>
		PCT international patent app	lication number	filed on
The ab	ove-ide	intified application was made	or authorized to be made by	y me (us).
		that I am (we are) the original ne above-identified application		ntors) of a claimed
	•	acknowledge that any willful f ider 18 U.S.C. 1001 by fine or i		
1 This I	orm requ	uires the use of an Application Data :	Sheet.	
SEC	teř No.	WB-201805-010-1	Attorney Ref No.	159644
COM	BINED C	ECLARATION (37 CFR 1.63) FOR I	UTILITY PATENT APPLICATION	AND ASSIGNMENT FORM

Page 1 of 5

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

I acknowledge that I am aware of the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

#### Section II. Assignment

In consideration of and according to the provisions of the Assignor's employment agreement(s), the undersigned hereby sell(s) and assign(s) to

Samsung Electronics Co., Ltd.

having an address at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16677, Republic of Korea (hereinafter designated as the Assignee), the entire (100%) right, title and interest for the United States as defined in 35 USC §100, in the invention or design described in the application identified in Section I of this document.

Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions or designs as described in the aforesald application, to the aforesaid application itself, and to provisional application(s) 62/689,008, 62/798,297, 62/841,590, 62/841,606 to which the aforesaid application daims priority, and to all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application or provisional, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications, patents. utility models, or other similar rights, resulting therefrom, and the copyright rights;

Assignor hereby	covenants and	d agrees to	execute	all instrume	nts or	documen	ts requi	ir <mark>ed</mark> or
requested for th	ie making and	prosecutio	in of any	applications	of any	type for	patent,	utility

SEC REING.	WB-201805-010-1	Attorney Ref No.	159644
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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 2 of 5

#### SAMSUNG ELECTRONICS CO., LTD.

model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

The undersigned hereby grant(s) the law firm of LEWIS ROCA ROTHGERBER CHRISTIE LLP the power to insert on this Declaration and Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

### Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL	NAME OF	Family Name	First Given Name	Second Given Name
	IRST R/ASSIGNOR	OVSIANNIKOV	Ilia	
***************************************	SIGNATURE	06000	8/16 /2019 DATE	

SEC Ref No. WB-201805-010-1 Attorn	ney Ref No159644
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### SAMSUNG ELECTRONICS CO., LTD.

LEGAL NAME OF SECOND	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	SHAFIEE ARDESTANI	Ali	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	HASSOUN	Joseph	
SIGNATURE		DATE	
LEGAL NAME OF FOURTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	Lei	
SIGNATURE		DATE	
		y	
LEGAL NAME OF FIFTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	LEE	Sehwan	
SIGNATURE		DATE	

*** *** WB-201805-010-1 Afterney Ref No. 159644	SEC Kef No.	***************************************	Attorney Ref No.	159644
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LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SIXTH INVENTOR/ASSIGNOR	SONG	JoonHo	
SIGNATURE	SIGNATURE		
: #. #	>>>		
LEGAL NAME OF SEVENTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	JANG	Jun-Woo	
SIGNATURE		DATE	
LEGAL NAME OF	Panelli, \$1,	**************************************	2.
EIGHTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	Yibing	Michelle
SIGNATURE	Wals	DATE	8/16/2019
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LEGAL NAME OF NINTH	Family Name	First Given Name	Second Given Nam
INVENTOR/ASSIGNOR	u	Yuecheng	
SIGNATURE		DATE	NA SARAGAMATAN AND AND AND AND AND AND AND AND AND A
10845700)_}			

## COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM<sup>1</sup>

The un	idersig	ned acknowledges that this doc	ument is being used both a	is an assignment of the
inventi	ion and	d as the declaration (37 CFR 1.6.	3) for a Utility or Design Ap	plication.
WHER	EAS, th	e undersigned, hereinafter refe	rred to collectively as Assig	mor, has invented:
Title:	NEU	RAL PROCESSOR		
for wh		ignor is about to make or has n	nade United States or Interi	national application for
WHERI	EAS, as	a below named inventor(s), I/(	we) hereby declare that:	
Section	n I. De	claration		
This de	clarati	on is directed to:		
		The attached U.S. non-provis	lonal patent application, or	
		U.S. non-provisional patent ap 2019, or	oplication number <u>16/446.</u> 1	510, filed on <u>June 19,</u>
		PCT international patent appl	ication number	, filed on
The ab	ove-id	entified application was made o	or authorized to be made b	y me (us).
		that I am (we are) the original he above-identified application		intors) of a claimed
•	•	acknowledge that any willful fander 18 U.S.C. 1001 by fine or in		
<sup>1</sup> This fo	orm req	uires the use of an Application Data S	heet.	
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Page 1 of 5

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

I acknowledge that I am aware of the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

### Section II. Assignment

In consideration of and according to the provisions of the Assignor's employment agreement(s), the undersigned hereby sell(s) and assign(s) to

Samsung Electronics Co., Ltd.

having an address at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16677, Republic of Korea (hereinafter designated as the Assignee), the entire (100%) right, title and interest for the United States as defined in 35 USC §100, in the invention or design described in the application identified in Section I of this document.

Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions or designs as described in the aforesaid application, to the aforesaid application itself, and to provisional application(s) 62/689,008, 62/798,297, 62/841,590, 62/841,606 to which the aforesaid application claims priority, and to all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application or provisional, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 2 of 5
PATENT

model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

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### Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL NAME OF FIRST	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	OVSIANNIKOV	Ilia	
SIGNATURE		DATE	

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
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### SAMSUNG ELECTRONICS CO., LTD.

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	SHAFIEE ARDESTANI	Ali	
SIGNATURE		DATE	048/16/2019

LEGAL NAME OF THIRD	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	HASSOUN	Joseph	<b>}</b> +
SIGNATURE	SW4	was n	e/14/19

LEGAL NAME OF FOURTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	<b>L</b> ei	
SIGNATURE		DATE	

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	LEE	Sehwan	
,			
SIGNATURE		DATE	

SEC Ref No.	*	WB-201805-010-1	Attorney Ref No.	
	~~~~~~	***************************************	•	***************************************

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SIXTH INVENTOR/ASSIGNOR	SONG	JoonHo	
SIGNATURE	N. V.	DATE	
LEGAL NAME OF SEVENTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	JANG	Jun-Woo	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
EIGHTH INVENTOR/ASSIGNOR	WANG	Yibing	Michelle
SIGNATURE		DATE	
LEGAL NAME OF NINTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	u	Yuecheng	
SIGNATURE		DATE	
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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 5 of 5

## COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM<sup>1</sup>

The undersigned acknowledges that this document is being used both as an assignment of the invention and as the declaration (37 CFR 1.63) for a Utility or Design Application. WHEREAS, the undersigned, hereinafter referred to collectively as Assignor, has invented: Title: **NEURAL PROCESSOR** for which Assignor is about to make or has made United States or International application for patent. WHEREAS, as a below named inventor(s), I/(we) hereby declare that: Section I. Declaration This declaration is directed to: The attached U.S. non-provisional patent application, or  $\boxtimes$ U.S. non-provisional patent application number 16/446,610, filed on June 19, 2019, or The above-identified application was made or authorized to be made by me (us). I (we) believe that I am (we are) the original inventor (original joint inventors) of a claimed invention in the above-identified application. I (we) hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. This form requires the use of an Application Data Sheet. WB-201805-010-1 Attorney Ref No. 159644

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 1 of 5

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Samsung Electronics Co., Ltd.

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Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
	***************************************	•	***************************************

Page 2 of 5 **PATENT** 

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model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

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### Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	OVSIANNIKOV	Ilia	
SIGNATURE		DATE	

SEC Rof No. WB	-201805-010-1	Attorney Ref No	
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LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECOND INVENTOR/ASSIGNOR	SHAFIEE ARDESTANI	Ali	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	HASSOUN	Joseph	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FOURTH INVENTOR/ASSIGNOR	WANG	Lei	
SIGNATURE	2-6	DATE	08/18/2019
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	LEE	Sehwan	
SIGNATURE		DATE	
SEC REF No. WB	i-201805-010-1	Attorney Ref No.	159644

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 4 of 5

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SIXTH INVENTOR/ASSIGNOR	SONG	JoonHo	
SIGNATURE		DATE	
LEGAL NAME OF SEVENTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	JANG	Jun-Woo	
SIGNATURE		DATE	
LEGAL NAME OF EIGHTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	Yibing	Michelle
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	u	Yuecheng	
SIGNATURE		DATE	
108457001_1			
SEC Ref No. 12/12-7	01805-010-1	Attorney Ref No.	159644

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
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Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions or designs as described in the aforesaid application, to the aforesaid application itself, and to provisional application(s) 62/689,008, 62/798,297, 62/841,590, 62/841,606 to which the aforesaid application claims priority, and to all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application or provisional. and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights:

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM

**PATENT** 

model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

The undersigned hereby grant(s) the law firm of LEWIS ROCA ROTHGERBER CHRISTIE LLP the power to insert on this Declaration and Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

### Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL NAME OF FIRST	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	OVSIANNIKOV	llia	
4			
SIGNATURE		DATE	

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
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### SAMSUNG ELECTRONICS CO., LTD.

LEGAL NAME OF SECOND	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	SHAFIEE ARDESTANI	Ali	
SIGNATURE		DATE	

LEGAL NAME OF THIRD	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	HASSOUN	Joseph	
SIGNATURE		DATE	×

LEGAL NAME OF FOURTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	Lei	
SIGNATURE		DATE	
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LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	LEE	Sehwan	
SIGNATURE	Mu	DATE	7. Augro19
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LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SIXTH INVENTOR/ASSIGNOR	SONG	JoonHo	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SEVENTH			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
INVENTOR/ASSIGNOR	JANG	Jun-Woo	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
EIGHTH	·	Yibing	
INVENTOR/ASSIGNOR	ASSIGNOR WANG Y		Michelle
SIGNATURE		DATE	
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LEGAL NAME OF NINTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	u	Yuecheng	

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## COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM<sup>1</sup>

The undersigned acknowledges that this document is being used both as an assignment of the invention and as the declaration (37 CFR 1.63) for a Utility or Design Application. WHEREAS, the undersigned, hereinafter referred to collectively as Assignor, has invented: Title: **NEURAL PROCESSOR** for which Assignor is about to make or has made United States or International application for patent. WHEREAS, as a below named inventor(s), I/(we) hereby declare that: Section I. Declaration This declaration is directed to: The attached U.S. non-provisional patent application, or  $\square$ U.S. non-provisional patent application number 16/446,610, filed on June 19, 2019, or PCT international patent application number \_\_\_\_\_\_, filed on The above-identified application was made or authorized to be made by me (us). I (we) believe that I am (we are) the original inventor (original joint inventors) of a claimed invention in the above-identified application. I (we) hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. This form requires the use of an Application Data Sheet. SEC Ref No. WB-201805-010-1 Attorney Ref No. 159644

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 1 of 5

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

I acknowledge that I am aware of the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

### Section II. Assignment

In consideration of and according to the provisions of the Assignor's employment agreement(s), the undersigned hereby sell(s) and assign(s) to

Samsung Electronics Co., Ltd.

having an address at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16677, Republic of Korea (hereinafter designated as the Assignee), the entire (100%) right, title and interest for the United States as defined in 35 USC §100, in the invention or design described in the application identified in Section I of this document.

Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions or designs as described in the aforesaid application, to the aforesaid application itself, and to provisional application(s) 62/689,008, 62/798,297, 62/841,590, 62/841,606 to which the aforesaid application claims priority, and to all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application or provisional, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
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**PATENT** 

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### Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	OVSIANNIKOV	llia	
SIGNATURE		DATE	

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
	***************************************	•	

LEGAL NAME OF SECOND	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	SHAFIEE ARDESTANI	Ali	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	HASSOUN	Joseph	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	Lei	
Signature		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FIFTH INVENTOR/ASSIGNOR	LEE	Sehwan	
SIGNATURE		DATE	
SEC Ref No. WI	-201805-010-1	Attorney Ref No.	159644

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 4 of 5

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	SONG	JoonHo	
SIGNATURE		DATE	Aug. 20, 2018

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	JANG	Jun-Woo	
SIGNATURE	443	DATE	Ag 20,20/9

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	Yibing	Michelle
SIGNATURE		DATE	***************************************

LEGAL NAME OF NINTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	Li	Yuecheng	
SIGNATURE		DATE	***************************************

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SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
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## COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM<sup>1</sup>

		neu acknowledges that this doct d as the declaration (37 CFR 1.63	~	4
		e undersigned, hereinafter refer	· · · · ·	
Title:	NEU	RAL PROCESSOR		
for wh		ignor is about to make or has m	ade United States or Interi	national application for
WHER	EAS, as	a below named inventor(s), I/(v	ve) hereby declare that:	
Sectio	n I. De	claration		
This de	eclarati	on is directed to:		
		The attached U.S. non-provision	onal patent application, or	
	$\boxtimes$	U.S. non-provisional patent ap 2019, or	plication number <u>16/446,</u>	510, filed on <u>June 19,</u>
		PCT international patent applic	cation number	filed on
The ab	ove-id	entified application was made o	r authorized to be made b	y me (us).
		that I am (we are) the original in the above-identified application.	, , ,	intors) of a claimed
		acknowledge that any willful fai nder 18 U.S.C. 1001 by fine or im		
<sup>1</sup> This f	orm req	uires the use of an Application Data Sh	eet.	
SEC N	tef No.	WB-201805-010-1	Attorney Ref No	159644
COM	BINED (	DECLARATION (37 CFR 1.63) FOR UT	FILITY PATENT APPLICATION	AND ASSIGNMENT FORM

Page 1 of 5

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

I acknowledge that I am aware of the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

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Samsung Electronics Co., Ltd.

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Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644

model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

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### Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	OVSIANNIKOV	llia	
SIGNATURE		DATE	

SEC Ref No.	WB-201805-010-1	Attorney Ref No.	159644
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LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECOND INVENTOR/ASSIGNOR	SHAFIEE ARDESTANI	Ali	
SIGNATURE		DATE	
LEGAL NAME OF	Englis Magaz	First Given Name	Coord Circa Nama
THIRD INVENTOR/ASSIGNOR	Family Name HASSOUN	Joseph	Second Given Name
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SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	Lei	
SIGNATURE		DATE	
LEGAL NAME OF FIFTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	(EE	Sehwan	
SIGNATURE		DATE	
		. I	
SBC Ref No. WP	-201805-010-1	Attorney Ref No.	159644

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 4 of 5

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	SONG	JoonHo	
SIGNATURE		DATE	

LEGAL NAME OF SEVENTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	JANG	Jun-Woo	
SIGNATURE		DATE	

LEGAL NAME OF EIGHTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	WANG	Yibing	Michelle
SIGNATURE		DATE	

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
NINTH INVENTOR/ASSIGNOR	u	Yuecheng	
SIGNATURE	Invaliti	DATE	8/22/2019

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