TRADEMARK ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	Notice of Substitution of Administrative Agent in Trademarks and Patents

CONVEYING PARTY DATA

Name	Formerly	Execution Date	Entity Type
JPMORGAN CHASE BANK, N.A.		10/30/2013	ASSOCIATION: UNITED STATES

RECEIVING PARTY DATA

Name:	CANTOR FITZGERALD SECURITIES
Street Address:	110 EAST 59TH STREET
Internal Address:	4TH FLOOR
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10022
Entity Type:	GENERAL PARTNERSHIP: NEW YORK

PROPERTY NUMBERS Total: 24

Property Type	Number	Word Mark
Registration Number:	2080733	
Registration Number:	1463364	
Registration Number:	1163486	KULDUCKIE
Registration Number:	1562026	KULGLASS
Registration Number:	1002640	KULROD
Registration Number:	1199867	LARSEN
Registration Number:	1121359	LARSEN
Registration Number:	2787947	PULSE
Registration Number:	1568116	PULSE
Registration Number:	1518684	PULSE ENGINEERING
Registration Number:	2451407	PULSEJACK
Registration Number:	2334506	SPOTS!
Registration Number:	1803124	VALOR

CH $615.00 2080733

Registration Number:	2410114	Z-BLOCKER
Registration Number:	1921738	COPPERHEAD
Registration Number:	2441051	COMPONENTS FOR A MODERN WORLD
Serial Number:	77434243	PULSE
Serial Number:	77434185	PULSE
Serial Number:	76546810	ANTENNA SOURCEBOOK
Registration Number:	4147716	SIDEWINDER
Registration Number:	2432883	EXCELSUS
Serial Number:	85171998	
Serial Number:	85376672	MAGPAC
Serial Number:	85172007	PULSE ELECTRONICS

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.

Email: mmakover@paulweiss.com, dewilliams@paulweiss.com

Correspondent Name: Matthew S. Makover

Address Line 1: 1285 Avenue of the Americas

Address Line 4: New York, NEW YORK 10019-6064

ATTORNEY DOCKET NUMBER:	13948-219
NAME OF SUBMITTER:	Matthew S. Makover
Signature:	/Matthew S. Makover/
Date:	12/27/2013

Total Attachments: 53

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EXECUTION COPY

NOTICE OF SUBSTITUTION OF ADMINISTRATIVE AGENT IN TRADEMARKS AND PATENTS

This **NOTICE OF SUBSTITUTION OF ADMINISTRATIVE AGENT IN TRADEMARKS AND PATENTS** (this "Notice"), is dated as of October 30, 2013 (the "Effective Date"), by and among (i) Pulse Electronics Corporation (formerly known as Technitrol, Inc.), a Delaware corporation (the "Company"), (ii) the Subsidiaries party hereto, (the "Subsidiary Grantors" and, collectively with the Company, the "Grantors"), (iii) JPMorgan Chase Bank, N.A., the initial Administrative Agent (the "Initial Administrative Agent"), under the Credit Agreement referred to below, and (iv) Cantor Fitzgerald Securities, as the successor Administrative Agent under the Credit Agreement referred to below (in such capacity, together with its successors and assigns, if any, in such capacity, the "Administrative Agent").

W I T N E S S E T H

WHEREAS, reference is made to the Credit Agreement dated as of February 28, 2008, as amended and restated as of February 19, 2009, as further amended and restated as of August 5, 2011, as further amended and rested as of March 9, 2012, as further amended and restated as of November 7 2012, as further amended as of November 19, 2012 and as further amended as of March 13, 2013 (as amended, supplemented or otherwise modified from time to time, the "Credit Agreement"), among the Company, Pulse Electronics (Singapore) Pte Ltd, the Lenders party thereto and the Initial Administrative Agent;

WHEREAS, capitalized terms used in this Agreement and not otherwise defined herein have the meanings specified in the Credit Agreement;

WHEREAS, pursuant to the Domestic Collateral Agreement dated as of February 19, 2009, as amended and supplemented as of November 19, 2012 (as amended, supplemented or otherwise modified from time to time, the "Domestic Collateral Agreement"), the Patent and Trademark Security Agreement dated as October 14, 2011 ("IP Security Agreement"), each among the Company, the Subsidiaries of the Company party thereto, and the Initial Administrative Agent, the Patent and Trademark Security Agreement dated as October 14, 2011, the Grantors granted to the Initial Administrative Agent, its successors and assigns, for the benefit of the Secured Parties (as defined in the Domestic Collateral Agreement), a security interest in, all right, title and interest of Grantors in and to Intellectual Property (as defined in the Domestic Collateral Agreement), including Patent and Trademark Collateral (as defined in the IP Security Agreement);

WHEREAS, pursuant to the Agency Resignation, Assignment and Acceptance Agreement, the Required Lenders appointed the Administrative Agent as "Administrative Agent" under the Credit Agreement and assigned to the Administrative Agent all liens and other security interests previously granted to the Initial Administrative Agent in connection with the Credit Agreement; and

WHEREAS, the Initial Administrative Agent is executing this Notice merely for recordation with the United States Patent and Trademark Office confirming the foregoing assignment.

NOW, THEREFORE, the Initial Administrative Agent hereby gives notice that it previously transferred and conveyed to the Administrative Agent all of its right, title and interest (including its security interest), in and to all right, title and interest of Grantors in and to Intellectual Property, including all right, title and interest of Grantors in and to:

1. all letters patent of the United States, all registrations and recordings thereof, and all applications for letters patent of the United States, including registrations, recordings and pending applications in the United States Patent and Trademark Office, including those registered patents and patent applications listed on Schedule I;

2. all reissues, continuations, divisions, continuations-in-part, renewals or extensions thereof, and the inventions disclosed or claimed therein, including the right to make, use and/or sell the inventions disclosed or claimed therein;

3. all trademarks, service marks, trade names, corporate names, company names, business names, fictitious business names, trade styles, trade dress, logos, other source or business identifiers, designs and general intangibles of like nature, now existing or hereafter adopted or acquired, all registrations and recordings thereof, and all registration and recording applications filed in connection therewith, including registrations and registration applications in the United States Patent and Trademark Office or any similar offices in any State of the United States, and all extensions, or renewals thereof, including those United States registered trademarks and trademark applications listed on Schedule II (the "Trademarks");

4. all goodwill associated with the Trademarks or symbolized thereby; and

5. all other assets, rights and interests that uniquely reflect or embody such goodwill.

This Notice may be executed in any number of counterparts and by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed to be an original and all of which taken together shall constitute but one and the same instrument. Delivery of an executed counterpart of this Notice by facsimile shall be effective as delivery of a manually executed counterpart of this Notice.

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IN WITNESS WHEREOF, Initial Administrative Agent has caused this Notice to be duly executed by its duly authorized officer or representative as of the day and year first above written.

JPMORGAN CHASE BANK, N.A., as Initial Administrative Agent

By:_____

Name: Jane E. Orndahl
Title: Authorized Officer

Signature Page to Notice of Substitution
of Administrative Agent in Trademarks and Patents

CANTOR FITZGERALD SECURITIES, as successor Administrative Agent

By: _____
Name:
Title:

James Bond
Chief Operating Officer

DUSTIN ANDERSON
REVIEWED
LEGAL DEPARTMENT

Signature Page to Notice of Substitution
of Administrative Agent in Trademarks and Patents

PULSE ELECTRONICS CORPORATION, as the Company

By: _____

Name: Ralph E. Faison

Title: Chief Executive Officer

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of Administrative Agent in Trademarks and Patents

PULSE ELECTRONICS GMBH, as Subsidiary Grantor

By: _____
Name: Drew A Moyer
Title: Director

PULSE ELECTRONICS, INC., as Subsidiary Grantor

By: _____
Name: Alan Benjamin
Title: Director

PULSE FINLAND OY, as Subsidiary Grantor

By: _____
Name: Alan Benjamin
Title: Director

Signature Page to Notice of Substitution
of Administrative Agent in Trademarks and Patents

Schedule I

Patents

Patent or Application #	Owner of Patent	Title	Patent Granted (countries)	Patent Apps Pending (countries)	Patent Grant Date	Patent Expiration Date
12/567,622	Pulse Engineering, Inc	Current Sensing Devices and Methods		US, PCT, TW, BR, CN, EP, IL, IN, KR, MX, RU, SG	None	None
12/684,056	Pulse Engineering, Inc	Current Sensing Devices and Methods		US, PCT, TW, BR, CN, EP, IL, IN, KR, MX, RU, SG	None	None
61/230,474	Pulse Engineering, Inc	Current Sensing Devices and Methods		US, PCT, TW, BR, CN, EP, IL, IN, KR, MX, RU, SG	None	None
12/954,546	Pulse Engineering, Inc	Current Sensing Devices and Methods		US, PCT, TW, BR, CN, EP, IN	None	None
61/413,913	Pulse Engineering, Inc	Advanced Electronic Header Apparatus and Methods		US, PCT, TW, CN	None	None
7,489,225	Pulse Engineering, Inc	Inductive Devices and Method	US, CN, TW		2/10/2009	11/16/2024
7,567,163	Pulse Engineering, Inc	Precision Inductive Devices and Methods	US		7/28/2009	8/26/2025
6,628,531	Pulse Engineering, Inc	Multi-Layer, User-Configurable Micro-Printed Circuit Board	US	CN, TW	9/30/2003	1/24/2021
6,420,953	Pulse Engineering, Inc	Multi-Layer, Multi-Fuctioning Printed Circuit Board	US CN, [KR,] IL	JP	7/16/2002	5/27/2020
6,590,469	Pulse Engineering, Inc	High frequency, large bandwidth balun and method of manufacturing	US		7/8/2003	2/12/2021
61/653,655		Current Sensing Device and Methods		US, PCT, TW		5/31/2013

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61/616,240		Flat Coil Planar Inductive Devices and Methods		US, CN, TW		3/27/2013
44 04 543	Pulse GmbH & Co. KG	Arrangement for automotive electrical system to connect a cable with an electrical functional unit	DE	none	2/12/1994	2/12/2014
195 04 221	Pulse GmbH & Co. KG	Ignition Coil	DE	none	2/9/1995	2/9/2015
196 08 526	Pulse GmbH & Co. KG	Method of controlling the minimum ignition energy for internal combustion engines	DE, FR	none	5/15/2003	5/15/2023
196 29 344	Pulse GmbH & Co. KG	Creeping spark plug to ignite a fuel-air micture	DE	none	5/4/2000	5/4/2020
197 02 438	Pulse GmbH & Co. KG	Pencil coil for internal combustion engines	DE	none	5/6/1999	5/6/2019
199 09 211	Pulse GmbH & Co. KG	Electrical Pencil Coil	DE	none	3/3/1999	3/3/2019
1 730 754	Pulse GmbH & Co. KG	Transformer device for generating an ignition voltage for internal combustion engines	EP, DE, CN, JP, [PCT]	none	3/15/2004	3/15/2024
100 36 528	Pulse GmbH & Co. KG	Switching device for controlling the primary current of an ignition module for internal combustion engines	DE	none	7/27/2000	7/27/2020
1 557 849	Pulse GmbH & Co. KG	Ignition coil for an internal combustion engine	EP, DE, CN,HK, US	none	1/22/2004	1/22/2024
US 7,952,456 DE 10 2004 003 223, PCT 2005/071701, EP 05 701 112.4, JP 2006-550055	Pulse Electronics GmbH	Ignition coil for an internal combustion engine	DE, US, JP, EP	none	1/22/2004	US 12/14/2026

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198 49 505	Pulse GmbH & Co. KG	High Voltage connection element	DE	none	10/27/1998	10/27/2018
199 62 279	Pulse GmbH & Co. KG	Ignition Coil	DE	none	12/23/1999	12/23/2019
199 12 376	Pulse GmbH & Co. KG	Ionic current measuring device	DE	none	3/19/1999	3/19/2019
199 27 820	Pulse GmbH & Co. KG	Pencil coil	DE	none	12/23/1999	12/23/2019
10 2005 043 336.7	Pulse GmbH & Co. KG	Pencil transformer for supplying a means of ignition in particular a spark plug for an internal combustion engine with a high voltage	DE	CN, HK, JP, EP, US [PCT]	9/12/2005	9/12/2025
10 2005 043 328.9	Pulse GmbH & Co. KG	Arrangement for detecting a measuring signal on a high violtage side, in particular a signal corresponding to ion current between sparking plug electrodes of an internal combustion engine	DE	CN, EP, JP, US	9/12/2005	9/12/2025
10 2005 043 318.9		Arrangement for detecting a measuring signal on a high violtage side, in particular a signal corresponding to ion current between sparking plug electrodes of an internal combustion engine	DE	CN,EP,JP,US	9/12/2005	
10 2011 017 095.2		Fluorine-free cutting, sealants and lubricants for spark plugs/coils	none	DE		
6,590,469	Pulse Engineering, Inc.	High-Frequency, Large Bandwidth Balun and Method of Manufacturing	US		7/8/2003	1/24/2021
5,015,981	Pulse Engineering, Inc.	Electronic microminiature packaging and method	US		5/14/1991	8/21/2010
5,032,953	Pulse Engineering, Inc.	Surface mounted singl in-line electronic component package with mounting projections and chamfered viewing edge	US		7/16/1991	8/15/2010
5,212,345	Pulse Engineering, Inc.	Self leaded surface mounted coplanar header	US		5/18/1993	1/24/2012

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5,262,745	Pulse Engineering, Inc.	Surface mounted multi-section bobbin.	US		11/16/1993	1/27/2012
5,455,741	Pulse Engineering, Inc.	Wire-lead through hole interconnect device	US		10/3/95	10/3/2013
5,971,805	Co-owned: Pulse Engineering, Inc. & Berg Inc.	Modular jack with filter insert	US, EU	CN, JP, KR	10/26/1999	5/27/2017
5,973,932	Pulse Engineering, Inc.	Soldered component bonding in a printed circuit assembly	US	CN	10/26/1999	2/14/2017
5,986,894	Pulse Engineering, Inc.	Microelectronic component carrier and method of its manufacture	US	CA, CN, EU	11/16/1999	3/19/2018
6,005,463	Pulse Engineering, Inc.	Through-hole interconnect device with isolated wire-leads and component barriers	US	CA, CN, EU, TW	12/21/1999	1/30/2017
6,116,963	Pulse Engineering, Inc.	Two-piece microelectronic connector and method	US	CN, EU, TW	9/12/2000	10/9/2018
6,176,741	Pulse Engineering, Inc.	Modular Microelectronic connector and method for manufacturing same	US		1/23/2001	4/20/2019
6,193,560	Co-owned: Pulse Engineering, Inc. & Tyco Inc.	Connector assembly with side-by-side terminal arrays	US		2/27/2001	3/3/2020
6,224,425	Pulse Engineering, Inc.	Simplified microelectronic connector and method of manufacturing	US		5/1/2001	4/20/2019
6,225,560	Pulse Engineering, Inc.	Advanced electronic microminiature package and method.	US		5/1/2001	11/25/2017
6,325,664	Pulse Engineering, Inc.	Shielded microelectronic connector with indicators and method of manufacturing	US		12/4/2001	3/13/2020
6,395,983	Pulse Engineering, Inc.	Electronic packaging device and method	US		5/28/2002	5/18/2019
6,409,548	Pulse Engineering, Inc.	Microelectronic connector with open-cavity insert	US, CN, KR, TW		6/25/2002	11/20/2020
6,471,551	Pulse Engineering, Inc.	Connector assembly with side-by-side terminal arrays	US		10/29/2002	3/30/2020
6,512,175	Pulse Engineering, Inc.	Electronic packaging device	US		1/28/2003	5/18/2019

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6,585,540	Pulse Engineering, Inc.	Shielded microelectronic connector assembly and method of manufacturing	US, CN, TW	EP	7/1/2003	12/6/2020
6,593,840	Pulse Engineering, Inc.	Electronic Packaging Device with Insertable Leads and Method of Manufacturing (Manufacturing Patent 6,912,781)	US		7/15/2003	1/31/2021
6,691,398	Pulse Engineering, Inc.	Electronic packaging device and method	US		2/17/2004	5/18/2019
6,769,936	Pulse Engineering, Inc.	Connector with insert assembly and method of manufacturing	US, CN		8/3/2004	5/6/2022
6,773,302	Pulse Engineering, Inc.	Advanced microelectronic connector assembly and method of manufacturing	US, JP, KR, TW	CN, EP	8/10/2004	3/16/2021
6,848,943	Pulse Engineering, Inc.	Shielded connector assembly and method of manufacturing	US		2/1/2005	4/16/2023
6,872,098	Co-owned: Pulse Engineering, Inc. & Tyco Inc.	Modular jack assembly with signal conditioning	US		3/29/2005	7/31/2022
6,877,211	Pulse Engineering, Inc.	Method of manufacturing an improved microelectronic package.	US		4/12/2005	11/22/2019
6,878,012	Pulse Engineering, Inc.	Shielded microelectronic connector assembly and method of manufacturing	US		4/12/2005	12/6/2020
6,912,781	Pulse Engineering, Inc.	Method of Manufacturing Electronic Packaging Device with Insertable Leads (Refer to Apparatus Patent 6,593,840)	US		7/5/2005	9/11/2022
6,962,511	Pulse Engineering, Inc.	Advanced microelectronic connector assembly and method of manufacturing	US		11/8/2005	3/16/2021
7,241,181	Pulse Engineering, Inc.	Universal connector assembly and method of manufacturing	US, TW		7/10/2007	6/29/2024
7,367,851	Pulse Engineering, Inc.	Universal connector assembly and method of manufacturing	US		5/6/2008	6/29/2024
7,524,206	Pulse Engineering, Inc.	Power-enabled connector assembly and method of manufacturing	US, TW		4/28/2009	3/22/2026
7,661,994	Pulse Engineering, Inc.	Universal connector assembly and method of manufacturing	US		2/16/2010	5/5/2028

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7,708,602	Pulse Engineering, Inc.	Connector Keep Out Apparatus and Methods	US	CN	5/4/2010	2/28/2028
7,724,204	Pulse Engineering, Inc.	Connector antenna apparatus and methods	US, TW		5/25/2010	6/12/2028
7,786,009	Pulse Engineering, Inc.	Universal connector assembly and method of manufacturing	US		8/31/2010	2/15/2030
7,845,984	Pulse Engineering, Inc.	Integrated 2x6 with POE controller "Backpack"	US		12/7/2010	6/30/2029
7,942,700	Pulse Engineering, Inc.	Modular electronic header assembly and methods of manufacture	US	TW	5/17/2011	5/10/2030
7,959,473	Pulse Engineering, Inc.	Universal connector assembly and method of manufacturing	US		6/14/2011	8/30/2030
7,982,572	Pulse Engineering, Inc.	MicroTransformer MagPac	US	CN, EP, TW	7/19/2011	7/15/2029
RE40,020	Pulse Engineering, Inc.	Impedance Blocking Filter Circuit	US		1/22/2008	11/19/2018
7,003,102	Pulse Engineering, Inc.	Telecommunications Gateway And Method	US		2/21/2006	10/10/2021
7,057,486	Pulse Engineering, Inc.	Controlled Induction Device and Method of Manufacture	US		6/6/2006	11/14/2021
7,009,482	Pulse Engineering, Inc.	Controlled Inductance Device and Method	US		3/7/2006	9/17/2022
7,109,837	Pulse Engineering, Inc.	Controlled inductance device and method	US		9/19/2006	9/17/2022
6,181,777	Pulse Engineering, Inc.	Impedance Blocking Filter Circuit	US		12/19/2006	11/19/2018
6,188,750	Pulse Engineering, Inc.	Impedance Blocking Filter Circuit	US		2/13/2001	11/19/2018
6,212,259	Pulse Engineering, Inc.	Impedance Blocking Filter Circuit	US		4/3/2001	11/19/2018
6,404,347	Pulse Engineering, Inc.	Alarm Filter Circuit	US		6/11/2002	5/4/2021
6,472,992	Pulse Engineering, Inc.	Alarm Filter Circuit	US		10/29/2002	5/4/2021

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6,504,906	Pulse Engineering, Inc.	Telephone Micro-tester & Signature Transport System	US		1/7/2003	2/7/2007
5,952,907	Pulse Engineering, Inc.	Blind Hole Potentiometer And Method Of Manufacturing	US		9/14/1999	4/7/2017
6,087,920	Pulse Engineering, Inc.	Monolithic Inductor	US		7/11/2000	8/11/2008
6,223,419	Pulse Engineering, Inc.	Monolithic Inductor And Method Of Manufacturing Same	US	MY	5/1/2001	2/11/2017
6,087,921	Pulse Engineering, Inc.	Placement Insensitive Monolithic Inductor And Method Of Manufacturing Same	US		7/11/2000	8/11/2008
6,005,467	Pulse Engineering, Inc.	Trimmable Inductor	US		12/21/1999	1/21/2008
6,593,840	Pulse Engineering, Inc.	Electronic Packaging Device with Insertable Leads and Method for Manufacturing	US		7/15/2003	1/31/2020
6,912,781	Pulse Engineering, Inc.	Electronic Packaging Device with Insertable Leads and Method for Manufacturing	US		7/5/2005	1/31/2020
6,642,827	Pulse Engineering, Inc.	Advanced Electronic Miniature Coil and Method of Manufacturing (Gap Toroids)	US; TW		11/4/2003	9/13/2020
7,110,931	Pulse Engineering, Inc.	Improved Electronic Filter Assembly and Method (Griffin) Advanced Electronic Signal Conditioning	US		9/19/2006	3/12/2021
D465205	Pulse Engineering, Inc.	Electronics Housing Elements (DSL Rocket)	US		11/5/2002	5/9/2021
D485,536	Pulse Engineering, Inc.	Electronics Component Assembly	US		1/20/2004	3/10/2023
D487,255	Pulse Engineering, Inc.	Electronics Component Package	US		3/2/2004	3/10/2023
7,876,189	Pulse Engineering, Inc.	Form-less Electronic device and methods of manufacture - Divisional.	US	CN	1/25/2011	7/6/2024
RE41,164	Pulse Engineering, Inc.	Impedance Blocking Filter Circuit	US		3/16/2010	10/22/2019
RE41,145	Pulse Engineering, Inc.	Impedance Blocking Filter Circuit	US		2/23/2010	11/19/2018

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346260	FRE Taiwan	Structure Modification of Connector	TW		1997/4/17	2009/1/16
133328	FRE Taiwan	Multi-port Signal Connector	TW		1997/5/28	2009/2/10
73215	FRE Taiwan	Dust Cover for Connector	TW		2000/7/4	2010/4/10
D119675 / 751688	FRE Taiwan	Top of Connector has the elastic tabulator	TW		2006/6/1	2010/10/31
M309839 / 969306	FRE Taiwan	Small Form Factor Connector Cage	TW		2006/10/25	2010/4/10
M309316 / 968238	FRE Taiwan	Small Form Factor SFP Cage with Heat sink	TW		2006/10/27	2010/3/31
M309801 / 968869	FRE Taiwan	Small Form Factor Connector with offset	TW		2006/11/03	2009/11/26
M309802 / 971794	FRE Taiwan	SMT Small Form Factor SFP Connector	TW		2006/11/03	2010/4/10
7,845,975	Pulse Engineering, Inc.	Low-profile connector assembly and methods	US	CN, TW	12/7/2010	1/29/2028
US12/876,003	Pulse Electronics Corp.	Substrate Inductive Devices and Methods		US, PCT, TW		
US13/023,041	Pulse Electronics Corp.	Simplified Inductive Devices and Methods		US, CN, TW		
US61/606,320	Pulse Electronics, Inc.	Deposition Antenna Apparatus and Methods		US		
US61/653,655	Pulse Electronics, Inc.	Current Sensing Devices and Methods		US		
US61/609,868	Pulse Electronics, Inc.	Deposition Antenna Apparatus and Methods		US		
US61/658,833	Pulse Electronics, Inc.	Precision Inductive Device and Methods		US		
US61/637,753	Pulse Electronics, Inc.	Low Cost Electronics Device Assembly and Methods		US		
US11/399,002	Pulse Electronics, Inc.	Modular Electronic Header Assembly and Methods of Manufacture		US, CN, EP, TW		

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US11/985,156	Pulse Electronics, Inc.	Wire-Less Inductive Devices and Methods		US, CN, EP, TW		
US13/437,856	Pulse Electronics, Inc.	Integrated Connector Apparatus and Methods		US		
8,147,278	Pulse Electronics, Inc.	Integrated Connector Apparatus and Methods	US	CN	4/3/2012	2/28/2028
7,524,206	Pulst Engineering, Inc.	Power-Enabled Connector Assembly With Heat Dissipation Apparatus and Method of Manufacturing	US		4/28/2009	
US61/639,739	Pulse Electronics, Inc.	Shielded Integrated Connector Modules and Assemblies and Methods of Manufacturing the Same		US		
US61/616,240	Pulse Electronics, Inc.	Flat Coil Planar Transformer and Methods		US		
US61/650,395	Pulse Electronics, Inc.	Substrate-Based Inductive Devices and Methods of Using and Manufacturing the Same		US		
6,062,908	Pulse Engineering, Inc.	High Density Connector Modules Having Integral Filtering Components Within Repairable, Replaceable Submodules	US		5/16/2000	1/21/2018
171935 (T), 10-0779238 (KR)	Pulse	Electrical Device and Method for Manufacturing the Same (As Amendmed Per Examiner)	TW, KR			1/20/2021
CN01137529.9	Pulse Finland Oy	Double-action antenna			10/12/2005	10/26/2021
DE 60108046.7-08	Pulse Finland Oy	Double-action antenna			12/29/2004	10/11/2021
GB 1202380	Pulse Finland Oy	Double-action antenna			12/29/2004	10/11/2021
CN02147126.6	Pulse Finland Oy	Internal multiband antenna			12/7/2005	10/22/2022
DE 60209686.3-	Pulse Finland Oy	Internal multiband antenna			3/8/2006	10/21/2022

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FI 115343	Pulse Finland Oy	Internal multiband antenna	4/15/2005	10/22/2021
FR 1304765	Pulse Finland Oy	Internal multiband antenna	3/8/2006	10/21/2022
GB 1304765	Pulse Finland Oy	Internal multiband antenna	3/8/2006	10/21/2022
IT 1304765	Pulse Finland Oy	Internal multiband antenna	3/8/2006	10/21/2022
SE 1304765	Pulse Finland Oy	Internal multiband antenna	3/8/2006	10/21/2022
US 6759989	Pulse Finland Oy	Internal multiband antenna	7/6/2004	10/18/2022
CN02154349.6	Pulse Finland Oy	Dual antenna and radio device	8/17/2005	11/27/2022
DE 60213543.5-08	Pulse Finland Oy	Dual antenna and radio device	8/2/2006	11/22/2002
FI 118404	Pulse Finland Oy	Dual antenna and radio device	10/31/2007	11/27/2021
FR 1315238	Pulse Finland Oy	Dual antenna and radio device	8/2/2006	11/22/2002
GB 1315238	Pulse Finland Oy	Dual antenna and radio device	8/2/2006	11/22/2002
SE 1315238	Pulse Finland Oy	Dual antenna and radio device	8/2/2006	11/22/2002
US 6882317	Pulse Finland Oy	Dual antenna and radio device	4/19/2005	11/27/2022
CN03110341.3	Pulse Finland Oy	Antenna with variable directional pattern	10/31/2007	4/9/2023
CN03103160.9	Pulse Finland Oy	Planar antenna	5/3/2006	1/31/2023
DE 60300005.3-	Pulse Finland Oy	Planar antenna	6/30/2004	1/30/2023

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IT 1339133	Pulse Finland Oy	Planar antenna	6/30/2004	1/30/2023
FR 1339133	Pulse Finland Oy	Planar antenna	6/30/2004	1/30/2023
GB 1339133	Pulse Finland Oy	Planar antenna	6/30/2004	1/30/2023
CN03155632.9	Pulse Finland Oy	Adjustable planar antenna	10/28/2009	8/29/2023
CN03132778.8	Pulse Finland Oy	Internal antenna	5/12/2010	9/18/2023
CN200410008260.X	Pulse Finland Oy	Multi-band planar antenna	3/5/2008	2/27/2024
EP 04396003.8	Pulse Finland Oy	Antenna element		1/7/2024
US 7391378	Pulse Finland Oy	Antenna element	6/24/2008	4/16/2025
CN200410001859.0	Pulse Finland Oy	Planar antenna structure and radio device	9/3/2008	1/15/2024
EP 04396002.0	Pulse Finland Oy	Planar antenna structure and radio device		1/9/2024
CN200410001860.3	Pulse Finland Oy	Internal multiband antenna	11/26/2008	1/15/2024
EP 04396001.2	Pulse Finland Oy	Internal multiband antenna		1/8/2024
FI 113586	Pulse Finland Oy	Internal multiband antenna	5/14/2004	1/15/2023
US 6937196	Pulse Finland Oy	Internal multiband antenna	8/30/2005	1/7/2024
CN200410001863.7	Pulse Finland Oy	Multiband antenna	2/4/2009	1/15/2024
EP 04396004.6	Pulse Finland Oy	Multiband antenna		1/9/2024

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FI 115262	Pulse Finland Oy	Multiband antenna	3/31/2005	4/15/2023
US 6963308	Pulse Finland Oy	Multiband antenna	11/8/2005	1/31/2024
CN200410034391.5	Pulse Finland Oy	Adjustable multi-band antenna	8/13/2008	4/15/2024
CN200480029488.5	Pulse Finland Oy	Cover structure for a radio device	6/8/2011	9/14/2024
EP 04767045.0	Pulse Finland Oy	Cover structure for a radio device		9/14/2024
DE 1671397	Pulse Finland Oy	Cover structure for a radio device	8/8/2012	
FR 1671397	Pulse Finland Oy	Cover structure for a radio device	8/8/2012	
GB 1671397	Pulse Finland Oy	Cover structure for a radio device	8/8/2012	
FI 121518	Pulse Finland Oy	Cover structure for a radio device	12/15/2010	10/9/2023
US 7340286	Pulse Finland Oy	Cover structure for a radio device	3/4/2008	11/15/2024
US 7256743	Pulse Finland Oy	Internal multiband antenna	8/14/2007	9/17/2024
CN200480032072.9	Pulse (Suzhou) Wireless Products Co., Ltd	Multiband planar antenna	4/21/2010	9/21/2024
CN200410010459.6	Pulse Finland Oy	Adjustable multi-band antenna	9/3/2008	12/15/2024
FI 112484	Pulse Finland Oy	Antenna component		8/18/2024
IN 5/DELNP/2007	Pulse Finland Oy	Antenna component		6/28/2025
CN 200580021564.2	Pulse Finland Oy	Antenna component		6/28/2025

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EP 05761293.9	Pulse Finland Oy	Antenna component		6/28/2025
US 7786938	Pulse Finland Oy	Antenna, component and methods	8/31/2010	11/22/2026
CN200580021563.8	Pulse Finland Oy	Chip antenna	4/13/2011	3/16/2025
DE 1761971 DE 602005006417.6]	Pulse Finland Oy	Chip antenna	4/30/2008	3/16/2025
FI 118748	Pulse Finland Oy	Chip antenna	2/29/2008	3/16/2025
FR 1761971	Pulse Finland Oy	Chip antenna	4/30/2008	3/16/2025
GB 1761971	Pulse Finland Oy	Chip antenna	4/30/2008	3/16/2025
IN 7737/DELNP/2006	Pulse Finland Oy	Chip antenna		3/16/2025
KR 952455	Pulse Finland Oy	Chip antenna	4/5/2010	3/16/2025
SE 1761971	Pulse Finland Oy	Chip antenna	4/30/2008	3/16/2025
US 7679595	Pulse Finland Oy	Chip antenna apparatus and methods	3/16/2010	12/28/2026
CN 200580031507.2	Pulse Finland Oy	Method for packaging radiation elements and package		9/7/2025
FI 120023	Pulse Finland Oy	Method for packaging radiation elements and package	5/29/2009	9/21/2024
IN 2679/DELNP/2007	Pulse Finland Oy	Method for packaging radiation elements and package		9/7/2025

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FI 119009	Pulse Finland Oy	Multiband Antenna System	6/13/2008	10/3/2025
CN 200680036557.4	Pulse Finland Oy	Multiband Antenna System		9/20/2026
EP 06794120.3	Pulse Finland Oy	Multiband Antenna System		9/20/2026
IN 3714/DELNP/2008	Pulse Finland Oy	Multiband Antenna System		9/20/2026
US 12/083129	Pulse Finland Oy	Multiband Antenna System and Methods		N/A
CN 200680036881.6	Pulse Finland Oy	Multiband Antenna System		9/20/2026
EP 06794119.5	Pulse Finland Oy	Multiband Antenna System		9/20/2026
KR1087150	Pulse Finland Oy	Multiband Antenna System	11/21/2011	9/20/2026
CN 200680027363.8	Pulse Finland Oy	Adjustable multiband antenna		7/13/2006
EP 06764565.5	Pulse Finland Oy	Adjustable multiband antenna		7/13/2006
IN1571/DELNP/2008	Pulse Finland Oy	Adjustable multiband antenna		7/13/2006
KR992919	Pulse Finland Oy	Adjustable multiband antenna	11/2/2010	7/13/2006
US11/989451	Pulse Finland Oy	Adjustable multiband antenna		N/A
EP06123741.8	Pulse Finland Oy	Multiband antenna component		11/21/2026
FI119577	Pulse Finland Oy	Multiband antenna component	12/31/2008	11/24/2025

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IN2504/DEL/2006	Pulse Finland Oy	Multiband antenna component			11/21/2026
KR1031052	Pulse Finland Oy	Multiband antenna component		4/18/2011	11/21/2026
US7663551	Pulse Finland Oy	Multiband antenna apparatus and methods		2/16/2010	11/22/2026
CN200680038200.X	Pulse Finland Oy	Adjustable antenna			9/28/2026
EP06794135.1	Pulse Finland Oy	Adjustable antenna			9/28/2026
FI118782	Pulse Finland Oy	Adjustable antenna		3/14/2008	2/15/2026
KR985203	Pulse Finland Oy	Adjustable antenna		9/28/2010	9/28/2026
US12/082882	Pulse Finland Oy	Adjustable antenna and methods			N/A
CN200580049116.3	Pulse Finland Oy	Antenna component			11/8/2025
EP05803705.2	Pulse Finland Oy	Antenna component			11/8/2025
IN7094/DELNP/2007	Pulse Finland Oy	Antenna component			11/8/2025
KR10-0947293	Pulse Finland Oy	Antenna component		3/5/2010	11/8/2025
US 11/901,611	Pulse Finland Oy	Antenna component and methods	US	9/25/2012	
CN200780019437.8	Pulse Finland Oy	Dual antenna			5/8/2027
EP07730743.7	Pulse Finland Oy	Dual antenna			5/8/2027
US8098202	Pulse Finland Oy	Dual antenna and methods			
CN200780042627.1	Pulse Finland Oy	Internal multi-band antenna			11/8/2027

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DE602007014 401.9-08	Pulse Finland Oy	Internal multi-band antenna	5/4/2011	11/8/2027
FR2092598	Pulse Finland Oy	Internal multi-band antenna	5/4/2011	11/8/2027
GB2092598	Pulse Finland Oy	Internal multi-band antenna	5/4/2011	11/8/2027
KR1091794	Pulse Finland Oy	Internal multi-band antenna	12/2/2011	11/8/2027
CN200780042 682.0	Pulse Finland Oy	Multi-band antenna with a common resonant feed structure and methods		7/19/2027
EP07810624.2	Pulse Finland Oy	Multi-band antenna with a common resonant feed structure and methods		7/19/2027
US 7589678	Pulse Finland Oy	Multi-band antenna with a common resonant feed structure and methods	9/15/2009	8/1/2027
CN200880012 496.7	Pulse Finland Oy	Method and apparatus for matching an antenna		4/17/2028
EP08736849.4	Pulse Finland Oy	Method and apparatus for matching an antenna		4/17/2028
CN200780043 785.9	Pulse Finland Oy	Dielectric antenna		11/14/2027
EP07823249.3	Pulse Finland Oy	Dielectric antenna		11/14/2027
FI120120	Pulse Finland Oy	Dielectric antenna	6/30/2009	11/28/2026
FI120119	Pulse Finland Oy	Antennirakenne	6/30/2009	1/4/2027
CN200880104 791.5	Pulse Finland Oy	Adjustable multiband antenna		8/20/2028
EP08787742.9	Pulse Finland Oy	Adjustable multiband antenna		8/20/2028

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FI20075597	Pulse Finland Oy	Adjustable multiband antenna		
CN200810009573.5	Pulse Finland Oy	Dual antenna apparatus		1/14/2028
EP08150302.1	Pulse Finland Oy	Dual antenna apparatus		1/16/2028
FI20075687	Pulse Finland Oy	Dual antenna apparatus		9/28/2027
KR995540	Pulse Finland Oy	Dual antenna apparatus	11/15/2010	1/10/2028
US8179322	Pulse Finland Oy	Dual antenna apparatus and methods	5/15/2012	5/6/2030
CN200980106689.3	Pulse Finland Oy	Adjustable multi-band antenna		2/18/2029
EP09716149.1	Pulse Finland Oy	Adjustable multi-band antenna		2/18/2029
DE 602009008986.2	Pulse Finland Oy	Adjustable multi-band antenna	8/15/2012	2/18/2029
FR 1671397	Pulse Finland Oy	Adjustable multi-band antenna	8/15/2012	2/18/2029
GB 1671397	Pulse Finland Oy	Adjustable multi-band antenna	8/15/2012	2/18/2029
FI121445	Pulse Finland Oy	Adjustable multi-band antenna	11/15/2010	2/28/2028
KR2010-7021541	Pulse Finland Oy	Adjustable multi-band antenna		2/18/2029
CN200980126449.X	Pulse Finland Oy	Dielectric antenna component and antenna		6/17/2029
CN200980137783.5	Pulse Finland Oy	Combination antenna		9/17/2029
CN201080006005.5	Pulse Finland Oy	Multiresonance Antenna		1/15/2030
CN201080019332.4	Pulse (Suzhou) Wireless Products	Antenna combination		4/24/2030

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	Co., Ltd		
PCT/FI2010/050805	Pulse Finland Oy	Method and Arrangement for Matching an Antenna	
FI20096101	Pulse Finland Oy	Method and Arrangement for Matching an Antenna	
13/502,722	Pulse Finland Oy	Antenna Matching Apparatus and Methods	
CN 201080048685.7	Pulse Finland Oy	Method and Arrangement for Matching an Antenna	10/15/2030
EP 10826168.6	Pulse Finland Oy	Method and Arrangement for Matching an Antenna	10/15/2030
KR 2012-7013367	Pulse Finland Oy	Method and Arrangement for Matching an Antenna	10/15/2030
PCT/FI2010/050821	Pulse Finland Oy	Adjustable antenna	
CN 201080049763.5	Pulse Finland Oy	Adjustable Antenna	10/20/2030
EP 10827952.2	Pulse Finland Oy	Adjustable Antenna	10/20/2030
KR 2012-7011207	Pulse Finland Oy	Adjustable Antenna	10/20/2030
PCT/US10/61346	Pulse Finland Oy	Loop resonator apparatus and methods for enhanced field control	
PCT/FI2011/050193	Pulse Finland Oy	Multiband diversity antenna	
PCT/FI2011/050434	Pulse Finland Oy	Antenna of a laptop device	
PCT/US11/33245	Pulse Finland Oy	Distributed multiband antenna and methods	
FI20115072	Pulse Finland Oy	Mulriresonance antenna, antenna module and radio device	1/15/2031

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PCT/F12012/050025	Pulse Finland Oy	Multiresonance antenna, antenna module and radio device		N/A
CN 201210112627.7	Pulse Finland Oy	Wideband antenna and methods		
TW101112831	Pulse Finland Oy	Wideband antenna and methods		
CN	Pulse Finland Oy	Multiband slot loop antenna apparatus and methods		N/A
EP 12177740.3	Pulse Finland Oy	Multiband slot loop antenna apparatus and methods		7/25/2032
KR 2012-0081231	Pulse Finland Oy	Multiband slot loop antenna apparatus and methods		7/25/2032
TW	Pulse Finland Oy	Multiband slot loop antenna apparatus and methods		
US13/331,802	Pulse Finland Oy	LOOSELY-COUPLED RADIO ANTENNA APPARATUS AND METHODS		N/A
US13/333,588	Pulse Finland Oy	SWITCHABLE DIVERSITY ANTENNA APPARATUS AND METHODS		N/A
CH0997974	Pulse Finland Oy	Planar antenna with two resonating frequencies	1/9/2002	9/29/2019
CN99123612.2	Pulse Finland Oy	Planar antenna with two resonating frequencies	1/14/2004	10/29/2019
DE69900773.9-08	Pulse Finland Oy	Planar antenna with two resonating frequencies	1/9/2002	9/29/2019
DK0997974	Pulse Finland Oy	Planar antenna with two resonating frequencies	1/9/2002	9/29/2019
IT0997974	Pulse Finland Oy	Planar antenna with two resonating frequencies	1/9/2002	9/29/2019
FI105061	Pulse Finland Oy	Planar antenna with two resonating frequencies	5/31/2000	10/30/2018
FR0997974	Pulse Finland Oy	Planar antenna with two resonating frequencies	1/9/2002	9/29/2019

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GB0997974	Pulse Finland Oy	Planar antenna with two resonating frequencies	1/9/2002	9/29/2019
SE0997974	Pulse Finland Oy	Planar antenna with two resonating frequencies	1/9/2002	9/29/2019
US6366243	Pulse Finland Oy	Planar antenna with two resonating frequencies	4/2/2002	10/29/2019
IT1018779	Pulse Finland Oy	Planar dual-frequency antenna and radio apparatus employing a planar antenna	6/30/2004	1/3/2020
CN00100912.5	Pulse Finland Oy	Planar dual-frequency antenna and radio apparatus employing a planar antenna	11/12/2003	1/5/2020
DE60011823.1-08	Pulse Finland Oy	Planar dual-frequency antenna and radio apparatus employing a planar antenna	6/30/2004	1/3/2020
FI105421	Pulse Finland Oy	Planar dual-frequency antenna and radio apparatus employing a planar antenna	8/15/2000	1/3/2020
FR1018779	Pulse Finland Oy	Planar dual-frequency antenna and radio apparatus employing a planar antenna	6/30/2004	1/3/2020
GB1018779	Pulse Finland Oy	Planar dual-frequency antenna and radio apparatus employing a planar antenna	6/30/2004	1/3/2020
SE1018779	Pulse Finland Oy	Planar dual-frequency antenna and radio apparatus employing a planar antenna	6/30/2004	1/3/2020
US6252552	Pulse Finland Oy	Planar dual-frequency antenna and radio apparatus employing a planar antenna	6/26/2001	1/5/2020
CN CN00126027.8	Pulse Finland Oy	Planar antenna structure	2/23/2005	8/24/2020

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FI112982	Pulse Finland Oy	Planar antenna structure	2/13/2004	8/25/2019
US6346914	Pulse Finland Oy	Planar antenna structure	2/12/2002	8/9/2020
CN 00127026.5	Pulse (Suzhou) Wireless Products Co., Ltd	Planar antenna structure	2/9/2005	9/11/2020
CN 00810239.2	Pulse Finland Oy	Structure of a radio-frequency front end	3/9/2005	7/13/2020
DE600 36 283.3-08	Pulse Finland Oy	Structure of a radio-frequency front end	9/5/2007	7/13/2020
FR1192726	Pulse Finland Oy	Structure of a radio-frequency front end	9/5/2007	7/13/2020
GB1192726	Pulse Finland Oy	Structure of a radio-frequency front end	9/5/2007	7/13/2020
CN 00131474.2	Pulse Finland Oy	Internal antenna of an apparatus	4/27/2005	10/20/2020
US6348892	Pulse Finland Oy	Internal antenna of an apparatus	2/19/2002	10/18/2020
CN 00131951.5	Pulse Finland Oy	Planar antenna	5/11/2005	10/30/2020
DE60018011. 5-08	Pulse Finland Oy	Planar antenna	2/9/2005	10/18/2020
IT1096602	Pulse Finland Oy	Planar antenna	2/9/2005	10/18/2020
FI114586	Pulse Finland Oy	Planar antenna	11/15/2004	11/1/2019
FR1096602	Pulse Finland Oy	Planar antenna	2/9/2005	10/18/2020
GB1096602	Pulse Finland Oy	Planar antenna	2/9/2005	10/18/2020
SE1096602	Pulse Finland Oy	Planar antenna	2/9/2005	10/18/2020
US6538604	Pulse Finland Oy	Planar antenna	3/25/2003	11/1/2020

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CN01111105.4	Pulse Finland Oy	Planar antenna structure	9/6/2006	2/23/2021
US13/269490	Pulse Finland Oy	Multi-Feed Antenna Apparatus and Methods		
US13/333588	Pulse Finland Oy	Switchable Diversity Antenna Apparatus and Methods		
US13/331802	Pulse Finland Oy	Loosely-Coupled Radio Antenna Apparatus and Methods		
PCT/FI2005/050247	Pulse Finland Oy	Antenna Component		
PCT/FI2005/050089	Pulse Finland Oy	Chip Antenna		
FI20040892	Pulse Finland Oy			
FI20041088	Pulse Finland Oy			
FI20065357	Pulse Finland Oy	Dual Antenna		
PCT/FI2007/050256	Pulse Finland Oy	Dual Antenna		
US8098202	Pulse Finland Oy	Dual Antenna and Methods	1/17/2012	12/4/2029
US12/693,241	Pulse Finland Oy	Miniature Patch Antenna and Methods		
FI20085067	Pulse Finland Oy	Contact Spring for Planar Antenna and Antenna		
PCT/FI2009/050028	Pulse Finland Oy	Contact Spring for Planar Antenna and Antenna		
911796	Pulse Finland Oy	Ceramic Duplex Filter		
US5239279	Pulse Finland Oy	Ceramic Duplex Filter	8/24/1993	3/31/2012
FI20022198	Pulse Finland Oy	Antenna for Flat Radio Device		

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US7136019	Pulse Finland Oy	Antenna for Flat Radio Device	11/14/2006	12/8/2023
FI911797	Pulse Finland Oy	Ceramic Band-Stop Filter		
FI892856	Pulse Finland Oy	Ceramic Band-Stop Filter		
FI892855	Pulse Finland Oy	Ceramic Band-Stop Filter		
US5307036	Pulse Finland Oy	Ceramic Band-Stop Filter	4/26/1994	3/31/2012
FI20031833	Pulse Finland Oy	Adjustable Multi-Band Antenna		
US7468700	Pulse Finland Oy	Adjustable Multi-Band Antenna	12/23/2008	12/24/2025
US13/439,576	Pulse Finland Oy	Compact Polarized Antenna and Methods		
US61/671,368	Pulse Finland Oy	Switched Antenna Apparatus and Methods		
PCT/FI2010/050821	Pulse Finland Oy	Adjustable Antenna		
FI20096134	Pulse Finland Oy	Adjustable Antenna		
FI20096251	Pulse Finland Oy	Mimo Antenna		
PCT/FI2010/050926	Pulse Finland Oy	Mimo Antenna		
CN 201080053513.9	Pulse Finland Oy	MIMO-Antenna		11/16/2030
EP 10832695.0	Pulse Finland Oy	MIMO-Antenna		11/16/2030
KR 2012-7015810	Pulse Finland Oy	MIMO-Antenna		11/16/2030
FI20096320	Pulse Finland Oy	Multiband Antenna Structure		

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PCT/FI2010/051003	Pulse Finland Oy	Multiband Antenna Structure				
CN 201080056800.5	Pulse Finland Oy	Multiband Antenna Structure and Methods				12/8/2030
FI20105158	Pulse Finland Oy	Antenna with Cover Radiator				
PCT/FI2011/050102	Pulse Finland Oy	Antenna with Cover Radiator				
5600333	Pulse Engineering inc.	MOBILE ACTIVE REPEATER	USA	none	Feb 4, 1997	Jan 26, 2015
6509878	Pulse Engineering inc.	ANTENNA MOUNTING SYSTEM	USA	none	Jan 21, 2003	April 2, 2021
7202826	Pulse Engineering inc.	COMPACT VEHICLE-MOUNTED ANTENNA	USA	none	Apr 10, 2007	Dec 24, 2023
5898408	Pulse Engineering inc.	WINDOW MOUNTED MOBILE ANTENNA SYSTEM USING ANNULAR RING APERTURE COUPLING	USA	none	Apr 27, 1999	Oct 24, 2016
13/439,576	Pulse Finland Oy	COMPACT POLARIZED ANTENNA AND METHODS		US	none	
7152592	PULSE ELECTRONICS GMBH	Ignition coil for a combustion engine	USA	none	12/26/2006	
8179655	PULSE ELECTRONICS, INC.	Surge protection apparatus and methods	USA	none	05/15/2012	
6346764	PULSE ENGINEERING, INC.	Multilayer piezoelectric transformer	USA	none	02/12/2002	
7218280	PULSE FINLAND OY	Antenna element and a method for manufacturing the same	USA	none	05/15/2007	
7081857	PULSE FINLAND OY	Arrangement for connecting additional antenna to radio device	USA	none	07/25/2006	

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6950068	PULSE FINLAND OY	Method of manufacturing an internal antenna, and antenna element	USA	none	09/27/2005
6903692	PULSE FINLAND OY	Dielectric antenna	USA	none	06/07/2005
6856293	PULSE FINLAND OY	Adjustable antenna	USA	none	02/15/2005
6473056	PULSE FINLAND OY	Multiband antenna	USA	none	10/29/2002
6340954	PULSE FINLAND OY	Dual-frequency helix antenna	USA	none	01/22/2002
5742259	PULSE FINLAND OY	Resilient antenna structure and a method to manufacture it	USA	none	04/21/1998
5734351	PULSE FINLAND OY	Double-action antenna	USA	none	03/31/1998
5506554	PULSE FINLAND OY	Dielectric filter with inductive coupling electrodes formed on an adjacent insulating layer	USA	none	04/09/1996
RE34898	PULSE FINLAND OY	Ceramic band-pass filter	USA	none	04/11/1995
5533054	PULSE FINLAND OY	Multi-level data transmitter	USA	none	07/02/1996

DE = Germany
DK = Denmark
EP = Europe

FI = Finland

FR = France

GB = United Kingdon

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IN = India

IT = Italy

KR = South
Korea
PCT = Patent Cooperation Treaty
SE = Sweden
US = United States of America

TRADEMARK
REEL: 005182 FRAME: 0906

Schedule II

Trademarks

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Intl Reg.	Design Only			1088559/ 05-May-2011	9, 42	Pulse Electronics Corporation 1210 Northbrook Drive, Suite 470 Trevose Pa 19053 Us (United States Of America)	Registration (Registered)/ International Registration designating: Australia, European Community, Japan, Norway, Russian Federation, Singapore and Switzerland. (Protection granted in Australia, EU, Japan, Norway, Russian Federation, Singapore, Switzerland)
Japan	Design			1088559 06-April-2012	9, 42	Pulse Electronics Corporation 1210 Northbrook Drive, Suite 470 Trevose Pa 19053 Us (United States Of America)	Registration (Registered)/

TRADEMARK
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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Korea	Design Only		45-2011-0001928/ 06-May-2011		9, 42	Pulse Electronics Corporation Pennsylvania United States Of America Us (United States Of America)	Unpublished Application (Pending)
USA	Design Only		85171998/ 08-Nov-2010		9, 40, 42	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Allowed Intent To Use (Final Refusal Mailed 7/26/11) Notice of Allowance issued 6/05/12
China	Design Only		9437159/ 09-May-2011		9	Pulse Electronics Corporation	Pending
China	Design Only		9437158/ 09-May-2011		42	Pulse Electronics Corporation	Pending
Taiwan	Design Only		100022555/ 06-May-2011		9, 42	Pulse Electronics Corporation	Pending

TRADEMARK
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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
USA	MAGPAC	MagPac	85376672/ 20-Jul-2011		9	Pulse Electronics Corporation Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Pending Intent To Use
Intl Reg.	Pulse Electronics	Pulse		1086937/ 05-May-2011	9, 42	Pulse Electronics Corporation 1210 Northbrook Drive, Suite 470 Trevose Pa 19053 Us (United States Of America)	Registration (Registered)/ International Registration designating: Australia, European Community, Japan, Norway, Russian Federation, Singapore and Switzerland. (Total refusal in Japan, Norway, Russian Federation, Singapore) (Published in Australia) (Protection granted in EU, Switzerland)
Korea	PULSE ELECTRONICS	Pulse Electronics	45-2011-0001929/ 06-May-2011		9, 42	Pulse Electronics Corporation Pennsylvania United States Of America Us (United States Of America)	Unpublished Application (Pending)

TRADEMARK
REEL: 005182 FRAME: 0909

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
USA	PULSE ELECTRONICS	Pulse Electronics	85172007/ 08-Nov-2010		9, 40, 42	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Allowed Intent To Use Notice of Allowance issued 6/05/12
China	PULSE ELECTRONICS	Pulse Electronics	9461086/ 13-May-2011		40	Pulse Electronics Corporation	Pending
Taiwan	PULSE ELECTRONICS	Pulse Electronics	100022554 06-May-2011		9, 42	Pulse Electronics Corporation	Pending
USA	SIDEWINDER	SIDEWINDER	85291715/ 11-Apr-2011	4147716 22-May-2012	9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Registration (Registered) Intent To Use Affidavit of Use due 5/22/18

TRADEMARK
REEL: 005182 FRAME: 0910

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Australia	SIDEWINDER	SIDEWINDER	1451882 04-Oct-2011	1451882 06-Feb-2012	9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Registration (Registered)
Brazil	SIDEWINDER	SIDEWINDER	831235780 04-Oct-2011		9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Published
Canada	SIDEWINDER	SIDEWINDER	1547625 04-Oct-2011		9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Pending

TRADEMARK
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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
China	SIDEWINDER	SIDEWINDER SIDEWINDER	10044799 10-Oct-2011		9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Pending
European Community	SIDEWINDER	SIDEWINDER	10313005 04-Oct-2011	10313005 04-Oct-2011	9, 42	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Registration (Registered)
India	SIDEWINDER	SIDEWINDER	2215386 04-Oct-2011		9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Pending

TRADEMARK
REEL: 005182 FRAME: 0912

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Israel	SIDEWINDER	SIDEWINDER	241088 04-Oct-2011		9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Pending
Mexico	SIDEWINDER	SIDEWINDER	1217146 04-Oct-2011	1272216 07-Mar-2012	9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Registration (Registered)
Taiwan	SIDEWINDER	SIDEWINDER	100051213 05-Oct-2011		9	Pulse Electronics Corporation Pennsylvania Corporation 1210 Northbrook Drive, Suite 470 Trevose, Pennsylvania 19053	Pending

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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
USA	EXCELSUS		75709982/ 20-May-1999	2432883/ 06-Mar-2001	9	Pulse Electronics, Inc Delaware Corporation 12220 World Trade Corporation San Diego, California 92128	Renewed (Registered)

TRADEMARK
REEL: 005182 FRAME: 0914

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Intl Reg.	PULSE			989855/ 29-Sep-2008	9, 10, 40, 42	Pulse Electronics, Inc 12220 World Trade Drive San Diego, Ca 92128 Us (United States Of America)	Registration (Registered)/ International Registration designating: Australia, China, European Community, Japan, Korea, Norway, Russian Federation, Singapore and Switzerland. (Total refusal in Australia and Korea). (Partial Provisional Refusal of Protection in China, Norway, Russia, Singapore) (Limited Protection granted in Japan) (Protection granted in EU, Switzerland) Name Change Filed - Pulse Engineering Inc. to Pulse Electronics, Inc. Change of ownership (assignment) Filed - Pulse Electronics, Inc. to Pulse Electronics Corporation

TRADEMARK
REEL: 005182 FRAME: 0915

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Intl Reg.	Pulse	Pulse		989856/ 29-Sep-2008	9, 10, 40, 42	Pulse Electronics, Inc 12220 World Trade Drive San Diego, Ca 92128 Us (United States Of America)	Registration (Registered) International Registration designating: Australia, China, European Community, Japan, Korea, Norway, Russian Federation, Singapore and Switzerland. (Total refusal in Australia and Korea). (Partial Provisional Refusal of Protection in China, Norway, Russia, Singapore, Switzerland) (Limited Protection granted in Japan) (Protection granted in EU) Name Change Filed - Pulse Engineering Inc. to Pulse Electronics, Inc. Change of ownership (assignment) Filed - Pulse Electronics, Inc. to Pulse Electronics Corporation

TRADEMARK
REEL: 005182 FRAME: 0916

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
USA	PULSE	Pulse	77434243/ 08-Nov-2010		9, 10, 40, 42	Pulse Engineering Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Allowed Intent To Use Suspended Notice of Allowance issued 1/10/12
USA	PULSE	PULSE	77434185/ 28-Mar-2008		9, 10, 40, 42	Pulse Engineering Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Allowed Intent To Use Suspended Notice of Allowance issued 1/03/12
Denmark	PULSE	Pulse	VA 03816/2008/ 26-Sept.-2008	VR 00824/2009 10-Mar-2009	9, 10, 40, 42	Pulse Engineering, Inc.	Registration (Registered) (Name change filed from Pulse ApS to Pulse Engineering Inc.)
USA	ANTENNA SOURCEBOOK	Antenna SourceBook	76546810/ 09-Sep-2003	2902945/ 16-Nov-2004	16	Pulse Engineering, Inc Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Registered Section 2(F)

TRADEMARK
REEL: 005182 FRAME: 0917

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
China	Design Only		6097481/ 08-Jun-2007	6097481/ 14-Feb-2010	9	Pulse Engineering, Inc. Us (United States Of America)	Registration (Registered)
USA	Design Only		75011958/ 30-Oct-1995	2080733/ 22-Jul-1997	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Renewed (Registered)
USA	Design Only		73653127/ 06-Apr-1987	1463364/ 03-Nov-1987	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92112	Renewed (Registered)
USA	KULDUCKIE	KULDUCKIE	73204082/ 16-Feb-1979	1163486/ 04-Aug-1981	9	Pulse Electronics, Inc. Delaware Corporation 1220 World Trade Drive San Diego, California 92128	Renewed (Registered)/ (Assignment To Pulse Engineering Of An Undivided Part Of Assignor's Interest - Radiall Incorporated) (Assigned to Pulse Electronics, Inc.)

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
USA	KULGLASS	Kūlglass	73787756/ 20-Mar-1989	1562026/ 24-Oct-1989	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Renewed (Registered)
Canada	KULROD		0368302/ 21-Sep-1973	TMA199949/ 21-Jun-1974	9	Pulse Engineering, Inc. Delaware Corporation 1220 World Trade Drive San Diego, California 92128	Renewed (Registered)
USA	KULROD		73000260/ 06-Sep-1973	1002640/ 28-Jan-1975	9	Pulse Engineering, Inc. Delaware Corporation 1220 World Trade Drive San Diego, California 92128	Renewed (Registered)/ Renewed (Registered)/ (Assignment To Pulse Engineering Of An Undivided Part Of Assignor's Interest - Radiall Incorporated)

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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Mexico	LARSEN	LARSEN	960840/ 11-Sep-2008	1093129/ 03-Apr-2009	9	Pulse Engineering, Inc. 12220 World Trade Drive, San Diego, Ca., 92128, Estados Unidos De America Us (United States Of America)	Registered
USA	LARSEN		73204130/ 16-Feb-1979	1199867/ 29-Jun-1982	37, 42	Pulse Electronics, Inc. Delaware Corporation 1220 World Trade Drive San Diego, California 92128	Renewed (Registered) Section 2(F) (Assigned to Pulse Electronics, Inc.)
USA	LARSEN		73173157/ 05-Jun-1978	1121359/ 03-Jul-1979	9	Pulse Engineering, Inc. Delaware Corporation 1220 World Trade Drive San Diego, California 92128	Renewed (Registered) Section 2(F)
Taiwan	LARSEN		83049681 28-Jul-1994	682719 01-Jul-1995	9	Pulse Electronics, Inc.	Renewed (Registered) (Foreign Associate filed Name Change to Pulse Electronics, Inc.)

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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Denmark	PULSE		VA 003814 2008 26-Sep-2008	VR 001275 2009/ 04-May-2009	9, 10, 40, 42	Pulse Engineering, Inc. 12220 World Trade Drive, San Diego, California 92128 Us (United States Of America)	Registration (Registered)
Korea	PULSE	Pulse	40-2003-0017480/	400634745000 0/ 12-Oct-2005	9	Pulse Electronics Corporation Sandy California U.S.A. Us (United States Of America)	Registration (Registered) Recorded name change from Pulse Engineering, Inc. to Pulse Electronics, Inc. and assignment from Pulse Electronics, Inc. to Pulse Electronics Corporation
USA	PULSE		76247820/ 27-Apr-2001	2787947/ 02-Dec-2003	9, 40	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Registered

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
USA	PULSE	Pulse	73787031/ 16-Mar-1989	1568116/ 28-Nov-1989	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Renewed (Registered)
Taiwan	PULSE		90043927/ 25-Oct-2001	1043266/ 16-May-2003	9	Pulse Electronics, Inc.	(Registered) Foreign Associate will renew registration after 11/16/12 (Foreign Associate filed Name Change to Pulse Electronics, Inc.)
Taiwan	PULSE		90043928/ 25-Oct-2011	176144/ 16-Jan-2003	40	Pulse Electronics, Inc.	Renewed (Registered) (Foreign Associate filed Name Change to Pulse Electronics, Inc.)
USA	PULSE ENGINEERIN G		73644058/ 02-Feb-1987	1518684/ 03-Jan-1989	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Renewed (Registered)

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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
European Community	PULSEJACK		1055227/ 27-Jan-1999	1055227/ 11-May-2000	9, 42	Pulse Engineering, Inc. 12220 World Trade Drive,San Diego,,Ca, 92128 Us (United States Of America)	Renewed (Registered)
Japan	PULSEJACK		H11-006563/ 27-Jan-1999	4413384/ 01-Sep-2000	9	Pulse Engineering, Inc. San Diego California Us (United States Of America)	Renewed (Registered)
Taiwan	PULSEJACK		088003350/ 26-Jan-1999	00937710/ 01-Apr-2001	9	Pulse Electronics, Inc.	Renewed (Registration) (Foreign Associate filed Name Change to Pulse Electronics, Inc.)
USA	PULSEJACK		75525466/ 27-Jul-1998	2451407/ 15-May-2001	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Renewed (Registered)

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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
USA	SPOTS!		75494677/ 01-Jun-1998	2334506/ 28-Mar-2000	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Renewed (Registered)
USA	VALOR		74304761/ 13-Aug-1992	1803124/ 09-Nov-1993	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Renewed (Registered)
USA	Z-BLOCKER		75706173/ 13-May-1999	2410114/ 05-Dec-2000	9	Pulse Engineering, Inc. Delaware Corporation 12220 World Trade Drive San Diego, California 92128	Renewed (Registered)
China	Design Only		3332174/ 10-Oct-2002	3332174/ 28-Oct-2003	9	Pulse Engineering, Inc. Us (United States Of America)	Registration (Registered)

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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
China	MGTOROID	MGTOROID	3001706/ 23-Oct-2001	3001706/ 14-Feb-2003	9	Pulse Engineering, Inc. Us (United States Of America)	Registration (Registered)
China	PULSE	PULSE	3004357/ 27-Apr-2001	3004357/ 07-Apr-2003	40	Pulse Engineering, Inc. Us (United States Of America)	Renewed (Registered)
China	PULSEJACK	PULSEJACK	1444313/ 27-Jan-1999	1444313/ 14-Sep-2000	9	Pulse Engineering, Inc. Us (United States Of America)	Renewed (Registered)
China	YOUR BUILD TO PRINT PARTNER	YOUR BUILD-TO-PRINT PARTNER	1947832/ 26-Feb-2001	1947832/ 07-Jan-2003	40	Pulse Engineering, Inc. Us (United States Of America)	Registration (Registered) (To Be Abandoned)
China	WEILI MAGNETICS	WEILI MAGNETICS	1947843/ 26-Feb-2001	1947843/ 07-Jan-2003	40	Pulse Engineering, Inc. Us (United States Of America)	Registration (Registered) (To Be Abandoned)
European Community	LK		4529665/ 07-Jul-2005	4529665/ 02-Aug-2006	9, 38, 42	Pulse Finland Oy Takatie 6,Kempele, 90440 Fi (Finland)	Registration (Registered)

Signature Page to Notice of Substitution
of Administrative Agent in Trademarks and Patents

Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
Finland	Lk		200501817/ 04-Jul-2005	235132/ 30-Dec-2005	9, 38, 42	Pulse Finland Oy Kempele Fi (Finland)	Registration (Registered)
Intl Reg.	LK			865739/ 04-Aug-2005	9, 38, 42	Pulse Finland Oy Takatie 6 Fi-90440 Kempele Fi (Finland)	Registration (Registered)/ International Registration designating China and USA.
European Community	LK PRODUCTS		4185062/ 10-Dec-2004	4185062/ 02-Feb-2006	9, 38, 42	Pulse Finland Oy Takatie 6,Kempele, 90440 Fi (Finland)	Registration (Registered)
Finland	LK PRODUCTS		200403183/ 10-Dec-2004	240073/ 31-Aug-2007	9, 38, 42	Pulse Finland Oy Kempele Fi (Finland)	Registration (Registered)
Intl Reg.	LK PRODUCTS			875450/ 09-Jun-2005	9, 38, 42	Pulse Finland Oy Takatie 6 Fi-90440 Kempele Fi (Finland)	Registration (Registered)
European Community	OBD Spark		4749552/ 21-Nov-2005	4749552/ 20-Oct-2006	9	Pulse Gmbh Einsteinstr. 1,Herrenberg, 71083 De (Germany)	Registration (Registered)

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Country	Trademark	Image	Application Number/ Application Date	Registration Number/ Registration Date	Class	Owner of Record/ Owner's Address of Record	Status/Remarks
USA	COPPERHEAD		74576554/ 21-Sep-1994	1921738/ 26-Sep-1995	9	Technitrol Delaware, Inc. Delaware Corporation 103 Springer Building 3411 Silverside Road Wilmington, De 19810	Renewed (Registered)
USA	COMPONENTS FOR A MODERN WORLD		76038699/ 02-May-2000	2441051/ 03-Apr-2001	40	Technitrol, Inc. Pennsylvania Corporation 1210 Northbrook Drive Suite 385 Trevose, Pennsylvania 19053	Registered

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