# 504725783 01/11/2018

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4772507

SUBMISSION TYPE:			NEW ASSIGNMENT		
NATURE OF CONVEYANCE:			ASSIGNMENT		
CONVEYING PARTY	DATA				
		1	Name	Execution Dat	
KYU-IK CHO				11/06/2017	
RECEIVING PARTY [	ΟΑΤΑ				
Name:	SAMSU	SAMSUNG ELECTRONICS CO., LTD.			
Street Address:	129, SA	AMSU	NG-RO, YEONGTONG-GU, GYEON	IGGI-DO	
City:	suwo	N-SI			
State/Country:	KOREA	A, REP	UBLIC OF		
Postal Code:	16677				
	I				
PROPERTY NUMBER					
Property Typ			Number		
Application Number:		15868	588		
CORRESPONDENCE	DATA				
Fax Number:		(202)2	293-7860		
• · ·		• /			
		o the e	-mail address first; if that is unsue		
	if provided	o the e d; if tha			
using a fax number,	if provided	<b>o the e</b> d; if tha 202-29	-mail address first; if that is unsuc at is unsuccessful, it will be sent v	ria US Mail.	
<i>using a fax number,</i> Phone: Email:	if provided	<b>b</b> the e d; if tha 202-29 creiter	-mail address first; if that is unsuc at is unsuccessful, it will be sent v 93-7060	ria US Mail.	
<i>using a fax number,</i> Phone: Email: Correspondent Name Address Line 1:	if provided	<i>b the e</i> <i>d; if tha</i> 202-29 creiter SUGH 2100 F	<i>-mail address first; if that is unsue</i> <i>at is unsuccessful, it will be sent v</i> 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW	ria US Mail.	
<i>using a fax number,</i> Phone: Email: Correspondent Name Address Line 1: Address Line 2:	<i>if providec</i> e:	<i>the ed; if the</i> 202-29 creiter SUGH 2100 F SUITE	<i>mail address first; if that is unsue</i> <i>at is unsuccessful, it will be sent v</i> 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW 800	ria US Mail.	
<i>using a fax number,</i> Phone: Email: Correspondent Name Address Line 1:	<i>if providec</i> e:	<i>the ed; if the</i> 202-29 creiter SUGH 2100 F SUITE	<i>-mail address first; if that is unsue</i> <i>at is unsuccessful, it will be sent v</i> 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW	ria US Mail.	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4:	if provided	202-29 creiter SUGH 2100 F SUITE WASH	<i>mail address first; if that is unsue</i> <i>at is unsuccessful, it will be sent v</i> 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW 800	ria US Mail.	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4:	<i>if provided</i> e: NUMBER:	b the e d; if the 202-29 creiter SUGH 2100 F SUITE WASH	<i>mail address first; if that is unsue</i> <i>at is unsuccessful, it will be sent</i> 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW 800 HINGTON, D.C. 20037-3213	<i>ria US Mail.</i> com	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET	<i>if provided</i> e: NUMBER:	b the e d; if the 202-29 creiter SUGH 2100 F SUITE WASH	<i>-mail address first; if that is unsuc</i> <i>at is unsuccessful, it will be sent</i> v 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW 800 HINGTON, D.C. 20037-3213	<i>ria US Mail.</i> com	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET JAME OF SUBMITTER	<i>if provided</i> e: NUMBER:	b the e d; if that 202-29 creiter SUGH 2100 F SUITE WASH	-mail address first; if that is unsuc at is unsuccessful, it will be sent v 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW E 800 HINGTON, D.C. 20037-3213 Q235058 CRYSTABEL REITER - TEAMS DE	<i>ria US Mail.</i> com	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NAME OF SUBMITTER SIGNATURE:	<i>if provided</i> e: NUMBER:	b the e d; if the 202-29 Creiter SUGH 2100 F SUITE WASH	-mail address first; if that is unsuc at is unsuccessful, it will be sent v 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW E 800 HINGTON, D.C. 20037-3213 Q235058 CRYSTABEL REITER - TEAMS DE /Crystabel Reiter/	<i>ria US Mail.</i> com PT.	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NAME OF SUBMITTER SIGNATURE: DATE SIGNED:	<i>if provided</i> e: NUMBER:	b the e d; if the 202-29 Creiter SUGH 2100 F SUITE WASH	-mail address first; if that is unsue at is unsuccessful, it will be sent w 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW 800 HINGTON, D.C. 20037-3213 Q235058 CRYSTABEL REITER - TEAMS DE /Crystabel Reiter/ 01/11/2018	<i>ria US Mail.</i> com PT.	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NAME OF SUBMITTER SIGNATURE: DATE SIGNED: Total Attachments: 4	if provided e: NUMBER: R:	b the e d; if tha 202-29 creiter SUGH 2100 F SUITE WASH	-mail address first; if that is unsue at is unsuccessful, it will be sent w 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW 800 HINGTON, D.C. 20037-3213 Q235058 CRYSTABEL REITER - TEAMS DE /Crystabel Reiter/ 01/11/2018	via US Mail. com PT. eclaration (37 CFR 1.63).	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NAME OF SUBMITTER SIGNATURE: DATE SIGNED: Total Attachments: 4 source=Q235058COME	if provided e: NUMBER: R: BINEDASS	IGNME	-mail address first; if that is unsuc at is unsuccessful, it will be sent w 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW 800 IINGTON, D.C. 20037-3213 Q235058 CRYSTABEL REITER - TEAMS DE /Crystabel Reiter/ 01/11/2018 This document serves as an Oath/D	<i>ria US Mail.</i> com PT. eclaration (37 CFR 1.63). D#page1.tif	
using a fax number, Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 2: Address Line 4: ATTORNEY DOCKET NAME OF SUBMITTER SIGNATURE: DATE SIGNED: Total Attachments: 4 source=Q235058COME source=Q235058COME	if provided e: NUMBER: R: BINEDASS BINEDASS BINEDASS	ignme Ignme Ignme	-mail address first; if that is unsuc at is unsuccessful, it will be sent w 93-7060 @sughrue.com, sughrue@sughrue. IRUE MION, PLLC PENNSYLVANIA AVE. NW 800 HINGTON, D.C. 20037-3213 Q235058 CRYSTABEL REITER - TEAMS DE /Crystabel Reiter/ 01/11/2018 This document serves as an Oath/D ENTANDDECLARATIONTOBEFILEI	via US Mail. com PT. eclaration (37 CFR 1.63). D#page1.tif D#page2.tif D#page3.tif	

## COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY 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:

#### RAMP SIGNAL GENERATOR OF IMAGE SENSOR, AND IMAGE Title: SENSOR INCLUDING SAME

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:

Sensor 제 # 2111 ETS.LSD/32 # 21/12259857 The attached U.S. non-provisional patent application, or

- $\boxtimes$
- 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.

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.

		ires the use of an Application Data Sł	seet.		
	SEC Ref No.	IB-201702-017-1-US0	Attorney Ref No	Q235058 (CV5008US)	
	COMBINED DEC	LARATION (37 CFR 1.63) FOR UTI	ITY PATENT APPLICATIO	N AND ASSIGNMENT FORM	
iensor利音:	개발팀(SLSI)/조규의	Page 1/12259857/2017-11-06 19:36	elof4 REE	PATENT EL: 044601 FRAME: 00	676

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

Lacknowledge that Lam 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 the sum of One Dollar (\$1.00) and other good and valuable consideration paid to each of the undersigned, 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 described in the application identified in Section 1 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 as described in the aforesaid application, to the aforesaid application itself, and all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application, 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 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,

	SEC Ref No	IB-2017	02-017-1-US0	Attorn	ey Ref No.	Q235058 (CY5008	US)
	COMBINED	DECLARATION (3	7 CFR 1.63) FOR	UTILITY PATENT	APPLICATION	AND ASSIGNMENT	ORM
Sensor제용2	개발팀(S.LSI)/2	s규익/12259857/20	17-11-06 19:36	Page 2 of 4		PATENT	

REEL: 044601 FRAME: 0677

SAMSUNG ELECTRONICS CO., LTD.

divisional, renewal or substitute thereof, and as to letters patent any reissue, reexamination, 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 Sughrue Mion, PLLC 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.

Gensie 相關裡設想的 S的 在自己的 S9857

 SEC Ref No.
 IB-201702-017-1-US0
 Attorney Ref No.
 Q235058 (CY5008US)

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM

Page 3 of 4 Sensor제품개발됨(SLSI)/초규익/12259857/2017-11-06 19:36

PATENT REEL: 044601 FRAME: 0678

## SAMSUNG ELECTRONICS CO., LTD.

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

LEGAL NAME OF	Family Name	First Given Name	Second Given Name	
INVENTOR/ASSIGNOR	СНО	Kyu-Ik		
SIGNATURE	Jon	DATE	2017. U. 6	



是指4月建备准的理论的组织的思想在2259337

SEC Ref No. IB-201702-017-1-US0 Attorney Ref No. Q235058 (CY5008US)

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM

Page 4 of 4

Sensor계番개봛툄(5.LSI)/조규역/12259857/2017-11-06 19:36

**RECORDED: 01/11/2018** 

PATENT REEL: 044601 FRAME: 0679