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PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

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EPAS ID: PAT4351235

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
KENJI YAMAZUMI	01/31/2017
HIROKAZU HATAYAMA	01/31/2017
PRASHANT SHAMARAO	01/31/2017
KOTA KITAMURA	01/31/2017

RECEIVING PARTY DATA

Name:	SYNAPTICS INCORPORATED
Street Address:	1251 MCKAY DRIVE
City:	SAN JOSE
State/Country:	CALIFORNIA
Postal Code:	95131

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15420599

CORRESPONDENCE DATA

Fax Number: (713)623-4846

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.

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Email: tjeffrey@pattersonsheridan.com,

psdocketing@pattersonsheridan.com

Correspondent Name: PATTERSON & SHERIDAN, LLP
Address Line 1: 595 SHREWSBURY AVENUE

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Address Line 4: SHREWSBURY, NEW JERSEY 07702

ATTORNEY DOCKET NUMBER:	KUDO/0031US
NAME OF SUBMITTER:	KEITH TABOADA
SIGNATURE:	/Keith Taboada/
DATE SIGNED:	04/04/2017

Total Attachments: 4

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> PATENT REEL: 041840 FRAME: 0583

SYNAPTICS INCORPORATED ASSIGNMENT AGREEMENT – WORLDWIDE

WHEREAS, I, an undersigned individual, have invented certain invention(s) described in an application for Letters Patent (the "Application") in:
the United States
enclosed herewith or \square previously filed on date under Serial No;
with docket number and title: <u>DEVICE AND METHOD FOR DRIVING DISPLAY PANEL IN RESPONSE TO IMAGE DATA</u> .
WHEREAS, Synaptics Incorporated, a corporation of the State of Delaware, having a place of business at 1251 McKay Drive; San Jose, CA 95131; U.S.A. ("Synaptics"), desires to acquire the entire right, title, and interest in and to the invention(s) disclosed in the Application and all embodiments of such invention(s) previously conceived, made, or discovered by me during my employment with and within the scope of my work in any capacity for Synaptics (collectively, the "Inventions"), and in and to the Application and any and all other applications for utility patents, utility models, inventor's certificates, and other forms of invention protection or rights for the Inventions in any and all countries and groups of countries (collectively, the "Applications"), and in and to any and all patents, inventors certificates, and other forms of invention protection or rights arising therefrom (the "Patents").
NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by me to have been received in full from Synaptics:
1. I hereby sell, assign, transfer and convey to Synaptics the entire right, title and interest (a) in and to the Inventions and the Application; (b) in and to all rights to apply for patents and all other forms of invention protection or rights on the Inventions in any and all countries pursuant to the Paris Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on the Inventions in any and all countries and groups of countries, including each and every application filed and each and every patent granted on any application which is a conventional, division, substitution, continuation, or continuation-in-part of any of the Applications; and (d) in and to each and every reissue or extension of any of the Patents.
2. I hereby covenant and agree to cooperate with Synaptics to enable Synaptics to enjoy to the fullest extent the right, title and interest to the Inventions herein conveyed in any and all countries and groups of countries. My cooperation shall include prompt production of pertinent facts and documents, giving sestimony, executing petitions, oaths, specifications, declarations or other papers, and providing other assistance to the extent deemed necessary or desirable by Synaptics (a) for perfecting in Synaptics the right, itle and interest herein conveyed; (b) for prosecuting the Applications; (c) for filing and prosecuting substitute conventional, divisional, continuation, continuation-in-part, or additional applications covering the Inventions; (d) for filing and prosecuting applications for reexamination or reissuance of any of the Patents; (e) in assisting Synaptics in any pre-grant or post-grant proceeding involving any of the Inventions, Applications, or Patents; and (f) in assisting Synaptics in any court or administrative proceeding involving any of the Inventions, Applications, or Patents, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, and infringement actions; provided, however, that easonable expenses incurred by me in providing such cooperation shall be paid for by Synaptics. 3. I hereby agree that the terms and covenants of this Assignment Agreement (the "Agreement") shall nure to the benefit of Synaptics, its successors, assigns and other legal representatives, and shall be binding upon me, my heirs, my legal representatives, and my assigns.
4. I hereby warrant and represent that I have not entered into and will not enter into any assignment,

Synaptics Incorporated Assignment Agreement v. 2014-10-15

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license, contract, or understanding in conflict herewith.

- 5. I hereby agree that if any provision of this Agreement is deemed invalid or otherwise unenforceable, the remaining provisions of this Agreement shall remain valid, enforceable, and binding, and the invalid or otherwise unenforceable provision shall be deemed to be replaced by a provision that is valid and enforceable and that comes closest to expressing the intent expressed by the invalid or unenforceable provision.
- 6. I hereby agree that this Agreement contains the entire understanding between Synaptics and me relating to the subject matter contained herein, and supersedes all prior and collateral communications and understandings between Synaptics and me.
- 7. In the event that the filing date or application number of the Application is not entered at the time I execute this document, and if such information is deemed necessary, I hereby authorize Synaptics, its successors and assigns, its legal representatives, or anyone it properly designates to enter above such filing date or application number.
- 8. I hereby understand and acknowledge that this Agreement is originally drafted in English, and any translation provided is for informational purposes only. I hereby agree that the controlling language is English, and accordingly, in case of conflict between English and such a translation, the English version prevails.

IN WITNESS WHEREOF, I have executed and delivered this instrument to Synaptics on the date indicated below.

(Finited legal name of inventor) Kenti YAWIAZOWII / III P. M. T.
(Inventor's signature) Kehi YAMAZUMI, 山伯夏司 (Date) 1/31/2017
(Inventor's mailing address) c/o Synaptics Japan GK, 10-2, Nakano 4-Chome, Nakano-ku, Tokyo, Japan
(Printed legal name of additional inventor, if any) <u>Hirokazu HATAYAMA / 畑山 博一</u>
(Inventor's signature) HiroKazu Hacayama / 州山 博一 (Date) 1/31/2017
(Inventor's mailing address) c/o Synaptics Japan GK, 10-2, Nakano 4-Chome, Nakano-ku, Tokyo, Japan
Printed legal name of inventor) <u>Prashant SHAMARAQ</u>
Inventor's signature) (Date)
Inventor's mailing address) c/o Synaptics Incorporated, 1251 McKay Drive, San Jose, CA 95131, USA
Printed legal name of additional inventor, if any) Kota KITAMURA / 北村 宏太
Inventor's signature) FOTA FITAMURA / HTT FAT (Date) 1/3/ (>017
Inventor's mailing address) c/o Synaptics Japan GK, 10-2, Nakano 4-Chome, Nakano-ku, Tokyo, Japan
Inventor's mailing address) <u>c/o Synaptics Japan GK, 10-2, Nakano 4-Chome, Nakano-ku, Tokyo, Japan</u>
Inventor's mailing address) <u>c/o Synaptics Japan GK, 10-2, Nakano 4-Chome, Nakano-ku, Tokyo, Japan</u>

SYNAPTICS INCORPORATED ASSIGNMENT AGREEMENT - WORLDWIDE

WHEREAS, I, an undersigned individual, have invented certain invention(s) described in an application for Letters Patent (the "Application") in:
the United States Japan another jurisdiction;
enclosed herewith or \square previously filed on date under Serial No
with docket number and title: <u>DEVICE AND METHOD FOR DRIVING DISPLAY PANEL IN RESPONSE TO IMAGE DATA</u> .
WHEREAS, Synaptics Incorporated, a corporation of the State of Delaware, having a place of business at 1251 McKay Drive; San Jose, CA 95131; U.S.A. ("Synaptics"), desires to acquire the entire right, title, and interest in and to the invention(s) disclosed in the Application and all embodiments of such invention(s) previously conceived, made, or discovered by me during my employment with and within the scope of my work in any capacity for Synaptics (collectively, the "Inventions"), and in and to the Application and any and all other applications for utility patents, utility models, inventor's certificates, and other forms of invention protection or rights for the Inventions in any and all countries and groups of countries (collectively, the "Applications"), and in and to any and all patents, inventors certificates, and other forms of invention protection or rights arising therefrom (the "Patents").
NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by me to have been received in full from Synaptics:
l. I hereby sell, assign, transfer and convey to Synaptics the entire right, title and interest (a) in and to the Inventions and the Application; (b) in and to all rights to apply for patents and all other forms of inventior protection or rights on the Inventions in any and all countries pursuant to the Paris Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on the Inventions in any and all countries and groups of countries, including each and every application filed and each and every patent granted on any application which is a conventional, division, substitution, continuation, or continuation-in-part of any of the Applications; and (d) in and to each and every reissue or extension of any of the Patents.
2. I hereby covenant and agree to cooperate with Synaptics to enable Synaptics to enjoy to the fullest extent the right, title and interest to the Inventions herein conveyed in any and all countries and groups of countries. My cooperation shall include prompt production of pertinent facts and documents, giving testimony, executing petitions, oaths, specifications, declarations or other papers, and providing other assistance to the extent deemed necessary or desirable by Synaptics (a) for perfecting in Synaptics the right, title and interest herein conveyed; (b) for prosecuting the Applications; (c) for filing and prosecuting substitut conventional, divisional, continuation, continuation-in-part, or additional applications covering the Inventions (d) for filing and prosecuting applications for reexamination or reissuance of any of the Patents; (e) in assisting Synaptics in any pre-grant or post-grant proceeding involving any of the Inventions, Applications, or Patents; and (f) in assisting Synaptics in any court or administrative proceeding involving any of the Inventions, Applications, or Patents, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, and infringement actions; provided, however, that reasonable expenses incurred by me in providing such cooperation shall be paid for by Synaptics.
3. I hereby agree that the terms and covenants of this Assignment Agreement (the "Agreement") shall inure to the benefit of Synaptics, its successors, assigns and other legal representatives, and shall be binding upon me, my heirs, my legal representatives, and my assigns.
4. I hereby warrant and represent that I have not entered into and will not enter into any assignment,
Synaptics incorporated Assignment Agreement v. 2014-10-15. Page 1 of 2

PATENT REEL: 041840 FRAME: 0586 license, contract, or understanding in conflict herewith.

- 5. I hereby agree that if any provision of this Agreement is deemed invalid or otherwise unenforceable, the remaining provisions of this Agreement shall remain valid, enforceable, and binding, and the invalid or otherwise unenforceable provision shall be deemed to be replaced by a provision that is valid and enforceable and that comes closest to expressing the intent expressed by the invalid or unenforceable provision.
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- 8. I hereby understand and acknowledge that this Agreement is originally drafted in English, and any translation provided is for informational purposes only. I hereby agree that the controlling language is English, and accordingly, in case of conflict between English and such a translation, the English version prevails.

IN WITNESS WHEREOF, I have executed and delivered this instrument to Synaptics on the date indicated below.

(Printed legal name of inventor) Kenji	YAMAZUMI/山角 賢司	
(Inventor's signature)		(Date)
(Inventor's mailing address) c/o Synap	tics Japan GK, 10-2, Nakan	o 4-Chome, Nakano-ku, Tokyo, Japan
(Printed legal name of additional inven	tor, if any) Hirokazu HATA	YAMA/如山 博一
(Inventor's signature)		(Date)
(Inventor's mailing address) c/o Synap	tics Japan GK, 10-2, Nakan	o 4-Chome, Nakano-ku, Tokyo, Japan
(Printed legal name of inventor) Prasha	int SHAMARAO	
(Inventor's signature)	5 Bart	(Date) 01/31/17
(Inventor's mailing address) c/o Synapt		
·		
(Printed legal name of additional invent	tor, if any) Kota KITAMUF	<u> </u>
(Inventor's signature)	1	(Date)
(Inventor's mailing address) c/o Synapt	tics Japan GK, 10-2, Nakan	o 4-Chome, Nakano-ku, Tokyo, Japan
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PATENT REEL: 041840 FRAME: 0587

RECORDED: 04/04/2017