PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4821085

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
TIGO ENERGY, INC.	02/08/2018

RECEIVING PARTY DATA

Name:	WESTERN ALLIANCE BANK
Street Address:	55 ALMADEN BOULEVARD, SUITE 100
Internal Address:	ATTN: NOTE DEPARTMENT
City:	SAN JOSE
State/Country:	CALIFORNIA
Postal Code:	95113

PROPERTY NUMBERS Total: 79

Property Type	Number
Patent Number:	8751053
Patent Number:	7884278
Patent Number:	7807919
Patent Number:	9218013
Patent Number:	7898112
Patent Number:	8098055
Patent Number:	8058747
Patent Number:	7602080
Patent Number:	8860246
Patent Number:	8653689
Patent Number:	8325059
Patent Number:	7839022
Patent Number:	8093757
Patent Number:	8963518
Patent Number:	9594392
Patent Number:	8860241
Patent Number:	8773236
Patent Number:	9143036
Patent Number:	9584021

Property Type	Number
Patent Number:	8405349
Patent Number:	8271599
Patent Number:	9124139
Patent Number:	8854193
Patent Number:	9377765
Patent Number:	8039730
Patent Number:	8415552
Patent Number:	8102074
Patent Number:	8274172
Patent Number:	8954203
Patent Number:	9401439
Patent Number:	8933321
Patent Number:	9312697
Patent Number:	8314375
Patent Number:	8686333
Patent Number:	9324885
Patent Number:	8922061
Patent Number:	9007210
Patent Number:	8823218
Patent Number:	9397612
Patent Number:	9813021
Patent Number:	8853886
Patent Number:	9225261
Patent Number:	8957544
Patent Number:	9450414
Patent Number:	9425783
Patent Number:	8841916
Patent Number:	9043039
Patent Number:	9142965
Patent Number:	9847646
Patent Number:	9431825
Patent Number:	8982591
Patent Number:	9368965
Patent Number:	9000919
Patent Number:	9543455
Patent Number:	9312399
Application Number:	12948614
Application Number:	14964342

Property Type	Number
Application Number:	14512786
Application Number:	15392960
Application Number:	14817949
Application Number:	15186330
Application Number:	15203595
Application Number:	14572458
Application Number:	15057955
Application Number:	15098075
Application Number:	15090939
Application Number:	15717244
Application Number:	15270997
Application Number:	15243493
Application Number:	14718426
Application Number:	15845980
Application Number:	15225692
Application Number:	15172996
Application Number:	13757616
Application Number:	15365753
Application Number:	14957503
Application Number:	15159699
Application Number:	15612977
Application Number:	90010892

CORRESPONDENCE DATA

Fax Number: (858)550-6420

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: 858-550-6433
Email: jmfitzpatrick@cooley.com
Correspondent Name: JENNIFER FITZPATRICK
Address Line 1: C/O COOLEY LLP
Address Line 2: 4401 EASTGATE MALL
Address Line 4: SAN DIEGO, CALIFORNIA 92121

ATTORNEY DOCKET NUMBER:	305983-1195
NAME OF SUBMITTER:	JENNIFER FITZPATRICK
SIGNATURE:	/JENNIFER FITZPATRICK/
DATE SIGNED:	02/12/2018

Total Attachments: 14
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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This **INTELLECTUAL PROPERTY SECURITY AGREEMENT**, dated as of February 8, 2018 (the "Agreement") between **WESTERN ALLIANCE BANK**, an Arizona corporation ("Bank") and **TIGO ENERGY, INC.**, a Delaware corporation ("Grantor") is made with reference to the Loan and Security Agreement, dated as of the date hereof (as amended from time to time, the "Loan Agreement'), between Bank and Grantor. Terms defined in the Loan Agreement have the same meaning when used in this Agreement.

For good and valuable consideration, receipt of which is hereby acknowledged, Grantor hereby covenants and agrees as follows:

To secure the Obligations under the Loan Agreement, Grantor grants to Bank a security interest in all right, title, and interest of Grantor in any of the following, whether now existing or hereafter acquired or created in any and all of the following property (collectively, the "Intellectual Property Collateral"):

(a) copyright rights, copyright applications, copyright registrations and like protections in each work or authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held (collectively, the "Copyrights"), including the Copyrights described in Exhibit A;

(b) trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Grantor connected with and symbolized by such trademarks (collectively, the "Trademarks"), including the Trademarks described in Exhibit B;

(c) patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same (collectively, the "Patents"), including the Patents described in Exhibit C;

(d) mask work or similar rights available for the protection of semiconductor chips or other products (collectively, the "Mask Works");

(e) trade secrets, and any and all intellectual property rights in computer software and computer software products;

(f) design rights;

(g) 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;

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

(i) amendments, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(j) 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.

The rights and remedies of Bank with respect to the security interests granted hereunder are in addition to those set forth in the Loan Agreement, and those which are now or hereafter available to Bank as a matter of law or equity. Each right, power and remedy of Bank provided for herein or in the Loan Agreement, or now or hereafter existing at law or in equity shall be cumulative and concurrent and shall be in addition to every right, power or remedy provided for herein, and the exercise by Bank of any one or more of such rights, powers or remedies does

not preclude the simultaneous or later exercise by Bank of any other rights, powers or remedies.

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

GRANTOR:

TIGO ENERGY, INC.

By: _____

Name: Zvi Alon

Title: CEO

Address for Notices:
Attn: Danit Neeman
420 Blossom Hill Road
Los Gatos, California 95032
Fax: n/a

BANK:

WESTERN ALLIANCE BANK, an Arizona corporation

By: _____

Name: _____

Title: _____

Address for Notices:
Attn: Note Department
55 Almaden Boulevard, Suite 100
San Jose, California 95113
Tel: (408) 556-6501
Fax:(408) 282-1681

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

GRANTOR:

TIGO ENERGY, INC.

By: _____

Name: _____

Title: _____

Address for Notices:
Attn: Danit Neeman
420 Blossom Hill Road
Los Gatos, California 95032
Fax: n/a

BANK:

WESTERN ALLIANCE BANK, an Arizona corporation

By: _____

Name: Matt Spencer

Title: VP

Address for Notices:
Attn: Note Department
55 Almaden Boulevard, Suite 100
San Jose, California 95113
Tel: (408) 556-6501
Fax:(408) 282-1681

EXHIBIT A

COPYRIGHTS

The Grantor has common law copyrights, but no copyright registrations have been made.

EXHIBIT B

TRADEMARKS

Mark / Title:	U.S. Serial Number:	U.S. Registration Number:	Filing Date:
Word Mark - Tigo Energy	77659647	3838677	Jan. 29, 2009
Mark: Stylized "Tigo Energy"	77659634	3773091	Jan. 29, 2009
Word Mark - Tigo Energy	77659613	3845975	Jan. 29, 2009
Word Mark - Tigo Energy	77659595	3773090	Jan. 29, 2009

EXHIBIT C

PATENTS

TITLE	STATUS	FILED	APP. NO.
Method and System to Provide a Distributed Local Energy Production System with High-Voltage DC Bus	Granted U.S. Patent No. 8,751,053	10/19/07	11/875,799
Apparatuses and Methods to Reduce Safety Risks Associated with Photovoltaic Systems	GRANTED U.S. Patent No. 7,884,278	10/20/08	12/254,780
Apparatuses and Methods to Reduce Safety Risks Associated with Photovoltaic Systems	GRANTEDU.S. Patent No. 7,807,919	2/5/09	12/366,597
Apparatuses and Methods to Reduce Safety Risks Associated with Photovoltaic Systems	PENDING	11/17/10	12/948,614
Method and System for Connecting Solar Cells or Slices in a Panel System	Granted U.S. Patent No. 9,218,013 issued on 12/22/2015	10/17/08	12/253,868
METHOD AND SYSTEM FOR CONNECTING SOLAR CELLS OR SLICES IN A PANEL SYSTEM	PENDING	12/9/15	14/964,342
Methods and Apparatus for Supervisory Firewall for Distributed Electrical Generation System	GRANTED U.S. Patent No. 7,898,112	10/29/08	12/260,720
Step-Up Coverter Systems and Methods	GRANTED U.S. Patent No. 8,098,055	8/29/08	12/202,110
Enhanced System for Connecting Multiple Photovoltaic Panels to DC-to-DC Modules With a High-Voltage Bus	GRANTEDU.S. Patent No. 8,058,747	12/19/08	12/340,540
Enhanced System and Method for Balancing Solar Panels in a Multi-Panel System	GRANTED U.S. Patent No. 7,602,080 REEXAM CERTIFICATE RECEIVED	3/25/09	12/411,317

Enhanced System and Method for Balancing Solar Panels in a Multi-Panel System	GrantedU.S. Patent No. 8,860,246 Issued on Oct. 14, 2014	9/25/09	12/567,169
SYSTEMS AND METHODS TO BALANCE SOLAR PANELS IN A MULTI-PANEL SYSTEM	Pending	10/13/14	14/512,786
Current-Mode Power Line Communications	GRANTED U.S. PatentNo. 8,653,689	5/15/09	12/467,117
Method and System for Cost Effective Power Line Communications for Sensor Data Collection	GRANTED U.S. Patent No. 8,325,059	5/15/09	12/467,116
Device for Distributed Maximum Power Tracking for Solar Arrays	GRANTED U.S. Patent No. 7,839,022	7/12/05	11/571,603
Device for Distributed Maximum Power Tracking for Solar Arrays	GRANTEDU.S. Patent NO. 8,093,757	11/23/10	12/953,337
Device for Distributed Maximum Power Tracking for Solar Arrays	GrantedPatent No. 8,963,518, issued on 2/24/15	12/9/11	13/316,388
DEVICE FOR DISTRIBUTED MAXIMUM POWER TRACKING FOR SOLAR ARRAYS	Granted U.S. Pat. No. 9,594,392, issued 3/14/2017	2/12/15	14/620,805
System and Method for Using a Power Converter for Transmission of Data over the Power Feed	GrantedU.S. Patent No. 8,860,241 Issued on Oct. 14, 2014	7/21/09	12/506,929
System and Method for an Enhanced Protocol Between a Local Controller and a Master Controller Channel optimization proposal (formerly TGY018)	Granted U.S. Patent No. 8,773,236 (Issue Date 07/08/2014)	9/30/10	12/895,745
System and Method for Enhanced Efficiency Auxiliary Power Supply Module	GrantedU.S. Patent No. 9,143,036 Issued on 09/22/2015	5/25/10	12/787,205

SYSTEMS AND METHODS FOR ENHANCED EFFICIENCY AUXILIARY POWER SUPPLY MODULE	Granted U.S. Pat. No. 9,584,021 issued on 2/28/2017	8/10/15	14/822,227
SYSTEMS AND METHODS FOR ENHANCED EFFICIENCY AUXILIARY POWER SUPPLY MODULE	Allowed	12/28/16	15/392,960
Enhanced Battery Storage and Recovery Energy Systems	GRANTED U.S. Patent No. 8,405,349	10/12/09	12/577,698
Systems and Methods for an Identification Protocol Between a Local Controller and a Master Controller	GRANTEDU.S. Patent No. 8,271,599	1/6/11	12/985,883
Systems and Methods for an Identification Protocol Between a Local Controller and a Master Controller	Granted U.S. Patent No. 9,124,139	4/30/12	13/460,545
SYSTEMS AND METHODS FOR AN IDENTIFICATION PROTOCOL BETWEEN A LOCAL CONTROLLER OF A SOLAR MODULE AND A MASTER CONTROLLER	Pending	8/4/15	14/817,949
Systems and Methods for Remote or Local Shut-Off of a Photovoltaic System	Granted Pat. No. 8,854,193 issued on 10/7/14	3/28/11	13/073,915
SYSTEMS AND METHODS FOR REMOTE OR LOCAL SHUT-OFF OF A PHOTOVOLTAIC SYSTEM	GrantedPatent No. 9,377,765 issued on 6/28/16	10/1/14	14/503,723
SYSTEMS AND METHODS FOR REMOTE OR LOCAL SHUT-OFF OF A PHOTOVOLTAIC SYSTEM	Pending	6/17/16	15/186,330
Systems and Methods for Prevention of Open Loop Damage During or Immediately After Manufacturing	GRANTED U.S. Patent No. 8,039,730	8/17/09	12/542,632
Systems and Methods for Prevention of Open Loop Damage During or Immediately After Manufacturing	GRANTEDU.S. Patent No. 8,415,552	9/14/11	13/232,887
Systems and Method for Limiting Maximum Voltage in Solar Photovoltaic Power Generation Systems	GRANTED U.S. Patent No. 8,102,074	9/18/09	12/562,933

Systems and Method for Limiting Maximum Voltage in Solar Photovoltaic Power Generation Systems	GRANTED U.S. Patent No. 8,274,172	1/24/12	13/357,331
System and Method for Distributed Power Factor Correction Synchronized by Local Utility	Granted U.S. Pat. No. 8,954,203, issued on 2/10/2015	9/18/09	12/562,491
Enhanced Systems and Methods for Using a Power Converter for Balancing Panels in Single String and Multi-String Configurations	GrantedU.S. Pat. No. 9,401,439, issued on 7/26/2016	11/4/09	12/612,641
ENHANCED SYSTEMS AND METHODS FOR USING A POWER CONVERTER FOR BALANCING MODULES IN SINGLE-STRING AND MULTI-STRING CONFIGURATIONS	Pending	7/6/16	15/203,595
System and Method for Enhanced Watch Dog in Solar Panel Installations	GrantedIssue Date 1/13/15; Patent No. 8,933,321	12/1/09	12/628,977
SYSTEMS AND METHODS FOR AN ENHANCED WATCHDOG IN SOLAR MODULE INSTALLATIONS	Pending	12/16/14	14/572,458
Novel System and Method for Addressing Solar Energy Production Capacity Loss Due to Field Buildup Between Cells and Glass and Frame Assembly	Granted Pat. No. 9,312,697 issued 4/12/16	12/1/09	12/628,997
SYSTEMS AND METHODS TO REDUCE FIELD BUILDUP BETWEEN CELLS AND GLASS AND FRAME ASSEMBLY FOR SOLAR ENERGY PRODUCTION	Pending	3/1/16	15/057,955
System and Method for Enhanced Local Management Unit	GRANTED U.S. Patent No. 8,314,375	1/21/10	12/691,692
System and Method for Local String Management Unit	GrantedU.S. Pat. No. 8,686,333 issued 4/1/14	9/26/12	13/627,852
Systems and Methods to Provide Enhanced Diode Bypass Paths	Granted Pat. No. 9,324,885 issued 4/26/16	3/15/10	12/724,371
SYSTEMS AND METHODS TO PROVIDE ENHANCED DIODE BYPASS PATHS	Pending	4/13/16	15/098,075

System and Method for Detecting and Correcting a Suboptimal Operation of One or More Inverters in a Multi inverter System	GrantedU.S. Patent No. 8,922,061Issue Date 12/30/2014	7/20/10	12/840,228
System and Method for Mapping the Connectivity Topology of Local Management Units in Large Photovoltaic Arrays	Granted Pat. No. 9,312,399 issued 4/12/16	10/14/10	12/904,919
SYSTEMS AND METHODS FOR MAPPING THE CONNECTIVITY TOPOLOGY OF LOCAL MANAGEMENT UNITS IN PHOTOVOLTAIC ARRAYS	Pending	4/5/16	15/090,939
Enhanced System and Method for Theft Prevention in a Solar Power Array During Nonoperative Periods	Granted U.S. Patent No. 9,007,210, issued on 4/14/2015	4/21/11	13/092,099
System and Method for Enhanced Watch Dog in Solar Panel Installations	GrantedU.S. Patent No. 8,823,218, issued on 9/2/14	4/22/11	13/092,783
SYSTEM AND METHOD FOR ENHANCED WATCH DOG IN SOLAR PANEL INSTALLATIONS	Granted US Pat. No. 9,397,612 issued on 7/19/2016	8/29/14	14/473,659
SYSTEM AND METHOD FOR ENHANCED WATCH DOG IN SOLAR PANEL INSTALLATIONS	GrantedU.S. Pat. No. 9,813,021, issued 11/7/2017	7/6/16	15/203,713
SYSTEM AND METHOD FOR ENHANCED WATCH DOG IN SOLAR PANEL INSTALLATIONS	Pending	9/27/17	15/717,244
System for Use of Static Inverters in Variable Energy Generation Environments	GrantedPat. No. 8,853,886 issued on 10/7/14	5/31/11	13/149,163
Method for Use of Static Inverters in Variable Energy Generation Environments	Granted Pat. No. 9,225,261 issued 12/29/15	5/31/11	13/149,172

Systems and Methods to Optimize Outputs of Static Inverters in Variable Energy Generation Environments	GrantedU.S. Pat. No. 8,957,544, issued on 2/17/2015	6/9/11	13/157,016
METHOD FOR USE OF STATIC INVERTERS IN VARIABLE ENERGY GENERATION ENVIRONMENTS	Granted U.S. Pat. No. 9,450,414, issued on 9/20/16	12/9/15	14/964,388
METHOD FOR USE OF STATIC INVERTERS IN VARIABLE ENERGY GENERATION ENVIRONMENTS	Allowed	9/20/16	15/270,997
Systems and Methods to Provide Enhanced Diode Bypass Paths	GrantedPat. No. 9,425,783 issued on 8/23/16	9/16/11	13/235,064
SYSTEMS AND METHODS TO PROVIDE ENHANCED DIODE BYPASS PATHS	Pending	8/22/16	15/243,493
System and Method for Flash Bypass	GrantedU.S. Patent No. 8,841,916, issued on 9/23/14	11/1/11	13/287,021
System and Method for Arc Detection and Intervention in Solar Energy Systems	Granted U.S. Patent No. 9,043,039, issued on 5/26/2015	3/29/11	13/075,093
SYSTEM AND METHOD FOR ARC DETECTION AND INTERVENTION IN SOLAR ENERGY SYSTEMS	Allowed	5/21/15	14/718,426
Systems and Methods to Combine Strings of Solar Panels	GrantedU.S. Patent No. 9,142,965 issued on 9/22/2015	12/20/11	13/332,299
SYSTEMS AND METHODS TO COMBINE STRINGS OF SOLAR PANELS	Granted Pat. No. 9,847,646, issued on 12/19/2017	8/14/15	14/827,023
SYSTEMS AND METHODS TO COMBINE STRINGS OF SOLAR PANELS	Pending	12/18/17	15/845,980

System and Method to Reduce the Number and Cost of Management Units of Distributed Power Generators	Granted Patent No. 9,431,825, issued on 8/30/16	1/9/12	13/346,482
SYSTEMS AND METHODS TO REDUCE THE NUMBER AND COST OF MANAGEMENT UNITS OF DISTRIBUTED POWER GENERATORS	Pending	8/1/16	15/225,692
System and Method for Exchangeable Capacitor Modules for High-Power Inverters and Converters	Granted Patent No. 8,982,591, issued on 3/17/15	3/1/12	13/410,175
Enhanced System and Method for String-Balancing	GrantedPatent No. 9,368,965, issued on 6/14/16	3/12/12	13/418,279
ENHANCED SYSTEM AND METHOD FOR STRING BALANCING	Pending	6/3/16	15/172,996
Enhanced System and Method for Matrix Panel Ties for Large Installations	PENDING	2/1/13	13/757,616
ANTI-THEFT SYSTEM AND METHOD FOR LARGE SOLAR PANEL SYSTEMS	Granted U.S. Patent No. 9,000,919, issued on 4/7/2015	2/27/13	13/779,456
System and Method for Low-Cost, High-Efficiency Solar Panel Power Feed	GrantedPat. No. 9,543,455 , issued 1/10/17	4/23/14	14/260,183
SYSTEM AND METHOD FOR LOW-COST, HIGH-EFFICIENCY SOLAR PANEL POWER FEED	Pending	11/30/16	15/365,753
SOLAR PANEL JUNCTION BOXES HAVING INTEGRATED FUNCTION MODULES	Pending	12/2/15	14/957,503
SYSTEMS AND METHODS FOR QUICK DISSIPATION OF STORED ENERGY FROM INPUT CAPACITORS OF POWER INVERTERS	Pending	5/19/16	15/159,699
SYSTEMS AND METHODS FOR QUICK DISSIPATION OF STORED ENERGY FROM INPUT CAPACITORS OF POWER INVERTERS	Pending		201680029553.7
Contacts for Junction Boxes on Solar Panels	Pending	6/2/17	15/612,977

SYSTEMS AND METHODS TO BALANCE SOLAR PANELS IN A MULTI-PANEL SYSTEM	Reexamination Certificate Issued 5/31/2011	3/26/10	90/010,892