

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT2903670

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|---|--------------------------------------|
| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                       |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT                           |
| <b>CONVEYING PARTY DATA</b>   |                                      |
| <b>Name</b>   | <b>Execution Date</b>                |
| ANDREAS P. FRIEDRICH  | 06/12/2014                           |
| ANDREA FOLETTO  | 06/12/2014                           |
| JAY M. TOWNE  | 06/12/2014                           |
| MICHAEL MORRIS  | 06/12/2014                           |
| ERIC SHOEMAKER  | 06/12/2014                           |
| ALLEGRO MICROSYSTEMS EUROPE LTD.  | 06/09/2014                           |
| <b>RECEIVING PARTY DATA</b>   |                                      |
| <b>Name:</b>  | ALLEGRO MICROSYSTEMS LLC             |
| <b>Street Address:</b>  | 115 NORTHEAST CUTOFF                 |
| <b>City:</b>  | WORCESTER                            |
| <b>State/Country:</b>   | MASSACHUSETTS                        |
| <b>Postal Code:</b>   | 01606                                |
| <b>PROPERTY NUMBERS Total: 1</b>  |                                      |
| <b>Property Type</b>  | <b>Number</b>                        |
| Application Number:   | 14306722                             |
| <b>CORRESPONDENCE DATA</b>  |                                      |
| <b>Fax Number:</b>  | (781)401-9966                        |
| <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>   | dm@dc-m.com                          |
| <b>Correspondent Name:</b>  | DALY, CROWLEY, MOFFORD & DURKEE, LLP |
| <b>Address Line 1:</b>  | 354A TURNPIKE STREET                 |
| <b>Address Line 2:</b>  | SUITE 301                            |
| <b>Address Line 4:</b>  | CANTON, MASSACHUSETTS 02021-2714     |
| <b>ATTORNEY DOCKET NUMBER:</b>  | ALLEG-445AUS                         |
| <b>NAME OF SUBMITTER:</b>   | KERMIT ROBINSON                      |
| <b>SIGNATURE:</b>   | /Kermit Robinson/                    |
| <b>DATE SIGNED:</b>   | 06/18/2014                           |
| <b>Total Attachments: 24</b>  |                                      |
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## ASSIGNMENT

Whereas we, Andreas P. Friedrich, Andrea Foletto, Jay M. Towne, Michael Morris and Eric Shoemaker have made certain inventions or discoveries (or both) set forth in an application for Letters Patent of the United States of America entitled: SYSTEMS AND METHODS FOR PROVIDING SIGNAL ENCODING REPRESENTATIVE OF A SIGNATURE REGION IN A TARGET, identified as Attorney Docket No. ALLEG-445AUS, and Client Case No. A-2344A, which application was executed on June 12, 2014, and filed on June 17, 2014, and assigned Application No. 14/306,722. In the event that the execution date, filing date, and/or Application No. are not entered above at the time this document is executed, and if such information is deemed necessary, we hereby authorize and request our attorneys at DALY, CROWLEY, MOFFORD & DURKEE, LLP, 354A Turnpike Street, Suite 301A, Canton, MA 02021-2714, to insert above the execution date, filing date, and/or Application No. of said application.

Whereas Allegro MicroSystems Europe Ltd., a company registered in England and having a place of business at Melita House, 124 Bridge Road, Chertsey Surrey KT16 8LH United Kingdom may have certain rights in the above identified inventions or discoveries;

Whereas, Allegro MicroSystems, LLC, a Delaware limited liability company having a place of business at 115 Northeast Cutoff, Worcester, Massachusetts 01606, and which, together with its successors and assigns, is hereinafter called "Assignee," is desirous of acquiring the title, rights, benefits and privileges hereinafter recited;

Now, therefore, for valuable consideration furnished by Assignee to us, receipt and sufficiency of which we, Andreas P. Friedrich, Andrea Foletto, Jay M. Towne, Michael Morris and Eric Shoemaker, and Allegro MicroSystems Europe Ltd. by signature of Stephanie Mizzi hereby acknowledge, we each hereby, without reservation:

1. Assign, transfer and convey to Assignee the entire right, title and interest in and to said inventions and discoveries, said application for Letters Patent of the United States of America, any and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries, including all divisional, renewal, substitute, continuation, reissue, re-examination and Convention applications based in whole or in part upon said inventions or discoveries, or upon said applications, and any and all Letters Patent, reissues, reexaminations, and extensions of Letters Patent granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent and any provisional applications from which priority is claimed in said Letters Patent;

2. Authorize Assignee to file patent applications in any or all countries on any or all of said inventions and discoveries in my name or in the name of Assignee or otherwise as Assignee may deem advisable, under the International Convention or otherwise;

3. Authorize and request the Commissioner of Patents and Trademarks of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patent to Assignee, as assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

4. Warrant that I have not knowingly conveyed to others any right in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that I have good right to assign the same to Assignee without encumbrance;

5. Bind my heirs, legal representatives and assigns, as well as myself, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to me or them, all acts reasonably serving to assure that the said inventions and discoveries, the said patent applications and the said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by me, my heirs, legal representatives and assigns if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to me relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in my control or in the control of my heirs, legal representatives or assigns which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries;

6. Warrant that Stephenie Mizzi, Commercial Director of Allegro MicroSystems Europe Ltd., is authorized to act on behalf of, and to bind Allegro MicroSystems Europe Ltd.

In testimony of which we have each executed this Assignment on the date indicated next to our name(s).

PATENT  
Atty. Dckt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: 6/12/14

A. F.A.  
Andreas P. Friedrich

On this 12 day of June, 2014, before me appeared Andreas P. Friedrich,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

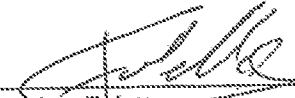
Christian Feuch  
First Witness Signature  
Christian FEUCHT  
First Witness Printed Name

On this 12 day of June, 2014, before me appeared Andreas P. Friedrich,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

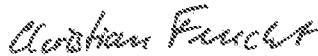
[Signature]  
Second Witness Signature  
REGAN HAY  
Second Witness Printed Name

PATENT  
Atty. Dekt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

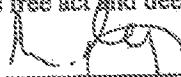
Dated: 6/12/14

  
Andrea Foletto

On this 12 day of June, 2014, before me appeared Andrea Foletto,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

  
First Witness Signature  
Christian FEUCHT  
First Witness Printed Name

On this 12 day of June, 2014, before me appeared Andrea Foletto,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

  
Second Witness Signature  
Mary REGAN  
Second Witness Printed Name

PATENT  
Atty. Dekt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: .....

Jay M. Towne

On this \_\_\_\_\_ day of \_\_\_\_\_, before me appeared Jay M. Towne,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

First Witness Signature

First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Jay M. Towne,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

Second Witness Signature

Second Witness Printed Name

PATENT  
 Atty. Dckt. No.: ALLEG-445AUS  
 Client Case No.: A-2344A

Dated: .....

Michael Morris

On this \_\_\_\_\_ day of \_\_\_\_\_, before me appeared Michael Morris,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

First Witness Signature

First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, before me appeared Michael Morris,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

Second Witness Signature

Second Witness Printed Name



PATENT  
Atty. Dckt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: .....

.....  
Eric Shoemaker

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Eric Shoemaker,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

.....  
First Witness Signature

.....  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Eric Shoemaker,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

.....  
Second Witness Signature

.....  
Second Witness Printed Name

PATENT  
Atty. Dckt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: .....

.....  
Allegro MicroSystems Europe Ltd.  
By: Stephenie Mizzi  
In her capacity as Commercial Director of  
Allegro MicroSystems Europe Ltd.

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Stephenie Mizzi,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and she acknowledged the same to be her free act and deed.

.....  
First Witness Signature

.....  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Stephenie Mizzi,  
Day Month Year  
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.....  
Second Witness Signature

.....  
Second Witness Printed Name

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1. Assign, transfer and convey to Assignee the entire right, title and interest in and to said inventions and discoveries, said application for Letters Patent of the United States of America, any and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries, including all divisional, renewal, substitute, continuation, reissue, re-examination and Convention applications based in whole or in part upon said inventions or discoveries, or upon said applications, and any and all Letters Patent, reissues, reexaminations, and extensions of Letters Patent granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent and any provisional applications from which priority is claimed in said Letters Patent;

2. Authorize Assignee to file patent applications in any or all countries on any or all of said inventions and discoveries in my name or in the name of Assignee or otherwise as Assignee may deem advisable, under the International Convention or otherwise;

3. Authorize and request the Commissioner of Patents and Trademarks of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patent to Assignee, as assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

4. Warrant that I have not knowingly conveyed to others any right in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that I have good right to assign the same to Assignee without encumbrance;

5. Bind my heirs, legal representatives and assigns, as well as myself, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to me or them, all acts reasonably serving to assure that the said inventions and discoveries, the said patent applications and the said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by me, my heirs, legal representatives and assigns if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to me relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in my control or in the control of my heirs, legal representatives or assigns which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries;

6. Warrant that Stephenie Mizzi, Commercial Director of Allegro MicroSystems Europe Ltd., is authorized to act on behalf of, and to bind Allegro MicroSystems Europe Ltd.

In testimony of which we have each executed this Assignment on the date indicated next to our name(s).

Dated: \_\_\_\_\_

\_\_\_\_\_  
Andreas P. Friedrich

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Andreas P. Friedrich,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
First Witness Signature

\_\_\_\_\_  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Andreas P. Friedrich,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
Second Witness Signature

\_\_\_\_\_  
Second Witness Printed Name

PATENT  
Atty. Dckt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: \_\_\_\_\_

\_\_\_\_\_  
Andrea Foletto

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Andrea Foletto,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
First Witness Signature

\_\_\_\_\_  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Andrea Foletto,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
Second Witness Signature

\_\_\_\_\_  
Second Witness Printed Name

Dated: 6/12/2014

[Signature]  
Jay M. Towne

On this 12 day of June, 2014, before me appeared Jay M. Towne,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

[Signature]  
First Witness Signature  
Kevin Marki  
First Witness Printed Name

On this 12 day of June, 2014, before me appeared Jay M. Towne,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

[Signature]  
Second Witness Signature  
Benjamin Geiger  
Second Witness Printed Name

Dated: 12-JUN-2014

Michael Morris  
Michael Morris

On this 12 day of JUNE, 2014, before me appeared Michael Morris,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

Kevin Maffe  
First Witness Signature  
Kevin Maffe  
First Witness Printed Name

On this 12 day of JUNE, 2014, before me appeared Michael Morris,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

Benjamin Geiser  
Second Witness Signature  
Benjamin Geiser  
Second Witness Printed Name



Dated: June 12, 2014

Eric Shoemaker  
Eric Shoemaker

On this 12 day of June, 2014, before me appeared Eric Shoemaker,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

Kevin Miller  
First Witness Signature  
Kevin Miller  
First Witness Printed Name

On this 12 day of June, 2014, before me appeared Eric Shoemaker,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

Benjamin Gergel  
Second Witness Signature  
Benjamin Gergel  
Second Witness Printed Name

Dated: \_\_\_\_\_

\_\_\_\_\_  
Allegro MicroSystems Europe Ltd.  
By: Stephenie Mizzi  
In her capacity as Commercial Director of  
Allegro MicroSystems Europe Ltd.

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Stephenie Mizzi,  
Day Month Year  
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First Witness Signature

\_\_\_\_\_  
First Witness Printed Name

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\_\_\_\_\_  
Second Witness Signature

\_\_\_\_\_  
Second Witness Printed Name

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In testimony of which we have each executed this Assignment on the date indicated next to our name(s).

PATENT  
Atty. Dckt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: \_\_\_\_\_

\_\_\_\_\_  
Andreas P. Friedrich

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Andreas P. Friedrich,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
First Witness Signature

\_\_\_\_\_  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Andreas P. Friedrich,  
Day Month Year  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
Second Witness Signature

\_\_\_\_\_  
Second Witness Printed Name

PATENT  
Atty. Dckt. No.: ALLEG-44SAUS  
Client Case No.: A-2344A

Dated: \_\_\_\_\_

\_\_\_\_\_  
Andrea Foletto

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Andrea Foletto,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
First Witness Signature

\_\_\_\_\_  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Andrea Foletto,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
Second Witness Signature

\_\_\_\_\_  
Second Witness Printed Name

BW.

PATENT  
Atty. Dckt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: \_\_\_\_\_

\_\_\_\_\_  
Jay M. Towne

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Jay M. Towne,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
First Witness Signature

\_\_\_\_\_  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Jay M. Towne,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
Second Witness Signature

\_\_\_\_\_  
Second Witness Printed Name

PATENT  
Atty. Dckt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: \_\_\_\_\_

\_\_\_\_\_  
Michael Morris

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Michael Morris,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
First Witness Signature

\_\_\_\_\_  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Michael Morris,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
Second Witness Signature

\_\_\_\_\_  
Second Witness Printed Name



PATENT  
Atty. Dckt. No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: \_\_\_\_\_

\_\_\_\_\_  
Eric Shoemaker

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Eric Shoemaker,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
First Witness Signature

\_\_\_\_\_  
First Witness Printed Name

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared Eric Shoemaker,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and he acknowledged the same to be his free act and deed.

\_\_\_\_\_  
Second Witness Signature

\_\_\_\_\_  
Second Witness Printed Name

PATENT  
Atty. Dckt No.: ALLEG-445AUS  
Client Case No.: A-2344A

Dated: 9 June 2014

[Signature]  
Allegro MicroSystems Europe Ltd.  
By: Stephenie Mizzi  
In her capacity as Commercial Director of  
Allegro MicroSystems Europe Ltd.

On this 9<sup>th</sup> day of June, 2014, before me appeared Stephenie Mizzi,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and she acknowledged the same to be her free act and deed.

[Signature]  
First Witness Signature  
ANNE-MARIE SEALS  
First Witness Printed Name

On this 9<sup>th</sup> day of June, 2014, before me appeared Stephenie Mizzi,  
to me known and known to me to be the person described in and who executed the foregoing  
instrument, and she acknowledged the same to be her free act and deed.

[Signature]  
Second Witness Signature  
SUMMIT REYNOLDS  
Second Witness Printed Name

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