

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5147910

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	PAOLO CAMPIGLIO	08/23/2018
	BRYAN CADUGAN	08/22/2018
	AMAL HAMDACHE	08/23/2018
	FLORIAN PALLIER	08/30/2018
	ALLEGRO MICROSYSTEMS FRANCE SAS	07/31/2018
	ALLEGRO MICROSYSTEMS EUROPE LIMITED	07/31/2018
	CRIVASENSE TECHNOLOGIES SAS	07/31/2018
RECEIVING PARTY DATA		
Name:	ALLEGRO MICROSYSTEMS, LLC	
Street Address:	955 PERIMETER ROAD	
City:	MANCHESTER	
State/Country:	NEW HAMPSHIRE	
Postal Code:	03103-3353	
PROPERTY NUMBERS Total: 1		
Property Type	Number	
Application Number:	16047342	
CORRESPONDENCE DATA		
Fax Number:	(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>		
Phone:	781-401-9988	
Email:	mmc@dc-m.com	
Correspondent Name:	DALY, CROWLEY, MOFFORD & DURKEE, LLP	
Address Line 1:	ONE UNIVERSITY AVENUE	
Address Line 2:	SUITE 201B	
Address Line 4:	WESTWOOD, MASSACHUSETTS 02090	
ATTORNEY DOCKET NUMBER:	ALLEG-684PUS	
NAME OF SUBMITTER:	KERMIT ROBINSON	
SIGNATURE:	/KERMIT ROBINSON/	
DATE SIGNED:	09/19/2018	

PATENT

Total Attachments: 30

source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page1.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page2.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page3.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page4.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page5.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page6.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page7.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page8.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page9.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page10.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page11.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page12.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page13.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page14.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page15.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page16.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page17.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page18.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page19.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page20.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page21.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page22.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page23.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page24.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page25.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page26.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page27.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page28.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page29.tif
source=TO_PTAS_ASSIGN_ALLEGRO_684PUS#page30.tif

30

ASSIGNMENT

Whereas I/we, Paolo Campiglio, Bryan Cadugan, Amal Hamdache, and Florian Pallier have made certain inventions or discoveries (or both) set forth in an application for Letters Patent of the United States of America entitled: MAGNETORESISTANCE ASSEMBLY HAVING A TMR ELEMENT DISPOSED OVER OR UNDER A GMR ELEMENT, identified as Attorney Docket No. ALLEG-684PUS, and Client Case No. A-2570, which application was executed on July 17, 2018, July 2, 2018, July 14, 2018, and June 27, 2018, and filed on July 27, 2018, and assigned Application No. 16/047,342. 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, One University Avenue, Suite 201B, Westwood, MA 02090, to insert above the execution date, filing date, and/or Application No. of said application.

Whereas Allegro MicroSystems France SAS (herein AMF), a company registered in France and having a place of business at Parc Altaïs, 60 Rue Cassiopée, Batiment B1, 74650 Chavanod, France may have certain rights in the above identified inventions or discoveries;

Whereas Allegro MicroSystems Europe Limited (herein AMEL), 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 CrivaSense Technologies SAS (herein CST), a company registered in France and having a place of business at Lieudit l'Orme des Mersiers, Parc Technologique de Saint Aubin, Batiment Mercury-Bldg. D, 91193 Saint-Aubin, Paris, France, 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 955 Perimeter Road, Manchester, New Hampshire 03103-3353, 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 I/we, Paolo Campiglio, Bryan Cadugan, Amal Hamdache, Florian Pallier, and

AMF, Allegro MicroSystems France SAS, by signature of Robert C. Hunt,

AMEL, Allegro MicroSystems Europe Limited, by signature of Robert C. Hunt,

CST, CrivaSense Technologies SAS, by signature of Robert C. Hunt,

I/we hereby acknowledge, I/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, PCT, 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, assigns, and successors, 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, assigns, and successors 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, assigns, or successors which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries;

6. Warrant that:

For AMF, Robert C. Hunt, Legal Representative of Allegro MicroSystems France SAS, is authorized to act on behalf of, and to bind Allegro MicroSystems France SAS.


For AMEL, Robert C. Hunt, General Manager of Allegro MicroSystems Europe Limited, is authorized to act on behalf of, and to bind Allegro MicroSystems Europe Limited.

For CST, Robert C. Hunt, Legal Representative of CrivaSense Technologies SAS, is authorized to act on behalf of, and to bind Crivasense Technologies.

PATENT
Atty. Decl. No.: ALLEG-684PUS
Client Case No.: A-2570


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

Dated: 23. 08. 2018



Paolo Campiglio

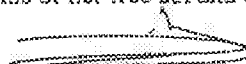
On this 23 day of 08, 2018, before me appeared Paolo Campiglio,
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.



First Witness Signature
Savador Anthony

First Witness Printed Name

On this 23 day of 08, 2018, before me appeared Paolo Campiglio,
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.



Second Witness Signature
DEHU Deanna

Second Witness Printed Name

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

Dated: _____
Bryan Cadugan

On this _____ day of _____, _____, before me appeared Bryan Cadugan,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

First Witness Signature

First Witness Printed Name

On this _____ day of _____, _____, before me appeared Bryan Cadugan,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

Second Witness Signature

Second Witness Printed Name

Dated: 08/23/2018

[Signature]
Amal Hamdache

On this 23 day of August, 2018, before me appeared Amal Hamdache,
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

[Signature]
First Witness Signature
Caroline For
First Witness Printed Name

On this 23 day of August, 2018, before me appeared Amal Hamdache,
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

[Signature]
Second Witness Signature
Sabine Veldt
Second Witness Printed Name

Dated: 30 August 2018

[Signature]
Florian Pallier

On this 30 day of August, 2018, before me appeared Florian Pallier,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

[Signature]
First Witness Signature
Hibault Perin
First Witness Printed Name

On this 20 day of August, 2018, before me appeared Florian Pallier,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

[Signature]
Second Witness Signature
Laéonny Dami
Second Witness Printed Name

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

AMF

Dated: _____

Allegro MicroSystems France SAS
By: Robert C. Hunt
In his capacity as Legal Representative of
Allegro MicroSystems France SAS

On this _____ day of _____, _____, before me appeared Robert C. Hunt,
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 Robert C. Hunt,
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

AMEL

Dated: _____

Allegro MicroSystems Europe Limited
By: Robert C. Hunt
In his capacity as General Manager of Allegro
MicroSystems Europe Limited

On this _____ day of _____, _____, before me appeared Robert C. Hunt,
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 Robert C. Hunt,
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

CST

Dated: _____

CrivaSense Technologies SAS
By: Robert C. Hunt
In his capacity as Legal Representative of
CrivaSense Technologies SAS

On this _____ day of _____, _____, before me appeared Robert C. Hunt,
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 Robert C. Hunt,
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

677031
#

ASSIGNMENT

Whereas I/we, Paolo Campiglio, Bryan Cadugan, Amal Hamdache, and Florian Pallier have made certain inventions or discoveries (or both) set forth in an application for Letters Patent of the United States of America entitled: MAGNETORESISTANCE ASSEMBLY HAVING A TMR ELEMENT DISPOSED OVER OR UNDER A GMR ELEMENT, identified as Attorney Docket No. ALLEG-684PUS, and Client Case No. A-2570, which application was executed on July 17, 2018, July 2, 2018, July 14, 2018, and June 27, 2018, and filed on July 27, 2018, and assigned Application No. 16/047,342. 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, One University Avenue, Suite 201B, Westwood, MA 02090, to insert above the execution date, filing date, and/or Application No. of said application.

Whereas Allegro MicroSystems France SAS (herein AMF), a company registered in France and having a place of business at Parc Altaïs, 60 Rue Cassiopée, Batiment B1, 74650 Chavanod, France may have certain rights in the above identified inventions or discoveries;

Whereas Allegro MicroSystems Europe Limited (herein AMEL), 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 CrivaSense Technologies SAS (herein CST), a company registered in France and having a place of business at Lieudit l'Orme des Mersiers, Parc Technologique de Saint Aubin, Batiment Mercury-Bldg. D, 91193 Saint-Aubin, Paris, France, 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 955 Perimeter Road, Manchester, New Hampshire 03103-3353, 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 I/we, Paolo Campiglio, Bryan Cadugan, Amal Hamdache, Florian Pallier, and

AMF, Allegro MicroSystems France SAS, by signature of Robert C. Hunt,

AMEL, Allegro MicroSystems Europe Limited, by signature of Robert C. Hunt,

CST, CrivaSense Technologies SAS, by signature of Robert C. Hunt,

I/we hereby acknowledge, I/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, PCT, 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, assigns, and successors, 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, assigns, and successors 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, assigns, or successors which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries;

6. Warrant that:

For AMF, Robert C. Hunt, Legal Representative of Allegro MicroSystems France SAS, is authorized to act on behalf of, and to bind Allegro MicroSystems France SAS.

For AMEL, Robert C. Hunt, General Manager of Allegro MicroSystems Europe Limited, is authorized to act on behalf of, and to bind Allegro MicroSystems Europe Limited.

For CST, Robert C. Hunt, Legal Representative of CrivaSense Technologies SAS, is authorized to act on behalf of, and to bind Crivasense Technologies.

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

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

Dated: _____

Paolo Campiglio

On this _____ day of _____, _____, before me appeared Paolo Campiglio,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

First Witness Signature

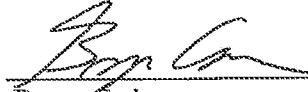
First Witness Printed Name

On this _____ day of _____, _____, before me appeared Paolo Campiglio,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

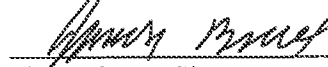
Second Witness Signature

Second Witness Printed Name


Dated: 8/22/18


Bryan Cadugan

On this 22 day of August, 2018, before me appeared Bryan Cadugan,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.


First Witness Signature
James Burgess
First Witness Printed Name

On this 22 day of August, 2018, before me appeared Bryan Cadugan,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.


Second Witness Signature
William Wilkinson
Second Witness Printed Name

PATENT
Atty. Dekt. No.: ALLEG-684PUS
Client Case No.: A-2570

Dated: _____

Amal Hamdache

On this _____ day of _____, _____, before me appeared Amal Hamdache,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

First Witness Signature

First Witness Printed Name

On this _____ day of _____, _____, before me appeared Amal Hamdache,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

Second Witness Signature

Second Witness Printed Name

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

Dated: _____

Florian Pallier

On this _____ day of _____, _____, before me appeared Florian Pallier,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

First Witness Signature

First Witness Printed Name

On this _____ day of _____, _____, before me appeared Florian Pallier,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

Second Witness Signature

Second Witness Printed Name

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

AMF

Dated: _____

Allegro MicroSystems France SAS
By: Robert C. Hunt
In his capacity as Legal Representative of
Allegro MicroSystems France SAS

On this _____ day of _____, _____, before me appeared Robert C. Hunt,
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 Robert C. Hunt,
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. Dekt. No.: ALLEG-684PUS
Client Case No.: A-2570

AMEL

Dated: _____

Allegro MicroSystems Europe Limited
By: Robert C. Hunt
In his capacity as General Manager of Allegro
MicroSystems Europe Limited

On this _____ day of _____, _____, before me appeared Robert C. Hunt,
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 Robert C. Hunt,
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

CST

Dated: _____

CrivaSense Technologies SAS
By: Robert C. Hunt
In his capacity as Legal Representative of
CrivaSense Technologies SAS

On this _____ day of _____, _____, before me appeared Robert C. Hunt,
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 Robert C. Hunt,
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

677031
#

ASSIGNMENT

Whereas I/we, Paolo Campiglio, Bryan Cadugan, Amal Hamdache, and Florian Pallier have made certain inventions or discoveries (or both) set forth in an application for Letters Patent of the United States of America entitled: MAGNETORESISTANCE ASSEMBLY HAVING A TMR ELEMENT DISPOSED OVER OR UNDER A GMR ELEMENT, identified as Attorney Docket No. ALLEG-684PUS, and Client Case No. A-2570, which application was executed on July 17, 2018, July 2, 2018, July 14, 2018, and June 27, 2018, and filed on July 27, 2018, and assigned Application No. 16/047,342. 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, One University Avenue, Suite 201B, Westwood, MA 02090, to insert above the execution date, filing date, and/or Application No. of said application.

Whereas Allegro MicroSystems France SAS (herein AMF), a company registered in France and having a place of business at Parc Altaïs, 60 Rue Cassiopée, Batiment B1, 74650 Chavanod, France may have certain rights in the above identified inventions or discoveries;

Whereas Allegro MicroSystems Europe Limited (herein AMEL), 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 CrivaSense Technologies SAS (herein CST), a company registered in France and having a place of business at Lieudit l'Orme des Mersiers, Parc Technologique de Saint Aubin, Batiment Mercury-Bldg. D, 91193 Saint-Aubin, Paris, France, 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 955 Perimeter Road, Manchester, New Hampshire 03103-3353, 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 I/we, Paolo Campiglio, Bryan Cadugan, Amal Hamdache, Florian Pallier, and

AMF, Allegro MicroSystems France SAS, by signature of Robert C. Hunt,

AMEL, Allegro MicroSystems Europe Limited, by signature of Robert C. Hunt,

CST, CrivaSense Technologies SAS, by signature of Robert C. Hunt,

I/we hereby acknowledge, I/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, PCT, 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, assigns, and successors, 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, assigns, and successors 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, assigns, or successors which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries;

6. Warrant that:

For AMF, Robert C. Hunt, Legal Representative of Allegro MicroSystems France SAS, is authorized to act on behalf of, and to bind Allegro MicroSystems France SAS.

For AMEL, Robert C. Hunt, General Manager of Allegro MicroSystems Europe Limited, is authorized to act on behalf of, and to bind Allegro MicroSystems Europe Limited.

For CST, Robert C. Hunt, Legal Representative of CrivaSense Technologies SAS, is authorized to act on behalf of, and to bind Crivasense Technologies.

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

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

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

Dated: _____

Paolo Campiglio

On this _____ day of _____, before me appeared Paolo Campiglio,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

First Witness Signature

First Witness Printed Name

On this _____ day of _____, before me appeared Paolo Campiglio,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

Second Witness Signature

Second Witness Printed Name

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

Dated: _____

Bryan Cadugan

On this _____ day of _____, before me appeared Bryan Cadugan,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

First Witness Signature

First Witness Printed Name

On this _____ day of _____, before me appeared Bryan Cadugan,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

Second Witness Signature

Second Witness Printed Name

Dated: _____

Amal Hamdache

On this _____ day of _____, _____, before me appeared Amal Hamdache,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

First Witness Signature

First Witness Printed Name

On this _____ day of _____, _____, before me appeared Amal Hamdache,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

Second Witness Signature

Second Witness Printed Name

PATENT
Atty. Dckt. No.: ALLEG-684PUS
Client Case No.: A-2570

Dated: _____

Florian Pallier

On this _____ day of _____, _____, before me appeared Florian Pallier,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

First Witness Signature

First Witness Printed Name

On this _____ day of _____, _____, before me appeared Florian Pallier,
Day Month Year
to me known and known to me to be the person described in and who executed the foregoing
instrument, and he or she acknowledged the same to be his or her free act and deed.

Second Witness Signature

Second Witness Printed Name

AMF

Dated: 31 July 2018

Robert C. Hunt

Allegro MicroSystems France SAS
By: Robert C. Hunt
In his capacity as Legal Representative of
Allegro MicroSystems France SAS

On this 31st day of July, 2018, before me appeared Robert C. Hunt,
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.

W. O. Alexander

First Witness Signature

W. O. Alexander

First Witness Printed Name

On this 31st day of July, 2018, before me appeared Robert C. Hunt,
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.

W. O. Alexander

Second Witness Signature

W. O. Alexander

Second Witness Printed Name

AMEL

Dated: 31 July 2018

Mr Hunt
Allegro MicroSystems Europe Limited
By: Robert C. Hunt
In his capacity as General Manager of Allegro
MicroSystems Europe Limited

On this 31st day of July, 2018, before me appeared Robert C. Hunt,
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
W. C. [unclear]
First Witness Printed Name

On this 21 day of July, 2018, before me appeared Robert C. Hunt,
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
STEWART
Second Witness Printed Name

CST

Dated: 31 July 2018

Robert C. Hunt

CrivaSense Technologies SAS
By: Robert C. Hunt
In his capacity as Legal Representative of
CrivaSense Technologies SAS

On this 31st day of July, 2018, before me appeared Robert C. Hunt,
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.

W. O. Anderson
First Witness Signature

W. O. Anderson
First Witness Printed Name

On this 31st day of July, 2018, before me appeared Robert C. Hunt,
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.

W. O. Anderson
Second Witness Signature

W. O. Anderson
Second Witness Printed Name

677031
#