

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4137872

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
CHIN SAN HAN	11/04/2016
VIVEK VENUGOPAL	09/26/2016
UEYN L. BLOCK	10/05/2016
NICHOLAS PAUL JOSEPH ALLEC	09/26/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	APPLE INC.
<b>Street Address:</b>	1 INFINITE LOOP
<b>City:</b>	CUPERTINO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95014
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15272133
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(323)210-1131
<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>	
<b>Email:</b>	ebowers@mofo.com
<b>Correspondent Name:</b>	JEAN NGUYEN
<b>Address Line 1:</b>	MORRISON & FOERSTER LLP
<b>Address Line 2:</b>	707 WILSHIRE BOULEVARD
<b>Address Line 4:</b>	LOS ANGELES, CALIFORNIA 90017-3543
<b>ATTORNEY DOCKET NUMBER:</b>	106842143500 (P26991US1)
<b>NAME OF SUBMITTER:</b>	JEAN NGUYEN
<b>SIGNATURE:</b>	/Jean Nguyen/
<b>DATE SIGNED:</b>	11/10/2016
<b>Total Attachments: 8</b>	
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source=10684-21435.00\_Assignment#page7.tif  
source=10684-21435.00\_Assignment#page8.tif

## ASSIGNMENT

This assignment is by:

1. Chin San HAN  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
2. Vivek VENUGOPAL  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
3. Ueyn L. BLOCK  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
4. Nicholas Paul Joseph ALLEC  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014

(referred to in this Assignment as "Assignors"), whose residence or mailing address information is listed above.

This Assignment is to:

Assignee: Apple Inc.  
Address: 1 Infinite Loop, Cupertino, California 95014  
A corporation duly organized under and pursuant to the laws of: California

(referred to in this Assignment as "Assignee"), which desires to acquire the entire right, title and interest in, to and under said patent application and the inventions covered thereby.

Assignors have invented certain new and useful inventions in:

### FORCE SENSING FOR PPG HEART-RATE PERFORMANCE ENHANCEMENT AND CONTACT DETECTION

for which Assignors have filed an application for patent in the United States of America concurrently herewith. Where this Assignment is not filed concurrently with the application, the following identifying information may be added after execution:

Serial No.: 15/272,133      Filing Date: September 21, 2016

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged,

1. Assignors hereby sell, assign, transfer and set over, to Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions, application for letters patent, any and all provisionals, non-provisionals, divisions, continuations, and continuations-in-part claiming priority thereto or the benefit thereof, substitutions of said applications, and any and all letters patent or patents in the United States of America and all foreign countries or jurisdictions which may be granted therefor and thereon, including, without limitation, any modifications to such letters patent or patents such as through reissue, re-examination or other post-grant proceeding, and any and all extensions of said letters patent or patents, and all rights under the International Convention for the Protection

of Industrial Property, the same to be held and enjoyed by Assignee (including any right to institute actions and to recover damages for past, present and future infringement), for its own use and the use of its successors, legal representatives and assigns, to the full end of the term or terms for which letters patent or patents may be granted, as fully and entirely as the same would have been held and enjoyed by Assignors, had this sale and assignment not been made.

2. Assignors represent, warrant and covenant (a) that, at the time of execution and delivery of this agreement, Assignors are the sole and lawful owners of the entire right, title and interest in and to said inventions and said application for letters patent, and that the same are unencumbered and that Assignors have good and full right and lawful authority to sell and convey the same in the manner set forth in this agreement, or (b) that Assignors solely and lawfully owned the entire right, title and interest in and to said inventions and said application for letters patent, and the same were unencumbered and that Assignors sold, assigned, transferred and set over, to Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to said inventions and said applications for letters patent.

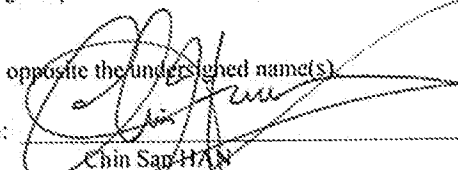
3. Assignors shall promptly sign and execute all papers and documents, take all lawful oaths, and do all acts necessary, required or useful for the procurement, maintenance, enforcement, defense or otherwise to secure title thereto to the Assignee, at the sole cost and expense of Assignee, its successors, legal representatives and assigns, in each case including, without limitation, arising from or relating to (a) said inventions, or said application for letters patent; (b) any provisional, non-provisional, division, continuation, or continuation-in-part claiming priority thereto or the benefit thereof, or any substitution of any such application, or (c) any letters patent or patents for said inventions in any country or jurisdiction, including without limitation, any modifications to such letters patent or patents such as through reissue, re-examination, or other post-grant proceeding. To be clear, for purposes of this paragraph, "procurement, maintenance, enforcement, defense" shall include, without limitation, any preparation, prosecution, pre-grant proceeding, and post-grant proceeding, whether before a patent office or other administrative body or judicial body with jurisdiction therefor.

4. Assignors hereby authorize and request the Commissioner of Patents in the United States to issue the above mentioned letters patent of the United States to Assignee as the assignee of said inventions and the letters patent to be issued thereon for the sole use of Assignee, its successors, legal representatives and assigns.

5. "I hereby grant Assignee's attorneys, all of Morrison & Foerster LLP, the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark office for recordation of this document, including the power to insert on this assignment the application number and filing date of said application when known."

In witness whereby, executed by the undersigned on the date(s) opposite the undersigned name(s)

Date: 2016.11.04

Signature:   
Chin Sap HAN

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Vivek VENUGOPAL

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Ueyn L. BLOCK

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Nicholas Paul Joseph ALLEC

## ASSIGNMENT

This assignment is by:

1. Chin San HAN  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
2. Vivek VENUGOPAL  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
3. Ueyn L. BLOCK  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
4. Nicholas Paul Joseph ALLEC  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014

(referred to in this Assignment as "Assignors"), whose residence or mailing address information is listed above.

This Assignment is to:

Assignee: Apple Inc.  
Address: 1 Infinite Loop, Cupertino, California 95014  
A corporation duly organized under and pursuant to the laws of California

(referred to in this Assignment as "Assignee"), which desires to acquire the entire right, title and interest in, to and under said patent application and the inventions covered thereby.

Assignors have invented certain new and useful inventions in:

**FORCE SENSING FOR PPG HEART-RATE PERFORMANCE ENHANCEMENT AND CONTACT DETECTION**

for which Assignors have filed an application for patent in the United States of America concurrently herewith. Where this Assignment is not filed concurrently with the application, the following identifying information may be added after execution:

Serial No.: 15/272,133      Filing Date: September 21, 2016

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1

of Industrial Property, the same to be held and enjoyed by Assignee (including any right to institute actions and to recover damages for past, present and future infringement), for its own use and the use of its successors, legal representatives and assigns, to the full end of the term or terms for which letters patent or patents may be granted, as fully and entirely as the same would have been held and enjoyed by Assignors, had this sale and assignment not been made.

2. Assignors represent, warrant and covenant (a) that, at the time of execution and delivery of this agreement, Assignors are the sole and lawful owners of the entire right, title and interest in and to said inventions and said application for letters patent, and that the same are unencumbered and that Assignors have good and full right and lawful authority to sell and convey the same in the manner set forth in this agreement, or (b) that Assignors solely and lawfully owned the entire right, title and interest in and to said inventions and said application for letters patent, and the same were unencumbered and that Assignors sold, assigned, transferred and set over, to Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to said inventions and said applications for letters patent.

3. Assignors shall promptly sign and execute all papers and documents, take all lawful oaths, and do all acts necessary, required or useful for the procurement, maintenance, enforcement, defense or otherwise to secure title thereto to the Assignee, at the sole cost and expense of Assignee, its successors, legal representatives and assigns, in each case including, without limitation, arising from or relating to (a) said inventions, or said application for letters patent; (b) any provisional, non-provisional, division, continuation, or continuation-in-part claiming priority thereto or the benefit thereof, or any substitution of any such application, or (c) any letters patent or patents for said inventions in any country or jurisdiction, including without limitation, any modifications to such letters patent or patents such as through reissue, re-examination, or other post-grant proceeding. To be clear, for purposes of this paragraph, "procurement, maintenance, enforcement, defense" shall include, without limitation, any preparation, prosecution, pre-grant proceeding, and post-grant proceeding, whether before a patent office or other administrative body or judicial body with jurisdiction therefor.

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In witness whereby, executed by the undersigned on the date(s) opposite the undersigned name(s).

Date: \_\_\_\_\_ Signature: \_\_\_\_\_  
Chin San HAN

Date: 9/26/2016 Signature:   
Vivek VENUGOPAL

Date: \_\_\_\_\_ Signature: \_\_\_\_\_  
Ueyn L. BLOCK

Date: \_\_\_\_\_ Signature: \_\_\_\_\_  
Nicholas Paul Joseph ALLEC

## ASSIGNMENT

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c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
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c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
3. Ueyn L. BLOCK  
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1 Infinite Loop  
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Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Chin San HAN

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Vivek VENUGOPAL

Date: 10/5/16

Signature:   
Uyen L. BLOCK

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Nicholas Paul Joseph ALLEC



## ASSIGNMENT

This assignment is by:

1. Chin San HAN  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
2. Vivek VENUGOPAL  
c/o Apple Inc.  
1 Infinite Loop  
Cupertino, California 95014
3. Ueyn L. BLOCK  
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Vivek VENUGOPAL

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Ueyn L. BLOCK

Date: 09/26/2016 Signature:   
Nicholas Paul Joseph ALLEC