

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT2660450

SUBMISSION TYPE:	NEW ASSIGNMENT														
NATURE OF CONVEYANCE:	ASSIGNMENT														
CONVEYING PARTY DATA															
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>JEFFREY LUKANC</td> <td>12/19/2013</td> </tr> <tr> <td>STEPHEN L. MOREIN</td> <td>12/13/2013</td> </tr> <tr> <td>CHRISTOPHER A. LUDDEN</td> <td>12/19/2013</td> </tr> <tr> <td>GREG P. SEMERARO</td> <td>12/19/2013</td> </tr> <tr> <td>JOSEPH KURTH REYNOLDS</td> <td>12/19/2013</td> </tr> <tr> <td>PETR SHEPELEV</td> <td>12/14/2013</td> </tr> </tbody> </table>		Name	Execution Date	JEFFREY LUKANC	12/19/2013	STEPHEN L. MOREIN	12/13/2013	CHRISTOPHER A. LUDDEN	12/19/2013	GREG P. SEMERARO	12/19/2013	JOSEPH KURTH REYNOLDS	12/19/2013	PETR SHEPELEV	12/14/2013
Name	Execution Date														
JEFFREY LUKANC	12/19/2013														
STEPHEN L. MOREIN	12/13/2013														
CHRISTOPHER A. LUDDEN	12/19/2013														
GREG P. SEMERARO	12/19/2013														
JOSEPH KURTH REYNOLDS	12/19/2013														
PETR SHEPELEV	12/14/2013														
RECEIVING PARTY DATA															
<table border="1"> <tr> <td>Name:</td> <td>SYNAPTICS INCORPORATED</td> </tr> <tr> <td>Street Address:</td> <td>1251 MCKAY DR.</td> </tr> <tr> <td>City:</td> <td>SAN JOSE</td> </tr> <tr> <td>State/Country:</td> <td>CALIFORNIA</td> </tr> <tr> <td>Postal Code:</td> <td>95131</td> </tr> </table>		Name:	SYNAPTICS INCORPORATED	Street Address:	1251 MCKAY DR.	City:	SAN JOSE	State/Country:	CALIFORNIA	Postal Code:	95131				
Name:	SYNAPTICS INCORPORATED														
Street Address:	1251 MCKAY DR.														
City:	SAN JOSE														
State/Country:	CALIFORNIA														
Postal Code:	95131														
PROPERTY NUMBERS Total: 1															
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>14137581</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	14137581										
Property Type	Number														
Application Number:	14137581														
CORRESPONDENCE DATA															
<p>Fax Number: (713)623-4846</p> <p>Phone: 7136234844</p> <p>Email: jekin@pattersonsheridan.com, psdocketing@pattersonsheridan.com</p> <p><i>Correspondence will be sent via US Mail when the email attempt is unsuccessful.</i></p> <p>Correspondent Name: PATTERSON &amp; SHERIDAN, LLP</p> <p>Address Line 1: 3040 POST OAK BOULEVARD</p> <p>Address Line 2: SUITE 1500</p> <p>Address Line 4: HOUSTON, TEXAS 77056</p>															
ATTORNEY DOCKET NUMBER:	SYNA0063US2 (2234.063465)														

NAME OF SUBMITTER:	KEITH TABOADA
Signature:	/Keith Taboada/
Date:	12/26/2013
<p>Total Attachments: 9</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page1.tif</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page2.tif</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page3.tif</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page4.tif</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page5.tif</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page6.tif</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page7.tif</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page8.tif</p> <p>source=SYNA 0063US02 ASGT sans Mackin#page9.tif</p>	

## ASSIGNMENT, CONVEYANCE, AND AGREEMENT – WORLDWIDE

### WHEREAS:

I, an undersigned individual whose name and mailing address appear below:

1)	Jeffrey LUKANC 1251 McKay Dr. San Jose, CA 95131	2)	Stephen L. MOREIN 1251 McKay Dr. San Jose, CA 95131
3)	Christopher A. LUDDEN 90 Linden Oaks Rochester, NY 14625	4)	Greg P. SEMERARO 90 Linden Oaks Rochester, NY 14625
5)	Joseph Kurth REYNOLDS 1251 McKay Dr. San Jose, CA 95131	6)	Petr SHEPELEV 1251 McKay Dr. San Jose, CA 95131

have invented certain invention(s) described in an application for Letters Patent in the United States ("hereinafter the "APPLICATION") or previously filed on **August 7, 2013** under Serial No. **61/863,350**; and entitled:

### CAPACITIVE SENSING USING A MATRIX ELECTRODE PATTERN

WHEREAS, Synaptics Incorporated, a corporation of the State of Delaware, having a place of business at 1251 McKay Dr., San Jose, California 95131 (hereinafter "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 or within the scope of my work in any capacity for SYNAPTICS (hereinafter 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 (hereinafter collectively the "APPLICATIONS"), and in and to any and all patents, inventors certificates, and other forms of invention protection or rights arising therefrom (hereinafter 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 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 substitute, conventional, divisional, continuation, continuation-in-part, or additional applications covering the INVENTIONS; (d) for filing and prosecuting applications for 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, Conveyance, and 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.

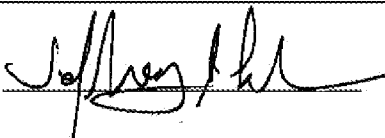
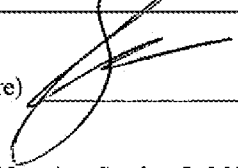
4. I hereby warrant and represent that I have not entered into and will not enter into any assignment, license, contract, or understanding in conflict herewith.

5. I hereby agree that all provisions of this AGREEMENT are severable, and 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 us.

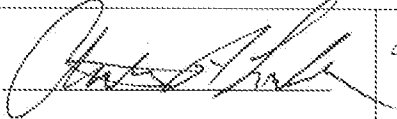
7. In the event that the filing date or application number of the APPLICATION is not entered at the time I execute this document, and if such information is deemed necessary, I hereby authorize SYNAPTICS, its successors and assigns, its legal representatives, or anyone it properly designates to enter above such filing date or application number.

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

1)	(Signature)  (Printed Name) <u>Jeffrey LUKANC</u> (Date) <u>12-19-13</u>	2)	(Signature)  (Printed Name) <u>Stephen L. MOREIN</u> (Date) <u>Dec 13 2013</u>
----	---	----	--

PATENT

REEL: 031848 FRAME: 0343

3)	(Signature)  (Printed Name) <u>Christopher A. LUDDEN</u> (Date) <u>12/19/13</u>	4)	(Signature) _____ (Printed Name) <u>Greg P. SEMERARO</u> (Date) _____
5)	(Signature) _____ (Printed Name) <u>Joseph Kurth REYNOLDS</u> (Date) _____	6)	(Signature) _____ (Printed Name) <u>Petr SHEPELEV</u> (Date) _____

## ASSIGNMENT, CONVEYANCE, AND AGREEMENT – WORLDWIDE

### WHEREAS:

I, an undersigned individual whose name and mailing address appear below:

1)	Jeffrey LUKANC 1251 McKay Dr. San Jose, CA 95131	2)	Stephen L. MOREIN 1251 McKay Dr. San Jose, CA 95131
3)	Christopher A. LUDDEN 90 Linden Oaks Rochester, NY 14625	4)	Greg P. SEMERARO 90 Linden Oaks Rochester, NY 14625
5)	Joseph Kurth REYNOLDS 1251 McKay Dr. San Jose, CA 95131	6)	Petr SHEPELEV 1251 McKay Dr. San Jose, CA 95131

have invented certain invention(s) described in an application for Letters Patent in the United States ("hereinafter the "APPLICATION") or previously filed on **August 7, 2013** under Serial No. **61/863,350**; and entitled:

### CAPACITIVE SENSING USING A MATRIX ELECTRODE PATTERN

WHEREAS, Synaptics Incorporated, a corporation of the State of Delaware, having a place of business at 1251 McKay Dr., San Jose, California 95131 (hereinafter "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 or within the scope of my work in any capacity for SYNAPTICS (hereinafter 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 (hereinafter collectively the "APPLICATIONS"), and in and to any and all patents, inventors certificates, and other forms of invention protection or rights arising therefrom (hereinafter 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 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 substitute, conventional, divisional, continuation, continuation-in-part, or additional applications covering the INVENTIONS; (d) for filing and prosecuting applications for 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, Conveyance, and 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, license, contract, or understanding in conflict herewith.

5. I hereby agree that all provisions of this AGREEMENT are severable, and 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 us.

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.

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

<p>1)</p> <p>(Signature) _____</p> <p>(Printed Name) <u>Jeffrey LUKANC</u></p> <p>(Date) _____</p>	<p>2)</p> <p>(Signature) _____</p> <p>(Printed Name) <u>Stephen L. MOREIN</u></p> <p>(Date) _____</p>
--	---

<p>3)</p> <p>(Signature) _____</p> <p>(Printed Name) <u>Christopher A. LUDDEN</u></p> <p>(Date) _____</p>	<p>4)</p> <p>(Signature) <u>Greg P. Semeraro</u></p> <p>(Printed Name) <u>Greg P. SEMERARO</u></p> <p>(Date) <u>19 Dec 13</u></p>
<p>5)</p> <p>(Signature) _____</p> <p>(Printed Name) <u>Joseph Kurth REYNOLDS</u></p> <p>(Date) _____</p>	<p>6)</p> <p>(Signature) _____</p> <p>(Printed Name) <u>Petr SHEPELEV</u></p> <p>(Date) _____</p>



## ASSIGNMENT, CONVEYANCE, AND AGREEMENT – WORLDWIDE

### WHEREAS:

I, an undersigned individual whose name and mailing address appear below:

1)	Jeffrey LUKANC 1251 McKay Dr. San Jose, CA 95131	2)	Stephen L. MOREIN 1251 McKay Dr. San Jose, CA 95131
3)	Christopher A. LUDDEN 90 Linden Oaks Rochester, NY 14625	4)	Greg P. SEMERARO 90 Linden Oaks Rochester, NY 14625
5)	Joseph Kurth REYNOLDS 1251 McKay Dr. San Jose, CA 95131	6)	Petr SHEPELEV 1251 McKay Dr. San Jose, CA 95131

have invented certain invention(s) described in an application for Letters Patent in the United States ("hereinafter the "APPLICATION") or previously filed on **August 7, 2013** under Serial No. **61/863,350**; and entitled:

### CAPACITIVE SENSING USING A MATRIX ELECTRODE PATTERN

WHEREAS, Synaptics Incorporated, a corporation of the State of Delaware, having a place of business at 1251 McKay Dr., San Jose, California 95131 (hereinafter "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 or within the scope of my work in any capacity for SYNAPTICS (hereinafter 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 (hereinafter collectively the "APPLICATIONS"), and in and to any and all patents, inventors certificates, and other forms of invention protection or rights arising therefrom (hereinafter 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 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 substitute, conventional, divisional, continuation, continuation-in-part, or additional applications covering the INVENTIONS; (d) for filing and prosecuting applications for 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, Conveyance, and 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, license, contract, or understanding in conflict herewith.

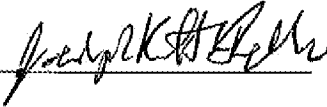
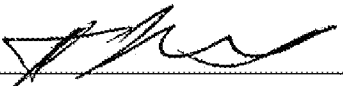
5. I hereby agree that all provisions of this AGREEMENT are severable, and that if any provision of this AGREEMENT is deemed invalid or otherwise unenforceable, the remaining provisions of this AGREEMENT shall remain valid, enforceable, and binding, and the invalid or otherwise unenforceable provision 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 us.

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.

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

1)	(Signature) _____  (Printed Name) <u>Jeffrey LUKANC</u>  (Date) _____	2)	(Signature) _____  (Printed Name) <u>Stephen L. MOREIN</u>  (Date) _____
----	---	----	--

3)	(Signature) _____  (Printed Name) <u>Christopher A. LUDDEN</u>  (Date) _____	4)	(Signature) _____  (Printed Name) <u>Greg P. SEMERARO</u>  (Date) _____
5)	(Signature) <u></u>  (Printed Name) <u>Joseph Kurth REYNOLDS</u>  (Date) <u>Dec 19 2013</u>	6)	(Signature) <u></u>  (Printed Name) <u>Petr SHEPELEV</u>  (Date) <u>December 14, 2013</u>

PATENT

RECORDED: 12/26/2013

REEL: 031848 FRAME: 0350