503264710 04/15/2015

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3311328

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JAMES D. REINKE	04/07/2015
XUSHENG ZHANG	04/15/2015
VINOD SHARMA	04/07/2014
VLADIMIR P. NIKOLSKI	04/07/2015
MICHAEL B. TERRY	04/13/2015
SCOTT A. HARELAND	04/07/2014
DANIEL L. HANSEN	04/07/2015
DONNA M. SALMI	04/07/2015

RECEIVING PARTY DATA

Name:	MEDTRONIC, INC.	
Street Address:	710 MEDTRONIC PARKWAY NE.	
Internal Address:	MS: LC340	
City:	MINNEAPOLIS	
State/Country:	MINNESOTA	
Postal Code:	55432	

PROPERTY NUMBERS Total: 1

Property Type	Number		
Application Number:	14686947		

CORRESPONDENCE DATA

Fax Number: (651)367-0471

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: 763-526-0929

Email: madonna.schroeder@medtronic.com

Correspondent Name: MEDTRONIC, INC.

Address Line 1: 710 MEDTRONIC PARKWAY NE.

Address Line 2: MS: MVC22

Address Line 4: MINNEAPOLIS, MINNESOTA 55432

ATTORNEY DOCKET NUMBER:	C00006980.USU2			
NAME OF SUBMITTER:	MICHAEL J. OSTROM			

503264710 PATENT REEL: 035412 FRAME: 0869

SIGNATURE:	/Michael J. Ostrom/				
DATE SIGNED:	04/15/2015				
Total Attachments: 8					
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PATENT REEL: 035412 FRAME: 0870

Attorney Docket No.: C00006980.USU2

ASSIGNMENT OF APPLICATION(S)

Whereas I/we, the below named inventor(s), with residence and citizenship as indicated below, have made an invention in

IMPLANTABLE MEDICAL DEVICE (IMD) SENSING

****	MODIFICATIONS RESPONSIVE TO DETECTED PACING PULSES
\boxtimes	for which an application for a United States Patent or a U.S. Provisional Application is being filed contemporaneously herewith;
	for which an application for a United States Patent identified as U.S. Patent Application No.; was filed on
	for which an application for a U.S. Provisional Application No. ; was filed on ;
Ø	for which above application claims priority to U.S. Provisional Patent Application No. 61/984,233; filed on April 25, 2014;
	which application is identified as PCT International Patent Application No.; filed;

Whereas, <u>Medtronic</u>, <u>Inc.</u>, a corporation organized and existing under the laws of the State of Minnesota and having a principle place of business at <u>710 Medtronic Parkway N.E.</u>, <u>Minneapolis</u>, <u>Minnesota 55432-5604</u>, hereinafter referred to as "Corporation," is desirous of acquiring the entire right, title and interest in and to said invention for the United States and for all foreign countries and in and to any and all foreign and domestic Letters Patent which may be granted therefore;

NOW, Therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, we have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Corporation, its successors and assigns, the entire right, title and interest in and to said invention and the application(s) identified above and in and to any application claiming benefit thereto and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefore including our rights under the International Convention for the Protection of Industrial Property, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Letters Patent that may be granted, the same to be held and enjoyed by Corporation for its own use and benefit and use and benefit of its successors and assigns to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made, including the right to enforce such Letters Patent as fully and entirely as the same would have been held and enjoyed by the assignors if this assignment had not been made; together with all claims by assignors for damages by reason of past infringement or for provisional rights and including the right to sue for, and collect the same for its own use and benefit, and for the use and benefit of its successors, assigns, and other legal representatives;

AND, for the consideration aforesaid, we materially represent to Corporation, its successors and assigns, that at the time of the execution and delivery of these presents, we are the sole lawful owners of the entire right, title and interest in and to the invention, application and Letters Patent above mentioned, and that the same are unencumbered, and that we have good right and lawful authority to sell and convey the same in the manner herein set forth;

AND, for the consideration aforesaid, we hereby individually covenant and agree to and with Corporation, its successors and assigns, that whenever its counsel or the counsel of its successors or assigns, learned in the law, shall advise that an amendment or division of, or continuation or any continuation-in-part thereof, or any other proceeding in connection with the filing or prosecution of said domestic or foreign patent applications, including interference proceedings, is lawful and desirable, or that a reissue of extension of said Letters Patent is lawful and desirable, we, or our executors, administrators or assigns will sign all papers and drawings, take all rightful oaths, and do all acts necessary or required to be done for the procurement of valid Letters Patent for said invention, or for the reissue or extension of the same, without charge to Corporation, its successors or assigns, but at Corporation's expense.

Page 1 of 4 Attorney Docket No.: C00006980.USU2

Medtronic, Inc., 710 Medtronic Parkway, Minneapolis, MN 55432

Assignment

I/We do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said Medtronic, Inc., as the assignee of the entire right, title, and interest therein.

In witness whereof, I/we have signed my/our name(s) on the day and year set forth below. Given Name (first and middle initial [if any]): Family Name or Surname (last name): REINKE James D. Inventor's Signature: Date: ame City and State: Citizenship: Country: US Maple Grove, Minnesota US STATE OF MINNESOTA COUNTY OF RAMSEY), before me personally appeared the above-named. and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid. MADONNA M. SCHROEDER Notary Public (Seal) State of Minnesota Notary Public My Commission Expires January 31 2020 Given Name (first and middle initial [if any]): Family Name or Surname (last name): ZHANG Xusheng Inventor's Signature: Date: Residence (City and State): Citizenship: Country: Shoreview, Minnesota US US STATE OF MINNESOTA COUNTY OF RAMSEY On this day of , before me personally appeared the above-named, and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid. MADONNA M. SCHROEDER Notary Public State of Minnesota (Seal) My Commission Expires January 31, 2020

Given Name (first and middle initial [if any]): Family Name or Surname (last name): SHARMA					
Inventor's Signature:		Date: 4/2/2015			
Residence (City and State): Maple Grove, Minnesota		Country: US	Citizenship: US		
STATE OF MINNESOTA)) ss.			***************************************		
COUNTY OF RAMSEY On this day of day of before me personally appeared the above-named, and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.					
(Seal) MADONNA M. SCHROSDS Notary Public State of Minnesots My Commission Expire: January 31, 2020	8	Notary Public	Julia -		
Given Name (first and middle initial [if any]): Vladimir P.	Family N NIKOLS	ame or Surname (I	ast name):		
Inventor's Signature: Wileshieir P. Kilobli;		Date: 20/	5-04-07		
Residence (City and State): Blaine, Minnesota		Country: US	Citizenship: US		
STATE OF MINNESOTA)) ss. COUNTY OF RAMSEY) On this day of day					
(Seal) MADONNA M. SCH Notary Pub State of Minn My Commission January 31.	lic esota Expires	Notary Public	Sand -		
Given Name (first and middle initial [if any]): Michael B.	Family N	ame or Surname (ast name):		
Inventor's Signature:		Date:			
Residence (City and State): Camas, Washington		Country: US	Citizenship: US		
STATE OF WASHINGTON) ss. COUNTY OF On this day of and who executed the foregoing instrument, as sa		, befo	re me personally appeared the above-named,		
and who executed the foregoing instrument, as st (Seal)	aiu person s	Notary Public	on me nay and year atoresam.		

Assignment

Page 3 of 4 Medironic, inc., 710 Medironic Parkway, Minneapolis, MN 55432

Attorney Docket No.: C00006980.USU2

Given Name (first and middle initial [if any]): Scott A. Inventor's Signature: Residence (City and State): Lino Lakes, Minnesota STATE OF MINNESOTA) On this and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid. Given Name (first and middle initial [if any]): MADONNAM. SCHROEDER Notary Public State of Minnesota My Commission Expires Jonuary 31, 2020 Given Name (first and middle initial [if any]): Daniel L. Inventor's Signature: Date: Country: Country: US Citizenship: US Citizenship: Country: US Citizenship: US Country: US Citizenship: US Country: U				
Residence (City and State): Lino Lakes, Minnesota STATE OF MINNESOTA) SS. COUNTY OF RAMSEY) On this and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid. MADONNAM SCHROEDER Notary Public State of Minnesota MADONNAM SCHROEDER Notary Public Notary Public Notary Public Notary Public Family Name or Surname (last name): HANSEN Inventor's Signature: James Andrea City and State): Castle Rock, Colorado STATE OF COLORADO On this Aday of Andrea				
STATE OF MINNESOTA) STATE OF MINNESOTA) SS. COUNTY OE, RAMSEY) On this				
COUNTY OF RAMSEY) On this day of day of ANDONNA M. SCHROEDER Notary Public State of Minnesota My Commission Expires January 31, 2020 Given Name (first and middle initial [if any]): Daniel L. Inventor's Signature: Date: HANSEN Country: Castle Rock, Colorado STATE OF COLORADO On this day of Ay of Selection Selection Selection Country:				
COUNTY OF RAMSEY) On this				
Given Name (first and middle initial [if any]): Daniel L. Inventor's Signature: Castle Rock, Colorado STATE OF COLORADO On this day of And and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.				
Given Name (first and middle initial [if any]): Daniel L. Family Name or Surname (last name): HANSEN				
Inventor's Signature: Date:				
Residence (City and State): Castle Rock, Colorado STATE OF COLORADO On this Hong day of Hong and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.				
Residence (City and State): Castle Rock, Colorado STATE OF COLORADO STATE OF COLORADO On this Honor day of Honor and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.				
COUNTY OF LAWS SS. On this Hong day of Live County				
(Seal) MADONNA M. SCHROEDER Notary Public State of Minnesota My Commission Expires January 31, 2020 Notary Public				
Given Name (first and middle initial [if any]): Family Name or Surname (last name): Donna M. SALMI				
Inventor's Signature: Date: 04/07/3015				
Residence (City and State): Minneapolis, Minnesota Country: US Citizenship: US				
STATE OF MINNESOTA)				
COUNTY OF RAMSEY) On this Hold July before me personally appeared the above-named				
and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.				
(Seal) MADONNA M. SCHROEDER Notery Public State of Minnesota My Commission Expires January 31, 2020 Notary Public Notary Public				

Attorney Docket No.: C00006980.USU2

ASSIGNMENT OF APPLICATION(S)

Whereas I/we, the below named inventor(s), with residence and citizenship as indicated below, have made an invention in

IMPLANTABLE MEDICAL DEVICE (IMD) SENSING

	MODIFICATIONS RESPONSIVE TO DETECTED PACING PULSES
X	for which an application for a United States Patent or a U.S. Provisional Application is being filed contemporaneously herewith;
	for which an application for a United States Patent identified as U.S. Patent Application No.; was filed on
	for which an application for a U.S. Provisional Application No ; was filed on ;
\boxtimes	for which above application claims priority to U.S. Provisional Patent Application No. 61/984,233; filed on April 25 2014;
	which application is identified as PCT International Patent Application No.; filed;
	Whereas, Medironic, Inc., a corporation organized and existing under the laws of the State of Minnesota and

Whereas, <u>Meditonic, Inc.</u>, a corporation organized and existing under the laws of the State of Minnesota and having a principle place of business at <u>710 Meditonic Parkway N.E.</u>, <u>Minneapolis</u>, <u>Minnesota 55432-3604</u>, hereinafter referred to as "Corporation," is desirous of acquiring the entire right, title and interest in and to said invention for the United States and for all foreign countries and in and to any and all foreign and domestic Letters Patent which may be granted therefore;

NOW, Therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, we have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Corporation, its successors and assigns, the entire right, title and interest in and to said invention and the application(s) identified above and in and to any application claiming benefit thereto and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefore including our rights under the International Convention for the Protection of Industrial Property, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Letters Patent that may be granted, the same to be held and enjoyed by Corporation for its own use and benefit and use and benefit of its successors and assigns to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made, including the right to enforce such Letters Patent as fully and entirely as the same would have been held and enjoyed by the assignors if this assignment had not been made; together with all claims by assignors for damages by reason of past infringement or for provisional rights and including the right to sue for, and collect the same for its own use and benefit, and for the use and benefit of its successors, assigns, and other legal representatives;

AND, for the consideration aforesaid, we materially represent to Corporation, its successors and assigns, that at the time of the execution and delivery of these presents, we are the sole lawful owners of the entire right, title and interest in and to the invention, application and Letters Patent above mentioned, and that the same are unencumbered, and that we have good right and lawful authority to sell and convey the same in the manner herein set forth;

AND, for the consideration aforesaid, we hereby individually covenant and agree to and with Corporation, its successors and assigns, that whenever its counsel or the counsel of its successors or assigns, learned in the law, shall advise that an amendment or division of, or continuation or any continuation-in-part thereof, or any other proceeding in connection with the filing or prosecution of said domestic or foreign patent applications, including interference proceedings, is lawful and desirable, or that a reissue of extension of said Letters Patent is lawful and desirable, we, or our executors, administrators or assigns will sign all papers and drawings, take all rightful oaths, and do all acts necessary or required to be done for the procurement of valid Letters Patent for said invention, or for the reissue or extension of the same, without charge to Corporation, its successors or assigns, but at Corporation's expense.

Assignment Page 1 of 4

Attorney Docket No.: C00006980 USU2

I/We do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said Medtronic, Inc., as the assignee of the entire right, title, and interest therein.

In witness whereof, I/we have signed my/our name(s) on the day and year set forth below. Given Name (first and middle initial (if any)): Family Name or Surname (last name): James D. REINKE Date Inventor's Signature City and State: Country: Citizenship US US. Maple Grove, Minnesota STATE OF MINNESOTA) COUNTY OF RAMSEY and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid (Scal) Notary Public Given Name (first and middle initial [if any]): Family Name or Surname (last name): ZHANG Xusheng Date: Inventor's Signature Residence (City and State): Country: Citizenship: Shoreview, Minnesota STATE OF MINNESOTA) COUNTY OF RAMSEY On this ______ day of _______, before me personally appeared the above-named , and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid. (Seal) Notary Public

Page 2 of 4 Attorney Docket No.: C00006980.USUZ Medtronic, Inc., 710 Medtronic Parkway, Minneapolis, MN 55432

Assignment

Given Name (first and middle initial [if any]): Vinod	Family No SHARM	amily Name of Surname (last name): HARMA		
Inventor's Signature:	Date:			
Residence (City and State): Maple Grove, Minnesota		Country: US	Citizenship: US	
STATE OF MINNESOTA) . ss.				
COUNTY OF RAMSEY)				
On thisday of and who executed the foregoing instrument, as sai	id person's f	ree act and deed, on the day an	ally appeared the above-named ; d year aforesaid.	
(Scal)		Notary Public		
Given Name (first and middle initial (if any)) Vladimir P.	Family Ni NIKOLS	une or Surname (last name): Kl		
Inventor's Signature:		Date:		
Residence (City and State): Blaine, Minnesota		Country: US	Citizenship: US	
STATE OF MINNESOTA) 3 ss.				
COUNTY OF RAMSEY)		b., 8		
On this day of and who executed the foregoing instrument, as sai	id person's fi	ree act and deed, on the day an	ally appeared the above-named, dyear aforesaid	
(Scal)		Notary Public		
			anamanamanamanamanamanamanamanamanamana	
Given Name (first and middle initial [if any]): Michael B.	Family Na TERRY	une or Surname (last name).		
Inventor's Signatury: 11/4/4.1 & Torz		Date: 4/13/20/9	, m	
Residence (City and State): Camas, Washington		Country: / / US	Citizenship: UB	
STATE OF WASHINGTON)				
COUNTY OF COUNTY OF COUNTY OF		193 on a second	"	
On thisand who executed the facing insuration in the facing in the fa	d person's fi	econi ec act and decit, on the day and	ally appeared the above-named , I year aforespit	
State of Washington PAULA I LAWTON		/ 1 / 1 3		
(Scal) MY COMMISSION EXPIRES June 23, 2015	<	Notary Public		

Assignment

Page 3 of 4 Attr Medironic, Inc., 710 Medironic Parkway, Minneapolis, MN 55432

Altomey Cocket No.: C00006980.USU2

Given Name (first and middle initial [if any]): Scott A.	Family Name or Surname (last name): HARELAND				
Inventor's Signature:		Date:			
Residence (City and Siate): Lino Lakes, Minnesota				Citizenship: US	
STATE OF MINNESOTA)) 88.					
COUNTY OF RAMSEY)					
On thisday of, before me personally appeared the above-named , and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.					
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(Seal)					
		Notary Public			
Given Name (first and middle initial [if any]):	manamana A Sicas	manamananananananananananananananananan	annamanna Seerese E		
Daniel L.	HANSE	ame or Surname (last name): ▼			
Inventor's Signature:		Date:			
Residence (City and State): Castle Rock, Colorado		Country: US		Citizenship: US	
STATE OF COLORADO)					
COUNTY OF					
On thisday of and who executed the foregoing instrument, as sa	id nerson's f	before :	me personi	ally appeared the above-named . If year afaresaid	
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(Scal)					
		Notary Public			
Given Name (first and middle initial (if any)):	Family N	ime or Sername (last	name		
Donns M. SALMI					
Inventor's Signature:		Date:			
Residence (City and State):		Country:		Citizenship:	
Minneapolis, Minnesota		US		US	
STATE OF MINNESOTA) SS.					
COUNTY OF RAMSEY)					
On thisday of, before me personally appeared the above-named, and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.					
(Seal)		Northean St. C.C.			
		Notary Public			

Assignment

Page 4 of 4 Medironic, Inc., 710 Medironic Parkway, Minneapolis, MN 95432

Altomey Docket No.: C00006980.USU2

PATENT REEL: 035412 FRAME: 0878