506699872 06/04/2021

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6746690

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ILGU HONG	05/27/2021
YANG SEOK KI	05/27/2021
CHANGHO CHOI	05/27/2021

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

PROPERTY NUMBERS Total: 2

Property Type	Number	
Application Number:	17333316	
Application Number:	63179013	

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@lewisroca.com

LEWIS ROCA ROTHGERBER CHRISTIE LLP **Correspondent Name:**

Address Line 1: PO BOX 29001

Address Line 4: GLENDALE, CALIFORNIA 91209

ATTORNEY DOCKET NUMBER:	204056/DMU/MAC
NAME OF SUBMITTER:	MARTI CARRILLO
SIGNATURE:	/Marti Carrillo/
DATE SIGNED:	06/04/2021

Total Attachments: 12

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> **PATENT REEL: 056446 FRAME: 0970**

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COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM¹

The und	dersign	ned acknowledges that this docun	nent is being used both a	as an assignment of the
inventio	on and	l as the declaration (37 CFR 1.63) $^{\circ}$	for a Utility or Design Ap	plication.
WHERE	AS, th	e undersigned, hereinafter referre	ed to collectively as Assig	gnor, has invented:
Title:		EMS AND METHODS FOR I/O COMM	IAND SCHEDULING BASED	ON MULTIPLE RESOURCE
for whice		ignor is about to make or has mad	de United States or Inter	national application for
WHERE	AS, as	a below named inventor(s), I/(we	e) hereby declare that:	
Section	I. De	claration		
This de	clarati	on is directed to:		
	\boxtimes	The attached U.S. non-provision	nal patent application, or	r
		U.S. non-provisional patent appl	ication number	, filed on
		PCT international patent applica	tion number	, filed on
The abo	ove-ide	entified application was made or a	authorized to be made b	y me (us).
		that I am (we are) the original inv he above-identified application.	entor (original joint inve	entors) of a claimed
¹ This fo	orm req	uires the use of an Application Data Shee	et.	
SEC Ref	No.	WB-202101-003-1-US0	Attorney Ref No.	204056

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.

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) **63/179,013** 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

SEC Ref No.	WB-202101-003-1-US0	Attorney Ref No.	204056
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Page 2 of 4 PATENT

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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 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
FIRST INVENTOR/ASSIGNOR	Hong	llgu	
SIGNATURE	/Ilgu Hong/	DATE	05/27/2021

SEC Ref No.	WB-202101-003-1-US0	Attorney Ref No.	204056
		-	

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 3 of 4

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECOND			
INVENTOR/ASSIGNOR	Ki	Yang Seok	
SIGNATURE		DATE	

LEGAL NAME OF THIRD INVENTOR/ASSIGNOR	Family Name Choi	First Given Name Changho	Second Given Name
SIGNATURE		DATE	

SEC Ref No.	WB-202101-003-1-US0	Attorney Ref No.	204056	

COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM¹

The undersigr	ed acknowledges that this do	cument is being used both a	as an assignment of the
invention and	as the declaration (37 CFR 1.	63) for a Utility or Design Ap	pplication.
WHEREAS, the	e undersigned, hereinafter re	ferred to collectively as Assi	gnor, has invented:
	EMS AND METHODS FOR I/O CO	OMMAND SCHEDULING BASE	D ON MULTIPLE
for which Assi patent.	gnor is about to make or has	made United States or Inter	national application for
WHEREAS, as	a below named inventor(s), I,	(we) hereby declare that:	
Section I. Dec	claration		
This declaration	on is directed to:		
\boxtimes	The attached U.S. non-provi	sional patent application, o	r
	U.S. non-provisional patent a		, filed on
	PCT international patent app	olication number	, filed on
The above-ide	entified application was made	or authorized to be made b	y me (us).
	that I am (we are) the origina ne above-identified applicatio	. •	entors) of a claimed
¹ This form requ	uires the use of an Application Data	Sheet.	
SEC Ref No.	WB-202101-003-1-US0	Attorney Ref No.	204056
COMBINED D	ECLARATION (37 CFR 1.63) FOR	UTILITY PATENT APPLICATION	AND ASSIGNMENT FORM

Page **1** of **4**

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.

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) **63/179,013** 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

SEC Ref No.	WB-202101-003-1-US0	Attorney Ref No.	204056

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page **2** of **4**

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 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	Hong	llgu	
SIGNATURE		DATE	
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SEC Ref No.	WB-202101-003-1-US0	Attornev Ref No.	204056
JLC NEI NO.	W D-202101-003-1-030	Attorney her No.	204030

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page **3** of **4**

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECOND INVENTOR/ASSIGNOR	Ki	Yang Seok	
SIGNATURE	/Yang Seok Ki/	DATE	5/27/2021

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	Choi	Changho	
SIGNATURE		DATE	

SEC Ref No.	WB-202101-003-1-US0	Attornev Ref No.	204056
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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page **4** of **4**

COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN PATENT APPLICATION AND ASSIGNMENT FORM:

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: SYSTEMS AND METHODS FOR I/O COMMAND SCHEDULING BASED ON MULTIPLE RESOURCE PARAMETERS	
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	
U.S. non-provisional patent application number, filed on, 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.	
This form requires the use of an Application Data Sheet	
SEC Ref No. WB-202101-003-1-US0 Attorney Ref No. 204056	
COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 1 of 6	

SAMSONG ELECTRONICS CO., LTD.

 $_{\rm CWe}$) hereby acknowledge that any willful false statement made in this declaration is $_{\rm DUnishable}$ under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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

Lacknowledge 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, Papublic 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 Lof 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 constries, to the inventions or designs as described in the aforesaid application, to the aforesaid application itself, and to provisional application(s) 63/179,013 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, lare 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

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SAMSUNG FLECTRONES CO. LTD

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 additional 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 testive 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 LIP 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
FIRST	Hong	llgu	
R			
SIGNATURE		DATE	

S																																						

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 3 of 6

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RECORDED: 06/04/2021

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
SECONO			
INVENTOR/ASSIGNO	Ki	Yang Seok	
R			
SIGNATURE		DATE	
JONATURE		UMIC	

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNO R	Choi	Changho	
SIGNATURE		DATE	2/27/2021

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