

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5718499

<b>SUBMISSION TYPE:</b>	CORRECTIVE ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	Corrective Assignment to correct the SPELLING OF THE FOURTH LISTED INVENTOR'S FIRST NAME FROM "SUN-II" TO "SUN-IL" previously recorded on Reel 050315 Frame 0012. Assignor(s) hereby confirms the ASSIGNMENT.
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
INJAE HWANG	05/21/2019
HUNG SHENG LIN	06/18/2019
HYUNWOO NHO	05/21/2019
SUN-IL 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
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	APPLE INC.
<b>Street Address:</b>	ONE APPLE PARK WAY
<b>City:</b>	CUPERTINO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95014
<b>PROPERTY NUMBERS Total: 2</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	62728665
<b>Application Number:</b>	16563500
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(281)970-4503
<i>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.</i>	
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<b>Correspondent Name:</b>	MICHAEL G. FLETCHER

PATENT

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**Address Line 2:** FLETCHER YODER  
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<b>ATTORNEY DOCKET NUMBER:</b>	P33699US1   APPL:0943
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<b>NAME OF SUBMITTER:</b>	MATTHEW G. OSTERHAUS
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<b>SIGNATURE:</b>	/Matthew G. Osterhaus/
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<b>DATE SIGNED:</b>	09/13/2019
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**Total Attachments: 14**

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## UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

SEPTEMBER 10, 2019

PTAS

MICHAEL G. FLETCHER  
P.O. BOX 692289  
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HOUSTON, TX 77269-2289

**505661508**

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RECORDATION DATE: 09/09/2019

REEL/FRAME: 050315/0012  
NUMBER OF PAGES: 12

BRIEF: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

DOCKET NUMBER: P33699US1 | APPL:0943

ASSIGNOR:  
HWANG, INJAE

DOC DATE: 05/21/2019

ASSIGNOR:  
LIN, HUNG SHENG

DOC DATE: 06/18/2019

ASSIGNOR:  
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DOC DATE: 05/21/2019

-----> ASSIGNOR:  
CHANG, ~~SUN-II~~ SUN-IL

DOC DATE: 08/29/2019

ASSIGNOR:  
ZHANG, RUI

DOC DATE: 05/30/2019

ASSIGNOR:  
VAHID FAR, MOHAMMAD B.

DOC DATE: 05/28/2019

ASSIGNOR:  
BRAHMA, KINGSUK

DOC DATE: 06/24/2019

ASSIGNOR:  
RICHMOND, JESSE A.

DOC DATE: 05/22/2019

ASSIGNOR:  
KIM, HYUNSOO

DOC DATE: 05/23/2019

ASSIGNOR:  
TAN, JUNHUA

DOC DATE: 05/30/2019

ASSIGNEE:  
APPLE INC.  
ONE APPLE PARK WAY  
CUPERTINO, CALIFORNIA 95014

APPLICATION NUMBER: 16563500  
PATENT NUMBER:  
TITLE: SYSTEMS AND METHODS FOR SENSING PIXEL VOLTAGES

FILING DATE:

ISSUE DATE:

APPLICATION NUMBER: 62728665  
PATENT NUMBER:  
TITLE: SYSTEMS AND METHODS FOR SENSING PIXEL VOLTAGES

FILING DATE: 09/07/2018

ISSUE DATE:

ASSIGNMENT RECORDATION BRANCH  
PUBLIC RECORDS DIVISION



## Electronic Patent Assignment System

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## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1

Stylesheet Version v1.2

SUBMISSION TYPE: NEW ASSIGNMENT

NATURE OF CONVEYANCE: ASSIGNMENT

## CONVEYING PARTY DATA

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State/Country:	CALIFORNIA
Postal Code:	95014

## PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	62728665
Application Number:	16563500

## CORRESPONDENCE DATA

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*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.*  
Correspondent Name: MICHAEL G. FLETCHER

Address Line 1: P.O. BOX 692289  
Address Line 2: FLETCHER YODER  
Address Line 4: HOUSTON, TEXAS 77269-2289

**ATTORNEY DOCKET  
NUMBER:** P33699US1 | APPL:0943

**NAME OF SUBMITTER:** MATTHEW G. OSTERHAUS

**Signature:** /Matthew G. Osterhaus/

**Date:** 09/09/2019

**Total Attachments: 10**

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**RECEIPT INFORMATION**

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**Receipt Date:** 09/09/2019

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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;

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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.


### Additional Application Information

U.S. Provisional Application Serial No. 62/728,665, filed on September 07, 2018.

U.S. Non-Provisional Application Serial No. 16/563,500, filed on September 6, 2019.

International Application Serial No. \_\_\_\_\_, filed on \_\_\_\_\_.

**Inventor 1:**

(Signature):   
Name: **Injae Hwang**

Date: 5.21.2019

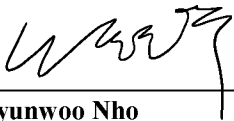
**Inventor 2:**

(Signature): Hung Sheng Lin  
Name: **Hung Sheng Lin**

Date: 6/18/2019




**Inventor 3:**

(Signature):  \_\_\_\_\_  
Name: **Hyunwoo Nho**


Date: 05/21/2019 \_\_\_\_\_

Inventor 4:

(Signature):   
Name: Sun-II Chang


Date: 08/29/2019

**Inventor 5:**

(Signature):   
Name: **Rui Zhang**

Date: 2019/05/30

**Inventor 6:**

(Signature):  \_\_\_\_\_

Name: **Mohammad B. Vahid Far**

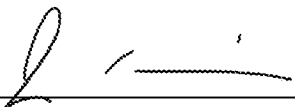
Date: 05/28/2019

**Inventor 7:**

(Signature):  \_\_\_\_\_  
Name: **Kingsuk Brahma**

Date: **06-24-2019** \_\_\_\_\_

**Inventor 8:**

(Signature):   
Name: **Jesse A. Richmond**

Date: 5/22/19

**Inventor 9:**

(Signature):

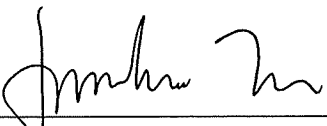


Name: **Hyunsoo Kim**

Date:

May 23, 2018

**Inventor 10:**

(Signature):   
Name: **Junhua Tan**

Date: 5/30/2019