

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4862464

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	SECURITY INTEREST	
CONVEYING PARTY DATA		
Name		Execution Date
INNOPHASE INC.		03/01/2018
RECEIVING PARTY DATA		
Name:	VENTURE LENDING & LEASING VIII, INC.	
Street Address:	104 LA MESA DRIVE, SUITE 102	
City:	PORTOLA VALLEY	
State/Country:	CALIFORNIA	
Postal Code:	94028	
PROPERTY NUMBERS Total: 29		
Property Type	Number	
Patent Number:	8542779	
Patent Number:	8705663	
Patent Number:	8929486	
Patent Number:	8941441	
Patent Number:	8804875	
Patent Number:	9024696	
Patent Number:	9020066	
Patent Number:	9568601	
Patent Number:	9031167	
Patent Number:	8917759	
Patent Number:	9229460	
Patent Number:	9203420	
Patent Number:	9438267	
Patent Number:	9083588	
Patent Number:	9813033	
Patent Number:	8803627	
Patent Number:	9391625	
Patent Number:	9497055	
Patent Number:	9673828	
Patent Number:	9673829	

PATENT

Property Type	Number
Application Number:	15488278
Application Number:	15469073
Application Number:	14863174
Application Number:	15614560
Application Number:	15675384
Application Number:	15655676
Application Number:	15654507
Application Number:	62477998
Application Number:	62477999

CORRESPONDENCE DATA

Fax Number: (415)777-4961

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.

Phone: 415 981 1400

Email: nsust@grmslaw.com

Correspondent Name: JEFFREY T. KLUGMAN

Address Line 1: FOUR EMBARCADERO CENTER, SUITE 4000

Address Line 4: SAN FRANCISCO, CALIFORNIA 94111

ATTORNEY DOCKET NUMBER:	48535-2053
NAME OF SUBMITTER:	JEFFREY T. KLUGMAN
SIGNATURE:	/JEFFREY T. KLUGMAN/
DATE SIGNED:	03/12/2018

Total Attachments: 14

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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement (this "Agreement") is made as of March 1, 2018, between INNOPHASE INC., a Delaware corporation ("Grantor"), and VENTURE LENDING & LEASING VIII, INC., a Maryland corporation ("Secured Party").

RECITALS

A. Pursuant to that certain Loan and Security Agreement of even date herewith between Grantor, as borrower, and Secured Party, as lender (as amended, restated, supplemented or otherwise modified from time to time, the "Loan Agreement"), Secured Party has agreed to make certain advances of money and to extend certain financial accommodations to Grantor (the "Loans") in the amounts and manner set forth in the Loan Agreement. All capitalized terms used herein without definition shall have the meanings ascribed to them in the Loan Agreement.

B. Secured Party is willing to make the Loans to Grantor, but only upon the condition, among others, that Grantor shall grant to Secured Party a security interest in substantially all of Grantor's personal property whether presently existing or hereafter acquired. To that end, Grantor has executed in favor of Secured Party the Loan Agreement granting a security interest in all Collateral, and is executing this Agreement with respect to certain items of Intellectual Property, in particular.

NOW, THEREFORE, THE PARTIES HERETO AGREE AS FOLLOWS:

1. Grant of Security Interest. As collateral security for the prompt and complete payment and performance of all of Grantor's present or future Obligations, Grantor hereby grants a security interest and mortgage to Secured Party, as security, in and to Grantor's entire right, title and interest in, to and under the following Intellectual Property, now owned or hereafter acquired by Grantor or in which Grantor now holds or hereafter acquires any interest (all of which shall collectively be called the "Collateral" for purposes of this Agreement):

(a) Any and all copyrights, whether registered or unregistered, held pursuant to the laws of the United States, any State thereof or of any other country; all registrations, applications and recordings in the United States Copyright Office or in any similar office or agency of the United States, and State thereof or any other country; all continuations, renewals, or extensions thereof; and any registrations to be issued under any pending applications, including without limitation those set forth on Exhibit A attached hereto (collectively, the "Copyrights");

(b) All letters patent of, or rights corresponding thereto in, the United States or any other country, all registrations and recordings thereof, and all applications for letters patent of, or rights corresponding thereto in, the United States or any other country, including, without limitation, registrations, recordings and applications in the United States Patent and Trademark Office or in any similar office or agency of the United States, any State thereof or any other country; all reissues, continuations, continuations-in-part or extensions thereof; all petty patents, divisionals, and patents of addition, and all patents to be issued under any such applications, including without limitation the patents and patent applications set forth on Exhibit B attached hereto (collectively, the "Patents");

(c) All trademarks, trade names, corporate names, business names, trade styles, service marks, logos, other source or business identifiers, prints and labels on which any of the foregoing have appeared or appear, designs and general intangibles of like nature, now existing or hereafter adopted or acquired, all registrations and recordings thereof, and any applications in connection therewith, including, without limitation, registrations, recordings and applications in the United States Patent and Trademark Office or in any similar office or agency of the United States, any State thereof or any other country or any political subdivision thereof, and reissues, extensions or renewals thereof, and the entire goodwill of the business of Grantor connected with and symbolized by

such trademarks, including without limitation those set forth on Exhibit C attached hereto (collectively, the "Trademarks");

(d) Any and all claims for damages by way of past, present and future infringement of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(e) All licenses or other rights to use any of the Copyrights, Patents or Trademarks, and all license fees and royalties arising from such use to the extent permitted by such license or rights;

(f) All amendments, renewals and extensions of any of the Copyrights, Trademarks or Patents; and

(g) All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

Notwithstanding the foregoing the term "Collateral" shall not include: (a) "intent-to-use" trademarks at all times prior to the first use thereof, whether by the actual use thereof in commerce, the recording of a statement of use with the United States Patent and Trademark Office or otherwise, but only to the extent the granting of a security interest in such "intent to use" trademarks would be contrary to applicable law or (b) any contract, instrument or chattel paper in which Grantor has any right, title or interest if and to the extent such contract, instrument or chattel paper includes a provision containing a restriction on assignment such that the creation of a security interest in the right, title or interest of Grantor therein would be prohibited and would, in and of itself, cause or result in a default thereunder enabling another person party to such contract, instrument or chattel paper to enforce any remedy with respect thereto; provided, however, that the foregoing exclusion shall not apply if (i) such prohibition has been waived or such other person has otherwise consented to the creation hereunder of a security interest in such contract, instrument or chattel paper, or (ii) such prohibition would be rendered ineffective pursuant to Sections 9-407(a) or 9-408(a) of the UCC, as applicable and as then in effect in any relevant jurisdiction, or any other applicable law (including the Bankruptcy Code or principles of equity); provided further that immediately upon the ineffectiveness, lapse or termination of any such provision, the term "Collateral" shall include, and Grantor shall be deemed to have granted a security interest in, all its rights, title and interests in and to such contract, instrument or chattel paper as if such provision had never been in effect; and provided further that the foregoing exclusion shall in no way be construed so as to limit, impair or otherwise affect Secured Party's unconditional continuing security interest in and to all rights, title and interests of Grantor in or to any payment obligations or other rights to receive monies due or to become due under any such contract, instrument or chattel paper and in any such monies and other proceeds of such contract, instrument or chattel paper.

2. Covenants and Warranties. Grantor represents, warrants, covenants and agrees as follows:

(a) Grantor has rights (as defined in the UCC) in the Collateral, except for Permitted Liens;

(b) During the term of this Agreement, Grantor will not transfer or otherwise encumber any interest in the Collateral, except for Permitted Liens and except for transfers otherwise permitted under the Loan Agreement;

(c) To its knowledge, each of the material Patents is valid and enforceable, and no material part of the Collateral has been judged invalid or unenforceable, in whole or in part, and no claim has been made that any material part of the Collateral violates the rights of any third party;

(d) Grantor shall deliver to Secured Party within thirty (30) days of the last day of each fiscal quarter, a report signed by Grantor, in form reasonably acceptable to Secured Party, listing (i) any applications or registrations that Grantor has made or filed in respect of any patents, copyrights or

trademarks, (ii) the status of any outstanding applications or registrations and (iii) any material change in the composition of the Collateral;

(e) Grantor shall use reasonable commercial efforts to (i) protect, defend and maintain the validity and enforceability of the Trademarks, Patents and Copyrights material to Grantor's business, (ii) detect infringements of the Trademarks, Patents and Copyrights material to Grantor's business and promptly advise Secured Party in writing of material infringements detected, and (iii) not allow any material Trademarks, Patents or Copyrights material to Grantor's business to be abandoned, forfeited or dedicated to the public unless Grantor deems it to be in the best interest of Grantor's business;

(f) Grantor shall apply for registration (to the extent registerable and not already registered) with the United States Patent and Trademark Office or the United States Copyright Office, as applicable: (i) those intellectual property rights listed on Exhibits A, B and C hereto within thirty (30) days of the date of this Agreement; and (ii) those additional intellectual property rights developed or acquired by Grantor from time to time in connection with any product or service, prior to the sale or licensing of such product or the rendering of such service to any third party (including without limitation revisions or additions to the intellectual property rights listed on such Exhibits A, B and C), except, in each case, with respect to such rights that Grantor determines in its sole but reasonable commercial judgment need not be registered to protect its own business interests. Grantor shall, from time to time, execute and file such other instruments, and take such further actions as Secured Party may reasonably request from time to time to perfect or continue the perfection of Secured Party's interest in the Collateral; and

(g) Grantor shall not enter into any agreement that would materially impair or conflict with Grantor's obligations hereunder without Secured Party's prior written consent, which consent shall not be unreasonably withheld or delayed.

3. Further Assurances; Attorney in Fact.

(a) On a continuing basis, Grantor will make, execute, acknowledge and deliver, and file and record in the proper filing and recording places in the United States, all such instruments, including appropriate financing and continuation statements and collateral agreements and filings with the United States Patent and Trademark Office and the Register of Copyrights, and take all such action as may reasonably be deemed necessary or advisable, or as reasonably requested by Secured Party, to perfect Secured Party's security interest in all Copyrights, Patents and Trademarks and otherwise to carry out the intent and purposes of this Agreement, or for assuring and confirming to Secured Party the grant or perfection of a security interest in all Collateral.

(b) Grantor hereby irrevocably appoints Secured Party as Grantor's attorney-in-fact, with full authority in the place and stead of Grantor and in the name of Grantor, from time to time in Secured Party's discretion, to take any action and to execute any instrument which Secured Party may deem necessary or advisable to accomplish the purposes of this Agreement, including (i) to modify, in its sole discretion, this Agreement without first obtaining Grantor's approval of or signature to such modification by amending Exhibits A, B and C, hereof, as appropriate, to include reference to any right, title or interest in any Copyrights, Patents or Trademarks acquired by Grantor after the execution hereof or to delete any reference to any right, title or interest in any Copyrights, Patents or Trademarks in which Grantor no longer has or claims any right, title or interest, (ii) to file, in its sole discretion, one or more financing or continuation statements and amendments thereto, relative to any of the Collateral without the signature of Grantor where permitted by law, and (iii) subject to the Forbearance Period, after the occurrence and during the continuance of an Event of Default, to transfer the Collateral into the name of Secured Party or a third party to the extent permitted under the California Uniform Commercial Code.

4. Events of Default. The occurrence of any of the following shall constitute an Event of Default under this Agreement:

(a) An Event of Default under the Loan Agreement; or

(b) Grantor breaches in any material respect any warranty or agreement made by Grantor in this Agreement and, as to any breach that is capable of cure, Grantor fails to cure such breach within thirty (30) days of the sooner to occur of Grantor's receipt of notice of such breach from Secured Party or the date on which such breach first becomes known to a responsible officer of Grantor.

5. Amendments. This Agreement may be amended only by a written instrument signed by both parties hereto, except for amendments permitted under Section 3 hereof to be made by Secured Party alone.

6. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute the same instrument.

[Signature Pages Follow]

{Signature page to Intellectual Property Security Agreement}

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

GRANTOR:

INNOPHASE INC.

By: 

Name: Dahong Qian

Title: Chief Executive Officer

Address for Notices:

6815 Flanders Drive Suite 150

San Diego CA 92121

Attn: Chief Executive Officer

Fax #: 619-330-4947

Phone #: 619-541-8280

SECURED PARTY:

VENTURE LENDING & LEASING VIII, INC.

By: _____

Name: _____

Title: _____

Address for Notices:

104 La Mesa Dr., Suite 102

Portola Valley, CA 94028

Attn: Chief Financial Officer

Fax # 650-234-4343

Phone # 650-234-4300

[Signature page to Intellectual Property Security Agreement]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

GRANTOR:

INNOPHASE INC.

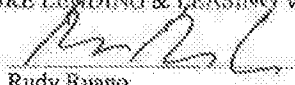
By: _____
Name: _____
Title: _____

Address for Notices: _____

Attn: _____
Fax #: _____
Phone #: _____

SECURED PARTY:

VENTURE LENDING & LEASING VIII, INC.

By: 
Name: Rudy Ruano
Title: Investment Partner

Address for Notices: _____

104 La Mesa Dr., Suite 102
Portola Valley, CA 94028
Attn: Chief Financial Officer
Fax # 650-234-4343
Phone # 650-234-4390

48535/2053
JTX/520717.2

EXHIBIT A

Copyrights

Description

Registration Number

Registration Date

None

48535/2053
JIK/5297/17.2

EXHIBIT B

Patents

Filing Date	App. No.	Patent. No.	Title	Country
01/31/2013	201380017211X	ZL201380017211X	RECEIVER AND TRANSCIEVER ARCHITECTURES AND METHODS FOR DEMODULATING AND TRANSMITTING PHASE SHIFT KEY	China
01/31/2013	112013000785.1	11 2013 000 785	RECEIVER AND TRANSCIEVER ARCHITECTURES AND METHODS FOR DEMODULATING AND TRANSMITTING PHASE SHIFT KEY	Germany
01/30/2013	13/754,819	8542779	RECEIVER ARCHITECTURE AND METHODS FOR DEMODULATING BINARY PHASE SHIFT KEYING SIGNALS	United States
09/23/2013	14/034,426	8705663	RECEIVER ARCHITECTURE AND METHODS FOR DEMODULATING BINARY PHASE SHIFT KEYING SIGNALS	United States
03/17/2014	2016-503413	6216034	POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	Japan
03/15/2013	13/840,478	8929486	POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	United States
06/24/2013	13/925,080	8804875	POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	United States

Filing Date	App. No.	Patent. No.	Title	Country
03/13/2014	201480016233.9	ZL201480016233.9	LNA WITH LINEARIZED GAIN OVER EXTENDED DYNAMIC RANGE	China
03/15/2013	13/839,462	8941441	LNA WITH LINEARIZED GAIN OVER EXTENDED DYNAMIC RANGE	United States
03/14/2014	2016-502972	6267318	DIGITALLY CONTROLLED INJECTION LOCKED OSCILLATOR	Japan
03/15/2013	13/840,379	9024696	DIGITALLY CONTROLLED INJECTION LOCKED OSCILLATOR	United States
03/15/2013	13/842,470	9020066	SINGLE-BIT DIRECT MODULATION TRANSMITTER	United States
05/23/2014	14/286,937	9568601	SUCCESSIVE- MFCW MODULATION FOR ULTRA-FAST NARROWBAND RADAR	United States
01/30/2013	13/754,841	9031167	RECEIVER ARCHITECTURE AND METHODS FOR DEMODULATING QUADRATURE PHASE SHIFT KEYING SIGNALS	United States
01/30/2013	13/754,853	8917759	TRANSCEIVER ARCHITECTURE AND METHODS FOR DEMODULATING AND TRANSMITTING PHASE SHIFT KEYING SIGNALS	United States

Filing Date	App. No.	Patent. No.	Title	Country
07/01/2014	14/321,299	9229460	RADIO FREQUENCY PEAK DETECTION WITH SUBTHRESHOLD BIASING	United States
02/05/2014	14/173,595	9203420	APPARATUS AND METHOD FOR DIGITAL TO ANALOG CONVERSION WITH CURRENT MIRROR AMPLIFICATION	United States
12/01/2015	14/955,963	9438267	APPARATUS AND METHOD FOR DIGITAL TO ANALOG CONVERSION WITH CURRENT MIRROR AMPLIFICATION	United States
04/23/2014	14/260,021	9083588	POLAR RECEIVER WITH ADJUSTABLE DELAY AND SIGNAL PROCESSING METHODS	United States
09/04/2013	14/846,399	9813033	SYSTEM AND METHOD FOR INDUCTOR ISOLATION	United States
12/03/2013	14/095,968	8803627	WIDEBAND DIRECT DCO MODULATOR WITH IN-BAND COMPENSATION	United States
03/24/2015	14/667,368	9391625	WIDEBAND DIRECT MODULATION WITH TWO-POINT INJECTION IN DIGITAL PHASE LOCKED LOOPS	United States

Filing Date	App. No.	Patent. No.	Title	Country
02/27/2015	14/634,525	9497055	METHOD AND APPARATUS FOR POLAR RECEIVER WITH DIGITAL DEMODULATION	United States
12/02/2015	14/957,131	9673828	WIDEBAND POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	United States
12/02/2015	14/957,134	9673829	WIDEBAND POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	United States
04/14/2017	15/488,278		TIME TO DIGITAL CONVERTER WITH INCREASED RANGE AND SENSITIVITY	United States
03/24/2017	15/469,073		WIDEBAND DIRECT MODULATION WITH TWO-POINT INJECTION IN DIGITAL PHASE LOCKED LOOPS	United States
03/13/2014	14767828.8		LNA WITH LINEARIZED GAIN OVER EXTENDED DYNAMIC RANGE	EPO
12/02/2016	PCT/US16/64772		WIDEBAND POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	PCT
10/23/2017	16769316.7		WIDEBAND DIRECT MODULATION WITH TWO-POINT INJECTION IN DIGITAL PHASE LOCKED LOOPS	EPO

Filing Date 09/23/2015	App. No. 14/863,174	Patent. No.	Title METHOD AND APPARATUS FOR POLAR RECEIVER WITH PHASE AMPLITUDE ALIGNMENT	Country United States
06/05/2017	15/614,560		WIDEBAND POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	United States
03/17/2014	201480016039.0		POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	China
03/17/2014	14765758.9		POLAR RECEIVER ARCHITECTURE AND SIGNAL PROCESSING METHODS	EPO
03/17/2014	201480016158.6		SINGLE-BIT DIRECT MODULATION TRANSMITTER	China
03/14/2014	201480015995.7		POLAR RECEIVER SIGNAL PROCESSING APPARATUS AND METHODS	China
03/14/2014	201480016230.5		DIGITALLY CONTROLLED INJECTION LOCKED OSCILLATOR	China
03/14/2014	14765293.7		DIGITALLY CONTROLLED INJECTION LOCKED OSCILLATOR	EPO
03/13/2014	2016-502150		LNA WITH LINEARIZED GAIN OVER EXTENDED DYNAMIC RANGE	Japan

Filing Date	App. No.	Patent No.	Title	Country
10/23/2017	201680023615.3		WIDEBAND DIRECT MODULATION WITH TWO-POINT INJECTION IN DIGITAL PHASE LOCKED LOOPS	China
08/11/2017	15/675,384		REFERENCE-LOCKED CLOCK GENERATOR	United States
07/20/2017	15/655,676		POLAR RECEIVER SYSTEM AND METHOD FOR BLUETOOTH COMMUNICATIONS	United States
07/19/2017	15/654,507		ADAPTIVE DIGITAL PREDISTORTION FOR POLAR TRANSMITTER	United States
03/28/2017	62/477,998		ADAPTIVE DIGITAL PREDISTORTION FOR POLAR TRANSMITTER	United States
03/28/2017	62/477,999		POLAR RECEIVER SYSTEM AND METHOD FOR BLUETOOTH COMMUNICATIONS	United States
01/31/2013	10-2014-7024177		RECEIVER AND TRANSCEIVER ARCHITECTURES AND METHODS FOR DEMODULATING AND TRANSMITTING PHASE SHIFT KEY	Korea, South

EXHIBIT C

Trademarks

Filing Date	App. No.	Reg. No.	Mark
12/15/2017		Serial No 87722486	Talaria

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JTK/520717.2