505661508 09/09/2019

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
INJAE HWANG	05/21/2019
HUNG SHENG LIN	06/18/2019
HYUNWOO NHO	05/21/2019
SUN-II CHANG	08/29/2019
RUI ZHANG	05/30/2019
MOHAMMAD B. VAHID FAR	05/28/2019
KINGSUK BRAHMA	06/24/2019
JESSE A. RICHMOND	05/22/2019
HYUNSOO KIM	05/23/2019
JUNHUA TAN	05/30/2019

RECEIVING PARTY DATA

Name:	APPLE INC.
Street Address:	ONE APPLE PARK WAY
City:	CUPERTINO
State/Country:	CALIFORNIA
Postal Code:	95014

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	62728665
Application Number:	16563500

CORRESPONDENCE DATA

Fax Number: (281)970-4503

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: 281-970-4545

Email: docket@fyiplaw.com, osterhaus@fyiplaw.com,

sorenson@fyiplaw.com, skiebe@fyiplaw.com

Correspondent Name: MICHAEL G. FLETCHER

Address Line 1: P.O. BOX 692289
Address Line 2: FLETCHER YODER

PATENT 505661508 REEL: 050315 FRAME: 0012

Address Line 4: HOU	STON, TEXAS 77269-2289	
ATTORNEY DOCKET NUMBER:	P33699US1 APPL:0943	
NAME OF SUBMITTER:	MATTHEW G. OSTERHAUS	
SIGNATURE:	/Matthew G. Osterhaus/	
DATE SIGNED:	09/09/2019	
Total Attachments: 10		
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ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned, does hereby:

SELL, ASSIGN AND TRANSFER to Apple Inc. (the "Assignee"), a corporation of the State of California, having a place of business at One Apple Park Way, Cupertino, CA 95014, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the application for United States Letters Patent, which is entitled "SYSTEMS AND METHODS FOR SENSING PIXEL VOLTAGES," and which may be further identified below, such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States, including all provisional and non-provisional applications, and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST that any attorney associated with PTO Customer No. 73576 may delete, insert, or alter any information identifying this application, or any related application, below after execution of this assignment;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the Assignee;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will (1) execute all provisional, non-provisional, divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers; (3) communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; (4) cooperate with the Assignee in any interference, opposition, dispute, or litigation involving any of the applications or patents for such improvements; and (5) generally do everything possible which the Assignee shall consider desirable for vesting title to such improvements in the Assignee, and for securing, maintaining and enforcing proper patent protection for such improvements;

TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

1 1 1 1 1 1 T C

	<u>Adaitional A</u>	<u>Appucation Information</u>	
L	.S. Provisional Application Serial No. <u>62/728,66</u>	65 , filed on September 0	7, 2018.
L	.S. Non-Provisional Application Serial No16	/563,500 , filed on September	6, 2019 <u>.</u>
h	ternational Application Serial No	, filed on	
Inventor 1	:		
(Signature	. H	Date:	5.21.2019
(Signature	Name: Injae Hwang		

Inventor 2:

(Signature): Hung Stung 7 Date: 6/18/3017

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Inventor 3:				
(Signature):	WRT	7	Date:	05/21/2019
-	Name: Hyunwoo Nho			

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Inventor 4:

(Signature):

Name: Sun-II Chang

Date: 09/29/2019

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Inventor 5:

(Signature):_____

Name: Rui Zhang

Date: 2019/05/30

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Inventor 6:				
(Signatura)	Mus	Data	05/28/2019	
(Signature):		Date:	03/20/2013	
	Name: Mohammad B. Vahid Far			

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Inventor 7:				
(Signature):	Hille	Date:	06-24-2019	
	. Name: Kingsuk Brahma			

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Inventor 8:

Signature):

Name: Jesse A. Richmond

Date: 5/22/19

Inventor 9:					
(Signature):		Kunfylu	Date:	May 23, 2019	
. •	Name: Hyunsoo Kim	/ "			

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Inventor 10:

(Signature):_

Name Junhua Tan

Date:

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