PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6960808

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
QUALCOMM INCORPORATED	02/01/2019

RECEIVING PARTY DATA

Name:	WITRICITY CORPORATION
Street Address:	57 WATER STREET
City:	WATERTOWN
State/Country:	MASSACHUSETTS
Postal Code:	02472

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17497730

CORRESPONDENCE DATA

Fax Number: (208)975-6667

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: 2088133905
Email: travis@colbynipper.com
Correspondent Name: COLBY NIPPER - WITRICITY
Address Line 1: 291 E. SHORE DRIVE
Address Line 2: SUITE 200
Address Line 4: EAGLE, IDAHO 83616

ATTORNEY DOCKET NUMBER:	W183754C1
NAME OF SUBMITTER:	BRITTAN A. GLAD, REG#61,090
SIGNATURE:	/Brittan A. Glad/
DATE SIGNED:	10/08/2021

Total Attachments: 95
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Patent Assignment

THIS PATENT ASSIGNMENT (this "**Assignment**") is made effective as of 1 February, 2019 (the "**Effective Date**") between Qualcomm Incorporated, a Delaware corporation, having a place of business located at 5775 Morehouse Drive, San Diego, CA 92121 U.S.A. ("**Qualcomm**"), and WiTricity Corporation, a Delaware corporation, having a place of business located at 57 Water Street, Watertown, MA 02472 ("**Assignee**").

WHEREAS, Qualcomm and Assignee and other Qualcomm affiliated entities have entered into an Asset Purchase Agreement dated 1 February, 2019 (the "**APA**"), in which, among other things, Qualcomm assigned to Assignee the Assigned Patents (as defined below); and

WHEREAS, the execution and delivery of this Assignment is a closing condition of the transaction contemplated by the APA.

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. **Assignment**. Subject to all existing encumbrances and rights granted prior to the Effective Date all as more particularly described in the APA, Qualcomm hereby irrevocably sells, assigns, transfers, and conveys to Assignee: (a) the issued patents and patent applications identified in the attached Attachment 1 hereto, together with any patent issuing on any such patent application identified in the attached Attachment 1 hereto, including any rights of priority in and to any of the foregoing patent applications and patents; (b) each patent and patent application throughout the world, directly or through one or more applications, that derives priority from any of the patent applications and patents described in clause (a) above, including all extensions, renewals, reissues, reexaminations, divisionals, substitutions, provisionals, continuations, continuations-in-part, conversions, prolongations, continued examinations, continued prosecution applications, and domestic and foreign counterparts that derive priority from any of the patent applications and patents described in clause (a) above, and each patent issuing on any of the foregoing items; and (c) each patent or patent application that is referenced by a terminal disclaimer filed in connection with any of the patent applications or patents identified in clause (a) or clause (b) above (the "**Assigned Patents**"). Notwithstanding anything to the contrary, the Assigned Patents do not include any patents or patent applications that were not assigned to Assignee pursuant to the APA, including without limitation those patents and patent applications described in the APA as being excluded from the Assigned Patents. In addition and for clarity, no action taken by Assignee or any other person or entity after the Effective Date shall result in any patent or patent application that exists as of the Effective Date and not included within clause (c) above as of the Effective Date being an Assigned Patent by reason of any such action.

2. **Patent Office Grants**. Qualcomm hereby authorizes the respective patent office or governmental agency in each jurisdiction to issue any and all patents, certificates of invention, utility models or other governmental grants or issuances that may be granted upon any of the Assigned Patents in the name of Assignee, as the assignee to the entire interest therein.

3. **Prosecution and Enforcement**. Assignee will be solely responsible for the filing, prosecution, and maintenance of each of the Assigned Patents, including the payment of all fees and costs relating thereto. Assignee will be solely responsible for the defense of the Assigned Patents. For clarity, Assignee is not obligated to file, prosecute, maintain, enforce or defend any of the Assigned Patents.

4. **Disclaimer of Warranties**. Qualcomm makes no representations or warranties under this Assignment whether express or implied, with respect to the Assigned Patents. Nothing in this

Section 4 shall amend, limit or otherwise modify any express representations or warranties made under the APA.

5. **Governing Law**. This Assignment, the rights and obligations of the parties under this Assignment, and any claim or controversy directly or indirectly based upon, arising out of or related to, this Assignment or the transactions contemplated by this Assignment (whether based upon contract, tort or any other theory), including all matters of construction, validity and performance, shall be governed by and construed in accordance with the laws of the State of Delaware, determined without regard to any conflict of law provisions that would require the application of the law of any other jurisdiction.

6. **Successors and Assigns**. This Assignment shall be binding upon and inure to the benefit of the parties and their respective successors and assigns.

7. **Miscellaneous**. Qualcomm makes no representations or warranties in this Assignment. Any rule of construction to the effect that ambiguities are to be resolved against the drafting party will not be applied in the construction or interpretation of this Assignment. The words "**include**", "**including**" and variations thereof will be deemed to be followed by the words "without limitation". The use of "or" will not be deemed to be exclusive. This Assignment may be executed in counterparts, each of which when executed will be deemed to be an original but all of which taken together will constitute one and the same agreement. In the event of a conflict between the terms and conditions in this Assignment and the APA, the terms and conditions in the APA shall control.

[*Signature page follows*]

IN WITNESS WHEREOF, I hereunto set my hand this 1 day of February, 2019.

Qualcomm Incorporated

By: _____

Printed Name: Raymond B Hom

Title: VP, Patent Counsel

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of San Diego)

On 1 February 2019 before me, Angela R. Gonzales, Notary Public
personally appeared Raymond B Hom, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

ANGELA R. GONZALES
Commission # 2144941
Notary Public - California
San Diego County
My Comm. Expires Mar 26, 2020

IN WITNESS WHEREOF, acknowledged and accepted on this _____ day of _____, 2019.

WiTricity Corporation

By: _____

Printed Name: Alex Gruzen

Title: Chief Executive Officer

IN WITNESS WHEREOF, I hereunto set my hand this _____ day of _____, 2019.

Qualcomm Incorporated

By: _____

Printed Name: _____

Title: _____

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of _____)

On _____ before me,

(insert name and title of the officer)

personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ **(Seal)**

IN WITNESS WHEREOF, acknowledged and accepted on this _____ day of _____, 2019.

WiTricity Corporation

By: _____

Printed Name: Alex Gruzen

Title: Chief Executive Officer

PATENT
REEL: 057758 FRAME: 0007

Attachment 1

List of Assigned Patents

See attached.

Attachment 1

Docket #	Family #	Country	Application Title	App. #s	Patent Number	Issue/Grant Date	Patent Status	Parent Docket Status
091359	092397IDF	United States	Wireless power apparatus and methods	12/870,869	9,774,226	9/26/2017	Granted	Granted
091359CN	092397IDF	China P.R.	Wireless power apparatus and methods	201080003991.2	ZL201080003991.2	5/20/2014	Granted	Granted
091359CN01	092397IDF	China P.R.	Wireless power apparatus and methods	201310670591.5	ZL201310670591.5	11/21/2017	Granted	Granted
091359CN02	092397IDF	China P.R.	Wireless power apparatus and methods	201410194476.1			Filed	Application - Interested to appeal rejection
091359EP	092397IDF	European Patent Convention	Wireless power apparatus and methods	10731195.3			Inactive	Abandoned
091359EP01	092397IDF	European Patent Convention	Wireless power apparatus and methods	17177091.0			Filed	Application
091359IN	092397IDF	India	Wireless power apparatus and methods	5067/CHENP/2009	290190	12/2/2017	Granted	Granted
091359JP	092397IDF	Japan	Wireless power apparatus and methods	2009-552815			Inactive	Abandoned
091359JP01	092397IDF	Japan	Wireless power apparatus and methods	2012-020695	5529481	4/25/2014	Granted	Granted
091359JP02	092397IDF	Japan	Wireless power apparatus and methods	2012-080946	6033552	11/4/2016	Granted	Granted
091359JP03	092397IDF	Japan	Wireless power apparatus and methods	2012-020947			Filed	Application - Interested to appeal rejection
091359JP04	092397IDF	Japan	Wireless power apparatus and methods	2013-185738			Inactive	Abandoned
091359JP04D1	092397IDF	Japan	Wireless power apparatus and methods	2015-147090			Filed	Application - Interested to appeal rejection
091359KR	092397IDF	Republic of Korea	Wireless power apparatus and methods	10-2009-7020581			Inactive	Abandoned
091359KR01	092397IDF	Republic of Korea	Wireless power apparatus and methods	10-2011-7021366	10-1266519	7/19/2013	Granted	Granted
091359KR02	092397IDF	Republic of Korea	Wireless power apparatus and methods	10-2011-7021567	10-1254024	4/15/2013	Granted	Granted
091359KR03	092397IDF	Republic of Korea	Wireless power apparatus and methods	10-2011-7021568	10-1335795	11/26/2013	Granted	Granted

092393KR2013	092393IDF	Republic of Korea	Wireless power apparatus and methods	10-2013-7025477	10-1211393	9/13/2013	Granted	Granted
092393KR2013-7	092393IDF	Republic of Korea	Wireless power apparatus and methods	10-2013-7032085			Inactive	Abandoned
092393KR2014	092393IDF	Republic of Korea	Wireless power apparatus and methods	10-2014-7015215			Inactive	Abandoned
092393KR2014	092393IDF	Republic of Korea	Wireless power apparatus and methods	10-2014-7031791	10-1376883	3/17/2014	Granted	Granted
092393PS	092393IDF	United States	Wireless power apparatus and methods	60/936,628			Inactive	Expired
092393WO	092393IDF	Patent Cooperation Treaty	Wireless power apparatus and methods	PCT/US2008/063603			Inactive	Expired
092402	092402IDF	United States	SYSTEM AND METHOD FOR MAGNETIC POWER TRANSFER	12/233,441	8,614,528	12/24/2013	Granted	Granted
092402C1	092402IDF	United States	Biological effects of magnetic power transfer	13/974,324			Inactive	Abandoned
092402CN	092402IDF	China P.R.	Maximizing power yield from wireless power magnetic resonators	200880107644.8			Inactive	Abandoned
092402CND1	092402IDF	China P.R.	Maximizing power yield from wireless power magnetic resonators	201310141795.1			Filed	Application
092402DE	092402IDF	Germany	Maximizing power yield from wireless power magnetic resonators	602008051301.8	EP2198477	7/5/2017	Granted	Granted
092402EP	092402IDF	European Patent Convention	Maximizing power yield from wireless power magnetic resonators	08832129.4	EP2198477	7/5/2017	Granted	Granted
092402EPD1	092402IDF	European Patent Convention	Maximizing power yield from wireless power magnetic resonators	17178015.7			Filed	Application
092402FR	092402IDF	France	Maximizing power yield from wireless power magnetic resonators	08832129.4	EP2198477	7/5/2017	Granted	Grantec
092402GB	092402IDF	Great Britain	Maximizing power yield from wireless power magnetic resonators	08832129.4	EP2198477	7/5/2017	Granted	Granted
092402IN	092402IDF	India	Maximizing power yield from wireless power magnetic resonators	1858/DELNP/2010	288188	10/9/2017	Granted	Granted

092402IND1	092402IDF	India	AN APPARATUS AND A METHOD OF TRANSMITTING POWER VIA A WIRELESS FIELD	201618036720			Filed	Application
092402JP	092402IDF	Japan	Maximizing power yield from wireless power magnetic resonators	2010-525979			Inactive	Abandoned
092402JPD1	092402IDF	Japan	Maximizing power yield from wireless power magnetic resonators	2013-121729	5889835	2/26/2016	Granted	Granted
092402KR	092402IDF	Republic of Korea	Maximizing power yield from wireless power magnetic resonators	10-2010-7008437			Inactive	Abandoned
092402KRD1	092402IDF	Republic of Korea	Maximizing power yield from wireless power magnetic resonators	10-2013-7002392	10-1502248	3/6/2015	Granted	Granted
092402KRD2	092402IDF	Republic of Korea	Maximizing power yield from wireless power magnetic resonators	10-2013-7002393	10-1515727	4/21/2015	Granted	Granted
092402P1	092402IDF	United States	Constraints imposed by field strength limits	60/973,711			Inactive	Expired
092402WO	092402IDF	Patent Cooperation Treaty	Maximizing power yield from wireless power magnetic resonators	PCT/US2008/076839			Inactive	Expired
092408	092408IDF	United States	Antennas and their coupling characteristics for wireless power transfer via magnetic coupling	12/994,032	8,344,552	1/1/2013	Granted	Granted
092408C1	092408IDF	United States	Antennas and their coupling characteristics for wireless power transfer via magnetic coupling	13/717,543	8,710,701	4/29/2014	Granted	Granted
092408P1	092408IDF	United States	Antennas and their coupling characteristics for wireless power transfer via magnetic coupling	61/032,028			Inactive	Expired
092412	092412IDF	United States	System and method for efficient wireless power transfer to devices located on and outside a charging base	12/427,318			Inactive	Abandoned

PATENT
REEL: 057758 FRAME: 0011

092412C1	092412IDF	United States	SYSTEM AND METHOD FOR EFFICIENT WIRELESS POWER TRANSFER TO DEVICES LOCATED ON AND OUTSIDE A CHARGING BASE	13/913,036	9,450,455	9/20/2016	Granted	Granted
092412C2	092412IDF	United States	SHORT RANGE EFFICIENT WIRELESS POWER TRANSFER INCLUDING A CHARGING BASE TRANSMITTER BUILT INTO A DESKTOP COMPONENT AND A POWER RELAY INTEGRATED INTO A DESKTOP	14/168,704	9,979,230	5/22/2018	Granted	Granted
092412CN	092412IDF	China P.R.	Short range efficient wireless power transfer	200980113946.6	ZL200980113946	2/24/2016	Granted	Granted
092412CND1	092412IDF	China P.R.	Short range efficient wireless power transfer	201610034816.9			Filed	Application
092412EP	092412IDF	European Patent Convention	Short range efficient wireless power transfer	09735888.1			Filed	Application
092412IN	092412IDF	India	Short range efficient wireless power transfer	7039/DELNP/2010			Filed	Application
092412JP	092412IDF	Japan	Short range efficient wireless power transfer	2011-506391			Inactive	Abandoned
092412JPD1	092412IDF	Japan	Short range efficient wireless power transfer	2014-205087	5882431	2/12/2016	Granted	Granted
092412JPD1D1	092412IDF	Japan	Short range efficient wireless power transfer	2016-019021			Inactive	Withdrawn
092412KR	092412IDF	Republic of Korea	Short range efficient wireless power transfer	10-2010-7026014	10-1247384	3/19/2013	Granted	Granted
092412KRD1	092412IDF	Republic of Korea	Short range efficient wireless power transfer	10-2012-7032797			Inactive	Abandoned
092412KRD1D1	092412IDF	Republic of Korea	Short range efficient wireless power transfer	10-2013-7024411	10-1572743	11/23/2015	Granted	Granted
092412KRD1D2	092412IDF	Republic of Korea	Short range efficient wireless power transfer	10-2014-7000895	10-1583836	1/22/2016	Granted	Granted
092412P1	092412IDF	United States	Short range efficient wireless power transfer	61/046,757			Inactive	Expired
092412WO	092412IDF	Patent Cooperation Treaty	Short range efficient wireless power transfer	PCT/US2009/041234			Inactive	Expired

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[illegible]	[illegible]	Patent Cooperation Treaty	Wireless high power transfer under regulatory constraints	[illegible]			Inactive	Expired
101328	101328IDF	United States	Wireless power transmission in electric vehicles	13/082,211	9,561,730	2/7/2017	Granted	Granted
101328C1	101328IDF	United States	Wireless power transmission in electric vehicles	15/424,640			Filed	Application
101328CN	101328IDF	China P.R.	Wireless power transmission in electric vehicles	201180018015.5			Inactive	Abandoned
101328CND1	101328IDF	China P.R.	Wireless power transmission in electric vehicles	201410677953.1	ZL201410677953	5/3/2017	Granted	Granted
101328EP	101328IDF	European Patent Convention	Wireless power transmission in electric vehicles	11719586.2			Inactive	Abandoned
101328EPD1	101328IDF	European Patent Convention	Wireless power transmission in electric vehicles	15150222.6			Filed	Application
101328IN	101328IDF	India	Wireless power transmission in electric vehicles	8822/CHENP/2012			Filed	Application
101328IND1	101328IDF	India	Wireless power transmission in electric vehicles	201848043255			Filed	Application
101328JP	101328IDF	Japan	Wireless power transmission in electric vehicles	2013-504008			Filed	Application - Instructed to lapse via inaction
101328JPD1	101328IDF	Japan	Wireless power transmission in electric vehicles	2015-136860	6140220	5/12/2017	Granted	Granted
101328KR	101328IDF	Republic of Korea	Wireless power transmission in electric vehicles	10-2012-7028938	10-1923741	11/23/2018	Granted	Granted
101328P1	101328IDF	United States	Wireless power transmission in electric vehicles background	61/322,196			Inactive	Expired
101328TW	101328IDF	Taiwan	Wireless power transmission in electric vehicles background	100112338			Inactive	Abandoned
101328WO	101328IDF	Patent Cooperation Treaty	Wireless power transmission in electric vehicles	PCT/US2011/031850			Inactive	Expired
[illegible]	[illegible]	United States	Wireless power antenna alignment adjustment system for vehicles	[illegible]			Filed	Application
[illegible]	[illegible]	China P.R.	Wireless power antenna alignment adjustment system for vehicles	[illegible]	[illegible]	[illegible]	Granted	Granted

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102033IN	102033IDF	India	Adaptive wireless energy transfer system	10316/CHENP/2012			Filed	Application
102033JP	102033IDF	Japan	Adaptive wireless energy transfer system	2013-511344	5654120	11/28/2014	Granted	Granted
102033JPD1	102033IDF	Japan	Adaptive wireless energy transfer system	2014-233453	5864247	3/4/2016	Granted	Granted
102033KR	102033IDF	Republic of Korea	Adaptive wireless energy transfer system	10-2012-7033173	10-1616365	4/22/2016	Granted	Granted
102033KRD1	102033IDF	Republic of Korea	Adaptive wireless energy transfer system	10-2016-7010277	10-1760632	7/17/2017	Granted	Granted
102033P1	102033IDF	United States	Adaptive wireless energy transfer system	61/346,378			Inactive	Expired
102033P2	102033IDF	United States	Adaptive wireless energy transfer system	61/367,802			Inactive	Expired
102033WO	102033IDF	Patent Cooperation Treaty	Adaptive wireless energy transfer system	PCT/US2011/037068			Inactive	Expired
103327	103327IDF	United States	Wireless energy transfer via coupled parasitic resonators	13/283,387	9,126,490	9/8/2015	Granted	Granted
103327CN	103327IDF	China P.R.	Method and apparatus for powering or charging an electric vehicle	201180058927.5	ZL201180058927	6/15/2016	Granted	Granted
103327DE	103327IDF	Germany	Wireless energy transfer via coupled parasitic resonators	602011038387.6	EP2632762	5/31/2017	Granted	Granted
103327EP	103327IDF	European Patent Convention	Wireless energy transfer via coupled parasitic resonators	11779323.2	EP2632762	5/31/2017	Granted	Granted
103327FR	103327IDF	France	Wireless energy transfer via coupled parasitic resonators	11779323.2	EP2632762	5/31/2017	Granted	Granted
103327GB	103327IDF	Great Britain	Wireless energy transfer via coupled parasitic resonators	11779323.2	EP2632762	5/31/2017	Granted	Granted
103327IN	103327IDF	India	Wireless energy transfer via coupled parasitic resonators	3306/CHENP/2013			Filed	Application
103327JP	103327IDF	Japan	Wireless energy transfer via coupled parasitic resonators	2013-536839	5632089	10/17/2014	Granted	Granted
103327KR	103327IDF	Republic of Korea	Wireless energy transfer via coupled parasitic resonators	10-2013-7013186	10-1842308	3/20/2018	Granted	Granted
103327P1	103327IDF	United States	Wireless energy transfer via coupled parasitic resonators	61/408,508			Inactive	Expired

103337WO	103337IDF	Patent Cooperation Treaty	Wireless energy transfer via coupled parasitic resonators	PCT/US2013/058147			Inactive	Expired
[illegible]	[illegible]	[illegible]	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	China P.R.	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	European Patent Convention	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	India	Wireless energy transfer and [illegible]	[illegible]	[illegible]	Filed	Pending	
[illegible]	[illegible]	[illegible]	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	European Patent Convention	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Wireless energy transfer and [illegible]	[illegible]	[illegible]	[illegible]	Inactive	Expired
[illegible]	[illegible]	Patent Cooperation Treaty	Wireless energy transfer and [illegible]	PCT/US2015/064538			Inactive	Expired
111554	111554IDF	United States	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	15/330,537	10,090,885	10/2/2018	Granted	Granted
111554CN	111554IDF	China P.R.	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	201280018448.8	ZL201280018448	6/4/2017	Granted	Granted

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111554DE	111554IDF	Germany	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	602012044168.2	EP2697910	3/21/2018	Granted	Granted
111554EP	111554IDF	European Patent Convention	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	12716164.4	EP2697910	3/21/2018	Granted	Granted
111554FR	111554IDF	France	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	12716164.4	EP2697910	3/21/2018	Granted	Granted
111554GB	111554IDF	Great Britain	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	12716164.4	EP2697910	3/21/2018	Granted	Granted
111554IN	111554IDF	India	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	7962/CHENP/2013			Filed	Application
111554JP	111554IDF	Japan	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	2014-505218	6010103	10/7/2016	Granted	Granted
111554KR	111554IDF	Republic of Korea	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	10-2013-7029272	10-1917501	11/5/2018	Granted	Granted
111554P1	111554IDF	United States	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	61/474,922			Inactive	Expired
111554WO	111554IDS	Patent Cooperation Treaty	Antenna alignment and vehicle guidance for wireless charging of electric vehicles	PCT/US2012/032926			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5/16/2017	Granted	Granted

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[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]			Filed	Allowed
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	European Patent Convention	METHOD OF CHARGING MULTIPLE CELLS PROVIDED IN ELECTRIC VEHICLE	[illegible]			Filed	Allowed
[illegible]	[illegible]	India	[illegible]	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	[illegible]	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Republic of Korea	[illegible]	[illegible]			Filed	Application
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]			Filed	Application
120826	120826IDF	United States	Method of multi-coil operation and optimization	13/745,876	9,142,990	9/22/2015	Granted	Granted
120826CN	120826IDF	China P.R.	Method of multi-coil operation and optimization	201480005043.7	ZL201480005043.7	12/15/2017	Granted	Granted
120826EP	120826IDF	European Patent Convention	Method of multi-coil operation and optimization	14702994.6			Filed	Allowed
120826IN	120826IDF	India	Method of multi-coil operation and optimization	4952/CHENP/2015			Filed	Application
120826JP	120826IDF	Japan	Method of multi-coil operation and optimization	2015-553792	5953858	9/13/2016	Granted	Granted
120826KR	120826IDF	Republic of Korea	Method of multi-coil operation and optimization	10-2015-7021706	10-1787220	10/13/2017	Granted	Granted
120826WO	120826IDF	Patent Cooperation Treaty	Method of multi-coil operation and optimization	PCT/US2014/011492			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Granted	Granted

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121544BR	121544IDF	Brazil	Device alignment and identification in inductive power transfer systems	BR112015030113			Filed	Application
121544CN	121544IDF	China P.R.	Device alignment and identification in inductive power transfer systems	[illegible]	[illegible]	9/28/2018	Granted	Granted
121544EP	121544IDF	European Patent Convention	Device alignment and identification in inductive power transfer systems	[illegible]			Filed	Application
121544IN	121544IDF	India	Device alignment and identification in inductive power transfer systems	8155/CHENP/2014			Filed	Application
121544JP	121544IDF	Japan	Device alignment and identification in inductive power transfer systems	[illegible]			Filed	Application
121544JPD1	121544IDF	Japan	Device alignment and identification in inductive power transfer systems	[illegible]			Filed	Application
121544KR	121544IDF	Republic of Korea	Device alignment and identification in inductive power transfer systems	[illegible]			Filed	Application
121544P1	121544IDF	United States	Device alignment and identification in inductive power transfer systems	[illegible]			Inactive	Expired
121544TW	121544IDF	Taiwan	Wireless power receiver, wireless power transmitter, method of operating a wireless power receiver, and method of operating a wireless power transmitter	[illegible]			Filed	Application
121544WO	121544IDF	Patent Cooperation Treaty	Device alignment and identification in inductive power transfer systems	[illegible]			Inactive	Expired
122270	122270IDF	United States	Tuning circuit and method for wireless power transfer systems	13/725,346	9,679,695	6/13/2017	Granted	Granted
122270CN	122270IDF	China P.R.	Tuning circuit and method for wireless power transfer systems	201380037513.3	ZL201380037513	8/11/2017	Granted	Granted
122270DE	122270IDF	Germany	Tuning circuit and method for wireless power transfer systems	602013017182.6	EP2873132	9/28/2016	Granted	Granted

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122270EP	122270IDF	European Patent Convention	Tuning circuit and method for wireless power transfer systems	13737909.5	EP2873132	9/28/2016	Granted	Granted
122270FR	122270IDF	France	Tuning circuit and method for wireless power transfer systems	13737909.5	EP2873132	9/28/2016	Granted	Granted
122270GB	122270IDF	Great Britain	Tuning circuit and method for wireless power transfer systems	13737909.5	EP2873132	9/28/2016	Granted	Granted
122270IN	122270IDF	India	Tuning circuit and method for wireless power transfer systems	345/CHENP/2015			Filed	Application
122270P1	122270IDF	United States	Tuning circuit and method for wireless power transfer systems	61/672,249			Inactive	Expired
122270WO	122270IDF	Patent Cooperation Treaty	Tuning circuit and method for wireless power transfer systems	PCT/US2013/047840			Inactive	Expired
[illegible]	[illegible]	United States	Power supply control in wireless power transfer systems	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	China P.R.	Power supply control in wireless power transfer systems	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	European Patent Convention	Power supply control in wireless power transfer systems	[illegible]			Filed	Application
[illegible]	[illegible]	India	Power supply control in wireless power transfer systems	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Power supply control in wireless power transfer systems	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Republic of Korea	Power supply control in wireless power transfer systems	[illegible]			Filed	Application
[illegible]	[illegible]	United States	Power supply control in wireless power transfer systems	[illegible]			Inactive	Expired
[illegible]	[illegible]	Patent Cooperation Treaty	Power supply control in wireless power transfer systems	[illegible]			Inactive	Expired

122296	122296IDF	United States	System and method for power output control in wireless power transfer systems	13/740,679	9,859,955	1/2/2018	Granted	Granted
122296CN	122296IDF	China P.R.	System and method for power output control in wireless power transfer systems	201380043725.2			Filed	Application
122296EP	122296IDF	European Patent Convention	System and method for power output control in wireless power transfer systems	13756243.5			Filed	Application
122296IN	122296IDF	India	System and method for power output control in wireless power transfer systems	687/CHENP/2015			Filed	Application
122296JP	122296IDF	Japan	System and method for power output control in wireless power transfer systems	2015-528626	6317349	4/6/2018	Granted	Granted
122296KR	122296IDF	Republic of Korea	System and method for power output control in wireless power transfer systems	10-2015-7007067			Filed	Application
122296P1	122296IDF	United States	System and method for power output control in wireless power transfer systems	61/692,908			Inactive	Expired
122296WO	122296IDF	Patent Cooperation Treaty	System and method for power output control in wireless power transfer systems	PCT/US2013/056032			Inactive	Expired
[illegible]	[illegible]	United States	Wireless power transfer system coil arrangements and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	China P.R.	Wireless power transfer system coil arrangements and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	India	Wireless power transfer system coil arrangements and method of operation	[illegible]			Filed	Application
[illegible]	[illegible]	United States	Coil arrangements in wireless power transfer systems	[illegible]			Inactive	Expired
[illegible]	[illegible]	Patent Cooperation Treaty	Wireless power transfer system coil arrangements and method of operation	[illegible]			Inactive	Expired
122906	122906IDF	United States	Wireless power transfer system coil arrangements and method of operation	13/791,424	9,672,975	6/6/2017	Granted	Granted

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122906CN	122906IDF	China P.R.	Wireless power transfer system coil arrangements and method of operation	201380046975.1	ZL201380046975	10/24/2017	Granted	Granted
122906IN	122906IDF	India	Wireless power transfer system coil arrangements and method of operation	1187/CHENP/2015			Filed	Application
122906P1	122906IDF	United States	Device, system and method for control of wireless power transfer	61/699,700			Inactive	Expired
122906WO	122906IDF	Patent Cooperation Treaty	Wireless power transfer system coil arrangements and method of operation	PCT/US2013/054291			Inactive	Expired
[illegible]	[illegible]	United States	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	China P.R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	European Patent	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	India	[illegible]	[illegible]	[illegible]	[illegible]	Filed	Application
[illegible]	[illegible]	Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PATENT
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Docket No.	Case No.	Patent Office	Electric vehicle wireless charging with monitoring of duration of charging operational mode	App. No.			Status	Status
Docket No.	Case No.	Patent Office	Electric vehicle wireless charging with monitoring of duration of charging operational mode	Application Number			Status	Status
123039	123039IDF	United States	Electric vehicle wireless charging with monitoring of duration of charging operational mode	13/925,655	9,831,952	6/3/2016	Granted	Granted
123039CI	123039IDF	United States	ELECTRIC VEHICLE WIRELESS CHARGING WITH MONITORING OF DURATION OF CHARGING OPERATIONAL MODE	15/943,503			Inactive	Abandoned
123039CN	123039IDF	China P.R.	Method and apparatus of transferring wireless power to an electric vehicle	201380033423.7	ZL201380033423	11/24/2017	Granted	Granted
123039CN01	123039IDF	China P.R.	Method and apparatus of transferring wireless power to an electric vehicle	201711079785.6			Filed	Application
123039DE	123039IDF	Germany	Electric vehicle wireless charging with monitoring of duration of charging operational mode	602013011845.9	EP2867974	9/21/2016	Granted	Granted
123039EP	123039IDF	European Patent Convention	Electric vehicle wireless charging with monitoring of duration of charging operational mode	13734292.9	EP2867974	9/21/2016	Granted	Granted
123039FR	123039IDF	France	Electric vehicle wireless charging with monitoring of duration of charging operational mode	13734292.9	EP2867974	9/21/2016	Granted	Granted
123039GB	123039IDF	Great Britain	Electric vehicle wireless charging with monitoring of duration of charging operational mode	13734292.9	EP2867974	9/21/2016	Granted	Granted
123039JP	123039IDF	Japan	Electric vehicle wireless charging with monitoring of duration of charging operational mode	2015-520407			Filed	Application

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123039P1	123039IDF	United States	Systems, methods, and apparatus related to electric vehicle wireless charging	61/665,205			Inactive	Expired
123039WO	123039IDF	Patent Cooperation Treaty	Electric vehicle wireless charging with monitoring of duration of charging operational mode	PCT/US2013/047678			Inactive	Expired
123041	123041IDF	United States	Systems, methods, and apparatus related to electric vehicle parking and wireless charging	[illegible]	[illegible]	[illegible]	Granted	Granted
123041CN	123041IDF	China P.R.	Systems, methods, and apparatus related to electric vehicle parking and wireless charging	[illegible]	[illegible]	[illegible]	Granted	Granted
123041CND1	123041IDF	China P.R.	Systems, methods, and apparatus related to electric vehicle parking and wireless charging	[illegible]			Filed	Application: [illegible]
123041EP	123041IDF	European Patent Convention	Systems, methods, and apparatus related to electric vehicle parking and wireless charging	[illegible]			Filed	Application
123041IN	123041IDF	India	Systems, methods, and apparatus related to electric vehicle parking and wireless charging	[illegible]			Filed	Application
123041KR	123041IDF	Republic of Korea	Systems, methods, and apparatus related to electric vehicle parking and wireless charging	[illegible]			Filed	Application
123041P1	123041IDF	United States	Systems, methods, and apparatus related to electric vehicle parking and wireless charging	[illegible]			Inactive	Expired
123041WO	123041IDF	Patent Cooperation Treaty	Systems, methods, and apparatus related to electric vehicle parking and wireless charging	[illegible]			Inactive	Expired

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123430	123430IDF	United States	Selective communication based on distance from a plurality of electric vehicle wireless charging stations in a facility	13/946,879	9,302,594	4/5/2016	Granted	Granted
123430CN	123430IDF	China P.R.	Selective communication based on distance from a plurality of electric vehicle wireless charging stations in a facility	201380039834.7	ZL201380039834	10/13/2017	Granted	Granted
123430EP	123430IDF	European Patent Convention	Selective communication based on distance from a plurality of electric vehicle wireless charging stations in a facility	13747725.1			Filed	Application
123430IN	123430IDF	India	Selective communication based on distance from a plurality of electric vehicle wireless charging stations in a facility	821/CHENP/2015			Filed	Application
123430JP	123430IDF	Japan	Selective communication based on distance from a plurality of electric vehicle wireless charging stations in a facility	2015-525452	6382913	8/10/2018	Granted	Granted
123430P1	123430IDF	United States	Systems, methods, and apparatus related to electric vehicle wireless charging and parking	61/677,967			Inactive	Expired
123430WO	123430IDF	Patent Cooperation Treaty	Selective communication based on distance from a plurality of electric vehicle wireless charging stations in a facility	PCT/US2013/051509			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
123478P1	123478IDF	United States	Systems, methods, and apparatus for detection of metal objects in a predetermined space	61/671,498			Inactive	Expired

123478U1	123478IDF	United States	Systems, methods, and apparatus for detection of metal objects in a predetermined space	13/791,585	9,726,518	8/8/2017	Granted	Granted
123478U1AR	123478IDF	Argentina	Systems, methods, and apparatus for detection of metal objects in a predetermined space	P130102488	AR094820	11/29/2017	Granted	Granted
123478U1C1	123478IDF	United States	SYSTEMS, METHODS, AND APPARATUS FOR DETECTION OF METAL OBJECTS IN A PREDETERMINED SPACE	15/668,868			Filed	Application
123478U1CN	123478IDF	China P.R.	Systems, methods, and apparatus for detection of metal objects in a predetermined space	201380036625.7	ZL201380036625.7	6/5/2017	Granted	Granted
123478U1EP	123478IDF	European Patent Convention	Systems, methods, and apparatus for detection of metal objects in a predetermined space	13742084.0			Filed	Application
123478U1JP	123478IDF	Japan	Systems, methods, and apparatus for detection of metal objects in a predetermined space	2015-521778	6266616	1/5/2018	Granted	Granted
123478U1JP01	123478IDF	Japan	Systems, methods, and apparatus for detection of metal objects in a predetermined space	2017-240455			Filed	Application
123478U1TW	123478IDF	Taiwan	Systems, methods, and apparatus for detection of metal objects in a predetermined space	102125283	I536035	6/1/2016	Granted	Granted
123478U1WO	123478IDF	Patent Cooperation Treaty	Systems, methods, and apparatus for detection of metal objects in a predetermined space	PCT/US2013/049935			Inactive	Expired
123478U2	123478IDF	United States	Systems, methods, and apparatus for detection of metal objects in a predetermined space	13/791,365	9,410,823	8/9/2016	Granted	Granted

123478U2AR	123478IDF	Argentina	Systems, methods, and apparatus for detection of metal objects in a predetermined space	P130102497	AR092856	12/29/2017	Granted	Granted
123478U2CN	123478IDF	China P.R.	Systems, methods, and apparatus for detection of metal objects in a predetermined space using the magnetic field generated by an inductive power transmitter	201380009683.7	ZL201380009683.7	12/26/2017	Granted	Granted
123478U2EP	123478IDF	European Patent Convention	Systems, methods, and apparatus for detection of metal objects in a predetermined space using the magnetic field generated by an inductive power transmitter	13742087.3			Filed	Allowed
123478U2IN	123478IDF	India	Systems, methods, and apparatus for detection of metal objects in a predetermined space using the magnetic field generated by an inductive power transmitter	9131/CHENP/2014			Filed	Application
123478U2TW	123478IDF	Taiwan	Systems, methods, and apparatus for detection of metal objects in a predetermined space	102125282	I498586	9/1/2015	Granted	Granted
123478U2TWD1	123478IDF	Taiwan	Systems, methods, and apparatus for detection of metal objects in a predetermined space	104123934	I570436	2/11/2017	Granted	Granted
123478U2WO	123478IDF	Patent Cooperation Treaty	Systems, methods, and apparatus for detection of metal objects in a predetermined space using the magnetic field generated by an inductive power transmitter	PCT/US2013/049348			Inactive	Expired
123[illegible]	123478IDF	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	China P.R.	Modular inductive power transfer power supply and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Germany	Modular inductive power transfer power supply and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	European Patent Convention	Modular inductive power transfer power supply and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	France	Modular inductive power transfer power supply and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Great Britain	Modular inductive power transfer power supply and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	India	Modular inductive power transfer power supply and method of operation	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Modular inductive power transfer power supply and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Republic of Korea	Modular inductive power transfer power supply and method of operation	[illegible]			Filed	Application
[illegible]	[illegible]	Patent Cooperation Treaty	Modular inductive power transfer power supply and method of operation	[illegible]			[illegible]	[illegible]
124288	124288IDF	United States	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	13/786,231	10,014,104	7/3/2018	Granted	Granted
124288BR	124288IDF	Brazil	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	BR1120150037782			Filed	Application
124288CN	124288IDF	China P.R.	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	201380056764.6	ZL201380056764	10/31/2017	Granted	Granted
124288EP	124288IDF	European Patent Convention	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	13783193.9			Filed	Application
124288IN	124288IDF	India	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	1985/CHENP/2015			Filed	Application

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124288JP	124288IDF	Japan	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	2015-540686			Filed	Application
124288KR	124288IDF	Republic of Korea	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	10-2015-7014459			Filed	Application
124288P1	124288IDF	United States	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	61/722,077			Inactive	Expired
124288TW	124288IDF	Taiwan	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	102138311	I550990	9/21/2016	Granted	Granted
124288WO	124288IDF	Patent Cooperation Treaty	Coil arrangements in wireless power transfer systems for low electromagnetic emissions	PCT/US2013/064957			Inactive	Expired
[illegible]	[illegible]	United States	System and method for inductance compensation in wireless power transfer	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	China P.R.	System and method for inductance compensation in wireless power transfer	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Germany	System and method for inductance compensation in wireless power transfer	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	European Patent Convention	System and method for inductance compensation in wireless power transfer	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	France	System and method for inductance compensation in wireless power transfer	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Great Britain	System and method for inductance compensation in wireless power transfer	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	India	System and method for inductance compensation in wireless power transfer	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	System and method for inductance compensation in wireless power transfer	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Republic of Korea	System and method for inductance compensation in wireless power transfer	[illegible]			Filed	Application

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
130220	130220IDF	United States	Mixed semiconductor H-bridge power converters and methods related thereto	14/071,492	9,248,751	2/2/2016	Granted	Granted
130220P1	130220IDF	United States	MIXED SEMICONDUCTOR H BRIDGE POWER CONVERTERS AND METHODS RELATED THERETO	61/799,417			Inactive	Expired
130220WO	130220IDF	Patent Cooperation Treaty	Mixed semiconductor h-bridge power converters and methods related thereto	PCT/US2014/019600			Inactive	Expired
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

130816	130816IDF	United States	Systems and methods for bi-state impedance conversion in wireless power transfer	14/027,097	9,302,591	4/5/2016	Granted	Granted
130816BR	130816IDF	Brazil	Systems and methods for bi-state impedance conversion in wireless power transfer	BR1120160055314			Filed	Application
130816C1	130816IDF	United States	Systems and methods for bi-state impedance conversion in wireless power transfer	15/084,382	9,994,114	6/12/2018	Granted	Granted
130816CA	130816IDF	Canada	Systems and methods for bi-state impedance conversion in wireless power transfer	2920780	2920780	12/5/2017	Granted	Granted
130816CN	130816IDF	China P.R.	Systems and methods for bi-state impedance conversion in wireless power transfer	201480050804.7	ZL201480050804	9/28/2018	Granted	Granted
130816DE	130816IDF	Germany	Systems and methods for bi-state impedance conversion in wireless power transfer	602014010148.8	EP3036820	5/24/2017	Granted	Granted
130816EP	130816IDF	European Patent Convention	Systems and methods for bi-state impedance conversion in wireless power transfer	14766380.1	EP3036820	5/24/2017	Granted	Granted
130816ES	130816IDF	Spain	Systems and methods for bi-state impedance conversion in wireless power transfer	14766380.1	EP3036820	5/24/2017	Granted	Granted

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130816FI	130816IDF	Finland	Systems and methods for bi-state impedance conversion in wireless power transfer	14766380.1	EP3036820	5/24/2017	Granted	Granted
130816FR	130816IDF	France	Systems and methods for bi-state impedance conversion in wireless power transfer	14766380.1	EP3036820	5/24/2017	Granted	Granted
130816GB	130816IDF	Great Britain	Systems and methods for bi-state impedance conversion in wireless power transfer	14766380.1	EP3036820	5/24/2017	Granted	Granted
130816HU	130816IDF	Hungary	Systems and methods for bi-state impedance conversion in wireless power transfer	14766380.1	EP3036820	5/24/2017	Granted	Granted
130816ID	130816IDF	Indonesia	Systems and methods for bi-state impedance conversion in wireless power transfer	P-00201602225			Filed	Application
130816IN	130816IDF	India	Systems and methods for bi-state impedance conversion in wireless power transfer	201647004004			Filed	Application
130816IT	130816IDF	Italy	Systems and methods for bi-state impedance conversion in wireless power transfer	502017000090138	EP3036820	5/24/2017	Granted	Granted
130816JP	130816IDF	Japan	Systems and methods for bi-state impedance conversion in wireless power transfer	2016-542043	6043895	11/18/2016	Granted	Granted
130816KR	130816IDF	Republic of Korea	Systems and methods for bi-state impedance conversion in wireless power transfer	10-2016-7008040	10-1932822	12/19/2018	Granted	Granted
130816KRD1	130816IDF	Republic of Korea	Systems and methods for bi-state impedance conversion in wireless power transfer	10-2017-7014619			Filed	Application
130816NL	130816IDF	Netherlands	Systems and methods for bi-state impedance conversion in wireless power transfer	14766380.1	EP3036820	5/24/2017	Granted	Granted
130816WO	130816IDF	Patent Cooperation Treaty	Systems and methods for bi-state impedance conversion in wireless power transfer	PCT/US2014/054787			Inactive	Expired
[illegible]	[illegible]	[illegible]	Primary power supply tuning network for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	[illegible]	Primary power supply tuning network for two coil device and method of operation	[illegible]			Filed	Application

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[illegible]	[illegible]	[illegible]	Primary power supply having pickups for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	United States	Primary power supply having pickups for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	[illegible]	Primary power supply having pickups for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	United States	Primary power supply having pickups for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	China	Primary power supply having pickups for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Filed	Application
[illegible]	[illegible]	[illegible]	Primary power supply having pickups for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Filed	Application
[illegible]	[illegible]	China	Primary power supply having pickups for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Filed	Application
[illegible]	[illegible]	Patent Cooperation Treaty	Primary power supply having pickups for two coil device and method of operation	[illegible]	[illegible]	[illegible]	Filed	Application
131931	131931IDF	United States	Pickup coil design for tight spaces and asymmetrical coupling	14/027,055	10,186,912	1/22/2019	Granted	Granted
131931CN	131931IDF	China P.R.	Pickup coil design for tight spaces and asymmetrical coupling	201480050303.2	ZL201480050303	10/9/2018	Granted	Granted
131931EP	131931IDF	European Patent Convention	Pickup coil design for tight spaces and asymmetrical coupling	14776940.0			Filed	Application
131931IN	131931IDF	India	Pickup coil design for tight spaces and asymmetrical coupling	201647004018			Filed	Application
131931JP	131931IDF	Japan	Pickup coil design for tight spaces and asymmetrical coupling	2016-542045			Filed	Application
131931WO	131931IDF	Patent Cooperation Treaty	Pickup coil design for tight spaces and asymmetrical coupling	PCT/US2014/054825			Inactive	Expired

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[illegible]	[illegible]	[illegible]	Systems and methods for electric vehicle wireless charging	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	[illegible]	Systems and methods for electric vehicle wireless charging	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Patent Cooperation Treaty	Systems and methods for electric vehicle wireless charging	[illegible]			Filed	Published
[illegible]	[illegible]	[illegible]	Systems and methods for electric vehicle wireless charging	[illegible]			Filed	Published
[illegible]	[illegible]	[illegible]	Systems and methods for electric vehicle wireless charging	[illegible]			Filed	Published
[illegible]	[illegible]	[illegible]	Systems and methods for electric vehicle wireless charging	[illegible]			Filed	Published
[illegible]	[illegible]	Patent Cooperation Treaty	Systems and methods for electric vehicle wireless charging	[illegible]			Filed	Published
132739	132739IDF	United States	Induction power transfer system with coupling and reactance selection	14/075,688	9,352,661	5/31/2016	Granted	Granted
132739P1	132739IDF	United States	Induction power transfer system with coupling and reactance selection	61/817,275			Inactive	Expired
132739WO	132739IDF	Patent Cooperation Treaty	Induction power transfer system with coupling and reactance selection	PCT/US2014/034398			Inactive	Expired
[illegible]	[illegible]	[illegible]	Wireless charging and sensing	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	[illegible]	Wireless charging and sensing	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Patent Cooperation Treaty	Wireless charging and sensing	[illegible]			Filed	Published
[illegible]	[illegible]	[illegible]	Wireless charging and sensing	[illegible]			Filed	Published
[illegible]	[illegible]	[illegible]	Wireless charging and sensing	[illegible]	[illegible]	[illegible]	Granted	Granted

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REEL: 057758 FRAME: 0036

[illegible]	[illegible]	United States	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
133370	132870IDF	United States	System and method for detecting the presence of a moving object below a vehicle	14/069,299	9,365,136	6/14/2016	Granted	Granted
132870CN	132870IDF	China P.R.	System and method for detecting the presence of a moving object below a vehicle	201480024711.0	ZL201480024713	8/9/2017	Granted	Granted
132870EP	132870IDF	European Patent Convention	System and method for detecting the presence of a moving object below a vehicle	14727310.6			Filed	Application
132870IN	132870IDF	India	System and method for detecting the presence of a moving object below a vehicle	8979/CHENP/2015			Filed	Application
132870JP	132870IDF	Japan	System and method for detecting the presence of a moving object below a vehicle	2016-512926			Filed	Allowed
132870KR	132870IDF	Republic of Korea	System and method for detecting the presence of a moving object below a vehicle	10-2015-7034077			Filed	Application
132870P1	132870IDF	United States	System and method for detecting the presence of a moving object below a vehicle	61/822,114			Inactive	Expired
132870WO	132870IDF	Patent Cooperation Treaty	System and method for detecting the presence of a moving object below a vehicle	PCT/US2014/035462			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
133295	133295IDF	United States	Electric vehicle induction coil housing with interengagement structure for ferrite tile assemblies	14/203,289	9,583,253	2/28/2017	Granted	Granted
133295BR	133295IDF	Brazil	Electric vehicle induction coil housing with interengagement structure for ferrite tile assemblies	BR112015020582.0			Filed	Application
133295CN	133295IDF	China P.R.	Electric vehicle induction coil housing with interengagement structure for ferrite tile assemblies	201580013247.X	ZL201580013247	9/28/2018	Granted	Granted
133295EP	133295IDF	European Patent Convention	Electric vehicle induction coil housing with interengagement structure for ferrite tile assemblies	15707855.1			Filed	Application
133295IN	133295IDF	India	Electric vehicle induction coil housing with interengagement structure for ferrite tile assemblies	201647029360			Filed	Application

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133295JP	133295IDP	Japan	Electric vehicle induction coil housing with interengagement structure for ferrite tile assemblies	2016-555215			Filed	Application
133295KR	133295IDP	Republic of Korea	Electric vehicle induction coil housing with interengagement structure for ferrite tile assemblies	10-2016-7026366			Filed	Application
133295WO	133295IDP	Patent Cooperation Treaty	Electric vehicle induction coil housing with interengagement structure for ferrite tile assemblies	PCT/US2015/017121			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	Taiwan	SYSTEMS, METHODS, AND APPARATUS RELATED TO MUTUAL DETECTION AND IDENTIFICATION OF ELECTRIC VEHICLE AND CHARGING STATION	[illegible]			Filed	Application
[illegible]	[illegible]	Patent Cooperation Treaty	SYSTEMS, METHODS, AND APPARATUS RELATED TO MUTUAL DETECTION AND IDENTIFICATION OF ELECTRIC VEHICLE AND CHARGING STATION	[illegible]			Inactive	Expired
133985	133985IDF	United States	Integration of electronic components in inductive power transfer systems	14/252,518	9,533,589	1/3/2017	Granted	Granted
133985CN	133985IDF	China P.R.	Integration of electronic components in inductive power transfer systems	201480039898.1	ZL201480039898	10/30/2018	Granted	Granted
133985EP	133985IDF	European Patent Convention	Integration of electronic components in inductive power transfer systems	14733934.5			Filed	Application
133985IN	133985IDF	India	Integration of electronic components in inductive power transfer systems	7618/CHENP/2015			Filed	Application
133985WO	133985IDF	Patent Cooperation Treaty	INTEGRATION OF ELECTRONIC COMPONENTS IN INDUCTIVE POWER TRANSFER SYSTEMS	PCT/US2014/041107			Inactive	Expired
[illegible]	[illegible]	United States	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	[illegible]	[illegible]	[illegible]	Granted	Expired
[illegible]	[illegible]	United States	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	[illegible]			Inactive	Abandoned
[illegible]	[illegible]	China P.R.	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	[illegible]	[illegible]	[illegible]	Granted	Granted

134149CN	134149IDF	China P.R.	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	[illegible]			Filed	Application - Instructed to [illegible]
134149DE	134149IDF	Germany	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	[illegible]	EP3013630	2/1/2017	Granted	Granted
134149EP	134149IDF	European Patent Convention	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	14752739.7	EP3013630	2/1/2017	Granted	Granted
134149FR	134149IDF	France	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	14752739.7	EP3013630	2/1/2017	Granted	Granted
134149GB	134149IDF	Great Britain	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	14752739.7	EP3013630	2/1/2017	Granted	Granted
134149IT	134149IDF	Italy	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	[illegible]			Filed	Application
134149JP	134149IDF	Japan	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	[illegible]			Filed	Application
[illegible]	134149IDF	United States	SYSTEMS, METHODS, AND APPARATUS RELATED TO DETECTING AND IDENTIFYING ELECTRIC VEHICLE AND CHARGING STATION	[illegible]			Inactive	Expired
134149WO	134149IDF	Patent Cooperation Treaty	Systems, methods, and apparatus related to detecting and identifying electric vehicle and charging station	PCT/US2014/[illegible]			Inactive	Expired
134231	134231IDF	United States	System and method for alignment and compatibility detection for a wireless power transfer system	14/218,246	9,438,064	9/6/2016	Granted	Granted

134231BR	134231IDF	Brazil	System and method for alignment and compatibility detection for a wireless power transfer system	BR1120160042158			Filed	Application
134231CA	134231IDF	Canada	System and method for alignment and compatibility detection for a wireless power transfer system	2919719			Filed	Application
134231CN	134231IDF	China P.R.	System and method for alignment and compatibility detection for a wireless power transfer system	201480047010.9	ZL201480047010	4/24/2019	Granted	Granted
134231DE	134231IDF	Germany	System and method for alignment and compatibility detection for a wireless power transfer system	602014011053.3	EP3031117	6/21/2017	Granted	Granted
134231EP	134231IDF	European Patent Convention	System and method for alignment and compatibility detection for a wireless power transfer system	14756195.5	EP3031117	6/21/2017	Granted	Granted
134231ES	134231IDF	Spain	System and method for alignment and compatibility detection for a wireless power transfer system	14756195.5	EP3031117	6/21/2017	Granted	Granted
134231FI	134231IDF	Finland	System and method for alignment and compatibility detection for a wireless power transfer system	14756195.5	EP3031117	6/21/2017	Granted	Granted
134231FR	134231IDF	France	System and method for alignment and compatibility detection for a wireless power transfer system	14756195.5	EP3031117	6/21/2017	Granted	Granted
134231GB	134231IDF	Great Britain	System and method for alignment and compatibility detection for a wireless power transfer system	14756195.5	EP3031117	6/21/2017	Granted	Granted
134231HU	134231IDF	Hungary	System and method for alignment and compatibility detection for a wireless power transfer system	14756195.5	EP3031117	6/21/2017	Granted	Granted

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134231ID	134231IDF	Indonesia	System and method for alignment and compatibility detection for a wireless power transfer system	P-00201601867			Filed	Application
134231IN	134231IDF	India	System and method for alignment and compatibility detection for a wireless power transfer system	201647002525			Filed	Application
134231IT	134231IDF	Italy	System and method for alignment and compatibility detection for a wireless power transfer system	502017000056953	EP3031117	6/23/2017	Granted	Granted
134231JP	134231IDF	Japan	System and method for alignment and compatibility detection for a wireless power transfer system	2016-538959	6427578	11/2/2018	Granted	Granted
134231KR	134231IDF	Republic of Korea	System and method for alignment and compatibility detection for a wireless power transfer system	10-2016-7008240			Filed	Application
134231NL	134231IDF	Netherlands	System and method for alignment and compatibility detection for a wireless power transfer system	14756195.5	EP3031117	6/21/2017	Granted	Granted
134231P1	134231IDF	United States	System and method for alignment and compatibility detection for a wireless power transfer system	61/873,771			Inactive	Expired
134231TW	134231IDF	Taiwan	System and method for alignment and compatibility detection for a wireless power transfer system	103125750			Filed	Allowed
134231WO	134231IDF	Patent Cooperation Treaty	System and method for alignment and compatibility detection for a wireless power transfer system	PCT/US2014/051141			Inactive	Expired
134231X	134231IDF	United States	System and method for alignment and compatibility detection for a wireless power transfer system	14/511,978			Filed	Application

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[illegible]	[illegible]	[illegible]	Devices, systems, and methods for dynamic electric vehicle charging with position detection	[illegible]			Filed	Application
[illegible]	[illegible]	European Patent Convention	Devices, systems, and methods for dynamic electric vehicle charging with position detection	[illegible]			Filed	Application
[illegible]	[illegible]	Korea	Devices, systems, and methods for dynamic electric vehicle charging with position detection	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Devices, systems, and methods for dynamic electric vehicle charging with position detection	[illegible]			Filed	Application
[illegible]	[illegible]	Republic of Korea	Devices, systems, and methods for dynamic electric vehicle charging with position detection	[illegible]			Filed	Application
[illegible]	[illegible]	Patent Cooperation Treaty	Devices, systems, and methods for dynamic electric vehicle charging with position detection	[illegible]			Filed	Published
134902	134902IDF	United States	Systems, methods, and apparatus related to guidance and alignment for an electric vehicle and charging station	14/480,999	10,139,238	11/27/2018	Granted	Granted
134902CN	134902IDF	China P.R.	Systems, methods, and apparatus related to guidance and alignment for an electric vehicle and charging station	201480049630.6			Filed	Application
134902EP	134902IDF	European Patent Convention	Systems, methods, and apparatus related to guidance and alignment for an electric vehicle and charging station	14772526.1			Filed	Allowed
134902IN	134902IDF	India	Systems, methods, and apparatus related to guidance and alignment for an electric vehicle and charging station	201647004017			Filed	Application

134902JP	134902IDF	Japan	Systems, methods, and apparatus related to guidance and alignment for an electric vehicle and charging station	2016-542072	6431075	11/9/2018	Granted	Granted
134902P1	134902IDF	United States	Systems, methods, and apparatus related to guidance and alignment for an electric vehicle and charging station	61/876,702			Inactive	Expired
134902WO	134902IDF	Patent Cooperation Treaty	Systems, methods, and apparatus related to guidance and alignment for an electric vehicle and charging station	PCT/US2014/054990			Inactive	Expired
135025	135025IDF	United States	Systems, methods, and apparatus for increased foreign object detection loop array sensitivity	14/738,516	9,921,045	3/20/2018	Granted	Granted
135025CN	135025IDF	China P.R.	Systems, methods, and apparatus for increased foreign object detection loop array sensitivity	201480066677.7	[illegible]	[illegible]	Granted	Granted
135025DE	135025IDF	Germany	Systems, methods, and apparatus for increased foreign object detection loop array sensitivity	[illegible]	EP3084865	7/26/2017	Granted	Granted
135025EP	135025IDF	European Patent Convention	Systems, methods, and apparatus for increased foreign object detection loop array sensitivity	14790550.8	EP3084865	7/26/2017	Granted	Granted
135025FR	135025IDF	France	Systems, methods, and apparatus for increased foreign object detection loop array sensitivity	14790550.8	EP3084865	7/26/2017	Granted	Granted
135025GB	135025IDF	Great Britain	Systems, methods, and apparatus for increased foreign object detection loop array sensitivity	14790550.8	EP3084865	7/26/2017	Granted	Granted
135025IN	135025IDF	India	Systems, methods, and apparatus for increased foreign object detection loop array sensitivity	[illegible]			Filed	Application

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
140203	140203IDF	United States	SYSTEM AND METHOD FOR ADAPTIVE CHARGING COMPLIANCE CONTROL	14/301,085	9,462,705	10/11/2016	Granted	Granted
140203CN	140203IDF	China P.R.	System and method for adaptive charging compliance control	201580031183.6	ZL201580031183	12/21/2018	Granted	Granted
140203EP	140203IDF	European Patent Convention	System and method for adaptive charging compliance control	15725925.0			Filed	Application
140203IN	140203IDF	India	System and method for adaptive charging compliance control	201647037063			Filed	Application
140203JP	140203IDF	Japan	System and method for adaptive charging compliance control	2016-570790	6227805	10/20/2017	Granted	Granted
140203KR	140203IDF	Republic of Korea	System and method for adaptive charging compliance control	10-2016-7034533	10-1866114	6/1/2018	Granted	Granted
140203WO	140203IDF	Patent Cooperation Treaty	System and method for adaptive charging compliance control	PCT/US2015/028709			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

140725	140725DF	United States	Methods and systems for object detection and sensing for wireless charging systems	14/307,285	9,735,603	8/15/2017	Granted	Issued	8/15/2017	Granted
140725CN	140725DF	China P.R.	Methods and systems for object detection and sensing for wireless charging systems	201580031655.6						

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140725EP	140725IDF	European Patent Convention	Methods and systems for object detection and sensing for wireless charging systems	15732489.8			Filed	Application
140725IN	140725IDF	India	Methods and systems for object detection and sensing for wireless charging systems	201647037952			Filed	Application
140725JP	140725IDF	Japan	Methods and systems for object detection and sensing for wireless charging systems	2016-573098			Filed	Application
140725KR	140725IDF	Republic of Korea	Methods and systems for object detection and sensing for wireless charging systems	10-2016-7034933			Filed	Application
140725WO	140725IDF	Patent Cooperation Treaty	Methods and systems for object detection and sensing for wireless charging systems	PCT/US2015/035155			Inactive	Expired
140786	140786IDF	United States	Coil topologies for inductive power transfer	14/961,240	9,837,204	12/5/2017	Granted	Granted
140786C1	140786IDF	United States	COIL TOPOLOGIES FOR INDUCTIVE POWER TRANSFER	15/803,648			Filed	Application
140786CN	140786IDF	China P.R.	Coil topologies for inductive power transfer	201480066887.1			Filed	Application
140786DE	140786IDF	Germany	Coil topologies for inductive power transfer	602014079026.3	EP3084914	7/4/2018	Granted	Granted
140786EP	140786IDF	European Patent Convention	Coil topologies for inductive power transfer	14871998.1	EP3084914	7/4/2018	Granted	Granted
140786EPD1	140786IDF	European Patent Convention	Coil topologies for inductive power transfer	18180725.6			Filed	Application
140786FR	140786IDF	France	Coil topologies for inductive power transfer	14871998.1	EP3084914	7/4/2018	Granted	Granted
140786GB	140786IDF	Great Britain	Coil topologies for inductive power transfer	14871998.1	EP3084914	7/4/2018	Granted	Granted
140786IN	140786IDF	India	Coil topologies for inductive power transfer	201647019684			Filed	Application
140786JP	140786IDF	Japan	Coil topologies for inductive power transfer	2016-538012			Filed	Application
140786KR	140786IDF	Republic of Korea	Coil topologies for inductive power transfer	10-2016-7019053			Filed	Application
140786P1	140786IDF	United States	Coil topologies for inductive power transfer	61/917,280			Inactive	Expired

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1410998	1410998IDF	United States	System and method to avoid magnetic power loss while providing alternating current through a ferromagnetic material	14/464,583	9,742,203	8/22/2017	Granted	Granted
1410998CN	1410998IDF	China P.R.	System and method to avoid magnetic power loss while providing alternating current through a ferromagnetic material	201480064577.7	ZL201480064577	4/20/2018	Granted	Granted
1410998EP	1410998IDF	European Patent Convention	System and method to avoid magnetic power loss while providing alternating current through a ferromagnetic material	14816044.9			Filed	Application
1410998IN	1410998IDF	India	System and method to avoid magnetic power loss while providing alternating current through a ferromagnetic material	201647014474			Filed	Application
1410998JP	1410998IDF	Japan	System and method to avoid magnetic power loss while providing alternating current through a ferromagnetic material	2016-536937			Filed	Application
1410998KR	1410998IDF	Republic of Korea	System and method to avoid magnetic power loss while providing alternating current through a ferromagnetic material	10-2016-7017630			Filed	Application
1410998P1	1410998IDF	United States	System and method to avoid magnetic power loss while providing alternating current through a ferromagnetic material	61/913,775			Inactive	Expired

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141098WO	141098IDF	Patent Cooperation Treaty	System and method to avoid magnetic power loss while providing alternating current through a ferromagnetic material	PCT/US2014/068181			Inactive	Expired
[illegible]	[illegible]	United States	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Brazil	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	China P.R.	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	Germany	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	European Patent Convention	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	India	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	Republic of Korea	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	United States	Devices, systems, and method for power control of dynamic electric vehicle charging systems	[illegible]			Inactive	Expired

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[illegible]	[illegible]	Patent Cooperation Treaty	Devices, systems, and methods for power control of dynamic electric vehicle charging systems	PCT/US[illegible]			Inactive	Expired
141373	141373IDF	United States	COMPLIANCE ASSESSMENT OF HUMAN EXPOSURE FROM WIRELESS ELECTRIC VEHICLE CHARGING SYSTEM USING AT LEAST ONE PHANTOM MODEL	14/574,095	9,575,108	2/21/2017	Granted	Granted
141373CN	141373IDF	China P.R.	Compliance assessment of human exposure from wireless electric vehicle charging system	201480066188.8	ZL201480066188	10/16/2018	Granted	Granted
141373EP	141373IDF	European Patent Convention	Compliance assessment of human exposure from wireless electric vehicle charging system	14824725.7			Filed	Application
141373IN	141373IDF	India	Compliance assessment of human exposure from wireless electric vehicle charging system	201647016132			Filed	Application
141373JP	141373IDF	Japan	Compliance assessment of human exposure from wireless electric vehicle charging system	2016-539911			Filed	Application
141373KR	141373IDF	Republic of Korea	Compliance assessment of human exposure from wireless electric vehicle charging system	10-2016-7019096			Filed	Application
141373P1	141373IDF	United States	Compliance assessment of human exposure from wireless electric vehicle charging system	61/918,568			Inactive	Expired
141373WO	141373IDF	Patent Cooperation Treaty	Compliance assessment of human exposure from wireless electric vehicle charging system	PCT/US2014/071249			Inactive	Expired
[illegible]	[illegible]	United States	Base distribution network for dynamic wireless charging	[illegible]	[illegible]	[illegible]	Granted	Granted

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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
141577	141577IDF	United States	Controlling current flow path in wireless electric vehicle charging systems for mitigating rf radiated emissions	14/489,385			Filed	Application
141577P1	141577IDF	United States	Optimizing shield design in wireless electric vehicle charging systems for mitigating RF radiated emissions	61/926,190			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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141637	141637IDF	United States	Base magnetics and sequence design for dynamic systems	14/938,018	9,468,397	10/387,833	Granted	Granted

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1416378R	141637IDF	Brazil	Inductive power supply for vehicles comprising a plurality of charging coils which can be operated in different sequences	BR112016024270			Filed	Application
141637CN	141637IDF	China P.R.	Inductive power supply for vehicles comprising a plurality of charging coils which can be operated in different sequences	201580020342.2			Filed	Application
141637EP	141637IDF	European Patent Convention	Inductive power supply for vehicles comprising a plurality of charging coils which can be operated in different sequences	15718674.5			Filed	Allowed
141637IN	141637IDF	India	Inductive power supply for vehicles comprising a plurality of charging coils which can be operated in different sequences	2036/MUMNP/2015			Filed	Application
141637JP	141637IDF	Japan	Inductive power supply for vehicles comprising a plurality of charging coils which can be operated in different sequences	2016-562528			Filed	Application
141637KR	141637IDF	Republic of Korea	Inductive power supply for vehicles comprising a plurality of charging coils which can be operated in different sequences	10-2016-7032018			Filed	Application
141637P1	141637IDF	United States	Base magnetics and sequence design for dynamic systems	61/981,443			Inactive	Expired
141637TW	141637IDF	Taiwan	Base magnetics and sequence design for dynamic systems	104111985			Filed	Application
141637WO	141637IDF	Patent Cooperation Treaty	Inductive power supply for vehicles comprising a plurality of charging coils which can be operated in different sequences	PCT/US2015/023815			Inactive	Expired

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143418	143418DF	United States	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	14/335,256	9,772,401	9/26/2017	Granted	Granted
143418BR	143418DF	Brazil	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	BR1120160214870			Filed	Application
143418CN	143418DF	China P.R.	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	201580012630.3			Filed	Application

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143418DE	143418IDF	Germany	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	602015007454.8	EP3130463	1/10/2018	Granted	Granted
143418EP	143418IDF	European Patent Convention	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	15707852.8	EP3130463	1/10/2018	Granted	Granted
143418EPD1	143418IDF	European Patent Convention	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	17202185.9			Filed	Application
143418FR	143418IDF	France	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	15707852.8	EP3130463	1/10/2018	Granted	Granted
143418GB	143418IDF	Great Britain	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	15707852.8	EP3130463	1/10/2018	Granted	Granted
143418IN	143418IDF	India	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	201647025358			Filed	Application
143418JP	143418IDF	Japan	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	2016-554850			Filed	Allowed
143418KR	143418IDF	Republic of Korea	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	10-2016-7027741			Filed	Application
143418P1	143418IDF	United States	SYSTEMS, METHODS, AND APPARATUS FOR RADAR-BASED DETECTION OF OBJECTS IN A PREDETERMINED SPACE	61/954,287			Inactive	Expired
143418WO	143418IDF	Patent Cooperation Treaty	Systems, methods, and apparatus for radar-based detection of objects in a predetermined space	PCT/US2015/016871			Inactive	Expired

143518	143518IDF	United States	METHODS AND SYSTEMS FOR COMPATIBLE OPERATION BETWEEN A WIRELESS POWER TRANSFER SYSTEM AND VEHICLE REMOTE ENTRY SYSTEMS	[illegible]	[illegible]	[illegible]	Granted	Granted
143518CN	143518IDF	China P.R.	Methods and systems for compatible operation between a wireless power transfer system and vehicle remote entry systems	[illegible]			Filed	Application
143518EP	143518IDF	European Patent Convention	Methods and systems for compatible operation between a wireless power transfer system and vehicle remote entry systems	[illegible]			Filed	Application
143518IN	143518IDF	India	Methods and systems for compatible operation between a wireless power transfer system and vehicle remote entry systems	[illegible]			Filed	Application
143518JP	143518IDF	Japan	Methods and systems for compatible operation between a wireless power transfer system and vehicle remote entry systems	[illegible]			Filed	Allowed
143518WO	143518IDF	Patent Cooperation Treaty	Methods and systems for compatible operation between a wireless power transfer system and vehicle remote entry systems	[illegible]			[illegible]	Expired
143918	143918IDF	United States	SYSTEM AND METHOD FOR FREQUENCY PROTECTION IN WIRELESS CHARGING	14/555,380	9,680,331	6/13/2017	Granted	Granted
143918BR	143918IDF	Brazil	System and method for frequency protection in wireless charging	BR112016011585			Filed	Application
143918CN	143918IDF	China P.R.	System and method for frequency protection in wireless charging	201580015280.8			Filed	Application

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143918DE	143918IDF	Germany	System and method for frequency protection in wireless charging	602015012731.5	EP3132518	6/27/2018	Granted	Granted
143918EP	143918IDF	European Patent Convention	System and method for frequency protection in wireless charging	15712027.0	EP3132518	6/27/2018	Granted	Granted
143918FR	143918IDF	France	System and method for frequency protection in wireless charging	15712027.0	EP3132518	6/27/2018	Granted	Granted
143918GB	143918IDF	Great Britain	System and method for frequency protection in wireless charging	15712027.0	EP3132518	6/27/2018	Granted	Granted
143918IN	143918IDF	India	System and method for frequency protection in wireless charging	201647025957			Filed	Application
143918JP	143918IDF	Japan	System and method for frequency protection in wireless charging	2016-555577	6487548	12/28/2018	Granted	Granted
143918KR	143918IDF	Republic of Korea	System and method for frequency protection in wireless charging	10-2016-7026780			Filed	Application
143918P1	143918IDF	United States	System and method for frequency protection in wireless charging	61/968,255			Inactive	Expired
143918WO	143918IDF	Patent Cooperation Treaty	System and method for frequency protection in wireless charging	PCT/US2015/020760			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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Docket No.	Family No.	Patent Cooperation Treaty	Systems, methods, and apparatus for foreign object detection loop based on inductive thermal sensing	Application No.			Status	Stage
144551	144551IDF	United States	Systems, methods, and apparatus for foreign object detection loop based on inductive thermal sensing	14/278,112			Filed	Allowed
144551CN	144551IDF	China P.R.	Systems, methods, and apparatus for foreign object detection loop based on inductive thermal sensing	201580024599.5			Filed	Application
144551EP	144551IDF	European Patent Convention	Systems, methods, and apparatus for foreign object detection loop based on inductive thermal sensing	15727334.9			Filed	Application
144551IN	144551IDF	India	Systems, methods, and apparatus for foreign object detection loop based on inductive thermal sensing	201647034051			Filed	Application
144551JP	144551IDF	Japan	Systems, methods, and apparatus for foreign object detection loop based on inductive thermal sensing	2016-567409			Filed	Application
144551KR	144551IDF	Republic of Korea	Systems, methods, and apparatus for foreign object detection loop based on inductive thermal sensing	10-2016-7035096			Filed	Application
144551WO	144551IDF	Patent Cooperation Treaty	Systems, methods, and apparatus for foreign object detection loop based on inductive thermal sensing	PCT/US2015/030148			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Filed	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Filed	[illegible]

[illegible]	[illegible]	European Patent Convention	[illegible]	[illegible]			Filed	Application
[illegible]	[illegible]	Korea	[illegible]	[illegible]			Filed	Application
[illegible]	[illegible]	Korea	[illegible]	[illegible]			Filed	Application
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]			Inactive	Expired
145278	145278IDF	United States	Systems, methods and apparatus for reducing INTRA-Base array network coupling	14/584,472	9,960,507	5/1/2018	Granted	Granted
145278CN	145278IDF	China P.R.	SYSTEMS, METHODS AND APPARATUS FOR REDUCING INTRA-BASE ARRAY NETWORK COUPLING	201580071206.8			Filed	Application
145278EP	145278IDF	European Patent Convention	SYSTEMS, METHODS AND APPARATUS FOR REDUCING INTRA-BASE ARRAY NETWORK COUPLING	15817901.9			Filed	Application
145278IN	145278IDF	India	SYSTEMS, METHODS AND APPARATUS FOR REDUCING INTRA-BASE ARRAY NETWORK COUPLING	201747017220			Filed	Application
145278JP	145278IDF	Japan	SYSTEMS, METHODS AND APPARATUS FOR REDUCING INTRA-BASE ARRAY NETWORK COUPLING	2017-531077			Filed	Application
145278WO	145278IDF	Patent Cooperation Treaty	SYSTEMS, METHODS AND APPARATUS FOR REDUCING INTRA-BASE ARRAY NETWORK COUPLING	PCT/US2015/063729			Inactive	Expired

[illegible]	[illegible]	United States	Guidance and alignment system and methods for electric vehicle wireless charging systems	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	China P.R.	Guidance and alignment system and methods for electric vehicle wireless charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	European Patent Convention	Guidance and alignment system and methods for electric vehicle wireless charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	India	Guidance and alignment system and methods for electric vehicle wireless charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Guidance and alignment system and methods for electric vehicle wireless charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	Republic of Korea	Guidance and alignment system and methods for electric vehicle wireless charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	United States	Guidance and alignment system and methods for electric vehicle wireless charging systems	[illegible]			Inactive	Expired
[illegible]	[illegible]	Patent Cooperation Treaty	Guidance and alignment system and methods for electric vehicle wireless charging systems	[illegible]			Inactive	Expired
146143	146143IDF	United States	System and method for multi-coil dual backbone dynamic inductive power transfer	14/584,667	9,698,608	7/4/2017	Granted	Granted
146143CN	146143IDF	China P.R.	SYSTEM AND METHOD FOR MULTI-COIL DUAL BACKBONE DYNAMIC INDUCTIVE POWER TRANSFER	201580071350.X			Filed	Application

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146143DE	146143IDF	Germany	SYSTEM AND METHOD FOR MULTI-COIL DUAL BACKBONE DYNAMIC INDUCTIVE POWER TRANSFER	15813213.4	EP3212456	5/9/2018	Granted	Granted
146143EP	146143IDF	European Patent Convention	SYSTEM AND METHOD FOR MULTI-COIL DUAL BACKBONE DYNAMIC INDUCTIVE POWER TRANSFER	15813213.4	EP3212456	5/9/2018	Granted	Granted
146143FR	146143IDF	France	SYSTEM AND METHOD FOR MULTI-COIL DUAL BACKBONE DYNAMIC INDUCTIVE POWER TRANSFER	15813213.4	EP3212456	5/9/2018	Granted	Granted
146143GB	146143IDF	Great Britain	SYSTEM AND METHOD FOR MULTI-COIL DUAL BACKBONE DYNAMIC INDUCTIVE POWER TRANSFER	15813213.4	EP3212456	5/9/2018	Granted	Granted
146143IN	146143IDF	India	SYSTEM AND METHOD FOR MULTI-COIL DUAL BACKBONE DYNAMIC INDUCTIVE POWER TRANSFER	201747017150			Filed	Application
146143JP	146143IDF	Japan	SYSTEM AND METHOD FOR MULTI-COIL DUAL BACKBONE DYNAMIC INDUCTIVE POWER TRANSFER	2017-531848	6325752	8/20/2018	Granted	Granted
146143WO	146143IDF	Patent Cooperation Treaty	SYSTEM AND METHOD FOR MULTI-COIL DUAL BACKBONE DYNAMIC INDUCTIVE POWER TRANSFER	PCT/US2015/063767			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Filed	Application

PATENT
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[illegible]	[illegible]	European Patent Convention	Systems, methods, and apparatus for controlling the amount of charge provided to a charge-receiving element in a series-tuned resonant system	[illegible]			Filed	Application
[illegible]	[illegible]	India	Systems, methods, and apparatus for controlling the amount of charge provided to a charge-receiving element in a series-tuned resonant system	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Systems, methods, and apparatus for controlling the amount of charge provided to a charge-receiving element in a series-tuned resonant system	[illegible]			Filed	Application
[illegible]	[illegible]	United States	SYSTEMS, METHODS, AND APPARATUS RELATED TO WIRELESS ELECTRIC VEHICLE CHARGING INCLUDING CONTROLLING THE AMOUNT OF CHARGE PROVIDED TO A CHARGE-RECEIVING ELEMENT	[illegible]			Inactive	Expired
[illegible]	[illegible]	Patent Cooperation Treaty	Systems, methods, and apparatus for controlling the amount of charge provided to a charge-receiving element in a series-tuned resonant system	[illegible]			Inactive	Expired
150059	150059IDF	United States	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	14/802,012	9,941,708	4/10/2018	Granted	Granted
150059BR	150059IDF	Brazil	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	BR1120170093782			Filed	Application
150059CA	150059IDF	Canada	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	2963153			Filed	Application

150059CN	150059IDF	China P.R.	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	201580059864.3			Filed	Application
150059DE	150059IDF	Germany	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	602015006893.9	EP3192141	12/20/2017	Granted	Granted
150059EP	150059IDF	European Patent Convention	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	15794727.6	EP3192141	12/20/2017	Granted	Granted
150059ES	150059IDF	Spain	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	15794727.6	EP3192141	12/20/2017	Granted	Granted
150059FI	150059IDF	Finland	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	15794727.6	EP3192141	12/20/2017	Granted	Granted
150059FR	150059IDF	France	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	15794727.6	EP3192141	12/20/2017	Granted	Granted
150059GB	150059IDF	Great Britain	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	15794727.6	EP3192141	12/20/2017	Granted	Granted
150059HU	150059IDF	Hungary	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	15794727.6	EP3192141	12/20/2017	Granted	Granted
150059ID	150059IDF	Indonesia	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	P-00201702791			Filed	Application
150059IN	150059IDF	India	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	201747010026			Filed	Application

150059IT	150059IDP	Italy	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	15794727.6	EP3192141	12/20/2017	Granted	Granted
150059JP	150059IDP	Japan	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	2017-533390			Filed	Application
150059KR	150059IDP	Republic of Korea	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	10-2017-7011827			Filed	Application
150059NL	150059IDP	Netherlands	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	15794727.6	EP3192141	12/20/2017	Granted	Granted
150059P1	150059IDP	United States	SYSTEMS, METHODS, AND APPARATUS RELATED TO WIRELESS ELECTRIC VEHICLE CHARGING INCLUDING INTEGRATED TUNING CAPACITORS IN CHARGING COIL STRUCTURE	62/075,303			Inactive	Expired
150059WO	150059IDP	Patent Cooperation Treaty	Systems, methods, and apparatus for integrated tuning capacitors in charging coil structure	PCT/US2015/058178			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	European Patent Convention	Systems, methods, and apparatus for living object protection in wireless power transfer applications	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	France	Systems, methods, and apparatus for living object protection in wireless power transfer applications	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Great Britain	Systems, methods, and apparatus for living object protection in wireless power transfer applications	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	India	Systems, methods, and apparatus for living object protection in wireless power transfer applications	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Systems, methods, and apparatus for living object protection in wireless power transfer applications	[illegible]			Filed	Application
[illegible]	[illegible]	United States	Systems, methods, and apparatus for living object protection in wireless power transfer applications	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	Patent Cooperation Treaty	Systems, methods, and apparatus for living object protection in wireless power transfer applications	[illegible]			[illegible]	[illegible]
150387	150387IDF	United States	METHODS AND APPARATUS FOR A MODULAR COIL HOLDER FOR AN EXTENDED WIRELESS CHARGING ROADWAY ASSEMBLY	15/002,204	10,027,147	7/17/2018	Granted	Granted
150387CN	150387IDF	China P.R.	Methods and apparatus for a modular coil holder for an extended wireless charging roadway assembly	201680005617.1			Filed	Application
150387EP	150387IDF	European Patent Convention	Methods and apparatus for a modular coil holder for an extended wireless charging roadway assembly	16703410.7			Filed	Allowed

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150387IN	150387IDF	India	Methods and apparatus for a modular coil holder for an extended wireless charging roadway assembly	201747019967			Filed	Application
150387JP	150387IDF	Japan	Methods and apparatus for a modular coil holder for an extended wireless charging roadway assembly	2017-535863			Filed	Application
150387P1	150387IDF	United States	Methods and apparatus for a modular coil holder for an extended wireless charging roadway assembly	62/107,002			Inactive	Expired
150387WO	150387IDF	Patent Cooperation Treaty	Methods and apparatus for a modular coil holder for an extended wireless charging roadway assembly	PCT/US2016/013515			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	PCT/US2013/048974	[illegible]	[illegible]	Inactive	Expired
150902	150902/DF	United States	System and method for reducing leakage flux in wireless charging systems	14/846,394	9,923,408	5/20/2018	Granted	Granted
150902CN	150902/DF	China P.R.	System and method for reducing leakage flux in wireless charging systems	201580048348.0			Filed	Application
150902DE	150902/DF	Germany	System and method for reducing leakage flux in wireless charging systems	15757388.0	EP3152088	1/9/2019	Granted	Granted
150902EP	150902/DF	European Patent Convention	System and method for reducing leakage flux in wireless charging systems	15757388.0	EP3152088	1/9/2019	Granted	Granted
150902FR	150902/DF	France	System and method for reducing leakage flux in wireless charging systems	15757388.0	EP3152088	1/9/2019	Granted	Granted
150902GB	150902/DF	Great Britain	System and method for reducing leakage flux in wireless charging systems	15757388.0	EP3152088	1/9/2019	Granted	Granted
150902IN	150902/DF	India	System and method for reducing leakage flux in wireless charging systems	201747002517			Filed	Application
150902WO	150902/DF	Patent Cooperation Treaty	System and method for reducing leakage flux in wireless charging systems	PCT/US2015/048974			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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150977	150977IDF	United States	SYSTEMS, APPARATUS AND METHOD FOR ADAPTIVE WIRELESS POWER TRANSFER	14/865,231	10,046,555	8/14/2018	Granted	Granted
150977CN	150977IDF	China P.R.	SYSTEMS, APPARATUS AND METHOD FOR ADAPTIVE WIRELESS POWER TRANSFER	201580060089.3			Filed	Application
150977EP	150977IDF	European Patent Convention	SYSTEMS, APPARATUS AND METHOD FOR ADAPTIVE WIRELESS POWER TRANSFER	15794763.1			Filed	Application
150977IN	150977IDF	India	SYSTEMS, APPARATUS AND METHOD FOR ADAPTIVE WIRELESS POWER TRANSFER	201747015838			Filed	Application
150977JP	150977IDF	Japan	SYSTEMS, APPARATUS AND METHOD FOR ADAPTIVE WIRELESS POWER TRANSFER	2017-531253			Filed	Application
150977P1	150977IDF	United States	Systems, apparatus and method for adaptive wireless power transfer	62/094,839			Inactive	Expired
150977WO	150977IDF	Patent Cooperation Treaty	SYSTEMS, APPARATUS AND METHOD FOR ADAPTIVE WIRELESS POWER TRANSFER	PCT/US2015/059052			Inactive	Expired

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[illegible]	[illegible]	France	SYSTEMS, METHODS, AND APPARATUS FOR DETECTING FERROMAGNETIC FOREIGN OBJECTS IN A PREDETERMINED SPACE	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Great Britain	SYSTEMS, METHODS, AND APPARATUS FOR DETECTING FERROMAGNETIC FOREIGN OBJECTS IN A PREDETERMINED SPACE	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	India	SYSTEMS, METHODS, AND APPARATUS FOR DETECTING FERROMAGNETIC FOREIGN OBJECTS IN A PREDETERMINED SPACE	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	SYSTEMS, METHODS, AND APPARATUS FOR DETECTING FERROMAGNETIC FOREIGN OBJECTS IN A PREDETERMINED SPACE	[illegible]			Filed	Application
[illegible]	[illegible]	United States	Systems, methods, and apparatus for detecting ferromagnetic foreign objects in a predetermined space	[illegible]			Inactive	Expired
[illegible]	[illegible]	Patent Cooperation Treaty	SYSTEMS, METHODS, AND APPARATUS FOR DETECTING FERROMAGNETIC FOREIGN OBJECTS IN A PREDETERMINED SPACE	[illegible]			Inactive	Expired
151190	151190IDF	United States	Systems, methods, and apparatus implementing hybrid symmetric and asymmetric control for soft switching in wireless power transfer applications	14/808,942			Filed	Application
151190CN	151190IDF	China P.R.	Systems, methods, and apparatus implementing hybrid symmetric and asymmetric control for soft switching in wireless power transfer applications	201680043746.8			Filed	Application

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151190WO	151190IDF	Patent Cooperation Treaty	Systems, methods, and apparatus implementing hybrid symmetric and asymmetric control for soft switching in wireless power transfer applications	PCT/US2016/039363			Inactive	Expired
[illegible]	[illegible]	United States	Clover leaf and butterfly coil structures for flat wireless coupling profiles in wireless power transfer applications	[illegible]			Filed	[illegible]
[illegible]	[illegible]	China PR	Clover leaf and butterfly coil structures for flat wireless coupling profiles in wireless power transfer applications	[illegible]			Filed	Application
[illegible]	[illegible]	European Patent Convention	Clover leaf and butterfly coil structures for flat wireless coupling profiles in wireless power transfer applications	[illegible]			Filed	Application
[illegible]	[illegible]	India	Clover leaf and butterfly coil structures for flat wireless coupling profiles in wireless power transfer applications	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Clover leaf and butterfly coil structures for flat wireless coupling profiles in wireless power transfer applications	[illegible]			Filed	Application
[illegible]	[illegible]	United States	Clover leaf and butterfly coil structures for flat wireless coupling profiles in wireless power transfer applications	[illegible]			Inactive	Expired
[illegible]	[illegible]	Patent Cooperation Treaty	Clover leaf and butterfly coil structures for flat wireless coupling profiles in wireless power transfer applications	[illegible]			Inactive	Expired
151890	151890IDF	United States	Methods and systems for compatible operation between a wireless power transfer system and wirelessly communicating vehicle systems	14/858,273	9,847,678	12/19/2017	Granted	Granted

151890BR	151890IDF	Brazil	Methods and systems for compatible operation between a wireless power transfer system and wirelessly communicating vehicle systems	BR112018005428.3			Filed	Application
151890CN	151890IDF	China P.R.	Methods and systems for compatible operation between a wireless power transfer system and wirelessly communicating vehicle systems	201680053813.4			Filed	Application
151890EP	151890IDF	European Patent Convention	Methods and systems for compatible operation between a wireless power transfer system and wirelessly communicating vehicle systems	16766758.2			Filed	Application
151890IN	151890IDF	India	Methods and systems for compatible operation between a wireless power transfer system and wirelessly communicating vehicle systems	201847013503			Filed	Application
151890JP	151890IDF	Japan	Methods and systems for compatible operation between a wireless power transfer system and wirelessly communicating vehicle systems	2018-513668			Filed	Application
151890KR	151890IDF	Republic of Korea	Methods and systems for compatible operation between a wireless power transfer system and wirelessly communicating vehicle systems	10-2018-7010501			Filed	Application

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152097WO	152097IDF	Patent Cooperation Treaty	Methods and systems for compatible operation between a wireless power transfer system and wirelessly communicating vehicle systems	PCT/US2015/050205			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
152097	152097IDF	United States	Methods and apparatus utilizing multi-filar alignment assistance in wireless power transfer applications	14/858,369			Filed	Allowed
152097BR	152097IDF	Brazil	Methods and apparatus utilizing multi-filar alignment assistance in wireless power transfer applications	BR112018005438O			Filed	Application
152097CN	152097IDF	China P.R.	Methods and apparatus utilizing multi-filar alignment assistance in wireless power transfer applications	201680053798.0			Filed	Application

152097EP	152097IDF	European Patent Convention	Methods and apparatus utilizing multi-filar alignment assistance in wireless power transfer applications	18760891.8			Filed	Application
152097IN	152097IDF	India	Methods and apparatus utilizing multi-filar alignment assistance in wireless power transfer applications	201847012453			Filed	Application
152097JP	152097IDF	Japan	Methods and apparatus utilizing multi-filar alignment assistance in wireless power transfer applications	2018-512620			Filed	Application
152097KR	152097IDF	Republic of Korea	Methods and apparatus utilizing multi-filar alignment assistance in wireless power transfer applications	10-2018-7010753			Filed	Application
152097WO	152097IDF	Patent Cooperation Treaty	Methods and apparatus utilizing multi-filar alignment assistance in wireless power transfer applications	PCT/US2016/049215			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PATENT
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[illegible]	[illegible]	European Patent Convention	Systems, methods, and apparatus for partial electronics integration in vehicle pads for wireless power transfer applications	16704776.0			Filed	Application
[illegible]	[illegible]	Indonesia	Systems, methods, and apparatus for partial electronics integration in vehicle pads for wireless power transfer applications	P00201706909			Filed	Application
[illegible]	[illegible]	India	Systems, methods, and apparatus for partial electronics integration in vehicle pads for wireless power transfer applications	201747024377			Filed	Application
[illegible]	[illegible]	Japan	Systems, methods, and apparatus for partial electronics integration in vehicle pads for wireless power transfer applications	2017-544724			Filed	Application
[illegible]	[illegible]	Republic of Korea	Systems, methods, and apparatus for partial electronics integration in vehicle pads for wireless power transfer applications	10-2017-7022937			Filed	Application
[illegible]	[illegible]	United States	Systems, methods, and apparatus for partial electronics integration in vehicle pads for wireless power transfer applications	15/136,256			[illegible]	[illegible]
[illegible]	[illegible]	Patent Cooperation Treaty	Systems, methods, and apparatus for partial electronics integration in vehicle pads for wireless power transfer applications	PCT/US2016/016115			[illegible]	[illegible]
152756	152756IDF	United States	INTEGRATION OF POSITIONING ANTENNAS IN WIRELESS INDUCTIVE CHARGING POWER APPLICATIONS	15/136,454	9,929,606	3/27/2018	Granted	Granted

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152756CN	152756IDF	China P.R.	INTEGRATION OF POSITIONING ANTENNAS IN WIRELESS INDUCTIVE CHARGING POWER APPLICATIONS	201680026743.0			Filed	Application
152756EP	152756IDF	European Patent Convention	INTEGRATION OF POSITIONING ANTENNAS IN WIRELESS INDUCTIVE CHARGING POWER APPLICATIONS	16721051.7			Filed	Allowed
152756IN	152756IDF	India	INTEGRATION OF POSITIONING ANTENNAS IN WIRELESS INDUCTIVE CHARGING POWER APPLICATIONS	201747033123			Filed	Application
152756JP	152756IDF	Japan	INTEGRATION OF POSITIONING ANTENNAS IN WIRELESS INDUCTIVE CHARGING POWER APPLICATIONS	2017-558419			Filed	Application
152756P1	152756IDF	United States	integration of solenoid positioning antennas in wireless inductive charging power applications	62/159,875			Inactive	Expired
152756WO	152756IDF	Patent Cooperation Treaty	INTEGRATION OF POSITIONING ANTENNAS IN WIRELESS INDUCTIVE CHARGING POWER APPLICATIONS	PCT/US2016/030448			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
153133	153133IDF	United States	METHODS AND APPARATUS UTILIZING A BIPOLAR DOUBLE D VEHICLE COUPLER IN WIRELESS POWER TRANSFER APPLICATIONS	14/865,826	9,876,366	1/23/2018	Granted	Granted
153133CN	153133IDF	China P.R.	Methods and apparatus utilizing a bipolar double D vehicle coupler in wireless power transfer applications	201580055365.6			Filed	Application
153133WO	153133IDF	Patent Cooperation Treaty	Methods and apparatus utilizing a bipolar double D vehicle coupler in wireless power transfer applications	PCT/US2015/049213			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
153537	153537IDF	United States	Integration of solenoid positioning antennas in wireless inductive charging power applications	15/013,521			Filed	Application
153537CN	153537IDF	China P.R.	Integration of solenoid positioning antennas in wireless inductive charging power applications	201680008435.4			Filed	Application

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153537EP	153537IDF	European Patent Convention	Integration of solenoid positioning antennas in wireless inductive charging power applications	16723588.6			Filed	Application
153537IN	153537IDF	India	Integration of solenoid positioning antennas in wireless inductive charging power applications	201747035206			Filed	Application
153537JP	153537IDF	Japan	Integration of solenoid positioning antennas in wireless inductive charging power applications	2017-557184			Filed	Application
153537P1	153537IDF	United States	Integration of solenoid positioning antennas in wireless inductive charging power applications	62/163,096			Inactive	Expired
153537WO	153537IDF	Patent Cooperation Treaty	Integration of solenoid positioning antennas in wireless inductive charging power applications	PCT/US2016/030015			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
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PATENT
REEL: 057758 FRAME: 0085

153722	153722IDF	United States	Methods and apparatus utilizing digital signal processing of ultra wide band radar signals for living object detection in wireless power transfer applications	14/835,127			Filed	Application
153722CN	153722IDF	China P.R.	METHODS AND APPARATUS UTILIZING DIGITAL SIGNAL PROCESSING OF ULTRA WIDE BAND RADAR SIGNALS FOR LIVING TARGET DETECTION	201680023261.3			Filed	Application
153722EP	153722IDF	European Patent Convention	METHODS AND APPARATUS UTILIZING DIGITAL SIGNAL PROCESSING OF ULTRA WIDE BAND RADAR SIGNALS FOR LIVING TARGET DETECTION	16723871.6			Filed	Application

ES3722IN	ES3722IDF	India	METHODS AND APPARATUS UTILIZING DIGITAL SIGNAL PROCESSING OF ULTRA WIDE BAND RADAR SIGNALS FOR LIVING TARGET DETECTION	202047033530			Filed	Pending	Application
ES3722P1	ES3722IDS	United States	Methods and apparatus utilizing digital signal processing of ultra wide band radar signals for living object detection in wireless power transfer applications	63/166,443			Inactive	Expired	Expired
ES3722WO	ES3722IDS	Patent Cooperation Treaty	METHODS AND APPARATUS UTILIZING DIGITAL SIGNAL PROCESSING OF ULTRA WIDE BAND RADAR SIGNALS FOR LIVING TARGET DETECTION	PCT/US2015/018364			Inactive	Expired	Expired

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[illegible]	[illegible]	China P.R.	Systems, methods and apparatus for guidance and alignment in electric vehicles wireless inductive charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	European Patent Convention	Systems, methods and apparatus for guidance and alignment in electric vehicles wireless inductive charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	India	Systems, methods and apparatus for guidance and alignment in electric vehicles wireless inductive charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	Japan	Systems, methods and apparatus for guidance and alignment in electric vehicles wireless inductive charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	Republic of Korea	Systems, methods and apparatus for guidance and alignment in electric vehicles wireless inductive charging systems	[illegible]			Filed	Application
[illegible]	[illegible]	Patent Cooperation Treaty	Systems, methods and apparatus for guidance and alignment in electric vehicles wireless inductive charging systems	[illegible]			Inactive	Expired
154372	154372IDF	United States	Systems, methods and apparatus for guidance and alignment between electric vehicles and wireless charging systems	15/069,716			Filed	Application
154372P1	154372IDF	United States	Systems, methods and apparatus for guidance and alignment between electric vehicles and wireless charging systems	62/186,851			Inactive	Expired

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US9373960	US9373960	Patent Cooperation Treaty	Systems, methods and apparatus for guidance and alignment between electric vehicles and wireless charging systems	PCT/US2016/034432					Inactive	Issued	
US9577436	US9577436	Patent Cooperation Treaty	Wireless power transfer systems for laptop computers and laptop computer wireless power transfer systems	US15/133,335					Pled	Application	
US9584189	US9584189	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
US9584190	US9584190	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
US9584191	US9584191	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
US9584192	US9584192	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
US9584193	US9584193	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
US9584194	US9584194	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
US9584195	US9584195	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
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US9584203	US9584203	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
US9584204	US9584204	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
US9584205	US9584205	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	
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US9584300	US9584300	Patent Cooperation Treaty	Communication system with adaptive frequency selection	US15/431,275					Inactive	Issued	

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157146	157146IDF	United States	METHODS AND APPARATUS FOR REDUCING FLUX CANCELLATION IN FERRITE OF DOUBLE COUPLE INDUCTIVE POWER TRANSFER SYSTEMS	15/154,286			Filed	Application
157146WO	157146IDF	Patent Cooperation Treaty	METHODS AND APPARATUS FOR REDUCING FLUX CANCELLATION IN FERRITE OF DOUBLE COUPLE INDUCTIVE POWER TRANSFER SYSTEMS	PCT/US2017/029678			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Granted	Granted
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]			Inactive	Expired
160507	160507IDF	United States	SYSTEMS AND METHODS FOR IDENTIFYING AN IDEAL OPERATION FREQUENCY FOR WIRELESS POWER TRANSFER	15/134,136	10,000,133	6/19/2018	Granted	Granted
160507WO	160507IDF	Patent Cooperation Treaty	SYSTEMS AND METHODS FOR IDENTIFYING AN IDEAL OPERATION FREQUENCY FOR WIRELESS POWER TRANSFER	PCT/US2017/021626			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Filed	Published
[illegible]	[illegible]	Patent Cooperation Treaty	[illegible]	[illegible]			Filed	Published

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160661	160661IDF	United States	BASE SIDE VEHICLE IDENTIFICATION USING VEHICLE CONTROLLER SWITCHING FREQUENCY	15/491,016			Filed	Allowed
160661CN	160661IDF	China P.R.	BASE SIDE VEHICLE IDENTIFICATION USING VEHICLE CONTROLLER SWITCHING FREQUENCY	201780038473.2			Filed	Application
160661P1	160661IDF	United States	BASE SIDE VEHICLE IDENTIFICATION USING VEHICLE CONTROLLER SWITCHING FREQUENCY	62/354,348			Inactive	Expired
160661WO	160661IDF	Patent Cooperation Treaty	BASE SIDE VEHICLE IDENTIFICATION USING VEHICLE CONTROLLER SWITCHING FREQUENCY	PCT/US2017/034862			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
160876	160876IDF	United States	APPARATUS AND METHODS FOR REDUCING MAGNETIC FIELD EMISSIONS BETWEEN WIRELESS POWER TRANSMITTERS	15/479,854			Filed	Application
160876WO	160876IDF	Patent Cooperation Treaty	APPARATUS AND METHODS FOR REDUCING MAGNETIC FIELD EMISSIONS BETWEEN WIRELESS POWER TRANSMITTERS	PCT/US2017/032863			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
162039	162039IDF	United States	TWISTED WIRE FOR POWER CHARGING	15/275,034	10,144,302	12/4/2018	Granted	Granted

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162733WO	162733IDF	Patent Cooperation Treaty	TWISTED WIRE FOR POWER CHARGING	PCT/US2017/047331			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
162317	162317IDF	United States	METHOD AND APPARATUS FOR POSITIONING A VEHICLE	15/449,718			Filed	Application
162317CN	162317IDF	China P.R.	METHOD AND APPARATUS FOR POSITIONING A VEHICLE	201780016060.4			Filed	Application
162317EP	162317IDF	European Patent Convention	METHOD AND APPARATUS FOR POSITIONING A VEHICLE	17714935.8			Filed	Application
162317P1	162317IDF	United States	METHODS AND APPARATUS FOR POSITIONING A VEHICLE	62/343,736			Inactive	Expired
162317P2	162317IDF	United States	SYSTEM AND METHOD FOR POSITIONING A VEHICLE	62/305,411			Inactive	Expired
162317WO	162317IDF	Patent Cooperation Treaty	METHOD AND APPARATUS FOR POSITIONING A VEHICLE	PCT/US2017/020890			Inactive	Expired
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
162730	162730IDF	United States	DETERMINING POWER ELECTRONICS FEASIBILITY WITH SINGLE TURN MAGNETIC SIMULATION DATA	15/272,673			Filed	Application

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162730WO	162730IDF	Patent Cooperation Treaty	DETERMINING POWER ELECTRONICS FEASIBILITY WITH SINGLE TURN MAGNETIC SIMULATION DATA	PCT/US2017/049261			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
163521	163521IDF	United States	DOUBLE-D SPLIT COIL WINDING	15/460,337			Filed	Application
163521WO	163521IDF	Patent Cooperation Treaty	DOUBLE-D SPLIT COIL WINDING	PCT/US2018/020384			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
163593	163593IDF	United States	SYSTEM AND METHOD FOR FREQUENCY PREDICTION	15/452,400			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
163950	163950IDF	United States	INDUCTIVE POWER TRANSFER COILS WITH PARASITIC RESONATORS	15/899,514			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
164460	164460IDF	United States	MULTI-COIL BASE PAD WITH ANGLED STRUCTURE	15/413,658			Filed	Application
164460P1	164460IDF	United States	DOUBLE-D BASE PAD WITH ANGLED STRUCTURE FOR REDUCED EMISSIONS IN FLUSH MOUNTED AND BURIED WIRELESS POWER TRANSFER APPLICATIONS	62/379,446			Inactive	Expired

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164460WO	164460IDF	Patent Cooperation Treaty	MULTI-COIL BASE PAD WITH ANGLED STRUCTURE	PCT/US2017/046143			Filed	Application
165562	165562IDF	United States	Vehicle-Side Beacon Mode for Wireless Electric Vehicle Charging	15/491,607			Filed	Application
165562P1	165562IDF	United States	Vehicle-Side Beacon Mode for Wireless Electric Vehicle Charging	62/437,009			Inactive	Expired
165562WO	165562IDF	Patent Cooperation Treaty	Vehicle-Side Beacon Mode for Wireless Electric Vehicle Charging	PCT/US2017/064278			Filed	Application
170107	170107IDF	United States	VEHICLE ALIGNMENT FOR WIRELESS CHARGING	15/656,915			Filed	Application
170107P1	170107IDF	United States	VEHICLE ALIGNMENT FOR WIRELESS CHARGING	62/437,005			Inactive	Expired
170112	170112IDF	United States	METHOD FOR INCREASING PAD EFFICIENCY AND ROBUSTNESS	15/605,569			Filed	Application
170112P1	170112IDF	United States	Increasing Pad Efficiency and Robustness	62/437,009			Inactive	Expired
170112WO	170112IDF	Patent Cooperation Treaty	MAGNETIC STRUCTURE FOR INDUCTIVE POWER TRANSMISSION WITH IMPROVED EFFICIENCY	PCT/US2017/064278			Filed	Application
170185	170185IDF	United States	RIPPLE CURRENT REDUCTION FOR WIRELESS ELECTRIC VEHICLE CHARGING	15/709,314			Filed	Application
170185P1	170185IDF	United States	RIPPLE CURRENT REDUCTION FOR WIRELESS ELECTRIC VEHICLE CHARGING	62/437,005			Inactive	Expired
170185P2	170185IDF	United States	RIPPLE CURRENT REDUCTION FOR WIRELESS ELECTRIC VEHICLE CHARGING	62/437,009			Inactive	Expired
170185WO	170185IDF	United States	RIPPLE CURRENT REDUCTION FOR WIRELESS ELECTRIC VEHICLE CHARGING	PCT/US2017/064278			Filed	Application

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170644	170644IDF	United States	Ferrite Arrangement In a Wireless Power-Transfer Structure To Mitigate Dimensional Tolerance Effects on Performance	15/700,004			Filed	Application
170830	170830IDF	United States	[illegible]	[illegible]			Filed	Application
171049	171049IDF	United States	LIVING OBJECT PROTECTION SYSTEM ANTENNA STRUCTURE	15/663,670			Filed	Allowed
171055	171055IDF	United States	[illegible]	[illegible]			Filed	Application
171059	171059IDF	United States	[illegible]	[illegible]			Filed	Allowed
171059WO	171059IDF	Patent Cooperation Treaty	[illegible]	[illegible]			Filed	Application
171398	171398IDF	United States	WIRELESS CHARGING MAGNETIC PARAMETER DETERMINATION	15/656,927			Filed	Application
171398WO	171398IDF	Patent Cooperation Treaty	WIRELESS CHARGING MAGNETIC PARAMETER DETERMINATION	PCT/US2018/039458			Filed	Application
171526	171526IDF	United States	[illegible]	[illegible]			Filed	Application
171626	171626IDF	United States	REINFORCED BASE PAD COVER	15/638,418			Filed	Application
171705	171705IDF	United States	[illegible]	[illegible]			Filed	Application
171706	171706IDF	United States	[illegible]	[illegible]			Filed	Application

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173366	173366IDF	United States	ADAPTIVE ADC CONTROL FOR LIVING OBJECT PROTECTION	15/838,679			Filed	Application
173366P1	173366IDF	United States	ADAPTIVE ADC CONTROL FOR LIVING OBJECT PROTECTION	62/479,268			Inactive	Expired
174858	174858IDF	United States	METHODS AND APPARATUS FOR SHIELDING IN WIRELESS TRANSFER POWER SYSTEMS	16/009,063			Filed	Application
174858P1	174858IDF	United States	METHODS AND APPARATUS FOR SHIELDING IN WIRELESS TRANSFER POWER SYSTEMS	62/520,461			Inactive	Expired
175011	175011IDF	United States	PASSIVE FLUX BRIDGE FOR CHARGING ELECTRIC VEHICLES	15/971,577			Filed	Application
175892	175892IDF	United States	FOREIGN OBJECT DETECTION CIRCUIT USING CURRENT MEASUREMENT	16/226,156			Filed	Application
175892P1	175892IDF	United States	FOREIGN OBJECT DETECTION CIRCUIT USING CURRENT MEASUREMENT	62/520,622			Filed	Application

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176074P1	176074IDF	United States	MAGNETIC COIL FOR WIRELESS POWER TRANSFER	63/632,809			Filed	Application - instructed to lapse via inaction (no conversion planned)
[illegible]	[illegible]	United States	Hybrid Foreign Object Detection and Positioning System	[illegible]			Filed	Application
[illegible]	[illegible]	United States	BEACON SUBSYSTEM FOR A SHORT RANGE POSITIONING SYSTEM	[illegible]			Inactive	Expired
[illegible]	[illegible]	United States	BEACON SUBSYSTEM FOR A SHORT RANGE POSITIONING SYSTEM	[illegible]			Inactive	Expired
[illegible]	[illegible]	United States	HYBRID FOREIGN OBJECT DETECTION AND POSITIONING SYSTEM	[illegible]			Inactive	Expired
[illegible]	[illegible]	United States	HYBRID FOREIGN OBJECT DETECTION AND POSITIONING SYSTEM	[illegible]			Filed	Application
[illegible]	[illegible]	Patent Cooperation Treaty	HYBRID FOREIGN OBJECT DETECTION AND POSITIONING SYSTEM	[illegible]			Filed	Application
176572	176572IDF	United States	THERMAL FEEDBACK FOR POWER TRANSFER OPTIMIZATION	16/246,985			Filed	Application
176572P1	176572IDF	United States	WIRELESS POWER TRANSFER APPARATUS	62/627,131			Filed	Application
176572P2	176572IDF	United States	WIRELESS POWER TRANSFER APPARATUS	62/630,385			Filed	Application
[illegible]	[illegible]	United States	[illegible]	[illegible]			Filed	Application
181095	181095IDF	United States	FLUSH-MOUNT WIRELESS CHARGING POWER-TRANSFER SYSTEM	16/178,559			Filed	Application
181095P1	181095IDF	United States	FLUSH-MOUNT WIRELESS CHARGING POWER-TRANSFER SYSTEM	62/595,012			Inactive	Expired

[illegible]	[illegible]	[illegible]	METHOD AND SYSTEM FOR MOVING A MAGNETIC FIELD HOT SPOT OF A WIRELESS POWER TRANSFER DEVICE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
182022P1	182022IDF	United States	COIL TURN STACKING ARRANGEMENT FOR INDUCTIVE WIRELESS CHARGING SYSTEM	62/637,139			Filed	Application - Instructed to lapse via inaction (no conversion planned)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
183277	183277IDF	United States	EXTENDED FOREIGN OBJECT DETECTION SIGNAL PROCESSING				To be Filed	To be Filed
183277P1	183277IDF	United States	EXTENDED FOREIGN OBJECT DETECTION SIGNAL PROCESSING	62/675,127			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
183754	183754IDF	United States	Extended-Range Positioning System Based on Foreign Object Detection				To be Filed	To be Filed
183754P1	183754IDF	United States	Extended-Range Positioning System Based on Foreign Object Detection	62/712,884			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
183925	183925IDF	United States	METHOD AND SYSTEM FOR MOVING A MAGNETIC FIELD HOT SPOT OF A WIRELESS POWER TRANSFER DEVICE	16/197,805			Filed	Application
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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